Swedish Cherry Hill Medical Center
Major Institution Master Plan

Draft
Environmental Impact Statement

Date Issued: May 22, 2014

City of Seattle
Department of Planning and Development
DPD Project Number 3012953

The intent and purpose of this Draft Environmental Impact Statement is to satisfy the procedural requirements of the State Environmental Policy Act (RCW 43.21c) and City Ordinance 114057. This document is not an authorization for an action, nor does it constitute a decision or a recommendation for an action; in its final form it will accompany the final decision on the proposal.

Introductory Memo

This Draft Environmental Impact Statement (DEIS) for the Swedish Cherry Hill Medical Center Major Institution Master Plan (MIMP) has been prepared under the direction of the City of Seattle (City) Department of Planning and Development (DPD). The future development has not been designed and this EIS is a non-project EIS for which there is normally less detailed information available. Individual future projects that exceed the SEPA thresholds for the underlying Single-Family 5000 (SF)-5000 or Lowrise 3 (LR3)[1] zoning will require project-specific environmental review at the time of the Master Use Permit (MUP) application.

The scope of this document has been determined in accordance with the scoping process required by the Seattle SEPA Ordinance (SMC 25.05.408). A public notice was issued on March 7, 2012, stating that the project would require an EIS and inviting public and agency comments on the scope of the DEIS.

On March 21, 2013, a public meeting was held at Swedish Medical Center's Education & Conference Center, First Floor - James Tower 550 17th Avenue, at 6:00 PM to provide opportunity for the public to discuss and identify probable significant environmental impacts that should be addressed in the EIS.

The scoping comment period ended on April 4, 2013. Written comments were received from three individuals as of April 4, 2013. Twenty-six people made oral comments at the March 21, 2013 scoping meeting. The majority of the comments were directed at height, bulk and scale, traffic and transportation impacts, land use compatibility with surrounding residential uses, historic resources, impacts on public services and utilities, and impacts of construction.

Based on scoping comments, DPD determined that the project had the potential to result in adverse impacts on the following elements of the environment: air quality; climate; water quality; height, bulk and scale; historic preservation; housing; land use; light and glare; shadows; noise and environmental health; traffic and transportation (including parking); and public services and utilities. There would also be potential impacts from construction (e.g., erosion, air quality, storm water runoff, noise and transportation [including sidewalk and street closures; pedestrian circulation; construction truck trips; haul routes; staging areas; construction worker parker demand; and impacts to transit stops and layover locations]). Elements of the environment for which significant adverse impacts are unlikely to occur include earth/geology (i.e., operation impacts), energy (i.e., usages of electrical and other forms of energy), and plants and animals, and these elements are eliminated from detailed study.

[1] See SMC 25.05.800 Categorical exemptions, Table B for 25.05.800: Exemptions for Non-Residential Uses. Non-residential uses under 4,000 gross SF are exempt from SEPA review in SF-5000 and LR3 zones located outside of urban centers and urban villages. Projects larger than 4,000 gross SF must go through SEPA review.

Key environmental issues and options identified in this PDEIS are primarily potential impacts to land use, height/bulk and scale, traffic and transportation and, to a lesser extent, construction and operational impacts on the other elements of the environment listed above. Summary information regarding the project's effects on these elements of the environment is provided beginning on page vii.

The lead agency is requesting review and comment on this DEIS from local, state, and federal agencies, and the general public.

The Final EIS will be used by the City of Seattle to inform various decisions, including:
(1) whether the City will approve, approve with conditions, or deny the proposed MIMP; and
(2) whether the City will issue land use approvals and the nature of impact mitigation that may be required.

The 45-day comment period for this review begins on the date of issuance of this DEIS (May 22, 2014), and ends on July 6, 2014. All written comments, questions, or information should be directed to the DPD contact person, Stephanie Haines at

Department of Planning and Development
ATTN: Public Resource Center
700 Fifth Ave, Ste 2000
P.O. Box 34019
Seattle, WA 98124-4019

Please include the project number (3012953), project address (500 17th Ave), and your mailing address with your written comment.

Fact Sheet

Project Title

Swedish Medical Center Cherry Hill Campus Major Institution Master Plan

Proponent

Swedish Medical Center

Location

The Swedish Cherry Hill Campus is located in the Cherry Hill neighborhood of Seattle, between E Jefferson and E Cherry Streets, and to the east of 15th Avenue. The site address is 500 17th Avenue, Seattle, Washington.

Proposed Action

The Proposed Action is the Council land use action to adopt a new Major Institution Master Plan MIMP for Swedish Medical Center, Cherry Hill Campus. A rezone is required for the modifications to Major Institution Overlay (MIO) height limits.

Lead Agency

City of Seattle Department of Planning and Development.

Responsible Official:	Diane Sugimura, Director City of Seattle Department of Planning and Development Seattle Municipal Tower, 700 Fifth Avenue, Suite 2000 PO Box 34019 Seattle, WA 98124-4019
Contact Person:	Stephanie Haines, Land Use Manager City of Seattle Department of Planning and Development Seattle Municipal Tower, 700 Fifth Avenue, Suite 2000 PO Box 34019 Seattle, WA 98124-4019 Telephone: (206) 684-5014 Fax: (206) 233-7902
Master Use Permit No.:	3012953

Required Approvals

Preliminary investigation indicates that the following permits and/or approvals could be required for the proposal. Additional permits/approvals may be identified during the review process for subsequent future development.

City of Seattle

City Council

- Council Land Use Action to approve a new MIMP
- Council Land Use Action to approve a rezone to allow changes in MIO heights
- Future Term permits for sky bridge and tunnel

Department of Planning and Development

Final EIS Approval of Adequacy

Date of Issue of the Draft EIS

May 22, 2014

Public and Agency Review and Response

In accordance with SEPA guidelines, this DEIS is circulated for a 45-day review period. Information regarding the availability of this DEIS will appear in the Seattle *Daily Journal of Commerce* and the DPD Land Use Information Bulletin. Agencies, the Swedish Cherry Hill Citizen's Advisory Committee (CAC), affected tribes, and members of the public are invited to comment on the Draft EIS. Written comments must be received by 5:00 PM on July 6, 2014. Written comments should be emailed to Stephanie Haines at DPD at Stephanie.haines@seattle.gov.

Public Hearing

A public hearing will be held on the DEIS; 6:00 PM on Thursday, June 12, in the Auditorium at Swedish Cherry Hill Medical Center. The purpose of the hearing is to gather comments on the environmental impact of the proposal and other issues addressed in the DEIS. Oral comments will be taken at the public hearing and will be considered in preparing the Final EIS and will be responded to in the Final EIS.

Approximate Date of Issue of the Final EIS

Anticipated in the third quarter of 2014

Approximate Date of Final Actions

Final actions will include Seattle City Council approval of the Master Plan and rezone (changes to MIO Height Districts). This action will follow the issuance of the Final EIS and is expected to occur in 2015.

Document Availability and Cost

Copies of the DEIS will be distributed to agencies and organizations noted in Chapter 6, Distribution List of this document.

Authors and Principal Contributors to this DEIS

The DEIS has been prepared under the direction of the DPD. Research and analysis was provided by the following consulting firms:

URS Corporation (Environmental analysis and document preparation)
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Seattle, WA 98101-1616

SSA Acoustics (Noise)
222 Etruria Street, Suite 100
Seattle, WA 98109

The Johnson Partnership (Historic Resources)
1212 NE 65th Street
Seattle, WA 98115-6724

The Transpo Group (Transportation analysis)
11730 118th Avenue NE, Suite 600
Kirkland, WA 98034-7120

Location of Background Data

City of Seattle
Department of Planning and Development
Seattle Municipal Tower, 700 Fifth Avenue, Suite 2000
PO Box 34019
Seattle, WA 98124-4019

Elements of the Environment

The following is a list of elements of the environment set forth in Chapter 25.05.444 of the Seattle Municipal Code. During the scoping process, the DPD evaluated the project's potential for adverse impacts on each of these elements. Consideration was given to both construction and operational impacts. The items marked "reviewed" are discussed in Chapter 3 of this EIS.

These items were identified as a result of the scoping process carried out in compliance with Section 25.05.408 of the Seattle Municipal Code (SMC) and were determined by the DPD to have potential significant adverse impacts. Items marked "not reviewed" do not have impacts, or have impacts that were deemed non-significant and are not discussed in the EIS.

I. Natural Environment

(a) Earth

(i)	Geology and Soils	Not reviewed
(ii)	Topography	Not reviewed
(iii)	Unique physical features	Not reviewed
(iv)	**Erosion/enlargement**	**Reviewed for Construction – see Air Quality and Public Utilities**

(b) Air

(i)	**Air Quality**	**Reviewed**
(ii)	Odor	Not reviewed
(iii)	**Climate**	**Reviewed**

(c) Water

(i)	**Surface Water Movement, Quantity, or Quality**	**Reviewed – See Public Utilities**
(ii)	**Runoff/absorption**	**Reviewed – See Public Utilities**
(iii)	Floods	Not reviewed
(iv)	**Groundwater**	**Reviewed – See Runoff/absorption in Construction**
(v)	**Public water supply**	**Reviewed – See Public Utilities**

(d) Plants and Animals

(i)	Habitat	Not reviewed
(ii)	Unique species	Not reviewed
(iii)	Fish or wildlife	Not reviewed

(e) Energy and Natural Resources

(i)	Amount required/ rate of use/ efficiency	Not reviewed
(ii)	Source/availability	Not reviewed
(iii)	Nonrenewable resources	Not reviewed
(iv)	Conservation and	Not reviewed
(v)	**Scenic resources**	**Reviewed**

II. Built Environment

(a) Environmental Health

(i)	**Noise**	**Reviewed**
(ii)	Risk of explosion	Not reviewed
(iii)	**Releases or potential releases to the environment affecting public health, such as toxic or hazardous materials.**	**Reviewed – See Public Services**

(b) Land and Shoreline Use

(i)	**Relationship to existing land use plans and to estimated population**	**Reviewed**
(ii)	**Housing**	**Reviewed**
(iii)	**Light and glare**	**Reviewed**
(iv)	**Aesthetics**	**Reviewed**
(v)	**Recreation**	**Reviewed – See Parks in Public Services and Utilities**
(vi)	**Historic and cultural preservation**	**Reviewed**
(vii)	Agricultural crops	Not reviewed

(c) Transportation

(i)	**Transportation systems**	**Reviewed**
(ii)	**Vehicular traffic**	**Reviewed**
(iii)	**Waterborne, Rail**	Not reviewed
(iv)	**Parking**	**Reviewed**
(v)	**Movement and circulation of people or goods**	**Reviewed**
(vi)	**Traffic hazards**	**Reviewed**

(d) Public Services and Utilities

(i)	**Fire**	**Reviewed**
(ii)	**Police**	**Reviewed**
(iii)	Schools	Not reviewed
(iv)	**Parks or other recreational facilities**	**Reviewed**
(v)	Maintenance	Not reviewed
(vi)	Communications	Not reviewed
(vii)	**Water and Storm Water**	**Reviewed**
(viii)	**Sewer and Solid Waste**	**Reviewed**
(ix)	**Other government services or utilities**	**Reviewed**

Acronyms

ALS	Advanced Life Support
ACS	American Community Survey
ADA	Americans with Disabilities Act
AMI	Area median income
BLS	Basic Life Support
CAC	Citizen's Advisory Committee
CHPO	City Preservation Officer
CHPB	Cherry Hill Professional Building
City	City of Seattle
COA	Certificate of Approval
CO	Carbon Monoxide
CO_2	Carbon Dioxide
CRAs	Community Reporting Areas
CTMP	Construction Transportation Management Plan
CT	Census tract
CTR	Commuter trip reduction
CPTED	Crime Prevention Through Environmental Design
CMP	Construction Management Plan
DAHP	Department of Archaeology and Historic Preservation
dB	Unit of decibels
dBA	A-weighted decibels
DEIS	Draft Environmental Impact Statement
DMP	Disaster Medicine Project
DON	Department of Neighborhoods
DPD	Department of Planning and Development
DPM	Diesel particulate matter
Draft MIMP	Draft Major Institution Master Plan
DSHS	Department of Social and Health Services
ECA	Environmentally Critical Areas
Ecology	Department of Ecology
EMS	Emergency Medical Services
EPA	Environmental Protection Agency
ETB	Electric Trolley Bus
FAR	Floor area ratio
FMR	Fair market rent
GHGs	Greenhouse gases
GSI	Green Stormwater Infrastructure
I-5	Interstate (Highway) 5
I-90	Interstate (Highway) 90
HCT	High capacity transit
HOV	High occupancy vehicle

HUD	Department of Housing and Urban Development
HVAC	Heating, Ventilation, and Air Conditioning
ICU	Intensive Care Unit
I&M	Inspection and maintenance
L_{eq}	Equivalent sound level during a specific period of time
L_{max}	Maximum sound level during a specific period of time
L_{min}	Minimum sound level
LOS	Level of service
LR1	Lowrise zone 1 (duplexes and triplexes only)
LR3	Lowrise zone 3 (higher density)
m:ss	minutes to seconds
MIMP	Major Institution Master Plan
MIO	Major Institution Overlay
mph	Miles per hour
MRI/CT	Magnetic resonance imaging/computed tomography
MS	Multiple sclerosis
MTCO2e	Metric tons CO2 equivalent
MUP	Master Use Permit
MUTCD	Manual of Uniform Traffic Control Devices
NAAQS	National Ambient Air Quality Standards
NHRP	National Register of Historic Places
NC1	Neighborhood Commercial
NO_2	Nitrogen dioxide
NO_x	Nitrogen oxide
OSE	Office of Sustainability and Environment
PDT	Pacific daylight time
PM2.5	Particles less than 2.5 micrometers in size
PM10	Particles less than 10 micrometers in size
ppm	Parts per million
PSCAA	Puget Sound Clean Air Agency
RN	Registered Nurse
RPZ	Restricted parking zones
Sabey	Sabey Corporation
SDOT	Seattle Department of Transportation
SEPA	State Environmental Policy Act
SF	Square feet
SF-5000	Single Family zone; 5000 SF minimum lot area required
SFD	Seattle Fire Department
SM	Seattle Mixed
SMC	Seattle Municipal Code
SOV	Single occupancy vehicle
SPD	Seattle Police Department
SPU	Seattle Public Utilities
SR	State Route

Swedish	Swedish Medical Center
Swedish Cherry Hill	Swedish Medical Center/Cherry Hill campus
SNI	Swedish Neuroscience Institute
TMP	Transportation Management Plan
UVTN	Urban village transit network
VOCs	Volatile organic compounds
vph	Vehicles per hour
WSDOT	Washington State Department of Transportation

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Section 1 - Summary

1.1 Project

Swedish Medical Center (Swedish) has applied to the City for a Council Land Use Action to adopt a new MIMP for Swedish Medical Center/Cherry Hill (Swedish Cherry Hill). A rezone is required for modification to the MIO height limits. The proposed MIMP would replace an expired MIMP that was adopted by the Seattle City Council by Ordinance 117238 on August 2, 1994. That MIMP expired in August of 2011 (after a 2-year extension).

The 1994 approved MIMP was project-based, and provided for nine new buildings and a total of 682,500 gross square feet (SF) of additional space. Four buildings totaling 434,002 gross SF have been constructed. See Table 2-1 *Projects Approved in 1994 MIMP* in Section 2 for a list of approved projects and project status. The current development within the MIO boundary totals 1.2 million gross SF. The 1994 MIMP allowed for 926 additional parking spaces, for a total of 1,725 parking spaces; currently, 1,510 parking spaces have been developed. A Notice of Intent to prepare a new MIMP was submitted by Swedish to the City DPD on November 11, 2011.

Swedish began to work with the Department of Neighborhoods (DON) in the spring of 2012 to assist with the formation of a CAC. The formation and first meeting of the committee occurred on December 13, 2012. A Concept Plan was submitted by Swedish to DPD on February 12, 2013, and a Preliminary Draft MIMP was submitted on November 7, 2013. In response to comments from the CAC, City departments, and the public, a revised Preliminary Draft MIMP was submitted to the City and the CAC for review on February 4, 2014. This Draft EIS analyzes the impacts of the proposal as described in the May 22, 2014, Draft MIMP. The proposed MIMP would allow a total building area of approximately 3.1 million gross SF and a Floor Area Ratio (FAR) of approximately 5. The MIMP includes the development of up to 2,310 parking spaces.

1.2 Site and Site Vicinity

Swedish Cherry Hill is located in the Squire Park neighborhood between E Cherry and E Jefferson Streets. The western boundary of the campus is 15th Avenue. The eastern boundary is mid-block between 18th and 19th Avenues.

Uses in the area north, east, and west of the campus are primarily single-family and lowrise multi-family residential, with a mix of some institutional and commercial uses. The eastern boundary of Seattle University’s campus faces the western boundary of the Swedish Cherry Hill campus across 15th Avenue.

Land south across E Jefferson Street contains some multi-family residential buildings and a small grocery store bordering on the south side of E Jefferson Street. Land further to the south is occupied by single-family homes. The half-block to the east of the campus and the block continuing to the east contain single-family homes. Land further to the east contains a mix of single-family homes with newer lowrise multifamily buildings located along 21st and 22nd Avenues. The land immediately north of the Swedish Cherry Hill campus contains a mix of multi-family residential and offices along E Cherry Street with multi-family structures to the north.

Garfield High School is located approximately 5 blocks to the east.

The underlying zoning for the Swedish Cherry Hill campus is SF-5000 and LR3. Both have a 30-foot height limit. The expired MIMP established a MIO that allows institutional uses and heights beyond the underlying single-and multi-family uses and height limits.

The existing MIO height limits are shown on Figure 2-3 in Section 2. The land to the north, south and east is zoned for either single-family or multi-family with 30-foot heights as shown on Figure 2-3. Land to the west contains a MIO for Seattle University with a 65-foot height limit. The Swedish Cherry Hill campus currently includes three height districts: MIO-37, -65, and -105. The campus generally slopes downward both to the west and to the east. The existing setbacks vary, and range from 10 to 20 feet along the edges of the campus. The half-block on the east side of 18th Avenue contains a few older buildings that have been converted from residential to office, and some cleared lots used for parking. Two of the buildings are vacant. The third building is temporarily in use by the St. Joseph's Baby Corner, a nonsectarian charity which provides essential items such as formula, diapers and car seats to families in need.

1.3 Description of Alternatives

The DEIS includes an evaluation of the following alternatives:

- **Alternative 1 –** No Build
- **Alternative 8 –** Addition of approximately 1.9 million gross SF; change in heights to MIO-50, -65, -105 and -240
- **Alternative 9 –** Addition of approximately 1.55 million gross SF; change in heights to MIO-50, -65, -105, -160, and -200
- **Alternative 10 –** Addition of approximately 1.55 million gross SF; change in heights to MIO-37, -50, -65, -105, -160, and -200

1.4 Summary of Potential Impacts and Major Conclusions

A summary comparing potential environmental impacts of each alternative discussed in Section 3 is shown in Table 1-1. A summary of potential construction impacts discussed in Section 3.9 is shown in Table 1-2. See Section 3 for more details.

1.5 Significant Areas of Controversy and Uncertainty

The Proposal is the subject of neighborhood controversy, related primarily to two issues: 1) the height, bulk, and scale of proposed development on campus relative to the surrounding lower heights and density of the residential development; and 2) the potential transportation impacts associated with greater and denser development. The future development has not been designed and this EIS is a non-project EIS for which there is normally less detailed information available. Individual future projects that exceed the SEPA thresholds for the underlying SF-5000 or LR3[1] zoning will require project-specific environmental review at the time of the MUP application.

One primary subject of uncertainty has been identified, related to the nature and magnitude of potential traffic and transportation impacts. Because the availability of funding for transit service varies over time, it is somewhat uncertain to what extent transit service will be available to serve the Cherry Hill area over time, and the effect that the new Seattle First Hill Streetcar may have on area transportation. The project level SEPA review that will accompany each future development will include site-specific transportation analysis that will better assess the state of the transit service that exists or is planned at the time of the proposed project implementation.

1.6 Summary of Potential Mitigation Measures

A summary of potential mitigation measures discussed in Section 3 is shown in Table 1-3. See the mitigation sections included for each element of the environment in Section 3 for more details.

1.7 Secondary and Cumulative Impacts

Secondary impacts are caused by the Proposal and are reasonably foreseeable, but are later in time or farther removed in distance than direct impacts. Examples are changes in land use and economic vitality (including induced new development, growth, and population), water quality, and natural resources. Cumulative impacts are impacts that result from the incremental consequences of a project when added to other past or reasonable foreseeable future actions. The cumulative effects may be undetectable when viewed individually, but added to other effects, eventually lead to a measurable environmental change. Examples are changes to land use, the loss of wetland areas, and the elimination of wildlife habitats caused by a combination of new developments in areas that were formerly open space.

Table 1-4 summarizes the secondary and cumulative impacts anticipated to be caused by each of the alternatives.

1.8 Significant Unavoidable Adverse Impacts

Significant unavoidable adverse impacts are those adverse impacts that would remain even after applying mitigation measures, or for which no mitigation measures would be effective.

Table 1-5 summarizes the significant unavoidable adverse impacts anticipated to be caused by each of the alternatives.

[1] See SMC 25.05.800 Categorical exemptions, Table B for 25.05.800: Exemptions for Non-Residential Uses. Non-residential uses under 4,000 gross SF are exempt from SEPA review in SF-5000 and LR3 zones located outside of urban centers and urban villages. Projects larger than 4,000 gross SF must go through SEPA review.

Table 1-1
Summary of Potential Operation Impacts

Environmental Element	Alternative 1 – No Build	Alternative 8 – Addition of 1.9 Million Gross SF; MIO-50, -65, -105, and -240	Alternative 9 – Addition of 1.55 Million Gross SF; MIO-50, -65 -105, -160, and -200	Alternative 10 – Addition of 1.55 Million Gross SF; MIO-37, -50, -65, -105, -160, and -200
Air Quality	Minimal impacts as typical with an institution.	The Build Alternatives would affect local emissions of CO from traffic in the immediate vicinity, particularly at congested traffic signals along Broadway Avenue. CO levels are anticipated to be below the EPA air quality standards. Future CO levels in the Cherry Hill neighborhood are anticipated to decrease because of continued improvements in vehicle technology. Additional traffic volumes under Alternatives 8, 9, or 10 compared to existing volumes are not anticipated to cause any exceedances of air quality standards at nearby monitoring sites.		
Noise	Noise levels are low and would be anticipated to remain much the same as today's levels.	Minor increase in noise levels compared to Alternative 1 due to increase in vehicular traffic accessing the site (parking), mechanical equipment (ventilation systems), emergency vehicles, and maintenance activities. Any mechanical equipment installed would be required to meet Seattle noise limits.		
Land Use	No change to existing land uses.	No change in land use. All Build Alternatives would increase height and development intensity. Alternative 8 would result in the most intensive development and increased density of the three Build Alternatives due to the proposed 240-foot heights. The area of campus that will be affected by the greatest amount of change is the half-block east of 18th Avenue between E Cherry and E Jefferson Streets. Proposed height changes in the interior of the campus	Similar to Alternative 8 except for lower heights in southeast corner of the central campus and less intensive development of the central and western areas of the campus. Alternative 9 would result in less intensive development of the central and western portions of the campus due to lower heights and smaller proposed square-footage compared to Alternative 8. On the southeast corner of the central campus, Alternative 9 would result in lessened impacts to surrounding uses due to conditioning the height below	Similar to Alternative 9 except for additional lower heights on half-block on east side of 18th Avenue and increased setbacks which could result in less development in this portion of the campus. On the half-block on the east side of 18th Avenue, Alternative 10 shows a greater rear ground-level setback between the east campus building and the adjacent single-family area and facing E Cherry and E Jefferson Streets than those proposed for Alternatives 8 or 9. There is also a 15-foot height limit for the center portion of the half-block. Development planned for this portion of campus would be

Table 1-1 (Continued)
Summary of Potential Operation Impacts

Environmental Element	Alternative 1 – No Build	Alternative 8 – Addition of 1.9 Million Gross SF; MIO-50, -65, -105, and -240	Alternative 9 – Addition of 1.55 Million Gross SF; MIO-50, -65 -105, -160, and -200	Alternative 10 – Addition of 1.55 Million Gross SF; MIO-37, -50, -65, -105, -160, and -200
		would increase development intensity.	the MIO-105 to a height of 40 feet compared to the proposed MIO-65 for Alternative 8.	approximately 200,000 gross SF, the same as proposed for Alternatives 8 and 9, however the greater setbacks that are proposed would likely reduce the amount of developable space in this location of the campus. There are increased upper- story setbacks on the west and central campus facing 15th and 16th Avenues: the proposed combination of 15-, 37-, and 50-foot height limits for Alternative 10 are the lowest of the Build Alternatives for the east campus area.
Aesthetics - Light, Glare	No change to existing conditions.	The closest scenic routes, E Madison Street and E Yesler Way would not be affected by the Build Alternatives as the proposed changes would not be visible. James Tower (Providence 1910 Building, Ordinance 121588) is a Seattle Landmark. The building would not be altered by the Master Plan, but due to increased building heights, all Build Alternatives would block some views of James Tower from adjacent streets. James Tower may be visible in the distance from the east (in the vicinity of Garfield High School), but would not be visible from Seattle University. Views of James Tower may remain from some viewpoints to the south. Each alternative would likely generate typical commercial stationary sources of light including interior lighting, pedestrian-level lighting (along proposed sidewalks, entryways) and illuminated signs. Interior lighting could be equipped with automatic shut-off timers. Where lighting is required for emergency egress, automatic shades could be installed.		
Aesthetics - Shadows	Shadows currently exist off campus during times when the sun is low on the horizon. At 9:00 AM	Shadow impacts would result from the Build Alternatives due to the increased amount of development on the	Shadow impacts would be similar to Alternative 8 but less due to the proposed lower heights of campus buildings.	Shadows from the west and center blocks would be similar to Alternative 9. In the summer at 5:00 PM, shadows from

Table 1-1 (Continued)
Summary of Potential Operation Impacts

Environmental Element	Alternative 1 – No Build	Alternative 8 – Addition of 1.9 Million Gross SF; MIO-50, -65, -105, and -240	Alternative 9 – Addition of 1.55 Million Gross SF; MIO-50, -65 -105, -160, and -200	Alternative 10 – Addition of 1.55 Million Gross SF; MIO-37, -50, -65, -105, -160, and -200
	during the winter solstice, shadows extend northwest over existing Cherry Hill buildings, Seattle University Connolly Center building, and onto buildings 1-block north of E Cherry Street (E Columbia Street). At 3:30 in the afternoon, shadows extend north across 20th Avenue and E Marion Street to residential area (approximately 2 blocks beyond MIO boundary) including Firehouse Mini Park. West of 18th Avenue, shadows from existing buildings extend a half-block beyond buildings.	Swedish Cherry Hill campus and greater building heights. Shadows would be longest during winter when the sun is low on the horizon. Because of the low angle of the sun above the horizon on Winter Solstice, shadow impacts would extend greater distances, regardless of the alternative. Conversely, during Summer Solstice, when the sun is at its greatest height above the horizon, shadow impacts would be shorter and less likely to cause shading impacts.		Alternative 10 development would extend less than Alternative 9, as building modulation on east campus would create an opening and reduction in shadows over residential area east of 19th Avenue.
Aesthetics – Height, Bulk & Scale	No increase in total developed area would be allowed, and no impacts to height, bulk, and scale would be anticipated.	The visual appearance of Swedish Cherry Hill would be altered with implementation of the Build Alternatives by the proposed buildings becoming taller, denser, and in some cases, wider. Project specific design, including setbacks of new buildings, would be determined prior to submittal of a master use permit application for	Alternatives 9 and 10 would have lesser height, bulk, and scale impacts on the surrounding residential uses than Alternative 8 because of the lower heights on the central campus, on the west campus facing Seattle University, and the lower height on the northwest corner of 18th Avenue and E Jefferson Street. Implementation of the Build Alternatives would result in	Alternative 10 bulk and scale impacts would be less than those for Alternatives 8 and 9 due to an increase in upper-story setbacks on the west and central campus facing 15th and 16th Avenues and lower heights and the increased ground-level and upper-level rear setback between the east campus building and the adjacent single-family area. The proposed combinations of 15-,

Table 1-1 (Continued)
Summary of Potential Operation Impacts

Environmental Element	Alternative 1 – No Build	Alternative 8 – Addition of 1.9 Million Gross SF; MIO-50, -65, -105, and -240	Alternative 9 – Addition of 1.55 Million Gross SF; MIO-50, -65 -105, -160, and -200	Alternative 10 – Addition of 1.55 Million Gross SF; MIO-37, -50, -65, -105, -160, and -200
		individual projects. On the west side of campus, the center portion of the block would be changed from MIO-65 to MIO-240. In the central block of the campus, the center-west portion would be changed from MIO-105 to MIO-240. On the east side of campus on the half-block located on the east side of 18th Avenue, the MIO would be changed from MIO-37 to MIO-50.	height limits over the current MIO in some portions of the campus.	37-, and 50-foot height limits for Alternative 10 are the lowest of the Build Alternatives for the east campus area.
Housing	Staffing and patient levels would minimally increase over current levels. Housing needs relative to this increase would be a small percentage of the area's housing stock.	Since there are no occupied housing units within the MIO boundary, there would be no direct impacts to housing or displacement of residents.		
Historic Resources	No impacts	There are buildings on campus that are over 50 years of age. Based on the City's interdepartmental procedures, at the time of a MUP application for development that would involve demolition of a building that is 50 years or older, a referral must be made from DPD to the City's Historic Preservation Officer for consideration as to whether the building would meet the City's Landmark criteria. No view impacts are associated with any of the Build Alternatives, as all primary views of the 1910 Providence Hospital building and the attached southern solarium from adjacent public right-of-ways of the eastern, southern, and western facades remain essentially the same. The view to the northern façade of the building is presently nearly completely blocked by the adjacent East Tower building. Views from adjacent public right-of-ways of the George Washington Carmack House are unaffected.		

Table 1-1 (Continued)
Summary of Potential Operation Impacts

Environmental Element	Alternative 1 – No Build	Alternative 8 – Addition of 1.9 Million Gross SF; MIO-50, -65, -105, and -240	Alternative 9 – Addition of 1.55 Million Gross SF; MIO-50, -65 -105, -160, and -200	Alternative 10 – Addition of 1.55 Million Gross SF; MIO-37, -50, -65, -105, -160, and -200
Transportation – Street System	Access to campus would not change. With growth in neighborhood traffic, access to off-campus parking facilities could become more challenging.	While the overall circulation and access patterns associated with the campus would generally stay the same, a new underground parking garage on 18th Avenue would result in a shift of the traffic to the east side of the campus. Deliveries would occur at the service docks located on 16th and 18th, and potentially at a new service dock on 15th Avenue.	Same as Alternative 8	Same as Alternative 8
Transportation – Bicycles	There could be some increase in walking and bicycling to campus as employees shift from driving alone. There are a number of transit improvements and development projects within the larger study area and as these occur it is likely that pedestrian facilities along the frontages of the development projects would be improved where deficient.	18th Avenue where it bisects the campus has been identified as a potential Greenway in the Bicycle Master Plan, providing enhancements for pedestrians and bicyclists.		
Transportation – Pedestrians		Swedish has proposed to create a "Health Walk" or walking path around the Swedish Cherry Hill campus along 15th Avenue, E Cherry Street, 18th Avenue, and E Jefferson Street. Along 18th Avenue, the health walk can be incorporated into the proposed neighborhood greenway. A direct pedestrian connection is proposed through the campus that would connect 17th Avenue between E Cherry and Jefferson Streets. The pedestrian environment would also be enhanced along the E Cherry Street frontage with improved sidewalks and landscaping as well as public open green spaces with seating areas. With the additional and expanded facilities on campus, the number of pedestrians on campus and those circulating to and from transit facilities and parking is anticipated to increase.		
Transportation – Public Transportation	It is assumed that Swedish employee use of transit would increase by 5	In the PM Peak Period, transit riders would increase from an existing 1,560 to 2,080 by	In the PM Peak Period, riders would increase from an existing 1,560 to 2,080 by 2023 (as compared to 1,680 for the No Build), and 2,600 riders by 2040 (as compared to 1,870 for the No Build and 2,620 for	

Table 1-1 (Continued)
Summary of Potential Operation Impacts

Environmental Element	Alternative 1 – No Build	Alternative 8 – Addition of 1.9 Million Gross SF; MIO-50, -65, -105, and -240	Alternative 9 – Addition of 1.55 Million Gross SF; MIO-50, -65 -105, -160, and -200	Alternative 10 – Addition of 1.55 Million Gross SF; MIO-37, -50, -65, -105, -160, and -200
	percent. There are planned transit improvements as well as potential service cuts.	2023 (as compared to 1,680 for the No Build), and 2,620 riders by 2040 (as compared to 1,870 for the No Build). Inter-campus shuttle service would continue.	Alternative 8). Unlike the AM Peak Period, transit capacity in the PM Peak Period is anticipated to increase from an existing capacity of 5,560, to 5,840 in 2023 and 2040. In both the AM and PM Peak Periods, even with the anticipated service cuts and increase in ridership, there is capacity to accommodate additional riders on the Swedish Cherry Hill bus service.	
Transportation – Traffic Volumes	Assuming the 50 percent SOV rate, the Swedish Cherry Hill campus would generate less traffic than existing conditions with 424 less daily trips, 27 less AM peak hour trips and 57 less PM peak hour trips under No Build conditions.	Build-out of Alternative 8 would increase trips by 5,814 net new daily trips with 409 new trips occurring during the AM peak hour and 565 new trips occurring during the PM peak hour, compared to No Build trip volumes.	Build-out of Alternatives 9 and 10 would increase trips by 5,503 net new daily trips with 387 new trips occurring during the AM peak hour and 536 new trips occurring during the PM peak hour, compared to No Build trip volumes.	
Transportation – Traffic Operations	Under the No Build conditions, there would be a continued decline in intersection level of service within the study area. As a result of the increases in traffic associated with background growth and pipeline traffic, delays for the minor street approaches in the immediate vicinity of the campus are anticipated to increase accordingly.	During the weekday AM peak hour, within the immediate vicinity of the campus, intersections along E Cherry and E Jefferson Streets are anticipated to operate at LOS D or better under 2023 conditions except for two unsignalized intersections, 14th Avenue/E Jefferson Street and 16th Avenue/E Cherry Street. During the weekday PM peak hour, under 2023 conditions, intersections along E Cherry	Intersection operations under Alternatives 9 and 10 for year 2023 in the AM and PM peak hours would be the same as for Alternative 8. In 2040, compared to the No Build conditions, impacts with Alternatives 9 and 10 would be very similar to those projected for Alternative 8. The difference would be a slightly lower number of vehicles. Alternatives 9 and 10 would result in two additional intersections operating at LOS F during the weekday AM peak hour and four additional intersections operating at LOS F during the weekday PM peak hour, the same as with Alternative 8. With development of Alternatives 9 and 10, corridor operations would degrade slightly in 2023 with average speed decreasing by 1-mph along both James Street in the westbound direction during the AM peak hour and E Cherry Street in the westbound direction during	

Table 1-1 (Continued)
Summary of Potential Operation Impacts

Environmental Element	Alternative 1 – No Build	Alternative 8 – Addition of 1.9 Million Gross SF; MIO-50, -65, -105, and -240	Alternative 9 – Addition of 1.55 Million Gross SF; MIO-50, -65 -105, -160, and -200	Alternative 10 – Addition of 1.55 Million Gross SF; MIO-37, -50, -65, -105, -160, and -200
		and E Jefferson Streets operate at LOS D or better, with the exception of three intersections: 13th Avenue/ E Cherry Street, 15th Avenue/E Cherry Street, and 14th Avenue/E Jefferson Street. With development of Alternative 8, corridor operations would degrade slightly in 2023 with average speed decreasing by 1-mph along both James Street in the westbound direction during the AM peak hour and E Cherry Street in the westbound direction during the PM peak hour. The largest increase in travel time for the 2023 conditions with Alternative 8 would be along James Street in the westbound direction with an increase of approximately 1-minute.	the PM peak hour. As discussed in the review of No Build 2023 conditions, given the existing capacity constraints along the corridor, changes in travel times and speeds are generally small. This would be the same as for Alternative 8. Similar conditions would exist during the 2040 conditions, with travel times and average speeds, showing generally small increases and decreases, respectively, as a result of Alternatives 9 and 10 compared to No Build conditions.	
Transportation – Parking	It was assumed that No Build off-street parking supply would remain at current levels, 1,510 spaces. Under No Build conditions, the projected parking demand of 1,014	The Land Use Code would require a minimum of 1,955 parking spaces and a maximum of 2,639 spaces with development of Alternative 8.	The Land Use Code would require a minimum of 1,895 parking spaces and a maximum of 2, 558 spaces with development of Alternatives 9 and 10. 2,245 parking spaces are proposed.	

Table 1-1 (Continued)
Summary of Potential Operation Impacts

Environmental Element	Alternative 1 – No Build	Alternative 8 – Addition of 1.9 Million Gross SF; MIO-50, -65, -105, and -240	Alternative 9 – Addition of 1.55 Million Gross SF; MIO-50, -65 -105, -160, and -200	Alternative 10 – Addition of 1.55 Million Gross SF; MIO-37, -50, -65, -105, -160, and -200
	vehicles could be accommodated in off-street parking on the campus.	2,310 parking spaces are proposed.		
Transportation - Safety	Based on the 3-year accident history (January 1, 2010 – December 31, 2012), the study area has not experienced an unusually high level of vehicular accidents to date except at the James Street/6th Street intersection. Two pedestrian fatalities from vehicles striking a pedestrian in a crosswalk occurred during this time period: at 16th Avenue/E Jefferson; and 7th Avenue/Cherry Street. In general, as traffic volumes increase, the potential for traffic safety issues increases proportionately.	Increased traffic along the E Cherry Street and E Jefferson Street corridor increases the potential for conflicts between pedestrians and vehicles. Along E Cherry Street several signalized crossings are provided at key intersections. Additional signalized crossings could be considered in the future to provide additional vehicular capacity and pedestrian safety enhancements at key neighborhood connection points.	Similar to Alternative 8	Similar to Alternative 8
Public Services and Utilities – Fire	Potential for minor impacts during routine remodeling activities.	Increases in onsite employment and the number of visitors/patients to the Swedish Cherry Hill campus would be incremental and would be accompanied by an increased demand for all types of services provided by SFD, including fire protection, BLS, and EMS. All new and renovated buildings would be constructed in compliance with the fire codes in effect at the time of building permit review. Adequate fire flow to serve the proposed redevelopment would be provided as required by fire code. Specific code requirements would be adhered to regarding emergency access to		

Table 1-1 (Continued)
Summary of Potential Operation Impacts

Environmental Element	Alternative 1 – No Build	Alternative 8 – Addition of 1.9 Million Gross SF; MIO-50, -65, -105, and -240	Alternative 9 – Addition of 1.55 Million Gross SF; MIO-50, -65 -105, -160, and -200	Alternative 10 – Addition of 1.55 Million Gross SF; MIO-37, -50, -65, -105, -160, and -200
		structures.		
Public Services and Utilities – Police	Potential for minor impacts during routine remodeling activities.	Increases in onsite employment and campus visitors/patients over the build-out of the MIMP would be incremental and would be accompanied by increases in demand for police services.		
Public Services and Utilities – Parks and Recreation	No impacts	There would be no effects to parks, other recreation, or open space off-campus. Visitation to the existing parks and open space may increase relative to the increase in employment, patients, and visitors at the Swedish Cherry Hill campus. With the implementation of any of the Build Alternatives, the amount of landscaped areas providing open space on campus would be replaced or relocated based on the building design.		
Public Services and Utilities – Water, Sewer, Stormwater	Potential for minor impacts during routine remodeling activities.	All Build Alternatives could increase water demand from its current 20.4 million gallons of consumption annually. With the increase of 1.9 million SF of gross building area on the site proposed in Alternative 8, this demand is anticipated to increase to 62.7 million gallons per year, based on average consumption per SF of gross building area.	All Build Alternatives could increase water demand from its current 20.4 million gallons of consumption annually. With the increase of 1.55 million SF of gross building area on the site proposed in Alternative 9 or 10, this demand is anticipated to increase to 71.6 million gallons per year, based on average consumption per SF of gross building area.	Same as Alternative 9
Public Services and Utilities – Solid Waste	Potential for minor impacts from increased demolition or construction waste during routine remodeling activities.	All Build Alternatives would result in an increase in solid waste production. No forecast has been calculated on the future waste stream upon full build out. Swedish Medical Center indicates that the amount and content of the waste stream would depend upon the services offered at the campus (e.g., obstetrics services would increase red bag waste and recycling) and building design with sustainability in mind would reduce the potential increase in waste production and increase opportunities for recycling. The campus would continue efforts to reduce waste and increase the recycling rate (Swedish 2013b). No impacts are anticipated.		

Table 1-2
Summary of Potential Construction Impacts

Environmental Element	Alternative 1 – No Build	Alternative 8 – Addition of 1.9 Million Gross SF; MIO-50, -65, -105, and -240	Alternative 9 – Addition of 1.55 Million Gross SF; MIO-50, -65 -105, -160, and -200	Alternative 10 – Addition of 1.55 Million Gross SF; MIO-37, -50, -65, -105, -160, and -200
Air Quality	Potential short-term temporary impacts from fugitive dust and emission during any construction activities if Swedish were to demolish and replace any existing buildings.	Potential short-term temporary impacts from fugitive dust and emission during construction of up to 1.9 Million SF over the life of the MIMP. Potential moderate impacts to sensitive adjacent land uses (residential) during heavy construction or demolition activities.	Potential short-term temporary impacts from fugitive dust and emission during construction of up to 1.55 Million SF over the life of the MIMP. Potential moderate impacts to sensitive adjacent land uses (residential) during heavy construction or demolition activities.	Same as Alternative 9
Groundwater	Subsurface soil conditions could potentially change	Construction can alter the subsurface soil conditions, and create new drainage pathways for groundwater. With each site-specific development, a geotechnical analysis would be performed that would include soil borings that would identify depth to groundwater and subsurface conditions that may affect groundwater flow. The geotechnical report would include recommendations for soil strengthening and means of addressing groundwater. These reports would be included in MUP applications for site-specific buildings.		
Noise	Short-term temporary noise impact could potentially occur if Swedish were to demolish and replace any existing buildings.	Intermittent significant unavoidable impacts during periods of noisy construction activities (demolition, excavation and structure erection), especially to the half-block on 18th Avenue between East Jefferson and East Cherry Streets (adjacent residences).	Similar to Alternative 8	Same as Alternative 8
Transportation – Street System	No changes from minor remodeling or routine maintenance	Construction impacts related to the street system would depend on the location of the construction within the Swedish Cherry Hill campus. The streets that would be most impacted would include E Cherry Street, E Jefferson Street, 15th Avenue, 16th Avenue, and 18th Avenue along the campus frontages. A Construction Management Plan (CMP) would mitigate these impacts. The plan could		

Table 1-2 (Continued)
Summary of Potential Construction Impacts

Environmental Element	Alternative 1 – No Build	Alternative 8 – Addition of 1.9 Million Gross SF; MIO-50, -65, -105, and -240	Alternative 9 – Addition of 1.55 Million Gross SF; MIO-50, -65 -105, -160, and -200	Alternative 10 – Addition of 1.55 Million Gross SF; MIO-37, -50, -65, -105, -160, and -200
		include scheduling street closures and other disruptions to the street system during off-peak periods to minimize impacts to the system.		
- Campus Access and Circulation	No impacts	Construction impacts related to campus access and circulation would depend on the location of the construction within the Swedish Cherry Hill campus. Impacts could include the need to reroute traffic and close parking access and/or lots/garages.		
-Pedestrians **-Bicycle**	No impacts	Construction impacts may result in intermittent sidewalk and bicycle facility closures and re-routing along E Cherry Street, E Jefferson Street, 15th Avenue, 16th Avenue, and 18th Avenue depending on the specific location of construction within the campus.		
-Public Transportation	Minor increases in transit use by construction personnel	Construction impacts could result in some increase in ridership as a result of construction workers traveling to and from the site. Based on the review of transit capacity, presented previously in this document, there would be capacity at the campus to accommodate additional demand related to construction workers.		
-Traffic Volumes, Freight and Goods	Minor impacts from additional trips when combined with changes in background conditions	Construction of the Build Alternatives would result in an increase in traffic volumes due to construction workers traveling to and from the site, delivery of material, and truck hauling.		
-Traffic Operations	Minor changes	Construction impacts related to traffic operations would occur as a result of increased traffic levels.		
-Parking	Minor parking impacts from additional workers during repair	Parking impacts due to construction would include increased parking needs related to workers, as well as parking facility closures or access changes with the construction. Construction worker parking would be accommodated onsite and secured in nearby parking lots and the use of alternative modes would be encouraged. In addition, construction activities could result in the need to close on-street parking adjacent to the site. These closures would be coordinated with SDOT and appropriate notices and signs would be provided.		
-Safety	Minor changes to safety with increase in background conditions	Construction would increase vehicular traffic within the study area, which could result in increased conflicts between vehicular, pedestrian, and bicycle traffic.		
Public Services and Utilities	No impacts	Potential short-term, temporary impact to fire and police response time. Relocation of water and sewer mains may be required in 16th	Same as Alternative 8	Same as Alternative 8

Table 1-2 (Continued)
Summary of Potential Construction Impacts

Environmental Element	Alternative 1 – No Build	Alternative 8 – Addition of 1.9 Million Gross SF; MIO-50, -65, -105, and -240	Alternative 9 – Addition of 1.55 Million Gross SF; MIO-50, -65 -105, -160, and -200	Alternative 10 – Addition of 1.55 Million Gross SF; MIO-37, -50, -65, -105, -160, and -200
		Avenue if a pedestrian tunnel were constructed. Solid waste would be generated by both demolition and construction activities.		

Table 1-3
Summary of Potential Mitigation Measures

Environmental Element	Construction and Operation Phases	Mitigation Measures
General Construction Impacts	Construction	To mitigate for potential construction-related impacts, Swedish would develop a CMP in conjunction with site-specific developments. The plan would include the following elements (see Section 3.9 for more details): • Construction Communication • Construction Hours and Sensitive Receivers • Construction Noise Requirements • Measures to Minimize Noise Impacts • Construction Milestones • Construction Noise Management • Construction Parking Management • Construction Traffic/Street and Sidewalk Closures • Construction Air Quality • Historic Resources
Air Quality	Construction	• Spray water, when necessary, during demolition, grading, and construction activities to reduce emissions of particulate matter. • Cover dirt, gravel, and debris piles to reduce dust and wind-blown debris. • Cover open-bodied trucks to reduce particulate matter blowing off trucks or dropping on roads while transporting materials. Alternatively, wetting materials in trucks or providing adequate freeboard (space from the top of the material to the top of the truck) could be used to reduce dust and deposition of particulate matter. • Provide wheel washers at construction sites to remove particulate matter from vehicle wheel wells and undercarriages before they exit to decrease deposition of particulate matter on area roadways. • Promptly sweep public streets, when necessary, to remove particulate matter deposited on paved roads and subsequent wind-blown dust. • Monitor truck loads and routes to minimize dust-related impacts. • Turn off construction trucks and engine-powered equipment during long periods of non-use, instead of being left idling, to reduce exhaust emissions and odors. • Require emission-control devices on construction equipment and using relatively new, well-maintained equipment to reduce exhaust emissions of CO, GHGs, and particulate matter from engine exhaust. • Provide quarry spall areas onsite prior to construction vehicles exiting the site. • Schedule the delivery and removal of construction materials and heavy equipment to minimize

Table 1-3 (Continued)
Summary of Potential Mitigation Measures

Environmental Element	Construction and Operation Phases	Mitigation Measures
		congestion during peak travel time associated with adjacent streets.
	Operation	No significant air quality impacts have been identified and no mitigation measures are proposed. A variety of mitigation measures are available to reduce GHG emissions. The following are described in greater detail in section 3.1.4.2: • Natural Drainage and Green Roofs • Tree Protection • Native Plants • Waste Management and Deconstruction • Building Design • Transportation
Groundwater	Construction	• A geotechnical report would be prepared for each future site specific building, and submitted as part of the MUP application. The report would identify subsurface soil and groundwater conditions and would include measures for mitigating any identified impacts.
Noise	Construction	• Develop and implement a Construction Management Plan that includes site specific sound level reduction measures. • Use engine enclosures and mufflers on construction equipment. • Locate portable equipment as far as possible from sensitive receptors. • Turn off equipment during periods of nonuse. • Use ambient sensitive broadband backup alarms. • Place stationary equipment as far away from sensitive receiving locations as possible. Where this is infeasible, or where noise impacts are still significant, portable noise barriers could be placed around the equipment with the opening directed away from the sensitive receiving property. • Place construction staging areas anticipated to be in use for more than a few weeks as far as possible from sensitive receivers as possible.
	Operation	• To minimize noise impacts associated with HVAC and air-handling equipment, equipment could be selected and positioned to maximize noise reduction to the extent possible. When conducting analyses to ensure compliance with the Seattle noise limits, facility designers would assess sound levels as they relate to the nearby residential uses. • Exhaust vents for all underground parking facilities could be located and controlled to reduce noise at both on-and offsite residential locations and to ensure compliance with the City noise limits. Mechanical equipment operating at night has a 45 dBA limit at the adjacent residential zone. • Loading docks could be designed and sited with consideration of nearby sensitive receivers and to

Table 1-3 (Continued)
Summary of Potential Mitigation Measures

Environmental Element	Construction and Operation Phases	Mitigation Measures
		with the City noise limits. • Depending on the location of loading docks relative to residences, restrictions could be implemented to limit noisy deliveries to daytime hours. • Solid waste, compacting, composting and recycling collection could, to the extent feasible, be designed to minimize or eliminate line-of-sight from collection/pickup points to nearby sensitive receivers. • Solid waste, compacting, composting and recycling collection times could be scheduled for daytime hours. • Alternatives to mechanical maintenance equipment (leaf blowers, power washers, etc.) should be explored (such as sweeping or using a hose to wash driveways where feasible) or equipment that produces lower sound levels used. • If mechanical maintenance equipment is needed for a specific task (such as power washing prior to painting), it should be scheduled during the weekday during normal business hours (9:00 AM to 5:00 PM) to coincide with higher ambient noise conditions. • To minimize the potential for noise impacts resulting from regular testing of emergency generators, the location of such equipment should be considered during building design relative to residences, and equipped with noise controls, to minimize noise intrusion.
Land Use	Construction	See Aesthetics/Light, Glare and Shadow for mitigation measures for height, bulk and scale.
	Operation	No significant impacts to land use have been identified, and no mitigation measures specific to land use are required.
Aesthetics/Light, Glare and Shadows	Construction	There will be no direct impacts to housing, and no mitigation measures are required.
	Operation/Height, Bulk & Scale	Swedish has proposed ground-level and upper-level building setbacks as one means of mitigating or lessening the proposed heights of buildings. The proposed setbacks under Alternatives 8, 9 and 10 are described in section 3.4.1.4. Swedish would use a number of measures to reduce or eliminate aesthetic impacts: • Scale-reducing elements, particularly at areas exposed to people activity (e.g., building entrances, adjacent to walkways, places of high visibility) would be identified and encouraged during project design. • Pedestrian amenities would be provided as site improvements. • Landscaping and open space would be provided for pedestrian interest, scale, partial building

Table 1-3 (Continued)
Summary of Potential Mitigation Measures

Environmental Element	Construction and Operation Phases	Mitigation Measures
		screening and building contrast. Other mitigation measures to height, bulk, and scale could include: • New buildings could be designed in accordance with adopted design guidelines. • Swedish Cherry Hill could comply with or exceed the setback requirements of the underlying campus zoning, include upper-level setbacks, and modulation. • New buildings could be designed with façade treatments, articulation, use of materials, varying roof heights, and fenestration to make the buildings look more consistent with the existing architectural character. • New buildings could be designed with the appearance of multiple buildings to reduce bulk and scale. • Heights could be further reduced.
	Operation/ Light and Glare	During operation, Swedish Cherry Hill would use a number of measures to reduce or eliminate light and glare impacts: • Building design would use low-reflective glass and other materials, window recesses and overhangs, and façade modulation. • Landscaping, screens, and "green walls" would be used to the extent practicable to obstruct light from shining to offsite locations. • Nighttime illumination of the site and selected buildings may be restricted and provided only when function or safety requires it. • Interior lighting would be equipped with automatic shut-off times. Automatic shades may be installed where lighting is required for emergency egress. • Parking lots and structures may include screens or landscaping to obstruct glare caused by vehicle headlights. Lighting fixtures would provide down-lighting or be oriented away from nearby residences.
	Operation/Shadows	It should be noted that the projects have not been designed and the actual project appearance is unknown. Required/proposed floor area ratios could reduce the mass for several buildings. The following mitigation measures would minimize potential impacts from shadows: • Future new building design will consider the final orientation and massing of the building relative to public open spaces. • A shadow study may be required with the MUP application for specific buildings depending upon their location on campus.

Table 1-3 (Continued)
Summary of Potential Mitigation Measures

Environmental Element	Construction and Operation Phases	Mitigation Measures
	Operation	• Alternatives 8, 9, and 10 would be designed to comply with all the development requirements of the Controls and Incentives Agreement for the Providence 1910 Building (Ordinance 121588), the only City Landmark with a Control and Incentives Agreement within the MIO area. A Controls and Incentives Agreement application would be made to the Landmark Preservation Board after completion of any MUP submittal to the City if required under the Controls and Incentives agreement. Under future SEPA review adjacency review consistent City Policies for SEPA review may be required. The Landmark Preservation Board will decide if the proposal meets the requirements of the Controls and Incentives Agreement.
Historic Resources	Construction	A Construction Management Plan would include scheduling street closures and other disruptions to the street system during off-peak periods to minimize impacts to the system. Protocol would be included in the plan: • Safe campus access and circulation adjacent to the construction site through the detours, signs, and providing information ahead of time to patients and employees on potential parking access or facility changes. Safe pedestrian and bicycle circulation adjacent to the construction site through the use of temporary facilities, detours, and signs; coordination with the transit agency in advance and appropriate relocation and signage provided; include scheduling the most intensive construction activities such that they are spread out over time and prohibiting material deliveries from leaving or entering the area during AM and PM peak hours when feasible; construction worker parking would be accommodated onsite and secured in nearby parking lots and the use of alternative modes would be encouraged.
	Operation	The primary mitigation would be through an enhanced TMP and physical improvements.
Transportation	Transportation Management	The overriding goal of the TMP is to decrease the number of vehicles accessing the Swedish Cherry Hill campus. The proposed TMP incorporates both elements from the existing TMP and proposed enhancements designed to achieve a SOV of 50 percent. The TMP is also being designed to address issues associated with neighborhood parking intrusion. The program elements are intended to adjust the transportation patterns and habits of the employee groups on campus. The TMP applies to the entire Swedish Cherry Hill campus and all activities that occur within its boundaries. The program elements that are currently utilized and proposed as part of the updated TMP include: • Transit Incentives – Increased levels of incentives, communication regarding schedules, and enhanced facilities • Alternative Modes – Promote the use of alternative travel modes, such as bicycle and walking

Table 1-3 (Continued)
Summary of Potential Mitigation Measures

Environmental Element	Construction and Operation Phases	Mitigation Measures
		through improved onsite facilities and incentive programs • HOV Incentives – Promote HOV programs through incentives for carpools/vanpools, preferred parking, and utilization of rideshare programs Parking Management Programs – Consider alternative payment technologies, parking policies, review of RPZ designations, and other programs to reduce spillover into the adjacent neighborhoods.
	Public Information	• Actively engage and promote alternatives through transportation fairs and other promotional opportunities to promote trip reduction programs • Coordination with residential properties Engage with tenants to inform about employee transportation benefits and options
	Transit	• Transit incentives (provide all tenants with access to a minimum 50% subsidy) • Commuter incentives
	Pedestrians	• New Health Walk around campus perimeter with signs, seating and pocket parks.
	Bicycle	• Weather-protected, secure bicycle racks at no charge to Cherry Hill employees at preferred locations • Shower accessibility • Bike lockers for a fee • Promote bicycle amenities • Signage indicating bike parking locations • Provide access to basic bike tools. Provide access to a bikeshare system when available
	Parking	• Monthly parking rate set equal to or greater than the current King County Metro rate for peak period one-zone transit passes. • Restricted access to monthly parking passes • Off-street parking management • Neighborhood parking control
	Vehicle Traffic and Safety	• Consideration of new traffic signals.
	Implementation and Monitoring	• Create a Transportation Committee for the campus. The committee would include a Campus Transportation Coordinator and all employer transportation coordinators on campus. The committee would meet regularly and be responsible for implementing the TMP.
	Construction	Fire and Emergency Response: • Swedish Cherry Hill will consult SFD to plan fire access routes to and on site, particularly during construction phases.

Table 1-3 (Continued)
Summary of Potential Mitigation Measures

<table>
<tr><th>Environmental Element</th><th>Construction and Operation Phases</th><th>Mitigation Measures</th></tr>
<tr><td></td><td></td><td><u>Police</u>:
• The portions of the site that are under construction will be fenced and lit, as well as monitored by surveillance cameras to help prevent construction site theft and vandalism.
<u>Utilities</u>:
• Temporary erosion and sedimentation control measures will be constructed around all construction activities that could produce contaminated runoff and building demolition activities will all be conducted using approved methods to reduce any release of asbestos, lead containing paint or other contaminants to stormwater leaving the site.
• Major development on the Swedish Cherry Hill campus would examine the impact of development on the public sewer infrastructure from the development site to where Seattle Pacific University (SPU's) collection system connects to King County interceptors (approximately 3,300 linear feet downstream).
<u>Solid Waste</u>
• To the extent feasible impacts related to construction-generated solid waste could be reduced, by diverting construction-generated solid waste from landfills and sent to recycling or composting facilities via the South Transfer Station.
• Other means of reducing the solid waste generated by redevelopment of the campus include: onsite source separated recycling; potential reuse of demolition materials onsite, and salvage and reuse of building components.</td></tr>
<tr><td></td><td>Operation</td><td><u>Fire and Emergency Services</u>:
• Swedish Cherry Hill will consult SFD to plan fire access routes to and on site.
• Fire flow requirements and hydrant location/capacity will be reviewed with SFD to ensure adequate capacity.
<u>Police</u>:
• Permanent site design features will be included to help reduce criminal activity and calls for service, including: orienting buildings towards sidewalks, streets and/or public open spaces; providing convenient public connections between buildings onsite and to the surrounding area; and, providing adequate lighting and visibility onsite, including pedestrian lighting.
• The Final MIMP will state that Swedish Cherry Hill will apply Crime Prevention through Environmental Design (CPTED) principles to the development of its open space and public amenities to enhance the safety and security of the areas.
<u>Water, sewer and stormwater</u>:
• Major development on the Swedish Cherry Hill campus would examine the impact of development on the public sewer infrastructure from the development site to where SPU's collection system</td></tr>
</table>

Table 1-3 (Continued)
Summary of Potential Mitigation Measures

Environmental Element	Construction and Operation Phases	Mitigation Measures
		connects to King County interceptors (approximately 3,300 linear feet downstream). • In the event that a tunnel is constructed across 16th Avenue, public sewer and water mains that are impacted would be relocated to carry flows around the impacted area in other parallel street rights-of-way. • Low impact development measures such as bio-retention cells or bio-retention planters will be utilized to reduce the demand on stormwater infrastructure. • In addition to Low Impact Development measures, major development on the Swedish Cherry Hill campus would trigger the need for flow control and water quality measures as part of the storm drainage design requirements for the site. Required water quality measures would involve following the Seattle stormwater design guidelines and using the Best Management Practices (BMPs) for water quality that would work effectively on the site while meeting the necessary requirements. BMPs that would likely be used include bio-filtration tree wells, stormwater filter units or water quality vaults. There are also several other possible measures that could be used, but it will depend on site constraints and the amount of stormwater that needs to be treated. Solid waste: • Continued implementation of waste reduction and recycling measures including informational website, efficient use of materials and supplies, food and yard waste composting, hazardous waste recycling, and general office recycling.

Table 1-4
Summary of Secondary and Cumulative Impacts

Element of the Environment	Secondary or Cumulative Impact
Air Quality	Cumulative impacts on air quality would be related to short-term increases in construction activity and to long-term increases in traffic and congestion. Cumulative construction impacts could occur from development under any of the three Build Alternatives. Minor secondary impacts on air quality could result from economic growth and changes in land uses induced by the redeveloped Swedish Cherry Hill campus. Any growth induced by the new MIMP would incrementally increase traffic volumes and associated traffic air pollutants.
Noise	Development under the new MIMP could result in minimal cumulative increases in environmental noise levels in the site vicinity, especially when added to noise levels from the adjacent Seattle University campus. Minor secondary impacts on noise levels could result from economic growth and changes in land uses induced by the redeveloped Swedish Cherry hill campus.
Land Use	The increase in staffing and patient levels at the hospital would contribute to secondary and cumulative land use changes, both directly and indirectly. There would be increased demands for customer service-type businesses in the nearby retail/commercial area to serve hospital staff, patients and visitors. There may be increased future demand for more intensive zoning along E Jefferson and E Cherry Streets to accommodate additional retail and commercial space. The overall impact is not anticipated to be significant when viewed in the context of existing and proposed future land uses.
Aesthetics/ Light, Glare and Shadows	Additional shadowing, while a direct impact, also contributes to cumulative loss of perceived open area. Under the Build Alternatives, additional sources of shadows would be added to the area as a result of new development and redevelopment, which, in some cases, would increase the development footprint on the campus.
Aesthetics/Height, Bulk & Scale	The height, bulk, and scale of new development at Swedish Cherry Hill would be visible from various locations in the neighborhood (see Viewpoints 1 and 10). The height, bulk, and scale would contribute to an overall increase in heights and density in the Squire Park neighborhood when combined with new development at Seattle University, new lowrise residential development to the east of the Cherry Hill campus, and new residential, commercial, and institutional development to the west.
Housing	If one of the Build Alternatives were selected, there would be a greater need for permanent housing within the City due to the increased employment on the Swedish Cherry Hill campus. Patient visitors and families may increase demand for hotel rooms in the area. It is possible that increases in employment associated with redevelopment of the campus could result in an increased demand for housing in the vicinity. It is likely that permanent housing demand would be dispersed throughout the region. Redevelopment of the eastern portion of the campus (the half-block within the existing MIO between 18th and 19th Avenues between E Jefferson and E Cherry Streets) for hospital-related uses would permanently remove approximately 1.75 acres of land area from available supply[2] that could be redeveloped for residential uses in the future.

[2] The total square-footage of the underlying parcels is 76,401 square feet (SF). The underlying zoning (MIO-37-SF-5000) could accommodate from 10 to15 single-family lots: 10 lots if the existing structures were to remain and the undeveloped area used as parking (50,801 SF) were developed; up to13 lots if the total area were redeveloped for single-family housing.

Table 1-4 (Continued)
Summary of Secondary and Cumulative Impacts

Element of the Environment	Secondary or Cumulative Impact
Historic Resources	The increase in staffing and patient levels at the hospital would contribute to secondary and cumulative changes to historic resources, both directly and indirectly. There would be increased demands for nearby retail/commercial and housing development to serve hospital staff, patients and visitors. There may be increased future demand to replace historic structures with other buildings to accommodate commercial and residential growth. Recent trends in economic development in the area indicate that growth in the vicinity could also contribute to the preservation of certain historic resources.
Transportation	Secondary and cumulative impacts on area roadways are included in the analysis of direct impacts. There is also a potential for cumulative impacts due to the combined effects of traffic being generated by build-out of the project and construction. This potential impact could be mitigated by scheduling construction activities such that arrival and departure of construction traffic occurs outside the peak hours.
Public Services and Utilities	The Build Alternatives in combination with population growth in the city of Seattle would increase the demand on public services and utilities; however, each of the identified public services and utilities has the capacity to accept an increase without adverse effects.

Table 1-5
Summary of Significant Unavoidable Adverse Impacts

Element of the Environment	Significant Unavoidable Adverse Impact
Air Quality	No significant unavoidable adverse impacts to air quality from the construction or operation of any of the three Build Alternatives (Alternatives 8, 9, or 10) are anticipated.
Noise	No significant unavoidable adverse noise impacts from the construction or operation of any of the three Build Alternatives (Alternatives 8, 9, or 10) are anticipated.
Land Use	No significant unavoidable adverse impacts to land use have been identified
Aesthetics/Height, Bulk & Scale	Under Alternatives 8, 9, and 10, development on the existing campus would intensify, resulting in greater height, bulk, and scale as compared to existing development on campus. The height, bulk, and scale of Alternatives 8, 9, and 10 adjacent to the single-family residential block between 18th and 19th Avenues (Viewpoints 5, 7, and 8) would be a significant unavoidable adverse impact. Alternative 10 would have less of an impact due to the proposed lower heights and greater setbacks. Other significant unavoidable adverse impacts include: Viewpoint 3, Alternative 8; Viewpoint 5, Alternatives 8 and 9; Viewpoint 7, all Build Alternatives; and Viewpoint 11, all Build Alternatives.
Housing	No significant unavoidable adverse impacts are anticipated.
Historic Resources	With the mitigation measures proposed (see Summary in Table 1-3), no significant unavoidable impacts are anticipated.
Transportation	Alternatives 8, 9, or 10 would accommodate additional amounts of future development at the Swedish Cherry Hill campus, which would contribute to additional travel demand and congestion along arterial corridors including E Cherry and E Jefferson Streets. The additional development also would increase traffic accessing and circulating in the area. This added congestion would contribute to measurably poorer performance of the transportation network, in terms of increased delays along several of the corridors and at some specific intersections. The increase in traffic and pedestrian and bicycle activity due to development would result in more conflict points and increased hazards to safety. The increase in traffic volumes for Alternatives 8, 9, or 10, and the resultant impacts on traffic operations are considered significant unavoidable adverse impacts.
Public Services and Utilities	No significant unavoidable impacts are anticipated.

Section 2 - Description of Alternatives

2.1 Proposed Action and Proponent's Objective

Swedish Medical Center has applied to the City for a Council Land Use Action to adopt a new MIMP for Swedish Cherry Hill. A rezone is required for the modifications to MIO height limits. The proposed MIMP would replace an expired MIMP that was adopted by the Seattle City Council by Ordinance 117238 on August 2, 1994. That MIMP expired in August of 2011 (after a 2-year extension).

Swedish has stated that:

> *…the objective of the Master Plan proposal is to provide flexibility as the medical center plans for the future while accommodating best medical practices and the needs of the neighborhood. The Swedish Cherry Hill campus is projected to need the following (Table C-1 of Draft Master Plan) new square footage over the next thirty (30) years.*

Information provided by Swedish Cherry Hill indicates a need for 3.1 million gross SF (see Table 2-3 in subsection 2.6.2 below).

2.2 Background

In 1908, Dr. Nils Johanson, a surgeon and Swedish immigrant, convinced 10 of his fellow Swedish-Americans to buy $1,000 bonds in order to open Swedish Hospital. Dr. Johanson's dream was to provide Seattle with a first-class nonprofit hospital. On June 1, 1910, nearly 2 years after the original incorporation, a lease was signed on a 2-story apartment house at 1733 Belmont Ave. The 24-bed facility began accepting patients just a few months later.

In 1912, the Swedish Board of Trustees acquired a nearby 40-bed private hospital that was nearing completion when the founder of that hospital (Dr. Edmund Rininger) died unexpectedly. That facility, located at Summit and Columbia, would become the cornerstone of Swedish Medical Center/First Hill.

Providence Seattle Medical Center, founded by the Sisters of Providence, joined the Swedish system in 2000. The Providence location is now called Swedish Medical Center/Cherry Hill. The Cherry Hill campus was formerly the hospital of the Sisters of Providence. In 2000, Swedish acquired the campus and changed its purpose from a general community medical center to a specialized regional medical center focused on cardiovascular and neuroscience services. In 2002, Swedish sold 40 percent of the campus, including most of the buildings that provide outpatient services and house physician offices to the Sabey Corporation (Sabey).

The Swedish Cherry Hill MIMP was adopted by the Seattle City Council by Ordinance 117238 on August 2, 1994, and expired in August of 2011. The total site area of the existing campus is 580,569 SF. The 1994 approved MIMP was project-based, and provided for 9 new buildings and a total of 682,500 gross SF of additional space. Four buildings totaling 434,002 gross SF have been constructed. Table 2-1 lists the projects that were approved in the 1994 MIMP, and identifies which projects were constructed.

Prior to the adoption of the 1994 MIMP, there were 799 parking spaces on campus. The 1994 MIMP allowed for 926 additional parking spaces, for a total of 1,725 parking spaces. Of the 1994 allowed spaces, 612 were developed. There are currently 1,510 parking spaces.

Table 2-1
Projects Approved in 1994 MIMP

Project Phase	Use	Area (Gross SF)	Height (feet)	Area Constructed (Gross SF)
I. Expand Parking Garage				
I.A. Add 2-1/2 half levels to Existing Garage	Parking	71,000 SF 204 spaces	20' (65' max)	0 SF
I.B. Expand Garage to the South	Parking	118,000 SF 502 spaces	65'	150,556 SF 494 spaces
II. Relocation of Family Medical Clinic/Temporary Parking	Clinic/Parking	10,000 SF 10 spaces	30'	35,000 SF
III. Relocate Boiler; MOB/Replace Providence Professional Building	Physical Plant Clinic/Office	75,000 SF	65' plus 15' mechanical penthouse	0 SF
IV. Surgery, Entry, Radiology, Oncology Addition, Laboratory, Chapel **Parking**	D&T Entry Clinic Parking	65,000 SF 63,000 SF 180 spaces	20'	43,669 SF 44,919 SF 118 spaces
V. New Patient Wing (includes Critical Care Expansion)	Beds	133,000 SF	90' plus 15' mechanical penthouse	0 SF
VI. Skilled Nursing **Central Utility Plant** **Learning Resource Center/Environmental Services**	Nursing Physical Plant Education & Support Services	60,000 SF	45'	159,858 SF
VII. Add 2 levels to East Wing (40 beds)	Beds	36,000 SF	30' plus 15' mechanical (105' max)	0 SF
VIII. Providence Inn (40 rooms) **Fitness Center with Parking Garage Below (30 cars)**	Inn Gym	30,000 SF 18,000 SF 30 spaces	30' plus 10' mechanical penthouse 36' plus 10' mechanical penthouse	0 SF 0 SF
IX. Day Care/Play Area	Day Care and Parking	3,500 SF	28'	0 SF
TOTAL		**682,500 Gross SF** **926 spaces**		**434,002 Gross SF** **612 spaces**

A Notice of Intent to prepare a new master plan was submitted by Swedish to the City DPD on November 11, 2011. Swedish began to work with the DON in the spring of 2012 to assist with the formation of a CAC. The formation and first meeting of the committee occurred on December 13, 2012.

A Concept Plan was submitted by Swedish to DPD on February 12, 2013, and a Preliminary Draft MIMP was submitted on November 7, 2013. In response to comments from the CAC, City departments, and the public, a revised Preliminary Draft MIMP was submitted to the City and the CAC for review on February 4, 2014. The Preliminary Draft MIMP was revised in response to comments from the City and the CAC. This DEIS analyzes the impacts of the proposal as described in the May 2014 Draft MIMP.

The proposed MIMP and alternatives are meant to: (1) reflect the programmatic needs of Swedish Cherry Hill; and (2) to address comments provided by the community during CAC meetings, during EIS scoping (March to April 2013), and the City's and CAC's comments on the November 2013 and February 2014 versions of the Preliminary Draft MIMP. Those programmatic needs are described below.

2.3 Swedish Medical Center Mission

As provided by Swedish in their Concept Plan, the hospital's stated mission is:

> *For more than a century, Swedish has been at the forefront of technology and innovation, providing world-class healthcare to those who live and work in Seattle and the surrounding Puget Sound region.*
>
> *Swedish was founded in 1910 by Dr. Nils Johanson, a surgeon and Swedish immigrant who brought together doctors and nurses who shared his passion for being on the leading edge of medical practice and patient care. Dr. Johanson's legacy of constant innovation and compassionate care continues today. Swedish is recognized nationally for the safety and quality of the care it delivers to more than 100,000 patients each year.*
>
> *True to the intent of its founder, Swedish has been dedicated to being the best community partner possible. It does this by providing a wide range of community benefits, strategies and solutions that meet people's healthcare needs. That means covering the cost of medical care for those who can't pay, offering free health screenings, assisting patients with their rent in times of healthcare crisis, and supporting research projects that help to create valuable medical advances, both here at home and across the world. In 2012, Swedish's community benefits and uncompensated care, totaled more than $140 million.*
>
> *Today, Swedish continues as a non-profit healthcare System, and is now comprised of five hospitals, two ambulatory care centers, and over 108 medical clinics serving patients and communities across the Western Washington region.*

The Cherry Hill campus was formerly the flagship hospital of the Sisters of Providence, with several of the buildings dating back to 1910. In the year 2000, Swedish acquired the campus and changed its purpose from a general community medical center to a specialized regional medical center focused on cardiovascular and neuroscience services. Now the home of the Swedish Heart and Vascular Institute and the Swedish Neurosciences Institute, these programs have grown into regional and national referral centers for patients seeking care for treatment of some of the most complex heart, vascular and neurological diseases. In 2002, Swedish sold 40% of the campus, including most of the buildings that provide outpatient services and house our physician offices to the Sabey Corporation. Since then, the Sabey and Swedish partnership has invested over $100 million in capital improvements to build a world-class center for the research and treatment of cardiac and neurological diseases at Cherry Hill.

2.3.1 Current Campus Master Planning

Growth at the campus is constrained by the campus boundaries and the fact that there is no space on the campus to place a new building without demolishing an existing building that is still in use. In its Concept Plan, Swedish has stated the following drivers as their need for campus growth:

- **Healthcare Reform** – The Patient Protection and Affordable Care Act will likely result in an increased volume of patients to the campus starting in 2014 as over half a million previously uninsured residents of Washington state become insured through the expansion of Medicaid and the establishment of the Exchanges under the Act.
- **Technological & Patient Care Changes** – Innovations in healthcare techniques, such as the use of robots in surgery, require larger operating rooms. In addition, market demands, health care regulations, and building code requirements tend to require significantly larger patient rooms than in previous years. Consequently, future replacement of a patient tower would likely result in a larger footprint for the same number of beds.
- **Regional Growth** – The Puget Sound region in general has seen significant population growth in the last 20 years, a trend that is now increasing within Seattle's city center. This growing local and regional population will place a greater demand on the services offered at Swedish Cherry Hill, imposing requirements for growth of campus services.
- **Population Aging** – The aging of the baby boom cohort will result in an increased need for specialty services of the type offered at the Swedish Cherry Hill campus, particularly cardiac and neurological care. Swedish is forecasting a need for growth and expansion based on the campus' regional referral status in these specialty areas.
- **Cost Pressures** – Given all of these pressures, healthcare providers will be challenged to continue to provide quality care to the additional people seeking care at a cost that is affordable and sustainable. Swedish will be looking to reduce the cost of care through efficiency and cutting out waste. Replacement and remodeling of older, inefficient buildings can be required to obtain these efficiency gains and to ensure the optimal use of resources. Swedish has stated a need to improve efficiencies around the

management of supply costs, one of the highest costs of healthcare. The current campus configuration is inefficient.

- **Consolidation of Services** – In 2012 Swedish entered into an affiliation agreement with Providence Health Services to provide better, more affordable care to the residents of western Washington. Planning is underway to consolidate and coordinate services where appropriate in order to avoid the costly duplication of services. Swedish, with its advanced treatment facilities located in Downtown Seattle, is well positioned to become the Regional Referral Center for the Providence Health System.
- **Safety & Quality** – Over 10 years ago a movement started in the healthcare industry to focus on improvements in patient safety and quality care based on research. Studies of the physical environment show that safety and quality issues are impacted by facility strategies. Specifically, reductions in medical errors, reduced hospital acquired infections, and decreased staff stress and fatigue levels can be linked to facility design. Studies also show that facility design can promote patient healing, reduce the need for pain medications, and shorten the length of stay in the hospital. The development of new and replacement facilities at Swedish Cherry Hill will need to focus on this approach.
- **Outpatient Care Requirements** – Outpatient services and related long-term and post-acute services are increasingly important for the coordination of clinical care and Swedish Cherry Hill is currently limited in its ability to grow these types of services.
- **Research & Education** – Swedish's vision calls for increasing the research and educational capabilities of the Swedish Cherry Hill campus and for collaboration with Seattle University around clinical education, particularly in nursing.
- **Required Facility Upgrades** – The current campus footprint has reached its capacity limiting Swedish's ability to provide additional services to meet the growth needs. Swedish has stated that they will need to expand and replace inpatient beds in order to meet the needs of the population, improve efficiency, and maintain state of the art services for the region. Upgrading hospital facilities to meet seismic requirements is of special concern in the Seattle area as it sits on a significant fault line and may be at risk in the event of an earthquake. Capacity of the Central Utility Plant is also at its current limits. In the future; the upgrading, replacing, and expanding of the Central Utility Plant and utilities is needed as new square-footage is added to the campus. Sustainable building is a desirable aspect of any new building project. The growth of healthcare through sustainable practices is essential for the future of the campus.
- **Programmatic Needs** – Swedish Medical Center has established the Swedish Cherry Hill Campus as its location for its Cardiac & Vascular and Neuro specialties. The Swedish Neuroscience Institute (SNI) provides advanced, progressive treatment for a wide range of brain, spine, and central nervous system conditions. Swedish serves patients outside the area with TeleHealth access and conducts physician and surgeon education in noninvasive medical techniques using the broadcasting capabilities established on the campus. A specially trained Inpatient Neurology Team provides a high level of care and compassion focused on improving outcomes and renewing hope.

Swedish has stated that they do not assume that all of these drivers will simultaneously dictate maximum growth at the Swedish Cherry Hill campus. But the aggregate effect of these drivers will be to require substantial increases in campus development over the next 2 decades. The Draft MIMP describes three development alternatives: Alternative 8 provides for an additional 1.9 million gross SF, for a total of 3.1 million gross SF; and two alternatives (Alternatives 9 and 10) both provide for an additional 1.55 million gross SF, for a total of 2.75 million gross SF of building area.

The focus of the Swedish Cherry Hill MIMP is to:

1. Anticipate future space needs based on the wide range of growth drivers noted earlier in the concept plan, various opportunities and growth of the primary core services and support services for the next 30 years.
2. Identify Buildings That:
    - Are positioned well for anticipated future needs
    - Will need to be re-purposed for future needs
    - Need to be replaced with new buildings for future needs
    - Are sites where future building is needed
3. Provide flexibility for good medical campus planning principles
    - Identifiable entries
    - Easy access to parking
    - Intuitive way-finding
    - Separation of flows (public & back-of-house)
    - Service Zoning (in-patient & out-patients)
    - Operational efficiency
    - Flexible Futures
    - Brand Consistency

2.4 Site and Site Vicinity

Swedish Medical Center/Cherry Hill is located in the Squire Park neighborhood between E Cherry and E Jefferson Streets. The western boundary of the campus is 15th Avenue. The eastern boundary is mid-block between 18th and 19th Avenues.

Uses in the area north, east, and west of the campus are primarily single-family and lowrise multi-family residential, with a mix of some institutional and commercial uses. The eastern boundary of Seattle University's campus faces the western boundary of Swedish Medical Center across 15th Avenue (see Figure 2-1).

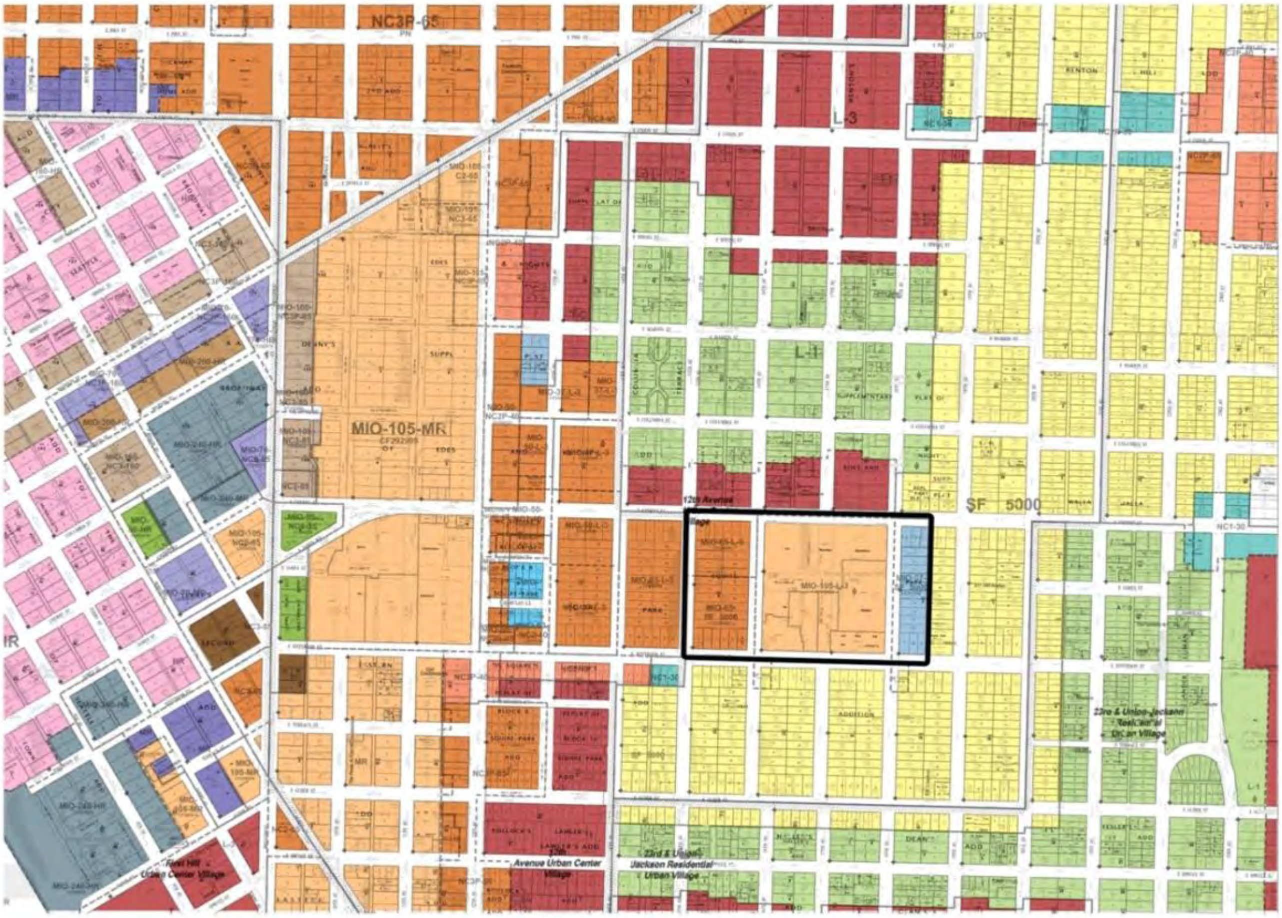


Figure 2-1
Site Vicinity

Land south across Jefferson Street is zoned for single-family (indicated in yellow on Figure 2-1) and contains some multi-family residential buildings and a small grocery store bordering on the south side of Jefferson Street. Land further to the south is occupied by single-family homes. The half-block to the east of the campus and the block continuing to the east contain single-family homes. Land further to the east contains a mix of single-family homes with newer lowrise multi-family buildings (located in LR1 zones indicated in light green on Figure 2-1) located along 21st and 22nd Avenues. The land immediately north of the Swedish Cherry Hill campus is zoned LR3 (indicated in red on Figure 2-1) and LR1, and contains a mix of multi-family residential and offices along E Cherry Street with multi-family structures to the north.

Garfield High School is located approximately 5 blocks to the east.

2.4.1 Existing Development

The existing campus buildings contain approximately 1.2 million gross SF. Some buildings date back to 1910 (see Figure 2-2 Existing Cherry Hill Campus).

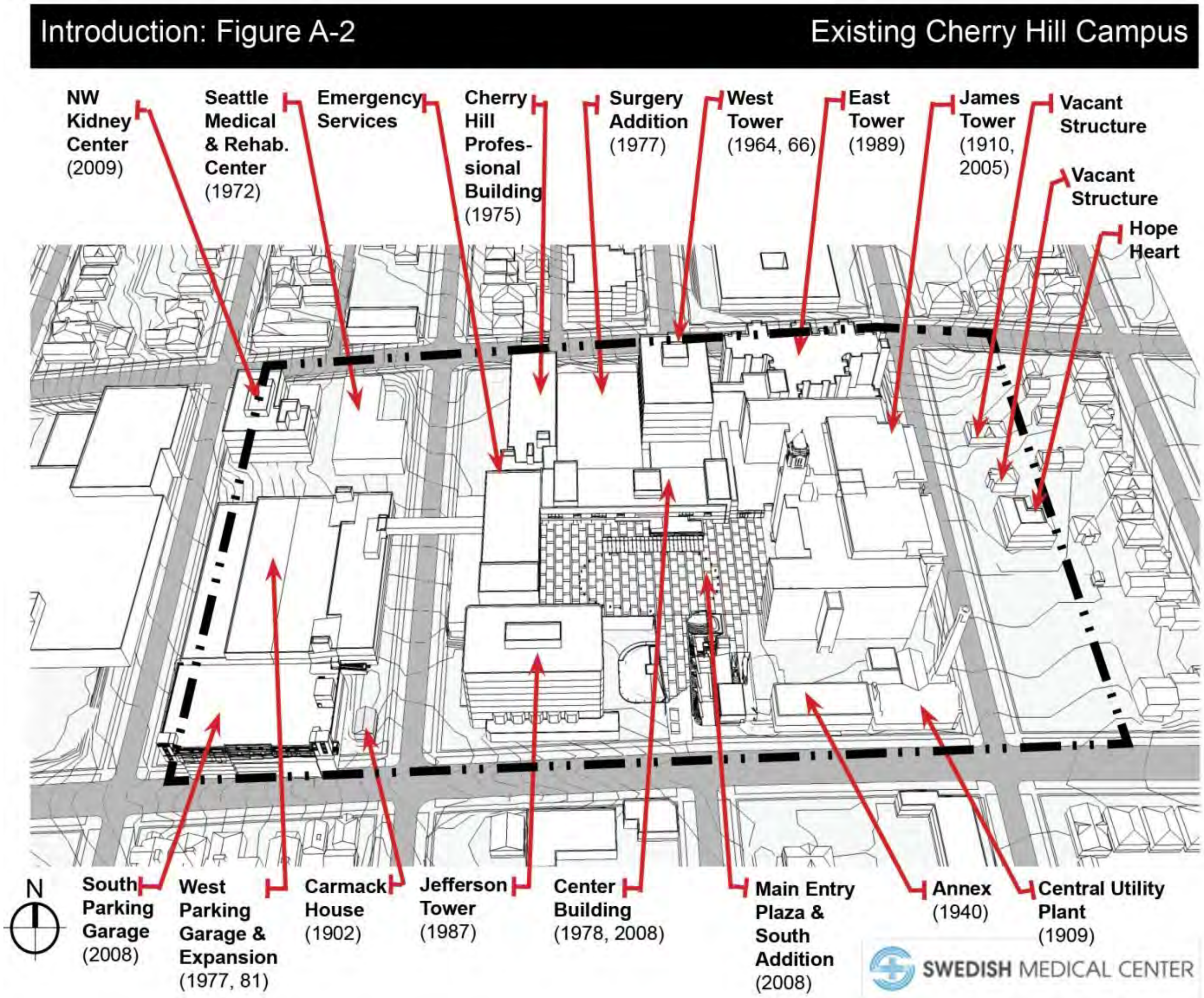


Figure 2-2

Existing Cherry Hill Campus

The James Tower, built in 1910, was one of the original Providence Hospital buildings. The building was renovated in 2005 into a medical office building and currently houses physician offices, and education and research facilities.

The West Tower, built in 1964 for in-patients, now houses out-patient hospital-related services, including physical and occupational therapy. The Cherry Hill Inn is also located in the West Tower, providing a low-cost housing option for patients undergoing surgery and treatment at Swedish Cherry Hill.

The Center Building was added in 1978. It was remodeled in 2008 as part of the Center Building Plaza project, and currently includes operating rooms, imaging services, and intensive care units (ICUs) for both the Neurological and Cardiac units.

The East Tower was opened in 1989 and, along with the ICU, is the only building on the campus where patient beds are located.

The Cherry Hill Professional Building (1975) and Jefferson Tower (1987) contain outpatient services including Advanced Imaging (MRI/CT), physician offices, ambulatory surgery and the Multiple Sclerosis (MS) Center.

A parking garage is located on the west side of campus, accessed from 15th Avenue. The garage was built in 1977 and expanded in 1981. An underground parking structure, added in 2008, is located beneath the front entrance off of E Jefferson Street.

2.5 City of Seattle Permitting

2.5.1 Zoning

The underlying zoning for the Swedish Cherry Hill campus is SF-5000 and LR3. Both have a 30-foot height limit. The expired MIMP established a MIO that allows institutional uses and heights beyond the underlying single- and multi-family uses and height limits.

Swedish has withdrawn their original proposals for expanding their MIO boundaries. The current proposal does not include any expansion of their MIO boundaries.

2.5.2 Major Institution Overlay (MIO) Designation

The existing MIO height limits are shown on Figure 2-3. The land to the north, south, and east is zoned for either single-family or multi-family, with 30-foot heights as shown on Figure 2-3. Land to the west contains a MIO for Seattle University with a 65-foot height limit. The Swedish Cherry Hill campus currently includes three MIO height districts: MIO-37, -65, and -105. The campus generally slopes downward both to the west and to the east. The existing setbacks vary, and range from 10 to 20 feet along the edges of the campus. The half-block on the east side of 18th Avenue contains a few older buildings that have been converted from residential to office, and some cleared lots used for parking.

Swedish has submitted an application for a new MIMP with new MIO heights. The MIMP approval process includes review and comment by a CAC, the Seattle DPD, DON and Department of Transportation (SDOT), a hearing before the City's Hearing Examiner, and then a vote by the Seattle City Council. If approved, the MIMP will include new MIO designating revisions to the existing heights.

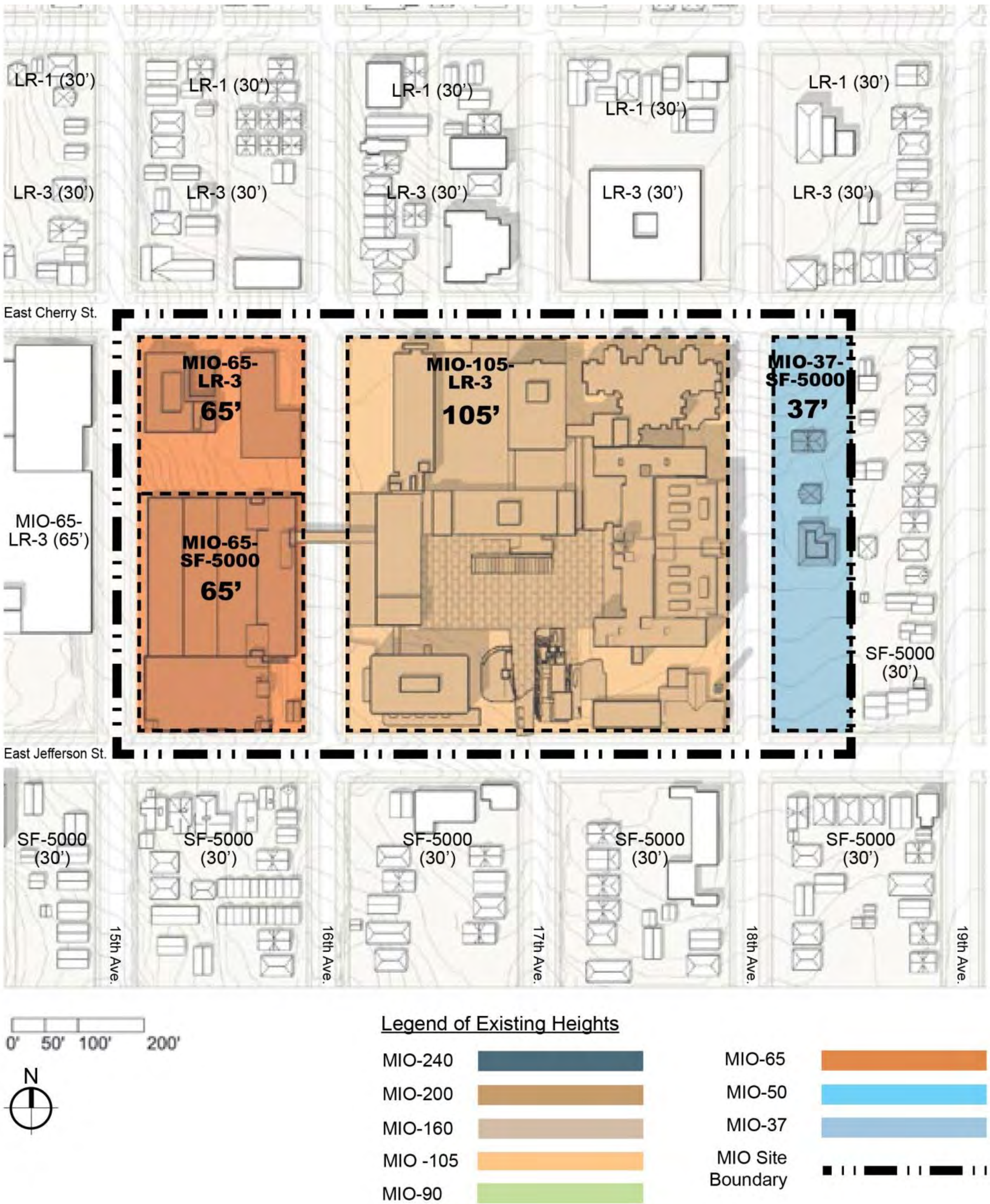


Figure 2-3

Existing Campus MIO Height Limits

2.6 Alternatives

Swedish is proposing two building alternatives in addition to the No Build Alternative. The alternatives described in the May 2014 Draft MIMP are summarized in Table 2-2 and described in Sections 2.6.1 through 2.6.4. The impacts of each alternative are analyzed in Section 3 of this DEIS.

The alternatives are:

- **Alternative 1 –** No Build
- **Alternative 8 –** Addition of approximately 1.9 million gross SF; change in heights to MIO-50, -65, -105 and -240
- **Alternative 9 –** Addition of approximately 1.55 million gross SF; change in heights to MIO-50, -65, -105, -160, and -200
- **Alternative 10 –** Addition of approximately 1.55 million gross SF; change in heights to MIO-37, -50, -65, -105, -160, and -200

Table 2-2
Alternatives Proposed in the May 2014 Draft MIMP and Analyzed in this DEIS

	Alternative 1 – No Build	Alternative 8 – Addition of 1.9 Million Gross SF	Alternative 9 – Addition of 1.55 Million Gross SF	Alternative 10 – Addition of 1.55 Million Gross SF
Institution Boundary	E Cherry and E Jefferson Streets on north and south; half-block west of 16th Ave and half-block east of 18th Ave between E Cherry and E Jefferson Streets	E Cherry and E Jefferson Streets on north and south; half-block west of 16th Ave and half-block east of 18th Ave between E Cherry and E Jefferson Streets	E Cherry and E Jefferson Streets on north and south; half-block west of 16th Ave and half-block east of 18th Ave between E Cherry and E Jefferson Streets	E Cherry and E Jefferson Streets on north and south; half-block west of 16th Ave and half-block east of 18th Ave between E Cherry and E Jefferson Streets
Institution Boundary Area	Existing 580,569 SF	580,569 SF	580,569 SF	580,569 SF
Total building area within MIO	Approximately 1.2 million gross SF	Approximately 3.1 million gross SF	Approximately 2.75 million gross SF	Approximately 2.75 million gross SF
Existing and Proposed Floor Area Ratio (FAR)	2.07 (expired MIMP approved an FAR of 2.3)	5.34	4.74	4.74
Leased Space outside MIO within 2,500 feet	Office space at 600 Broadway Building	Office space at 600 Broadway Building	Office space at 600 Broadway Building	Office space at 600 Broadway Building
Owned Space outside MIO within 2,500 feet	Swedish-owned First Hill Campus	Swedish-owned First Hill Campus	Swedish-owned First Hill Campus	Swedish-owned First Hill Campus

Table 2-2 (Continued)
Alternatives Proposed in the May 2014 Draft MIMP
and Analyzed in this DEIS

	Alternative 1 – No Build	Alternative 8 – Addition of 1.9 Million Gross SF	Alternative 9 – Addition of 1.55 Million Gross SF	Alternative 10 – Addition of 1.55 Million Gross SF
Uses	Approximately 196-bed hospital, clinic, clinical research, office, and clinical laboratory	Approximately 385-bed hospital, clinic, clinical research, office, clinical laboratory, hotel, and long-term care	Approximately 385-bed hospital, clinic, clinical research, office, clinical laboratory, hotel, and long-term care	Approximately 385-bed hospital, clinic, clinical research, office, clinical laboratory, hotel, and long-term care
Street Vacations	None	None	None	None
Parking	1,510 spaces	2,310 (800 new)	2,245 spaces (735 new)	2,245 spaces (735 new)
Parking Location	Existing parking is primarily located on the western portion of campus, with an above-ground garage and a surface lot located west of 16th Avenue, and an underground garage located and small surface lots located east of 16th Avenue. There are surface parking lots located east of 18th Avenue.	Parking is proposed to be located under each new development with underground garages proposed for both sides of 18th Avenue, the block between 15th and 16th Avenues, and along the south side of Cherry east of 16th Avenue.	Same as Alternative 8	Same as Alternative 8
Access	Access to Central Plaza from E Jefferson Street; access to underground parking garage from E Jefferson Street; access to above-ground parking from 16th Avenue; access to surface lots from 18th Avenue.	Access to Central Plaza from E Jefferson Street; access to underground parking garage from E Jefferson Street; access to new below-ground parking from 16th Avenue; access to new below-ground parking from 18th Avenue.	Same as Alternative 8	Same as Alternative 8
Height Limit for MIO				
Half-block on west side of 16th	MIO-65	MIO-65 on north and south; MIO-240 in center	MIO-65 on north and south; MIO-200 in center	Same as Alternative 9 – MIO-65 on north and south; MIO-200 in center

Table 2-2 (Continued)
Alternatives Proposed in the May 2014 Draft MIMP and Analyzed in this DEIS

	Alternative 1 – No Build	Alternative 8 – Addition of 1.9 Million Gross SF	Alternative 9 – Addition of 1.55 Million Gross SF	Alternative 10 – Addition of 1.55 Million Gross SF
Central Campus Block	MIO-105	MIO-240 on the W portion; MIO-105 on the central courtyard; MIO-65 on the SE corner; N, NE, and SW portion would remain at MIO-105	MIO-160 on the W portion; MIO-105 on the central courtyard; other areas would remain at MIO-105	Same as Alternative 9 - MIO-160 on the W portion; MIO-105 on the central courtyard; other areas would remain at MIO-105
Half-block on east side of 18th	MIO-37	MIO-50	MIO-50	MIO-37 on north, MIO-50 on north-center section; MIO-37 on center section; MIO-50 on south center section; MIO-37 on south
Designated Open Space				
Designated Open Space Locations	Central Plaza and main hospital entrance off of Jefferson Street	Main entry plaza (Central Plaza) and landscaped courtyard between Annex and James Tower; pocket park(s) along Cherry Street	Same as Alternative 8	Same as Alternative 8, plus designated open space in center of building to be developed on east side of 18th Avenue

2.6.1 Alternative 1 – No Build

Alternative 1 has been studied to compare potential impacts of the two Build Alternatives (Alternatives 8 and 9). Alternative 1 considers potential traffic and transportation conditions in approximately 20 years (2035). Because the Swedish Cherry Hill MIMP has expired, Swedish would not be able to add square-footage or heights and the existing height limits or MIO of the campus would remain. Swedish could demolish and replace existing buildings but no increase in total developed area would occur.

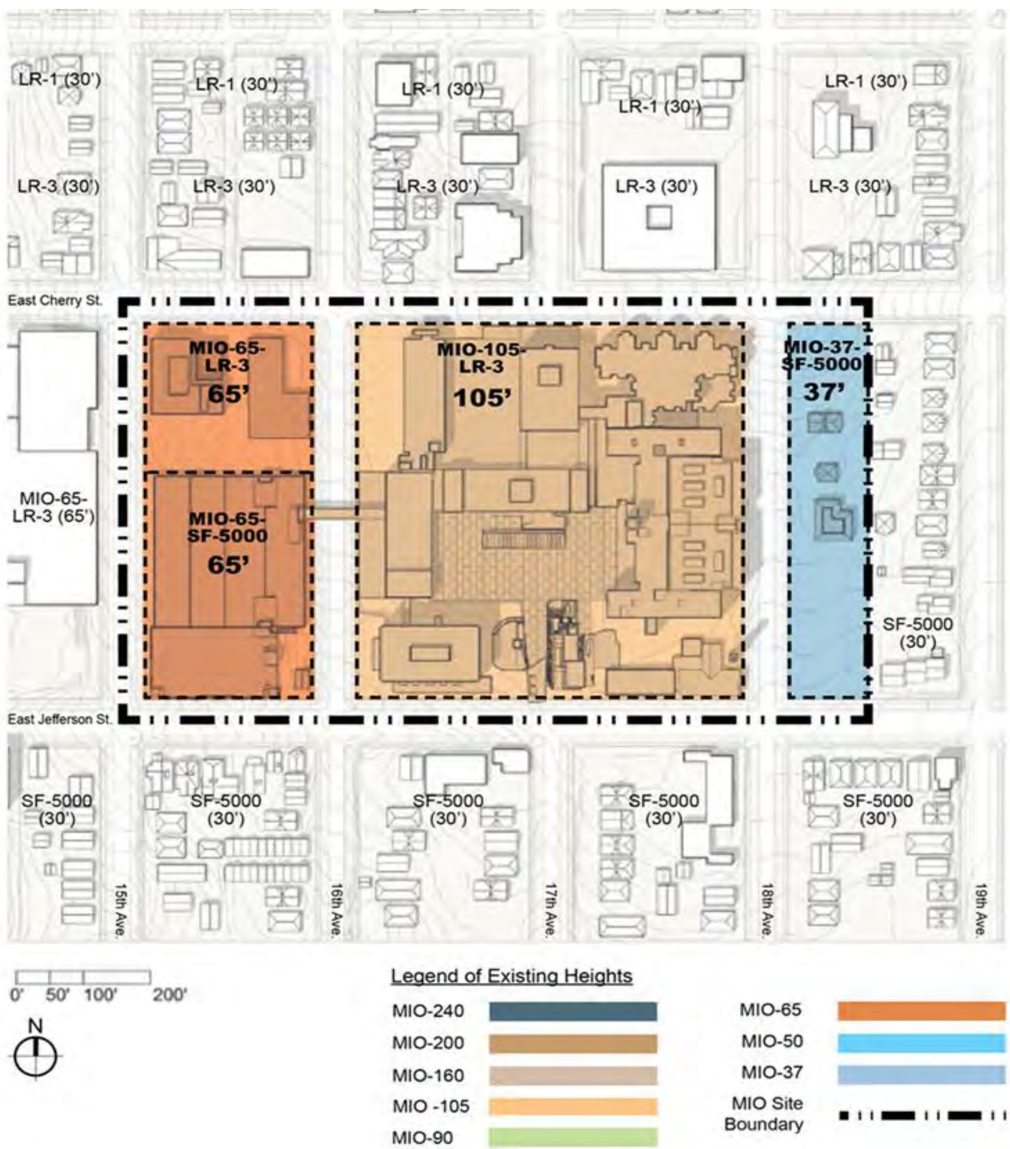


Figure 2-4

Alternative 1 - No Build

2.6.2 Design Elements Common to All Build Alternatives

All of the build alternatives (Alternatives 8, 9, and 10) would result in a similar program for Swedish Cherry Hill, and are intended to meet the proponent's objective: approximately 385-bed hospital, clinic, research, clinical laboratory, education, hotel, long-term care, and office. The two alternatives differ in the amount of additional area. Alternative 8 would include an increase of approximately 1.9 million gross SF for a total of 3.1 million gross SF. Alternatives 9 and 10 would include an increase of approximately 1.55 million gross SF for a total of 2.75 million gross SF.

Swedish's projected needs for the next 30 years are summarized on Table 2-3.

Table 2-3
Summary of Swedish Cherry Hill Needs Projection

	2012 Existing (Gross SF)	New (Gross SF)	2040 Need (Gross SF)
Hospital*	541,300	808,700	1,350,000
Clinical/Research	427,000	823,000	1,250,000
Education	73,000	77,000	150,000
Hotel	12,500	67,500	80,000
Long-Term Care	43,000	177,000	220,000
Other Support	50,000	0	50,000
TOTAL Gross SF	**1,146,800**	**1,953,200**	**3,100,000**

*Hospital area includes medical retail space for the campus such as retail pharmacy.

2.6.3 Alternative 8 – Addition of 1.9 Million Gross SF

2.6.3.1 Proposed Changes to MIO Districts

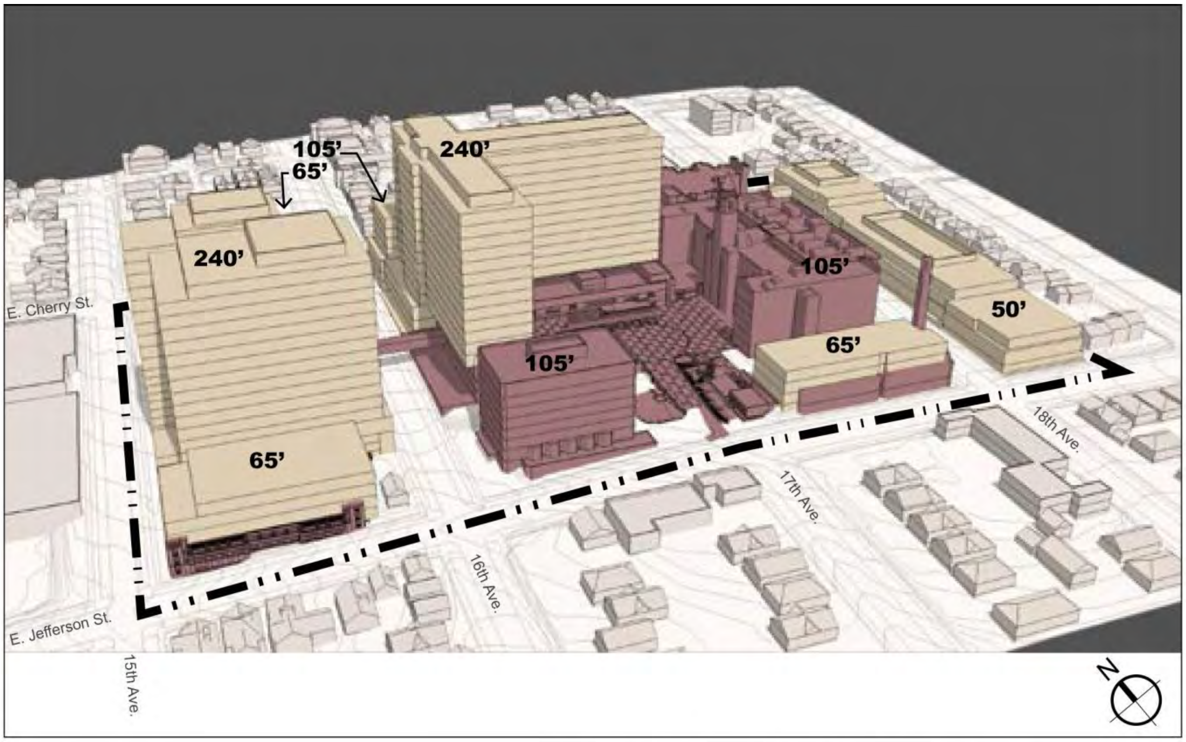
The following changes are proposed to the MIO districts for the campus under Alternative 8:

1. On the west side of campus, the center portion of the block would be changed from MIO-65 to MIO-240. The north and south portions would remain at MIO-65.
2. In the central block of the campus, the western portion would be changed from MIO-105 to MIO-240; and the southeast corner would be changed from MIO-105 to MIO-65. The remainder of the central block would remain at MIO-105.
3. On the east side of campus on the half-block located on the east side of 18th Avenue, the MIO would be changed from MIO-37 to MIO-50.

2.6.3.2 MIO Boundary

No boundary expansions are proposed.

See Figures 2-5 and 2-6 Alternative 8 - Addition of 1.9 Million Gross SF.



Legend of Planned Future Height, Bulk and Form

Existing Height, Bulk and Form to Remain

Planned Future Height, Bulk and Form

Figure 2-5

Alternative 8 - Addition of 1.9 Million Gross SF Future Height, Bulk and Form

2.6.3.3 Street Vacation

No street vacations are proposed.

2.6.3.4 Site Access

Access to the Central Plaza would remain off of E Jefferson Street, and access to parking would continue to be provided from a vacated 16th Avenue. With the potential for additional parking under new development on the east side of campus, there would be additional access provided to parking to replace existing access to surface lots.

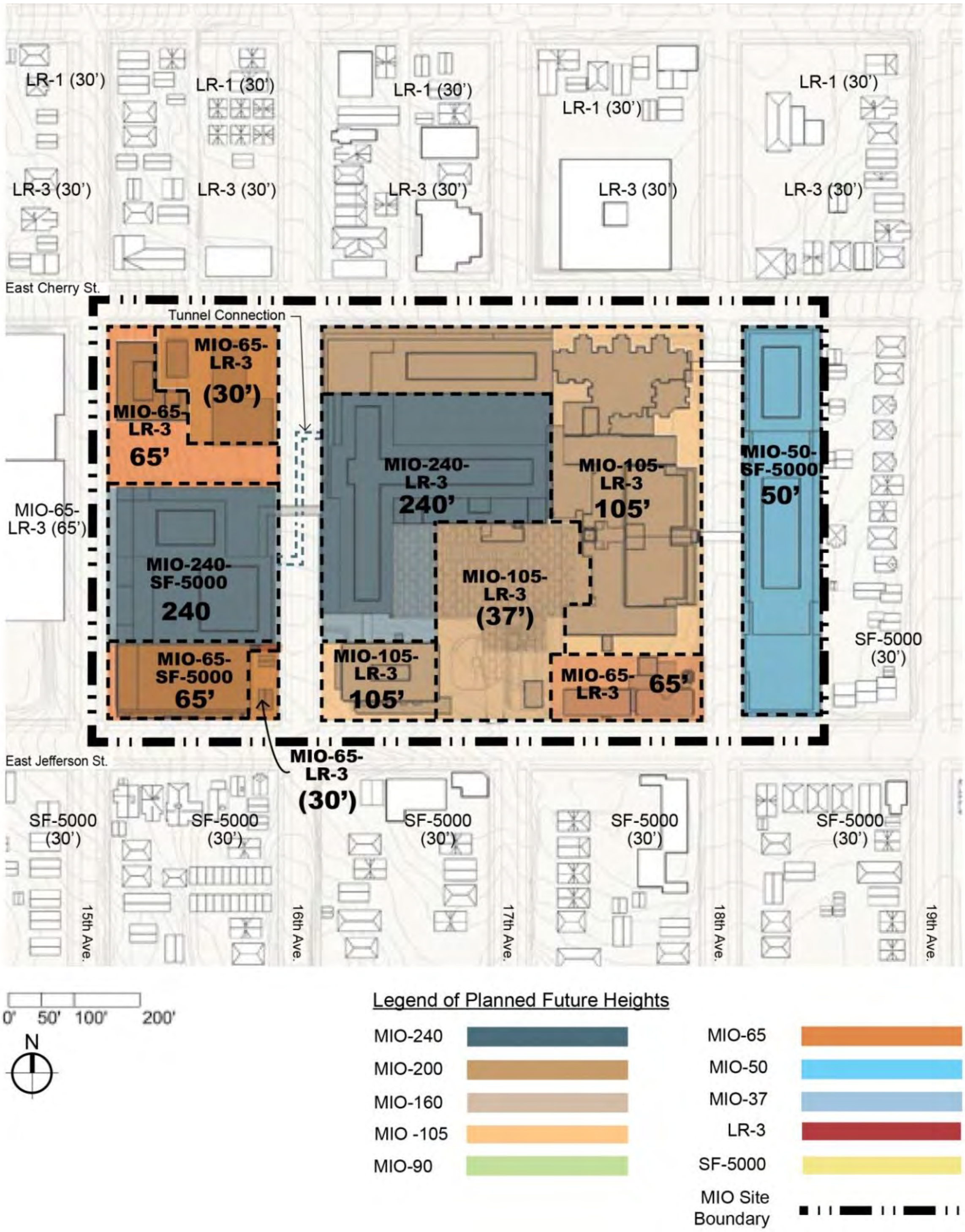


Figure 2-6

Alternative 8 - Addition of 1.9 Million Gross SF
Proposed MIO Districts

2.6.4 Alternative 9 - Addition of 1.55 Million Gross SF

2.6.4.1 Proposed Changes to MIO Districts

The following changes are proposed to the MIO districts for the campus under Alternative 9. See Figures 2-7 and 2-8 Alternative 9 - Addition of 1.55 Million Gross SF.

1. On the west side of campus, the center portion of the block would be changed from MIO-65 to MIO-200. The north and south portions would remain at MIO-65.
2. In the central block of the campus, the western portion would be changed from MIO-105 to MIO-160. The remainder of the central block would remain at MIO-105.
3. On the east side of campus on the half-block located on the east side of 18th Avenue, the MIO would be changed from MIO-37 to MIO-50.

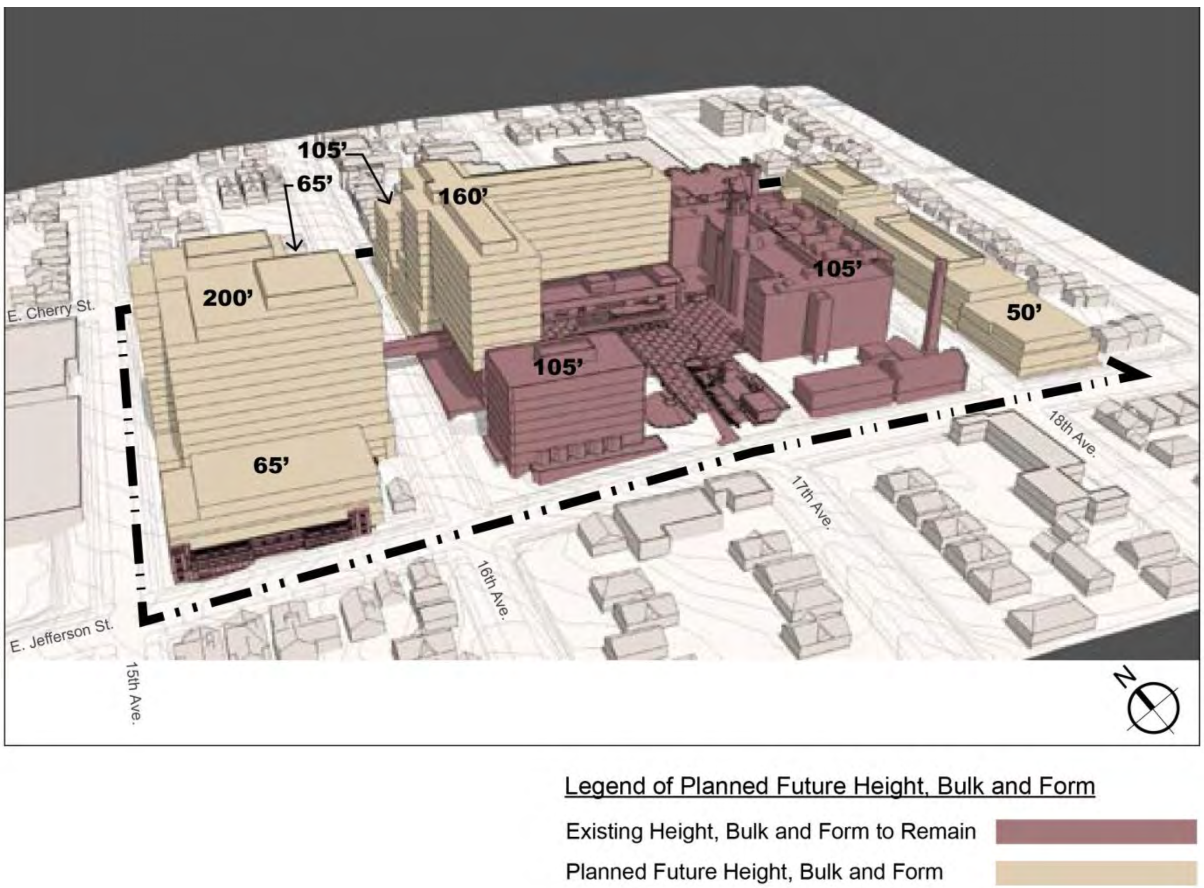


Figure 2-7

Alternative 9 - Addition of 1.55 Million Gross SF
Future Height, Bulk and Form

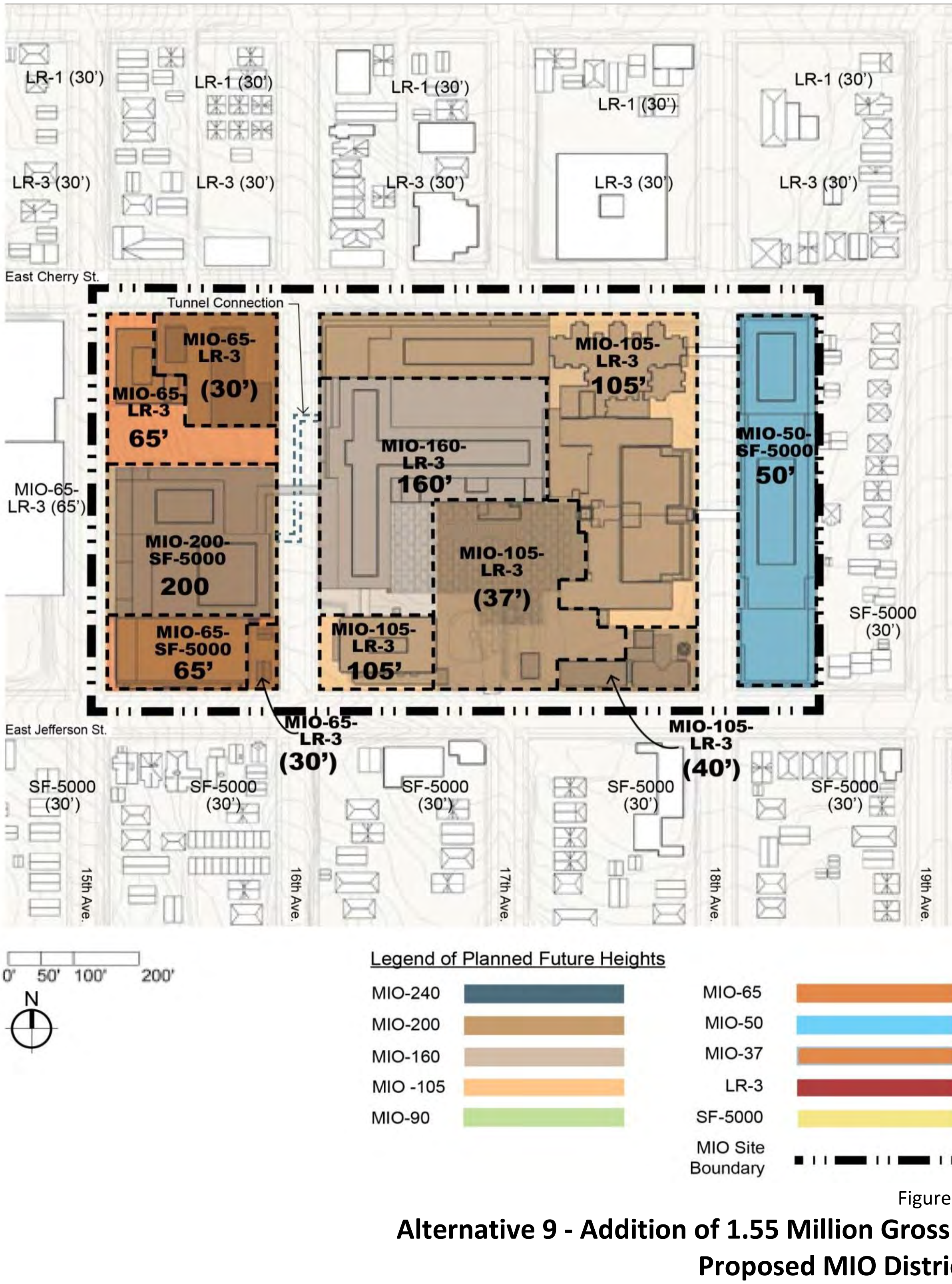


Figure 2-8

Alternative 9 - Addition of 1.55 Million Gross SF Proposed MIO Districts

2.6.4.2 MIO Boundary

No boundary expansions are proposed.

2.6.4.3 Street Vacation

No street vacations are proposed.

2.6.4.4 Site Access

Access to the Central Plaza would remain off of E Jefferson Street, and access to parking would continue to be provided from a vacated 16th Avenue. With the potential for additional parking under new development on the east side of campus, there would be additional access provided to parking to replace existing access to surface lots.

2.6.5 Alternative 10 - Addition of 1.55 Million Gross SF

See Figures 2-9 and 2-10 Alternative 10 - Addition of 1.55 Million Gross SF.

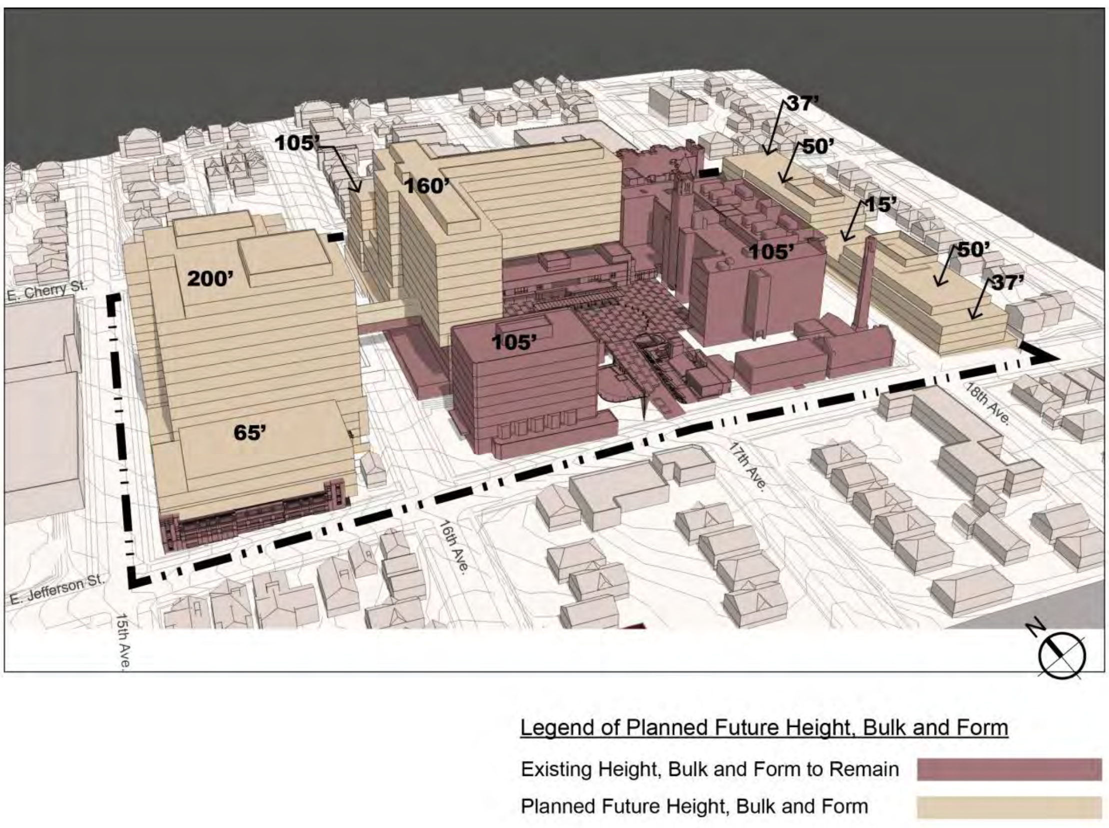


Figure 2-9

Alternative 10 - Addition of 1.55 Million Gross SF
Future Height, Bulk and Form

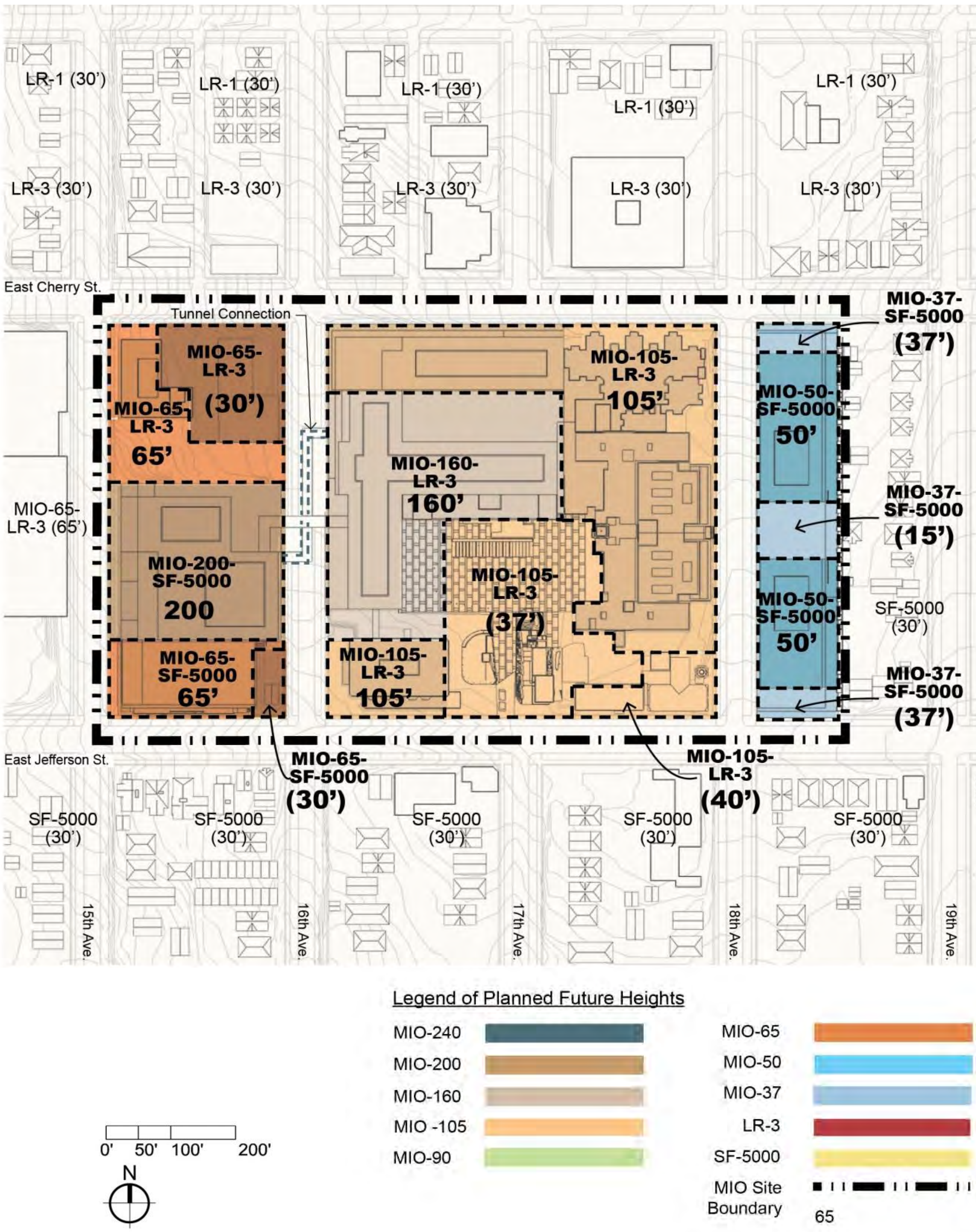


Figure 2-10

Alternative 10 - Addition of 1.55 Million Gross SF Proposed MIO Districts

2.6.5.1 Proposed Changes to MIO Districts

Swedish is proposing that the Alternative 10 MIOs for the west and central block of the campus be the same as proposed for Alternative 9. The difference is with the east side of the campus. For Alternative 9, Swedish is proposing a MIO-50 for the entire half-block. For alternative 10, Swedish is proposing that the north edge, center, and south edge have an overlay of MIO-37, with MIO-50 for the sections in between. The following changes are proposed to the MIO districts for the campus under Alternative 10.

1. On the west side of campus, the center portion of the block would be changed from MIO-65 to MIO-200. The north and south portions would remain at MIO-65.
2. In the central block of the campus, the western portion would be changed from MIO-105 to MIO-160. The remainder of the central block would remain at MIO-105.
3. On the east side of campus on the half-block located on the east side of 18th Avenue, the MIO would remain at MIO-37 on the north edge, center and south edge, and be changed from MIO-37 to MIO-50 for the two sections in between.

2.6.5.2 MIO Boundary

No boundary expansions are proposed.

2.6.5.3 Street Vacation

No street vacations are proposed.

2.6.5.4 Site Access

Access to the Central Plaza would remain off of E Jefferson Street, and access to parking would continue to be provided from a vacated 16th Avenue. With the potential for additional parking under new development on the east side of campus, there would be additional access provided to parking to replace existing access to surface lots.

2.7 Construction Phasing

Swedish is proposing a MIMP for development over the next 30 years, or longer.

Construction phasing is described in Section C.8 of the Draft MIMP, and would be dependent upon the height limits approved by the City Council in the MIMP, and the need to create an "empty chair" (i.e., empty developable space) in which to develop new buildings without first having to demolish an existing building that is still in use. The Draft MIMP describes four potential development phases (titled "A, B, C and D"), *"The titles of A, B, C, and D are not intended to convey a particular order. Each project will be undertaken in response to demand and financial feasibility"* (see Section C.8 of Draft MIMP).

Phase A: The 18th Avenue half-block is the only "empty chair" to begin the process of replacing aging buildings and parking structures. The project, a medical office building (similar to the James and Jefferson Towers), would allow clinical/administration uses to move out of the existing Cherry Hill Professional Building (CHPB) and West Tower. Also additional campus demands for clinical/research/education could be the balance of the project. Underground parking is an essential component of the phase to maintain the campus parking supply during future phases. Hours of operation will be similar to the hours of James and Jefferson Towers (not 24/7).

Phase B: The renovation and repurposing of the old Providence Annex on E Jefferson Street into a community amenity. Potential uses and improvements could include: improvement of access to E Jefferson Street and the metro bus stop, community meeting space, street-side small-scaled retail space for service retail (i.e., bicycle repair shop) or a food & beverage establishment.

Phase C: Would involve the new hospital replacement tower on the corner of 16th Avenue and E Cherry Street (to replace space occupied by the CHPB/West Tower and expand hospital need). Also under building parking would need to be included in this phase to help satisfy the parking supply needs. Scope and/or additional sub-phases of this project would depend on funding, timing of need and constructability issues.

Phase D: The demolition of the 1977/81 west parking garage and replaced with more structured parking, clinical/research/education space, and long-term care facilities. The size of each use would depend on the demand needs of the medical center. Scope and/or additional sub-phases of this project would depend on funding, timing of need and constructability issues.

Potential scheduling of the first project: 18th Avenue Medical Office Building/Under-building parking garage

- July 2015: Swedish Cherry Hill Campus MIMP approvals
- August 2015 – July 2016: Design and city permit approvals
- August 2016 – January 2018: Construction
- February 2018: Move in and begin operations

2.8 Alternatives Considered But Not Advanced

2.8.1 Alternatives included in Concept Plan (February 2013)

In its February 2013 Concept Plan, Swedish proposed two alternatives for further development of the campus, Alternative 2 – Increased Vertical Capacity, and Alternative 3 – Increased Vertical Capacity and Boundary Expansion. Both have been eliminated from further consideration based on comments from the CAC members, the City, and the public. Table 2-4 provides a summary of the features of those alternatives.

Table 2-4
Alternatives Proposed in February 2013 Concept Plan

	Alternative 1 – No Build	Alternative 2 – Increased Vertical Capacity	Alternative 3 – Increased Vertical Capacity and Boundary Expansion
Institution Boundary	E Cherry and E Jefferson Streets on north and south; half-block west of 16th Ave and half-block east of 18th Ave between E Cherry and E Jefferson Streets.	E Cherry and E Jefferson Streets on north and south; half-block west of 16th Ave and half-block east of 18th Ave between E Cherry and E Jefferson Streets; plus site on NW corner of 16th Ave and E Cherry Street.	E Cherry and E Jefferson Streets on north and south; half-block west of 16th Ave and half-block east of 18th Ave between E Cherry and E Jefferson Streets; plus three sites north of E Cherry Street (on NW corner of 16th Ave and E Cherry Street; two sites between 16th and 17th Aves); half-block on the west side of 19th Ave between E Cherry and E Jefferson Streets; and two sites south of E Jefferson St between 16th and 18th Avenues.
Institution Boundary Area	Existing 577,204 SF	680,400 SF	923,840 SF
Total building area within MIO	Approximately 1.2 million gross SF	Approximately 3 million gross SF	Approximately 3 million gross SF
Existing and Proposed Floor Area Ratio (FAR)	2.08 (expired MIMP approved an FAR of 2.3)	4.56	3.36
Leased Space outside MIO within 2,5000 feet	None	None	None
Owned Space outside MIO within 2,500 feet	Spencer Technologies Site (24,000 SF)	0 SF (Spencer Technologies site incorporated into MIO)	0 SF (Spencer Technologies site incorporated into MIO)
Uses	Approximately 196-bed hospital, clinic, clinical research, office, and clinical laboratory	Approximately 365-bed hospital, clinic, clinical research, office, and clinical laboratory	Approximately 365-bed hospital, clinic, clinical research, office, and clinical laboratory
Street Vacations	None	16th and 18th Avenues between E Cherry and E Jefferson Streets	16th and 18th Avenues between E Cherry and E Jefferson Streets
Parking	1,560 spaces	4,500 spaces (2,940 new)	4,500 spaces (2,940 new)
Parking Location	Existing parking is primarily located on the western portion of campus, with an above-ground garage and a surface lot located west of 16th Avenue, and an underground garage	Under Alternative 2, parking was proposed to be located under each new development with underground garages proposed for both sides of 18th Avenue, the Spencer site, the block between 15th and 16th Avenues, and along the	Same as Alternative 2

Table 2-4 (continued)
Alternatives Proposed in February 2013 Concept Plan

	Alternative 1 – No Build	Alternative 2 – Increased Vertical Capacity	Alternative 3 – Increased Vertical Capacity and Boundary Expansion
	located and small surface lots located east of 16th Avenue. There are surface parking lots located east of 18th Avenue.	south side of Cherry east of 16th Avenue.	
Access	Access to Central Plaza from E Jefferson Street; access to underground parking garage from E Jefferson Street; access to above-ground parking from 16th Avenue; access to surface lots from 18th Avenue.	Access to Central Plaza from East Jefferson Street; access to underground parking garage from East Jefferson Street; access to new below-ground parking from 16th Avenue; access to new below-ground parking from 18th Avenue.	Access to Central Plaza from East Jefferson Street; access to underground parking garage from East Jefferson Street; access to new below-ground parking from 16th Avenue; access to new below-ground parking from 18th Avenue.
Height Limit for MIO			
Half-block on west side of 16th	MIO-65	MIO-90 on north and south; MIO-200 in center	MIO-65 on north and south; MIO-200 in center
Central Campus Block	MIO-105	MIO-200 on the NW portion; MIO-105 on the NE portion; southern portion would remain at MIO-105	MIO-160 on the NW portion; MIO-105 on the NE portion and SW portion; SE corner would be MIO-65
Half-block on east side of 18th	MIO-37	MIO-90	MIO-90
Spencer Technologies Site	LR3 with 30 to 35’ height limit; LR1 with 25’ height limit	MIO-65	MIO-65
Sites to the north of E Cherry Street between 16th and 17th Avenues	LR3 with 30 to 35’ height limit; LR1 with 25’ height limit	(not included in Alternative 2)	MIO-50
Half-block on the west side of 19th Avenue between E cheery and Jefferson Streets	SF-5000	(not included in Alternative 2)	MIO-37
Portion of Block south of E Jefferson St between 16th and 17th Aves	SF-5000	(not included in Alternative 2)	MIO-50

Table 2-4 (continued)
Alternatives Proposed in February 2013 Concept Plan

	Alternative 1 – No Build	Alternative 2 – Increased Vertical Capacity	Alternative 3 – Increased Vertical Capacity and Boundary Expansion
Portion of Block south of E Jefferson St between 17th and 18th Aves	SF-5000	(not included in Alternative 2)	MIO-37

2.8.2 Alternative Included in November 2013 Preliminary Draft MIMP

In its November 2013 Preliminary Draft MIMP, Swedish proposed three alternatives for further development of the campus: Alternative 5 – Expansion to Spencer Technologies, Vacation of 16th Avenue; Alternative 6 – Expansion to Spencer Technologies, Vacation of 16th Avenue, Lower Heights on East and West; and Alternative 7 – Expansion to Spencer Technologies, No Street Vacations. All three have been eliminated from further consideration based on comments from the CAC members, the City, and the public. Table 2-5 provides a summary of the features of those alternatives.

Table 2-5
Alternatives Proposed in the November 2013 Preliminary Draft MIMP

	Alternative 1 – No Build	Alternative 5 – Expansion to Spencer Technologies; Vacation of 16th Avenue	Alternative 6 – Expansion to Spencer Technologies; Vacation of 16th Avenue; Lower Heights on East and West	Alternative 7 – Expansion to Spencer Technologies; No Street Vacations
Institution Boundary	E Cherry and E Jefferson Streets on north and south; half-block west of 16th Ave and half-block east of 18th Ave between E Cherry and E Jefferson Streets	E Cherry and E Jefferson Streets on north and south; half-block west of 16th Ave and half-block east of 18th Ave between E Cherry and E Jefferson Streets; plus site on NW corner of 16th Ave and E Cherry Street	E Cherry and E Jefferson Streets on north and south; half-block west of 16th Ave and half-block east of 18th Ave between E Cherry and E Jefferson Streets; plus site on NW corner of 16th Ave and E Cherry Street	E Cherry and E Jefferson Streets on north and south; half-block west of 16th Ave and half-block east of 18th Ave between E Cherry and E Jefferson Streets; plus site on NW corner of 16th Ave and E Cherry Street
Institution Boundary Area	Existing 577,204 SF	640,800 SF	640,800 SF	601,200 SF
Total building area within MIO	Approximately 1.2 million gross SF	Approximately 3.1 million gross SF	Approximately 3.1 million gross SF	Approximately 3.1 million gross SF
Existing and Proposed Floor Area Ratio (FAR)	2.08 (expired MIMP approved an FAR of 2.3)	4.84	4.84	5.16
Leased Space outside MIO	None	None	None	None

Table 2-5 (continued)
Alternatives Proposed in November 2013 Preliminary Draft MIMP

	Alternative 1 – No Build	Alternative 5 – Expansion to Spencer Technologies; Vacation of 16th Avenue	Alternative 6 – Expansion to Spencer Technologies; Vacation of 16th Avenue; Lower Heights on East and West	Alternative 7 – Expansion to Spencer Technologies; No Street Vacations
within 2,5000 feet				
Owned Space outside MIO within 2,500 feet	Spencer Technologies Site (24,000 SF)	0 SF (Spencer Technologies site incorporated into MIO)	0 SF (Spencer Technologies site incorporated into MIO)	0 SF (Spencer Technologies site incorporated into MIO)
Uses	Approximately 196-bed hospital, clinic, clinical research, office, and clinical laboratory	Approximately 385-bed hospital, clinic, clinical research, office, and clinical laboratory	Approximately 385-bed hospital, clinic, clinical research, office, and clinical laboratory	Approximately 385-bed hospital, clinic, clinical research, office, and clinical laboratory
Street Vacations	None	16th Avenue between E Cherry and E Jefferson Streets	16th Avenue between E Cherry and E Jefferson Streets	None
Parking	1,560 spaces	4,500 spaces (2,940 new)	4,500 spaces (2,940 new)	4,500 spaces (2,940 new)
Parking Location	Existing parking is primarily located on the western portion of campus, with an above-ground garage and a surface lot located west of 16th Avenue, and an underground garage located and small surface lots located east of 16th Avenue. There are surface parking lots located east of 18th Avenue.	Parking is proposed to be located under each new development with underground garages proposed for both sides of 18th Avenue, the Spencer site, the block between 15th and 16th Avenues, and along the south side of Cherry east of 16th Avenue.	Same as Alternative 5	Same as Alternative 5
Access	Access to Central Plaza from E Jefferson Street; access to underground parking garage from E Jefferson Street; access to	Access to Central Plaza from E Jefferson Street; access to underground parking garage from E Jefferson Street; access to new below-ground parking from 16th Avenue; access to new	Access to Central Plaza from E Jefferson Street; access to underground parking garage from E Jefferson Street; access to new below-ground parking from 16th Avenue; access to new	Access to Central Plaza from E Jefferson Street; access to underground parking garage from E Jefferson Street; access to new below-ground parking from 16th Avenue; access to new

Table 2-5 (continued)
Alternatives Proposed in November 2013 Preliminary Draft MIMP

	Alternative 1 – No Build	Alternative 5 – Expansion to Spencer Technologies; Vacation of 16th Avenue	Alternative 6 – Expansion to Spencer Technologies; Vacation of 16th Avenue; Lower Heights on East and West	Alternative 7 – Expansion to Spencer Technologies; No Street Vacations
	above-ground parking from 16th Avenue; access to surface lots from 18th Avenue.	below-ground parking from 18th Avenue.	below-ground parking from 18th Avenue.	below-ground parking from 18th Avenue.
Height Limit for MIO				
Half-block on west side of 16th	MIO-65	MIO-65 on north and south; MIO-200 in center	MIO-65 on north and south; MIO-240 in center	MIO-65 on north and south; MIO-240 in center
Central Campus Block	MIO-105	MIO-200 on the NW portion; MIO-160 on the NE portion; southern portion would remain at MIO-105	MIO-200 on the NW portion; MIO-160 on the NE portion; southern portion would remain at MIO-105	MIO-200 on the NW portion; MIO-160 on the NE portion; southern portion would remain at MIO-105
Half-block on east side of 18th	MIO-37	MIO-65	MIO-50	MIO-65
Spencer Technologies Site	LR3 with 30 to 35' height limit; LR1 with 25' height limit	MIO-105	MIO-50	MIO-65

2.9 Benefits and Disadvantages of Delaying Project Implementation

The benefits of deferring action on the proposal would include:

- Delaying construction impacts (the primary benefit); however, the phased nature of the development proposal would postpone some of the construction impacts until later phases of the development.
- Allowing more certainty regarding potential changes to surrounding transportation and traffic patterns caused by the new Seattle First Hill Street Car.

The disadvantages of deferring action of the proposal would be:

- Deferral would preclude or delay the addition of approximately 170 hospital beds.
- Deferring action would limit the ability of Swedish Health and Services to address its stated medical needs of the community.

Section 3 - Environmental Analysis

3.1 Air Quality and Climate Change

This section describes the air quality conditions on the Swedish Cherry Hill campus and in the site vicinity. Potential impacts to air quality from redevelopment under the EIS alternatives are assessed. Greenhouse gas (GHG) emissions are also estimated.

3.1.1 Introduction

Air pollutants associated with development projects in the Puget Sound area primarily are related to vehicular emissions. The air pollutants potentially include particulate matter, air toxics, diesel exhaust, carbon monoxide (CO), ozone, and GHGs.

In urban areas of the Puget Sound, motor vehicles are the largest source of air emissions. Over the last 2 decades, many pollutant levels have declined, and air quality has generally improved. Elevated fine particle levels are the most important air quality challenge in the Puget Sound. Ozone levels also remain a concern in the region. Air toxics have been present at levels that pose adverse health effects (PSCAA 2012).

Air quality in the project area is regulated by the U.S. Environmental Protection Agency (EPA), Washington State Department of Ecology (Ecology), and the Puget Sound Clean Air Agency (PSCAA). Under the Clean Air Act, the EPA has established the national ambient air quality standards (NAAQS). The NAAQS are designed to protect public health with an adequate margin of safety. The PSCAA is primarily responsible for monitoring and regulating air quality in the Seattle area.

The EPA has designated most regions as attainment, maintenance, or nonattainment areas in regard to air quality standards. Nonattainment areas are geographic regions where air pollutant concentrations for a specific pollutant have persistently exceeded the NAAQS, while attainment areas have had measured concentrations below standards. Maintenance areas are regions that were previously in nonattainment but have since attained compliance. The Seattle area is currently in attainment for all EPA-regulated air pollutants, and has maintenance plans in place for CO, ozone, and particulate matter (PSCAA 2012).

3.1.2 Affected Environment

Typical sources of air pollution within the Swedish Cherry Hill project area include vehicular traffic, medical offices and facilities, educational institutions, a variety of commercial businesses, and residential wood-burning fireplaces and stoves. Residential wood burning produces a variety of air contaminants, including relatively large quantities of fine particulate matter. The major concern with regard to air pollution from vehicular traffic is CO. CO is the pollutant that is emitted in the largest quantity for which ambient air standards exist.

Other pollutants generated by traffic include the ozone precursors: hydrocarbons and nitrogen oxides. In addition, sulfur oxides and nitrogen dioxide are emitted by motor vehicles, although concentrations of these pollutants are usually low, except for near large industrial facilities.

Ecology and the PSCAA maintain a network of monitoring stations in the Puget Sound region. Based on monitoring information collected over a period of years, the Swedish Cherry Hill project study area is in an ozone air quality "maintenance" area, suggesting that the air quality is generally good. This is a nonattainment area that has been found to be in attainment of the standard, but which is still subject to special air quality reviews until the standard has been maintained for at least 10 years. Under current air quality plans and policies, a "maintenance" area designation has no direct implications on the alternatives.

3.1.2.1 Existing Air Quality

Particulate Matter

Particulate matter includes fine particles less than 2.5 micrometers in size (PM2.5) and particles less than 10 micrometers in size (PM10). Motor vehicle exhaust emissions are generally in the PM2.5 size range, while fugitive dust is generally in the PM10 size range. Fine particles (PM2.5) are more harmful than dust and PM10, because they can be inhaled deeply into the lungs. Fine particles have a greater impact than coarse particles at locations far from the emitting source, because they remain suspended in the atmosphere longer and travel farther.

Particulate emissions have decreased over the past 15 years, and the Puget Sound area is in attainment with federal air quality standards. PM2.5 is still one of the major air pollution concerns affecting the Puget Sound area, and PM2.5 levels do not meet the PSCAA's more stringent health goal (PSCAA 2012). PM10 is no longer a major concern in the Puget Sound area, and the PSCAA ceased all PM10 monitoring in 2006. Fine particulate matter levels in the Puget Sound area are often higher in the winter months because of stagnant air inversions and wood burning in fireplaces and wood stoves.

Air Toxics and Diesel Exhaust

Air toxics are broadly defined as over 400 pollutants potentially harmful to human health and the environment. Many air toxics are a component of either particulate matter or volatile organic compounds (VOCs) (a precursor to ozone). Although air toxics concentrations have declined since 2003 in the Puget Sound area, the health risks remain substantial. Recent studies show people living near ports and roadways have higher exposures and health risks (PSCAA 2013a).

In the Puget Sound area, diesel particulate matter (DPM) accounts for most of the potential cancer risk from all air toxics. This pollution comes from diesel-fueled trucks, cars, buses, construction equipment, rail, marine, and port activities. PSCAA has three main strategies to reduce particulate matter: 1) enhanced enforcement of burn bans; 2) required removal of older, more polluting uncertified wood stoves; and 3) implementation of strategies to reduce fine particle emissions from cars, trucks, ships, and industry.

Carbon Monoxide (CO)

CO is an odorless, colorless gas that reduces the oxygen-carrying capability of blood. The majority of CO comes from vehicle exhaust, and the highest levels typically occur in winter at busy traffic intersections. In spite of substantial increases in vehicle travel, automobile emissions of CO have been reduced in urban areas of Puget Sound as the result of federal emission standards for new vehicles and the Washington State vehicle inspection and maintenance (I&M) program.

There have been no measured violations of the CO ambient air quality standard within Washington State for many years. CO levels are well below federal standards and are no longer considered a pollutant of concern in the Puget Sound area. This region was designated as "attainment" status in 1996 and has not exceeded the CO standard since 1990.

There are no monitoring stations measuring CO near the project vicinity; the closest station is located on Beacon Hill and is representative of typical urban CO levels. Based on measured data in the greater Puget Sound, Swedish Cherry Hill is located in an area considered in attainment for CO. Based on monitoring data, emissions inventory projections, and continued improvements in vehicle technology, it is highly unlikely that measured CO levels will exceed the EPA standard in the future (PSCAA 2013a). The maximum 8-hour CO concentration in 2010 in the Puget Sound area was 1.1 parts per million (ppm), which was well below the EPA standard of 9 ppm (PSCAA 2012).

Ozone

Ozone is a major component of smog. Harmful ozone near the earth's surface results from a reaction of sunlight with nitrogen oxides (NO_x) and VOCs, which are known as ozone precursors. Ground-level ozone is primarily a product of regional vehicular traffic and industrial sources. Ozone is a summertime air pollution problem in the Puget Sound area, and the period of concern is May through September. The highest concentrations of ozone are measured in the communities downwind of these large urban areas. The Puget Sound area has not exceeded the EPA ozone standard since 1992, and was designated as attainment status for ozone in 1996 (PSCAA 2013). Ozone remains a pollutant of concern in the Puget Sound area, because the EPA might tighten the federal ozone standard. If the ozone standard were lowered, then it is likely that portions of the Puget Sound area would be determined to be in violation of the new standard.

Greenhouse Gases

The major GHGs are ozone, carbon dioxide (CO_2), methane, nitrous oxide, and hydrofluorocarbons. The major source of GHGs in the Puget Sound region is transportation, which includes cars, trucks, buses, aircraft, construction equipment, recreational vehicles, boats and ferries. GHGs contribute to climate change in the Pacific Northwest. The PSCAA does not monitor GHG levels in the ambient air in the Seattle area.

Seattle GHG emissions are produced from three main sources: transportation (62 percent), buildings (21 percent), and industry (17 percent). Transportation GHG emissions are the largest source and remain Seattle's biggest challenge. The City of Seattle's Climate Action Plan includes the goal of being carbon neutral. The Climate Action Plan includes a wide range of GHG-reduction strategies. The Environment Element of the Seattle Comprehensive Plan sets a goal to "Reduce emissions of carbon dioxide and other climate- changing greenhouse gases in Seattle by 30 percent from 1990 levels by 2020, and become carbon neutral by 2050" (Goal EG7). The Comprehensive Plan sets out three means of reducing GHG emissions: (1) Transportation; a reduction in vehicle miles traveled for passenger cars, and a reduction in GHG emissions per mile for passenger cars and freight; (2) Energy Use: a reduction in energy use for both residential and commercial buildings; and (3) Waste: an increased diversion rate from solid waste landfills and a reduction in methane emissions commitment per ton of waste disposed.

The City of Seattle Office of Sustainability and Environment (OSE) conducts a community inventory of GHG emissions every 3 years, and the most recent available inventory is from 2008. The community inventory measures the entire City's GHGs emissions. The OSE's community GHG inventory is the primary method of gauging progress toward Seattle's near-term and long-term goals of reducing climate pollution (City of Seattle 2008).

In recognition of the impacts from GHG emissions, on December 3, 2007, the Seattle City Council adopted Ordinance 122574 which requires City departments that perform environmental review under the State Environmental Policy Act to evaluate GHG emissions when reviewing permit applications for development. DPD requires the submittal of a Greenhouse Gas Emissions Worksheet (currently Version 1.7 dated December 26, 2007) as part of State environmental Policy Act (SEPA) review. The SEPA Greenhouse Gas Emissions Worksheet estimates all GHG emissions that will be created over the lifespan of a project. This includes emissions associated with obtaining construction materials, fuel used during construction, energy consumed during a buildings operation, and transportation by building occupants.

3.1.3 Impacts

Construction impacts are discussed in Section 3.9 of this DEIS. The following is a discussion of the impacts of operation.

3.1.3.1 Alternative 1 – No Build

Air Pollutants

Backup emergency source of power is supplied by diesel generators. These generators run for approximately 45 minutes per month for testing and maintenance as an average of 48 hours per month for outages.

Long-term sources of air pollutants in the Swedish Cherry Hill area are primarily from vehicular traffic. Increased traffic volumes at Swedish Cherry Hill would not occur under the No Build Alternative. Vehicular emissions of air pollutants in the area would continue from background traffic. Background traffic would continue to grow, which would proportionately increase vehicular emissions. Any increase in vehicular emissions under No Build would likely be offset by emission reductions from future improvements in vehicle technology.

Greenhouse Gas Emissions

As noted above, DPD requires the submission of a Greenhouse Gas Emissions Worksheet (Version 1.7 December 26, 2007) to provide an estimate of potential GHG emissions from development projects as part of SEPA review. That potential is expressed as equivalent CO_2 emissions, or $MTCO_2e$ (Metric Tons of equivalent carbon dioxide). Using the worksheet, total emissions are estimated at 2,25,416 $MTCO_2e$ for the No Build Alternative. These figures represent an estimate of GHG emissions created over the lifespan of the project, including those associated with manufacturing construction materials, fuel used during construction, energy consumed during facility operation, and transportation by employees. The GHG worksheet uses a standard project lifespan of 62.5 years. GHG emission worksheets for both the existing campus and Proposed Alternatives are included in Appendix A. At this point, the MIMP proposal is a non-project-specific proposal; Swedish has proposed a total area, and areas by category of use (e.g., hospital, clinic, or research). No buildings have been designed, no construction materials identified, so it is not possible to refine the GHG emission estimates beyond those categories and formulas already included in the worksheet. If the MIMP is approved, it is anticipated that with each subsequent MUP application there will be an accompanying SEPA review and project-specific GHG emission worksheet which will allow the refinement of overall GHG emission estimates.

3.1.3.2 Alternatives 8, 9, and 10

Air Pollutants

The air quality review for operational traffic considered the issue of potential CO emissions near congested intersections as well as from various parking structures that would be developed as part of the proposed plan. The location of parking garages and the allocation of future numbers of parking spaces has not been completed. GHG worksheets will be completed for specific projects as they are designed and submitted to DPD for review with future MUP applications.

As shown in Table 3.1-1, model-calculated CO concentrations near the intersection of 6th Avenue and James Street with traffic related to the Yesler Terrace Redevelopment Project were less than the levels allowed by the 1-hour and 8-hour ambient air quality standards for CO (35 ppm and 9 ppm, respectively), for both the near-term and the future analysis scenarios.

Because the projected volumes and delays at the intersection of 6th Avenue at James Street with Swedish Cherry Hill project traffic are lower than those assumed for the Yesler Terrace project, worst-case CO concentrations would be less than those predicted for the James Street intersection.

Table 3.1-1
Summary Traffic Conditions at Worst-Case Intersection

Intersection	2010 PM Peak-Hour		2030 PM Peak-Hour	
	Volume	Per Vehicle Delay	Volume	Per Vehicle Delay
6th Avenue at James Street (Yesler Terrace Project)	3,660	83 seconds	4,215	136 seconds
	Cumulative delay = 84 hours		Cumulative delay = 159 hours	
Modeled-Calculated 1-hour CO Concentrations	8.0 ppm		7.8 ppm	
8-hour CO	6.8 ppm		6.7 ppm	
Swedish Cherry Hill	**2023 PM Peak-Hour**		**2040 PM Peak-Hour**	
6th Avenue at James Street (Swedish Cherry Hill MIMP)	3,636	40 seconds	3,896	49 seconds
	Cumulative delay = 40 hours		Cumulative delay = 53 hours	

Source: Swedish Cherry Hill Traffic Data, Transpo Group, 2014; Yesler Terrace Redevelopment Project EIS, 2010

Operation of an expanded hospital campus itself would not be a point source of air pollutants except perhaps for the use of diesel generators for backup emergency power supply, and that use would be minimal. Operational impacts under the Build Alternatives (Alternatives 8, 9, or 10) would be attributable primarily to vehicular traffic from patients, staff, ambulances and delivery vehicles. Vehicular traffic would primarily emit CO, precursors of ozone, particulate matter, and GHGs. Highest emissions would likely occur during a weekday peak-hour with additional traffic from patients and staff arriving at the hospital. The MIMP would include a TMP designed to reduce volumes and congestion, and to encourage transit use, which would reduce traffic emissions of air pollutants (see Section 3.7 Transportation and Appendix C).

The Build Alternatives would affect local emissions of CO from traffic in the immediate vicinity, particularly at congested traffic signals along Broadway Avenue. CO levels measured in Seattle have been well below the health-based EPA standards, and it is highly unlikely that measured CO levels would exceed the federal standard in the future (PSCAA 2013). While additional development at the Swedish Cherry Hill campus would increase local emissions of CO at area intersections, CO levels are anticipated to be below the EPA air quality standards. Future CO levels in the Cherry Hill neighborhood are anticipated decrease because of continued improvements in vehicle technology.

Additional traffic could also affect regional emissions of the precursors of ozone (volatile organic compounds [VOC] and NO_x). Ozone is a summertime air pollution problem in the Puget Sound area, and the period of concern is May through September (PSCAA 2013). Additional traffic would increase ozone during the period of May through September; however, the Build Alternatives would not likely contribute to ozone concentrations that would exceed EPA air quality standards.

Diesel-powered vehicles are a source of fine particles, diesel exhaust, and air toxics (PM2.5). The relative proportion of diesel vehicles for diesel or transit would be relatively small.

Additional traffic volumes under Alternatives 8, 9, or 10 are not anticipated to cause any exceedances of air quality standards at nearby monitoring sites. Measured concentrations of air pollutants have not recently exceeded EPA air quality standards at the closest monitoring station at Beacon Hill. This monitoring station has not measured any recent violations of air quality standards related to traffic from larger medical or educational developments such as Seattle University or Harborview, and future traffic from development at Swedish Cherry Hill would be anticipated to be similar. Project development is not anticipated to result in exceedances of air quality standards at the Beacon Hill monitoring station.

Greenhouse Gas Emissions

Alternative 8 would include approximately 3.1 million gross SF of building space; Alternative 9 or 10 would include approximately 2.75 million gross SF. DPD has adopted a GHG emissions worksheet to provide an estimate of potential GHG emissions from development projects. That potential is expressed as equivalent CO_2 emissions, or $MTCO_2e$.

Using the worksheet, total emissions for Alternative 8 are estimated at 5,999,123 $MTCO_2e$, based on a proposed 3.1 million gross SF. Total emissions for Alternative 9 or 10 are estimated at 5,394,477 MTCO2e, based on a proposed 2.75 million gross SF. Table 3.1-2 provides an estimate of both lifespan emissions and annual emissions.

Table 3.1-2
Estimated Greenhouse Gas Emissions ($MTCO_2E$[1])

	Gross SF	Lifespan Emissions[1]	Annual Emissions	Percentage of Annual City-wide GHG Emissions
Alternative 8	3.1 million	5,999,123	95,985	1.4%
Alternative 9 or 10	2.75 million	5,394,477	86,312	1.3%
City of Seattle City-wide Emissions[2]			6,770,000	

Notes: (1) Lifespan Emissions include construction, electricity during operation, and vehicular traffic during operation. GHG emissions are estimated as MTCO2e (metric tons CO_2 equivalent)
(2) City-wide GHG emissions from all sources, based on 2008 community inventory (City of Seattle)

The estimated emissions presented in Table 3.1-2 represent an estimate of GHG emissions created over the lifespan of the project based on the currently projected total space needs; including those associated with manufacturing construction materials, fuel used during construction, energy consumed during facility operation, and transportation by employees. The MIMP proposal is for a non-project action (there is no specific project). With each specific development project, a new GHG calculation will be performed based on an actual building design.

[1] $MTCO_2E$ = Metric Tons Carbon Dioxide Equivalent

The GHG worksheet uses a standard project lifespan of 62.5 years. GHG emission worksheets for both the existing campus and Proposed Alternatives are included in Appendix A.

3.1.4 Mitigation Measures

Mitigation measures for construction impacts to air quality are discussed in Section 3.9 Construction. The following apply to operational impacts to air quality and GHG emissions.

3.1.4.1 Air Quality

No significant air quality impacts have been identified and no mitigation measures are proposed. Building future facilities that are resource-efficient (i.e., participate in the Seattle 2030 District challenge) would help reduce emissions and improve air quality in this area.

3.1.4.2 Greenhouse Gas Emissions

A variety of mitigation measures are available to reduce energy use, increase sustainable building design, and reduce GHG emissions. As the Master Plan is further developed, it is recommended that Swedish consider the following potential mitigation measures that could be implemented during future design and construction of buildings on campus:

- **Natural Drainage and Green Roofs** – Green roofs can provide additional open space, opportunities for urban agriculture, and decreased energy demands by reducing the cooling load for the building. As development planning occurs in conjunction with specific buildings on-campus, possible incorporation of green roofs associated with that building should be considered. Green Stormwater Infrastructure (GSI) would be developed for flow control and water quality treatment to the maximum extent feasible.
- **Tree Protection** – The City has aggressive urban forest goals in order to help restore tree cover which has been lost due to development. Trees can provide stormwater management, habitat value, noise buffering, air purification, carbon sequestration, and mitigation of the urban heat island effect. Trees also have a positive effect on property values and neighborhood quality. Protection of existing trees, as feasible, and careful attention to new tree planting could help meet the Seattle Comprehensive Urban Forest Management Plan Goals for multi-family residential and commercial development by achieving 15 to 20 percent overall tree canopy within 30 years.
- **Native Plants** – Native plants are adapted to the local climate and do not depend upon irrigation after plant establishment for ultimate survival. Landscaping with native plants, beyond that required by code, could be planted to reduce water demand and integrate with the local ecosystem. Swedish should consider a goal of creating green spaces that use native, non-invasive plants, to reduce water and fertilizer consumption, and align with good urban landscaping design practices.
- **Waste Management and Deconstruction** – When existing buildings are demolished there are often opportunities to reduce the amount of waste being sent to the landfill with sustainable waste management strategies. In the Seattle area, standard practice for building construction and demolition results in fairly high recycling rates of over 50 to 60 percent. However, these rates can be increased by implementing aggressive

demolition recycling. Such efforts can require considerable additional effort on the part of the contractor. Some of the options that could mitigate waste generated by redevelopment on the Swedish Cherry Hill campus include onsite source separated recycling, potential reuse of demolition materials onsite, deconstruction of existing buildings, and salvage and reuse of building components.

- **Building Design** – Building design on the Swedish Cherry Hill campus could integrate a wide variety of green building features. Green building encompasses energy and water conservation, waste reduction, and good indoor environmental quality. Tools and standards that are used to measure green building performance could be used. Some options include: Built Green, LEED, and the Evergreen Sustainable Development Criteria. Custom green building guidelines could also be developed to guide building design and construction. Some of the specific building design strategies that could be considered include solar panels for electricity generation or domestic solar hot water; energy star rated appliances; water conserving fixtures beyond code; low toxic materials, finishes, and flooring; energy and water sub-metering for individual units; high-efficiency fixtures such as dual flush toilets; toilet flushing and irrigation supplied by recaptured wastewater or rainwater; dual plumbing systems for all new buildings to accommodate water reuse; and wind-generated alternative energy.
- **Transportation** – Transportation plays a major role in climate change and Swedish plans to address this concern through several initiatives including contributing to a vibrant pedestrian-oriented development, and encouraging fewer personal vehicle trips. A TMP is included in the MIMP, which identifies strategies to reduce single-occupancy vehicle (SOV) travel. Any transportation mitigation measures included in the TMP to reduce traffic volumes and congestion correspondingly could reduce traffic emissions of air pollutants (see Section 3.7 Transportation). Such measures could include encouraging transit use and carpooling, bicycle parking and routes, access improvements, traffic signal optimization, intersection realignments, and improved pedestrian facilities. Continued focus on and implementation of these measures throughout the MIMP development process would contribute to reducing the GHG emissions estimated in Table 3.1-2 for Alternatives 8, 9, or 10.

3.1.5 Secondary and Cumulative Impacts

Cumulative impacts on air quality would be related to short-term increases in construction activity and to long-term increases in traffic volumes and congestion. Cumulative construction impacts could occur from development under any of the three Build Alternatives (Alternatives 8, 9 or 10) and other development projects being constructed at the same time in the Cherry Hill area. Because construction emissions under the Build Alternatives and other development projects would be temporary in duration and comply with PSCAA requirements, short-term cumulative impacts during construction would be low.

Long-term cumulative increases in traffic volumes and congestion would result from the combined traffic volumes under the Build Alternatives and from future growth in traffic resulting from other future projects in the area.

Secondary impacts on air quality could result from economic growth and changes in land uses induced by the redeveloped Swedish Cherry Hill campus. Any growth induced by the new MIMP would incrementally increase traffic volumes and associated traffic air pollutants. Although the location and specific amount of growth is unknown, incremental increases in traffic emissions likely would be small.

3.1.6 Significant Unavoidable Adverse Impacts

No significant unavoidable adverse impacts to air quality from the construction or operation of any of the three Build Alternatives (Alternatives 8, 9, or 10) are expected.

3.2 Noise

This section describes the existing noise conditions on the Swedish Cherry Hill campus and in the site vicinity. Potential changes to noise levels from redevelopment under the EIS alternatives are assessed. Please see Appendix B Ambient Noise Assessment (March 20, 2014) for additional information.

3.2.1 Introduction

3.2.1.1 SEPA Policy

The SMC contains provisions that describe the scope of the SEPA analysis for the noise element. Relevant policies from SMC 25.05.675 are provided below:

L.2 Noise Policies

- *a. It is the City's policy to minimize or prevent adverse noise impacts resulting from new development or uses.*
- *b. The decision maker may require, as part of the environmental review of a project, an assessment of noise impacts likely to result from the project.*
- *c. Based in part on such assessments, and in consultation with appropriate agencies with expertise, the decision maker shall assess the extent of adverse impacts and the need for mitigation.*
- *d. Subject to the Overview Policy set forth in SMC Section 25.05.665, the decision maker may condition or deny a proposal to mitigate its adverse noise impacts.*
- *e. Mitigating measures may include, but are not limited to:*
    - *Use of an alternative technology*
    - *Reduction in the size or scope of a project or operation*
    - *Limits on the time and/or duration of operation*
    - *Requiring buffering, landscaping, or other techniques to reduce noise impacts offsite*

3.2.1.2 Noise Characteristics

Noise can be defined generally as unwanted sound. Prolonged exposure to very high sounds can cause hearing loss or impairment, although environmental noise in urban areas rarely approaches sound levels that could cause hearing damage. The primary effect of environmental noise is annoyance that interferes with sleep, thought, and conversation.

Noise is expressed on a logarithmic scale in units of decibels (dB). Noise is composed of many frequencies, and the various frequencies commonly are measured as A-weighted decibels (dBA), which approximate how an average person hears a sound. Under the logarithmic decibel scale, a doubling of the number of noise sources (e.g., the number of vehicles on a roadway) increases noise levels by 3 dBA. For example, a noise source emitting a noise level of 60 dBA added to another noise source of 60 dBA results in a combined noise level of 63 dBA, not 120 dBA.

The common descriptor for measuring and predicting environmental noise is the equivalent sound level (L_{eq}). The L_{eq} can be considered a measure of the average sound level for a specific period of time. The maximum sound level during that period of time is called the L_{max}. Unlike the L_{eq} that is an average over a period of time, L_{max} is a measurement of a single event of short duration during that time period. Minimum sound level, L_{min}, is the lowest sound level for a given sound source, event, or time period and is usually the relatively steady level of sound that is present in the absence of any noise events. The L_{max} and L_{eq} are used in local noise ordinances to evaluate the noise limits at receiving properties.

Loudness, compared to physical sound measurement, refers to how people judge a sound and varies from person-to-person. A listener often judges an increase of 5 dBA to be readily noticeable and an increase of 10 dBA to be twice as loud. A change of sound level of 2 dBA or lower generally would not be perceptible. Table 3.2-1 provides sound levels by common noise sources.

Table 3.2-1
Sound Levels by Common Noise Sources

Thresholds/ Noise Sources	Sound Level (dBA)	Subjective Evaluations	Possible Effects on Humans [1]
Human Threshold of Pain **Carrier jet takeoff at 50 feet**	140	Deafening	
Siren at 100 feet **Loud rock band**	130		
Jet takeoff at 200 feet **Auto horn at 3 feet**	120		Continuous exposure to levels above 70 dBA can cause hearing loss in majority of population
Chain saw **Noisy snowmobile**	110	Very Loud	
Lawn mower at 3 feet **Noisy motorcycle at 50 feet**	100		
Heavy truck at 50 feet	90		
Pneumatic drill at 50 feet **Busy urban street, daytime**	80	Loud	
Normal automobile at 50 mph **Vacuum cleaner at 3 feet**	70		
Air conditioning unit at 20 feet **Conversation at 3 feet**	60	Moderate	Speech interference
Quiet residential area **Light auto traffic at 100 feet**	50		Sleep interference
Library **Quiet home**	40	Faint	
Soft whisper at 15 feet	30		
Slight rustling of leaves	20		
Broadcasting Studio	10	Very Faint	
Threshold of Human Hearing	0		

Source: EPA. [1]The physiological responses overlap among categories and depend on the sensitivity of the noise receiver.

3.2.1.3 Noise Regulations

Noise regulations provide a basis for evaluating potential noise impacts and mitigation measures during construction of future development for Swedish Cherry Hill. The City has noise regulations in Chapter 25.08 of the SMC (25.08.410, .420 and .425). The City noise limits are based on the land use districts or zones of both the noise source and receiver, and on the time of day. The City noise regulations are summarized in Table 3.2-2. Lands surrounding Swedish Cherry Hill are zoned residential.

Table 3.2-2
City of Seattle Exterior Sound Level Limits

	District of Receiving Property			
District of Sound Source	**Residential Day (L_{eq} dBA)**	**Residential Night (L_{eq} dBA)**	**Commercial (L_{eq} dBA)**	**Industrial (L_{eq} dBA)**
Residential	55	45	57	60
Commercial	57	47	60	65
Industrial	60	50	65	70

Notes:

1) The exterior sound level limits are based on the L_{eq} during the measurement interval, using a minimum measurement interval of 1-minute for a constant sound source, or a 1-hour measurement for a non-continuous sound source.
2) During a measurement interval, L_{max} may exceed the exterior sound level limits by no more than 15 dBA.
3) Sound level limits are reduced by 10 dBA for residential receiving property between 10:00 PM and 7 AM during weekdays and between 10:00 PM and 9:00 AM on weekends and legal holidays (SMC 25.08).

The City noise regulations have specific provisions for construction noise in Section 25.08.425 of the SMC. Construction activities in Seattle generally have higher noise limits between 7:00 AM and 10:00 PM on weekdays, and between 9:00 AM and 10:00 PM on weekends and holidays; but must meet the lower noise limits shown in Table 3.2-2 during nighttime hours. The noise limits in Table 3.2-2 may be exceeded in daytime by 25 dBA for large construction equipment such as dozers and drills, by 20 dBA for portable construction equipment such as chainsaws and powered hand tools, and by 15 dBA for maintenance equipment such as lawn mowers.

Table 3.2-3 provides a summary of Seattle's daytime construction noise limits. Construction noise limits apply at 50 feet or a real property line of another person, whichever is greater. Construction noise is limited to the higher levels listed in the table during "daytime" hours only, which vary based on underlying zoning. The surrounding zoning is single-family and Lowrise. Except as noted below for impact equipment, within single-family and Lowrise zones, the levels of construction noise shown in Table 3.2-3 are allowed between 7:00 AM and 7:00 PM on weekdays and between 9:00 AM and 7:00 PM on weekends and legal holidays. These limits effectively prohibit construction at "night" except in special cases. Noise from construction impact equipment such as jackhammers and pile drivers during any 1-hour period may not exceed an L_{eq} of 90 dBA continuously, 93 dBA for 30 minutes, 96 dBA for 15 minutes, and 99 dBA for 7-1/2 minutes. The higher noise limits for impact equipment may occur between 8:00 AM and 5:00 PM on weekdays, and 9:00 AM and 5:00 PM on weekends and holidays.

Table 3.2-3
City of Seattle Daytime Construction Sound Level Limits

	District of Receiving Property		
District of Sound Source	**Residential Day (L_{eq} dBA)**	**Commercial (L_{eq} dBA)**	**Industrial (L_{eq} dBA)**
Onsite sources such as dozers, loaders, power shovels, cranes, derricks, graders, off-highway trucks, ditchers, and pneumatic equipment (maximum +25 dBA (25.08.425.A.1)			
Residential	80	82	85
Commercial	82	85	90
Industrial	85	90	95
Portable equipment used in temporary locations in support of construction such as chain saws, log chippers, and powered hand tools (maximum +20 dBA) (25,08.425.A.2)			
Residential	75	77	80
Commercial	77	80	85
Industrial	80	85	0-

3.2.2 Affected Environment

3.2.2.1 Existing Sound Levels

The existing Swedish Cherry Hill campus is typical of a semi-urban residential setting. Noise on and around the campus is driven by automobile traffic on the nearby surface roads, aircraft overflights, pedestrian activity and other typical urban activities.

The existing aural environment at the edge of the Swedish Cherry Hill campus was characterized using multi-day sound level measurements at seven locations. These measurements were taken to construct a model of existing noise levels. The March 20, 2014, Ambient Noise Assessment is included as Appendix B to this DEIS.

A summary of each location and a map showing where each measurement was taken is given in Figure 3.2-1 below.

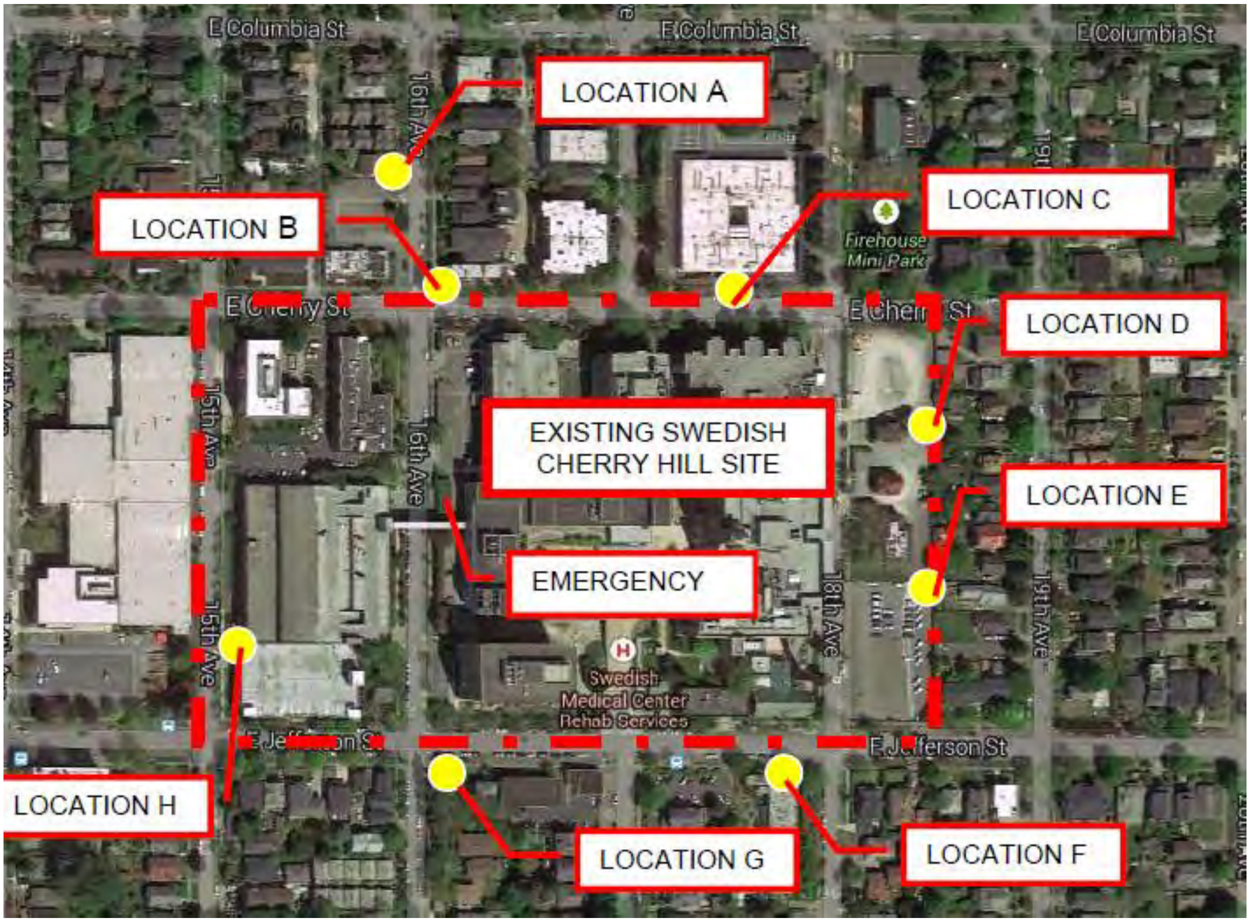


Figure 3.2-1

Existing Ambient Sound Level Measurement Locations

Results of the long-term measurements are shown in Figure 6 through Figure 13 in Appendix B as plots of the hourly L_{eq}, L_{min}, and L_{max}. The weather conditions for a portion of these measurement intervals included low levels of wind and moderate precipitation. The weather during the time of the measurements was not severe enough to significantly impact the measurements. Please note that the noise levels from automobile traffic are typically slightly higher during wet conditions. Also, wind, humidity, and temperature have a significant impact on the sound propagation and the noise levels (only if the sound receiver is a long distance away from the noise source). If the distance is only few hundred feet, the effects are not significant.

Table 3.2-4 summarizes the ranges of existing sound levels at the noise monitoring locations based on the results of the long-term measurements described above. The sound levels shown in Table 3.2-4 are considered to be a summary of the existing ambient sound levels.

Table 3.2-4
Summary of Existing Sound Levels, L_{eq}, dBA

Measurement Summary		Noise Monitoring A	B	C	D	E	F	G	H
Measured L_{eq}	Day	54-67	63-71	61-70	54-73	51-78	54-74	58-69	55-73
	Night	47-59	62-71	54-67	47-58	40-59	48-60	54-62	51-61
Seattle Noise Code	Receiver Descrip	Resident	Resident	Commrc	Resident	Resident	Resident	Resident	Commrc
	Day Limit	57	57	60	57	57	57	57	60
	Night Limit	47	47		47	47	47	47	

Table 3.2-5
Summary of Existing Maximum Sound Levels, L_{max}, dBA

Measurement Summary		Noise Monitoring A	B	C	D	E	F	G	H
Measured L_{max}	Day	68-89	68-93	76-100	67-97	67-104	69-98	71-100	69-90
	Night	61-83	69-89	75-91	57-80	53-75	66-85	69-83	66-83
Seattle Noise Code	Receiver Descrip	Resident	Resident	Commrc	Resident	Resident	Resident	Resident	Commrc
	Day Limit	72	72	75	72	72	72	72	75
	Night Limit	62	62		62	62	62	62	

The measured existing sound levels indicate that sound levels in the vicinity of the Swedish Cherry Hill campus are relatively high, often not dropping below code limits during daytime hours and occasionally remaining above nighttime noise limits as well. This is attributable to traffic on E Cherry and E Jefferson Streets; noise monitors located along these streets exhibited consistently higher hourly L_{eq} levels than those located to the east and west of the campus. Noise levels along the eastern border of the campus are significantly lower, and are consistent with the residential neighborhood that the campus abuts in that direction. At Location A, noise levels fall at or above code limits. Levels at this location do not drop off as for Locations D and E to the east.

These measurements document the levels of noise from existing traffic patterns, airplane flyovers, pedestrian activity, etc., and indicate that most adjacent properties are affected by relatively high levels of noise from these typical urban sources. Based on urban growth patterns in Seattle, it is expected that the measured ambient noise levels would remain relatively constant or to slightly increase in the future.

3.2.3 Impacts

Construction impacts are discussed in Section 3.9. The following is a discussion of the potential noise impacts of operation.

3.2.3.1 Alternative 1 – No Build

The No Build Alternative would not involve expansion of the MIO boundary. There would be some remodeling and/or replacement and could be changes to onsite pedestrian and vehicular circulation and parking. Noise levels would be anticipated to remain much the same as they exist today.

3.2.3.2 Alternatives 8, 9, and 10

It is expected that, as new buildings are developed onsite, noise levels due to heating, ventilation, and air conditioning (HVAC) systems would remain approximately constant or be reduced due to the advent of new, quieter system technologies. An analysis of each new building's HVAC system will be performed to confirm compliance with the City Noise Ordinance. These analyses will be submitted as part of future MUP applications and reviewed by DPD's Noise Abatement section to ensure compliance with the Noise Ordinance.

Depending on the orientation of these buildings, and the typical access route to them, it is feasible to expect that shifting traffic patterns may also affect ambient background noise levels. An analysis of anticipated changes in traffic patterns may be performed for these projects once any changes to traffic counts are determined.

Noise levels from increased development at the Swedish Cherry Hill campus would increase due to increased traffic volumes, noise from new parking locations, noise from building mechanical systems, noise from loading docks, noise from solid waste and recycling collection or compaction equipment, noise from emergency vehicles, and noise from maintenance activities. All construction and operational noise activities must meet the City of Seattle Noise Objective Standards. These Standards exempt noise from emergency vehicles.

All three of the Build Alternatives would include increases in the number of onsite parking spaces. Current plans are to place that new parking in underground garages to be developed with each new future building. Noise could result from new mechanical ventilation systems used to ventilate the underground parking; from vehicles entering and exiting the garages, and from garage exit warning systems. Any fans installed for ventilation would be required to meet Seattle noise limits.

The buildings to be developed under the new MIMP have not been designed. In addition to underground parking, there may be small amounts of surface parking to meet the requirements for Americans with Disabilities Act (ADA) access. Noise from those surface lots is anticipated to be similar or less than noise from existing surface lots that exist today at Swedish Cherry Hill.

New buildings would include HVAC systems and some would likely require supplemental mechanical systems to provide such things as refrigeration, hot water, and supplemental ventilation. Buildings would not be designed until after the MIMP is approved and no project-specific details are available at this time regarding the types and specific locations of such equipment; therefore, no quantitative analysis is possible at this time. Swedish will have an acoustic consultant evaluate mechanical equipment noise potential prior to submittal for permit approval to ensure that sound levels would be below applicable limits.

Noise from HVAC and mechanical systems would be subject to the Seattle noise limits and DPD review, and compliance with these limits would be considered during design and permitting of future development. Architectural design could incorporate exterior mechanical equipment mitigation into structures, and a detailed review would be performed to ensure compliance with the City daytime and nighttime noise limits.

New loading docks and solid waste/recycling collection, compaction, and hauling locations would generate truck visits, truck off-loading, and waste dumping activities that would generate noise. Depending on the locations of these facilities in relation to sensitive offsite uses and the timing of the activities, these components of the Swedish Cherry Hill MIMP could result in on- and offsite noise impacts. Operational noise from these facilities would be subject to the City noise limits for offsite noise receivers.

Sound emissions from maintenance activities include noise from leaf blowers, power washers, and other mechanical equipment. While newer equipment can produce lower sound levels, if equipment is not properly maintained or used in early morning or evening hours when ambient noise levels are lower, noise could be heard by neighboring residents. These noises are regulated and are limited to occurring between 7:00 AM and 7:00 PM on weekdays, and between 9:00 AM and 7:00 PM on weekends and holidays.

Noise from emergency vehicle sirens is exempt from the City noise limits. Noise from sirens could cause relatively high, but short-term sound levels at noise-sensitive receivers near the emergency department access routes.

Swedish Cherry Hill is required to have emergency generators to use in the event of a power failure. The noise from testing or operating an emergency generator is exempt from Seattle noise limits. Emergency generators can be located inside garages or outside buildings, but need to be located close enough to provide electrical power supply where is it needed. Because of their infrequent use, emergency generators are usually tested approximately once a month for a short period of time. As noted above, the noise resulting from the testing is exempt from the Seattle noise limits, however DPD encourages that the testing be conducted during daytime periods when there is the least potential to cause noise impacts. Generators located within underground garages would not likely create a noise impact to offsite receivers. Generators located outside of buildings can be equipped with noise control mufflers or partial enclosures to limit noise impacts.

3.2.4 Mitigation Measures

Mitigation measures for construction impacts are described in Section 3.9 Construction. The following mitigation measures are proposed to minimize sound impacts from operation and could be implemented to reduce the potential for noise impacts from operations. Swedish will have an acoustic consultant evaluate mechanical equipment noise potential prior to submittal for permit approval to ensure that sound levels would be below applicable limits.

- To minimize noise impacts associated with HVAC and air-handling equipment, equipment could be selected and positioned to maximize noise reduction to the extent possible. When conducting analyses to ensure compliance with the Seattle noise limits, facility designers would assess sound levels as they relate to the nearby residential uses.

- Exhaust vents for all underground parking facilities could be located and controlled to reduce noise at both on- and offsite residential locations and to ensure compliance with the City noise limits. Mechanical equipment operating at night has a 45 dBA limit at the adjacent residential zone.
- Loading docks could be designed and sited with consideration of nearby sensitive receivers and to ensure that noise from truck traffic to and from the docks and from loading activities would comply with the City noise limits.
- Depending on the location of loading docks relative to residences, restrictions could be implemented to limit noisy deliveries to daytime hours.
- Solid waste, compacting, composting, and recycling collection could (to the extent feasible) be designed to minimize or eliminate line-of-sight from collection/pickup points to nearby sensitive receivers.
- Solid waste, compacting, composting, and recycling collection times could be scheduled for daytime hours.
- Alternatives to mechanical maintenance equipment (e.g., leaf blowers, power washers, etc.) should be explored (such as sweeping or using a hose to wash driveways where feasible) or equipment that produces lower sound levels used.
- If mechanical maintenance equipment is needed for a specific task (e.g., power washing prior to painting), it should be scheduled during the weekday during normal business hours (9:00 AM to 5:00 PM) to coincide with higher ambient noise conditions.
- To minimize the potential for noise impacts resulting from regular testing of emergency generators, the location of such equipment should be considered during building design relative to residences, and equipped with noise controls to minimize noise intrusion.

3.2.5 Secondary and Cumulative Impacts

Development under the new MIMP could result in cumulative increases in environmental noise levels in the site vicinity, especially when added to noise levels from the adjacent Seattle University campus. Construction and operation noise from Swedish Cherry Hill would comply with the City's noise limits, but would add to the general noise levels in the neighborhood coming from vehicles and other mechanical equipment. This could slightly raise neighborhood noise levels throughout the day; however, the overall noise level change would be expected to be minimal.

Secondary impacts on noise levels could result from economic growth and changes in land uses induced by the redeveloped Swedish Cherry hill campus. Any growth induced by the new MIMP would incrementally increase traffic volumes and associated noise from traffic. Incremental increases in traffic noise likely would be small.

3.2.6 Significant Unavoidable Adverse Impacts

No significant unavoidable adverse noise impacts from the construction or operation of any of the three Build Alternatives (Alternatives 8, 9, or 10) are expected.

3.3 Land Use

This section of the DEIS describes the existing land use patterns on the Swedish Cherry Hill campus and in the site vicinity. Included is an analysis of the potential land use impacts that could result from the proposed new MIMP. The analysis is based on the information provided in the Swedish Medical Center Draft Major Institution Master Plan, dated May 2014, information contained in the minutes of the CAC meetings, and the Final EIS Scoping document. A discussion of the project's relationship to land use plans, policies, and regulations is also included. Discussion of impacts related to height, bulk, and scale are addressed in Section 3.4 Aesthetics.

3.3.1 Policy Context

The SMC contains specific provisions that describe the scope of the SEPA analysis for the land use element. Relevant policies from SMC 25.05.675 are provided below:

J.2. Land Use Policies

  a. *It is the City's policy to ensure that proposed uses in development projects are reasonably compatible with surrounding uses and are consistent with any applicable, adopted City land use regulations, the goals and policies set forth in Section B of the land use element of the Seattle Comprehensive Plan regarding Land Use Categories, and the shoreline goals and policies set forth in section D-4 of the land use element of the Seattle Comprehensive Plan for the area in which the project is located.*
  b. *Subject to the overview policy set forth in SMC Section 25.05.665, the decisionmaker may condition or deny any project to mitigate adverse land use impacts resulting from a proposed project or to achieve consistency with the applicable City land use regulations, the goals and policies set forth in Section B of the land use element of the Seattle Comprehensive Plan regarding Land Use Categories, the shoreline goals and policies set forth in Section D-4 of the land use element of the Seattle Comprehensive Plan, the procedures and locational criteria for shoreline environment redesignations set forth in SMC Sections 23.60.060 and 23.60.220, respectively, and the environmentally critical areas policies.*

Additionally, following review of the written comments received during the Notice of Application and scoping, oral, and written comments received at the EIS Scoping meeting, and written comment received from the CAC, the following issues identified under land use shall be addressed:

- Comprehensive Plan
  - Section B of the Land Use Element Goals and applicable policies under Education and Employability and Health in the Human Development Element
  - Section C of the Land Use Element Goals, Location Specific Land Use Policies, C-1 Major Institution Goals and Policies

- Neighborhood Plan(s)
- Compatibility with surrounding uses
- Neighborhood connectivity and cohesion
- Street level uses
- Hospital versus office use
- MIO criteria
- Rezone criteria
- Modified development standards
- Decentralization options

3.3.2 Affected Environment

3.3.2.1 Land Use

Hospital Campus

Swedish Cherry Hill is located in the Squire Park neighborhood between E Cherry and E Jefferson Streets. The western boundary of the campus is 15th Avenue. The eastern boundary is mid-block between 18th and 19th Avenues (see Figure 3.3-1).

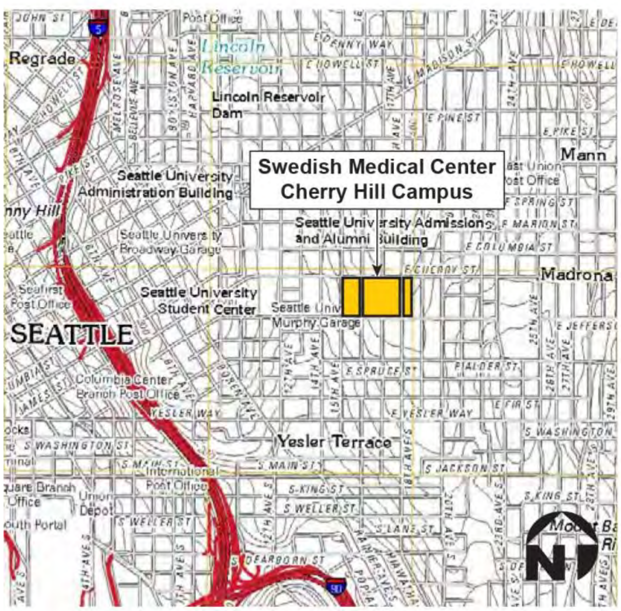
The existing campus encompasses many uses related to the operation of the hospital, other medical service facilities, research centers, offices, some commercial space, and parking. Figure 3.3-1 shows the campus buildings and a general description of their use.

Swedish acquired the hospital campus from the Providence Seattle Medical Center in 2000. In 2002, ownership of certain buildings (40 percent of the campus – primarily outpatient services and physician offices) was transferred from Swedish Medical Center to Sabey. Within the campus, Swedish owns and operates the hospital; whereas, Sabey owns and manages the property associated with research, clinical, and auxiliary uses.

MIMP Decentralization

Considerations in the MIMP process include determining the type and extent of growth that is possible within existing boundaries and/or "decentralization" of the facility uses away from the existing boundary (over 2,500 feet away).

Swedish Medical Center is a non-profit healthcare system comprised of 5 hospitals, 2 ambulatory care centers, and over 108 medical clinics serving patients and communities across the Western Washington region. The five hospitals are located in Seattle (Ballard, Cherry Hill, and First Hill), Edmonds, and Issaquah. The two ambulatory care centers are located in Mill Creek and Redmond. Swedish Cherry Hill is a specialized regional medical center focused on cardiovascular (Swedish Heart and Vascular Institute) and neuroscience (SNI) services (Swedish 2012).



Sources: *Google Earth Pro, USGS 7.5-minute topographic quadrangle, Seattle South, Washington, 2011*

Legend

Swedish Medical Center Cherry Hill Campus

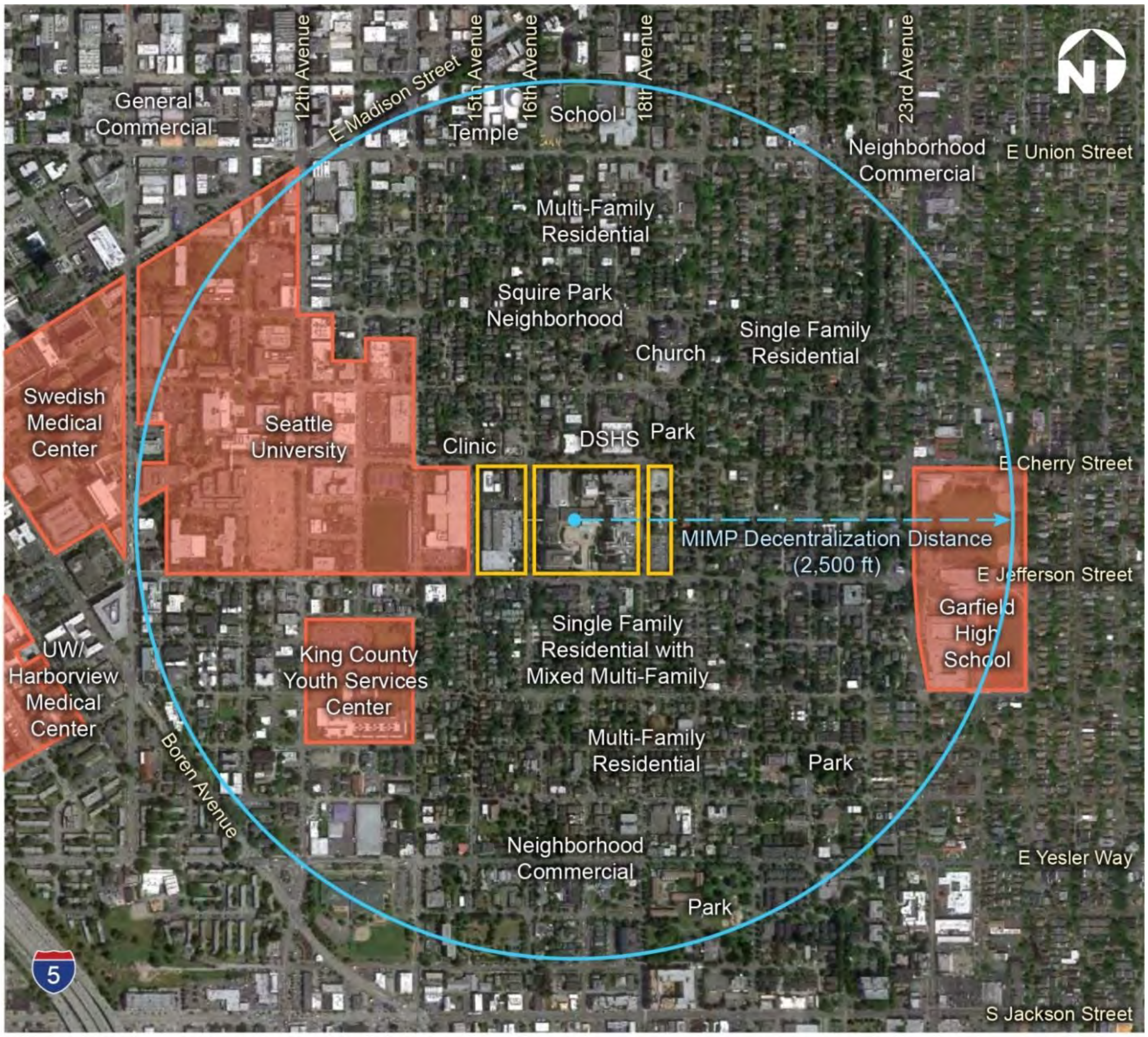
1. NW Kidney Center
2. Seattle Post Acute Care
3. Cherry Hill Professional Building
4. Surgery Addition
5. Center Building
6. West Tower
7. East Tower
8. Surface Parking North
9. Vacant Houses
10. St. Joseph's Baby Corner
11. James Tower
12. Surface Parking South
13. Boiler Building
14. Annex
15. Plaza
16. Jefferson Tower
17. Emergency Entrance
18. Carmack House (vacant)
19. West Parking Garage Expansion
20. West Parking Garage

Figure 3.3-1

Swedish Cherry Hill Campus and Vicinity Map

Surrounding Land Uses

Swedish Cherry Hill campus is located in the Squire Park neighborhood of Seattle. Land use in the area north, east, and west of the campus are predominantly single-family and lowrise multi-family residential with a mix of institutional and commercial uses. The Seattle University campus abuts the Swedish Cherry Hill campus along 15th Avenue. Garfield High School is located approximately 5 blocks to the east. King County Youth Services is located approximately 1-block to the southwest (see Figure 3.3-2).



Source: Google Earth Pro

Legend

Swedish Medical Center Cherry Hill Campus

Figure 3.3-2
Neighborhood Context

Land south across E Jefferson Street is zoned for SF-5000 and contains some multi-family residential buildings, parking, and a small grocery store bordering on the south side of Jefferson Street. Land further to the south is primarily occupied by single-family homes. Land further to the east contains a mix of single-family homes with newer lowrise multifamily buildings (located in LR1) zone indicated in light green on Figure 3.3-4 below) located along 21st and 22nd Avenues. The land immediately north of the Swedish Cherry Hill campus is zoned LR3 (indicated in red on Figure 3.3-4) and LR1, and contains a mix of multi-family residential and offices along E Cherry Street with multi-family structures to the north. The half-block on the east side of 18th Avenue contains a few older buildings that have been converted from residential to office, and some cleared lots used for parking.

3.3.2.2 Land Use Regulations

New or expanding MIOs must be accomplished through the development of a MIMP. The SMC provisions containing the criteria for review and approval of a MIMP are set forth in SMC Chapter 23.69. An application for a MIMP is initiated with a notice of intent to apply for a MIMP filed with the DPD per SMC 23.69.032.A. The final MIMP and final EIS must be reviewed by the DPD, the CAC, and the City's Hearing Examiner; each of whom (in their turn) must make a recommendation on the proposed MIMP before it is considered by the City Council, who makes the decision to approve, approve with conditions, or deny an application for a MIMP.

The criteria for recommendation and approval of a MIMP are set forth in two chapters of the SMC. First, in the portions of SMC 23.69 setting forth the criteria for the DPD Director's Report, it states:

> *…a determination shall be made whether the planned development and changes of the Major Institution are consistent with the purpose and intent of this chapter, and represent a reasonable balance of the public benefits of development and change with the need to maintain livability and vitality of adjacent neighborhoods* (SMC 23.69.032.E.2).

The "purpose and intent" provisions are set forth in SMC 23.69.002.A through M. In applying the criteria quoted above, the Director is required to give "consideration" to a list of factors that are set forth in SMC 23.69.032.E.2, E.4, E.5, and E.6. These are Land Use Code factors, fully set forth in SMC 23.69. There is one instance in which the Director is asked to consider particular policies in the Comprehensive Plan:

> *In the Director's Report, an assessment shall be made of the extent to which the Major Institution, with its proposed development and changes, will address the goals and applicable policies under Education and Employability and Health in the Human Development Element of the Comprehensive Plan* (SMC 23.69.032.E.3).

There are no separate substantive criteria applicable to the Council's decision on the merits (see SMC 23.69.032.J) other than those that are set forth with respect to the Director's Report as referenced above.

Second, in those instances where the boundaries of an MIO district or the heights within such MIO district are being changed, such decisions must be made in accordance with the special rezone criteria applicable to Major Institutions in SMC 23.34.124 and the purpose and intent provisions set forth in SMC 23.69.002.A through M. The special rezone criteria require a statement of public benefits by the applicant, set forth applicable boundaries criteria, set forth applicable height criteria, and request consideration of the general rezone criteria in SMC 23.34.008 as well as consideration of the CAC recommendations. These criteria for boundary and height changes are applicable to the Director, in the recommendation, the Hearing Examiner's findings and recommendation, as well as to the Council in its final decision.

The Comprehensive Plan goals and policies that apply to Major Institutions, as well as land use elements that are relevant to Swedish Cherry Hill's proposed Draft MIMP, are identified and discussed below. For each applicable goal or policy, the DEIS includes an assessment of the manner in which Swedish Cherry Hill's proposed Draft MIMP is consistent or inconsistent, in whole or in part, with such goals and policies. The purpose of this analysis is to augment the discussion of land use "impacts." It is not the function of the DEIS to assess and apply the criteria for review and approval of master plans that is contained in SMC 23.69, SMC 23.34.124, and SMC 23.34.008. That is the prerogative of the recommending entities (DPD, CAC, and the Hearing Examiner) and the City Council.

The Director's Report and Recommendation will include a full analysis of Swedish Cherry Hill's proposed Draft MIMP using the regulatory criteria for review and approval of master plans noted above and described in greater detail the discussion below. The Final EIS as well as the Director's Report will be provided to the City Council to assist it in making its decision on Swedish Cherry Hill's proposed Draft MIMP.

City of Seattle Comprehensive Plan

The Comprehensive Plan "Toward a Sustainable Seattle," is a 20-year policy plan designed to articulate a vision of how Seattle will grow in ways that sustain its citizens' values. The City first adopted the plan in 1994 in response to the state Growth Management Act of 1990. The current plan contains amendments adopted by the Seattle City Council through the 2012 to 2013 annual amendment process.

The City has begun a multi-year process to complete a major plan review, with new planning horizon of 2035, by June 2015.

The Comprehensive Plan contains 11 elements: urban village; land use; transportation; housing; capital facilities; utilities; economic development; neighborhood planning; human development; cultural resource; and environmental. The *Future Land Use Map*, which is part of the plan, designates the Swedish Cherry Hill site and the area to the west as a Major

Institution[1], with single-family to the south and east, multi-family to the north, and a commercial area to the southwest (see Figure 3.3-3).

The Swedish Cherry Hill campus is located within the Central District Neighborhood Planning Area, which encompasses three Urban Villages/Centers: Madison-Miller to the north, 23rd Avenue South at Jackson-Union to the east and south, and 12th Avenue in the western portion of the neighborhood. Swedish Cherry Hill campus is surrounded by these urban villages/centers but is not located within an urban village or urban center.The Land Use Element of the plan contains location-specific land use policies for Major Institutions. Under C-1 Major Institutions, the plan states:

> *Hospitals and higher educational facilities play an important role in Seattle. Institutions containing these facilities provide needed health and educational services to the citizens of Seattle and the region. They also contribute to employment opportunities and to the overall diversification of the city's economy. However, when located in or adjacent to residential and pedestrian-oriented commercial areas, the activities and facilities of major institutions can have negative impacts such as traffic generation, loss of housing, displacement and incompatible physical development.*
>
> *These policies provide a foundation for the City's approach to balancing the growth of these institutions with the need to maintain the livability of the surrounding neighborhoods.*

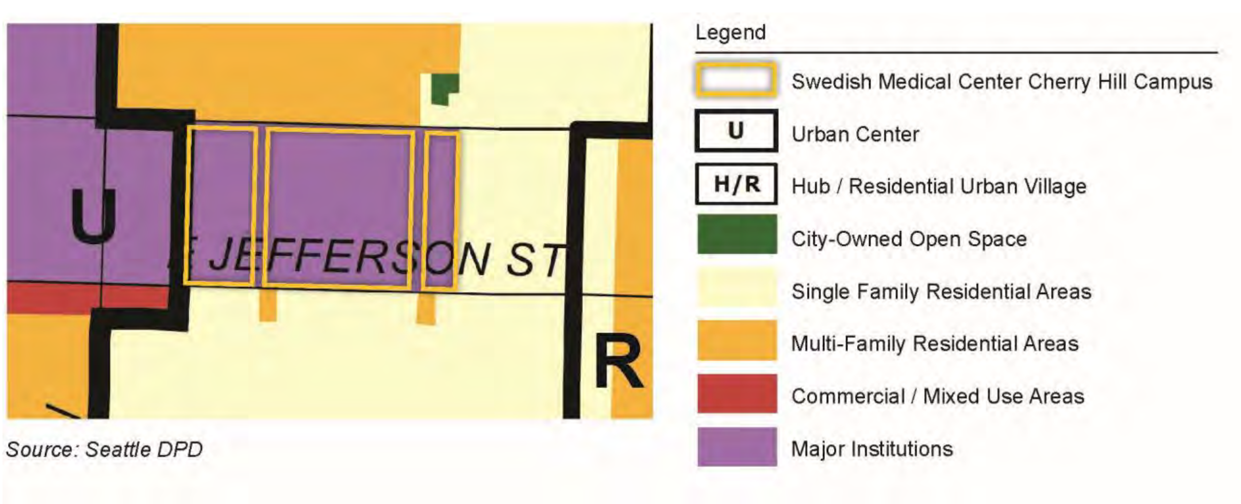


Figure 3.3-3
Comprehensive Plan Future Land Use Map

[1] See Chapter 5 Glossary for a definition of "Major Institution."

Zoning

The underlying zoning for the Swedish Cherry Hill campus is SF-5000 and LR3. Both have a 30-foot height limit. See Figure 3.3-4 for existing zoning designations and height limits in the vicinity of the project site. The expired MIMP established a MIO that allows institutional uses and heights beyond the underlying single- and multi-family uses and height limits.

The land to the north, south, and east is zoned for either single-family or multi-family with 30-foot heights. Land to the southwest is zoned Neighborhood Commercial (NC1), which also has a 30-foot height limit. Land to the west contains a MIO for Seattle University with a 65-foot height limit. The Swedish Cherry Hill campus currently includes three MIO height districts: 37, 65, and 105.

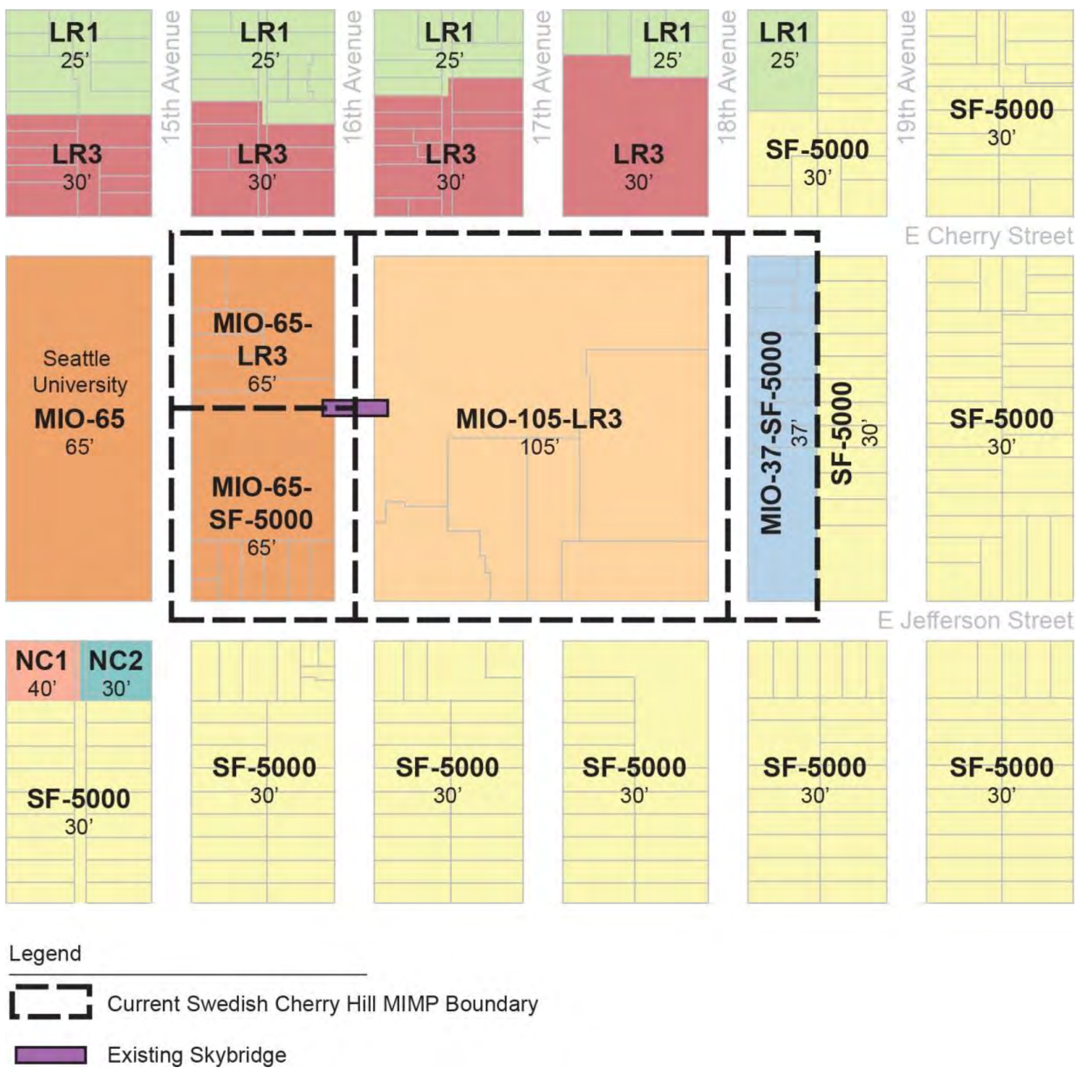


Figure 3.3-4
Existing Zoning and Height Limits

Swedish has submitted an application for a new MIMP with new MIO heights. If approved, the MIMP will include changes to the existing MIO heights.

Major Institution Overlay Districts

MIOs regulate Seattle's major educational and medical institutions. Creating or modifying an overlay district allows these major institutions to grow while minimizing impacts to the surrounding community. The master planning process encourages growth within existing boundaries or consideration of decentralization of the facility uses away from the existing boundary (over 2,500 feet away). Swedish Cherry Hill is one of 13 MIOs in Seattle: 6 are colleges or universities, and 7 are hospitals or medical centers. MIMPs in the vicinity of Swedish Cherry Hill are shown on Figure 3.3-2.

According to the Seattle DON:

> *Unique zoning rules are crafted for each major institution through the adoption of a MIMP that: 1) identifies a boundary (Major Institution Overlay District) within which the revised rules applies; and 2) identifies the specific rules that will apply to development within this boundary. The objectives of the plan are to balance the needs of major institution development with the need to preserve adjacent neighborhoods" (City of Seattle 2013).*

Since MIMP and MIO allow modifications to the development standards of the underlying zone, the master plan process requires intensive community involvement to develop, adopt, and monitor the MIMP. A CAC is formed to work with the city and project proponent in the development of a MIMP.

Major institutions have typically grown with the community and are integrated into neighborhoods which may have variety of uses that don't necessarily reflect a single characteristic. For example, Swedish Cherry Hill is located in a diverse neighborhood that includes newer and early 20th century single-family residences; lowrise apartments and condominiums; Washington State offices (Department of Social and Human Services); storefronts; private schools; churches; a small park; non-profit organization offices; and another major institution (Seattle University). MIOs "provide flexibility for development and encourage a high quality environment through modifications of use restrictions and parking requirements of the underlying zoning" (SMC 23.69.002.H). To balance the need of the institution to grow and change within a neighborhood, the MIMP must specify how the new development will minimize impacts on the surrounding neighborhood. A TMP is another important component of the MIMP due to the increase in parking and vehicular traffic associated with development within a MIO.

3.3.3 Impacts

Swedish is proposing three Build Alternatives in addition to the No Build Alternative. All Build Alternatives (Alternatives 8, 9 and 10) maintain the existing (MIO) boundary, and do not include street vacations on either 16th or 18th Avenues. Alternatives 8, 9 and 10 include proposed increases in the MIO height limits (see Table 3.3-1).

Impacts from changes to height, bulk, and scale are discussed in Section 3.4 Aesthetics, Light, Glare and Shadows.

The alternatives summarized in Table 3.3-1 are:

- Alternative 1 – No Build
- Alternative 8 – Addition of 1.9 Million gross SF; change in heights to MIO-50, -65, -105 and -240
- Alternative 9 – Addition of 1.55 Million gross SF; change in heights to MIO-50, -65, -105, -160, and -200
- Alternative 10 – Addition of 1.55 million gross SF; change in heights to MIO-37, -50, -65, -105, -160, and -200

Table 3.3-1
Summary of Alternatives Proposed in the May 2014 Draft MIMP and Analyzed in this DEIS

	Alternative 1 – No Build	Alternative 8 – Addition of 1.9 Million Gross SF	Alternative 9 – Addition of 1.55 Million Gross SF	Alternative 10 – Addition of 1.55 Million Gross SF
Institution Boundary	E Cherry and E Jefferson Streets on north and south; half-block west of 16th Avenue and half-block east of 18th Avenue between E Cherry and E Jefferson Streets	E Cherry and E Jefferson Streets on north and south; half-block west of 16th Avenue and half-block east of 18th Avenue between E Cherry and E Jefferson Streets	E Cherry and E Jefferson Streets on north and south; half-block west of 16th Avenue and half-block east of 18th Avenue between E Cherry and E Jefferson Streets	E Cherry and E Jefferson Streets on north and south; half-block west of 16th Avenue and half-block east of 18th Avenue between E Cherry and E Jefferson Streets
Institution Boundary Area	Existing 580,569 SF	580,569 SF	580,569 SF	580,569 SF
Total building area within MIO	Approximately 1.2 million gross SF	Approximately 3.1 million gross SF	Approximately 2.75 million gross SF	Approximately 2.75 million gross SF
Existing and Proposed Floor Area Ratio (FAR)	2.07 (expired MIMP approved an FAR of 2.3)	5.34	4.74	4.74
Leased Space outside MIO within 2,5000 feet	Office space at 600 Broadway Building	Office space at 600 Broadway Building	Office space at 600 Broadway Building	Office space at 600 Broadway Building
Owned Space outside MIO within 2,500 feet	Swedish-owned First Hill Campus	Swedish-owned First Hill Campus	Swedish-owned First Hill Campus	Swedish-owned First Hill Campus
Uses	Approximately 196-bed hospital, clinic, clinical research, office, and	Approximately 385-bed hospital, clinic, clinical research,	Approximately 385-bed hospital, clinic, clinical research, office, clinical	Approximately 385-bed hospital, clinic, clinical research,

Table 3.3-1 (Continued)
Alternatives Proposed in the May 2014 Draft MIMP
and Analyzed in this DEIS

	Alternative 1 – No Build	Alternative 8 – Addition of 1.9 Million Gross SF	Alternative 9 – Addition of 1.55 Million Gross SF	Alternative 10 – Addition of 1.55 Million Gross SF
	clinical laboratory	office, clinical laboratory, hotel, and long-term care	laboratory, hotel, and long-term care	office, clinical laboratory, hotel, and long-term care
Street Vacations	None	None	None	None
Parking	1,510 spaces	2,310 (800 new)	2,245 spaces (735 new)	2,245 spaces (735 new)
Parking Location	Existing parking is primarily located on the western portion of campus, with an above-ground garage and a surface lot located west of 16th Avenue, and an underground garage located and small surface lots located east of 16th Avenue. There are surface parking lots located east of 18th Avenue.	Parking is proposed to be located under each new development with underground garages proposed for both sides of 18th Avenue, the block between 15th and 16th Avenues, and along the south side of Cherry east of 16th Avenue.	Same as Alternative 8	Same as Alternative 8
Access	Access to Central Plaza from E Jefferson Street; access to underground parking garage from E Jefferson Street; access to above-ground parking from 16th Avenue; access to surface lots from 18th Avenue.	Access to Central Plaza from E Jefferson Street; access to underground parking garage from E Jefferson Street; access to new below-ground parking from 16th Avenue; access to new below-ground parking from 18th Avenue.	Same as Alternative 8	Same as Alternative 8
Height Limit for MIO				
Half-block on west side of 16th	MIO-65	MIO-65 on north and south; MIO-240 in center	MIO-65 on north and south; MIO-200 in center	Same as Alternative 9 – MIO-65 on north and south; MIO-200 in center
Central Campus Block	MIO-105	MIO-240 on the W portion; MIO-105 on the central courtyard; MIO-65 on the SE corner; N, NE, and SW portion would remain at MIO-105	MIO-160 on the W portion; MIO-105 on the central courtyard; other areas would remain at MIO-105	Same as Alternative 9 - MIO-160 on the W portion; MIO-105 on the central courtyard; other areas would remain at MIO-105
Half-block on east side of 18th	MIO-37	MIO-50	MIO-50	MIO-37 on north, MIO-50 on north-center section; MIO-37 on center section;

Table 3.3-1 (Continued)
Alternatives Proposed in the May 2014 Draft MIMP and Analyzed in this DEIS

	Alternative 1 – No Build	Alternative 8 – Addition of 1.9 Million Gross SF	Alternative 9 – Addition of 1.55 Million Gross SF	Alternative 10 – Addition of 1.55 Million Gross SF
				MIO-50 on south center section; MIO-37 on south
Designated Open Space				
Designated Open Space Locations	Small plaza on NW corner of campus (SE corner of E Cherry St/15th Ave E), Central Plaza and main hospital entrance off of Jefferson Street	Small plaza on NW corner of campus (SE corner of E Cherry St/15th Ave E), Central Plaza and main hospital entrance off of Jefferson Street,; pocket park(s) along Cherry Street	Small plaza on NW corner of campus (SE corner of E Cherry St/15th Ave E), Central Plaza and main hospital entrance off of Jefferson Street, landscaped courtyard between Annex and James Tower; pocket park(s) along Cherry Street	Same as Alternative 9

In addition to the MIO Height Districts proposed in Table 3.3-1, Swedish is proposing to condition the heights of specific buildings that are anticipated to be retained during the life of the new MIMP to their existing heights. These conditioned heights are shown on Figures 3.3-6 (Alternative 8), 3.3-7 (Alternative 9), and 3.3-8 (Alternative 10) and are summarized in Table 3.3-2.

Table 3.3-2
MIO Heights That Are Conditioned Lower

Summary of Proposed Conditioned Heights for Specific Buildings	Alternative 1 – No Build	Alternative 8 – Addition of 1.9 Million Gross SF	Alternative 9 – Addition of 1.55 Million Gross SF	Alternative 10 – Addition of 1.55 Million Gross SF
Conditioned Maximum Heights	None	Seattle Medical & Rehab Center - 30’ Carmack House - 30’ Central Plaza - 37’ Bell Tower - 150’ Smoke Stack - 140’ Central Utility Plant - 40’ Annex - 65’	Same as Alternative 8	Same as Alternative 8 plus 15’ on the center of the proposed development for east side of 18th Avenue

3.3.3.1 Land Use

For all alternatives, detailed summaries of each alternative and comparisons between alternatives can be found in Section 2, Description of Alternatives. The proposed Draft MIMP would continue the use of the existing MIO as a major medical institution.

The Build Alternatives would not require a street vacation. The existing skybridge across 16th Avenue would remain in a similar location. The approval for the skybridge is through a term permit.

Table 3.3-3 compares the relative intensity of development of the alternatives. The density-related impacts of additional development, increased height, bulk and scale, increased noise, parking, increased traffic, and increased need for public services and utilities are addressed in other subsections within Section 3 of this Draft EIS. Height limits, height overlay photos (3D simulations), and the potential impacts of height, bulk and scale are discussed in Section 3.4, Aesthetics/Light, Glare, and Shadows.

Table 3.3-3
Intensity of Development Comparison

	Property Size (Total within MIO)	Building (Gross SF)	Number of Licensed Hospital Beds	Approximate Floor Area Ratio*
Alternative 1 – No Build	580,569 SF	1.2 Million	385	2.07 (expired MIMP approved an FAR of 2.3)
Alternative 8	580,569 SF	3.1 Million	385	5.34
Alternative 9	580,569 SF	2.75 Million	385	4.74
Alternative 10	580,569 SF	2.75 Million	385	4.74

Note: FARs are used as a measure of the intensity of the site being developed. The ratio is generated by dividing the building area by the parcel area. Some portions of structures included in the total gross SF are not included in the calculation of FAR. These include below-grade space, above and below-ground parking, interstitial space that is not occupiable (mechanical floors/levels), rooftop mechanical space/penthouses, skybridges or tunnel connections within the public right-of-way, and other unoccupiable spaces as approved by DPD.

This land use impact analysis, in conformance with the City's SEPA Land Use Policy, is focused on ensuring that the proposed uses in development projects are reasonably compatible with surrounding uses; and are consistent with any applicable adopted City land use regulations and the goals and policies set forth in the Urban Village (Areas Outside of Centers and Villages) and Land Use Elements of the Comprehensive Plan. This includes Section A, City-Wide Land Use Policies; Section B, Land Use Categories for single-family and multi-family areas; and Section C, Major Institutions of the Seattle Comprehensive Plan regarding Location-Specific Land Use Categories in C-1 Major Institutions. The project site is not located within a shoreline, and an analysis of the shoreline goals and policies set forth in section D-4 of the land use element of the Seattle Comprehensive Plan is not required.

Alternative 1 No Build

Alternative 1 has been studied to compare potential impacts of the three Build Alternatives (Alternatives 8, 9 and 10). Despite being a "no build" alternative, Alternative 1 considers some future conditions such as potential traffic and transportation conditions in approximately 20 years (see Section 3.7, Transportation). The 1994 Swedish Cherry Hill MIMP expired in 2011 (after a 2-year extension) without full development of the approved list of projects (See Table 2-1 in Section 2). Due to the MIMP expiration, Swedish could not develop any further projects identified in the 1994 plan. Figure 3.3-5 shows the existing height limits and MIO of the campus. Swedish could demolish and replace existing buildings, but no increase in total developed area would be allowed (Swedish 2013a).

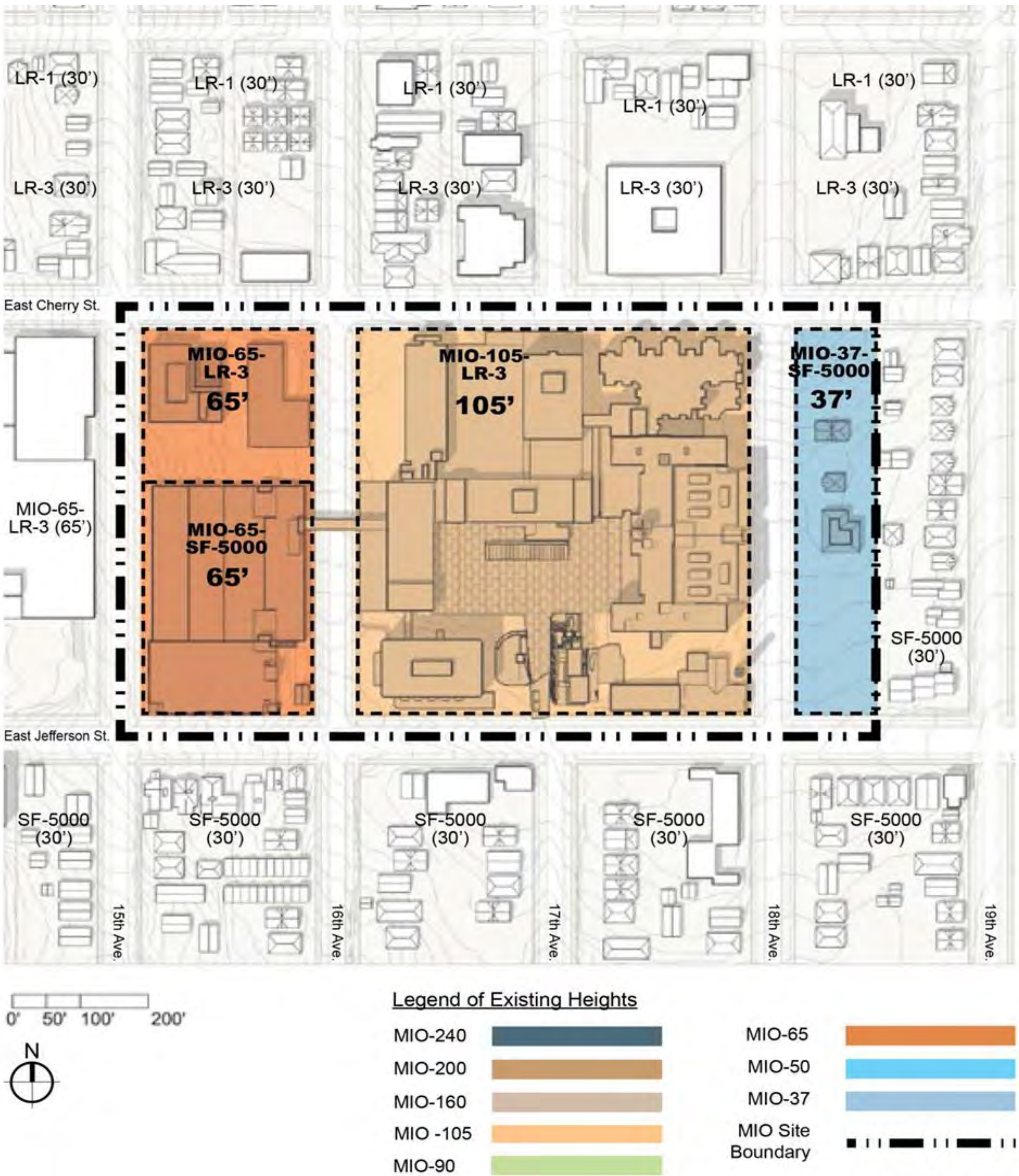


Figure 3.3-5

Alternative 1 - No Build

Build Alternatives

Implementation of the MIMP would result in the intensification of hospital/medical office uses on-campus as a result of new building development, more intensive use of existing buildings, and the modification of existing parking areas. The pattern and types of land uses on the western portion of the campus would not change substantially; however, building density, intensity, and existing building heights would change as a result of the proposed redevelopment. Proposed changes in height limits are summarized in Table 3.3-4.

Table 3.3-4
Proposed MIO Height Districts

	Alternative 1 – No Build	Alternative 8 – Addition of 1.9 Million Gross SF	Alternative 9 – Addition of 1.55 Million Gross SF	Alternative 10 – Addition of 1.55 Million Gross SF
Half-block on west side of 16th	MIO-65	MIO-65 on north and south; MIO-240 in center	MIO-65 on north and south; MIO-200 in center	Same as Alternative 9 – MIO-65 on north and south; MIO-200 in center
Central Campus Block	MIO-105	MIO-240 on the W portion; MIO-105 on the central courtyard; MIO-65 on the SE corner; N, NE, and SW portion would remain at MIO-105	MIO-160 on the W portion; MIO-105 on the central courtyard; other areas would remain at MIO-105	Same as Alternative 9 - MIO-160 on the W portion; MIO-105 on the central courtyard; other areas would remain at MIO-105
Half-block on east side of 18th	MIO-37	MIO-50	MIO-50	MIO-37 on north, MIO-50 on north-center section; MIO-37 on center section; MIO-50 on south center section; MIO-37 on south

Redevelopment of the properties along east side of 18th Avenue would intensify development on this half-block by displacing the existing lowrise institutional use (St. Joseph's Baby Corner), surface parking, and two vacant structures. The existing MIO height limit is 37 feet; existing buildings are less than 37 feet high. With Alternatives 8, 9 and 10, Swedish is proposing to develop new institutional buildings up to 50 feet in height. Alternative 10 would differ from Alternative 8 and 9 in that Swedish is proposing to establish MIO-37 height districts on the north, center, and south portions of the half-block, as compared to a MIO-50 for the entire half-block proposed under Alternative 8 and 9. Additionally for Alternative 10, Swedish is proposing to condition the height of the center portion to 15 feet; to include greater rear setbacks, and upper-level setbacks; and to establish designated open space.

The new MIO height districts would allow increased height limits above what currently exists on the campus and accommodate the addition of approximately 1.55 million gross SF (Alternatives

9 or 10) to 1.9 million gross SF (Alternative 8) (see specific zoning under a discussion of each Build Alternative below). Swedish is proposing to build higher rather than expand its campus, to develop new space required for the changing technological and patient care needs (e.g., larger patient rooms and full build out of its licensed bed count of 385 beds). Swedish has stated that they need flexibility to meet anticipated needs based on other pressures such as healthcare reform, a growing and aging population, and the need to replace existing buildings on campus to meet required facility upgrades.

MIO Boundary

There is no boundary expansion proposed. All proposed height changes would be within the existing campus boundary.

Street Vacation

No street vacations are proposed.

Skybridges and Tunnels

Alternatives 8, 9, and 10 would include retaining the existing skybridge over 16th Avenue. However, the skybridge may be relocated to better align with new development. All Build Alternatives would include one service tunnel under 16th Avenue connecting new development. The skybridge and tunnel would be permitted under separate term permits to be requested at the time of development. These impacts are addressed in the City of Seattle Skybridge Term Permits and Significant Structure Term Permit below.

Site Access

Access to the central plaza, and the existing parking under the central plaza, would remain off of E Jefferson Street. Access to proposed underground parking on the west side of campus would be provided from 15th Avenue and 16th Avenue. Access to proposed parking under new development along E Cherry Street would be provided from 16th Avenue. Existing surface parking lots on the east side of 16th Avenue would be replaced with underground parking, and new garage access from 16th Avenue would be designed with proposed new development.

Alternative 8

Proposed Changes to MIO Districts

The following changes are proposed to the MIO districts for the campus under Alternative 8 (See Figure 3.3-6).

1. On the west side of campus, the center portion of the block would be changed from MIO-65 to MIO-240. The Northwest Kidney Center site and the site of the adjacent surface parking lot on the northwest corner would remain MIO-65; the height district on the Seattle Medical and Rehab Center site would remain at MIO-65 but the height conditioned to the height of the existing building at 30 feet. The south portion would remain at MIO-65; the MIO-65 height district on the Carmack parcel would be

conditioned down to 30 feet. Neither Swedish nor Sabey own this parcel and there are no plans to redevelopment the site under the MIMP.

2. In the central block of the campus, the center-west portion would be changed from MIO-105 to MIO-240, and the northeast portions facing E Cherry Street and 18th Avenue, as well as the southwest corner (at 16th Avenue and E Jefferson Street) would remain MIO-105. The southeast portion would be changed from MIO-105 to MIO-65. The MIO height district of the plaza would remain at MIO-105, but the height would be conditioned downward to a height of 37 feet.
3. On the east side of campus on the half-block located on the east side of 18th Avenue, the MIO would be changed from MIO-37 to MIO-50.

Impacts Specific to Alternative 8

Alternative 8 would result in the most intensive development and increased density of the three Build Alternatives due to the proposed 240-foot heights. All Build Alternatives concentrate the greatest heights in the central campus (where the concentration of the existing campus is located) and west campus (facing Seattle University). The area of campus that will be affected by the greatest amount of change is the half-block east of 18th Avenue between E Cherry and E Jefferson Streets. Swedish is proposing that approximately 200,000 gross SF, or 7.2 percent of the new development, be placed on the half-block. The open character of the surface parking/underdeveloped land, low level institutional building (St. Joseph's Baby Corner) and two vacant former single-family houses would be changed to an approximately 3- to 4-story institutional building with an underground parking garage. Setbacks from property lines and upper stories, building modulation, and landscape buffers would help provide some transition between markedly different scales of development.

16th and 18th Avenues would remain open and maintain circulation neighborhood cohesion in the north to south direction. Comments received from the public have indicated that 16th and 18th Avenues serve as important pedestrian and bicycle routes provide alternatives to major arterials.

Proposed height changes in the interior of the campus would increase development intensity. The Draft MIMP describes the opportunity to employ measures to promote the connectivity of the campus to the rest of the community including:

- Design medical facilities to concentrate height/bulk/scale and activity intensity toward the center of the campus with less development density as a transition toward the campus edges bordering residential uses
- Design buildings with scale-reducing elements that break-up massing and bulk and that address spill-over impacts such as light/glare, noise, and privacy intrusions
- Plan for a permeable campus that is not a barrier to neighborhood linkages
- Use landscaping for buffers and screening
- Provide usable open spaces that make visual connections between buildings and the landscape

Swedish proposes to integrate the campus with the surrounding community through improvements to pedestrian connections and perimeter improvements. Swedish has stated that it proposes to continue to serve as a community resource providing wellness education programs, meeting spaces, and other community outreach.

Uses in the surrounding community include predominantly residential to the north, east, and south along with Seattle University to the east; and other educational uses; neighborhood commercial uses; multi-family and single-family residential; open space; churches; public facilities (King County Youth Services and DSHS); and nonprofit organizations.

The underlying zoning for the existing campus includes both SF-5000 (south half of the west campus block and all of the half-block on the east side of 18th Avenue) and LR3 (remainder of the campus). Institutional uses are among the uses that are allowed in both single-family and LR3 zones as administrative conditions uses. The institutional use would be considered compatible with existing and most surrounding land use. However, there are potential adverse impacts based on height, bulk, scale and the intensity of use especially in the transition between the eastern portion of campus and the adjacent single-family neighborhood. See Section 3.4 Aesthetics/Light, Glare and Shadows for the analysis of heights, bulk, and scale.

A criterion to approve locating or expanding the institution is to consider whether the bulk and siting meet the development standards of the underlying zoning, or whether a modification should be approved. In determining whether to approve a modification to the underlying development standards, the Director must balance the needs of the institution against the compatibility of the proposed institution with the residential scale and character of the surrounding area. For major institutions, the Director's analysis and recommendation on the proposed MIMP's development standards must be based, in part, on:

> *The extent to which buffers such as topographic features, freeways or large open spaces are present or transitional height limits are proposed to mitigate the difference between the height and scale of existing or proposed Major Institution development and that of adjoining areas. Transition may also be achieved through the provision of increased setbacks, articulation of structure facades, limits on structure height or bulk or increased spacing between structures* (SMC 23.69.032 Master plan process, E.4.a).

See Section 3.4 Aesthetics/Light, Glare and Shadows for this analysis.

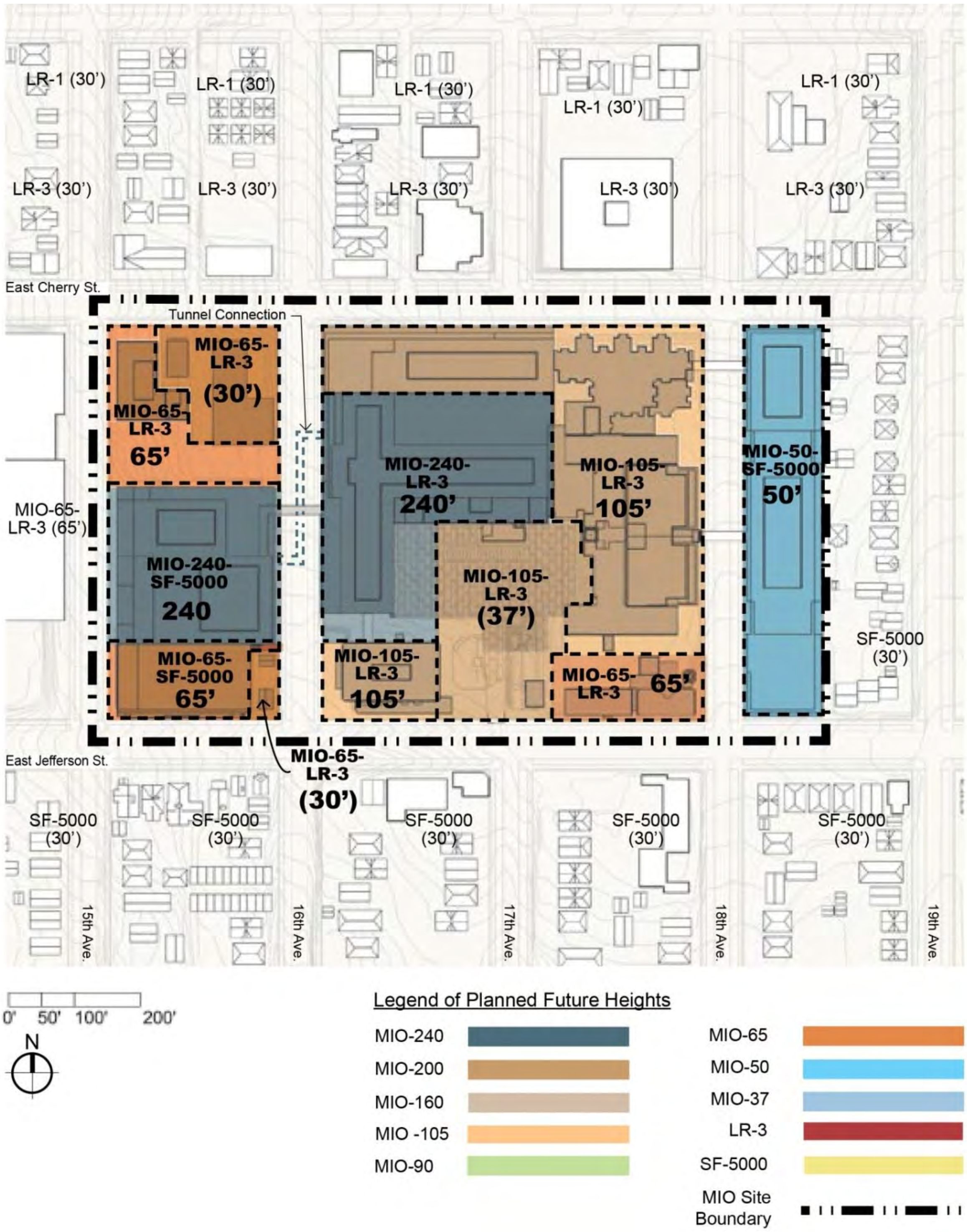


Figure 3.3-6

Alternative 8

Alternative 9

Proposed Changes to MIO Districts

The following changes are proposed to the MIO districts for the campus under Alternative 9 (See Figure 3.3-7).

1. West Campus: The MIO Districts would be the same as proposed for Alternative 8 with the exception of the center portion of the block. A MIO-200 is proposed for that portion. On the west side of campus, the center portion of the block would be changed from MIO-65 to MIO-200. The Northwest Kidney Center site and the site of the adjacent surface parking lot on the northwest corner would remain MIO-65; the height district on the Seattle Medical and Rehab Center site would remain at MIO-65 but the height conditioned to the height of the existing building at 30 feet. The south portion would remain at MIO-65; the MIO-65 height district on the Carmack parcel would be conditioned down to 30 feet. Neither Swedish nor Sabey own this parcel and there are no plans to redevelopment the site under the MIMP.
2. Central Block: In the central block of the campus, the center-west portion would be changed from MIO-105 to MIO-160 and remaining portions would retain the existing MIO-105. Swedish is proposing to condition the height of the plaza to 37 feet and the southeast corner to 40 feet.
3. On the east side of campus on the half-block located on the east side of 18th Avenue, the MIO would be changed from MIO-37 to MIO-50, the same as proposed for Alternative 8.

Impacts Specific to Alternative 9

Impacts of Alternative 9 are the same as those for Alternative 8 (see Impacts Specific to Alternative 8 above) except for the following:

- Alternative 9 would result in less intensive development of the central and western portions of the campus due to lower heights and smaller proposed square-footage.
- On the southeast corner of the central campus, Alternative 9 would result in lessened impacts to surrounding uses due to conditioning the height below the MIO-105 to a height of 40 feet compared to the proposed MIO-65 for Alternative 8.

As described above for Alternative 8, the institutional use is compatible with existing and most surrounding land uses. However there are potential adverse impacts based on height, bulk, scale and the intensity of use especially in the transition between eastern portion of campus and the adjacent single-family neighborhood. See Section 3.4 Aesthetics/Light, Glare and Shadows for the analysis of height, bulk, and scale.

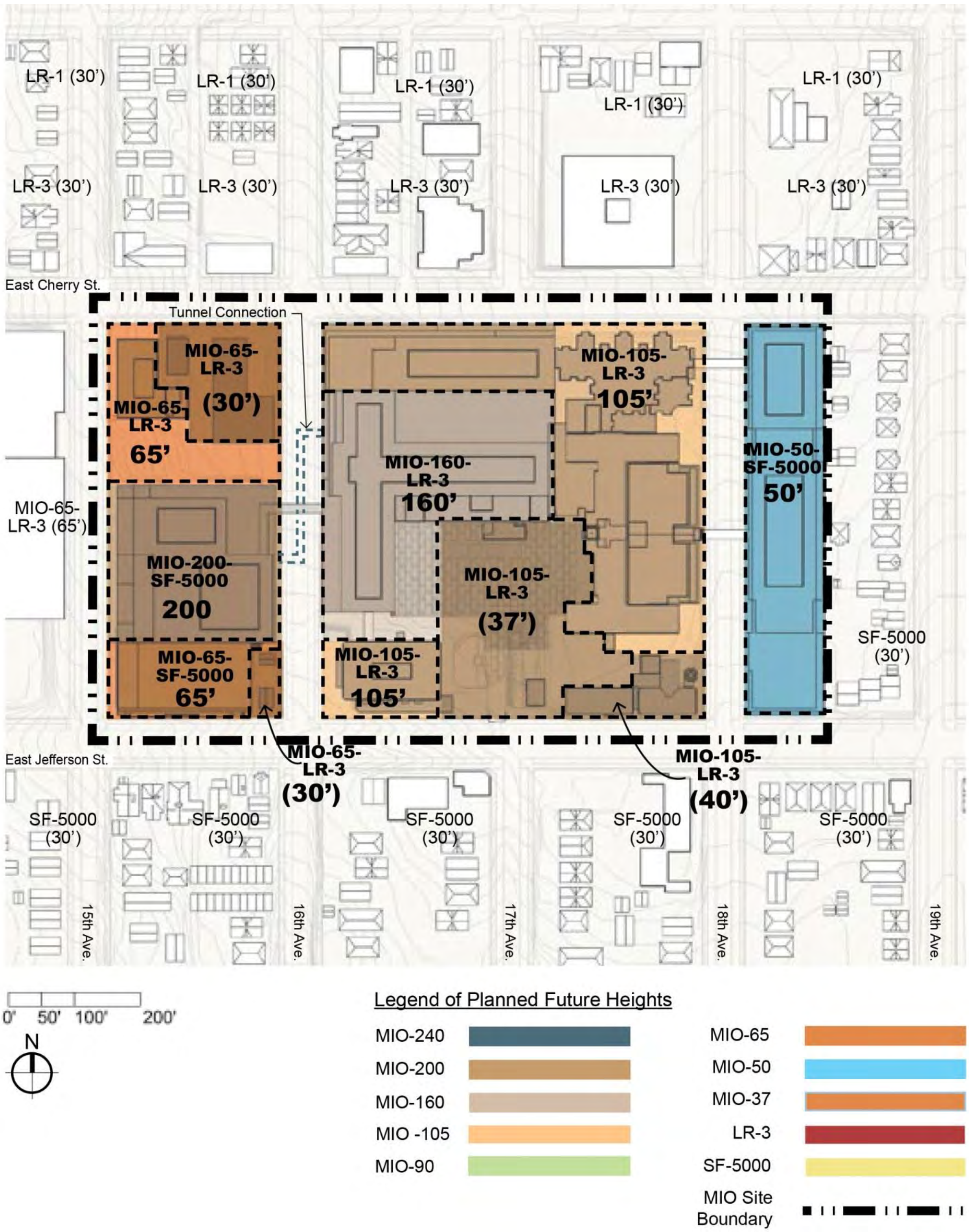


Figure 3.3-7

Alternative 9

Alternative 10

Proposed Changes to MIO Districts

The following changes are proposed to the MIO districts for the campus under Alternative 10 (See Figure 3.3-8).

1. West Campus: The MIO Districts would be the same as proposed for Alternative 9.
2. In the central block of the campus, the changes in heights would be the same as proposed in Alternative 9. Alternative 10 would have additional upper-story setbacks as facing 15th and 16th Avenues. Facing 18th Avenue, the ground level setback is reduced compared to Alternatives 8 and 9.
3. On the east side of campus on the half-block located on the east side of 18th Avenue, the MIO would be changed from MIO-37 to MIO-50 except for 30 feet facing E Cherry Street, and 30 feet facing E Jefferson Street, and the center portion, all of which would remain MIO-37. The centermost portion of the east campus building would have heights conditioned to a maximum of 15 feet.

Impacts Specific to Alternative 10

Impacts of Alternative 10 are similar to those for Alternative 9 except for the following:

- On the half-block on the east side of 18th Avenue, Alternative 10 shows a greater rear ground-level setback between the east campus building and the adjacent single-family area and facing E Cherry and E Jefferson Streets than those proposed for Alternatives 8 or 9. There is also a 15-foot height limit for the center portion of the half-block. Development planned for this portion of campus would be approximately 200,000 gross SF, the same as proposed for Alternatives 8 and 9, however the greater setbacks that are proposed would likely reduce the amount of developable space in the location of campus. The actual amount won't be determined until future buildings are designed.
- There are increased upper-story setbacks on the west and central campus facing 15th and 16th Avenues: the proposed combination of 15-, 37-, and 50-foot height limits for Alternative 10 are the lowest of the Build Alternatives for the east campus area.

As described above for Alternatives 8 and 9, the institutional use is compatible with existing and most surrounding land uses. However, even with increased setbacks of Alternative 10, there are potential adverse impacts based on height, bulk, scale, and the intensity of use especially in the transition between east campus and the adjacent single-family neighborhood. See Section 3.4 Aesthetics/Light, Glare and Shadows for the analysis of height, bulk, and scale.

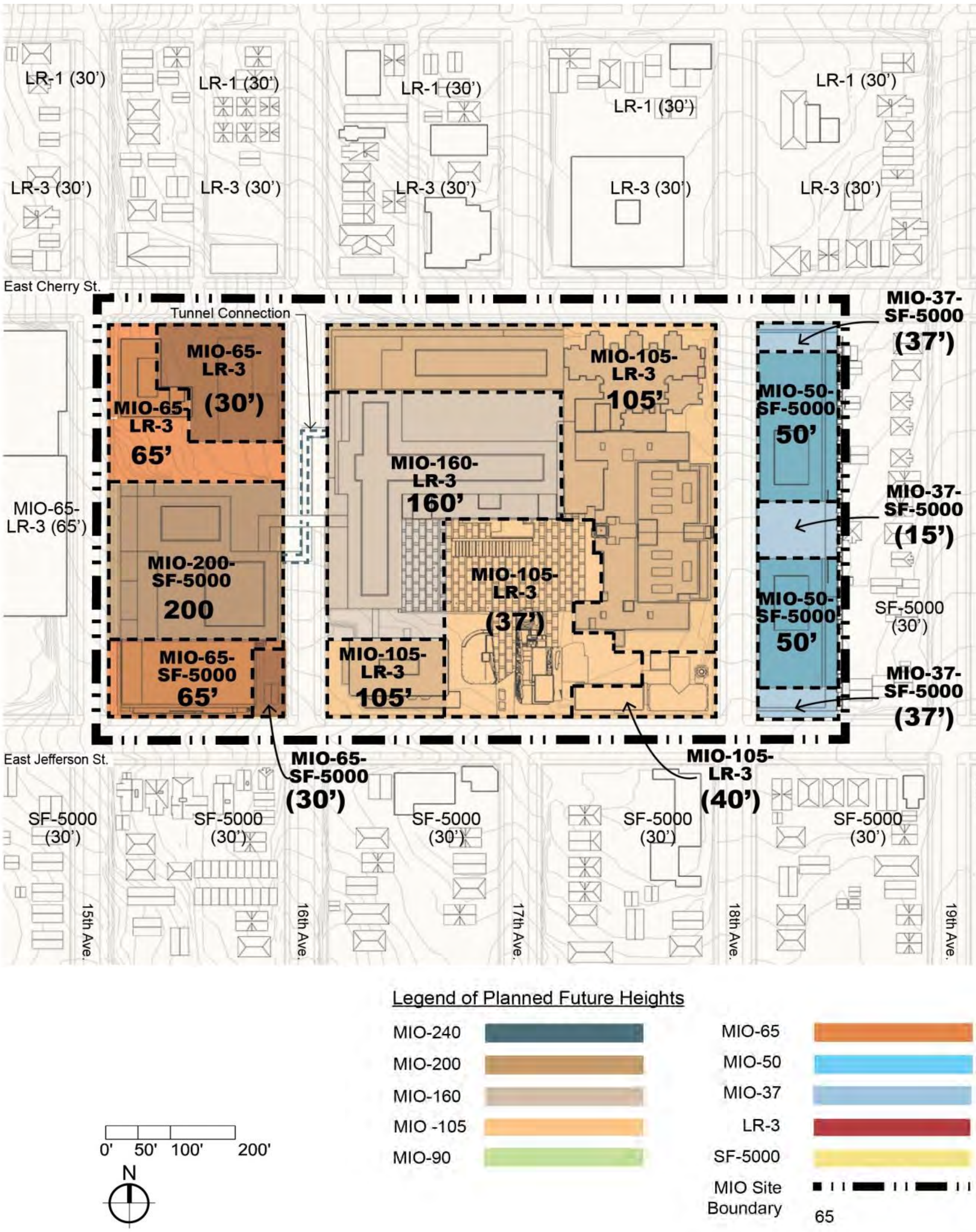


Figure 3.3-8

Alternative 10

3.3.4 Relationship to Adopted Land Use Plans, Policies, and Regulations

Information in this section addresses the relationship of the development alternatives to adopted land use plans, applicable policies, and regulations. Specific documents that are referenced include:

- City of Seattle Comprehensive Plan
- Central Area Neighborhood Plan
- City of Seattle Land Use Code

3.3.4.1 City of Seattle Comprehensive Plan

The Reader's Guide to the Comprehensive Plan includes a section called "Implementing the Plan" which provides an overview as to how the Plan is to be used: As a policy document, the Plan lays out general guidance for future City actions. Many of those actions are addressed in functional plans that focus on a particular aspect of City services, such as parks, transportation or drainage. Another way the City implements the Plan is through development regulations, primarily found in the City's zoning map and Land Use Code.

In the Reader's Guide to the Land Use Element, it is stated that:

> *The Growth Management Act requires that all comprehensive plans include a land use element. Policies guiding the City's zoning and development regulations can be found here. This includes general descriptions of the five major zoning categories - single-family, multi-family, commercial, industrial and downtown - as well as the rationale behind development regulations, such as height and density limits, parking and setback requirements. Zoning and development regulations are important tools for implementing the urban village strategy because they help to direct and control where and what type of development can occur. The element is divided into three major sections: one deals with policies that affect all areas of the city; a second describes the unique rules for each of the five zoning categories; and the third addresses special areas, such as shorelines, environmentally critical areas and major institutions. Detailed regulations that are used in reviewing individual development projects can be found in the City's Land Use Code.*

Directions on how to apply the Comprehensive Plan are found on page xi:

> *The principal purpose of this Comprehensive Plan is to provide policies that guide the development of the City in the context of regional growth management. These polices can be looked to by citizens and by all levels of government in planning for growth. Specifically, the Plan will be used by the City of Seattle to help make decisions about proposed ordinances, policies and programs. Although the Plan will be used to direct the development of regulations which govern land use and development, the Plan will not be used to review applications for specific development projects except when reference to this*

Comprehensive Plan is expressly required by an applicable development regulation.

While consistency with the goals and policies of the Comprehensive Plan must be considered in the SEPA review, the Comprehensive Plan itself directs the decision-maker to use the regulations of the Land Use Code in reviewing an individual development project. Major institutions are regulated by SMC Section 23.69 (see Section 3.3.2.4).

There are two elements of the Comprehensive Plan containing policies that apply to major institutions, the Urban Village Element and the Land Use Element. Each applicable policy is discussed below.

Consistency with the Urban Villages Element of the Comprehensive Plan

Section A-2 Areas Outside of Centers and Villages

Swedish Cherry Hill is surrounded by Urban Centers and Villages, but is not within one. Applicable goals and policies of Section A-2 include UVG28 and policies UV35 through UV39. In the following paragraphs, each goal or policy is cited from the comprehensive plan and discussed in context of the proposal:

UV*G28 Support and maintain the positive qualities of areas outside of urban centers and villages.*

Discussion: The goal provides general guidance to reinforce and sustain characteristics of the neighborhood that people value. The Central District Plan and the CAC have identified the following positive qualities of the neighborhood surrounding Swedish Cherry Hill:

- The neighborhood is predominantly residential with a mix of mostly single-family homes with some lower height (30’) multi-family structures.
- Community diversity in its population, topography, community businesses, and housing types.
- The neighborhood is rich in historical structures.
- The community has benefited from recent redevelopment including improvements to residential properties and access to small-scale commercial/retail uses in the community.

See the Neighborhood Planning section of this DEIS for the discussion of the goals and policies for the Central District that apply.

The proposed Draft MIMP protects against encroachment into the single-family and multi-family neighborhoods by eliminating expansions of the existing boundary. The existing campus boundaries would be maintained, and Swedish has proposed to locate the greatest building heights away from the edges toward the center of the campus.

Landscaped setbacks are proposed to provide transitions along the edges of campus from the proposed higher major institutional buildings to residential or commercial uses on facing streets or facing properties in the case of the mid-block between 18th and 19th Avenues. Existing street rights-of-way provide transitions; however, the boundary along 18th Avenue abuts a single-family zone. Additional ground-level and upper-story setbacks are proposed between the MIO boundary and adjacent property lines. In determining whether to approve this modification to the underlying zoning development standard, the Director must determine whether the proposal represents a reasonable balance of the public benefits of the development and change with the need to maintain livability and vitality of the adjacent neighborhoods. That determination will be made in the Director's Report and Recommendation.

Swedish Cherry Hill (formerly Providence Medical Center and Sisters of Providence) has stated they will continue its mission to promote the diversity of the community as a nonprofit community medical center that actively provides services to people of all economic means while promoting the institution as a leader in research and medical care. The hospital, through its 2005 renovation of James Tower that maintained the 1910 façade, helped maintain the historic character of structures within the neighborhood. To maintain and preserve the surrounding residential neighborhood, the draft MIMP accommodates all new growth within the existing MIO boundary, and provides a transition in heights between its boundaries and the surrounding neighborhood. Building setbacks are also proposed to provide further transition to the surrounding neighborhood.

UV*35* *Provide that the area of the city outside urban centers and villages remain primarily as residential and commercial areas with allowable densities similar to existing conditions, or as industrial areas, or major institutions.*

Discussion: Swedish Cherry Hill is an existing major institution. Policy UV35 allows that it may be located outside of urban centers and villages. The implementation of Swedish Cherry Hill MIMP would increase density within the existing MIO. This change in intensity is an impact on the subject site and the immediate vicinity, and the EIS addresses mitigations for impacts to related elements of the environment, such as traffic and aesthetics. While the Draft MIMP represents a departure from the neighborhood's existing residential and commercial densities, the policy recognizes major institutions separately, offering no guidance that the DraftMIMP should adhere to densities similar to existing conditions.

UV*36* *Protect single-family areas, both inside and outside of urban villages. Allow limited multi-family, commercial, and industrial uses outside of villages to support the surrounding area or to permit the existing character to remain.*

Discussion: Single-family areas are directly adjacent to the Swedish Cherry Hill campus across E Jefferson Street to the south, and on the eastern half of the block between

18th and 19th Avenues. To accommodate future growth, Swedish has proposed to increase MIO heights on the existing campus to avoid encroaching upon surrounding single-family or multi-family areas by expanding its current boundary.

UV*37 Recognize neighborhood anchors designated in adopted neighborhood plans as important community resources that provide a transit and service focus for those areas outside of urban villages.*

Discussion: Swedish Cherry Hill is within the Central District Planning Area. The neighborhood anchors have been designated within the Central Area at 34th and Union and at Madison and Martin Luther King Jr. Way. Though Swedish Cherry Hill is not a neighborhood anchor, it is an important service provider and employer in the community. Its location and size supports a transit focus for its employees and helps to maintain transit service to the larger neighborhood along E Jefferson Street.

UV*38 Permit limited amounts of development consistent with the desire to maintain the general intensity of development that presently characterizes the multi-family, commercial, and industrial areas outside of urban centers and villages and direct the greatest share of growth to the urban centers and villages.*

Discussion: This policy speaks to the intent to focus new development primarily in areas that are identified as receptors for increased growth in accordance with the City's land use map and neighborhood plans. The development envisioned by the MIMP is not multi-family, commercial, or industrial. Nor is it comparable in scale to the general intensity of development in the surrounding area. The proposed 1.55 million gross SF (Alternatives 9 or 10) or 1.9 million gross SF (Alternative 8) increase would occur outside of any urban center or village. As such, the Draft MIMP appears to be inconsistent with this policy.

UV*39 Accommodate growth consistent with adopted master plans for designated major institutions located throughout the city.*

Discussion: As a major institution, any proposed growth must be in accordance with an adopted MIMP. Swedish Cherry Hill is a designated major institution and its MIMP has expired. Swedish has applied for City approval of a new MIMP to accommodate growth. If approved, its growth is subject to the provisions of its adopted plan.

Section B Distribution of Growth

Section B of the Urban Village Element addresses growth. In the general discussion, the plan states:

The urban village strategy directs Seattle's future growth primarily to areas designated as centers and villages. The greatest share of job growth will be accommodated in urban centers – areas that already function as high density, *concentrated employment centers with the greatest access to the regional transit network. Growth in industrial sector jobs will continue to be accommodated primarily within the two manufacturing/industrial centers where this activity is already securely established. Job growth will also occur in hub urban villages, which are distributed throughout the city to promote additional employment concentrations in areas easily accessible to the surrounding residential population, thereby locating jobs and services near where people live. The greatest share of residential growth will also be accommodated in urban centers, increasing opportunities for people to live close to work. The next most significant share of residential growth will be distributed among the various hub and residential urban villages throughout the city in amounts compatible with the existing development characteristics of individual areas. Modest growth will also be dispersed, generally at low density, in various areas outside centers and villages.*

Discussion: This statement on growth allows for modest low-density growth outside of urban centers and villages. Considered in isolation, the goal appears to be at odds with the proposed development, as the site and vicinity are not located in an urban center or village, and the MIMP is not low-density development. While this language does not specifically rule out instances of high-density job growth outside of urban centers, it does establish a preference for locating such growth in established urban centers and urban villages.

Of the eight Urban Village goals that follow the general statement in Section B of the Urban Village element, seven goals (**UV**G29; **UV**G30; **UV**G31; **UV**G 32; **UV**G33; **UV**G34; **UV**G35; and **UV**G36) focus on planning for growth within urban villages. The policies either do not apply to this proposal, as Swedish Cherry Hill is outside of any urban village or center, or, any substantial expansion to a major institution located outside of urban villages and centers could be considered inconsistent with these goals. While these goals apply to growth within urban villages, the proposed Draft MIMP applies the spirit of the goals **UV**G29 and **UV**G30:

***UV**G29: Encourage growth in locations within the city that support more compact and less land-consuming, high quality urban living.*

***UV**G30: Concentrate a greater share of employment growth in locations convenient to the city's residential population to promote walking and transit use and reduce the length of work trips.*

Discussion: Swedish Cherry Hill is not located within an urban village or center; however, it is surrounded by three Urban Villages/Centers: Madison-Miller, 12th Avenue, and 23rd and Union-Jackson. Growth of the campus is concentrated toward the campus' center within the boundaries of the existing MIO. Swedish is proposing to grow and be an even larger employment center adjacent to residential areas. Both the employment and the services Swedish Cherry Hill provides are within convenient distance for walking and transit connections.

The eighth goal is **UVG** 37: *Allow limited amounts of development in areas of the city outside urban centers and villages to maintain the general intensity of development that already characterizes these areas and to promote the targeted level of growth in village and center locations.*

Discussion: The proposed Draft MIMP represents an intensification of development within its area compared to the current level of development. The proposed addition of approximately 1.55 million gross SF (Alternative 9) to 1.9 million gross SF (Alternative 8) does not appear to constitute a "limited amount of development" and would therefore be inconsistent with this goal.

Six policies (**UV**40, **UV**41, **UV**42, **UV**43, **UV**44, and **UV**45) correspond to the goals in Section B. All are aimed at planning for, maintaining, and adjusting growth targets within urban villages. These policies do not apply to the subject site or the proposed Draft MIMP.

Section C Open Space Network and Section D Annexation

Sections C and D of the Urban Village Element address open space networks and annexation and do not apply to the proposed Draft MIMP.

Consistency with the Land Use Element of the Comprehensive Plan

The Land Use Element of the Comprehensive Plan comprises three sections: A, Citywide Land Use Policies; B, Land Use Categories; and C, Location-Specific Land Use Policies.

Section A, Citywide Land Use Policies

LU*6* *In order to focus future growth, consistent with the urban village strategy, limit higher intensity zoning designations to urban centers, urban villages, and manufacturing/ industrial centers. Limit zoning with height limits that are significantly higher than those found in single-family areas to urban centers, urban villages, and manufacturing/ industrial centers and to those areas outside of urban villages where higher height limits would be consistent with an adopted neighborhood plan, a major institution's adopted master plan, or with the existing built character of the area.*

To paraphrase, LU6 directs the City to limit zoning with height limits that are significantly higher than those found in single-family areas to those areas outside of urban villages where higher height limits would be consistent with an adopted neighborhood plan, a major institution's adopted master plan, or with the existing built character of the area.

Discussion: Swedish Cherry Hill is not within an urban center, an urban village, or a manufacturing/industrial center. There is an adopted neighborhood plan for the area: Central District Neighborhood Plan. See Section 3.3.2.1 for a discussion of the neighborhood context and discussion below concerning the area's neighborhood plan.

Swedish Cherry Hill is a designated major institution within an adopted major institution overlay district, and has asked for City approval of a new MIMP with increased height limits. As the proposed Draft MIMP identifies heights that exceed heights designated under the existing MIO, the City must consider the new limits in accordance with criteria in SMC 23.69 Major Institution Overlay District, SMC 23.45 Multi-family, and 23.34 Amendments to Official land Use Map (Rezones); specifically, 23.34.124 Designation of MIO districts.

Across Cherry Street, to the north, there are 2- and 3-story buildings (zoned LR3 with 30-foot height limits); and across Jefferson, to the south, the buildings are of a similar scale (zoned SF-5000 with 30-foot height limits and a mix of multi-family, single-family, and neighborhood commercial uses). The portion of Seattle University immediately to the west of the Swedish Cherry Hill campus has a height limit of 65 feet (MIO-65-LR3). The area to the east of the campus is a single-family neighborhood with a 30-foot height limit (zoned SF-5000-30).

The existing campus height limits are in three categories 37 feet, 105 feet, and 65 feet (from west to east):

1. The western portion of the campus between 15th and 16th Avenues has a height limit of 65 feet for both the areas zoned MIO-65-LR3 (Northwest Kidney Center and Seattle Medical & Rehab) and MIO-65-SF-5000 (parking garages and the Carmack House).
2. The central portion of the campus between 16th and 18th Avenues has a height limit of 105 feet.
3. The eastern portion of the campus across from the single-family area has an existing height limit of 37 feet. The adjacent single-family zone has a height limit of 30 feet.

Swedish is proposing to change the MIO height districts. Figures 3.3-6 through 3.3-8 present each alternative with its proposed height limit.

Height Limits for Alternative 8 are proposed as follows:

1. On the west side of campus, the center portion of the block would be changed from MIO-65 to MIO-240. The Northwest Kidney Center site and the site of the adjacent surface parking lot on the northwest corner would remain MIO-65; the height district on the Seattle Medical and Rehab Center site would remain at MIO-65 but the height conditioned to the height of the existing building at 30 feet. The south portion would remain at MIO-65; the MIO-65 height district on the Carmack parcel would be conditioned down to 30 feet. Neither Swedish nor Sabey own this parcel and there are no plans to redevelopment the site under the MIMP.
2. In the central block of the campus, the center-west portion would be changed from MIO-105 to MIO-240 and the northeast portions, facing E Cherry Street and 18th Avenue, as well as the southwest corner (at 16th Avenue and E Jefferson Street) would remain MIO-105. The southeast portion would change from MIO-105 to MIO-

65. The MIO height district of the plaza would remain at MIO-105, but the height would be conditioned downward to a height of 37 feet.

3. On the east side of campus on the half-block located on the east side of 18th Avenue, the MIO would be changed from MIO-37 to MIO-50.

Height Limits for Alternative 9 are proposed as follows:

1. West Campus: The MIO Districts would be the same as proposed for Alternative 8 with the exception of the center portion of the block where Swedish is proposing that portion be changed from MIO-65 to MIO-200. The Northwest Kidney Center site and the site of the adjacent surface parking lot on the northwest corner would remain MIO-65; the height district on the Seattle Medical and Rehab Center site would remain at MIO-65 but the height conditioned to the height of the existing building at 30 feet. The south portion would remain at MIO-65; the MIO-65 height district on the Carmack parcel would be conditioned down to 30 feet. Neither Swedish nor Sabey own this parcel and there are no plans to redevelopment the site under the MIMP.
2. Central Block: In the central block of the campus, the center-west portion would be changed from MIO-105 to MIO-160 and remaining portions would retain the existing MIO-105. Swedish is proposing to condition the height of the plaza to 37 feet and the southeast corner to 40 feet.
3. On the east side of campus on the half-block located on the east side of 18th Avenue, the MIO would be changed from MIO-37 to MIO-50, the same as proposed for Alternative 8.

Height Limits for Alternative 10 are proposed as follows:

1. West Campus: The MIO Districts would be the same as proposed for Alternative 9: The center portion of the block is proposed to be changed from MIO-65 to MIO-200. The Northwest Kidney Center site and the site of the adjacent surface parking lot on the northwest corner would remain MIO-65; the height district on the Seattle Medical and Rehab Center site would remain at MIO-65 but the height conditioned downward to the height of the existing building at 30 feet. The south portion would remain at MIO-65; the MIO-65 height district on the Carmack parcel would be conditioned down to 30 feet. Neither Swedish nor Sabey own this parcel and there are no plans to redevelopment the site under the MIMP.
2. Central Block: The MIO Districts would be the same as proposed for Alternative 9: In the central block of the campus, the center-west portion would be changed from MIO-105 to MIO-160 and remaining portions would retain the existing MIO-105. Swedish is proposing to condition the height of the plaza to 37 feet and the southeast corner to 40 feet.
3. On the half-block on the east side of 18th Avenue, Swedish is proposing greater building rear setbacks than those proposed for Alternatives 8 or 9, additional upper-level setbacks, and a 15-foot height limit for the center portion of the half-block.

MIO-37 would be retained on the north, center, and south portions of the half-block, and the MIO-37 District would be changed to MIO-50 for the two building sections in between.

As described above the surrounding areas consistent of areas zoned for single-family and LR3, and both have 30-foot height limits. Swedish has proposed lower heights and setbacks along its exterior edges to provide a transition between the major institution and surrounding lower residential uses.

The Draft MIMP's proposed higher and more densely developed MIOs are generally inconsistent with policies that apply to areas zoned for single-family and lowrise residential development. The proposed height limits would be substantially higher, the least of these increased heights roughly twice the height of structures that define the neighborhoods' existing character.

Setbacks are proposed to mitigate the increased heights and to provide a transition between the two uses. Alternative 10 proposes additional upper-level setbacks for buildings facing public rights-of-way, and lower heights and greater setbacks on the east side of campus. On its eastern edge, abutting the rear yards of single-family homes, Swedish is proposing a building setback of 25 feet (equal to the required minimum rear yard depth for single-family development), and to condition the center of the development to a height of 15 feet.

The Draft EIS describes the specific height, bulk, and scale of the alternatives, their impacts, and the setbacks proposed for each alternative in Section 3.4 Aesthetics.

Section B-1, Land Use Categories, Single-family Areas

Swedish is not proposing to expand into any areas currently designated single-family. There are two portions of the existing campus that overlay land zoned for single-family use: the southern portion of west campus currently occupied by the south and west parking garages and the Carmack House; and the east campus area (the half-block on the east side of 18th Avenue) currently occupied by surface parking, St. Joseph's Baby Corner, and two vacant buildings. The proposed Draft MIMP includes MIO height districts in both locations that are greater than the height limit allowed for single-family, and would modify the underlying single-family development standards.

There are three goals in Section B-1: LUG8, LUG9, and LUG10. LUG10 is related to housing development and is not applicable to the proposal.

***LU**G8 Preserve and protect low-density, single-family neighborhoods that provide opportunities for home-ownership, that are attractive to households with children and other residents, that provide residents with privacy and open spaces immediately accessible to residents, and where the amount of impervious surface can be limited.*

***LU**G9 Preserve the character of single-family residential areas and discourage the demolition of single-family residences and displacement of residents, in a way that encourages rehabilitation and provides housing opportunities throughout the city. The character of single-family areas includes use, development, and density characteristics.*

> **Discussion:** Implementation of the MIMP would require demolition of two structures that were previously used as single-family residences on 18th Avenue and permanently remove these buildings and the rest of the east side of the campus from the potential housing stock. These units have been within the existing MIO and vacant for years; there would be no displacement of residents. No additional single-family-zoned land would be required for the development of Swedish Cherry Hill. The Draft MIMP's access points will remain off E Jefferson with parking access off 16th Avenue away from the single-family areas. The Draft MIMP locates the most intensive new development away from nearby single-family areas, oriented toward the western side of the campus facing Seattle University, thus preserving and protecting the adjacent single-family neighborhoods. The Draft MIMP is consistent with these goals in that it does not directly displace residents or encroach upon residential areas through expansion of the existing institutional boundary. The Draft MIMP is inconsistent with these goals in that it does not provide any permanent housing and would contrast with the character of adjacent single-family areas.

There are four policies that address the location or designation of single-family areas: LU57 directs the designation of areas containing predominantly single-family structures, and enough space to maintain low-density development, as single-family areas; LU58 directs that a range of single-family zoning be used; LU59 describes the criteria to be used in approving an up-zone of single-family; and LU60 describes when to apply small-lot single-family zoning. The underlying zoning would remain as single-family; these policies are not relevant to the proposal.

There are five policies related to single-family residential use: LU61 through LU65. The existing and proposed use is major institution; and none of these policies apply to the proposal.

There are two policies related to minimum lot size for single-family lots: LU66 and LU67. These policies do not apply to the proposal.

There are two policies related to bulk and siting of single-family residences (LU68 and LU69) and one policy related to height limitations on single-family structures (LU70). The proposal is not for single-family residences and no single-family structures are proposed. Therefore, none of these policies applies to the proposal.

Section B-2, Land Use Categories, Multi-family Residential Areas

Swedish is not proposing to expand into any areas currently designated for multi-family residential use (LR1 and LR3). There are two areas of campus that overlay LR3 zoning: the northern portion of west campus currently occupied by the Northwest Kidney Center and the Seattle Medical & Rehab Center; and the entire central campus area currently occupied by hospital buildings. The proposed Draft MIMP includes MIO height districts in both locations that are greater than the height limits allowed for LR3 and would modify the underlying LR3 development standards.

There are six policies pertaining to the designation of multi-family areas (LU71 through LU76). These policies do not apply since this proposal does not change or eliminate any zoning classifications.

There are three multi-family residential use policies, LU77 through LU79. Policy LU79 does not apply as the proposed use is not commercial.

LU*77 Establish multi-family residential use as the predominant use in multi-family areas, to preserve the character of multi-family residential areas and preserve development opportunities for multi-family use.*

LU*78 Limit the number and type of non-residential uses permitted in multi-family residential areas to protect these areas from negative impacts of incompatible uses*.

> **Discussion**: North of E Cherry Street, the land is zoned multi-family (LR3 and LR1) with multi-family residential and commercial/office as the predominant use. A large portion of the existing campus has an underlying zoning classification of LR3. Current processes are in place to protect these areas from negative impacts: institution uses are allowed or are permitted outright in LR zones if such uses meet standards, or if the use requires an administrative conditional use or master plan to modify development standards.
>
> As framework language for zoning regulations, this policy seeks to focus the rules for multi-family zones on their principal purpose, to provide for residential uses. In the context of the Swedish application for rezones and its MIMP, the multi-family residential zone would be overlain with a MIO, subject to additional policies.
>
> The vicinity is characterized by a diversity of uses and intensities of development. The Draft MIMP represents an increase in the scale and intensity of development on the existing campus, with identified mitigations that address many of the analyzed impacts. The proposed Draft MIMP does not reduce the area devoted to multi-family residential use, it appears to address the underlying policy intent – to limit negative impacts associated with nonresidential development.
>
> Alternatives 8, 9, and 10 would be consistent with these goals.

Goals and policies contained in Section B-2 that are specific to the development of multi-family housing are not applicable to this proposal: density limits policies; multi-family development standards policies; low-density multi-family areas goals and policies; moderate-density multi-family areas goals and policies; and high-density multi-family areas goals and policies.

Section C, Location-Specific Land Use Policies

Section C, Location-Specific Land Use policies states that:

> *The basic zoning categories described in Section B, are augmented here by policies that respond to specific characteristics of an area." For example, historic districts are governed by a basic zoning category as well as regulations that respond to the unique historic characteristics of an area. This section provides the policy foundation to guide how the City adjusts its regulations to respond to unique environments, particularly those created by: major institutions, historic districts and landmarks, environmentally critical areas and shorelines.*

There is one overarching goal listed in Section C:

***LU**G31 Provide flexibility in, or supplement, standard zone provisions to achieve special public purposes where circumstances warrant. Such areas include shoreline areas, airport height districts, historic landmark and special review districts, major institutions, subarea plan districts, areas around high capacity transit stations, and other appropriate locations.*

> **Discussion:** The proposed MIMP is an application to supplement the standard zone provisions to achieve special public purposes for a major institution. The proposal is consistent with this goal.

The first policy, LU178, promotes the integration of high-capacity transit stations into surrounding neighborhoods. This policy does not apply. The second policy, LU179, does apply.

***LU**179 Permit the establishment of zoning overlay districts, which may modify the regulations of the underlying land use zone categories to address special circumstances and issues of significant public interest in a subarea of the city, subject to the limitations on establishing greater density in single-family areas. Overlays may be established through neighborhood planning.*

> **Discussion:** Because of the impacts of development on surrounding communities, establishing Major Institution boundaries and adopting MIMPs are an issue of significant public interest to the surrounding community. The underlying zoning of the existing campus is single-family and multi-family. The bulk of the new development proposed for the Build Alternatives would be on the central campus area, which is zoned multi-family. The area of campus that will be affected by the greatest amount of change is the half-block east of 18th Avenue between E Cherry and E Jefferson Streets. The open character of the surface parking/underdeveloped land, low-level institutional building (St. Joseph's Baby Corner) and two (vacant) former single-family houses would be changed to approximately 3- to 4-story institutional buildings. There would be an increase in density on the existing campus, which is located inside the existing MIO. As a portion of the underlying zone of the existing campus is single-family, increased density on the hospital campus might be characterized as inconsistent with this policy.

However, in establishing the existing MIO boundary, the City has recognized Swedish Cherry Hill's public purpose mission and public benefit as a major institution.

Section C-1, Major Institution Goals and Policies

As stated in the introduction to C-1:

Hospitals and higher educational facilities play an important role in Seattle. Institutions containing these facilities provide needed health and educational services to the citizens of Seattle and the region. They also contribute to employment opportunities and to the overall diversification of the city's economy. However, when located in or adjacent to residential and pedestrian-oriented commercial areas, the activities and facilities of major institutions can have negative impacts such as traffic generation, loss of housing, displacement and incompatible physical development. These policies provide a foundation for the City's approach to balancing the growth of these institutions with the need to maintain the livability of the surrounding neighborhoods.

There are four goals listed, LUG32 through LUG35:

LUG*32 Maximize the public benefits of major institutions, including health care and educational services, while minimizing the adverse impacts associated with development and geographic expansion.*

Discussion: Swedish has stated that they need to intensify development in order to increase its services in accordance with its mission. The Draft MIMP and Draft EIS discuss mitigation measures for each element of the environment intended to minimize the adverse impacts associated with development.

LUG*33 Recognize the significant economic benefits of major institutions in the city and the region and their contributions to employment growth.*

Discussion: As an indicator of the economic benefit of Swedish Cherry Hill to the City and the region, Swedish identified 2012 expenditures including $1.018 billion in employee salaries and benefits and over $653 million in operating expenses. Swedish Medical Centers are also a leader in charitable (i.e., uncompensated) care donating over $35 million in 2012 (Swedish 2012). The proposal would allow for additional space, services, and staff. The proposal is consistent with this goal.

LUG*34 Balance each major institution's ability to change and the public benefit derived from change with the need to protect the livability and vitality of adjacent neighborhoods.*

Discussion: Swedish Hospital has stated that its intent in requesting a new MIMP is to provide the Medical Center with the ability to continue to change and provide services valued by the public. In determining whether to recommend approval of the proposed MIMP, the Director must determine whether the proposal represents a reasonable balance of the public benefits of the development and change with the need to maintain livability and vitality of the adjacent neighborhoods. That determination will be made in the Director's Report and Recommendation.

***LUG**35 Promote the integration of institutional development with the function and character of surrounding communities in the overall planning for urban centers.*

Discussion: Swedish Cherry Hill is not within an urban center. Nonetheless, public comment identified issues related to the hospital's continued development and the neighborhood's function and character; such as transitions in scale, construction noise, and increased traffic volumes. The EIS analyzes these impacts and identifies mitigation. The hospital has existed in its current location for over 100 years. The perimeter is landscaped and designed in a manner to help integrate the hospital campus with the diverse edges of the surrounding areas. The current landscaping integrates the character of the existing development with the surrounding communities, and that part of the proposal is consistent with this goal. The scale of both the existing and proposed buildings is more intense than the surrounding neighborhood character, and that aspect of the proposal is inconsistent with the goal. The proposed Draft MIMP incorporates setbacks intended to establish an appropriate pedestrian scale and transition to surrounding neighborhoods and mitigate impacts to the character of surrounding communities. An analysis of the height, bulk, and scale impacts is included in Section 3.4 of this DEIS.

The goals are followed by 12 general policies for major institutions, **LU**180 through **LU**191:

***LU**180 Designate the campuses of large hospitals, colleges and universities as Major Institutions to recognize that a separate public process is used to define appropriate uses in the areas.*

Discussion: The Swedish Cherry Hill campus contains a large hospital and the campus is designated as a Major Institution. The MIMP process in SMC 23.69 has been established as the process to permit appropriate institutional growth within boundaries while minimizing the adverse impacts associated with development. The proposal is consistent with this policy.

***LU**181 Provide for the coordinated growth of major institutions through major institution conceptual master plans and the establishment of major institution overlay zones.*

Discussion: Swedish Cherry Hill is a designated Major Institution within an adopted MIO district. The proposed MIMP would replace an expired MIMP adopted by the Seattle City Council by Ordinance 117238 on August 2, 1994. Swedish has submitted a Concept Plan which includes changes to the existing MIO height districts. The process applied to review and approval of a new MIMP is consistent with this policy.

***LU**182 Establish Major Institution Overlays (MIO) to permit appropriate institutional development within boundaries while minimizing the adverse impacts associated with* *development and geographic expansion. Balance the public benefits of growth and change for major institutions with the need to maintain the livability and vitality of adjacent neighborhoods. Where appropriate, establish MIO boundaries so that they contribute to the compatibility between major institution areas and less intensive zones.*

Discussion: City Council approved the prior Swedish Cherry Hill MIMP and MIOs in 1994. In that approval process, the City Council, as the decision-maker, permitted Swedish Cherry Hill to grow within boundaries while minimizing the adverse impacts associated with development. The MIMP adopted in 1994, , has expired and a new MIMP is proposed. As part of the review by DPD, the Hearing Examiner, and ultimately, the decision by City Council will have to balance the public benefits with the proposed needs of the growing institution with the need to maintain the livability and vitality of adjacent neighborhoods.

LU*183 Allow modifications to the underlying zone provisions in order to allow major institutions to thrive while ensuring that impacts of development on the surrounding neighborhood are satisfactorily mitigated.*

Discussion: The Draft MIMP and the Draft EIS contain a number of design features and mitigation measures intended to mitigate the impacts of development on the surrounding neighborhood. Proposed MIO development standards are distinct from the provisions of the underlying zoning, in order to provide increased flexibility for major institution growth, as well as clear provisions to identify the siting of future development. The Draft EIS summarizes the mitigation measures in Table 1-2, and significant unavoidable adverse impacts are summarized in Table 1-4. The City Council will decide whether to allow the modifications to the underlying zone provisions.

LU*184 Allow all functionally integrated major institution uses within each overlay district, provided the development standards of the underlying zone are met. Permit development standards specifically tailored for the major institution and its surrounding area within the overlay district through a master plan process.*

Discussion: Uses functionally related to Swedish Cherry Hill are permitted within its existing MIO boundary. Consistent with the process described in this policy, Swedish has requested approval for development standards specifically tailored to its needs to allow future development within its existing boundary. City Council will decide whether to approve the development standards as part of the MIMP approval process.

LU*185 Allow modification of use restrictions and parking requirements of the underlying zoning by the overlay to accommodate the changing needs of major institutions, provide flexibility for development and encourage a high-quality environment. Allow modification of the development standards and other requirements of the underlying zoning by an adopted master plan.*

Discussion: Swedish has requested that the City allow modifications of development standards from the underlying single-family and multi-family zoning through the MIMP to accommodate institutional buildings, and to provide flexibility for current and future development. The proposed on-campus parking would meet the parking standards for major institutions.

***LU**186 Discourage the expansion of established major institution boundaries.*

Discussion: All alternatives currently under consideration maintain the boundary of the existing MIO which is consistent with this policy.

***LU**187 Encourage significant community involvement in the development, monitoring, implementation and amendment of major institution master plans, including the establishment of citizen's advisory committees containing community and major institution representatives.*

Discussion: The DON worked with Swedish to develop a list of potential CAC members. The Notice of Intent, required under the Land Use Code to form the CAC, was published in the City's Land Use Information Bulletin. In addition, outreach to stakeholders in the residential and business community occurred to develop potential members. As required, the majority of CAC membership is made up of community members from adjacent neighborhoods that have no direct economic relationship with the institution with the exception of one Swedish Medical Center non-management representative. Finally, the CAC was appointed by the Mayor and City Council.

Members have experience in such areas as neighborhood organization and issues, land use and zoning, architecture, landscape architecture, economic development, building development and educational or medical services. CAC members apply this experience to provide a balanced representative group. The voting members are staffed by the DON with the cooperation and assistance of Swedish Medical Center. Technical assistance is provided by the DPD, the DON, and the Seattle Department of Transportation (SDOT).

The CAC considered the comments from the public in their discussions and recommendation on the MIMP process and consideration of alternatives.

In addition to the CAC meetings, Swedish has held public open houses to share information and provided updates to the MIMP on the Swedish Medical Center website. There has been significant community involvement in the development, monitoring, implementation and amendment of the Preliminary Draft MIMP, and this involvement will continue throughout the process toward a decision. The process being followed is consistent with this policy.

***LU**188 Encourage Advisory Committee participation throughout the process of revision, amendment and refinement of the master plan proposal.*

Discussion: The CAC has actively participated in the revision and refinement process. Through April 2014, the CAC has met 14 times, and anticipates approximately a total of 24 meetings by the time they reach their recommendation. Meetings are taking place every 1 to 2 months and in some months, 2 meetings are anticipated to be held. The process is involving the CAC during the development of the Draft MIMP and EIS. Swedish modified its initial concept plan in response to the CAC's comments and concerns, and has continued to modify its preliminary Draft MIMP in response to comments. Consistent with this policy, the CAC's continued participation has been encouraged by both the City and Swedish.

***LU**189 Require preparation of either a master plan or a revision to the appropriate existing master plan when a major development is proposed that is part of a major institution, and does not conform with the underlying zoning and is not included in an existing master plan.*

Discussion: The Swedish Cherry Hill 1994 MIMP has expired. To accommodate new development within the existing MIO, a new MIMP is required. Swedish has submitted a Draft MIMP for City approval. This is consistent with this policy.

Policies **LU**190 and **LU**191 provide for the establishment of new major institutions, and the location of new institutions. Neither policy is applicable to this proposal as Swedish Cherry Hill is an existing designated Major Institution located in an area designated as "major institution."

There is one use policy, **LU**192:

***LU**192 Define all uses that are functionally integrated with, or substantively related to, the central mission of the major institution or that primarily and directly serve the users of the institution as major institution uses and permit these uses in the Major Institution Overlay district, subject to the provisions of this policy, and in accordance with the development standards of the underlying zoning classifications or adopted master plan.*

Discussion: All existing uses at Swedish Cherry Hill are functionally integrated with, or substantially related to, the central mission of Swedish Cherry Hill as a major institution; and are permitted uses in the MIO districts. The City has defined the uses that are allowed in a MIO in the Land Use Code (SMC 23.69.088). The proposed Draft MIMP, if approved, would be monitored to ensure that new uses are consistent with this policy and the Land Use Code.

There are two policies on development standards for major institutions: **LU**193 and **LU**194:

***LU**193 Apply the development standards of the underlying zoning classification for height, density, bulk, setbacks, coverage and landscaping for institutions to all major institution development, except for specific standards altered by a master plan.*

Discussion: The underlying zoning for the existing campus is SF-5000 and LR3. In single-family zones, institutions (e.g., community centers, schools, religious facilities, and libraries) are allowed through conditional use approval. Hospitals are only allowed in single-family zones through the approval of a MIMP.

The applicable development standards for institutions are codified in SMC 23.44.022. Section D states, *"New or expanding institutions in single-family zones shall meet the development standards for uses permitted outright in Section 23.44.008 through 23.44.016 unless modified elsewhere in this section or in a Major Institution Master Plan."* Swedish Cherry Hill is not a new institution, but would be expanding in a single-family or multi-family zone by adding additional square-footage and height.

The underlying zoning regulates height, yard requirements, and lot coverage. The Draft MIMP proposes the following general modifications to underlying development standards (e.g., height, setbacks, and lot coverage):

- Remove the maximum lot coverage of 35 percent
- Establish heights pursuant to MIO zones listed in SMC 23.69.004 Major Institution Overlay District Established
- Allow the establishment of building setbacks in lieu of yards
- Change the single-family zone requirements for garage setbacks and entrance widths
- Allow for long-term care facilities to be constructed within the overall development standards for the MIMP
- Allow an unmodulated façade width maximum of 150 feet
- Allow the structure depth to be limited by setbacks measured from property lines

In determining whether to approve this modification to the underlying zoning development standard, the Director must determine whether the proposal represents a reasonable balance of the public benefits of the development and change with the need to maintain livability and vitality of the adjacent neighborhoods. That determination will be made in the Director's Report and Recommendation.

LU*194 The need for appropriate transition shall be a primary consideration in determining setbacks.*

Discussion: In their Draft MIMP, Swedish has proposed setbacks with the stated intent to establish an appropriate pedestrian scale and transition to the surrounding neighborhood. The proposed setbacks are the same for both Alternatives 8 and 9 on the half-block on 18th Avenue. Compared to Alternatives 8 and 9, Alternative 10 has greater setbacks on the north, south, and east sides on the half-block on 18th Avenue; but a smaller setback on the east side facing 18th Avenue. An analysis of the height, bulk and scale impacts of each Build Alternative is included in Section 3.4. In many locations, the proposed setbacks are the same as those that existed in the expired 1994 MIMP, but they are less than those that would be required for front, rear, or side yards in the underlying zoning. Swedish has asked for a modification to those yard requirements and approval of the proposed setbacks. In determining whether to approve this modification to the underlying zoning development standard, the Director must determine whether the proposal represents a reasonable balance of the public benefits of the development and change with the need to maintain livability and vitality of the adjacent neighborhoods. That determination will be made in the Director's Report and Recommendation.

There are four policies that address parking standards for Major Institutions:

LU*195 Establish minimum parking requirements in MIO districts to meet the needs of the major institution and minimize parking demand in the adjacent areas. Include maximum parking limits to avoid unnecessary traffic in the surrounding areas and to limit the use of single occupancy vehicles (SOV).*

Discussion: Swedish has proposed to meet the Land Use Code required minimum parking amounts. The 1994 approved MIMP allowed for 1,725 parking spaces; 1,510 parking spaces have been developed. The minimum parking supply requirement is based on a combination of numbers of employees, beds, outpatients, and auditorium seating. The maximum allowed parking supply is 135 percent of the calculated required minimum. Table 12 of the Transportation Report (Appendix C to this DEIS) shows the required minimum spaces for Alternative 8 calculated to be 1,955 spaces, and the maximum calculated to be 2,639. For Alternatives 9 and 10, the calculated minimum would be 1,895 spaces and the maximum calculated to be 2,558 (Table 17 of Appendix C). Swedish is proposing to provide up to a total of 2,310 spaces (800 new) for Alternative 8 or 2,245 for Alternatives 9 or 10 (735 new) on campus. The proposed number of parking spaces is below the maximum number allowed by the Land Use Code, and the proposal is consistent with this policy.

LU*196 Allow short-term or long-term parking space provisions to be modified as part of a Transportation Management Program (TMP).*

Discussion: Swedish has proposed a number of parking spaces that is within the Land Use Code maximum. No modification to the short-term or long-term parking space provisions is requested.

LU*197 Allow an increase to the number of permitted spaces only when an increase is necessary to reduce parking demand on streets in surrounding areas and is compatible with goals to minimize traffic congestion in the area.*

Discussion: Swedish is proposing that the number of parking spaces on campus be below the maximum number of permitted spaces. No increase to the number of permitted spaces is being requested.

***LU**198 Use the TMP to reduce the number of vehicle trips to the major institution, minimize the adverse impacts of traffic on the streets surrounding the institution, minimize demand for parking on nearby streets, especially residential streets, and minimize the adverse impacts of institution-related parking on nearby streets. To meet these objectives, seek to reduce the number of SOVs used by employees and students to reach the campus at peak times.*

Discussion: Swedish's current TMP goal is 50 percent SOV, and the 2012 CTR survey indicates Swedish Cherry Hill currently exceeds the goal with SOV use at 57 percent. The current TMP includes the following features:

- Establish and continuously maintain a Building Transportation Coordinator
- Provide a transit subsidy equal to 50 percent of the cost of an Orca Passport for both bus and ferry
- Provide preferential parking for vanpool and carpools, carpools of three or more people or vanpools park on campus at no cost
- Provide off-street parking for SOV at a monthly fee equal to or greater than the market rate for peak period one-zone monthly transit passes
- Provide weather protected and secured bicycle parking
- Subsidize the cost of the restricted parking zone (RPZ) stickers for areas surrounding the campus
- Encourage and support alternative work schedules, where possible
- Participate in the guaranteed ride home program
- Conduct one to three transportation fairs per year on-campus to promote the trip reduction programs
- Provide a flex-car program on campus
- Operate an inter-campus shuttle (see additional discussion in the Affected Environment)

To reduce SOV use, and prevent parking on nearby adjacent streets, Swedish has proposed the following program elements intended to adjust the transportation patterns and habits of the larger employee groups on campus, as well as those of the auxiliary uses that operate on the Swedish Cherry Hill campus. The program elements that are currently utilized and proposed as part of the updated TMP include:

- Transit Incentives – Increased levels of incentives, communication regarding schedules, and enhanced facilities
- Alternative Modes – Promote the use of alternative travel modes, such as bicycle and walking through improved onsite facilities and incentive programs
- HOV Incentives – Promote HOV programs through incentives for carpools/vanpools, preferred parking, and utilization of rideshare programs
- Parking Management Programs – Consider alternative payment technologies, parking policies, review of RPZ designations, and other programs to reduce spillover into the adjacent neighborhoods

Director's Rule 10-2012 details the elements of the required TMP. The draft TMP is currently under review by both DPD and SDOT and must be approved before the MIMP recommendation is made. The MIMP would comply with Director's Rule 10-2012 and would be consistent with this policy.

There is one policy on residential structures:

LU*199 Encourage the preservation of housing within major institution overlay districts and the surrounding areas. Discourage conversion or demolition of housing within a major institution campus, and allow such action only when necessary for expansion of the institution. Prohibit demolition of structures with non-institutional residential uses for the development of any parking lot or parking structure which could provide non-required parking or be used to reduce a deficit of required parking spaces. Prohibit development by a major institution outside of the MIO district boundaries when it would result in the demolition of structures with residential uses or change of these structures to non-residential uses.*

Discussion: No occupied housing exists on the existing campus. There are three, single-family structures within the existing MIO boundary:

1. The Carmack House, 1522 E Jefferson Street, has been vacant for several years. It is not owned by Swedish, Sabey, or any of their subsidiaries. Neither Swedish nor Sabey have any plans to development the site as part of this MIMP.
2. 544 18th Avenue was originally a single-family house. The property is owned by 17th and James, LLC/Sabey Corporation and is vacant.
3. 536 18th Avenue was originally a single-family house. The property is owned by 17th and James, LLC/Sabey and is vacant.

Each of the Build Alternatives would require demolition of the two vacant structures owned by 17th and James, LLC/Sabey located on the half-block on the east side of 18th Avenue within the MIO. This half-block is one of the few places on campus that can provide an area for new development and new below-grade parking without demolishing existing hospital or medical functions. Swedish has proposed that development in this area occur within the first phase in order to also provide temporary space in which to relocate existing services while their existing buildings are replaced, renovated, or enlarged.

The Draft MIMP alternatives were revised based on CAC and community concerns about expansion beyond the existing MIO boundary.

There are five policies pertaining to the MIMP:

LU*200 Require a master plan for each Major Institution proposing development which could affect the livability of adjacent neighborhoods or has the potential for significant adverse* *impacts on the surrounding areas. Use the master plan to facilitate a comprehensive review of benefits and impacts of the Major Institution development.*

> **Discussion**: The City has required that Swedish prepare a new master plan for its proposed development. The Draft MIMP describes Swedish Cherry Hill proposed benefits. This EIS reviews the impacts of the proposed 1.9 million gross SF new of development (3.1 million gross SF total). The master plan review and approval process, and the EIS review, are consistent with this policy.

***LU**201 Use the master plan to: Give clear guidelines and development standards on which the major institutions can rely for long-term planning and development; Provide the neighborhood advance notice of the development plans of the major institution; Allow the City to anticipate and plan for public capital or programmatic actions that will be needed to accommodate development; and Provide the basis for determining appropriate mitigating actions to avoid or reduce adverse impacts from major institution growth.*

> **Discussion**: If approved, the MIMP would provide clear guidelines and development standards on which Swedish Cherry Hill can rely for long-term planning and development. The Draft MIMP includes proposed setbacks, landscaping, and designated open space, and a description of the underlying Land Use Code development standards for SF-5000 and LR3 zones for which the institution is requesting a modification to allow for the development of major institution buildings. The preliminary drafts of the MIMP have been provided to the CAC and to the public for review as a means of providing advance notice of the amount of, and size of proposed future development.
>
> The Draft MIMP and the Draft EIS provide information on site access, traffic volumes, intersection congestion, transit ridership, and utility needs (e.g., water supply, and water discharge) which would allow the City to anticipate and plan for public capital or programmatic actions, including the potential need for new traffic signals along the arterials of E Jefferson and E Cherry Streets. See Section 3.7 Transportation for mitigation measures for additional information.
>
> The information contained in the Draft MIMP and the analysis contained in this EIS provide the basis for identifying appropriate mitigation measures to avoid or reduce the adverse impacts of the proposed growth.

***LU**202 The master plan should establish or modify boundaries; provide physical development standards for the overlay district; define the development program for the specified time-period; and describe a transportation management program.*

> **Discussion**: The Swedish Cherry Hill Draft MIMP maintains existing MIO boundaries for all three Build Alternatives; requests approval of physical development standards for the MIOs; includes a proposed development schedule for a 20- to 30-year period; and

includes a draft TMP. The Draft MIMP contains the elements required by this policy and is consistent with the policy.

***LU**203 Require City Council review and adoption of the master plan following a cooperative planning process to develop the master plan by the Major Institution, the surrounding community and the City.*

Discussion: Swedish submitted a Concept Plan in February 2013, followed by the development and submittal of a Preliminary Draft MIMP (November 2013) and a second Preliminary Draft MIMP (February 2014). Each of the documents was presented to the CAC for its review and consideration. The CAC met regularly through the planning process. From the December 13, 2012, through April 2014, the CAC held 14 committee meetings to provide comments and input on the development of the MIMP, and anticipates holding a total of approximately 24 meetings prior to making its recommendation on the MIMP. Swedish, through its voting representative and non-voting representative, is an active participant in the committee discussions. All CAC meetings are open to the public. At each of the CAC meetings, opportunity is provided to the public to provide comments, and many members of the surrounding community speak frequently during the public comment period. DPD and SDOT are also active participants of the CAC, attending most meetings, and present at all meetings in which the CAC's recommendations on the MIMP are formulated.

DPD will make its recommendation to the Hearing Examiner after publication of the Final EIS Final MIMP, and receipt of the CAC Report. Following the Hearing Examiner's recommendation, the Final MIMP will then go to the City Council for its review and consideration.

The process followed for the review of the Draft MIMP has been consistent with this policy.

***LU**204 In considering rezones, the objective shall be to achieve a better relationship between residential, commercial or industrial uses and the Major Institution uses, and to reduce or eliminate major land use conflicts in the area.*

Discussion: The proposed MIO height limits require a rezone. City Council will make the rezone decisions as part of their consideration of approval of the requested MIMP. The rezone analysis is part of the Director's analysis of the proposal, rather than the EIS's analysis of the proposal's environmental impacts.

Section C- 3, Environmentally Critical Areas (Steep slope)

The existing MIO has areas designated as Environmentally Critical Areas (ECAs) in that they contain steep slopes. The majority of the ECAs are on already developed land with the exception of the steep slope on the parking area/vacant commercial land associated with the Seattle Medical Post-Acute Care (555 16th Avenue). Any project-specific development will need to comply with the ECA ordinance).

Consistency with the Human Development Element of the Comprehensive Plan

The Seattle Comprehensive Plan Human Development Element includes goals and policies related to health that apply to the Swedish Cherry Hill MIMP. The relationship of the relevant Comprehensive Plan aspects is described below.

Vision Statement

Vision Statement *The City of Seattle invest in people so that all families and individuals can meet their basic needs, share in economic prosperity, and participate in building a safe, healthy, educated, just and caring community.*

> **Discussion:** The stated mission of Swedish Cherry Hill is to improve the health and well-being of each person served. Swedish has said that the future growth considered in the Draft MIMP is necessary to support its mission. The Draft MIMP is consistent with the Plan Element vision statement.

Section B, Food to Eat & a Roof Overhead

HD*G3 Strive to alleviate the impacts of poverty, low income and conditions that make people, especially children and older adults, vulnerable.*

> **Discussion:** Swedish Medical Center has many programs that serve to low-income individuals. Swedish works with five community clinics that provide health care to underserved populations, including ethnic communities and the poor. Many of the patients are refugees, homeless, or are without the means to get the clinical and pharmaceutical attention they need. Residency programs provide these services at the Swedish Cherry Hill Family Medicine Clinic. The charity-care program offers free or discounted hospital services for people who cannot afford care. Swedish Medical Centers provide financial assistance in cases, whether patients are uninsured or underinsured, where the yearly family income is between 0-400 percent of the federal poverty level (Swedish Foundation 2013; Swedish 2014).

HD*11 Encourage coordinated service delivery for food, housing, health care, and other basic necessities of life to promote long-term self-reliance for vulnerable populations.*

> **Discussion:** Swedish Cherry Hill provides healthcare to patients of every age and economic status.

Section C, The Education & Job Skills to Lead an Independent Life

HD*G4 Promote an excellent education system and opportunities for life-long learning for all Seattle residents.*

HD*G4.5 Strengthen educational opportunities for all Seattle students.*

> **Discussion:** Swedish Cherry Hill provides health information resources and classes to improve well-being. Examples of programs provided are: Childbirth, Parenting, and

Family Classes; Health Classes at Swedish; Diabetes Education Center; Cancer Education Center; support groups; research studies; online Health Library; Medication Safety; Parentelligence Blog; HealthWatch Newsletter; and Swedish Kids Symptom Checker.

***HD**19 Work with community colleges, universities and other institutions of higher learning to promote life-long learning opportunities for community members and encourage the broadest possible use of libraries, community centers, schools, and other existing facilities throughout the city, focusing on development of these resources in urban villages areas.*

Discussion: In addition to its location next to Seattle University, in the vicinity of other major medical institutions, and as a part of the broader Swedish Medical Center system, the Swedish Cherry Hill campus is a hub of research and education including the Heart and Vascular Institute and the Neuroscience Institute. As noted above, Swedish provides a number of classes open to the community. Many of the wellness-themed classes are free and others involve a moderate fee (some classes have scholarships available on a limited basis).

***HD**20 Work with schools and other educational institutions, community-based organizations, businesses and other governments to develop strong linkages between education and training programs and employability development resources.*

Discussion: The Registered Nurse (RN) Residency Program was created by Swedish in 2010. The program trains 120 recently graduated/newly hired nurses in specialties that include Med Surgery, Adult Critical Care, Neonatal Intensive Care, Telemetry, Labor and Delivery, Postpartum, and Emergency Department care. A remodeled Learning Center for the RN Residency Program will be located at the existing Cherry Hill Campus and will include classroom space and a Nursing Simulation Lab (Swedish Foundation 2013).

Swedish is also committed to ongoing medical research. At any given time, there are as many as 700 clinical trials (federal and commercial) being conducted by Swedish-affiliated physicians, making Swedish one of the nation's leading clinical-trial sites (Swedish 2013b).

Section D, Effective Disease Prevention, Access to Health Care, Physical & Mental Fitness for Everyone

***HD**G6 Create a healthy environment where all community members, including those currently struggling with homelessness, mental illness and chemical dependence, are able to aspire to and achieve a healthy life, are well nourished, and have access to affordable health care.*

Discussion: Swedish Medical Centers have provided medical services to the community for over a century. Swedish Cherry Hill outreach serves those who may not otherwise receive needed services, such as programs for newly arrived immigrants, homeless teenagers, low-income seniors, pregnant women with addictions, and charity care. As stated in the Swedish Medical Center Mission:

> *Swedish has been dedicated to being the best community partner possible. It does this by providing a wide range of community benefits, strategies and solutions that meet people's healthcare needs. That means covering the cost of medical care for those who can't pay, offering free health screenings, assisting patients with their rent in times of healthcare crisis, and supporting research projects that help to create valuable medical advances, both here at home and across the world. In 2012, Swedish Medical Center's community benefits and uncompensated care totaled more than $130 million*.

In 2011, Swedish provided more than $35 million in direct charity care to the community. In 2012 the total approached $36 million. In 2012, Swedish donated over $140 million in charity care and community benefits (Swedish Foundation 2013). In 2013, Swedish provided more than $35 million in direct charity care alone (Swedish 2014).

***HD**21 Encourage Seattle residents to adopt healthy and active lifestyles to improve their general health and well-being. Provide opportunities for people to participate in fitness and recreational activities and to enjoy available open space.*

Discussion: See Discussion under HDG4 and HDG4.5 above. The Draft MIMP includes a proposed enhancement of open space and streetscapes. A "Health Walk" perimeter walking system with health information stops and improved sidewalks is one proposed pedestrian amenity intended to promote well-being.

***HD**22 Work toward the reduction of health risks and behaviors leading to chronic and infectious diseases and infant mortality, with particular emphasis on populations disproportionately affected by these conditions.*

Discussion: See Discussion under HDG6 above. Swedish Cherry Hill outreach serves those who may not otherwise receive needed services, such as programs for newly arrived immigrants, homeless teenagers, low-income seniors, pregnant women with addictions, and charity care.

***HD**23 Work to reduce environmental threats and hazards to health.*

a. Make use of the City's building and fire codes, food licensing, and permit processes, and hazardous materials and smoking regulations for fire and life safety protection.
b. Collaborate through joint efforts among City agencies, such as fire, police, and construction and land use to address the health and safety issues in a more efficient manner.

Discussion: Swedish Cherry Hill complies with all applicable federal, state, and local requirements related to environmental and health hazards. Swedish Medical Center is a member of the Disaster Medicine Project (DMP) which provides staff with a standardized, all-hazards approach to crisis and disaster response. The group includes hospitals and fire districts to train emergency personnel about standardized procedures between hospitals, emergency service responders, and residents to maximize disaster preparedness at all times. DMP focuses on four components: training, collaboration, disaster auxiliary and advocacy, and helps hospital personnel recognize a disaster and how to provide the greatest good for the greatest number of people.

***HD**24 Seek to improve the quality and equity of access to health care, including physical and mental health, emergency medical, and addiction services.*

a. *Collaborate with community organizations and health providers to advocate for quality health care and broader accessibility to services.*
b. *Pursue co-location of programs and services, particularly in under-served areas and in urban village areas.*

Discussion: As a charitable nonprofit organization, Swedish invests its resources in programs and services that improve the health of the community and region. Examples of continuing programs provided through the Swedish Medical Center Foundation and in coordination with other organizations are: Swedish Community Specialty Clinic, NW Kidney Center Education, Family Health Center, Country Doctor and Global to Local.

***HD**24.5 Support increased access to preventive interventions at agencies that serve the homeless, mentally ill and chemically dependent populations. Pursue co-location of health services at these and other agencies serving those disproportionately affected by disease.*

Discussion: Swedish has partnered with Country Doctor Community Health Centers to *"help improve the health of our community by providing high-quality, caring, culturally appropriate primary health care that addresses the needs of all people regardless of their ability to pay"* (www.countrydoctor.org). Country Doctor Community Health Centers opened an after-hours clinic on December 2, 2013, on the Cherry Hill Campus located in the Swedish family medicine clinic on the first floor of the Professional Office Building. The hours of operation are 6 to 10 PM Monday through Friday and noon to 10 PM Saturday and Sunday. Located adjacent to the emergency room, it is staffed by ARNPs and is open to the community. The clinic serves people with state-sponsored insurance, private insurance as well as the uninsured. In addition to meeting the needs of the community that is underserved for after-hours care, an explicit goal is to decrease inappropriate emergency room utilization, avoid unnecessary hospitalizations, provide an outlet for busy local primary care clinics, and connect patients to a medical home.

Neighborhood Planning

In early 2000, the City concluded a 5-year neighborhood planning process. From each plan a set of neighborhood-specific goals and policies were adopted into the Comprehensive Plan. These goals and policies constitute the "adopted" neighborhood plans.

The Swedish Cherry Hill campus is located within the borders of the Central District Neighborhood Planning Area – the plan area is shown in Figure 3.3-9 and encompasses three Urban Villages/Centers: Madison-Miller to the north, 23rd Avenue S at Jackson-Union to the east and south and 12th Avenue in the western portion of the neighborhood. The consistency analysis for this EIS is based on the goals and policies for the Central District overall since the Swedish Cherry Hill campus is not within an urban village/center. The consistency analysis for this EIS also includes the Swedish Medical Center First Hill MIMP and Seattle University MIMP. Consistency of the proposed MIMP with applicable goals and policies from these plans is presented below.

Applicable Neighborhood Planning Element Goals and Policies

NG*2 Give all community members the opportunity to participate in shaping the future of their neighborhoods.*

N*1 The policies in this element are intended to guide neighborhood planning for areas that are designated through the Comprehensive Plan to accommodate significant proportions of Seattle's growth, as well as other areas.*

Neighborhood Planning Element Section B-6, Central Area

Overall Central Area Community Identity & Character Goal

CA*-G1 A community that celebrates the Central Area's culture, heritage, and diversity of people and places.*

Overall Central Area Community Identity & Character Policies

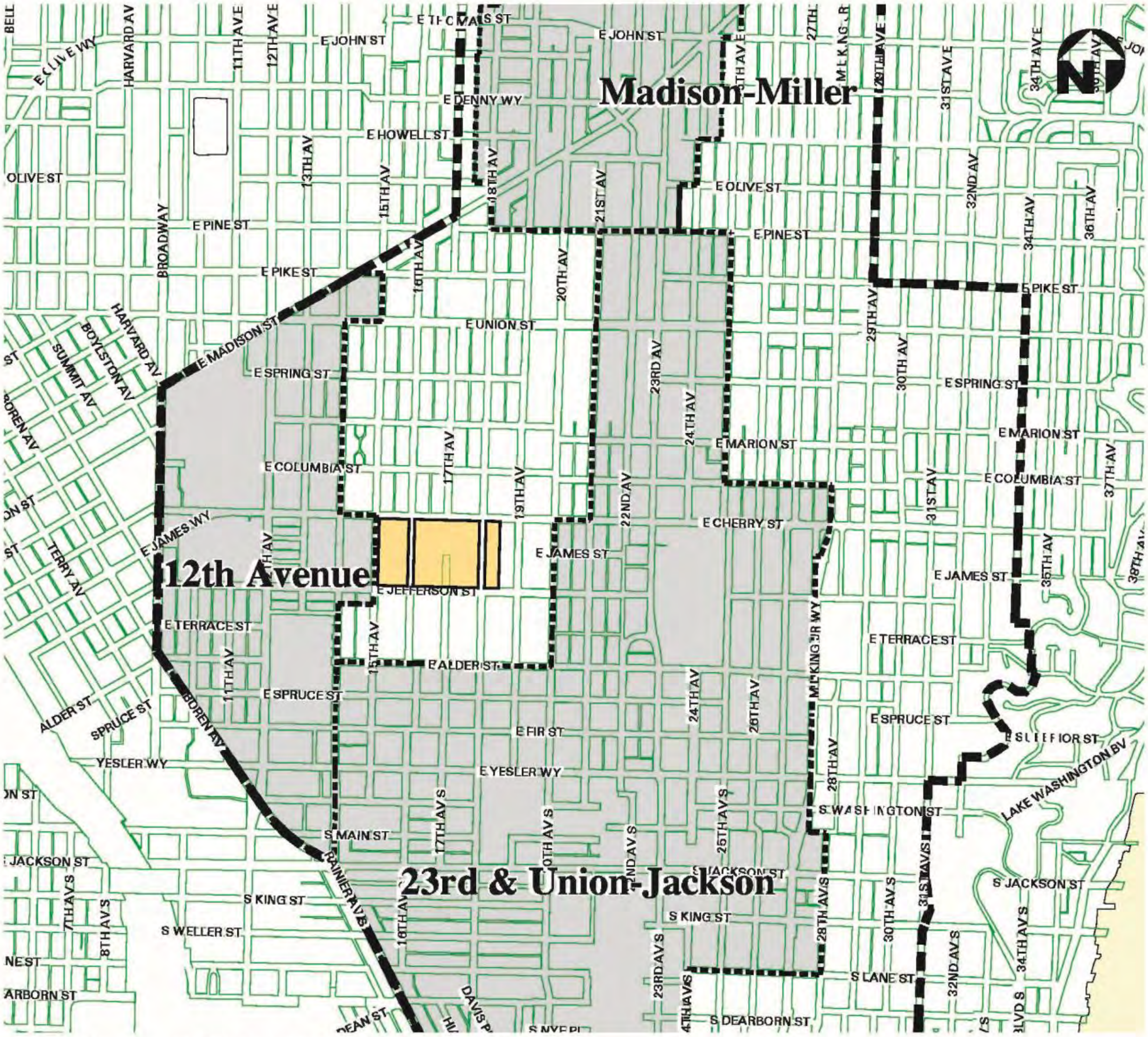
CA*-P1 Enhance the sense of community and increase the feeling of pride among Central Area residents, business owners, employees, and visitors through excellent physical and social environments on main thoroughfares.*

CA*-P2 Recognize the historical importance and significance of the Central Area's single-family residential housing stock, institutional buildings (old schools, etc.), and commercial structures as community resources. Incorporate their elements into building design guidelines, housing maintenance programs, and possible designation of historic and cultural resources.*

CA*-P3 Seek opportunities for community-based public improvements that would create a sense of identity, establish pride of place, and enhance the overall image of the Central Area.*

CA*-P4 Create opportunities for public spaces, public art, and community gateways (e.g., Lavizzo Amphitheater, I-90 Lid).*

CA*-P5 Support the development of CAAP*IT CAN (Central Area Action Plan * Implementation Team Community Action Network) for coordination of volunteerism and economically viable community building programs, projects and collaboration.*



Source: City of Seattle Strategic Planning Office

Legend

- Swedish Medical Center Cherry Hill Campus
- Planning Area Boundary
- Urban Village/Center Boundary
- Urban Village/Center

Figure 3.3-9

Central District Neighborhood Planning Area

Central District Transportation and Infrastructure Goals

***CA**-G2 A community where residents, workers, students and visitors alike can choose from a variety of comfortable and competitively convenient modes of transportation including walking, bicycling, and transit and where our reliance on cars for basic transportation needs is minimized or eliminated.*

***CA**-G3 A community that is served by a well-maintained infrastructure and the most up to date communication technology.*

Central District Transportation and Infrastructure Policies

***CA**-P6 Facilitate movement of residents, workers, visitors, and goods within the Central Area with a particular focus on increasing safety, supporting economic centers, encouraging a full range of transportation choices, and creating social gathering places that improve the quality of life and serve as the heart of the community.*

***CA**-P7 Encourage use of travel modes such as transit, bicycles, walking and shared vehicles by students and employees, and discourage commuting by single occupant vehicle. Minimize impacts of commuters on Central Area neighborhoods and neighborhood cut through traffic to and from the regional highway network. Work with institutions/businesses to develop creative solutions for minimizing auto usage by employees and students.*

***CA**-P8 Promote capital improvements that encourage "pedestrianism" among residents, employees, and shoppers. Use all area streets and sidewalks as avenues to walk to work, school, recreational facilities, shopping districts, and visit neighbors. Provide for pedestrian convenience and priority at signalized intersections using Transportation Strategic Plan strategies. Preserve residential area street ends and stairways for public access.*

***CA**-P9 Identify key pedestrian streets and areas where neighborhoods can be linked together.*

***CA**-P10 Central Gateway project: Strive to provide excellent pedestrian and bicycle links between the Central Area and adjacent neighborhoods. Facilitate bicycle and pedestrian safety, and transit and traffic flow and access. Minimize neighborhood cut-through traffic.*

***CA**-P11 Coordinate project planning with affected neighborhood planning areas including the Central Area, the International District, and First Hill.*

***CA**-P12 Strive to provide safety for pedestrians needing to cross Central Area arterials to reach schools, parks, businesses, services, and transit. Operate pedestrian signals to facilitate pedestrian movement and safety.*

***CA**-P13 Facilitate residents' access to Central Area businesses, services, and institutions by using public transportation, thereby encouraging patronage of area businesses and reducing the need for cars. Encourage community-based transit service with transit hubs at primary business nodes and community anchors.*

***CA**-P14 Facilitate access to employment centers for Central Area residents who use public transit. Maintain efficiency of direct transit service to downtown, improve north-south transit service to regional job centers, and improve access to eastside transit service.*

***CA**-P15 Encourage shared parking at business nodes in order to meet parking requirements while maximizing space for other uses with a goal to reduce the need for surface parking lots especially along Key Pedestrian Streets.*

***CA**-P16 Encourage coordination of construction work within the street right of way in order to maximize the public benefit and minimize the disruption of the street surface.*

***CA**-P17 Improve the visual quality of the neighborhoods by encouraging undergrounding of utilities including service lines for all new construction and remodel projects and minimizing the impact of new telecommunication facilities such as towers.*

Discussion: Redevelopment under the Build Alternatives would include the replacement of aging facilities to meet the demands of regional growth within the medical community. The need to meet technological demands and is a key driver for the growth and redevelopment of the existing campus. Upgrading hospital facilities to meet seismic requirements is of special concern in the Seattle area as it sits on a significant fault line and may be at risk in the event of an earthquake. Capacity of the Central Utility Plant is also at its current limits. In the future; the upgrading, replacing, and expanding of the Central Utility Plant and utilities is needed as new square-footage is added to the campus. The Draft MIMP proposal for new development and future building operations incorporates sustainable buildings practices as a goal for the future campus.

All Build Alternatives would increase the amount of employment on the campus and enhance street-level retail uses.

Existing and proposed open space areas and enhancements to the pedestrian streetscape on the campus and along campus boundaries would serve not only the employees of and visitors to the campus, but the surrounding community as well. In an effort to reduce the number of trips to the campus, the Draft MIMPincludes a TMP that would encourage the use of transit, bicycling, and walking as a means to access the campus. Proposed development under the MIMP would also include an increase in the amount of underground parking provided on campus.

Transit access is on E Jefferson Street with stops next to the main entry at 17th Avenue, and stops west down the hill near 15th Ave. Swedish Cherry Hill would maintain the shuttle service from the main plaza that circulates between First Hill, Cherry Hill and Met Park campuses.

The MIMP would enhance pedestrian circulation. Maintaining the pedestrian and bicycle circulation within the street right-of-way will be a priority component within the plan. The enhancements recently approved by DPD of the 17th Avenue internal/ external corridor will be added to the standards (e.g., clear pathway signage and public access, public amenities, sufficient pathway lighting and places for rest along the accessible route).

Swedish would work with the City for pedestrian-oriented capital improvements: painted cross walks, curb bulbs, special paving, new signals, bus stop plazas, street trees and other landscaping and bicycle routes. The underlying zones don't have pedestrian circulation requirements.

Bike circulation occurs currently within the street right-of-way since there are no dedicated bike lanes in the direct surrounding neighborhood or MIO. The City of Seattle Neighborhood Greenway Plan is proposing 18th Ave to be a Greenway street. Similar to the pedestrian circulation system, Swedish would work to maintain the current connections through the campus through plans described in the Draft MIMP.

This redevelopment would be consistent with the transportation and infrastructure goals and policies of the adjacent Central Area Neighborhood Planning Area.

Central District Economic Development Goals and Policies

CA*-G5 Central Area as one business district offering a series of successful economic niche neighborhoods within the overall community.*

CA*-P22 Encourage minority and locally owned businesses in the Central Area to grow and expand.*

CA*-P23 Facilitate and support business associations for primary business districts.*

CA*-P24 Create a viable business base that will attract investment, focusing on neighborhood retail, professional and personal services, restaurants, and entertainment. Support the urban design element of the Central Area Neighborhood Plan that strengthens development and enhances the pedestrian nature of each area.*

CA*-P25 Support linkages between job training and services and jobs available.*

CA*-P26 Develop organizational capacity within the community to stimulate economic development.*

CA*-P27 Support crime prevention programs that involve the community such as Community Police Teams, Block Watch, Youth Advisory Council.*

Discussion: The Swedish Cherry Hill campus is located within the Central District Neighborhood Plan Area but is not within an Urban Center or Village. Housing goals and policies are not applicable to this MIMP.

Redevelopment under the Draft MIMP would include the replacement of aging facilities to meet the demands of regional growth within the medical community. The active collaboration between Swedish and the CAC in the MIMP process is intended to assure that redevelopment would be consistent or compatible with many of the goals and policies of the adjacent Central District Neighborhood Planning Area. The Draft MIMP would increase the amount of employment on the campus.

The Swedish Cherry Hill campus is located between two main thoroughfares (E Cherry and E Jefferson Streets) and near other Central area community-based institutions (e.g., Seattle University, Garfield Community Center). A goal of the Draft MIMP is to improve the physical environment along all street frontages adjacent to the campus, and Swedish is working with the CAC to consider amenities and uses along the street frontages that would increase interaction between the neighborhood and the medical center.

In the Draft MIMP, Swedish has described the existing and proposed open space areas. They have started a dialog with the CAC and Squire Park community on the types of enhancements to the pedestrian streetscape on the campus and along campus boundaries that would be desirable to the neighborhood. It has not yet been determined as to whether future open space, or which open space, would serve not only the employees of and visitors to the campus, but the surrounding community as well.

In an effort to reduce the number of trips to the campus, the Draft MIMP includes a proposed TMP designed to encourage the use of transit, bicycling, and walking as a means to access the campus. Proposed development under the MIMP would also include an increase in the amount of parking provided on campus.

Overall, implementation of the Draft MIMP will likely increase safety and security for patients, employees, visitors, and neighborhood through multiple enhancements; however, a final assessment cannot be made until those enhancements are more clearly defined.

Seattle University MIMP

The Seattle University Campus abuts the Swedish Cherry Hill campus along 15th Avenue. The multi-block Seattle University campus is generally bounded by Broadway, Madison Street, 12th and 15th Avenues, and E Jefferson Street (see Figure 3.3-2). The Seattle University MIMP was adopted in 1997 by the City Council. A new Draft MIMP and Draft EIS were prepared in 2009 and the Final MIMP and Final EIS were issued in June 2011. The MIMP was adopted by the City Council on January 22, 2013, by Ordinance 124097 (Clerk File 309092). Seattle University had realized the growth anticipated in that earlier MIMP and developed the new MIMP to plan for the next 20 years.

The MIMP document contains a description of planned and potential development projects, a discussion and summary of the MIMP Development Standards, and the TMP. Proposed projects include academic, library, housing, administration, and other uses. Overall the University plans to expand on-campus housing from 23 percent (in 2011) to 28 percent of the student population.

Discussion: The Swedish Cherry Hill campus and the Seattle University campus both share 15th Avenue as their boundary. The new Seattle University campus MIMP maintains the original MIO-65 along that eastern boundary fronting on 15th Avenue. Development under the Swedish Cherry Hill MIMP would provide a range of medical, as well as educational and retail/commercial uses in the direct vicinity of the Seattle University campus. Proposed future development by Swedish Cherry Hill in combination with other institutional development in the Central District Neighborhood and vicinity, particularly at the adjacent Seattle University campus, would contribute to cumulative employment/population growth and intensity of land uses in this area. For example, the Seattle University Final MIMP identifies near-term planned and potential projects that could occur over the proposed 20-year time frame, which would result in an increase of approximately 2.145 million gross SF of campus building space, an increase of building heights along portions of the campus perimeter and an expansion of the MIO boundary by 2.4 acres (from a total of 54.9 acres to 57.3 acres), and an increase of 4.4 percent over the existing area within the boundary.

Seattle University proposes increasing parking by 526 spaces in the near-term, but eventually reducing that number by 187 parking spaces in the long-term. Over the life of the Seattle University MIMP, the goal is to have a total of 1,868 parking spaces (a net increase of 339 over what currently exists). This, in combination with future development planned for the Swedish Cherry Hill campus over the next 15 to 25 years, could result in increased height and density of buildings on each campus, expansion of campus boundaries to accommodate future planned development, and displacement of existing residential and neighborhood commercial land uses in this neighborhood.

The Seattle University MIMP includes proposed development regulations and design guidelines for future development on campus, as well as the provision of public open spaces on campus. Proposed design standards that are part of the Seattle University MIMP would ensure that future development on its campus would be compatible with surrounding areas and minimize potential impacts.

A transportation management plan is included as part of the Seattle University and Swedish Cherry Hill MIMPs to provide transportation management solutions for both campuses and minimize potential impacts to the surrounding areas. In addition, Seattle University intends to enhance its internal pedestrian network to provide a more pedestrian scale, while also adding and improving existing pedestrian crossings from the Seattle University campus to the surrounding areas (Seattle City Council 2012a; 2012b).

Swedish Medical Center/First Hill Campus MIMP

The Swedish Medical Center First Hill campus is located west of the Swedish Cherry Hill campus beyond the Seattle University Campus west of Broadway. The multi-block First Hill campus is bordered by Broadway Avenue to the east, James Street to the south, Madison Street to the north, and Boren Avenue to the west (see Figure 3.3-2). The Swedish Medical Center/First Hill Campus MIMP was adopted in 2005 by the City Council and contains projects to be phased-in over a 15-year period following MIMP approval (2006 to 2025). The approved planned and potential development in the Final MIMP, all of which will occur within the Swedish/First Hill MIO boundary, will add approximately 1.2 million gross SF of net new floor area to the existing campus development, which currently totals approximately 2,283,394 gross SF of campus building area (which includes the hospital, medical office buildings, and other buildings). Proposed parking of 5,180 stalls total would add 1,437 net new spaces (600 fewer than the maximum allowed by code). The purpose of this MIMP is to upgrade, improve, replace, and expand Swedish facilities within its MIO in order to continue to be responsive to health care demands by providing the highest quality and most comprehensive care to the community. Swedish Hospital currently has 697 licensed beds (planned and potential; the MIMP indicates that there were 566 set-up beds in 2005) for the First Hill Campus – the approved MIMP projects would not change this number (City of Seattle 2005; Seattle City Council 2005; City of Seattle 2012).

Discussion: Development under the Swedish Cherry Hill MIMP would provide a range of medical, as well as educational and retail/commercial uses in the vicinity of the Swedish First Hill campus. These two institutions are just at or just outside the 2,500-foot radius that decentralized development for each institution is allowed to take place (See Figure 3.3-2). Proposed future development by Swedish Cherry Hill in combination with other institutional development in the vicinity (First Hill and Central District neighborhoods), would contribute to cumulative employment/population growth and intensity of land uses in this area.

For example, the Swedish First Hill Campus Final MIMP identifies 6 planned projects and 3 potential projects that would occur on their campus in the next 15 years. Planned development would account for approximately 950,000 gross SF of net new square-footage; projects would include the replacement of four hospital buildings, a medical office building and a central support facility. Potential projects would add approximately 270,000 gross SF of net new square-footage in the form of a medical office building, a hospital replacement building and a central support facility. Certain planned projects on the First Hill campus are already under construction, including the replacement of one hospital building on the corner of James Street and Broadway.

Elements of the Swedish First Hill Final MIMP recognize the proximity of other medical major institutions (Virginia Mason to the west and Swedish Cherry Hill to the east) in the vicinity and are intended to help integrate the Swedish First Hill campus with the surrounding community, as well as contribute to maintaining the livability and vitality of the adjacent neighborhood.

A TMP is included as part of the Final MIMP to provide transportation management solutions for Swedish First Hill and minimize potential impacts to the surrounding areas (City of Seattle 2005, 2012).

3.3.4.2 Zoning

The underlying zoning for the Swedish Cherry Hill campus is SF-5000 and Residential, Multi-Family LR3. Swedish is not proposing a change to the underlying zoning.

There is an existing MIO. The 1994 MIMP has expired and the development standards in the expired MIMP no longer apply. A summary of existing and proposed height limits is provided in Table 3.3-1 (see Section 3.3.3). The MIMP approval process allows for consideration of modification to the underlying zoning development standards to accommodate major institution development. Table B-1 of the proposed MIMP summarizes the underlying zoning standards for which Swedish is requesting modification. The final MIMP and final EIS must be reviewed by the DPD, the CAC, and the City's Hearing Examiner, each of whom (in their turn) must make a recommendation on the proposed MIMP before it is considered by the City Council, who makes the decision to approve, approve with conditions, or deny an application for a MIMP. The Council's decision will include the modifications which are approved as part of the MIMP.

3.3.4.3 Regulation of Major Institutions

Relationship of Comprehensive Plan to Land Use Code

In order to reconcile the applicability of consistency with the Comprehensive Plan Goals and Policies with the regulations found in the Land Use Code, the decision-maker is directed to the language on page xi of the Comprehensive Plan: "*Although the Plan will be used to direct the development of regulations which govern land use and development, the Plan will not be used to review applications for specific development projects except when reference to this Comprehensive Plan is expressly required by an applicable development regulation.*"

Major Institutions are regulated by SMC Section 23.69. Within Section 23.69 there are only two references to the Comprehensive Plan, both related to the goals and policies of the Education and Employability and Health in the Human Development Element. The two references are as follows:

- In Section 23.69.030 Contents of a master plan, 13: "*A description of the following shall be provided for informational purposes only. The Advisory Committee, pursuant to Section 23.69.032 D1, may comment on the following but may not subject these elements to negotiation nor shall such review delay consideration of the master plan or the final recommendation to Council:*
    a. *A description of the ways in which the institution will address goals and applicable policies under Education and Employability and Health in the Human Development Element of the Comprehensive Plan,"*

- And in Section 23.69.032 Master Plan Process, E. Draft Report and Recommendation of the Director, 3: "*In the Director's Report, an assessment shall be made of the extent to which the Major Institution, with its proposed development and changes, will address the goals and applicable policies under Education and Employability and Health in the Human Development Element of the Comprehensive Plan.*"

A description of consistency with the Human Development Goals and Policies of the Comprehensive Plan is included in the Consistency with the Human Development Element of the Comprehensive Plan above.

There are no references in SMC Chapter 23.69, SMC 23.34.124, or SMC 23.34.007 that require application of either the Land Use or Urban Village Elements of the Comprehensive Plan to the decision on Swedish's proposed MIMP.

City of Seattle Rezone Criteria

A rezone is required for a change in MIO heights. In addition to the general rezone criteria contained in the Land Use Code, rezone criteria used in the selection of appropriate height designations for proposed modification to height limits within an existing MIO district are:

1. *Increases to height limits may be considered where it is desirable to limit MIO district boundary by expansion.*
2. *Height limits at the district boundary shall be compatible with those in the adjacent areas.*
3. *Transitional height limits shall be provided wherever feasible when the maximum permitted height within the overlay district is significantly higher than permitted in areas adjoining the major institution campus.*
4. *Height limits should generally not be lower than existing development to avoid creating non-conforming structures.*
5. *Obstruction of public scenic or landmark views to, from or across a major institution campus should be avoided where possible.*

The comments of the CAC shall also be considered (Chapter 23.34 SMC – *Amendments to Official Land Use Map [Rezones] Sub-Chapter II - Rezone Criteria*, SMC 23.34.124, *Designation of Major Institution Overlay [MIO] districts*).

Swedish has proposed to increase its developable area through increased height limits and is not requesting an expansion in its existing MIO district boundary, so it is appropriate to consider increases in height limits.

The Swedish Cherry Hill campus is surrounded by SF-5000 and LR3 zoning which limit development to 30 feet in height. The existing MIO height districts, approved in the 1994 MIMP are MIO-65 on the western portion, MIO-105 on the central block, and MIO-37 on the western block. Swedish has proposed to maintain the MIO-65 on the western block where it abuts E Cherry or E Jefferson Streets, and to maintain the MIO-105 on the edges of the central block. For both of those portions of campus, Swedish is proposing to increase heights in the center portions with the existing MIO height districts remaining to provide a transition to the lower heights of the neighborhood.

The compatibility of the proposed height limit is most in question along the eastern edge of campus. That portion of campus abuts the rear yards of single-family homes located on property zoned SF-5000 which has a 30-foot height limit. The current MIO height district is MIO-37. Swedish has proposed to increase the MIO in two locations to MIO-50 for Alternative 10 (while retaining MIO-37 on the north, center and south portions of the half-block), and to increase the MIO height to MIO-50 for the entire half-block for Alternatives 8 and 9. Alternative 10 also includes a greater rear setback (25 feet) than those proposed for Alternatives 8 and 9 (10 feet at ground level). The proposed rear setback of 25 feet is equal to the rear yard requirement for SF-5000.

The James Tower is a Seattle Landmark. It is located on the east edge of the central block facing 19th Avenue and views from the street would not be obstructed. Swedish is also proposing to maintain the existing central entry plaza from which a visitor can view the west side of the James Tower.

City of Seattle Skybridge Term Permits

There is an existing skybridge at Swedish Cherry Hill over 16th Avenue. Swedish is proposing to maintain a skybridge in approximately the same location; however, the existing skybridge would need to be replaced to fit with future development.

Proposals for skybridges are regulated through Title 15 Street and Sidewalk Code Subtitle II Miscellaneous Street Use Regulations of the SMC. Specific provisions are provided below:

SMC 15.64.010 A. The purpose of Chapter 15.64 is to establish the procedures and criteria for the administration and approval of applications related to pedestrian skybridges that encroach over and above a public place within the City of Seattle, including permission to:

1. *construct, maintain, and operate new pedestrian skybridges;*
2. *maintain and operate existing pedestrian skybridges that are due for term renewal; and*
3. *maintain and operate existing pedestrian skybridges upon expiration of the term of the permission (including any authorized renewals).*

SMC 15.64.020 Council petition for skybridge term permit
Any owner of an interest in real property abutting any public place, or any public entity or utility, who desires to construct a new pedestrian skybridge, or obtain a new term permit for an existing pedestrian skybridge upon expiration of the term of the permission (including any authorized renewals), over and above a public place, shall petition the City Council to grant a term permit ordinance for construction, maintenance, and operation of a new pedestrian

skybridge or continuing maintenance and operation of an existing skybridge upon term expiration. The petition shall be filed with the City Clerk. (Ord. 123919, § 3, 2012; Ord. 110422 § 1(part), 1982.)

SMC 15.64.050 C. In making the recommendation to City Council on an application for the proposed skybridge as detailed in Section 15.64.040, the following elements shall be considered by the Director of Transportation:

1. *Adequacy of horizontal and vertical clearance;*
2. *View blockage;*
3. *Interruption or interference with existing streetscape or other street amenities;*
4. *Impacts due to reduction of natural light;*
5. *Reduction of and effect on pedestrian activity at street level;*
6. *Number of pedestrians projected to use the skybridge;*
7. *Effect on commerce and enjoyment of neighboring land uses;*
8. *Availability of reasonable alternatives;*
9. *Effect on traffic and pedestrian safety;*
10. *Accessibility for the elderly and handicapped; and*
11. *The public benefit mitigation elements provided by the proposal.*
    (Ord. 123919 , § 7, 2012; Ord. 118409 § 113, 1996; Ord. 110422 § 1(part), 1982.)

Discussion: The existing skybridge is permitted through a term permit (see process above). It connects a parking garage with the patient floor of the hospital and is intended to provide a weather-protected passageway for patients to get from their vehicles to the medical center. In the proposed MIMP, a medical clinic building would replace the parking garage and a new hospital building would be developed on the site across 16th Avenue, and Swedish is proposing that the existing skybridge be relocated to connect the new clinic and hospital buildings.

Swedish is not seeking approval for the proposed skybridge or tunnel (see below) at this time. A skybridge and tunnel would be needed to connect patient and materials circulation between the new facilities. If deemed needed at the time of new development, Swedish would submit applications for the skybridge and/or tunnel in conformance with SMC 15.64 Skybridge Term Permits, SDOT Director's Rule 2-06 Skybridge Permits, Client Assistance Memo 2207 Skybridge Permitting Process and Client Assistance Memo 2207 Term Permit Fee Methodology, or as those documents may be amended or superseded in the future.

The regulatory compliance agencies governing healthcare services hold medical environments and pathways to very high standards, including controlling airflow direction and air changes, prevention of patient exposure to airborne contaminants, and separation of clean and soiled flows of materials and patients. There are numerous codes defining these relationships, including the Washington State Department of Health WACs, the NFPA fire codes, the ASHRAE mechanical system requirements, City building codes, and others. The concept of controlled environment also extends to the various items that potentially could come in contact with the patient, like a medical provider's clothing, medical supplies, and equipment. These items also need to be managed to minimize potential contamination from environmental hazards, or the risk of theft or tampering. Numerous regulations, policies, procedures, and guidelines govern the flows of medical staff and supplies. This work is grounded in epidemiologic studies and incident investigations that have tracked infections and adverse outcomes back to their source, and once found, have recommended revisions in the environment of care to eliminate the risk.

Some examples of these practices include: Staff who work in Operating Rooms cannot go outside in their surgical attire, or must change their attire prior to re-entering the Operating Room suite to reduce post-surgical infections. Supplies that have been unpacked at the loading dock to prevent their external wrappings from bringing contaminants into the care environment cannot be re-exposed to environmental contaminants by being moved back outside to be transported across a city street or alley. Pharmaceuticals must have a strictly controlled path of delivery from initial receipt to final dosing. Laboratory samples must be appropriately handled and transported to prevent degradation or contamination of the specimens and to provide a rapid diagnosis.

One of the goals of the MIMP is to improve the environment of care by replacing older buildings that are no longer compliant with current codes or best practices. Since these codes, policies, and practices are continuously being updated, it would be necessary at the point in time that the skybridge or tunnel permits are requested to provide an analysis of the codes in effect as part of the justification.

If approved, a future skybridge would replace the existing skybridge across a public right-of-way. The skybridge would be intended to facilitate hospital functions and create on-campus building cohesion. As such, it is not expected to significantly impact land uses patterns in the immediate vicinity of these facilities.

Significant Structure Term Permit

Alternatives 8, 9, and 10 include a tunnel connection under 16th Avenue. A tunnel is considered a "significant structure" and is regulated by Title 15 Street and Sidewalk Code Subtitle II Miscellaneous Street Use Regulations of the SMC. Specific provisions are provided below:

SMC 15.65.010 Purpose and intent statement

> *A. The purpose of Chapter 15.65 is to establish the procedures and criteria for the administration and approval of applications for permission to: construct, maintain, and operate significant structures; maintain and operate existing significant structures that are due for term renewal; maintain and operate*

existing significant structures upon expiration of the term of the permission (including any authorized renewals); that encroach over, above, across, on, or under a public place within the City of Seattle under the jurisdiction of the Department of Transportation.

SMC 15.65.030 Preliminary application for a new significant structure
Any owner of an interest in real property abutting a public place, or any public entity or utility, who desires to construct a new significant structure over, above, across, on, or under a public place, shall apply to the Director of Transportation for a significant structure term permit. The applicant shall submit an application to the Director of Transportation on a form supplied by the official, including the following:

- *A. Conceptual drawings of the proposed structure, including its location, size, height above or depth from ground surface, and cost estimate;*
- *B. Drawings of the proposed structure showing its visual appearance;*
- *C. Photographs of the location and immediately surrounding area;*
- *D. A copy of the environmental checklist or determination of exemption as required by Sections 25.05.315 and 25.05.960;*
- *E. A statement of the reasons for the necessity of the proposed structure and intended use;*
- *F. A monetary deposit to cover the City's administrative expenses as required in Section 15.04.040*
- *G. A proposal of conceptual public benefit mitigation elements, to the extent required based on the nature of the structure; and*
- *H. Any additional information deemed necessary for processing the application.*

15.65.030 C. In making the recommendation to City Council on an application for a proposed new significant structure as detailed in Section 15.65.030, the following elements shall be considered by the Director of Transportation:

1. *Adequacy of horizontal, vertical, and other clearances;*
2. *View blockage and impacts due to reduction of natural light;*
3. *Construction review is at 60% conceptual approval;*
4. *Interruption or interference with existing streetscape or other street amenities;*
5. *Effect on pedestrian activity;*
6. *Effect on commerce and enjoyment of neighboring land uses;*
7. *Availability of reasonable alternatives;*
8. *Effect on traffic and pedestrian safety;*
9. *Accessibility for the elderly and handicapped; and*
10. *The public benefit mitigation elements provided by the proposal, to the extent required based on the nature of the structure.*

Discussion: The tunnel proposed in Alternatives 8, 9 and 10 would cross public rights-of-way and are intended to facilitate hospital functions and create on-campus building cohesion (see description above under skybridges on the purpose and use). As such, it is not expected to significantly impact land uses patterns in the immediate vicinity of these facilities. An analysis of the impacts of a potential tunnel (conflicts with existing underground utilities) is provided in Section 3.8, Public Services.

Consistency with Purpose and Intent of the Major Institution Regulations

Major Institutions are regulated by SMC Section 23.69. The purpose and intent of the regulations is stated as follows:

SMC 23.69.002 Purpose and Intent

The purpose of this chapter is to regulate Seattle's major educational and medical institutions in order to:

- *A. Permit appropriate institutional growth within boundaries while minimizing the adverse impacts associated with development and geographic expansion;*
- *B. Balance a Major Institution's ability to change and the public benefit derived from change with the need to protect the livability and vitality of adjacent neighborhoods;*
- *C. Encourage the concentration of Major Institution development on existing campuses, or alternatively, the decentralization of such uses to locations more than two thousand five hundred (2,500) feet from campus boundaries;*
- *D. Provide for the coordinated growth of major institutions through major institution conceptual master plans and the establishment of major institutions overlay zones;*
- *E. Discourage the expansion of established major institution boundaries;*
- *F. Encourage significant community involvement in the development, monitoring, implementation and amendment of major institution master plans, including the establishment of citizen's advisory committees containing community and major institution representatives;*
- *G. Locate new institutions in areas where such activities are compatible with the surrounding land uses and where the impacts associated with existing and future development can be appropriately mitigated;*
- *H. Accommodate the changing needs of major institutions, provide flexibility for development and encourage a high quality environment through modifications of use restrictions and parking requirements of the underlying zoning;*
- *I. Make the need for appropriate transition primary considerations in determining setbacks. Also setbacks may be appropriate to achieve proper scale, building modulation, or view corridors;*
- *J. Allow an increase to the number of permitted parking spaces only when it is 1) necessary to reduce parking demand on streets in surrounding areas, and 2) compatible with goals to minimize traffic congestion in the area;*
- *K. Use the TMP to reduce the number of vehicle trips to the major institution, minimize the adverse impacts of traffic on the streets surrounding the institution, minimize demand for parking on nearby streets, especially residential streets, and minimize the adverse impacts of institution-related parking on nearby*

streets. To meet these objectives, seek to reduce the number of SOVs used by employees and students at peak time and destined for the campus;

L. *Through the master plan: 1) give clear guidelines and development standards on which the major institutions can rely for long-term planning and development; 2) provide the neighborhood advance notice of the development plans of the major institution; 3) allow the city to anticipate and plan for public capital or programmatic actions that will be needed to accommodate development; and 4) provide the basis for determining appropriate mitigating actions to avoid or reduce adverse impacts from major institution growth; and*

M. *Encourage the preservation, restoration and reuse of designated historic buildings.*

Discussion: Three of these statements do not apply to the Swedish Cherry Hill proposal:

- Item E; Swedish is not proposing to expand its boundaries
- Item G; Swedish is not a new institution
- Item J; Swedish is not requesting a number of parking spaces above the range permitted by the Land Use Code

Minimizing Adverse Impacts Associated with Development

Section 23.69.032 includes the regulations for the master plan process. Subsection E describes the requirements for the content of the Director's Report, including the required analysis and recommendation. Items A and B are the balancing that must be done In determining whether to recommend approval of the proposed MIMP, the Director must determine whether the proposal represents a reasonable balance of the public benefits of the development and change with the need to maintain livability and vitality of the adjacent neighborhoods. That determination will be made in the Director's Report and Recommendation.

Concentration on Existing Campus or Decentralization

Item C encourages the concentration on the existing campus or decentralization of services more than 2,500 feet from the MIO boundary. Swedish has provided information on the services that they decentralize, and are proposing to further concentrate services on the Swedish Cherry Hill campus without expanding the existing boundary.

Master Plan Process

Two items, D and L, describe the process to be followed for the MIMP approval. This process is being followed by Swedish Cherry Hill and the City.

Community Involvement

Item F encourages significant community involvement and the formation of a CAC. Both have been done in this process.

Impacts of Development

Two of the items are directed toward reducing the impacts of the height, bulk, and scale of new development: items H, and I. The analysis of height, bulk, and scale impacts is included in Section 3.4 Aesthetics of this DEIS.

Traffic and Parking

Items J and K are aimed at reducing both parking and traffic. The impacts on transportation are described in Section 3.8 Transportation of this DEIS.

Preservation of Historic Buildings

Item M is the preservation of historic buildings. There are two designated historic buildings (Seattle Landmarks) located on the existing campus. One historic building, the Carmack House located at 1522 E Jefferson Street, is not owned by either Swedish or Sabey and neither have plans to redevelopment that site. The James Tower, another Seattle Landmark, was renovated in 2005 and will remain as part of the campus.

3.3.5 Mitigation Measures

Mitigation for the density-related impacts of additional development, such as increased height, bulk, and scale, increased noise, parking, increased traffic, and increased need for public services and utilities are addressed in other subsections within Section 3 of this Final EIS. No significant impacts to land use have been identified, and no mitigation measures specific to land use are required.

3.3.6 Secondary and Cumulative Impacts

The increase in staffing and patient levels at the hospital would contribute to secondary and cumulative land use changes, both directly and indirectly. There would be increased demands for customer service-type businesses in the nearby retail/commercial area to serve hospital staff, patients and visitors. There may be increased future demand for more intensive zoning along E Jefferson and E Cherry Streets to accommodate additional retail and commercial space. The overall impact is not expected to be significant when viewed in the context of existing and proposed future land uses.

3.3.7 Significant Unavoidable Adverse Impacts

No significant unavoidable adverse impacts to land use have been identified. The potential for significant adverse impacts for density-related impacts such as increased height, bulk and scale, and increased traffic and parking, are addressed in other subsections within Section 3 of this Draft EIS.

3.4 Aesthetics/Light, Glare and Shadows

This section of the DEIS describes potential changes to: (1) height, bulk, and scale; (2) view protection; (3) light and glare; and (4) changes in shadow patterns.

3.4.1 Height, Bulk, and Scale

The discussion of height, bulk, and scale analyzes the relationship of potential massing of new Swedish Cherry Hill MIMP buildings to surrounding development in the vicinity of the Swedish Cherry Hill campus boundaries.

3.4.1.1 Policy Context

The SMC contains specific provisions that describe the scope of the SEPA analysis for the height, bulk, and scale analysis. Relevant policies from SMC 25.05.675 are provided below:

G2. Height, Bulk, and Scale Policies.

- *a. It is the City's policy that the height, bulk and scale of development projects should be reasonably compatible with the general character of development anticipated by the goals and policies set forth in Section B of the land use element of the Seattle Comprehensive Plan regarding Land Use Categories, the shoreline goals and policies set forth in Section D-4 of the land use element of the Seattle Comprehensive Plan, the procedures and locational criteria for shoreline environment redesignations set forth in SMC Sections 23.60.060 and 23.60.220, and the adopted land use regulations for the area in which they are located, and to provide for a reasonable transition between areas of less intensive zoning and more intensive zoning.*
- *b. Subject to the overview policy set forth in SMC Section 25.05.665, the decision-maker may condition or deny a project to mitigate the adverse impacts of substantially incompatible height, bulk and scale. Mitigating measures may include but are not limited to:*
  - *i. Limiting the height of the development;*
  - *ii. Modifying the bulk of the development;*
  - *iii. Modifying the development's facade including but not limited to color and finish material;*
  - *iv. Reducing the number or size of accessory structures or relocating accessory structures including but not limited to towers, railings, and antennae;*
  - *v. Repositioning the development on the site; and*
  - *vi. Modifying or requiring setbacks, screening, landscaping or other techniques to offset the appearance of incompatible height, bulk and scale.*

The SMC contains specific provisions that describe the scope of the SEPA analysis for the view protection analysis. Relevant policies from SMC 25.05.675 are provided below.

3.4.1.2 Affected Environment

The underlying zoning for the Swedish Cherry Hill campus is SF-5000 and LR3. Both have a 30-foot height limit. See Figure 3.3-4 in Section 3.3 Land Use for existing zoning designations and height limits in the vicinity of the project site. The expired MIMP established a MIO that allows institutional uses and heights beyond the underlying single- and multi-family uses and height limits.

The existing visual environment of Swedish Cherry Hill consists of multi-story, large-scale, institutional buildings that sit atop a slight north to south ridge. Medical/hospital buildings comprise the majority of the campus land use. All buildings are multi-story structures – ranging from 2 stories to 8 stories; the tallest two buildings include: the 8-story Jefferson Tower, as well as the 6-story James and East Towers.

The campus buildings have been constructed and renovated at various times between 1910 and 2009. With almost 100 years of campus growth and development, the architectural styles that are represented by buildings on-campus (and within the expansion area) are diverse. They range from the new and modern Northwest Kidney Center, to the façade of the renovated James Tower which retains the Classical Revival style of the original hospital building.

Overall, the campus is densely developed with multiple buildings covering entire blocks on the west and central campus. Surface parking takes up the majority of the east side of the campus with the remainder occupied by two vacant single-family structures and the 2-story building that is currently temporarily occupied by St. Joseph's Baby Corner. Vegetation (e.g., street trees and other landscaping) at the perimeter of the campus provides some transition to, or screens some of, the height and bulk of the buildings from the adjacent right-of-way.

The land to the north, south, and east is zoned for either single-family or multi-family with 30-foot heights. Land to the southwest is zoned NC1, which also has a 30-foot height limit. Land to the west contains a MIO for Seattle University with a 65-foot height limit. The Swedish Cherry Hill campus currently includes three MIO height districts: MIO-37, -65, and -105.

The Swedish Cherry Hill site is part of the diverse visual environment found in the Central Area/Squire Park neighborhood. The neighborhood surrounding Swedish Cherry Hill varies in character depending upon the point of reference. Blocks to the west are occupied by the approximately 57-acre Seattle University campus. Blocks to the north across E Cherry Street, a main arterial roadway, are a mix of office/commercial, 2-story condominiums, a multi-story condominium complex, and single-family residential. To the south, across E Jefferson Street, the area character is a mix of lowrise apartments, neighborhood-commercial, and single-family residential. In the larger neighborhood, there are other institutional buildings within several blocks of Swedish Cherry Hill including King County Youth Services, two schools (Garfield High School and Lake Washington Girls Middle School), and the Department of Social and Health Services (DSHS). These institutional buildings are in the midst of the generally lower density residential in character (see Figure 3.3-2 Neighborhood Context in the Land Use section of this EIS).

Campus Visibility

Photomontages have been prepared for each of the alternatives from viewpoints surrounding Swedish Cherry Hill for height, bulk, and scale evaluation. For purposes of comparison, the existing views (Alternative 1 – No Build) of the Swedish Cherry Hill campus from the neighborhood are described alongside the simulated views of Alternatives 8, 9, and 10 in Figures 3.4-2 through 3.4-49. The first figure, Figure 3.4-1, provides a map of the viewpoint locations and viewing direction.

Figure 3.4-**1**

Viewpoint Locations

3.4.1.3 Height, Bulk and Scale Impacts

Alternative 1 – No Build

Under Alternative 1, Swedish Cherry Hill would not be able to add square-footage or height. The existing height limits and MIO of the campus would remain. Swedish could demolish and replace existing buildings (and maintaining existing MIO heights), but no increase in total developed area would be allowed. No impacts to height, bulk, and scale would be anticipated.

Alternatives 8, 9 and 10

The visual appearance of Swedish Cherry Hill would be altered with implementation of the Build Alternatives by the proposed buildings becoming taller, denser, and in some cases, wider. Project specific design, including setbacks of new buildings, would be determined prior to submittal of a master use permit application for individual projects.

Alternative 8

The following changes are proposed to the MIO districts for the campus under Alternative 8 (also see Figures 3.3-4 and -7 in Section 3.3 Land Use).

1. On the west side of campus, the center portion of the block would be changed from MIO-65 to MIO-240. The Northwest Kidney Center location and the adjacent area currently used as surface parking would remain MIO-65; Seattle Medical Post-Acute Care location would remain at MIO-65, but the height would be conditioned downward to 30 feet. The southernmost portion of the west campus would remain MIO-65, except the heights on the Carmack parcel would be limited to 30 feet (MIO-65). Along Jefferson Street, the existing garage would remain.
2. In the central block of the campus, the center-west portion would be changed from MIO-105 to MIO-240; and most of the northeast portion, facing E Cherry Street and 18th Avenue, as well as the southwest corner (at 16th Avenue and E Jefferson Street) would remain MIO-105. The southeast portion would change from MIO-105 to MIO-65 and the plaza would remain at MIO-105, but the height would be conditioned downward to 37 feet.
3. On the east side of campus on the half-block located on the east side of 18th Avenue, the MIO would be changed from MIO-37 to MIO-50

Alternative 9

The following changes are proposed to the MIO districts for the campus under Alternative 9 (also see Figures 3.3-4 and 3.3-7 in Section 3.3 Land Use).

1. On the west side of campus, the center portion of the block would be changed from MIO-65 to MIO-200. The Northwest Kidney Center location and the adjacent area currently used as surface parking would remain MIO-65; Seattle Medical Post-Acute Care location would remain at MIO-65, but the height would be conditioned downward to 30 feet. The southernmost portion of the west campus would remain MIO-65, except the heights on the Carmack parcel would be limited to 30 feet (MIO-65

2. In the central block of the campus, the center-west portion would be changed from MIO-105 to MIO-160 and most of the northeast portion, facing E Cherry Street and 18th Avenue, as well as the southwest corner (at 16th Avenue and E Jefferson Street) would remain MIO-105. The southeast portion would change from MIO-105 to MIO-65 and the plaza (which extends further east compared to Alternative 8) would remain at MIO-105, but the heights would be conditioned downward to 37 feet.
3. On the east side of campus on the half-block located on the east side of 18th Avenue, the MIO would be changed from MIO-37 to MIO-50.

Alternative 9 bulk and scale impacts would be similar to the bulk and scale impacts of Alternative 8, but the height impacts would be less than those for Alternative 8.

Alternative 10
The following changes are proposed to the MIO districts for the campus under Alternative 10 (also see Figures 3.3-4 and 3.3-8 in Section 3.3 Land Use).

1. The MIO district changes on the west side of campus are the same as those proposed for Alternative 9. Along Jefferson Street, the existing garage would remain.
2. In the central block of the campus, the changes in heights would be the same as proposed in Alternative 9.
3. On the east side of campus on the half-block located on the east side of 18th Avenue, the MIO would be changed from MIO-37 to MIO-50 in two places, leaving 30 feet facing E Cherry Street, 30 feet facing E Jefferson Street, and the center portion of the half-block to remain MIO-37. The centermost portion of the east campus building would have heights conditioned to a maximum of 15 feet.

Alternatives 9 and 10 would have lesser height, bulk, and scale impacts on the surrounding residential uses than Alternative 8 because of the lower heights on the central campus, on the west campus facing Seattle University, and the lower height on the northwest corner of 18th Avenue and E Jefferson Street. Implementation of the Build Alternatives would result in height limits over the current MIO in some portions of the campus.

Alternative 10 bulk and scale impacts would be less than those for Alternatives 8 and 9 due to an increase in upper-story setbacks on the west and central campus facing 15th and 16th Avenues and lower heights and the increased ground-level and upper-level rear setback between the east campus building and the adjacent single-family area. The proposed combinations of 15-, 37-, and 50-foot height limits for Alternative 10 are the lowest of the Build Alternatives for the east campus area.

Height, Bulk, and Scale Simulations

The proposed height, bulk, and scale of buildings within the proposed MIO height limits were computer generated for each of the Build Alternatives. Table 3.4-1 compares each of the Build Alternatives to Alternative 1 - No Build. Photomontages for comparison of the existing views to the corresponding computer-generated views of each Build Alternative are shown in Figures 3.4-2 through 3.4-49.

Computer-generated views, shown in the photomontages in Figures 3.4-2 through 3.4-49, superimpose the proposed building mass of each alternative on the photos to show the maximum bulk allowable within the proposed MIO limits. Since the projects have not been designed, the actual project appearance is unknown. Views with vegetation could also vary depending on the time of year and type of vegetation (i.e., if there are mostly deciduous trees; view obstruction would be lessened in winter months when trees are bare of leaves). Required/proposed FAR would reduce the mass for several buildings. The horizontal lines on the photomontages indicate the approximate number of stories (and potential mechanical equipment area).

Table 3.4-1
Estimated Height, Bulk, and Scale Impacts of the Alternatives

Viewpoint	Alternative 1 – No Build	Alternative 8 – Addition of 1.9 Million Gross SF	Alternative 9 – Addition of 1.55 Million Gross SF	Alternative 10 – Addition of 1.55 Million Gross SF
Viewpoint 1	Distant background upper stories and James Tower visible; 3-4 stories of Jefferson Tower visible.	Distant background approximately 13 stories visible; central campus buildings visible; James Tower not visible; 3-4 stories of Jefferson Tower partially visible.	Distant background approximately 10 stories visible; central campus buildings visible; James Tower not visible; 3-4 stories of Jefferson Tower partially visible.	Same as Alternative 9.
Viewpoint 2	Background upper 2 stories of West Parking Garage visible. Existing building obstructs view of other campus buildings.	Approximately 16 stories of central tower visible. Upper 2 stories visible in background.	Approximately 13 stories of central tower visible. Upper 2 stories visible in background.	Similar to Alternative 9 but slight setback of upper stories.
Viewpoint 3	No campus buildings visible.	Campus buildings fill middle ground, most of 17-20 stories visible, partially obstructed by trees. Street-edge approximately 3 stories visible.	Approximately 3 stories less on each side of 16th Avenue than Alternative 8; reducing overall middle ground heights. Street-edge height same as Alternative 8.	Similar to Alternative 9 but slight setback of upper stories.
Viewpoint 4	Foreground upper 2 stories visible, lower stories obstructed by vegetation.	Street-edge height and bulk similar to Alternative 1 (East Tower to remain). Additional upper stories step back at 37 feet. Approximately 8 additional stories visible above step back.	Street-edge same as Alternative 8. Approximately 2 additional stories visible above step back.	Same as Alternative 9.

Table 3.4-1 (Continued)
Estimated Height, Bulk, and Scale Impacts of the Alternatives

Viewpoint	Alternative 1 – No Build	Alternative 8 – Addition of 1.9 Million Gross SF	Alternative 9 – Addition of 1.55 Million Gross SF	Alternative 10 – Addition of 1.55 Million Gross SF
Viewpoint 5	Right foreground parking area visible. Background buildings partially obscured by vegetation.	Three stories visible in the foreground. Top story steps back from facade. Building façade is modulated.	Same as Alternative 8.	Top story steps back 5 feet above 37 feet in height. Building is setback further from property line than Alternatives 8 and 9. Building façade is not modulated as in Alternatives 8 and 9.
Viewpoint 6	Buildings mostly obscured by existing buildings and vegetation.	Same as Alternative 1.	Same as Alternative 1.	Same as Alternative 1.
Viewpoint 7	Background upper 4 stories partially visible, partially obscured by existing buildings in foreground.	Proposed middle-ground building obscures background and is partially obscured by existing buildings in foreground. Background upper Central Utility Plant stack just visible. Upper 3-4 stories of central campus building visible in distant background.	Similar to Alternative 8, except no buildings visible in distant background.	Tops of some buildings visible in background due to increased setback of Alternative 10.
Viewpoint 8	Parking lot visible in foreground (left) and 4 stories of existing campus buildings visible in the background (left).	Approximately 3-4 stories of foreground building obscures view of campus. Top story steps back from façade.	Same as Alternative 8.	Building is setback further from property line than Alternatives 8 and 9. Building façade is not modulated as in Alternatives 8 and 9.
Viewpoint 9	Upper stories of James Tower visible in background; lower stories partially obscured by vegetation (left). Right foreground parking lot visible.	Approximately 3-4 stories visible in right foreground; top story set back from façade. James Tower not visible in middle ground; background along west side (left) 18th Avenue upper stories just visible of the northern most building.	Same as Alternative 8.	Above 37 feet, upper-story is stepped back further than Alternatives 8 and 9 facing E Jefferson Street. Building is closer to 18th Avenue than Alternatives 8 and 9.

Table 3.4-1 (Continued)
Estimated Height, Bulk, and Scale Impacts of the Alternatives

Viewpoint	Alternative 1 – No Build	Alternative 8 – Addition of 1.9 Million Gross SF	Alternative 9 – Addition of 1.55 Million Gross SF	Alternative 10 – Addition of 1.55 Million Gross SF
Viewpoint 10	Distant background one upper-story barely visible; Central Utility Plant stack partially visible.	Approximately 12 stories of central campus visible above trees. Central Utility Plant stack remains visible.	Approximately 6 stories of central campus visible above trees. Central Utility Plant stack remains visible.	Same as Alternative 9.
Viewpoint 11	Right foreground; upper 4 stories visible; background; skybridge visible.	Approximately 15-17 stories of buildings visible to the left and right; vegetation partially obscures lower floors; skybridge visible.	Similar bulk and scale to Alternative 8. Fewer stories visible on each side of 16th Avenue.	Similar to Alternative 9 but with setbacks to the upper stories that lessen the bulk and scale.
Viewpoint 12	Left foreground; upper 4-5 stories visible, lower stories partially obscured by vegetation, top of Central Utility Plant stack visible over trees.	Foreground height and bulk same as to Alternative 1. Distant background upper-story just visible through trees.	Same as Alternative 1.	Same as Alternative 1.

Viewpoint 1

Alternative 1 – No Build

Viewpoint 1 (Figure 3.4-2) shows the view looking east on E James Court at 12th Avenue within the Seattle University campus adjacent to Seattle University Park. Seattle University campus is visible in the foreground; Swedish Cherry Hill, including the James Tower, is partially visible in the distance at the center of the view.

All Build Alternatives

Viewpoint 1 shows a change to the territorial view of Swedish Cherry Hill from the vicinity of the Seattle University campus. Specifically, James Tower would no longer be visible from Viewpoint 1 and there would be new buildings with considerable height, bulk, and scale within view.

Alternative 8

Distant background shows approximately 13 stories visible, central campus buildings visible, James Tower not visible, and 3 to 4 stories of Jefferson Tower partially visible.

Alternative 9 and 10

Distant background shows approximately 10 stories visible, central campus buildings visible, James Tower not visible, and 3 to 4 stories of Jefferson Tower partially visible.

Figure 3.4-2

Viewpoint 1: Alternative 1
East on E James Court at 12th Avenue

Figure 3.4-3

Viewpoint 1: Alternative 8
East on E James Court at 12th Avenue

Figure 3.4-4

Viewpoint 1: Alternative 9
East on E James Court at 12th Avenue

Figure 3.4-5

Viewpoint 1: Alternative 10
East on E James Court at 12th Avenue

Viewpoint 2

Alternative 1 – No Build

Viewpoint 2 (Figure 3.4-5) shows the view looking south from the intersection of 15th Avenue and E Cherry Street – the western edge of the Swedish Cherry Hill campus. Northwest Kidney Center is visible in the left foreground, the Swedish Cherry Hill parking garage is visible in the distance on the left, and the rear of the Seattle University Connolly Center (athletics and recreational sports) is visible in the foreground on the right.

All Build Alternatives

Viewpoint 2 shows that the greatest increase in height and bulk would be situated back from the viewpoint at 15th Avenue along E Cherry Street. The impact of this bulk is negligible due to the wall-like nature of the Seattle University buildings that face 15th Avenue. There would be a minor impact from the height and scale of the center portion of the western edge of the Swedish Cherry Hill campus due to the potential 135 – 175 foot height difference with Seattle University buildings across the street. Swedish is proposing that the center portion of this block be developed with a building of 200 feet for Alternatives 9 or 10, or 240 feet for Alternative 8 as compared to the 65 foot height limit for the Seattle University buildings on the west side of the street. For all Build Alternatives, Swedish is proposing a height limit of 65 feet for buildings on the north and south portions of this block fronting on 15th Avenue.

Alternative 8

Approximately 16 stories of the proposed tower would be visible from this viewpoint, with the upper 2 stories visible in background.

Alternative 9

Viewpoint 2 shows the overall impact would be similar to that of Alternative 8 bulk and scale, but less due to the lower heights along 16th Avenue. Approximately 17 stories of the proposed tower would be visible from this viewpoint.

Alternative 10

Viewpoint 2 shows the upper stories (on the left/east) setback 5 feet above 37 feet in height, 10 feet above 65 feet in height, and 15 feet above 105 feet in height; which lessens the overall bulk and scale impact compared to Alternatives 8 and 9.

Figure 3.4-6

Viewpoint 2: Alternative 1
South on 15th Avenue at E Cherry Street

Figure 3.4-7

Viewpoint 2: Alternative 8
South on 15th Avenue at E Cherry Street

Figure 3.4-8

Viewpoint 2: Alternative 9
South on 15th Avenue at E Cherry Street

Figure 3.4-9

Viewpoint 2: Alternative 10
South on 15th Avenue at E Cherry Street

Viewpoint 3

Alternative 1 – No Build

Viewpoint 3 (Figure 3.4-8) shows the view looking south on 16th Avenue between E Cherry and E Columbia Streets. The viewpoint is just to the north of E Cherry Street. The hospital skybridge over 16th Avenue is just visible through the vegetation in the distance. The view of buildings on the west side of 16th Avenue is obstructed by vegetation.

All Build Alternatives

Viewpoint 3 shows changes to the general character of the neighborhood to the north of the campus with all Alternatives. The height, bulk, and scale of the proposed buildings on the main campus area of Swedish Cherry Hill would change the view from a lower density mixed residential and commercial neighborhood to a higher density urban setting.

Alternative 8

Approximately 17 to 20 stories would be visible in the background. The proposed towers are the same height on each side of 16th Avenue. The street-edge would have approximately 3 stories visible.

Alternative 9

Viewpoint 3 shows the overall impact would be similar to that of Alternative 8 bulk and scale, but less due to the lower heights along 16th Avenue. On the east side of 16th (left), approximately 13 stories would be visible; on the west side of 16th (left), approximately 11 stories would be visible.

Alternative 10

Viewpoint 3 shows the upper stories on the left (east) setback 5 feet above 37 feet in height, 10 feet above 65 feet in height, and 15 feet above 105 feet in height and the upper stories on the right (west) setback 5 feet above 37 feet in height. These setbacks lessen the overall bulk and scale impact compared to Alternatives 8 and 9.

Figure 3.4-10

Viewpoint 3: Alternative 1
16th Avenue between E Cherry & E Columbia Streets

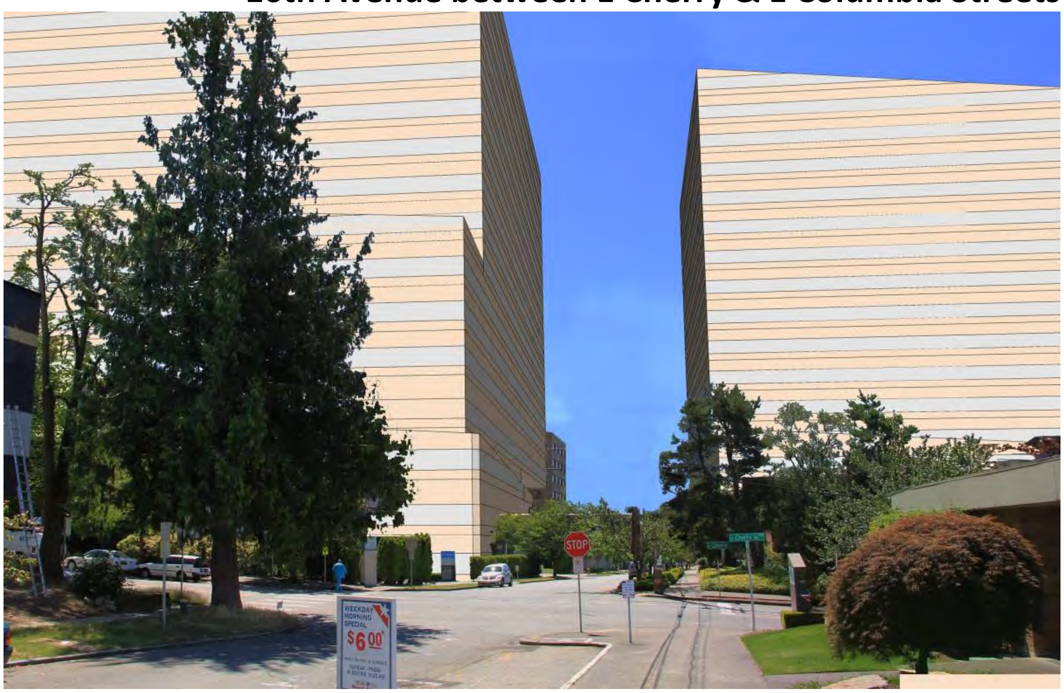


Figure 3.4-11

Viewpoint 3: Alternative 8
16th Avenue between E Cherry & E Columbia Streets

Figure 3.4-12

Viewpoint 3: Alternative 9
16th Avenue between E Cherry & E Columbia Streets

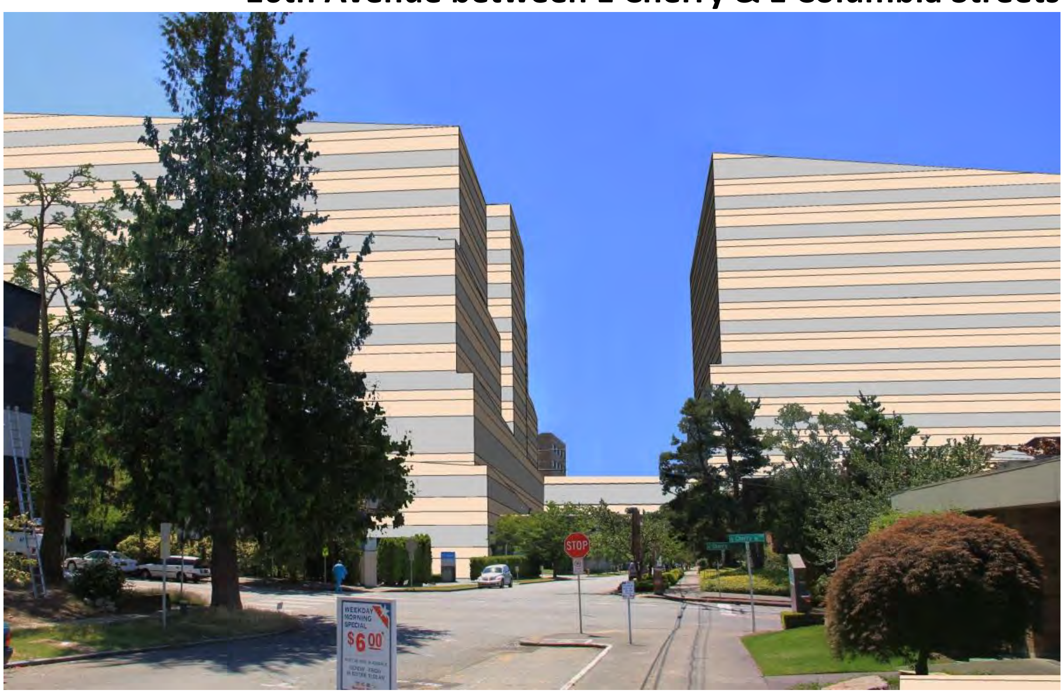


Figure 3.4-13

Viewpoint 3: Alternative 10
16th Avenue between E Cherry & E Columbia Streets

Viewpoint 4

Alternative 1 – No Build

Viewpoint 4 (Figure 3.4-11) shows the view looking west on E Cherry Street at 18th Avenue. The East Tower of the Swedish Cherry Hill campus is visible in the foreground on the left. The Department of Health and Human Services building is visible on the right.

All Build Alternatives

Viewpoint 4 shows a general maintenance of the building character along the south side of E Cherry Street in the vicinity of the intersection with 18th Avenue. In the distant background, closer to 17th Avenue, there would be an increase in the height, bulk, and scale.

Alternative 8

Viewpoint 4 shows an increase in the height, bulk, and scale with 10 to 15 stories visible in the distant background the proposed buildings on the south side of the street. Street-edge height and bulk would be similar to Alternative 1 (East Tower to remain). Additional upper stories would step back at 37 feet. Approximately 8 additional stories would be visible above step back.

Alternatives 9 and 10

Viewpoint 4 shows only approximately 2 additional stories visible above step back. Street-edge height and bulk would be similar to Alternative 1 (East Tower to remain).

Figure 3.4-14

Viewpoint 4: Alternative 1
West on E Cherry at 18th Avenue

Figure 3.4-15

Viewpoint 4: Alternative 8
West on E Cherry at 18th Avenue

Figure 3.4-16

Viewpoint 4: Alternative 9
West on E Cherry at 18th Avenue

Figure 3.4-17

Viewpoint 4: Alternative 10
West on E Cherry at 18th Avenue

Viewpoint 5

Alternative 1 – No Build

Viewpoint 5 (Figure 3.4-14) shows the view looking south on E Cherry Street, mid-block between 18th and 19th Avenues. The campus surface parking lot, on the eastern portion of the campus, is to the right of the view. The mostly single-family residences on the eastern half of the block are to the left.

Alternatives 8 and 9

Viewpoint 5 shows a change in the building character along E Cherry Street near 18th and 19th Avenues. The open character of the lower density residential space would be changed to a building with considerable height, bulk, and scale; especially in relation to the adjacent residential zoned land adjacent to the east. Three stories are visible in the foreground. Upper-level setbacks, above 37 feet, would be provided to modulate the bulk and scale of the new buildings. The building is setback 10 feet from the property line.

Alternative 10

Viewpoint 5 shows similar changes to height, bulk, and scale compared to Alternatives 8 and 9. In response to community concerns relating to these impacts, Alternative 10 shows an increased setback (25 feet) from the adjacent property line.

Figure 3.4-18

Viewpoint 5: Alternative 1

South mid-block between 18th & 19th Avenues at E Cherry Street

Figure 3.4-19

Viewpoint 5: Alternative 8

South mid-block between 18th & 18th Avenues at E Cherry Street

Figure 3.4-20

Viewpoint 5: Alternative 9

South mid-block between 18th & 19th Avenues at E Cherry Street

Figure 3.4-21

Viewpoint 5: Alternative 10

South mid-block between 18th & 19th Avenues at E Cherry Street

Viewpoint 6

Alternative 1 – No Build

Viewpoint 6 (Figure 3.4-17) shows the view looking west on E Cherry Street at 19th Avenue. The view of Swedish Cherry Hill campus buildings is obstructed by vegetation. Only the cupola of James Tower is visible over a house in the foreground.

All Build Alternatives

When in bloom or full with leaves, deciduous street trees along E Cherry would obscure the view of potential development on the corner of 18th Avenue and E Cherry Street. Viewpoint 6 shows negligible impact for all Build Alternatives because of the view blockage of the deciduous street trees. The new building would be located behind the house on the left.

For illustration purposes, in Figure 3.4-25, a simulation of a potential structure under Alternative 10 has been superimposed over the photo of the trees to provide the reader with an indication of the relative size of a potential new structure. The roofline indicated in the simulation is paralleling the topography of the block.

Views of buildings would be greater when the deciduous street trees are bare of leaves in the winter. Impacts would be negligible to minor.

Figure 3.4-22

Viewpoint 6: Alternative 1
West on E Cherry Street at 19th Avenue

Figure 3.4-23

Viewpoint 6: Alternative 8 and 9
West on E Cherry Street at 19th Avenue

Figure 3.4-24

Viewpoint 6: Alternative 10
West on E Cherry Street at 19th Avenue

Figure 3.4-25

Viewpoint 6: Alternative 10 (with Structure Superimposed over Trees)
West on E Cherry Street at 19th Avenue

Viewpoint 7

Alternative 1 – No Build

Viewpoint 7 (Figure 3.4-20) shows the view looking west on 19th Avenue between E Jefferson and E Cherry Streets. The Central Utility Plant stack and James Tower are partially visible in the background.

All Build Alternatives

Viewpoint 7 shows a change in the neighborhood character along 19th Avenue. The character behind the lower density residentially zoned land and surface parking areas would be changed to buildings with greater bulk and scale than today, but the impact may be less than illustrated with building design, articulation, and compatible building materials. Upper-level setbacks, above 37 feet, and a landscape terrace on the eastern facade would be provided to modulate the bulk and scale of the new buildings.

Alternative 8

Approximately 3 to 4 stories of the west campus tower are visible in the distant background. The central campus stories are visible but mostly obscured by vegetation.

Alternative 9

The viewpoint is similar to Alternative 8 except that central and west campus towers are not visible in the distant background.

Alternative 10

Viewpoint 7 shows some buildings visible in the background. The top of the James Tower is visible because, for Alternative 10, the 50-foot-high portion of the east campus building is set back 25 to 30 feet from property line compared to Alternatives 8 and 9 that are setback 10 to 20 feet at the 50-foot height.

Figure 3.4-26

Viewpoint 7: Alternative 1
West at 19th Avenue between E Jefferson & E Cherry Streets

Figure 3.4-27

Viewpoint 7: Alternative 8
West at 19th Avenue between E Jefferson & E Cherry Streets

Figure 3.4-28

Viewpoint 7: Alternative 9
West at 19th Avenue between E Jefferson & E Cherry Streets

Figure 3.4-29

Viewpoint 7: Alternative 10
West at 19th Avenue between E Jefferson & E Cherry Streets

Viewpoint 8

Alternative 1 – No Build

Viewpoint 8 (Figure 3.4-23) shows the view looking north on E Jefferson Street mid-block between 18th and 19th Avenues. The southern end of the campus surface parking lot, on the eastern portion of the campus, is in the left foreground of the view. James Tower and East Tower are partially visible in the left and background view. Residences adjacent to the parking area are partially visible through the vegetation in the foreground on the right.

Alternatives 8 and 9

Viewpoint 8 shows a change in the building character along E Jefferson Street near 18th and 19th Avenues. The open character of the surface parking/under-developed land and lower density residential spaces would be changed to approximately 3- to 4-story buildings. Upper-level setbacks, above 37 feet, and a landscape terrace on the eastern façade would be provided to modulate the bulk and scale of the new buildings. The proposed building is setback 10 feet from the property line.

Alternative 10

Viewpoint 8 shows Alternative 10 is similar to the height, bulk, and scale of Alternatives 8 and 9. In response to community concerns relating to these impacts, Alternative 10 shows an increased setback (25 feet) from the adjacent property line to the east. The upper-story is setback 30 feet above 37 feet in height.

Figure 3.4-30

Viewpoint 8: Alternative 1
North on E Jefferson St mid-block between 18th & 19th Avenues

Figure 3.4-31

Viewpoint 8: Alternative 8
North on E Jefferson St mid-block between 18th & 19th Avenues

Figure 3.4-32

Viewpoint 8: Alternative 9
North on E Jefferson St mid-block between 18th & 19th Avenues

Figure 3.4-33

Viewpoint 8: Alternative 10
North on E Jefferson St mid-block between 18th & 19th Avenues

Viewpoint 9

Alternative 1 – No Build

Viewpoint 9 (Figure 3.4-26) shows the view looking north on 18th Avenue at E Jefferson Street. The Central Utility Plant stack is visible in the foreground with James Tower visible in the background. The campus surface parking is located on the right.

All Build Alternatives

Viewpoint 9 shows a change in the building character at E Jefferson Street and 18th Avenue. The open character of the surface parking/under-developed land and lower density residential spaces would be changed to 3- to 4-story buildings. Upper-level setbacks above 37 feet, elimination of the parking lane, and continuation of neighborhood greenway-street north and south of the campus, would be provided to modulate the bulk and scale of the new buildings.

Alternative 8

Viewpoint 9 shows the reduced height from the existing MIO-105 to a height limit of 65 feet at the corner of 18th Avenue and E Jefferson Street; 2 to 3 additional stories are visible above the existing Central Utility Plant (left).

Alternative 9

Viewpoint 9 shows the reduced height from the existing MIO-105 height, to a height limit of 40 feet at the corner of 18th Avenue and E Jefferson Street. This would provide a transition between the new campus building heights and surrounding development on the south side of E Jefferson Street.

Alternative 10

The view of Alternative 10 on the right foreground shows a building of similar height, bulk, and scale compared to Alternatives 8 and 9 except the building is closer to 18th Avenue at ground level compared to Alternatives 8 and 9. The increased upper-story setback (30 feet setback above 37 feet in height) facing E Jefferson Street does not seem to lessen the height, bulk and scale at this viewpoint compared to Alternatives 8 and 9.

Figure 3.4-34

Viewpoint 9: Alternative 1
North on 18th Avenue at E Jefferson Street

Figure 3.4-35

Viewpoint 9: Alternative 8
North on 18th Avenue at E Jefferson Street

Figure 3.4-36

Viewpoint 9: Alternative 9
North on 18th Avenue at E Jefferson Street

Figure 3.4-37

Viewpoint 9: Alternative 10
North on 18th Avenue at E Jefferson Street

Viewpoint 10

Alternative 1 – No Build
Viewpoint 10 (Figure 3.4-29) shows the view looking north on 18th Avenue at E Alder Street. The campus Central Utility Plant stack is visible in the distance.

Alternative 8
Viewpoint 10 shows moderate impact to the general character of the neighborhood in the block south of the campus with Alternative 8 due to the visibility of approximately 12 stories of the central campus upper stories.

Alternatives 9 and 10
Viewpoint 10 shows minor impact to the general character of the neighborhood in the block south of the campus with Alternatives 9 and 10 due to the general visibility of the central campus upper stories. Approximately 6 stories of the central campus upper stories are visible.

Figure 3.4-38

Viewpoint 10: Alternative 1
North on 18th Avenue at E Alder Street

Figure 3.4-39

Viewpoint 10: Alternative 8
North on 18th Avenue at E Alder Street

Figure 3.4-40

Viewpoint 10: Alternative 9
North on 18th Avenue at E Alder Street

Figure 3.4-41

Viewpoint 10: Alternative 10
North on 18th Avenue at E Alder Street

Viewpoint 11

Alternative 1 – No Build

Viewpoint 11 (Figure 3.4-32) shows the view looking north on 16th Avenue at E Jefferson Street. Jefferson Tower is visible on the right, and the 16th Avenue skybridge that connects the central campus to the West Parking Garage is visible in the distance.

Alternatives 8 and 9

Viewpoint 11 shows change to the general character of 16th Avenue at E Jefferson Street due to the bulk and scale of Alternatives 8 and 9. Alternative 9 has fewer stories that face 16th Avenue than Alternative 8, but the impact from this viewpoint is not lessened with the lower building heights.

Alternative 10

Viewpoint 11 shows the upper stories on the right (east) setback 5 feet above 37 feet in height, 10 feet above 65 feet in height, and 15 feet above 105 feet in height and the upper stories on the left (west) setback 5 feet above 37 feet in height. These setbacks lessen the overall bulk and scale impact compared to Alternatives 8 and 9.

Figure 3.4-42

Viewpoint 11: Alternative 1
North on 16th Avenue at E Jefferson Street

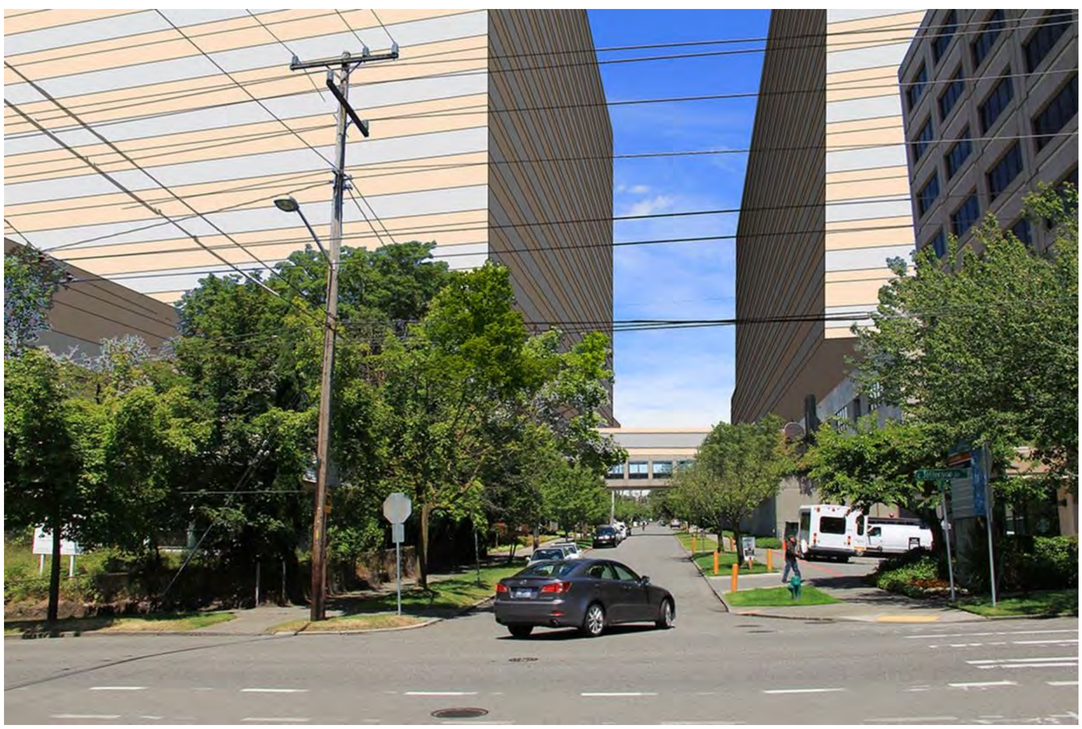


Figure 3.4-43

Viewpoint 11: Alternative 8
North on 16th Avenue at E Jefferson Street

Figure 3.4-44

Viewpoint 11: Alternative 9
North on 16th Avenue at E Jefferson Street

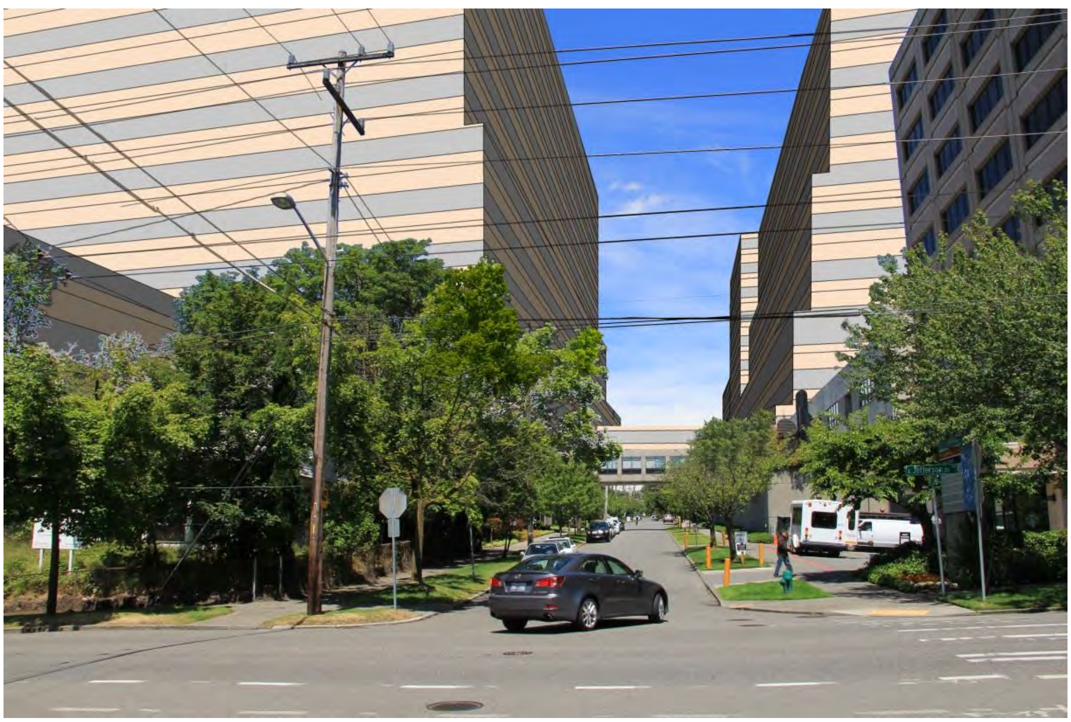


Figure 3.4-45

Viewpoint 11: Alternative 10
North on 16th Avenue at E Jefferson Street

Viewpoint 12

Alternative 1 – No Build

Viewpoint 12 (Figure 3.4-10) shows the view looking east on E Jefferson Street at 16th Avenue. Jefferson Tower is visible in the foreground on the left and the Central Utility Plant stack is visible above the tree line in the distance. The main entrance to the campus is in between, but obscured by vegetation.

Alternative 8

Viewpoint 12 shows that the foreground for Alternative 8 would be similar to the Existing Conditions and Alternative 1 - No Build. Due to the distance of the view, impacts from new height and bulk in the middle background would be minor.

Alternatives 9 and 10

Viewpoint 12 shows that this view for Alternative 9 would be the same as the Existing Conditions and Alternative 1 - No Build.

Figure 3.4-46

Viewpoint 12: Alternative 1
East on E Jefferson Street at 16th Avenue

Figure 3.4-47

Viewpoint 12: Alternative 8
East on E Jefferson Street at 16th Avenue

Figure 3.4-48

Viewpoint 12: Alternative 9
East on E Jefferson Street at 16th Avenue

Figure 3.4-49

Viewpoint 12: Alternative 10
East on E Jefferson Street at 16th Avenue

3.4.1.4 Mitigation Measures

Height, bulk, and scale relate to the size of buildings and their relationship to neighboring structures. The City's SEPA policies recognize that physical characteristics of buildings affect the character of neighborhoods. These policies also recognize a need to address building height, bulk, and scale as a means to achieve appropriate transition from one zoning district to another.

Swedish Proposed Mitigation Measures

Swedish has proposed building setbacks as one means of mitigating or lessening the proposed heights of buildings. The proposed setbacks are as follows:

Alternative 8

1. On the west side of campus, Swedish has proposed a 10-foot setback for any new structure that is built above the existing garage (height varies from 10 to 32 feet). Along 15th Avenue, Swedish is proposing that buildings be set back 10 feet from the property line up to a height of 65 feet, and then an additional 10-foot setback, for a total of 20 feet. Along E Cherry Street, Swedish is proposing a 20-foot setback from the property line. Along both faces of 16th Avenue, Swedish is proposing that the lower portions of buildings be set back 5 feet from the property line up to a height of 37 feet, and then an additional 5 feet, for a total of 10 feet of setback for the upper-levels.
2. In the central block of the campus, from 16th Avenue, the lower portions of buildings would be set back 5 feet from the property line up to a height of 37 feet, and then an additional 5 feet, for a total of 10 feet of setback for the upper-levels. Along E Cherry Street, Swedish is proposing a 5-foot setback at ground level, an additional 15 feet of setback at a height of 37 feet (for a total of 20 feet), and an additional 60 feet of setback for portions of buildings above 105 feet (for a total of 80 feet of setback). The James Tower would remain on the west side of 18th Avenue. Swedish is proposing to maintain the 5-foot setback from the property line that exists up to approximately 90 feet, and then an additional 10 feet in setback (for a total of 15 feet). Along E Jefferson Street, Swedish is proposing a 5-foot setback from the property line up to a height of 37 feet, and then an additional 5 feet of setback (for a total of 10 feet).
3. Along the east side of 18th Avenue, Swedish is proposing a 5-foot setback from the property line at ground level up to 37 feet in height, and then an additional 5 feet in setback (for a total of 10 feet) for portions of the buildings above 37 feet in height. Along E Cherry Street, Swedish is proposing a 10-foot setback from the property line up to a height of 37 feet, and then an additional 5 feet (for a total of 15 feet) for portions of the buildings above 37 feet in height. Along E Jefferson Street, Swedish is proposing a 5-foot setback at ground level to the face of the underground parking garage, an additional 5 feet (total of 10 feet) of setback for the building façade up to a height of 37 feet, and then an additional 10 feet (for a total of 20 feet of setback) for upper-level portions of the building between 37 and 50 feet in height. The rear setbacks are proposed to be 10 feet at ground level up to 37 feet, and an additional 10 feet (total of 20 feet) of setbacks for portions of the buildings between 37 and 50 feet in height. Swedish is also proposing some minor façade modulation for upper-level portions of

structures adding 2.5 feet to the 10-foot setback and 5 feet to the 20-foot setback in some areas.

Alternative 9

1. Proposed setbacks for Alternative 9 on the west side of campus would be the same as proposed for Alternative 8.
2. Proposed setbacks for Alternative 9 on the central block would be the same as proposed for Alternative 8.
3. Proposed setbacks for Alternative 9 on the east side of campus would be the same as proposed for Alternative 8.

Alternative 10

1. Swedish has proposed the same setback for this section as proposed for Alternatives 8 and 9: a 10-foot setback for any new structure that is built above the existing garage (height varies from 10 to 32 feet). Along 15th Avenue, Swedish is proposing smaller setbacks than proposed for Alternatives 8 and 9: that buildings be built to the property line at ground level up to a height of 37 feet, then a setback of 5 feet to a height of 65 feet, then an additional 5-foot setback (total of 10 feet) to a height of 105 feet, and then an additional 5 feet (for a total setback of 15 feet) for upper-levels. Along E Cherry Street, Swedish is proposing a 20-foot setback from the property line, the same as proposed for Alternatives 8 and 9. Along the west side of 16th Avenue, Swedish is proposing different setbacks for the northern, middle, and southern portions of the block face; and an additional upper-level setback as compared to the setbacks proposed for Alternatives 8 and 9. In the northern portion, adjacent to the Seattle Medical & Rehab Center, Swedish is proposing a setback of 10 feet. In the middle portion of the block face, Swedish is proposing that the lower portions of buildings be built to the property line up to a height of 37 feet, and then 5-foot setback for portions of structures between 37 and 65 feet in height, then an additional 5-foot setback (total of 10 feet) for portions between 65 and 105 feet in height, and then an additional 5 feet (total of 15 feet) for portions above 105 feet. On the southern portion of the block face on the Carmack House site, Swedish is proposing a 20-foot setback from the property line.
2. In the central block of the campus, along the northern portion of the east side of 16th Avenue, for Alternative 10 Swedish is proposing no setback at ground level (as compared to a 5-foot setback for Alternative 8 and 9), with greater setbacks at the upper-levels. The setback would be 5 feet at 37 feet in height, and then an additional 5 feet (total of 10 feet) at 65 feet in height, and an additional 5 feet (total of 15 feet) at 105 feet and higher. The center portion would be set back 5 feet at an elevation of 37 feet and higher, and a 10-foot setback for the southern portion (the Jefferson Tower is currently set back 30 feet). Along E Cherry Street, Swedish is proposing the same setbacks as for Alternatives 8 and 9, a 5-foot setback at ground level, an additional 15 feet of setback at a height of 37 feet (for a total of 20 feet), and an additional 60 feet of setback for portions of buildings above 105 feet (for a total of 80 feet of setback). Facing the west side of 18th Avenue, the setbacks would be the same as for Alternative

8 and 9. The James Tower would remain on the west side of 18th Avenue. Swedish is proposing to maintain the 5-foot setback from the property line that exists up to approximately 90 feet, and then an additional 10 feet in setback (for a total of 15 feet). Along E Jefferson Street, Swedish is proposing a 5-foot setback from the property line up to a height of 37 feet, and then an additional 5 feet of setback (for a total of 10 feet), the same as proposed for Alternative 8 and 9.

3. Along the east side of 18th Avenue, Swedish is proposing a 5-foot setback from the property line at ground level up to 37 feet in height, and then an additional 5 feet in setback (for a total of 10 feet) for portions of the buildings above 37 feet in height, the same as for Alternatives 8 and 9. Along E Cherry Street, Swedish is proposing a 10-foot setback from the property line up to a height of 37 feet, and then an additional 20 feet (for a total of 30 feet) for portions of the buildings above 37 feet in height. Along E Jefferson Street, Swedish is proposing a 5-foot setback at ground level to the face of the underground parking garage, an additional 5 feet (total of 10 feet) of setback for the building façade up to a height of 37 feet, and then an additional 20 feet (for a total of 30 feet of setback) for upper-level portions of the building between 37 and 50 feet in height. The rear setbacks are proposed to be 25 feet at ground level up to 37 feet, and an additional 5 feet (total of 30 feet) of setbacks for portions of the buildings between 37 and 50 feet in height.

Swedish would use a number of measures to reduce or eliminate aesthetic impacts:

- Scale-reducing elements, particularly at areas exposed to people activity (e.g., building entrances, adjacent to walkways, places of high visibility) would be identified and encouraged during project design.
- Pedestrian amenities would be provided as site improvements.
- Landscaping and open space would be provided for pedestrian interest, scale, partial building screening and building contrast.

Additional Potential Mitigation Measures to Reduce the Impacts of Height, Bulk, and Scale

Other mitigation measures could include:

- New buildings could be designed in accordance with adopted design guidelines.
- Swedish Cherry Hill could comply with or exceed the setback requirements of the underlying campus zoning, include upper-level setbacks, and modulation.
- New buildings could be designed with façade treatments, articulation, use of materials, varying roof heights, and fenestration to make the buildings look more consistent with the existing architectural character.
- New buildings could be designed with the appearance of multiple buildings to reduce bulk and scale.
- Heights could be further reduced.

3.4.1.5 Secondary and Cumulative Impacts

The height, bulk, and scale of new development at Swedish Cherry Hill would be visible from various locations in the neighborhood (see Viewpoints 1 and 10). The height, bulk, and scale would contribute to an overall increase in heights and density in the Squire Park neighborhood when combined with new development at Seattle University, new lowrise residential development to the east of the Cherry Hill campus, and new residential, commercial, and institutional development to the west.

3.4.1.6 Significant Unavoidable Adverse Impacts

Under Alternatives 8, 9, and 10, development on the existing campus would intensify, resulting in greater height, bulk, and scale as compared to existing development on campus. The height, bulk, and scale of Alternatives 8, 9, and 10 adjacent to the single-family residential block between 18th and 19th Avenues (Viewpoints 5, 7, and 8) would be a significant unavoidable adverse impact. Alternative 10 would have less of an impact due to the proposed lower heights and greater setbacks. Other significant unavoidable adverse impacts include: Viewpoint 3, Alternative 8; Viewpoint 5, Alternatives 8 and 9; Viewpoint 7, all Build Alternatives; and Viewpoint 11, all Build Alternatives.

3.4.2 View Protection

The discussion of view protection describes the existing public views of scenic routes and historic landmarks in the vicinity of the proposed Swedish Cherry Hill MIMP, and evaluates how development associated with the Master Plan would affect these public views.

3.4.2.1 Policy Context

P2. Public View Protection Policies

- *a. i. It is the City's policy to protect public views of significant natural and human-made features: Mount Rainer, the Olympic and Cascade Mountains, the downtown skyline, and major bodies of water including Puget Sound, Lake Washington, Lake Union and the Ship Canal, from public places consisting of the specified viewpoints, parks, scenic routes, and view corridors, identified in Attachment 1 [Attachment 1 is located at the end of Section 25.05.675 of the code]. This subsection does not apply to the Space Needle, which is governed by subsection P2c [of Section 25.05.675 of the code].*
- *b. i. It is the City's policy to protect public views of historic landmarks designated by the Landmarks Preservation Board which, because of their prominence of location or contrasts of siting, age, or scale, are easily identifiable visual features of their neighborhood or the City and contribute to the distinctive quality or identity of their neighborhood or the City. This subsection does not apply to the Space Needle, which is governed by subsection P2c [of Section 25.05.675 of the code].*
  - *ii. A proposed project may be conditioned or denied to mitigate view impacts on historic landmarks, whether or not the project meets the criteria of the Overview Policy set forth in SMC Section 25.05.665.*

3.4.2.2 Affected Environment

Topography of the site and the surrounding area slopes slightly down to the west and east. There is some visibility of the downtown skyline from some vantage points along public rights-of-way (looking to the west on E Jefferson and E Cherry Streets). The ridge-top location makes Swedish Cherry Hill visually prominent from Seattle University, which sits on another ridge and in the valley to the west, and Garfield High School, which sits on another ridge to the east.

The closest scenic routes (as defined in SMC 25.05.675), E Madison Street and E Yesler Way are 1.5 miles away; the Swedish Cherry Hill campus is not visible from those routes.

James Tower (Providence 1910 Building, Ordinance 121588) is a Seattle Landmark. According to this policy, views of the landmark must be assessed for "*prominence of location or contrasts of siting, age, or scale, are easily identifiable visual features of their neighborhood or the City and contribute to the distinctive quality or identity of their neighborhood*" (SMC 25.05.675) from various public places, including landmarks, public parks, and designated view corridors. The Land Use Code also regulates views of designated landmarks from existing rights-of-way or those proposed for vacation (SMC 23.69.032.E.5.j).

3.4.2.3 View Impacts

Alternative 1 - No Build

With Alternative 1 - No Build, existing views of the James Tower would not be changed.

Impacts Common to All Build Alternatives

The closest scenic routes, E Madison Street and E Yesler Way would not be affected by the Build Alternatives as the proposed changes would not be visible.

James Tower (Providence 1910 Building, Ordinance 121588) is a Seattle Landmark. The building would not be altered by the Master Plan, but consideration is given to this building's designation as a landmark relative to view protection policies. According to this policy, views of the landmark must be assessed for "*prominence of location or contrasts of siting, age, or scale, are easily identifiable visual features of their neighborhood or the City and contribute to the distinctive quality or identity of their neighborhood*" (SMC 25.05.675). Due to increased building heights, all Build Alternatives would block some views of James Tower from adjacent streets. James Tower may be visible in the distance from the east (in the vicinity of Garfield High School), but would not be visible from Seattle University. Views of James Tower may remain from some viewpoints to the south.

3.4.2.4 Mitigation Measures

No mitigation measures have been identified.

3.4.2.5 Secondary and Cumulative Impacts

Development in the vicinity of James Tower would cumulatively lead to a reduction in views of historic structures in the Squire Park neighborhood.

3.4.2.6 Significant Unavoidable Adverse Impacts

No significant unavoidable adverse impacts to views have been identified.

3.4.3 Light and Glare

This section describes existing light and glare conditions on the Swedish Cherry Hill campus and in the site vicinity.

3.4.3.1 Policy Context

The SMC contains specific provisions that describe the scope of the SEPA analysis for the light and glare analysis. Relevant policies from SMC 25.05.675 are provided below:

K. 2. Light and Glare Policies

- *a. It is the City's policy to minimize or prevent hazards and other adverse impacts created by light and glare.*
- *b. If a proposed project may create adverse impacts due to light and glare the decisionmaker shall assess the impacts and the need for mitigation.*
- *c. Subject to the Overview Policy set forth in SMC Section 25.05.665, the decision maker may condition or deny a proposed project to mitigate its adverse impacts due to light and glare.*
- *d. Mitigating measures may include, but are not limited to:*
  - *i. Limiting the reflective qualities of surface materials that can be used in the development;*
  - *ii. Limiting the area and intensity of illumination;*
  - *iii. Limiting the location or angle of illumination;*
  - *iv. Limiting the hours of illumination; and*
  - *v. Providing landscaping.*

3.4.3.2 Affected Environment

Light and glare on and around Swedish Cherry Hill currently includes sources of building illumination, car headlights, site and street lighting, and signage. A number of the facilities are operated and lighted 24 hours a day. The Swedish Cherry Hill buildings are illuminated and visible from the surrounding area, but site landscaping obscures and block some of the light. The existing buildings have a variety of surfaces and finishes; including brick, concrete, and glass; but are generally of low reflectivity. No highly reflective materials or surfaces exist on the buildings.

3.4.3.3 Light and Glare Impacts

Alternative 1 – No Build

With Alternative 1 - No Build existing light and glare would not be changed.

Impacts Common to All Build Alternatives

Each alternative would likely generate typical commercial stationary sources of light including interior lighting, pedestrian-level lighting (along proposed sidewalks, entryways) and illuminated signs. Interior lighting could be equipped with automatic shut-off timers. Where lighting is required for emergency egress, automatic shades could be installed. Specific information relative to stationary building fixtures and signage would be provided as part of the construction-level plans associated with the City of Seattle Building Permit process. At times during the construction period, required area lighting of the job site would be provided, and lighting would be directed away from residences as much as possible.

It is anticipated that the type of glazing that would be specified for the proposed buildings would be an energy-efficient glass in terms of solar heat gain and light transmittance. Glow from site illumination would be minimal, primarily because building design features such as downward-directed lighting and building materials.

Factors that contribute to glare off of buildings include weather, time of day and year, objects that block a light source or reflected light, the reflectivity of materials, and façade orientation. Glare is greatest on clear days during the late fall, winter, and early spring months when the sun is low on the horizon.

Light and glare from the Build Alternatives is not expected to cause safety hazards. More specific glare analysis would be conducted further into the design process.

3.4.3.4 Mitigation Measures

During operation, Swedish Cherry Hill would use a number of measures to reduce or eliminate light and glare impacts:

- Building design would use low-reflective glass and other materials, window recesses and overhangs, and façade modulation.
- Landscaping, screens, and “green walls” would be used to the extent practicable to obstruct light from shining to offsite locations.
- Nighttime illumination of the site and selected buildings may be restricted and provided only when function or safety requires it.
- Interior lighting would be equipped with automatic shut-off times. Automatic shades may be installed where lighting is required for emergency egress.
- Parking lots and structures may include screens or landscaping to obstruct glare caused by vehicle headlights.
- Lighting fixtures would provide down-lighting or be oriented away from nearby residences.

3.4.3.5 Secondary and Cumulative Impacts

Increased lighting on the Swedish Cherry Hill campus could contribute to an overall increase in lighting in the area. Cumulatively there could be an increase in sky glow in the nighttime sky if lighting is not properly shielded.

3.4.3.6 Significant Unavoidable Adverse Impacts

No significant unavoidable adverse impacts have been identified after mitigation.

3.4.4 Shadows

Policy Context

The SMC contains specific provisions that describe the scope of the SEPA analysis for the shadow analysis. Relevant policies from SMC 25.05.675 are provided below:

> *Q.2. Shadows on Open Spaces Policies*
> *It is the City's policy to minimize or prevent light blockage and the creation of shadows on open spaces most used by the public.*
>
> a. *Areas outside of downtown to be protected are as follows:*
>   i. *Publicly owned parks;*
>   ii. *Public schoolyards;*
>   iii. *Private schools which allow public use of schoolyards during non-school hours; and*
>   iv. *Publicly owned street ends in shoreline areas.*
>
> b. *The decision maker shall assess the extent of adverse impacts and the need for mitigation. The analysis of sunlight blockage and shadow impacts shall include an assessment of the extent of shadows, including times of the year, hours of the day, anticipated seasonal use of open spaces, availability of other open spaces in the area, and the number of people affected.*
>
> c. *When the decision maker finds that a proposed project would substantially block sunlight from open spaces listed in subsections Q2a and Q2b above at a time when the public most frequently uses that space, the decision maker may condition or deny the project to mitigate the adverse impacts of sunlight blockage, whether or not the project meets the criteria of the Overview Policy set forth in SMC Section 25.05.665.*
>
> d. *Mitigating measures may include, but are not limited to:*
>   i. *Limiting the height of the development;*
>   ii. *Limiting the bulk of the development;*
>   iii. *Redesigning the profile of the development;*
>   iv. *Limiting or rearranging walls, fences, or plant material;*
>   v. *Limiting or rearranging accessory structures, i.e., towers, railing, antennae; and*
>   vi. *Relocating the project on the site.*

3.4.4.1 Affected Environment

Existing shadow conditions are created by the location and scale of structures relative to the seasonal pattern of the sun, time of day, and weather. Topography and vegetation also influence shadow patterns. All public parks and schools in Seattle are protected by the SMC to minimize shadow effects (SMC 25.06.675). The Firehouse Mini Park, located at 712 18th Avenue, is the only applicable public space within the vicinity of Swedish Cherry Hill.

Existing shadows created by Swedish Cherry Hill facilities are shown among the shadow simulations for Alternatives 8, 9, and 10 in Figures 3.4-50 through 3.4-97.

3.4.4.2 Shadow Impacts

Shadow Analysis

The alternatives were modeled with SketchUp™ software to determine shadows for the morning and afternoon hours during the winter and summer months. The analysis evaluates shading associated with the proposed buildings for 3 times of the day on 2 key solar days of the year, Winter Solstice (approximately December 21st) and Summer Solstice (approximately June 21st). These 2 days depict the minimum and maximum impacts relative to shadows cast by the alternatives. The analysis also evaluates shading associated with proposed buildings for 3 times of the day on 2 other key days of the year: Vernal (Spring) Equinox (approximately March 21st) and Autumnal (Fall) Equinox (approximately September 21st). Around the time of the equinox, night and day are about equal length. Shadow-related impacts would occur throughout the year, not only on these 4 days. A person standing in one location would observe differences in the duration of shadow-related impacts based on season and the width of the shadow. The analysis assumes full build-out of proposed MIO heights.

Shadow impacts specific to James Tower (1910 Providence Hospital building) and potentially historic resources are discussed in Section 3.6.3 of this EIS.

The shadow analysis for 3 times of the day on the Vernal (Spring) Equinox; Summer Solstice, Autumnal (Fall) Equinox, Winter Solstice is as follows:

Vernal (Spring) Equinox (refer to Figures 3.4-50 through 3.4-61)

Sunrise on vernal equinox (approximately March 20th) occurs at about 7:11 AM and sunset at about 7:21 PM[1]. The extent of possible shading from existing buildings and proposed development must also be considered within the context of climatic data for the month (e.g., on average the number of clear, partly cloudy and cloudy days). Data[2] indicate that on average, March has 3.4 clear days, 5.8 partly cloudy days and 21.9 cloudy days.

As in indicated in Figures 3.4-50 through 3.4-61 for vernal equinox, shadows from existing campus development, together with shadows from other nearby buildings, were evaluated and compared to the Build Alternatives at 8:00 AM, 12:00 PM and 5:00 PM, respectively. The shadow diagrams are described below; Pacific Daylight Savings Time (PDT) is in-effect on this day. The maximum sun angle that occurs on this key solar day is approximately 42.9 degrees. In general, this is the angle between the horizon and the sun.

---

[1] These times are local times for Seattle. http://www.timeanddate.com
[2] Source: Western Regional Climate Center. 2014. Local Climate Summaries Available at: http://www.wrcc.dri.edu/summary/lcd.html.

Vernal (Spring) Equinox - 8:00 AM

Existing Conditions and Alternative 1 - No Build: Shadows from the Swedish Cherry Hill campus extend in a northwesterly direction and periodically shade portions of 15th and 16th Avenues, E Cherry Street, as well as the campus central plaza. Shadows from the west campus extend to Seattle University Connolly Center buildings across 15th Avenue and shade portions of the adjacent playfield. Shadow length, from structures in the surrounding area, varies depending on building height. Shadows from most single-family structures generally extend at least onto the adjacent buildings, yard, or public right-of-way. Shadows from the taller multi-family or commercial buildings generally extend onto the adjacent block.

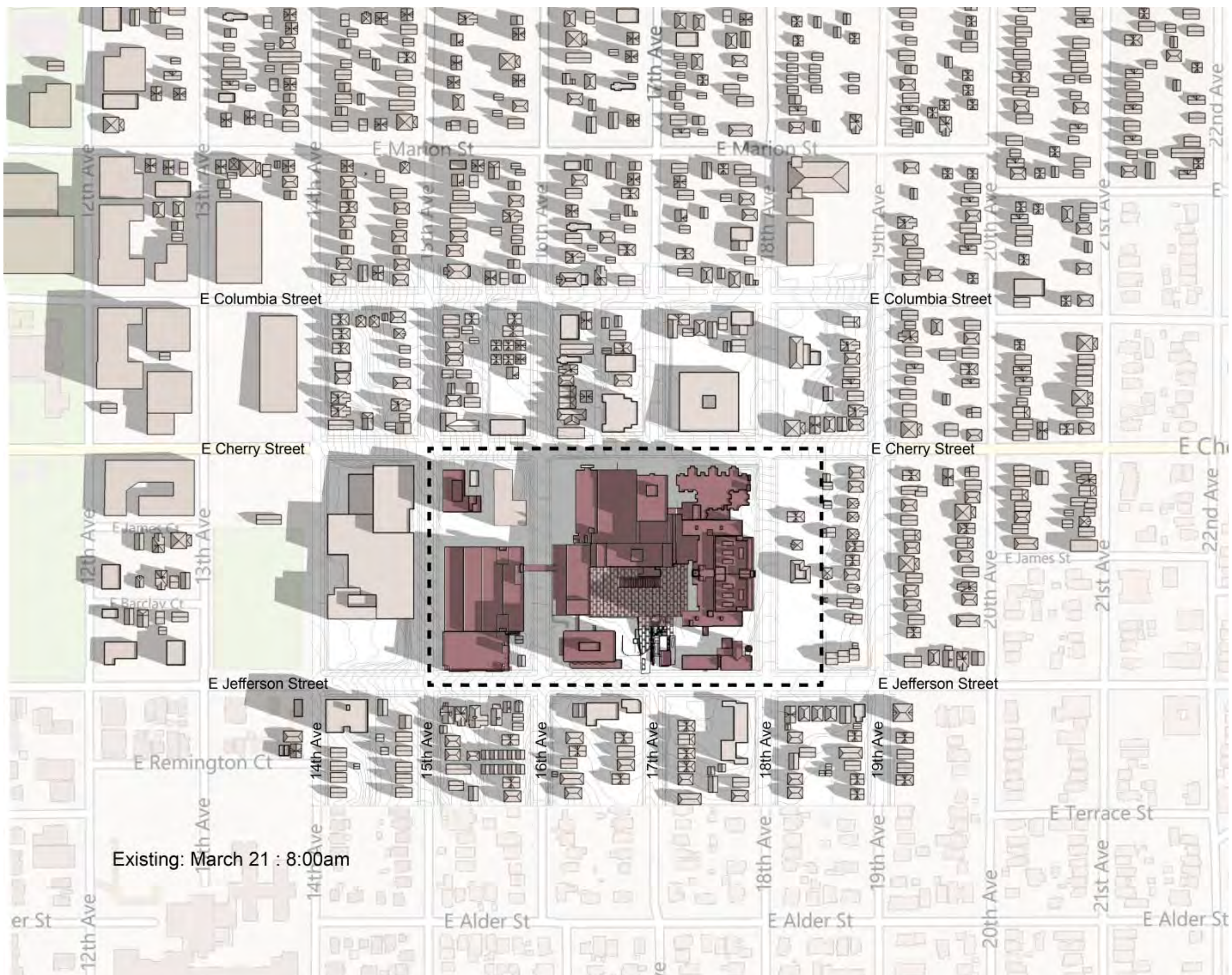


Figure 3.4-50

Existing Conditions/Alternative 1 – No Build
Vernal (Spring) Equinox, March 21st, 8:00 AM

Alternative 8: Shadows from the Swedish Cherry Hill west and central campus towers would extend over 15th Avenue and Seattle University Connolly Center approximately to the corner of 13th Avenue and E Cherry Street, portions of the adjacent playfield, and just over 13th Avenue for half-block south of E Cherry Street. The central campus tower shadows would extend over the Seattle Medical Post-Acute Care and Northwest Kidney Center buildings and portions of 16th Avenue. East campus shadows would extend over 18th Avenue and onto the front of the James Tower building (see Figure 3.4-51).

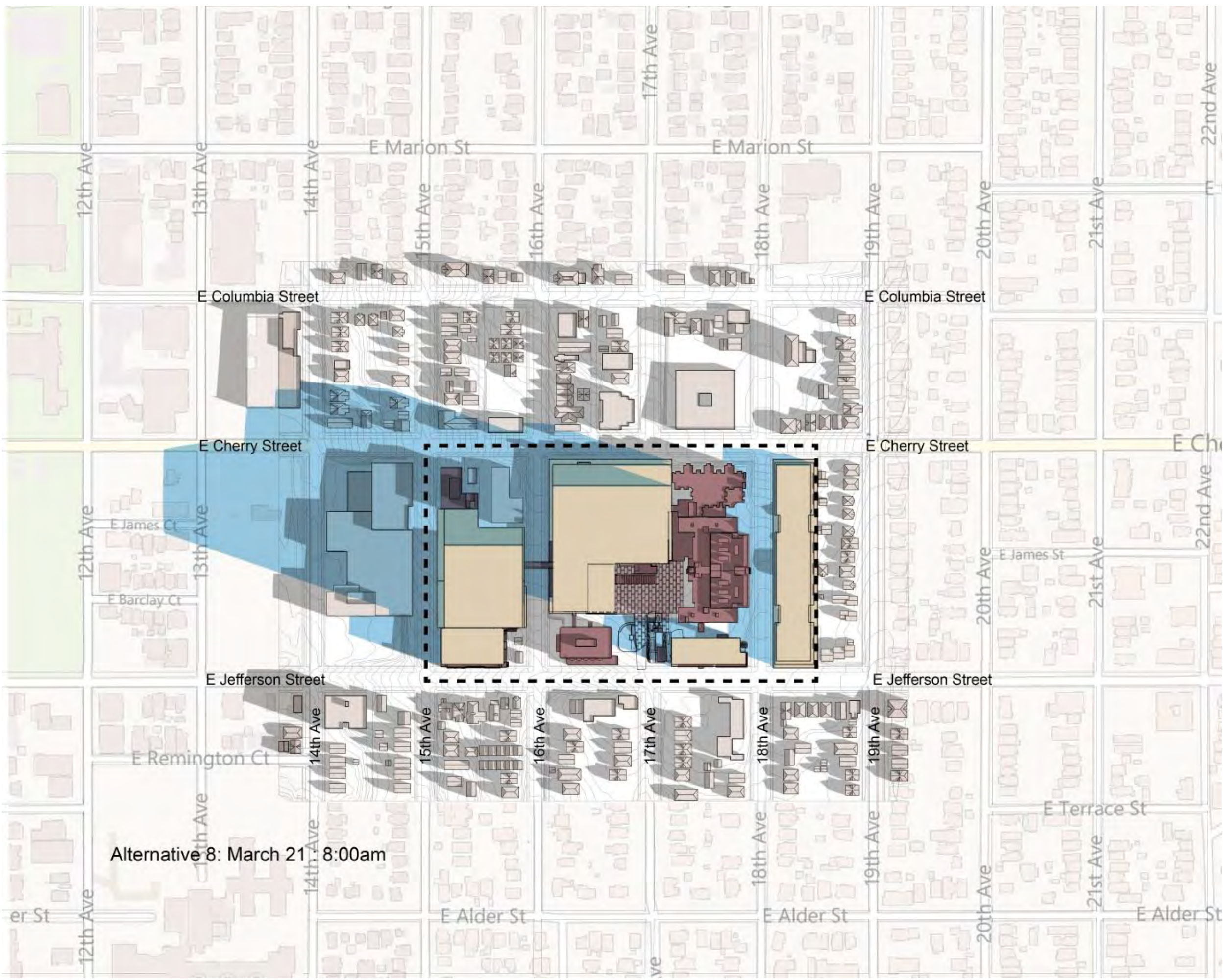


Figure 3.4-51

Alternative 8 – Vernal (Spring) Equinox, March 21st, 8:00 AM

Alternative 9: Shadows would extend similar to Alternative 8, but not as far in the northwesterly direction (not beyond 13th Avenue to the west or E Cherry Street at 15th Avenue to the north) due to reduced tower heights on both the west and central campus.

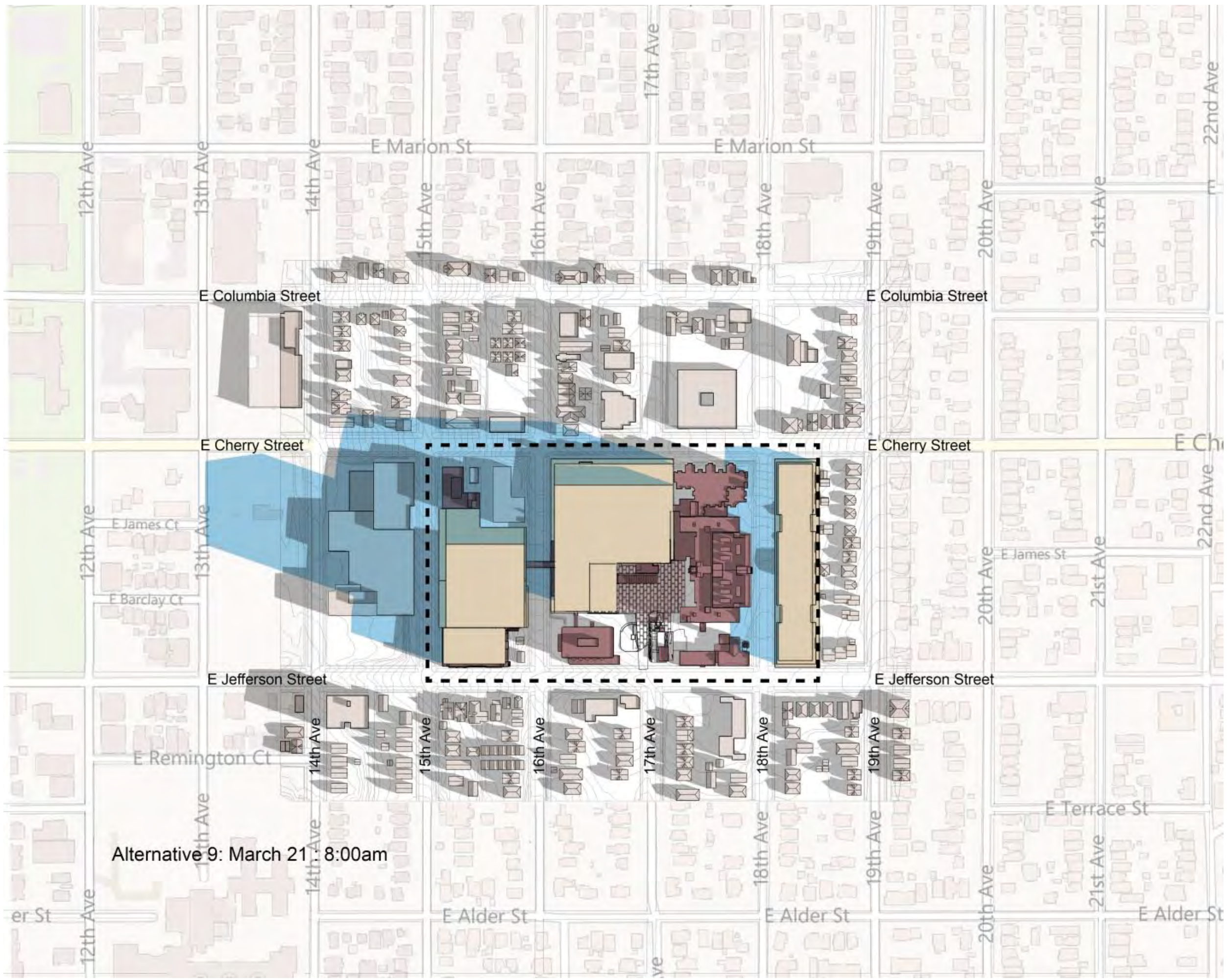


Figure 3.4-52

Alternative 9 – Vernal (Spring) Equinox, March 21st, 8:00 AM

Alternative 10: Shadows would extend similar to Alternative 9, except not as far mid-block on 18th Avenue due east campus building modulation (15-foot height limit mid-building).

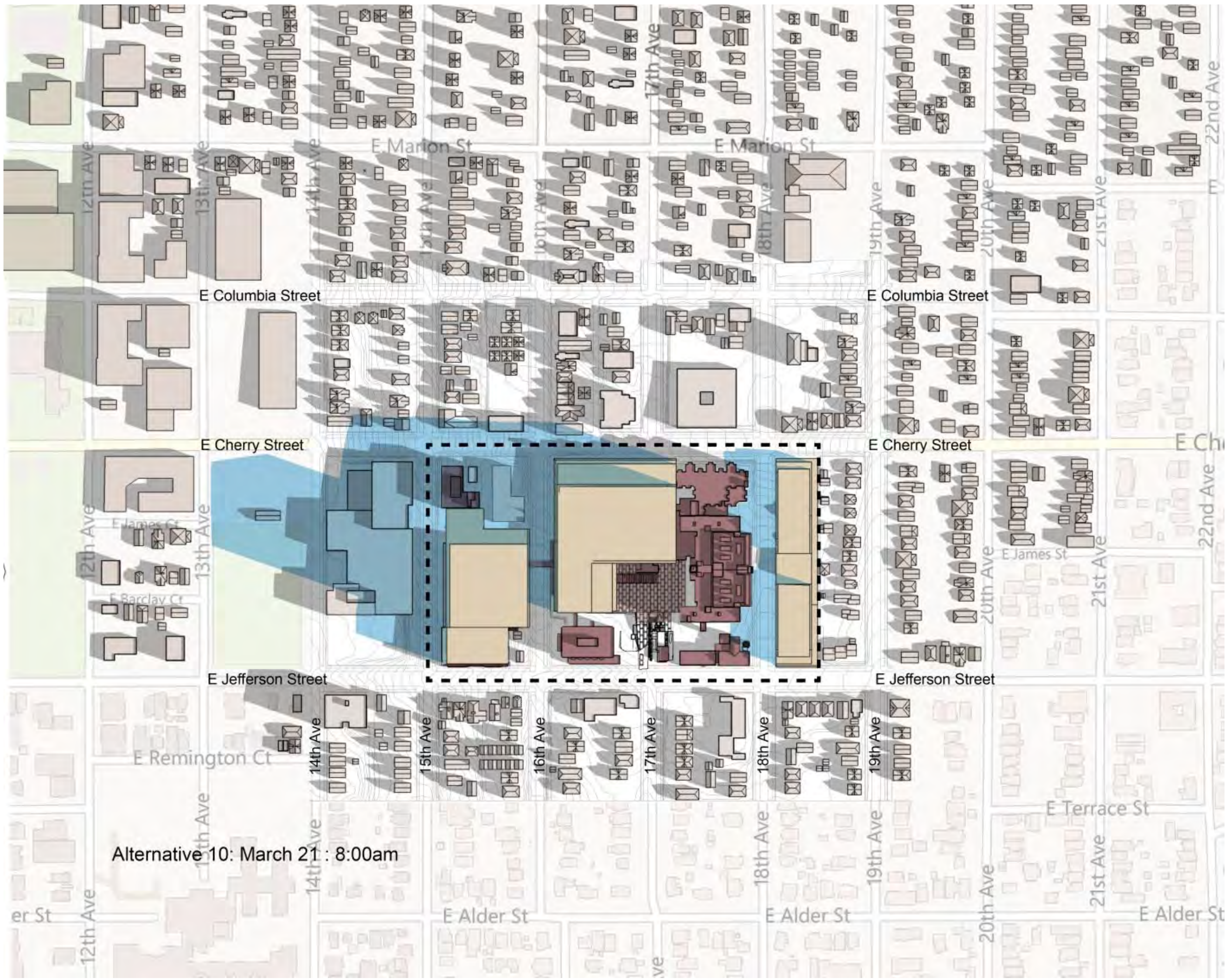


Figure 3.4-53

Alternative 10 – Vernal (Spring) Equinox, March 21st, 8:00 AM

Vernal (Spring) Equinox - 12:00 PM

Existing Conditions and Alternative 1 - No Build: Shadows from the Swedish Cherry Hill campus extend in a northerly direction and periodically shade portions of E Cherry Street as well as the north sides of campus buildings. The skybridge casts a narrow shadow onto 16th Avenue. Shadow length, from buildings in the surrounding area, is approximately half of the building's height.

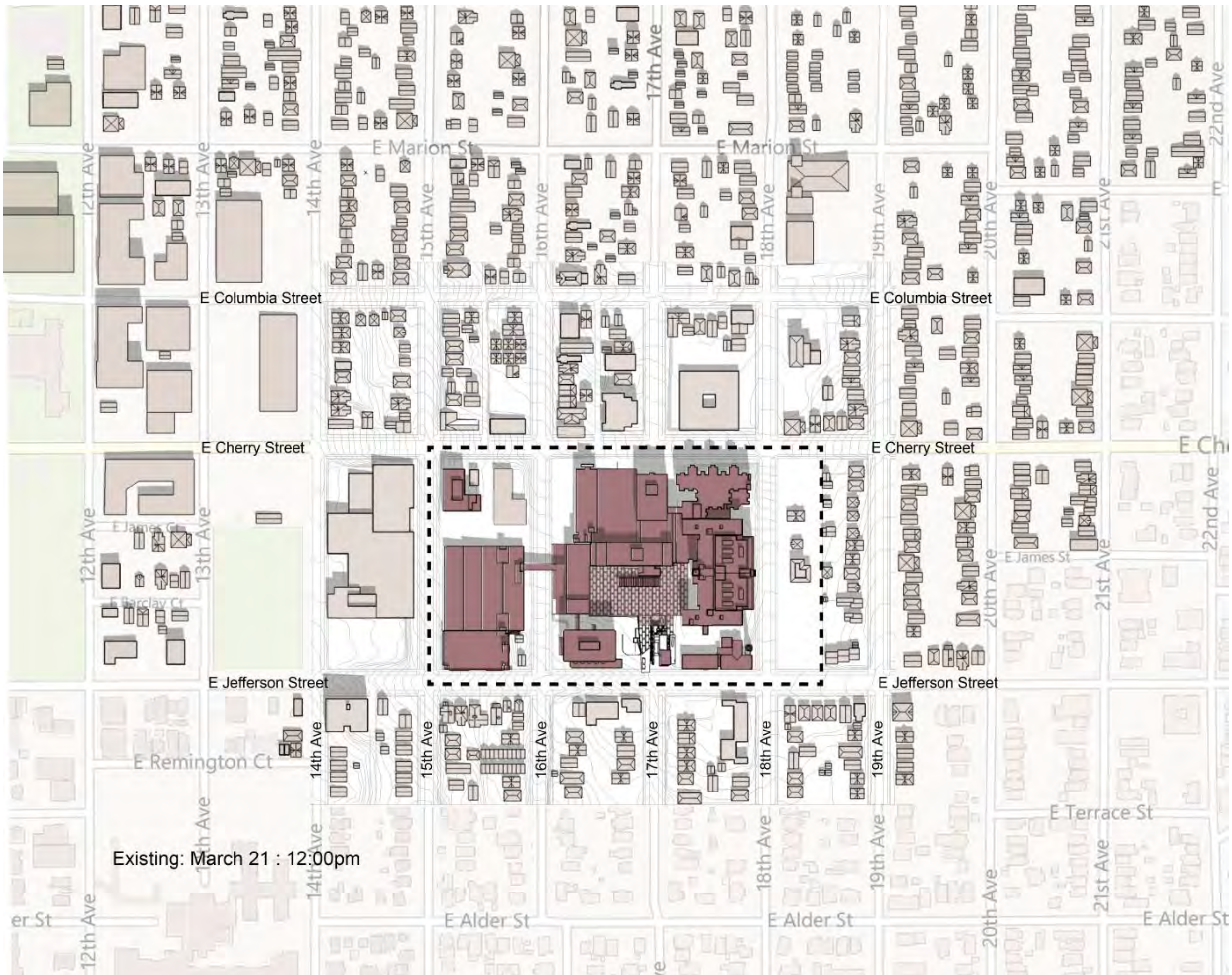


Figure 3.4-54

Existing Conditions/Alternative 1 – No Build
Vernal (Spring) Equinox, March 21st, 12:00 PM

Alternative 8: Shadows would extend similar to Existing Conditions and Alternative 1 - No Build, except that shadows from the west tower would extend over the Northwest Kidney Center and Seattle Medical Post-Acute Care buildings; shadows from proposed heights along E Cherry Street would extend father across E Cherry Street over the condominiums at the northeast corner of E Cherry Street and 17th Avenue; and shadows from central tower would extend over the south-facing units of the Manhattan Plaza at the northwest corner of E Cherry Street and 17th Avenue. Shadow length, from structures in the surrounding area, varies slightly depending on building height. Shadows from most single-family structures, taller multi-family, and commercial buildings are generally confined to their own yards or extend onto the adjacent public right-of-way.

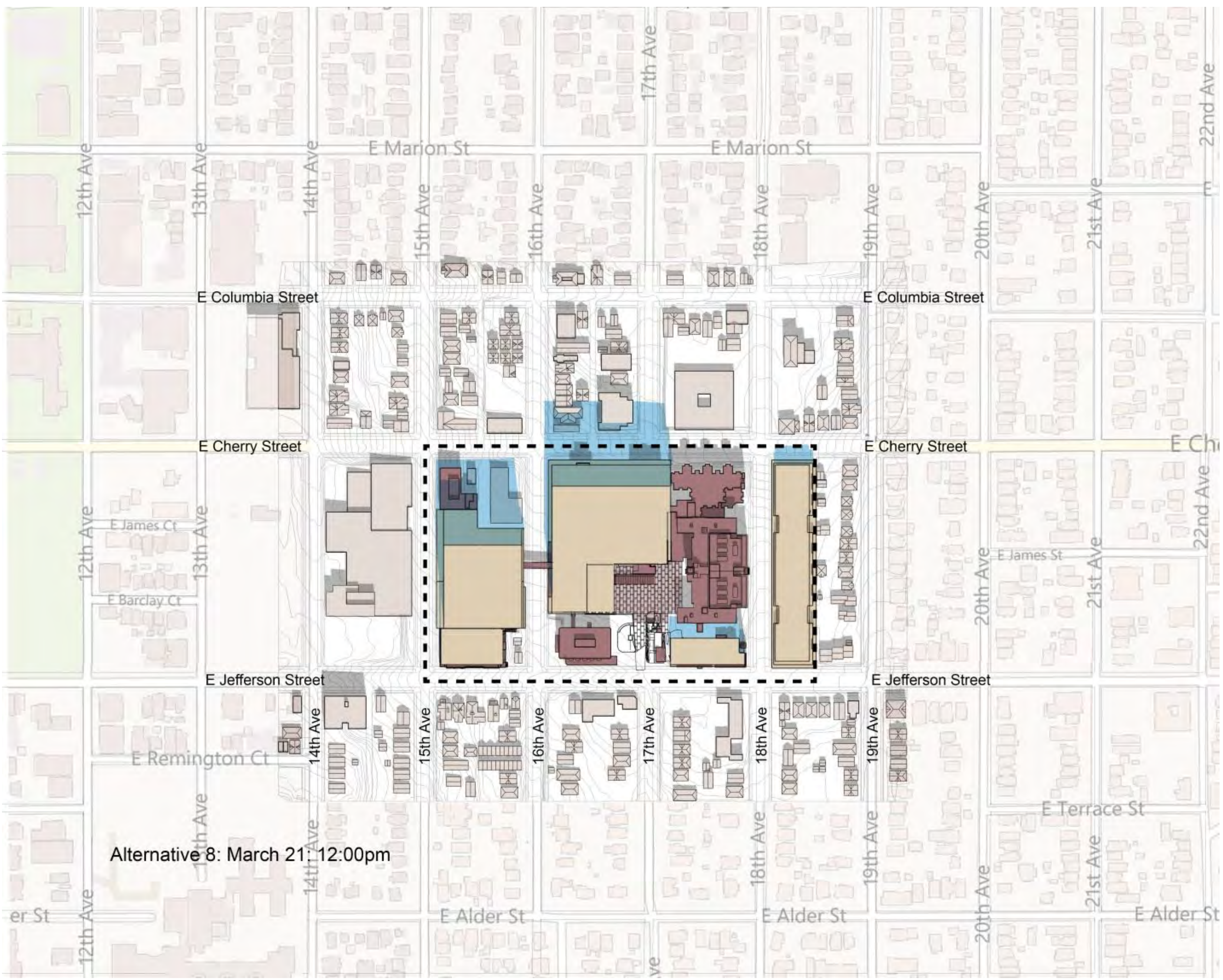


Figure 3.4-55

Alternative 8 – Vernal (Spring) Equinox, March 21st, 12:00 PM

Alternative 9: Shadows would extend similar to Alternative 8, except that the shadows of the central tower of Alternative 9 would not extend quite as far over the south-facing units of the Manhattan Plaza.

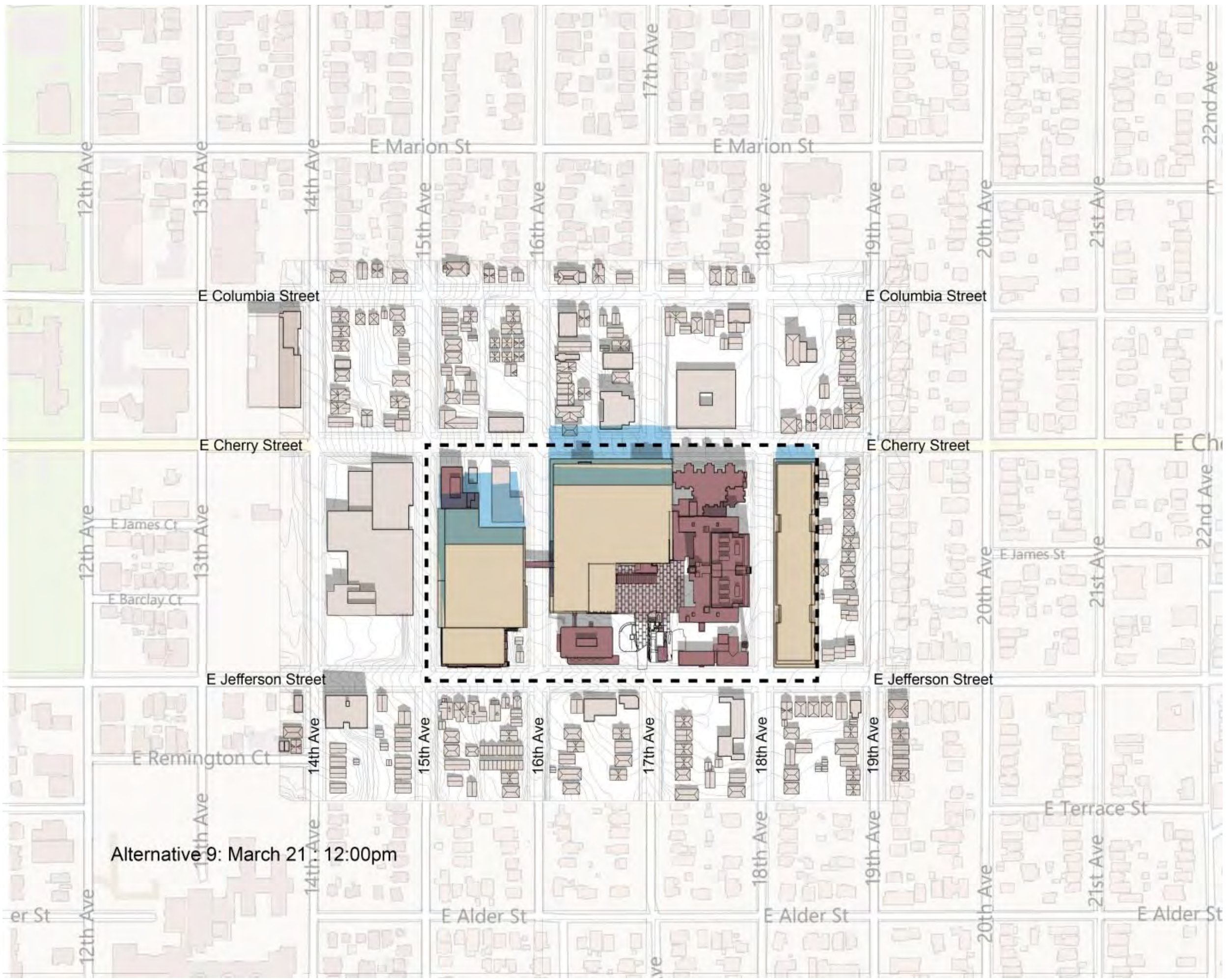


Figure 3.4-56

Alternative 9 – Vernal (Spring) Equinox, March 21st, 12:00 PM

Alternative 10: Shadows would extend similar to Alternative 9.

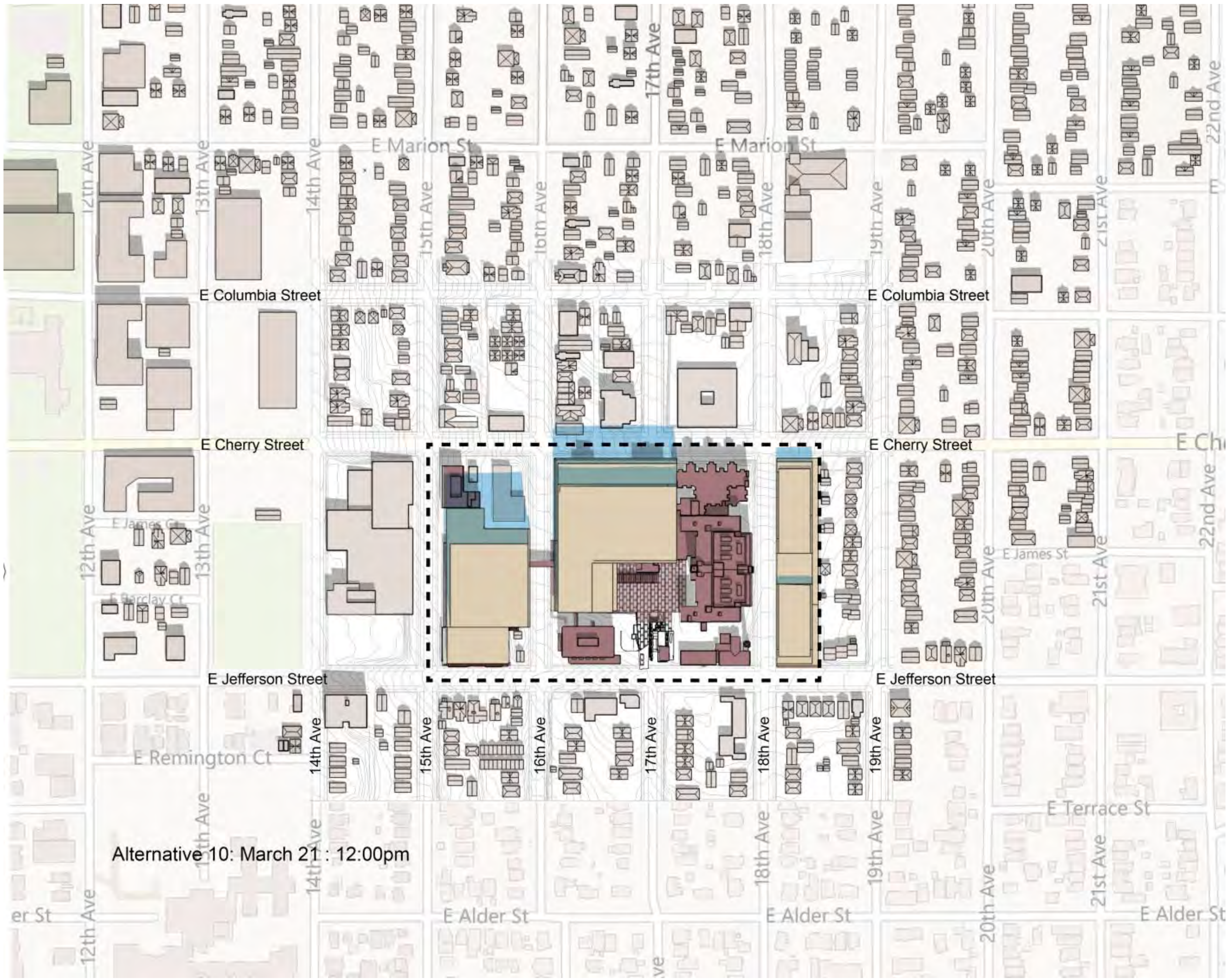


Figure 3.4-57

Alternative 10 – Vernal (Spring) Equinox, March 21st, 12:00 PM

Vernal (Spring) Equinox - 5:00 PM

Existing Conditions and Alternative 1 - No Build: Shadows from the Swedish Cherry Hill campus extend in a northeasterly direction and periodically shade portions of 16th (including the rear portion of the Carmack House property), 18th and 19th Avenues, E Cherry Street as well as the campus central plaza. Shadows from James Tower and West Tower extend to some houses on 19th Avenue, shading those front yards. Shadows in the surrounding area extend a half-block or more beyond the buildings depending on building height. East of 18th Avenue, shadows extend farther due to the slope of the terrain.

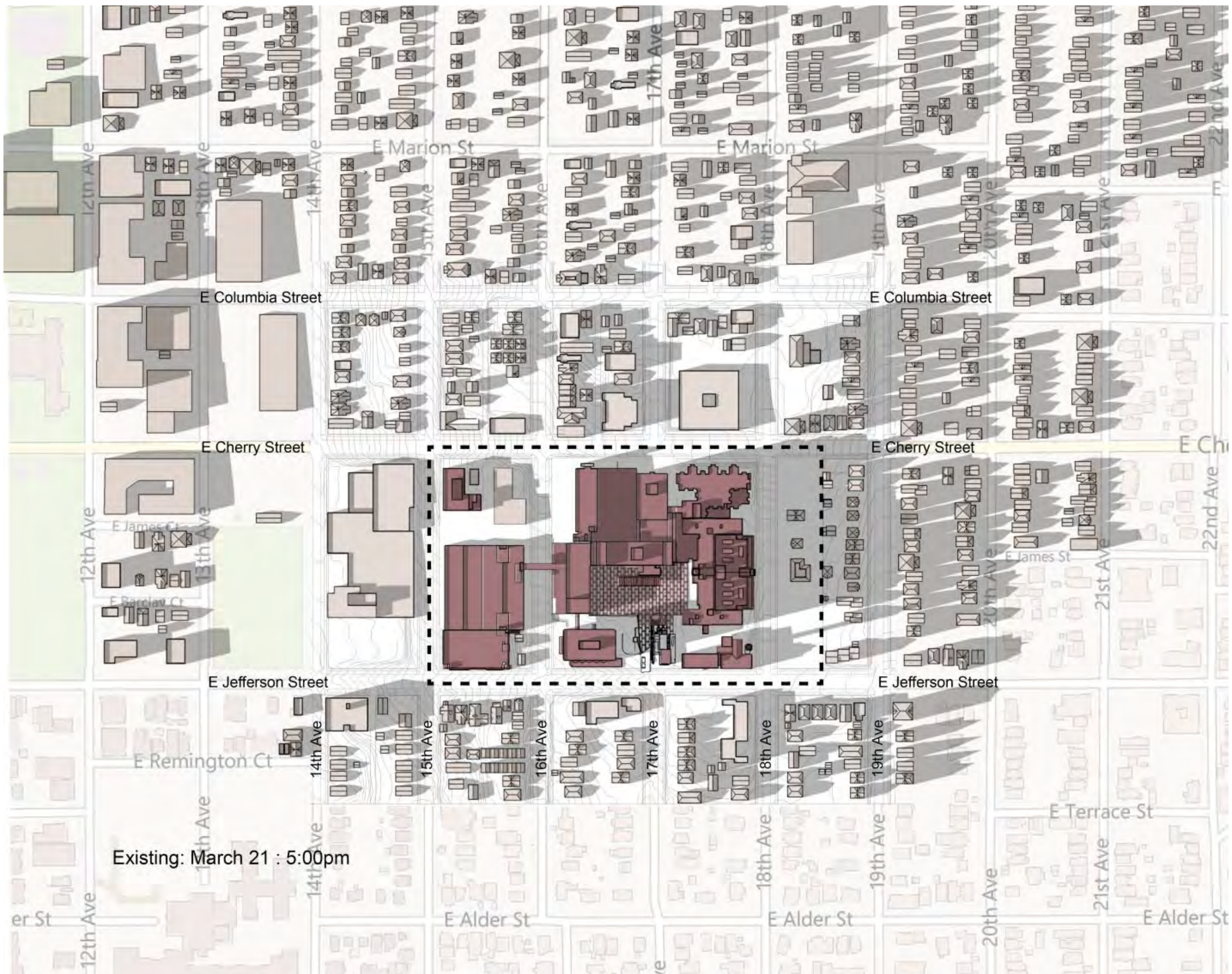


Figure 3.4-58

Existing Conditions/Alternative 1 – No Build
Vernal (Spring) Equinox, March 21st, 5:00 PM

Alternative 8: Shadows would extend similar to Existing Conditions and Alternative 1 - No Build, except for greater shading of the northwest corner of the campus and the Carmack House property. Shadows from the central tower would extend almost to the intersection of 21st Avenue and E Cherry Street.

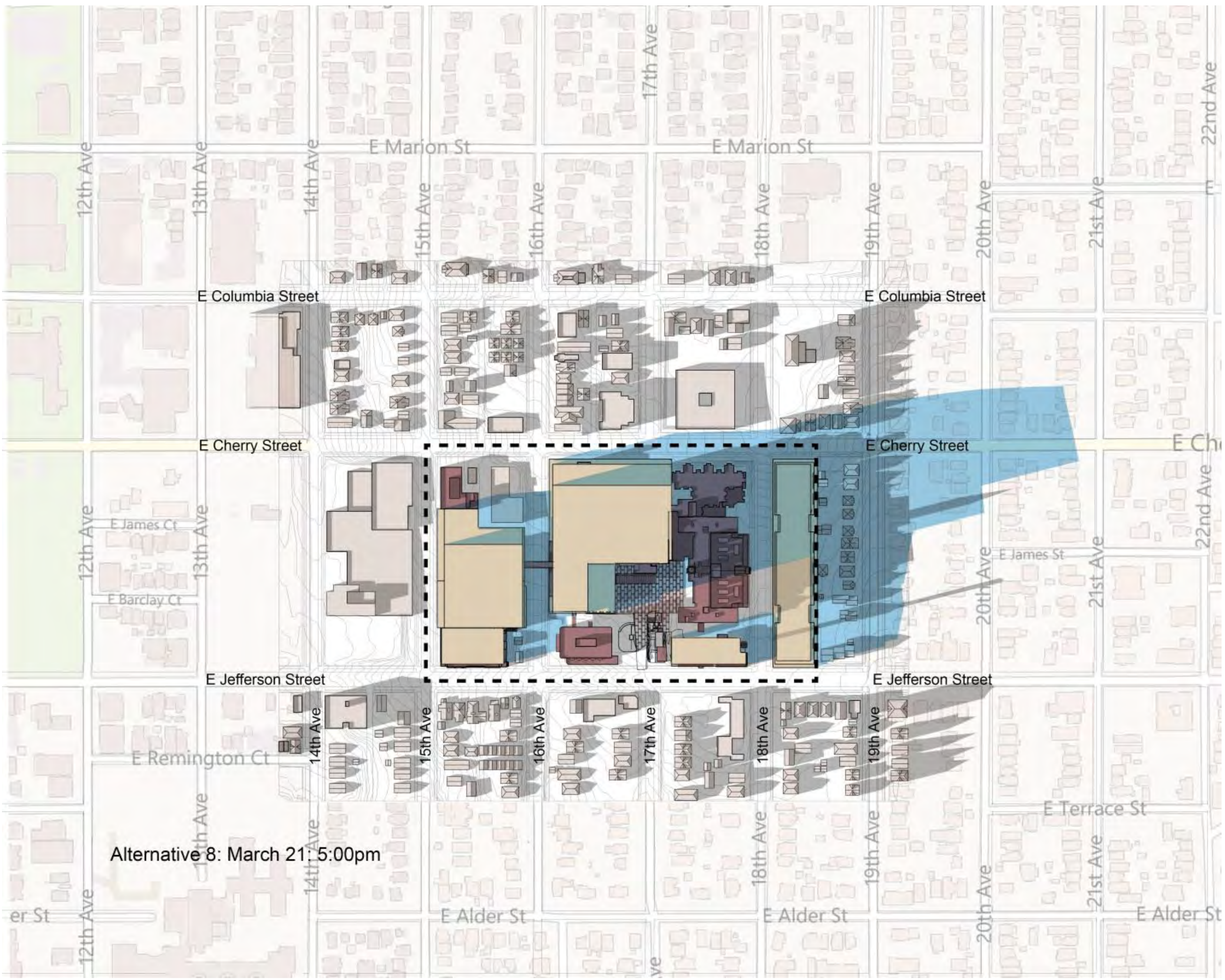


Figure 3.4-59

Alternative 8 – Vernal (Spring) Equinox, March 21st, 5:00 PM

Alternative 9: Shadows would extend similar to Existing Conditions and Alternative 1 - No Build, except for broader shadows over the residential area just to the east of 19th Avenue.

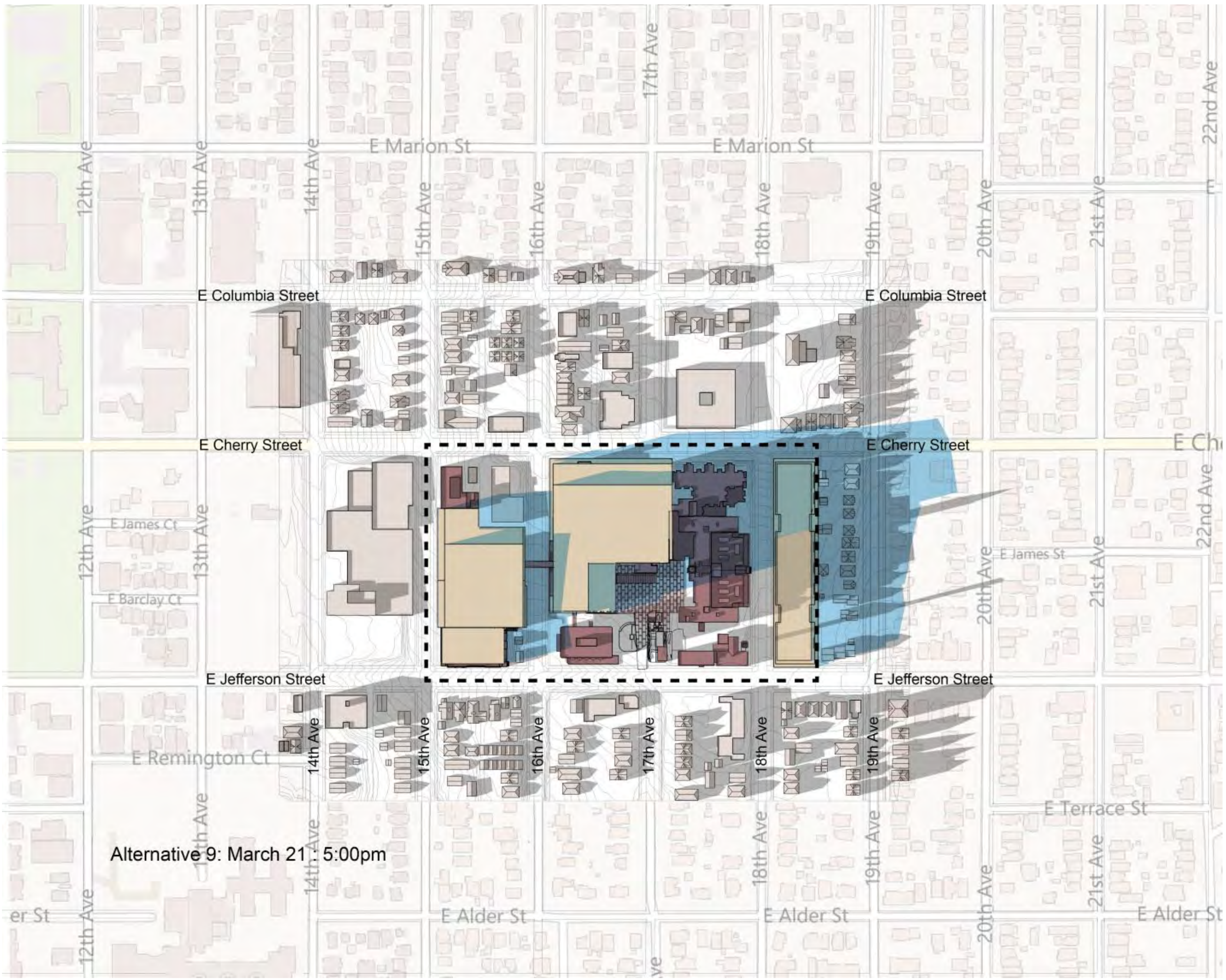


Figure 3.4-60

Alternative 9 – Vernal (Spring) Equinox, March 21st, 5:00 PM

Alternative 10: Shadows would extend similar to Alternative 9, except not as far mid-block on 19th Avenue due to east campus building modulation (15-foot height limit mid-building).

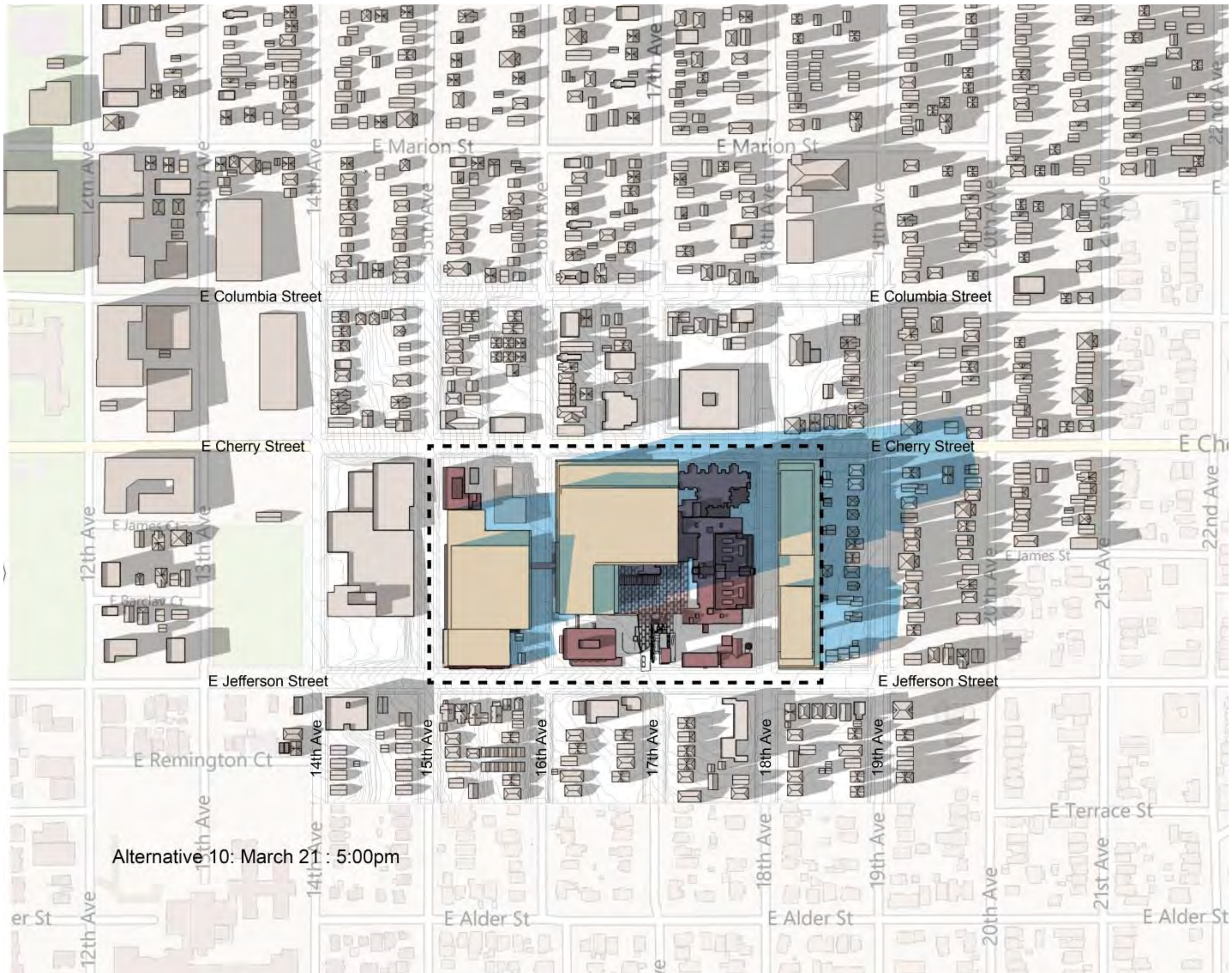


Figure 3.4-61

Alternative 10 – Vernal (Spring) Equinox, March 21st, 5:00 PM

Summer Solstice (refer to Figures 3.4-62 through 3.4-73)

Sunrise on summer solstice (approximately June 21st) occurs at about 5:11 AM and sunset at about 9:11 PM. PDT remains in-effect on this day. The maximum sun angle that occurs on this key solar day is approximately 65.8 degrees. The extent of possible shading from the proposed alternatives must be considered within the context of climatic data for the month (e.g., on average the number of clear, partly cloudy and cloudy days). Data[3] indicate that on average, June has 5.1 clear days, 7.8 partly cloudy days and 17 cloudy days.

[3] Source: Western Regional Climate Center. 2014. Local Climate Summaries Available at: http://www.wrcc.dri.edu/summary/lcd.html.

As indicated by Figures 3.4-62 through 3.4-73 for summer solstice, shadows from existing campus development, together with shadows from other nearby buildings, were evaluated and compared to the Build Alternatives at 8:00 AM, 12:00 PM, and 5:00 PM and are described on the following pages.

Summer Solstice - 8:00 AM

Existing Conditions and Alternative 1 - No Build: Most shadows are confined to the campus except for periodic shading of portions of the sidewalks on 16th (including the rear portion of the Carmack House property) and 15th Avenues. Seattle University Connolly Center shades portions of 14th Avenue. Shadows, from single-family buildings in the surrounding area, are generally confined to the same building lot. Shadows from taller buildings may extend onto the adjacent right-of-way, building, or lot depending on building height.

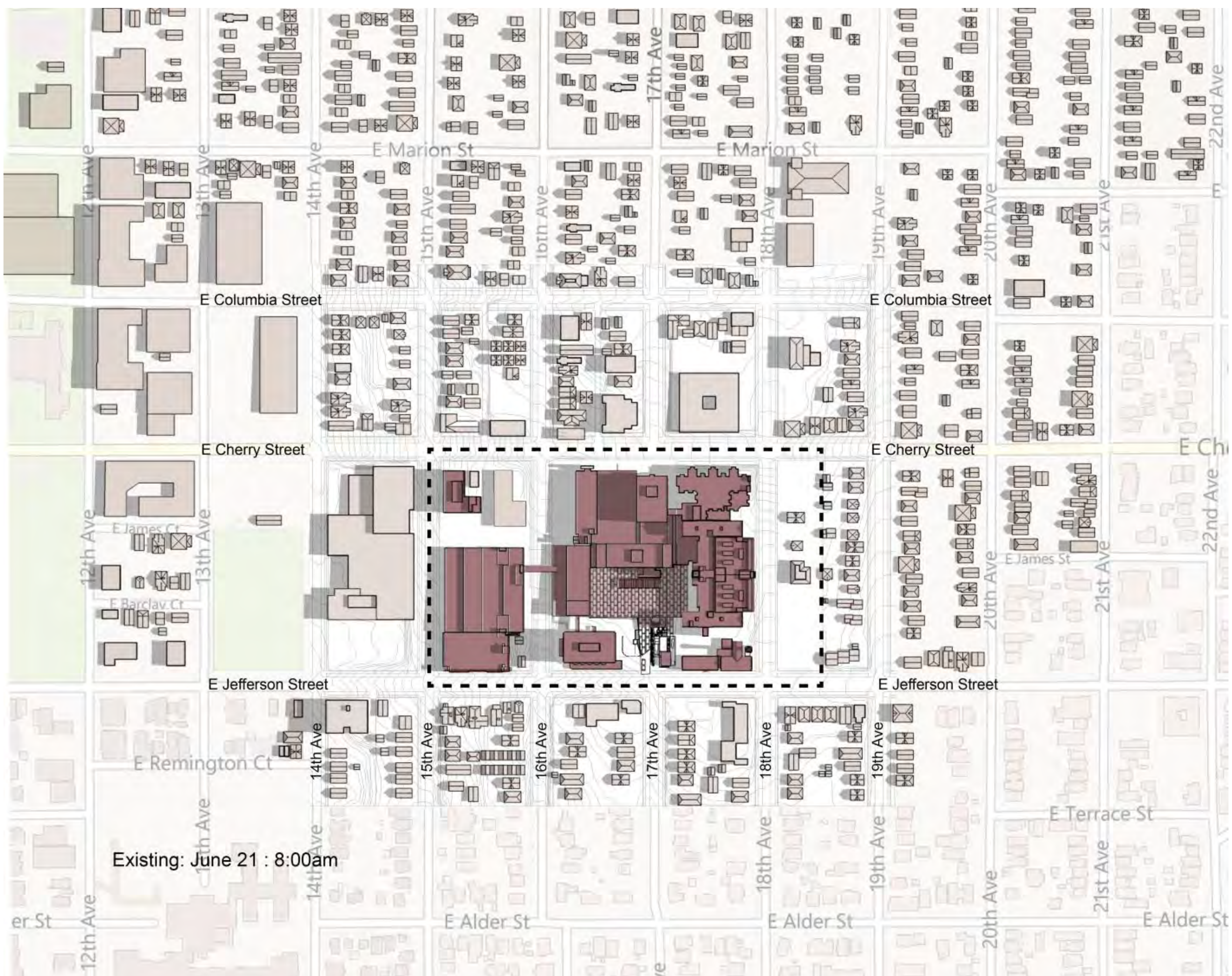


Figure 3.4-62

Existing Conditions/Alternative 1 – No Build
Summer Solstice, June 21st, 8:00 AM

Alternative 8: Shadows would extend in a westerly direction and would periodically shade portions of the plaza area of Swedish Cherry Hill campus and portions of the sidewalks and streets along E Cherry Street, 14th Avenue, 15th Avenue, and 18th Avenue; and portions of the rooftop of the Seattle University Connolly Center.

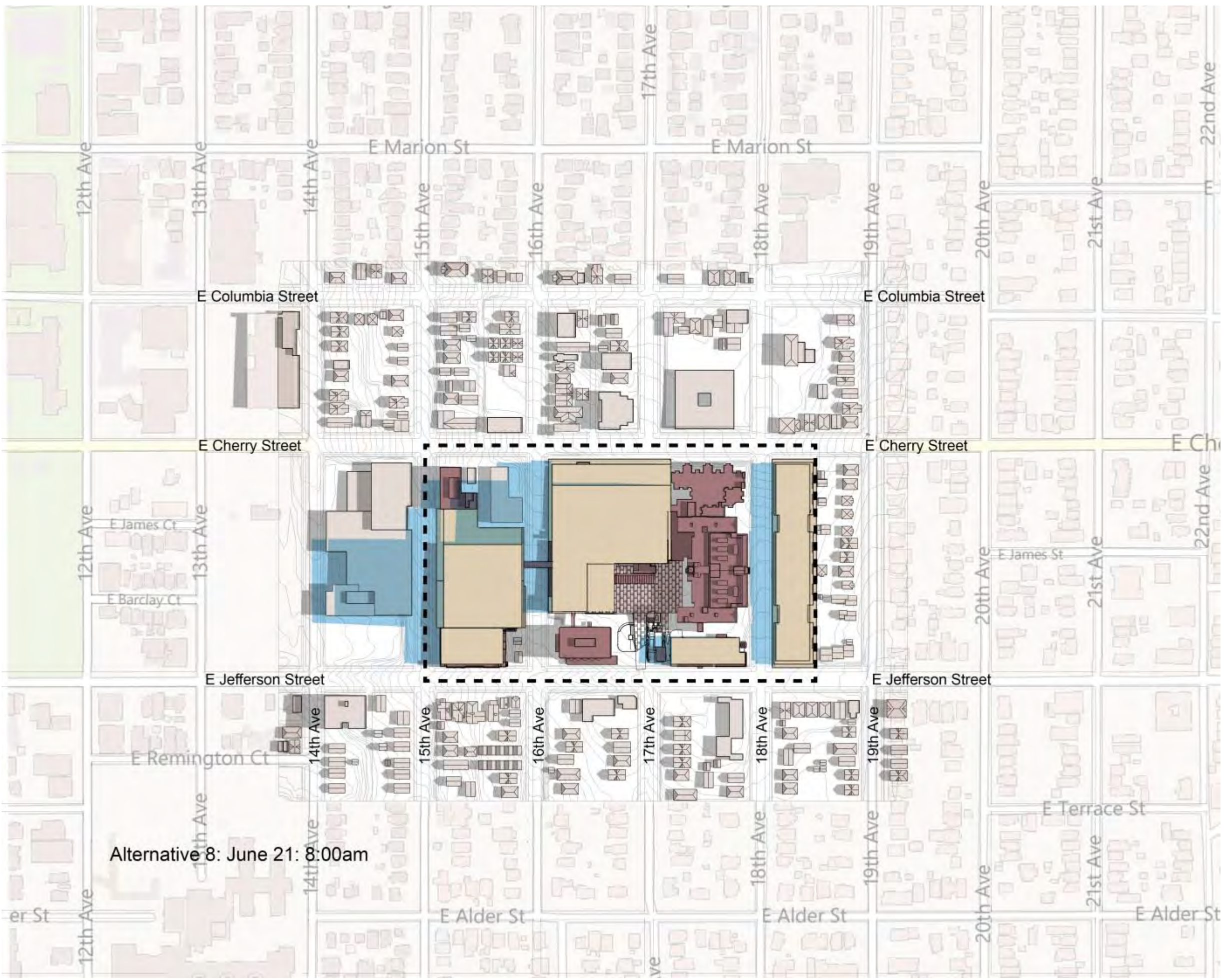


Figure 3.4-63

Alternative 8 – Summer Solstice, June 21st, 8:00 AM

Alternative 9: Shadows would extend similar to, but slightly less than, Alternative 8 west of 15th Avenue.

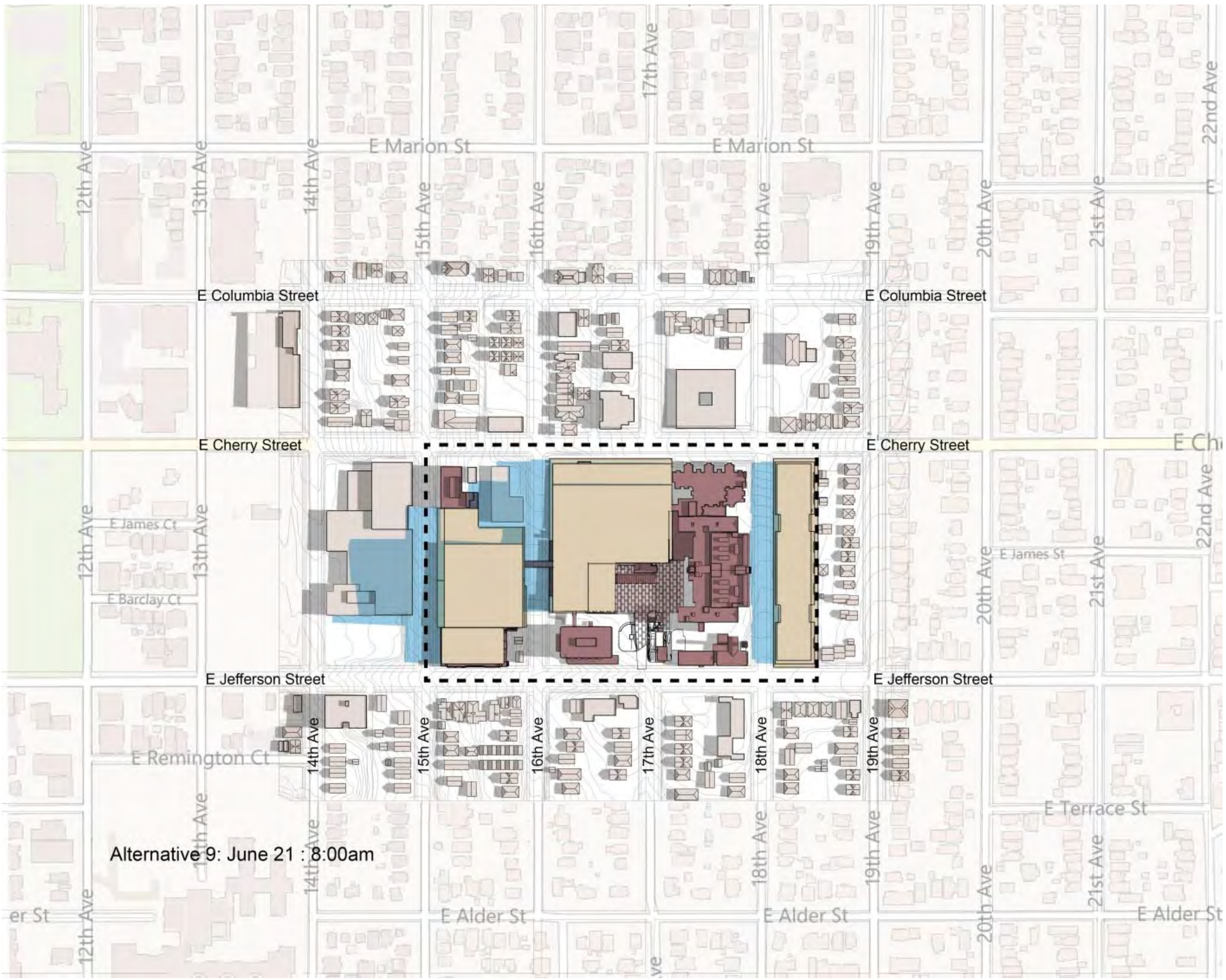


Figure 3.4-64

Alternative 9 – Summer Solstice, June 21st, 8:00 AM

Alternative 10: Shadows would extend similar to Alternative 9, except not as far mid-block on 18th Avenue due east campus building modulation (15-foot height limit mid-building). Shadows would not extend to the corners on the west side of 18th Avenue and E Cherry Street and on the west side 18th Avenue and E Cherry Street due to the deeper setback of the upper-story (30 feet compared to 15 feet for Alternatives 8 and 9).

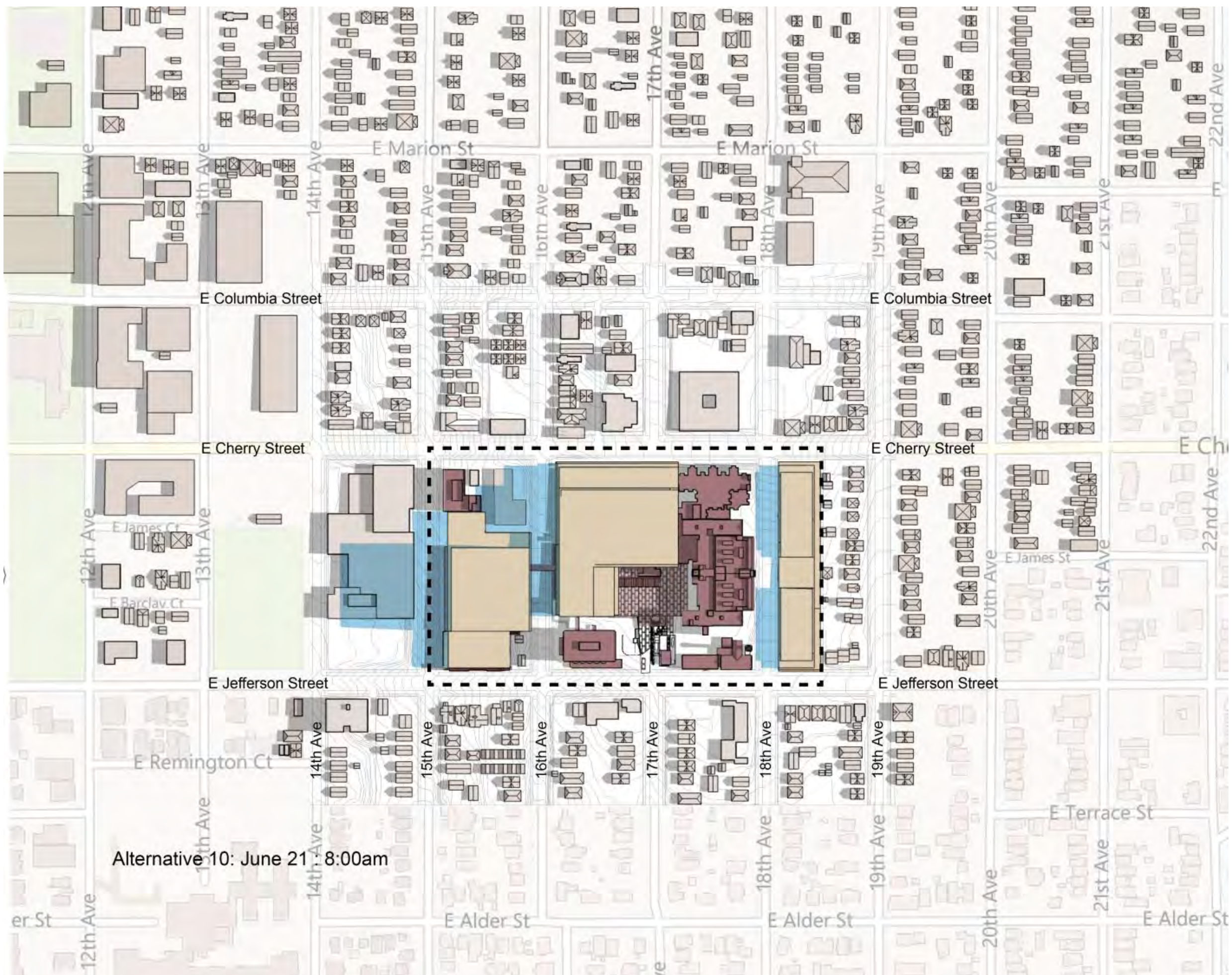


Figure 3.4-65

Alternative 10 – Summer Solstice, June 21st, 8:00 AM

Summer Solstice - 12:00 PM

Existing Conditions and Alternative 1 - No Build: Shadows would extend the shortest distance during this time of day. Shadows extend in a northerly direction. Shadows are confined to campus except for periodically shading portions of the sidewalks and street along E Cherry Street. Shadows, from buildings in the surrounding area, generally extend just beyond the building envelope.

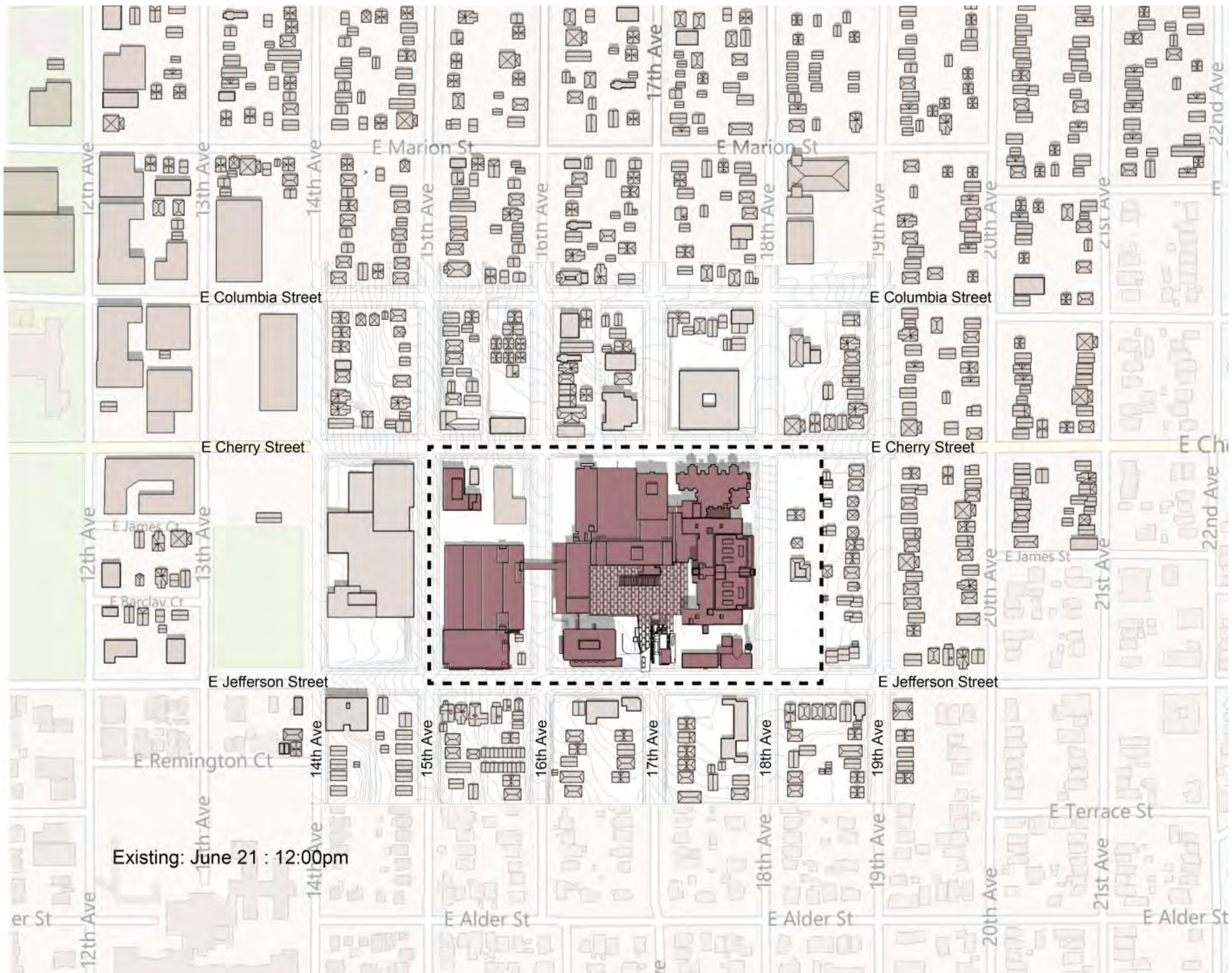


Figure 3.4-66

Existing Conditions/Alternative 1 – No Build
Summer Solstice, June 21st, 12:00 PM

Alternative 8: Shadows would extend to the sidewalk on the south side E Cherry Street between 16th and 18th Avenues, and portions of on-campus rooftops in a northerly direction.

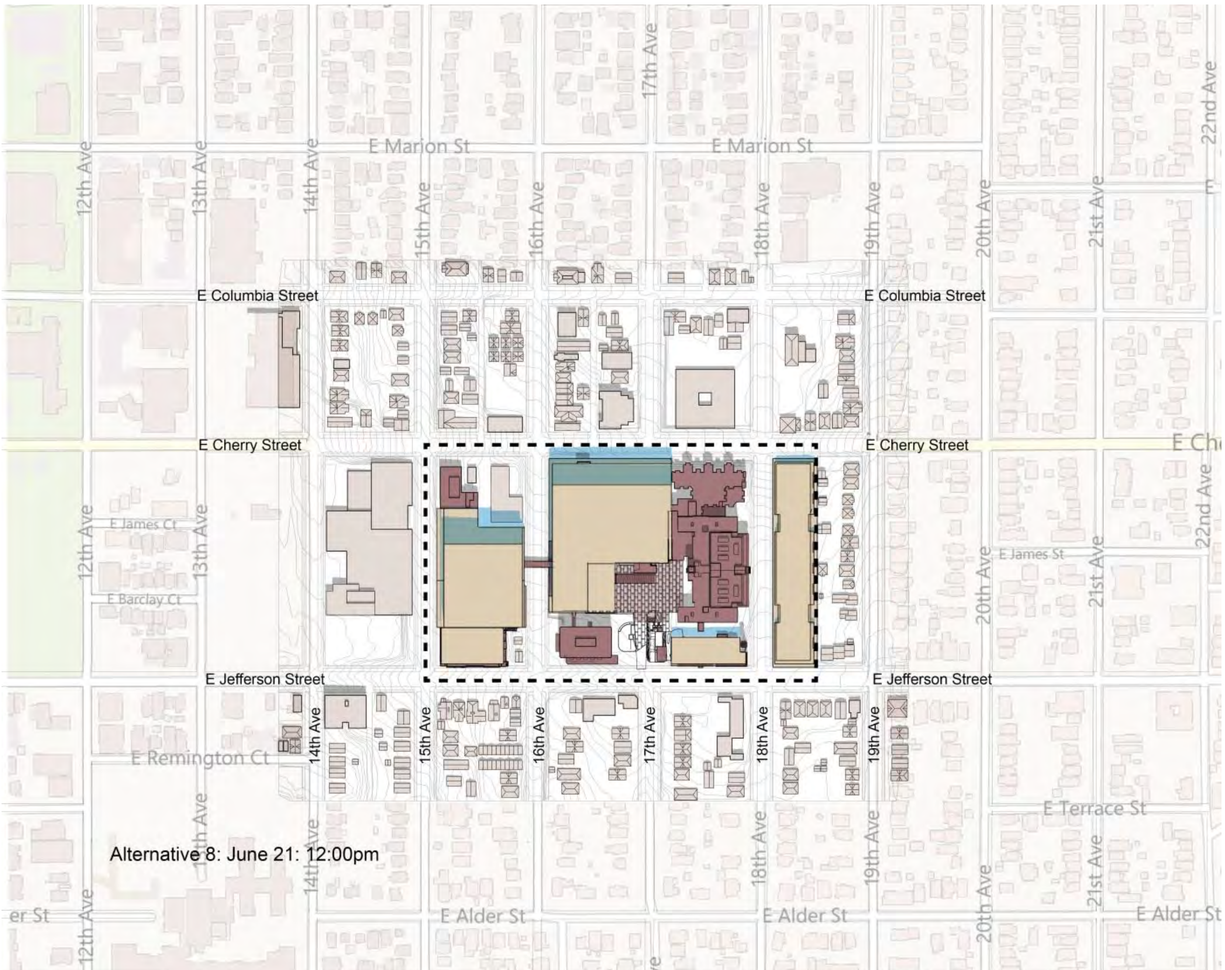


Figure 3.4-67

Alternative 8 – Summer Solstice, June 21st, 12:00 PM

Alternative 9: Shadows would extend similar to Alternative 8.

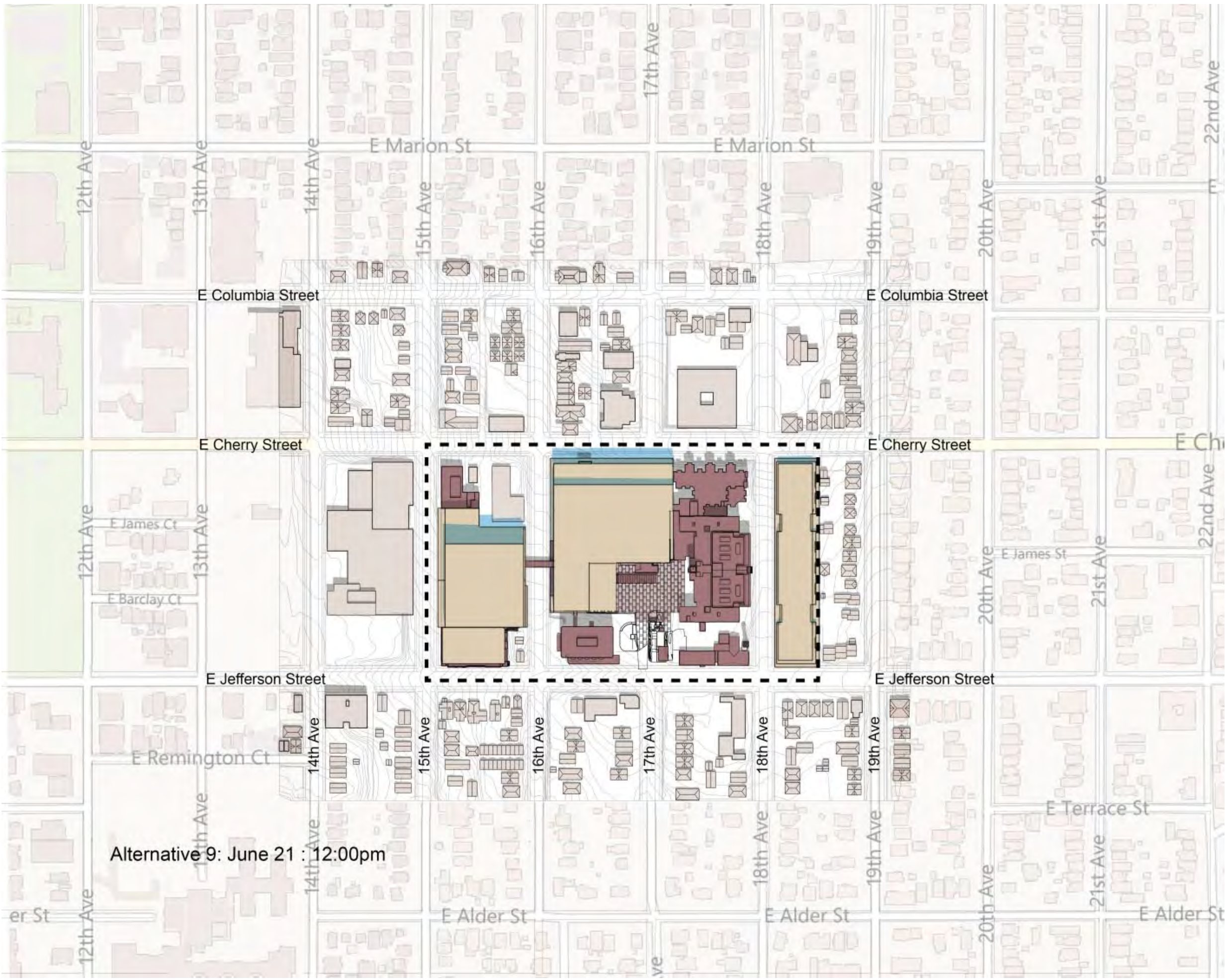


Figure 3.4-68

Alternative 9 – Summer Solstice, June 21st, 12:00 PM

Alternative 10: Shadows would extend similar to Alternatives 8 and 9.

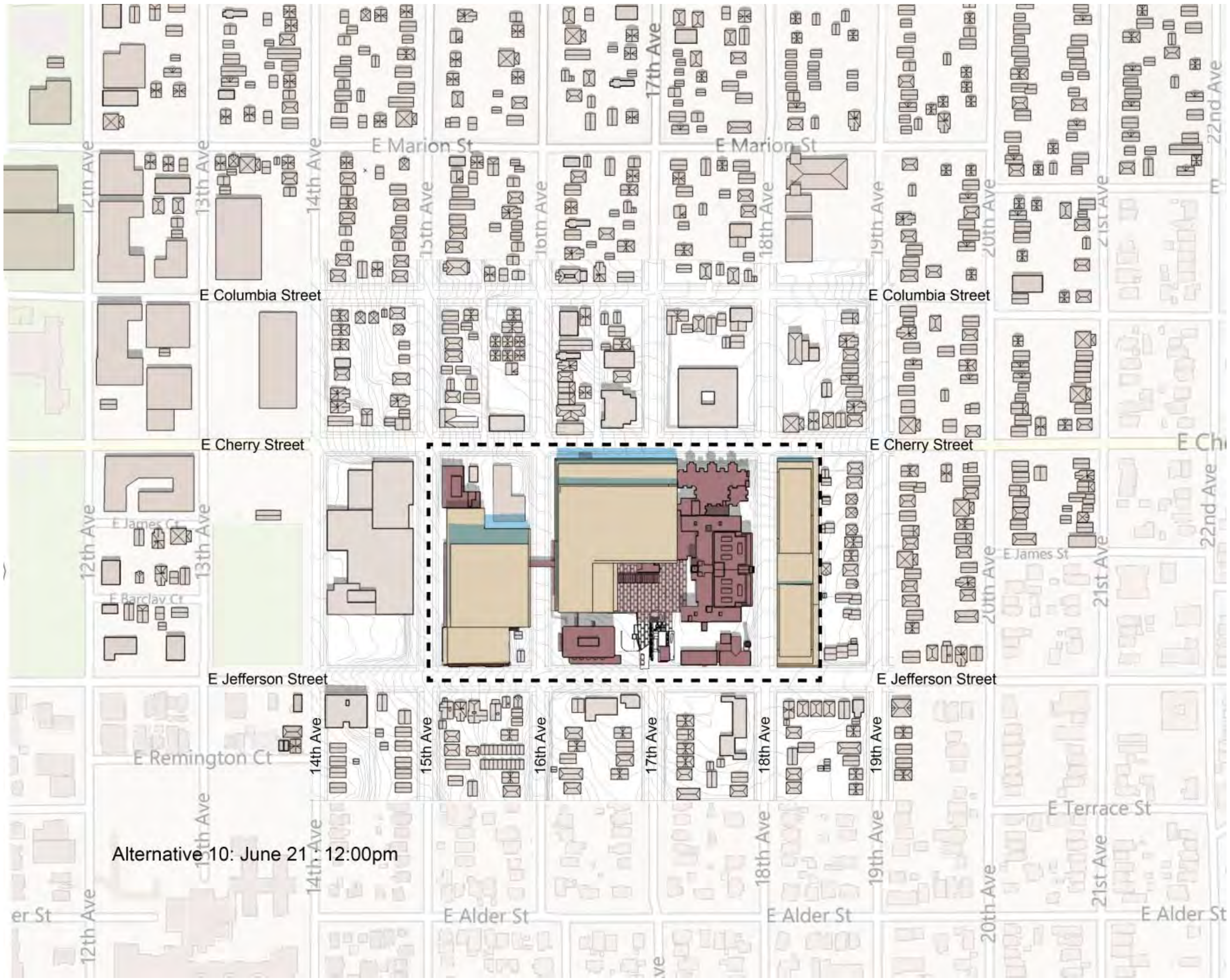


Figure 3.4-69

Alternative 10 – Summer Solstice, June 21st, 12:00 PM

Summer Solstice - 5:00 PM

Existing Conditions and Alternative 1 - No Build: Shadows extend in an easterly direction. Shadows would periodically shade portions of the plaza area of Swedish Cherry Hill campus; portions of the sidewalks and streets along 16th Avenue (including the west portion of the Carmack House property, but excluding the house) and 18th Avenue, and portions of the structures on the east side 18th Avenue. Shadows, from buildings in the surrounding area, generally extend just beyond building onto the adjacent yard or right-of-way. East of 18th Avenue, shadows extend slightly farther due to the slope of the terrain.

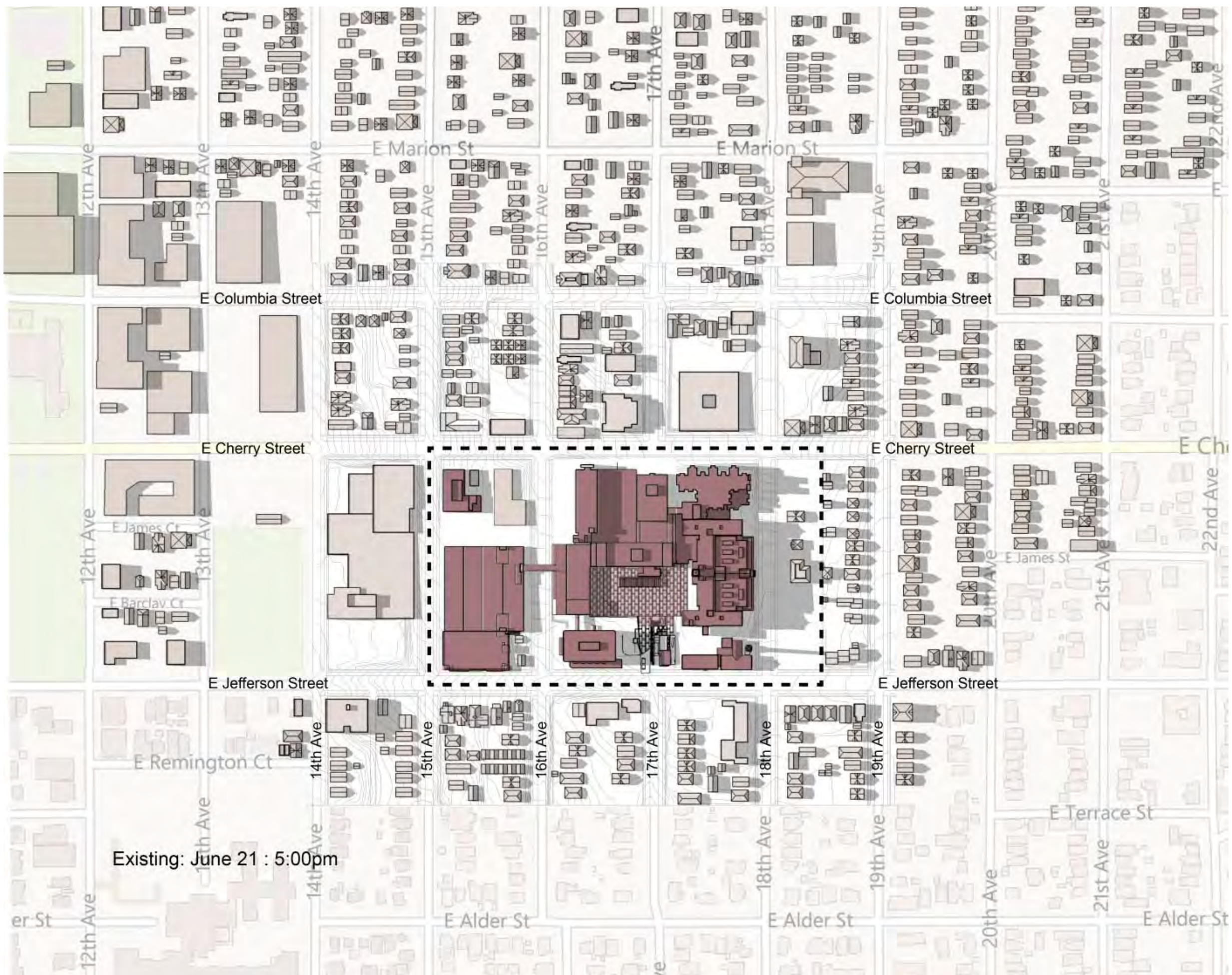


Figure 3.4-70

Existing Conditions/Alternative 1 – No Build
Summer Solstice, June 21st, 5:00 PM

Alternative 8: Shadows would extend across portions of 16th Avenue, all of the Carmack House property, the Swedish Cherry Hill plaza, most of 18th Avenue including both sidewalks and a portion of the rooftop of the east campus building, and onto the rear of the structures on the block between 18th and 19th Avenues.

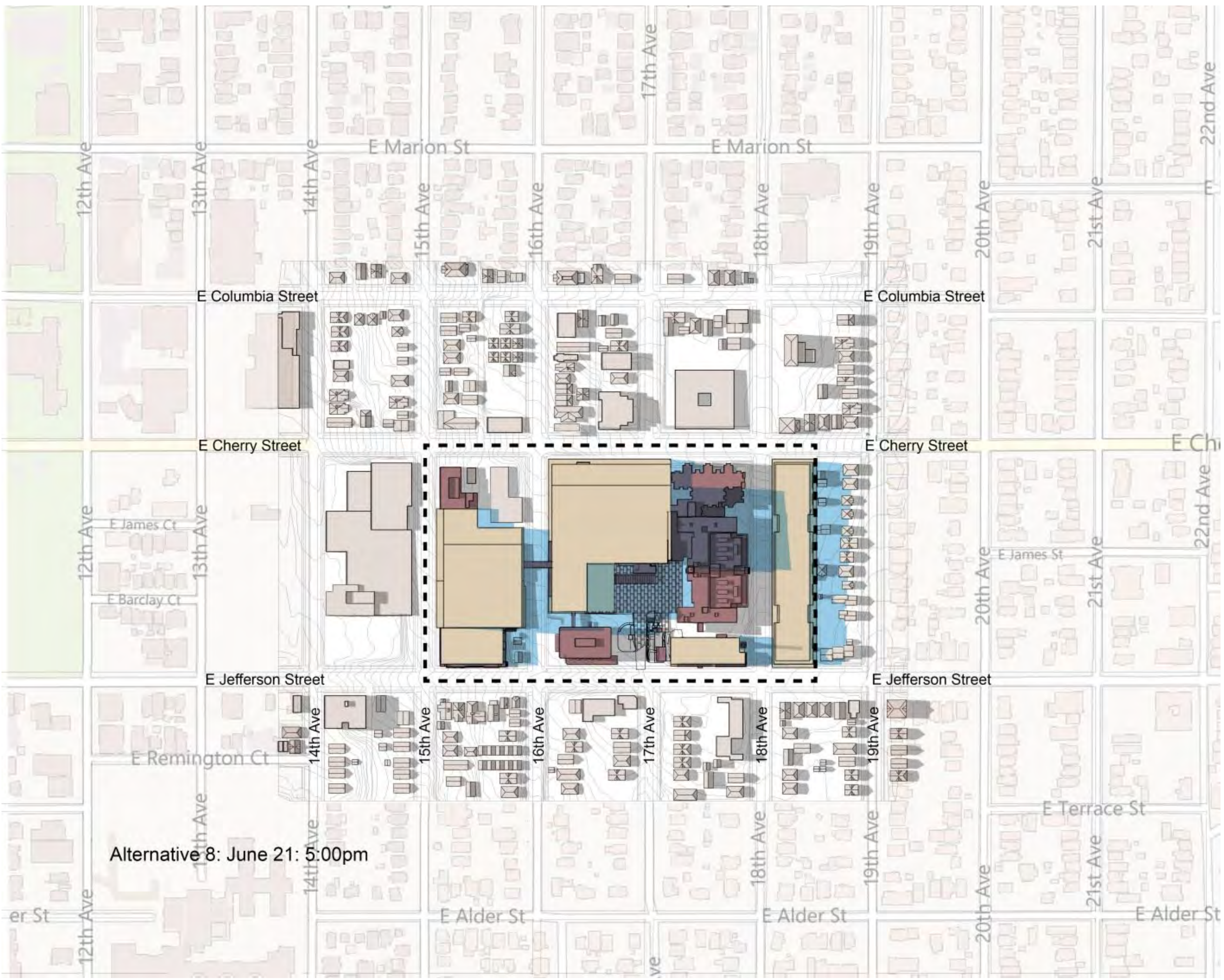


Figure 3.4-71

Alternative 8 – Summer Solstice, June 21st, 5:00 PM

Alternative 9: Shadows would extend similar to Alternative 8, but to a lesser extent along 18th Avenue.

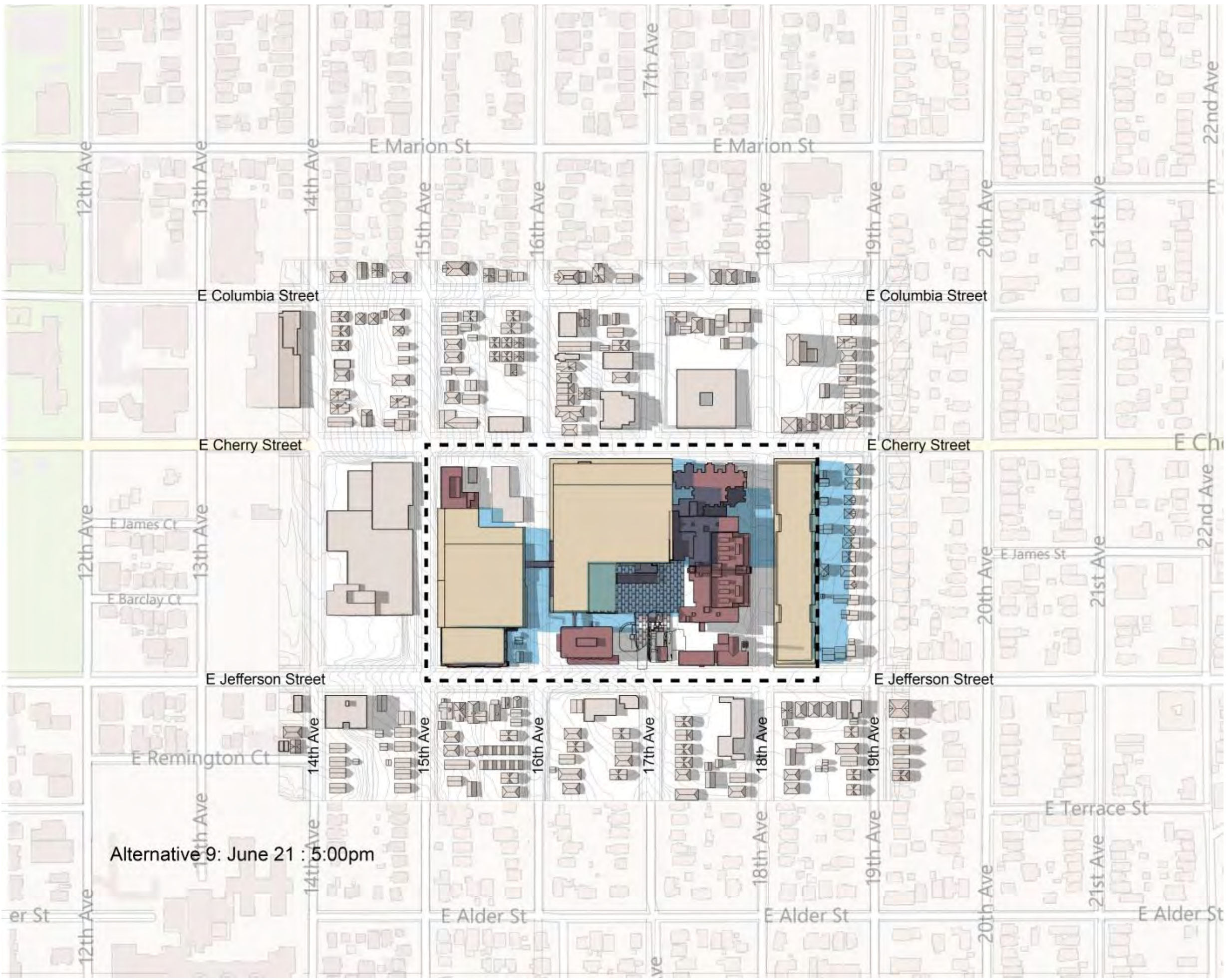


Figure 3.4-72

Alternative 9 – Summer Solstice, June 21st, 5:00 PM

Alternative 10: Shadows would extend similar to Alternatives 8 and 9, but to a lesser extent mid-block between 18th and 19th Avenues due east campus building modulation (15-foot height limit mid-building).

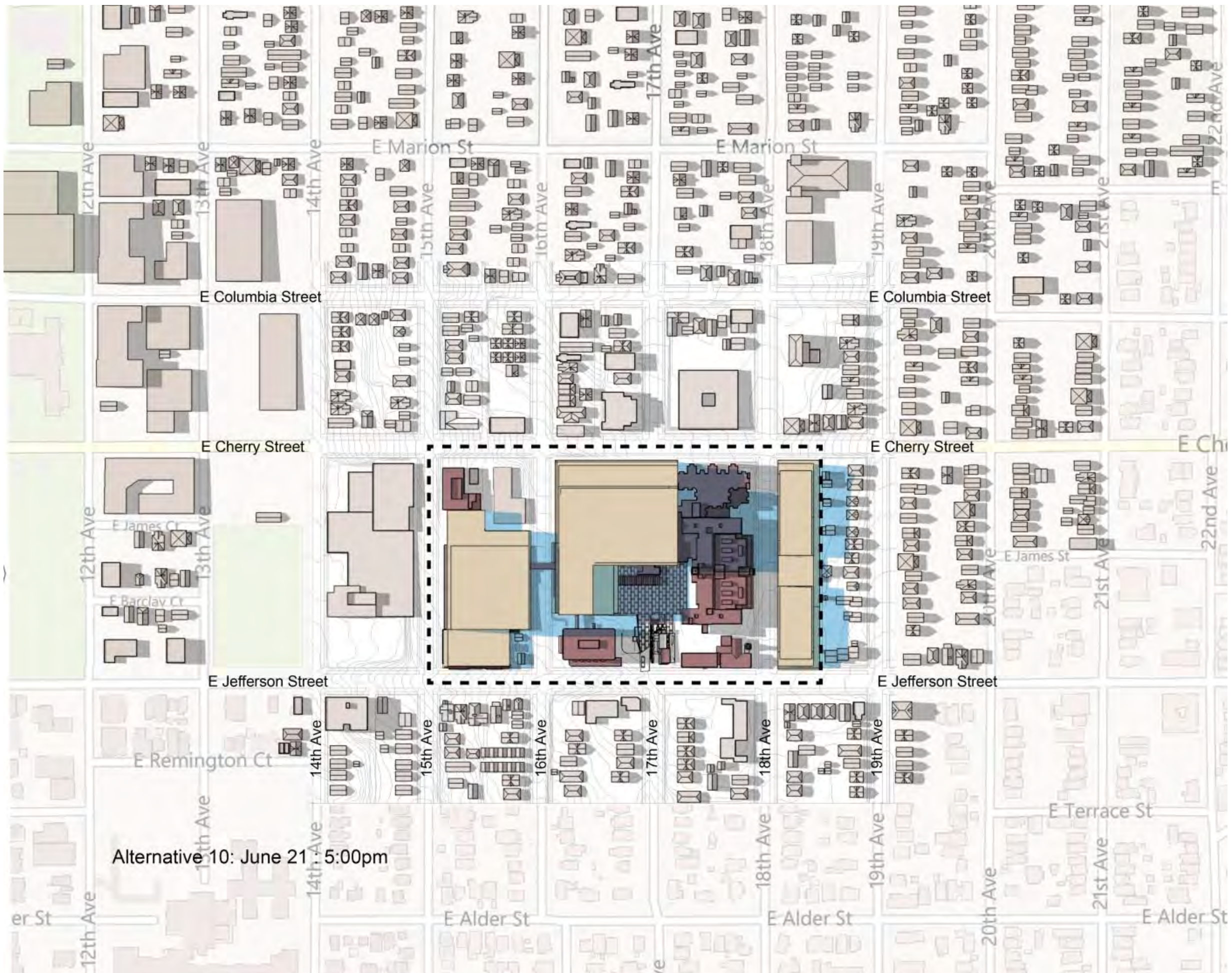


Figure 3.4-73

Alternative 10 – Summer Solstice, June 21st, 5:00 PM

Autumnal (Fall) Equinox *(refer to Figures 3.4-74 through 3.4-85)*

Sunrise on autumnal equinox (approximately September 21st) occurs at about 6:55 AM and sunset at about 7:08 PM. The maximum sun angle that occurs on this key solar day is approximately 42.8 degrees. With regard to climatic data for the month of September, data indicate that on average September typically has 8.2 clear days, 8.6 partly cloudy days, and 13.2 cloudy days.

As in indicated in Figures 3.4-74 through 3.4-85 for autumnal equinox, shadows from existing campus development, together with shadows from other nearby buildings, were evaluated and compared to the Build Alternatives at 8:00 AM, 12:00 PM, and 5:00 PM and are described below. PDT remains in-effect on this day.

Autumnal (Fall) Equinox - 8:00 AM

Existing Conditions and Alternative 1 - No Build: Shadows from the Swedish Cherry Hill campus extend in a northwesterly direction and periodically shade portions of 15th and 16th Avenues, E Cherry Street as well as the campus central plaza. Shadows from the west campus extend onto small portions of the Seattle University Connolly Center buildings across 15th Avenue. Shadows, from single-family buildings in the surrounding area, generally extend just beyond each building onto the adjacent public right-of-way. Shadows, from taller buildings extend slightly farther. West of 18th Avenue, shadows extend slightly farther due to the slope of the terrain.

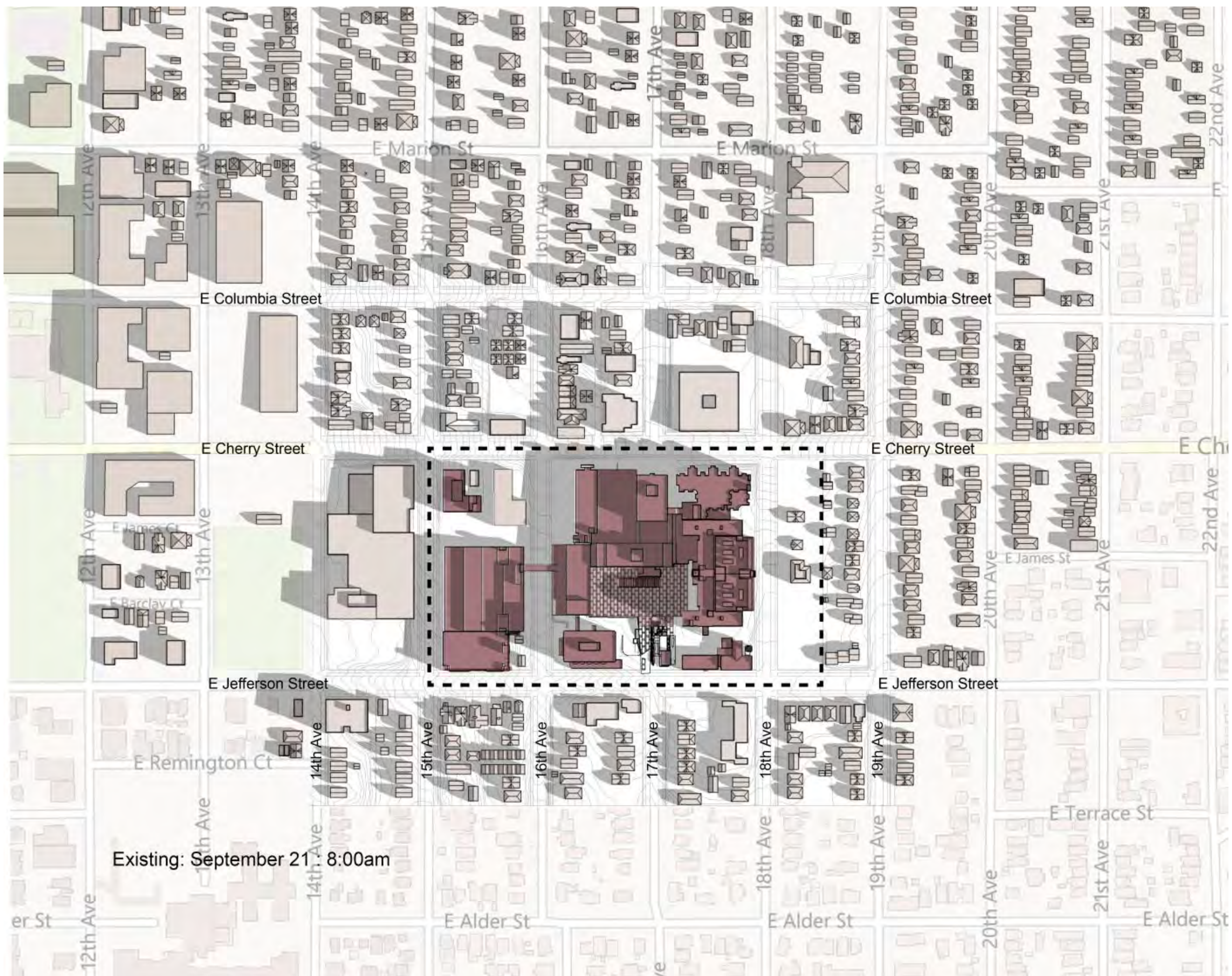


Figure 3.4-74

Existing Conditions/Alternative 1 – No Build
Autumnal (Fall) Equinox, September 21st, 8:00 AM

Alternative 8: Shadows from the Swedish Cherry Hill west campus tower would extend over 15th Avenue, Seattle University Connolly Center, onto a portion of the adjacent playfield, and over the north half of the block between 13th Avenue and 14th Avenue and E Cherry Street and E Jefferson Street. The central campus tower shadows would extend over the Seattle Medical Post-Acute Care and Northwest Kidney Center buildings to the residential units facing E Cherry Street, as well as portions of 16th Avenue. Shadows from proposed heights along E Cherry Street would extend across E Cherry Street to a portion of the Spencer Technologies building and the condominium at 16th Avenue and E Cherry Street. East campus shadows would extend over 18th Avenue and onto the lower story of the James Tower building.

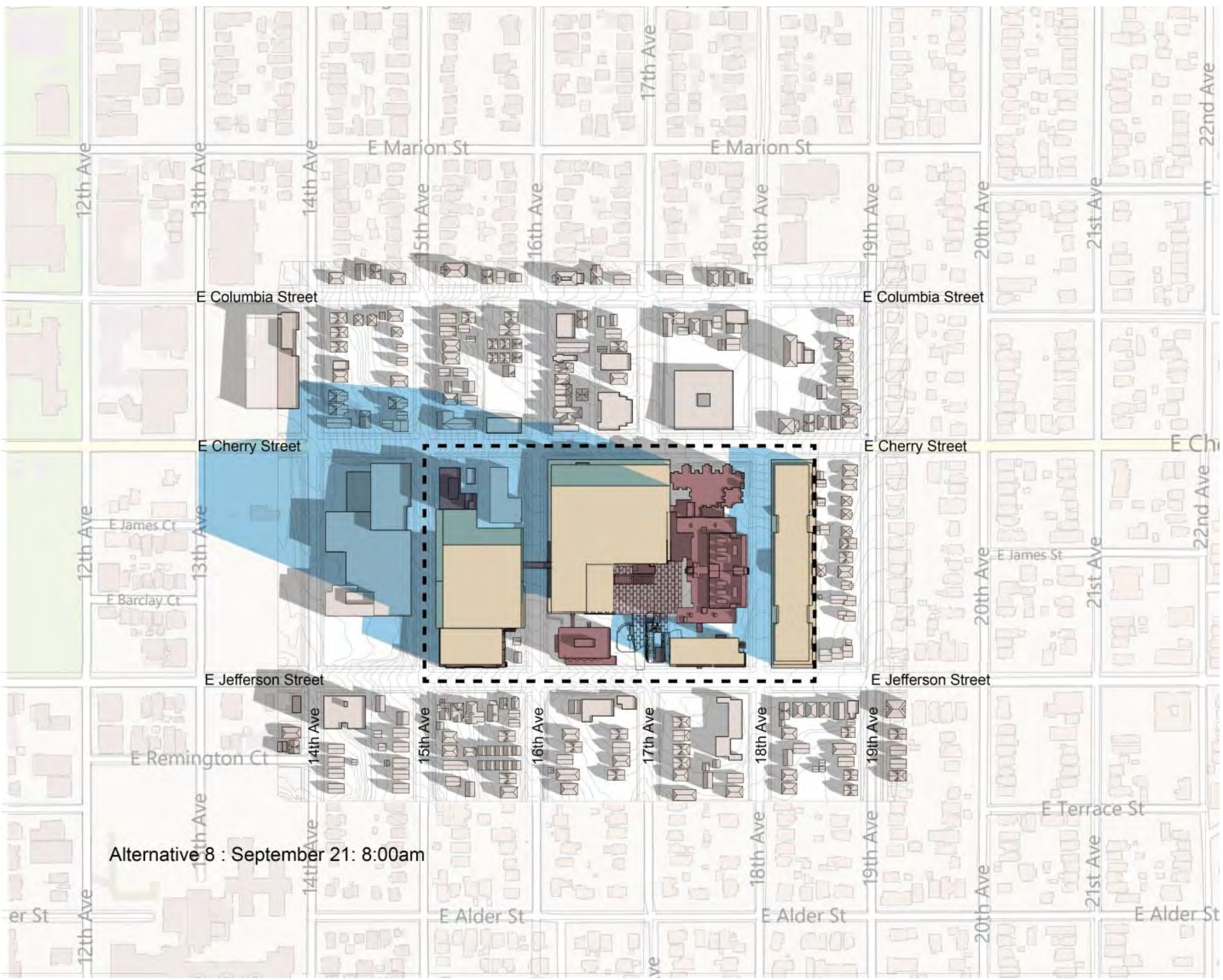


Figure 3.4-75

Alternative 8 – Autumnal (Fall) Equinox, September 21st, 8:00 AM

Alternative 9: Shadows would extend similar to Alternative 8, but not as far in the northwesterly direction (not beyond Seattle University Connolly Center) due to reduced tower heights on both the west and central campus.

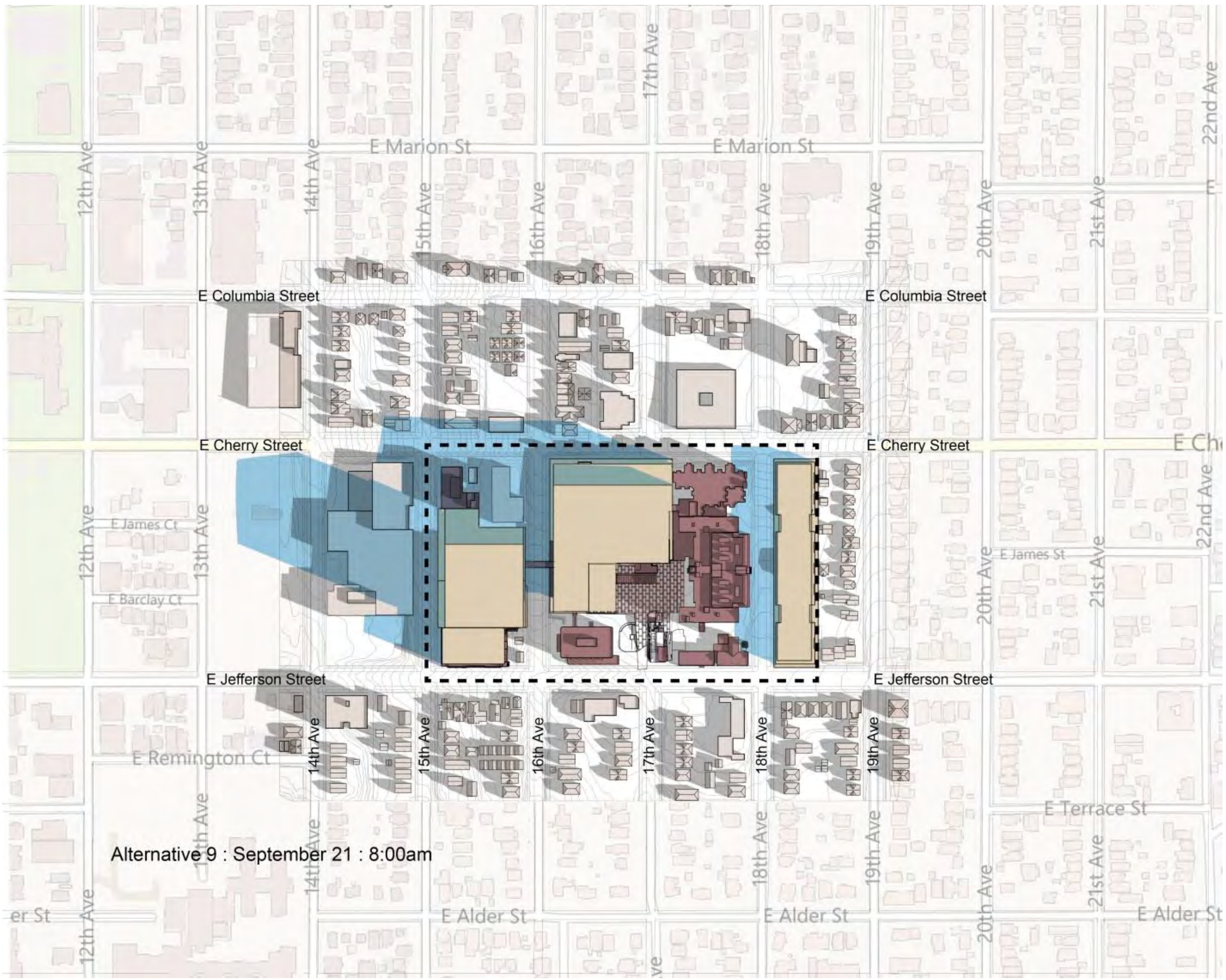


Figure 3.4-76

Alternative 9 – Autumnal (Fall) Equinox, September 21st, 8:00 AM

Alternative 10: Shadows would extend similar to Alternative 9, except not as far mid-block on 18th Avenue due east campus building modulation (15-foot height limit mid-building).

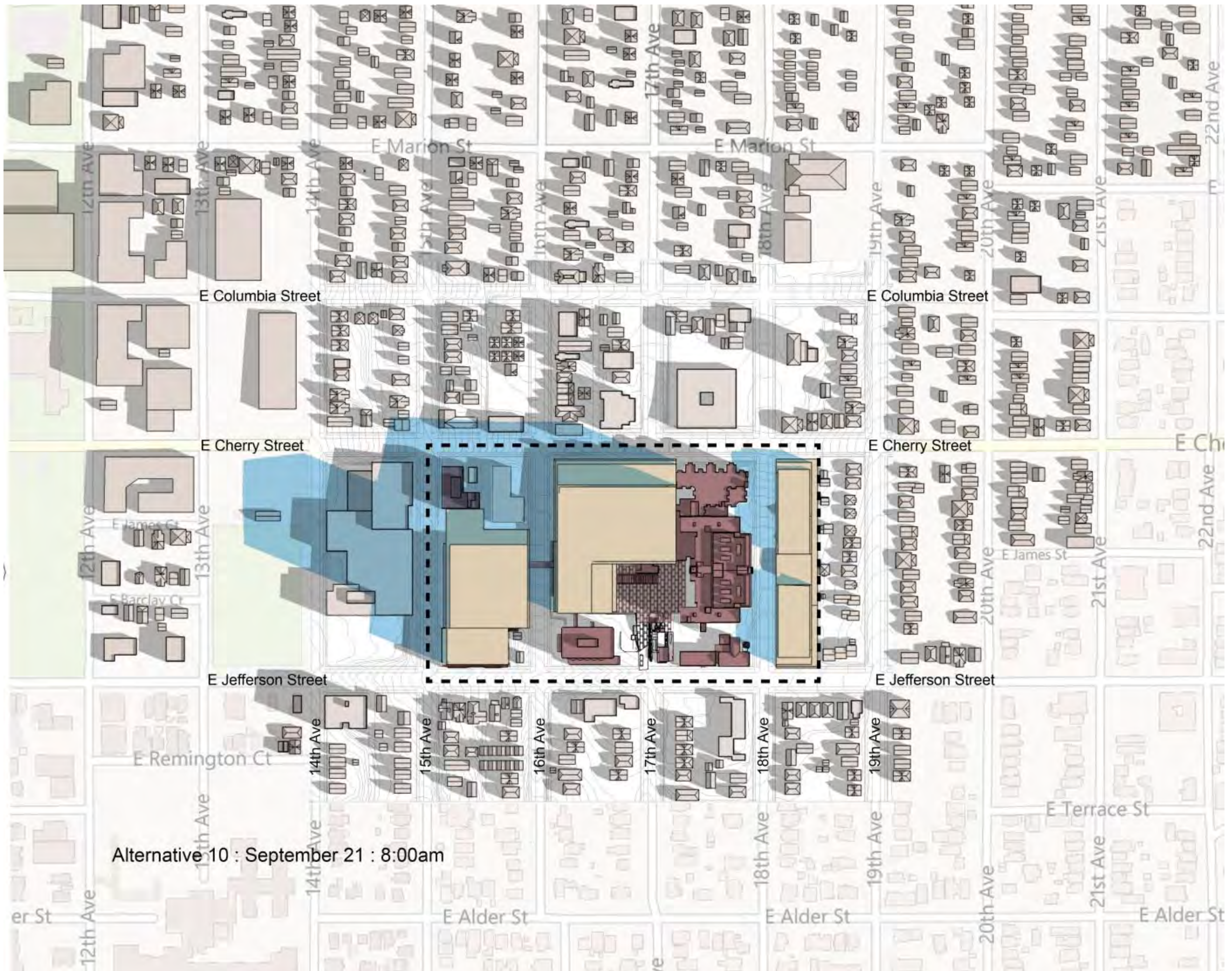


Figure 3.4-77

Alternative 10 – Autumnal (Fall) Equinox, September 21st, 8:00 AM

Autumnal (Fall) Equinox - 12:00 PM

Existing Conditions and Alternative 1 - No Build: Shadows from the Swedish Cherry Hill campus extend in a northerly direction and periodically shade portions of E Cherry Street as well as the north sides of campus buildings. The skybridge casts a narrow shadow onto 16th Avenue. Shadow length, from structures in the surrounding area, varies slightly depending on building height. Shadows, from most single-family structures, taller multi-family, as well as commercial buildings, are generally confined to their own yards or extend onto the adjacent public right-of-way.

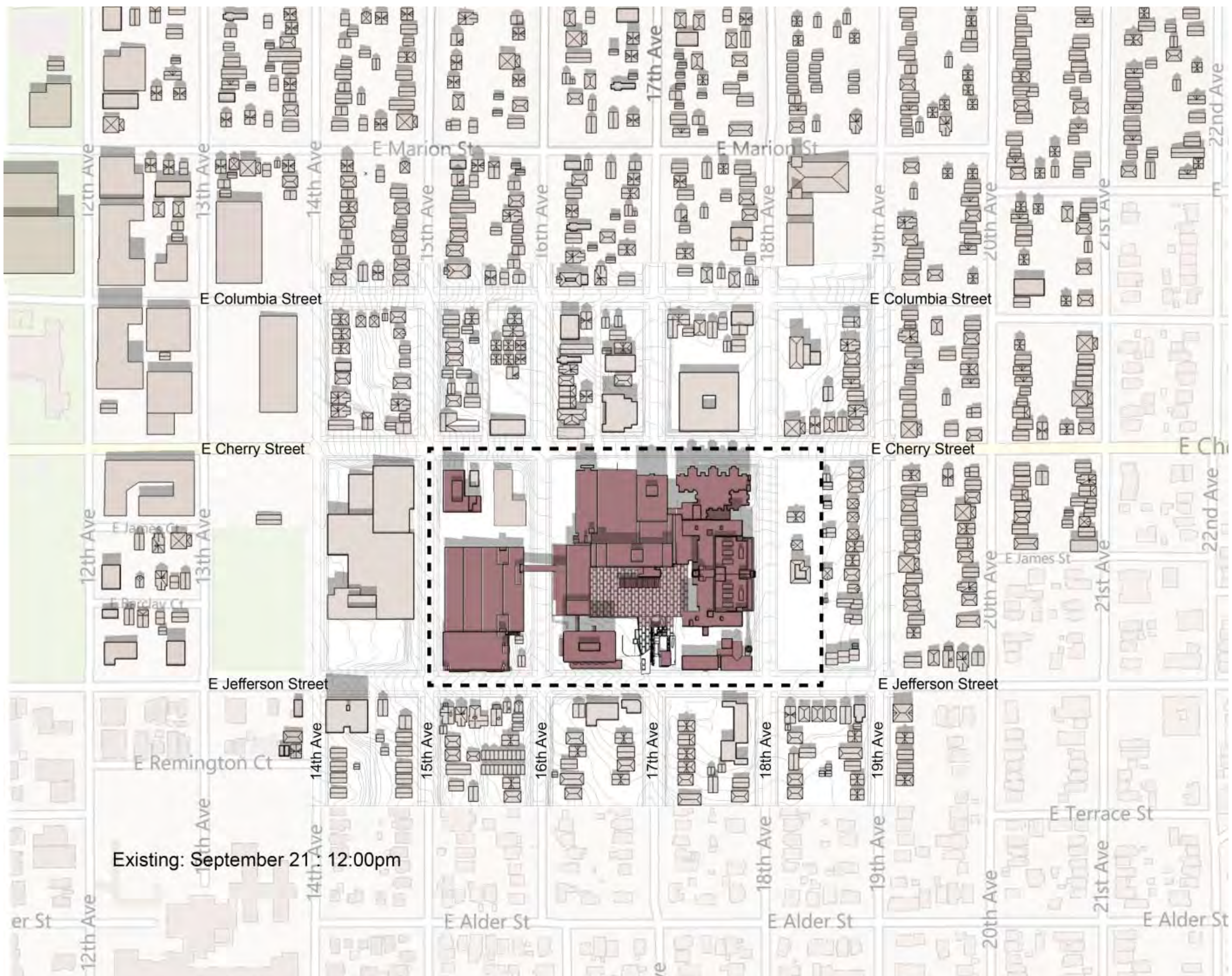


Figure 3.4-78

Existing Conditions/Alternative 1 – No Build
Autumnal (Fall) Equinox, September 21st, 12:00 PM

Alternative 8: Shadows would extend similar to Existing Conditions and Alternative 1 - No Build, except that shadows from the west tower would extend over the Northwest Kidney Center and Seattle Medical Post-Acute Care buildings; shadows from proposed heights along E Cherry Street would extend father across E Cherry Street over the condominiums at the northeast corner of E Cherry Street and 17th Avenue; and shadows from central tower would extend over the south-facing units of the Manhattan Plaza at the northwest corner of E Cherry Street and 17th Avenue.

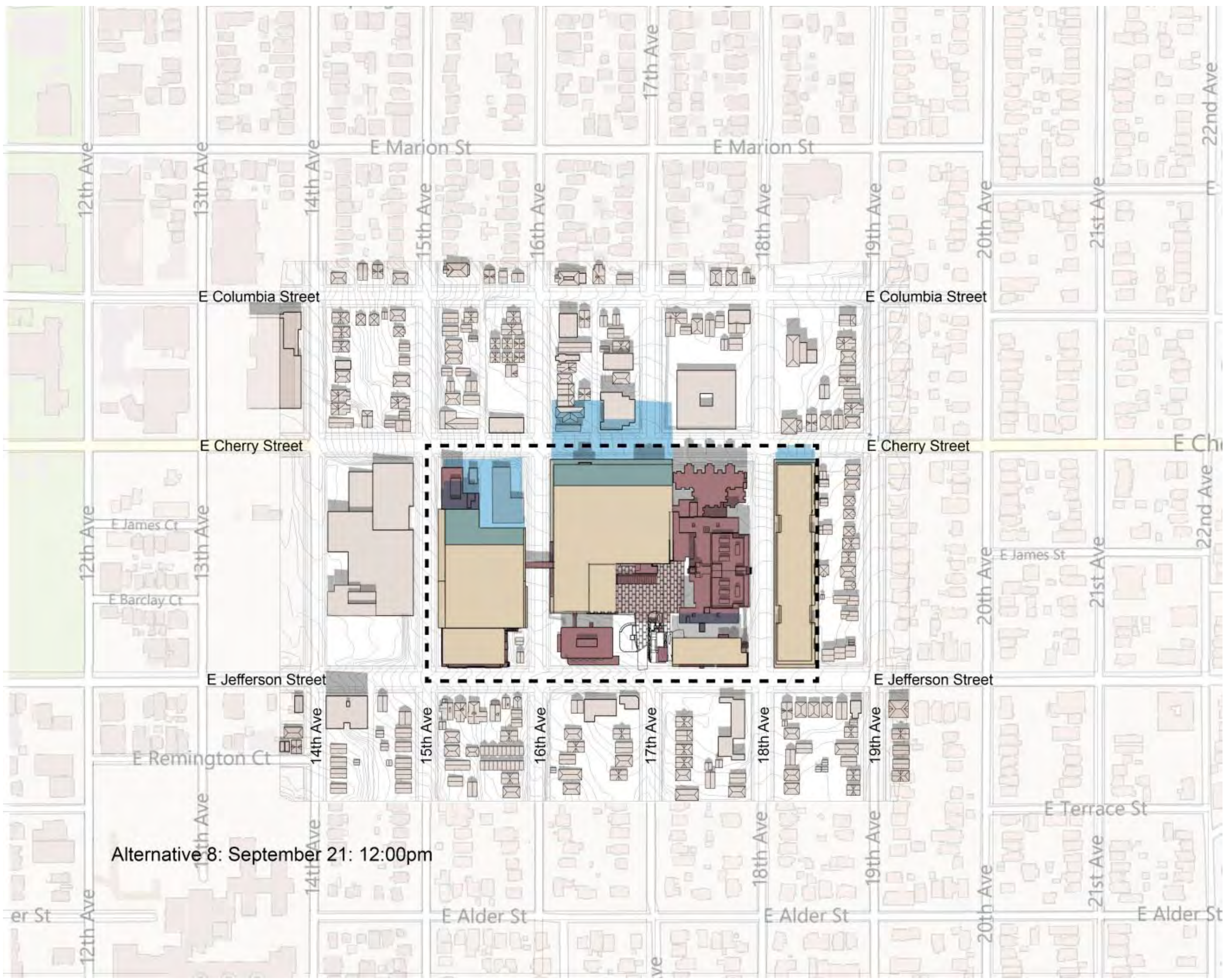


Figure 3.4-79

Alternative 8 – Autumnal (Fall) Equinox, September 21st, 12:00 PM

Alternative 9: Shadows would extend similar to Alternative 8 except that the shadows of the central tower of Alternative 9 would not extend quite as far over the south-facing units of the Manhattan Plaza.

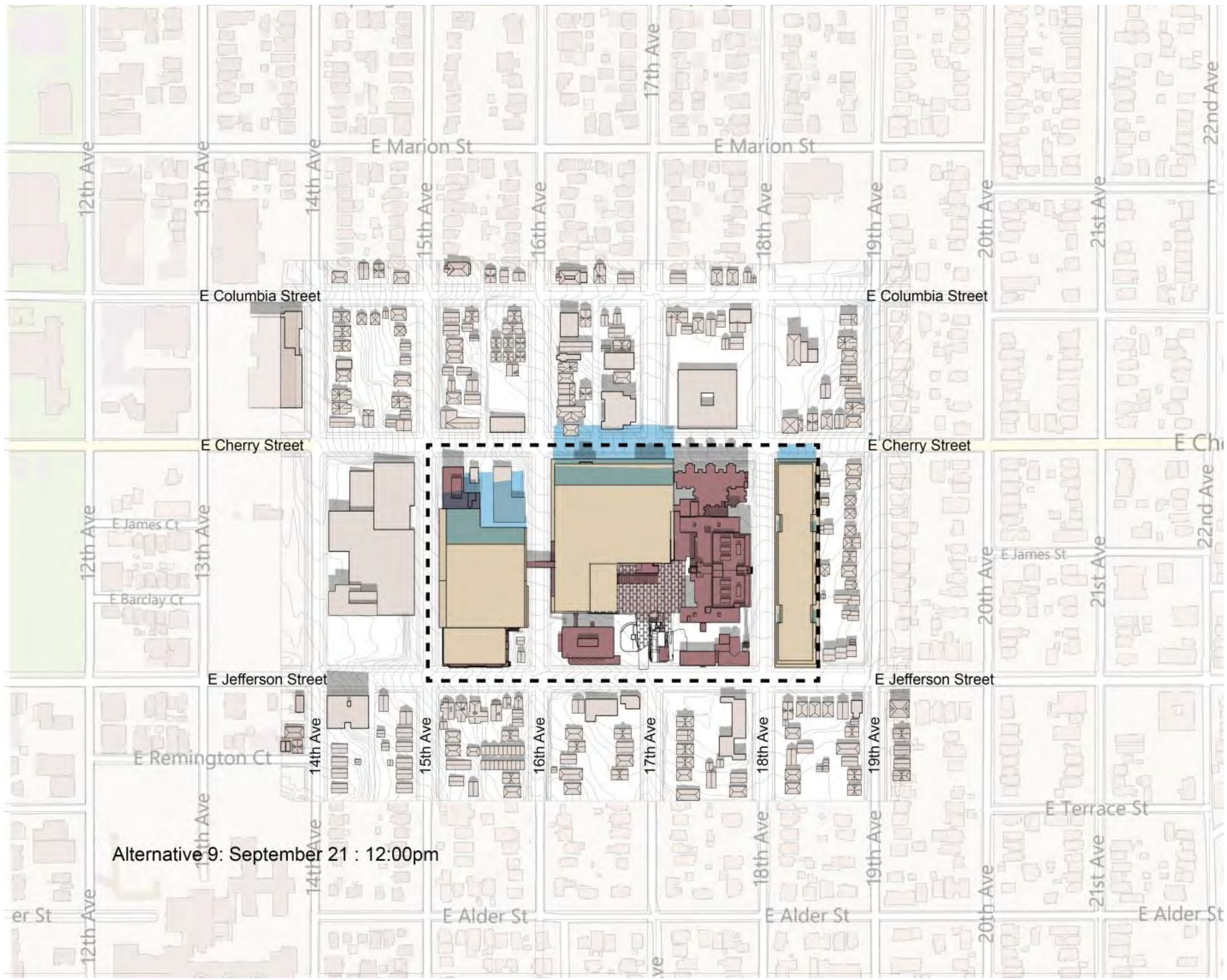


Figure 3.4-80

Alternative 9 – Autumnal (Fall) Equinox, September 21st, 12:00 PM

Alternative 10: Shadows would extend similar to Alternative 9.

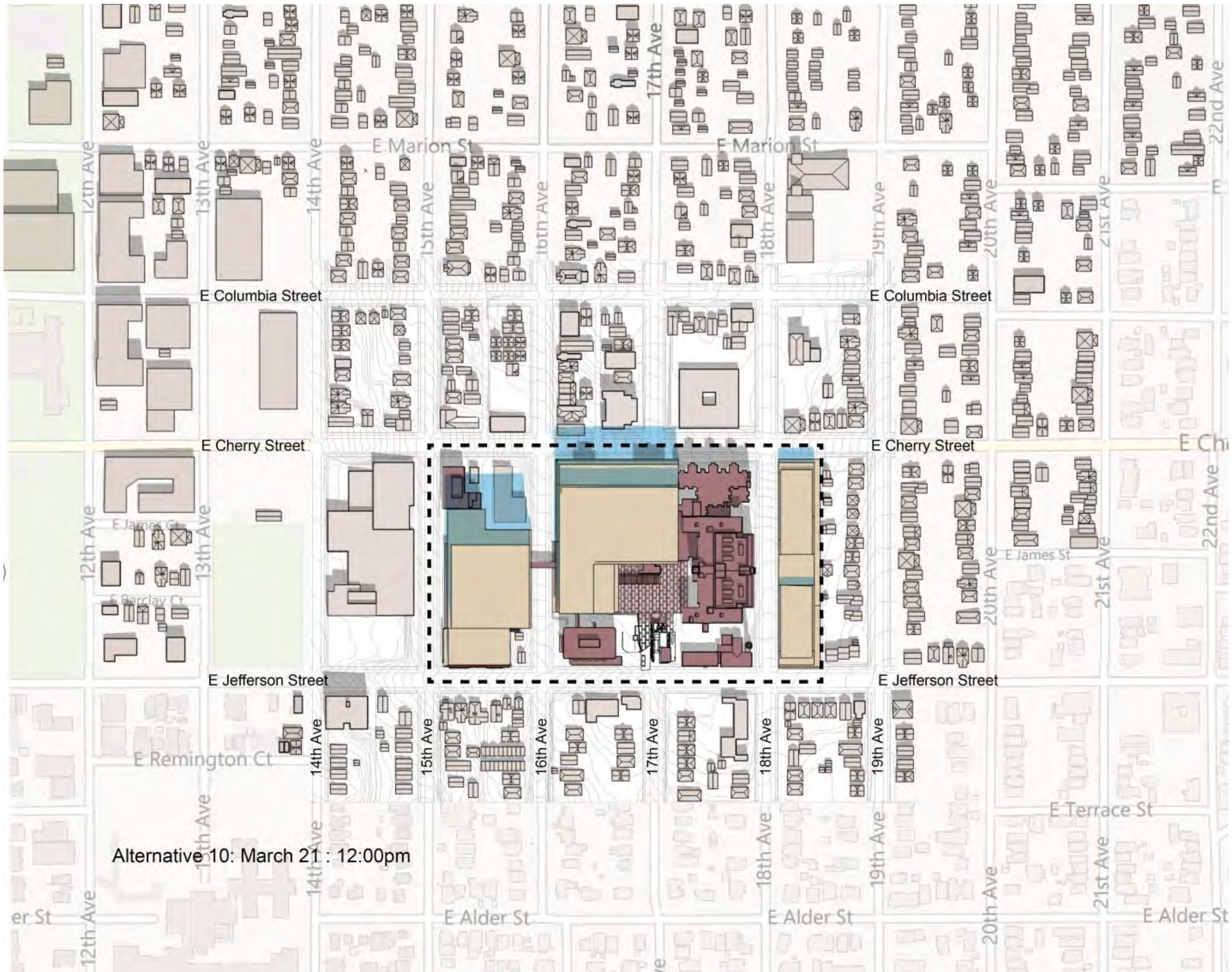


Figure 3.4-81

Alternative 10 – Autumnal (Fall) Equinox, September 21st, 12:00 PM

Autumnal (Fall) Equinox - 5:00 PM

Existing Conditions and Alternative 1 - No Build: Shadows from the Swedish Cherry Hill campus extend in a northeasterly direction and periodically shade portions of 16th (including the rear portion of the Carmack House property), 18th and 19th Avenues, E Cherry Street as well as the campus central plaza. Shadows from James Tower and West Tower extend onto the residential area shading front yards on portions of 20th Avenue. Shadows, from single-family buildings in the surrounding area, generally extend onto the other side of the adjacent right-of-way. Taller buildings may cast shadows over adjacent buildings or onto the next block. East of 18th Avenue, shadows extend farther due to the slope of the terrain.

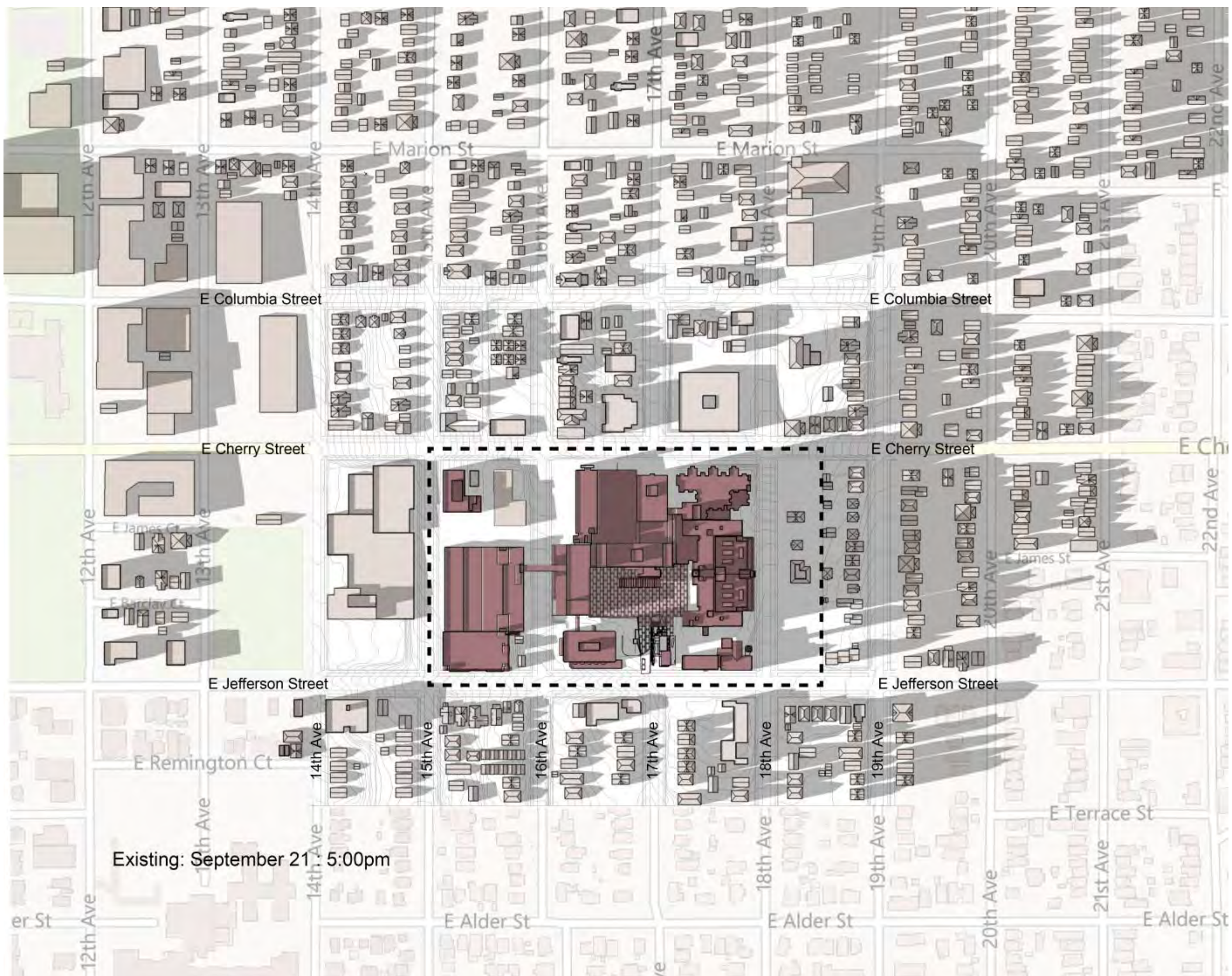


Figure 3.4-82

Existing Conditions/Alternative 1 – No Build
Autumnal (Fall) Equinox, September 21st, 5:00 PM

Alternative 8: Shadows would result in greater shading of the northwest corner of the campus, 16th Avenue, James Tower, and east campus buildings than existing conditions. Shadows from the central tower would extend to the intersection of 22st Avenue and E Cherry Street.

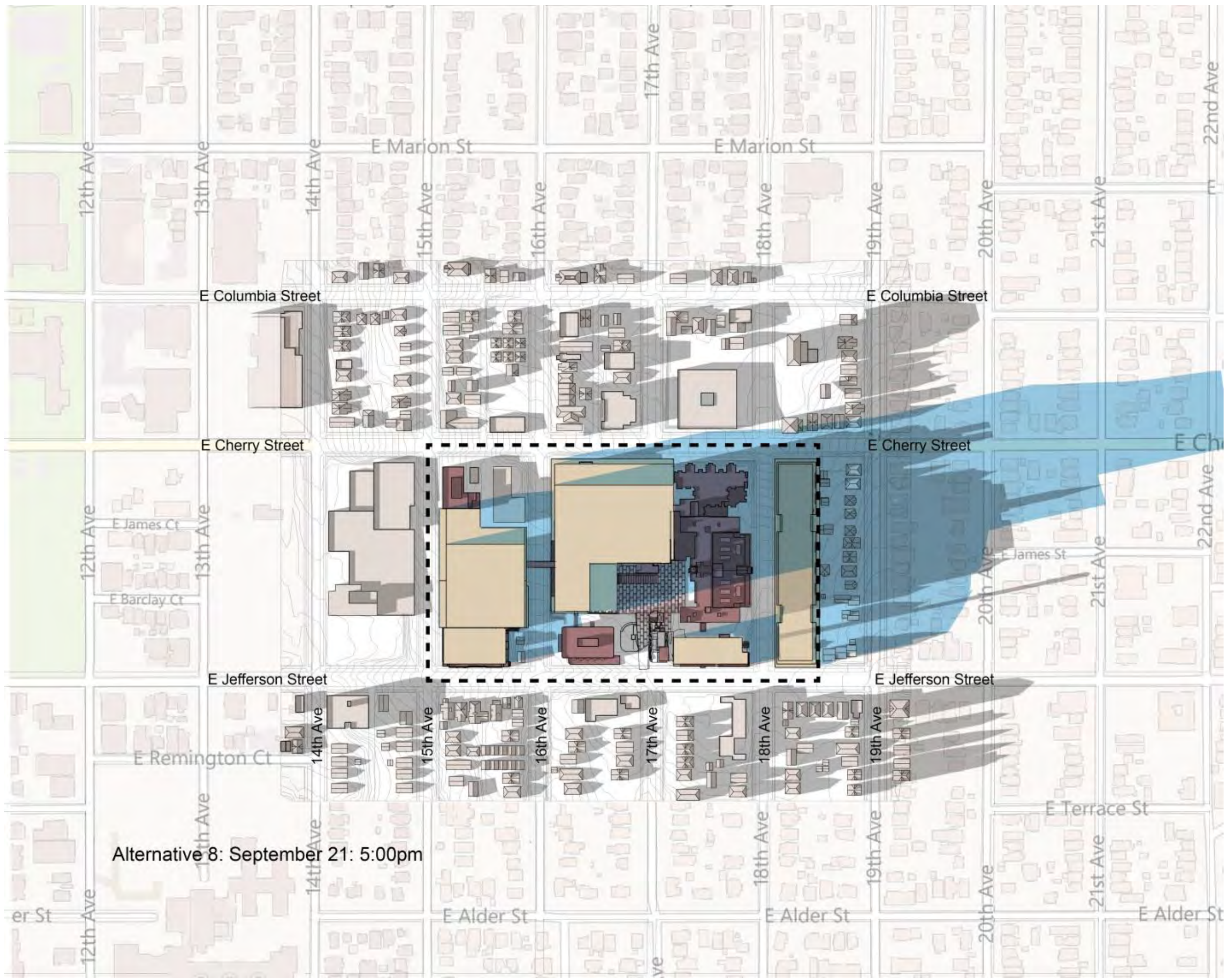


Figure 3.4-83

Alternative 8 – Autumnal (Fall) Equinox, September 21st, 5:00 PM

Alternative 9: Shadows would extend similar to Existing Conditions and Alternative 1 - No Build, except for broader shadows over the residential area just to the east of 19th Avenue and a slightly greater extent of shadows in the vicinity of 29th Avenue and E Cherry Street.

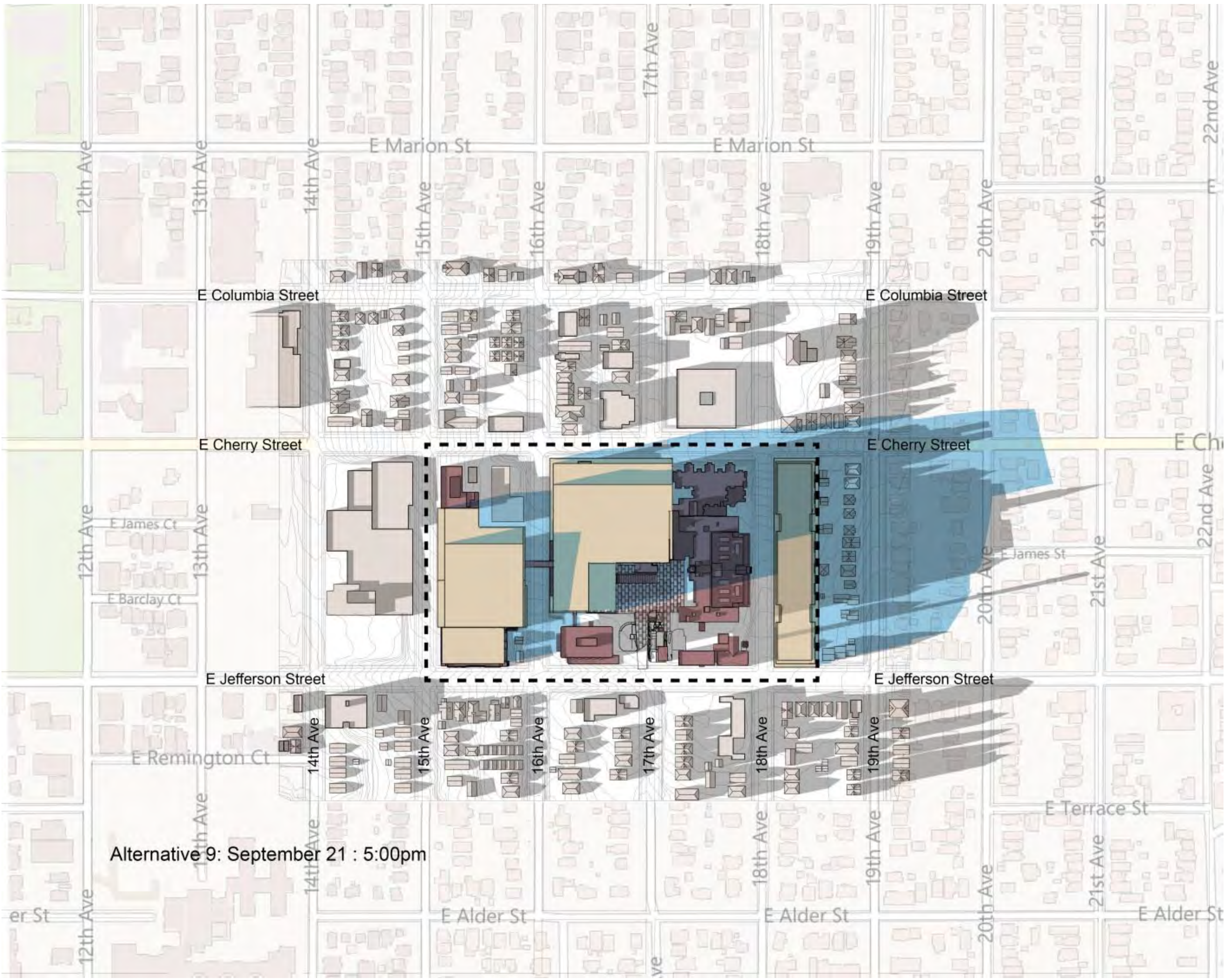


Figure 3.4-84

Alternative 9 – Autumnal (Fall) Equinox, September 21st, 5:00 PM

Alternative 10: Shadows would extend similar to Alternative 9, except that the building modulation on east campus (15-foot height limit mid-building) creates an opening in the shadows cast over the residential area just to the east of 19th Avenue.

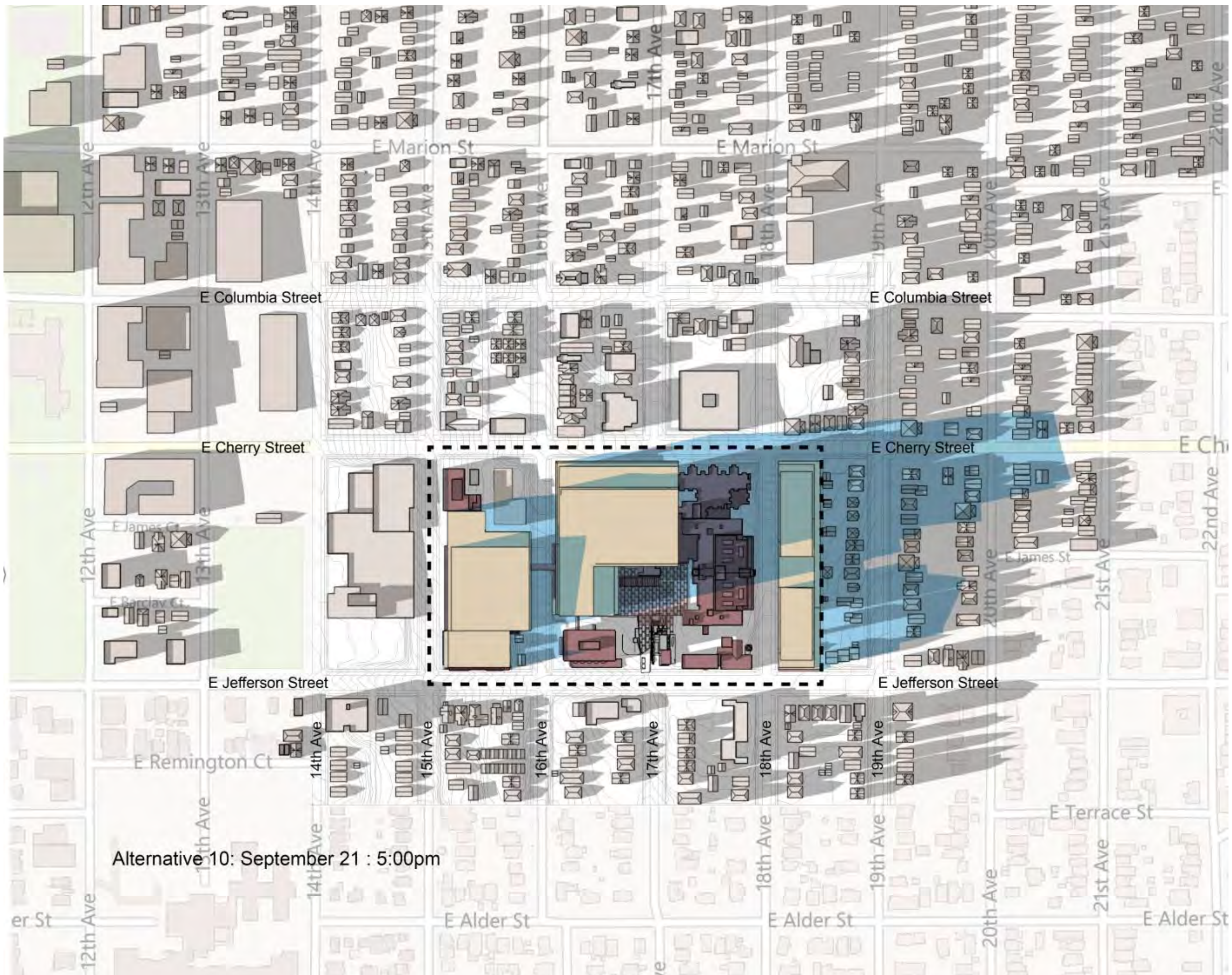


Figure 3.4-85

Alternative 10 – Autumnal (Fall) Equinox, September 21st, 5:00 PM

Winter Solstice (refer to Figures 3.4-86 through 3.4-97)

Sunrise on winter solstice (approximately December 21st) occurs at about 7:55 AM and sunset at about 4:20 PM. Pacific Standard Time remains in-effect on this day. With regard to climatic data for the month of December, data indicate that on average December has 2.3 clear days, 3.9 partly cloudy days and 24.9 cloudy days. Because of the relatively low altitude of the sun above the horizon at this time of the year, approximately 19 degrees, shadows can be far reaching.

As indicated in Figures 3.4-86 through 3.4-97 for winter solstice, shadows from existing campus development, together with shadows from other nearby buildings, were evaluated and compared to the Build Alternatives at 9:00 AM, 12:00 PM, and 3:30 PM.

Winter Solstice - 9:00 AM

Existing Conditions and Alternative 1 - No Build: Shadows extend in a northwesterly direction over the existing Swedish Cherry Hill buildings, a portion of Seattle University Connolly Center building, and onto buildings 1-block north side of E Cherry Street (E Columbia Street). East of 18th Avenue, shadows, from buildings in the surrounding area, extend half-block or more beyond the buildings depending on building height. West of 18th Avenue, shadows from buildings generally extend farther on the ground and spread over buildings due to the slope of the terrain.

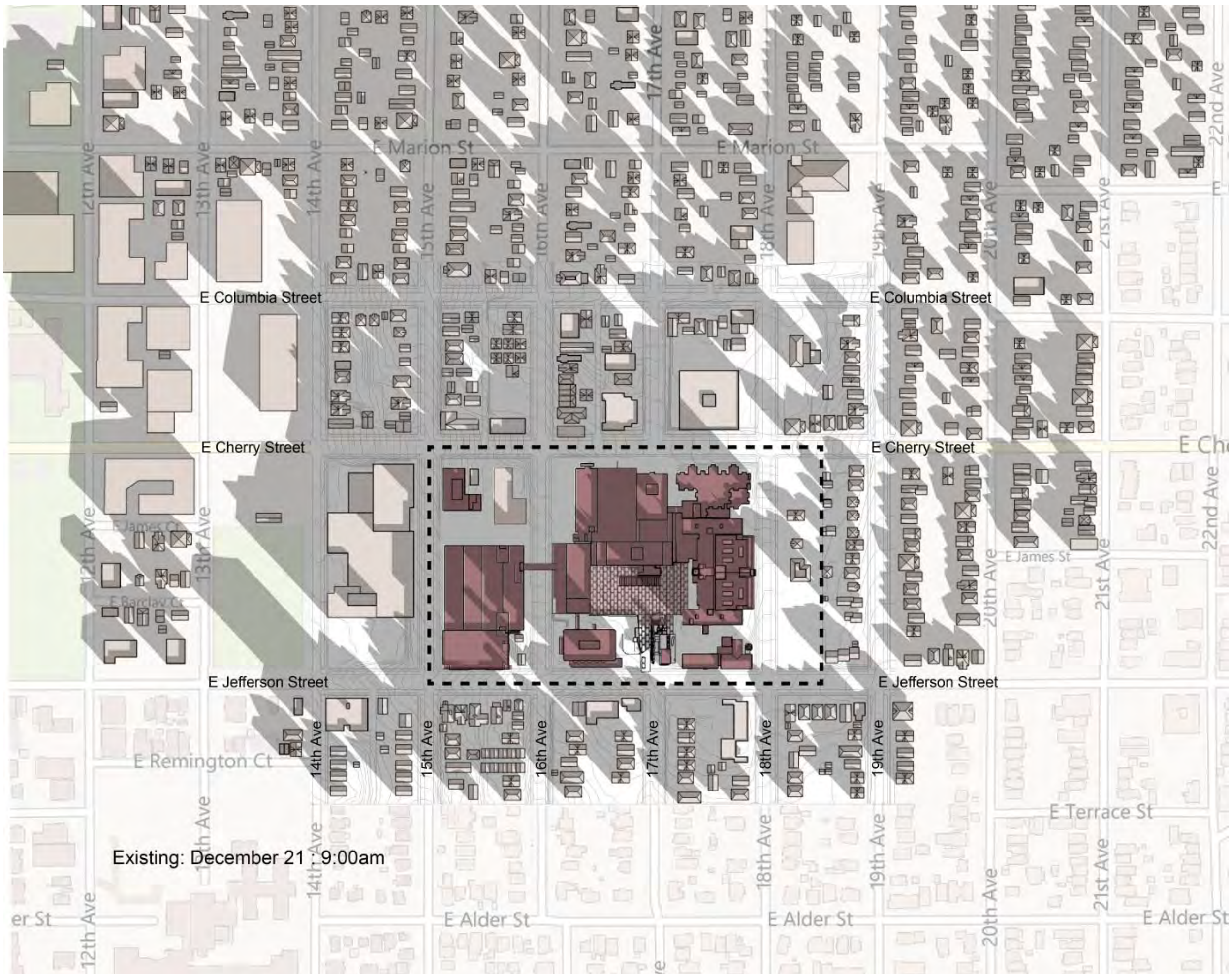


Figure 3.4-86

Existing Conditions/Alternative 1 – No Build
Winter Solstice, December 21st, 9:00 AM

Alternative 8: Shadows from central campus towers would extend about 3 to 4 blocks northwest of the intersection of E Cherry Street and 15th Avenue (approximately to 11th Avenue and E Spring Street). Overall, more extensive shadows would be associated with Alternative 8. Shadows would extend across E Cherry Street onto a portion of the DSHS building and to the residential area.

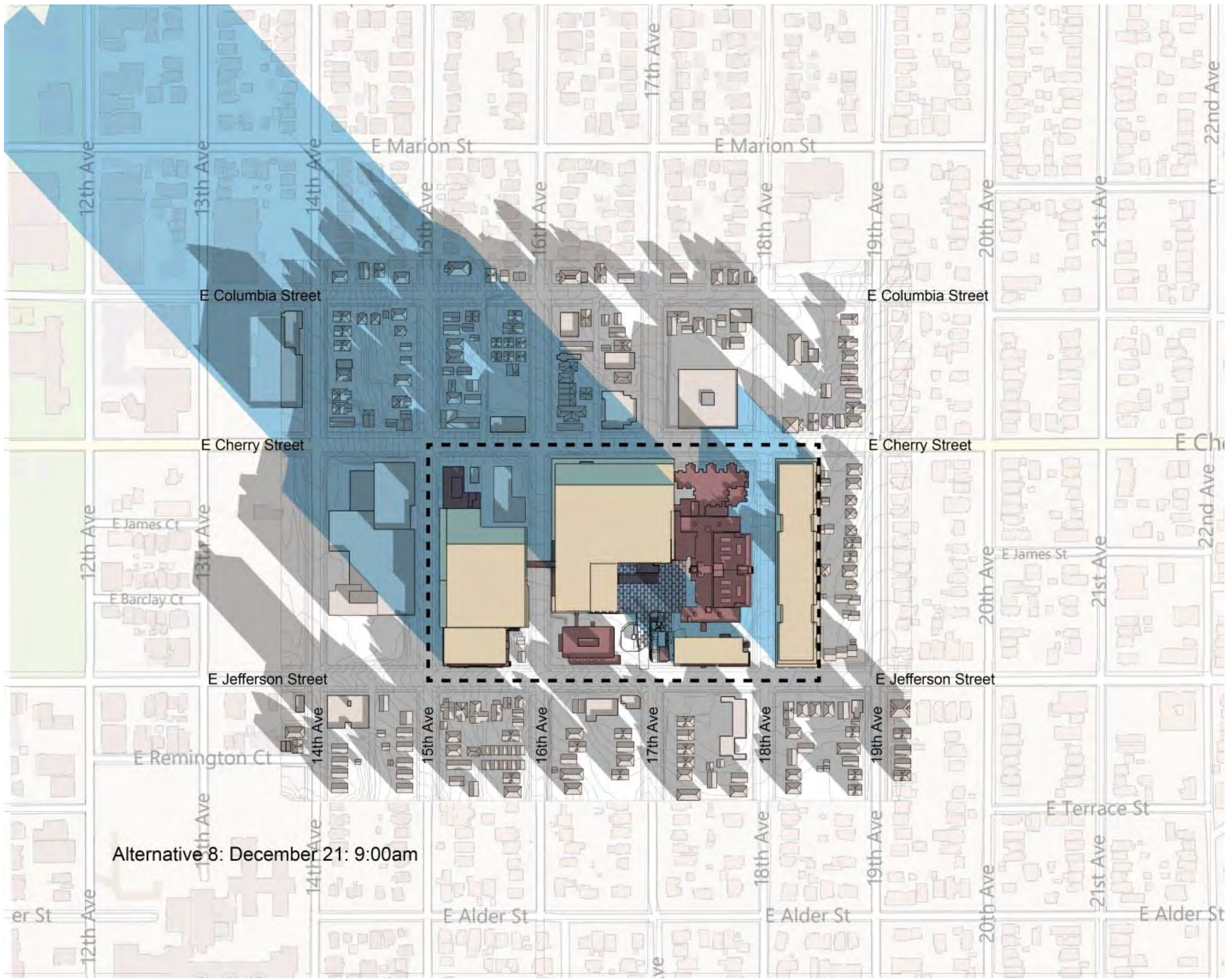


Figure 3.4-87

Alternative 8 – Winter Solstice, December 21st, 9:00 AM

Alternative 9: Shadows would be similar those for Alternative 8, except shadows from central campus towers extend northwest 2 to 3 blocks beyond E Cherry Street -- not as far as Alternatives 8.

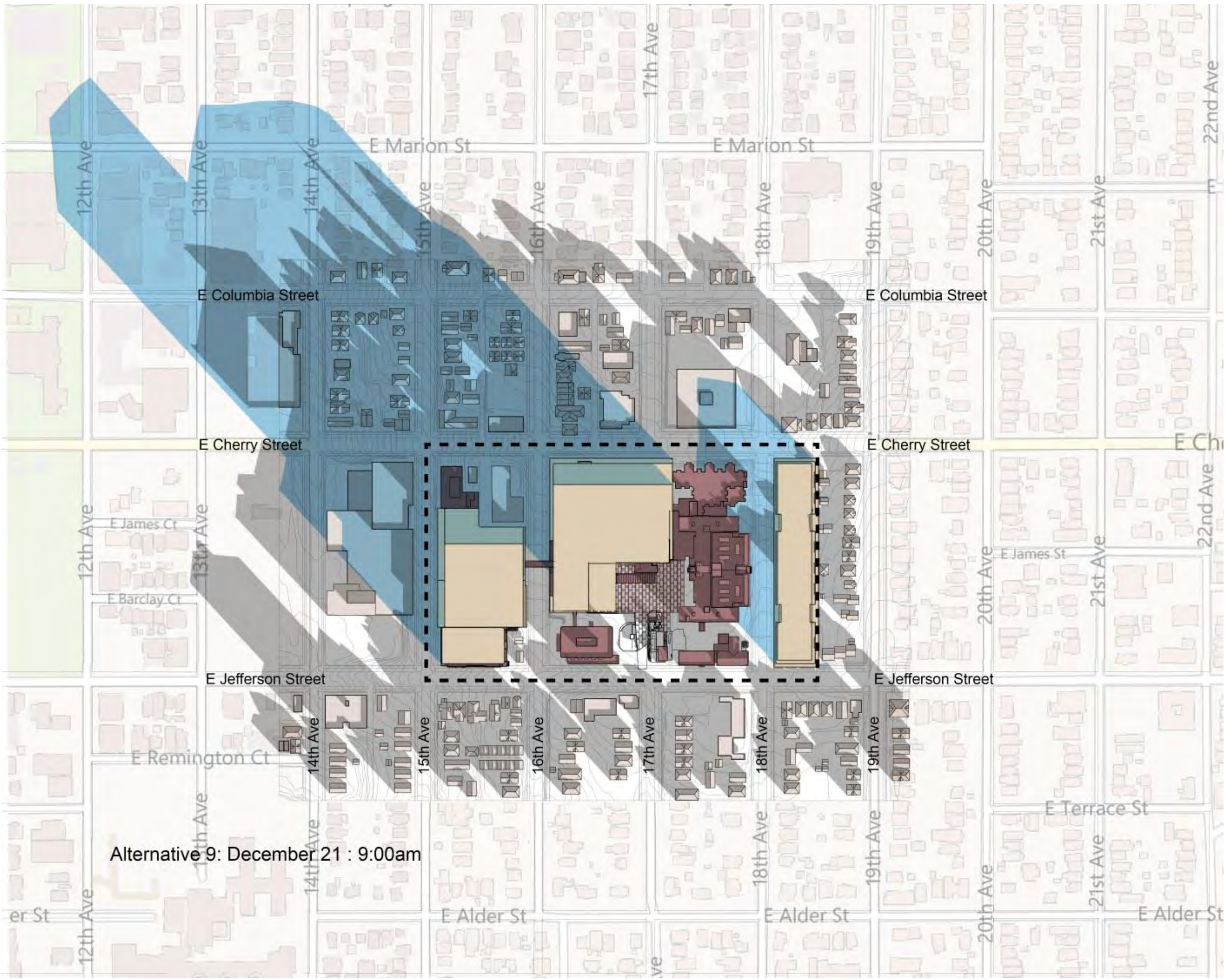


Figure 3.4-88

Alternative 9 – Winter Solstice, December 21st, 9:00 AM

Alternative 10: Shadows would be similar those for Alternative 9.

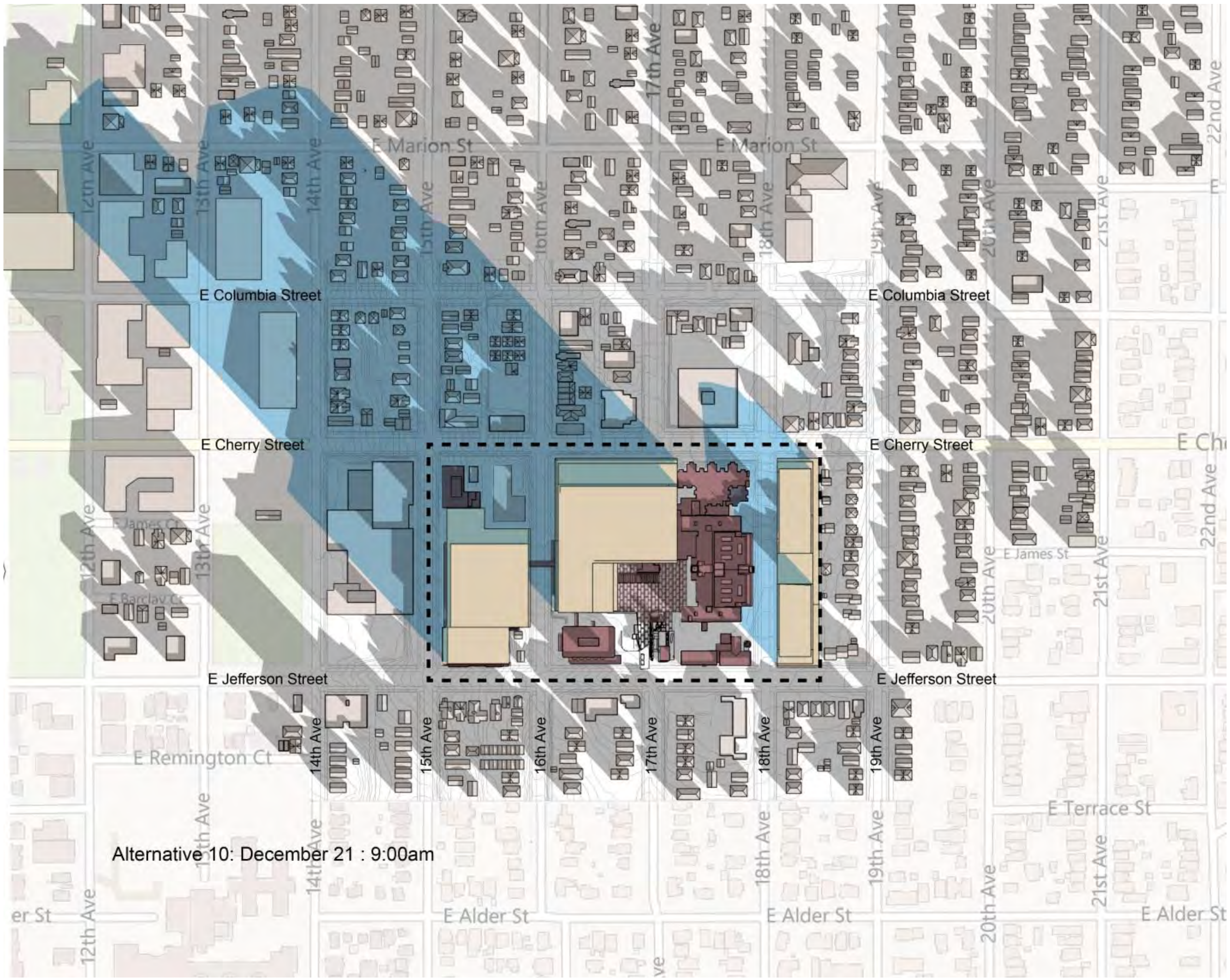


Figure 3.4-89

Alternative 10 – Winter Solstice, December 21st, 9:00 AM

Winter Solstice - 12:00 PM

Existing Conditions and Alternative 1 - No Build: Shadows extend north to portions of the north side of E Cherry Street. Shadows in the surrounding area generally extend at least onto the adjacent buildings, yard, or public right-of-way depending on building height.

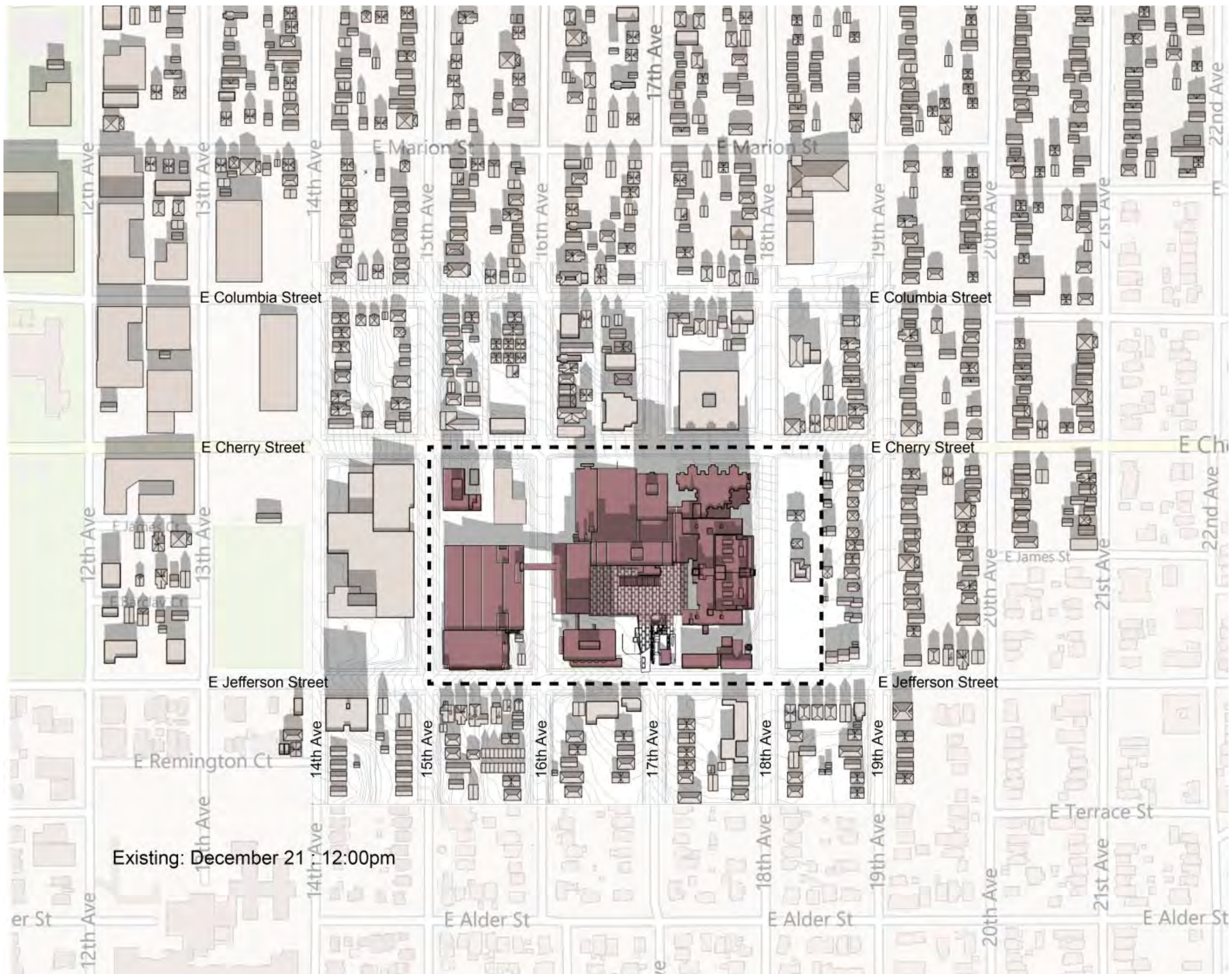


Figure 3.4-90

Existing Conditions/Alternative 1 – No Build
Winter Solstice, December 21st, 12:00 PM

Alternative 8: Shadows from center campus extend north to portions of East Columbia Street; shadows from building on west side of campus extend north almost to East Columbia Street to the north; shadows from building on east side extend a house to the north across E Cherry Street.

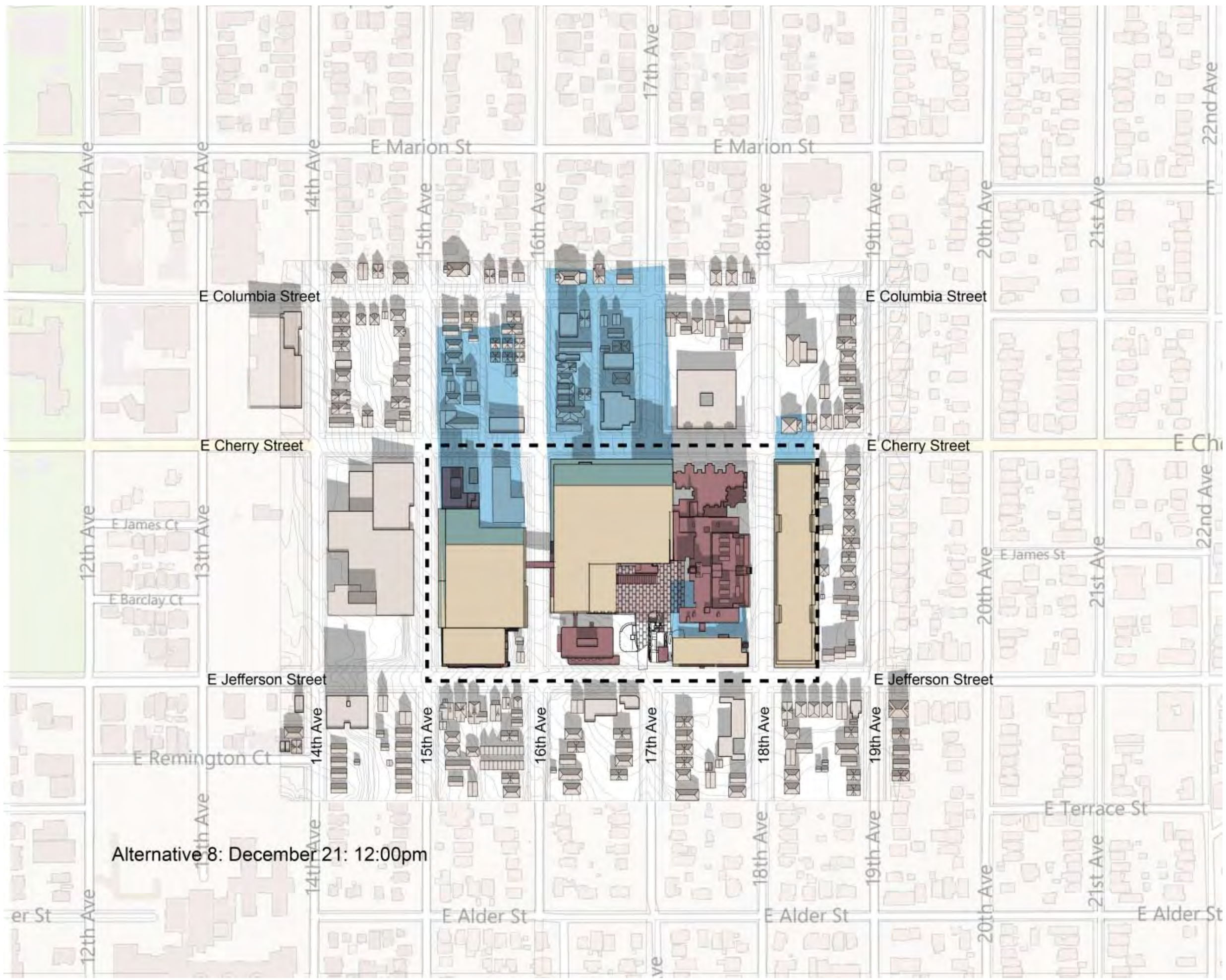


Figure 3.4-91

Alternative 8 – Winter Solstice, December 21st, 12:00 PM

Alternative 9: Shadows from center campus extend less than Alternative 8, as shadows would extend to only halfway between E Cherry and E Columbia Streets.

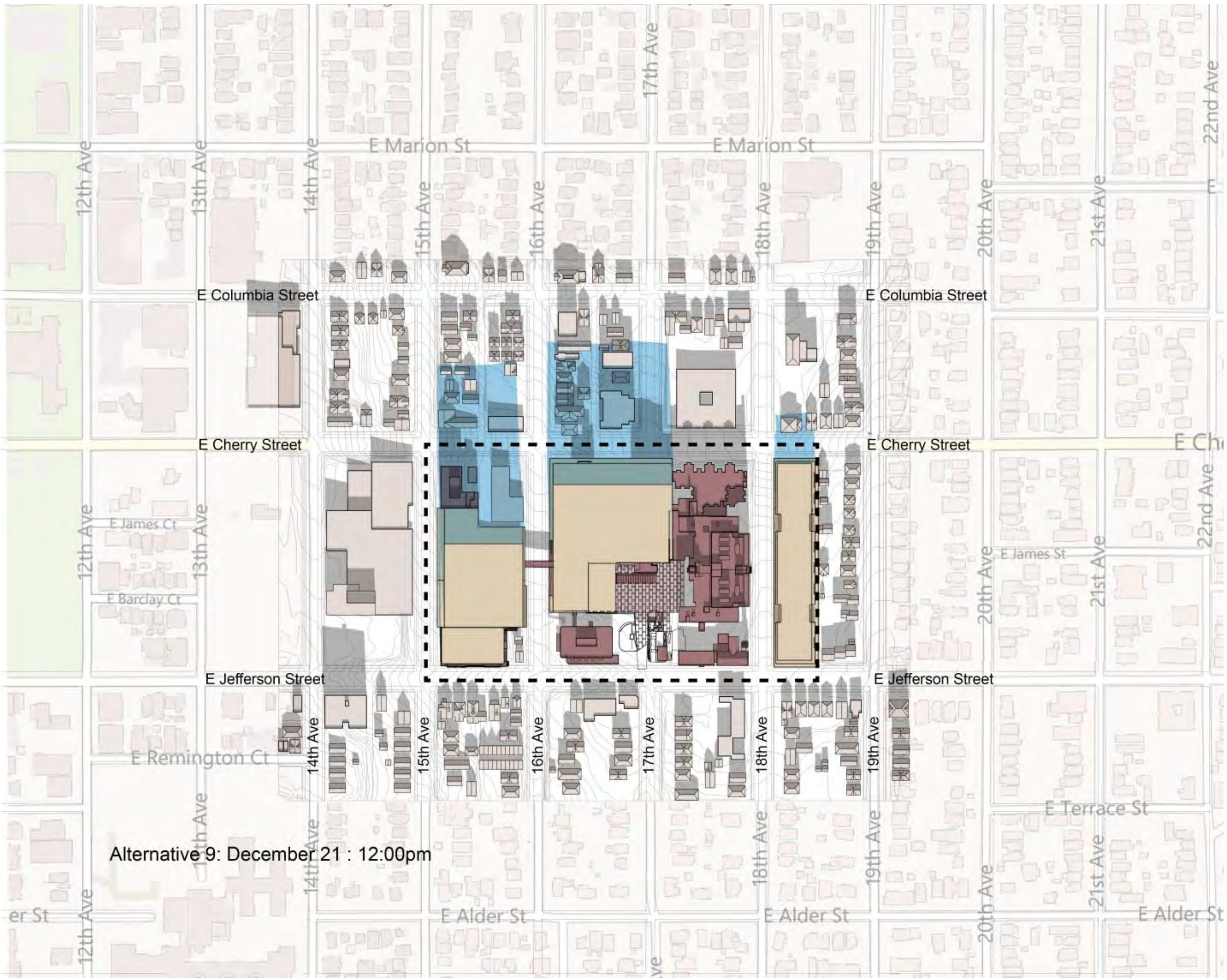


Figure 3.4-92

Alternative 9 – Winter Solstice, December 21st, 12:00 PM

Alternative 10: Shadows from center campus extend similar to Alternative 9.

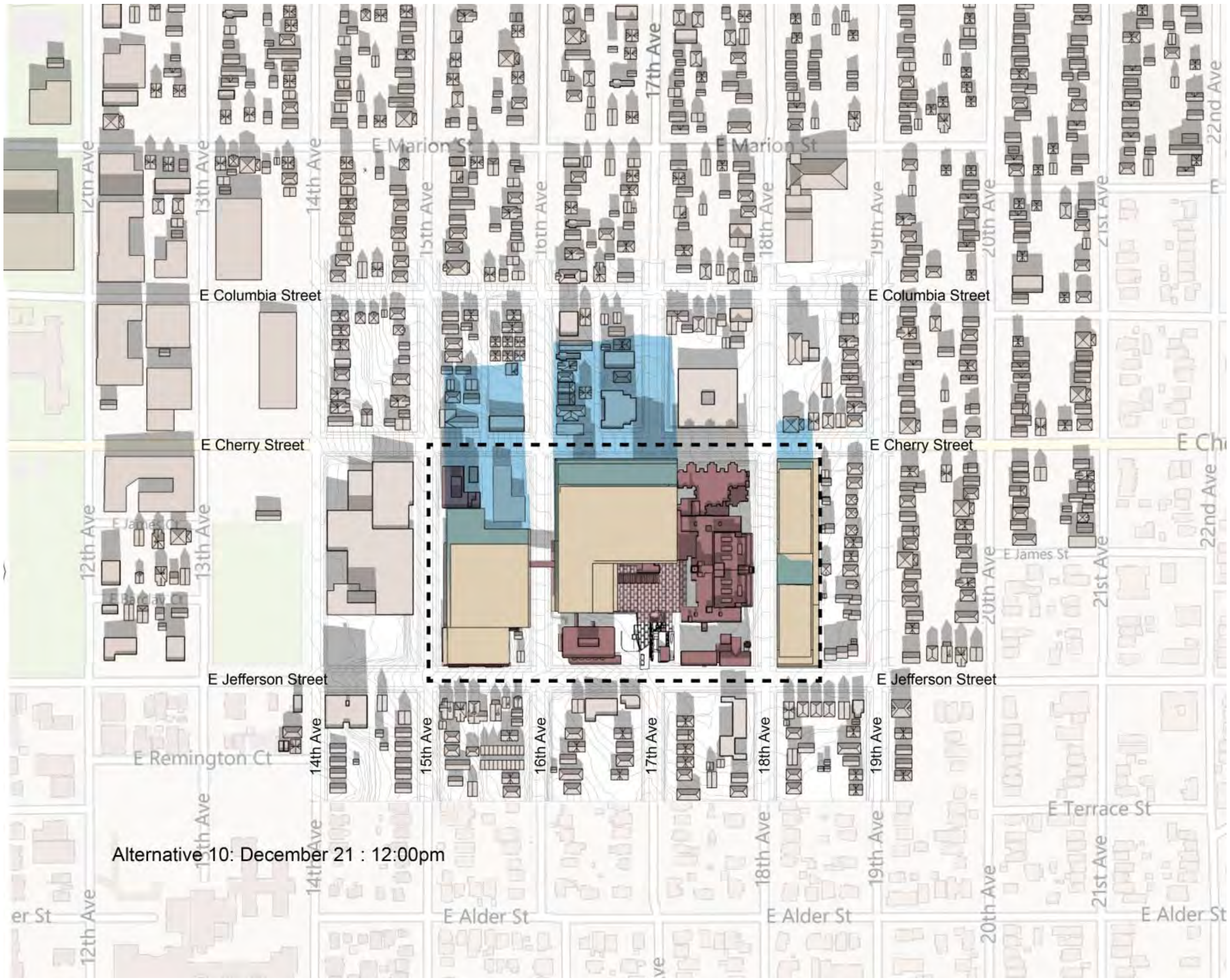


Figure 3.4-93

Alternative 10 – Winter Solstice, December 21st, 12:00 PM

Winter Solstice - 3:30 PM

Existing Conditions and Alternative 1 - No Build: Shadows extend in a northeasterly direction across 20th Avenue and E Marion Street onto a residential area (approximately 2 blocks beyond the existing MIO boundary) including Firehouse Mini Park. West of 18th Avenue, shadows, from buildings in the surrounding area, extend a half-block or more beyond the buildings depending on building height. East of 18th Avenue, shadows from buildings generally extend farther on the ground and spread over buildings due to the slope of the terrain.

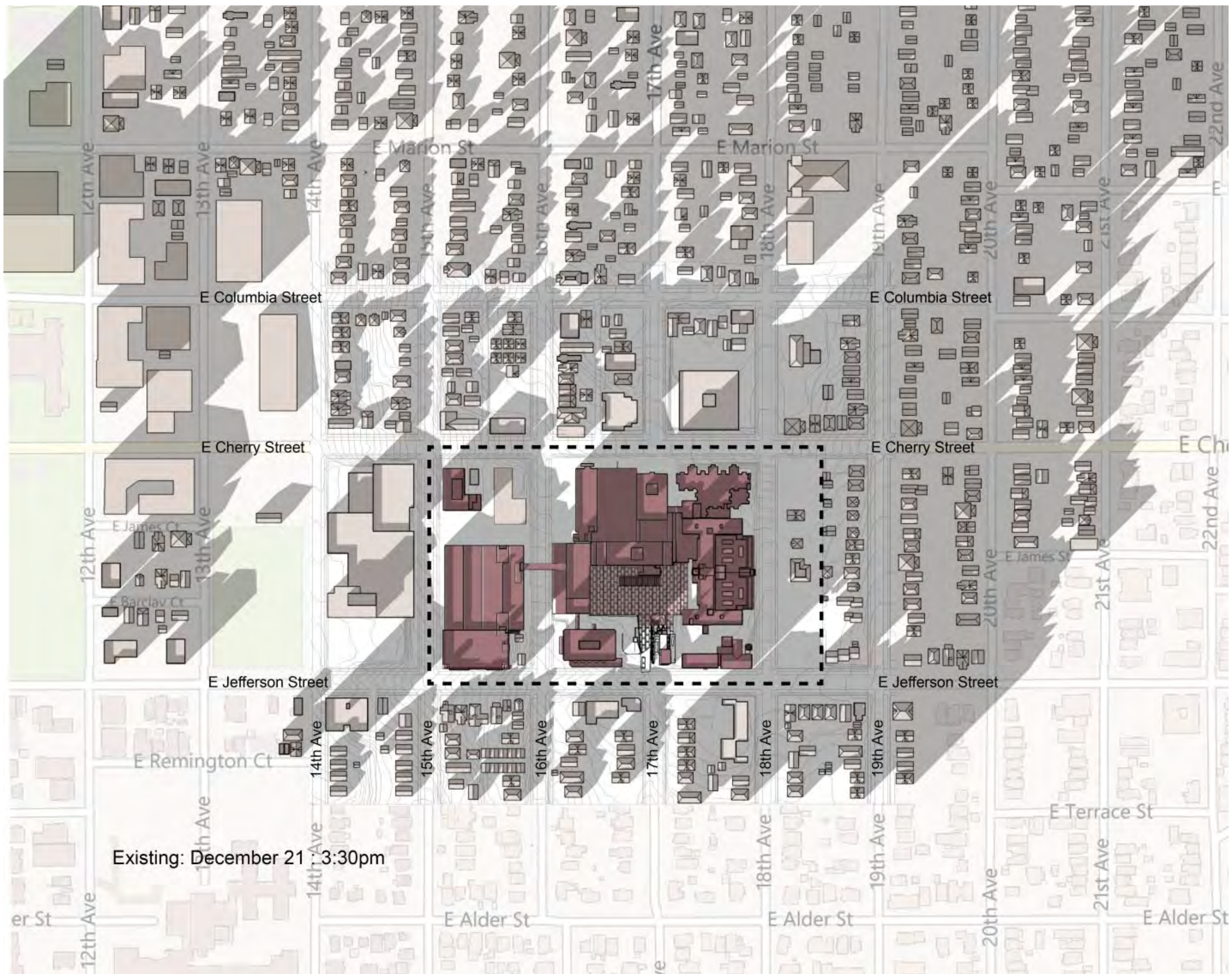


Figure 3.4-94

Existing Conditions/Alternative 1 – No Build
Winter Solstice, December 21st, 3:30 PM

Alternative 8: Shadows would extend in a northeasterly direction 3 to 4 blocks beyond E Cherry Street onto and beyond Firehouse Mini Park and the residences along 19th Avenue north of E Columbia Street. Shadows from the proposed 240-foot tower would extend the farthest for Alternative 8 shading buildings to the northeast.

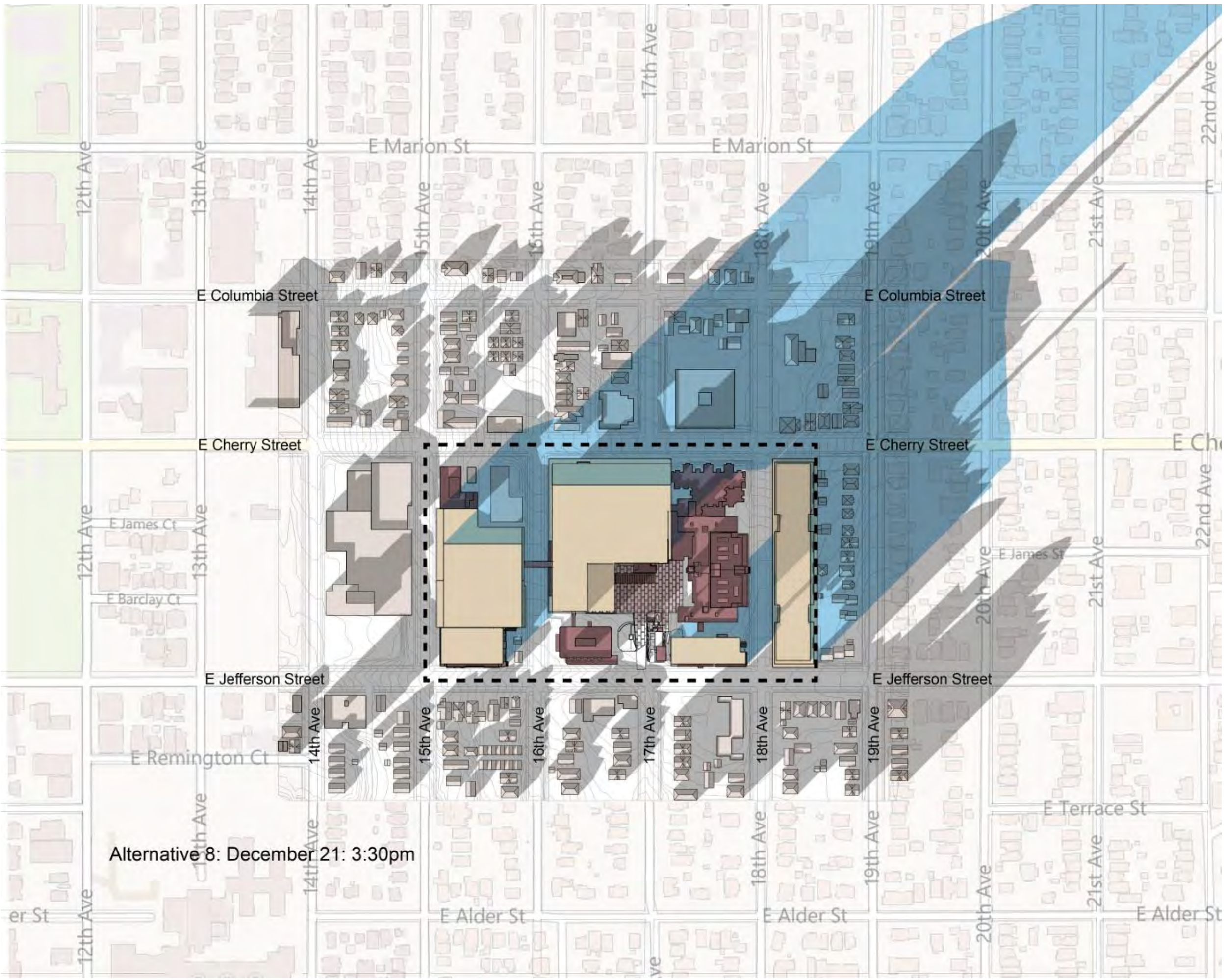


Figure 3.4-95

Alternative 8 – Winter Solstice, December 21st, 3:30 PM

Alternative 9: Shadows from center campus extend similar to existing conditions of the campus and surrounding buildings, but there would be an approximately half-block broader and longer shadow from the west campus tower extending in a northeasterly direction.

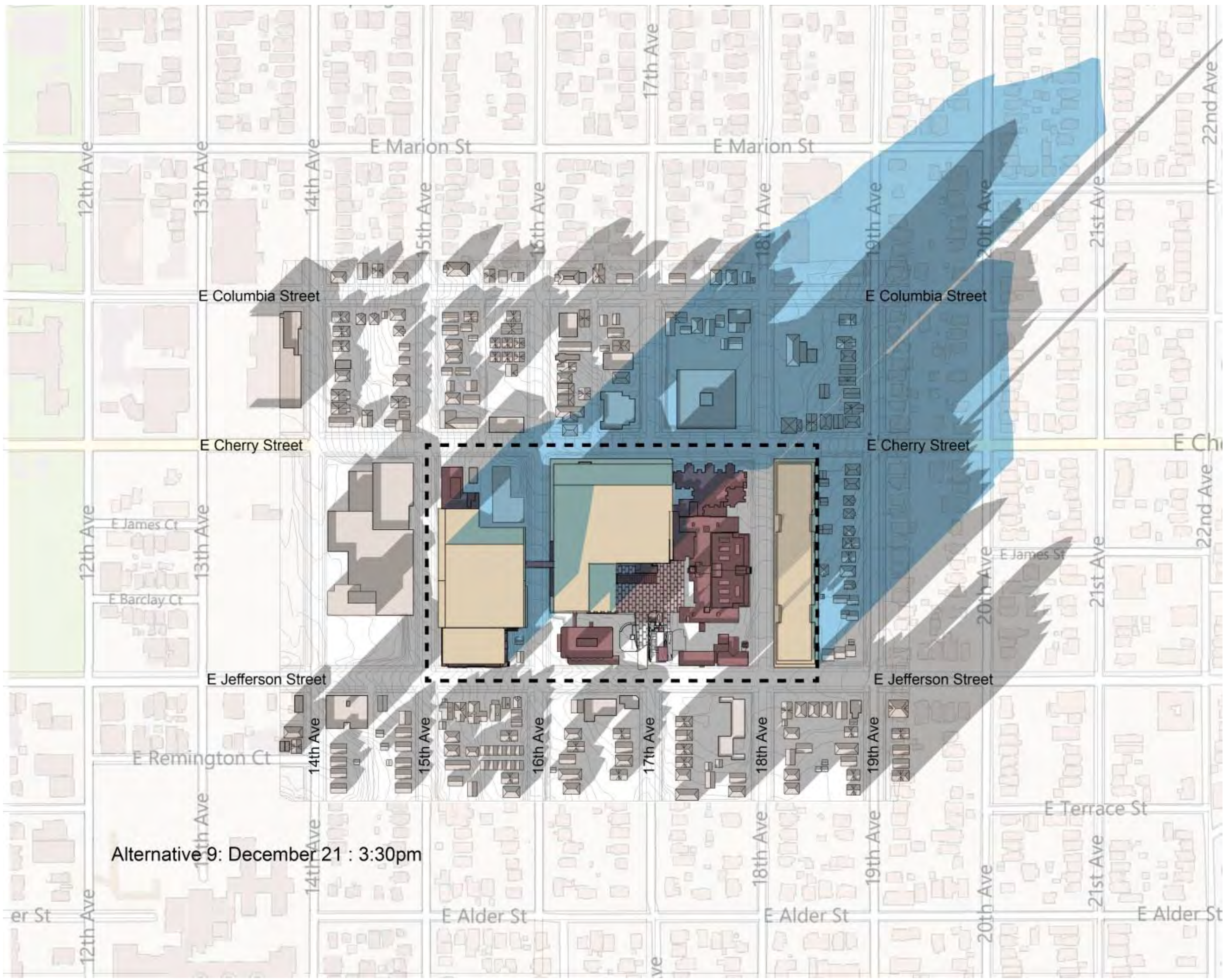


Figure 3.4-96

Alternative 9 – Winter Solstice, December 21st, 3:30 PM

Alternative 10: Shadows from center campus extend similar to Alternative 9.

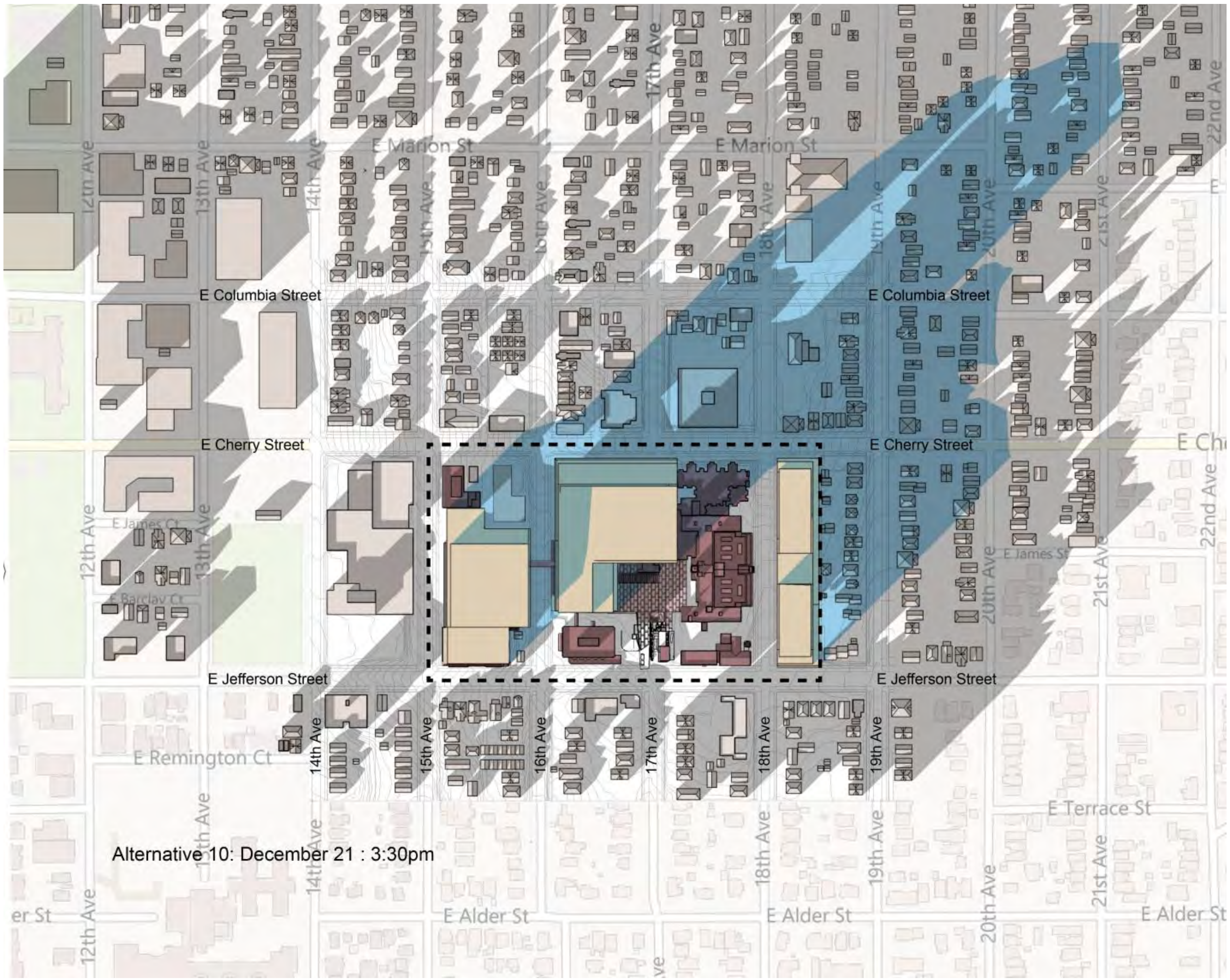


Figure 3.4-97

Alternative 10 – Winter Solstice, December 21st, 3:30 PM

Summary of Shadow Impacts

Table 3.4-2 provides a summary of the shadow impacts described above.

Table 3.4-2
Summary of Shadow Impacts of the Alternatives

Time of Year	Alternative 1 – No Build	Alternative 8 – Addition of 1.9 Million Gross SF	Alternative 9 – Addition of 1.55 Million Gross SF	Alternative 10 – Addition of 1.55 Million Gross SF
Vernal (Spring) Equinox				
8:00 AM	Cherry Hill campus shadows extend northwest shading 15th & 16th Ave, E Cherry Street, & campus central plaza. West campus shadows shade Seattle University Connolly Center across 15th Avenue and portions of adjacent playfield. Single-family buildings: shadows extend to adjacent buildings, yard, or public right-of-way. Taller buildings: shadows extend to adjacent block.	Cherry Hill west & central campus towers shadows would extend over 15th Avenue, Seattle University Connolly Center, adjacent playfield, and 13th Avenue. Central campus tower shadows would extend over Seattle Medical Post-Acute Care & NW Kidney Center, 16th Avenue East campus shadows would extend over 18th Avenue and onto James Tower building.	Shadows would extend similar to Alternative 8, but not as far to NW (not beyond 13th Ave to west or E Cherry Street to north) due to reduced tower heights on both west and central campus.	Shadows would extend similar to Alternative 9, but not as far on 18th Avenue due to east campus building modulation.
Noon	Shadows from Cherry Hill campus extend north shading portions of E Cherry Street & N side of campus buildings. The skybridge casts a narrow shadow on 16th Avenue Shadow length, from local buildings, is approximately 1/2 of building's height.	Shadows would be similar to existing conditions and Alternative 1 – No Build except shadows from the west tower would extend over NW Kidney Center & Seattle Medical Post-Acute Care; shadows along E Cherry Street would extend across E Cherry Street to condominiums. Central tower shadows would extend to Manhattan Plaza. Shadows from local buildings would be confined to yards or public right-of-way.	Shadows would extend similar to Alternative 8, except shadows of Alternative 9 central tower would not extend as far over south-facing units of Manhattan Plaza.	Shadows would extend similar to Alternative 9.

Table 3.4-2 (Continued)
Summary of Shadow Impacts of the Alternatives

Time of Year	Alternative 1 – No Build	Alternative 8 – Addition of 1.9 Million Gross SF	Alternative 9 – Addition of 1.55 Million Gross SF	Alternative 10 – Addition of 1.55 Million Gross SF
5:00 PM	Shadows from Cherry Hill campus extend northeast, shading 16th, Carmack House property, 18th & 19th Aves, E Cherry Street & campus central plaza. Shadows from James Tower & West Tower extend to houses on 19th Ave, shading front yards. Shadows in area extend half-block beyond buildings. East of 18th Ave, shadows extend farther.	Shadows would extend similar to existing conditions and Alternative 1 – No Build, except for greater shading of NW corner of campus and Carmack House property. Shadows from central tower would extend almost to intersection of 21st Avenue and E Cherry Street.	Shadows would extend similar to existing conditions and Alternative 1 – No Build, except for broader shadows over residential area just to east of 19th Avenue.	Shadows would extend similar to Alternative 9, except not as far mid-block on 19th Avenue due to east campus building modulation.
Summer Solstice				
8:00 AM	Shadows confined to campus except for shading of sidewalks on 16th and 15th Avenues. Seattle University Connolly Center shades 14th Avenue single-family buildings. Shadows from taller buildings extend to right-of-way.	Shadows would extend west and shade Cherry Hill campus plaza & sidewalks on E Cherry Street, 14th, 15th, & 18th Avenues; and rooftops of Seattle University Connolly Center.	Shadows would extend similar to, but slightly less than, Alternative 8 west of 15th Avenue	Shadows would extend similar to Alternative 9, not as far on 18th Avenue due to east campus building modulation, and not to corners on west side of 18th Avenue and E Cherry Street due to 30 ft. setback of upper-story
Noon	Shadows extend north, are confined to campus shading some sidewalks and E Cherry Street. Shadows from buildings extend just beyond building envelope.	Shadows would extend to sidewalk on south side of E Cherry Street between 16th and 18th Avenues, and portions of on-campus rooftops to the north.	Shadows would extend similar to Alternative 8.	Shadows would extend similar to Alternatives 8 and 9.

Table 3.4-2 (Continued)
Summary of Shadow Impacts of the Alternatives

Time of Year	Alternative 1 – No Build	Alternative 8 – Addition of 1.9 Million Gross SF	Alternative 9 – Addition of 1.55 Million Gross SF	Alternative 10 – Addition of 1.55 Million Gross SF
5:00 PM	Shadows extend east, shading Cherry Hill campus plaza; sidewalks and 16th Avenue (including Carmack House property, but not house), 18th Avenue, and structures on east side of 18th Avenue. Shadows from local buildings extend beyond building onto adjacent yard or right-of-way extending farther east of 18th Avenue.	Shadows would extend across portions of 16th Avenue, all of Carmack House property, Swedish Cherry Hill plaza, 18th Avenue, east campus building rooftop, and structures between 18th and 19th Avenues.	Shadows would extend similar to Alternative 8, but less on 18th Avenue.	Shadows would extend similar to Alternatives 8 and 9, but less mid-block between 18th and 19th Avenues due east campus building modulation.
Autumnal (Fall) Equinox				
8:00 AM	Shadows from Cherry Hill campus extend northwest over 15th and 16th Avenues, E Cherry Street and campus central plaza. Shadows from west campus extend onto portions of Seattle University Connolly Center. Shadows from smaller local buildings extend to adjacent public right-of-way. Shadows, from taller buildings extend slightly farther west of 18th Avenue, due to slope.	Shadows from Cherry Hill west campus tower would extend over 15th Avenue, Seattle University Connolly Center, adjacent playfield, and north between 13th Avenue and E Jefferson Street. Central campus tower would shade Seattle Medical Post-Acute Care and NW Kidney Center and residential units facing E Cherry Street. On E Cherry Street, shadows would extend across E Cherry Street to the Spencer Technologies site, the condominium at 16th Avenue and E Cherry Street. East campus shadows would extend over 18th Avenue to James Tower building.	Shadows would extend similar to Alternative 8, but not as far in northwest direction due to reduced tower heights on west and central campus.	Shadows would extend similar to Alternative 9, except not as far mid-block on 18th Avenue due to east campus building modulation.

Table 3.4-2 (Continued)
Summary of Shadow Impacts of the Alternatives

Time of Year	Alternative 1 – No Build	Alternative 8 – Addition of 1.9 Million Gross SF	Alternative 9 – Addition of 1.55 Million Gross SF	Alternative 10 – Addition of 1.55 Million Gross SF
Noon	Shadows from Swedish Cherry Hill campus extend north shading portions of E Cherry Street and the north sides of campus buildings. The skybridge casts a narrow shadow onto 16th Avenue. Shadows from local buildings are generally confined to their yards or adjacent public right-of-way.	Shadows would extend similar to existing conditions and Alternative 1 - No Build, except that shadows from west tower extend over NW Kidney Center and Seattle Medical Post-Acute Care buildings. Shadows would extend far over E Cherry Street, and over condominiums at the corner of E Cherry Street and 17th Avenue Shadows from central tower would extend over south-facing units of Manhattan Plaza at NW corner of E Cherry Street and 17th Avenue.	Shadows would extend similar to Alternative 8 except that shadows of central tower of Alternative 9 would not extend quite as far over south-facing units of Manhattan Plaza.	Shadows would extend similar to Alternative 9.
5:00 PM	Shadows from Swedish Cherry Hill campus extend north shading 16th (including Carmack House property), 18th and 19th Avenue, E Cherry Street and campus central plaza. Shadows from James Tower and West Tower extend to front yards on 20th Avenue. Shadows from smaller local buildings extend to adjacent right-of-way. Taller buildings shadows extend over adjacent buildings or onto next block. East of 18th Avenue, shadows extend farther than 1-block.	Alternative 8 would result in greater shading of NW corner of campus, 16th Avenue, James Tower, and east campus buildings than existing conditions. Shadows from central tower would extend to intersection of 22st Ave and E Cherry Street.	Shadows would extend similar to existing conditions and Alternative 1 - No Build, except there would be broader shadows over the residential area just to the east of 19th Avenue and to a slightly greater extent in vicinity of 29th Ave and E Cherry Street.	Shadows would extend similar to Alternative 9, except that building modulation on east campus would create an opening and reduction in shadows over residential area east of 19th Avenue.

Table 3.4-2 (Continued)
Summary of Shadow Impacts of the Alternatives

Time of Year	Alternative 1 – No Build	Alternative 8 – Addition of 1.9 Million Gross SF	Alternative 9 – Addition of 1.55 Million Gross SF	Alternative 10 – Addition of 1.55 Million Gross SF
Winter Solstice				
9:00 AM	Shadows extend northwest over existing Cherry Hill buildings, Seattle University Connolly Center building, and onto buildings 1-block north of E Cherry Street (E Columbia Street). East of 18th Avenue, shadows from local buildings extend a half-block or more. West of 18th Avenue, shadows from buildings extend farther than 1-block.	Shadows from central campus towers would extend 3-4 blocks northwest of intersection of E Cherry Street and 15th Avenue. Shadows would extend across E Cherry Street onto DSHS building and residential area.	Shadows would extend similar those for Alternative. 8, except shadows from central campus towers would extend northwest 2 to 3 blocks beyond E Cherry Street -- not as far as Alternative 8 shadows.	Shadows would extend similar those for Alternative 9
Noon	Shadows extend north to north side of E Cherry Street. Shadows in area extend to adjacent buildings, yards, or public right-of-way.	Shadows from center campus would extend north to portions of E Columbia Street. Shadows from building on west side of campus would extend north to E Columbia Street. Shadows from building on east would extend to house across E Cherry Street.	Shadows from center campus would extend less than Alternative 8 as shadows would extend to only halfway between E Cherry and E Columbia Street.	Shadows from center campus would extend similar to Alternative 9.
3:30 PM	Shadows extend north across 20th Avenue and E Marion Street to residential area (approximately 2 blocks beyond MIO boundary) including Firehouse Mini Park. West of 18th Avenue, shadows from existing buildings extend a half-block beyond buildings. East of 18th Avenue, shadows extend farther.	Shadows would extend north 3-4 blocks beyond E Cherry Street beyond Firehouse Mini Park and residences on 19th Ave north of E Columbia Street. Shadows from proposed 240-foot tower would extend farthest of the alternatives, shading buildings to north.	Shadows from center campus would extend similar to existing conditions and Alternative 1 – No Build, but would be approximately a half-block broader and longer from west campus tower extending north.	Shadows from center campus would extend similar to Alternative 9.

3.4.4.3 Mitigation Measures

It should be noted that the projects have not been designed and the actual project appearance is unknown. Required/proposed floor area ratios could reduce the mass for several buildings. The following mitigation measures would minimize potential impacts from shadows:

- Future new building design will consider the final orientation and massing of the building relative to public open spaces.
- A shadow study may be required with the MUP application for specific buildings depending upon their location on campus.

3.4.4.4 Secondary and Cumulative Impacts

Additional shadowing, while a direct impact, also contributes to cumulative loss of perceived open area.

Shadow impacts would result from the Build Alternatives due to the increased amount of development on the Swedish Cherry Hill campus and greater building heights.

Shadows would be longest during winter when the sun is low on the horizon. Because of the low angle of the sun above the horizon on Winter Solstice, shadow impacts would extend greater distances, regardless of the alternative. Conversely, during Summer Solstice, when the sun is at its greatest height above the horizon, shadow impacts would be shorter and less likely to cause shading impacts.

Under the Build Alternatives, additional sources of shadows would be added to the area as a result of new development and redevelopment, which, in some cases, would increase the development footprint on the campus. Shadows would add to and combine with shadows from existing development on and in the Swedish Cherry Hill campus area vicinity. Overall, shadow impacts would not be expected to result in long-term, significant adverse environmental impacts. Shadow impacts would be typical of an urbanizing area – one that is transitioning to more intensive development. Shadow impacts to Firehouse Park, the only public open space area proximate to the Swedish Cherry Hill campus, already occur as a result of the existing buildings on the Swedish Cherry Hill campus (during Winter Solstice only) and other adjacent buildings.

3.4.4.5 Significant Unavoidable Adverse Impacts

Development under the MIMP would result in new sources of shadow impacts associated with the Swedish Cherry Hill campus. Shadow impacts associated with Alternative 8 would be greater than those associated with Alternative 9; and shadows associated with Alternative 10 would be similar to Alternative 9.

Under SEPA, significant unavoidable adverse impacts of proposed actions are considered as they apply to public open space. Shadow impacts to Firehouse Park located at 712 18th Avenue, the only public open space area proximate to the Swedish Cherry Hill campus, already occur as a result of the existing buildings on the Swedish Cherry Hill campus and other adjacent buildings. No significant unavoidable adverse impacts to public open space would be anticipated due to implementation of the Build Alternatives.

3.5 Housing

This section of the Draft EIS describes the existing housing characteristics on the Swedish Cherry Hill campus and surrounding vicinity; and evaluates the potential impacts to housing resources that could occur as a result of implementation of the MIMP.

All MIMP Alternatives maintain the existing MIO boundaries. No expansion of the MIO boundaries is proposed.

3.5.1 Policy Context

The SMC contains specific provisions that describe the scope of the SEPA analysis for housing. Relevant policies from SMC 25.05.675.I Housing[1] are provided below:

1. *Policy Background. Demolition or rehabilitation of low-rent housing units or conversion of housing for other uses can cause both displacement of low-income persons and reduction in the supply of housing.*
2. *Policies*
    a. *It is the City's policy to encourage preservation of housing opportunities, especially for low income persons, and to ensure that persons displaced by redevelopment are relocated.*
    b. *Proponents of projects shall disclose the on-site and off-site impacts of the proposed projects upon housing, with particular attention to low-income housing.*
    c. *Compliance with legally valid City ordinance provisions relating to housing relocation, demolition and conversion shall constitute compliance with this housing policy.*
    d. *Housing preservation shall be an important consideration in the development of the City's public projects and programs. The City shall give high priority to limiting demolition of low-income housing in the development of its own facilities.*

Land Use Code

Additionally, SMC 23.34.124 Designation of MIO District[2], Section B.7, states the following with respect to additions to existing MIO districts:

> *New or expanded boundaries shall not be permitted where they would result in the demolition of structures with residential uses or change of use of those structures to nonresidential major institution uses unless comparable replacement is proposed to maintain the housing stock of the city.*

[1] SMC 25.05.675: Title 25 – Environmental Protection and Historic Preservation, Chapter 25.05 – Environmental Policies and Procedures, Subchapter VII – SEPA and Agency Decisions, Specific Environmental Policies of the Seattle Municipal Code.

[2] SMC 23.34.124: Title 23 - Land Use Code, Subtitle III – Land Use Regulations, Division 1 – Land Use Zones, Chapter 23.34 – Amendments to Official Land Use Map (Rezones), Subchapter II Rezone Criteria.

3.5.2 Affected Environment

3.5.2.1 Residential Structures within the Existing MIO Boundary

The Swedish Cherry Hill campus contains three, single-family residential structures that are currently vacant, and one nursing care facility. The Seattle Medical Post-Acute Care, owned by Evergreen Healthcare Management, is a 99-bed, 24-hour skilled nursing care facility providing rehabilitation and longer term care (for certain patients) located within the MIO at 555 16th Avenue. The facility serves patients who require additional care after a hospital visit before returning home or transitioning to an assisted-living facility or nursing home. The SMC defines nursing homes as a residential use (SMC 23.84A.032 "R" 17.). Swedish Cherry Hill provides some temporary housing at the Inn at Cherry Hill for families and patients awaiting care.

Table 3.5-1 lists the address, description of each building, the present use, and the underlying zoning.

Table 3.5-1
Residential-type Units within the MIO Boundary

Address	Parcel Number	Property Name/ Property Type[3]	Ownership	Present Use[4]	Zoning
544 18th Avenue	7942600205	Old Residence/ Commercial	17th and James, LLC/ Sabey	Single-Family/ Vacant	MIO-37-SF-5000
536 18th Avenue	7942600215	Old Residence/ Commercial	17th and James, LLC/ Sabey	Single-Family/ Vacant	MIO-37-SF-5000
1522 E Jefferson Street	7942600795	Old Residence/ Residential	Other	Single-Family/ Vacant	MIO-65-SF-5000
555 16th Avenue	7942600675	Seattle Medical Post Acute Care	Evergreen Healthcare Management	Nursing Home	MIO-65-LR3

Source: King County Recorder's Office 2014 and City of Seattle 2014 for property search by address; and Sabey Corporation 2013.

The two, single-family structures located on 18th Avenue are vacant. These properties are owned by Sabey and are within the existing MIO boundary. Permits for change of use were submitted but not finalized for these structures prior to 1997.

The vacant house located at 1522 E Jefferson Street is within the MIO but the property is not owned by either Swedish or Sabey[5]. Swedish has no plans to develop it as part of its MIMP.

3.5.2.2 Housing Characteristics near Swedish Cherry Hill

The housing characteristics and population information presented in this section were obtained from the US Census Bureau's 2008 to 2012 American Community Survey (ACS) 5-year

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[3] Description as noted in King County Recorder's Office property detail
[4] Correspondence with Jennifer Crowley, Senior Property Manager, Sabey Corporation, January 29 and 30, 2014.
[5] Refer to the Project Description section for a detailed discussion of building ownership within the MIO.

estimates. ACS[6] is conducted annually and provides more detailed socioeconomic information to help characterize existing housing conditions for purposes of this EIS analysis.

ACS data is used for data related to Census Tract (CT) 87, Central Area/Squire Park Community Reporting Areas (CRAs), Central Neighborhood District, and the City. As shown in Figure 3.5-1, Swedish Cherry Hill is within the Central Area/Squire Park CRA, which is comprised of CTs 77, 79, 87 and 88 (City of Seattle 2010). This CRA's approximate boundaries include 15th Avenue to the west, East Denny Way and East Roy Street to the north, Yesler Way to the south, and 31st Avenue to the east. The larger Central Neighborhood District (comprised of CTs 77, 78, 79, 87, 88, 89 and 90) extends farther east to Lake Washington and farther south to Interstate 90 (I-90). Swedish Cherry Hill is located within CT 87, which is bounded by 15th Avenue to the west, East Marion Street to the north, Yesler Way to the south, and 2nd Avenue to the east.

CRAs were adopted by the City in 2004 as a standard, consistent, citywide geography for reporting purposes. The CRA boundaries were updated for the 2010 Census. There are 53 CRAs derived from census tract geography. The CRAs have been grouped into 13 Neighborhood Districts to approximate the Neighborhood Districts represented on the City Neighborhood Council.

[6] The ACS is a nationwide survey that produces characteristics of the population and housing, similar to the long-form questionnaire used in Census 2000. The data that were collected from the long form sample are now produced from the ACS. The ACS produces these estimates for small areas and small population groups. The v is a continuous survey, in which each month a sample of housing unit addresses receives a questionnaire. About 3.5 million addresses are surveyed each year.

The 2010 Census included only one form sent to the entire U.S. population. That form asked only questions similar to those contained in previous census short forms. The 2010 Census provides a basic count of the U.S. population, collecting only the most basic demographic and housing information. Detailed demographic, social, economic, and housing data are no longer collected as part of the decennial census.

The questions that were asked on the 2010 Census are also asked on the ACS questionnaire (US Census 2014).

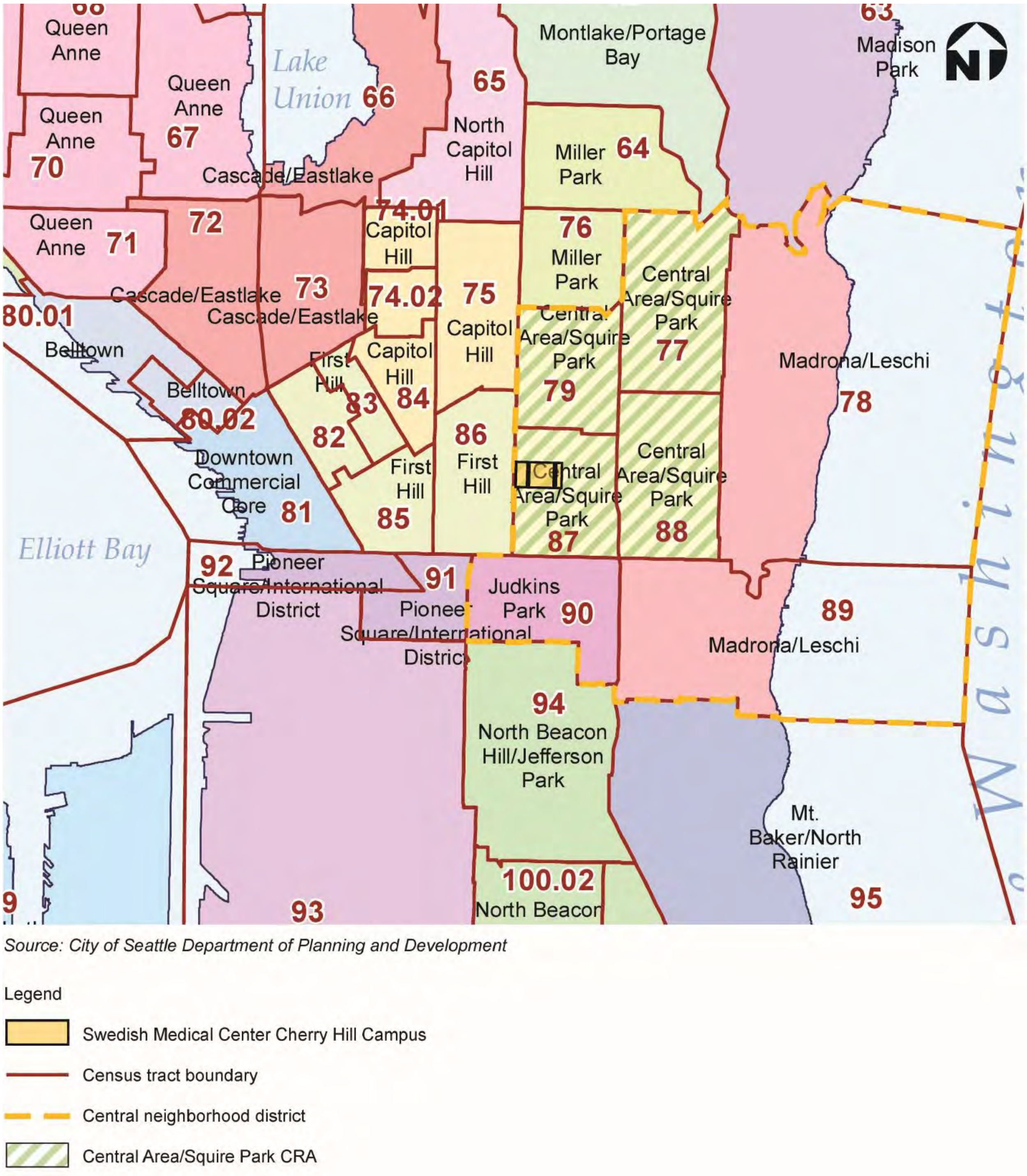

Figure 3.5-1

Central Area/Squire Park CRA and Central Neighborhood District

CT 87 and the CRA reflect the most immediate data surrounding Swedish Cherry Hill. The neighborhood district represents a broader view of housing near the campus. Table 3.5-2 compares CT 87, the Central Area/Squire Park CRA, the Central Neighborhood District, and the City characteristics such as population, housing units, and income.

Table 3.5-2
Population, Housing, and Income Characteristics

	CT 87	Central Area/Squire Park CRA[7]	Central Neighborhood District[8]	City of Seattle
Population (% of total Seattle pop.)	3,831 (0.6%)	16,725 (2.7%)	29,698 (4.8%)	612,916
Housing Units (% of total Seattle units)	1,899 (0.6%)	8,757 (2.9%)	14,991 (4.9%)	306,694
Occupied Housing Units (% of total housing units)	1,626 (85.6%)	8,106 (92.6%)	13,921 (92.9%)	285,476 (93.1%)
Owner occupied (% of total occupied units in area)	624 (38.4%)	3,478 (42.9%)	6,894 (49.5%)	135,156 (47.3%)
Renter occupied (% of total occupied units in area)	1,002 (61.6%)	4,628 (57.1%)	7,027 (50.5%)	150,320 (52.7%)
Median Household Income	$54,833	$62,780	$73,794	$63,470
Mean Household Income	$71,977	$81,238	$99,285	$89,319
Median Household Value	$404,500	$416,725	$463,429	$441,000

Source: U.S. Census Bureau, 2008-2012 ACS 5-year Estimates

The diversity of housing types is indicated in Table 3.5-3 and Figure 3.5-2.

Table 3.5-3
Housing Units per Structure (estimated)

	CT 87	Central Area/Squire Park CRA	Central Neighborhood District	City of Seattle
Total Housing Units	1899	8757	14991	306,694
Units per structure				
1, detached	652	3491	6726	137,772
1, attached	216	648	1020	12,552
2 units	149	452	878	9,771
3-4 units	201	438	747	12,995
5-9 units	99	676	979	19,442
10-19 units	195	818	1067	26,160
20 or more	387	1167	1663	37,894
50 or more	n/a	1027	1871	48,732
Mobile home	0	40	40	1,100
Boat, RV, van, etc.	0	0	0	276

Source: U.S. Census Bureau, 2008-2012 ACS 5-year Estimates

[7] Census Tracts 77, 79, 87 and 88
[8] Census Tracts 77, 78, 79, 87, 88, 89 and 90

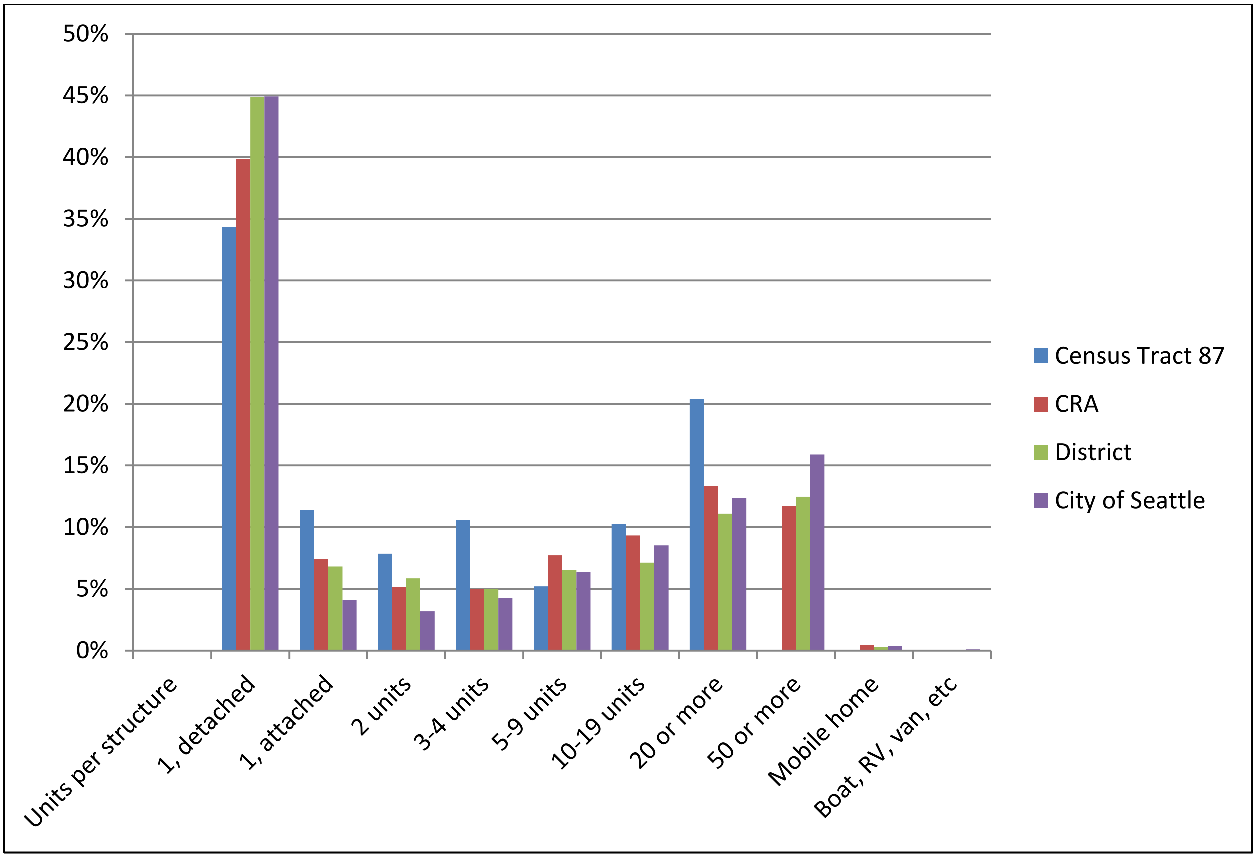

Figure 3.5-2

Percentage of Housing Units per Structure by Geographic Area

The Central Area/Squire Park CRA contains approximately 2.7 percent of Seattle's population, and approximately 2.9 percent of Seattle's housing units. The average household size is 2.21 persons for owner-occupied units, and 2.07 persons for renter-occupied units within the Central Area/Squire Park CRA. This is compared to an average household size of 2.33 persons for owner-occupied units, and 1.83 persons for renter-occupied units for all of Seattle.

Within CT 87, in the area immediately surrounding Swedish Cherry Hill, there are a lower percentage of detached, single-family housing units and a higher percentage of attached, single-family; as well as some types of multi-family housing complexes (i.e., those with 19 or fewer units) in comparison to the broader vicinity and the city as a whole.

CT 87 has a lower percentage (38.4 percent) of owner-occupied units compared to city-wide, the Central Neighborhood District, and the CRA. Within the CRA, approximately 42.9 percent of the housing units are owner-occupied, and approximately 57.1 percent are renter-occupied. Within the Central Neighborhood District, approximately 49.5 percent of the housing units are owner-occupied, while approximately 50.5 percent are renter-occupied. City-wide, approximately 47.3 percent of the housing units are owner-occupied and 52.7 percent are renter-occupied.

Other Housing Features in the Vicinity

Yesler Terrace Redevelopment

The Yesler Terrace redevelopment project is within approximately 1/2-mile southwest of the Swedish Cherry Hill campus. The 30-acre property is owned and operated by the Seattle Housing Authority. Redevelopment consists of replacing 561 housing units and the area infrastructure with assisted and market-rate housing, as well as commercial and public space. Up to 5,000 units of housing are planned. Up to 3,199 housing units will be market-rate units, and the balance will serve a range of incomes from 30-80 percent of the Area Median Income (AMI). Construction of the project began in 2013 and will continue through 2016 (SHA 2014).

Seattle University

Housing demand and supply in the vicinity may be influenced by Seattle University located west of Swedish Cherry Hill across 15th Avenue. Seattle University has a total of 7,422 students enrolled in undergraduate and graduate programs (as of fall 2013). There is an on-campus housing capacity for approximately 1,780 students. The remaining students (approximately 5,642) find housing throughout the area (Seattle University 2014).

Owner-Occupied Median Value

Median value for owner-occupied housing units within CT 87 is $404,500 and $416,725 in the Squire Park CRA. The median value for owner-occupied housing units within the Central Neighborhood District is $463,429, substantially higher than the value within the CRA. The median value for owner-occupied housing units in Seattle is $441,000.[9]

Rental Market

Approximately 61.6 percent and 57.1 percent of the housing in the census tract surrounding Swedish Cherry Hill and Central Area/Squire Park CRA, respectively, is occupied by renters. According to Dupre + Scott data (Tables 3.5-4 through 3.5-10), the Squire Park market area (CTs 77, 79, 87, and 88) had an overall rental market vacancy rate of 2.72 percent in the fall of 2013, compared to 2.91 percent city-wide. The average rent in Squire Park was $1,343, comparable to the City's average rent of $1,349. Since 2009, vacancy rates have generally declined and rents increased in both Squire Park and Seattle as a whole. Since spring 2011, the area in the direct vicinity of Swedish Cherry Hill (CT 87), tends to have lower vacancy rates and average rents compared to Squire Park and the City.

Tables 3.5-5 through 3.5-9 provide further details on vacancy and rental rates for studio, one-bedroom, two-bedroom, and three-bedroom units in the various market areas. CT 87 has three studio units in two buildings as of fall 2013. There were no studios in this area prior to fall 2013. The majority (approximately 77 percent) of the units in CT 87 are one-bedroom units.

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[9] Within the MIO, the property at 1522 E Jefferson Street recently sold for $900,000. Sabey Corporation (17th and James, LLC) purchased the two properties on 18th Avenue for $1.5 million each. Sabey Corporation is the Registered Agent of 17th and James LLC, a Washington limited liability company.

Vacancy rates for all unit sizes appear to be more volatile in the CT 87 market area; and the rents are notably lower as compared to Squire Park and Seattle.

Table 3.5-4
Rental Market Vacancy and Average Rent: All Units

	CT 87		Central Area/ Squire Park CRA		City of Seattle	
Month/Year	Market Vacancy	Average Rent	Market Vacancy	Average Rent	Market Vacancy	Average Rent
Spring 2008	6.76%	$783	5.65%	$1,120	3.05%	$1,082
Fall 2008	2.70%	$797	4.29%	$1,208	3.09%	$1,122
Spring 2009	9.90%	$827	6.43%	$1,155	5.46%	$1,115
Fall 2009	8.91%	$848	7.63%	$1,082	5.80%	$1,099
Spring 2010	4.95%	$837	5.40%	$1,078	5.09%	$1,083
Fall 2010	10.89%	$827	3.86%	$1,109	3.58%	$1,105
Spring 2011	1.35%	$848	3.49%	$1,075	3.38%	$1,115
Fall 2011	2.97%	$818	3.96%	$1,106	3.36%	$1,165
Spring 2012	2.97%	$863	3.06%	$1,204	2.95%	$1,177
Fall 2012	3.96%	$915	1.97%	$1,263	3.02%	$1,245
Spring 2013	1.06%	$911	1.73%	$1,276	2.46%	$1,298
Fall 2013	2.13%	$921	2.72%	$1,343	2.91%	$1,349

Source: © 2014 Dupre + Scott Apartment Advisors, Inc.

Table 3.5-5
Rental Market Vacancy and Average Rent: Studio Units

	CT 87*		Central Area/ Squire Park CRA		City of Seattle	
Month/Year	Market Vacancy	Average Rent	Market Vacancy	Average Rent	Market Vacancy	Average Rent
Spring 2008	n/a	n/a	5.45%	$832	2.79%	$861
Fall 2008	n/a	n/a	2.96%	$927	2.90%	$893
Spring 2009	n/a	n/a	5.36%	$925	6.05%	$876
Fall 2009	n/a	n/a	8.41%	$842	5.68%	$845
Spring 2010	n/a	n/a	2.80%	$823	5.64%	$832
Fall 2010	n/a	n/a	1.91%	$877	3.81%	$847
Spring 2011	n/a	n/a	1.63%	$842	3.46%	$852
Fall 2011	n/a	n/a	3.85%	$855	3.51%	$901
Spring 2012	n/a	n/a	4.35%	$921	3.09%	$914
Fall 2012	n/a	n/a	1.10%	$973	2.92%	$965
Spring 2013	0.00%	$803	1.92%	$975	2.47%	$994
Fall 2013	n/a	n/a	3.48%	$1,061	3.34%	$1,057

Note: In CT 87, there were only three studio units in two buildings as of fall 2013; none prior to that date.
Source: © 2014 Dupre + Scott Apartment Advisors, Inc.
Source: © 2014 Dupre + Scott Apartment Advisors, Inc.

Table 3.5-6
Rental Market Vacancy and Average Rent: 1-Bedroom Units

	CT 87		Central Area/ Squire Park CRA		City of Seattle	
Month/Year	**Market Vacancy**	**Average Rent**	**Market Vacancy**	**Average Rent**	**Market Vacancy**	**Average Rent**
Spring 2008	8.20%	$748	4.82%	$1,036	2.89%	$1,015
Fall 2008	3.28%	$760	3.00%	$1,104	2.87%	$1,058
Spring 2009	12.86%	$761	7.87%	$1,076	5.22%	$1,057
Fall 2009	10.00%	$783	7.42%	$1,063	6.11%	$1,038
Spring 2010	5.71%	$745	5.74%	$1,024	4.92%	$1,022
Fall 2010	12.86%	$754	3.96%	$959	3.38%	$1,045
Spring 2011	1.64%	$820	2.13%	$993	3.30%	$1,056
Fall 2011	0.00%	$762	1.04%	$1,033	3.08%	$1,097
Spring 2012	2.86%	$799	3.63%	$1,088	2.98%	$1,114
Fall 2012	4.29%	$847	2.08%	$1,205	2.86%	$1,172
Spring 2013	1.41%	$820	1.37%	$1,208	2.50%	$1,226
Fall 2013	1.39%	$845	1.93%	$1,269	2.78%	$1,279

Note: The majority (approximately 77 percent) of the units in CT 87 are one-bedroom units.
Source: © 2014 Dupre + Scott Apartment Advisors, Inc.

Table 3.5-7
Rental Market Vacancy and Average Rent: 2-Bedroom/1-Bath Units

	CT 87		Central Area/ Squire Park CRA		City of Seattle	
Month/Year	**Market Vacancy**	**Average Rent**	**Market Vacancy**	**Average Rent**	**Market Vacancy**	**Average Rent**
Spring 2008	8.20%	$748	0.00%	$1,135	2.89%	$1,109
Fall 2008	3.28%	$760	3.45%	$1,191	2.47%	$1,131
Spring 2009	12.86%	$761	2.94%	$1,029	4.92%	$1,171
Fall 2009	10.00%	$783	2.94%	$1,030	5.20%	$1,155
Spring 2010	5.71%	$745	0.00%	$993	5.18%	$1,132
Fall 2010	12.86%	$754	4.00%	$1,170	3.61%	$1,153
Spring 2011	1.64%	$820	1.10%	$1,129	3.62%	$1,165
Fall 2011	0.00%	$762	3.85%	$1,022	3.13%	$1,230
Spring 2012	2.86%	$799	0.94%	$1,176	2.66%	$1,243
Fall 2012	4.29%	$847	1.25%	$1,140	3.13%	$1,331
Spring 2013	1.41%	$820	4.11%	$1,141	2.66%	$1,410
Fall 2013	1.39%	$845	2.74%	$1,205	2.57%	$1,466

Note: Approximately 21 percent of the units in CT 87 are two-bedroom/one-bath units.

Table 3.5-8
Rental Market Vacancy and Average Rent: 2-Bedroom/2-Bath Units

	CT 87*		Central Area/ Squire Park CRA		City of Seattle	
Month/Year	Market Vacancy	Average Rent	Market Vacancy	Average Rent	Market Vacancy	Average Rent
Spring 2008	n/a	n/a	9.74%	$1,599	4.66%	$1,569
Fall 2008	n/a	n/a	9.09%	$1,654	4.99%	$1,619
Spring 2009	n/a	n/a	7.14%	$1,603	6.76%	$1,611
Fall 2009	n/a	n/a	11.45%	$1,462	6.27%	$1,608
Spring 2010	n/a	n/a	11.45%	$1,469	5.46%	$1,606
Fall 2010	n/a	n/a	5.42%	$1,501	4.35%	$1,639
Spring 2011	n/a	n/a	11.45%	$1,399	3.77%	$1,671
Fall 2011	n/a	n/a	13.01%	$1,514	5.05%	$1,739
Spring 2012	n/a	n/a	2.41%	$1,613	3.36%	$1,735
Fall 2012	n/a	n/a	3.09%	$1,653	4.19%	$1,806
Spring 2013	n/a	n/a	1.41%	$1,727	2.42%	$1,908
Fall 2013	n/a	n/a	4.60%	$1,895	3.50%	$1,958

Note: There are no two-bedroom/two-bath units in CT 87.
Source: © 2014 Dupre + Scott Apartment Advisors, Inc.

Table 3.5-9
Rental Market Vacancy and Average Rent: 3-Bedroom/2-Bath Units

	CT 87*		Central Area/ Squire Park CRA		City of Seattle	
Month/Year	Market Vacancy	Average Rent	Market Vacancy	Average Rent	Market Vacancy	Average Rent
Spring 2008	n/a	n/a	0.00%	$2,208	3.79%	$1,731
Fall 2008	n/a	n/a	0.00%	$2,286	5.77%	$1,849
Spring 2009	n/a	n/a	0.00%	$1,530	4.00%	$1,846
Fall 2009	n/a	n/a	9.09%	$1,503	3.66%	$1,857
Spring 2010	n/a	n/a	9.09%	$1,646	3.59%	$1,839
Fall 2010	n/a	n/a	13.64%	$1,508	4.37%	$1,835
Spring 2011	n/a	n/a	0.00%	$1,636	3.60%	$1,905
Fall 2011	n/a	n/a	8.33%	$1,732	3.55%	$1,917
Spring 2012	n/a	n/a	6.25%	$1,728	1.80%	$2,001
Fall 2012	n/a	n/a	0.00%	$1,820	2.45%	$2,056
Spring 2013	n/a	n/a	7.69%	$1,912	1.40%	$2,090
Fall 2013	n/a	n/a	0.00%	$1,965	2.79%	$2,310

Note: There are no three-bedroom/two-bath units in CT 87.
Source: © 2014 Dupre + Scott Apartment Advisors, Inc.

Rental Affordability

According to the U.S. Department of Housing and Urban Development (HUD), households that pay more than 30 percent of their income for housing are considered cost burdened and may have difficulty affording necessities such as food, clothing, transportation and medical care.

Table 3.5-1010 shows that the city's rental housing is generally not affordable (renters pay over 30 percent of their income). CT 87 has 48.9 percent of households in renter-occupied units that pay over 30 percent of their household income for rent. City-wide, 47.3 percent of households in renter-occupied units pay over 30 percent of the household income for rent.

Table 3.5-10
Gross Rent as a Percentage of Household Income 2008-2012 ACS; 5-year Estimates

Renter-occupied housing units	CT 87	Central/Squire Park CRA	Central Neighborhood District	Seattle
Less than 15%	12.0%	11.9%	12.9%	12.1%
15 to 19.9%	6.1%	12.2%	11.7%	13.4%
20 to 24.9%	11.6%	15.2%	13.8%	14.5%
25 to 29.9%	21.5%	16.1%	13.9%	12.7%
30 to 34.5%	16.3%	10.3%	10.1%	9.1%
35% or more	32.6%	34.3%	37.7%	38.2%
Over 30%	48.9%	44.6%	47.8%	47.3%
Not computed	n/a	n/a	n/a	n/a

Source: U.S. Census Bureau, 2008-2012 ACS

Hotel Availability

Swedish has a 29-room hotel on its campus (Inn at Cherry Hill) that offers nearby accommodations to patient visitors, patients arriving the day before a procedure, or patients who may want to stay 1 to 2 days after a procedure. There are other hotels within 1 to 2 miles of the campus that offer a price range in accommodations, including the Silver Cloud Hotel at 1100 Broadway, the Inn at Virginia Mason at 1006 Spring Street, the Sorrento Hotel at 900 Madison Street, and other hotels in downtown Seattle.

3.5.3 Impacts

The constructions impacts are discussed in Section 3.9**.** The following is a discussion of housing impacts from implementation and operation of the MIMP.

3.5.3.1 Alternative 1 – No Build

In 2012, there were 165 hospital-based doctors, 115 staff doctors, and 2,123 other employees present during normal weekday daytime hours. With Alternative 1 – No Build, staffing and patient levels would minimally increase over current levels. Housing needs relative to this increase would be a small percentage of the area's housing stock.

Swedish Cherry Hill would continue to provide hotel accommodations at the Inn at Cherry Hill for families and patients awaiting care. The Inn currently has 29 rooms.

3.5.3.2 Alternatives 8, 9, and 10

With Alternatives 8, 9, and 10, staffing and patient levels would increase over current levels. The number of hospital based doctors would increase from 165 (year 2012) to 410 at full build out of Alternative 8, or 385 at full build out of Alternative 9 and 10. Staff doctors would increase from 115 (year 2012) to 155 at fill build out of any of the three Build Alternatives. Other staff present during peak hours would increase from 2,123 to a range of 4,154 (Alternatives 9 and 10) to 4,246 (Alternative 8). These staffing increases would occur incrementally over the next 30 years as new projects are developed. Housing needs relative to these increases are expected to continue to be a small percentage of the area's housing stock.

Since there are no occupied housing units within the MIO boundary, there would be no direct impacts to housing or displacement of residents. Implementation of the MIMP would require demolition of two vacant residential structures on 18th Avenue and permanently remove these units and the rest of the east side of the campus from the potential future housing stock.

Implementation of the proposed MIMP would not affect the house located at 1522 E Jefferson Street as the property is not owned by Swedish or Sabey and there are no plans within the proposed MIMP to redevelop the site.

Swedish is proposing to increase the size of the long-term care facility. The current size of the nursing home is 43,000 gross SF and contains 99 beds. With Alternative 8, Swedish would increase the overall size to a total of 220,000 gross SF, and would include approximately 220 beds. With Alternative 9 and 10, the total size would be 93,000 gross SF, and would include approximately 149 beds.

Swedish is proposing to expand the hotel accommodations for families and patients awaiting care at the patient family hotel. Alternative 8 would increase the square-footage of the hotel from 12,500 gross SF to 80,000 gross SF, and provide 80 rooms. Alternative 9 and 10 would increase the square-footage of the hotel to 40,000 gross SF, and provide 40 rooms.

3.5.4 Mitigation Measures

No mitigation is proposed as there are no direct impacts to housing.

3.5.5 Secondary and Cumulative Impacts

If one of the Build Alternatives were selected, there would be a greater need for permanent housing within the City due to the increased employment on the Swedish Cherry Hill campus. Patient visitors and families may increase demand for hotel rooms in the area. It is possible that increases in employment associated with redevelopment of the campus could result in an increased demand for housing in the vicinity. It is likely that permanent housing demand would be dispersed throughout the region.

Redevelopment of the eastern portion of the campus (the half-block within the existing MIO between 18th and 19th Avenues between E Jefferson and E Cherry Streets) for hospital-related uses would permanently remove approximately 1.75 acres of land area from available supply[10] that could be redeveloped for residential uses in the future.

3.5.6 Significant Unavoidable Adverse Impacts

No significant unavoidable adverse impacts are anticipated.

[10] The total square-footage of the underlying parcels is 76,401 SF. The underlying zoning (MIO-37-SF-5000) could accommodate from 10 to 15 single-family lots: 10 lots if the existing structures were to remain and the undeveloped area used as parking (50,801 SF) were developed; up to 13 lots if the total area were redeveloped for single-family housing (King County Recorder's Office 2014 and City of Seattle 2014).

3.6 Historic Resources

This section of the Draft EIS describes existing historic resources in the Swedish Medical Center/Cherry Hill MIO boundary area and historic structures in the general vicinity of the campus; and analyzes potential impacts that could result from development of the proposed MIMP or alternatives.

3.6.1 Policy Context

The SMC contains specific provisions that describe the scope of the SEPA analysis for the historic resources analysis. Relevant policies from SMC 25.05.675 are provided below.

3.6.1.1 Historic Preservation Policies

a. *It is the City's policy to maintain and preserve significant historic sites and structures and to provide the opportunity for analysis of archaeological sites.*
b. *For projects involving structures or sites that have been designated as historic landmarks, compliance with the Landmarks Preservation Ordinance 25.12 shall constitute compliance with the policy set forth in subsection (a.) above.*
c. *For projects involving structures or sites that are not yet designated as historical landmarks but which appear to meet the criteria for designation, the decision maker, or any interested person may refer the site or structure to the Landmarks Preservation Board for consideration. If the Board approves the site or structure for Nomination as an historic landmark, consideration of the site or structure for designation as an historic landmark and application of controls and incentives shall proceed as provided by the Landmarks Preservation Ordinance 25.12. If the resource is rejected for Nomination, the project shall not be conditioned or denied for historical preservation purposes, except pursuant to paragraphs d. or e. of this subsection.*
d. *When a project is proposed adjacent to or across the street from a designated site or structure, the decision maker shall refer the proposal to the City's Historic Preservation Officer for an assessment of any adverse impacts on the designated landmark and for comments on possible mitigating measures. Mitigation may be required to insure the compatibility of the proposed project with the color, material and architectural character of the designated landmark and to reduce impacts on the character of the landmark's site. Subject to the Overview Policy set forth in SMC Section 25.05.665, mitigating measures may be required and are limited to the following:*
    i. *Sympathetic façade treatment;*
    ii. *Sympathetic street treatment;*
    iii. *Sympathetic design treatment; and*
    iv. *Reconfiguration of the project and/or relocation of the project on the project site; provided that mitigating measures shall not include reductions in a project's gross floor area.*
e. *On sites with potential archaeological significance, the decision maker may require an assessment of the archaeological potential of the site. Subject to the*

criteria of the Overview Policy set forth in SMC Section 25.05.665, mitigating measures which may be required to mitigate adverse impacts to an archaeological site include, but are not limited to:

i. *Relocation of the project on the site;*
ii. *Providing markers, plaques, or recognition of discovery;*
iii. *Imposing a delay of as much as ninety (90) days (or more than ninety (90) days for extraordinary circumstances) to allow archaeological artifacts and information to be analyzed; and*
iv. *Excavation and recovery of artifacts.*

3.6.1.2 Regulatory Framework

Seattle's SEPA polices are outlined in SMC 25.05; with regard to historic buildings, SMC 25.05.675 notes that the City protects historic resources through the Landmarks Preservation Ordinance (Ordinance #106348), as administered by the Landmarks Preservation Board.

Since 1973, Seattle has designated more than 350 individual sites, buildings, vehicles, vessels, and street clocks as City Landmarks. An object, site, or improvement (i.e., resource) which is more than 25 years old may be designated for preservation as a landmark site or landmark if it has significant character, interest, or value as part of the development; heritage or cultural characteristics of the City, state, or nation; if it has integrity or the ability to convey its significance; and the City's Landmarks Preservation Board determines that it satisfies one or more of the following criteria:

- It is the location of or is associated in a significant way with an historic event with a significant effect upon the community, city, state, or nation.
- It is associated in a significant way with the life of a person important in the history of the city, state, or nation.
- It is associated in a significant way with a significant aspect of the cultural, political, or economic heritage of the community, city, state or nation.
- It embodies the distinctive visible characteristics of an architectural style, period, or a method of construction.
- It is an outstanding work of a designer or builder.
- Because of its prominence of spatial location, contrasts of siting, age, or scale, it is an easily identifiable visual feature of its neighborhood or the city and contributes to the distinctive quality or identity of such neighborhood or City.

The Landmarks Ordinance further stipulates that a Certificate of Approval (COA) must be obtained from the City's Landmarks Preservation Board before alterations or significant changes may be made to specific features or characteristics of a City Landmark, which have been identified in the approved nomination, the Landmarks Preservation Board's report on designation, or subject to control in a Controls and Incentives Agreement as identified in the associated City designation ordinance.

In February 2014, DPD and the DON, which administers the City's Historic Preservation Program, updated and amended their inter-local agreement relating to the review of potential historic resources during the environmental review process of a project. The environmental review threshold of non-residential projects is 12,000 gross SF for projects that have an underlying zoning of commercial, manufacturing, or industrial zoning classification of C1, C2, Seattle Mixed (SM), or Industrial; and 4,000 gross SF for non-residential projects in all other zones. The environmental review threshold for residential projects is: 4 dwelling units in gross SF, RSL, LR1, NC1, NC2, NC3, C1, C2, and Industrial zones; 6 dwelling units in the LR2 zone; 8 dwelling units in the LR3 zone; and 20 dwelling units in MR, HR, SM, and Downtown zones.

This process pertains to designated City Landmarks, as well as those resources that are potentially eligible for designation as City Landmarks. If a resource is more than 50 years old; public comment suggests that it is potentially eligible for designation; it has been previously identified by a historic resources inventory; the resource is not currently a designated City Landmark; or it is presently undergoing evaluation by the City's Landmarks Preservation Board; an analysis of the resource's eligibility for designation (referred to as a "SEPA Appendix A," or an "Appendix A," submittal) is required to be filed with DPD at the time of the MUP Application that proposes to modify or replace the resource.

In general, the referral "SEPA Appendix A," contains information regarding the building design and construction, the architect, builder, and noteworthy events that may have occurred at a site. Based on this and supplemental information, the Historic Preservation Officer determines if the building appears to meet any of the criteria for landmarks designation.

DPD transmits the project "SEPA Appendix A" to DON's Historic Preservation Program, for the City's Preservation Officer's (CHPO). The CHPO may request additional information, or reply that the resource appears to either meet or not meet designation criteria. If the CHPO indicates that the resource is potentially eligible for designation, a Landmark Nomination must be prepared for review by the City's Landmarks Preservation Board.

In addition to the City's Landmark program, properties may also be eligible for listing in the National Register of Historic Places or by the State of Washington in the Washington Heritage Register.

The National Register of Historic Places (NHRP) is administered by the National Park Service and is the official federal list of districts, sites, buildings, structures and objects significant in American history, architecture, archaeology, engineering and culture. To be eligible for listing in the National Register, a property must have integrity, which is the "*ability of a property to convey its significance*," and must meet at least one of four possible criteria related to significant events in history, association with the lives of significant persons, embodiment of distinctive characteristics, or yield information important in prehistory or history.

The Washington Heritage Register is an official listing of historically significant sites and properties within the State. The Washington State Department of Archaeology and Historic

Preservation (DAHP) maintains this list. Properties that are listed in the federal NRHP are automatically included in the Washington Heritage Register.

3.6.2 Affected Environment

3.6.2.1 Squire Park Neighborhood

The Swedish Cherry Hill Medical Center Scoping Document, June 2013, indicated that historic resources in the Squire Park Neighborhood should be addressed. The Swedish Cherry Hill campus is located within Seattle's Squire Park neighborhood, an area that was initially developed in the 1880s and 1890s. Squire Park is defined in this analysis as the area bordered by East Union Street on the north, 23rd Avenue on the east, South Jackson Street on the south, and 12th Avenue on the west.

The Squire Park Neighborhood, located within Seattle's greater Central Area, is named after the plat centrally located between 12th Avenue and 20th Avenue, with East Cherry Street as its northern border and a line 1-block deep, south of East Alder Street. Watson O. Squire (1838 to 1926), a munitions dealer, and his wife Ida, the granddaughter of the founder of the Remington Arms Company, filed the Squire Park Addition, originally a portion of the Carson D. Boren Donation Land Claim, on November 11, 1890. The Walla Walla plat lies to the east, also filed in 1890. The Renton's Addition, filed in 1889, makes up the northeastern corner of the neighborhood, and H.L. Yesler's 1st Addition abuts the Squire Park Addition on the south. The 40-block Edes and Knight Addition, where the Swedish Cherry Hill campus is located, lies to the north and west of the Squire Park addition. Originally filed in 1870, it is considered one of the city's earliest large plats (re-platted in 1890).

There were approximately 400 plats filed outside of Seattle's central business district in the 2 years following the Great Fire of 1889. New regulations required all new buildings in the downtown core to be of fireproof construction, forcing wood-frame residential building outward to new suburban neighborhoods, where newly platted lots quickly filled with new homes financed by banks and investors capitalizing on the boom following the fire. Cable car and streetcar lines were built to both serve and generate interest in these new neighborhoods. Within 12 months of the completion of the Yesler Way cable car line to Lake Washington in 1888, approximately 1,569 homes were built within 3 blocks of the cable car line. In 1890, another cable car line was constructed along Madison Street to Madison Park, generating additional construction in the northern portion of the neighborhood. By 1896, another line was completed running from downtown via James and Jefferson Streets (Sheridan 2009).

Squire Park and the larger Central Area developed into a diverse residential neighborhood, becoming the home to many racial and ethnic minorities over the years, including African Americans, Japanese, Filipino, and Jewish populations.

African-American pioneer George Grose purchased a 12-acre tract east of 23rd Street and south of Madison Street from Henry Yesler in 1882, and moved to his former ranch in 1891, after the destruction of his hotel and saloon in the Great Fire of 1889 (Mumford 1980). Other African-

American settlers followed after Grose, and soon African-American residences and businesses were located south along 23rd Avenue between Yesler Way and East Roy Street (Schmid 1944). By 1900, the East Madison area became known as the “colored colony” (Mumford 1980). To better serve its members, the African Methodist Church moved to 14th and Pine, and the Mt. Zion Baptist Church relocated to 19th Avenue and East Madison (Schmid 1944). The African-American population remained relatively small in Seattle, not exceeding 4,000, until the demand for military/industrial workers during World War II attracted many workers from the East and South, many of whom were African-Americans (Schmid 1944). At that time the Central Area was one of the few locations where African-American residents could purchase property and avoid hostility from neighbors. The Central Area, including Squire Park, has been particularly associated with the African-American community from the mid-20th century to the present.

Much of the Central Area was also predominantly Jewish before World War I, and numerous institutional buildings from this period remain near Squire Park. These include the Congregation Bikur Cholim (1912 to 1915, B. Marcus Priteca, altered, now Langston Hughes Cultural Center, City Landmark) at the southwestern corner of East Yesler Way and 18th Avenue; the Herzl Congregation (1956, F. Edward Cushman, altered, now Odessa Brown Children’s Clinic) at the southeastern corner of East Yesler Way and 21st Avenue; and Temple de Hirsch (1906 to 2008, Julian Everett, demolished) between East Pike and East Union Streets and between 15th and 16th Avenues. Although the original synagogue Temple de Hirsch was demolished, the existing synagogue and school continues to serve the Jewish community; after World War II, many in the Jewish community moved outside the Central District and established new synagogues in Seward Park, Mercer Island, and Bellevue (Sheridan 2009).

A substantial Japanese community also developed several blocks to the southwest of Squire Park near the vicinity of Yesler Way and Rainier Avenue South, becoming known as “Japan Town.” The Mary Knoll sisters established Our Lady Queen of Martyrs parish in 1925, and by that time had a church, a school, and an orphanage for Japanese and Filipino Catholic children. Japanese-Americans also owned many businesses near and along Yesler Way and located a number of important institutions in this area. Following the internment of Japanese-Americans during World War II, relatively few Japanese returned to the area and the Our Lady Queen of Martyrs parish was closed in 1953.

T.T. Minor School (1890, Saunders and Houghton) was the first public school serving the area, constructed just north of the Squire Park Neighborhood on East Union Street between 16th and 18th Streets. The school was expanded in 1893 to ease overcrowding. The building was demolished in 1940, and replaced by a new 1-story concrete and brick masonry building (1940, Naramore, Bain, Brady & Johanson). By 1970, prior to the Seattle School Districts voluntary racial transfer program, 70 percent of the student population was African-American. The school continues to serve the community as a K-4 school (Thompson and Marr 2002).
The second public school serving the area was Pacific School (1893), which opened in 1893, across 12th Avenue between Jefferson and John Streets at the western edge of Squire Park. By 1901, the school had more than 700 students, attesting to the rapid growth of the

neighborhood. The building was determined to be unsafe and was closed in 1976, and demolished by Seattle University for use as an athletic field (Thompson and Marr 2002).

In 1890, the Society of Jesus (the Jesuits) purchased nine lots at southeast corner of Broadway and East Madison Street, 3 blocks west of Squire Park for use as a Jesuit school (HistoryLink.org 2001a). In 1892, the parish and school of the Immaculate Conception were established, and later that year some classes were held at their new campus in the former home of the Woman's Christian Temperance Union (HistoryLink.org 1999). The School's first new permanent building, (1894, John Parkinson, now Garrand Hall) was consecrated on December 8, 1894, and the School reincorporated as Seattle College in 1898 (HistoryLink.org 1999). The College relocated to Interlaken in 1919 (now Seattle Preparatory School), but returned to First Hill in 1931 (HistoryLink.org 1999). Enrollment increased during and after World War II, and the College expanded its campus by acquiring nearby properties. Seattle College was reincorporated as Seattle University in 1948 (HistoryLink.org 2001b). The University began an eventual process of converting its acquired properties to educational uses, creating a connected campus centered between Madison and Jefferson Streets, from Broadway to 12th Avenue (Sheridan 2009). In 1971, the campus expanded into the boundaries of the Squire Park Neighborhood with a gymnasium (presently known as the Connelly Center) on the eastern side of 14th Avenue between East Cherry and East Jefferson Streets. Seattle University has continued to expand its ownership interests to other properties east of 12th Avenue (Sheridan 2009).

In 1906, the Immaculate Conception parish completed the Italianate Church of the Immaculate Conception (a City Landmark) in the Squire Park Neighborhood at the southeastern corner of East Marion Street and 18th Avenue. The parish later completed a school building (1910, Beezer Brothers), and rectory (1914, Beezer Brothers) on the same block, south of the church (Wilma 2001). In 1941, the City completed a large public housing project called Yesler Terrace on a 22-acre site near the southwestern edge of Squire Park. Funded by then President Franklin Roosevelt's New Deal Legislation, the Seattle Housing Authority constructed 700 housing units on what was considered a blighted area within Henry Yesler's original Donation Land Claim. The Authority is presently redeveloping the project to provide enhanced affordable housing.

A significant commercial and light-industrial district developed on the western side of the Squire Park neighborhood in the vicinity of 12th Avenue and East Cherry Street between the early 1900s, and into the 1950s. The western areas of Squire Park (blocks 7 through 10), just east of 12th Avenue, were re-platted several years ago to form smaller blocks. The re-platting allowed more intense development and re-development. This commercial area is thriving today due to the dramatic growth of Seattle University in recent years (Sheridan 2009).

The King County Youth Service Center, that includes juvenile court, is located in the southern portion of the Squire Park Neighborhood, occupying 6 acres between 12th and 14th Avenues at East Alder Street. The building was constructed in 1951, and has been expanded and remodeled several times since its construction.

After World War II, booming development in the suburbs surrounding Seattle drew the middle-class population away from the Central Area and Squire Park. Lower middle-class and elderly populations remained in the Central Area. The area suffered from blight and disinvestment until the early 1990s, when the technology boom and a rising population in the City caused more middle-class populations to move back to the Central Area. This transformation of the Central Area and Squire Park continues today, marked by general economic prosperity, community efforts, and greater investment in housing and businesses in the area (Sheridan 2009).

The Squire Park Neighborhood, as one of Seattle's earliest residential neighborhoods, presently contains 10 designated City Landmarks, including the original 1910 Providence Hospital:

- Seattle Fire Station #6, 101 23rd Avenue
- Congregation Bikur Cholem/Langston Hughes Center, 104 17th Avenue
- Washington Hall, 153 14th Avenue
- Providence Hospital/James Tower, 521 17th Avenue
- Coca-Cola Bottling Company, 711 14th Avenue
- Seattle Fire Station #23/Center Stone, 722 18th Avenue
- Immaculate Conception Church, 820 18th Avenue
- Victorian House, 1414 South Washington Street
- George Washington Carmack House, 1522 East Jefferson Street
- Yesler Houses/Prevost Dr. Houses, 103, 107, and 109 23rd Avenue

Three properties within the neighborhood are listed in the National Register of Historic Places. They are also designated City Landmarks:

- Washington Hall, 153 14th Avenue
- Seattle Fire Station #23/Center Stone, 722 18th Avenue
- Yesler Houses/Prevost Dr. Houses, 103, 107, and 109 23rd Avenue

Three additional properties or sites have also been identified in the Washington State DAHP's statewide database as possibly being eligible for listing in the NHRP:

- YWCA King County, 301 23rd Avenue
- Residence, 1311 Spruce Street
- Spruce Park Apartments, 1901 East Fir Street

In 2000, the City began a systematic and comprehensive effort to survey and inventory historic resources in the City. To date, surveys and inventories of eight neighborhoods have been completed as well as neighborhood commercial districts and residential properties built prior to 1906. Although a comprehensive survey of the Squire Park Neighborhood has not yet been completed, residential buildings built prior to 1906, and commercial properties with the neighborhood have been surveyed, with approximately 250 properties and sites identified by surveyors employed by the City as being potentially eligible for Designation as City Landmarks.

Approximately 20 additional properties were identified during the preparation of this report, but have not been added to the City of Seattle's database of potential historic resources. See Figure 3.6–1 for the location of the designated historic buildings or identified potential historic resources within the Squire Park Neighborhood.

3.6.2.2 Swedish Cherry Hill Campus

Initial Development

The major institution within the Squire Park Neighborhood continues to be Providence Hospital (1907 to 2012, Somervell & Cote, altered, City Landmark) now known as Swedish Cherry Hill. The Sisters of Providence, originally led in the Northwest by Mother Joseph (1823 to 1902) purchased a full block in the Squire Park neighborhood in 1906, relocating their operation from their original hospital location, which stood on the block between Spring and Madison Streets, and 5th and 6th Avenues. The new hospital in Squire Park was designed by architects Somervell & Coté, cost approximately $750,000, and opened in 1910 (BOLA 2002).

Providence Hospital was one of the first hospitals in the country to be approved by the American College of Surgeons for intern and residence training, and soon began an affiliation with Seattle University developing an accredited School of Nursing. The hospital also developed a recognized School of Medical Record Librarianship, X-ray Technology, and Medical Technology (BOLA 2002).

Original Hospital and Central Utility Plant Building (1909-1910)

The original 1910 hospital campus included the hospital building, a 6-story Classical Revival style reinforced concrete building with brick masonry cladding and comprised of approximately 220,000 gross SF. The Central Utility Plant Building was located on the eastern side of the site facing 18th Avenue with its main entrance centrally located between East Jefferson and East Cherry Streets.

The 2-story Central Utility Plant (also known as "Boiler Building"), measuring approximately 88 feet east to west and 82 feet north to south, was constructed with a similar aesthetic to the hospital and constructed around the same time on the southeastern corner of the block. It originally housed the hospital laundry and steam plant and featured a 156-foot-tall smoke stack (reconstructed in 2003, after the 2001 Nisqually Earthquake).

In the late 1920s, solarium additions designed by architect John Graham, Sr. were added to the northern and southern ends of the main corridor. The southern solarium remains a feature of the building.

In 1929, internal changes were made to lower floors of the original hospital to accommodate a bakery, kitchen, and dining areas. Additional mechanical, plumbing, and electrical upgrades were made over the years, as the hospital attempted to stay abreast of medical advancements. Other internal changes included updating laboratories, and additional office a conference room spaces.

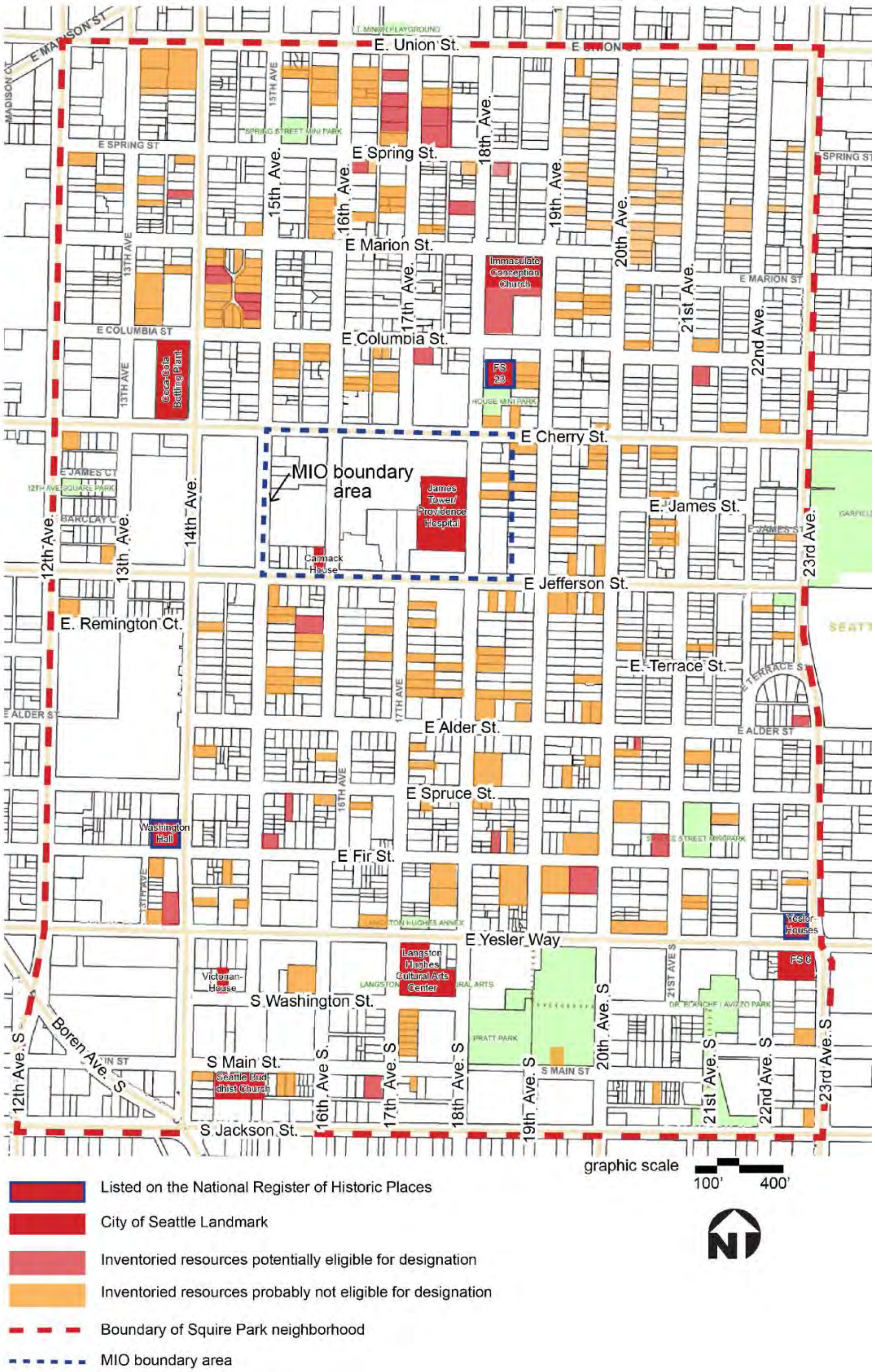


Figure 3.6–1

Squire Park Historic Resources

In the mid-1960s, the hospital's primary entrance sequence was shifted from the eastern primary façade to the west when the site was re-graded to allow direct automobile access to a new western entry addition accessed from driveways off of 17th Avenue. By the late 1960s, three brick-faced stair towers were added to the original hospital's eastern primary façade. By 2003, the interior of the original 1910 hospital building had little original fabric remaining with a suspended ceiling with florescent lighting, vinyl flooring, and composite wall panels. In the opinion of the Seattle Landmarks Preservation Board, however, the original 1910 hospital building and the 1927 solarium retained sufficient physical integrity to convey its historic significance and met at least one of the six landmark criterion, and the building was designated a City Landmark in 2003.

The building received extensive interior upgrades in 2005, which were approved by the Landmarks Preservation Board by issuance of a COA.

Later Development of the Hospital Campus

The Annex (1920)

The 2-story brick masonry clad 8,420 gross SF modern-style building, originally known as the Annex, was constructed around 1920, to the west of the Central Utility Plant and fronting East Jefferson Street. The building measures approximately 102 feet east to west and 42 feet north to south. The building originally contained large sewing and linen rooms on the main floor and second the floor was dedicated to residential use.

Providence Hall (1927-29, demolished)

A 5-story residence for nurses was constructed between 1927 and 1929, at the northeastern corner of the original block. The East Tower replaced it in the late 1980s.

17th Avenue and East James Street Vacation

Providence Hospital obtained all properties between 16th and 17th Avenues and between East Jefferson and East Cherry Streets between the 1960s and 1980s for hospital campus expansion. This allowed for street vacations on a stub of James Street running westward from 17th Avenue in 1977; and on 17th Avenue in 1989. Presently, the entire area contained between 16th and 17th Avenues and between East Jefferson and East Cherry Streets is one aggregated parcel.

West Nursing Tower (1964-66)

The 6-story brick masonry-clad reinforced-concrete West Nursing Tower, measuring approximately 80 feet east to west and 100 feet north to south, was constructed between 1964 and 1966 on the vacated 17th Street right-of-way fronting East Cherry Street. The building presently connects to the East Tower near its southeastern corner on levels one through six.

Center Building (1964-88, 2008)

The reinforced-concrete Center Building was completed by phases between 1964 and 1988, with a 2008 addition. It is a 4-story building running east to west from the western side of the original 1910 hospital building, nearly to the 16th Avenue right-of-way. The Center Building presently serves as the campus's main entry—visitors and patients arriving by car or on foot enter by way of a north to south sidewalk entering through an open steel structure with a space frame and glazed panel canopy. Internal corridors link the Center Building lobby to the main north-to-south corridor of the 1910 Building. Additionally, two sky-bridges provide links from the Center Building to other structures in the campus, with one leading westward to the Parking Garage across 16th Avenue, and another leading southward to the 1600 Jefferson/Medical Tower Building.

Cherry Hill Professional Building (1975)
The 4-story reinforced-concrete professional office building was constructed at the northwestern corner of the expanded site. The building is oriented north to south with its primary exterior entry off 16th Avenue. It is internally linked to the Center Building and the 1977 Surgery Addition.

Surgery Addition (1977)
A 1-story Surgery Addition was constructed in 1977 between the Cherry Hill Professional Building and the West Tower and adjoining the Center Building. The building is connected internally with its adjoining neighbors.

West Parking Garages (1977, 1981), and West Parking Garage Expansion (2009)
Campus parking is provided in three reinforced-concrete frame multi-story garages constructed in three phases and located on campus property, taking up the majority of a city block bordered by 15th and 16th Avenues and between East Jefferson and East Cherry Streets. The garage is connected to the Center Building and main entry to the hospital complex by an enclosed sky-bridge over the 16th Avenue, midway between East Jefferson and East Cherry Streets.

Jefferson Tower (1987)
An 8-story reinforced-concrete tower was constructed on the southwestern corner of the expanded hospital campus in 1987, housing a gift shop and café at street level and clinics and doctors' offices above. The building's primary southern façade fronts East Jefferson Street. A glazed sky-bridge connects it to the Central Building to the north.

East Tower (1989)
The 6-story reinforced-concrete East Tower replaced the Providence Hall in 1989. Clad with a combination of brick masonry veneer, and metal and glass panels, the Post-modern style building was designed as an addition to the original hospital, and therefore enclosed a large portion of the original building's northern wing. Several floor levels are linked internally in a continuous fashion by corridors. A large vehicle entry and service dock is located at grade level on the eastern side of the East Tower.

Plaza (2008)
This parking garage with a rooftop plaza was constructed in 2008 immediately south of the Center Building.

Northwest Kidney Center (2009)
The 3-story building is located at the northwestern corner of the existing hospital campus. It houses a community dialysis center, special care unit, and training areas for home hemodialysis and peritoneal dialysis.

See Figure 2-2 in the Project Description of this EIS for building locations.

3.6.2.3 Current MIO Boundary

The area defined by the current MIO boundary is defined by East Jefferson and East Cherry Streets on the south and north, and between 15th Avenue on the west and a half-block east of 18th Avenue on the east. The MIO is presently comprised of 12 medical buildings including parking garages; the former Hope Heart Institute building; two vacant residential buildings (all owned by Providence Health Care LLC, Sabey Corporation, or entities controlled by Sabey Corporation); the Seattle Medical and Rehab Center (555 16th Avenue) owned by Evergreen Health Care; and one vacant residential building (1522 East Jefferson Street, known as the George Washington Carmack House), owned by Perfect Wealth Investment LLC. The Carmack House is located within the existing MIO, but it not owned by either Swedish or Sabey, and there are no plans to redevelop the property as part of the proposed MIMP. See Figure 2-2 for the identification and location of all buildings within the current MIO boundary.

Two buildings within the current MIO are City Landmarks, the original 1910 Providence Hospital building and the attached southern solarium, and the George Washington Carmack House, located at the northwestern corner of East Jefferson Street and 17th Avenue.

All proposed changes to the exterior of the original 1910 Providence Hospital building and its connected solarium must be approved by the City Landmark Preservation Board through issuance of a DON Certificate of Approval.

The following controls imposed on the features and characteristics of the Providence 1910 Building (Ordinance 121588) were designated by the Board for preservation:

> *The owner must obtain a Certificate of Approval issued by the Board pursuant to SMC 25.12, or the time for denying a Certificate of Approval must have expired, before the owner may make alterations or significant changes to the following specific features or characteristics:*
>
> - *The exterior of the 1910 building and the 1927 solarium addition on the south side of the 1910 building;*
> - *The site of the 1910 building and of the 1927 solarium addition on the south side of the 1910 building.*
> - *No Certificate of Approval or approval by the City Historic Preservation Officer (CHPO) is required for the following:*

- *Any in-kind maintenance or repairs of the features on the exterior of the 1910 building and the 1927 solarium addition on the south side of the 1910 building.*
- *Minor landscaping including the removal or addition of the following: trees under 6 inches caliper, shrubs, perennials and annuals.*
- *Alterations to or demolition of the additions built in 1964, 1969, 1978 and 1988.*
- *Administrative review by the City Preservation Officer review is available for the following:*
- *For the designated areas of the building, the addition or elimination of duct conduits, HVAC vents, grilles, fire escapes, pipes, wiring, and other similar mechanical elements necessary for the normal operation of the building.*

The George Washington Carmack House has no controls imposed on it by City Landmarks Preservation Board and a corresponding designation ordinance, and thus can be altered or demolished without a City COA issued by the DON.

New construction adjacent or across the street from a designated City Landmark will be referred to DON's Historic Preservation Program for review, per SMC 25.05.675H2d.

The half-block on the eastern side of 18th Avenue and between East Jefferson and East Cherry Streets, also included in the current MIO boundary, includes three additional buildings, two vacant residential buildings, and the former Hope Heart Institute (1984 Addition) on the southern portion. The two residential buildings were reviewed by the DON in 2009. The northern building, 544 18th Avenue (ca. 1900), was viewed as ineligible for Nomination as a City Landmark by DON staff; and the southern building, 536 18th Avenue (1899), was nominated for Designation as a City Landmark in 2010 but denied by the Landmarks Preservation Board on February 17, 2010. The former Hope Heart Institute may be eligible for designation as a City Landmark due to its association with important cardiovascular research leading to several life-saving medical procedures.

None of the remaining buildings within the current MIO boundary have been nominated and/or designated as City Landmarks, nor are they located within a historic district, nor are they listed in the NRHP or the Washington Heritage Register.

Two of the medical buildings included in the original Providence Hospital Campus are over 50 years of age:

- Central Utility Plant (1909 to 2010)
- Annex (1920)

Proposed alterations or demolition of these buildings will require a historical analysis ("SEPA Appendix A;" see Section 3.6.1.2 above for explanation of "SEPA Appendix A") at the time of the submittal of the MUP and referral to the DON for review. Buildings over 50 years of age also meet the minimum age requirements for listing in the NRHP.

Two other buildings on the original campus will be 50 years old in 2016:

- West Nursing Center (1964 to 1966, a.k.a. the West Tower)
- Center Building (1964, 1988, 2008)

Proposed alterations or demolition of these buildings after 2015 will require historical analysis ("SEPA Appendix A") at the time of the submittal of the MUP and referral to the DON for review.

Eight other buildings included within the current MIO boundary are, or will be, 25 years old by 2014, thereby meeting minimum age eligibility for designation as a City Landmark and subject to possible nomination:

- Seattle Medical and Rehab Center (1974)
- Cherry Hill Professional Building (1975)
- Surgery Addition (1977)
- First West Parking Garage (1977)
- Second West Parking Garage (1981)
- Hope Care Institute Addition (1984)
- Jefferson Tower (1987)
- East Tower (1989)

See Figure 3.6–2 for the location of the designated historic buildings within the current MIO boundary.

3.6.2.4 Historic and Potential Historic Resources Adjacent to or Proximate to the Current and Proposed Expansion of the MIO

There are two residential buildings that are adjacent to the existing MIO's eastern boundary that have been identified within the City's Historic Resources Survey as an inventoried resource but appearing not eligible to meet the criteria for designation as a City Landmark in the opinion of the City's surveyor (see Figure 3.6-2). Neither have so far been evaluated in greater detail or nominated as possible City Landmarks. The former Fire Station #23 (1908, Julian F. Everett, now Center Stone), a City Landmark, is located approximately a half-block north of the current MIO boundary. Additionally, approximately 55 residential properties are located within 1-block of the current MIO area that have been identified within the City's Historic Resources Survey as an inventoried resource. Only four structures located on Figure 3.6-2 are shown as potentially eligible for designation as a City Landmark in the opinion of the City's surveyor; although none have so far been evaluated in greater detail or nominated as possible City of Seattle Landmarks. See Figure 3.6–2 for the location of the designated historic buildings or identified potential historic resources within the current and proposed expansion MIO boundary.

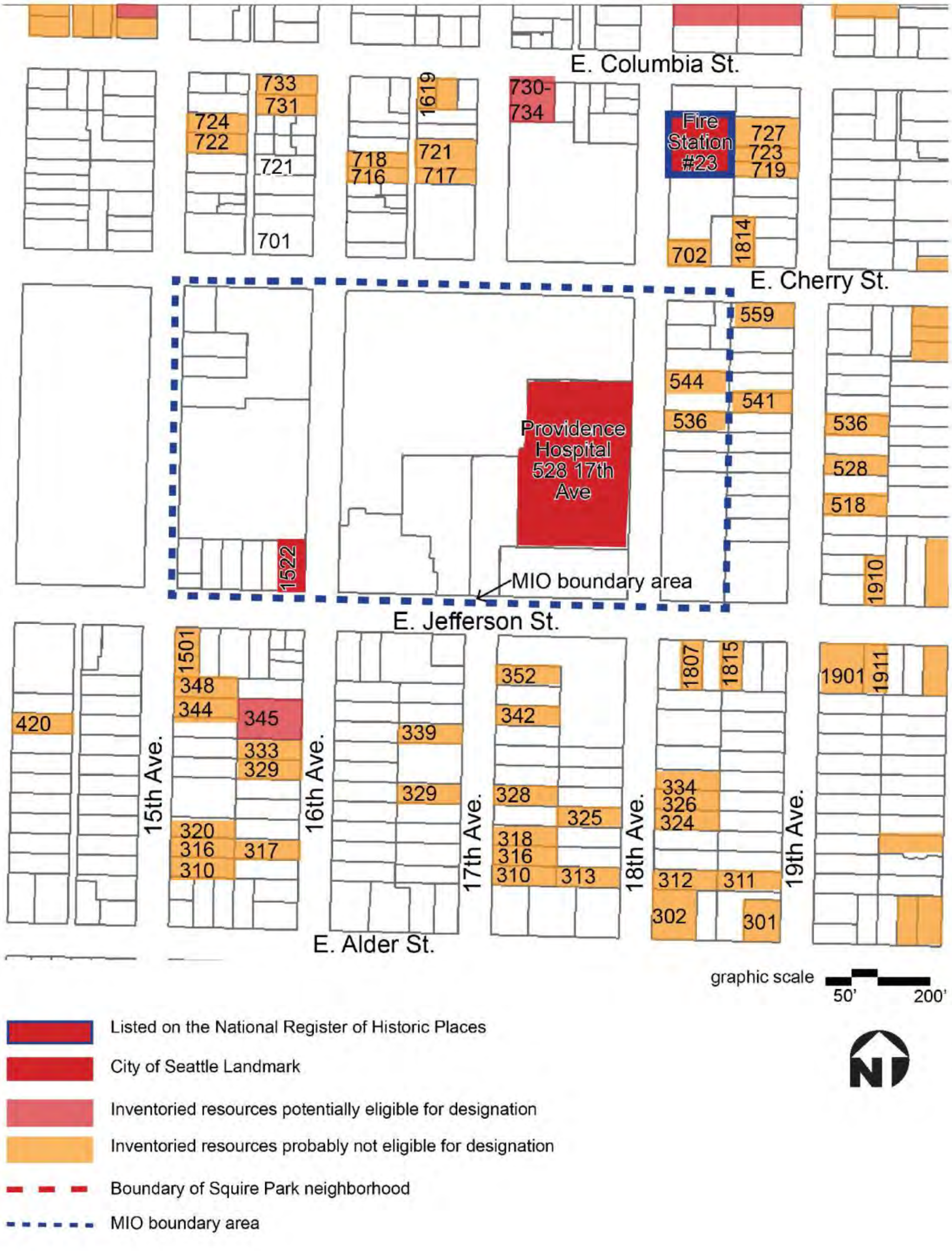


Figure 3.6–2

Historic Resources Surrounding Swedish Cherry Hill

3.6.3 Impacts

3.6.3.1 Alternative 1 – No Build

The No Build Alternative would involve no new building construction within the Swedish Cherry Hill MIO. Existing buildings would remain, and limited building remodeling would be expected to occur. No impacts to historic resources would be anticipated under the No Build Alternative.

3.6.3.2 Impacts Common to All Build Alternatives

Based on the City's interdepartmental procedures, at the time of a MUP application for development that would involve demolition of a building that is 50 years or older, a referral must be made from DPD to the City's Historic Preservation Officer.

If the Historic Preservation Officer determines the structure does not appear to meet the Landmark criteria, demolition of the structure would not be conditioned or denied for historic preservation purposes under SEPA. If the Historic Preservation Officer determines a structure appears to meet the criteria, the owner must submit a City of Seattle Nomination to the DON to be reviewed for completeness, and then submitted to the Landmark Preservation Board. If the Landmark Preservation Board votes to designate the building, a Controls and Incentives Agreement would be negotiated between the City Historic Preservation Officer and the property owner. Once an agreement has been reached and approved by the City's Landmark Preservation Board, a designation ordinance is forwarded to the City Council for approval.

No view impacts are associated with the any of the Build Alternatives, as all primary views of the 1910 Providence Hospital building and the attached southern solarium from adjacent public right-of-ways of the eastern, southern, and western facades remain essentially the same. The view to the northern façade of the building is presently nearly completely blocked by the adjacent East Tower building. Views from adjacent public right-of-ways of the George Washington Carmack House are unaffected.

3.6.3.3 Shadow Impacts

Alternative 8

Preliminary shade and shadow analysis associated with the full development of the proposed action are provided in Section 3.4 of this EIS. Impacts associated with increased shadows cast on exterior façades of the 1910 Providence Hospital building and the attached southern solarium are seasonal, with additional shading on the 1910 Providence Hospital building's eastern façade occurring during winter mornings from proposed buildings on the half-block to the east of 18th Avenue, as well as additional minor shading of the lower portion of the 1910 Providence Hospital building southern solarium during winter afternoons. Additional shading is also anticipated to affect the two potentially historic residential buildings (541 and 559 19th Avenue) that are adjacent to the existing MIO's eastern boundary in winter afternoons. Five other potentially historic residential buildings (702 18th Avenue, 1814 East Cherry Street, 719, 723, and 727 19th Avenue) that are proximate to, and to the northeast of the existing MIO boundary, will receive additional shading during winter afternoons. Fire Station #23, a City

Landmark, is also located northeast of the existing MIO boundary and will receive additional shading in winter afternoons.

Two potentially historic residential buildings (722 and 724 15th Avenue) located north of the MIO boundary will receive additional shading during winter mornings. Additional shading will occur to two potentially historic residential buildings (731 and 733 16th Avenue), located to the northwest of the MIO boundary in winter hours around noon. Some additional shading will also occur in winter afternoons to five potentially historic buildings (716 and 718 16th Avenue, 717 and 721 17th Avenue, and 1619 East Columbia Street) that are located north of the proposed MIO boundary.

Alternatives 9 and 10

Shadow impacts on historic structures from the development of Alternative 9 or 10 would be less than Alternative 8. There would be no additional shading to the 1910 Providence Hospital solarium, the four potentially historic residential buildings located at 722 and 724 15th Avenue; 731 and 733 16th Avenue, or the potentially historic building located 1619 East Columbia Street. Other shadow impacts would be the same as described for Alternative 8.

3.6.4 Mitigation Measures

Alternatives 8, 9, and 10 would be designed to comply with all the development requirements of the Controls and Incentives Agreement for the Providence 1910 Building (Ordinance 121588), the only City Landmark with a Controls and Incentives Agreement within the MIO area. A Controls and Incentives Agreement application would be made to the Landmark Preservation Board after completion of any MUP submittal to the City if required under the Controls and Incentives agreement. Under future SEPA review, adjacency review consistent City Policies for SEPA review may be required. The Landmark Preservation Board will decide if the proposal meets the requirements of the Controls and Incentives Agreement (see Section 3.6.1.1, *d*).

3.6.5 Secondary and Cumulative Impacts

The increase in staffing and patient levels at the hospital would contribute to secondary and cumulative changes to historic resources, both directly and indirectly. There would be increased demands for nearby retail/commercial and housing development to serve hospital staff, patients and visitors. There may be increased future demand to replace historic structures with other buildings to accommodate commercial and residential growth. Recent trends in economic development in the area (See Section 3.6.2.1) indicate that growth in the vicinity could also contribute to the preservation of certain historic resources.

3.6.6 Significant Unavoidable Adverse Impacts

With the mitigation noted, no significant unavoidable adverse impacts are anticipated.

3.7 Transportation

This section of the Draft EIS summarizes information included in Appendix C, Transportation Technical Report (Transpo 2014), including the transportation conditions on the Swedish Cherry Hill campus and in the site vicinity, and an assessment of the potential impacts to transportation from redevelopment under the EIS alternatives.

Swedish is proposing a MIMP for development over the next 15 to 25 years, or longer. Construction phasing would be dependent upon the height limits approved by the City Council in the MIMP, and the need to create an "empty chair" (i.e., empty developable space) in which to develop new buildings without first having to demolish an existing building that is still in use. Early development potential may include the east side of the campus along 18th Avenue and the redevelopment of the existing west side parking garage, or the site of the Cherry Hill Professional Building on the southeast corner of E Cherry Street and 16th Avenue.
Given the timeframe of the MIMP, 2 horizon years have been identified for analysis. This includes a long-term horizon year of 2040, as well as a short-term horizon year of 2023. This short-term horizon year evaluates the impacts of the early development potential.

Assumptions for the long- and short-term development scenario were provided by the applicant. Development assumed by 2023 is the same for all Build Alternatives (Alternatives 8, 9, and 10), and includes construction of approximately 1.16 million gross SF for a total of approximately 2.3 million gross SF by year 2023.

The following transportation elements are evaluated in this report:

- Street System
- Campus Access and Service Vehicle Loading
- Pedestrians and Bicycle Transportation
- Transit/Shuttle Service
- Traffic Volumes
- Traffic Operations
- Traffic Safety
- Parking

3.7.1 Policy Context

The SMC contains specific provisions that describe the scope of the SEPA analysis for the traffic and transportation element (SMC 25.05.675.R) and parking element (SMC 25.05.675.M). Relevant policies are provided below:

> *R. Traffic and Transportation.*
> > *1. Policy Background.*
> > > *a. Excessive traffic can adversely affect the stability, safety and character of Seattle's communities.*

b. Substantial traffic volumes associated with major projects may adversely impact surrounding areas.

c. Individual projects may create adverse impacts on transportation facilities which service such projects. Such impacts may result in a need for turn channelization, right-of-way dedication, street widening or other improvements including traffic signalization.

d. Seattle's land use policies call for decreasing reliance on the single occupant automobile and increased use of alternative transportation modes.

e. Regional traffic and transportation impacts arising as a result of downtown development have been addressed in substantial part by the Land Use Code.

2. Policies.

a. It is the City's policy to minimize or prevent adverse traffic impacts which would undermine the stability, safety and/or character of a neighborhood or surrounding areas.

b. In determining the necessary traffic and transportation impact mitigation, the decisionmaker shall examine the expected peak traffic and circulation pattern of the proposed project weighed against such factors as the availability of public transit; existing vehicular and pedestrian traffic conditions; accident history; the trend in local area development; parking characteristics of the immediate area; the use of the street as determined by the Seattle Department of Transportation's Seattle Comprehensive Transportation Plan; and the availability of goods, services and recreation within reasonable walking distance.

c. Mitigation of traffic and transportation impacts shall be permitted whether or not the project meets the criteria of the Overview Policy set forth in SMC Section 25.05.665

f. i. Mitigating measures which may be applied to projects outside of downtown may include, but are not limited to:

(A) Changes in access;

(B) Changes in the location, number and size of curb cuts and driveways;

(C) Provision of transit incentives including transit pass subsidies;

(D) Bicycle parking;

(E) Signage;

(F) Improvements to pedestrian and vehicular traffic operations including signalization, turn channelization, right-of-way dedication, street widening, or other improvements proportionate to the impacts of the project; and

(G) Transportation management plans.

ii. For projects outside downtown which result in adverse impacts, the decisionmaker may reduce the size and/or scale of the project only if the decisionmaker determines that the traffic improvements outlined under *subparagraph R2fi above would not be adequate to effectively mitigate the adverse impacts of the project.*

M. Parking.

1. Policy background.

a. Increased parking demand associated with development projects may adversely affect the availability of parking in an area.

b. Parking regulations to mitigate most parking impacts and to accommodate most of the cumulative effects of future projects on parking are implemented through the City's Land Use Code. However, in some neighborhoods, due to inadequate off-street parking, streets are unable to absorb parking spillover. The City recognizes that the cost of providing additional parking may have an adverse effect on the affordability of housing.

2. Policies.

a. It is the City's policy to minimize or prevent adverse parking impacts associated with development projects.

b. Subject to the overview and cumulative effects policies set forth in Sections 25.05.665 and 25.05.670, the decisionmaker may condition a project to mitigate the effects of development in an area on parking; provided that:

1) No SEPA authority is provided to mitigate the impact of development on parking availability in the Downtown and South Lake Union Urban Centers;

2) No SEPA authority is provided for the decision maker to mitigate the impact of development on parking availability for residential uses located within:

i. the Capitol Hill/First Hill Urban Center, the Uptown Urban Center, and the University District Urban Center, except the portion of the Ravenna urban village that is not within 1,320 feet of a street with frequent transit service, measured as the walking distance from the nearest transit stop to the lot line of the lot;

ii. the Station Area Overlay District; and

iii. portions of urban villages within 1,320 feet of a street with frequent transit service, measured as the walking distance from the nearest transit stop to the lot line of the lot;

d. If parking impact mitigation is authorized by this subsection 25.05.675.M, it may include but is not limited to:

1) Transportation management programs;

2) Parking management and allocation plans;

3) Incentives for the use of alternatives to single-occupancy vehicles, such as transit pass subsidies, parking fees, and provision of bicycle parking space;

4) Increased parking ratios; and

5) Reduced development densities to the extent that it can be shown that reduced parking spillover is likely to result; provided, that parking impact mitigation for multifamily development may not include reduction in development density.

3.7.2 Affected Environment

Figure 3.7-1 shows the overall study area defined for the analysis and highlights the study area intersections. The study area encompasses the area east of Interstate 5 (I-5), west of 23rd Avenue, north of S Dearborn Street and south of Pike Street. The key arterials of E Madison Street, E Cherry Street, James Street, and E Jefferson Street corridors as well as Broadway, 12th Avenue, and 23rd Avenue are included in the evaluation. The transportation analysis includes the evaluation of these corridors and 43 study intersections.

3.7.2.1 Street System

Swedish Cherry Hill is surrounded by residential neighborhoods to the north, east, and south. The Seattle University campus abuts the west side of the Swedish Cherry Hill campus. The neighborhoods located adjacent to the campus are served by residential streets, which include on-street parking and sidewalks. Parking is permitted on both sides of the roadways, resulting in narrow travel way widths where often only one car can pass at a time, depending on how vehicles are parked on the street.

Access to and from the regional roadways such as I-5 to the west is provided via E Cherry Street and E Jefferson Street. Local connections to the neighborhood from these roadways are generally provided via stop-controlled intersections, with E Cherry and E Jefferson Streets having the right-of-way. There are traffic signals at the E Cherry Street/18th Avenue and E Cherry Street/14th Avenue intersections to serve the neighborhoods north of the campus. There are no traffic signals along E Jefferson Street in the vicinity of the campus.

Regional access to the campus from the north (State Route [SR] 520) and the south (I-90) is provided via collector arterials such as E Madison Street, Rainier Avenue, and Broadway. These roadways range from 3- to 5-lane cross-sections.

Figure 3.7-1

Study Area and Intersections

The characteristics of these key roadways are summarized in Table 3.7-1. See Table 1 in Appendix C for characteristics of additional roadways in the vicinity of the campus.

Table 3.7-1
Characteristics of Major Roadways in Study Area

Roadway	Arterial Classification	Posted Speed Limit	Number of Travel Lanes	On-Street Parking?	Sidewalks?	Bicycle Facilities?
E Madison Street (Boren Avenue to 23rd Avenue)	Principal Arterial	30 mph	4 to 5 lanes	Some Blocks	Yes	No
E Cherry Street (James Street to 23rd Avenue)	Minor Arterial	30 mph	2 to 4 lanes	Some Blocks	Yes	Yes
E Jefferson Street (Broadway to 23rd Avenue)	Collector Arterial	30 mph	2 lanes	Most Blocks	Yes	Yes
Rainier Avenue SE	Principal Arterial	30 mph	4 to 6 lanes	No	Yes	No
Broadway	Minor Arterial	30 mph	4 to 5 lanes	Some Blocks	Yes	Yes

E Cherry Street forms the northern border of the campus and is classified as a minor arterial by the City. In the vicinity of the hospital, sidewalks, and parking are provided on both sides of this two-lane roadway. In addition, sharrows (i.e., indicating shared vehicle/bicycle travel ways) are provided along both sides of the roadway as well as bicycle lanes on the uphill portion of the corridor. The majority of the intersections along this corridor within the site vicinity are stop-controlled. Parking for the hospital or clinics can be accessed along 15th Avenue, 16th Avenue, and 18th Avenue off of E Cherry Street.

E Jefferson Street forms the southern boundary of the campus. In the vicinity of Swedish Cherry Hill campus, E Jefferson Street is classified as a collector arterial. Sidewalks and parking are provided on both sides of this two-lane roadway. In addition, sharrows are provided along the corridor as well as bicycle lanes along the uphill portions from 12th Avenue to 19th Avenue. All intersections between 12th Avenue and 23rd Avenue are stop controlled. There are also seven bus routes that operate along E Jefferson Street within the site vicinity. Access to the Swedish Cherry Hill parking areas is at 15th Avenue, 16th Avenue, and 18th Avenue off of E Jefferson Street.

15th Avenue provides access to existing parking structures and surface lots for the hospital and forms the western border of the Swedish Cherry Hill campus. Seattle University facilities are located on the west side of the roadway. In the vicinity of Swedish Cherry Hill, 15th Avenue is classified as an access street. Sidewalks are provided on both sides of this two-lane roadway and parking is permitted along the west side of the roadway only.

16th Avenue provides access to existing parking structures and surface lots for the campus. It also provides a north/south vehicular, pedestrian, and bicycle connection to and from the neighborhood. In the vicinity of Swedish Cherry Hill, 16th Avenue is classified as an access street. Sidewalks are provided on both sides of this two-lane roadway with some on-street parking allowed.

18th Avenue provides access to two Swedish Cherry Hill surface lots, with the eastern border of the campus located between 18th Avenue and 19th Avenue. In the vicinity of Swedish Cherry Hill, 18th Avenue is classified as an access street. Sidewalks are provided on both sides of this two-lane roadway as well as on-street parking along the west side. 18th Avenue is adjacent to the signed bicycle route that runs along 19th Avenue. A traffic signal exists at the E Cherry Street/18th Avenue intersection, providing a signalized connection for neighborhood traffic.

3.7.2.2 Campus Access and Service Vehicle Loading

There are several parking areas within the Swedish Cherry Hill campus that are available to staff, patients, and visitors. (See Figure 2 in Appendix C for existing locations). Access points to the Swedish Cherry Hill parking garages and surface lots are located primarily on 15th Avenue, 16th Avenue, and 18th Avenue between E Cherry Street and E Jefferson Street. Designated parking is provided for patients of the Northwest Kidney Center within a separated portion of the 16th Avenue Garage with vehicular access along 15th Avenue.

The primary access to the emergency department is provided via 16th Avenue. The entry to the emergency department is located south of E Cherry Street at the second driveway, which is one-way, inbound only. Ambulances, other emergency vehicles and patients enter the same driveway. In front of the emergency entrance, there are two parking spaces for ambulances and seven parking spaces for emergency room visitors.

The main truck access for the delivery of supplies is provided at two locations (See Figure 2 in Appendix C for existing locations):

- The 16th Avenue delivery area is located north of the emergency department entrance and primarily used for hospital services. This area includes multiple truck docks, parking for funeral home use, postal service, 12 general parking spaces, and 4 ADA-accessible spaces. There are two exits for vehicles in this area; one to the north, which connects to 16th Avenue, and one to the south exiting on to E Jefferson Street at 17th Avenue. The loading dock has approximately 10 scheduled deliveries per day and the potential for additional courier pick-ups or drop-offs that are typically not scheduled. The maneuvering area can accommodate backing movements onsite without using 16th Avenue.
- The 18th Avenue service area is located just south of E Cherry Street. There is a smaller service dock for the kitchen, James Tower, and Jefferson Tower. The loading dock typically has less than 10 deliveries per day with vehicles ranging from small vans to tractor trailers. Most of the vehicles access the loading area back-in and need to use 18th Avenue to complete the backing maneuver. Trash pick-up also occurs in this area for the dumpsters associated with James Tower.

There are also service areas accommodating smaller deliveries with vans or cars along 15th Avenue for the Northwest Kidney Center, along the alley between 15th Avenue and 16th Avenue for the Seattle Rehabilitation Center, and along 18th Avenue for the Central Utility Plant.

SMC 23.54.035 establishes requirements for off-street loading berths. Hospitals are identified as a high-demand use with each of the existing loading facilities needing to meet the following requirements:

- The 16th Avenue loading area services approximately 554,000 SF of building area and would require 17 loading berths per code. The area currently has two loading berths as well as some service entrances.
- The 18th Avenue loading area services approximately 515,000 SF of building and would require 16 loading berths per code. The area currently has one loading berth.

It should be noted that these loading facilities may have been constructed prior to the implementation of current code requirements and/or DPD Director Decisions may have modified the code requirements based on the specific needs of the buildings served by the loading facilities. Existing loading facilities are generally adequate to serve the needs of Swedish

Cherry Hill; however, there are some periods in the morning when food service deliveries are waiting along 18th Avenue to access the loading berth. This impact could be minimized through scheduling of deliveries to minimize overlap times especially given that there are less than 10 deliveries per day. The primary issue associated with the 18th loading facilities is that trucks need to back across the public right of way to reach the loading dock.

Trucks traveling between Swedish Cherry Hill and I-5 primarily use the arterials of E Cherry Street and E Jefferson Street. Loading facilities are served by the adjacent local access streets of 16th Avenue and 18th Avenue. The existing road network adequately accommodates trucks serving Swedish Cherry Hill and there are no observable deficiencies in the existing road network.

3.7.2.3 Pedestrian and Bicycle Transportation

Approximately 4 percent of employees commute to and from the campus by walking. In addition, all other travel to the campus ends in a walking trip whether connecting from vehicle parking, bicycle parking or transit. All of the streets within the vicinity of Swedish Cherry Hill campus generally have sidewalks on both sides. There are a limited number of pedestrian crossings along E Cherry Street and E Jefferson Street. Signalized pedestrian crossings are provided at the E Cherry Street/18th Avenue intersection. Unsignalized pedestrian crosswalks are also provided across E Cherry Street at 16th Avenue and across E Jefferson Street at 16th, 17th, and 18th Avenues.

Based on the Commuter Trip Reduction (CTR) surveys, approximately 2 percent of employees commute to and from the campus via bicycle. The campus currently provides 132 bicycle parking spaces for visitors and employees. In addition, lockers and showers are provided for employees.

Figure 3.7-2 illustrates the bicycle network within the study area. The primary north to south bike corridors included Broadway and 19th Avenue, which are delineated with sharrows[1]. 19th Avenue is a signed bicycle route. A bicycle lane is provided along 12th Avenue.

East to west bicycle connections in the study area are provided via E Cherry Street and E Jefferson Street, and predominantly identified by sharrows. Bicycle lanes are provided along portions of E Cherry Street traveling in the uphill direction, E Jefferson Street west of 19th Avenue, and E Yesler Way. Union Street, a signed bike route, has a combination of sharrows and bicycle lanes. The E Yesler Way bicycle route goes into the downtown.

[1] Sharrows are pavement markings used to delineate and identify a shared vehicle/bicycle travel lane.

Figure 3.7-2

Existing Bicycle Facilities

Traffic counts conducted at the study intersections included bicycle and pedestrian counts. The highest concentration of pedestrians in the study area is in the vicinity of the schools including Seattle University (west of Swedish Cherry Hill) and Garfield High School (east of the campus). In the immediate vicinity of the campus, pedestrian volumes are highest during the weekday PM peak hour. Adjacent to the campus, bicycle volumes were higher along E Jefferson Street as compared to E Cherry Street during both the weekday AM and PM peak hours.

3.7.2.4 Transit and Shuttle Service

King County Metro operates several routes within the vicinity of Swedish Cherry Hill. There are 8 King County Metro Transit routes within a half-mile (or 10- to 12-minute) walking distance of Swedish Cherry Hill. The service areas, operating hours, and headways are summarized in Table 2 in Appendix C. The headways range from 5 to 30 minutes during the weekday peak periods. Routes 3/4, 64, 84, 193, 211, and 303 serve Swedish Cherry Hill directly with a stop in each direction along E Jefferson Street at 17th Avenue adjacent to the campus. Nighttime service is provided by Route 84 (from 2:00 PM to 4:30 AM) and Route 34 (from 5:00 AM to 1:30 AM). All of the routes serving the campus have remaining capacity to accommodate additional riders during the weekday peak periods, Appendix C provides additional detail.

The inter-campus shuttle operated by Swedish serves the Swedish First Hill campus, Swedish Cherry Hill campus, and the Metropolitan Park offices. This service is offered free to staff and patients and runs Monday through Friday, except on holidays. This service operates between

6:30 AM and 5:30 PM. The service operates with 20-minute headways within the core hours of 10:00 AM to 2:00 PM and 40 minutes outside those hours.

King County Metro is currently experiencing a funding shortage and it is anticipated that in late 2014 there would be service cuts and changes to bus service. This will impact routes 4, 211, 64, and 193 serving the Swedish Cherry Hill campus. The impact of the changes in transit capacity is reflected in the No Build analysis.

3.7.2.5 Traffic Volumes

Traffic volumes within the study area were collected for the weekday AM (7:00 to 9:00 AM) and PM (4:00 to 6:00 PM) peak periods. Intersection turning movement counts were conducted in May, September, and October 2013, and January 2014. In addition to vehicles, the counts included bicycle and pedestrian volumes. Seattle University, located adjacent to the Swedish Cherry Hill campus, was in session during all counts. The weekday peak hour generally occurred from 7:30 to 8:30 AM during the morning, and 5:00 to 6:00 PM during the evening. The traffic volumes represent the sum of both directions of travel. Weekday AM peak hour volumes are generally lower than the weekday PM peak hour volumes with the exception of along James Street/E Cherry Street between I-5 and 23rd Avenue and along E Jefferson Street in the immediate vicinity of Swedish. Weekday AM peak hour traffic volumes along James Street/E Cherry Street range between 755 near 23rd Avenue to 2,040 vehicles per hour (vph) near I-5, and are approximately 20 percent higher than the existing James Street/E Cherry Street traffic volumes during the weekday PM peak hour. Traffic volumes along E Jefferson Street between Broadway and 23rd Avenue range from 360 to 555 vph during the weekday AM peak hour. Near 12th Avenue, the weekday AM peak hour traffic volumes along E Jefferson Street are 15 percent higher than weekday PM peak hour traffic volumes.

During the weekday PM peak hour, traffic volumes along E Cherry Street, adjacent to the campus, range between 635 to 815 vph depending on the individual block. Left-turns from E Cherry Street range between 10 to 50 vph depending on the intersection. West of Broadway, where E Cherry Street transitions to James Street, traffic volumes are higher with volumes as high as 1,710 vph near the I-5 interchange. These volumes decrease east of the interchange.

Traffic volumes along E Jefferson Street are lower than E Cherry Street. Traffic volumes along E Jefferson Street between Broadway and 23rd Avenue range from 385 to 485 vph. During both the weekday AM and PM peak hours and likely throughout the day, traffic volumes generally decrease along the E Jefferson Street corridor from the west to the east as traffic distributes to the local residential neighborhoods north and south of the corridor.

3.7.2.6 Traffic Operations

The scope of the traffic operations analysis included an evaluation of individual intersection performance as well as corridor operations along E Cherry Street/James Street between 6th Avenue and Broadway, and Broadway and 18th Avenue. This analysis provides a basis for not only understanding future impacts to general traffic operations, but also how the proposed project affects neighborhood traffic and circulation patterns and access. The purpose of this corridor analysis is to assess the impacts of intersection delay and queuing on travel time and corridor progression. The E Cherry Street/James Street corridor was identified for analysis based on the anticipated travel patterns to/from the site and connectivity to I-5 as well as existing observations.

Intersection Operations

Approximately 80 percent of the study intersections currently operate at Level of Service (LOS) C or better. During the AM and PM peak hours, all intersections proximate to Swedish Cherry Hill operate at LOS C or better with the exception of one:

- 16th Avenue/E Cherry Street, which is currently operating at LOS D in both the AM and PM peak hours

During the weekday PM peak hour, all study area intersections operate at LOS D or better with the exception of two that operate below LOS D:

- 12th Avenue/E Marion Street (side street approaches operate at LOS F)
- 13th Avenue/E Cherry Street (side street approaches operate at LOS E) intersections

The 12th Avenue/E Marion Street intersection has a high concentration of pedestrian crossings, which causes increased delays for these side street approaches, resulting in the LOS F condition.

Corridor Operations

The main route to Swedish Cherry Hill is along the E Cherry Street/James Street corridor. This corridor has been evaluated for travel times and travel speeds, and includes consideration of intersection queuing, pedestrian activity, and overall driver behavior. For the purpose of the analysis, the corridor was divided into two segments: (1) James Street from 6th Avenue to Broadway Avenue; and (2) E Cherry Street from Broadway to 18th Avenue.

- During the weekday AM peak hour, travel times along James Street/E Cherry Street, within the two segments, are approximately 3 to 5 minutes for both directions in each segment.
- During the weekday PM peak hour, travel times along E Cherry Street are less than 3 minutes while along James Street travel times range between 4 and 6 minutes.
- Average travel speeds are generally slow, ranging from 6 to 15 miles per hour (mph).

These average travel speeds take into account free-flow travel times and intersection-related delay. Overall, the travel times and speeds indicate congestion along both corridors during the weekday AM and PM peak hours.

3.7.2.7 Traffic Safety

Records of reported collisions were obtained from SDOT for the 3-year period between January 1, 2010, and December 31, 2012. A summary of the total and average annual reported accidents at each study intersection is provided in Table 4 in Appendix C. The City has adopted criteria for assigning high accident location status to signalized intersections with 10 or more reported collisions per year, and unsignalized intersections with 5 or more reported collisions per year. Intersections designated as high accident locations are targeted for future safety improvements in an effort to reduce the occurrence of accidents.

Fewer than 5 collisions per year were reported at each of the unsignalized study intersections. At the signalized study area intersection, only the 6th Avenue/James Street intersection had an average of more than 10 collisions per year. A review of the collisions at the 6th Avenue/James Street intersection shows the majority of the collisions at this location involved left-turning vehicles along James Street not granting right-of-way to vehicles traveling the opposite direction.

The data were also reviewed for fatalities as well as collisions involving pedestrians or bicyclists. The 7th Avenue/Cherry Street and 16th Avenue/E Jefferson Street intersections both had fatalities. The fatalities at these intersections resulted from a vehicle striking a pedestrian in the crosswalk. The cause of these accidents does not appear to be related to the design of the intersection. Adequate sight distance exists for the vehicle movements.

- At the 16th Avenue/E Jefferson Street intersection, a pedestrian was struck by a southbound left-turning vehicle while crossing the east leg of E Jefferson Street.
- At the 7th Avenue/Cherry Street intersection, the pedestrian was struck by a northbound through vehicle while crossing the south leg of 7th Avenue.

In addition to these two pedestrian fatalities, 33 of the 43 study locations had collisions involving pedestrians and bicyclists. Of the 33 locations, 6 locations averaged more than one collision per year involving a pedestrian or bicyclists. These include:

- 12th Avenue/E Pike Street
- 12th Avenue/Madison Street
- 12th Avenue/E Jefferson Street
- 12th Avenue/S Jackson Street
- 23rd Avenue/E Jefferson Street
- 23rd Avenue/E Yesler Way

Within the immediate vicinity of the campus, the frequency of collisions is higher along E Jefferson Street than along E Cherry Street. The cause of these collisions is due to the unsignalized control at the majority of the intersections and limited sight distance due to on-street parking along both corridors.

Along E Cherry Street from 14th Avenue to 18th Avenue there were 12 collisions over the 3-year period. Six of the 12 collisions resulted in an injury and the remaining resulted in property damage only. The most common collision type along E Cherry Street from 14th Avenue to 18th

Avenue was related to vehicles turning into the traffic stream. Two of the collisions involved pedestrians or bicyclists.

Along E Jefferson Street from 14th Avenue to 18th Avenue, there were 27 collisions. Fourteen of the 27 collisions resulted in an injury and one collision resulted in a fatality as previously discussed. Four collisions involved a pedestrian or a bicyclist. Similar to E Cherry Street, the most common collision type were related to vehicles turning into the traffic stream.

3.7.2.8 Parking

There is designated parking for the Swedish Cherry Hill campus in off-street facilities. There is also on-street parking within the neighborhood surrounding the campus including unrestricted areas, residential parking zones (RPZ), and metered parking.

Off-Street, On-Campus Facilities

The overall parking supply is approximately 1,510 parking spaces with 1,293 garage spaces and 217 surface spaces (see Figure 10 in Appendix C for locations). All of the off-street parking is paid parking whether through monthly permits, leasing, or hourly/daily pay by use, with some parking validated for patients or visitors. Generally, parking is unreserved and open for both staff and patient parking. The parking facilities include:

- Surface Lot (Northeast Corner of E Jefferson Street/18th Avenue) – This gravel parking lot can accommodate approximately 100 vehicles and is designed for LabCorp employees.
- Surface Lot (Southeast Corner of E Cherry Street/18th Avenue) – This parking lot has 55 reserved parking spaces for staff.
- 15th/16th Avenue Garage – This parking garage has 1,197 spaces with 50 of the spaces secured and reserved for the Northwest Kidney Center. In addition, there are some reserved parking spaces for physicians and staff. The remainder is available for patient parking, accessible from 16th Avenue.
- Rehabilitation Center – This surface parking lot has 35 parking spaces that are dedicated to the rehabilitation center.
- Emergency Department Lot - This surface parking lot has 27 parking spaces that are designated for the emergency department.
- Plaza Garage - This parking garage has 96 spaces and is generally patient parking.

Hourly data was collected in February 2014 to determine parking utilization. The off-street facilities had peak occupancy of 716 vehicles or 47 percent of the total off-street parking supply. The smaller public parking facilities (e.g., Plaza Garage, Rehabilitation Center, E Cherry Street/18th Avenue surface lot and Northwest Kidney Center parking) had the highest utilization ranging from 82 to 100 percent. Both the Rehabilitation and Northwest Kidney Center parking have validated parking for patients/visitors of those uses, which likely contributes to the high utilization. The least utilized parking lot was LabCorp, which is restricted to LabCorp employees and could be underutilized due to employee alternative mode use. The peak parking demand of the 16th Avenue garage during the observation period was approximately 40 percent. This data, as well as field observations, indicate the Swedish Cherry Hill off-street parking facilities are generally not full.

On-Street Parking

The majority of the neighborhood surrounding the campus is part of a (RPZ), which restricts on-street parking to a 2-hour time limit unless the vehicle has a residential permit. On the streets adjacent to the campus, there is paid parking along E Jefferson Street between 17th and 18th Avenues, 18th Avenue between E Cherry and E Jefferson Streets, and E Cherry Street between 16th and 17th Avenues on the south side and 17th and 18th Avenues on both sides. There is also 2-hour time limited parking on the north side of E Jefferson Street between 16th and 17th Avenues and 18th and 19th Avenues as well as on both sides of 14th Avenue between E Jefferson and E Cherry Streets.

While the off-street parking demands can be reliably associated with the Swedish Cherry Hill campus, the level of parking in the neighborhood associated with Swedish Cherry Hill is more difficult to assign. The on-street parking demand was identified through February 2014 observations of pedestrians entering and exiting the Swedish Cherry Hill campus to and from the neighborhood streets. The data collection excluded pedestrians to and from the parking garages, lots, and bus stop and identified carpools.

Some pedestrians counted as part of the on-street parking data collection effort were likely affiliated with walking trips to the campus and not related parking in the neighborhoods. The Swedish CTR surveys indicate 4.6 percent or 66 affected employees (i.e., employees that arrive to campus between 6:00 and 9:00 AM) walk to work. These walking trips would be coming from the neighborhood. It is unknown if all of these employees walked to work during the count day; however, to account for some level of walking, the parking counts associated with the on-street parking were reduced by 50 vehicles assuming 80 percent or the CTR affected employees walked to work.

Based on the on-street and off-street parking counts, the existing parking demand for the campus is estimated at approximately 1,093. This peak occurs at 10:00 AM with 716 vehicles parked off-street and 377 vehicles identified as parking on-street. There are 82 paid and time limited or unrestricted parking spaces adjacent to the campus. These spaces are not directly fronting residential development and are not designated as RPZ. The data collection showed that 59 vehicles were parked in these spaces at 10:00 AM, which indicates 318 vehicles likely parking on streets surrounding the campus.

Parking Demand

As noted previously, the total off-street parking availability is approximately 1,510 parking spaces (1,293 in garages and 217 in surface lots). Based on the surveyed utilization rates for off-street and on-street parking, the total parking demand was estimated at 1,093 vehicles, and this total could be accommodated within existing off-street parking spaces.

Sabey and Swedish continue to monitor the pricing structure of the parking garages. The garages are operated pursuant to the current Transportation Management Program (TMP). The pricing structure is intended to promote the use of alternative travel modes by making parking off-street lots more expensive than using transit. This is creating an unintended consequence of parking spillover in the surrounding neighborhood.

3.7.3 Impacts

3.7.3.1 Alternative 1 - No Build

This section describes the future traffic conditions for the years 2023 and 2040 without the approval of the MIMP and no further expansion of the campus. For Alternative 1, No Build, no expansion of the campus is assumed, thus employee population and patient population is assumed to be consistent with existing levels.

As discussed in the previous section, the adopted single occupancy vehicle (SOV) goal is 50 percent and the campus is achieving 56 percent for CTR affected employees. The evaluation of No Build conditions assumes achievement of the 50 percent SOV rate by 2023 and 2040; therefore, the overall campus trip generation and parking demand is assumed to be less than under existing conditions. In addition, while some growth/change in staffing is possible without MIMP approval, an assumption of no increase in staff provides a conservatively low baseline condition against which the impacts of the Build Alternatives can be measured. The impacts of additional growth in patient activity or employment are addressed below in the discussion of impacts of Alternatives 8, 9, and 10.

The evaluation of future conditions reflect increases in traffic attributed to known, and approved, developments in the area as well as modifications to the street system to reflect planned transportation improvement projects.

Street System

Table 3.7-2 summarizes the key planned transportation projects in the study area, and identifies how the projects were included into the Alternative 1 – No Build 2023 and 2040 evaluations. With the exception of the Madison High Capacity Transit project, all are expected to be completed by 2023. Additional detail on the transportation projects is provided in Section 4.1 of Appendix C.

Table 3.7-2
Transportation Improvement Projects

Project Description	Responsible Agency	Expected Completion Date	Funded?[1]	Assumed in Analysis?[2] 2023	Assumed in Analysis?[2] 2040
First Hill Streetcar: 2-mile streetcar line serving Capitol Hill, First Hill and International District with connections to Link Light Rail, Sounder commuter rail and bus service.	SDOT	2014	Yes	✓	✓
Link Light Rail: Extension of the regional light rail system. All segments are funded in ST2, but the year of completion may vary depending on revenue available to fund construction. The segments include:	Sound Transit				
North—University District and Capitol Hill		2016	Yes	✓	✓
North—Northgate		2021	Yes	✓	✓
North—Lynnwood		2023	Yes	✓	✓
East—Bellevue and Redmond		2023	Yes	✓	✓
South—Extension to S 200th Street		2016	Yes	✓	✓
South—Extension to Kent-Des Moines Road		2023	Yes	✓	✓
23rd Avenue Transit Priority Corridor Improvement: 23rd Avenue Urban Village Transit Network (UVTN) Corridor from John to Jackson Streets	SDOT	2013	Yes	✓	✓
Madison High Capacity Transit (HCT): Electric trolley buses (ETBs) serving First Hill, the Central Area, and downtown Seattle with connections to the First Hill Streetcar, ferry service at the Colman Dock Ferry Terminal, and bus service. This is currently in the study phase.	SDOT	Unknown	Partial		
SR 520 Bridge Replacement: Construction of a new SR 520 floating bridge with two general purpose lanes and one High Occupancy Vehicle (HOV)/transit lane per direction. Transit and non-motorized transportation projects between SR 202 and I-5. The eastside and floating bridge segments are funded. The west side projects in the Montlake Interchange vicinity are not funded.	WSDOT	2015	Partial	✓	✓
Electric Trolleybus Fleet Replacement: King County Metro Transit will replace its fleet of 159 trolleybus with modern low-floor vehicles providing more capacity on these routes	King County Metro Transit	2015	Yes	✓	✓
23rd Avenue Corridor Neighborhood Greenway: Creation of a neighborhood greenway between Roanoke Street and Rainer Avenue along either 21st or 22nd Avenues including pavement markings, improved crossings, way-finding, traffic calming and signage.	SDOT	Phase 1: 2014	Partial	✓	✓

Campus Access and Service Vehicle Loading

General vehicular and truck access and circulation patterns to and from the Swedish Cherry Hill campus would not change under No Build conditions. In addition, it is anticipated that the number of service deliveries would remain consist with existing conditions. With growth in traffic along E Cherry Street and E Jefferson Street, access to the off-street parking facilities and loading areas along 16th Avenue and 18th Avenue could become progressively more challenging as vehicle delays on the minor street approaches increase.

Pedestrian and Bicycle Transportation

By 2023 and 2040, with a reduction in the percentage of SOVs, there could be some increase in walking and biking to campus as employees shift from driving alone to other modes.

There are planned pedestrian or bicycle improvements in the immediate vicinity of Swedish Cherry Hill.

There are also a number of transit improvements and development projects within the larger study area and as these occur it is likely that pedestrian facilities (i.e., sidewalks) along the frontages of the development projects would be improved where deficient. Key planned improvements in the study include:

- **13th Avenue/Cherry Street Crosswalk:** A new marked crosswalk would be provided at this intersection.
- **18th Avenue Neighborhood Greenway:** The Bicycle Master Plan includes a neighborhood greenway along 18th Avenue including the area adjacent to the campus. Neighborhood greenways are located along roadways with low traffic volumes and speeds. The greenway would provide a two-way bicycle facility on the west side of the street and pedestrian facilities on both sides.
- **First Hill Streetcar:** Existing sidewalks will be maintained as part of this project; however, crosswalk enhancements will be added to provide connections to the streetcar including five signalized pedestrian crossings along Broadway, E Yesler Way, and S Jackson Street and improve pedestrian curb ramps along the route to comply with ADA requirements. In addition, bicycle facilities are being upgraded along the entire streetcar route including changing sharrows to bicycle lanes along 14th Avenue S and E Yesler Way, and adding a two-way cycle track along Broadway. Bicycle boxes would also be provided at intersection providing a designated area for bicycles to wait at traffic signals.
- **23rd Avenue Corridor Neighborhood Greenway:** This project would create a greenway on either 21st or 22nd Avenues E. Features of the greenway could include pavement markings, improved crossings, way-finding, traffic calming and signage. The planning process is underway for this project and it is anticipated that Phase 1 would be implemented in 2014 providing a greenway between S Jackson Street and E John Street.

Along with these specific improvements in the study area, the City's Pedestrian Master Plan identifies high priority areas for making pedestrian improvements. Priority corridors within the study area are Broadway, Boren Avenue, S Dearborn Street and portions of E Cherry Street, and 12th Avenue.

Transit/Shuttle Services

The No Build evaluation assumes a 50 percent SOV rate and a 5 percent increase in transit use as a result of employees shifting from SOVs to alternative modes. It is assumed transit use by Swedish employees would increase by 5 percent in both 2023 and 2040 for the No Build conditions. In addition, it is assumed that general ridership (i.e., non-Swedish employee ridership) would increase by 1 percent per year.

As described in the Street System section, there are a number of transit improvements within the study area including the First Hill Streetcar, the Link Light Rail, 23rd Avenue UVTN corridor, and the electronic trolleybus fleet replacement. As discussed in Subsection 3.7.2 Affected Environment, service cuts and changes to bus service are anticipated in late 2014. For the bus routes directly serving Swedish Cherry Hill at E Jefferson Street, the following services changes are anticipated and are accounted for in the capacity calculations[2]:

- **Route 3** – Frequency would be doubled changing from the existing 20-minute headways to 10-minute headways during the weekday AM and PM peak periods and service would be extended to Seattle Pacific University. The intention of increasing transit frequency along this route is to provide additional capacity for riders who are currently served by Route 4.
- **Routes 4 and 211** – These routes would be eliminated.
- **Route 64** – Service would be reduced by two morning trips and two afternoon trips.
- **Route 193** – The part of the route that serves Tukwila Park-and-Ride would be eliminated and service would be revised to connect to north part of downtown Seattle. Afternoon service would be reduced by one trip.

The bus service at the Swedish Cherry Hill E Jefferson Street stops was evaluated consistent with the methodology described in the Affected Environment. Instead of a route by route analysis, the total capacity and ridership at the Swedish Cherry Hill campus E Jefferson Street bus stops were evaluated as it is difficult to predict exactly which routes future riders would chose.

The evaluation of No Build 2023 and 2040 bus transit considered the following:

- Changes in transit capacity may result from the service modifications identified above. The analysis assumes that riders of the routes that could be eliminated would shift to one of the remaining routes serving the Swedish Cherry Hill campus.

[2] Summary of Proposed Service Reductions, King County Metro Transit, http://metro.kingcounty.gov/am/future/PDFs/changes/service-reduction-summary.pdf, Accessed: February 13, 2014.

- By 2023 and 2040, No Build ridership is assumed to increase by 1 percent per year based on annual growth in King County Metro transit boarding between 2009 and 2012.
- A 5 percent increase in Swedish employee transit use is assumed due to the mode shift with the achievement of a 50 percent SOV rate. A portion of Swedish transit riders could be using other transit modes such as rail, ferry, or connecting with bus service at a different location; however, the evaluation conservatively assumes that all of the increase in transit would use bus service.

Figures 12 and 13 in Appendix C provide a comparison of existing and No Build passenger loads and remaining capacity during the weekday AM and PM peak periods. The AM Peak Period Transit Capacity and Ridership figure (Figure 12) shows that the bus passenger load would increase from an existing 1,400 AM Peak Period riders to 1,430 riders in 2023, and 1,600 riders in 2040. Transit capacity is anticipated to decrease during the same period from an existing capacity of 5,420 to 5,320 in 2023, and 5,150 by 2040.

In the PM Peak Period (Figure 13), riders would increase from an existing 1,560 to 1,680 by 2023, and 1,870 by 2040. Unlike the AM Peak Period, transit capacity in the PM Peak Period is anticipated to increase from an existing capacity of 5,560, to 5,840 in 2023 and 2040.

In both the AM and PM Peak Periods, even with the anticipated service cuts and increase in ridership, there is capacity to accommodate additional riders on the Swedish Cherry Hill bus service.

As described in the Affected Environment, Swedish Cherry Hill operates an inter-campus shuttle service that serves Swedish First Hill Campus, Swedish Cherry Hill Campus, and the Metropolitan Park offices. This service was assumed to continue in the future. The analysis does not assume any increases in shuttle service; however, as staff and patient populations increase it is likely that the service frequency and/or area would change to accommodate the increased demand. In addition, consideration may be given to providing a connection between Swedish Cherry Hill and the streetcar to supplement service cuts and continue to encourage transit use to and from campus.

Traffic Volumes

Section 4.5 of Appendix C describes the methodology and assumptions used to forecast future No Build 2023 and 2040 traffic volumes. Table 3.7-3 summarizes the trip generation for the existing and No Build conditions. As shown in the table, based on the model and assuming the 50 percent SOV rate, the Swedish Cherry Hill campus would generate less traffic than existing conditions with 424 less daily trips, 27 less AM peak hour trips and 57 less PM peak hour trips under No Build conditions.

Table 3.7-3
Summary of Swedish Cherry Hill Trip Generation – Existing and No Build

Scenario	Daily Trips	Weekday AM Peak Hour Trips			Weekday PM Peak Hour Trips		
		Inbound	Outbound	Total	Inbound	Outbound	Total
Existing	5,863	241	165	406	100	477	577
No Build	5,439	229	150	379	89	431	520
Net New Trips	**-424**	**-12**	**-15**	**-27**	**-11**	**-46**	**-57**

Forecast traffic volumes from the following 12 projects ("pipeline projects") were included in the background traffic projections for No Build 2023 and 2040 which could have some effect on traffic volumes in corridors used by Swedish Cherry Hill drivers:

- Virginia Mason Medical Center MIMP
- Seattle University MIMP
- Swedish Medical Center Fist Hill MIMP
- Seattle NBA/NHL Arena
- 550 Broadway
- 500 Terry
- 1124 Columbia
- 1414 10th Avenue
- 1424 11th Avenue
- 1111 E Union Street
- Yesler Terrace
- King County's Children & Family Justice Center

During the AM peak hour, growth attributed to pipeline projects and general increases in background traffic results in traffic volumes increases of between 0 and 31 percent in the study area.

- The largest percent increase is forecast along James Street west of Broadway where traffic volumes are anticipated to increase by 31 percent.
- Increases in traffic volumes along Broadway are forecast to be approximately 27 percent. These large increases in background traffic volumes are largely due to the additional traffic associated with the Virginia Mason Medical Center MIMP, Seattle University MIMP, and Yesler Terrace projects.
- Along E Cherry Street peak hour traffic volumes are expected to increase by approximately 120 to 145 vehicles during the weekday AM peak hour period, representing an increase of 16 percent west and east of the Swedish Cherry Hill campus.
- Along E Jefferson Street, weekday AM peak hour traffic volumes are forecast to increase by approximately 50 trips. This represents an increase of approximately 9 percent west of the Swedish Cherry Hill campus and 14 percent east of the Swedish Cherry Hill campus.

During the 2023 weekday PM peak hour, similar to the AM peak hour results, the largest percentage and absolute volume increases are forecast along James Street west of Broadway.

- Weekday PM peak hour traffic volumes are forecasted to increase by approximately 47 percent along James Street west of Broadway (growth associated with the Virginia Mason Medical Center MIMP, Seattle University MIMP, and Yesler Terrace, all contribute to the growth anticipated along this corridor).
- Weekday PM peak hour increases in traffic along Broadway and 12th Avenue are generally consistent with the increases forecasted for the AM peak hour.
- In the immediate vicinity of the Swedish Cherry Hill campus, increases in traffic along E Cherry Street are forecast to be approximately 185 to 200 vehicles, representing a 25 percent increase west of the campus and 29 percent increase east of the campus.
- Along E Jefferson Street in the vicinity of the campus, traffic volumes are forecast to increase by 30 to 45 vehicles during the peak hour, representing an increase of 6 percent west of the campus and 12 percent east of the campus.

The traffic forecasts for the 2040 conditions show a lower growth rate between 2023 and 2040 then identified between the existing to 2023 conditions. This is because the majority of the forecasted growth in traffic for the 2023 conditions is associated with pipeline projects, which results in a higher annual growth rate. The only new pipeline projects in 2040 are the phases of the Virginia Mason Medical Center MIMP that would be completed beyond 2023.

By 2040, during the weekday AM peak hour, study area volumes are expected to increase up to approximately 38 percent above existing traffic volumes.

- Within the immediate vicinity of the campus, traffic volumes along E Cherry Street are forecast to increase by an additional 150 to 180 vehicles above existing levels.
- Along E Jefferson Street, traffic volumes are forecasted to increase by approximately 65 to 70 vehicles. Based on information provided for area-wide pipeline projects, E Cherry Street is forecasted to continue carrying the majority of the east/west traffic through the area.

By 2040, during the weekday PM peak hour, study area volumes are expected to increase by up to approximately 55 percent above existing traffic volumes.

- In the vicinity of the Swedish Cherry Hill campus, traffic volumes along E Cherry Street are forecast to increase by approximately 215 to 240 vehicles during the weekday PM peak hour as compared to existing traffic volumes.
- Along E Jefferson Street, traffic volumes are forecasted to increase by approximately 40 to 60 vehicles.

Traffic Operations

Intersection Operations

Under the No Build conditions, there would be a continued decline in intersection level of service within the study area.

- Under existing conditions, approximately 80 percent of the study intersections currently operate at LOS C or better. During the AM and PM peak hours, one intersection proximate to the campus operates below LOS C, 16th Avenue/E Cherry Street is at LOS D. During the weekday PM peak hour, all study area intersections operate at LOS C or better with the exception of two, 12th Avenue/E Marion Street (side street approaches operate at LOS F) and 13th Avenue/E Cherry Street (side street approaches operate at LOS E) intersections.
- By 2023, during both the AM and PM peak hours, four intersections would operate at LOS E or worse.
- By 2040, continued growth in background traffic volumes would result in two additional intersections operating at LOS E or worse during the PM peak hour and four continuing to operate at LOS E or worse during the AM peak hour. One of the intersections operating at LOS E or worse under 2040 conditions is the 16th Avenue/E Cherry Street which is projected to operate at LOS E during the weekday AM peak hour.

As a result of the increases in traffic associated with background growth and pipeline traffic, delays for the minor street approaches in the immediate vicinity of the campus are expected to increase accordingly.

- During weekday AM peak hour, intersections along E Cherry and E Jefferson Streets are forecast to operate at LOS D or better under both No Build 2023 and 2040 conditions except for the unsignalized intersection of 16th Avenue/E Cherry Street.
- The unsignalized intersection of 16th Avenue/E Cherry Street would operate at LOS E due to the anticipated increases in traffic volumes along E Cherry Street.
- During the weekday PM peak hour under both No Build 2023 and 2040 conditions, the 13th Avenue/E Cherry Street intersection would operate at LOS E due to the anticipated increases in traffic volumes along E Cherry Street.

Corridor Operations

As shown in Table 3.7-4, for corridors that are already constrained and congested, only small differences in travel times or average speeds would occur between existing and No Build conditions.

- Average speed would be reduced by 1-mph along James Street in the westbound direction in both the AM and PM peak hours and in the eastbound direction in the PM peak hour with No Build 2023 and 2040 growth conditions.
- Average travel time would increase by 1-minute in the westbound direction during the PM peak hour under No Build 2040 conditions.
- Along E Cherry Street, average speeds would decrease by 2- to 3-mph in the westbound direction during the weekday PM peak hour under 2023 and 2040 No Build.
- In the eastbound direction along E Cherry Street, weekday AM and PM peak hour speeds along E Cherry Street in the eastbound direction would increase by 5 mph and travel time would decrease by over 30 seconds under both the 2023 and 2040 No Build

conditions. This change in speed and slight reduction in travel time is due to the optimization of signal timing for future conditions.

Table 3.7-4
No Build Weekday Peak Hours Corridor Travel Time Analysis

		Existing		2023		2040	
Segment	Direction	Travel Time (m:ss)[1]	Average Speed (mph)	Travel Time (m:ss)	Average Speed (mph)	Travel Time (m:ss)	Average Speed (mph)
AM Peak Hour							
James Street (6th Ave to Broadway)	EB	04:17	7	04:12	7	04:24	7
	WB	03:31	9	03:31	9	03:34	9
E Cherry Street (Broadway to 18th Ave)	EB	05:22	10	04:19	12	04:09	13
	WB	03:01	12	02:59	12	02:53	13
PM Peak Hour							
James Street (6th Ave to Broadway)	EB	04:03	8	04:11	7	04:11	7
	WB	05:40	6	06:30	5	05:52	6
E Cherry Street (Broadway to 18th Ave)	EB	02:29	14	01:51	19	01:51	19
	WB	02:43	13	03:10	11	03:11	11

1. m:ss = minutes:seconds

Traffic Safety

Growth in background traffic is forecast on both E Cherry Street and E Jefferson Street. On E Cherry Street, in the vicinity of the campus, 2040 weekday PM peak hour traffic volumes are forecast to increase by 29 to 34 percent depending on the roadway segment. Similarly, along E Jefferson Street, by 2040 traffic volumes are forecast to increase by 8 to 16 percent during the weekday PM peak hour. While there is not a direct relationship between anticipated future accidents and traffic volumes, absent a specific hazard, it is reasonable to expect that the number of accidents could increase in some relation to the increase in traffic volumes. Delays for vehicles entering E Cherry Street or E Jefferson Street from unsignalized approaches are forecast to increase. Depending on specific circumstances, this could result in driver impatience, which could result in more aggressive driving maneuvers.

These same traffic conditions could impact pedestrian and bicycle safety, especially safety in crossing arterials at unsignalized intersections. The unsignalized intersection of 16th Avenue/E Cherry Street has been identified as needing pedestrian and vehicle improvements. Safety issues are primarily related to the sight distance limitations at this intersection for vehicles turning from 16th Avenue onto E Cherry Street. With increases in traffic projected along E Cherry Street, existing conflicts between vehicles and pedestrians trying to cross or access E Cherry Street would increase.

Similar characteristics would exist at other unsignalized intersections along the E Cherry Street and to a lesser degree along the E Jefferson Street corridor, simply by the nature of the lower traffic volumes along the E Jefferson Street corridor.

Parking

The analysis of the No Build scenario assumes achievement of a 50 percent SOV rate for affected employees by 2023 and 2040. The achievement of the 50 percent SOV rate would result in a reduction in campus parking demand as employees switch from SOVs to other mode choices such as carpool, vanpool, transit, walking or bicycling.

No Build peak parking demand was developed consistent with the trip generation method. The peak parking demand was projected by decreasing the CTR-affected SOV rate to 50 percent and considered the resulting increases in carpool and vanpool. Table 3.7-5 provides a comparison between the existing and No Build parking demand.

Table 3.7-5
Preliminary Swedish Cherry Hill Estimated Parking Demand for Existing and No Build Conditions

Facilities	Existing	No Build (2023 & 2040)
Hospital	570	529
Clinic/Research	385	354
Education	40	40
Hotel	4	4
Long-Term Care	41	40
Other Support Facilities	53	47
Total Parking Demand	**1,093**	**1,014**

It was assumed that No Build off-street parking supply would remain at current levels, 1,510 spaces. Under No Build conditions, the projected parking demand of 1,014 vehicles could be fully accommodated in off-street parking on the campus.

As discussed previously, there is some level of parking that occurs on-street in the surrounding neighborhood. On-street utilization in the neighborhoods surrounding the campus is nearing capacity through a combination of neighborhood and campus related demands. If all of the No Build parking associated with Swedish Cherry Hill occurred on-campus, the overall utilization of the off-street (on-campus) parking would be 67 percent, which would still provide capacity to accommodate additional future demand.

3.7.3.2 Alternative 8

The impact analysis of Alternative 8 assumes a mode-split performance of 50 percent SOV consistent with the No Build condition. Table 3.7-6 provides a summary of land use assumptions for the short- (2023) and long- (2040) term horizon years. The level of development assumed by the 2023 horizon year includes the development of approximately

2.3 million gross SF. The build-out of the MIMP under Alternative 8 would result in 3.1 million gross SF of development.

Table 3.7-6
Swedish Cherry Hill Land Use Summary
Alternative 8

Facilities	No Build/Existing (Gross SF)	Alternative 8	
		2023 (Gross SF)	2040 (Gross SF)
Hospital	541,300 (196 beds)	1,014,000 (290 beds)	1,350,000 (385 beds)
Clinic/Research	427,000	1,014,000	1,250,000
Education	73,000	100,000	150,000
Hotel	12,500	40,000	80,000
Long-Term Care	43,000 (99 beds)	93,000 (149 beds)	220,000 (220 beds)
Other Support Facilities	50,000	50,000	50,000
Total	**1,146,800**	**2,311,000**	**3,100,000**

Street System

The street system for Alternative 8 would be the same as those described under Alternative 1 - No Build with no major changes to the local circulation proposed as part of the MIMP.

Campus Access and Service Vehicle Loading

Figure 3.7-3 identifies the location of proposed parking lots, garages, campus access points, circulation patterns, and service vehicle loading areas. The same access points and circulation patterns are proposed for all Build Alternatives (8, 9, and 10).

- Access to parking facilities would be located along 15th and 16th Avenues E similar to the locations that exist today. The proposal is not anticipated to increase the number of access points to parking along 15th and 16th Avenues.
- New underground parking of approximately 490 parking spaces would be developed along the east side of 18th Avenue replacing the existing surface lots. Two locations along the east side of 18th Avenue have been identified for the garage entrances/exits. There are currently five driveways along the east side of 18th Avenue between E Cherry and Jefferson Streets so the proposal would reduce the number of driveways and associated conflicts between modes. While the overall circulation and access patterns associated with the campus would generally stay the same, the new underground parking garage on 18th Avenue would result in a shift of the traffic to the east side of the campus.

- Emergency vehicle access would remain in its current location with the emergency department adjacent to 16th Avenue; however, emergency patient parking could be expanded to the 15th/16th Avenue garage.
- Deliveries would occur at service docks located along 16th and 18th Avenues just south of E Cherry Street similar to today and at a new service dock accessed along 15th Avenue south of the existing Rehabilitation Center parking lot. In addition, there are smaller service areas associated with the Northwest Kidney Center, Seattle Rehabilitation Center, and Central Utility Plant.

It is anticipated that the size of the 18th Avenue loading dock would remain similar to today since the number of deliveries are not anticipated to increase. Deliveries at 18th Avenue are mainly related to food services; therefore, it is anticipated that the size and the duration of the deliveries may increase but the number of deliveries would remain the same. A more detailed evaluation of loading areas including truck access, and truck maneuvers, and the required number of loading berths would occur at the project level.

The MIMP seeks relief from City code requirements for loading berths to allow for the consolidation of facilities and reduce the number of loading berths required by code. The quantity and size of loading berths cannot be evaluated at this stage. What is known is that truck traffic along E Cherry Street, E Jefferson Street, 16th Avenue, and 18th Avenue would likely increase. With the proposed 3,100,000 gross SF of building area served, a total of 88 loading berths would be needed on campus to meet the code requirement for 'high demand' uses as described in SMC 23.54.035. The existing campus is 1,146,800 gross SF and adequately served by two loading areas and three loading berths for a ratio of approximately 0.003 berths per 1,000 gross SF. Applying this ratio to the proposed 3,100,000 SF of development would result in a future need for nine loading berths. Given the range between estimated future needs and the code requirement, additional analysis at the project level will be required to more accurately access operational needs and establish appropriate loading berth quantities and sizes.

The arterial routes used by trucks to access Swedish Cherry Hill are not anticipated to change from existing conditions. Truck traffic serving Swedish Cherry Hill will likely increase. Deliveries could shift to off-peak hours and night deliveries could increase as vendors seek to minimize delivery costs by avoiding congested time periods. It is recommended that deliveries be schedule to minimize the impact to the adjacent street system (i.e., limit trucks waiting on-street to access loading areas) and neighborhood.

The location and access to future loading areas should be evaluated when a specific project is proposed to ensure that loading facilities:

- Are adequately sized and consolidated when possible
- Traffic impacts and impacts to pedestrian circulation are identified and mitigated
- Locate accesses on minor streets where possible
- Are designed to minimize or preferably eliminate the need to make backing maneuvers within public rights of way or block sidewalks

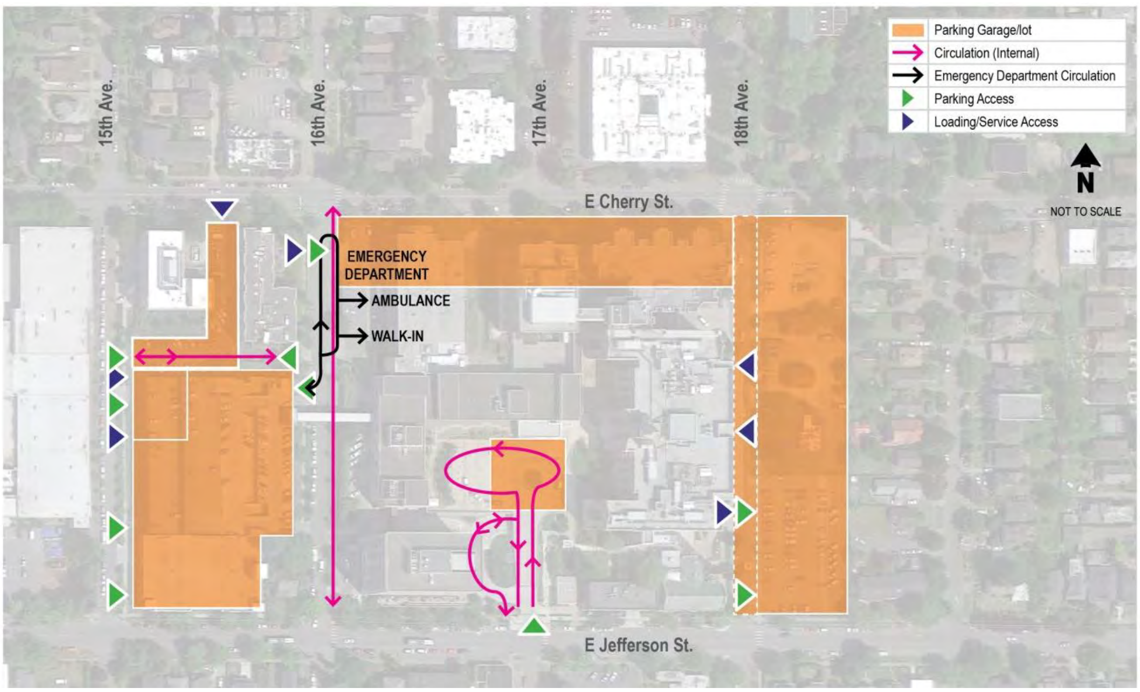


Figure 3.7-3

Alternatives 8, 9 and 10 Access and Circulation Routes

Pedestrian and Bicycle Transportation

There are existing sidewalks surrounding the campus, and sidewalk connections to and from the surrounding on-street parking and transit stops. Where it bisects the Swedish Cherry Hill campus, 18th Avenue has been identified as a potential neighborhood greenway in the Bicycle Master Plan, providing enhancements for pedestrians and bicyclists. A Greenway, as envisioned by the City, is a facility where signs and pavement markings are used to guide people along the route and speed and volume management techniques are used to discourage vehicular traffic, making this a more desirable travel route for bicyclist and pedestrians.

Swedish has proposed to create a “health walk” or walking path around the Swedish Cherry Hill campus along 15th Avenue, E Cherry Street, 18th Avenue, and E Jefferson Street. Along 18th Avenue, the health walk could be incorporated into the proposed neighborhood greenway. A direct pedestrian connection is proposed through the campus that would connect 17th Avenue between E Cherry and Jefferson Streets. The pedestrian environment would also be enhanced along the E Cherry Street frontage with improved sidewalks and landscaping as well as public open green spaces with seating areas.

With the additional and expanded facilities on campus, the number of pedestrians on campus and those circulating to and from transit facilities and parking is anticipated to increase. Future bicycle facilities on the arterials adjacent to the campus under the new MIMP would be similar to existing conditions. No modification to the adjacent street system is anticipated with the proposed development. The MIMP would provide enhancements along the 18th Avenue corridor frontage consistent with the City's Greenway standards.

Swedish currently has a loading dock and a separate service entrance on the west side of 18th Avenue with curb cuts and driveways that cross through the existing sidewalk. The 18th Avenue loading area currently has approximately 10 deliveries throughout the day, and the service entrance (near the Central Utility Plant) has a similar number of 10 deliveries per day. Deliveries are generally scheduled outside of the peak period to minimize conflict with other modes. The number of deliveries at the 18th Avenue loading area is anticipated to be similar to existing conditions, but the size of the load per truck would likely increase and dwell times could be longer.

The two-way bicycle facility associated with the 18th Avenue greenway is currently proposed to be located on the west side of the street. This could increase the number of conflicts between bicyclists with vehicular access to the Swedish Cherry Hill loading area and the delivery access along west side of 18th Avenue.

If the bicycle facility were located along the east side of the 18th Avenue, it would conflict with 18th Avenue parking garage access points. Although the MIMP would reduce the number of driveways along 18th Avenue between E Cherry and Jefferson Streets, the intensity of vehicular traffic to and from the access points along the east side of 18th Avenue would increase. The garage is forecasted to have approximately 100 to 160 vehicles during the AM and PM hour peak hours, which means traffic levels would approximately double when compared to existing conditions. The parking garage would cause greater and more frequent conflicts with the pedestrian and bicycle facilities than the loading area.

The 18th Avenue neighborhood greenway is still in the planning process with the public outreach anticipated in Fall 2014. It is possible through the outreach process other alternatives may be considered. Consideration may be given to providing the neighborhood greenway along a lower volume street such as 19th Avenue where traffic volumes are lower and it would be located outside the MIO Boundary.

The Swedish Cherry Hill campus currently provides bicycle racks for visitors and employees. In addition, lockers and showers are provided to employees. These amenities would continue with the MIMP. The SMC requires medical institutions to provide bicycle parking equivalent to 2 percent of the employees, including doctors. Based on future population projection of 6,545 employees in 2040, the plan would require 131 bicycle parking spaces by 2040. The campus currently provides 132 bicycle parking spaces; therefore, bicycle parking code requirements for the proposal are already satisfied.

Transit/Shuttle Services

As part of Alternative 8, the existing campus transit stops along E Jefferson Street would be enhanced. Enhancements would likely include expansion of the covered waiting area and seating capacity for passengers, installation of pedestrian scale lighting, extension of the passenger boarding loading area to accommodate space for two buses in the loading zone. With the increase in population, transit ridership would increase with Alternative 8.

As described in the No Build condition, there are planned transit improvements as well as potential service cuts. Similar to the No Build condition, an evaluation of transit in the vicinity of Swedish Cherry Hill was conducted to understand the impacts of Alternative 8 on the bus service. This evaluation takes into consideration service changes and ridership increases described as part of the No Build analysis.

A portion of Swedish transit riders could be using other transit modes such as rail, ferry, or connecting with bus service at a different location. This analysis assumes that all of the projected increase in transit ridership as a result in the growth associated with Alternative 8 would use the bus service. An evaluation was conducted for both the 2023 and 2040 conditions during the weekday AM and PM peak periods.

Figures 24 and 25 in Appendix C provide a comparison of No Build and Alternative 8 passenger loads and remaining capacity during the weekday AM and PM peak periods. The AM Peak Period Transit Capacity and Ridership figure (Figure 24) shows that the bus passenger load would increase from an existing 1,400 AM Peak Period riders to 1,650 riders in 2023 (as compared to 1,430 for the No Build), and 1,970 riders in 2040 (as compared with 1,600 riders for the No Build). Transit capacity is anticipated to decrease during the same period from an existing capacity of 5,420 to 5,320 in 2023, and 5,150 by 2040.

In the PM Peak Period (Figure 25), riders would increase from an existing 1,560 to 2,080 by 2023 (as compared to 1,680 for the No Build), and 2,620 riders by 2040 (as compared to 1,870 for the No Build). Unlike the AM Peak Period, transit capacity in the PM Peak Period is anticipated to increase from an existing capacity of 5,560, to 5,840 in 2023 and 2040.
In both the AM and PM Peak Periods, even with the anticipated service cuts and increase in ridership, there is capacity to accommodate additional riders on the Swedish Cherry Hill bus service.

The inter-campus shuttle service that serves Swedish First Hill Campus, Swedish Cherry Hill Campus, and the Metropolitan Park offices is assumed to continue in the future. The analysis does not assume any increases in shuttle service; however, as staff and patient populations increase it is likely that the service frequency and/or area would change to accommodate the increased demand. In addition, consideration may be given to providing a connection between

Swedish Cherry Hill and the streetcar to supplement service cuts and continue to encourage transit use to and from campus.

Traffic Volumes

Table 3.7-7 summarizes the trip generation for the existing and future conditions. As shown in the table, based on the model, the Swedish Cherry Hill campus would generate 5,439 daily trips with 379 occurring during the AM peak hour, and 520 occurring during the PM peak hour under No Build conditions. The short-term or Phase 1 development would increase trips by 2,855 net new daily trips with 198 new trips occurring during the AM peak hour and 264 new trips occurring during the PM peak hour. In addition, the build-out of Alternative 8 would increase trips by 5,814 net new daily trips with 409 new trips occurring during the AM peak hour and 565 new trips occurring during the PM peak hour, compared to No Build trip volumes. Some of the increases in building area are proposed to bring facilities up to modern standards or "right-size" the facility. Although building area nearly triples, population and associated trips do not increase proportionally since modern standards typically include more square-footage per employee or patient.

Table 3.7-7
Swedish Cherry Hill MIMP Trip Generation
Alternative 8

Alternative	Daily Trips	Weekday AM Peak Hour Trips			Weekday PM Peak Hour Trips		
		Inbound	Outbound	Total	Inbound	Outbound	Total
No Build	5,439	229	150	379	89	431	520
Short-term (2023) – Alternative 8							
Net New Trips	*2,855*	*126*	*72*	*198*	*49*	*215*	*264*
Total Trips	**8,294**	**355**	**222**	**577**	**138**	**646**	**784**
Build-out (2040) – Alternative 8							
Net New Trips	*5,814*	*248*	*161*	*409*	*98*	*467*	*565*
Total Trips	**11,253**	**477**	**311**	**788**	**187**	**898**	**1,085**

Traffic Operations

During the weekday AM peak hour, within the immediate vicinity of the campus, intersections along E Cherry and E Jefferson Streets are expected to operate at LOS D or better under 2023 conditions except for two unsignalized intersections, 14th Avenue/E Jefferson Street and 16th Avenue/E Cherry Street.

- The 14th Avenue/E Jefferson Street intersection would operate at LOS E due to the anticipated increases in traffic volumes along both 14th Avenue and E Jefferson Street. The 16th Avenue/E Cherry Street intersection operates at LOS E due to anticipated growth in volumes at the intersection.

By 2040, during the weekday AM peak hour, the 15th Avenue/E Cherry Street intersection would also degrade to LOS E and the 14th Avenue/E Jefferson Street and 16th Avenue/E Cherry Street intersections would degrade to LOS F. These operations are related to the overall increases in traffic volumes along both E Cherry Street and E Jefferson Street.

During the weekday PM peak hour (under 2023 conditions) intersections along E Cherry and E Jefferson Streets operate at LOS D or better, with the exception of four intersections: 13th Avenue/ E Cherry Street, 15th Avenue/E Cherry Street, 16th Avenue/E Cherry Street, and 14th Avenue/E Jefferson Street.

- These four intersections are stop controlled, 13th, 15th, and 16th Avenue along E Cherry Street being two-way stop controlled and 14th Avenue / E Jefferson Street being a four-way stop controlled intersection.
- The 15th Avenue/E Cherry Street, 16th Avenue/E Cherry Street, and 14th Avenue/E Jefferson Street intersections would operate at LOS E and the 13th Avenue/E Cherry Street intersection would operate at LOS F due to increased project volumes through these intersections.

Increases in traffic volumes of up to 43 percent along E Cherry and E Jefferson Streets would make it progressively more challenging for side-street traffic to enter the traffic stream. By 2040, during the weekday PM peak hour with the development of Alternative 8, intersections along E Cherry and E Jefferson Streets are projected to operate at LOS D or better, with the exception of four intersections, the three intersections previously mentioned as well as 16th Avenue/ E Cherry Street. The three intersections along E Cherry Street are two-way stop controlled and the 14th Avenue/E Jefferson Street intersection is four-way stop controlled. All four intersections operate at LOS F as a result of increases in traffic volume with the proposed expansion.

Along E Cherry Street traffic signals exist at the 14th Avenue/E Cherry Street and 18th Avenue/E Cherry Street intersections. These traffic signals provide an opportunity to utilize a signal controlled intersection to exit from the neighborhood, if the unsignalized intersection approaches exceed the delay tolerance for a driver. The two existing signalized intersections are projected to operate at LOS C or better during the weekday AM and PM peak hours in 2040.

Intersection Operations

During the weekday AM peak hour, compared to the No Build Conditions, Alternative 8 would result in one additional intersection operating at LOS E or F in 2023.

- **14th Avenue/E Jefferson Street** – Under No Build conditions, this intersection is forecast to operate at LOS D during both the AM and PM peak hours. With the development of Alternative 8, this intersection would degrade to LOS E during both the AM and PM peak hours. This intersection is currently controlled by an all-way stop. Under 2023 build conditions, traffic volumes are expected to increase by 6 to 8 percent during the weekday AM and PM peak hours, respectively.

During the weekday PM peak hour, the addition of traffic associated with Alternative 8 would result in three additional intersections operating at LOS E and one additional intersection operating at LOS F.

- **Broadway/James Street** – During the weekday PM peak hour, operations at this signalized intersection would degrade from LOS D under No Build 2023 conditions to LOS E with development of Alternative 8. During the weekday AM peak hour, LOS E operations would continue for both No Build and Alternative 8 conditions. Alternative 8 would result in a less than 5-second increase in overall delay at the Broadway/James Street intersection.
- **13th Avenue/E Cherry Street** – The northbound approach at this unsignalized intersection would degrade from LOS E under No Build 2023 conditions to LOS F with Alternative 8 during the weekday PM peak hour. Alternative 8 is anticipated to add approximately 15 seconds of delay.
- **14th Avenue/E Jefferson Street** –With the development of Alternative 8, this intersection would degrade to LOS E during both the AM and PM peak hours.
- **15th Avenue/E Cherry Street** – The northbound approach at this unsignalized intersection would degrade from LOS D under No Build 2023 conditions to LOS E under Alternative 8 2023 conditions during the weekday PM peak hour. Traffic volumes on the northbound approach are relatively low with a total weekday PM peak hour volume of approximately 70 vph and the proposed expansion is anticipated to result in an approximately 10 percent increase in overall traffic volumes at this location.

In 2040, compared to the No Build conditions, Alternative 8 would result in two additional intersections operating at LOS F during the weekday AM peak hour and four additional intersections operating at LOS F during the weekday PM peak hour.

- **13th Avenue/E Cherry Street** – Operations of the northbound approach of this unsignalized intersection would degrade from LOS E under No Build 2040 conditions to LOS F under Alternative 8 2040 conditions during the weekday PM peak hour. The LOS F operations are related to the increases in traffic volumes along Cherry Street as a result of the project. Northbound and southbound traffic volumes range between 70 and 95 vph during the weekday PM peak hour under 2040 conditions. Alternative 8 would result in an increase in overall traffic volumes of approximately 20 percent at the 13th Avenue/E Cherry Street intersection in 2040 during the weekday PM peak hour.
- **15th Avenue/E Cherry Street** – The northbound approach at this unsignalized intersection would degrade from LOS D under No Build 2040 conditions to LOS F under Alternative 8 2040 conditions during the weekday PM peak hour. During the weekday AM peak hour, operations on the northbound approach would degrade from LOS D under the No Build 2040 conditions to LOS E under Alternative 8 2040 conditions. The LOS E and F operations are related to the increases in traffic volumes along Cherry Street as a result of the project. Northbound and southbound traffic volumes range

between 25 and 100 vph during the weekday PM peak hour under 2040 conditions and Alternative 8 would result in an approximately 24 percent increase in traffic volumes at this intersection. Similarly, during the weekday AM peak hour, the northbound and southbound traffic volumes range between 25 and 60 vph under 2040 conditions and Alternative 8 would result in an approximately 16 percent increase in traffic volumes at this intersection.

- **16th Avenue/E Cherry Street** – The operations on the northbound approach of this unsignalized intersection would degrade from LOS E and D under No Build 2040 conditions during the weekday AM and PM peak hours, respectively, to LOS F under Alternative 8 2040 conditions during both the weekday AM and PM peak hours. The LOS F operations are related to the increases in traffic volumes along Cherry Street with approximately 55 to 125 northbound left-turns during the AM and PM peak hours. During the weekday AM and PM peak hours in 2040, overall traffic volumes would increase by approximately 15 to 20 percent, respectively, at 16th Avenue/E Cherry Street with the development of Alternative 8.
- **14th Avenue/E Jefferson Street** – Under No Build conditions, this intersection is forecast to operate at LOS D during both the AM and PM peak hours. With the development of Alternative 8 this intersection degrades to LOS F during both the AM and PM peak hours. This intersection is currently controlled by an all-way stop. Under 2040 build conditions, traffic volumes are expected to increase by approximately 13 to 19 percent during the AM and PM peak hours, respectively.

Corridor Operations

A comparison of travel times along the James Street and E Cherry Street corridors under No Build and Alternative 8 conditions is provided in Table 3.7-8. With development of Alternative 8, corridor operations would degrade slightly in 2023 with average speed decreasing by 1-mph along both James Street in the westbound direction during the AM peak hour and E Cherry Street in the westbound direction during the PM peak hour. As discussed in the review of No Build 2023 conditions, given the existing capacity constraints along the corridor, changes in travel times and speeds are generally small.

The largest increase in travel time for the 2023 conditions with Alternative 8 would be along James Street in the westbound direction with an increase of approximately 1-minute. Similar conditions would exist during the 2040 conditions, with travel times and average speeds, showing generally small increases and decreases, respectively, as a result of Alternative 8 compared to No Build conditions. The exception is along James Street in the westbound direction during the weekday PM peak hour where travel time would increase by approximately 3 minutes between No Build and Alternative 8 conditions in 2040.

Table 3.7-8
Weekday Peak Hour Comparison of Travel Times
No Build and Alternative 8

		2023 Horizon Year				2040 Horizon Year			
		Travel Time (m:ss)[1]		Average Speed (mph)		Travel Time (m:ss)		Average Speed (mph)	
Segment	Direction	No Build	Alt 8	No Build	Alt 8	No Build	Alt 8	No Build	Alt 8
AM Peak Hour									
James Street (6th Ave to Broadway)	EB	04:12	04:14	7	7	04:24	04:23	7	7
	WB	03:31	03:45	9	8	03:34	04:11	9	7
E Cherry Street (Broadway to 23rd Ave)	EB	04:19	04:13	12	12	04:09	04:13	13	12
	WB	02:59	03:01	12	12	02:53	03:04	13	12
PM Peak Hour									
James Street (6th Ave to Broadway)	EB	04:11	04:11	7	7	04:11	04:13	7	7
	WB	06:30	07:32	5	5	05:52	09:06	6	4
E Cherry Street (Broadway to 23rd Ave)	EB	01:51	01:51	19	19	01:51	01:52	19	19
	WB	03:10	03:29	11	10	03:11	03:39	11	10

1. m:ss = minutes:seconds

Traffic Safety

Based on the 3-year accident history, the study area has not experienced an unusually high level of accidents to date except at the James Street/6th Street intersection. In general, as traffic volumes increase, the potential for traffic safety issues increases proportionately. Alternative 8 would increase traffic along both E Cherry Street and E Jefferson Street at varying levels. On E Cherry Street, in the vicinity of the campus, 2040 weekday PM peak hour traffic volumes are forecast to increase by 4 to 20 percent depending on the roadway segment. Similarly, along E Jefferson Street, by 2040 traffic volumes are forecast to increase by 8 to 39 percent during the weekday PM peak hour. It would likely become progressively more challenging for side-street traffic at unsignalized intersections to enter the traffic stream. Indicators of this are found in the Traffic Operations described above.

Increased traffic along the E Cherry Street and E Jefferson Street corridor increases the potential for conflicts between pedestrians and vehicles. Along E Cherry Street several signalized crossings are provided at key intersections. Additional signalized crossings could be considered in the future to provide additional vehicular capacity and pedestrian safety enhancements at key neighborhood connection points. Projects to address intersection capacity and pedestrian/vehicle safety are discussed in the mitigation section 3.7.4 below.

With the improvements related to the First Hill Streetcar, including additional signalized crossings and bicycle lanes, the safety of pedestrian and bicyclist would likely improve along that alignment. In addition, as part of Alternative 8, pedestrian and bicycle enhancements would be provided along the campus frontage as described in Pedestrian and Bicycle Transportation.

Parking

Figure 3.7-3 illustrates the proposed location of off-street parking proposed for all Build Alternatives (Alternatives 8, 9, and 10). The initial phases of development would include construction of the 18th and 16th parking garages, which would constitute the majority of the Swedish Cherry Hill parking. The following describes the code required parking and anticipated parking demand as a result of Alternative 8.

Code Required Supply

The Land Use Code Chapter of the SMC (SMC Chapter 23) establishes a minimum and maximum number of parking stalls allowed for Major Institutions. The calculation of parking code requirements is based on 100 percent of the hospital doctors and other employees present during the peak, which is 71 percent of all other employees. The 71 percent adjustment factor for other employees is based on clinic and hospital shift times.

Table 3.7-9 summarizes the code required parking for Alternative 8 based on the Land Use Code. Projections for staff and patient population are consistent with the trip generation and are based on the *Swedish Medical Center Cherry Hill Campus Draft Major Institution Master Plan, May 22, 2014*. As shown in Table 3.7-9, the Land Use Code would require a minimum of 1,955 parking spaces and a maximum of 2,639 spaces with development of Alternative 8.

Table 3.7-9
Land Use Code Required Parking
Alternative 8

Land Use Code Category	Unit	Code Requirement[1]	Parking Stall Requirement
Long-term Parking			
Hospital Based Doctors	410	0.80 stalls	328
Staff Doctors	155	0.25 stalls	39
Other Employees Present During Peak	4,246	0.30 stalls	1,274
Short-term Parking			
# of Hospital Beds	605	1 stall per 6 beds	101
Average Daily Outpatients[2]	995	1 per five outpatient	199
Fixed Seats in Auditorium	140	1 stall per 10 seats	14
Minimum Required Parking Spaces			**1,955**
Maximum Allowed Parking Spaces (1.35 x Minimum)			**2,639**

1. SMC 23.54.016.
2. There are 385 hospital beds and 220 beds in the Seattle Medical and Rehabilitation Center.

Demand

Table 3.7-10 summarizes the No Build and Alternative 8 parking demand.

Table 3.7-10
Preliminary Estimated Parking Demand
Alternative 8

Facilities	No Build	Alternative 8	
		2023	2040
Hospital	529	794	1,130
Clinic/Research	354	551	700
Education	40	87	121
Hotel	4	7	11
Long-Term Care	40	59	89
Other Support Facilities	47	47	47
Total Parking Demand	**1,014**	**1,545**	**2,098**
Effective Parking Demand	**-**	**1,700**	**2,310**

The current on-campus, off-street parking supply is 1,510 spaces. Table 3.7-10 shows that current parking supply levels, if efficiently utilized, would be adequate to accommodate No Build demands. By 2023 and 2040, additional parking would be needed to accommodate the anticipated parking demand. Relative to the code required parking supply, the anticipated Alternative 8 effective parking demand of 2,310 vehicles by 2040 would be within the range of the minimum and maximum Land Use Code requirement. The effective parking demand accounts for circulation and turnover within the parking areas.

Existing parking surveys documented some vehicles associated with Swedish Cherry Hill using on-street parking in the surrounding neighborhood. It is expected, without further action to discourage it, this activity would continue in the future, with or without MIMP approval. Given the current level of on-street parking use, the rate of occurrence may decrease as available on-street parking becomes increasingly scarce. Further TMP measures and/or cooperation with the City parking enforcement would be required to help ensure the constructed onsite parking is used as intended.

3.7.3.3 Alternatives 9 and 10

Alternatives 9 and 10 would include the development of approximately 2.75 million gross SF. The two Alternatives differ in heights and setbacks, with the same level of uses proposed for both Alternatives.

Table 3.7-11 provides a summary of land use assumptions for the short- and long-term horizon years for both Alternatives 9 and 10. As shown in the table, the level of development assumed by the 2023 horizon year results in a total campus development of approximately 2.3 million gross SF. This increase would approximately double the size of the campus. The build-out of Alternatives 9 and 10 would result in 2.75 million gross SF of development.

Table 3.7-11
Swedish Cherry Hill Land Use Summary
Alternatives 9 and 10

Facilities	No Build/Existing (Gross SF)	Alternatives 9 and 10	
		2023 (Gross SF)	2040 (Gross SF)
Hospital	541,300 (196 beds)	1,014,000 (290 beds)	1,350,000 (385 beds)
Clinic/Research	427,000	1,014,000	1,070,000
Education	73,000	100,000	150,000
Hotel	12,500	40,000	40,000
Long-Term Care	43,000 (99 beds)	93,000 (149 beds)	93,000 (149 beds)
Other Support Facilities	50,000	50,000	50,000
Total	**1,146,800**	**2,311,000**	**2,753,000**

Street System

The street system for Alternatives 9 and 10 would be the same as those described under Alternative 1 (No Build) and for Alternative 8, with no major changes to the local circulation proposed as part of the MIMP.

Campus Access and Service Vehicle Loading

Campus access, circulation, and service vehicle loading would be the same for Alternatives 9 and 10 as described for Alternative 8.

As discussed for Alternative 8, the MIMP seeks relief from City code requirements for loading berths to allow for the consolidation of facilities and reduce the number of loading berths required by code. With the proposed 2,753,000 gross SF of building area served, a total of 78 loading berths would be needed on campus to meet the code requirement for 'high demand' uses as described in SMC 23.54.035. Applying the existing 0.003 berths per 1,000 gross SF to the proposed 2,753,000 gross SF of development would result in a future need for 8 loading berths. Additional analysis at the project level will be required to more accurately access operational needs and establish appropriate loading berth quantities and sizes. The location and access to future loading areas should be evaluated when a specific project is proposed to ensure that loading facilities:

- Are adequately sized and consolidated when possible
- Traffic impacts and impacts to pedestrian circulation are identified and mitigated
- Locate accesses on minor streets where possible
- Are designed to minimize or preferably eliminate the need to make backing maneuvers within public rights of way or block sidewalks

Pedestrian and Bicycle Transportation

Pedestrian and bicycle transportation infrastructure improvements and impacts under Alternatives 9 and 10 would be similar to those described for Alternative 8. The anticipated daily campus population with Alternatives 9 and 10 would be approximately 3 percent less than Alternative 8, which could result in slightly fewer pedestrians and bicyclists associated with the campus development.

Impacts of Alternative 9 and 10 on the proposed 18th Avenue neighborhood greenway would be similar to Alternative 8.

Based on future population projection of 6,390 employees in 2040, the Land Use Code would require 128 bicycle parking spaces by 2040. The campus currently provides 132 bicycle parking spaces; therefore, bicycle parking code requirements for the proposal are already satisfied.

Transit/Shuttle Services

Alternatives 9 and 10 would include the same transit stop enhancements described previously for Alternative 8.

As was done with the analysis for Alternative 8, an analysis was performed for Alternatives 9 and 10 that assumes that all of the projected increase in transit ridership as a result in the growth associated with Alternatives 9 and 10 would use the bus service. An evaluation was conducted for both the 2023 and 2040 conditions during the weekday AM and PM peak periods.

Figures 39 and 40 in Appendix C provide a comparison of No Build and Alternatives 9 and 10 passenger loads and remaining capacity during the weekday AM and PM peak periods. The proposed development by 2023 for Alternatives 9 and 10 is the same as proposed for Alternative 8 (a total of 2.3 million gross SF) and the transit ridership would be the same.

The AM Peak Period Transit Capacity and Ridership figure (Figure 39) shows that the bus passenger load would increase from an existing 1,400 AM Peak Period riders to 1,650 riders in 2023 (as compared to 1,430 for the No Build), and 1,960 riders in 2040 (as compared with 1,600 riders for the No Build and 1,970 riders for Alternative 8). Transit capacity is anticipated to decrease during the same period from an existing capacity of 5,420 to 5,320 in 2023, and 5,150 by 2040.

In the PM Peak Period (Figure 40 in Appendix C), riders would increase from an existing 1,560 to 2,080 by 2023 (as compared to 1,680 for the No Build), and 2,600 riders by 2040 (as compared to 1,870 for the No Build and 2,620 for Alternative 8). Unlike the AM Peak Period, transit capacity in the PM Peak Period is anticipated to increase from an existing capacity of 5,560, to 5,840 in 2023 and 2040.

In both the AM and PM Peak Periods, even with the anticipated service cuts and increase in ridership, there is capacity to accommodate additional riders on the Swedish Cherry Hill bus service.

The inter-campus shuttle service that serves Swedish First Hill Campus, Swedish Cherry Hill Campus, and the Metropolitan Park offices is assumed to continue in the future. The analysis does not assume any increases in shuttle service; however, as staff and patient populations increase it is likely that the service frequency and/or area would change to accommodate the increased demand. In addition, consideration may be given to providing a connection between Swedish Cherry Hill and the streetcar to supplement service cuts and continue to encourage transit use to and from campus.

Traffic Volumes

Table 3.7-11 summarizes the trip generation for the existing and future conditions. As shown in the table, based on the model, the Swedish Cherry Hill campus would generate 5,439 daily trips with 379 occurring during the AM peak hour and 520 occurring during the PM peak hour under No Build conditions. The short-term or Phase 1 development would increase trips by 2,855 net new daily trips with 198 new trips occurring during the AM peak hour and 264 new trips occurring during the PM peak hour, with is the same as for Alternative 8.

The build-out of Alternatives 9 and 10 would increase trips by 5,503 (as compared to 5,814 for Alternative 8) net new daily trips with 387 (as compared to 409 for Alternative 8) new trips occurring during the AM peak hour and 536 (as compared to 565 for Alternative 8) new trips occurring during the PM peak hour, compared to No Build trip volumes.

Table 3.7-12
Swedish Cherry Hill MIMP Trip Generation
Alternatives 9 and 10

Alternative	Daily Trips	Weekday AM Peak Hour Trips			Weekday PM Peak Hour Trips		
		Inbound	Outbound	Total	Inbound	Outbound	Total
No Build	5,439	229	150	379	89	431	520
Short-term (2023) – Alternative 9 or 10							
Net New Trips	*2,855*	*126*	*72*	*198*	*49*	*215*	*264*
Total Trips	**8,294**	**355**	**222**	**577**	**138**	**646**	**784**
Build-out (2040) – Alternative 9 or 10							
Net New Trips	*5,503*	*231*	*156*	*387*	*87*	*449*	*536*
Total Trips	**10,942**	**460**	**396**	**766**	**176**	**880**	**1,056**

Traffic Operations

Intersection Operations

Alternatives 9 and 10 development by year 2023 is proposed to be the same as for Alternative 8 (2.3 million gross SF). Intersection operations under Alternatives 9 and 10 for year 2023 in the AM and PM peak hours would be the same as for Alternative 8.

In 2040, compared to the No Build conditions, impacts with Alternatives 9 and 10 would be very similar to those projected for Alternative 8. The difference would be a slightly lower number of vehicles.

Alternatives 9 and 10 would result in two additional intersections operating at LOS F during the weekday AM peak hour and four additional intersections operating at LOS F during the weekday PM peak hour, the same as with Alternative 8.

- **13th Avenue/E Cherry Street** – Operations of the northbound approach of this unsignalized intersection would degrade from LOS E under No Build 2040 conditions to LOS F under Alternatives 9 and 10 2040 conditions during the weekday PM peak hour. The LOS F operations are related to the increases in traffic volumes along Cherry Street as a result of the project. Northbound and southbound traffic volumes range between 70 and 95 vph during the weekday PM peak hour under 2040 conditions. Alternatives 9 and 10 would result in an increase in overall traffic volumes of approximately 19 percent (as compared to 20 percent for Alternative 8) at the 13th Avenue/E Cherry Street intersection in 2040 during the weekday PM peak hour.
- **15th Avenue/E Cherry Street** – The northbound approach at this unsignalized intersection would degrade from LOS D under No Build 2040 conditions to LOS F under Alternatives 9 and 10 2040 conditions during the weekday PM peak hour. During the weekday AM peak hour, operations on the northbound approach would degrade from LOS D under the No Build 2040 conditions to LOS E under Alternatives 9 and 10 2040 conditions. The LOS E and F operations are related to the increases in traffic volumes along Cherry Street as a result of the project. Northbound and southbound traffic volumes range between 25 and 95 vph (as compared to between 25 and 100 vph for Alternative 8) during the weekday PM peak hour under 2040 conditions and Alternatives 9 and 10 would result in an approximately 23 percent increase (as compared to 24 percent increase with Alternative 8) in traffic volumes at this intersection. Similarly, during the weekday AM peak hour, the northbound and southbound traffic volumes range between 25 and 60 vph (the same as for Alternative 8) under 2040 conditions and Alternatives 9 and 10 would result in an approximately 15 percent increase in traffic volumes at this intersection (as compared to approximately 16 percent for Alternative 8).
- **16th Avenue/E Cherry Street** – The operations on the northbound approach of this unsignalized intersection would degrade from LOS E and D under No Build 2040 conditions during the weekday AM and PM peak hours, respectively, to LOS F under Alternatives 9 and 10 2040 conditions during both the weekday AM and PM peak hours.

The LOS F operations are related to the increases in traffic volumes along Cherry Street with approximately 50 to 120 (as compared to 55 to 125 for Alternative 8) northbound left-turns during the AM and PM peak hours. During the weekday AM and PM peak hours in 2040, overall traffic volumes would increase by approximately 14 to 21 percent (as compared to 15 to 20 percent for Alternative 8), respectively, at 16th Avenue/E Cherry Street with the development of Alternatives 9 and 10.

- **14th Avenue/E Jefferson Street** – Under No Build conditions, this intersection is forecast to operate at LOS D during both the AM and PM peak hours. With the development of Alternatives 9 and 10, this intersection degrades to LOS F during both the AM and PM peak hours. This intersection is currently controlled by an all-way stop. Under 2040 build conditions, traffic volumes are expected to increase by approximately 13 to 18 percent (compared to 13 to 19 percent for Alternative 8) during the AM and PM peak hours, respectively.

Corridor Operations

A comparison of travel times along the James Street and E Cherry Street corridors under No Build and Alternatives 9 and 10 conditions is provided in Table 3.7-12. With development of Alternatives 9 and 10, corridor operations would degrade slightly in 2023 with average speed decreasing by 1-mph along both James Street in the westbound direction during the AM peak hour and E Cherry Street in the westbound direction during the PM peak hour. As discussed in the review of No Build 2023 conditions, given the existing capacity constraints along the corridor, changes in travel times and speeds are generally small. This would be the same as for Alternative 8.

Similar conditions would exist during the 2040 conditions, with travel times and average speeds, showing generally small increases and decreases, respectively, as a result of Alternatives 9 and 10 compared to No Build conditions.

As shown in Table 3.7-13, with development of Alternatives 9 and 10, corridor operations would degrade slightly in 2040 with average speed decreasing by 1- to 2-mph in the westbound direction along both James Street and E Cherry Street during the AM and PM peak hours. An increase in travel time of approximately 3 minutes between No Build and Alternatives 9 and 10 conditions would occur along James Street in the westbound direction during the PM peak hour. All other corridor travel times would have only small increases between No Build and Alternatives 9 and 10 conditions. The difference in travel times between Alternative 8 and Alternatives 9 and 10 is 2 or 3 seconds (see Table 3.7-8 for 2040 travel times for Alternative 8).

Table 3.7-13
Weekday Peak Hour Comparison of Travel Times
No Build and Alternatives 9 and 10

		2023 Horizon Year				2040 Horizon Year			
		Travel Time (m:ss)[1]		Average Speed (mph)		Travel Time (m:ss)		Average Speed (mph)	
Segment	Direction	No Build	Alt 8, 9 or 10	No Build	Alt 8, 9 or 10	No Build	Alt 9 or 10	No Build	Alt 9 or 10
AM Peak Hour									
James Street (6th Ave to Broadway)	EB	04:12	04:14	7	7	04:24	04:23	7	7
	WB	03:31	03:44	9	8	03:34	04:07	9	8
E Cherry Street (Broadway to 23rd Ave)	EB	04:19	04:18	12	12	04:09	04:12	13	13
	WB	02:59	03:00	12	12	02:53	03:04	13	12
PM Peak Hour									
James Street (6th Ave to Broadway)	EB	04:11	04:11	7	7	04:11	04:13	7	7
	WB	06:30	07:19	5	5	05:52	09:02	6	4
E Cherry Street (Broadway to 23rd Ave)	EB	01:51	01:51	19	19	01:51	01:52	19	19
	WB	03:10	03:27	11	10	03:11	03:37	11	10

1. m:ss = minutes:seconds

Traffic Safety

Impacts of Alternatives 9 and 10 on traffic safety would be similar to those described for Alternative 8.

Parking

The location of parking for Alternatives 9 and 10 would be the same as proposed for Alternative 8. Code requirements and parking demand for Alternatives 9 and 10 would be slightly less than Alternative 8 given the reduced development. The following describes the code required parking and anticipated parking demand as a result of Alternatives 9 and 10.

Code Required Supply

Table 3.7-14 summarizes the code required parking for Alternatives 9 and 10 based on the Land Use Code. Projections for staff and patient population are consistent with the trip generation and are based on the *Swedish Medical Center Cherry Hill Campus Draft Major Institution Master Plan, May 22, 2014*. As shown in Table 3.7-13, the Land Use Code would require a minimum of 1,895 parking spaces and a maximum of 2, 558 spaces with development of Alternatives 9 and 10, as compared to a minimum of 1,955 and a maximum of 2,639 spaces for Alternative 8.

Table 3.7-14
Land Use Code Required Parking
Alternatives 9 and 10

Land Use Code Category	Unit	Code Requirement[1]	Parking Stall Requirement
Long-term Parking			
Hospital Based Doctors	385	0.80 stalls	308
Staff Doctors	155	0.25 stalls	39
Other Employees Present During Peak	4,154	0.30 stalls	1,246
Short-term Parking			
# of Hospital Beds	534	1 stall per 6 beds	89
Average Daily Outpatients[2]	995	1 per five outpatient	199
Fixed Seats in Auditorium	140	1 stall per 10 seats	14
Minimum Required Parking Spaces			1,895
Maximum Allowed Parking Spaces (1.35 x Minimum)			2,558

1. SMC 23.54.016.
2. There are 385 hospital beds and 220 beds in the Seattle Medical and Rehabilitation Center.

Demand

Table 3.7-15 summarizes the No Build and Alternatives 9 and 10 parking demand.

Table 3.7-15
Preliminary Estimated Parking Demand
Alternatives 9 and 10

Facilities	No Build	Alternatives 9 and 10	
		2023	2040
Hospital	529	794	1,121
Clinic/Research	354	551	680
Education	40	87	121
Hotel	4	7	11
Long-Term Care	40	59	59
Other Support Facilities	47	47	47
Total Parking Demand	**1,014**	**1,545**	**2,039**
Effective Parking Demand	**-**	**1,700**	**2,245**

The current on-campus, off-street parking supply is 1,510 spaces. Table 3.7-15 shows that by 2023 and 2040, additional parking would be needed to accommodate the anticipated parking demand. Relative to the code required parking supply, the anticipated Alternatives 9 and 10 effective parking demand of 2,245 vehicles by 2040 (as compared to 2,310 vehicles for

Alternative 8) would be within the range of the minimum and maximum Land Use Code requirement.

Existing parking surveys documented some vehicles associated with Swedish using on-street parking in the surrounding neighborhood. It is expected, without further action to discourage it, this activity would continue in the future, with or without MIMP approval. Given the current level of on-street parking use, the rate of occurrence may decrease as available on-street parking becomes increasingly scarce. Further TMP measures and/or cooperation with the City parking enforcement would be required to help ensure the constructed onsite parking is used as intended.

3.7.4 Mitigation Measures

Mitigation measures will be further defined and outlined based on coordination with the DPD, SDOT, and the applicant. A preliminary list of mitigation measures are described below. The primary mitigation would be through an enhanced TMP and physical improvements.

The MIMP includes bicycle, pedestrian, and transit enhancements along the campus frontages and internal to the site. Improvements include a “health walk” around the Cherry Hill campus along 15th Avenue, E Cherry Street, 18th Avenue, and E Jefferson Street, a direct pedestrian connection through the campus connecting 17th Avenue between E Cherry and Jefferson Streets, enhancements to the transit stops on E Jefferson Street at the campus, improvements to 18th Avenue along the frontage consistent with the City’s greenway standards, and enhancements to the pedestrian environment along the E Cherry Street frontage.

The following describes the proposed TMP and physical mitigation measures for the Swedish Cherry Hill campus.

3.7.4.1 Proposed Transportation Management Program (TMP)

The overriding goal of the TMP is to decrease the number of vehicles accessing the Swedish Cherry Hill campus. The proposed TMP incorporates both elements from the existing TMP and proposed enhancements designed to achieve a SOV of 50 percent. The TMP is also being designed to address issues associated with neighborhood parking intrusion.

The program elements are intended to adjust the transportation patterns and habits of the employee groups on campus. The TMP applies to the entire Swedish Cherry Hill campus and all activities that occur within its boundaries. The program elements that are currently utilized and proposed as part of the updated TMP include:

- **Transit Incentives** – Increased levels of incentives, communication regarding schedules, and enhanced facilities
- **Alternative Modes** – Promote the use of alternative travel modes, such as bicycle and walking through improved onsite facilities and incentive programs
- **HOV Incentives** – Promote HOV programs through incentives for carpools/vanpools, preferred parking, and utilization of rideshare programs

- **Parking Management Programs** – Consider alternative payment technologies, parking policies, review of RPZ designations, and other programs to reduce spillover into the adjacent neighborhoods

Table 3.7-15 summarizes the existing and the proposed TMP inclusive of proposed enhancements. In addition to the additional TMP elements identified in the proposed TMP, there are several pilot programs that have been identified and will be tested. Depending on the overall effectiveness, these programs may be considered for ongoing implementation. The following provides an overview of the pilot projects, focusing on transit incentives, alternative transit modes, and parking management policies to better utilize the off-street parking supply and minimize impacts to the surrounding neighborhood.

- **Transit Incentives** – The intent of this pilot project is to increase transit usage at the Swedish Cherry Hill campus by working with King County Metro Transit to expand the ORCA passport program to all campus employees. The ORCA business passport program is a comprehensive, annual transportation pass program for employers. The passport program allows employers to manage their transportation benefits and gives employees access to bus, light rail, and ferry as well as subsidizes vanpool and vanshares and provides guaranteed rides homes.
- **Commuter Incentive** – The intent of this pilot would be to explore the potential of providing incentives to all employees to encourage alternative commuting as well as enhancing commuter incentives for the overall campus. The pilot would evaluate commuter incentive options campus-wide, which could overlap with the Transit pilot's evaluation of the ORCA passport program. In addition, an evaluation of campus-wide biking and walking incentives including benefits such as stipends for bicycle and walking equipment and free tune-ups for bicycles. Lastly, contact will occur with the onsite retailers (e.g., Starbucks, gift shop, cafeteria) to see if benefits such as discounts on products could be offered for bicycle commuters.
- **Off-street Parking Management** – The current parking program provides monthly passes, which encourages employees to drive to work if they have already purchased a parking pass. In addition, parking rates vary across campus and there is little signage to direct drivers to available off-street parking. The intent of the parking pilot project would be to develop a more flexible system that would allow flexibility to commuters making daily travel mode choices, as well as evaluate parking rates for employees and visitors/patients, and review technology to provide drivers with information on parking availability and location. Working with the parking garage operators, this pilot project would explore a campus-wide flexible daily parking program with benefits such as on-demand carpool discounts and Smartcard access tied to parking debit accounts for employees. Parking policies would be reviewed for employees and visitors/patients and recommendations would be made to potential adjustments to encourage employees to use alternative modes while minimizing parking along neighborhood streets.
- **Neighborhood Parking** – Some of the parking associated with the Swedish Cherry Hill campus currently occurs in the neighborhood. There are several potential causes for this including the cost of off-street parking vs. cost-free on-street parking. Another

potential reason may be the relative convenience for commuters traveling to the east end of the campus since most public parking is at the west side. The neighborhood parking pilot would aim to reduce the amount of parking by Swedish Cherry Hill employees, visitors and vendors occurring on neighborhood streets. A program would be designed in consultation with campus employers to encourage off-street parking within the Swedish Cherry Hill garages as well as the use of non-SOV modes. This would include items considered as part of the Parking Pilot (described above) where parking policy is evaluated to encourage employees to park within the garages. In addition, Swedish would work with the City to address the misuse of handicapped parking placards as well as discuss potential enhancements of the RPZ program with the neighborhood.

- **Coordination w/Residential Properties** – Data indicates that employees living closer to Swedish Cherry Hill campus are more likely to walk and bike to work. This program will create a partnership with local apartment and condominium owners to determine the feasibility of offering incentives to employees who choose to live close to campus.

These pilot projects would be implemented incrementally so the effectiveness of each pilot project can be evaluated. Projects that are feasible and show merit in reducing the SOV rate, encouraging alternative modes, and meeting the overall intent of the specific pilot would likely be adopted into the enhanced TMP. An update on each project would be included in the annual report to the City.

Table 3.7-16
Comparison of Current and Proposed TMP

Element	Current TMP	Proposed TMP	Pilot Projects with Commute Seattle
Transit	Subsidize 50% of transit pass cost including ferry, rail for larger employee groups on-campus.	Provide all tenants with access to a minimum 50% subsidy of transit pass cost including ferry & rail. Engage with tenants to inform about employee transportation benefits and options.	**Transit Pilot:** Work with King County Metro Transit to expand eligibility to provide access to all campus employees.
High Occupancy Vehicle (HOV)	Preferred parking carpool/vanpool. Parking cost for carpools for two people subsidized 50%. Carpools of three or more and vanpools subsidized 100%. Rideshare Online Network.	Preferred location for carpool and vanpool parking. Investigate alternative parking rate structures that incentivize vanpools and carpools and implement as appropriate. Provide free vanpool parking for tenants. Facilitate rideshare match-ups for carpool and vanpool.	**Parking Pilot:** Work with parking operator to explore a campus-wide flexible daily carpool program.

Table 3.7-16 (continued)
Comparison of Current and Proposed TMP

Element	Current TMP	Proposed TMP	Pilot Projects with Commute Seattle
		Encourage cooperation among tenant companies to promote vanpools and carpools.	
Bicycle	Weather-protected, secure bicycle racks at no charge to Swedish Cherry Hill employees at preferred locations. Shower accessibility in most cases. Bike lockers for a fee.	Weather-protected, secure bicycle racks at no charge to Swedish Cherry Hill employees at preferred locations. Shower accessibility. Bike lockers for a fee. Promote bicycle amenities. Signage indicating bike parking locations. Provide access to basic bike tools. Provide access to a bikeshare system when available.	**Commuter Incentive Pilot**: Work on a biking and walking incentive program. Work with onsite retail to offer bicycle benefits or other commuter incentives (e.g., Starbucks, gift shop, cafeteria).
Parking	Monthly parking rate set equal to or greater than the current King County Metro rate for peak period one-zone passes. Monthly parking is currently available only to employees hired since 1990 or if the vehicle is needed for work.	Monthly parking rate set equal to or greater than the current King County Metro rate for peak period one-zone passes. Restricted access to monthly parking passes.	**Parking Pilot:** Work with parking operator to explore parking rates and flexible alternatives to encourage greater use of alternative transportation modes including flexible on-demand (daily) parking accounts.
Neighborhood Parking Reduction	Subsidize the cost of the RPZ stickers for areas surrounding the campus.	Subsidize the cost of the RPZ stickers for areas surrounding the campus and review options to redirect RPZ permit payments into other neighborhood transportation funding sources. Improve wayfinding signs to direct vehicles to on-campus parking. Develop a campus-wide policy to discourage employee and vendor parking in the neighborhood. Regular contact with City parking enforcement to encourage patrolling. Regular meetings with community	**Neighborhood Parking Pilot:** Meet with employers to consult designing solutions that get employees out of SOVs and the neighborhood. Evaluate parking policy to encourage employees away from neighborhood parking. Consider a hotline to alert institution to violations. Discuss Enhanced RPZ with neighborhood.

Table 3.7-16 (continued)
Comparison of Current and Proposed TMP

Element	Current TMP	Proposed TMP	Pilot Projects with Commute Seattle
		representatives to evaluate progress, communicate issues, consider solutions.	
Other	Building Transportation Coordinator. Intercampus shuttle between Swedish Cherry Hill, First Hill, and Metropolitan Park office buildings. Guaranteed ride home. Provide flex-car on campus. Telecommuting for some employees. Special taxi service for 10-12 hour shift employees that use transit. Encourage and promote alternative work schedules, where possible. Free taxi service to physicians that travel between First Hill and Cherry campuses.	Create a Transportation Committee for the campus. The committee would include a Campus Transportation Coordinator and all employer transportation coordinators on campus. The committee would meet regularly and be responsible for implementing the TMP. Intercampus shuttle between Swedish Cherry Hill, First Hill, and Metropolitan Park office buildings. Guaranteed ride home. Provide car—sharing options on campus (e.g., ZipCar). Telecommuting for some employees. Special taxi service for 10-12 hour shift employees that use transit. Encourage and promote alternative work schedules, where possible. Continue to work with the City to address misuse of handicapped parking placards.	**Residential Pilot:** Partner with local apartment and condo building owners to explore partnership with employees who choose to live close to campus.
Marketing	Conduct 1 to 3 transportation fairs per year on-campus to promote trip reduction programs.	Actively engage and promote alternatives through transportation fairs and other promotional opportunities to promote trip reduction programs.	Transportation Policy Roll-out Fair. Promote bike to work month and host activities including seminar, kick-off fair, organize teams.

3.7.4.2 Physical Improvements

Several unsignalized intersections in the immediate vicinity of the hospital are expected to experience an increase in minor street delay as a result of the build out of the proposed MIMP. The increases in traffic along E Cherry Street and E Jefferson Street will impact vehicle, pedestrian, and bicycle accessibility into the neighborhoods from arterials such as E Cherry Street and E Jefferson Street. For that reason the potential for the installation of a traffic signal will be considered at two possible locations. These locations include:

- 16th Avenue/E Cherry Street
- 14th Avenue/E Jefferson Street

While other intersections such as 15th/Cherry and 13th/Cherry are anticipated to experience an increase in delay as a result of the growth in traffic, the signalization identified at the 16th/Cherry intersection provides an improved connection to the neighborhood streets. If the delay experienced at these intersections is not acceptable to drivers, then traffic may shift to the improved connections provided at the new signalized intersections.

The intersection of 14th Avenue/E Jefferson Street is currently controlled by an all-way stop. Signal warrants based on the Manual of Uniform Traffic Control Devices (MUTCD), 2009, this review indicates the 4-hour volume warrant would be met at this location by 2023 under the No Build and Alternatives 8, 9, and 10 conditions. Future improvements at this intersection could include the installation of a traffic signal.

A signal warrant evaluation was also conducted at 16th Avenue/E Cherry Street. For both 2023 and 2040, the volume warrants would not be met. There are other conditions in which a signal warrant may be considered including corridor progression, safety, pedestrians, etc. In consideration of these other factors, a signal at this location is recommended. If a signal was installed at 16th Avenue/E Cherry Street, some of the traffic from 15th Avenue or other parallel corridors may shift to the improved connection.

3.7.4.3 Other Mitigation Measures

Some of the mitigation associated with the MIMP will need to be defined at the project level when additional definition on the specific uses, building features, and City of Seattle planned improvements are known.

Loading

Truck access and loading berths would need to be further reviewed as part of the MIMP projects process. This review should include:

- Assess loading berth requirements and where possible consolidate facilities so that the number of berths campus wide is less than the code requirement.
- Assess truck delivery routes between Swedish Cherry Hill and I-5 and along E Cherry Hill and E Jefferson Street to identify potential impacts to roadways along those routes.

- Reduce the impact of truck movements on local streets and potential conflicts with pedestrians by consolidating loading facilities and managing delivery schedules.

18th Avenue Neighborhood Greenway

Swedish should continue to coordinate with SDOT on the location of the neighborhood greenway and work to minimize campus impacts on users of the facility. To the extent possible, the greenway features should be incorporated into the proposed health walk. If the greenway is provided along 18th Avenue, it is recommended that the bicycle facility provided on the west side of the street.

3.7.5 Secondary and Cumulative Impacts

Secondary and cumulative impacts on area roadways are included in the analysis of direct impacts. There is also a potential for cumulative impacts due to the combined effects of traffic being generated by build-out of the project and construction. This potential impact could be mitigated by scheduling construction activities such that arrival and departure of construction traffic occurs outside the peak hours.

3.7.6 Significant Unavoidable Adverse Impacts

Alternatives 8, 9, or 10 would accommodate additional amounts of future development at the Swedish Cherry Hill campus, which would contribute to additional travel demand and congestion along arterial corridors including E Cherry and E Jefferson Streets. The additional development also would increase traffic accessing and circulating in the area. This added congestion would contribute to measurably poorer performance of the transportation network, in terms of increased delays along several of the corridors and at some specific intersections. The increase in traffic and pedestrian and bicycle activity due to development would result in more conflict points and increased hazards to safety. The increase in traffic volumes for Alternatives 8, 9, or 10, and the resultant impacts on traffic operations are considered significant unavoidable adverse impacts.

3.7.6.1 Street System

Increases in Swedish Cherry Hill's traffic along the street system may result in an increase in traffic and related congestion that could be considered significant.

3.7.6.2 Campus Access and Service Vehicle Loading

Access to the parking facilities would occur along 15th and 16th Avenues similar to what exist today, and a new access would be provided to the parking garage along 18th Avenue. While the overall circulation and access patterns associated with the campus would generally stay the same, the amount of parking on 18th Avenue would result in a shift of the traffic to the east side of the campus. No significant unavoidable impacts to campus access and loading were identified.

3.7.6.3 Pedestrian and Bicycle Transportation

Swedish would provide pedestrian and bicycle enhancements at the Swedish Cherry Hill campus including along the 18th Avenue greenway. The proposal would increase potential conflicts between vehicular traffic and users of the neighborhood greenway. No significant unavoidable adverse non-motorized impacts are expected.

3.7.6.4 Transit/Shuttle Services

Swedish would improve transit access to the campus through the transit stop enhancements to the site. In addition, the analysis indicates that there would be sufficient capacity to accommodate anticipated increases in ridership at the Swedish Cherry Hill transit stop as a result of Alternatives 8, 9, or 10. No significant unavoidable adverse shuttle and transit service impacts are expected.

3.7.6.5 Traffic Volumes

Future (2023 and 2040) growth in the area would result in increases in regional and local traffic within the study area both without and with the project. In addition, Alternatives 8, 9, or 10 would increase area-wide and local traffic on routes serving the site. Although Swedish would implement strategies to reduce its overall traffic, this impact is considered a significant and unavoidable adverse impact since Swedish would likely not be able to reduce its traffic volume contribution to zero, and therefore, would increase traffic volumes on roadways even with mitigation. While strategies to reduce travel demand and related impacts have been identified, a residual increase in traffic to the street system attributable to Swedish is likely.

3.7.6.6 Traffic Operations

The increase in Swedish Cherry Hill's traffic along the street system, even with a successful TMP, may result in an increase in traffic and related congestion that could be considered significant.

3.7.6.7 Traffic Safety

No significant adverse impact to safety would occur. With the proposed mitigation, it is probable that overall safety would be improved.

3.7.6.8 Parking

Swedish is providing enhancements to the TMP as well as piloting a parking program to provide flexible on-demand off-street parking. Currently, there is parking associated with Swedish Cherry Hill that occurs along neighborhood streets. Some level of on-street parking within the residential area may continue to occur with the proposed project. This is not considered a significant impact.

3.8 Public Services

This section describes the existing public services (e.g., fire/emergency medical services; police; parks, civic, and other open spaces; water; sewer; stormwater; and solid waste – including hospital-related hazardous materials handling) on and in the vicinity of the Swedish Cherry Hill campus. Potential impacts to public services with operation of the Alternatives are analyzed below.

3.8.1 Policy Context

The SMC contains specific provisions that describe the scope of the SEPA analysis for the public services element. Relevant policies from SMC 25.05.675 are provided below:

O.2. Public Services and Facilities Policies

a. *It is the City's policy to minimize or prevent adverse impacts to existing public services and facilities.*
b. *The decision maker may require, as part of the environmental review of a project, a reasonable assessment of the present and planned condition and capacity of public services and facilities to serve the area affected by the proposal.*
c. *Based upon such analyses, a project which would result in adverse impacts on existing public services and facilities may be conditioned or denied to lessen its demand for services and facilities, or required to improve or add services and/or facilities for the public, whether or not the project meets the criteria of the Overview Policy set forth in SMC Section 25.05.665.*

3.8.2 Affected Environment

3.8.2.1 Fire

The Seattle Fire Department (SFD) provides fire protection, Basic Life Support (BLS), Advanced Life Support (ALS)/Emergency Medical Services (EMS), and fire investigation throughout the City from 34 fire stations (including Medic One Headquarters at Harborview Medical Center). Each fire station provides a full range of fire protection services, including fire suppression, emergency medical, rescue, hazmat response, and public education. In 2012, the SFD had 981 uniformed personnel, with on-duty strength of 207 officers. Apparatus associated with all stations includes: 33 fire engines; 12 ladder trucks; 4 aid units (basic life support); 7 medic units (advanced life support); 2 air trucks; 4 fire boats; and 2 hose wagons. Fire fighters must use compressed air to survive and air trucks provide air compressors that can refill spent cylinders (SFD 2013a).

Swedish Cherry Hill is situated between three fire stations: Fire Stations 6, 25, and 10. Fire Station 6 (Central District, 101 23rd Avenue South) is located approximately 0.7-mile to the southeast of Swedish Cherry Hill, and houses an engine company and a ladder unit. Station 25 (Capitol Hill, 1300 East Pine Street), located approximately 0.9-mile to the north, is the lead station for Battalion II, which serves the central part of the city. As a battalion station it houses an engine company, a ladder unit, an aid unit, and a battalion chief unit. It also houses several reserve units, including a reserve ladder unit and battalion chief unit. Station 25 houses the department's Mobile Ventilation Unit, which is utilized to support large-scale decontamination/ventilation efforts. Station 10 (400 South Washington Street), located approximately 1.2 miles to the southwest of Swedish Cherry Hill, houses an engine company, a ladder unit, an aid unit, the SFD's primary hazmat unit, and the reserve hazmat unit. Fire Station 10 is the city's Fire Alarm Center and the Emergency Operations Center, which have the ability to operate continuously for 72 hours under emergency conditions. Station locations relative to the Swedish Cherry Hill campus are shown on Figure 3.8-1 for the (SFD 2013a).

Response Times

The SFD maintains an overall average first-arrival response time to fire, rescue and hazardous materials calls of 4.15 minutes in 2012. The average response time to basic life support was 3.74 minutes and advanced life support was 3.67 minutes. The response time may be influenced by station location and design, staffing levels, as well as local rules and procedures for response. SFD serves a population of 608,660 in an area of 83.9 square miles. The location of a fire station is not the only factor in determining if that station will respond to an alarm. The Seattle 9-1-1 Dispatch Center determines which fire stations and other emergency units respond depending on the location and nature of the call (e.g., fire, medical emergency) and the availability of resources (SFD 2013b).

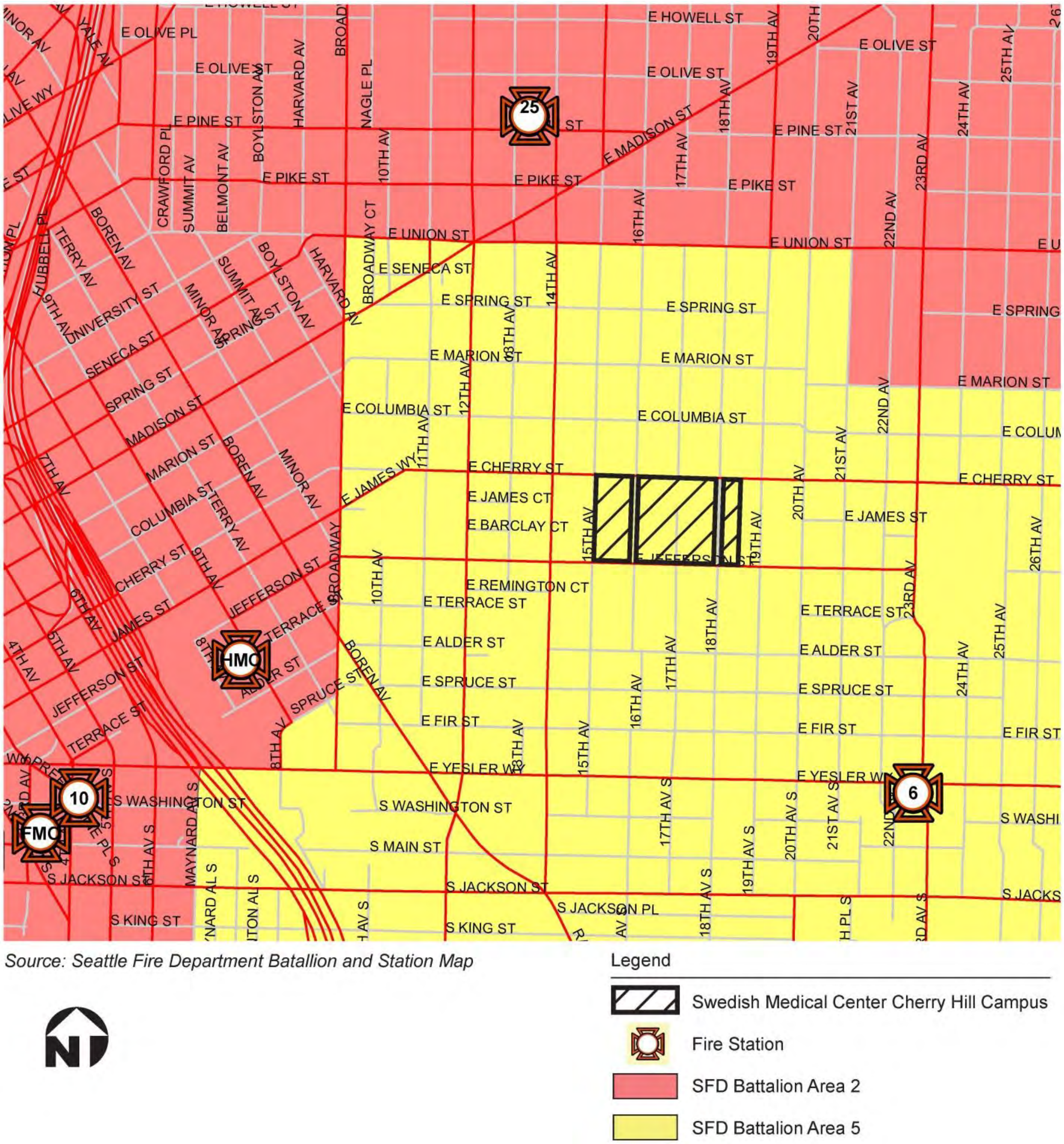
Fire/Emergency Service Incident History

Table 3.8-1 shows total historical incident response data for the SFD in 2011 and 2012 at the three stations which serve the Swedish Cherry Hill campus. Included are responses to calls for fire protection, false alarms, EMS, mutual aid and other services (i.e., rescue, car fire). As shown, the majority of responses at all stations were for EMS.

Table 3.8-1
Fire and Emergency Medical Services Incidents
Responded to by Stations Serving Swedish Cherry Hill, 2011 and 2012*

Emergency Types	2011	2012
Structure Fire	371	392
Non-Structure Fire	226	211
False Alarm	1,274	1,232
EMS	16,255	17,190
Mutual Aid	5	5
Other (i.e., rescue, car fire)	3,317	3,140

Source: Leonard Roberts, SFD email 11/8/132013c.
*Includes Stations 6, 10, and 25



Source: Seattle Fire Department Batallion and Station Map

Figure 3.8–1

Fire Station Locations

Fire/EMS Incident Responses to Site

The SFD records indicate that in 2011 and 2012, 230 and 234 calls, respectively, were made to Swedish Cherry Hill annually, which represent approximately 1 percent of the total calls for the three stations that serve the area (See Table 3.8-2).

Table 3.8-2
Fire and Emergency Medical Services Incidents
Responses at Swedish Cherry Hill, 2011 and 2012*

Emergency Types	2011	2012
Structure Fire	0	0
Non-Structure Fire	0	2
False Alarm	11	12
EMS	197	201
Mutual Aid	0	0
Other (i.e., rescue, car fire)	22	19

Source: Leonard Roberts, SFD email 11/8/2013, 2013c.
*Includes Stations 6, 10, and 25

Fire Facilities and Emergency Response Levy

A Fire Facilities and Emergency Response Levy was approved by Seattle voters in 2003 to improve and upgrade Seattle's fire facilities and emergency response system, which were determined to be outdated and inadequate to maintain the desired response times throughout the City. All of the City's fire stations, which were built between 1918 and 1974, were evaluated as needing major upgrades, renovation, or replacement in order to continue to provide service.

The levy provided approximately $167 million for multiple projects, including upgrades, renovations, or replacement of 32 neighborhood fire stations. Funds from this levy facilitated the construction of seismic and safety upgrades at Fire Station 25, which are scheduled to be completed in 2014. The rebuilding of Fire Station 6 was completed in January 2013. Station 10 rebuild was completed in 2008 (SFD 2013b).

3.8.2.2 Police

Police service at Swedish Cherry Hill is provided by the City of Seattle Police Department (SPD). Seattle is divided into five geographic areas; within those areas are the five precincts or police stations: North, East, South, West and Southwest. Precinct boundaries were determined through consideration of neighborhood boundaries, geographic and other natural boundaries. Each precinct contains smaller geographic areas called sectors. There are 17 sectors in the City. Each of these sectors is divided into three smaller sections called beats. Individual patrol officers are assigned responsibility within a beat. See Figure 3.8-2 for the location of the East Precinct relative to Swedish Cherry Hill.

Swedish Cherry Hill is located in East Precinct, George sector, beat G1. East Precinct, located at 1519 12th Avenue, serves the Capitol Hill, Central Area, First Hill, Judkins Park, Madison Park, Montlake, upper Pike/Pine neighborhoods in the East and Central Neighborhood Council Districts. East Precinct provides a full range of police services to prevent crime and enforce the law in a manner that makes residents and visitors feel safe (and be safe) in their homes, schools, businesses, and neighborhoods. Precinct personnel also respond to situations while patrolling the streets of Seattle, as well as work on solutions to long-standing neighborhood concerns and needs through the Community Policing and Anti-Crime Teams. Garfield High

School and the Seattle Housing Authority's Yesler Terrace are two focal points of the Community Policing Program in the vicinity of Swedish Cherry Hill.

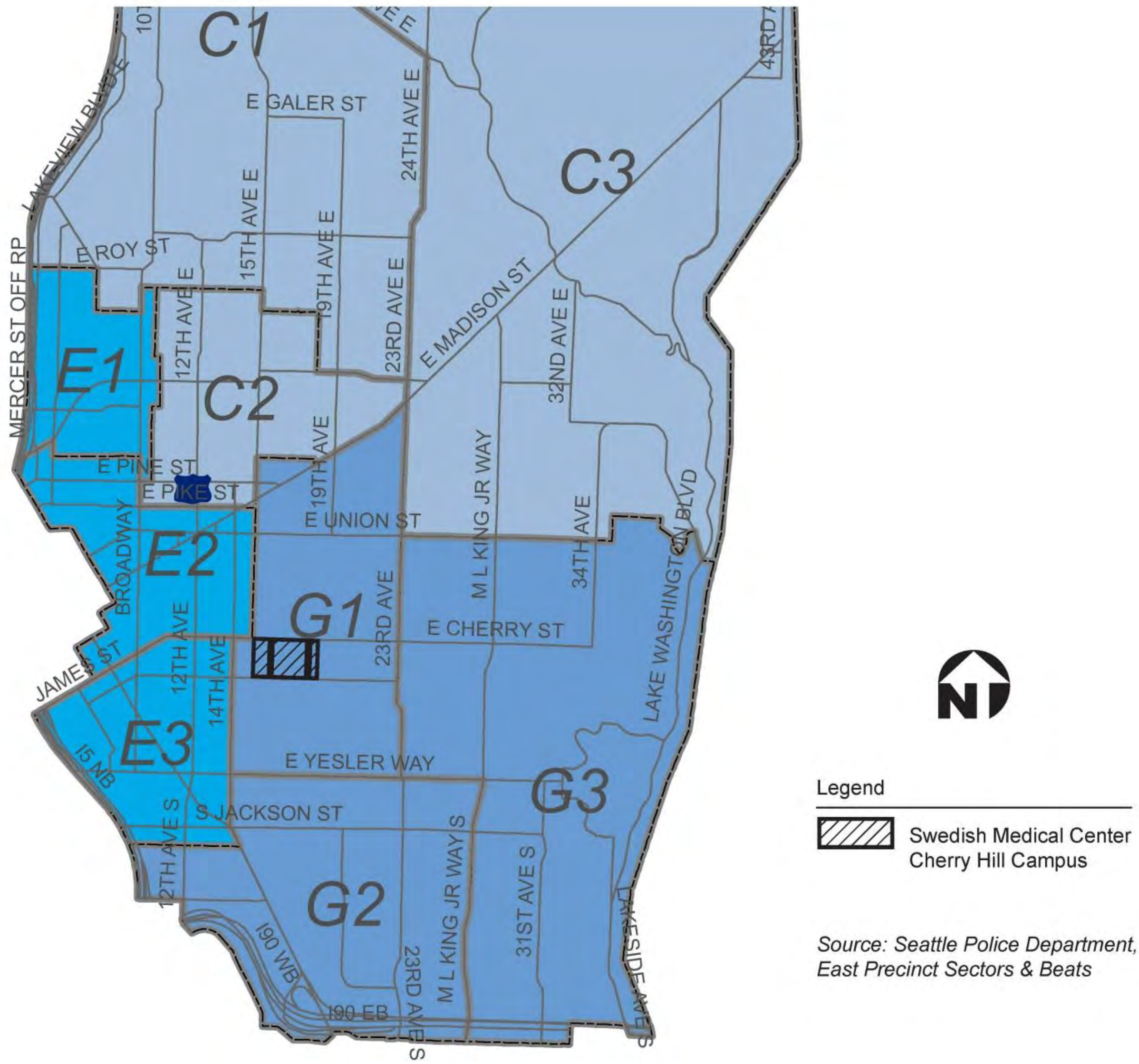


Figure 3.8–2

SPD East Precinct

In mid-2012, SPD reported City-wide average response times of 6.8 minutes against a goal of 7 minutes (SPD 2013). SPD reports that over the past 25 years, major crimes have shown a steady downward trend (SPD 2013). Table 3.8-3 shows crime statistics for East Precinct, George sector, and beat G1 compared to the City as a whole in 2011 and 2012. East Precinct (90,500 population in 2009) has approximately 15 percent of the City's population and accounts for 15 percent of the City's total crime reports. Beat G1 accounts for 1 percent of the City's total crime reports.

Table 3.8-3
Major Crime Reports 2011 and 2012

Type of Crime	2011				2012			
	City	East Precinct	Sector	Beat	City	East Precinct	Sector	Beat
Criminal Homicide	20	3	2	1	26	2	1	0
Forcible Rape Total	100	12	1	0	121	12	4	3
Robbery Total	1418	225	96	37	1447	243	90	43
Assault Total	7347	1064	325	108	7319	1089	357	119
Burglary Total	6807	1000	311	93	6633	1004	244	62
Larceny - Theft Total	21585	3158	868	257	20656	3017	896	243
Motor Vehicle Theft Total	3400	463	112	51	3541	533	138	33
Grand Total	40677	5925	1715	547	39743	5900	1730	503
Percent of Crime	100%	15%	4%	1%	100%	15%	4%	1%

Source: SPD 2013

In addition to the SPD providing law enforcement and public safety in the area, Swedish Cherry Hill supports their own security within the campus. Swedish Cherry Hill Security indicates that the typical calls to SPD involve disorderly conduct, car prowls (in parking garage), theft, trespassing, and assaults. Calls for police service average two to four calls per month. Seattle University, located immediately west of Swedish Cherry Hill, also maintains a security force that supplements SPD patrols of public areas outside of the Swedish Cherry Hill campus (Swedish 2013c).

3.8.2.3 Parks and other Open Space

According to the City of Seattle Parks and Recreation Department website, there are no public parks or open spaces immediately adjacent the Swedish Cherry Hill campus. There are several recreational facilities, small parks, and open spaces within several blocks of the Swedish Cherry Hill campus.

The 0.3-acre Firehouse Mini Park is located within the block north of the campus at 712 18th Avenue. The Firehouse Mini Park abuts the former Fire Station 23 discussed in Section 3.6 Historic Resources. The tree-shaded park has a wading pool, firehouse-themed play area, and benches. A 0.3-acre park with similar character, Spring Street Mini Park, is located 3 blocks north of the campus.

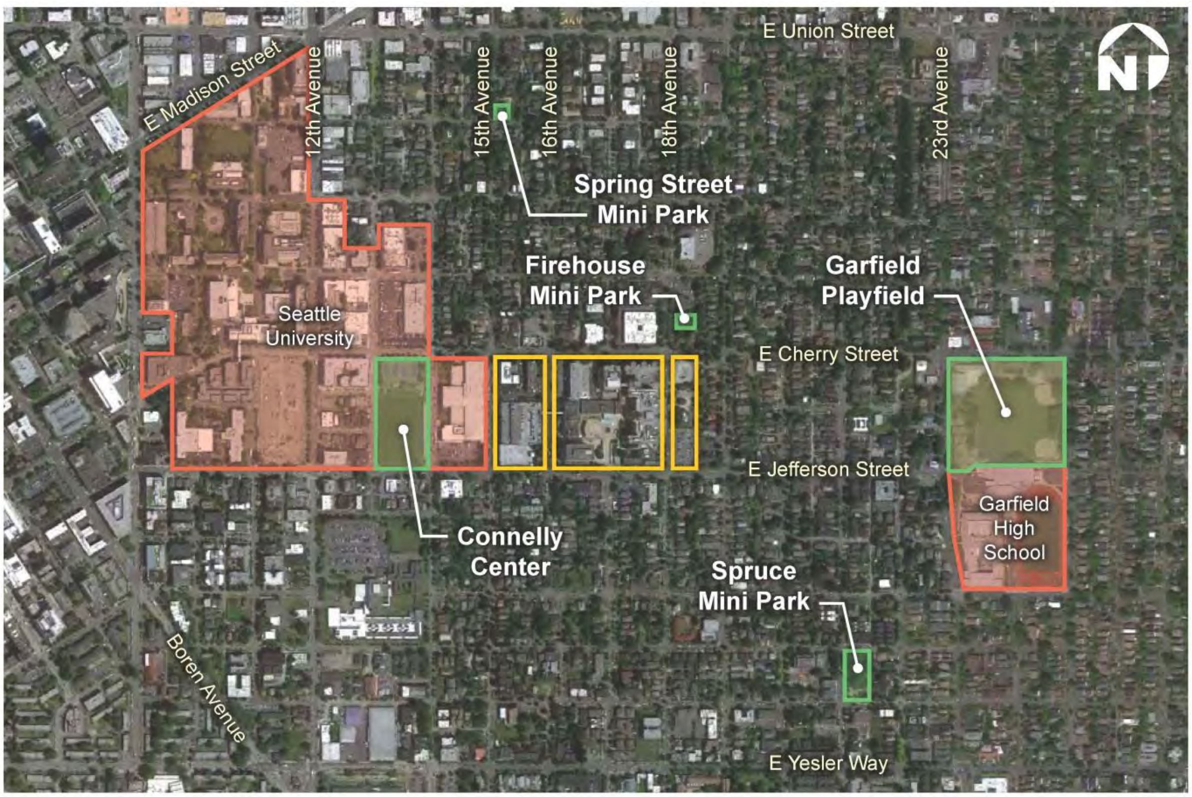
Spruce Street Mini Park is located at 160 21st Avenue approximately 4 blocks southwest of the campus. The 0.7-acre park has a modern play area, benches, a grassy area, and trees.

Garfield Playfield is located at 23rd Avenue and East Cherry Street. The 19.4-acre park, adjacent to the Garfield Community Center, has lighted tennis courts, fields for football, soccer, and baseball/softball, and restrooms. The Medger Evers indoor pool is also located next to the park.

Seattle University, a private institution, is located immediately west of Swedish Cherry Hill along 15th Avenue. The Seattle University Connolly Center (recreation and athletics) abuts 15th Avenue. The university's athletic fields and tennis courts are located farther west of the Connolly Center. These facilities are not included in the Seattle University MIMP as designated open space and their use appears to be limited to students and staff of Seattle University.

Public parks and open space within several blocks of Swedish Cherry Hill are shown on Figure 3.8-3.

The existing open space on the Swedish Cherry Hill campus reflects the urbanized character of the campus. These spaces are dispersed, and are generally small varied spaces in the perimeter setbacks and in-between buildings. The Master Plan identifies the central plaza as an open space; a portion is used as the hospital's main driveway entrance.



Source: Google Earth Pro

Legend

Swedish Medical Center Cherry Hill Campus

Figure 3.8–3

Parks and other Open Space

3.8.2.4 Water/Sewer/Stormwater

Water

Seattle Public Utilities (SPU) supplies water to 1.3 million businesses and people in the region, including the Swedish Cherry Hill campus. In 2009, users of the Seattle Regional Water System consumed approximately 130 million gallons per day, or approximately 47 billion gallons per year.

Water service to the Swedish Cherry Hill campus is supplied through ductile iron or cast iron mains ranging from 6-inch to 12-inch diameter (See Figure 3.8-4). In 2012, the domestic and irrigation water demand for the Swedish Cherry Hill campus was approximately 20.4 million gallons of water per year.

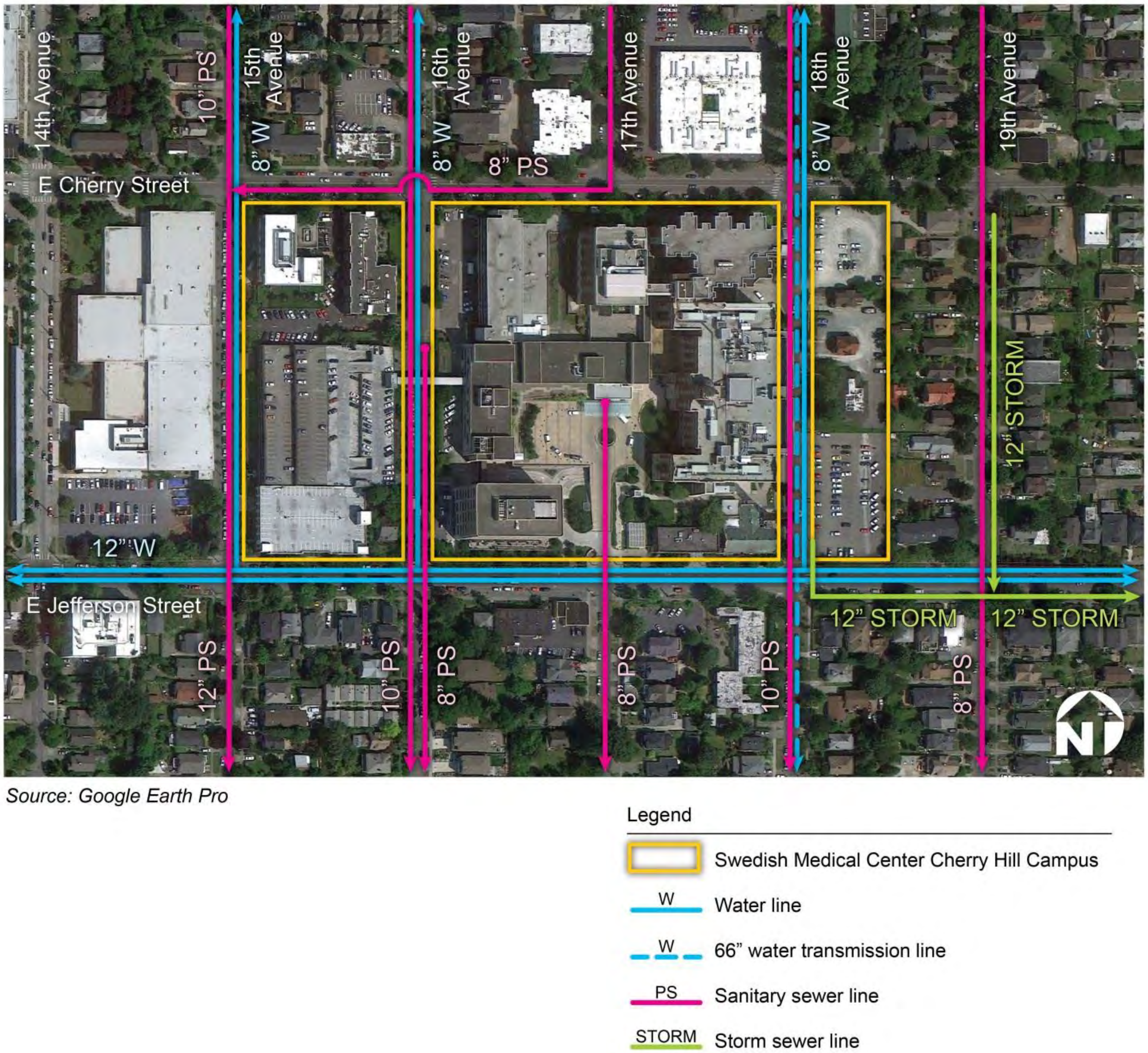
Sewer

Sewer service to the Swedish Cherry Hill campus is provided by SPU. Swedish Cherry Hill is served by combined public sewers consisting of a 10-inch clay pipe and a 15-inch concrete pipe in 15th Avenue, an 8-inch clay pipe in 16th Avenue, a 10-inch clay pipe in 17th Avenue, and an 8-inch clay pipe in 18th Avenue (See Figure 3.8-4). For commercial businesses, such as Swedish Cherry Hill, sewer bills are based on actual water usage at all times of the year. The City allows medical waste in the form of liquid body fluids to be flushed into the sewer system.

No system expansions are contemplated by SPU at this time. With each MUP application for specific buildings, an analysis of sewer capacity would be performed to determine whether adequate capacity exists from the site to the location where SPU's collection system connects to King County interceptors (approximately 3,300 linear feet downstream).

Stormwater

Stormwater service is provided through SPU. Stormwater is collected and detained in a flow-controlled facility onsite, then discharged to the combined public sewer mains described in the description of the sewer system above (See Figure 3.8–4). Drainage fees are collected through property taxes and not through a utility bill. Stormwater rates are charged per number of 1,000 gross SF increments on the site. Rate charges vary depending on property size and the total amount of impervious surfaces.



Source: Google Earth Pro

Figure 3.8–4
Existing Utilities

3.8.2.5 Solid Waste

Solid waste service to Swedish Cherry Hill is provided by Cleanscapes. Non-hazardous recycling, including commingled recyclables and cardboard is provided by Republic Services. A number of other recyclers handle materials that require special handling such as privacy-sensitive documents, batteries, electronics, oil, antifreeze, and spent lamps. In 2012, Swedish Cherry Hill generated 1,076,130 pounds of solid waste, and 920,465 pounds of recycling.

In 2012, the Swedish Cherry Hill campus generated 74,900 pounds of food waste and 24,000 pounds of yard waste. These compostable materials are sent to Cedar Grove for composting.

The campus reduced its waste stream by 5 percent and increased its recycling rate to 46 percent in 2012. The internal website - "Healthy Healthcare" - provides information to staff for improving the hospital's sustainability (Swedish 2013d).

Garbage is delivered to the Seattle's South Transfer Station at 130 South Kenyon Street, which is managed and operated by SPU. Recycling materials are delivered to the Republic's facilities at 54 South Dawson Street in Seattle.

The transfer station that primarily serves the Seattle area south of the Lake Washington Ship Canal, although service is not limited to that area. Solid waste, organics (e.g., yard and food waste) and recyclables (e.g., clean wood waste, appliances and other scrap metal, plastics, paper and other recyclables) are collected at the station. The solid waste is compacted, and the waste materials are trucked to an intermodal yard for transfer to trains (solid waste), the Cedar Grove composing facility in Maple Valley (organics), and other recycling facilities (recyclables). Waste from the station is transported to the Columbia Ridge Landfill and Recycling Center in Arlington, Oregon.

Medical and other Hazardous Waste

Medical waste generated by Swedish Cherry Hill is picked up bi-weekly by Stericycle, the only Washington Utilities and Transportation Commission-permitted medical waste-hauler within the state. In 2012, the Swedish Cherry Hill campus generated 13,463 pounds of medical waste. So-called "red bag" waste includes waste pharmaceuticals, chemotherapy waste, and various other hazard materials designated by the State of Washington (Swedish 2013d).

3.8.3 Impacts

Alternative 1 – No Build

The No Build Alternative would not involve expansion of the MIO boundary. There would be some remodeling and/or replacement and could be changes to onsite pedestrian and vehicular circulation and parking. Construction activities would be anticipated to be similar to ongoing maintenance activities that existing today.

Impacts Common to All Build Alternatives

Fire

Increases in onsite employment and the number of visitors/patients to the Swedish Cherry Hill campus would be incremental and would be accompanied by an increased demand for all types of services provided by SFD, including fire protection, BLS, and EMS. The SFD indicates that they have sufficient capacity and resources to absorb potential increased calls related to fire suppression and EMS services at Swedish Cherry Hill[1].

[1] Source: Leonard Roberts, SFD email 11/8/2013, 2013c

All new and renovated buildings would be constructed in compliance with the fire codes in effect at the time of building permit review. Adequate fire flow to serve the proposed redevelopment would be provided as required by fire code. Specific code requirements would be adhered to regarding emergency access to structures.

Police

Increases in onsite employment and campus visitors/patients over the build-out of the Swedish Cherry Hill MIMP would be incremental and would be accompanied by increases in demand for police services. There should be no difference between the alternatives in the level of calls for service.

Parks and other Open Space

There would be no effects to parks, other recreation, or open space off-campus. Visitation to the existing parks and open space may increase relative to the increase in employment, patients, and visitors at the Swedish Cherry Hill campus. With the implementation of any of the Build Alternatives, the amount of landscaped areas providing open space on campus would be replaced or relocated based on the building design. Swedish has proposed to construct a "Health Walk" or walking path around the perimeter of campus with informational signs, public pocket parks, and green spaces with seating areas.   Seattle DPD Green Factor guidelines would be used in directing the development of new open spaces. Overall, the Build Alternatives are anticipated to have a positive impact on open space on campus.

Water/Sewer/Stormwater

With the increase of 1.9 million SF of gross building area on the site proposed in Alternative 8, this demand is expected to increase to 62.7 million gallons per year, based on average consumption per SF of gross building area.

With the increase of 1.55 million SF of gross building area on the site proposed in Alternative 9 or 10, this demand is expected to increase to 71.6 million gallons per year, based on average consumption per SF of gross building area.

All Build Alternatives could increase water demand from its current 20.4 million gallons of consumption annually.[2]

There appears to be adequate capacity in the current system to handle an increase in water consumption, as well as sanitary sewer and stormwater discharge. The MIMP development would occur over the next 30 years and existing capacity could change. With each new building proposed, an evaluation of the infrastructure would be performed and improvements identified if needed. The evaluation would be submitted to DPD as part of the MUP application.

[2] Calculation: 33 gallons per square-foot multiplied by the additional square-footage under each alternative. This demand per square-foot is based on the current water usage records for the Swedish Medical Center Cherry Hill campus.

As the water pressure in the public system is static, Swedish Cherry Hill neighbors would not experience changes in their water pressure. The only time a reduction in water pressure could be noticed is during a fire flow event (when fire hydrants are in use to battle a fire). None of the Build Alternatives would have an impact on water services or local domestic water pressure.

Solid Waste

All Build Alternatives would result in an increase in solid waste production. No forecast has been calculated on the future waste stream upon full build out. Swedish Medical Center indicates that the amount and content of the waste stream would depend upon the services offered at the campus (e.g., obstetrics services would increase red bag waste and recycling) and building design with sustainability in mind would reduce the potential increase in waste production and increase opportunities for recycling. The campus would continue efforts to reduce waste and increase the recycling rate (Swedish 2013d). No impacts are anticipated.

3.8.4 Cumulative Impacts

Planned development in the area includes projects associated with the Swedish Medical Center/First Hill, Harborview Medical Center, The Polyclinic, and Seattle University. These projects, together with the Swedish Cherry Hill campus redevelopment, could increase demand for public services (e.g., fire, police, parks, water/sewer/stormwater, and solid waste) in the vicinity. Currently, there is sufficient capacity in the system to accommodate development, however a specific analysis would need to be performed for each building as it is developed and improvements identified if needed.

3.8.4.1 Fire

The SFD reports that approximately 80 percent of the total increase in call volume for fire/EMS services is related to the general growth in population and employment (for commercial development call volume is calculated based on the increase in number of employees). Geographic areas that have a high concentration of hospitals, clinics, nursing homes, retirement, and adult care facilities account for approximately 20 percent of SFD's call volume. The adjacent First Hill/Broadway neighborhood has one of the highest numbers of EMS calls in the City. Planned development in the area, together with the Swedish Cherry Hill campus redevelopment, would increase demand for certain fire/EMS services over the long-term.

Based on the anticipated increase in demand for fire/EMS services, the SFD is developing alternate response strategies based on a City-wide review of call volume (demand), forecasted changes in demographics, and other criteria. Therefore, mitigating measures related to any specific project would not be required (SFD 2013c).

3.8.4.2 Water/Sewer/Stormwater

Sufficient capacity is currently available within these infrastructure systems, with the exception of storm drainage capacity within mains in 23rd Avenue east of the project site. The storm drainage capacity in 23rd Ave known to be deficient. The existing storm drainage system in this area is planned for improvement in the near future, with modifications to include construction of additional capacity (new pipes), reduction of stormwater entering the system through the use of Green Stormwater Infrastructure BMP's and/or re-directing some of the water around the limited capacity portions of the system. The actual limits and details of the project are still in the planning stage, so are not known at this time. As development occurs in the future, a current analysis would need to be performed for each development and improvements identified if needed.

3.8.5 Mitigation Measures

The following mitigation measures would reduce potential impacts to fire/EMS Services from implementing the Swedish Cherry Hill MIMP:

- Swedish Cherry Hill will consult SFD to plan fire access routes to and on the site.
- Fire flow requirements and hydrant location/capacity will be reviewed with SFD to ensure adequate capacity.

The following mitigation measures could minimize potential impacts to police services resulting from implementing the Swedish Cherry Hill MIMP:

- Permanent site design features will be included to help reduce criminal activity and calls for service, including: orienting buildings towards sidewalks, streets and/or public open spaces; providing convenient public connections between buildings onsite and to the surrounding area; and, providing adequate lighting and visibility onsite, including pedestrian lighting.
- The Final MIMP will state that Swedish Cherry Hill will apply Crime Prevention Through Environmental Design (CPTED) principles to the development of its open space and public amenities to enhance the safety and security of the areas.

The following mitigation measures would reduce or minimize potential impacts to water, sewer, and stormwater:

- Major development on the Swedish Cherry Hill campus would examine the impact of development on the public sewer infrastructure from the development site to where SPU's collection system connects to King County interceptors (approximately 3,300 linear feet downstream).
- In the event that a tunnel is constructed across 16th Avenue, public sewer and water mains that are impacted would be relocated to carry flows around the impacted area in other parallel street rights-of-way.
- Low-impact development measures such as bio-retention cells or bio-retention planters will be utilized to reduce the demand on stormwater infrastructure.
- In addition to Low Impact Development measures, major development on the Swedish Cherry Hill campus would trigger the need for flow control and water quality measures as part of the storm drainage design requirements for the site. Required water quality measures would involve following the Seattle stormwater design guidelines and using the BMPs for water quality that would work effectively on the site while meeting the

necessary requirements. BMPs that would likely be used include bio-filtration tree wells, stormwater filter units, or water quality vaults. There are also several other possible measures that could be used, but it will depend on site constraints and the amount of stormwater that needs to be treated.

The following mitigation measures would reduce or minimize potential impacts to solid waste from the implementation of the Swedish Cherry Hill MIMP:

- Continued implementation of waste reduction and recycling measures including an informational website, efficient use of materials and supplies, food and yard waste composting, hazardous waste recycling, and general office recycling.

3.8.6 Secondary and Cumulative Impacts

The Build Alternatives in combination with population growth in the City would increase the demand on public services and utilities; however, each of the identified public services and utilities has the capacity to accept an increase without adverse effects.

3.8.7 Significant Unavoidable Adverse Impacts

No significant unavoidable adverse impacts would be anticipated.

3.9 Construction

This section of the Draft EIS describes potential construction-related impacts that could result from development identified under the proposed new MIMP. Demolition, site preparation, excavation and construction will generate short-term environmental impacts including: air quality; noise; land use; aesthetics; housing; historic resources; transportation (including circulation and parking); and public services. While the majority of all construction activity will occur during the daytime, at times it may be necessary for some construction activity to occur during evening hours. Some evening activities may be necessary to reduce the duration of the overall construction timeframe and/or because the City requires certain construction activities to occur at that time in order to reduce impacts to pedestrians and vehicles during the day. Construction activity would likely be noticeable to some adjacent land uses.

Policy Context

The SMC contains specific provisions that describe the scope of the SEPA analysis for the construction impacts analysis. Relevant policies from SMC 25.05.675 are provided below:

B.2. Construction Impact Policies

1. *It is the City's policy to minimize or prevent temporary adverse impacts associated with construction activities.*
2. *The decision maker may require, as part of the environmental review of a project, an assessment of noise, drainage, erosion, water quality degradation, habitat disruption, pedestrian circulation and transportation, and mud and dust impacts likely to result from the construction phase.*
3. *Based on such assessments, the decision maker may, subject to the Overview Policy set forth in SMC Section 25.05.665, condition or deny a project to mitigate adverse impacts of the construction process.*
4. *Noise. Mitigating measures to address adverse noise impacts during construction include, but are not limited to:*
    i. *Limiting the hours of construction;*
    ii. *Specifying the time and duration of loud noise;*
    iii. *Specifying a preferred type of construction equipment; and*
    iv. *Requiring sound buffering and barriers.*
5. *Drainage. Mitigating measures to address adverse drainage impacts during construction may include, but are not limited to:*
    i. *Sedimentation traps and filters;*
    ii. *Sedimentation tanks or ponds;*
    iii. *Oil separators;*
    iv. *Retention facilities;*
    v. *Maintenance programs;*
    vi. *Performance bonds; and*
    vii. *Non disturbance areas.*
6. *Pedestrian Circulation. Mitigating measures to address adverse impacts relating to pedestrian circulation during construction may include, but are not limited to:*

i. Covered sidewalks or alternate safe, convenient and adequate pedestrian routes; and

ii. Limits on the duration of disruptions to pedestrian flow.

7. *Transportation. Mitigating measures to address transportation impacts during construction may include, but are not limited to:*
   i. A construction phase transportation plan which addresses ingress and egress of construction equipment and construction worker vehicles at the project site;
   ii. Traffic control and street maintenance in the vicinity of the construction site;
   iii. Rerouting of public vehicular and pedestrian circulation in the vicinity of the construction site;
   iv. Providing a temporary High Occupancy Vehicle (HOV) incentive program for construction workers at the site to reduce the number of their vehicle staking parking places in the vicinity of the construction site; and
   v. HOV discounts for members of the public who were displaced from a traditional parking area by the construction activity.

3.9.1 Affected Environment

3.9.1.1 Air Quality

Typical sources of air pollution within the Swedish Cherry Hill project area include vehicular traffic, medical offices and facilities, educational institutions, a variety of commercial businesses, and residential wood-burning fireplaces and stoves. Residential wood-burning produces a variety of air contaminants, including relatively large quantities of fine particulate matter. The major concern with regard to air pollution from vehicular traffic is CO. CO is the pollutant that is emitted in the largest quantity for which ambient air standards exist.

Other pollutants generated by traffic include the ozone precursors: hydrocarbons and nitrogen oxides. In addition, sulfur oxides and nitrogen dioxide (NO_2) are emitted by motor vehicles, although concentrations of these pollutants are usually low, except for near large industrial facilities.

Ecology and the PSCAA maintain a network of monitoring stations in the Puget Sound region. Based on monitoring information collected over a period of years, the Swedish Cherry Hill project study area is in an ozone air quality "maintenance" area, suggesting that the air quality is generally good. This is a nonattainment area that has been found to be in attainment of the standard, but which is still subject to special air quality reviews until the standard has been maintained for at least 10 years. Under current air quality plans and policies, a "maintenance" area designation has no direct implications on the Alternatives.

See Section 3.1, Air Quality, for additional information.

3.9.1.2 Groundwater

According to URS geotechnical engineer Martin McCabe (PE), the Cherry Hill area is generally underlain by shallow glacial till (i.e., unsorted sediment with content that varies from clays to mixtures of clay, sand, gravel and boulders). There are likely areas of perched groundwater, where there are pockets of groundwater that have rock or clay under them that prevents the groundwater from draining. Construction can affect the groundwater by compacting soil which can force groundwater to the surface or to another location, or by opening new channels in what was previously an impermeable layer.

3.9.1.3 Noise

The existing Swedish Cherry Hill site is typical of a semi-urban residential setting. The source of noise on and around the campus is primarily from automobile traffic on the nearby surface roads, aircraft overflights, pedestrian activity and other typical urban activities.

The existing aural environment at the edge of the Swedish Cherry Hill Site was characterized using multi-day sound level measurements at seven locations. These measurements were taken to construct a model of existing noise levels.

The measured existing sound levels indicate that sound levels in the vicinity of the Swedish Cherry Hill Campus are relatively high (54 to 78 dBA), often not dropping below code limits during daytime hours and occasionally remaining above nighttime noise limits as well. This is attributable to traffic on E Cherry and E Jefferson Streets; noise monitors located along these streets exhibited consistently higher hourly L_{eq} levels than those located to the east and west of the campus. Noise levels along the eastern border of the campus are substantially lower and are consistent with the adjacent residential neighborhood.

See Section 3.2, Noise, for additional information including details on noise level measurements.

3.9.1.4 Transportation

Swedish Cherry Hill is surrounded by residential neighborhoods to the north, east, and south. West of the Swedish Cherry Hill campus lies the Seattle University campus. The neighborhoods located adjacent to the campus are served by residential streets, which include on-street parking and sidewalks. With parking permitted on both sides of the roadways, travel way widths are narrow and often only one car can pass at a time, depending on how vehicles are parked on the street.

Access to and from the regional roadways such as I-5 to the west is provided via E Cherry Street and E Jefferson Street. Local connections to the neighborhood from these roadways are generally provided via stop controlled intersections, with E Cherry and E Jefferson Streets having the right-of-way. However, to serve the neighborhoods north of the campus, traffic signals exist at the E Cherry Street/18th Avenue and E Cherry Street/14th Avenue intersections. No traffic signals exist along E Jefferson Street in the vicinity of the campus. Access to the campus north (SR 520) and south (I-90) of the local neighborhoods is provided via collector arterials such as E Madison Street, Rainier Avenue, and Broadway. These roadways range from three- to five-lane cross-sections.

There are several parking areas within the Swedish Cherry Hill campus that are available to staff, patients, and visitors. Access points to the Swedish Cherry Hill parking garages and surface lots are located primarily on 15th Avenue, 16th Avenue, and 18th Avenue between E Cherry Street and E Jefferson Street. Designated parking is provided for patients of the Northwest Kidney Center within a separated portion of the 16th Avenue garage with vehicular access along 15th Avenue.

The primary access to the emergency department is provided via 16th Avenue. The entry to the emergency department is located south of E Cherry Street at the second driveway, which is one-way inbound only. Ambulances, other emergency vehicles, and patients enter the same driveway. In front of the emergency entrance, there are two parking spaces for ambulances and seven parking spaces for emergency room visitors.

The primary north to south bicycle corridors included Broadway and 19th Avenue E, which are delineated with sharrows. 19th Avenue is a signed bicycle route. A bicycle lane is provided along 12th Avenue E. East to west bicycle connections in the study area are provided via E Cherry Street and E Jefferson Street, and predominantly identified by sharrows. Bicycle lanes are provided along portions of E Cherry Street traveling in the uphill direction, E Jefferson Street west of 19th Avenue, and E Yesler Way. Union Street, a signed bike route, has a combination of sharrows and bicycle lanes. The E Yesler Way bicycle route goes into the downtown.

King County Metro operates several routes within the vicinity of Swedish Cherry Hill. There are 8 King County Metro Transit routes within a half-mile (or 10- to 12-minute) walking distance of Swedish Cherry Hill. King County Metro bus stops are currently located on E Jefferson Street at 17th Avenue adjacent to the Swedish Cherry Hill campus.

Sidewalks are present on all of the streets surrounding the Swedish Cherry Hill campus with marked crossings at most intersections.

See Section 3.7, Transportation, for more detailed information.

3.9.1.5 Public Services

Fire

Swedish Cherry Hill is situated between three fire stations: Fire Stations 6, 25, and 10. Fire Station 6 (Central District, 101 23rd Avenue South) is located approximately 0.7-mile to the southeast of Swedish Cherry Hill and houses an engine company and a ladder unit. Station 25 (Capitol Hill, 1300 East Pine Street), located approximately 0.9-mile to the north, is the lead station for Battalion II, which serves the central part of the city. As a battalion station it houses an engine company, a ladder unit, an aid unit, and a battalion chief unit. It also houses several reserve units, including a reserve ladder unit and battalion chief unit. Station 25 houses the department's Mobile Ventilation Unit, which is utilized to support large-scale decontamination/ventilation efforts. Station 10 (400 South Washington Street), located approximately 1.2 miles to the southwest of Swedish Cherry Hill; houses an engine company, a ladder unit, an aid unit, the SFD primary hazmat unit, and the reserve hazmat unit. Fire Station 10 is the city's Fire Alarm Center and the Emergency Operations Center, which have the ability to operate continuously for 72 hours under emergency conditions.

See Section 3.8.1.1 for additional information on fire services.

Police

Swedish Cherry Hill is located in East Precinct, George sector, beat G1. East Precinct, located at 1519 12th Avenue, serves the Capitol Hill, Central Area, First Hill, Judkins Park, Madison Park, Montlake, upper Pike/Pine neighborhoods in the East and Central Neighborhood Districts.

See Section 3.8.1.2 for additional information on police services.

Water/Sewer/Stormwater

Water service to the Swedish Cherry Hill campus is supplied through ductile iron or cast iron mains ranging from 6-inch to 12-inch diameter. Sewer service to the campus is provided by SPU. Swedish Cherry Hill is served by combined public sewers consisting of a 10-inch clay pipe and a 15-inch concrete pipe in 15th Avenue, an 8-inch clay pipe in 16th Avenue, a 10-inch clay pipe in 17th Avenue, and an 8-inch clay pipe in 18th Avenue. Stormwater service is provided through SPU. Stormwater is collected and detained in a flow controlled facility onsite, then discharged to the combined public sewer mains.

See Section 3.8.1.4 for additional information on water/sewer/stormwater.

3.9.2 Impacts

3.9.2.1 Alternative 1 – No Build

The No Build Alternative would involve limited modifications or additions to open space, or modifications to onsite pedestrian and vehicular circulation or parking. Construction impacts could result from on-campus remodeling or building replacement projects.

Air Quality

Short-term, temporary increases in emissions could occur. Swedish would comply with PSCAA regulations and provide mitigation to reduce construction dust and emissions.

Noise

Short-term, temporary noise impacts could occur due to construction activities such as demolition, excavation and structure erection.

Transportation

Limited modifications to onsite pedestrian and vehicular circulation or parking could occur. Any street or sidewalk closure would be regulated and permitted through the SDOT. Short-term transportation impacts would be negligible to minor.

Public Services and Utilities

No onsite activities are anticipated to affect public services; no public services impacts are anticipated.

No modifications to utilities are anticipated but in the event limited modifications to the site require improvements to utilities, utility design and construction would be overseen by the responsible utility. Permit requirements would seek to avoid or minimize service interruptions during construction periods.

3.9.3 Impacts Common to all Build Alternatives

3.9.3.1 Air Quality

Demolition, site preparation, and construction activities would intermittently generate particulate matter, odors, and engine exhaust. Particulate matter (dust, PM2.5 and PM10) would be emitted from ground clearing, excavation, material piles, building construction, and trucks depositing mud on streets. Engine exhaust would include small amounts of CO, GHGs, and particulate matter from trucks and construction equipment. Diesel-powered construction equipment would emit small amounts of diesel exhaust and air toxics. Engine exhaust and paving activities could be sources of odors at times. The duration of construction emissions would vary depending on the individual building project, and any construction impacts would be considered short-term and temporary.

Construction equipment, temporary detours, lane restrictions, and other construction activities could increase traffic congestion at times. Emissions from traffic could increase while vehicles experience greater delay. Any vehicular emissions from construction traffic would contribute a small amount compared with area automobile traffic, because construction traffic would be a small fraction of the total traffic in the area. Emissions from temporary traffic delays as a result of construction equipment could be reduced by a Construction Transportation Management Plan (CTMP).

Potential construction impacts would be mostly localized to the vicinity of the construction activity. Residences are located in the immediate vicinity of the Swedish Cherry Hill site, and the potential for site-specific construction air quality impacts to sensitive land uses would vary depending upon the proximity of development to residences, and could be moderate at times during heavy construction or demolition activities.

To reduce fugitive dust, odors, and engine exhaust, construction activities would include mitigation measures such as spraying with water and emission-control devices on equipment. Construction activities would comply with the PSCAA regulations to minimize fugitive dust (PSCAA 2013b). With the mitigation and dust-control measures, the quantity of air emissions during construction would be anticipated to be minimal.

3.9.3.2 Groundwater

As noted above, construction can alter the subsurface soil conditions, and create new drainage pathways for groundwater. With each site-specific development, a geotechnical analysis would be performed that would include soil borings that would identify depth to groundwater and subsurface conditions that may affect groundwater flow. The geotechnical report would include recommendations for soil strengthening and means of addressing groundwater. These reports would be included in MUP applications for site-specific buildings.

3.9.3.3 Noise

Construction activities would intermittently generate noise from demolition, site preparation, construction, and paving activities. Construction noise levels would vary, depending on the equipment being used, location, and time and duration of the construction activity. Noise during construction could be disruptive at times for nearby land uses and be most noticeable at locations near construction activities.

The City noise ordinance allows temporary noise levels to exceed the noise limits described in Table 3.9-1 during daytime hours. Stricter nighttime noise levels apply during nighttime hours (between 7:00 PM and 7:00 AM on weekdays, and between 7:00 PM and 9:00 AM on weekends and legal holidays) and are limited to 45 dBA for sources affecting receivers in residential zones.

Table 3.9-1
Construction Equipment Sound Ranges

Equipment	Examples	Noise Level At 50 feet (dBA)(1)	Noise Level At 100 feet (dBA`)(2)`	Noise Level At 400 feet (dBA)(3)
Earth Moving	Compacters, loaders, backhoes, tractors, graders, pavers	73-96	67-90	55-78
Materials Handling	Concrete mixers and pumps, cranes, derricks	74-88	68-82	56-70
Stationary	Pumps, compressors, generators	69-87	63-81	51-69
Hauling	Trucks	83-94	77-88	65-76
Impact Equipment	Pile drivers	95-106	89-100	77-88
Impact Tools	Jackhammers, rock drills, pneumatic wrenches	81-98	75-92	63-80

Notes:
1) Noise levels at 50 feet from *Noise from Construction Equipment and Operations, Building Equipment, and Home Appliances* (U.S. EPA 1971).
2) Noise levels at other distances extrapolated by an attenuation rate of 6 dBA per doubling of distance from the source at 50 feet.
3) Noise levels do not consider the shielding effects of buildings and other obstructions.

The proposed MIMP envisions a development period of approximately 30 years or longer, however the development would occur in phases and construction would not be continuous. Any potential construction noise impacts would be considered short-term and temporary, and would include measures to reduce construction impacts. Construction activities also would comply with the City noise regulations where applicable.

During construction, the greatest potential for noise impacts would be to the residences located immediately adjacent to the half-block located on 18th Avenue between E Jefferson and E Cherry Streets. Construction activities within 50 to 100 feet of sensitive receivers would have the potential to exceed 80 to 85 dBA. Individual pieces of equipment such as dump trucks, pavers, pneumatic wrenches, and jackhammers have the potential for higher noise levels. If construction noise were to exceed 80 dBA L_{eq}, a violation could occur depending upon its duration. To determine whether a noise violation is occurring, a 1-hour L_{eq} measurement of construction noise would need to be recorded.

Construction noise sources would include earth movers, generators, trucks, and impact equipment. Maximum noise levels of construction equipment would be similar to the typical construction equipment noise levels presented in Table 3.9-1.

The construction noise levels in Table 3.9-1 are for individual equipment operating separately, and do not represent L_{eq} levels over any particular period. Average L_{eq} levels would depend on the type and number of construction equipment, how often the equipment operates, location within the construction area, and distances to nearby residences. Because various construction equipment at any time could be turned off, idling, or operating at less than full power, and because construction machinery is typically used to complete short-term tasks, average construction L_{eq} levels would be lower than the maximum sound levels in Table 3.9-1.

Ground vibrations could occur during construction as the result of the use of heavy equipment during the demolition of existing structures, ground improvement activities, compaction equipment operations, and truck traffic. These vibrations could be annoying to individuals working or living within the area, and/or potentially cause damage to nearby structures or utilities. Vibration monitoring would be implemented if necessary to prevent offsite adverse effects.

3.9.3.4 Transportation

The construction impacts associated with the proposed Swedish Cherry Hill MIMP on of the transportation system elements; including the street system, campus access and circulation, pedestrian and bicycle transportation, transit service/facilities, traffic volumes, traffic operations, traffic safety and parking; are described below.

Street System

Construction impacts related to the street system would depend on the location of the construction within the Swedish Cherry Hill campus. The streets that would be most impacted would include E Cherry Street, E Jefferson Street, 15th Avenue, 16th Avenue, and 18th Avenue along the campus frontages. A Construction Management Plan (CMP) would mitigate these impacts. The plan could include scheduling street closures and other disruptions to the street system during off-peak periods to minimize impacts to the system.

Campus Access and Circulation

Construction impacts related to campus access and circulation would depend on the location of the construction within the Swedish Cherry Hill campus. Impacts could include the need to reroute traffic and close parking access and/or lots/garages. A CMP could be developed to mitigate impacts. Protocol could be included in the plan related to safe campus access and circulation adjacent to the construction site through the detours, signs, and providing information ahead of time to patients and employees on potential parking access or facility changes.

Pedestrian and Bicycle Transportation

Construction impacts may result in intermittent sidewalk and bicycle facility closures and re-routing along E Cherry Street, E Jefferson Street, 15th Avenue, 16th Avenue, and 18th Avenue depending on the specific location of construction within the campus. A CMP could be developed to mitigate impacts. Protocol could be included in the plan related to safe pedestrian and bicycle circulation adjacent to the construction site through the use of temporary facilities, detours, and signs.

Transit/Shuttle Services

Construction impacts could result in some increase in ridership as a result of construction workers traveling to and from the site. Based on the review of transit capacity, presented previously in this document, there would be capacity at the campus to accommodate additional demand related to construction workers. In addition, construction-related activities could impact nearby transit routes and stops as well as pedestrian accessibility to these facilities. A CMP could be prepared and impacts to transit could be coordinated with the transit agency in advance and appropriate relocation and signage provided.

Traffic Volumes

Construction of the Build Alternatives would result in an increase in traffic volumes due to construction workers traveling to and from the site, delivery of material, and truck hauling.

Traffic Operations

As described for traffic volumes, construction impacts related to traffic operations would occur as a result of increased traffic levels. To minimize impacts to operations, a CMP would be developed and could include scheduling the most intensive construction activities such that they are spread out over time, and prohibiting material deliveries from leaving or entering the area during AM and PM peak hours when feasible.

Potential haul routes during construction are anticipated to be between Swedish Cherry Hill and I-5 or I-90 depending on where materials will be delivered to or from. Possible routes could be via E Jefferson, E James or Rainier Ave S. Specific haul routes would be defined as part of the permitting process with SDOT.

Traffic Safety

Construction would increase vehicular traffic within the study area, which could result in increased conflicts between vehicular, pedestrian, and bicycle traffic. It is anticipated that safety impacts related to construction would be less than build-out of the MIMP.

Parking

Parking impacts due to construction would include increased parking needs related to workers, as well as parking facility closures or access changes with the construction. As discussed in the campus access and circulation construction impacts discussion, impact-related closures and changes to parking could be minimized by providing the information ahead of time to patients and employees as well as through detours and signs. Construction worker parking would be accommodated onsite and secured in nearby parking lots and the use of alternative modes would be encouraged. In addition, construction activities could result in the need to close on-street parking adjacent to the site. These closures would be coordinated with SDOT and appropriate notices and signs would be provided.

3.9.3.5 Public Services and Utilities

Fire

During construction activities under the Build Alternatives, there could be an increase in demand for fire services. SFD would respond to service calls related to inspection of specific construction projects onsite and could need to respond to potential construction-related accidents and injuries. Existing SFD staffing and equipment are expected to be sufficient to handle any potential service needed for workers during onsite construction.

Police

During construction activities of the Build Alternatives, there could be an increase in SPD service calls due to construction site theft and vandalism. Existing SPD capacity would be expected to be sufficient to handle any increased service needed for construction activities.

Solid Waste

Implementation of the Build Alternatives would generate solid waste by both demolition and construction activities. To the extent feasible, impacts related to construction-generated solid waste could be reduced by diverting construction-generated solid waste from landfills and sent to recycling or composting facilities via the South Transfer Station. Other means of reducing the solid waste generated by redevelopment of the campus include: onsite source separated recycling, potential reuse of demolition materials onsite, and salvage and reuse of building components.

Building materials would be tested as part of demolition activities in order to determine the potential levels of contamination present, such as lead or asbestos. The test results would be used to determine whether building materials would be sent to a landfill or to a specialized facility that handles hazardous waste.

3.9.4 Mitigation Measures

To mitigate for potential construction-related impacts, Swedish would develop a CMP in conjunction with site-specific developments. The intent of the CMP is to anticipate and reduce the potential noise impacts from demolition and construction activities on adjacent properties and minimize impacts on traffic. Management practices shall be established and at a minimum include the following: technological and operational noise control measures to reduce the amount of sound generation; reduce the transmission of demolition and construction noise to offsite receivers through sound-containment measures; limits to construction hours depending on distance from sensitive receivers; and, coordinate with SDOT on haul routes and street use permits. This plan would be coordinated with the DPD Noise Abatement Office, SDOT, and Swedish, and must be submitted and approved prior to issuance of a building permit.

The plan would include the following elements:

1. Construction Communication – Including a Contact and Community Liaison. The chair of the Standing Advisory Committee will be included in the Construction Communication Plan associated with site-specific development along with the Contact person and Community Liaison.
2. Construction Hours and Sensitive Receivers – Identifying demolition and construction activities within permissible construction hours.
3. Construction Noise Requirements – All demolition and construction activities shall conform to the Noise Ordinance, except as approved through the variance process.
4. Measures to Minimize Noise Impacts – List measures to be implemented to reduce or prevent noise impacts during demolition and construction activities during standard and non-standard working hours.
5. Construction Milestones – A description of the various phases of demolition and construction, including a description of noise and traffic generators, and anticipated construction hours for each phase.
6. Construction Noise Management – Identify techniques to minimize demolition and construction noise including: timing restrictions, noise reduction construction technologies, process modifications.
7. Construction Parking Management – Construction workers will be encouraged to park in designated onsite parking areas.
8. Construction Traffic/Street and Sidewalk Closures – Demolition, earthwork excavating, concrete and other truck routing plans will be developed and submitted for approval through SDOT for site-specific development.
9. Construction Air Quality – Site development would adhere to Puget Sound Clean Air Agency's regulations and the City's construction best practices regarding demolition activity and fugitive dust emissions.
10. Historic Resources – Measures could be implemented as necessary to address potential impacts to historic resources resulting from redevelopment activities.

The following lists specific mitigation measures anticipated for the MIMP.

3.9.4.1 Air Quality

The Build Alternatives would include mitigation measures to reduce emissions of dust, odors, and engine exhaust during construction. Construction activities would comply with the PSCAA regulations that require reasonable precautions to minimize fugitive dust (PSCAA 2013b). Construction equipment also would include emission-control devices to reduce CO, GHGs, and particulate emissions from gasoline and diesel engines. Construction mitigation would be incorporated into construction plans and contractor specifications in the construction contracts. The Build Alternatives will include the following mitigation measures during construction:

- Spray water (when necessary) during demolition, grading, and construction activities to reduce emissions of particulate matter
- Cover dirt, gravel, and debris piles to reduce dust and wind-blown debris
- Cover open-bodied trucks to reduce particulate matter blowing off trucks or dropping on roads while transporting materials. Alternatively, wetting materials in trucks or providing adequate freeboard (space from the top of the material to the top of the truck) could be used to reduce dust and deposition of particulate matter
- Provide wheel washers at construction sites to remove particulate matter from vehicle wheel wells and undercarriages before they exit to decrease deposition of particulate matter on area roadways
- Promptly sweep public streets (when necessary) to remove particulate matter deposited on paved roads and subsequent wind-blown dust
- Monitor truck loads and routes to minimize dust-related impacts
- Turn off construction trucks and engine-powered equipment during long periods of non-use, instead of being left idling, to reduce exhaust emissions and odors
- Require emission-control devices on construction equipment and using relatively new, well-maintained equipment to reduce exhaust emissions of CO, GHGs, and particulate matter from engine exhaust
- Provide quarry spall areas onsite prior to construction vehicles exiting the site
- Schedule the delivery and removal of construction materials and heavy equipment to minimize congestion during peak travel time associated with adjacent streets

The construction contractors could participate in the PSCAA's Diesel Solution Program to voluntarily reduce diesel exhaust. Reduction strategies under the Diesel Solutions Program include using cleaner fuels, retrofitting engines and exhaust systems, and replacing older equipment with newer, cleaner equipment. Reducing diesel exhaust from construction equipment would reduce emissions of fine particulate matter and air toxics during the construction period.

The project would include a CTMP to reduce temporary traffic delays on area streets (see Section 3.7 Transportation). The CTMP could include specific hours of construction, temporary traffic detours, scheduling construction trucks, and flagging. Routing and scheduling construction equipment to reduce delays to traffic during peak travel times would reduce air impacts caused by traffic delays while waiting for construction trucks and other activities.

Construction activities could encourage waste reduction and use of green building materials, which would reduce overall GHG emissions and be consistent with the City's goal to achieve carbon neutrality. Construction waste from the project site could be recycled and reused. Reuse of construction, demolition, and land clearing wastes onsite if feasible would reduce the number of trucks required to transport the material. Reducing the number of construction trucks would reduce their exhaust emissions.

3.9.4.2 Groundwater

A geotechnical report would be prepared for each future site-specific building, and submitted as part of the MUP application. The report would identify subsurface soil and groundwater conditions and would include measures for mitigating any identified impacts.

3.9.4.3 Noise

The Build Alternatives will include mitigation measures to reduce noise during construction. Construction activities would comply with the City's construction noise regulations (SMC 25.08). Construction noise will be reduced with reasonable mitigation measures, such as:

- Develop and implement a CMP that includes site-specific sound level reduction measures
- Use engine enclosures and mufflers on construction equipment
- Locate portable equipment as far as possible from sensitive receptors
- Turn off equipment during periods of nonuse
- Use ambient sensitive broadband backup alarms
- Place stationary equipment as far away from sensitive receiving locations as possible Where this is infeasible, or where noise impacts are still significant, portable noise barriers could be placed around the equipment with the opening directed away from the sensitive receiving property
- Place construction staging areas expected to be in use for more than a few weeks as far as possible from sensitive receivers as possible

3.9.4.4 Transportation

The construction impacts associated of the proposed Swedish Cherry Hill MIMP on of the transportation system elements; including the street system, campus access and circulation, pedestrian and bicycle transportation, transit service/facilities, traffic volumes, traffic operations, traffic safety and parking; are described below.

Street System

Construction impacts related to the street system would depend on the location of the construction within the Swedish Cherry Hill campus. The streets that would be most impact would include E Cherry Street, E Jefferson Street, 15th Avenue, 16th Avenue, and 18th Avenue along the campus frontages. A CMP would mitigate these impacts. The plan could include scheduling street closures and other disruptions to the street system during off-peak periods to minimize impacts to the system.

Campus Access and Circulation

Construction impacts related to campus access and circulation would depend on the location of the construction within the Swedish Cherry Hill campus. Impacts could include the need to reroute traffic and close parking access and/or lots/garages. A CMP would be developed to mitigate impacts. Protocol would be included in the plan related to safe campus access and circulation adjacent to the construction site through the detours, signs, and providing information ahead of time to patients and employees on potential parking access or facility changes.

Pedestrian and Bicycle Transportation

Construction impacts may result in intermittent sidewalk and bicycle facility closures and re-routing along E Cherry Street, E Jefferson Street, 15th Avenue, 16th Avenue, and 18th Avenue depending on the specific location of construction within the campus. A CMP would be developed to mitigate impacts. Protocol would be included in the plan related to safe pedestrian and bicycle circulation adjacent to the construction site through the use of temporary facilities, detours, and signs.

Transit/Shuttle Services

Construction impacts could result in some increase in ridership as a result of construction workers traveling to and from the site. Based on the review of transit capacity, presented previously in this document, there would be capacity at the campus to accommodate additional demand related to construction workers. In addition, construction-related activities could impact nearby transit routes and stops as well as pedestrian accessibility to these facilities. A CMP would be prepared and impacts to transit would be coordinated with the transit agency in advance and appropriate relocation and signage provided.

Traffic Volumes

Construction of Alternative 8, 9, or 10 would result in an increase in traffic volumes due to workers traveling to and from the site, delivery of material, and truck hauling. It is anticipated that the increase in traffic volumes due to construction would be less than generated with Alternatives 8, 9, or 10.

Traffic Operations

As described for traffic volumes, construction impacts related to traffic operations would occur as a result of increased traffic levels. To minimize impacts to operations, a CMP would be developed and would include scheduling the most intensive construction activities such that they are spread out over time and prohibiting material deliveries from leaving or entering the area during AM and PM peak hours when feasible.

Traffic Safety

Construction would increase vehicular traffic within the study area, which could result in increased conflicts between vehicular, pedestrian, and bicycle traffic. It is anticipated that safety impacts related to construction would be less than those associated with operation of new structures.

Parking

Parking impacts due to construction would include increased parking needs related to workers as well as parking facility closures or access changes with the construction. As discussed in the campus access and circulation construction impacts discussion, impacts related closures and changes to parking could be minimized by providing the information ahead of time to patients and employees as well as through detours and signs. Construction worker parking would be accommodated onsite and secured in nearby parking lots and the use of alternative modes would be encouraged. It is anticipated that parking impacts related to construction would be less than with Alternatives 8, 9, or 10. In addition, construction activities could result in the need to close on-street parking adjacent to the site. These closures would be coordinated with SDOT and appropriate notice and signs would be provided.

3.9.4.5 Public Services

Fire and Emergency Response

Swedish Cherry Hill will consult SFD to plan fire access routes to- and onsite, particularly during construction phases. The portions of the site that are under construction will be fenced and lit, as well as monitored by surveillance cameras to help prevent construction site theft and vandalism.

Solid Waste

During demolition and construction, construction and debris waste will be recycled, based on the existence of hazardous materials.

3.9.5 Secondary and Cumulative Impacts

Planned development in the area includes projects associated with the Swedish Medical Center/First Hill, Harborview Medical Center, The Polyclinic, and Seattle University. These projects, together with the Swedish Cherry Hill campus redevelopment, would contribute to increased emissions temporarily during construction and cumulative noise impacts would occur during construction from the addition of construction traffic to area roadways. The percentage of new trips would likely be small relative to overall traffic levels on area roadways.
These projects, in combination, could increase demand for public services (e.g., fire, police, parks, water/sewer/stormwater, and solid waste) in the vicinity. Each of the identified public services and utilities has the capacity to accept an increase without adverse effects.

3.9.6 Significant Unavoidable Adverse Impacts

While some construction-related air quality impacts would be unavoidable, due to the temporary and intermittent nature of construction impacts and with implementation of the proposed mitigation, no significant impacts are anticipated.

Construction noise has the potential to affect multiple residential and other sensitive properties in the vicinity of the Swedish Cherry Hill. The City has established specific noise limits for construction activities that occur during daytime hours. These limits vary depending on the zoning of the source and receiving properties and will be different for each of the proposed new or expanded buildings. Careful attention should be given to the demolition and construction plans for these facilities in order to ensure that the construction activities can comply with the applicable noise limits. With attention to these details, no significant noise impacts would be expected.

With implementation of appropriate mitigation measures, no significant unavoidable adverse impacts to historic resources, public services or transportation resources would be anticipated.

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Section 5 - Glossary

Air emissions. Gas emitted into the air from industrial and chemical processes, such as ozone, carbon monoxide, nitrogen oxide, nitrogen dioxide, sulfur dioxide and others.

Air pollutant. Any substance in air that could, in high enough concentration, harm humans, other animals, vegetation or material. Pollutants may include almost any natural or artificial composition of airborne matter capable of being airborne. They may be in the form of solid particles, liquid droplets, gases or a combination thereof. Generally, they fall into two main groups: 1) those emitted directly from identifiable sources; and 2) those produced in the air by interaction between two or more primary pollutants, or by reaction with normal atmospheric constituents, with or without photoactivation. Exclusive of pollen, fog and dust, which are of natural origin, about 100 contaminants have been identified and fall into the following categories: solids, sulfur compounds, volatile organic chemicals, nitrogen compounds, oxygen compounds, halogen compounds, radioactive compounds, and odors.

Air quality standards. The level of pollutants prescribed by regulations that may not be exceeded during a given time in a defined area.

A-weight. A standard frequency weighting to stimulate the response of the human ear.

Congestion. A condition characterized by unstable traffic flows that prohibit movement on a transportation facility at optimal legal speeds. Recurring congestion is caused by constant excess volume compared with capacity. Nonrecurring congestion is caused by unusual or unpredictable events such as traffic accidents.

Cumulative effect. The effects on the environment that result from the incremental consequences of an action when added to other past, present and reasonably foreseeable future actions.

Emission. Pollution discharged into the atmosphere from smokestacks, other vents and surface areas of commercial or industrial facilities, and from residential and mobile sources.

Environmental impact statement (EIS). A document that identifies and analyzes, in detail, environmental impacts of a proposed action. As a tool for decision-making, the EIS describes positive and negative effects, and lists alternatives for an undertaking.

Grade. The natural surface contour of a lot. Grade can be modified by minor adjustments to the surface of the lot in preparation for construction.

Greenhouse gases. Greenhouse gases (GHGs) are the gases present in the earth's atmosphere which warm near-surface global temperatures through the greenhouse effect. The principal greenhouse gases are carbon dioxide, NOx, methane, and three groups of high-warming potential gases—hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride.

Height. Measurement from grade.

Impervious surface. Surface through which water cannot percolate.

Leq. Equivalent sound level. The level of a constant sound which, in a given time period, has the same energy as does in a time-varying sound.

Level of service (LOS). A gauge for evaluating system performance for roadways, non-motorized and other transportation modes. For example, roadway measures of level of service often assign criteria based on volume-to-capacity ratios.

Mitigation measures. Actions taken to reduce adverse effects on the environment, usually implemented under the State Environmental Policy Act.

MUP. Master Use Permit. The document issued to a project applicant, recording all land use decisions made by the DPD on a master use application. The term excludes construction permits and land use approvals granted by the City Council, by citizen boards or by the state.

National Ambient Air Quality Standards (NAAQS). Standards established by the US Environmental Protection Agency that apply to outside air quality throughout the country.

Nitrogen oxide. A gas formed by combustion under high temperature and high pressure in an internal combustion engine. Changes in nitrogen dioxide in the ambient air contributes to photochemical smog.

Non-attainment area. Area that does not meet one or more of the National Ambient Air Quality Standards for the criteria pollutants designated in the Clean Air Act.

State Environmental Policy Act (SEPA). State legislation passed in 1974, which establishes an environmental review process for all development projects and major planning studies prior to taking any action on these projects. SEPA permits early coordination to identify and mitigate any significant issues or impacts that may result from a project or study.

SOV. Single Occupant Vehicle means a motor vehicle occupied by one (1) person, excluding motorcycles.

Transportation Management Program (TMP). A required set of measures to reduce a project building's demand on transportation infrastructure. These measures typically seek to discourage commuting via single-occupant vehicle and encourage alternative commute modes. TMPs must be approved by DPD, SDOT, and the owner of the project building as a condition of the project building's Master Use Permit.

Section 6 - Draft EIS Distribution List

6.1 State Agencies

Department of Community Development Historic Preservation Office
Department of Ecology, Environmental Review Section
Department of Transportation (WSDOT)

6.2 Regional Agencies

Port of Seattle
Puget Sound Clean Air Agency
Puget Sound Regional Council
Sound Transit

6.3 Local Agencies

King County Department of Transportation/Metro Transit

City of Seattle

- Department of Planning and Development, Attn: Ms. Stephanie Haines
- Department of Planning and Development, Attn: Mr. John Shaw
- Department of Neighborhoods, Attn: Mr. Steve Sheppard
- Department of Neighborhoods, Landmarks Preservation Board, Attn: Ms. Karen Gordon, Seattle Historic Preservation Officer
- Fire Department
- Police Department
- Seattle Public Utilities, Environmental Review Section
- Seattle Department of Transportation, Attn: Ms. Christina VanValkenburgh

6.4 Libraries

Seattle Public Library – Central Library
Seattle Public Library – Douglass Truth Branch
Seattle Public Library – International District/Chinatown Branch

Appendix A

Greenhouse Gas Emission Worksheets

Section I: Buildings

Alternative 1 - No Build

Type (Residential) or Principal Activity (Commercial)	# Units	Square Feet (in thousands of square feet)	Emissions Per Unit or Per Thousand Square Feet (MTCO2e) Embodied	Energy	Transportation	**Lifespan Emissions (MTCO2e)**
Single-Family Home............................	0		98	672	792	**0**
Multi-Family Unit in Large Building	0		33	357	766	**0**
Multi-Family Unit in Small Building	0		54	681	766	**0**
Mobile Home.......................................	0		41	475	709	**0**
Education		73.0	39	646	361	**76320**
Food Sales		0.0	39	1,541	282	**0**
Food Service		0.0	39	1,994	561	**0**
Health Care Inpatient		584.3	39	1,938	582	**1494990**
Health Care Outpatient		427.0	39	737	571	**574974**
Lodging		12.5	39	777	117	**11664**
Retail (Other Than Mall).......................		0.0	39	577	247	**0**
Office		50.0	39	723	588	**67467**
Public Assembly		0.0	39	733	150	**0**
Public Order and Safety		0.0	39	899	374	**0**
Religious Worship		0.0	39	339	129	**0**
Service		0.0	39	599	266	**0**
Warehouse and Storage		0.0	39	352	181	**0**
Other		0.0	39	1,278	257	**0**
Vacant		0.0	39	162	47	**0**

Section II: Pavement.........................

Pavement..		0.00				**0**

Total Project Emissions: **2225416**

Section I: Buildings

Alternative 8

Type (Residential) or Principal Activity (Commercial)	# Units	Square Feet (in thousands of square feet)	Emissions Per Unit or Per Thousand Square Feet (MTCO2e) Embodied	Energy	Transportation	**Lifespan Emissions (MTCO2e)**
Single-Family Home............................	0		98	672	792	**0**
Multi-Family Unit in Large Building	0		33	357	766	**0**
Multi-Family Unit in Small Building	0		54	681	766	**0**
Mobile Home.......................................	0		41	475	709	**0**
Education		150.0	39	646	361	**156822**
Food Sales		0.0	39	1,541	282	**0**
Food Service		0.0	39	1,994	561	**0**
Health Care Inpatient		1,570.0	39	1,938	582	**4017003**
Health Care Outpatient		1,250.0	39	737	571	**1683180**
Lodging		80.0	39	777	117	**74650**
Retail (Other Than Mall)......................		0.0	39	577	247	**0**
Office		50.0	39	723	588	**67467**
Public Assembly		0.0	39	733	150	**0**
Public Order and Safety		0.0	39	899	374	**0**
Religious Worship		0.0	39	339	129	**0**
Service		0.0	39	599	266	**0**
Warehouse and Storage		0.0	39	352	181	**0**
Other		0.0	39	1,278	257	**0**
Vacant		0.0	39	162	47	**0**

Section II: Pavement.........................

Pavement..		0.00				**0**

Total Project Emissions: **5999123**

Section I: Buildings

Alternative 9 and 10

Type (Residential) or Principal Activity (Commercial)	# Units	Square Feet (in thousands of square feet)	Emissions Per Unit or Per Thousand Square Feet (MTCO2e) Embodied	Energy	Transportation	**Lifespan Emissions (MTCO2e)**
Single-Family Home............................	0		98	672	792	**0**
Multi-Family Unit in Large Building	0		33	357	766	**0**
Multi-Family Unit in Small Building	0		54	681	766	**0**
Mobile Home.......................................	0		41	475	709	**0**
Education		150.0	39	646	361	**156822**
Food Sales		0.0	39	1,541	282	**0**
Food Service		0.0	39	1,994	561	**0**
Health Care Inpatient		1,443.0	39	1,938	582	**3692061**
Health Care Outpatient		1,070.0	39	737	571	**1440802**
Lodging		40.0	39	777	117	**37325**
Retail (Other Than Mall).......................		0.0	39	577	247	**0**
Office		50.0	39	723	588	**67467**
Public Assembly		0.0	39	733	150	**0**
Public Order and Safety		0.0	39	899	374	**0**
Religious Worship		0.0	39	339	129	**0**
Service		0.0	39	599	266	**0**
Warehouse and Storage		0.0	39	352	181	**0**
Other		0.0	39	1,278	257	**0**
Vacant		0.0	39	162	47	**0**

Section II: Pavement.........................

Pavement..		0.00				**0**

Total Project Emissions: **5394477**

Definition of Building Types

Type (Residential) or Principal Activity (Commercial)	Description
Single-Family Home..................................	Unless otherwise specified, this includes both attached and detached buildings
Multi-Family Unit in Large Building	Apartments in buildings with more than 5 units
Multi-Family Unit in Small Building	Apartments in building with 2-4 units
Mobile Home...	
Education	Buildings used for academic or technical classroom instruction, such as elementary, middle, or high schools, and classroom buildings on college or university campuses. Buildings on education campuses for which the main use is not classroom are included in the category relating to their use. For example, administration buildings are part of "Office," dormitories are "Lodging," and libraries are "Public Assembly."
Food Sales	Buildings used for retail or wholesale of food.
Food Service	Buildings used for preparation and sale of food and beverages for consumption.
Health Care Inpatient	Buildings used as diagnostic and treatment facilities for inpatient care.
Health Care Outpatient	Buildings used as diagnostic and treatment facilities for outpatient care. Doctor's or dentist's office are included here if they use any type of diagnostic medical equipment (if they do not, they are categorized as an office building).
Lodging	Buildings used to offer multiple accommodations for short-term or long-term residents, including skilled nursing and other residential care buildings.
Retail (Other Than Mall)............................	Buildings used for the sale and display of goods other than food.
Office	Buildings used for general office space, professional office, or administrative offices. Doctor's or dentist's office are included here if they do not use any type of diagnostic medical equipment (if they do, they are categorized as an outpatient health care building).
Public Assembly	Buildings in which people gather for social or recreational activities, whether in private or non-private meeting halls.
Public Order and Safety	Buildings used for the preservation of law and order or public safety.
Religious Worship	Buildings in which people gather for religious activities, (such as chapels, churches, mosques, synagogues, and temples).
Service	Buildings in which some type of service is provided, other than food service or retail sales of goods
Warehouse and Storage	Buildings used to store goods, manufactured products, merchandise, raw materials, or personal belongings (such as self-storage).
Other	Buildings that are industrial or agricultural with some retail space; buildings having several different commercial activities that, together, comprise 50 percent or more of the floorspace, but whose largest single activity is agricultural, industrial/ manufacturing, or residential; and all other miscellaneous buildings that do not fit into any other category.
Vacant	Buildings in which more floorspace was vacant than was used for any single commercial activity at the time of interview. Therefore, a vacant building may have some occupied floorspace.

Sources: ....

Residential — 2001 Residential Energy Consumption Survey
Square footage measurements and comparisons
http://www.eia.doe.gov/emeu/recs/sqft-measure.html

Commercial — Commercial Buildings Energy Consumption Survey (CBECS),
Description of CBECS Building Types
http://www.eia.doe.gov/emeu/cbecs/pba99/bldgtypes.html

Embodied Emissions Worksheet

Section I: Buildings

Type (Residential) or Principal Activity (Commercial)	# thousand sq feet/ unit or building	Life span related embodied GHG missions (MTCO2e/ unit)	Life span related embodied GHG missions (MTCO2e/ thousand square feet) - See calculations in table below
Single-Family Home................................	2.53	98	39
Multi-Family Unit in Large Building	0.85	33	39
Multi-Family Unit in Small Building	1.39	54	39
Mobile Home...	1.06	41	39
Education	25.6	991	39
Food Sales	5.6	217	39
Food Service	5.6	217	39
Health Care Inpatient	241.4	9,346	39
Health Care Outpatient	10.4	403	39
Lodging	35.8	1,386	39
Retail (Other Than Mall)..........................	9.7	376	39
Office	14.8	573	39
Public Assembly	14.2	550	39
Public Order and Safety	15.5	600	39
Religious Worship	10.1	391	39
Service	6.5	252	39
Warehouse and Storage	16.9	654	39
Other	21.9	848	39
Vacant	14.1	546	39

Section II: Pavement.............................

All Types of Pavement............................			50

	Columns and Beams	Intermediate Floors	Exterior Walls	Windows	Interior Walls	Roofs	Total Embodied Emissions (MTCO2e)	Total Embodied Emissions (MTCO2e/ thousand sq feet)
Average GWP (lbs CO2e/sq ft): Vancouver, Low Rise Building	5.3	7.8	19.1	51.2	5.7	21.3		
Average Materials in a 2,272-square foot single family home	0.0	2269.0	3206.0	285.0	6050.0	3103.0		
MTCO2e	0.0	8.0	27.8	6.6	15.6	30.0	88.0	38.7

Sources

All data in black text
King County, DNRP. Contact: Matt Kuharic, matt.kuharic@kingcounty.gov

Residential floorspace per unit
2001 Residential Energy Consumption Survey (National Average, 2001)
Square footage measurements and comparisons
http://www.eia.doe.gov/emeu/recs/sqft-measure.html

Floorspace per building
EIA, 2003 Commercial Buildings Energy Consumption Survey (National Average, 2003)
Table C3. Consumption and Gross Energy Intensity for Sum of Major Fuels for Non-Mall Buildings, 2003
http://www.eia.doe.gov/emeu/cbecs/cbecs2003/detailed_tables_2003/2003set9/2003excel/c3.xls

Average GWP (lbs CO2e/sq ft): Vancouver, Low Rise Building
Athena EcoCalculator
Athena Assembly Evaluation Tool v2.3- Vancouver Low Rise Building
Assembly Average GWP (kg) per square meter
http://www.athenasmi.ca/tools/ecoCalculator/index.html
Lbs per kg 2.20
Square feet per square meter 10.76

Average Materials in a 2,272-square foot single family home
Buildings Energy Data Book: 7.3 Typical/Average Household
Materials Used in the Construction of a 2,272-Square-Foot Single-Family Home, 2000
http://buildingsdatabook.eren.doe.gov/?id=view_book_table&TableID=2036&t=xls
See also: NAHB, 2004 Housing Facts, Figures and Trends, Feb. 2004, p. 7.

Average window size
Energy Information Administration/Housing Characteristics 1993
Appendix B, Quality of the Data. Pg. 5.
ftp://ftp.eia.doe.gov/pub/consumption/residential/rx93hcf.pdf

Pavement Emissions Factors
MTCO2e/thousand square feet of asphalt
or concrete pavement 50 (see below)

Embodied GHG Emissions……………………Worksheet Background Information

Buildings
Embodied GHG emissions are emissions that are created through the extraction, processing, transportation, construction and disposal of building materials as well as emissions created through landscape disturbance (by both soil disturbance and changes in above ground biomass).

Estimating embodied GHG emissions is new field of analysis; the estimates are rapidly improving and becoming more inclusive of all elements of construction and development.

The estimate included in this worksheet is calculated using average values for the main construction materials that are used to create a typical family home. In 2004, the National Association of Home Builders calculated the average materials that are used in a typical 2,272 square foot single-family household. The quantity of materials used is then multiplied by the average GHG emissions associated with the life-cycle GHG emissions for each material.

This estimate is a rough and conservative estimate; the actual embodied emissions for a project are likely to be higher. For example, at this stage, due to a lack of comprehensive data, the estimate does not include important factors such as landscape disturbance or the emissions associated with the interior components of a building (such as furniture).

King County realizes that the calculations for embodied emissions in this worksheet are rough. For example, the emissions associated with building 1,000 square feet of a residential building will not be the same as 1,000 square feet of a commercial building. However, discussions with the construction community indicate that while there are significant differences between the different types of structures, this method of estimation is reasonable; it will be improved as more data become available.

Additionally, if more specific information about the project is known, King County recommends two online embodied emissions calculators that can be used to obtain a more tailored estimate for embodied emissions: www.buildcarbonneutral.org and www.athenasmi.ca/tools/ecoCalculator/.

Pavement
Four recent life cycle assessments of the environmental impacts of roads form the basis for the per unit embodied emissions of pavement. Each study is constructed in slightly different ways; however, the aggregate results of the reports represent a reasonable estimate of the GHG emissions that are created from the manufacture of paving materials, construction related emissions, and maintenance of the pavement over its expected life cycle. For specifics, see the worksheet.

Special Section: Estimating the Embodied Emissions for Pavement

Four recent life cycle assessments of the environmental impacts of roads form the basis for the per unit embodied emissions of pavement. Each study is constructed in slightly different ways; however, the aggregate results of the reports represent a reasonable estimate of the GHG emissions that are created from the manufacture of paving materials, construction related emissions, and maintenance of the pavement over its expected life cycle.

The results of the studies are presented in different units and measures; considerable effort was undertaken to be able to compare the results of the studies in a reasonable way. For more details about the below methodology, contact matt.kuharic@kingcounty.gov.

The four studies, Meil (2001), Park (2003), Stripple (2001) and Treolar (2001) produced total GHG emissions of 4-34 MTCO2e per thousand square feet of finished paving (for similar asphalt and concrete based pavements). This estimate does not including downstream maintenance and repair of the highway. The average (for all concrete and asphalt pavements in the studies, assuming each study gets one data point) is ~17 MTCO2e/thousand square feet.

Three of the studies attempted to thoroughly account for the emissions associated with long term maintenance (40 years) of the roads. Stripple (2001), Park et al. (2003) and Treolar (2001) report 17, 81, and 68 MTCO2e/thousand square feet, respectively, after accounting for maintenance of the roads.

Based on the above discussion, King County makes the conservative estimate that 50 MTCO2e/thousand square feet of pavement (over the development's life cycle) will be used as the embodied emission factor for pavement until better estimates can be obtained. This is roughly equivalent to 3,500 MTCO2e per lane mile of road (assuming the lane is 13 feet wide).

It is important to note that these studies estimate the embodied emissions for roads. Paving that does not need to stand up to the rigors of heavy use (such as parking lots or driveways) would likely use less materials and hence have lower embodied emissions.

Sources:
Meil, J. A Life Cycle Perspective on Concrete and Asphalt Roadways: Embodied Primary Energy and Global Warming Potential. 2006. Available: http://www.cement.ca/cement.nsf/eee9ec7bbd630126852566c40052107b/6ec79dc8ae03a782852572b90061b914/$FILE/ATTK0WE3/athena%20report%20Feb.%202%202007.pdf

Park, K, Hwang, Y., Seo, S., M.ASCE, and Seo, H. , "Quantitative Assessment of Environmental Impacts on Life Cycle of Highways," Journal of Construction Engineering and Management , Vol 129, January/February 2003, pp 25-31, (DOI: 10.1061/(ASCE)0733-9364(2003)129:1(25)).

Stripple, H. Life Cycle Assessment of Road. A Pilot Study for Inventory Analysis. Second Revised Edition. IVL Swedish Environmental Research Institute Ltd. 2001. Available: http://www.ivl.se/rapporter/pdf/B1210E.pdf

Treloar, G., Love, P.E.D., and Crawford, R.H. Hybrid Life-Cycle Inventory for Road Construction and Use. Journal of Construction Engineering and Management. P. 43-49. January/February 2004.

Energy Emissions Worksheet

Type (Residential) or Principal Activity (Commercial)	Energy consumption per building per year (million Btu)	Carbon Coefficient for Buildings	MTCO2e per building per year	Floorspace per Building (thousand square feet)	MTCE per thousand square feet per year	MTCO2e per thousand square feet per year	Average Building Life Span	Lifespan Energy Related MTCO2e emissions per unit	Lifespan Energy Related MTCO2e emissions per thousand square feet
Single-Family Home.............................	107.3	0.108	11.61	2.53	4.6	16.8	57.9	672	266
Multi-Family Unit in Large Building	41.0	0.108	4.44	0.85	5.2	19.2	80.5	357	422
Multi-Family Unit in Small Building	78.1	0.108	8.45	1.39	6.1	22.2	80.5	681	489
Mobile Home..	75.9	0.108	8.21	1.06	7.7	28.4	57.9	475	448
Education	2,125.0	0.124	264.2	25.6	10.3	37.8	62.5	16,526	646
Food Sales	1,110.0	0.124	138.0	5.6	24.6	90.4	62.5	8,632	1,541
Food Service	1,436.0	0.124	178.5	5.6	31.9	116.9	62.5	11,168	1,994
Health Care Inpatient	60,152.0	0.124	7,479.1	241.4	31.0	113.6	62.5	467,794	1,938
Health Care Outpatient	985.0	0.124	122.5	10.4	11.8	43.2	62.5	7,660	737
Lodging	3,578.0	0.124	444.9	35.8	12.4	45.6	62.5	27,826	777
Retail (Other Than Mall).......................	720.0	0.124	89.5	9.7	9.2	33.8	62.5	5,599	577
Office	1,376.0	0.124	171.1	14.8	11.6	42.4	62.5	10,701	723
Public Assembly	1,338.0	0.124	166.4	14.2	11.7	43.0	62.5	10,405	733
Public Order and Safety	1,791.0	0.124	222.7	15.5	14.4	52.7	62.5	13,928	899
Religious Worship	440.0	0.124	54.7	10.1	5.4	19.9	62.5	3,422	339
Service	501.0	0.124	62.3	6.5	9.6	35.1	62.5	3,896	599
Warehouse and Storage	764.0	0.124	95.0	16.9	5.6	20.6	62.5	5,942	352
Other	3,600.0	0.124	447.6	21.9	20.4	74.9	62.5	27,997	1,278
Vacant	294.0	0.124	36.6	14.1	2.6	9.5	62.5	2,286	162

Sources

All data in black text — King County, DNRP. Contact: Matt Kuharic, matt.kuharic@kingcounty.gov

Energy consumption for residential buildings — 2007 Buildings Energy Data Book: 6.1 Quad Definitions and Comparisons (National Average, 2001)
Table 6.1.4: Average Annual Carbon Dioxide Emissions for Various Functions
http://buildingsdatabook.eren.doe.gov/
Data also at: http://www.eia.doe.gov/emeu/recs/recs2001_ce/ce1-4c_housingunits2001.html

Energy consumption for commercial buildings and Floorspace per building — EIA, 2003 Commercial Buildings Energy Consumption Survey (National Average, 2003)
Table C3. Consumption and Gross Energy Intensity for Sum of Major Fuels for Non-Mall Buildings, 2003
http://www.eia.doe.gov/emeu/cbecs/cbecs2003/detailed_tables_2003/2003set9/2003excel/c3.xls

Note: Data in plum color is found in both of the above sources (buildings energy data book and commercial buildings energy consumption survey).

Carbon Coefficient for Buildings — Buildings Energy Data Book (National average, 2005)
Table 3.1.7. 2005 Carbon Dioxide Emission Coefficients for Buildings (MMTCE per Quadrillion Btu)
http://buildingsdatabook.eere.energy.gov/?id=view_book_table&TableID=2057
Note: Carbon coefficient in the Energy Data book is in MTCE per Quadrillion Btu.
To convert to MTCO2e per million Btu, this factor was divided by 1000 and multiplied by 44/12.

Residential floorspace per unit — 2001 Residential Energy Consumption Survey (National Average, 2001)
Square footage measurements and comparisons
http://www.eia.doe.gov/emeu/recs/sqft-measure.html

average lief span of buildings, estimated by replacement time method

	Single Family Homes	Multi-Family Units in Large and Small Buildings	All Residential Buildings	
New Housing Construction, 2001	1,273,000	329,000	1,602,000	
Existing Housing Stock, 2001	73,700,000	26,500,000	100,200,000	
Replacement time:	57.9	80.5	62.5	(national average, 2001)

Note: Single family homes calculation is used for mobile homes as a best estimate life span.
Note: At this time, KC staff could find no reliable data for the average life span of commercial buildings.
Therefore, the average life span of residential buildings is being used until a better approximation can be ascertained.

Sources:

New Housing Construction, 2001 **Quarterly Starts and Completions by Purpose and Design - US and Regions (Excel)**
http://www.census.gov/const/quarterly_starts_completions_cust.xls
See also: http://www.census.gov/const/www/newresconstindex.html

Existing Housing Stock, 2001 **Residential Energy Consumption Survey (RECS) 2001**
Tables HC1:Housing Unit Characteristics, Million U.S. Households 2001
Table HC1-4a. Housing Unit Characteristics by Type of Housing Unit, Million U.S. Households, 2001
Million U.S. Households, 2001
http://www.eia.doe.gov/emeu/recs/recs2001/hc_pdf/housunits/hc1-4a_housingunits2001.pdf

Transportation Emissions Worksheet

Type (Residential) or Principal Activity (Commercial)	# people/ unit or building	# thousand sq feet/ unit or building	# people or employees/ thousand square feet	vehicle related GHG emissions (metric tonnes CO2e per person per year)	MTCO2e/ year/ unit	MTCO2e/ year/ thousand square feet	Average Building Life Span	Life span transportation related GHG emissions (MTCO2e/ per unit)	Life span transportation related GHG emissions (MTCO2e/ thousand sq feet)
Single-Family Home..................................	2.8	2.53	1.1	4.9	13.7	5.4	57.9	792	313
Multi-Family Unit in Large Building	1.9	0.85	2.3	4.9	9.5	11.2	80.5	766	904
Multi-Family Unit in Small Building	1.9	1.39	1.4	4.9	9.5	6.8	80.5	766	550
Mobile Home..	2.5	1.06	2.3	4.9	12.2	11.5	57.9	709	668
Education	30.0	25.6	1.2	4.9	147.8	5.8	62.5	9247	361
Food Sales	5.1	5.6	0.9	4.9	25.2	4.5	62.5	1579	282
Food Service	10.2	5.6	1.8	4.9	50.2	9.0	62.5	3141	561
Health Care Inpatient	455.5	241.4	1.9	4.9	2246.4	9.3	62.5	140506	582
Health Care Outpatient	19.3	10.4	1.9	4.9	95.0	9.1	62.5	5941	571
Lodging	13.6	35.8	0.4	4.9	67.1	1.9	62.5	4194	117
Retail (Other Than Mall)............................	7.8	9.7	0.8	4.9	38.3	3.9	62.5	2394	247
Office	28.2	14.8	1.9	4.9	139.0	9.4	62.5	8696	588
Public Assembly	6.9	14.2	0.5	4.9	34.2	2.4	62.5	2137	150
Public Order and Safety	18.8	15.5	1.2	4.9	92.7	6.0	62.5	5796	374
Religious Worship	4.2	10.1	0.4	4.9	20.8	2.1	62.5	1298	129
Service	5.6	6.5	0.9	4.9	27.6	4.3	62.5	1729	266
Warehouse and Storage	9.9	16.9	0.6	4.9	49.0	2.9	62.5	3067	181
Other	18.3	21.9	0.8	4.9	90.0	4.1	62.5	5630	257
Vacant	2.1	14.1	0.2	4.9	10.5	0.7	62.5	657	47

Sources

All data in black text — King County, DNRP. Contact: Matt Kuharic, matt.kuharic@kingcounty.gov

people/ unit — Estimating Household Size for Use in Population Estimates (WA state, 2000 average)
Washington State Office of Financial Management
Kimpel, T. and Lowe, T. Research Brief No. 47. August 2007
http://www.ofm.wa.gov/researchbriefs/brief047.pdf
Note: This analysis combines Multi Unit Structures in both large and small units into one category;
the average is used in this case although there is likely a difference

Residential floorspace per unit — 2001 Residential Energy Consumption Survey (National Average, 2001)
Square footage measurements and comparisons
http://www.eia.doe.gov/emeu/recs/sqft-measure.html

employees/thousand square feet — Commercial Buildings Energy Consumption Survey commercial energy uses and costs (National Median, 2003)
Table B2 Totals and Medians of Floorspace, Number of Workers, and Hours of Operation for Non-Mall Buildings, 2003
http://www.eia.doe.gov/emeu/cbecs/cbecs2003/detailed_tables_2003/2003set1/2003excel/b2.xls

Note: Data for # employees/thousand square feet is presented by CBECS as square feet/employee.
In this analysis employees/thousand square feet is calculated by taking the inverse of the CBECS number and multiplying by 1000.

vehicle related GHG emissions

Estimate calculated as follows (Washington state, 2006)_

56,531,930,000	2006 Annual WA State Vehicle Miles Traveled	
		Data was daily VMT. Annual VMT was 365*daily VMT.
		http://www.wsdot.wa.gov/mapsdata/tdo/annualmileage.htm
6,395,798	2006 WA state population	
		http://quickfacts.census.gov/qfd/states/53000.html
8839	vehicle miles per person per year	
0.0506	gallon gasoline/mile	
		This is the weighted national average fuel efficiency for all cars and 2 axle, 4 wheel light trucks in 2005. This includes pickup trucks, vans and SUVs. The 0.051 gallons/mile used here is the inverse of the more commonly known term “miles/per gallon” (which is 19.75 for these cars and light trucks).
		Transportation Energy Data Book. 26th Edition. 2006. Chapter 4: Light Vehicles and Characteristics. Calculations based on weighted average MPG efficiency of cars and light trucks.
		http://cta.ornl.gov/data/tedb26/Edition26_Chapter04.pdf
		Note: This report states that in 2005, 92.3% of all highway VMT were driven by the above described vehicles.
		http://cta.ornl.gov/data/tedb26/Spreadsheets/Table3_04.xls
24.3	lbs CO2e/gallon gasoline	
		The CO2 emissions estimates for gasoline and diesel include the extraction, transport, and refinement of petroleum as well as their combustion.
		Life-Cycle CO2 Emissions for Various New Vehicles. RENew Northfield.
		Available: http://renewnorthfield.org/wpcontent/uploads/2006/04/CO2%20emissions.pdf
		Note: This is a conservative estimate of emissions by fuel consumption because diesel fuel,
2205		with a emissions factor of 26.55 lbs CO2e/gallon was not estimated.
4.93	lbs/metric tonne	
	vehicle related GHG emissions (metric tonnes CO2e per person per year)	

average lief span of buildings, estimated by replacement time method — See Energy Emissions Worksheet for Calculations

Commercial floorspace per unit — EIA, 2003 Commercial Buildings Energy Consumption Survey (National Average, 2003)
Table C3. Consumption and Gross Energy Intensity for Sum of Major Fuels for Non-Mall Buildings, 2003
http://www.eia.doe.gov/emeu/cbecs/cbecs2003/detailed_tables_2003/2003set9/2003excel/c3.xls

Appendix B

Ambient Noise Measurements

Ambient Noise Assessment

Swedish Hospital Master Plan

Seattle, Washington

Submitted to:
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URS Corporation
1501 Fourth Avenue, Suite 1400
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Prepared by:
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Seattle, Washington 98109

March 20, 2014

Table of Contents

I. Introduction and Executive Summary

This report describes sound level measurements conducted to determine the existing ambient noise levels at Swedish Hospital – Cherry Hill Campus in Seattle, WA. This report presents existing noise levels measured in November and December of 2013 in the vicinity of the site.

Swedish Medical Center has applied to the City for a Council Land Use Action to adopt a new major institution master plan (MIMP) for Swedish Medical Center/Cherry Hill (Swedish Cherry Hill). A rezone is required for expansion of the major institution overlay (MIO) boundary and modifications to MIO height limits. The proposed MIMP would replace an expired MIMP that was adopted by the Seattle City Council by Ordinance 117238 on August 2, 1994. That MIMP expired in August of 2009. This study will form the basis for assessing noise impact to adjacent property lines as a part of this application process.

II. Project Site

A vicinity map showing the proposed Swedish Hospital site and surrounding properties is shown in Figure 1. Swedish Medical Center/Cherry Hill is located in the Central District neighborhood of Seattle, between East Cherry and East Jefferson Streets. The western boundary of the campus is 15th Avenue. The eastern boundary is mid-block between 18th and 19th Avenues.

Uses in the area are primarily residential to the north, east and south, with intermittent commercial. The eastern boundary of Seattle University's campus faces the western boundary of Swedish Medical Center across 15th Avenue. Land south across Jefferson Street contains some multi-family residential buildings and a small grocery store bordering on the south side of Jefferson Street. Land further to the south is occupied by single family homes. The half block to the east of the campus and land continuing to the east contain single family homes. The land immediately north of the Swedish Cherry Hill Campus contains a mix of multi-family residential and commercial offices.

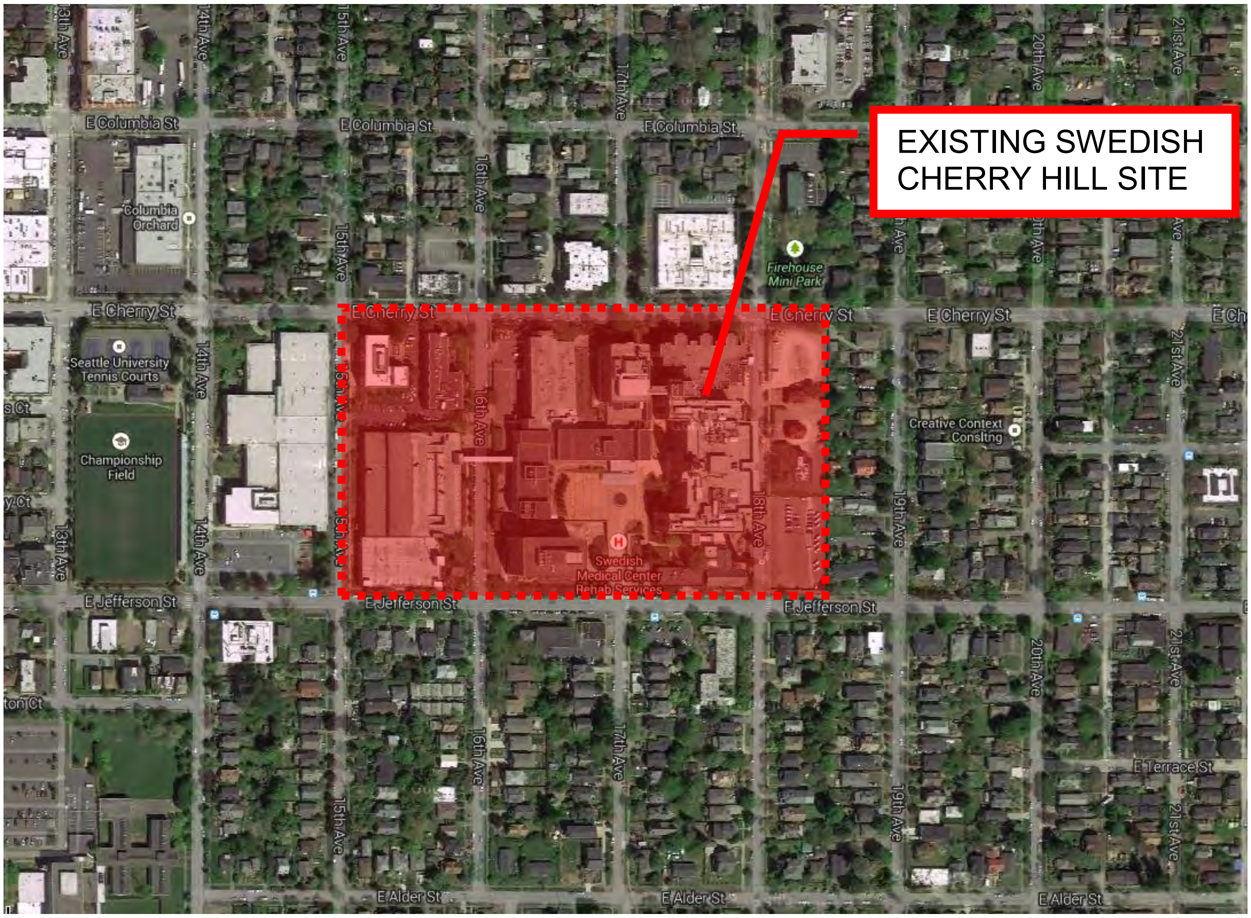

Figure 1 - Swedish Site Location

The existing campus buildings contain approximately 1.2 million square feet (sf). A figure illustrating the existing campus is presented below, Figure 2.

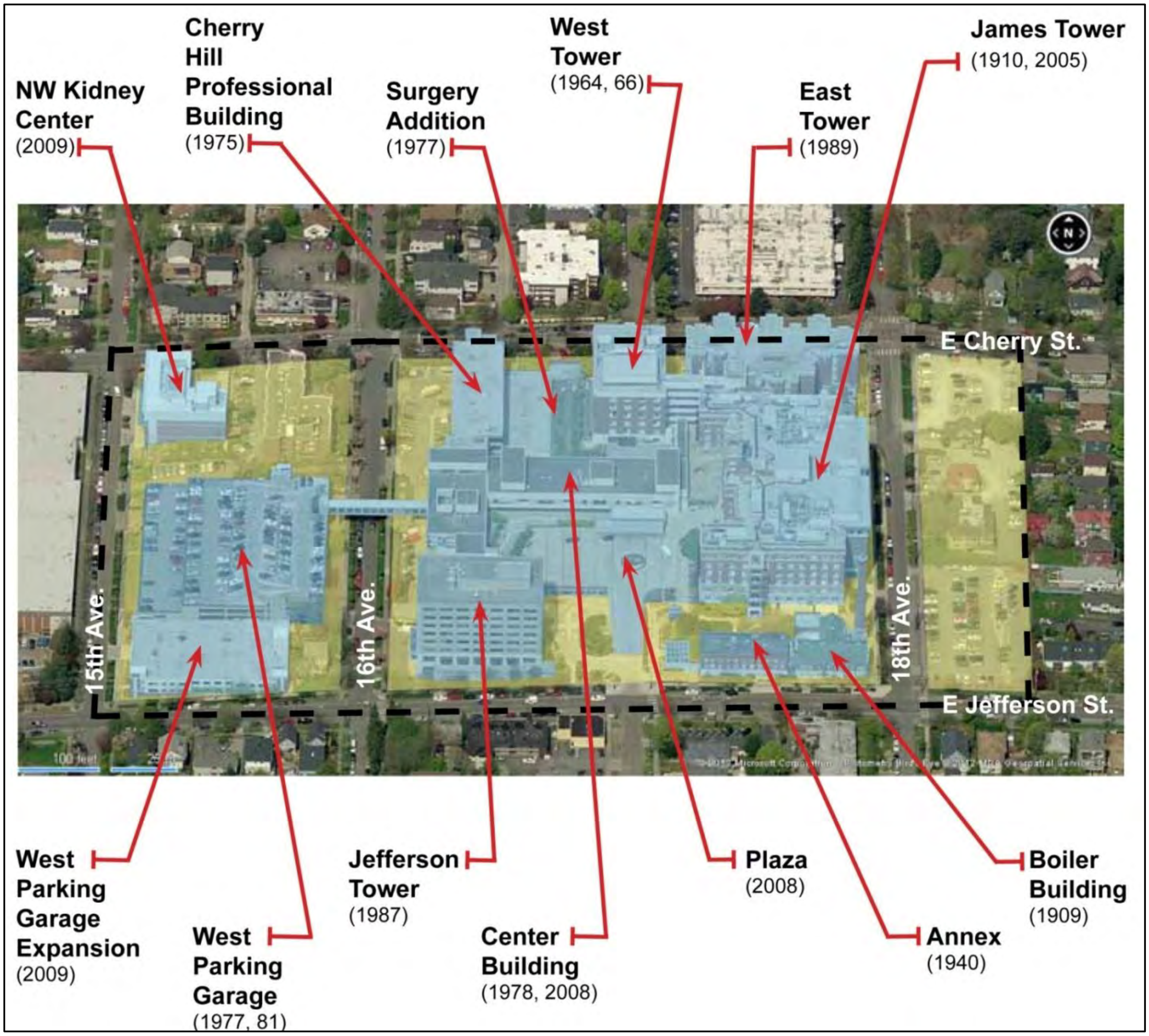

Figure 2 - Swedish Campus Summary

III. Sound Level Descriptors and Criteria

A. Sound Level Descriptors

Sound is measured as sound level in units of decibels, dB. The human ear responds differently to sounds at different frequencies. This is demonstrated by the fact that we hear higher pitched sounds more easily than lower ones of the same magnitude. To compensate for the different "loudness" as perceived by humans, a standard weighting curve is applied to measured sound levels. The weighting curve represents the frequency response of the human ear and is labeled as dBA ("A" weighted decibels). The A-weighting curve is often used to measure environmental sound.

People normally experience sound levels between 30 and 90 dBA, depending on their activities. Locations near highways or urban arterials may be 70 dBA, whereas quiet rural areas may be 40 dBA.

Each 10 dB increase in sound level corresponds to a tenfold increase of sound energy, but is judged by a listener as only a doubling of loudness. The smallest changes in sound level considered just noticeable are about 2 to 3 dBA, and 5 dBA changes are clearly noticeable.

Sound levels from two or more sources are combined logarithmically, not by adding the levels arithmetically. When two levels are combined, the louder level predominates, and the combined level is the louder level plus 0 to 3 dBA. Some examples: 50 dBA combined with 50 dBA is 53 dBA; 50 dBA combined with 40 dBA results in 50.4 dBA, which is rounded off to 50 dBA since fractions of a dB are negligible from the point of view of perception of environmental noise.

When measuring noise that is fluctuating over time, several A-weighted sound level descriptors are used to characterize the sound. In this report, the following descriptors are used:

Leq **Equivalent sound level, Leq,** is the most commonly used descriptor for measuring time-varying sound. The Leq is the level of constant sound that, over a given time period, contains the same amount of sound energy as the measured fluctuating sound.

Lmax **Maximum sound level, Lmax,** is the highest instantaneous sound level for a given sound source, event, or time period. Unlike Leq, typically have large fluctuations from hour to hour and day to day, Lmax is seldom used to measure noise impact, except in cases where brief high-level sound is causing an impact such as sleep disturbances.

Lmin **Minimum sound level, Lmin,** is the lowest sound level for a given sound source, event, or time period and is usually the relatively steady level of sound that is present in the absence of any noise events.

B. Seattle Noise Code

1. Zoning

The hospital site is bounded by E. Cherry Street to the north, single family homes to the east, Jefferson Street to the south and 15th Avenue to the west.

Per the City of Seattle it is our understanding the project and adjacent properties are currently zoned as follows:

- Project Site: MIO-105-LR3-CF298506, MIO-65-LR3-CF298506, MIO-65-SF5000-CF298506, MIO-37-SF5000-CF298506
- North: LR3
- East: SF-5000
- South: SF-5000
- West: MIO-65-LR3-CF292999

As per Seattle Municipal Code Section 25.08.100, the underlying zonings of the MIO both for the Swedish campus and the adjacent Seattle University Campus source MIO are LR3 and SF5000, which is treated as “Residential” zoning. SF is classified as “Residential” zoning as well. The following figure is a zoning map with the project site highlighted, Figure 3.

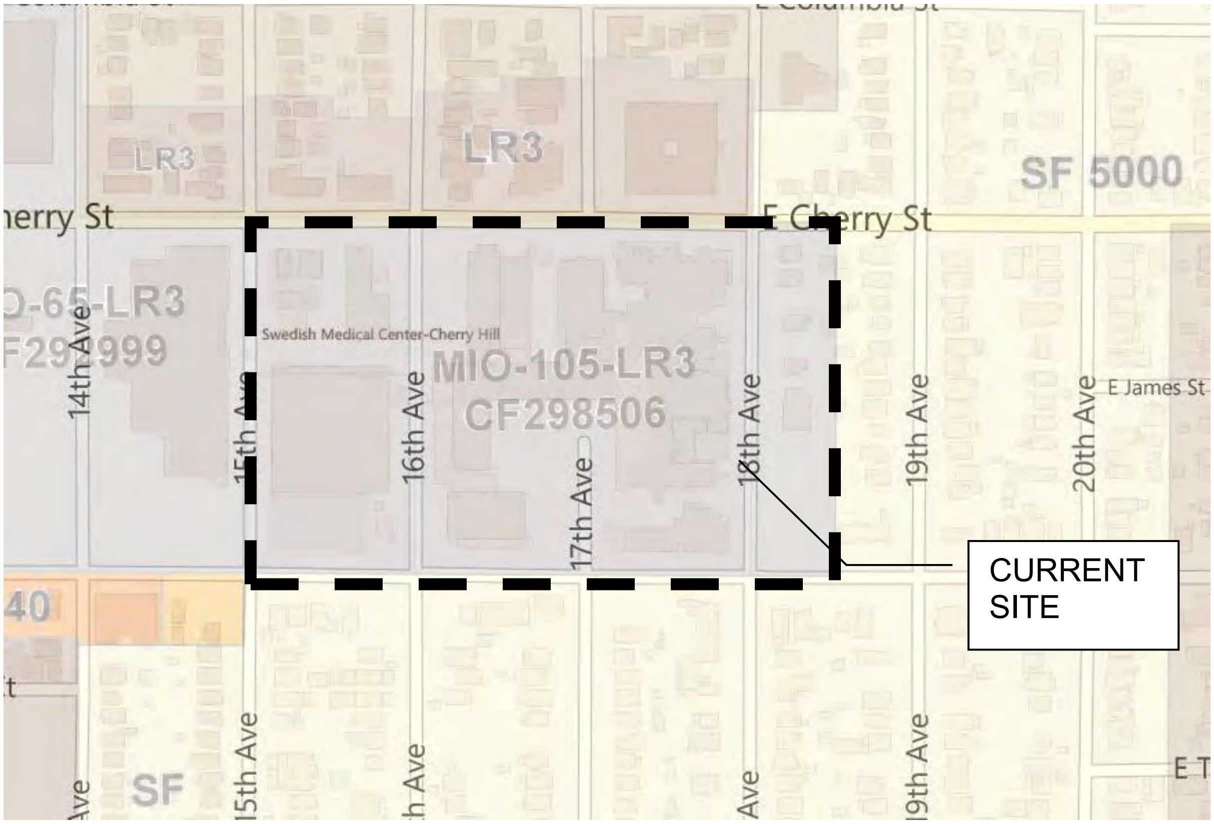

Figure 3 – Project Area Zoning Map

Figure 4 – Detailed Project Site Zoning Map

2. Noise Ordinance

The applicable noise ordinance is described by the City of Seattle Municipal Code chapter 25.08.410, Exterior sound level limits. The City of Seattle noise limits are based on the zoning of the source and receiving properties. The maximum permissible sound levels for the City of Seattle are provided in the following table for daytime hours.

Table 1 – Exterior Sound Level Limits

District of Sound Source	District of Receiving Property
	Residential (dB(A)) (Leq)
Residential	55

The City of Seattle Municipal Code chapter 25.08.420, Modifications to exterior sound level limits states that between the hours of ten (10:00) p.m. and seven (7:00) a.m. during weekdays, and between the hours of ten (10:00) p.m. and nine (9:00) a.m. on weekends, the levels established by Section 25.08.410 are reduced by ten (10) dB(A) where the receiving property lies within a residential district of the City.

Per code section 25.08.410.B, the Lmax may not exceed the exterior sound level limits shown in the table above by more than 15 dBA in any measurement period.

Since the zoning of the hospital MIO, Seattle University MIO, and the surrounding properties is residential, noise created by mechanical equipment and activity on site may not exceed 55 dBA to all adjacent properties during the day and 45 dBA at night. The Lmax is limited to 15 dBA above each of these limits.

3. Construction Noise

Seattle Municipal Code Section 25.08.425 outlines limits for noise created by construction and maintenance equipment. The code allows this equipment to exceed typical exterior sound level limits from 7:00 AM to 7:00 PM on weekdays at adjacent property lines or 50 ft, whichever is greater, and 9:00AM to 7:00PM on weekends and legal holidays. However, it is our understanding that the previous MIMP for the Cherry Hill Campus limits construction hours to non-holiday weekdays between 7:30AM and 6:00PM. These limits are presented in the table below. Based on the source and adjacent receiving properties, the baseline construction noise limits for the Swedish – Cherry Hill Campus are highlighted in the table below.

Separate limits are also specified for impact types of equipment, including but not limited to pavement breakers, piledrivers, jackhammers, sandblasting tools, or other types of equipment that create impulse sound or impact sound. This equipment may exceed the exterior sound level limits outlined above in any one hour period between 8AM and 5PM on weekdays. At no time may the sound level exceed the following:

1. Leq 90 dBA continuously
2. Leq 93 dBA for 30 minutes
3. Leq 96 dBA for 15 minutes
4. Leq 99 dBA for 7.5 minutes

Sound levels in excess of Leq 99 are prohibited unless authorized by variance obtained from the Administrator. In addition, impact sources producing sound levels less than 90 dBA shall comply with the limits outlined in Table 2 during hours outside of the permissible impulsive activity hours.

Table 2 – Seattle Noise Ordinance: Construction Noise Limits

Noise Source	Day		Night	
	Average (Leq)	Maximum (Lmax)	Average (Leq)	Maximum (Lmax)
Residential Receiver				
On-site Equipment	80	95	45	60
Portable Powered Equipment	75	90	45	60
Hand Tools & Maintenance Equipment	70	85	45	60
Impulsive Noise[1]	90	99	47	62

1: Applies during 8AM to 5PM, weekdays. Reverts to non-impulse noise limits for remaining hours.

C. U.S. Environmental Protection Agency (EPA) Region X Noise Criteria

The EPA established non-statutory guidelines for evaluating noise increases caused by a project over existing sound levels. Noise increases of 0-5 dBA at residential receivers are considered a slight impact, 5-10 dBA a significant impact, and over 10 dBA a serious impact. These criteria are guidelines only, and have no statutory authority.

IV. Existing Conditions

The existing Swedish Cherry Hill site is typical of a semi-urban residential setting. Noise on and around the campus is driven by automobile traffic on the nearby surface roads, aircraft overflights, pedestrian activity and other typical urban activities.

The existing aural environment at the edge of the Swedish Cherry Hill Site was characterized using multi-day sound level measurements at 7 locations. These measurements were taken to construct a model of existing noise levels. A summary of each location and a map showing where each measurement was taken is given in Figure 5 below.

Results of the long-term measurements are shown in Figure 6 through Figure 13 as plots of the hourly Leq, Lmin, and Lmax. The weather conditions for a portion of these measurement intervals included low levels of wind and moderate precipitation. The weather during the time of the measurements was not severe enough to significantly impact the measurements. Please note that the noise levels from automobile traffic are typically slightly higher during wet conditions. Also, wind, humidity and temperature have a significant impact on the sound propagation, and the noise levels, though only if the sound receiver is a long distance away from the noise source. If the distance is only few hundred feet, the affects are not significant.

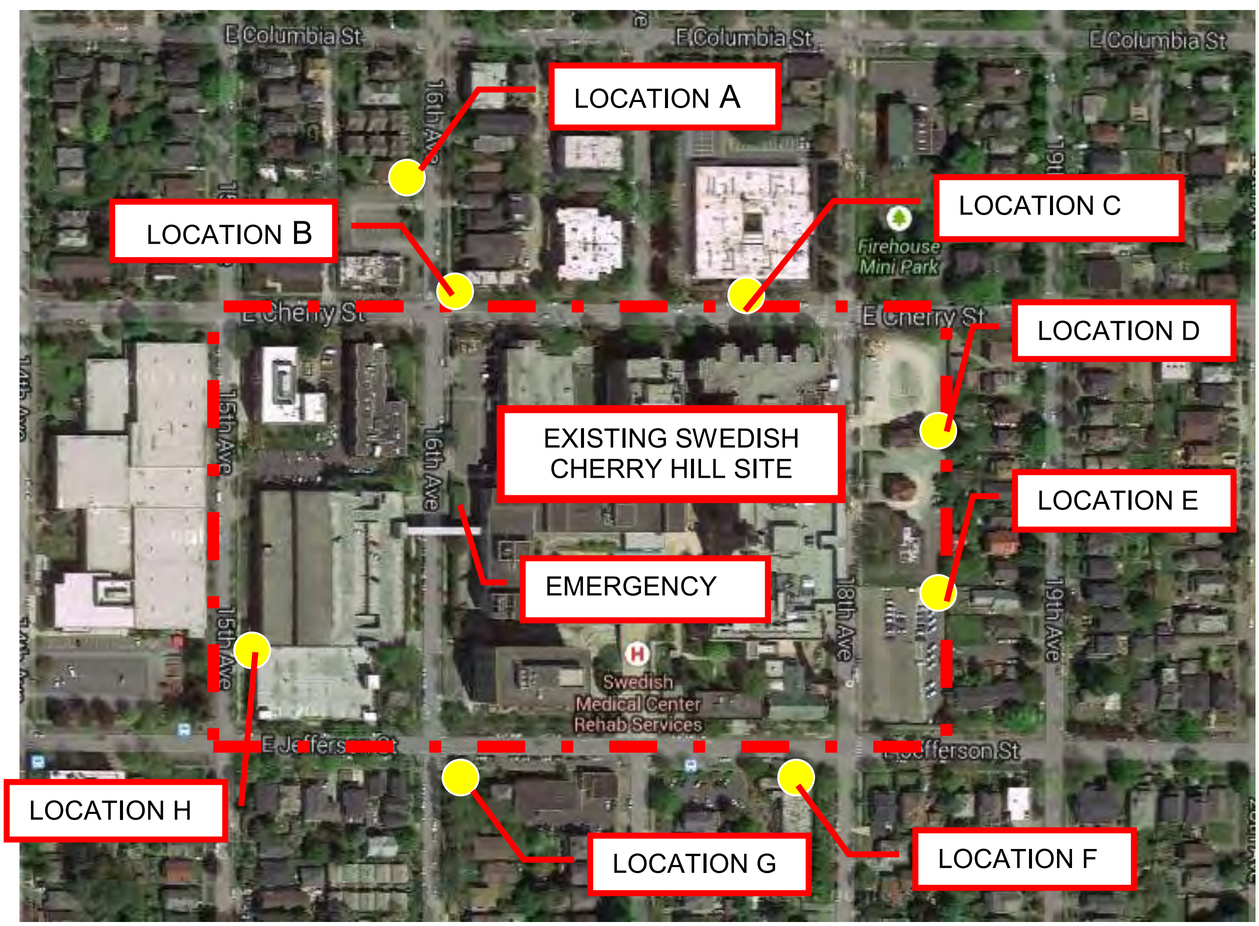

Figure 5 – Existing Ambient Sound Level Measurement Locations

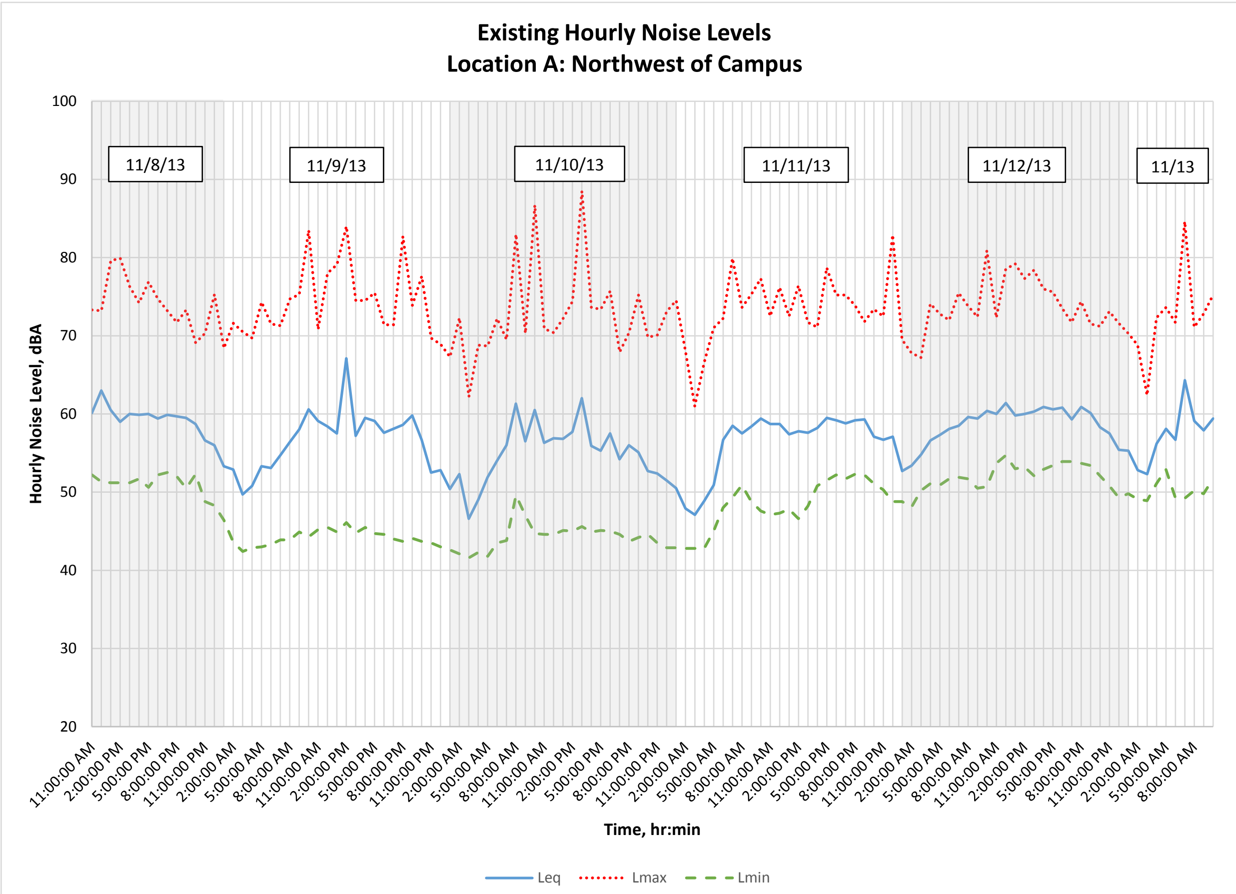

Figure 6 – Location A: Existing Sound Levels

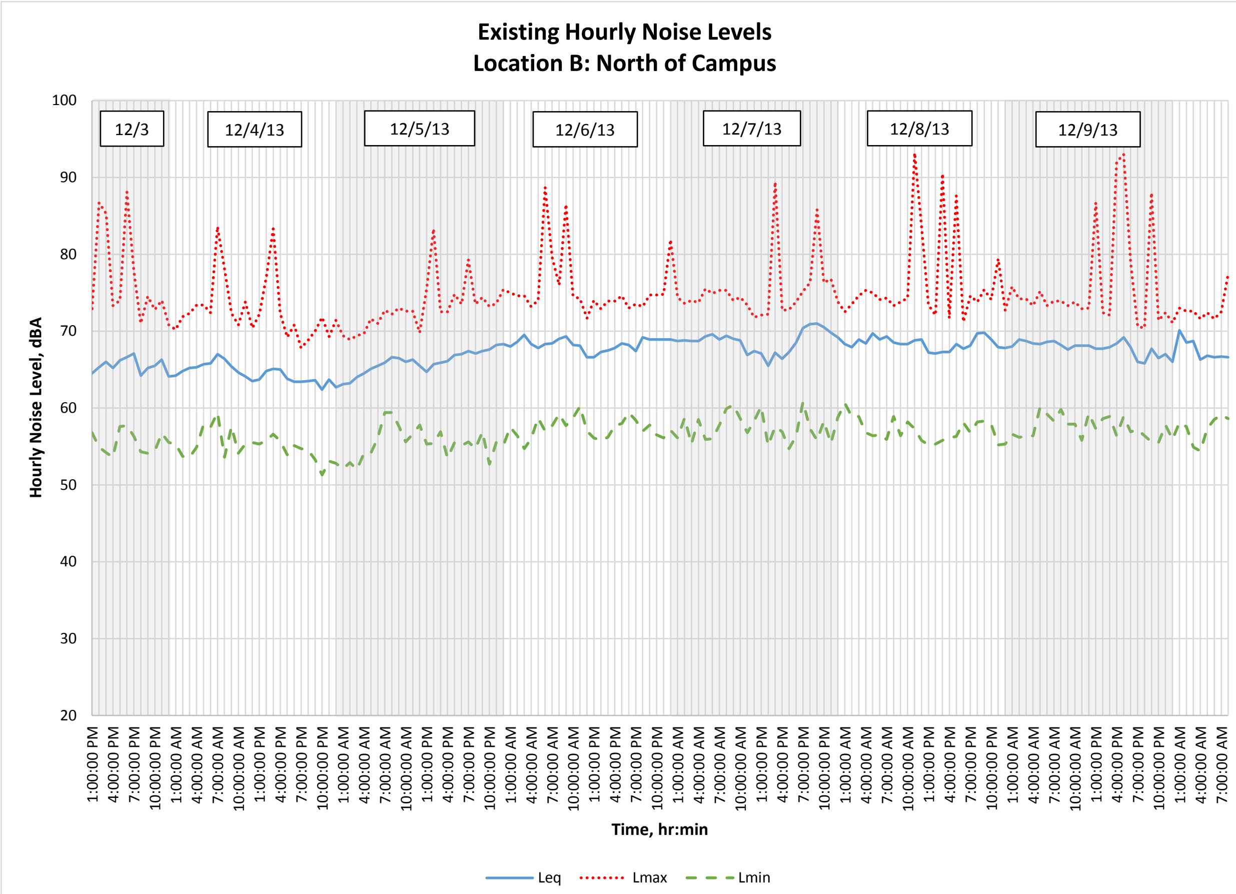

Figure 7 – Location B: Existing Sound Levels

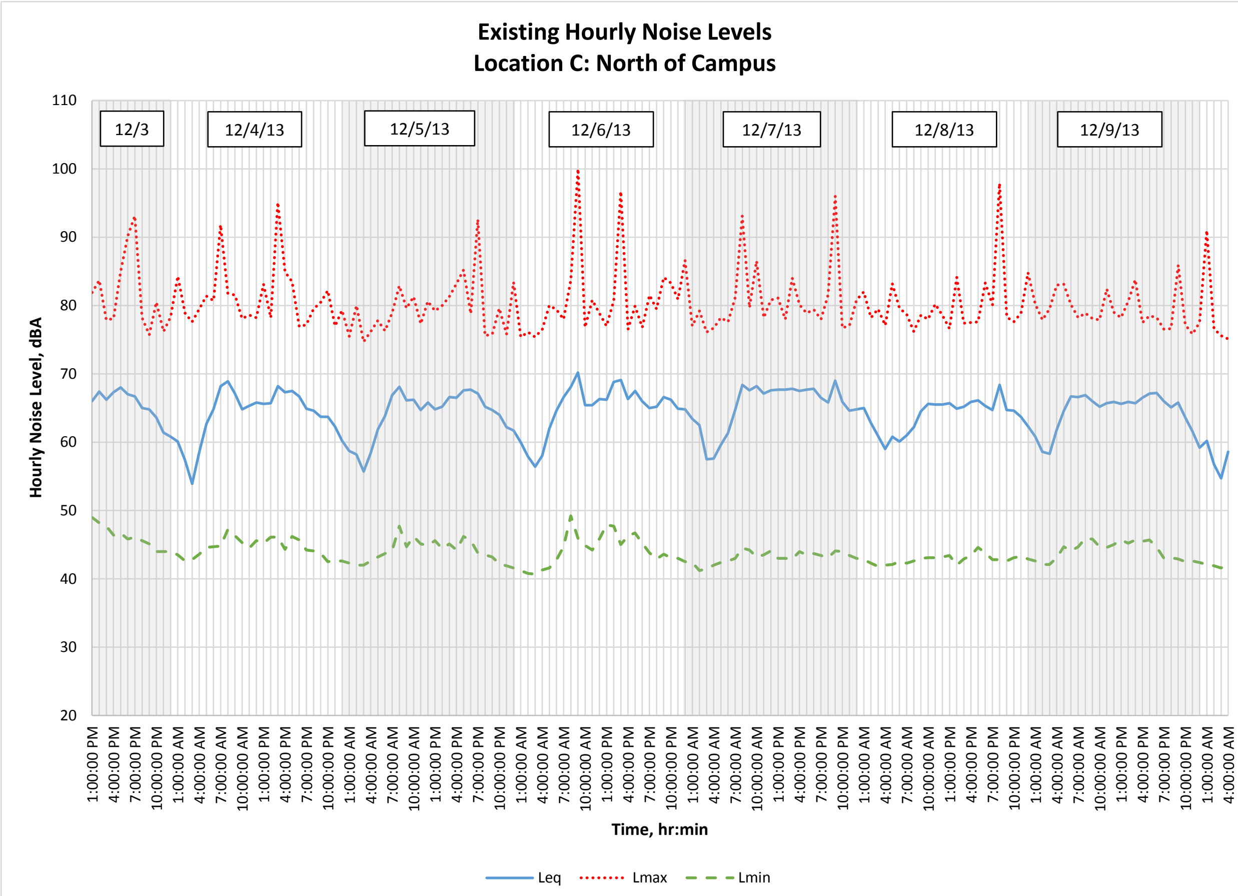

Figure 8 – Location C: Existing Sound Levels

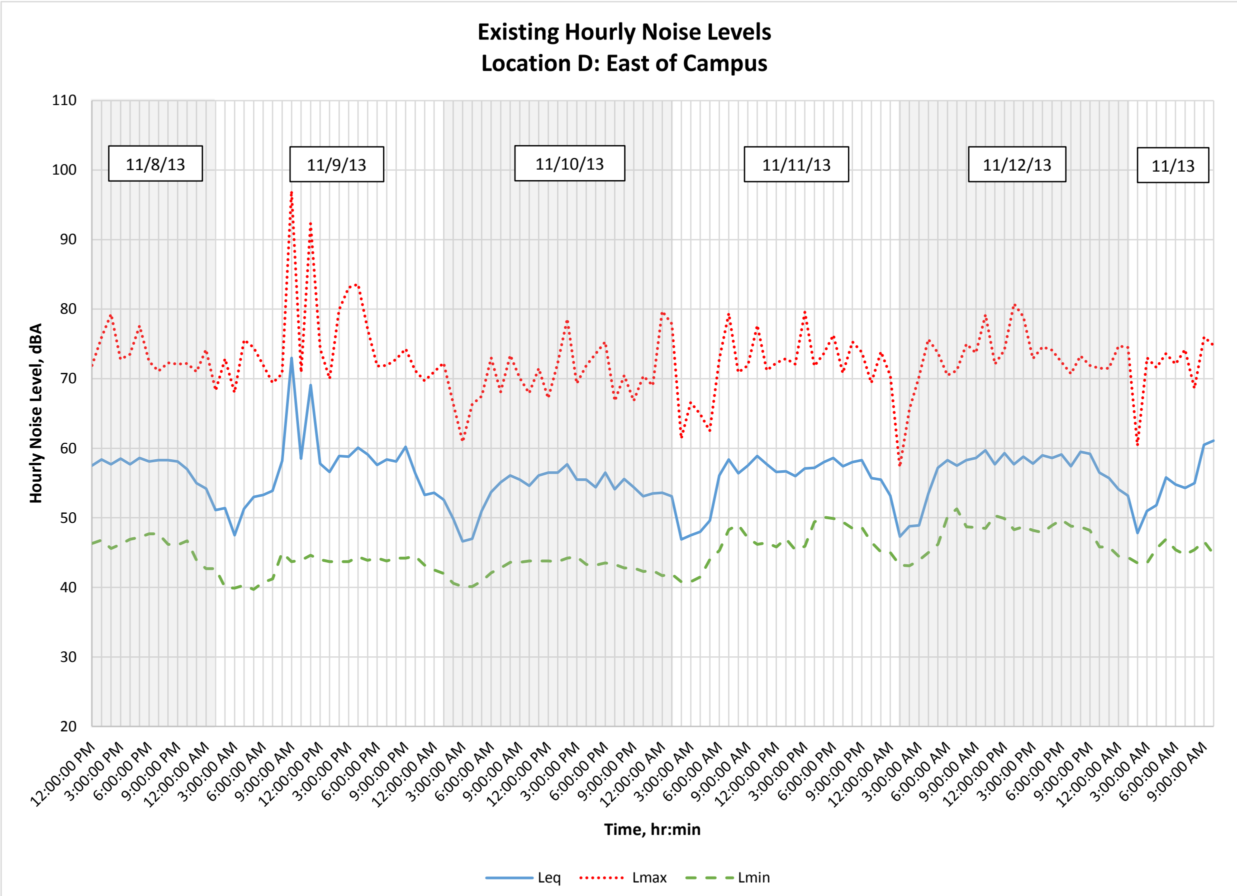

Figure 9 – Location D: Existing Sound Levels

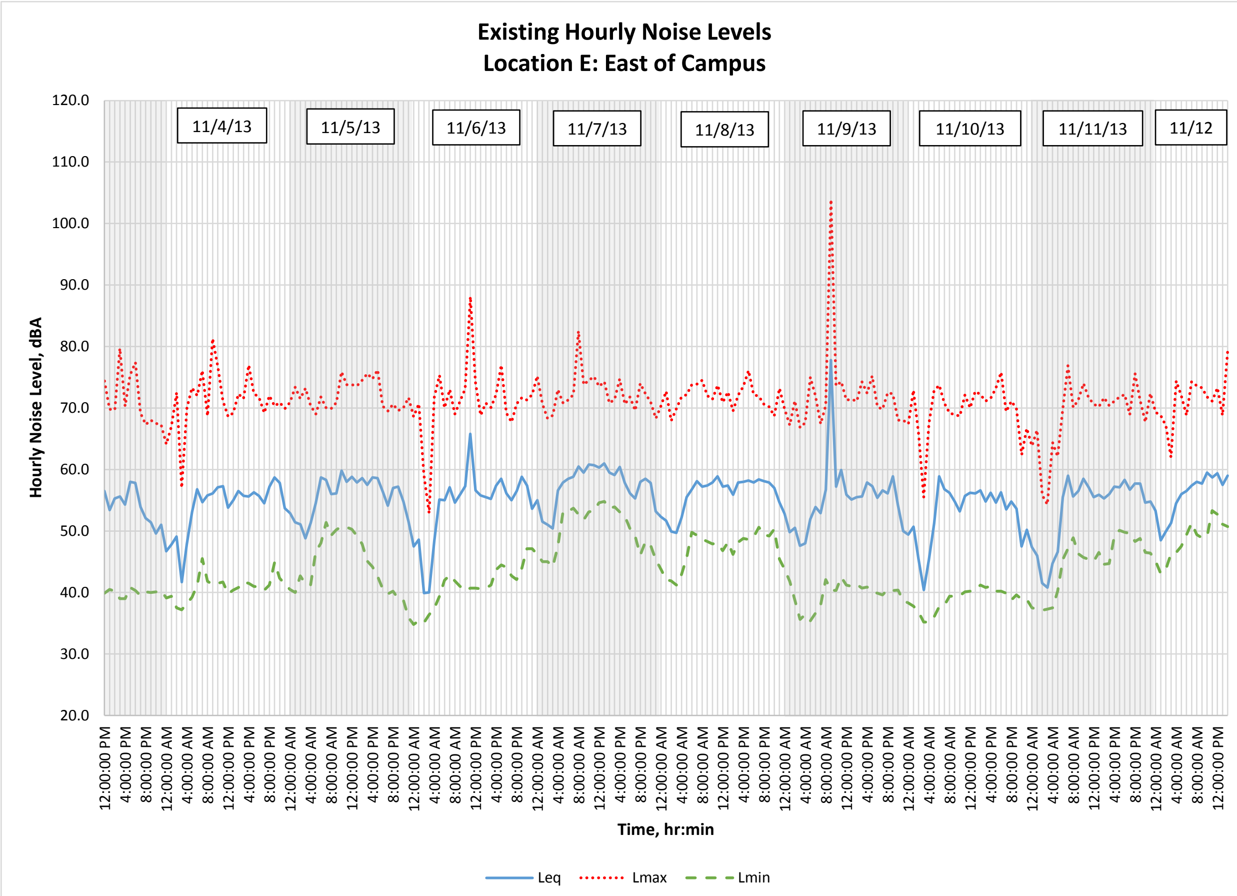

Figure 10 –Location E: Existing Sound Levels

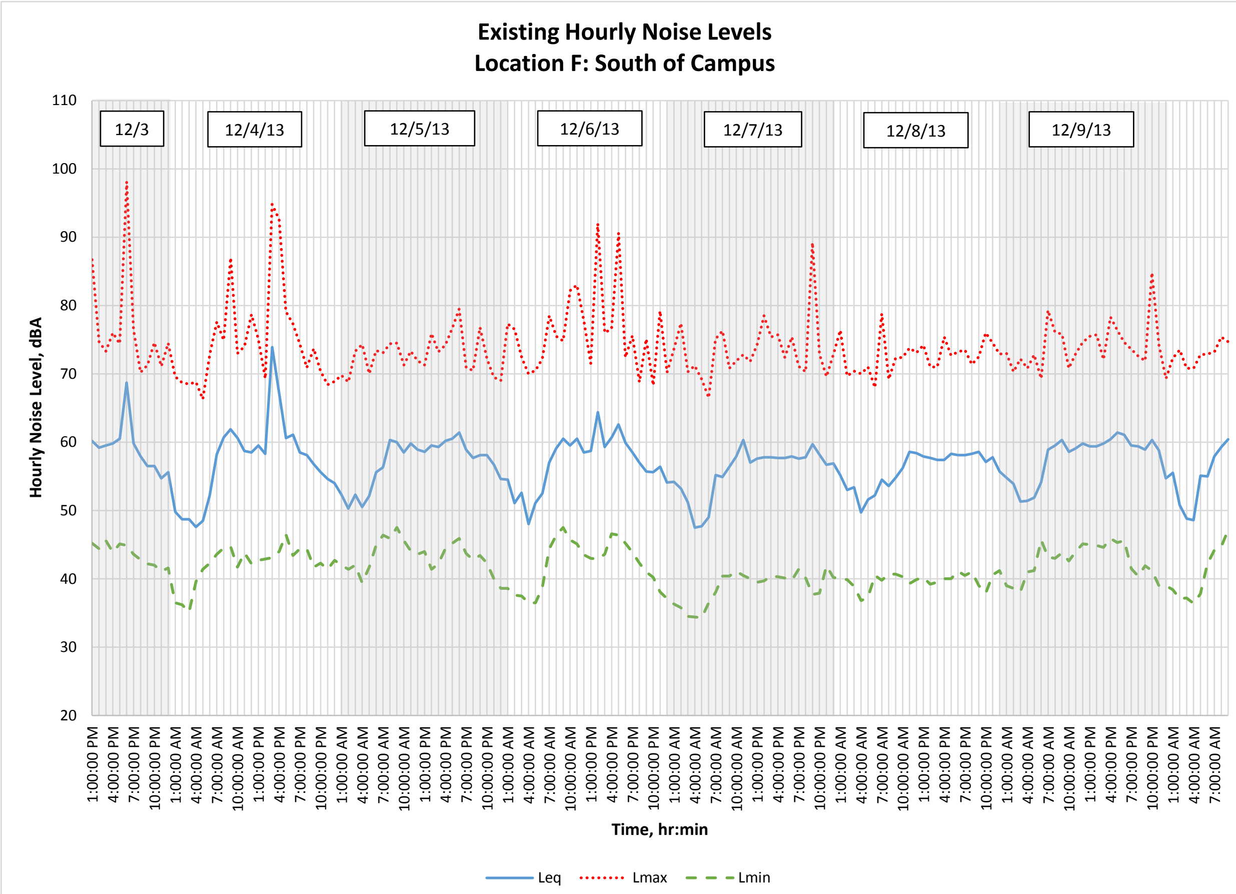

Figure 11 –Location F: Existing Sound Levels

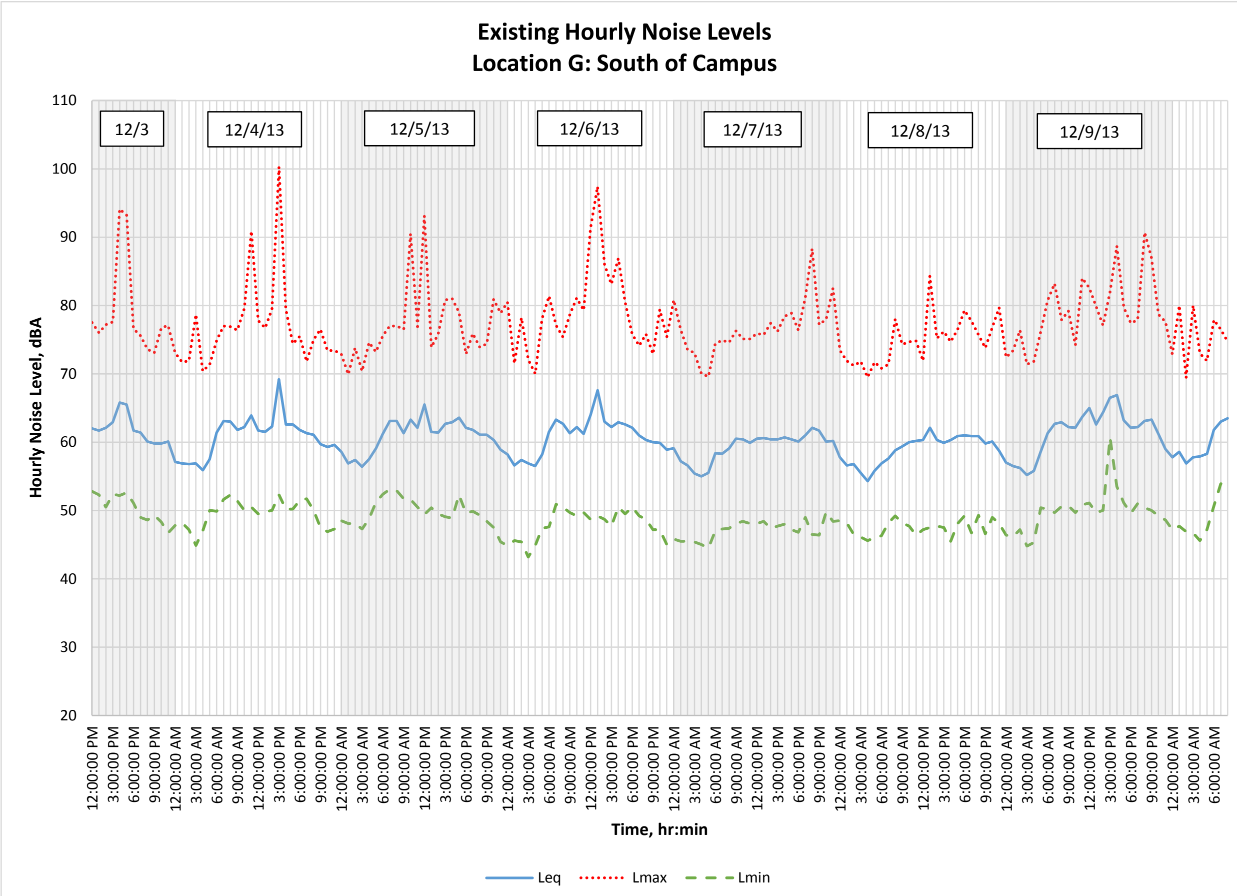

Figure 12 –Location G: Existing Sound Levels

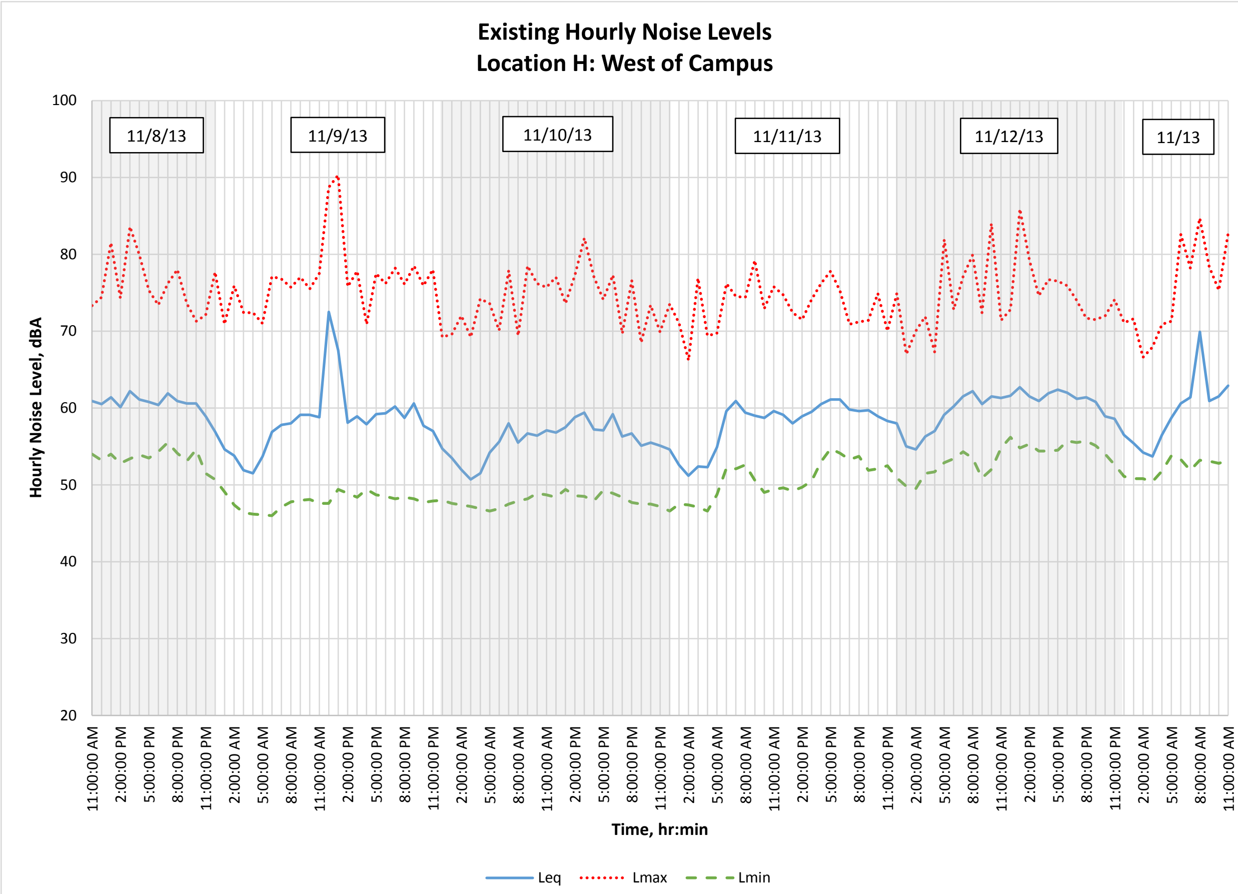

Figure 13 –Location H: Existing Sound Levels

Table 3 – Existing Ambient Sound Level Measurement Locations & Descriptions

Location	Description
A	NW Residential Receiver. Off main arterials.
B	North Residential Receiver – West end. On Cherry St
C	North Commercial Receiver – East end. On Cherry St
D	East Residential Receiver – North end. Mid-block between 18th & 19th Ave
E	East Residential Receiver – South end. Mid-block between 18th & 19th Ave
F	South Residential Receiver – East end. On Jefferson St
G	South Residential Receiver – West end. On Jefferson St
H	West Commercial Receiver. On 15th Ave

Table 4 summarizes the ranges of existing sound levels at the noise monitoring locations, based on the results of the long term measurements described above. The sound levels shown in Table 4 are considered to be a summary of the existing ambient sound levels.

Table 4 - Summary of Existing Sound Levels, Leq, dBA

Measurement Summary		Noise Monitoring Location							
		A	**B**	**C**	**D**	**E**	**F**	**G**	**H**
Measured Leq	Day	54-67	63-71	61-70	54-73	51-78	54-74	58-69	55-73
	Night	47-59	62-71	54-67	47-58	40-59	48-60	54-62	51-61
Seattle Noise Code	Receiver Descrip	Residnt	Residnt	Residnt	Residnt	Residnt	Residnt	Residnt	Residnt
	Day Limit	55	55	55	55	55	55	55	55
	Night Limit	45	45	45	45	45	45	45	45

Table 5 - Summary of Existing Maximum Sound Levels, Lmax, dBA

Measurement Summary		Noise Monitoring Location							
		A	**B**	**C**	**D**	**E**	**F**	**G**	**H**
Measured Lmax	Day	68-89	68-93	76-100	67-97	67-104	69-98	71-100	69-90
	Night	61-83	69-89	75-91	57-80	53-75	66-85	69-83	66-83
Seattle Noise Code	Receiver Descrip	Residnt	Residnt	Residnt	Residnt	Residnt	Residnt	Residnt	Residnt
	Day Limit	70	70	70	70	70	70	70	70
	Night Limit	60	60	60	60	60	60	60	60

V. Analysis and Discussion

The measured existing sound levels indicate that sound levels in the vicinity of the Swedish Cherry Hill Campus are relatively high, often not dropping below code limits during daytime hours and occasionally remaining above nighttime noise limits as well. This is attributable to traffic on Cherry and Jefferson Streets; noise monitors located along these streets exhibited consistently higher hourly Leq levels than those located to the east and west of the campus.

Noise levels along the eastern border of the campus are significantly lower, and are consistent with the residential neighborhood that the campus abuts in that direction. At Location A, noise levels fall at or above code limits. Levels at this location do not drop off as for Locations D and E to the east.

These measurements document the levels of noise from existing traffic patterns, airplane flyovers, pedestrian activity, etc., and indicate that most adjacent properties are affected by relatively high levels of noise from these typical urban sources. Based on urban growth patterns in Seattle, we expect that the measured ambient noise levels would remain relatively constant or slightly increase in the future.

We expect that, as new buildings are developed on site, noise levels due to HVAC systems would remain approximately constant or be reduced due to the advent of new, quieter system technologies. It is our understanding that an analysis of each new building's HVAC system will be performed to confirm compliance with the City Noise Ordinance. These analyses will be submitted as part of future MUP packages.

Depending on the orientation of these buildings, and the typical access route to them, it is feasible to expect that shifting traffic patterns may also affect ambient background noise levels. An analysis of anticipated changes in traffic patterns may be performed for these projects once any changes to traffic counts are determined.

VI. Summary

This report summarizes measurements of the existing noise levels surrounding the Swedish Cherry Hill site. These measurements relatively high noise levels due to typical urban noise sources such as traffic on adjacent roadways.

Should you have any questions or concerns regarding the above, please don't hesitate to contact us.

Sincerely,
SSA Acoustics, LLP

Mohamed Ait Allaoua
Managing Partner &
Senior Acoustical Consultant

Matt Roe
Acoustical Consultant

Draft Environment Impact Statement

for the

Swedish Cherry Hill

Major Institution Master Plan

Appendix C: Transportation Technical Report

May 22, 2014

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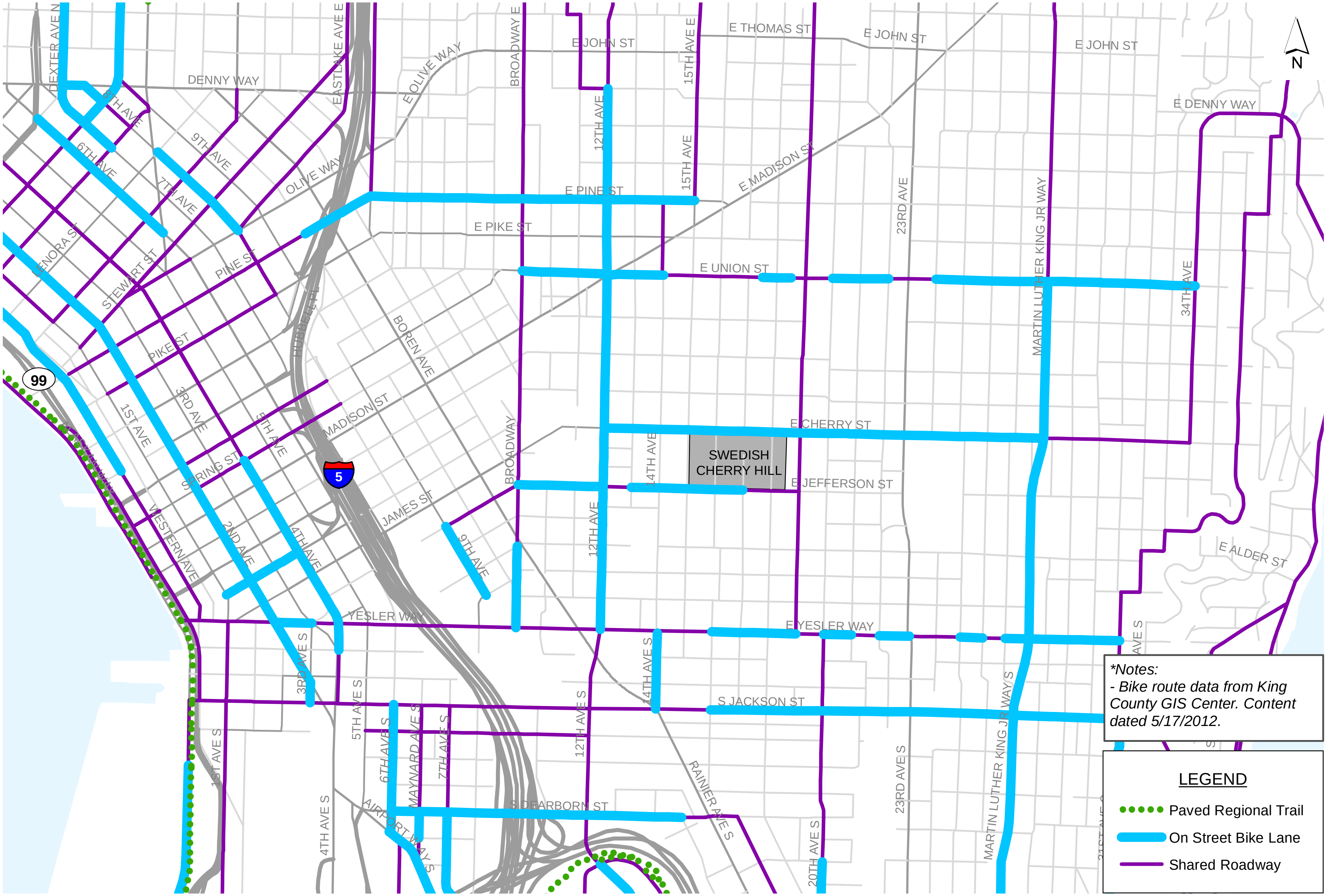
List of Figures



Existing Bicycle Facilities

FIGURE **3.7-2**

Swedish Cherry Hill MIMP DEIS

transpoGROUP

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Transportation

1 Introduction

This document provides technical information in support of the transportation element of the Environmental Impact Statement (EIS) prepared for the proposed expansion of the Swedish Cherry Hill Medical Center campus (Swedish) in Seattle through a Major Institution Master Plan (MIMP). The following provides an overview of the project description and analysis approach. Further details are provided in subsequent sections that are specific to key transportation elements.

Four alternatives have been identified for evaluation in the Draft EIS. All of the alternatives are within the boundary of the existing major institution overlay (MIO). The Alternatives include:

- Alternative 1 – No Build
- Alternative 8 – Addition of approximately 1.9 million gross square-feet for a total of 3.1 million gross square-feet.
- Alternative 9 – Addition of approximately 1.55 million gross square-feet for a total of 2.75 million gross square-feet.
- Alternative 10 – Addition of approximately 1.55 million gross square-feet for a total of 2.75 million gross square-feet with reduced building heights and increased setbacks along 18th Avenue compared to Alternative 9.

Alternatives 2 – 7 were removed from consideration and are not evaluated within this technical analysis.

Swedish is proposing a MIMP for development over the next fifteen to twenty-five years, or longer. Construction phasing would be dependent upon the height limits approved by the City Council in the MIMP, and the need to create an "empty chair" (empty developable space) in which to develop new buildings without first having to demolish an existing building that is still in use. Early development potential may include the east side of the campus along 18th Avenue and the redevelopment of the existing west side parking garage, or the site of the Cherry Hill Professional Building on the southeast corner of E Cherry Street and 16th Avenue.

The scope of the technical analysis has been based on information outlined in the August 2013 scoping document, direction from staff from the Seattle Department of Transportation and the Department of Planning and Development, and comments provided from agency staff on the preliminary Draft EIS.

Given the timeframe of the MIMP, two horizon years have been identified for analysis. This includes a long-term horizon year of 2040 as well as a short-term horizon year of 2023. This short-term horizon year evaluates the impacts of the early development potential. Assumptions for the long- and short-term development scenario were provided by the applicant. Development assumed by 2023 is the same for Alternatives 8, 9, and 10 and includes construction of approximately 1.16 million gross square-feet for a total of approximately 2.3 million square-feet.

The following transportation elements are evaluated in this report:

- Street System
- Campus Access and Service Vehicle Loading
- Pedestrians and Bicycle Transportation
- Transit/Shuttle Service
- Traffic Volumes
- Traffic Operations
- Traffic Safety
- Parking

This report is organized into the following sections:

- **Introduction** – This section outlines project background, description of alternatives, and overall approach and scope to the transportation analysis completed for the project.
- **Transportation Management Program (TMP)** – This section outlines the current TMP in place for the campus. Information regarding program objectives and program elements are summarized. This establishes an institutional framework to understand the existing transportation conditions.
- **Affected Environment** – This section documents the existing transportation conditions focusing on the transportation elements noted above.
- **No Action** – This section documents future conditions (2023 and 2040) *without* the completion of the proposed expansion. This analysis reflects growth in traffic associated with approved development projects in the area and general growth in background traffic. The analysis also includes transportation improvements planned by the City or projects that are anticipated to be completed as part of developments in the area. Similar to the Affected Environment this section focuses on the transportation elements noted previously.
- **Alternative 8** – This section describes the impacts of the proposed project on the transportation elements identified, addressing scoping comments noted in the EIS scoping document.
- **Alternatives 9** and 10– This section describes the impacts of the proposed project, focusing on the same transportation elements as described above for Alternative 8.

2 Existing Transportation Management Program

The Swedish Cherry Hill Medical Center has adopted a transportation management program (TMP) targeted at reducing the employee single occupancy vehicle (SOV) rate. The success of this program is reported through the commute trip reduction (CTR) surveys. The current goal of the program is a 50 percent SOV rate. Existing program elements are discussed below. Enhancement of the existing TMP would be used to further promote a reduction in SOV rates. More details related to TMP enhancements are discussed in the mitigation section of this report.

Elements of the existing approved TMP include:

1. Establish and continuously maintain a Building Transportation Coordinator
2. Provide a transit subsidy equal to 50 percent of the cost of an Orca Passport for both bus and ferry
3. Provide preferential parking for vanpool and carpools, carpools of three or more people or vanpools park on campus at no cost
4. Provide off-street parking for SOV at a monthly fee equal to or greater than the market rate for peak period one-zone monthly transit passes
5. Provide weather protected and secured bicycle parking
6. Subsidize the cost of the restricted parking zone (RPZ) stickers for areas surrounding the campus
7. Encourage and support alternative work schedules, where possible
8. Participate in the guaranteed ride home program
9. Conduct one to three transportation fairs per year on-campus to promote the trip reduction programs
10. Provide a flex-car program on campus
11. Operate an inter-campus shuttle (see additional discussion in the Affected Environment)

Implementation of the TMP is undertaken jointly by Swedish, Sabey and LabCorp, each of which conduct independent CTR surveys. The most recent surveys completed indicate an average SOV rate of approximately 57 percent[1], which is greater than the current 50 percent SOV goal set for the Swedish Cherry Hill campus.

[1] Total population drive alone rate is 57 percent.

3 Affected Environment

This section provides an overview of the existing conditions within the defined study area. **Figure 1** shows the overall study area defined for the analysis and highlights the study area intersections. The study area was determined by Department of Planning and Development (DPD) and Seattle Department of Transportation (SDOT) in recognition of the primary travel patterns for Swedish Cherry Hill traffic. The study area encompasses the area east of I-5, west of 23rd Avenue, north of S Dearborn Street and south of Pike Street. The key arterials of E Madison Street, E Cherry Street, James Street, and E Jefferson Street corridors as well as Broadway, 12th Avenue, and 23rd Avenue are included in the evaluation. The ensuing transportation analysis fully encompasses these corridors and includes the evaluation of 43 study intersections.

This analysis included a review of the existing transportation system elements including the street system, campus access and circulation, pedestrian and bicycle transportation, transit service/facilities, traffic volumes, traffic operations, traffic safety and parking.

3.1 Street System

Swedish Cherry Hill is surrounded by residential neighborhoods to the north, east, and south. The Seattle University campus abuts the west side of the Swedish Cherry Hill campus. The neighborhoods located adjacent to the campus are served by residential streets, which include on-street parking and sidewalks. Parking is permitted on both sides of the roadways, resulting in narrow travel way widths where often only one car can pass at a time, depending on how vehicles are parked on the street.

Access to and from the regional roadways such as I-5 to the west is provided via E Cherry Street and E Jefferson Street. Local connections to the neighborhood from these roadways are generally provided via stop controlled intersections, with E Cherry and E Jefferson Streets having the right-of-way. There are traffic signals at the E Cherry Street/18th Avenue and E Cherry Street/14th Avenue intersections to serve neighborhoods north of the campus. No traffic signals exist along E Jefferson Street in the vicinity of the campus.

Regional access to the campus north (SR 520) and south (I-90) of the local neighborhoods is provided via collector arterials such as E Madison Street, Rainier Avenue, and Broadway. These roadways range from 3 to 5 lane cross-sections.

An inventory of the streets serving the Swedish Cherry Hill campus is provided in **Table 1**. This inventory includes a summary of travel lanes, parking, sidewalks, and posted speed limit. A more comprehensive summary of the key streets that surround the campus and are utilized by staff and patients to access the campus is provided following **Table 1.**

Study Area and Intersections

Swedish Cherry Hill MIMP - DEIS

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FIGURE

1

Table 1
Characteristics of Roadways in Study Area

Roadway	Arterial Classification	Posted Speed Limit	Number of Travel Lanes	On-Street Parking?	Sidewalks?	Bicycle Facilities?
E Madison Street (Boren Avenue to 23rd Avenue)	Principal Arterial	30 mph	4 to 5 lanes	Some Blocks	Yes	No
E Pike Street (Broadway to 12th Avenue)	Minor Arterial	30 mph	2 to 3 lanes	Most Blocks	Yes	No
E Union Street (E Madison Street to 23rd Avenue)	Minor Arterial	30 mph	2 to 3 lanes	Most Blocks	Yes	Yes
E Marion Street	Access Street	25 mph	2 lanes	Most Blocks	Yes	No
E Columbia Street	Access Street	25 mph	2 lanes	Most Blocks	Yes	No
Cherry Street (6th Avenue to 7th Avenue)	Principal Arterial	30 mph	2 lanes	No	Yes	Yes
James Street (6th Avenue to Broadway)	Principal Arterial	30 mph	4 lanes	No	Yes	No
E Cherry Street (James Street to 23rd Avenue)	Minor Arterial	30 mph	2 to 4 lanes	Some Blocks	Yes	Yes
E Jefferson Street (Broadway to 23rd Avenue)	Collector Arterial	30 mph	2 lanes	Most Blocks	Yes	Yes
Boren Avenue	Principal Arterial	30 mph	4 lanes	No	Yes	No
Rainier Avenue SE	Principal Arterial	30 mph	4 to 6 lanes	No	Yes	No
S Dearborn Street (I-5 to Rainier Avenue SE)	Principal Arterial	30 mph	2 to 4 lanes	Few Blocks	Yes	Yes
E Yesler Way (12th Avenue to 23rd Avenue)	Minor Arterial	30 mph	2 lanes	Most Blocks	Yes	Yes
S Jackson Street (12th Avenue to 23rd Avenue)	Minor Arterial	30 mph	2 to 4 lanes	Some Blocks	Yes	Yes
Broadway	Minor Arterial	30 mph	4 to 5 lanes	Some Blocks	Yes	Yes
6th Avenue	Principal Arterial	30 mph	3 to 4 lanes	Few Blocks	Yes	No
7th Avenue	Principal Arterial	30 mph	1 to 3 lanes	Some Blocks	Yes	Yes
12th Avenue (Madison Street to Boren Avenue)	Minor Arterial	30 mph	2 to 4 lanes	Some Blocks	Yes	Yes
13th Avenue	Access Street	25 mph	2 lanes	Most Blocks	Yes	No

Table 1 (Cont'd)
Characteristics of Roadways in Study Area

Roadway	Arterial Classification	Posted Speed Limit	Number of Travel Lanes	On-Street Parking?	Sidewalks?	Bicycle Facilities?
14th Avenue	Collector Arterial	30 mph	2 lanes	Most Blocks	Yes	No
15th Avenue	Access Street	25 mph	2 lanes	Most Blocks	Yes	No
16th Avenue	Access Street	25 mph	2 lanes	Most Blocks	Yes	No
18th Avenue	Access Street	25 mph	2 lanes	Most Blocks	Yes	No
19th Avenue	Access Street	25 mph	2 lanes	Most Blocks	Yes	Yes
23rd Avenue	Principal Arterial	30 mph	4 lanes	Few Blocks	Yes	No

Source: Seattle Department of Transportation and Transpo Group, 2013.

E Cherry Street forms the northern border of the campus and is classified as a minor arterial by the City. In the vicinity of the hospital, sidewalks and parking are provided on both sides of this two-lane roadway. In addition, sharrows (i.e., indicating shared vehicle/bicycle travel ways) are provided along both sides of the roadway as well as bicycle lanes on the uphill portion of the corridor. The majority of the intersections along this corridor within the site vicinity are stop controlled. Parking for the hospital or clinics can be accessed along 15th Avenue, 16th Avenue, and 18th Avenue off of E Cherry Street. As noted previously, E Cherry Street provides a connection to/from I-5 to the west.

E Jefferson Street forms the southern boundary of the campus. In the vicinity of Swedish Hospital campus, E Jefferson Street is classified as a collector arterial. Sidewalks and parking are provided on both sides of this two-lane roadway. In addition, sharrows are provided along the corridor as well as bicycle lanes along the uphill portions from 12th Avenue to 19th Avenue. All intersections between 12th Avenue and 23rd Avenue are stop controlled. There are also seven bus routes that operate along E Jefferson Street within the site vicinity. Access to the Swedish parking areas is at 15th Avenue, 16th Avenue, and 18th Avenue off of E Jefferson Street.

15th Avenue provides access to existing parking structures and surface lots for the hospital and forms the western border of the Swedish campus. Seattle University facilities are located on the west side of the roadway. In the vicinity of Swedish, 15th Avenue is classified as an access street. Sidewalks are provided on both sides of this two-lane roadway and parking is permitted along the west side of the roadway only.

16th Avenue provides access to existing parking structures and surface lots for the campus. It also provides a north/south vehicular, pedestrian, and bicycle connection to and from the neighborhood. In the vicinity of Swedish, 16th Avenue is classified as an access street. Sidewalks are provided on both sides of this two-lane roadway with some on-street parking allowed.

18th Avenue provides access to two Swedish surface lots, with the eastern border of the campus located between 18th Avenue and 19th Avenue. In the vicinity of Swedish, 18th Avenue is classified as an access street. Sidewalks are provided on both sides of this two-lane roadway as well as on-street parking along the west side. 18th Avenue is adjacent to the signed bicycle route that runs along 19th Avenue. A traffic signal exists at the E Cherry Street/18th Avenue intersection, providing a signalized connection for neighborhood traffic.

12th Avenue is a main arterial to the west of the campus and is classified as a minor arterial by the City. Near Swedish this roadway is three-lanes with sidewalks and parking on both sides. Bicycle lanes are also provided along both sides of the corridor from E Madison Street to E Yesler Way.

23rd Avenue is a main arterial to the east of Swedish, and is classified as a principal arterial by the City. Sidewalks are provided on both sides of this four-lane roadway and no parking is allowed. Directly east of Swedish along 23rd Avenue, there is a 20 mph school zone, for Garfield High School, that starts at E Spruce Street and ends at E Cherry Street.

3.2 Campus Access and Service Vehicle Loading

There are several parking areas within the Cherry Hill campus that are available to staff, patients, and visitors. **Figure 2** highlights these parking lots and garages and the campus access and circulation. As shown in **Figure 2**, access points to the Swedish Cherry Hill parking garages and surface lots are located primarily on 15th Avenue, 16th Avenue, and 18th Avenue between E Cherry Street and E Jefferson Street. Designated parking is provided for patients of the Northwest Kidney Center within a separated portion of the 16th Garage with vehicular access along 15th Avenue.

The primary access to the emergency department is provided via 16th Avenue. The entry to the emergency department is located south of E Cherry Street at the second driveway, which is one-way inbound only. Ambulances, other emergency vehicles and patients enter the same driveway. In front of the emergency entrance, there are two parking spaces for ambulances and seven parking spaces for emergency room visitors.

Figure 2 illustrates the location of the access points to the loading and services areas. The main truck access for the delivery of supplies is provided at two locations:

1. **16th Avenue.** This delivery area is located north of the emergency department entrance and primarily used for hospital services. This area includes multiple truck docks, parking for funeral home use, postal service, twelve general parking spaces, and four ADA accessible spaces. There are two exits for vehicles in this area, one to the north, which connects to 16th Avenue and one to the south exiting on to E Jefferson Street at 17th Avenue. The loading docks has approximately ten scheduled deliveries per day and the potential for additional courier pick-ups or drop-offs that are typically not scheduled. The maneuvering area can accommodate backing movements on-site without using 16th Avenue.

2. **18th Avenue.** This service area is located just south of E Cherry Street. There is a smaller service dock for the kitchen, James Tower, and Jefferson Tower. The loading dock

typically has less than ten deliveries per day with vehicles ranging from small vans to tractor trailers. Most of the vehicles access the loading area back-in and need to use 18th Avenue to complete the backing maneuver. Trash pick-up also occurs in this area for the dumpsters associated with James Tower.

In addition to the two main delivery areas, there are service areas accommodating smaller deliveries with vans or cars along 15th Avenue for the Northwest Kidney Center, along the alley between 15th Avenue and 16th Avenue for the Seattle Rehabilitation Center, and along 18th Avenue for the Central Utility Plant.

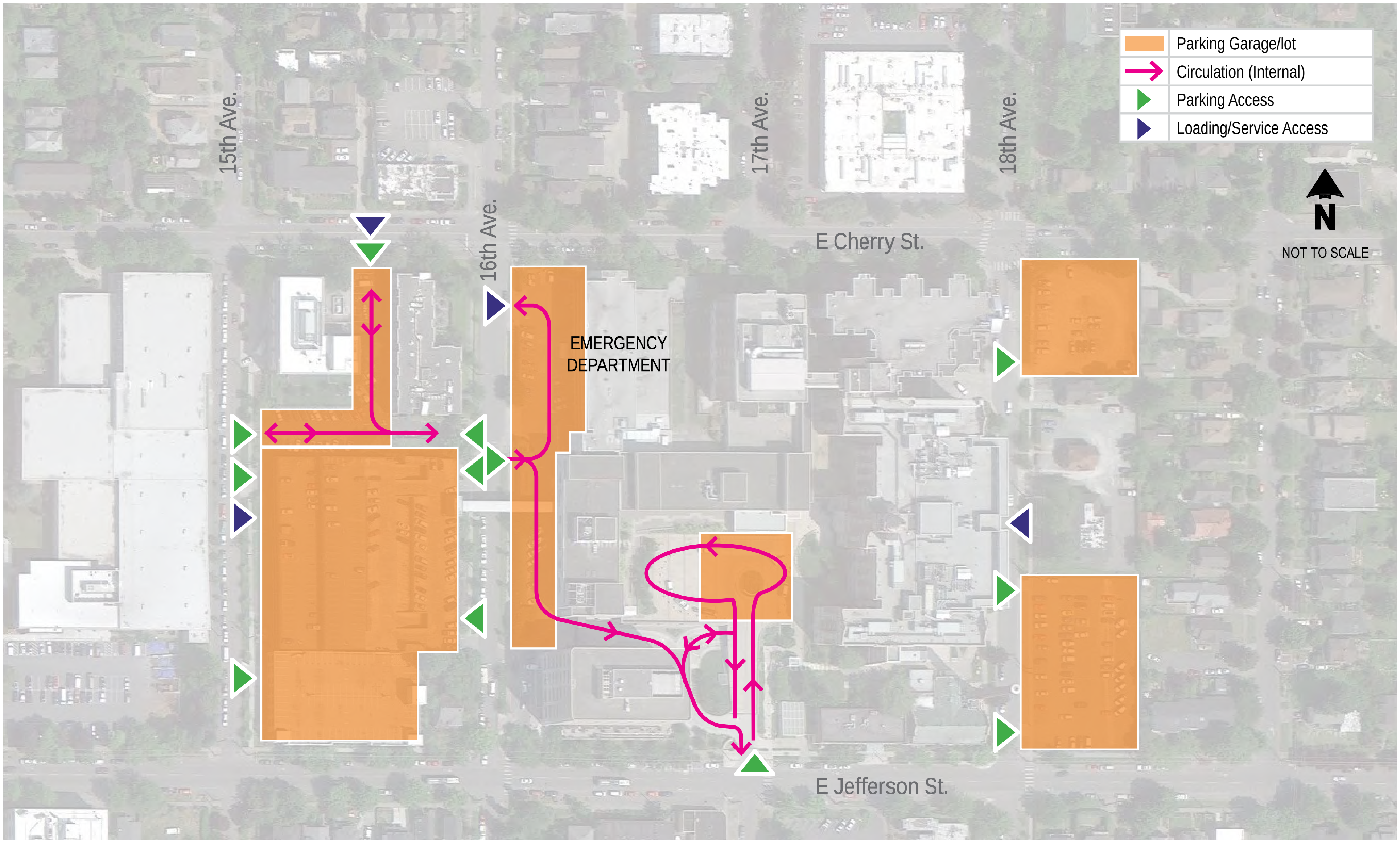
SMC 23.54.035 establishes requirements for off-street loading berths. Hospitals are identified as a high-demand use with each of the existing loading facilities needing to meet the following requirements:

1. The 16th Avenue loading area services approximately 554,000 square-feet of building area and would require 17 loading berths per code. The area currently has two loading berths as well as some service entrances.

2. The 18th Avenue loading area services approximately 515,000 square-feet of building and would require 16 loading berths per code. The area currently has one loading berth.

It should be noted that these loading facilities may have been constructed prior to the implementation of current code requirements and/or DPD Director Decisions may have modified the code requirements based on the specific needs of the buildings served by the loading facilities. Existing loading facilities are generally adequate to serve the needs of Swedish Cherry Hill; however, there are some periods in the morning when food service deliveries are waiting along 18th Avenue to access the loading berth. This impact could be minimized through scheduling of deliveries to minimize overlap times especially given that there are less than ten deliveries per day. The primary issue associated with the 18th loading facilities is that trucks need to back across the public right of way to reach the loading dock.

Trucks traveling between Swedish Cherry Hill and Interstate 5 primarily use the arterials of E Cherry Street and E Jefferson Street. Loading facilities are served by the adjacent local access streets of 16th Avenue and 18th Avenue. The existing road network adequately accommodates trucks serving Swedish Cherry Hill and there are no observable deficiencies in the existing road network.



Existing Access and Circulation Routes

Swedish Cherry Hill MIMP – DEIS

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FIGURE
2

3.3 Pedestrian and Bicycle Transportation

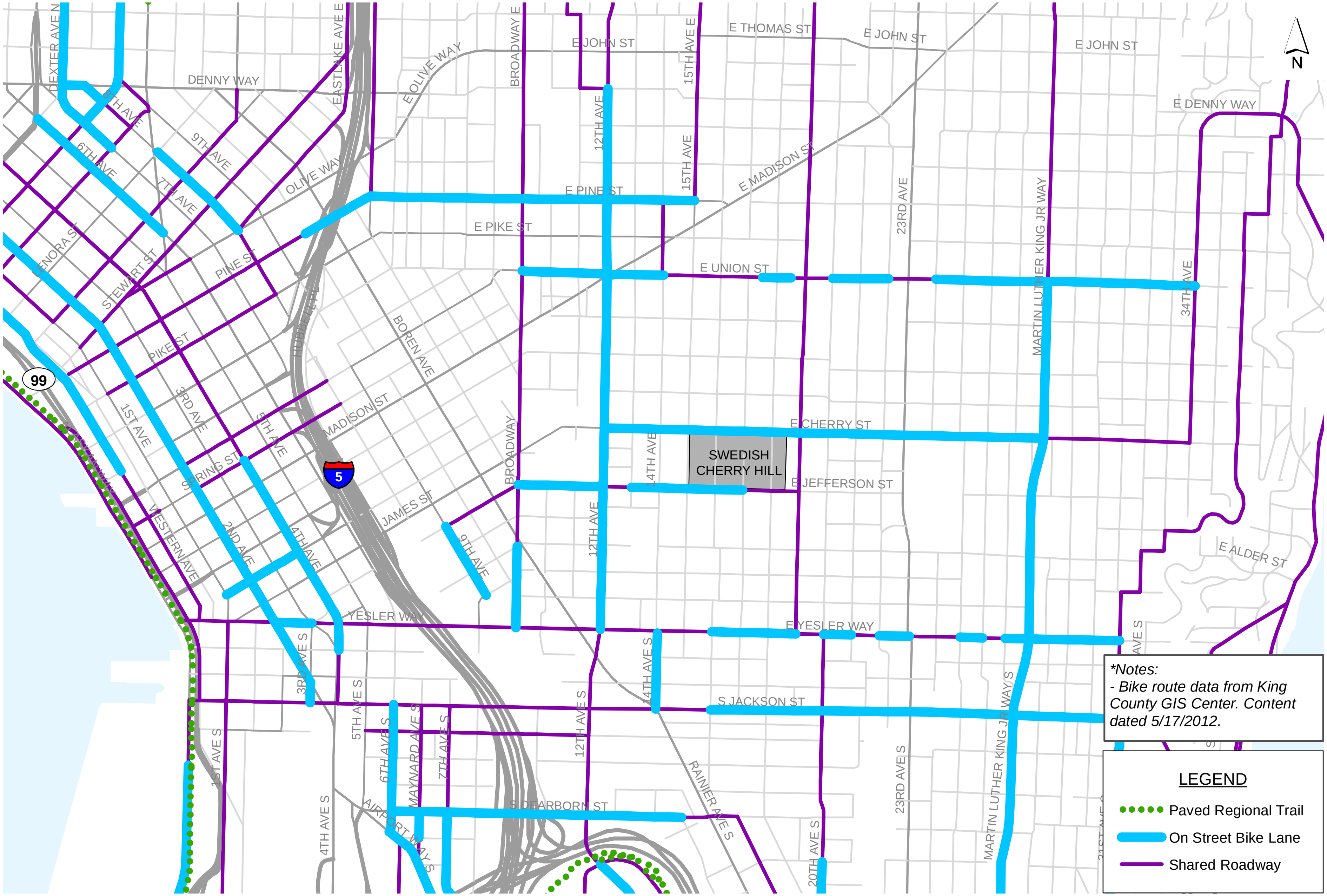
Based on the CTR surveys, approximately two percent of employees commute to and from the campus via bicycle. The campus currently provides 132 bicycle parking spaces for visitors and employees. In addition, lockers and showers are provided for employees.

Figure 3 illustrates the bicycle network within the study area. The primary north-south bike corridors included Broadway and 19th Avenue E, which are delineated with sharrows. 19th Avenue is a signed bicycle route. A bicycle lane is provided along 12th Avenue E.

East-west bicycle connections in the study area are provided via E Cherry Street and E Jefferson Street, and predominantly identified by sharrows. Sharrows are pavement markings used to delineate and identify a shared vehicle/bicycle travel lane. Bicycle lanes are provided along portions of E Cherry Street traveling in the uphill direction, E Jefferson Street west of 19th Avenue, and E Yesler Way. Union Street, a signed bike route, has a combination of sharrows and bicycle lanes. The E Yesler Way bicycle route goes into the downtown.

Approximately four percent of employees commute to and from the campus by walking. In addition, all other travel to the campus ends in a walking trip whether connecting from vehicle parking, bicycle parking or transit. All of the streets within the vicinity of Swedish Cherry Hill campus generally have sidewalks on both sides. There are a limited number of pedestrian crossings along E Cherry Street and E Jefferson Street. Signalized pedestrian crossings are provided at the E Cherry Street/ 18th Avenue intersection. Unsignalized pedestrian crosswalks are also provided across E Cherry Street at 16th Avenue and across E Jefferson Street at 16th, 17th, and 18th Avenues.

Traffic counts conducted at the study intersections included bicycle and pedestrian counts. The highest concentration of pedestrians in the study area is in the vicinity of the schools including Seattle University (west of Swedish Cherry Hill) and Garfield High School (east of the campus). In the immediate vicinity of the campus, pedestrian volumes are highest during the weekday PM peak hour. Adjacent to the campus, bicycle volumes were higher along E Jefferson Street as compared to E Cherry Street during both the weekday AM and PM peak hours.



Existing Bicycle Facilities

FIGURE
2

Swedish Cherry Hill MIMP DEIS

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3.4 Transit/Shuttle Service

King County Metro operates several routes within the vicinity of Swedish. There are eight King County Metro Transit routes within a half mile (or 10- to 12-minute) walking distance of Swedish Cherry Hill. The service areas, operating hours, and headways are summarized in **Table 2**. As shown in the table, the headways range from 5 to 30 minutes during the weekday peak periods. Route 84 operates at night, running from 2:00 AM to 4:30 AM. The routes serve the neighborhoods of Seattle as well as Issaquah and Federal Way. Routes 3/4, 64, 84, 193, 211, and 303 serve Swedish Cherry Hill directly with a stop in each direction along E Jefferson Street at 17th Avenue adjacent to the campus. The routes serving Swedish Cherry Hill directly provide viable options for travelling to and from the campus.

Table 2
Existing Transit Service to Swedish Cherry Hill Campus

Route	Area Served	Approximate Operating Hours	AM Peak Period Transit Trips NB / EB[2]	AM Peak Period Transit Trips SB / WB[2]	AM Peak Period Headway (minutes)	PM Peak Period Transit Trips NB / EB[2]	PM Peak Period Transit Trips SB / WB[2]	PM Peak Period Headway (minutes)
3/4	Judkins Park - Downtown Seattle - Queen Anne Hill	5:00 AM - 1:30 AM	13	16	5 - 10	15	17	5 – 10
27	Colman Park - Downtown Seattle	5:30 AM - 10:30 PM	4	4	30	4	4	30
48	Mount Baker - University District - Loyal Heights	5:30 AM - 12:00 AM	11	11	5 - 15	12	12	10
64	First Hill - Downtown - Lake City	6:30 AM - 9:00 AM 3:30 PM - 6:00 PM	-	5	15 - 30	5	-	15 – 30
84	Madison Park - Madrona	2:00 PM - 4:30 AM	-	-	-	-	-	-
193	First Hill - Federal Way	6:30 AM - 9:00 AM 3:30 PM - 7:00 PM	5	-	20 - 30	-	4	30
211	First Hill - Issaquah Highlands	6:00 AM - 9:30 AM 2:30 PM - 6:00 PM	4	-	30	-	4	30
303	First Hill - Shoreline	6:00 AM - 9:00 AM 3:30 PM - 7:30 PM	-	8	15 - 20	6	-	15 – 30
Total Transit Trips During Peak Period			**37**	**44**		**42**	**41**	

1. Based on data King County Metro Transit (2013).
2. General direction of travel NB = northbound, EB = eastbound, SB = southbound, and WB = westbound.

The inter-campus shuttle operated by Swedish serves the Swedish First Hill campus, Cherry Hill campus, and the Metropolitan Park offices. This service is offered free to staff and patients and runs Monday through Friday, except on holidays. This service operates between 6:30 AM and

5:30 PM. The service operates with 20 minutes headways within the core hours of 10:00 AM to 2:00 PM and 40 minutes outside those hours.

The capacity of transit services to and from Swedish Cherry Hill varies by day (weekday or weekend service) and by the time of day (peak commuter period, evening services, etc.). The following provides a capacity and ridership evaluation of the bus transit service to and from the Swedish Cherry Hill campus at the E Jefferson Street bus stops at 17th Avenue. Average boarding's and alightings, as well as the passengers continuing on past the stop for Spring 2013 were provided by King County Metro. The data provided represents the weekday average per trip (alighting, boarding, and departure load) during the different time periods throughout the day. The weekday AM and PM peak periods were examined when ridership at the Swedish Cherry Hill bus stop is highest. The weekday AM peak period is defined as 6:00 to 9:00 AM and the weekday PM peak period is defined as 3:15 to 6:15 PM. The total available capacity and passenger loads or ridership for the routes serving the E Jefferson Street bus stop are illustrated in **Figures 4 and 5** for the weekday peak periods. As shown in the figures, routes 3 and 4 provide the most capacity or highest service levels to the campus. All of the routes serving the campus have some level of remaining capacity to accommodate additional riders during the weekday peak periods.

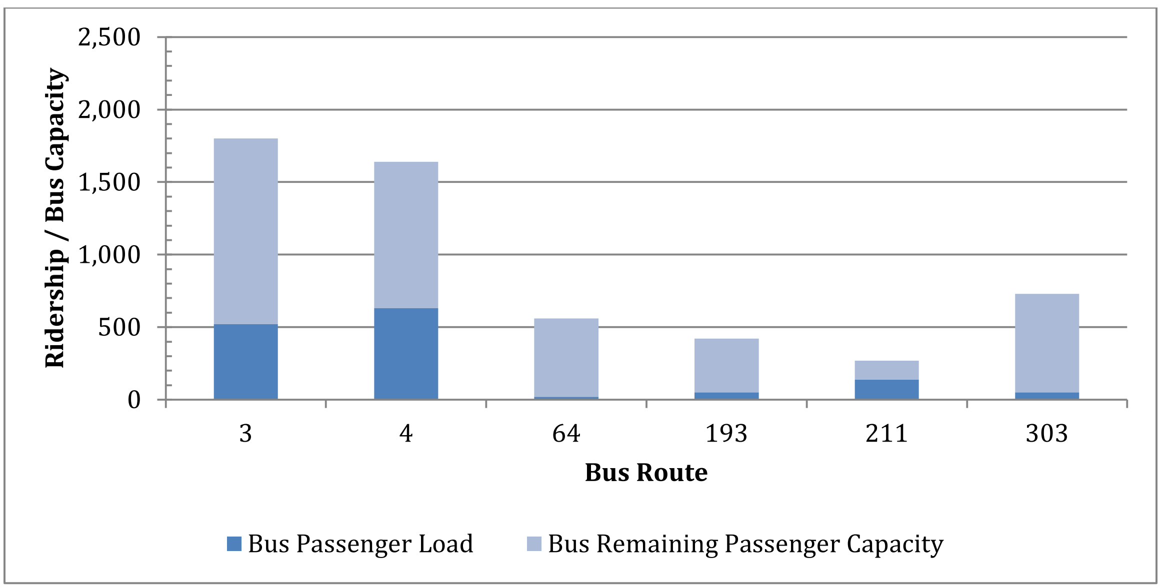


Figure 4 Existing Weekday AM Peak Period Bus Transit Capacity and Ridership

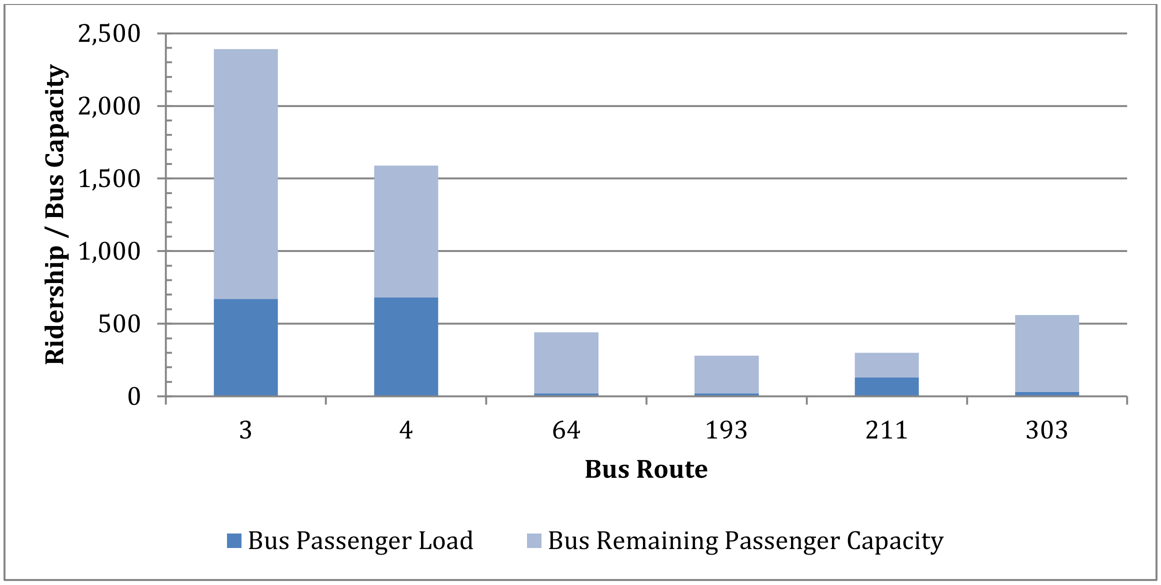


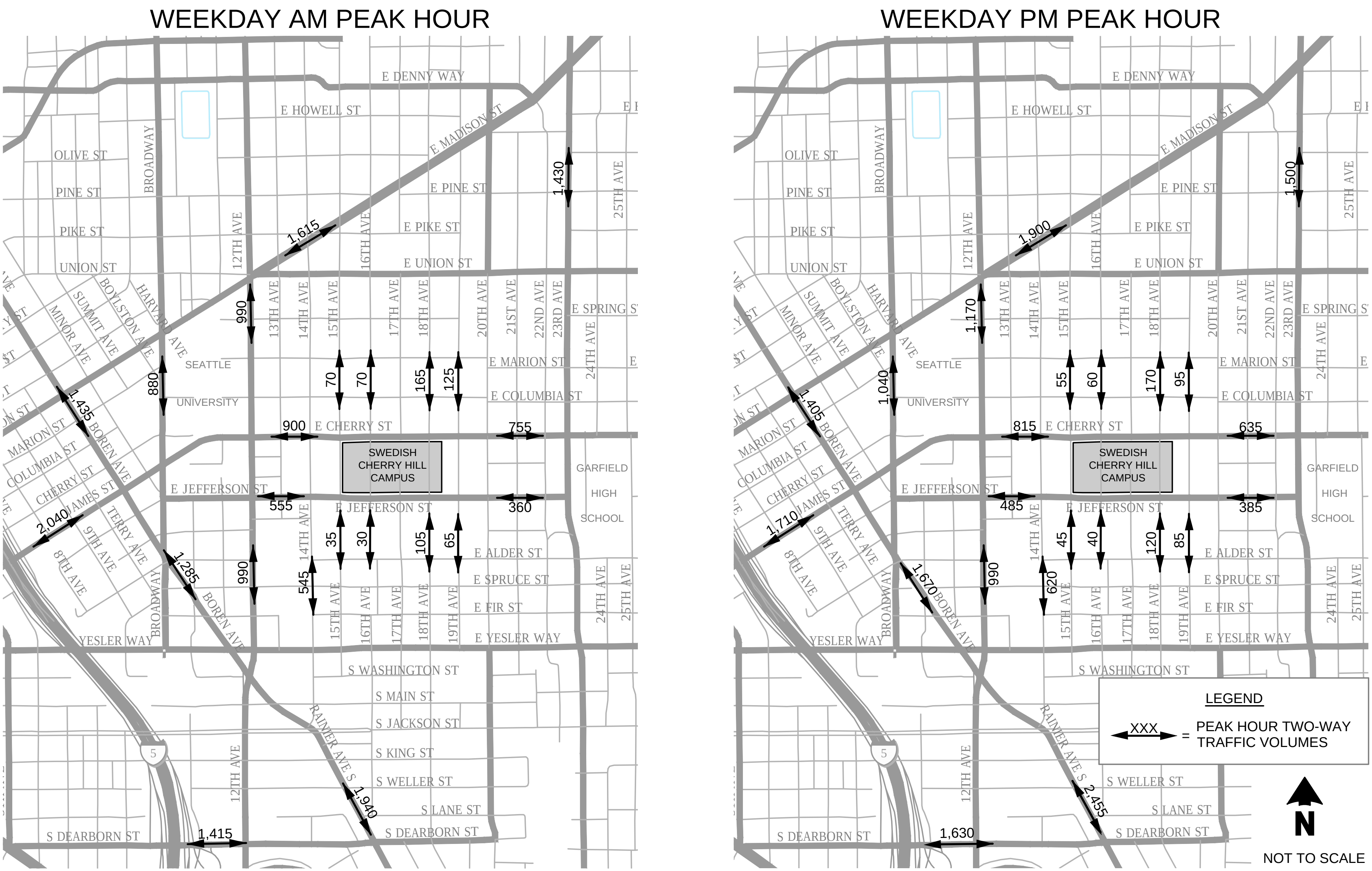
Figure 5 Existing Weekday PM Peak Period Bus Transit Capacity and Ridership

King County Metro is currently experiencing a funding shortage and it is anticipated that in late 2014 there would be service cuts and changes to bus service. This will impact routes 4, 211, 64, and 193 serving the Swedish campus. The impact of the changes in transit capacity is reflected in the No Build analysis.

3.5 Traffic Volumes

Traffic volumes within the study area were collected for the weekday AM (7:00 to 9:00 AM) and PM (4:00 to 6:00 PM) peak periods. Intersection turning movement counts were conducted in May, September, and October 2013 and January 2014. In addition to vehicles, the counts included bicycle and pedestrian volumes. Seattle University, located adjacent to the Swedish Cherry Hill campus, was in session during all counts. **Figure 6** summarizes the weekday AM and PM peak hour link volumes on the major roadways surrounding the campus. The weekday peak hour generally occurred from 7:30 to 8:30 AM during the morning and 5:00 to 6:00 PM during the evening. The turning movement count summaries are included in **Attachment C-1**. Count worksheets for each location are available upon request.

The traffic volumes shown on the figures represent the sum of both directions of travel. Weekday AM peak hour volumes, shown on **Figure 6**, are generally lower than the weekday PM peak hour volumes with the exception of along James Street/E Cherry Street between I-5 and 23rd Avenue and along E Jefferson Street in the immediate vicinity of Swedish. Weekday AM peak hour traffic volumes along James Street/E Cherry Street range between 755 near 23rd Avenue to 2,040 vehicles per hour (vph) near I-5. These existing weekday AM peak hour traffic volumes are approximately 20 percent higher than the existing James Street/E Cherry Street traffic volumes during the weekday PM peak hour. Traffic volumes along E Jefferson Street between Broadway and 23rd Avenue range from 360 to 555 vph during the weekday AM peak hour. Near 12th Avenue, the weekday AM peak hour traffic volumes along E Jefferson Street are 15 percent higher than weekday PM peak hour traffic volumes.



Existing Weekday Peak Hour Two-Way Link Volumes

FIGURE **6**

Swedish Cherry Hill MIMP - DEIS

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As shown on **Figure 6**, during the weekday PM peak hour, traffic volumes along E Cherry Street, adjacent to the campus, range between 635 to 815 vph depending on the individual block. Left-turns from E Cherry Street range between 10 to 50 vph depending on the intersection. West of Broadway, where E Cherry Street transitions to James Street, traffic volumes are higher with volumes as high as 1,710 near the I-5 interchange. These volumes decrease as you proceed east of the interchange. Traffic volumes along E Jefferson Street are lower than E Cherry Street. Traffic volumes along E Jefferson Street between Broadway and 23rd Avenue range from 385 to 485 vph. During both the weekday AM and PM peak hours and likely throughout the day, traffic volumes generally decrease along the E Jefferson Street corridor from the west to the east as traffic distributes to the local residential neighborhoods north and south of the corridor.

3.6 Traffic Operations

The scope of the traffic operations analysis included an evaluation of individual intersection performance as well as corridor operations along E Cherry Street/James Street between 6th Avenue and Broadway and Broadway and 18th Avenue. This analysis provides a basis for not only understanding future impacts to general traffic operations, but also how the proposed project affects neighborhood traffic and circulation patterns and access. The purpose of this corridor analysis is to assess the impacts of intersection delay and queuing on travel time and corridor progression. The E Cherry Street/James Street corridor was identified for analysis based on the anticipated travel patterns to/from the site and connectivity to I-5 as well as existing observations.

3.6.1 Intersection Operations

The operational performance of an intersection was determined by calculating the intersection level of service (LOS) based on the procedures presented in *Highway Capacity Manual* (HCM) 2000 rather than the most recent HCM 2010. The use of HCM 2000 for this analysis is due to limitations related to the HCM 2010 methodology for some conditions, analysis software coding bugs, a desire to apply a consistent methodology throughout the study area, and long-term acceptance of the previous HCM results. Specific limitations of the HCM 2010 methodology include the inability to model five-legged intersections as well as restrictions related to signal phasing that result in the inability to model some of the study area signalized locations. As a consistent approach to measuring intersection and corridor performance, the LOS analysis was completed using the HCM 2000 methodologies as implemented in the Synchro version 8 software program.

The HCM method uses peak hour traffic volumes, intersection geometry, intersection control, and roadway characteristics as inputs to evaluate operations. The intersection as a whole and its individual turning movements can be described with a range of levels of service (A through F), with LOS A indicating free-flowing traffic and LOS F indicating extreme congestion and long vehicle delays. At signalized and all-way stop controlled intersections, LOS is measured in average total delay per vehicle and is typically reported for the intersection as a whole. At side-street stop controlled intersections, LOS is measured in average movement delay per vehicles and is typically reported for the worst movement. **Attachment C-2** provides a more detailed explanation of intersection LOS.

Figure 7 summarizes the existing AM and PM peak hour levels of services. Existing weekday peak hour LOS for each study intersection is displayed on **Figures 8 and 9** with detailed LOS calculations provided in **Attachment C-3**.

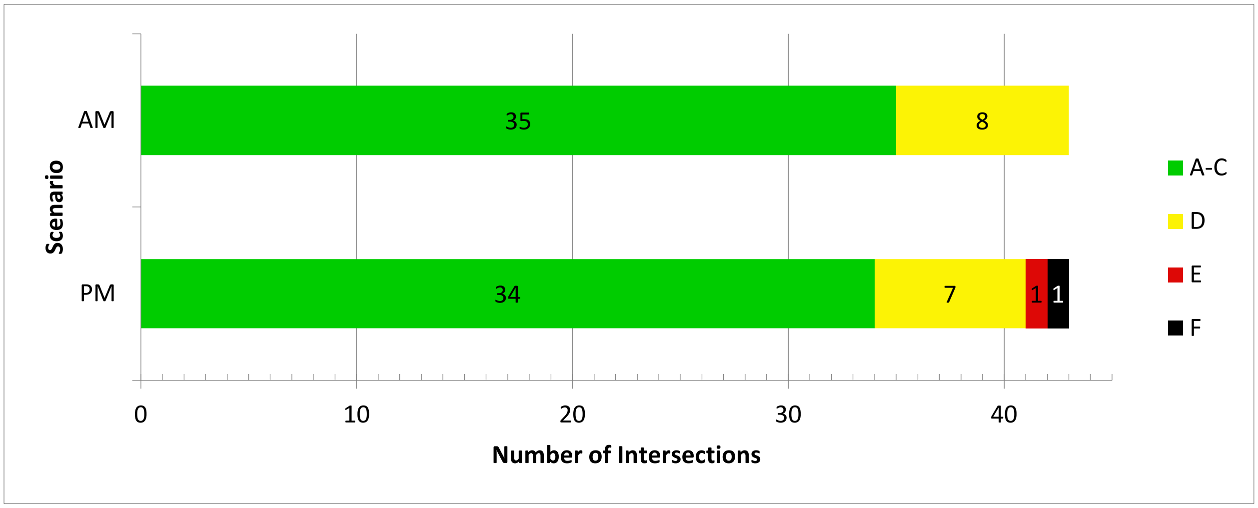
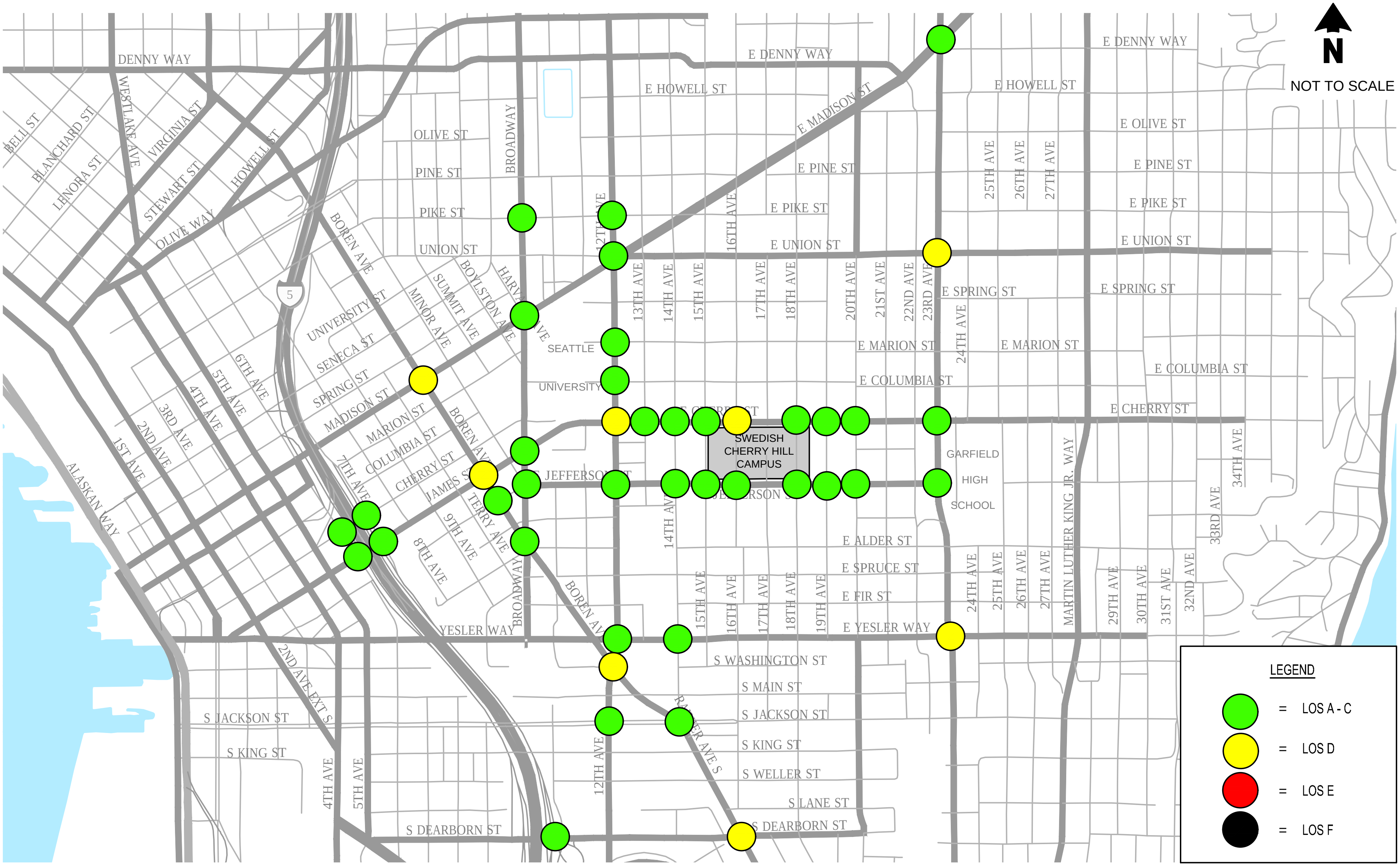


Figure 7 Existing Weekday Peak Hour Intersection Level of Service Comparison

As shown on **Figure 7**, approximately 80 percent of the study intersections currently operate at LOS C or better. No intersections in the study area currently operate below LOS D during the weekday AM peak hour. During the weekday PM peak hour, all study area intersections operate at LOS C or better with the exception of two that operate below LOS D. The two intersections operating below LOS D are 12th Avenue/E Marion Street (side street approaches operate at LOS F) and 13th Avenue/E Cherry Street (side street approaches operate at LOS E) intersections. The 12th Avenue/E Marion Street intersection has a high concentration of pedestrian crossings, which causes increased delays for these side street approaches, resulting in the LOS F condition.

As shown in **Figure 8**, during the weekday AM peak hour, study intersections proximate to Swedish are currently operating at LOS C or better with the exception of 16th Avenue/E Cherry Street, which is currently operating at LOS D. Results of the weekday PM peak hour analysis, shown on **Figure 9**, are similar to the weekday AM peak hour analysis, with all nearby intersections operating at LOS D or better. Proximate to the campus, all intersections operate at LOS C or better with the exception of 16th Avenue/E Cherry Street, which is currently operating at LOS D.

Previous studies and field observations of the 6th Avenue/James Street intersection suggest this intersection operates worse than the calculated delay and LOS in this study. Along the James Street corridor, intersection LOS alone may not provide an adequate assessment of the corridor operations. Field observations indicate that congestion along the corridor results in queuing that has been observed to extend to adjacent intersections. The following section provides a detailed analysis of the E James Street/E Cherry Street corridor from 6th Avenue to 18th Avenue. This corridor analysis, focusing on corridor travel speeds and travel times, accounts for intersection queuing, pedestrian activity, and overall driver behavior.



Existing Weekday AM Peak Hour Levels of Service Summary

FIGURE
8

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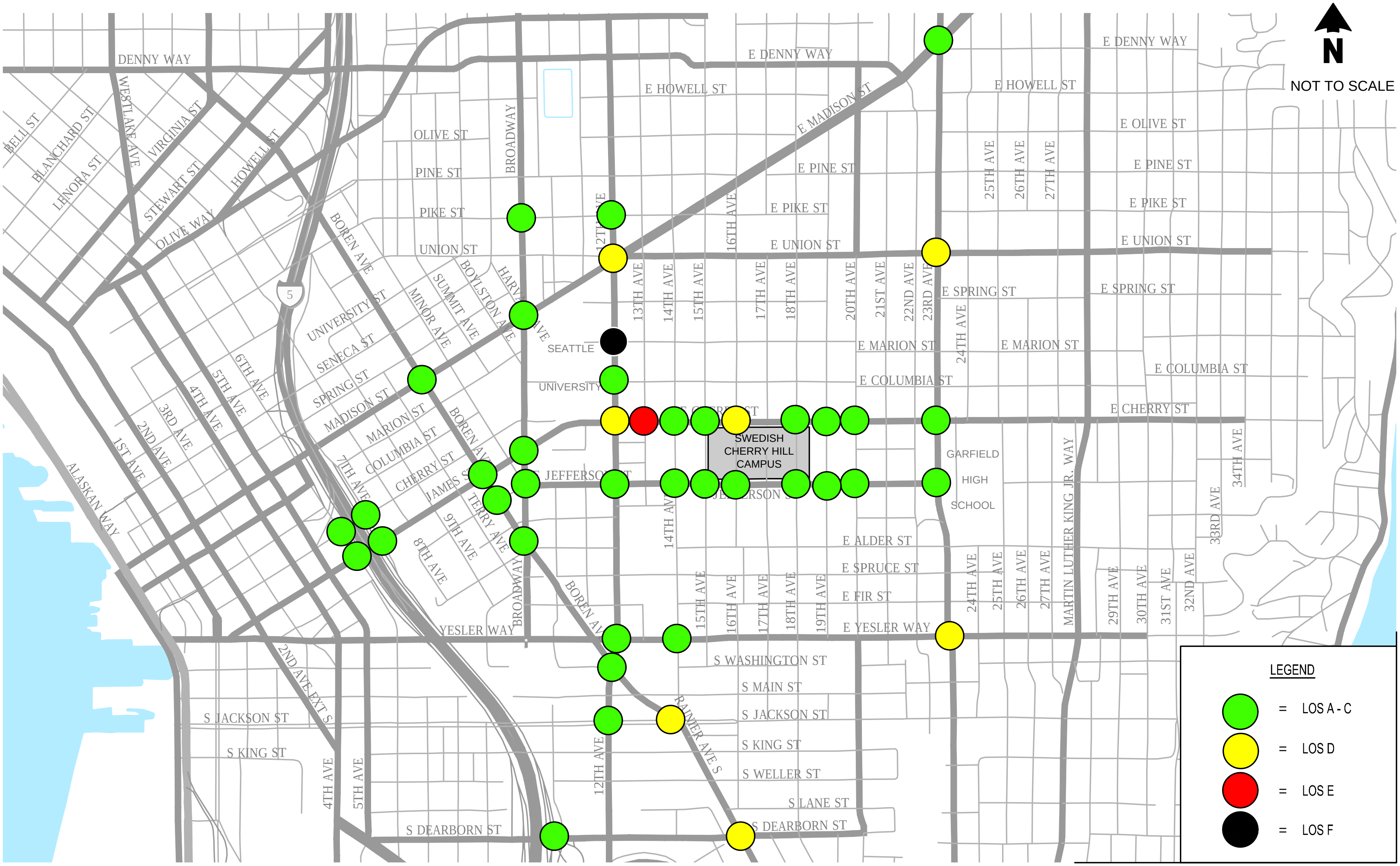

Existing Weekday PM Peak Hour Levels of Service Summary

Swedish Cherry Hill MIMP - DEIS

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FIGURE
9

3.6.2 **Corridor Operations**

In addition to the intersection LOS analysis, the main route to the Swedish Cherry Hill campus along E Cherry Street/James Street was evaluated with respect to travel time and travel speeds. The E Cherry Street/James Street corridor was divided into two segments for purposes of this analysis. The first segment (James Street) extends from 6th Street to Broadway and the second segment (E Cherry Street) extends from Broadway to 18th Avenue.

The analysis was conducted using Synchro 8, consistent with the intersection LOS methodology. Existing travel times along the corridor were measured in the field using Bluetooth technology to track travel times for vehicles along the corridor. This technology provides a more robust data set then the typical floating car data collection methodologies. Two-days of data was collected in the field and averaged. During the weekday AM and PM peak hours, existing travel time data shown below is based on approximately 10 – 50 data points for the AM peak hour period depending on the segment and direction and 10 – 30 data points for the PM peak hour period. Travel time projections and average speeds reported from the Synchro model were calibrated to data measured in the field. **Table 3** provides a summary of the existing travel times measured in the field, existing uncalibrated travel times from the Synchro model, and the adjustment factor. The adjustment or calibration factor accounts for operational impacts from vehicle queuing, mid-block pedestrian crossing, on-street parking maneuvers, etc. not reflected in the Synchro delay calculations. The future travel times from the Synchro model are multiplied by the adjustment factor to determine future travel times calibrated to field conditions and accounting for the factors described above (i.e., queuing, parking, etc.).

As shown in the table, during the weekday AM peak hour the field data shows that travel times along James Street/E Cherry Street, within the defined segments, are approximately three to five minutes for both directions. During the weekday PM peak hour, travel times along E Cherry Street are less than three minutes while along James Street travel times range between four and six minutes. Average travel speeds are generally slow ranging from 6 to 15 mph. These average travel speeds take into account free-flow travel times and intersection related delay. Overall the travel times and speeds indicate congestion along both corridors during the weekday AM and PM peak hours.

Table 3
Existing Weekday Peak Hour James Street/E Cherry Street Travel Time Analysis

Segment	Direction	Field Data		Uncalibrated Traffic Model (Synchro)		Calculated Adjustment Factor[1]	
		Travel Time (m:ss)[2]	Average Speed (mph)	Travel Time (m:ss)[2]	Average Speed (mph)	Travel Time	Average Speed
AM Peak Hour							
James Street (6th Ave to Broadway)	EB	04:17	6.9	01:56	15.0	2.23	0.46
	WB	03:31	8.8	02:48	10.3	1.26	0.85
E Cherry Street (Broadway to 18th Ave)	EB	05:22	9.8	02:43	12.6	1.98	0.78
	WB	03:01	12.0	02:36	13.1	1.16	0.91
PM Peak Hour							
James Street (6th Ave to Broadway)	EB	04:03	7.4	02:02	14.2	1.99	0.52
	WB	05:40	6.2	02:31	11.5	2.25	0.54
E Cherry Street (Broadway to 18th Ave)	EB	02:29	14.5	02:53	11.9	0.86	1.21
	WB	02:43	13.0	02:21	14.5	1.16	0.90

1. The adjustment factor is based on the field data divided by the traffic model results and is being used to help calibrate the traffic model future condition travel times and speeds to existing conditions and account for operational impacts from vehicle queuing, mid-block pedestrian crossing, on-street parking maneuvers, etc. not reflected in the Synchro delay calculations. The future travel times from the Synchro model are multiplied by the adjustment factor to determine future travel times calibrated to field conditions.
2. m:ss = minutes and seconds

3.7 Traffic Safety

Records of reported collisions were obtained from SDOT for the three-year period between January 1, 2010, and December 31, 2012. A summary of the total and average annual reported accidents at each study intersection is provided in **Table 4**. The City of Seattle has adopted criteria for assigning high accident location status to signalized intersections with 10 or more reported collisions per year and unsignalized intersections with 5 or more reported collisions per year. Intersections designated as high accident locations are targeted for future safety improvements in an effort to reduce the occurrence of accidents.

Fewer than 5 collisions per year were reported at each of the unsignalized study intersections. At the signalized study area intersection, only the 6th Avenue/James Street intersection had an average more than 10 collisions per year. A review of the collisions at the 6th Avenue/James Street intersection shows the majority of the collisions at this location involved left-turning vehicles along James Street not granting right-of-way to vehicles traveling the opposite direction. These collisions are likely occurring as a result of the high traffic volume and the permitted left-turn phasing on the westbound approach of James Street. Drivers may not be yielding to oncoming eastbound traffic, which is typical of intersections with dual left-turn lanes with higher levels of turning traffic. The left turning collisions at this location could likely be reduced by providing protected left-turn phasing. However, projected left-turn phasing may degrade traffic operations, likely causing more delay that could increase other types of collisions such as rear-end.

Table 4
Three-Year Collision Summary – 2010-2012

Intersection	Traffic Control	Number of Collisions 2010	2011	2012	Total	Annual Average
1. Broadway/E Pike Street	Signalized	4	2	3	9	3.00
2. 12th Avenue/E Pike Street	Signalized	3	4	6	13	4.33
3. Boren Avenue/Madison Street	Signalized	4	5	4	13	4.33
4. Broadway/Madison Street	Signalized	5	6	5	16	5.33
5. 12th Avenue/Madison Street	Signalized	9	5	11	25	8.33
6. 23rd Avenue/Madison Street	Signalized	6	3	0	9	3.00
7. 23rd Avenue/E Union Street	Signalized	2	3	4	9	3.00
8. 12th Avenue/E Marion Street	Stop Control	1	2	0	3	1.00
9. 12th Avenue/E Columbia Street	Signalized	0	1	1	2	0.67
10. 6th Avenue/Cherry Street	Signalized	5	10	7	22	7.33
11. 7th Avenue/Cherry Street	Signalized	2	1	1	4	1.33
12. 6th Avenue/James Street	Signalized	13	8	14	35	11.67
13. 7th Avenue/James Street	Signalized	9	1	4	14	4.67
14. Boren Avenue/James Street	Signalized	2	0	5	7	2.33
15. Broadway/James Street	Signalized	1	4	4	9	3.00
16. 12th Avenue/E Cherry Street	Signalized	4	3	4	11	3.67
17. 13th Avenue/E Cherry Street	Stop Control	2	2	1	5	1.67
18. 14th Avenue/E Cherry Street	Signalized	3	1	4	8	2.67
19. 15th Avenue/E Cherry Street	Stop Control	1	1	0	2	0.67
20. 16th Avenue/E Cherry Street	Stop Control	1	0	0	1	0.33
21. 18th Avenue/E Cherry Street	Signalized	1	0	0	1	0.33
22. 19th Avenue/E Cherry Street	Stop Control	0	0	1	1	0.33
23. 20th Avenue/E Cherry Street	Stop Control	1	1	2	4	1.33
24. 23rd Avenue/E Cherry Street	Signalized	7	5	1	13	4.33
25. Boren Avenue/E Jefferson Street	Signalized	2	3	5	10	3.33
26. Broadway/E Jefferson Street	Signalized	1	3	3	7	2.33
27. 12th Avenue/E Jefferson Street	Signalized	3	3	3	9	3.00
28. 14th Avenue/E Jefferson Street	Stop Control	3	4	4	11	3.67
29. 15th Avenue/E Jefferson Street	Stop Control	4	1	0	5	1.67
30. 16th Avenue/E Jefferson Street	Stop Control	3	0	1	4	1.33
31. 18th Avenue/E Jefferson Street	Stop Control	4	1	2	7	2.33
32. 19th Avenue/E Jefferson Street	Stop Control	1	2	2	5	1.67
33. 20th Avenue/E Jefferson Street	Stop Control	2	1	0	3	1.00
34. 23rd Avenue/E Jefferson Street	Signalized	4	2	5	11	3.67
35. Broadway/Boren Avenue	Signalized	2	1	2	5	1.67
36. 12th Avenue/E Yesler Way	Signalized	9	7	3	19	6.33
37. 14th Avenue/E Yesler Way	Signalized	4	1	2	7	2.33
38. 23rd Avenue/E Yesler Way	Signalized	4	2	4	10	3.33
39. 12th Avenue/Boren Avenue	Signalized	2	1	3	6	2.00
40. 12th Avenue/S Jackson Street	Signalized	3	5	6	14	4.67
41. 14th Avenue/Boren Avenue/ Rainier Avenue S/S Jackson Street	Signalized	5	8	1	14	4.67

Table 4 (Cont'd)
Three-Year Collision Summary – 2010-2012

Intersection	Traffic Control	Number of Collisions			Total	Annual Average
		2010	2011	2012		
42. I-5 NB Ramps/S Dearborn Street	Signalized	1	2	0	3	1.00
43. Rainier Ave S/S Dearborn Street	Signalized	6	1	7	14	4.67

The data were also reviewed for fatalities as well as collisions involving pedestrians or bicyclists. The 7th Avenue/Cherry Street and 16th Avenue/E Jefferson Street intersections both had fatalities. The fatalities at these intersections resulted from a vehicle striking a pedestrian in the crosswalk. At the 16th Avenue/E Jefferson Street intersection, the pedestrian was struck by a southbound left-turning vehicle while crossing the east leg of E Jefferson Street. At the 7th Avenue/Cherry Street intersection, the pedestrian was struck by a northbound through vehicle while crossing the south leg of 7th Avenue. The cause of these accidents does not appear to be related to the design of the intersection as adequate sight distance exists for the vehicle movements. In addition to these two pedestrian fatalities, 33 of the 43 study locations had collisions involving pedestrians and bicyclists. Of the 33 locations, 6 locations averaged more than one collision per year involving a pedestrian or bicyclists. These include:

- 12th Avenue / E Pike Street
- 12th Avenue / Madison Street
- 12th Avenue / E Jefferson Street
- 12th Avenue / S Jackson Street
- 23rd Avenue / E Jefferson Street
- 23rd Avenue / E Yesler Way

Within the immediate vicinity of the campus, the frequency of collisions is higher along E Jefferson Street than along E Cherry Street. Along E Cherry Street from 14th Avenue to 18th Avenue there were a total of 12 collisions over the three-year period. Six of the 12 collisions resulted in an injury and the remaining resulted in property damage only. The most common collision type along E Cherry Street from 14th Avenue to 18th Avenue was related to vehicles turning into the traffic stream. Two of the collisions involved pedestrians or bicyclists. Along E Jefferson Street from 14th Avenue to 18th Avenue there were a total of 27 collisions. Fourteen of the 27 collisions resulted in an injury and one collision resulted in a fatality as previously discussed. Four collisions involved a pedestrian or a bicyclist. Similar to E Cherry Street, the most common collision type were related to vehicles turning into the traffic stream. The cause of these types of collisions is due to the unsignalized control at the majority of the intersections and limited sight distance due to on-street parking along both corridors.

3.8 Parking

Designated parking for the Swedish Cherry Hill campus is provided through off-street facilities. There is also on-street parking within the neighborhood surrounding the campus, which may be used by visitors and staff. The nature of the on-street parking includes unrestricted areas, restricted parking zones (RPZ), and metered parking. The following describes the existing parking supply and utilization in the vicinity of the Swedish Cherry Hill campus. The parking demand associated with the Swedish campus is also discussed.

Supply

This section describes the off- and on-street parking supply subject to use by Swedish.

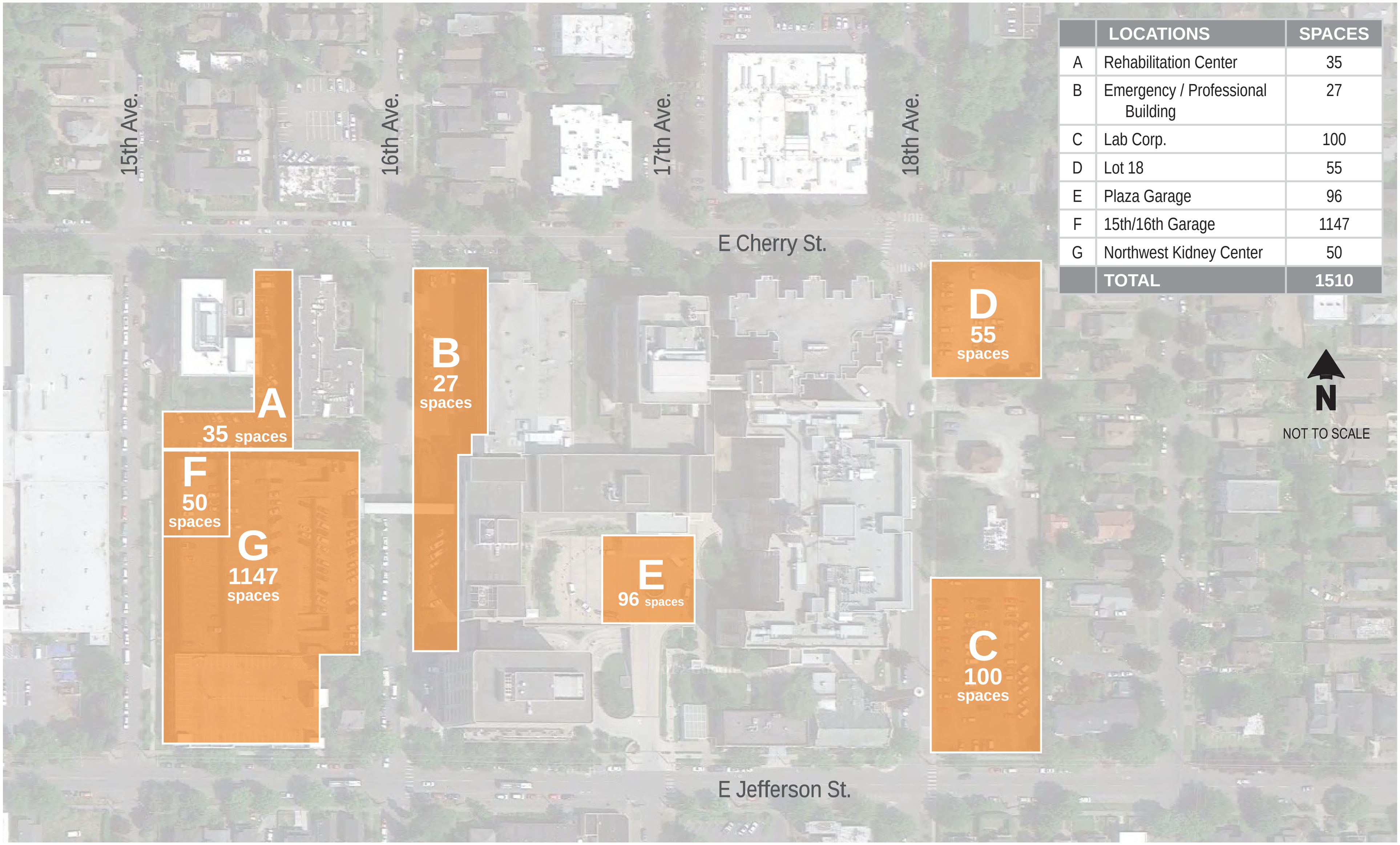
Off-Street. There are several off-street facilities in the vicinity of the Swedish Cherry Hill campus that are operated by Swedish or Sabey. There are also some smaller public parking facilities along 14th Avenue. This evaluation of off-street parking focuses on the on-campus facilities, which are most proximate for employee and patient use and have capacity to accommodate (see utilization discussion below).

Figure 10 shows the existing parking facilities associated with Swedish Cherry Hill. The overall parking supply is approximately 1,510 parking spaces with 1,293 garage spaces and 217 surface spaces. All of the off-street parking is paid parking whether through monthly permits, leasing, or hourly/daily pay by use. Generally, parking is unreserved and open for both staff and patient parking. The parking facilities include:

- Surface Lot (Northeast Corner of E Jefferson Street/18th Avenue) – This gravel parking lot can accommodate approximately 100 vehicles and is designed for LabCorp employees.
- Surface Lot (Southeast Corner of E Cherry Street/18th Avenue) – This parking lot has 55 reserved parking spaces for staff.
- 15th/16th Garage – This parking garage has 1,197 spaces with 50 of the spaces secured and reserved for the Northwest Kidney Center. In addition, there are some reserved parking spaces for physicians and staff.
- Rehabilitation Center – This surface parking lot has 35 parking spaces that are dedicated to the rehabilitation center.
- Emergency Department Lot – This surface parking lot has 27 parking spaces that are designated for the emergency department.
- Plaza Garage – This parking garage has 96 spaces and is generally patient parking.

On-Street. The on-street parking study area incorporates all the RPZ blocks in the vicinity as well as parking within 1,000-feet or an approximate five minute walk of the campus. This study area represents the on-street parking most likely impacted by the MIMP.

Figure 11 illustrates the on-street parking surrounding Swedish Cherry Hill. The majority of the neighborhood surrounding the campus is part of a residential permit zone (RPZ), which restricts on-street parking to a two-hour time limit unless the vehicle has a residential permit. On the streets adjacent to the campus, there is paid parking along E Jefferson Street between 17th and 18th Avenues, 18th Avenue between E Cherry and E Jefferson Streets, and E Cherry Street between 16th and 17th Avenues on the south side and 17th and 18th Avenues on both sides. There is also two-hour time limited parking on the north side of E Jefferson Street between 16th and 17th Avenues and 18th and 19th Avenues as well as on both sides of 14th Avenue between E Jefferson and E Cherry Streets.



	LOCATIONS	SPACES
A	Rehabilitation Center	35
B	Emergency / Professional Building	27
C	Lab Corp.	100
D	Lot 18	55
E	Plaza Garage	96
F	15th/16th Garage	1147
G	Northwest Kidney Center	50
	TOTAL	1510

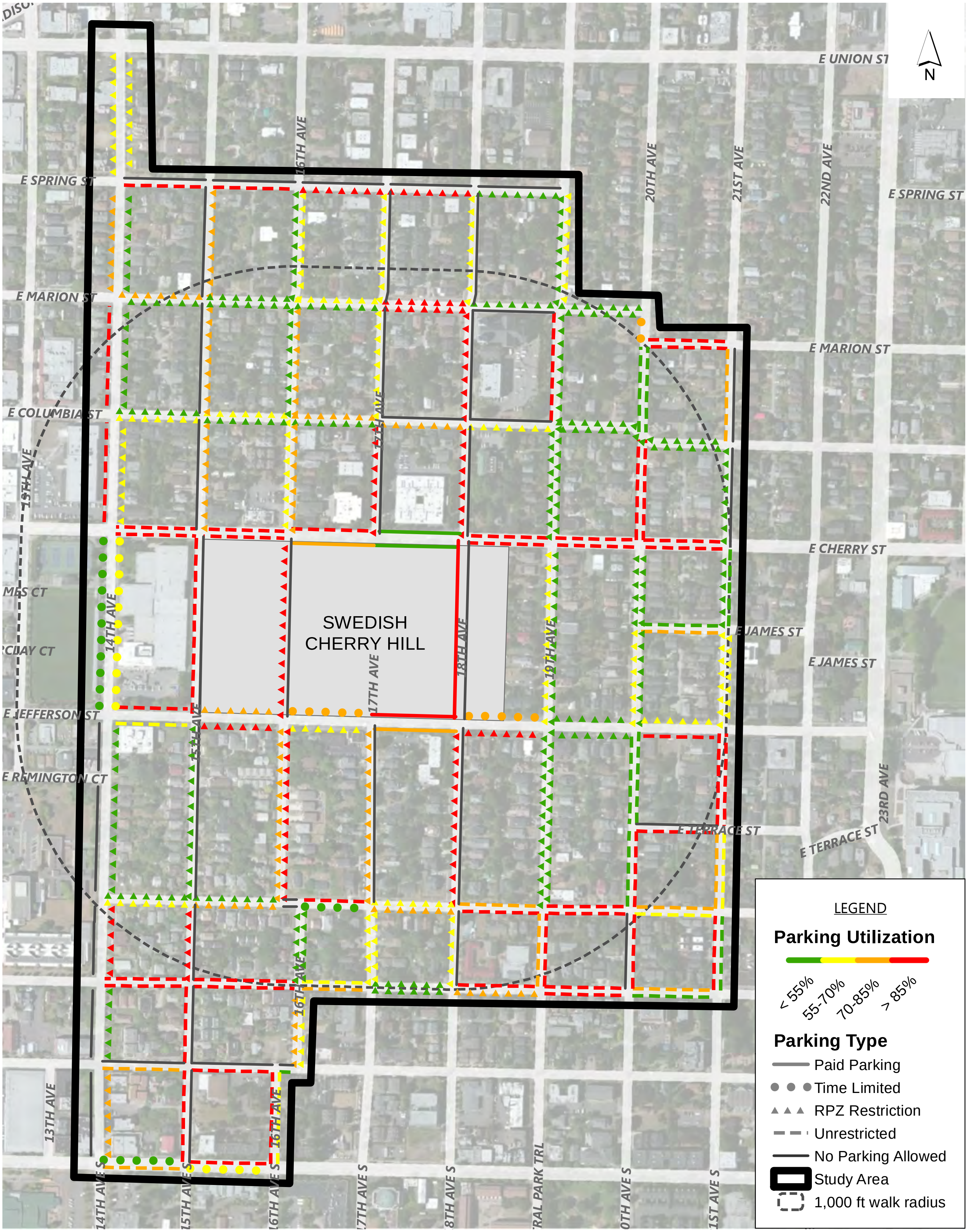
Existing Off-Street Swedish Parking Facilities

Swedish Cherry Hill MIMP – DEIS

FIGURE
10

transpoGROUP

Q:\Projects\11\11244.00 Swedish Providence Cherry Hill Campus\Graphics\Figures\11244 Fig 8 Swedish Existing Parking.pdf



Existing On-Street Parking Supply and Utilization

FIGURE
11

Swedish Cherry Hill MIMP DEIS

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Utilization and Demand

Hourly data was collected in September 2013 and February 2014 to evaluate the parking utilization for the Swedish off-street parking facilities as well as identify the amount of campus related parking was occurring on the neighborhood street surrounding the campus.. The results of the parking study showed that the peak Swedish parking demand in the study area occurred at 10:00 AM. The following provides additional information regarding the off-street and on-street parking utilization.

Off-Street. As discussed previously, there are 1,510 off-street parking spaces for the campus. The off-street facilities during the campus peak (10:00 a.m.) had an occupancy of 716 vehicles or 47 percent of the total off-street parking supply. The smaller public parking facilities (Plaza Garage, Rehabilitation Center, E Cherry Street/18th Avenue surface lot, and Northwest Kidney Center parking) had the highest utilization ranging from 82 to 100 percent. Both the Rehabilitation and Northwest Kidney Center parking have free parking for patients/visitors of those uses, which likely contributes to the high utilization. The least utilized parking lot was LabCorp, which is restricted to LabCorp employees and could be underutilized due to employee alternative mode use. The peak parking demand of the 16th Avenue garage during the observation period was approximately 40 percent.

On-Street. Figure 11 illustrates the parking utilization by block for the on-street study area. As shown on the figure, the blocks immediately adjacent to campus are generally highly utilized with 10:00 AM occupancies of approximately 70 percent or higher; this reflects less than two spaces available per block. One block north and south of the campus along 16th, 17th, and 18th Avenues utilizations are also high with limited availability. Further from the campus, along 15th and 19th Avenues, observed utilizations are less than 70 percent. There is one block adjacent to the campus along E Cherry Street between 17th and 18th Avenues, which has a utilization of less than 55 percent; this is a paid parking block. Overall the data shows a peak utilization of approximately 75 percent and approximately 160 spaces available within one to two blocks of the campus.

This data as well as field observations indicate the Swedish off-street parking facilities are generally not full, while on-street parking utilization in the adjacent neighborhoods and in the paid and unrestricted parking areas is high.

Existing Demand. The off- and on-street parking data collected in February 2014 was used to estimate the parking demand associated with Swedish Cherry Hill. While the off-street parking demands can be reliably associated with the Swedish Cherry Hill campus, the level of parking in the neighborhood associated with Swedish is more difficult to assign. The on-street parking demand was estimated through observations of pedestrians entering and exiting the Swedish campus to and from the neighborhood streets. Data collectors were stationed around the campus to count pedestrians to and from the neighborhood. The data collection excluded pedestrians to and from the parking garages, lots, and bus stop and identified pedestrians walking together from the neighborhood as carpools.

Some pedestrians counted as part of the on-street parking data collection effort were likely affiliated with walking trips to the campus and not related parking in the neighborhoods. The Swedish CTR surveys indicate 4.6 percent or 66 affected employees (i.e., employees that arrive to campus between 6:00 and 9:00 a.m.) walk to work. These walking trips would be coming from the neighborhood. It is unknown if all of these employees walked to work during the count day; however, to account for some level of walking, the parking counts associated with the on-street parking were reduced by 50 vehicles assuming 80 percent or the CTR affected employees walked to work.

Based on the on-street and off-street parking counts, the existring parking demand for the campus is estimated at approximately 1,093. This peak occurs at 10:00 a.m. with 716 vehicles parked off-street and 377 vehicles identified as parking on-street. There are 82 paid and time limited or unrestricted parking spaces adjacent to the campus. These spaces are not directly fronting residential development and are not designated as RPZ. The data collection showed that 59 vehicles were parked in these spaces at 10:00 a.m., which indicates 318 vehicles likely parking on streets surrounding the campus.

Compared to the existing off-street parking supply of 1,510, the existing parking demand of 1,093 vehicles could be fully accommodated within the off-street parking facilities. As previously noted, the 16th Avenue garage parking structure had a peak utilization of approximately 40 percent resulting in approximately 700 available parking stalls. Swedish continues to monitor the pricing structure of the parking garages. The garages are operated pursuant to the current TMP. The pricing structure is intended to promote the use of alternative travel modes, which can have an unintended consequence of parking spillover in the surrounding neighborhood.

4 Impacts of Alternative 1 No Build

This section describes the future traffic conditions for the years 2023 and 2040 without the approval of the Master Plan and no further expansion of the campus. For Alternative 1, No Build, no expansion of the campus is assumed, thus employee population, and patient population is assumed to be consistent with existing levels. As discussed in the previous section, the adopted SOV goal is 50 percent and the campus is achieving 56 percent for CTR affected employees. The evaluation of No Build conditions assumes achievement of the 50 percent SOV rate by 2023 and 2040; therefore, the overall campus trip generation and parking demand is assumed to be less than under existing conditions. In addition, while some growth/change in staffing is possible without Master Plan approval, an assumption of no increase in staff provides a conservatively low baseline condition against which the impacts of the build alternatives can be measured. The impacts of additional growth in patient activity or employment are addressed within Sections 5 and 6 (Impacts of Alternative 8 and Impacts of Alternatives 9 and 10).

The evaluation of future conditions reflect increases in traffic attributed to known, and approved, developments in the area as well as modifications to the street system to reflect planned transportation improvement projects.

4.1 Street System

A review of local and regional capital improvement programs and long-range transportation plans was conducted to determine planned funded and unfunded transportation projects that would impact the transportation network within the defined study area. The review included, but was not limited to, transportation plans from the Washington State Department of Transportation (WSDOT), City of Seattle, and King County. Some of the key planning documents reviewed for the City of Seattle include the *Draft Seattle Bicycle Master Plan* (June 2013), *City Seattle Department of Transportation Transit Master Plan* (April 2012), *First Hill Streetcar Transportation Technical Report* (August 27, 2010)**,** and *Seattle Pedestrian Master Plan* (2009).

Table 5 provides a summary of key planned transportation projects in the study area and identifies how these transportation projects were incorporated into the Alternative 1 No Build 2023 and 2040 evaluations. As is shown in **Table 5**, the primary projects that have been identified focus on pedestrian and bicycle transportation and public transit. Most of the major street system projects impacting vehicular movements would be completed by 2023. Following the table is a more detailed discussion on how specific transportation projects impact the study area.

Table 5
Transportation Improvement Projects

Project Description	Responsible Agency	Expected Completion Date	Funded?[1]	Assumed in Analysis?[2]	
				2023	2040
First Hill Streetcar: Two-mile streetcar line serving Capitol Hill, First Hill and International District with connections to Link Light Rail, Sounder commuter rail and bus service.	SDOT	2014	Yes	✓	✓
Link Light Rail: Extension of the regional light rail system. All segments are funded in ST2, but the year of completion may vary depending on revenue available to fund construction. The segments include:	Sound Transit				
North—University District and Capitol Hill		2016	Yes	✓	✓
North—Northgate		2021	Yes	✓	✓
North—Lynnwood		2023	Yes	✓	✓
East—Bellevue and Redmond		2023	Yes	✓	✓
South—Extension to S. 200th Street		2016	Yes	✓	✓
South—Extension to Kent-Des Moines Road		2023	Yes	✓	✓
23rd Avenue Transit Priority Corridor Improvement: 23rd Avenue Urban Village Transit Network (UVTN) Corridor from John to Jackson Streets	SDOT	2013	Yes	✓	✓
Madison High Capacity Transit (HCT): Electric trolley buses (ETBs) serving First Hill, the Central Area, and downtown Seattle with connections to the First Hill Streetcar, ferry service at the Colman Dock Ferry Terminal, and bus service. This is currently in the study phase.	SDOT	Unknown	Partial		
SR 520 Bridge Replacement: Construction of a new SR 520 floating bridge with two general purpose lanes and one HOV / transit lane per direction. Transit and non-motorized transportation projects between SR 202 and I-5. The eastside and floating bridge segments are funded. The west side projects in the Montlake Interchange vicinity are not funded.	WSDOT	2015	Partial	✓	✓
Electric Trolleybus Fleet Replacement: King County Metro Transit will replace its fleet of 159 trolleybus with modern low-floor vehicles providing more capacity on these routes	King County Metro Transit	2015	Yes	✓	✓
23rd Avenue Corridor Neighborhood Greenway: Creation of a neighborhood greenway between Roanoke Street and Rainer Avenue along either 21st or 22nd Avenues including pavement markings, improved crossings, way-finding, traffic calming and signage.	SDOT	Phase 1: 2014	Partial	✓	✓

1. "Yes" means the project is fully funded for construction, "partial" means the project has some, but not complete funding for construction, and "no" means the project does not have any construction funding.
2. A check indicates that the project was assumed in the analysis related to the horizon year.

Planned projects assumed in the 2023 and 2040 analyses are described in more detail below:

- **First Hill Streetcar:** The project is a new streetcar line along S. Jackson Street, 14th Avenue, Yesler Way, and Broadway connecting Capitol Hill to Pioneer Square. The line will operate 7 days a week with 10-minute headways during the weekday peak commute hours and 15-minute headways during other periods. Service is anticipated by spring of 2014 with more than 3,000 trips per day expected. This project also includes installing a two-way cycle track along Broadway between Yesler Way and Denny Way, a portion of which recently opened to cyclists. Modifications to intersections along the route are required. Adjustments in intersection geometry and signal operations have been incorporated into this analysis where appropriate.
- **Link Light Rail:** The regional light rail system is anticipated to extend beyond Seattle by 2023 with five extensions planned:
    - **North Link Light Rail – University:** This extension will connect the UW and Capitol Hill neighborhood to downtown Seattle via the Westlake Station. The project includes two stations; one near Seattle Central Community College on Capitol Hill and one near Husky Stadium. Construction is underway and service is anticipated in 2016.
    - **Northgate (North):** The light rail will extend between the University extension and Northgate. The three locations where stations are planned are the U-District near NE 45th Street and Brooklyn Avenue NE, Roosevelt High School near 12th Avenue NE and NE 65th Street, and Northgate Mall / Transit Center near NE 103rd Street. This project is under construction and service is expected in 2021.
    - **Lynnwood (North):** This segment will connect from the northern point of the Northgate extension and terminate in Lynnwood. Several stations are planned along the route at NE 130th / 145th / 155th Street in Seattle / Shoreline, NE 185th Street in Shoreline, 236th Street SW in Mountlake Terrace, and 200th Street SW in Lynnwood which follows the I-5 corridor. Construction would begin in 2018 with service expected to begin in 2023.
    - **East –** This extension will link Bellevue and Mercer Island to the International District / Chinatown Station in Seattle. Several stations are planned along the route: Rainier Avenue S.; Mercer Island; South Bellevue, East Main, Bellevue Transit Center, Overlake Hospital, 120th Avenue NE, and 130th Avenue NE in Bellevue; and Overlake Village and Overlake Transit Center in Redmond. Construction is expected to begin in 2015 with service in 2023.
    - **South Link Light Rail – S. 200th Extension:** This extension will add one additional station and a new park-and-ride facility to the system south of SeaTac Airport. The project is scheduled to open for service in 2016.
    - **South –** This segment would extend from S. 200th Street in SeaTac to add one additional station at Kent-Des Moines Road in the vicinity of Highline Community College. The project is anticipated to open for service in 2023.

- **23rd Avenue Transit Priority Corridor Improvement:** This project provides a dedicated transit-only lane in both directions along 23rd Avenue between John and Jackson Streets. As a result of the project, 23rd Avenue will become a three-lane roadway with a two-way center left-turn lane.
- **Madison High Capacity Transit (HCT):** This creates a bus rapid transit corridor along Madison Street using electronic trolley buses (ETBs). The HCT would serve First Hill and downtown Seattle with connections to the First Hill Streetcar, Colman Dock Ferry Terminal, and bus service. This project is in the study phase only and no plans have been developed.
- **23rd Avenue Corridor Neighborhood Greenway**: 23rd Avenue is a heavily travelled transportation corridor. SDOT plans to install a neighborhood greenway near this busy arterial to provide a more comfortable pedestrian and bicycle transportation environment. This project would create a neighborhood greenway between Roanoke Street and Rainer Avenue along either 21st or 22nd Avenues. Features of the greenway could include pavement markings, improved crossings, way-finding, traffic calming and signage. The planning process is underway for this project and it is anticipated that Phase 1 would be implemented in 2014 providing a greenway between S Jackson Street and E John Street.

4.2 Campus Access and Service Vehicle Loading

General vehicular and truck access and circulation patterns to and from the Swedish Cherry Hill campus would not change under No Build conditions. In addition, it is anticipated that the number of service deliveries would remain consist with existing conditions. With growth in traffic along E Cherry Street and E Jefferson Street, access to the off-street parking facilities and loading areas along 16th Avenue and 18th Avenue would become progressively more challenging as vehicle delays on the minor street approaches increase.

4.3 Pedestrian and Bicycle Transportation

By 2023 and 2040, with the reduced SOV percent, there could be some increase in walking and biking to campus as employees shift from driving alone to other modes.

There are some planned pedestrian or bicycle improvements in the immediate vicinity of Swedish Cherry Hill. There are also a number of transit improvements and development projects within the larger study area and as these occur it is likely that pedestrian facilities (i.e. sidewalks) along the frontages of the development projects would be improved where deficient. More information on the location of these development projects is described in section 4.5. Key planned improvements in the study area include:

- **13th Avenue / Cherry Street Crosswalk**: A new marked crosswalk would be provided at this intersection.
- **18th Avenue Neighborhood Greenway:** The Bicycle Master Plan includes a neighborhood greenway along 18th Avenue including the area adjacent to the campus. Neighborhood greenways are located along roadways with low traffic volumes and speeds. The greenway would provide a two-way bicycle facility on the west side of the street and pedestrian facilities on both sides.

- **First Hill Streetcar:** Existing sidewalks will be maintained as part of this project; however, crosswalk enhancements will be added to provide connections to the streetcar including five signalized pedestrian crossings along Broadway, E Yesler Way, and S Jackson Street and improve pedestrian curb ramps along the route to comply with Americans with Disability Act (ADA) requirements. In addition, bicycle facilities are being upgraded along the entire streetcar route including changing sharrows to bicycle lanes along 14th Avenue S and E Yesler Way and adding a two-way cycle track along Broadway. Bicycle boxes would also be provided at intersection providing a designated area for bicycles to wait at traffic signals.
- **23rd Avenue Corridor Neighborhood Greenway:** As discussed previously, this project would create a greenway on either 21st or 22nd Avenues. Features of the greenway could include pavement markings, improved crossings, way-finding, traffic calming and signage. The planning process is underway for this project and it is anticipated that Phase 1 would be implemented in 2014 providing a greenway between S Jackson Street and E John Street.

Along with these specific improvements in the study area, the City's Pedestrian Master Plan identifies high priority areas for making pedestrian improvements. Priority corridors within the study area are Broadway, Boren Avenue, S Dearborn Street and portions of E Cherry Street, and 12th Avenue.

4.4 Transit/Shuttle Services

The No Build evaluation assumes a 50 percent SOV rate and a 5 percent increase in transit use as a result of employees shifting from single occupancy vehicles to alternative modes. It is assumed transit use by Swedish employees would increase by five percent in both 2023 and 2040 for the No Build conditions. In addition, it is assumed that general ridership (i.e., non-Swedish employee ridership) would increase by one percent per year.

As described in the Street System section, there are number of transit improvements within the study area including the First Hill Streetcar, the Link Light Rail, 23rd Avenue UVTN corridor, and the electronic trolleybus fleet replacement. As discussed in the Affected Environment, service cuts and changes to bus service are anticipated in late 2014. For the bus routes directly serving Swedish Cherry Hill at E Jefferson Street, the following services changes are anticipated and are accounted for in the capacity calculations[2]:

- **Route 3 –** Frequency would be doubled changing from the existing 20-minute headways to 10-minute headways during the weekday AM and PM peak periods and service would be extended to Seattle Pacific University. The intention of increasing transit frequency along this route is to provide additional capacity for riders who are currently served by Route 4.
- **Route 4 and 211 –** These routes would be eliminated.
- **Route 64** – Service would be reduced by two morning trips and two afternoon trips.

[2] Summary of Proposed Service Reductions, King County Metro Transit, http://metro.kingcounty.gov/am/future/PDFs/changes/service-reduction-summary.pdf, Accessed: February 13, 2014.

- **Route 193** – The part of the route that serves Tukwila Park-and-Ride would be eliminated and service would be revised to connect to north part of downtown Seattle. Afternoon service would be reduced by one trip.

The bus service at the Swedish E Jefferson Street stops were evaluated consistent with the methodology described in the Affected Environment. Instead of a route by route analysis, the total capacity and ridership at the Swedish campus E Jefferson Street bus stops are evaluated since it is difficult to predict exactly, which routes future riders would use.

The evaluation of No Build 2023 and 2040 bus transit takes into consideration the changes in capacity due to the service modifications identified above. In addition, by 2023 and 2040, No Build ridership is anticipated to increase. General ridership was assumed to increase by one percent per year based on annual growth in King County Metro transit boardings between 2009 and 2012. A five percent increase in Swedish employee transit use was also assumed due to the mode shift with the achievement of a 50 percent SOV rate. A portion of Swedish transit riders could be using other transit modes such as rail, ferry, or connecting with bus service at a different location; however, the evaluation conservatively assumes that all of the increase in transit would use bus service. The analysis also assumes that riders of the routes that could be eliminated would shift to one of the remaining routes serving the Swedish campus.

Figures 12 and 13 provide a comparison of existing and No Build passenger loads and remaining capacity during the weekday AM and PM peak periods. As shown in the figures, even with the anticipated service cuts and increase in ridership, there is capacity to accommodate additional riders on the Swedish Cherry Hill bus service.

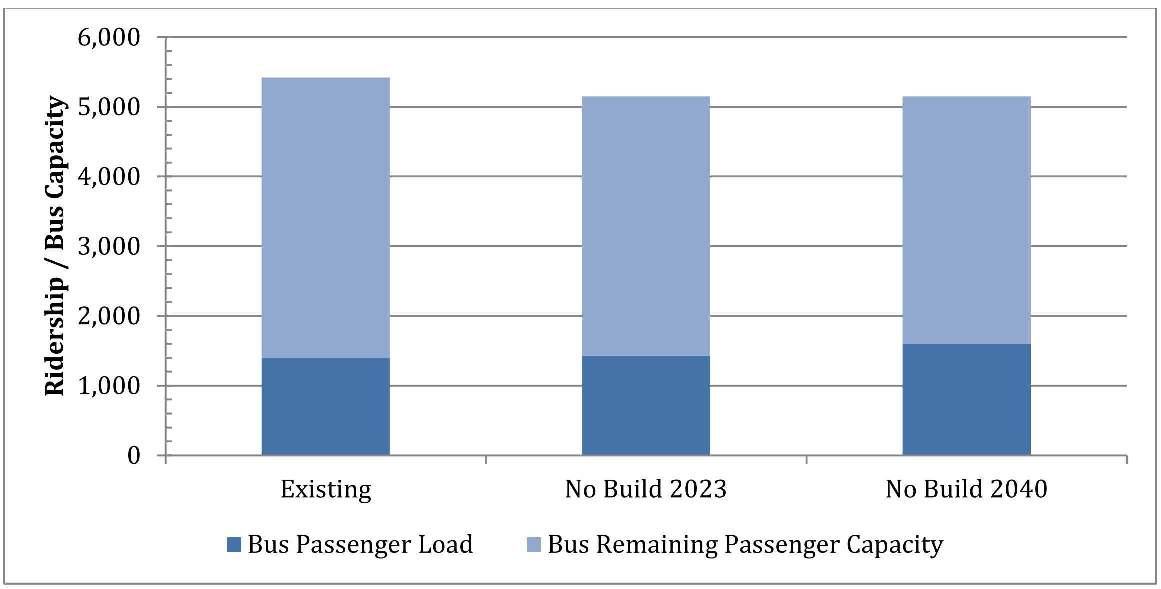

Figure 12 Comparison of Existing and No Build Weekday AM Peak Period Bus Transit Capacity and Ridership

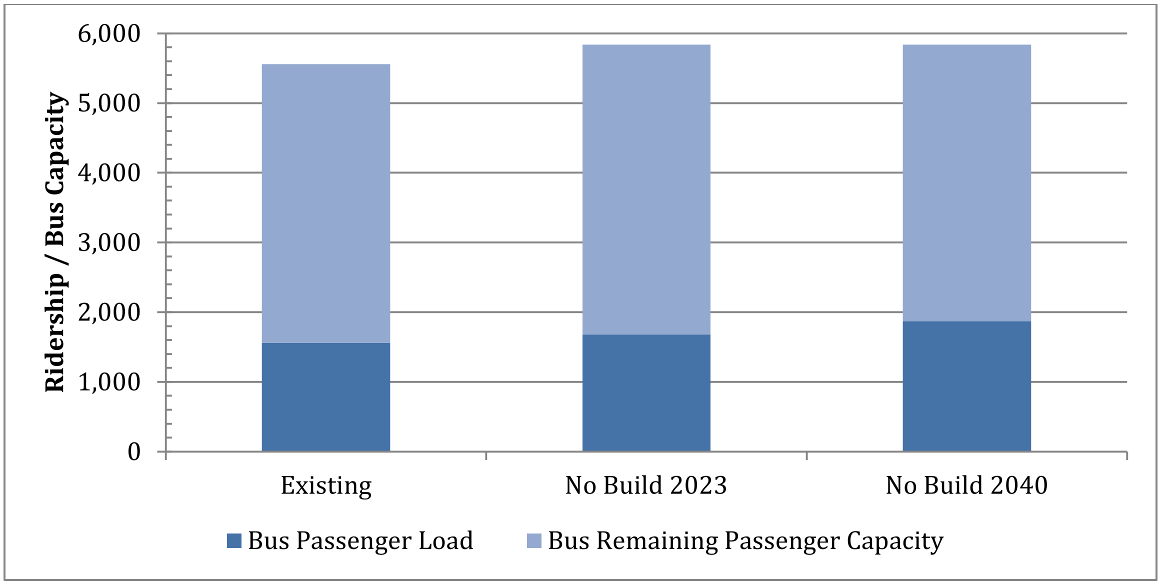

Figure 13 Comparison of Existing and No Build Weekday PM Peak Period Transit Capacity and Ridership

4.5 Traffic Volumes

The following provides a summary of the methodology used to forecast the future No Build 2023 and 2040 traffic volumes. This includes a review of Swedish's No Build trip generation with the reduction in SOV from 57 to 50 percent (for CTR affected employees) between existing and No Build conditions. No Build forecast volumes were developed by adjusting background traffic volumes to account for the reduction in Swedish related traffic with the achievement of the 50 percent SOV rate. The following describes the Swedish trip generation and background forecast methodologies.

4.5.1 Swedish Trip Generation Estimates

The method for forecasting the reduction in trips for No Build is consistent with the approach used for other Hospital MIMPs in the City of Seattle. The following provides a detailed description of the methodology and key assumptions.

Trip generation for use in transportation impact analyses are typically estimated based on either building area or employees. Based on previous experiences with similar projects in the City of Seattle, forecasted total on-site persons (employees, patients, and visitors) provide the basis for estimating trip generation. While the Institute of Transportation Engineers' *Trip Generation Manual* contains information on hospital uses, a more robust trip generation model developed based on population totals and local model split data is recommended. Weekday daily, AM peak hour, and PM peak hour trip generation associated with No Build were estimated based on anticipated Swedish Cherry Hill mode splits. The process of determining trip generation included first creating an existing trip generation model and then using that model to determine No Build trip generation with the 50 percent SOV rate.

The existing trip generation process takes the Swedish Cherry Hill average weekday population and applies travel model split data to determine the number of people that are driving, using transit, biking, walking, and using other modes to and from the campus. The result of applying mode splits to the population gives the number of person trips by mode for the day. Daily vehicle trips are determined by applying average vehicle occupancy (AVO) to the SOV, carpool, and vanpool person trips. Peak hour vehicle trips are determine by multiplying daily vehicle trips by the percent that would occur during the weekday AM and PM peak hours. Consideration was also given to the potential for people making multiple trips in one day; there is likely only a small amount of the population making multiple trips because staff lunch breaks are typically 30-minutes, there are limited restaurant and retail opportunities nearby, and the parking garages do not allow in/out privileges. To account for persons making multiple trips, the SOV trips were increased by five percent.

The following describes assumptions used in development of the trip generation model.

Existing Trip Model

A trip generation model was created based on existing campus population (i.e., employees and patients), mode splits, and percent of daily trips occurring during the peak hours. The current daily campus population was based on 2012/2013 data consistent with the Swedish Cherry Hill needs study and the *Swedish Medical Center Cherry Hill Campus Draft Major Institution Master Plan,* March 2014. Swedish was subdivided based on the uses on the campus: hospital, clinics/research, education, hotel, long-term care, and other support services. Mode splits and AVO are applied to the population and daily vehicle trips are determined. The percent of vehicle trips occurring during the peak hours is applied to the daily trips to determine peak hour vehicle trips. **Figure 14** below illustrates the existing condition trip generation process.

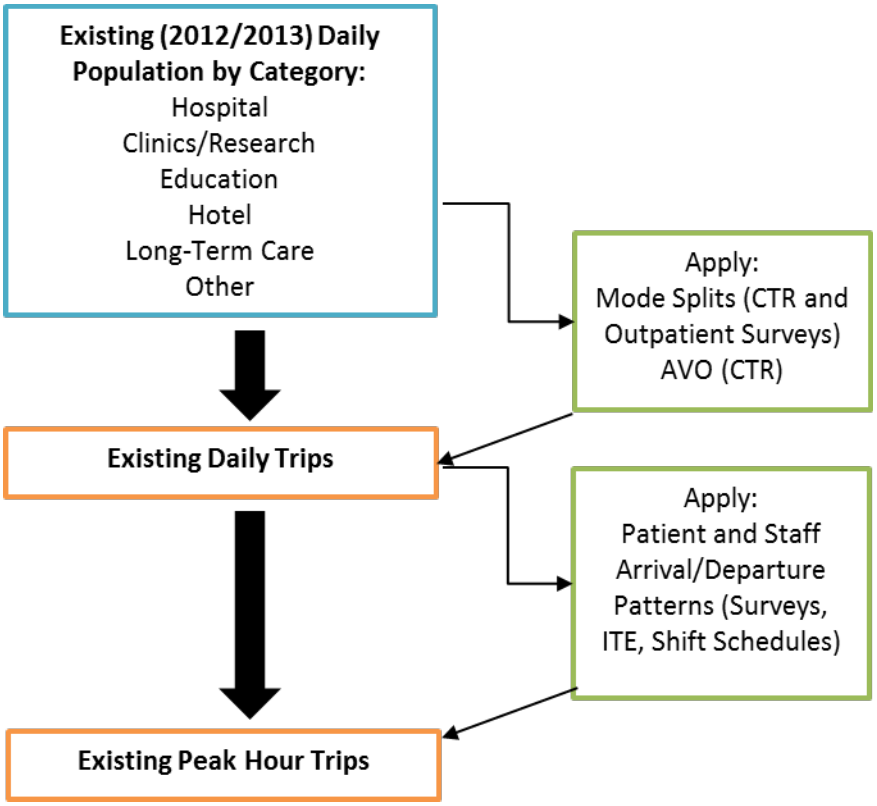

Figure 14 Existing Trip Generation Modeling Process

Key assumptions for the existing trip generation model include:

- **Population:** Trip generation was developed based on population groups (patients, doctors, and staff). The numbers of existing employees and patients were based on 2012/2013 data consistent with the Swedish Cherry Hill needs study and the *Swedish Medical Center Cherry Hill Campus Draft Major Institution Master Plan*, March 2014.
- **Travel Modes:** The mode share for each population group was based on a number of different sources. The source of this information for each population group is noted below.
  - **Other Staff / General Employees**: Average mode splits for all employees from the LabCorp, Swedish Medical Center, and Sabey most recent Commute Trip Reduction (CTR) survey
  - **Clinic Outpatient / Visitors**: Field surveys conducted at the clinics within the Jefferson and James Towers
  - **Inpatients / Class Attendees / Hotel Staff / Long-Term Care Staff / Patients**: No data is available. It was assumed that 95 percent of the trips were drive alone
  - **Hospital Outpatient / Emergency Department Visits**: No data is available. It was assumed that all trips were driving

- **Doctors**: Based on coordination with Swedish transportation services, it was assumed that 90 percent of all Swedish doctors drive alone to campus

- **Percent Daily Traffic Occurring During Peak Hours:** For each population group, it was determined what percent of daily traffic would occur on the Swedish Cherry Hill campus during the peak hours. This was based on inbound and outbound garage flows, shift times, facility operations, clinic patient surveys, and ITE *Trip Generation*, 9th Edition for medical office (#710), nursing home (#620), and hotel (#310) land uses.

Attachment C-4 provides the detailed trip generation model for existing conditions.

No Build Trip Generation

The No Build 2023 and 2040 conditions assume the campus population would remain consistent with existing levels and the SOV rate would decrease to 50 percent. The percent of trips occurring during the peak hours and vehicle occupancy are assumed to be the same as existing conditions.

Figure 15 below illustrates the process used to estimate the No Build trip generation for the Swedish Cherry Hill MIMP.

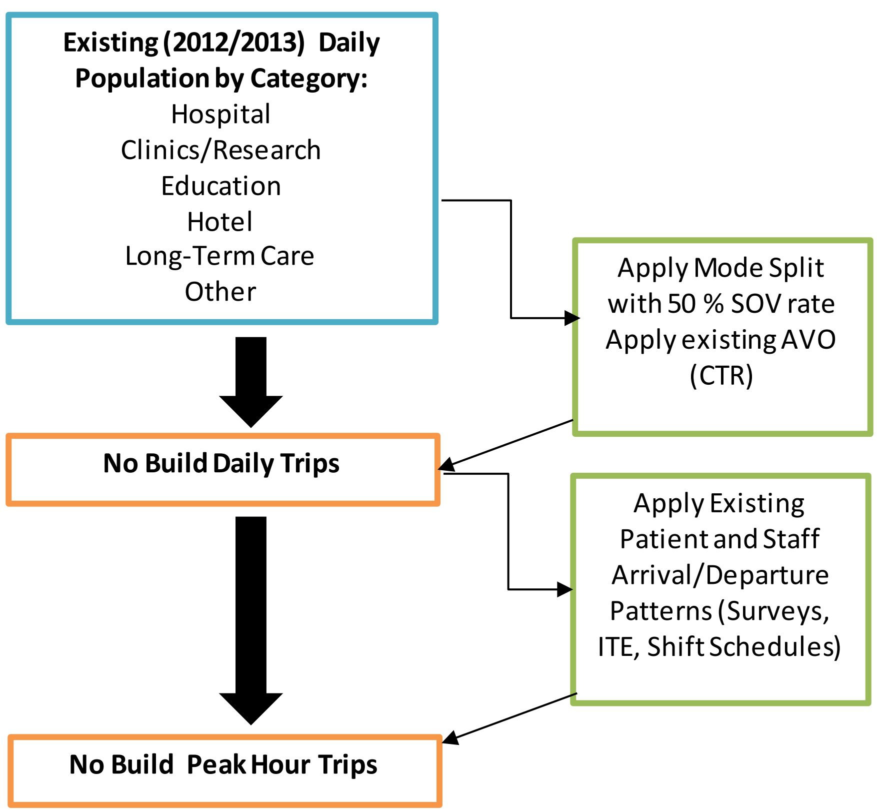

Figure 15 No Build Trip Generation Process

Table 6 summarizes the trip generation for the existing and No Build conditions. **Attachment C-4** provides the detailed trip generation model. As shown in the table, based on the model and assuming the 50 percent SOV rate, the Swedish Cherry Hill campus would generate less traffic than existing conditions with 424 less daily trips, 27 less AM peak hour trips and 57 less PM peak hour trips under No Build conditions.

Table 6
Summary of Swedish Cherry Hill Trip Generation – Existing and No Build

		Weekday AM Peak Hour Trips			Weekday PM Peak Hour Trips		
Scenario	**Daily Trips**	**Inbound**	**Outbound**	**Total**	**Inbound**	**Outbound**	**Total**
Existing	5,863	241	165	406	100	477	577
No Build	5,439	229	150	379	89	431	520
Net New Trips	**-424**	**-12**	**-15**	**-27**	**-11**	**-46**	**-57**

4.5.2 Background Traffic Volumes

Background traffic forecasts were developed by applying a general growth rate and adding the traffic associated with known "pipeline" (planned/approved) development projects identified by the city. This methodology is used consistently in the evaluation of traffic impacts of development projects throughout the city. An annual growth rate of 0.25 percent was assumed throughout the study area, with the exception of the Madison Street corridor. Along this corridor a 0.50 percent annual growth rate was used to reflect a higher level of anticipated development. This approach and specific assumptions are consistent with that taken for recent MIMP EIS's completed in the vicinity for Seattle University and Virginia Mason Medical Center. The pipeline development specifically accounted for includes:

- Virginia Mason Medical Center MIMP
- Seattle University MIMP
- Swedish Medical Center Fist Hill MIMP
- Seattle NBA/NHL Arena
- 550 Broadway
- 500 Terry
- 1124 Columbia
- 1414 10th Avenue
- 1424 11th Avenue
- 1111 E Union Street
- Yesler Terrace
- King County's Children and Family Justice Center

All of the pipeline projects are anticipated to be completed by 2023 except for the Virginia Mason Medical Center MIMP, which would be completed by approximately 2040[3]. The 2023 forecasts accounts for the portion of the Virginia Mason Medical Center MIMP that would be completed by 2023, as this project would be phased over approximately 30 years. Assumptions on the level of development to be completed by 2023 were based on a linear rate of development through the life of the master plan.

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[3] *Final Environmental Impact Statement Virginia Mason Medical Center Major Institution Master Plan Section 3.9 Transportation*, December 2012.

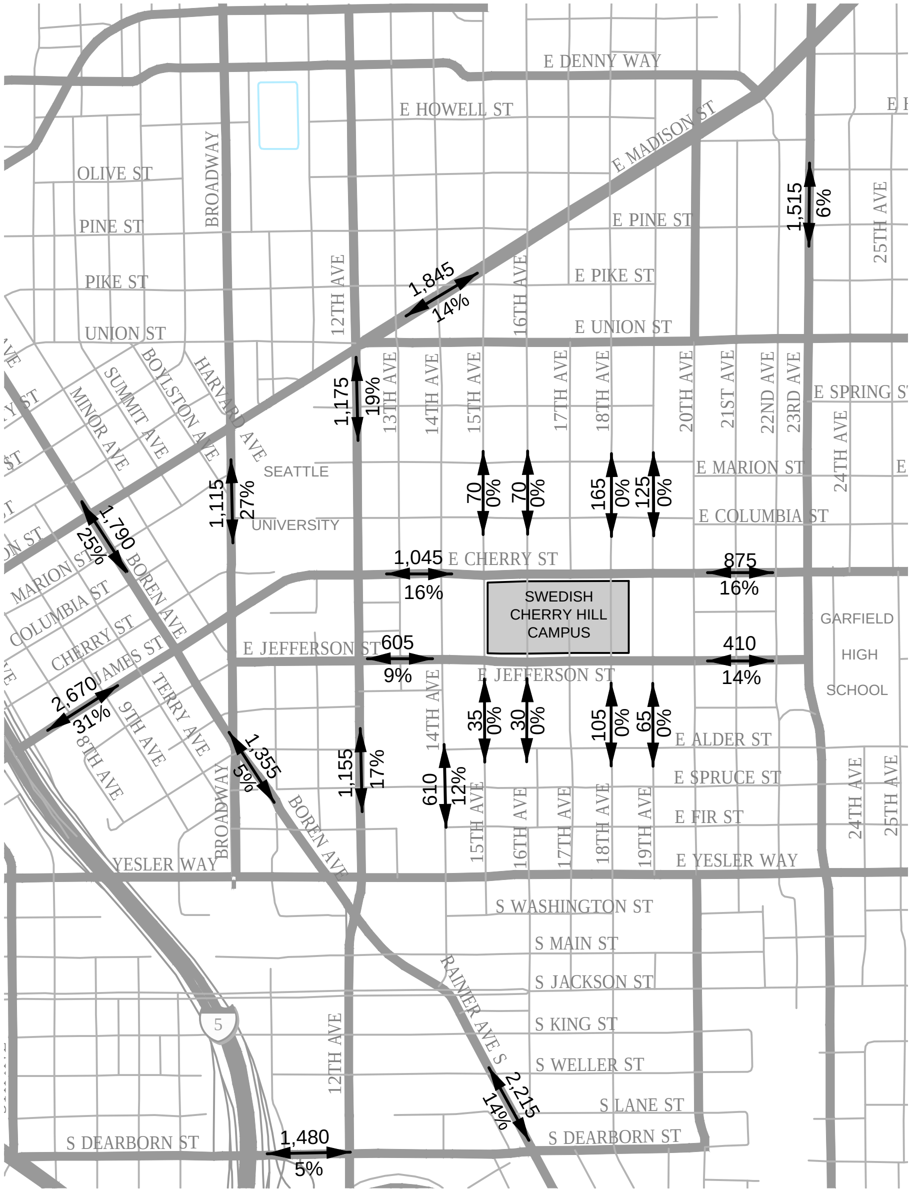
The net decrease in Swedish trip generation (see **Table 6**) under the No Build conditions was subtracted from the background traffic volumes to form the basis of the No Build 2023 and 2040 conditions. No Build trips were subtracted from the network based on existing Swedish commute trip patterns. **Figures 16 and 17** summarize the No-Build weekday AM and PM peak hour link volumes on the major roadways surrounding the campus for 2023 and 2040. The intersection turning movement summaries are included in **Attachment C-1**.

Figure 16 summarizes the weekday AM and PM peak hour forecasts for the 2023 horizon year. During the AM peak hour, growth attributed to pipeline projects and general increases in background traffic results in traffic volumes increases of between 0 and 31 percent in the study area. The largest percent increase is forecast along James Street west of Broadway where traffic volumes are anticipated to increase by 31 percent. Increases in traffic volumes along Broadway are forecast to be approximately 27 percent. These large increases in background traffic volumes are largely due to the additional traffic associated with the Virginia Mason Medical Center MIMP, Seattle University MIMP, and Yesler Terrace projects. Along E Cherry Street peak hour traffic volumes are expected to increase by approximately 120 to 145 vehicles during the weekday AM peak hour period, representing an increase of 16 percent west and east of the Swedish campus. Along E Jefferson Street, weekday AM peak hour traffic volumes are forecast to increase by approximately 50 trips. This represents an increase of approximately 9 percent west of the Swedish campus and 14 percent east of the Swedish campus.

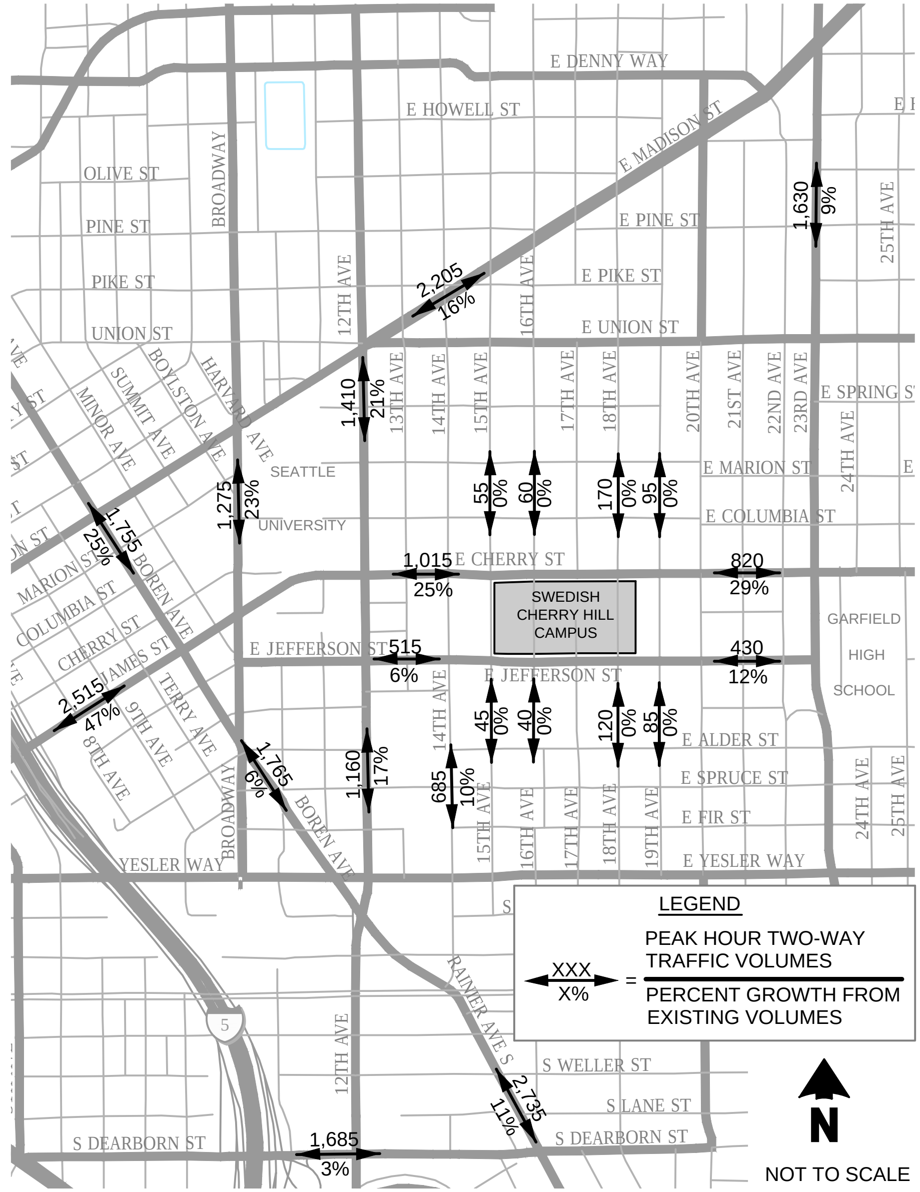
During the 2023 weekday PM peak hour, similar to the AM peak hour results, the largest percentage and absolute volume increases are forecast along James Street west of Broadway. Weekday PM peak hour traffic volumes are forecasted to increase by approximately 47 percent along James Street west of Broadway. As noted in the discussion of the AM peak hour forecasts, growth associated with the Virginia Mason Medical Center MIMP, Seattle University MIMP, and Yesler Terrace, all contribute to the growth anticipated along this corridor. Weekday PM peak hour increases in traffic along Broadway and 12th Avenue are generally consistent with the increases forecasted for the AM peak hour. In the immediate vicinity of the Swedish campus, increases in traffic along E Cherry Street are forecast to be approximately 185 to 200 vehicles, representing a 25 percent increase west of the campus and 29 percent increase east of the campus. Along E Jefferson Street in the vicinity of the campus, traffic volumes are forecast to increase by 30 to 45 vehicles during the peak hour, representing an increase of 6 percent west of the campus and 12 percent east of the campus.

The traffic forecasts for the 2040 conditions show a lower growth rate between 2023 and 2040 then identified between the existing to 2023 conditions. This is because the majority of the forecasted growth in traffic for the 2023 conditions is associated with pipeline projects, which results in a higher annual growth rate. The only new pipeline projects in 2040 are the phases of the Virginia Mason Medical Center MIMP that would be completed beyond 2023.

WEEKDAY AM PEAK HOUR



WEEKDAY PM PEAK HOUR



No-Build (2023) Weekday Peak Hours Two-Way Link Volumes

FIGURE **16**

Swedish Cherry Hill MIMP - DEIS

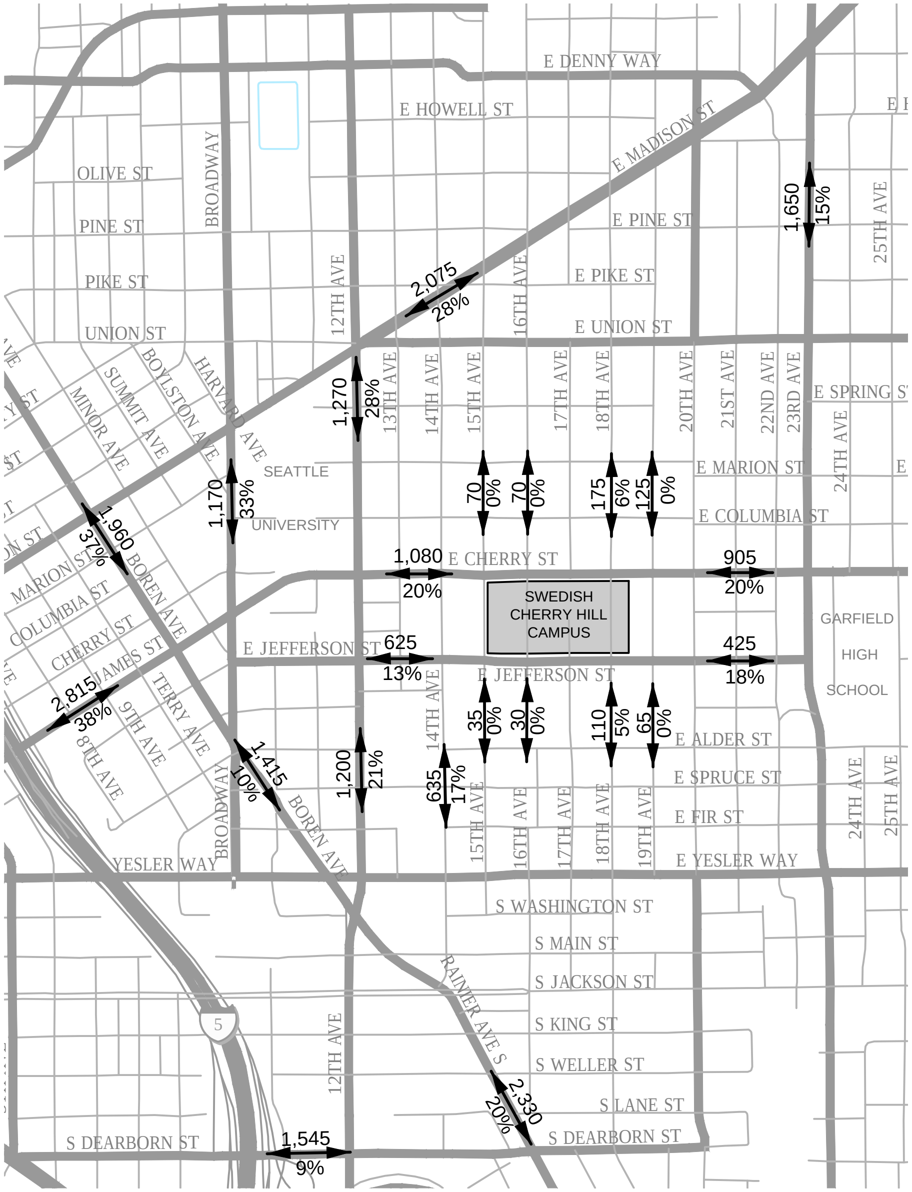
\\srv-dfs-wa\MM_Projects\Projects\11\11244.00 Swedish Providence Cherry Hill Campus\Graphics\Swedish_Graphic01 <10-No-Build (2023) Two-Way Link> kassil 02/13/14 08:53

Figure 17 shows the 2040 forecast volumes for the weekday AM and PM peak hour volumes. The figure also shows the growth relative to the existing traffic volumes.

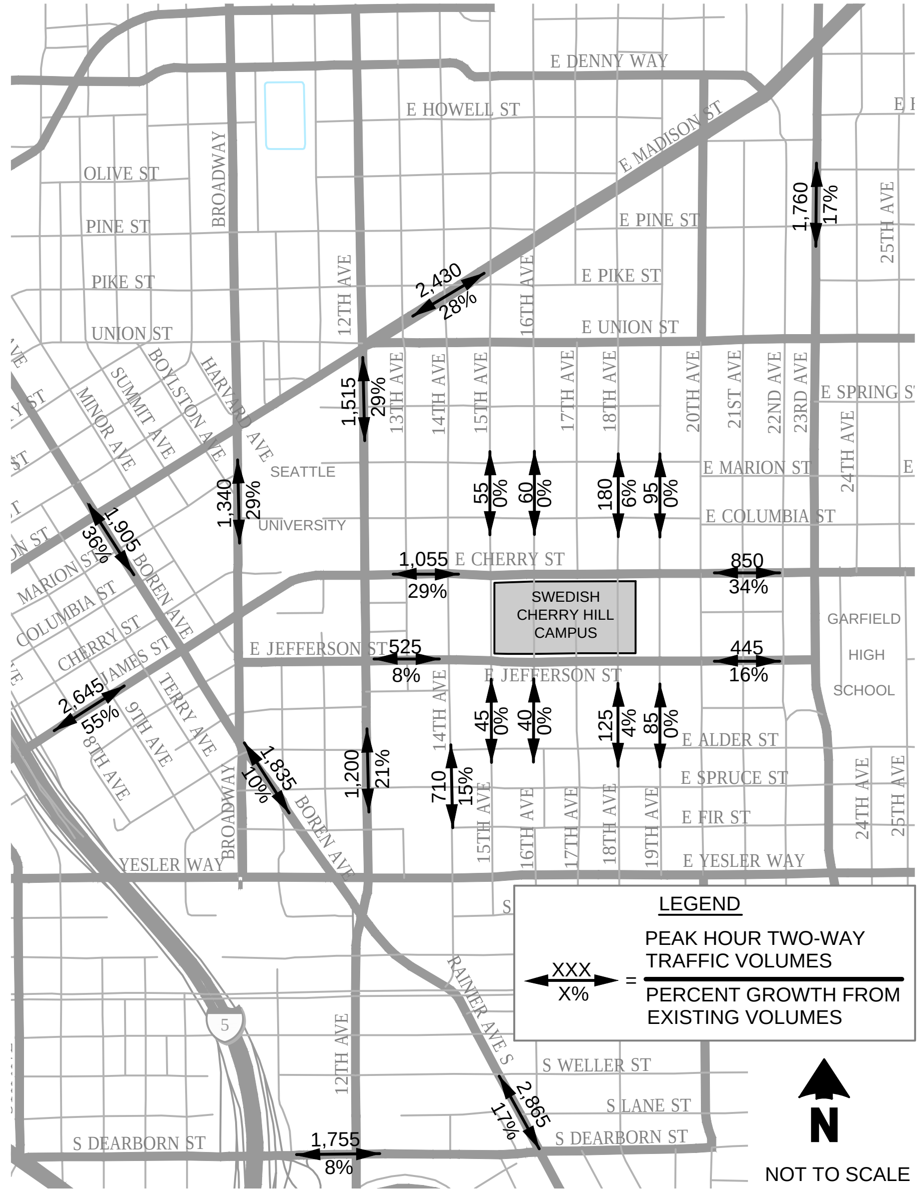
By 2040, during the weekday AM peak hour, study area volumes are expected to increase up to approximately 38 percent above existing traffic volumes. Within the immediate vicinity of the campus, traffic volumes along E Cherry Street are forecast to increase by an additional 150 to 180 vehicles above existing levels. Along E Jefferson Street, traffic volumes are forecasted to increase by approximately 65 to 70 vehicles. Based on information provided for area-wide pipeline projects, E Cherry Street is forecasted to continue carrying the majority of the east/west traffic through the area.

By 2040, during the weekday PM peak hour, study area volumes are expected to increase by up to approximately 55 percent above existing traffic volumes. In the vicinity of the Swedish campus, traffic volumes along E Cherry Street are forecast to increase by approximately 215 to 240 vehicles during the weekday PM peak hour as compared to existing traffic volumes. Along E Jefferson Street, traffic volumes are forecasted to increase by approximately 40 to 60 vehicles.

WEEKDAY AM PEAK HOUR



WEEKDAY PM PEAK HOUR



No-Build (2040) Weekday Peak Hour Two-Way Link Volumes

FIGURE **17**

Swedish Cherry Hill MIMP - DEIS

\\srv-dfs-wa\MM_Projects\Projects\11\11244.00 Swedish Providence Cherry Hill Campus\Graphics\Swedish_Graphic01 <11-No-Build (2040) Two-Way Link> kassil 02/13/14 08:53

4.6 Traffic Operations

The following describes the future intersection and corridor operations within the study area. Intersection levels of service and corridor performance levels are summarized for the 2023 and 2040 conditions. Operations account for the planned improvements described in section 4.1, including operations of the streetcar and the 23rd Avenue corridor transit improvements.

4.6.1 Intersection Operations

Intersection LOS was calculated at the study intersections using the same methodology outlined previously in the Affected Environment section. **Figure 18** provides a comparison between Existing and No Build weekday AM and PM peak hour LOS for the study area. Specific No Build 2023 and 2040 weekday peak hour LOS for each study intersection are displayed on **Figures 19 through 22** with detailed LOS calculations provided in **Attachment C-3**.

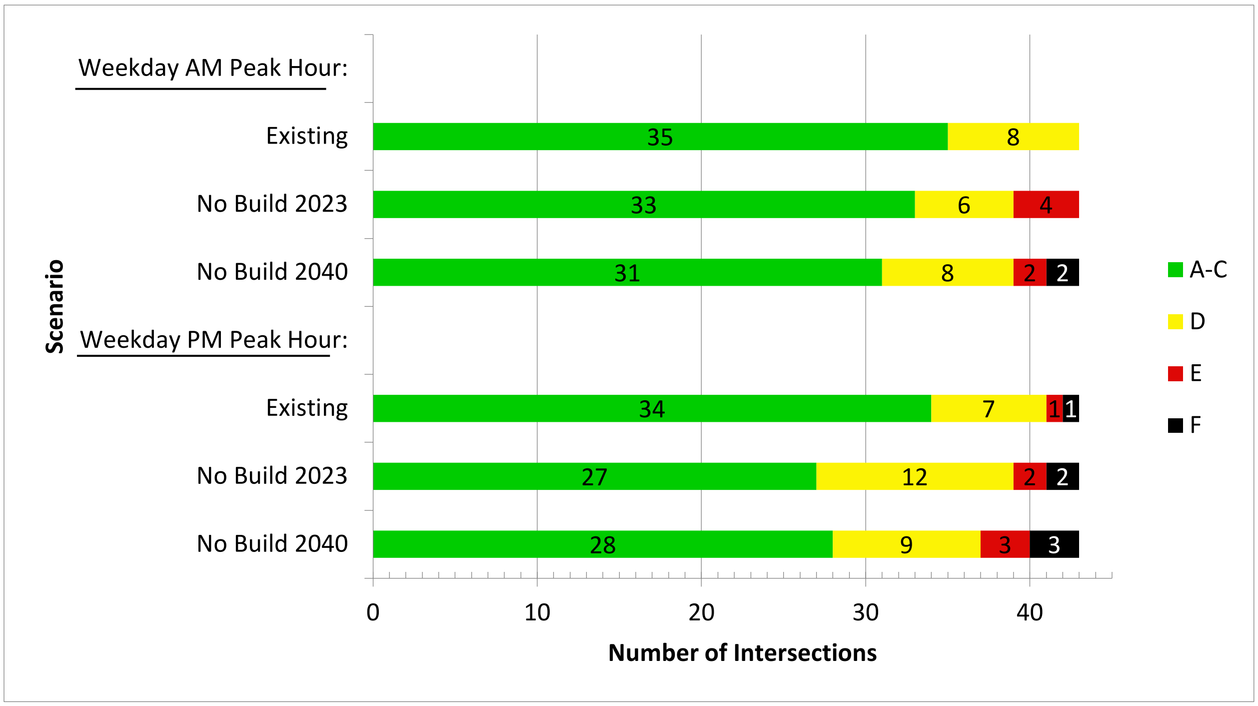
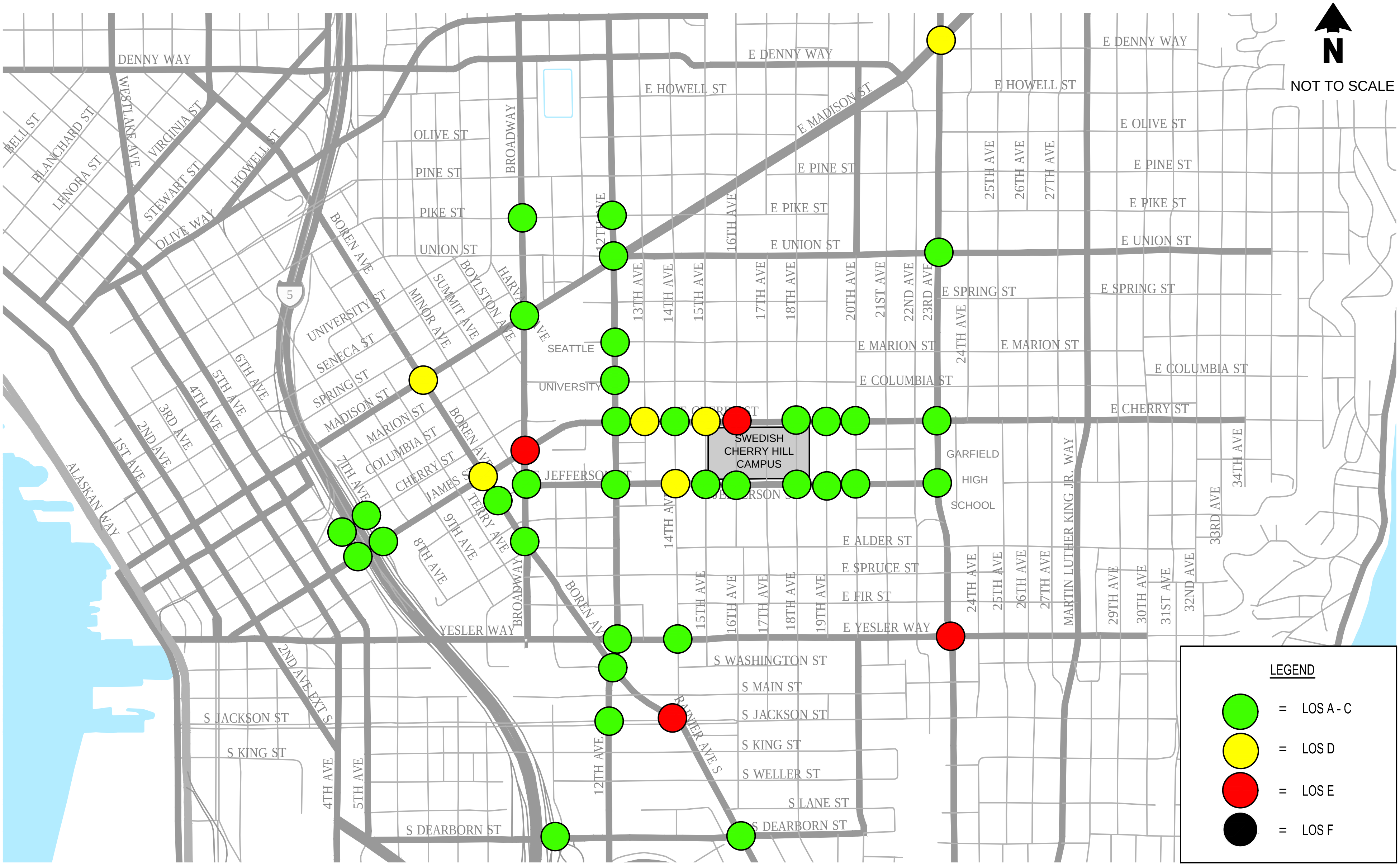


Figure 18 Existing and No Build Weekday Peak Hour Intersection Level of Service Comparison

As illustrated on **Figure 18**, under the No Build conditions, there would be a continued decline in intersection level of service within the study area. By 2023, a total of four intersections during both the AM and PM peak hours would operate at LOS E or worse, compared to existing conditions where no intersections were calculated at that level during the AM peak hour and only two during the PM peak hour. By 2040, continued growth in background traffic volumes would result in two additional intersections operating at LOS E or worse during the PM peak hour and four continuing to operate at LOS E or worse during the AM peak hour. One of the intersections operating at LOS E or worse under 2040 conditions is the 16th Avenue/E Cherry Street which is projected to operate at LOS E during the weekday AM peak hour. The following discussion provides additional detail regarding those locations forecast to operate at LOS E or worse during either the AM or PM peak hours.

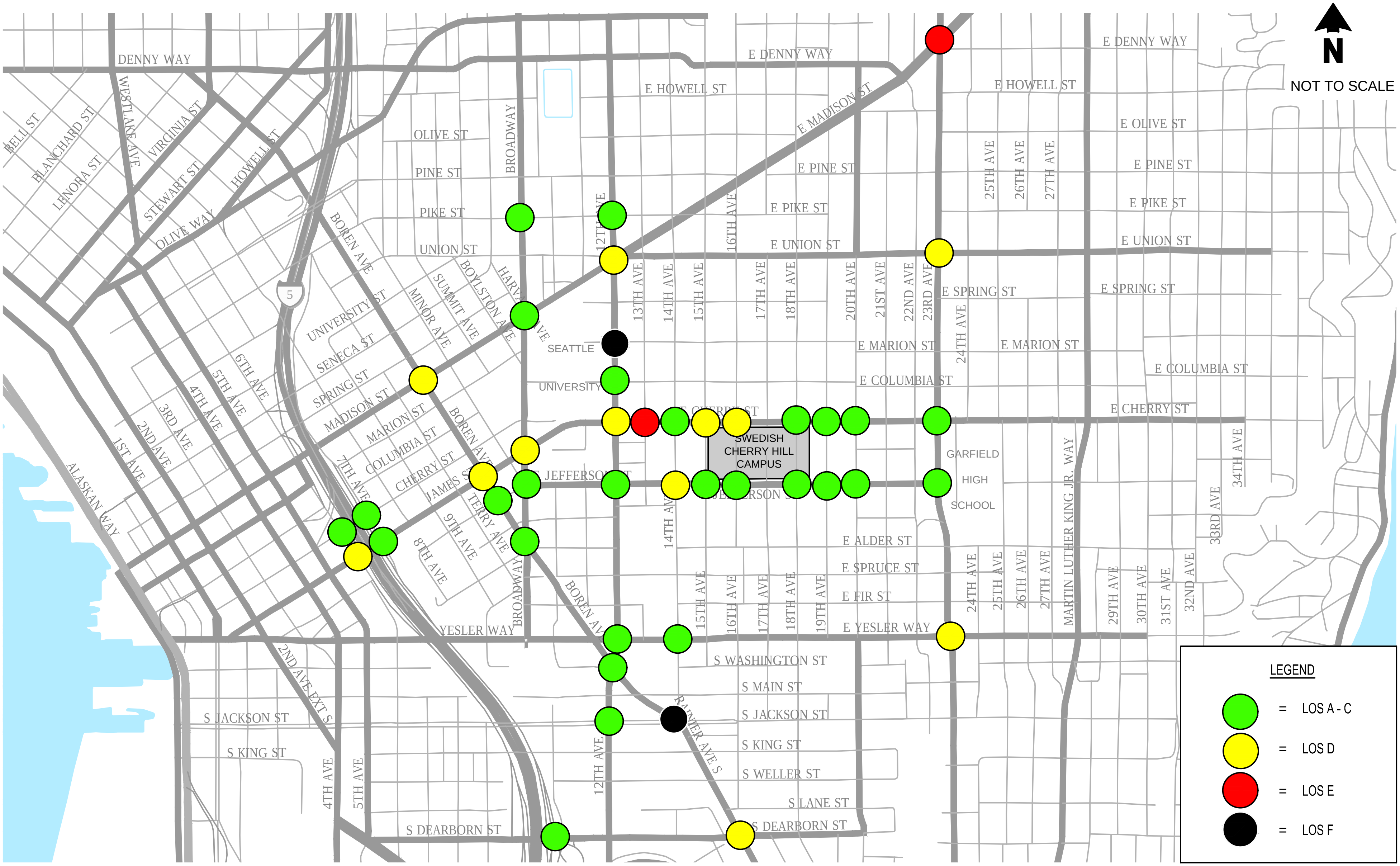


No-Build (2023) Weekday AM Peak Hour Levels of Service Summary

FIGURE
19

Swedish Cherry Hill MIMP - DEIS

\\srv-dfs-wa\MM_Projects\Projects\11\11244.00 Swedish Providence Cherry Hill Campus\Graphics\Swedish_Graphic01 <13-LOS AM (2023) NO BUILD> kassil 02/13/14 08:53



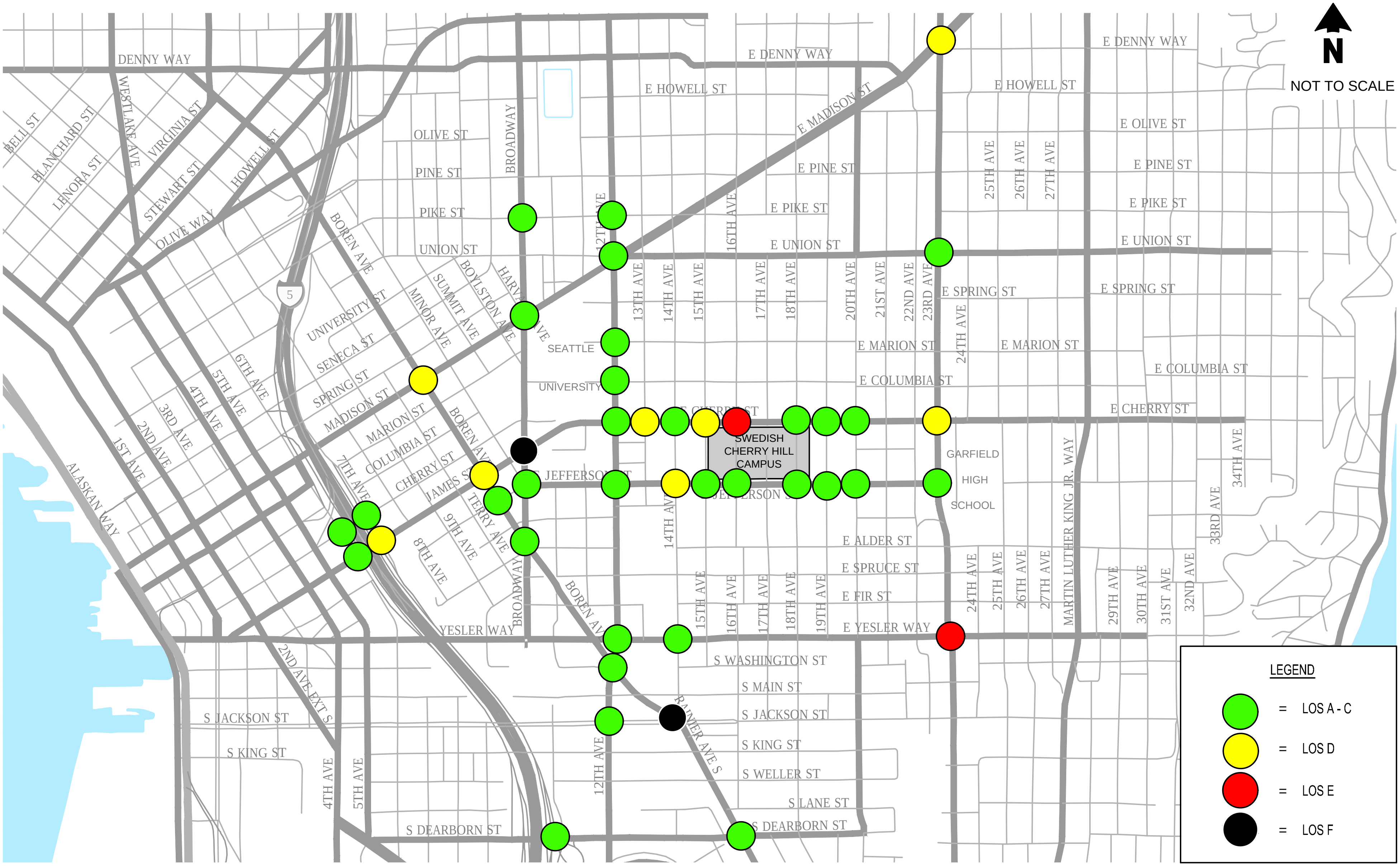
No-Build (2023) Weekday PM Peak Hour Levels of Service Summary

FIGURE

20

Swedish Cherry Hill MIMP - DEIS

\\srv-dfs-wa\MM_Projects\Projects\11\11244.00 Swedish Providence Cherry Hill Campus\Graphics\Swedish_Graphic01 <14-LOS PM (2023) NO BUILD> kassil 02/13/14 08:53

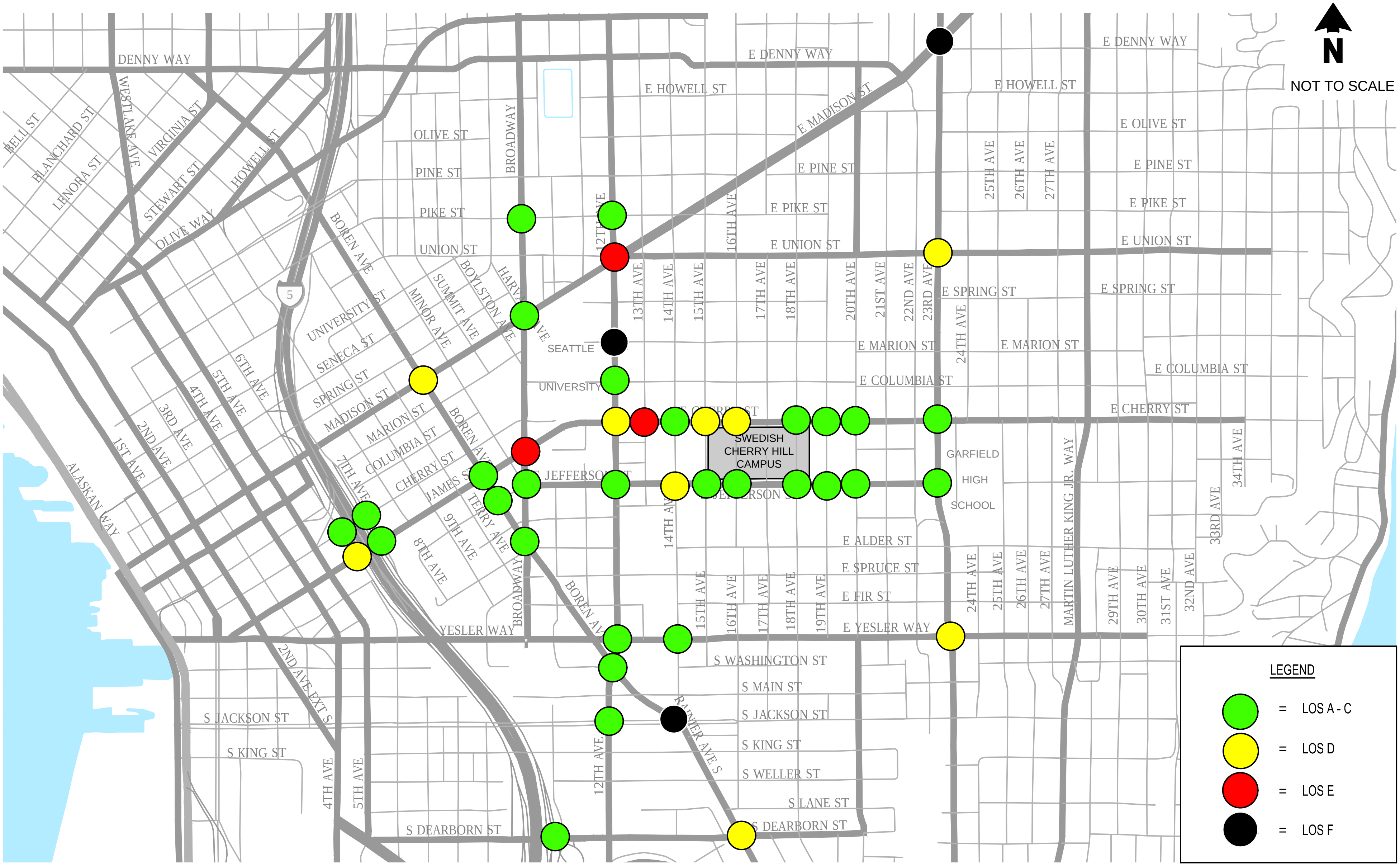


No-Build (2040) Weekday AM Peak Hour Levels of Service Summary

FIGURE **21**

Swedish Cherry Hill MIMP - DEIS

\\srv-dfs-wa\MM_Projects\Projects\11\11244.00 Swedish Providence Cherry Hill Campus\Graphics\Swedish_Graphic01 <15-LOS AM (2040) NO BUILD> kassil 02/13/14 08:53



No-Build (2040) Weekday PM Peak Hour Levels of Service Summary

FIGURE **22**

Swedish Cherry Hill MIMP - DEIS

\\srv-dfs-wa\MM_Projects\Projects\11\11244.00 Swedish Providence Cherry Hill Campus\Graphics\Swedish_Graphic01 <16-LOS PM (2040) NO BUILD> kassil 02/13/14 08:53

As shown in **Figures 19 and 20**, the results of the analysis indicate that the following study intersections would operate at LOS E or worse under No Build 2023 conditions during either the weekday AM or PM peak hours:

- **23rd Avenue / Madison Street** – Operations at this intersection would degrade from LOS C under existing conditions to LOS E under No Build 2023 conditions during the weekday PM peak hour. This is a signalized intersection. The LOS E operations during the weekday PM peak hour is related to the reduced capacity due to the 23rd Avenue Transit Corridor improvements. This improvement would reduce the general vehicular traffic capacity from four lanes (i.e., two travel lanes in each direction) to three lanes (i.e., one travel lane in each direction and a two-way left turn center lane) to provide a dedicated transit only lane in each direction.
- **12th Avenue / E Marion Street** – This side-street stop controlled intersection would continue to operate at LOS F under No Build 2023 conditions during the weekday PM peak hour with the worst movement being the eastbound left turn, exiting the Seattle University campus . As discussed in the Affected Environment, LOS F operations at this location are due to the high levels of pedestrian activity.
- **13th Avenue / E Cherry Street** – This intersection would continue to operate at LOS E on the northbound approach under No Build 2023 conditions during the weekday PM peak hour. As discussed in the Affected Environment, LOS E operations at this location are due to the high levels of pedestrian activity.
- **16th Avenue / E Cherry Street –** Operations at this intersection would degrade from LOS D under existing conditions to LOS E on the northbound approach under No Build 2023 conditions during the weekday AM peak hour. The LOS E operations are due to the anticipated increases in traffic volumes along E Cherry Street making it more difficult for vehicles on 16th Avenue to enter the traffic stream.
- **Broadway / James Street –** Operations at this intersection would degrade from LOS C under existing conditions to LOS E under No Build 2023 conditions during the weekday AM peak hour. The signalized intersection served by the streetcar would operate at LOS E due to increase in traffic volumes.
- **23rd Avenue / E Yesler Way** – Operations at this intersection would degrade from LOS D under existing conditions to LOS E under No Build 2023 conditions during the weekday AM peak hour. This is a signalized intersection. The LOS E operations during the weekday AM peak hour is related to the reduced capacity due to the 23rd Avenue Transit Corridor improvements. This improvement would reduce the general vehicular traffic capacity from four lanes (i.e., two travel lanes in each direction) to three lanes (i.e., one travel lane in each direction and a two-way left turn center lane) to provide a dedicated transit only lane in each direction.

- **14th Avenue / S Jackson Street** – Operations at this intersection would degrade from LOS D under existing conditions to LOS E during the weekday AM peak hour under No Build 2023 conditions and LOS F during the weekday PM peak hour. The LOS E and F operations at this signalized intersection are related to the five leg configuration at this location and the need for exclusive streetcar and pedestrian phases across Boren Avenue. These exclusive phases reduce the amount of green time available for vehicular traffic resulting in higher delays. Most intersections with streetcar service allow the streetcar to travel with traffic, which minimizes the impacts of the streetcar on intersection operations. The No Build conditions were modeled based on future timing provided by SDOT, which incorporate timing changes as a result of the streetcar.

As shown in **Figure 21 and 22**, under 2040 No Build conditions, one additional intersection, 12th Avenue/Madison Street, would degrade to LOS E. The locations operating at LOS E or worse include:

- **12th Avenue / Madison Street** – Operations at this intersection would degrade from LOS D under existing conditions to LOS E under No Build 2040 conditions during the weekday PM peak hour. This is a signalized intersection. The LOS E operations during the weekday PM peak hour are related to the anticipated increases in the westbound left-turn volume at this location.
- **23rd Avenue / Madison Street** – Operations at this intersection would degrade from LOS E under No Build 2023 conditions to LOS F under the No Build 2040 conditions during the PM peak hour. This is a signalized intersection. The LOS F operations are due to anticipated increases in traffic volumes at this location.
- **12th Avenue / E Marion Street** – This intersection would continue to operate at LOS F for both the 2023 and 2040 No Build conditions during the weekday PM peak hour with the worst movement being the eastbound left-turn. The LOS F is a result of high pedestrian volumes in the area.
- **Broadway / James Street –** Operations at this intersection would degrade from LOS D to LOS E during the weekday PM peak hour and degrade from LOS E to LOS F during the weekday AM peak hour under the No Build 2040 conditions compared to the No Build 2023 conditions. The LOS E operations at this location are related to increased traffic volumes during the PM peak hour at this signalized intersection served by the streetcar.
- **13th Avenue / E Cherry Street** – The northbound approach to this intersection would continue to operate at LOS E for both the 2023 and 2040 No Build conditions during the weekday PM peak hour. The LOS E is due high volumes along E Cherry Street making it difficult for side street vehicles to enter the traffic stream at this unsignalized intersection.
- **16th Avenue / E Cherry Street –** The northbound approach at this intersection would continue to operate at LOS E during the weekday AM peak hour during 2040 conditions as it did under weekday AM peak hour 2023 conditions. This is due to the high volumes along E Cherry Street making it difficult for vehicles to enter the traffic stream at this unsignalized intersection.

- **14th Avenue / S Jackson Street –** This intersection would degrade from LOS E during the weekday AM peak hour under No Build 2023 conditions and operate at LOS F during the weekday AM and PM peak hours for No Build 2040 conditions . This is due to the five-leg configuration at this signalized intersection accommodating exclusive pedestrian and streetcar phases.
- **23rd Avenue / E Yesler Way –** This intersection would continue to operate at LOS E during the weekday AM peak hour 2040 No Build conditions, similar to 2023 No Build conditions. This is related to the reduced capacity with the 23rd Avenue Transit Corridor Improvements.

All other study intersections would operate at LOS D or better under both the No Build 2023 and 2040 conditions during both the weekday AM and PM peak hours.

Neighborhood Assessment

As a result of the increases in traffic associated with background growth and pipeline traffic, delays for the minor street approaches in the immediate vicinity of the campus are expected to increase accordingly. Intersections along E Cherry and E Jefferson Streets are forecast to operate at LOS D or better during the weekday AM peak hour under both No Build 2023 and 2040 conditions except for the unsignalized intersection of 16th Avenue/E Cherry Street. As described above this intersection would operate at LOS E due to the anticipated increases in traffic volumes along E Cherry Street. During the weekday PM peak hour under both No Build 2023 and 2040 conditions, the 13th Avenue/E Cherry Street intersection would operate at LOS E. As described above this intersection would operate at LOS E due to the anticipated increases in traffic volumes along E Cherry Street.

4.6.2 Corridor Operations

Consistent with the Affected Environment evaluation, the travel speeds and travel times along E Cherry Street/James Street from I-5 to 18th Avenue S were evaluated using Synchro. The calibration factor identified in **Table 3** in the Affected Environment section was applied to the No Build projections. The adjustment or calibration factor accounts for operational impacts from vehicle queuing, mid-block pedestrian crossing, on-street parking maneuvers, etc. not accounted for in the Synchro calculations. The projected travel times, inclusive of the adjustment factor, are summarized in **Table 7**.

As shown in **Table 7**, for corridors that are already constrained and congested, only small differences in travel times or average speeds would occur between existing and No Build conditions. Average speed would be reduced by one mph along James Street in the westbound direction in both the AM and PM peak hours and in the eastbound direction in the PM peak hour with No Build 2023 and 2040 growth conditions. Average travel time would increase by one minute in the westbound direction during the PM peak hour under No Build 2040 conditions. Along E Cherry Street, average speeds would decrease by two to three mph in the westbound direction during the weekday PM peak hour under 2023 and 2040 No Build. In the eastbound direction along E Cherry Street, weekday AM and PM peak hour speeds along E Cherry Street in the eastbound direction would increase by 2 to 5 mph and travel time would decrease by over 30 seconds under both the 2023 and 2040 No Build conditions. This change in speed and slight reduction in travel time is due to the optimization of signal timing for future conditions.

Table 7
No Build Weekday Peak Hours James Street/E Cherry Street Travel Time Analysis

Segment	Direction	Existing		2023		2040	
		Travel Time (m:ss)[1]	Average Speed (mph)	Travel Time (m:ss)[1]	Average Speed (mph)	Travel Time (m:ss)	Average Speed (mph)
AM Peak Hour							
James Street (6th Ave to Broadway)	EB	04:17	7	04:12	7	04:24	7
	WB	03:31	9	03:31	9	03:34	9
E Cherry Street (Broadway to 18th Ave)	EB	05:22	10	04:19	12	04:09	13
	WB	03:01	12	02:59	12	02:53	13
PM Peak Hour							
James Street (6th Ave to Broadway)	EB	04:03	8	04:11	7	04:11	7
	WB	05:40	6	06:30	5	05:52	6
E Cherry Street (Broadway to 18th Ave)	EB	02:29	14	01:51	19	01:51	19
	WB	02:43	13	03:10	11	03:11	11

1. m:ss = minutes: seconds

4.7 Traffic Safety

As described in Section 4.5, growth in background traffic is forecast on both E Cherry Street and E Jefferson Street. On E Cherry Street, in the vicinity of the campus, 2040 weekday PM peak hour traffic volumes are forecast to increase by 29 to 34 percent depending on the roadway segment. Similarly, along E Jefferson Street, by 2040 traffic volumes are forecast to increase by 8 to 16 percent during the weekday PM peak hour. While there is not a direct relationship between anticipated future accidents and traffic volumes, absent a specific hazard, it is reasonable to expect that the number of accidents could increase in some relation to the increase in traffic volumes. As described in section 4.6, delays for vehicles entering E Cherry Street or E Jefferson Street from unsignalized approaches is forecast to increase. Depending on specific circumstances, this can result in driver impatience, which could result in more aggressive driving maneuvers.

These same traffic conditions can impact pedestrian and bicycle safety, especially as it relates to crossing arterials at unsignalized intersections. The unsignalized intersection of 16th Avenue/E Cherry Street has been the subject of previous conversations with SDOT regarding the need for pedestrian and vehicle improvements. This is primarily related to the sight distance limitations at this intersection for vehicles turning from 16th Avenue onto E Cherry Street. With increases in traffic projected along E Cherry Street existing conflicts between vehicles and pedestrians trying to cross or access E Cherry Street would increase. Similar characteristics would exist at other unsignalized intersections along the E Cherry Street and to a lesser degree along the E Jefferson Street corridor, simply by the nature of the lower traffic volumes along the E Jefferson Street corridor.

4.8 Parking

As noted previously, the analysis of the No Build scenario assumes achievement of a 50 percent SOV rate for affected employees by 2023 and 2040. The achievement of the 50 percent SOV rate would result in a reduction in campus parking demand as employees switch from single occupancy vehicles to other mode choices such as carpool, vanpool, transit, etc.

No Build peak parking demand was developed consistent with the trip generation method. The peak parking demand was projected by decreasing the CTR-affected SOV rate to 50 percent and considered the resulting increases in carpool and vanpool. **Table 8** provides a comparison between the existing and No Build parking demand.

Table 8
Swedish Cherry Hill Estimated Parking Demand[1]
– Existing and No Build

Facilities	Existing	No Build (2040 & 2023)
Hospital	570	529
Clinic/Research	385	354
Education	40	40
Hotel	4	4
Long-Term Care	41	40
Other Support Facilities	53	47
Total Parking Demand	**1,093**	**1,014**

sf = square-feet
1. The parking demand by facility is estimated proportional to trip generation by population group and is not reflective of actual parking classification counts.

As shown in **Table 8,** reduction in the existing SOV rate would result in a decrease in parking demand for the No Build condition. As with vehicular traffic demand, this assumption provides a conservatively low baseline against which to compare impacts of the build alternatives insofar as it assumes no noticeable growth in staff, patient, or visitor demands unrelated to construction of new projects identified in the proposed MIMP.

It was assumed that No Build parking supply associated with the Swedish Cherry Hill campus would remain at current levels, 1,510 spaces. As discussed previously, there is some level of parking that occurs on-street; however, under No Build conditions, the projected parking demand of 1,014 vehicles could be fully accommodated in off-street parking on the campus. As identified in the Affected Environment section, the existing utilization of the 16th Avenue parking garage is at approximately 40 percent (at 10:00 a.m.). On-street utilization in the neighborhoods surrounding the campus is nearing capacity through a combination of neighborhood and campus related demands. If all the No Build parking associated with Swedish occurred on-campus, the overall utilization of the off-street (on-campus) parking would be 67 percent, which would still provide capacity to accommodate additional future demand.

5 Impacts of Alternative 8

This section documents the impacts associated with the development of Alternative 8. Transportation Elements discussed previously in the Affected Environment and No Build discussions are also presented in this section.

The impact analysis of Alternative 8 assumes a mode-split performance of 50 percent SOV consistent with the No Build condition. As noted previously, the development assumed in the Master Plan is projected to occur over a period of 25 years. Based on discussions with the applicant, an estimate of development to be completed by the 2023 horizon year was identified. **Table 9** provides a summary of land use assumptions for the short and long term horizon years. As shown in the table, the level of development assumed by the 2023 horizon year includes the development of approximately 2.3 million square-feet. This increase would approximately double the size of the existing campus. The build-out of the Master Plan results in 3.1 million square-feet of development or almost tripling the campus size.

Table 9
Swedish Cherry Hill Land Use Summary

		Alternative 8	
Facilities	**No Build / Existing**	**2023**	**2040**
Hospital	541,300 sf (196 beds)	1,014,000 sf (290 beds)	1,350,000 sf (385 beds)
Clinic/Research	427,000 sf	1,014,000 sf	1,250,000 sf
Education	73,000 sf	100,000 sf	150,000 sf
Hotel	12,500 sf	40,000 sf	80,000 sf
Long-Term Care	43,000 sf (99 beds)	93,000 sf (149 beds)	220,000 sf (220 beds)
Other Support Facilities	50,000 sf	50,000 sf	50,000 sf
Total	**1,146,800 sf**	**2,311,000 sf**	**3,100,000 sf**

sf = square-feet
Source: *Swedish Medical Center Cherry Hill Campus Draft Major Institution Master Plan,* March 31, 2014.

5.1 Street System

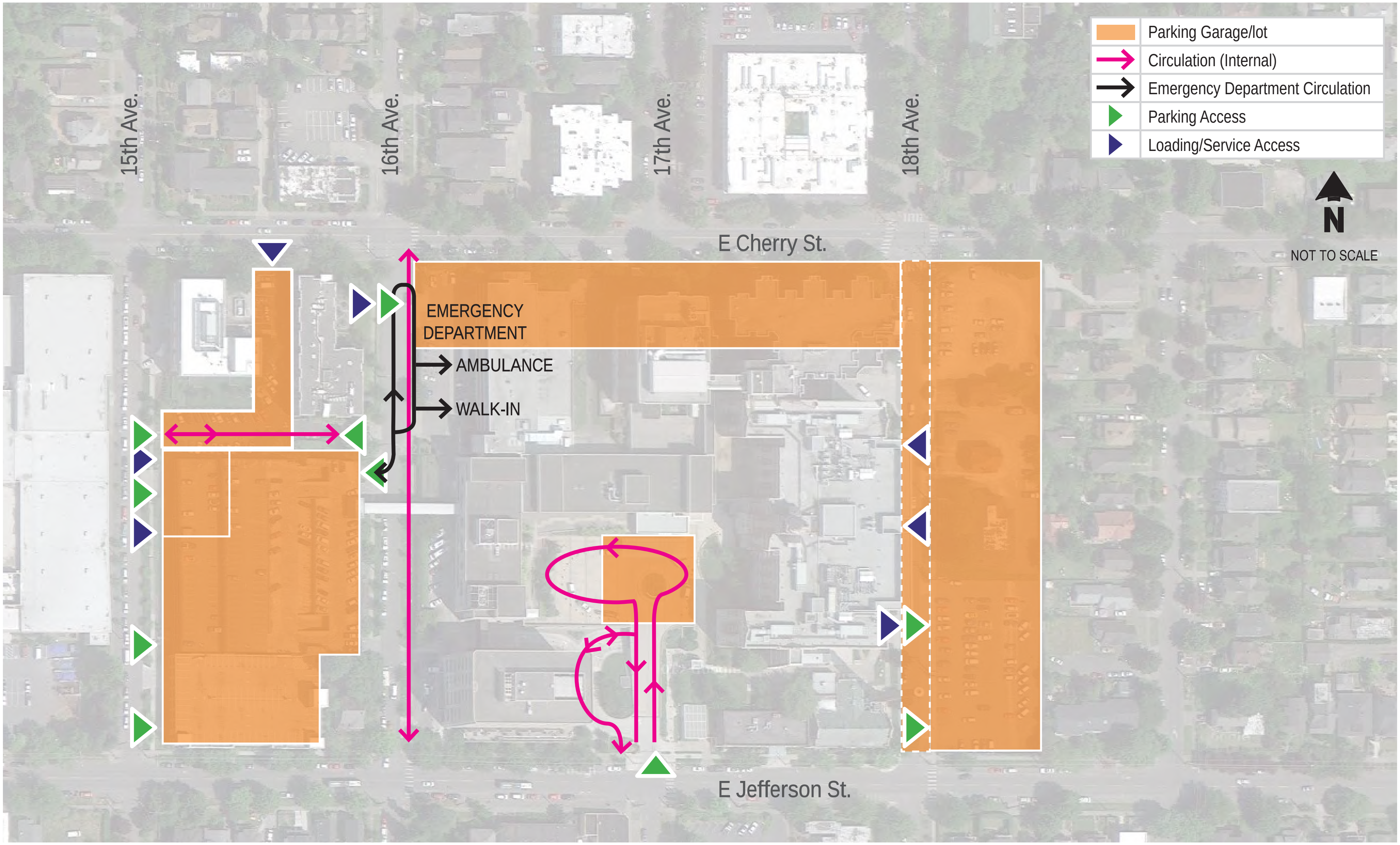
The street system for Alternative 8 would be the same as those described under Alternative 1 (No Build) with no major changes to the local circulation proposed as part of the MIMP.

5.2 Campus Access and Service Vehicle Loading

Figure 23 highlights the proposed parking lots and garages and the campus access and circulation patterns proposed under the current MIMP. The same access and circulation is proposed for Alternatives 8, 9 and 10. As shown in **Figure 23**, access to the parking facilities would occur along 15th and 16th Avenues similar to what exist today. The proposal is not anticipated to increase the number of access points to parking along 15th and 16th Avenues. One to two access points would be provided to the new parking garage along 18th Avenue. There are currently five driveways along the east side of 18th Avenue between E Cherry and Jefferson Streets so the proposal would reduce the number of driveways and associated conflicts between modes. Emergency vehicle access would continue to be as it is today with the emergency department located along 16th Avenue; however, emergency patient parking could expand to the 15th/16th Avenue garage. While the overall circulation and access patterns associated with the campus would generally stay the same, the amount of parking on 18th Avenue would result in a shift of the traffic to the east side of the campus.

Figure 23 also illustrates the location of the loading and service access points. The MIMP would include redevelopment and potentially expansion of the existing loading dock located along 16th Avenue south of E Cherry Street. The smaller services areas associated with the Northwest Kidney Center, Seattle Rehabilitation Center, and Central Utility Plant would be maintained. In addition, a new loading dock accessed along 15th Avenue south of the existing Rehabilitation Center parking lot is proposed. It is anticipated that the size of the 18th Avenue loading dock would remain similar to today since the number of deliveries are not anticipated to increase. Deliveries at 18th Avenue are mainly related to food services; therefore, it is anticipated that the size and the duration of the deliveries may increase but the number of deliveries would remain the same. A more detailed evaluation of loading areas including truck access, truck maneuvers, and the required number of loading berths would occur at the project level.

The MIMP seeks relief from City code requirements for loading berths to allow for the consolidation of facilities and reduce the number of loading berths required by code. At this stage of planning the quantity and size of loading berths cannot be evaluated. What is known is that truck traffic along E Cherry Street, E Jefferson Street, 16th Avenue, and 18th Avenue would likely increase. With the proposed 3,100,000 square-feet of building area served, a total of 88 loading berths would be needed on campus to meet the code requirement for 'high demand' uses as described in SMC 23.54.035. The existing campus is 1,146,800 square-feet and adequately served by two loading areas and three loading berths for a ratio of approximately 0.003 berths per 1,000 SF. Applying this ratio to the proposed 3,100,000 square-feet of development would result in a future need for nine loading berths. Given the range between estimated future needs and the code requirement, additional analysis at the project level will be required to more accurately access operational needs and establish appropriate loading berth quantities and sizes.



Alternatives 8, 9 & 10 Access and Circulation Routes

Swedish Cherry Hill MIMP – DEIS

FIGURE 23

transpoGROUP

Q:\Projects\11\11244.00 Swedish Providence Cherry Hill Campus\Graphics\Figures\11244 Fig 23 no vacation 16th access and circ routes.pdf

The arterial routes used by trucks to access Swedish are not anticipated to change from existing conditions. Truck traffic serving Swedish will likely increase. Deliveries could shift to off-peak hours and night deliveries could increase as vendors seek to minimize delivery costs by avoiding congested time periods. It is recommended that deliveries be schedule to minimize the impact to the adjacent street system (i.e., limit trucks waiting on-street to access loading areas) and neighborhood.

The location and access to future loading areas should be evaluated when a specific project is proposed to ensure that loading facilities:

- Are adequately sized and consolidated when possible
- Traffic impacts and impacts to pedestrian circulation are identified and mitigated
- Locate accesses on minor streets where possible
- Are designed to minimize or preferably eliminate the need to make backing maneuvers within public rights of way or block sidewalks

5.3 Pedestrian and Bicycle Transportation

Future bicycle facilities on the arterials adjacent to the campus under the new MIMP would be similar to existing conditions. No modification to the adjacent street system is anticipated with the proposed development. The Bicycle Master Plan identified 18th Avenue as a neighborhood greenway, which is a facility where signs and pavement markings are used to guide people along the route and speed and volume management techniques are used to discourage vehicular traffic, making this a more desirable travel route for bicyclist and pedestrians. The MIMP would provide enhancements along the 18th Avenue corridor frontage consistent with the City's neighborhood greenway standards and incorporate this into facility into the proposed campus health walk.

A neighborhood greenway is proposed along 18th Avenue. The two-way bicycle facility associated with the greenway is currently proposed on the west side of the street. This would conflict with the Swedish loading area along 18th Avenue. As discussed previously, the number of deliveries is anticipated to be similar to existing conditions, but the size of the load per truck would likely increase and dwell times could be longer. Relevant to pedestrians and bicyclists conflicts with the 18th Avenue loading and services areas are anticipated to be similar to existing conditions. The 18th Avenue loading areas currently has less than ten deliveries throughout the day, which would not change with Alternative 8 and the service entrance would likely add less than ten deliveries per day. Deliveries are generally scheduled outside of the peak period to minimize conflict with other modes. In addition, the deliveries should be scheduled to minimize staging on 18th Avenue while waiting to access the loading area.

If the bicycle facility were located along the east side of the 18th Avenue, it would conflict with 18th Avenue parking garage access points. Although the MIMP would reduce the number of driveways along 18th Avenue between E Cherry and Jefferson Streets, the intensity of vehicular traffic to and from the access points along the east side of 18th Avenue would increase. The garage is forecasted to have approximately 100-160 vehicles during the AM and PM hour peak hours, which means traffic levels would approximately double when compared to existing conditions. The parking garage would cause greater and more frequent conflicts with the pedestrian and bicycle facilities than the loading area.

The 18th Avenue neighborhood greenway is still in the planning process with the public outreach anticipated in Fall 2014. It is possible through the outreach process other alternatives may be considered. Consideration may be given to providing the neighborhood greenway along a lower volume street such as 19th Avenue where traffic volumes are lower and it would be located outside the MIO Boundary.

The campus currently provides bicycle racks for visitors and employees. In addition, lockers and showers are provided to employees. These amenities would continue with the MIMP. The Seattle Municipal Code (SMC) requires medical institutions to provide bicycle parking equivalent to two percent of the employees, including doctors. Based on future population projection of 6,545 employees in 2040, the plan would require 131 bicycle parking spaces by 2040. The campus currently provides 132 bicycle parking spaces; therefore, bicycle parking code requirements for the proposal are already satisfied.

As noted in the discussion above, 18th Avenue has been identified as a potential Greenway, providing enhancements for bicyclists as well as pedestrians. A "health walk" or walking path would be created around the Cherry Hill campus along 15th Avenue, E Cherry Street, 18th Avenue, and E Jefferson Street. Along 18th Avenue, the health walk can be incorporated into the proposed neighborhood greenway. A direct pedestrian connection is proposed through the campus that would connect 17th Avenue between E Cherry and Jefferson Streets. In addition to these improvements, the pedestrian environment would be enhanced along the E Cherry Street frontage with improved sidewalks and landscaping as well as public pocket parks and green spaces with seating areas.

The number of pedestrians on campus and those circulating to and from transit facilities and parking is anticipated to increase given that the proposed expansion would serve a greater population. If as a result of the expansion, Swedish Cherry Hill employees and patients continue to park on-street then pedestrian levels within the neighborhood would increase. There are sidewalks and connections to and from the surrounding on-street parking and transit stops. In addition, as part of Alternative 8 the pedestrian environment along E Cherry Street and E Jefferson Street would be improved with wider sidewalks and landscaping as well as connections to and from the neighborhood.

5.4 Transit/Shuttle Services

As part of Alternative 8, the existing campus transit stops along E Jefferson Street would be enhanced. Enhancements would likely include expansion of the covered waiting area and seating capacity for passengers, installation of pedestrian scale lighting, extension of the passenger boarding loading area to accommodate space for two buses in the loading zone. With the increase in population, transit ridership would increase with Alternative 8. As described in the No Build condition, there are planned transit improvements as well as potential service cuts. Similar to the No Build condition, an evaluation of transit in the vicinity of Swedish was conducted to understand the impacts of Alternative 8 on the bus service. This evaluation takes into consideration service changes and ridership increases described as part of the No Build analysis.

A portion of Swedish transit riders could be using other transit modes such as rail, ferry, or connecting with bus service at a different location. This analysis assumes that all of the projected increase in transit ridership as a result in the growth associated with Alternative 8 would use the bus service. An evaluation was conducted for both the 2023 and 2040 conditions during the weekday AM and PM peak periods.

Figures 24 and 25 provide a comparison of No Build and Alternative 8 passenger loads and remaining capacity during the weekday AM and PM peak periods. The development for Alternatives 8, 9 and 10 are consistent in 2023; therefore, the evaluation is representative the impacts associated with all the Build Alternatives. As shown in the figures, even with the anticipated service cuts and increase in ridership, there is adequate capacity to accommodate increased ridership on the Swedish Cherry Hill bus service.

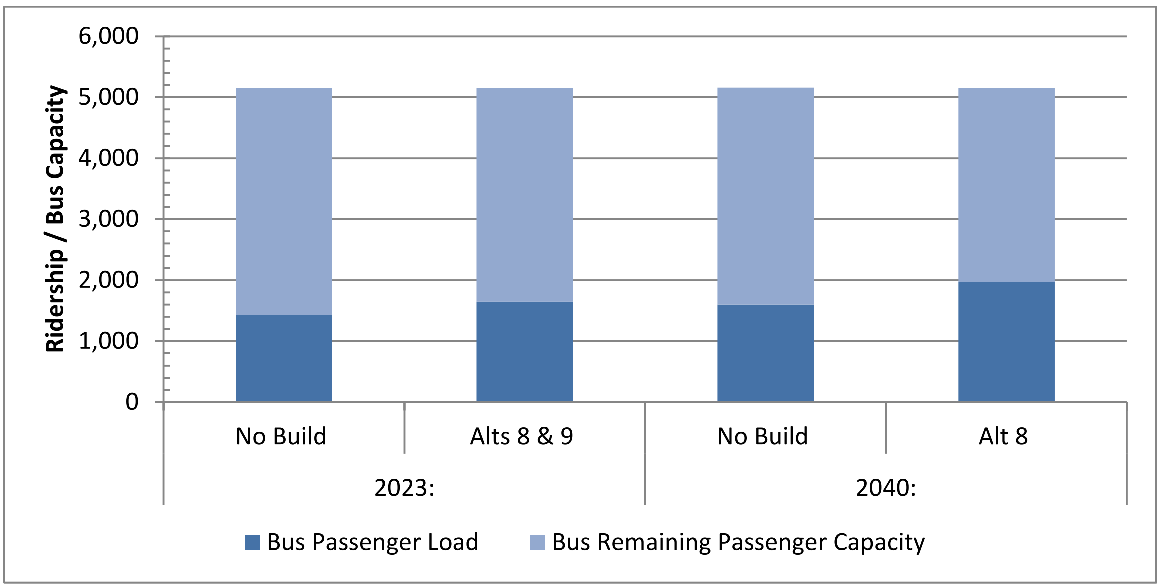


Figure 24 Comparison of No Build and Alternative 8 Weekday AM Peak Period Bus Transit Capacity and Ridership

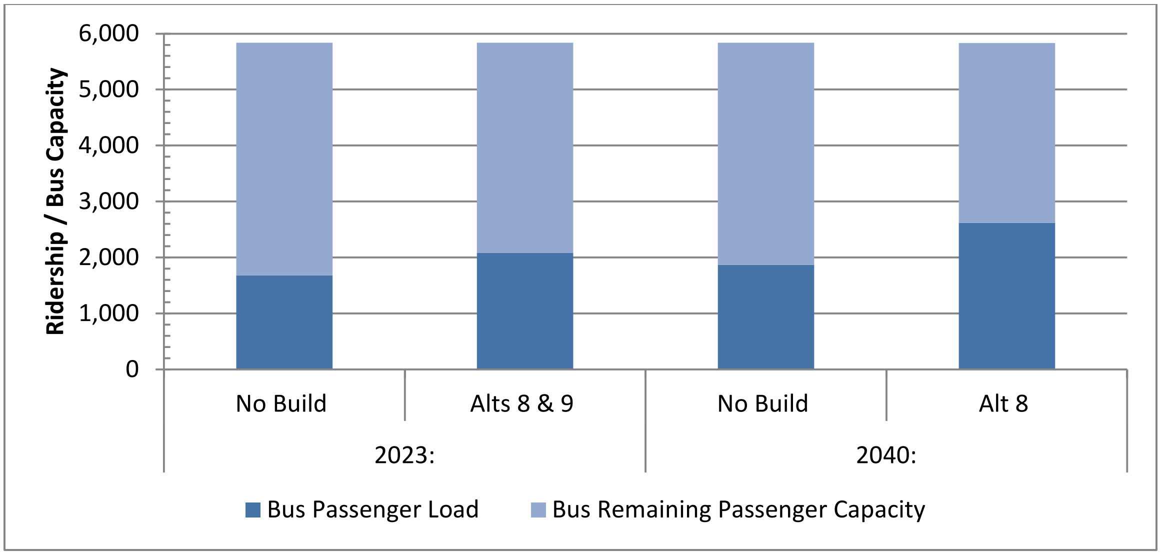


Figure 25 Comparison of No Build and Alternative 8 Weekday PM Peak Period Transit Capacity and Ridership

As described in the Affected Environment, Swedish Cherry Hill operates an inter-campus shuttle service that serves Swedish First Hill Campus, Cherry Hill Campus, and the Metropolitan Park offices. This service was assumed to continue in the future. The analysis does not assume any increases in shuttle service; however, as staff and patient populations increase it is likely that the service frequency and/or area would change to accommodate the increased demand. In addition, consideration may be given to providing a connection between Swedish Cherry Hill and the streetcar to supplement service cuts and continue to encourage transit use to and from campus.

5.5 Forecast Traffic Volumes

The following provides a summary of the methodology used to forecast the future traffic volumes, inclusive of the proposed campus expansion. This includes a review of Swedish's trip generation, mode share, trip assignment, and trip distribution.

Forecast volumes with the development of the MIMP were developed by adding expansion related traffic to the No Build (Alternative 1) traffic volumes outlined previously. The No Build traffic accessing the Swedish campus was re-routed based on the future location and distribution of the parking supply.

5.5.1 MIMP Trip Generation Estimates

The method for forecasting new trips for Alternative 8 is consistent with the approach described for the No Build conditions and has been used for other Hospital MIMPs in the City of Seattle. Weekday daily, AM peak hour, and PM peak hour trip generation associated with Alternative 8 were estimated based on Swedish Cherry Hill trip generation characteristics and expected increases in Swedish's population. As described in the No Build conditions, the process of determining trip generation included first creating an existing trip generation model and then using that model plus the forecasted growth in Swedish's population and resulting mode splits with the assumed 50 percent SOV rate to determine future trip generation. The following provides an overview of how Alternative 8 trips were estimated.

Unmitigated Future Trip Generation

By 2040, under Alternative 8, the campus population (employees and patients) is projected to nearly double. The future campus population for both 2023 and 2040 was based on the *Swedish Medical Center Cherry Hill Campus Draft Major Institution Master Plan,* April 2014 and data provided by Terrie Martin Consulting, Inc. on behalf of Swedish. Some of the increases in building area are proposed to bring facilities up to modern standards or "right-size" the facility. Although building area nearly triples, population and associated trips do not increase proportionally since modern standards typically include more square-footage per employee or patient.

The term mitigated refers to any changes in mode splits that occur through additional Transportation Management Plan (TMP) measures. The trip generation described here is considered unmitigated since assumptions in mode split and vehicle occupancy are assumed to be the same as No Build conditions. In addition, the percent of trips occurring during the peak hours is assumed to be the same as the No Build conditions.

Figure 26 below illustrates the process used to estimate the future increase in trip generation for the Swedish Cherry Hill MIMP.

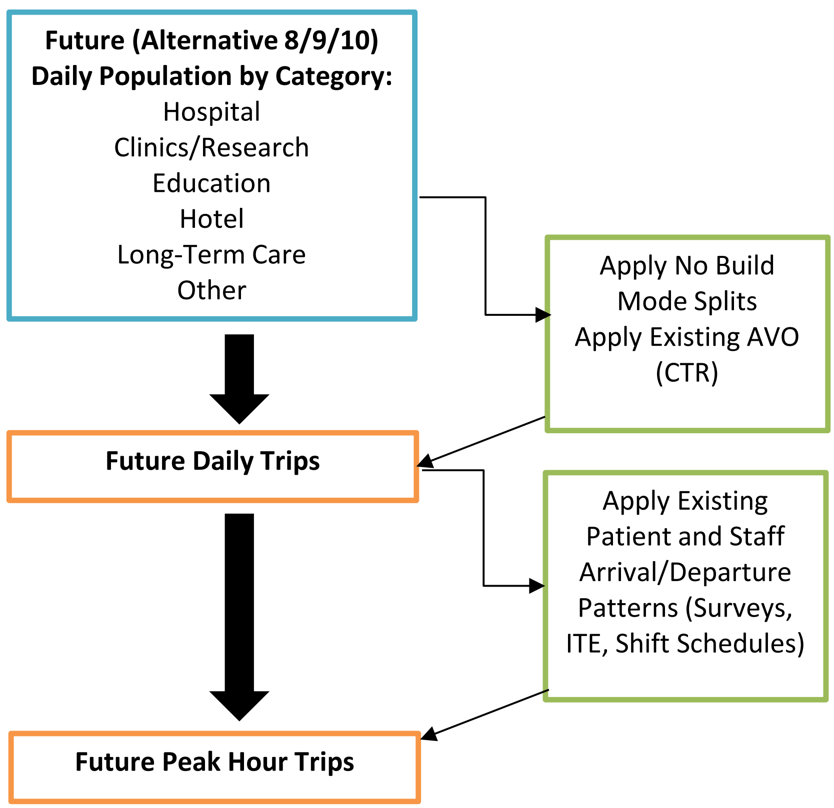


Figure 26 Future Trip Generation Process

Table 10 summarizes the trip generation for the existing and future conditions. **Attachment C-4** provides the detailed trip generation model for future conditions. As shown in the table, based on the model, the Swedish Cherry Hill campus would generate 5,439 daily trips with 379 occurring during the AM peak hour and 520 occurring during the PM peak hour under No Build conditions. The short-term or Phase 1 development would increase trips by 2,855 net new daily trips with 198 new trips occurring during the AM peak hour and 264 new trips occurring during the PM peak hour. In addition, the build-out of Alternative 8 would increase trips by 5,814 net new daily trips with 409 new trips occurring during the AM peak hour and 565 new trips occurring during the PM peak hour, compared to No Build trip volumes.

Table 10
Summary of Swedish Cherry Hill MIMP Trip Generation (unmitigated) – Alternative 8

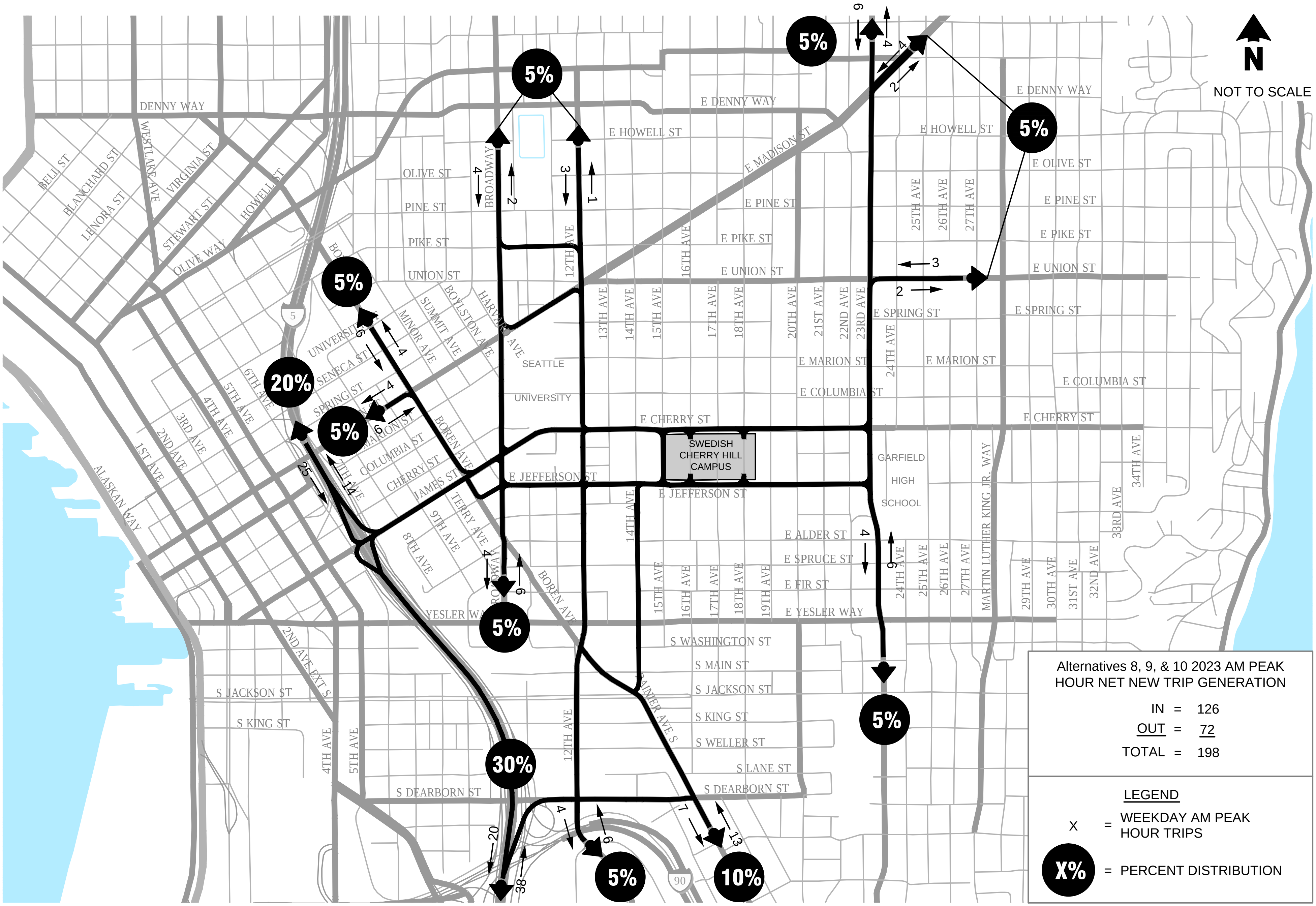
Alternative	Daily Trips	Weekday AM Peak Hour Trips			Weekday PM Peak Hour Trips		
		Inbound	**Outbound**	**Total**	**Inbound**	**Outbound**	**Total**
No Build	5,439	229	150	379	89	431	520
Short-term (2023) – Alternative 8							
Net New Trips	*2,855*	*126*	*72*	*198*	*49*	*215*	*264*
Total Trips	**8,294**	**355**	**222**	**577**	**138**	**646**	**784**
Build-out (2040) – Alternative 8							
Net New Trips	*5,814*	*248*	*161*	*409*	*98*	*467*	*565*
Total Trips	**11,253**	**477**	**311**	**788**	**187**	**898**	**1,085**

5.5.2 Trip Distribution and Assignment

The Swedish Cherry Hill Campus trip distribution patterns assumed in this study are based on travel patterns identified through the most recent Commute Trip Reduction (CTR) surveys. **Figures 27 through 30** illustrate the weekday AM and PM peak hour trip distribution and assignment for the 2023 and 2040 horizon years. The trip distribution patterns developed for the project generally reflect the following:

- 20 percent I-5 north
- 30 percent I- 5 south
- 25 percent north via Madison Street, Broadway, 12th Avenue, and 23rd Avenue
- 25 percent south via Broadway, 12th Avenue, Rainier Avenue, and 23rd Avenue

The same trip distribution patterns were utilized for the 2023 and 2040 analysis. Alternatives 9 and 10 have the same trip generation and assignment as Alternative 8 in 2023; therefore, **Figures 27 and 28** show the trip assignment for all the Build Alternatives. All of the trips associated with Alternative 8 were assigned to the off-street parking on campus, which potentially results in higher impacts at locations nearest the campus than would otherwise occur with off-campus parking.

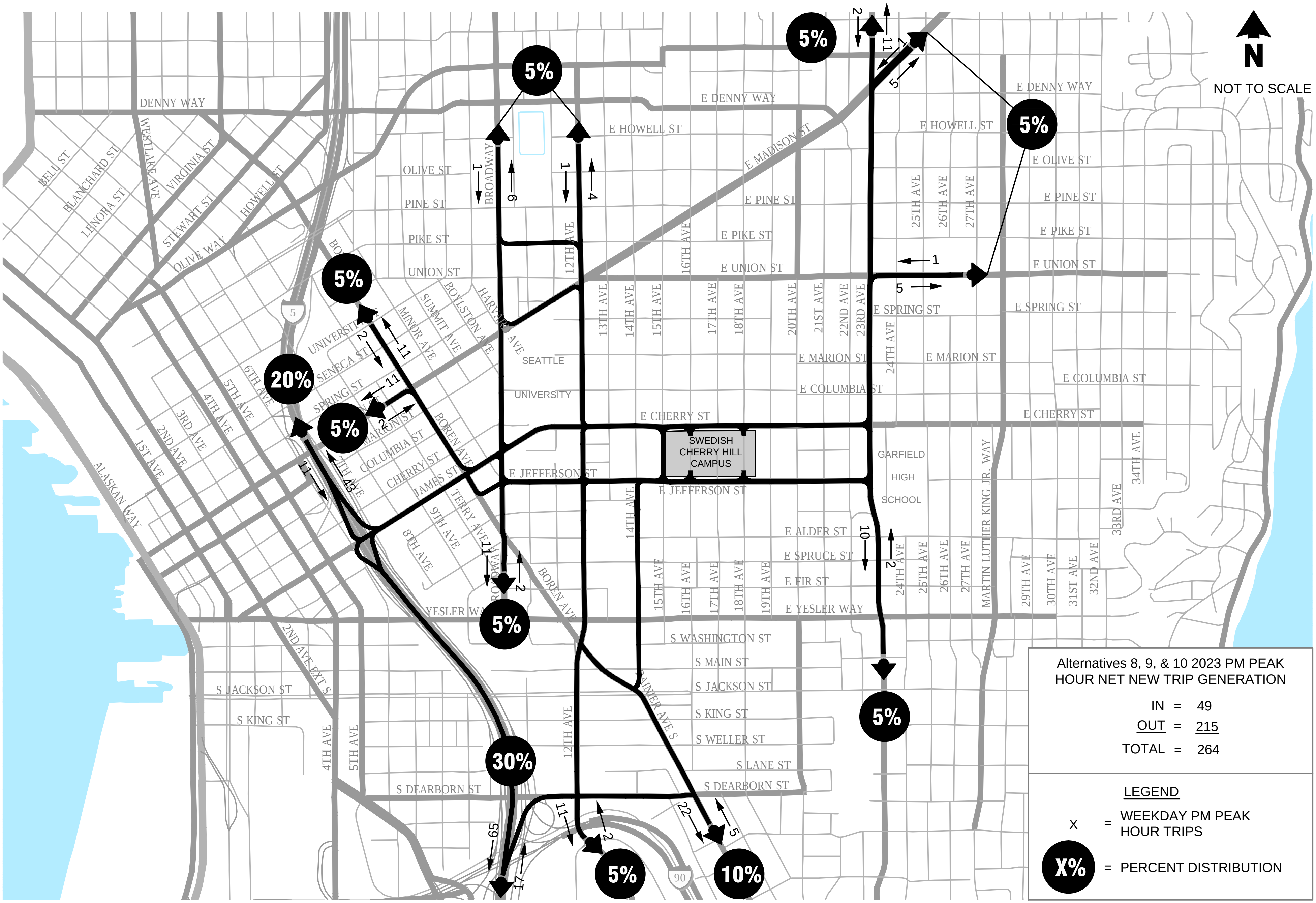


Alternatives 8, 9, & 10 (2023) Weekday AM Peak Hour Trip Distribution and Assignment

FIGURE
27

Swedish Cherry Hill MIMP - DEIS

\\srv-dfs-wa\MM_Projects\Projects\11\11244.00 Swedish Providence Cherry Hill Campus\Graphics\Swedish_Graphic01 <20-AM (2023) dist & assign> kassil 02/13/14 08:53



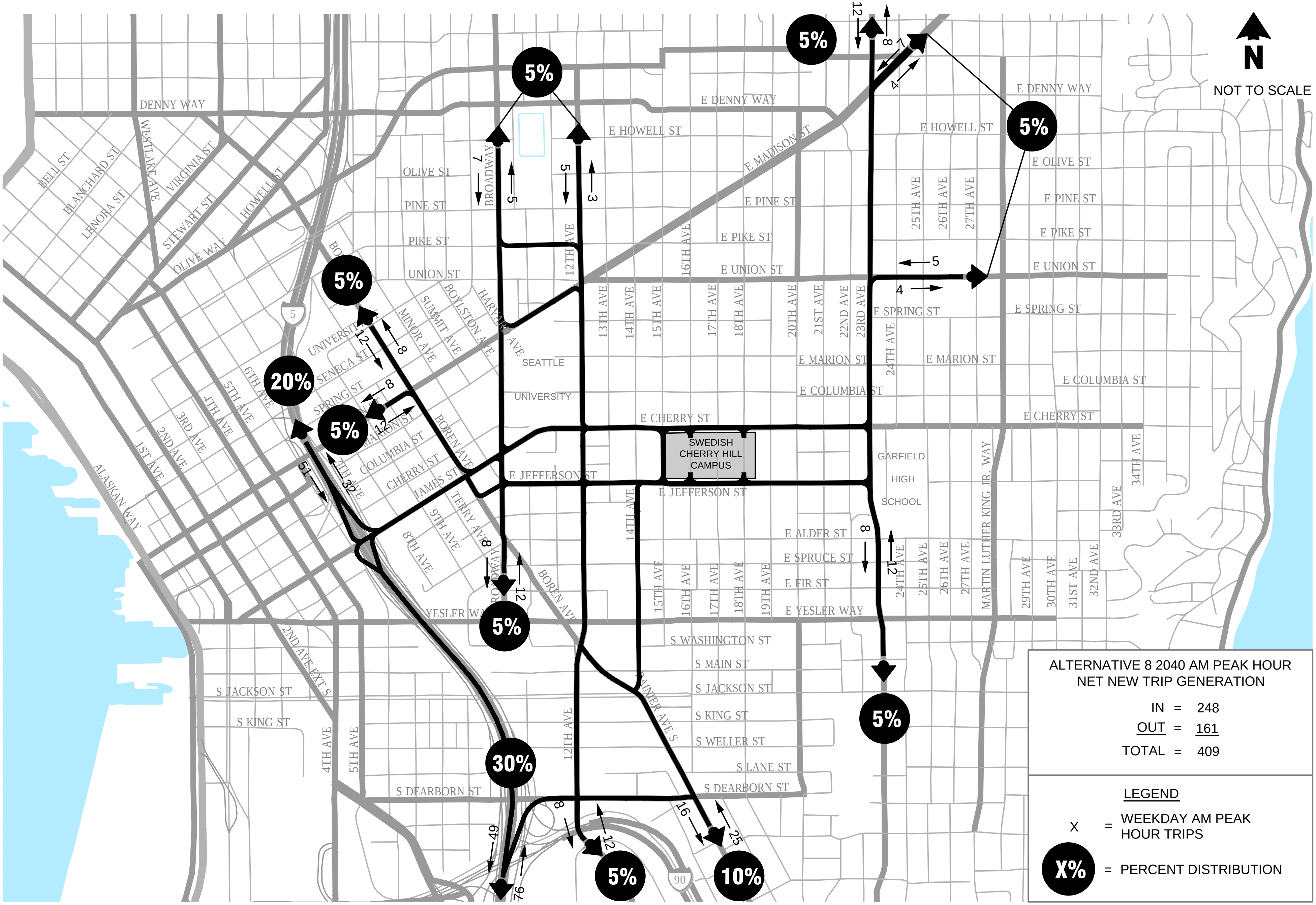
Alternatives 8, 9, & 10 (2023) Weekday PM Peak Hour Trip Distribution and Assignment

FIGURE

28

Swedish Cherry Hill MIMP - DEIS

\\srv-dfs-wa\MM_Projects\Projects\11\11244.00 Swedish Providence Cherry Hill Campus\Graphics\Swedish_Graphic01 <21-PM (2023) dist & assign> kassil 02/13/14 08:53

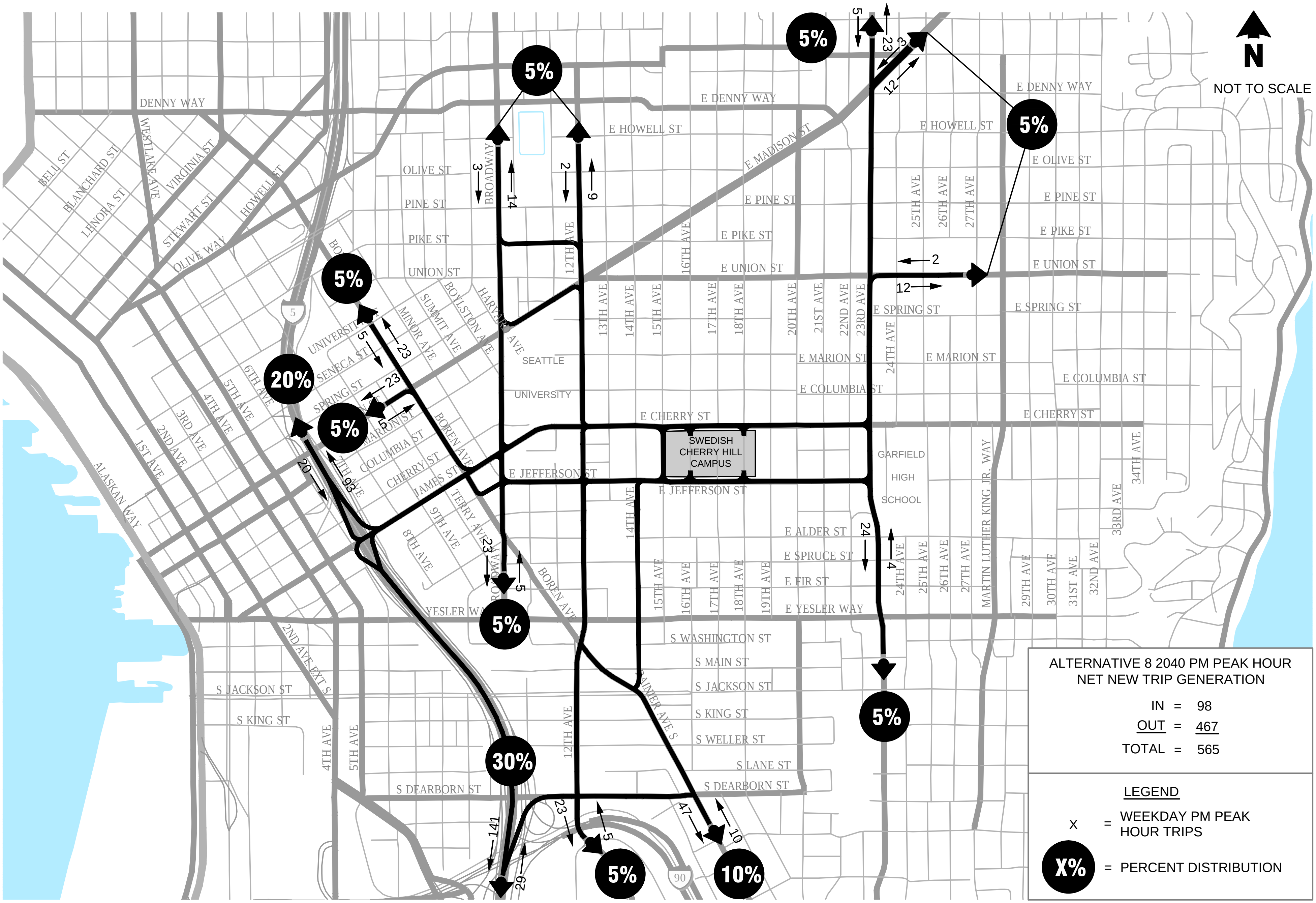


Alternative 8 (2040) Weekday AM Peak Hour Trip Distribution and Assignment

FIGURE
29

Swedish Cherry Hill MIMP - DEIS

\\srv-dfs-wa\MM_Projects\Projects\11\11244.00 Swedish Providence Cherry Hill Campus\Graphics\Swedish_Graphic01 <22-AM (2040) dist & assign> kassil 02/13/14 08:53



Alternative 8 (2040) Weekday PM Peak Hour Trip Distribution and Assignment

FIGURE

30

Swedish Cherry Hill MIMP - DEIS

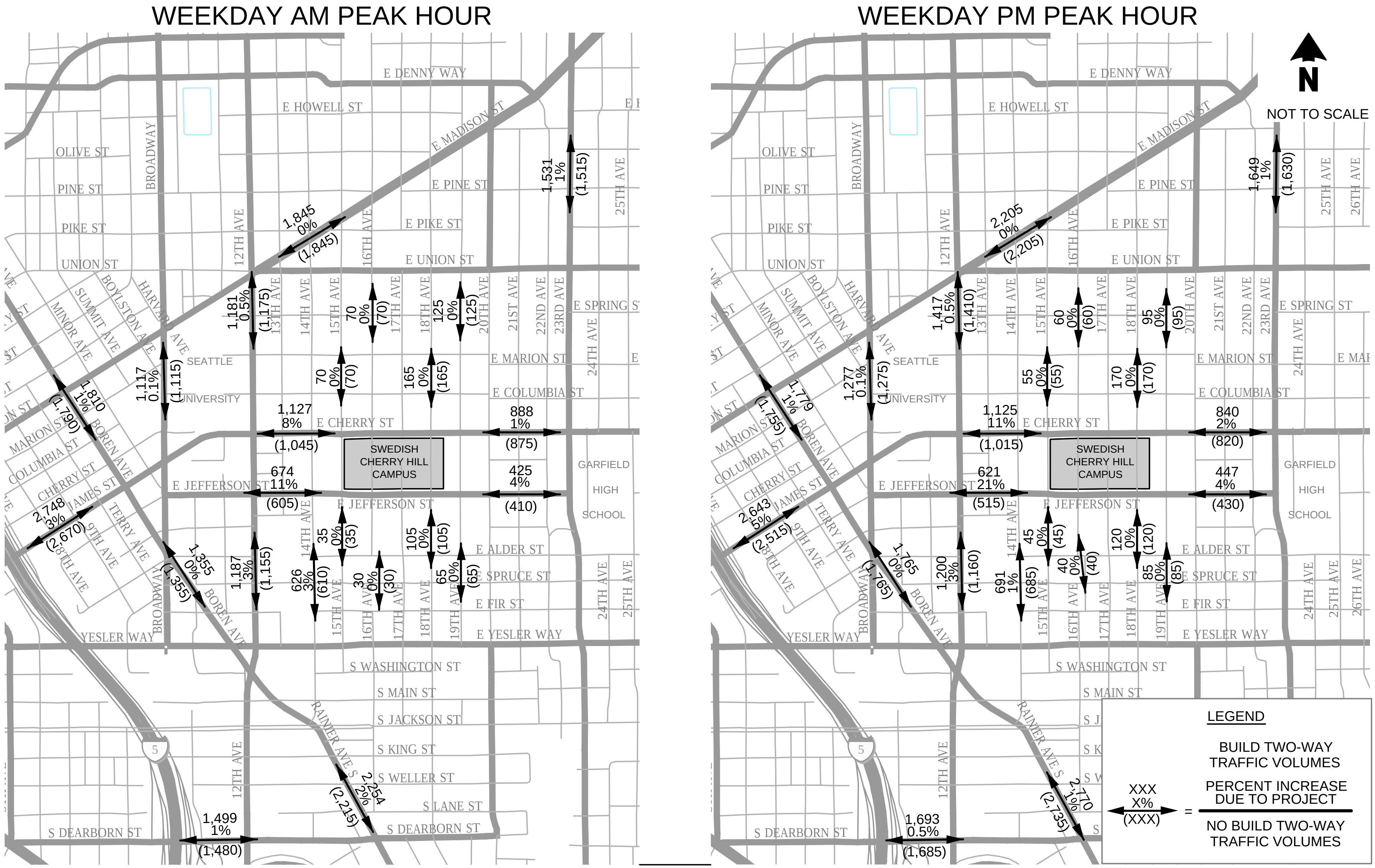
\\srv-dfs-wa\MM_Projects\Projects\11\11244.00 Swedish Providence Cherry Hill Campus\Graphics\Swedish_Graphic01 <23-PM (2040) dist & assign> kassil 02/13/14 08:53

5.5.3 Alternative 8 Forecast Traffic Volumes

Traffic associated with the expansion of the campus were added to the No Build traffic volumes to form the basis of the Alternative 8 analysis. **Figures 31 and 32** summarize the 2023 and 2040 weekday AM and PM peak hour traffic forecasts for Alternative 8. Alternatives 9 and 10 are also noted on **Figure 31** since the 2023 traffic volumes would be the same as Alternative 8 2023 conditions. The intersection turning movement summaries are included in **Attachment C-1**.

As shown on **Figure 31**, for the 2023 horizon year, increases in the weekday AM peak hour traffic volumes would vary by segment, but is no more than 82 vph on any one segment. Due to the existing grid network and the overall distribution patterns of the traffic, the traffic volume increases associated with the expansion are distributed over multiple streets. Minimal increases in traffic volumes are expected furthest from the site, whereas the streets closest to the site have the greatest volume increases. During the weekday 2023 AM peak hour, traffic volumes at the outer edges of the study area, both north and south of the project site, are forecast to increase by less than 0.1 to up to 3 percent. Near the campus where project related traffic is concentrated, increases on the order of 1 to 11 percent are anticipated. Specifically, the largest volume increase is along James Street/E Cherry Street between I-5 and 23rd Avenue. Traffic volumes along James Street/E Cherry Street increase by 1 to 8 percent with volumes ranging between approximately 888 and 2,748 vph with the proposed expansion, as compared to 875 to 2,670 vph under No Build conditions. The second largest volume increase occurs along E Jefferson Street between Broadway and 23rd Avenue with Alternative 8 ranging between 425 and 674 vph compared to 410 to 605 under No Build conditions; this represents an approximately 4 to 11 percent increase in traffic volumes along E Jefferson Street.

Increases in traffic volumes during the 2023 weekday PM peak hour conditions are slightly higher than identified for the weekday AM peak hour period. During the weekday 2023 PM peak hour, traffic volumes at the outer edges of the study area, both north and south of the project site, would increase by less than 0 to 5 percent with development of Alternative 8. Near the campus where project related traffic is concentrated, increases on the order of 2 to 21 percent are anticipated. **Figure 31** summarizes the forecast 2023 weekday PM peak hour link volumes. Specifically, the largest increase in traffic on any roadway segment is on the order of 130 vph along the Cherry Street/James Street corridor, west of Broadway, with volumes as high as 2,643 vph near the I-5 interchange compared to 2,515 vph under the No Build conditions. This represents a four percent increase in traffic volume along James Street. The greatest percentage increase in traffic volumes between No Build and Alternative 8 during the weekday PM peak hour occurs along E Jefferson Street near 12th Avenue where Alternative 8 would increase weekday PM peak hour traffic by 21 percent with 621 vph anticipated as compared to 515 vph in the No Build. The second highest percentage increase is forecast along E Cherry Street, adjacent to the campus, with dual direction traffic volumes ranging between 840 to 1,125 vph depending on the individual block with a 2 to 11 percent increase.

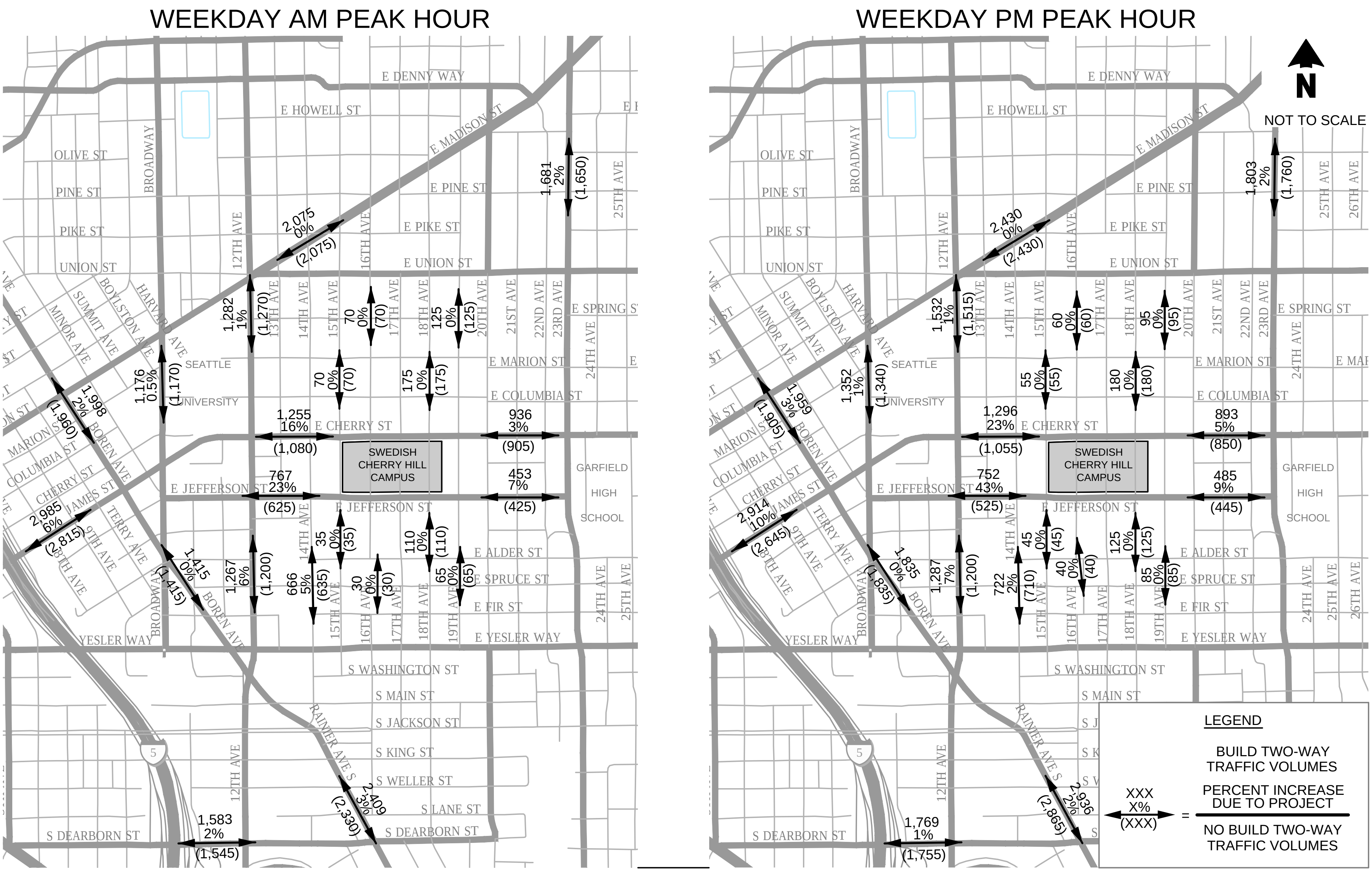


Alternatives 8, 9, & 10 (2023) Weekday Peak Hours Two-Way Link Volumes

FIGURE **31**

Swedish Cherry Hill MIMP - DEIS

\\srv-dfs-wa\MM_Projects\Projects\11\11244.00 Swedish Providence Cherry Hill Campus\Graphics\Swedish_Graphic01 <24-Build with Vac (2023) Two-Way Link> kassil 02/13/14 08:53



Alternative 8 (2040) Weekday Peak Hours Two-Way Link Volumes

FIGURE **32**

Swedish Cherry Hill MIMP - DEIS

\\srv-dfs-wa\MM_Projects\Projects\11\11244.00 Swedish Providence Cherry Hill Campus\Graphics\Swedish_Graphic01 <25-Build with Vac (2040) Two-Way Link> kassil 02/13/14 08:53

As shown in **Figure 32**, in 2040, during the weekday AM peak hour, traffic volumes at the outer edges of the study area, both north and south of the project site, are forecast to increase between 0 to 6 percent. Near the campus where project related traffic is concentrated, increases on the order of 3 to 23 percent are anticipated. Specifically, forecast increases along E Cherry Street and E Jefferson Street range from 28 to 175 vehicles depending on the roadway segment. The largest volume increase is along E Cherry Street between I-5 and 23rd Avenue. Traffic volumes along E Cherry Street range between 936 and 2,985 vph with the proposed expansion, as compared to 905 to 2,815 vph under No Build condition. The second largest volume increase between No Build 2040 and Alternative 8 is anticipated along E Jefferson Street. Traffic volumes along E Jefferson Street between Broadway and 23rd Avenue range from 453 to 767 vph compared to 425 to 625 vph under No Build condition.

As shown in **Figure 32,** during the weekday 2040 PM peak hour, traffic volumes at the outer edges of the study area, both north and south of the project site, are forecast to increase by less than 1 to 10 percent. Near the campus where project related traffic is concentrated, increases on the order of 5 to 43 percent are anticipated. Specifically, increases of up to 240 vehicles are anticipated along E Cherry Street near 12th Avenue. Forecast volumes with the proposed expansion are anticipated to be as high as 2,914 vph near the I-5 interchange compared to 2,645 vph under the No Build condition. The greatest percentage increase of volumes from No Build to Alternative 8 during the weekday PM peak hour would be along E Jefferson Street at 12th Avenue with a 43 percent increase in traffic volumes. The second highest volume increase would be along E Cherry Street, adjacent to the campus, with dual direction traffic volumes ranging between 893 to 1,296 vph depending on the individual block, a 5 to 23 percent increase from the No Build conditions with volumes ranging between 850 and 1,055 vph.

5.6 Traffic Operations

The following describes the future intersection and corridor operations, consistent with previous sections. The results of the intersection LOS and corridor performance analysis are summarized for the weekday AM and PM peak hours for 2023 and 2040 horizon years.

5.6.1 Intersection Operations

Intersection LOS was calculated at the study intersections using the same method outlined in previous sections. **Figure 33** provides a comparison between No Build and Alternative 8 weekday AM and PM peak hour LOS for the study area. Specific Alternative 8 2023 and 2040 weekday peak hour LOS for each study intersection are displayed on **Figures 34 through 37** with detailed LOS calculations provided in **Attachment C-3**.

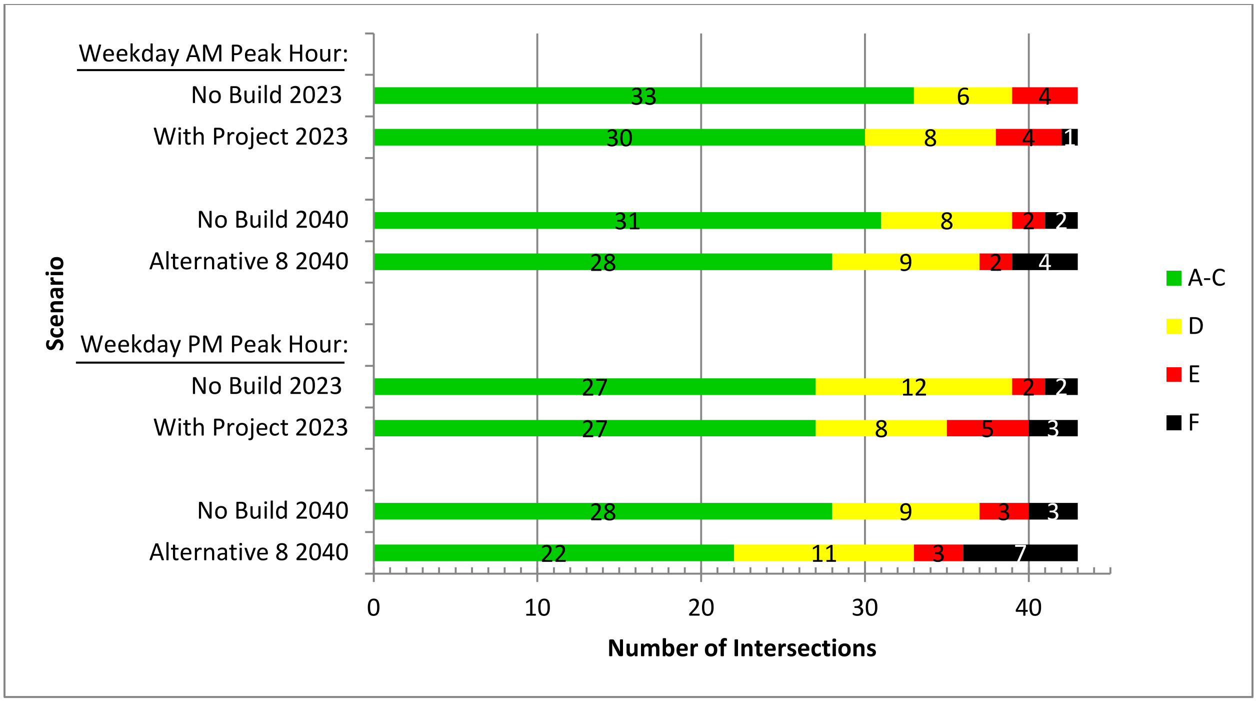


Figure 33 No Build and Alternative 8 Weekday Peak Hour Intersection Level of Service Comparison

As shown on **Figure 33**, during the weekday AM peak hour, Alternative 8 would result in one additional intersection operating at LOS F in 2023. During the weekday PM peak hour, the addition of traffic associated with Alternative 8 would result in three additional intersections operating at LOS E and one additional intersection operating at LOS F. In 2040, compared to the No Build conditions, Alternative 8 would result in two additional intersections operating at LOS F during the weekday AM peak hour and four additional intersections operating at LOS F during the weekday PM peak hour.

Figures 34 through 37 and the discussion that follows provide additional detail regarding the potential impacts of Alternative 8 during the weekday AM and PM peak hours. **Figures 34 and 35** also identify Alternatives 9 and 10 since the 2023 conditions are the same for all Build Alternatives.

Alternatives 8, 9, & 10 (2023) Weekday AM Peak Hour Levels of Service Summary

FIGURE 34

Swedish Cherry Hill MIMP - DEIS

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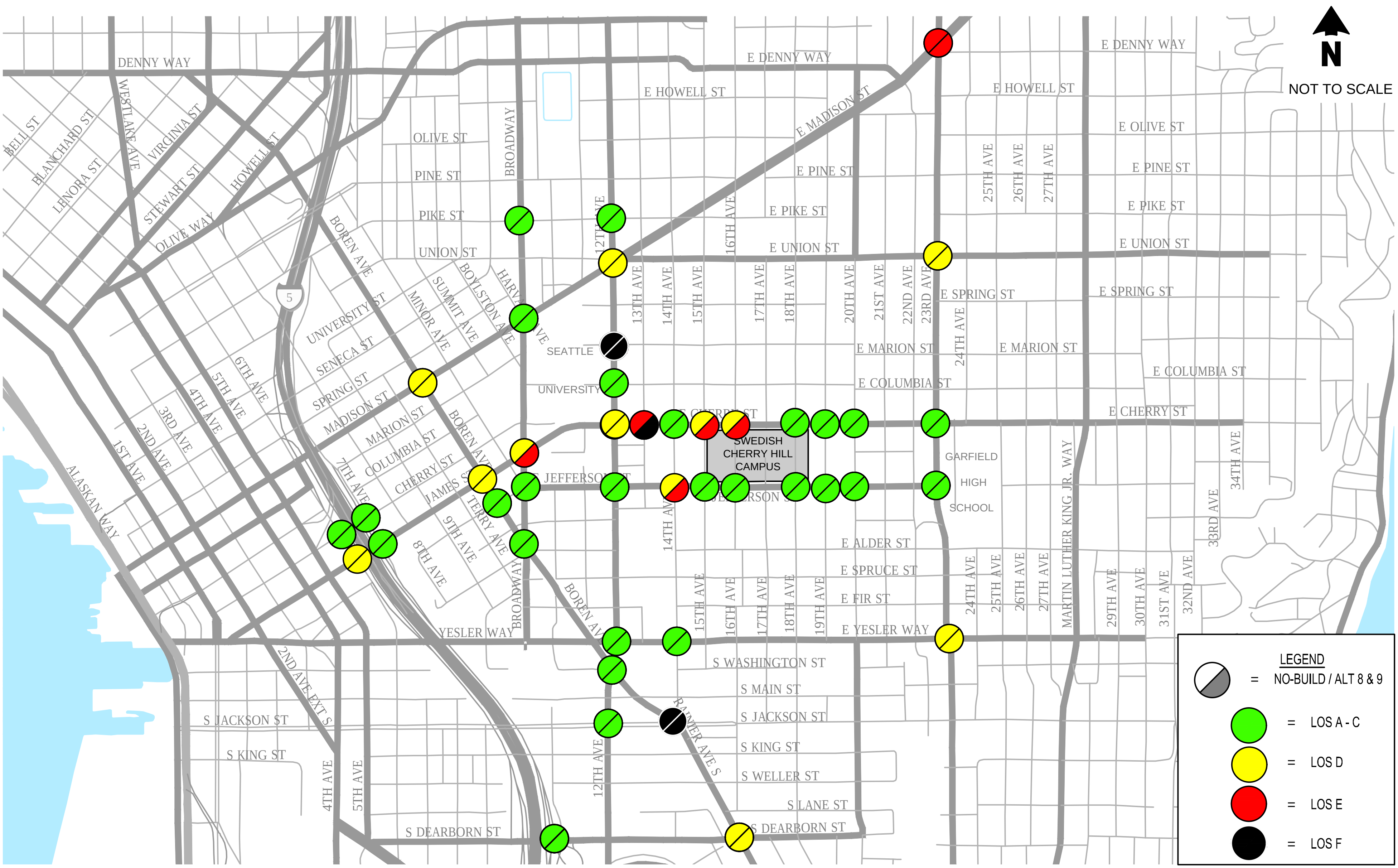


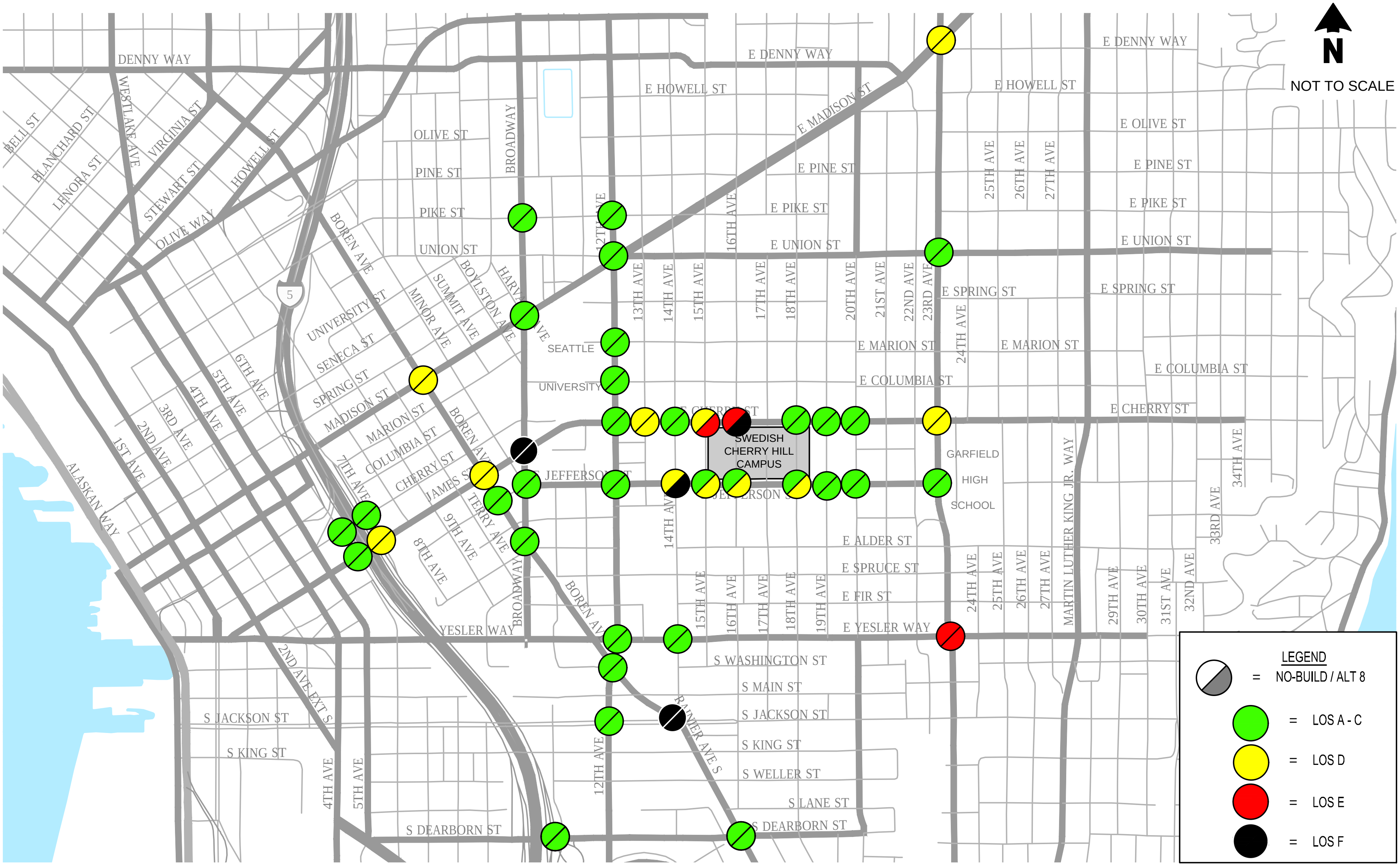
Alternatives 8, 9, & 10 (2023) Weekday PM Peak Hour Levels of Service Summary

Swedish Cherry Hill MIMP - DEIS

\\srv-dfs-wa\MM_Projects\Projects\11\11244.00 Swedish Providence Cherry Hill Campus\Graphics\Swedish_Graphic01 <28-LOS PM (2023)> kassil 02/13/14 08:53

FIGURE

35

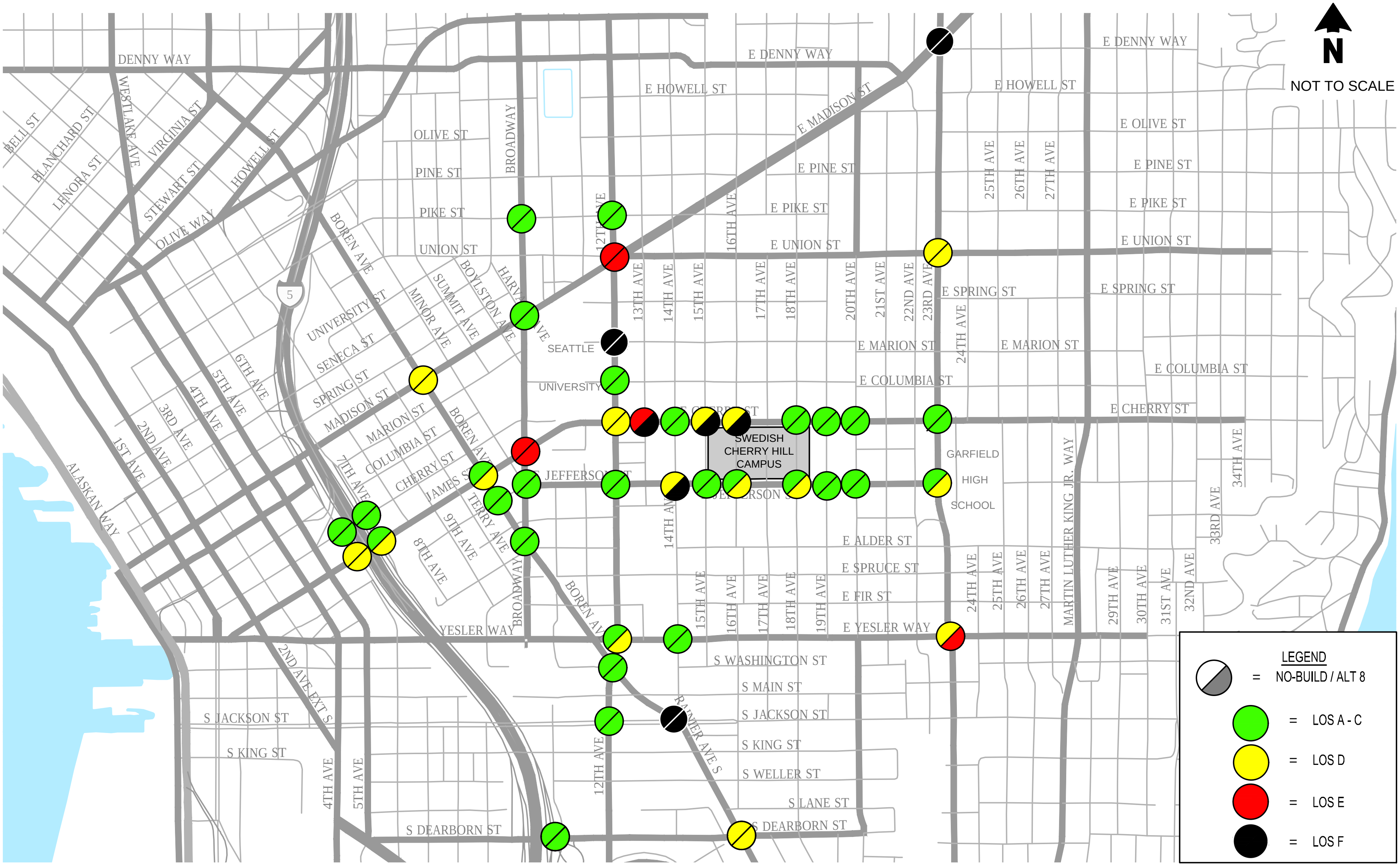


Alternative 8 (2040) Weekday AM Peak Hour Levels of Service Summary

FIGURE **36**

Swedish Cherry Hill MIMP - DEIS

\\srv-dfs-wa\MM_Projects\Projects\11\11244.00 Swedish Providence Cherry Hill Campus\Graphics\Swedish_Graphic01 <29-LOS AM (2040) Alt 8> kassil 02/13/14 08:53



Alternative 8 (2040) Weekday PM Peak Hour Levels of Service Summary

Swedish Cherry Hill MIMP - DEIS

\\srv-dfs-wa\MM_Projects\Projects\11\11244.00 Swedish Providence Cherry Hill Campus\Graphics\Swedish_Graphic01 <30-LOS PM (2040) Alt 8> kassil 02/13/14 08:53

FIGURE 37

Intersections identified are forecasted to operate at LOS E or F during either the AM or PM peak hours in 2023 include:

- **23rd Avenue / Madison Street** – This intersection would continue to operate at LOS E during the weekday PM peak hour with the development of Alternative 8. As noted in the No Build analyses, transit related projects along the Madison Street corridor are expected to reduce overall intersection capacity. The change in delay as a result of Alternative 8 is anticipated to be less than one second.
- **12th Avenue / E Marion Street** – This unsignalized intersection would continue to operate at LOS F during the weekday PM peak hour under Alternative 8 conditions due to the high pedestrian volumes at this location. The worst movement at this side-street stop-controlled intersection being the eastbound left-turn, leaving the Seattle University campus.
- **Broadway / James Street** – During the weekday PM peak hour, operations at this signalized intersection would degrade from LOS D under No Build 2023 conditions to LOS E with development of Alternative 8. During the weekday AM peak hour, LOS E operations would continue for both No Build and Alternative 8 conditions. Alternative 8 would result in a less than 5 second increase in overall delay at the Broadway/James Street intersection.
- **13th Avenue / E Cherry Street** – The northbound approach at this unsignalized intersection would degrade from LOS E under No Build 2023 conditions to LOS F with Alternative 8 during the weekday PM peak hour. Alternative 8 is anticipated to add approximately 15 seconds of delay.
- **15th Avenue / E Cherry Street** – The northbound approach at this unsignalized intersection would degrade from LOS D under No Build 2023 conditions to LOS E under Alternative 8 2023 conditions during the weekday PM peak hour. Traffic volumes on the northbound approach are relatively low with a total weekday PM peak hour volume of approximately 70 vph and the proposed expansion is anticipated to result in an approximately 10 percent increase in overall traffic volumes at this location.
- **16th Avenue / E Cherry Street** – During the weekday AM peak hour, the level of service for the northbound approach would remain at LOS E with development of Alternative 8 and would degrade to LOS E during the weekday PM peak hour from LOS D under No Build conditions. The LOS E operations are associated with the increased traffic volumes on the northbound approach combined with the additional east/west traffic on E Cherry Street. Traffic volumes on the northbound approach are relatively low with a total weekday AM and PM peak hour volumes of approximately 50 to 90 vph, respectively. The expansion is anticipated to result in an approximately 7 to 10 percent increase in overall traffic volumes at the intersection for the weekday AM and PM peak hours.
- **14th Avenue / E Jefferson Street** – Under No Build conditions, this intersection is forecast to operate at LOS D during both the AM and PM peak hours. With the development of Alternative 8, this intersection would degrade to LOS E during both the AM and PM peak hours. This intersection is currently controlled by an all-way stop. Under 2023 build conditions, traffic volumes are expected to increase by 6 – 8 percent during the weekday AM and PM peak hours, respectively.

- **23rd Avenue / E Yesler Way** – This signalized intersection would remain at LOS E with the addition of Alternative 8 during the weekday AM peak hour. Alternative 8 traffic would add less one second of delay as compared to No Build 2023 AM peak hour conditions. As discussed previously, poor operations are due to the reduced capacity as a result of the 23rd Avenue Transit Corridor Improvements.
- **14th Avenue / S Jackson Street** – This signalized intersection is projected to operate at LOS F during both the weekday AM and PM peak hour under Alternative 8 conditions. As discussed previously, poor operations are related to signal operations as a result of the streetcar. The proposed expansion would increase traffic at this intersection by approximately one percent during both the AM and PM peak hours resulting in an increase in intersection delay of approximately 7 and 4 seconds during the AM and PM peak hours, respectively.

By 2040 with the development of Alternative 8, the intersections operating at LOS E or worse include:

- **12th Avenue / Madison Street** – This intersection would continue operating at LOS E during the weekday PM peak hour under Alternative 8 conditions. The proposed expansion is anticipated to increase intersection delay by less than one second as compared to the No Build 2040 conditions reflecting an increase in traffic volumes of less than one percent during the weekday PM peak hour.
- **23rd Avenue / Madison Street** – This intersection would continue to operate at LOS F during the weekday PM peak hour. The proposed expansion is anticipated to increase intersection delay by approximately one second as compared to the No Build 2040 conditions reflecting an increase in traffic volumes of approximately one percent during the weekday PM peak hour.
- **12th Avenue / E Marion Street** – This intersection would continue to operate at LOS F on the eastbound left-turn movement with the development of Alternative 8 during the weekday PM peak hour. Poor operations at this intersection are related to the high level of pedestrian volumes. The expansion is anticipated to result in an increase of approximately one percent in overall traffic volumes at the intersection.
- **Broadway / James Street** – Operations at this signalized intersection would continue to operate at LOS F during the weekday AM peak hour and LOS E during the weekday PM peak hour under Alternative 8 conditions. Alternative 8 would increase traffic at this intersection by approximately 5 and 7 percent during the weekday AM and PM peak hours in 2040, respectively.
- **13th Avenue / E Cherry Street** – Operations of the northbound approach of this unsignalized intersection would degrade from LOS E under No Build 2040 conditions to LOS F under Alternative 8 2040 conditions during the weekday PM peak hour. The LOS F operations are related to the increases in traffic volumes along Cherry Street as a result of the project. Northbound and southbound traffic volumes range between 70 and 95 vph during the weekday PM peak hour under 2040 conditions. Alternative 8 would result in an increase in overall traffic volumes of approximately 20 percent at the 13th Avenue/E Cherry Street intersection in 2040 during the weekday PM peak hour.
- **15th Avenue / E Cherry Street** – The northbound approach at this unsignalized intersection would degrade from LOS D under No Build 2040 conditions to LOS F under Alternative 8

2040 conditions during the weekday PM peak hour. During the weekday AM peak hour, operations on the northbound approach would degrade from LOS D under the No Build 2040 conditions to LOS E under Alternative 8 2040 conditions. The LOS E and F operations are related to the increases in traffic volumes along Cherry Street as a result of the project. Northbound and southbound traffic volumes range between 25 and 100 vph during the weekday PM peak hour under 2040 conditions and Alternative 8 would result in an approximately 24 percent increase in traffic volumes at this intersection. Similarly, during the weekday AM peak hour, the northbound and southbound traffic volumes range between 25 and 60 vph under 2040 conditions and Alternative 8 would result in an approximately 16 percent increase in traffic volumes at this intersection.

- **16th Avenue / E Cherry Street** – The operations on the northbound approach of this unsignalized intersection would degrade from LOS E and D under No Build 2040 conditions during the weekday AM and PM peak hours, respectively, to LOS F under Alternative 8 2040 conditions during both the weekday AM and PM peak hours. The LOS F operations are related to the increases in traffic volumes along Cherry Street with approximately 55 to 125 northbound left-turns during the AM and PM peak hours. During the weekday AM and PM peak hours in 2040, overall traffic volumes would increase by approximately 15 to 20 percent, respectively, at 16th Avenue/E Cherry Street with the development of Alternative 8.
- **14th Avenue / E Jefferson Street** – Under No Build conditions, this intersection is forecast to operate at LOS D during both the AM and PM peak hours. With the development of Alternative 8 this intersection degrades to LOS F during both the AM and PM peak hours. This intersection is currently controlled by an all-way stop. Under 2040 build conditions, traffic volumes are expected to increase by 13 – 19 percent during the AM and PM peak hours, respectively.
- **23rd Avenue / E Yesler Way –** Under No Build 2040 conditions, this intersection is anticipated to operate at LOS E during the weekday AM peak hour and LOS D during the weekday PM peak hour. With the development of Alternative 8, this intersection would operate at LOS E during both the weekday AM and PM peak hours. Alternative 8 would increase delay by approximately one second during the weekday AM and PM peak hours. In addition, Alternative 8 would increase traffic at this intersection by approximately one percent during the weekday AM peak hour and PM peak hours.
- **14th Avenue / S Jackson Street** – This signalized intersection is projected to operate at LOS F during the weekday AM and PM peak hours under No Build and Alternative 8 conditions. As discussed previously, poor operations are related to signal operations as a result of the streetcar. The project would result in an increase in intersection delay of approximately 24 seconds during the weekday AM peak hour and 7 seconds during the weekday PM peak hour and less than three percent increase in overall intersection traffic volumes during both the weekday AM and PM peak hours.

All other study intersections would operate at LOS D or better with Alternative 8 under 2023 and 2040 conditions during both the weekday AM and PM peak hours.

Neighborhood Assessment

During the weekday AM peak hour, within the immediate vicinity of the campus, intersections along E Cherry and E Jefferson Streets are expected to operate at LOS D or better under 2023 conditions except for two unsignalized intersections, 14th Avenue/E Jefferson Street and 16th Avenue/E Cherry Street. As described above, the 14th Avenue/E Jefferson Street intersection would operate at LOS E due to the anticipated increases in traffic volumes along both 14th Avenue and E Jefferson Street. The 16th Avenue/E Cherry Street intersection operates at LOS E due to anticipated growth in volumes at the intersection. By 2040, during the weekday AM peak hour, the 15th Avenue/E Cherry Street intersection would also degrade to LOS E and the 14th Avenue/E Jefferson Street and 16th Avenue/E Cherry Street intersections would degrade to LOS F. These operations are related to the overall increases in traffic volumes along both E Cherry Street and E Jefferson Street.

During the weekday PM peak hour, under 2023 conditions, intersections along E Cherry and E Jefferson Streets operate at LOS D or better, with the exception of four intersections, 13th Avenue/ E Cherry Street, 15th Avenue/E Cherry Street, 16th Avenue/E Cherry Street, and 14th Avenue/E Jefferson Street. As described above, these four intersections are stop controlled, 13th, 15th, and 16th Avenue along E Cherry Street being two-way stop controlled and 14th Avenue / E Jefferson Street being a four-way stop controlled intersection. The 15th Avenue/E Cherry Street, 16th Avenue/E Cherry Street, and 14th Avenue/E Jefferson Street intersections would operate at LOS E and the 13th Avenue/E Cherry Street intersection would operate at LOS F due to increased project volumes through these intersections.

Increases in traffic volumes of up to 43 percent along E Cherry and E Jefferson Streets would make it progressively more challenging for side-street traffic to enter the traffic stream. By 2040, during the weekday PM peak hour with the development of Alternative 8, intersections along E Cherry and E Jefferson Streets are projected to operate at LOS D or better, with the exception of four intersections, the three intersections previously mentioned as well as 16th Avenue/ E Cherry Street. The three intersections along E Cherry Street are two-way stop controlled and the 14th Avenue/E Jefferson Street intersection is four-way stop controlled. All four intersections operate at LOS F as a result of increases in traffic volume with the proposed expansion.

Along E Cherry Street traffic signals exist at the 14th Avenue/E Cherry Street and 18th Avenue/E Cherry Street intersections. These traffic signals provide an opportunity to utilize a signal controlled intersection to exit from the neighborhood, if the unsignalized intersection approaches exceed the delay tolerance for a driver. The two existing signalized intersections are projected to operate at LOS C or better during the weekday AM and PM peak hours in 2040.

5.6.2 Corridor Operations

Consistent with the Affected Environment and No Build evaluations, the travel speeds and travel times along E Cherry Street/James Street from I-5 to 23rd Avenue were evaluated using Synchro. A comparison of travel times along the James Street and E Cherry Street corridors under No Build and Alternative 8 conditions is provided in **Table 11**. Travel time calibration factors discussed in previous sections were applied to the Alternative 8 projections.

Table 11
Weekday Peak Hour Comparison of No Build and Alternative 8 Travel Times

Segment	Direction	2023 Horizon Year				2040 Horizon Year			
		Travel Time (m:ss)[1]		Average Speed (mph)		Travel Time (m:ss)[1]		Average Speed (mph)	
		No Build	Alt 8	No Build	Alt 8	No Build	Alt 8	No Build	Alt 8
AM Peak Hour									
James Street (6th Ave to Broadway)	EB	04:12	04:14	7	7	04:24	04:23	7	7
	WB	03:31	03:45	9	8	03:34	04:11	9	7
E Cherry Street (Broadway to 23rd Ave)	EB	04:19	04:13	12	12	04:09	04:13	13	12
	WB	02:59	03:01	12	12	02:53	03:04	13	12
PM Peak Hour									
James Street (6th Ave to Broadway)	EB	04:11	04:11	7	7	04:11	04:13	7	7
	WB	06:30	07:32	5	5	05:52	09:06	6	4
E Cherry Street (Broadway to 23rd Ave)	EB	01:51	01:51	19	19	01:51	01:52	19	19
	WB	03:10	03:29	11	10	03:11	03:39	11	10

1. m:ss = minutes:seconds

As shown in **Table 11**, with development of Alternative 8, corridor operations would degrade slightly in 2023 with average speed decreasing by one mph along both James Street in the westbound direction during the AM peak hour and E Cherry Street in the westbound direction during the PM peak hour. As discussed in the review of No Build 2023 conditions, given the existing capacity constraints along the corridor changes in travel times and speeds are generally small. The largest increase in travel time for the 2023 conditions with Alternative 8 would be along James Street in the westbound direction with an increase of approximately one minute. Similar conditions would exist during the 2040 conditions, with travel times and average speeds, showing generally small increases and decreases, respectively, as a result of Alternative 8 compared to No Build conditions. The exception is along James Street in the westbound direction during the weekday PM peak hour where travel time would increase by approximately three minutes between No Build and Alternative 8 conditions in 2040.

5.7 Traffic Safety

Based on the three-year accident history reviewed in Section 3.7, the study area has not experienced an unusually high level of accidents to date except at the James Street/6th Street intersection. In general, as traffic volumes increase, the potential for traffic safety issues increases proportionately. As described in Section 5.5.3, Alternative 8 would increase traffic along both E Cherry Street and E Jefferson Street at varying levels. On E Cherry Street, in the vicinity of the campus, 2040 weekday PM peak hour traffic volumes are forecast to increase by 4 to 20 percent depending on the roadway segment. Similarly, along E Jefferson Street, by 2040 traffic volumes are forecast to increase by 8 to 39 percent during the weekday PM peak hour. It would likely become progressively more challenging for side-street traffic at unsignalized intersections to enter the traffic stream. Indicators of this are found in the Traffic Operations described above.

Increased traffic along the E Cherry Street and E Jefferson Street corridor increases the potential for conflicts between pedestrians and vehicles. Along E Cherry Street several signalized crossing are provided at key intersections. Additional signalized crossings could be considered in the future to provide additional vehicular capacity and pedestrian safety enhancements at key neighborhood connection points. Projects to address intersection capacity and pedestrian/vehicle safety are discussed in the mitigation section of this report.

With the improvements related to the First Hill Streetcar, including additional signalized crossings and bicycle lanes, the safety of pedestrian and bicyclist would likely improve along that alignment. In addition, as part of Alternative 8, pedestrian and bicycle enhancements would be provided along the campus frontage as described in Section 5.3, Pedestrian and Bicycle Transportation.

5.8 Parking

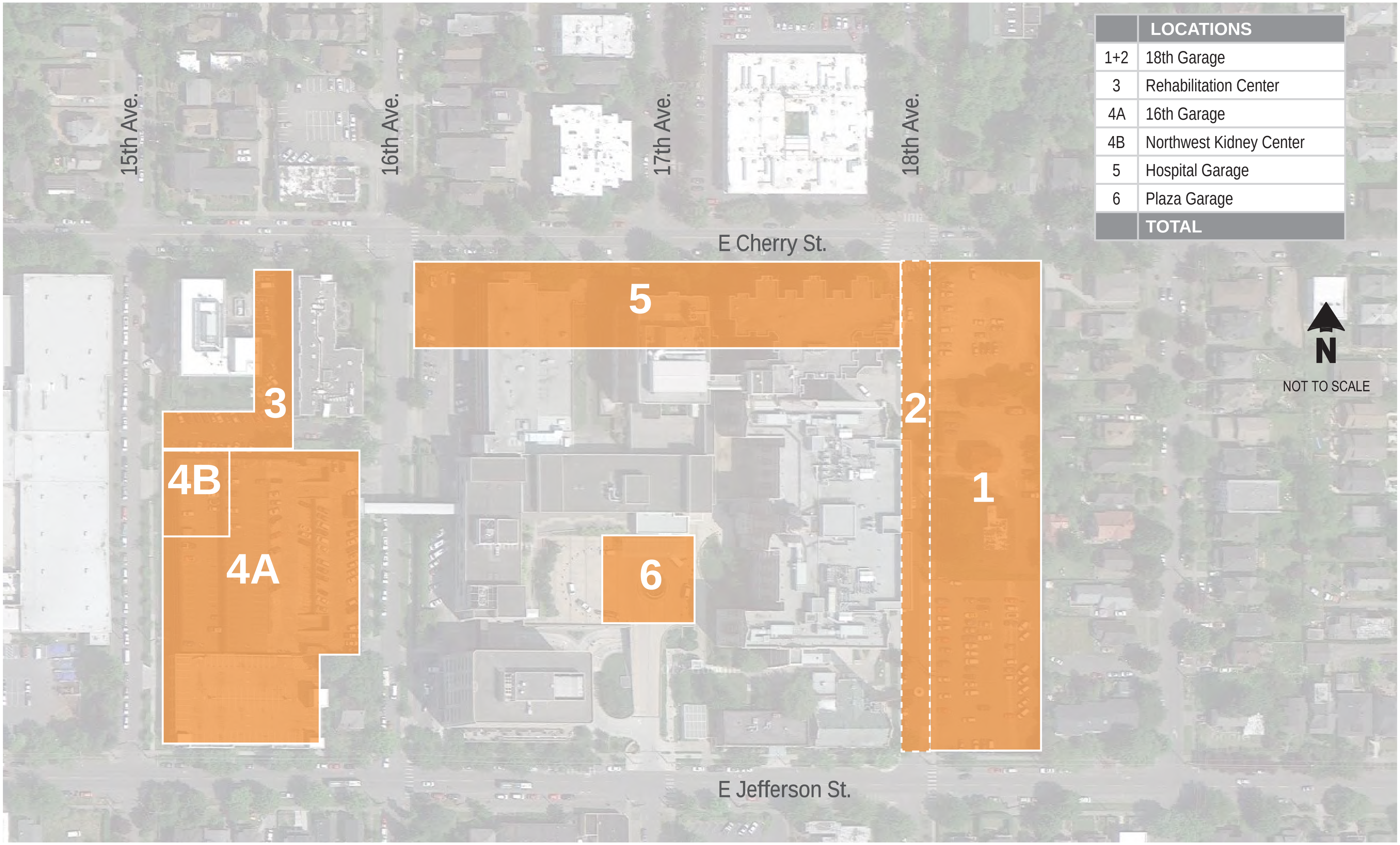
Figure 38 illustrates the proposed location of off-street parking with Alternative 8. Alternatives 9 and 10 would have the same proposed off-street parking locations as Alternative 8. The initial phases of development would include construction of the 18th and 16th parking garages, which would constitute the majority of the Swedish Cherry Hill parking. The following describes the code required parking and anticipated parking demand as a result of Alternative 8.

Code Required Supply

The Seattle Municipal Code (SMC) establishes a minimum and maximum number of parking stalls allowed for Major Institutions.[4] The calculation of parking code requirements is based on 100 percent of the hospital doctors and other employees present during the peak, which is 71 percent of all other employees. The 71 percent adjustment factor for other employees is based on clinic and hospital shift times.

Table 12 summarizes the code required parking for Alternative 8 based on SMC. Projections for staff and patient population are consistent with the trip generation and are based on the *Swedish Medical Center Cherry Hill Campus Draft Major Institution Master Plan*, March 31, 2014. As shown in **Table 12**, SMC would require a minimum of 1,955 parking spaces and a maximum of 2,639 spaces with development of Alternative 8.

[4] Seattle Municipal Code 23.54.016.



Alternatives 8 9 & 10 Swedish Parking Locations

Swedish Cherry Hill MIMP – DEIS

FIGURE 38

transpoGROUP

Q:\Projects\11\11244.00 Swedish Providence Cherry Hill Campus\Graphics\Figures\11244 Fig 38 build parking facilities.pdf

Table 12
Alternative 8 Parking Code Requirement

Zoning Code Category	Unit	Code Requirement[1]	Parking Stall Requirement
Long-term Parking			
Hospital Based Doctors	410	0.80 stalls	328
Staff Doctors	155	0.25 stalls	39
Other Employees Present During Peak	4,246	0.30 stalls	1,274
Short-term Parking			
# of Hospital Beds	605	1 stall per 6 beds	101
Average Daily Outpatients[2]	995	1 per five outpatient	199
Fixed Seats in Auditorium	140	1 stall per 10 seats	14
Minimum Required Parking Spaces			1,955
Maximum Allowed Parking Spaces (1.35 x Minimum)			2,639

1. Seattle Municipal Code 23.54.016.
2. There are 385 hospital beds and 220 beds in the Seattle Medical and Rehabilitation Center.

Demand

Future peak parking demand for the proposed project was developed consistent with the trip generation method. As described in the existing conditions, the peak parking demand for the study area occurs at 10:00 a.m. Future peak parking demands were projected based on the anticipated increases in population. Consistent with the No Build analyses, a 50 percent SOV rate was assumed with Alternative 8. **Table 13** summarizes the No Build and Alternative 8 parking demand.

Table 13
Swedish Cherry Hill Estimated Parking Demand[1] – Alternative 8

Facilities	No Build	Alternative 8	
		2023	**2040**
Hospital	529	794	1,130
Clinic/Research	354	551	700
Education	40	87	121
Hotel	4	7	11
Long-Term Care	40	59	89
Other Support Facilities	47	47	47
Total Parking Demand	**1,014**	**1,545**	**2,098**
Effective Parking Demand[2]	**-**	**1,700**	**2,310**

1. The parking demand by facility is estimated based on mode splits and is not reflective of actual parking classification counts.
2. Effective parking demand equals the calculated parking demand plus 10 percent. The 10 percent factor accounts for circulation and turnover within the parking areas.

Table 13 highlights that current parking supply levels, if efficiently utilized, would be adequate to accommodate No Build demands. By 2023 and 2040, additional parking would be needed to accommodate the anticipated parking demand. Relative to the code required parking supply, the anticipated Alternative 8 effective parking demand of 2,310 vehicles by 2040 would be within the range of the minimum and maximum SMC requirement. The effective parking demand accounts for circulation and turnover within the parking areas.

Existing parking surveys documented some vehicles associated with Swedish using on-street parking in the surrounding neighborhood. It is expected, without further action to discourage it, this activity would continue in the future, with or without MIMP approval. Given the current level of on-street parking use, the rate of occurrence may decrease as available on-street parking becomes increasingly scarce. Further TMP measures and/or cooperation with the City of Seattle parking enforcement may be required to help ensure the constructed on-site parking is used as intended.

6 Impacts of Alternatives 9 and 10

This section documents the impacts associated with the development of Alternatives 9 and 10. Transportation Elements discussed previously in the Affected Environment and No Build discussions are also presented in this section.

The impact analysis of Alternatives 9 and 10 assume a mode-split performance of 50 percent SOV consistent with the No Build and Alternative 8 analyses. As noted previously, the development assumed in the Master Plan is projected to occur over a period of 25 years. Alternatives 9 and 10 would develop 347,000 square-feet less than Alternative 8 for a total of 2,753,000 square-feet. This reduction in square-footage would translate into less hotel, long-term care, and clinical/research development. The short-term (2023) development assumptions for Alternatives 9 and 10 are consistent with the Alternative 8 assumptions.

Table 14 provides a summary of land use assumptions for the short and long term horizon years. As shown in the table, the level of development assumed by the 2023 horizon year results in a total campus development of approximately 2.3 million square-feet. This increase would approximately double the size of the campus. The build-out of Alternatives 9 and 10 result in 2.75 million square-feet of development.

Table 14
Swedish Cherry Hill Land Use Summary – Alternatives 9 and 10

		Alternatives 9 and 10	
Facilities	**No Build / Existing**	**2023**	**2040**
Hospital	541,300 sf (196 beds)	1,014,000 sf (290 beds)	1,350,000 sf (385 beds)
Clinic/Research	427,000 sf	1,014,000 sf	1,070,000 sf
Education	73,000 sf	100,000 sf	150,000 sf
Hotel	12,500 sf	40,000 sf	40,000 sf
Long-Term Care	43,000 sf (99 beds)	93,000 sf (149 beds)	93,000 sf (149 beds)
Other Support Facilities	50,000 sf	50,000 sf	50,000 sf
Total	**1,146,800 sf**	**2,311,000 sf**	**2,753,000 sf**

sf = square-feet
Source: *Swedish Medical Center Cherry Hill Campus Draft Major Institution Master Plan, March 31*, 2014.

6.1 Street System

The street system for Alternatives 9 and 10 would be the same as those described under Alternative 1 (No Build) with no major changes to the local circulation proposed as part of the MIMP.

6.2 Campus Access and Service Vehicle Loading

Alternatives 9 and 10 access and loading as well as impacts would be consistent with the proposal described as part of the Alternative 8 discussion (see Section 5.2 and Figure 23).

As discussed for Alternative 8, the MIMP seeks relief from City code requirements for loading berths to allow for the consolidation of facilities and reduce the number of loading berths required by code. With the proposed 2,753,000 square-feet of building area served, a total of 78 loading berths would be needed on campus to meet the code requirement for 'high demand' uses as described in SMC 23.54.035. Applying the existing 0.003 berths per 1,000 square-feet to the proposed 2,753,000 square-feet of development would result in a future need for eight loading berths. Additional analysis at the project level will be required to more accurately access operational needs and establish appropriate loading berth quantities and sizes. The location and access to future loading areas should be evaluated when a specific project is proposed to ensure that loading facilities:

- Are adequately sized and consolidated when possible
- Traffic impacts and impacts to pedestrian circulation are identified and mitigated
- Locate accesses on minor streets where possible
- Are designed to minimize or preferably eliminate the need to make backing maneuvers within public rights of way or block sidewalks.

6.3 Pedestrian and Bicycle Transportation

Alternatives 9 and 10 pedestrian and bicycle transportation as well as impacts would be consistent with Alternative 8 (see Section 5.3). The anticipated daily campus population with Alternatives 9 and 10 would be approximately three percent less than Alternative 8, which could result in slightly fewer pedestrians and bicyclists associated with the campus development.

Impacts of Alternative 9 and 10 on the proposed 18th Avenue neighborhood greenway would be similar to Alternative.

Based on future population projection of 6,390 employees in 2040, the plan would require 128 bicycle parking spaces by 2040. The campus currently provides 132 bicycle parking spaces; therefore, bicycle parking code requirements for the proposal are already satisfied.

6.4 Transit/Shuttle Services

The existing campus transit stops along E Jefferson Street would be enhanced as part of Alternatives 9 and 10. A transit analysis was conducted consistent with the No Build and Alternative 8 conditions. The 2023 evaluation for Alternatives 9 and 10 is consistent with Alternative 8 given that development levels are projected to be the same.

Figures 39 and 40 provide a comparison of No Build and Alternatives 9 and 10 passenger loads and remaining capacity during the weekday AM and PM peak periods. As shown in the figures, even with the anticipated service cuts and increase in ridership, there is capacity to accommodate additional riders on the Swedish Cherry Hill bus service.

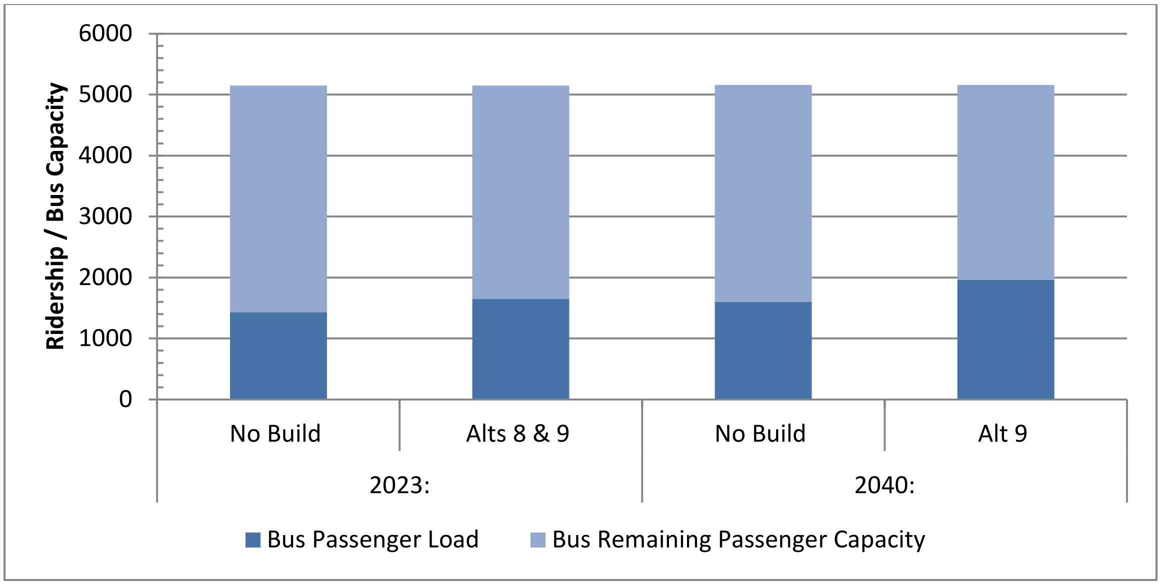


Figure 39 Comparison of No Build and Alternatives 9 and 10 Weekday AM Peak Period Bus Transit Capacity and Ridership

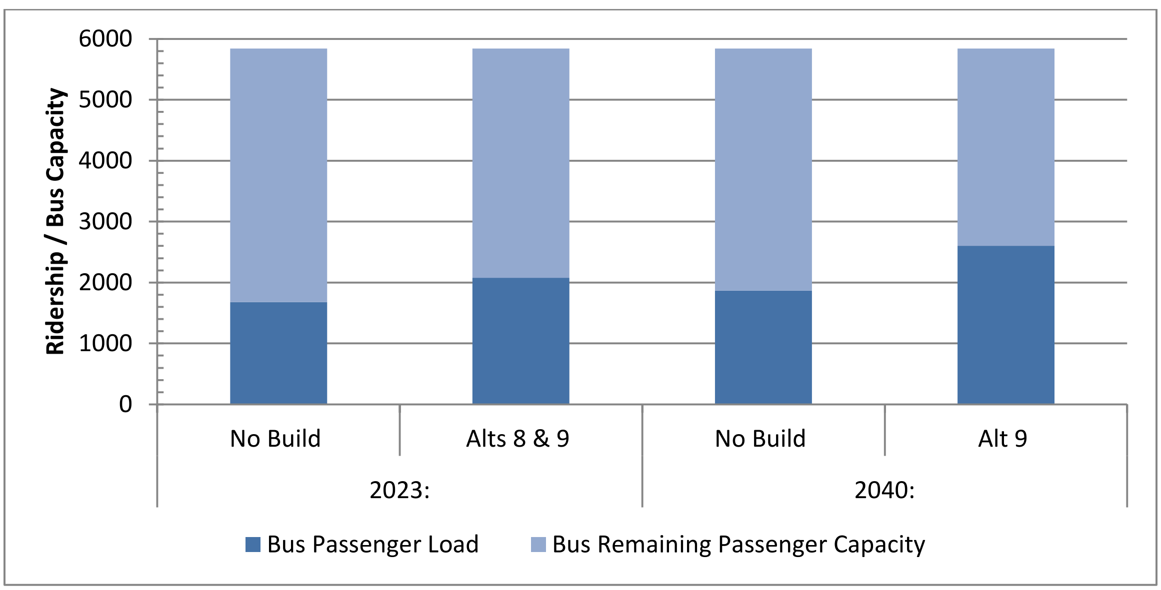


Figure 40 Comparison of No Build and Alternatives 9 and 10 Weekday PM Peak Period Transit Capacity and Ridership

As described in the Affected Environment, Swedish Cherry Hill operates an inter-campus shuttle service that serves Swedish First Hill Campus, Cherry Hill Campus, and the Metropolitan Park offices. This service was assumed to continue in the future. The analysis does not assume any increases in shuttle service; however, as staff and patient populations increase it is likely that service frequency and/or area would change to accommodate the increased demand. In addition, consideration may be given to providing a connection between Swedish Cherry Hill and the streetcar to supplement service cuts and continue to encourage transit use to and from campus.

6.5 Forecast Traffic Volumes

The methodology used to forecast the future traffic volumes is consistent with Alternative 8, Section 5.5. Forecast volumes with the development of the MIMP were developed by adding expansion related traffic to the No Build (Alternative 1) traffic volumes outlined previously. The No Build traffic accessing the Swedish campus was re-routed based on the future location and distribution of the parking supply.

6.5.1 MIMP Trip Generation Estimates

The method for forecasting new trips for Alternatives 9 and 10 is consistent with Alternative 8 (see Section 5.5.1 for a detailed discussion). **Table 15** summarizes the trip generation for the existing and future conditions. **Attachment C-4** provides the detailed trip generation model for future conditions. As shown in the table, based on the model, the Swedish Cherry Hill campus would generate 5,439 daily trips with 379 occurring during the AM peak hour and 520 occurring during the PM peak hour under No Build conditions. The short-term or Phase 1 development would increase trips by 2,855 net new daily trips with 198 new trips occurring during the AM peak hour and 264 new trips occurring during the PM peak hour. In addition, the build-out of Alternatives 9 and 10 would increase trips by 5,503 net new daily trips with 387 new trips occurring during the AM peak hour and 536 new trips occurring during the PM peak hour, compared to No Build trip volumes.

Table 15
Summary of Swedish Cherry Hill MIMP Trip Generation (unmitigated) – Alternatives 9 and 10

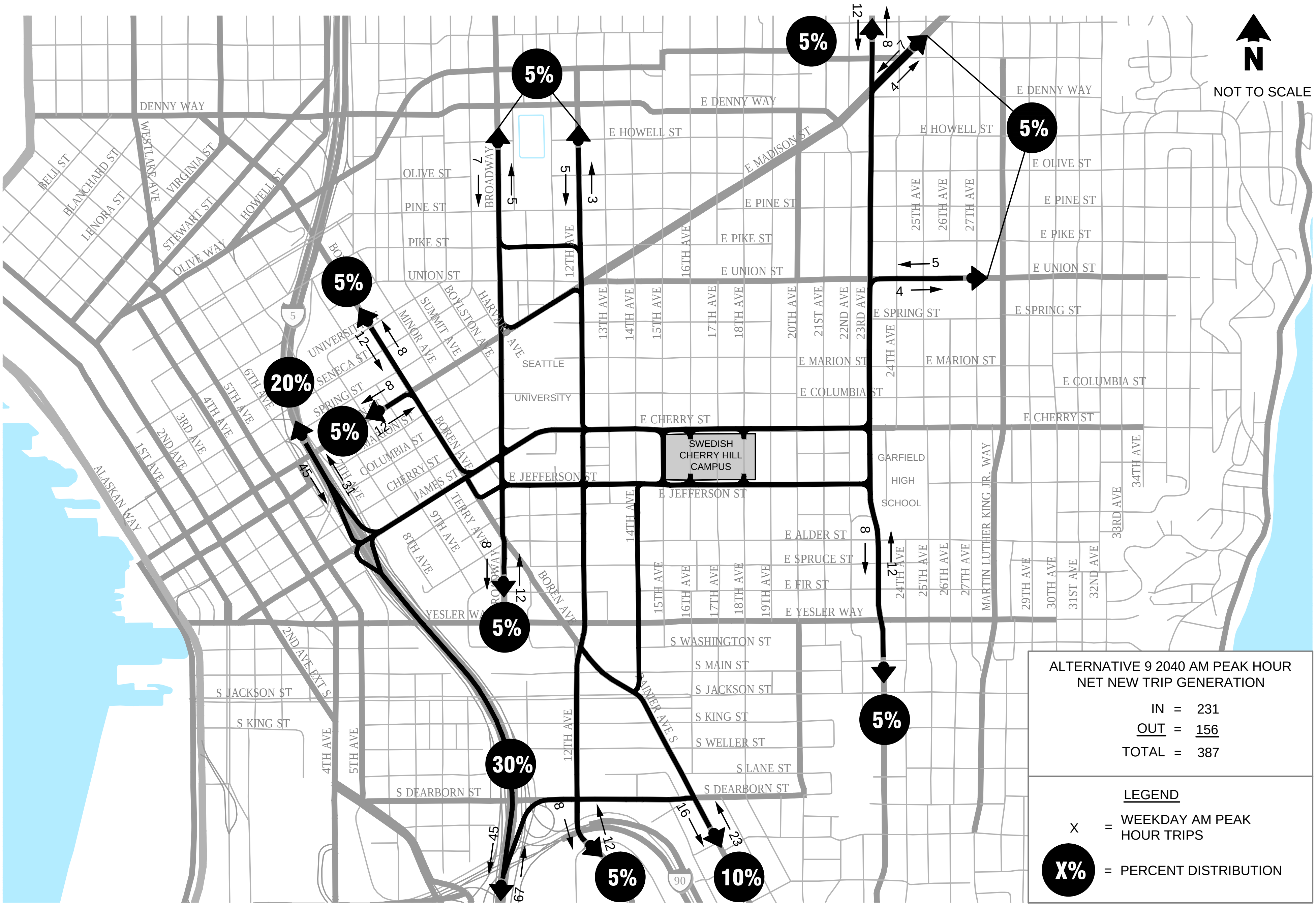
Alternative	Daily Trips	Weekday AM Peak Hour Trips			Weekday PM Peak Hour Trips		
		Inbound	Outbound	Total	Inbound	Outbound	Total
No Build	5,439	229	150	379	89	431	520
Short-term (2023) – Alternatives 9 and 10							
Net New Trips	*2,855*	*126*	*72*	*198*	*49*	*215*	*264*
Total Trips	**8,294**	**355**	**222**	**577**	**138**	**646**	**784**
Build-out (2040) – Alternatives 9 and 10							
Net New Trips	*5,503*	*231*	*156*	*387*	*87*	*449*	*536*
Total Trips	**10,942**	**460**	**396**	**766**	**176**	**880**	**1,056**

6.5.2 Trip Distribution and Assignment

The Swedish Cherry Hill Campus trip distribution patterns assumed in this study are based on travel patterns identified through the most recent CTR surveys, consistent with Alternative 8. **Figures 27 and 28** provided in Section 5, Impacts of Alternative 8 show the 2023 trip distribution and assignment. The Alternatives 9 and 10 weekday AM and PM peak hour trip distribution and assignment for 2040 are illustrated on **Figures 41 and 42.** As described previously, the trip distribution patterns developed for the project generally reflect the following:

- 20 percent I-5 north
- 30 percent I- 5 south
- 25 percent north via Madison Street, Broadway, 12th Avenue, and 23rd Avenue
- 25 percent south via Broadway, 12th Avenue, Rainier Avenue, and 23rd Avenue

The same trip distribution patterns were utilized for the 2023 and 2040 analysis. All of the trips associated with Alternatives 9 and 10 were assigned to the off-street parking on campus, which potentially results in higher impacts at locations nearest the campus than would otherwise occur with off-campus parking.



Alternatives 9 & 10 (2040) Weekday AM Peak Hour Trip Distribution and Assignment

FIGURE 41

Swedish Cherry Hill MIMP - DEIS

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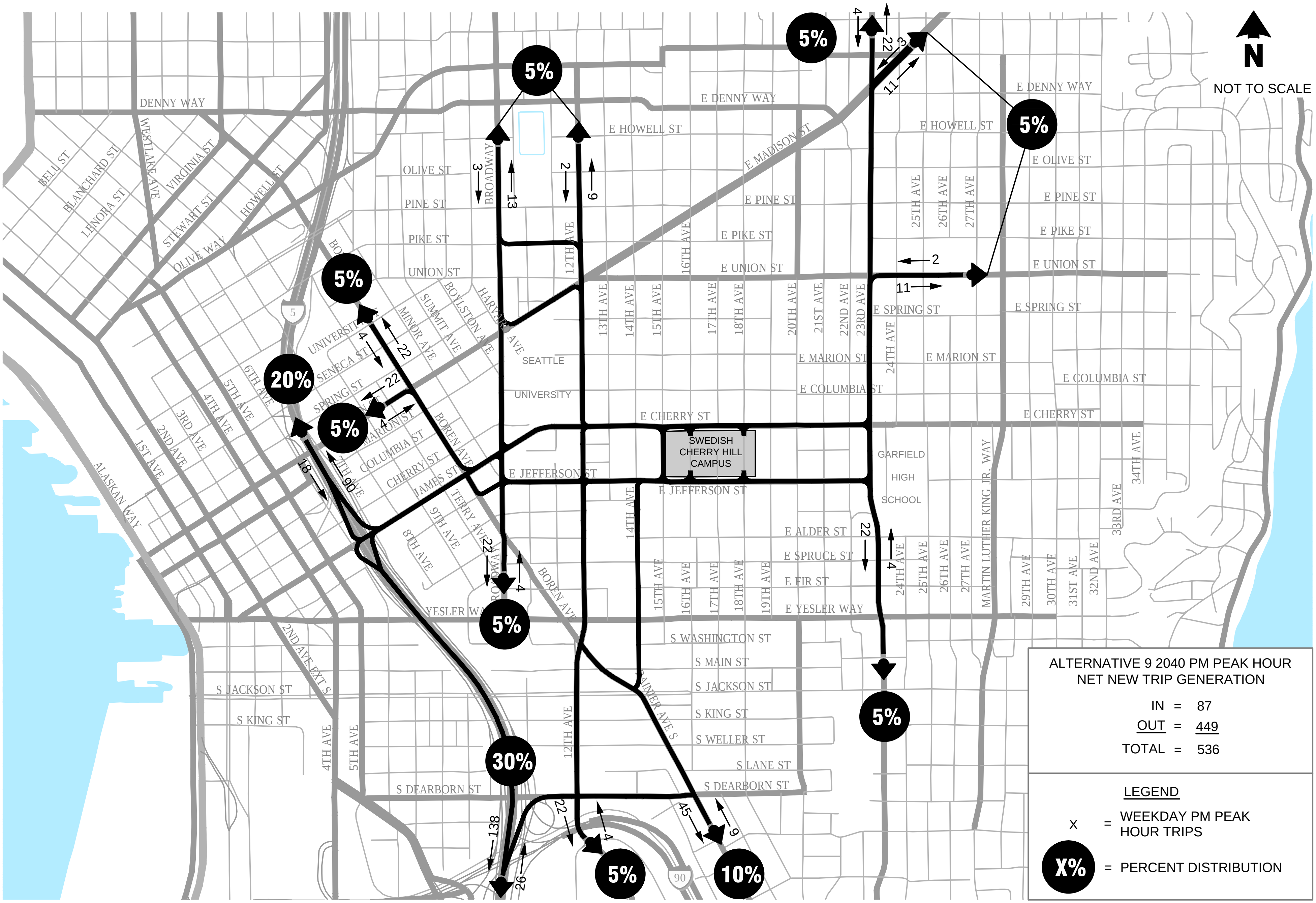

Alternatives 9 & 10 (2040) Weekday PM Peak Hour Trip Distribution and Assignment

FIGURE 42

Swedish Cherry Hill MIMP - DEIS

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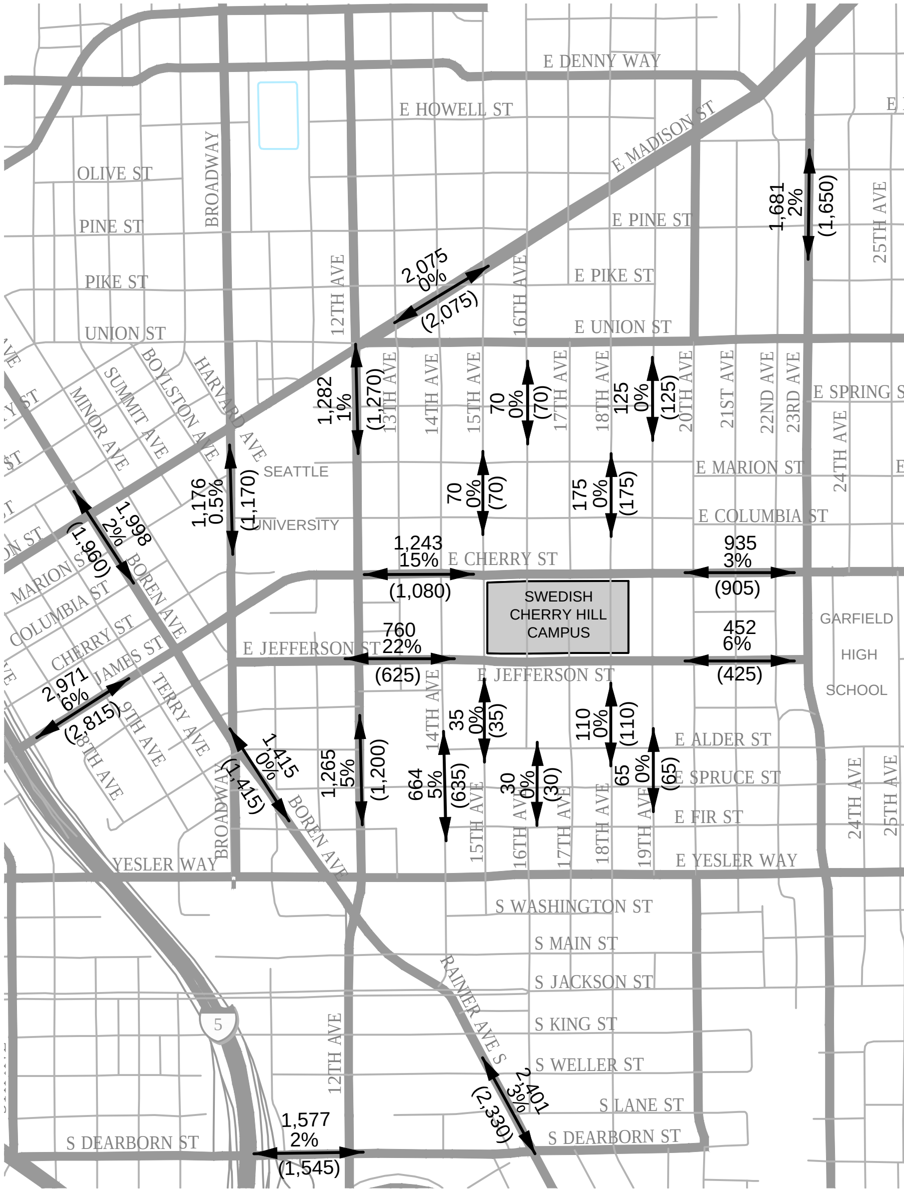
6.5.3 Alternatives 9 and 10 Forecast Traffic Volumes

Projected Swedish net new trips were added to the No Build traffic volumes to form the basis of the Alternatives 9 and 10 analysis. **Figure 43** summarizes the 2040 weekday AM and PM peak hour traffic forecasts for Alternatives 9 and 10. Forecasts for Alternatives 9 and 10 in 2023 are consistent with Alternative 8 and shown on **Figure 31.** The intersection turning movement summaries are included in **Attachment C-1**.

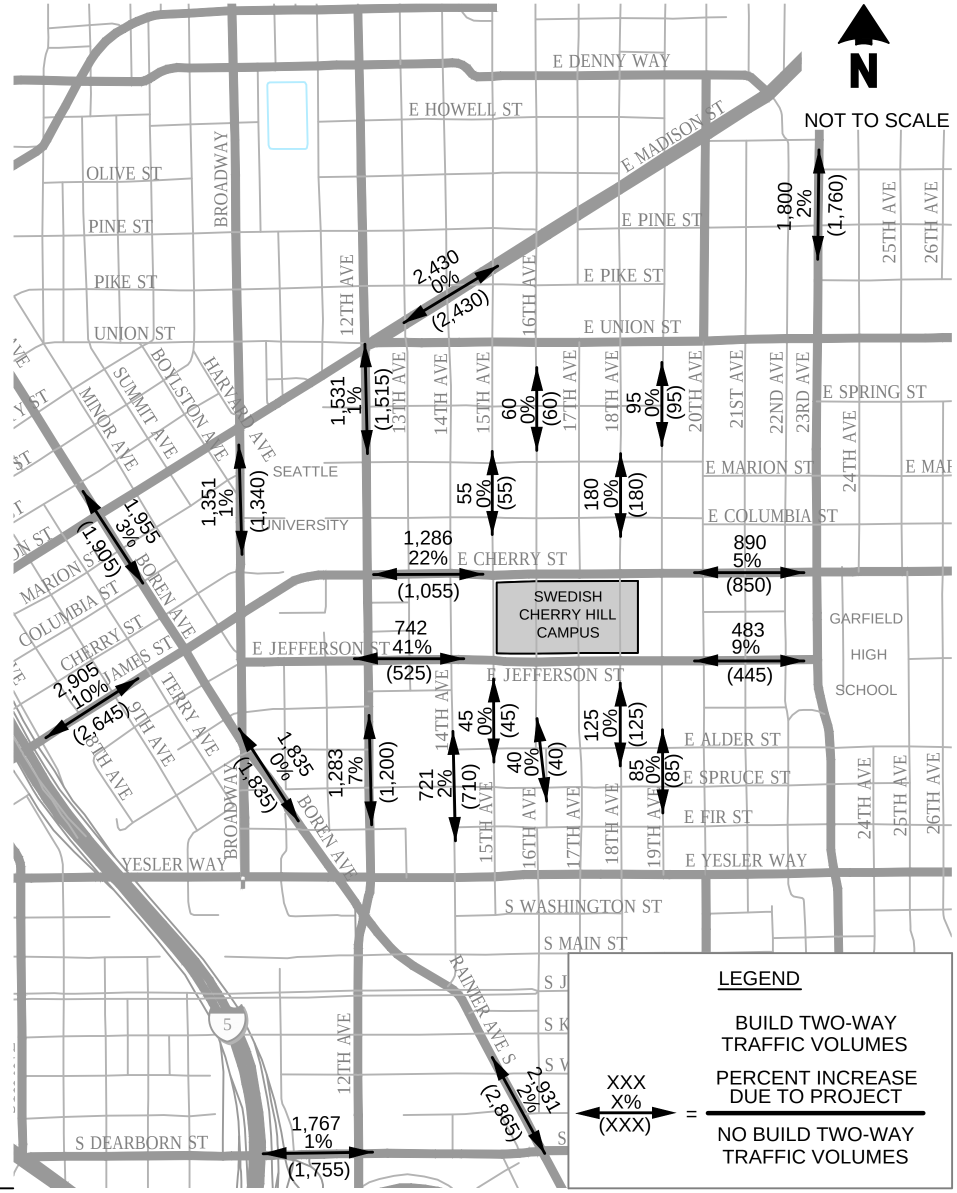
As shown in **Figure 43**, during the weekday AM peak hour in 2040, traffic volumes at the outer edges of the study area, both north and south of the project site, are forecast to increase by 6 percent or less. Near the campus where project related traffic is concentrated, increases on the order of 3 to 22 percent are anticipated. Specifically, forecast increases along E Cherry Street and E Jefferson Street range from 27 to 163 vehicles depending on the roadway segment. The largest volume increase is along E Cherry Street between I-5 and 23rd Avenue. Traffic volumes along E Cherry Street range between 935 and 2,971 vph with the proposed expansion, as compared to 905 to 2,815 vph under No Build condition. The second largest volume increase between No Build 2040 and Alternative 8 is anticipated along E Jefferson Street. Traffic volumes along E Jefferson Street between Broadway and 23rd Avenue range from 452 to 760 vph compared to 425 to 625 vph under No Build condition.

As shown in **Figure 43,** during the weekday 2040 PM peak hour, traffic volumes at the outer edges of the study area, both north and south of the project site, are forecast to increase by 10 percent or less. Near the campus where project related traffic is concentrated, increases on the order of 5 to 41 percent are anticipated. Specifically, increases of up to 231 vehicles are anticipated along E Cherry Street near 12th Avenue. Forecast volumes with the proposed expansion are anticipated to be as high as 2,905 vph near the I-5 interchange compared to 2,645 vph under the No Build condition. The greatest percentage increase of volumes from No Build to Alternative 8 during the weekday PM peak hour would be along E Jefferson Street at 12th Avenue with a 41 percent increase in traffic volumes. The second highest volume increase would be along E Cherry Street, adjacent to the campus, with dual direction traffic volumes ranging between 890 to 1,286 vph depending on the individual block, a 5 to 22 percent increase from the No Build conditions with volumes ranging between 850 and 1,055 vph.

WEEKDAY AM PEAK HOUR



WEEKDAY PM PEAK HOUR



Alternatives 9 & 10 (2040) Weekday Peak Hours Two-Way Link Volumes

FIGURE **43**

Swedish Cherry Hill MIMP - DEIS

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6.6 Traffic Operations

The following describes the future intersection and corridor operations, consistent with previous sections. The results of the intersection LOS and corridor performance analysis are summarized for the weekday AM and PM peak hours for the 2040 horizon year. As noted previously, in 2023 Alternatives 9 and 10 would have the same development levels as Alternative 8; therefore, traffic operations would be consistent (see Section 6.6 for the analysis of 2023 conditions).

6.6.1 Intersection Operations

Intersection LOS was calculated at the study intersections using the same method outlined in previous sections. **Figure 44** provides a comparison between 2040 No Build and Alternatives 9 and 10 weekday AM and PM peak hour LOS for the study area (see Figure 33 for 2023 conditions). Specific Alternatives 9 and 10 2040 weekday peak hour LOS for each study intersection are displayed on **Figures 45 and 46** with detailed LOS calculations provided in **Attachment C-3** (see Figures 34 and 35 for 2023 conditions).

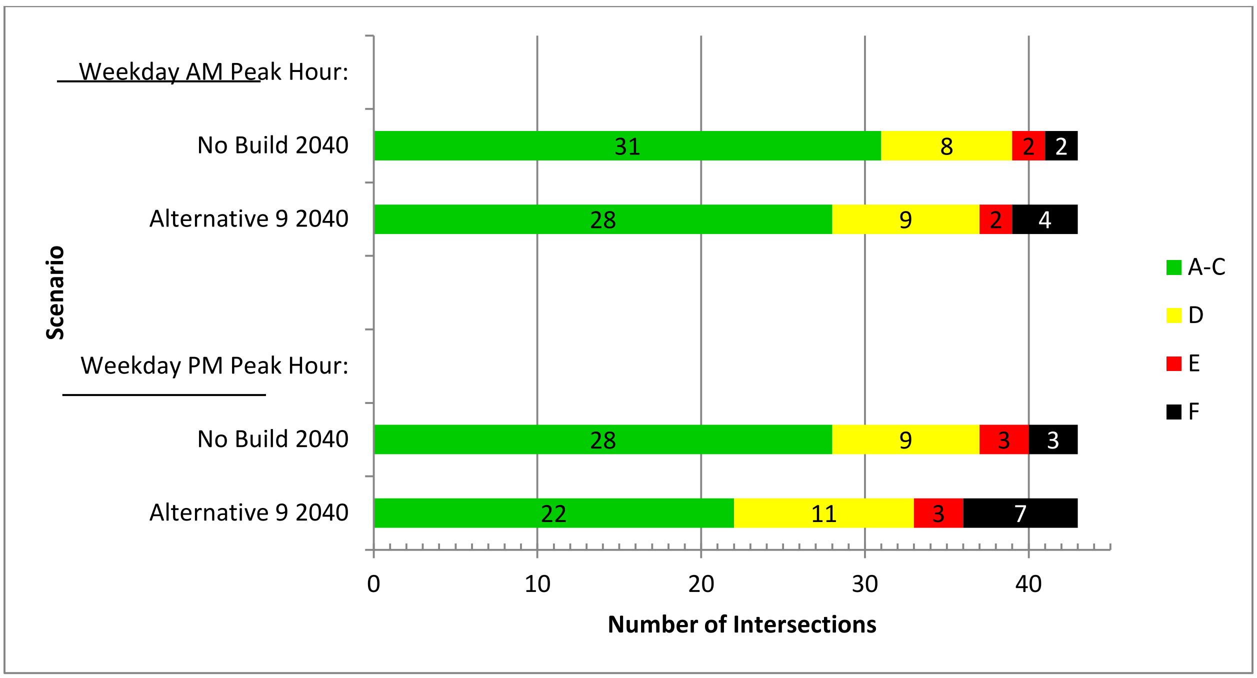


Figure 44 No Build and Alternatives 9 and 10 Weekday Peak Hour Intersection Level of Service Comparison

As shown on **Figure 44**, in 2040, compared to the No Build conditions, Alternatives 9 and 10 would result in two additional intersections operating at LOS F during the weekday AM peak hour and four additional intersections operating at LOS F during the weekday PM peak hour.

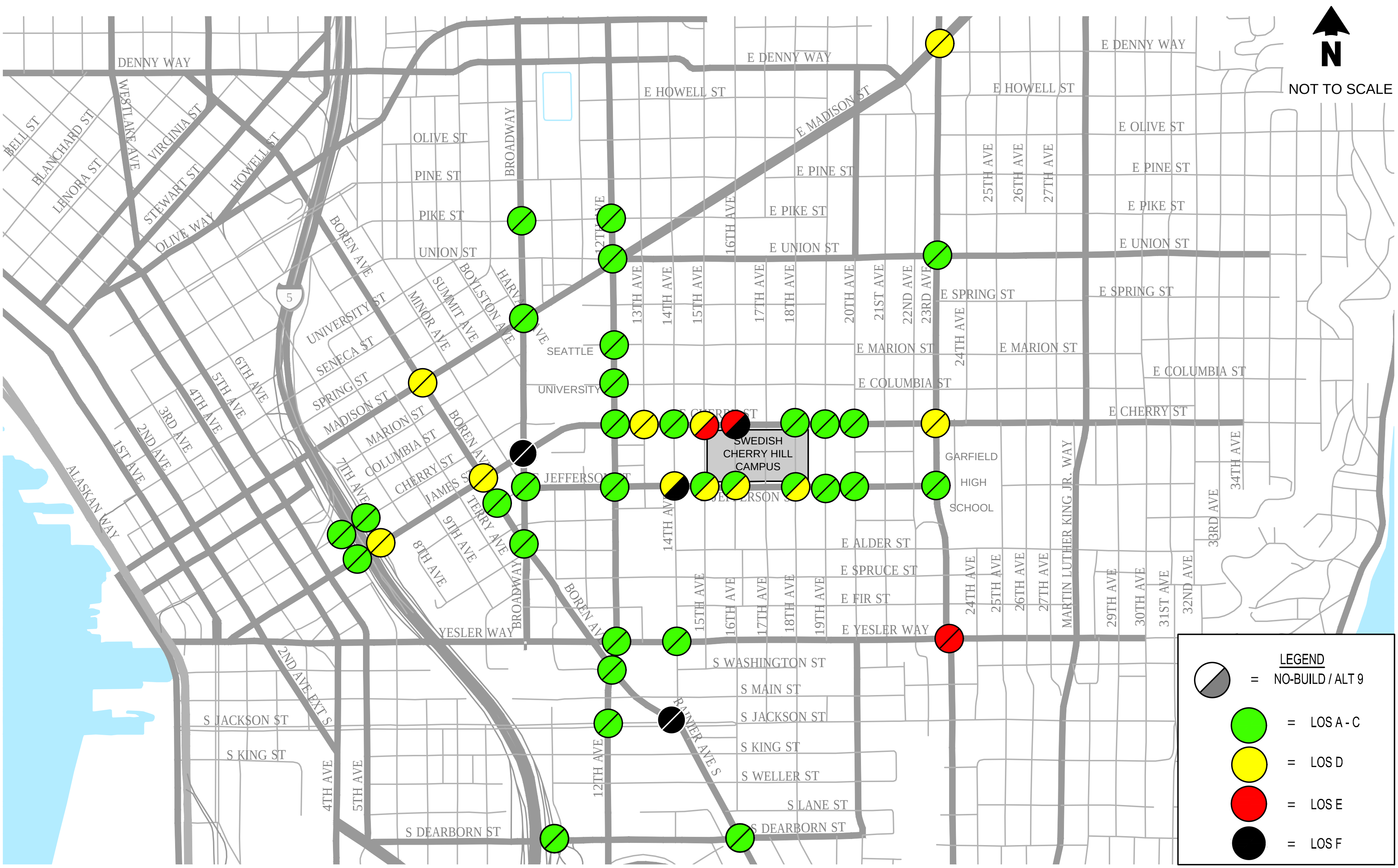
Figures 45 and 46 and the following discussion provide additional detail regarding the potential impacts of Alternatives 9 and 10 during the weekday AM and PM peak hours in 2040. Intersections identified are forecasted to operate at LOS E or F during either the AM or PM peak hours in 2040 include:

- **12th Avenue / Madison Street** – This intersection would continue operating at LOS E during the weekday PM peak hour under build conditions. The proposed expansion is anticipated to increase intersection delay by less than one second as compared to the No Build 2040 conditions reflecting an increase in traffic volumes of less than one percent during the weekday PM peak hour.
- **23rd Avenue / Madison Street** – This intersection would continue to operate at LOS F during the weekday PM peak hour. The proposed expansion is anticipated to increase intersection delay by approximately one second as compared to the No Build 2040 conditions reflecting an increase in traffic volumes of approximately one percent during the weekday PM peak hour.
- **12th Avenue / E Marion Street** – This intersection would remain at LOS F for the eastbound left-turn movement from No Build conditions to with the development of Alternatives 9 and 10 during the weekday PM peak hour. Poor operations at this location are due to high pedestrian volumes conflicting with vehicular traffic. The expansion is anticipated to result in an increase of approximately one percent in overall traffic volumes at this intersection.
- **Broadway / James Street** – Operations at this signalized intersection would continue to operate at LOS F during the weekday AM peak hour and LOS E during the weekday PM peak hour under Alternatives 9 and 10 conditions. Alternatives 9 and 10 would increase traffic at this intersection by approximately 5 percent during the weekday AM peak hour and 7 percent during PM peak hours in 2040.
- **13th Avenue / E Cherry Street** – The operations on the northbound approach of this unsignalized intersection would degrade from LOS E under No Build 2040 conditions to LOS F under Alternatives 9 and 10 2040 conditions during the weekday PM peak hour. The LOS F operations are related to the increases in traffic volumes along Cherry Street as a result of the project. Northbound and southbound traffic volumes range between 70 and 95 vph during the weekday PM peak hour under 2040 conditions. Alternatives 9 and 10 would result in an increase in overall traffic volumes of approximately 19 percent at the 13th Avenue/E Cherry Street intersection in 2040 during the weekday PM peak hour.
- **15th Avenue / E Cherry Street** – The northbound approach of this unsignalized intersection would degrade from LOS D under No Build 2040 conditions to LOS F under Alternatives 9 and 10 2040 conditions during the weekday PM peak hour. During the weekday AM peak hour, operations on the northbound approach would degrade from LOS D under the No Build 2040 conditions to LOS E under Alternatives 9 and 10 2040 conditions. The LOS E and F operations are related to the increases in traffic volumes along Cherry Street as a result of the project. Northbound and southbound traffic volumes range between 25 and 95 vph during the weekday PM peak hour under 2040 conditions and Alternatives 9 and 10 would result in an approximately 23 percent increase in traffic volumes at this intersection. Similarly, during the weekday AM peak hour, the northbound and southbound traffic volumes range between 25

and 60 vph under 2040 conditions and Alternatives 9 and 10 would result in an approximately 15 percent increase in traffic volumes at this intersection.

- **16th Avenue / E Cherry Street** – The operations on the northbound approach of this unsignalized intersection would degrade from LOS E to LOS F under Alternatives 9 and 10 2040 conditions during the weekday AM peak hour and LOS D to LOS F during the weekday PM peak hour. The LOS F operations are related to the increases in traffic volumes along Cherry Street with approximately 50 to 120 northbound left-turns during the AM and PM peak hours. Overall traffic volumes would increase by approximately 14 to 21 percent at 16th Avenue/E Cherry Street with the development of Alternatives 9 and 10.
- **14th Avenue / E Jefferson Street** – Under No Build conditions, this intersection is forecasted to operate at LOS D during both the AM and PM peak hours. With the development of Alternatives 9 and 10, this intersection would degrade to LOS F during both the AM and PM peak hours. This intersection is currently controlled by an all-way stop. Under 2040 build conditions, traffic volumes are expected to increase by 13 – 18 percent.
- **23rd Avenue / E Yesler Way –** Under No Build and Build 2040 conditions, this intersection is anticipated to operate at LOS E during the weekday AM peak hour and to degrade to LOS E under Build 2040 conditions during the weekday PM peak hour from LOS D under No Build 2040 conditions. Alternatives 9 and 10 would increase the overall traffic at this intersection by less than one percent during both the weekday AM and PM peak hours.
- **14th Avenue / S Jackson Street** – This signalized intersection is projected to operate at LOS F during the weekday AM and PM peak hours under No Build and Alternatives 9 and 10 conditions. As discussed previously, poor operations are related to signal operations as a result of the streetcar. The project would result in an increase in intersection delay of approximately 20 seconds during the weekday AM peak hour and 6 seconds during the weekday PM peak hour and an approximate increase of 2 – 3 percent in overall intersection traffic volumes during the AM and PM peak hours.

All other study intersections would operate at LOS D or better with Alternatives 9 and 10 under 2040 conditions during both the weekday AM and PM peak hours.

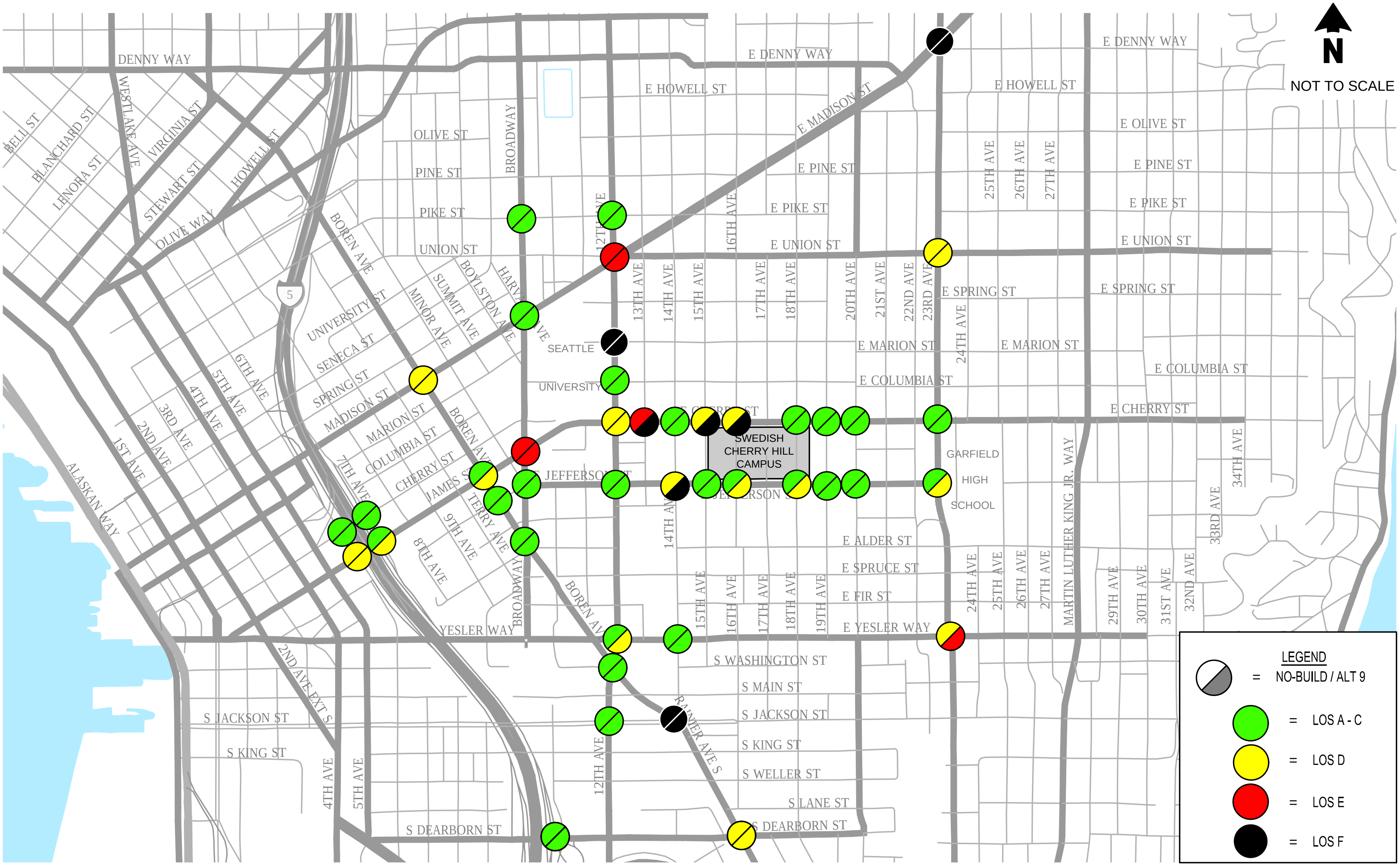


Alternatives 9 & 10 (2040) Weekday AM Peak Hour Levels of Service Summary

FIGURE 45

Swedish Cherry Hill MIMP - DEIS

\\srv-dfs-wa\MM_Projects\Projects\11\11244.00 Swedish Providence Cherry Hill Campus\Graphics\Swedish_Graphic01 <29-LOS AM (2040) Alt 9> kassil 02/13/14 08:53



Alternatives 9 & 10 (2040) Weekday PM Peak Hour Levels of Service Summary

Swedish Cherry Hill MIMP - DEIS

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FIGURE
46

Neighborhood Assessment

During the weekday AM peak hour, within the immediate vicinity of the campus, intersections along E Cherry and E Jefferson Streets are expected to operate at LOS D or better under 2040 conditions except for three unsignalized intersections, 14th Avenue/E Jefferson Street, 15th Avenue/E Cherry Street, and 16th Avenue/E Cherry Street. As described above, the 14th Avenue/E Jefferson Street intersection would operate at LOS F due to the anticipated increases in traffic volumes along both 14th Avenue and E Jefferson Street. The 15th and 16th Avenue/E Cherry Street intersections operate at LOS E and F, respectively, due to anticipated growth in volumes at both intersections and overall increases in traffic volumes along E Cherry Street.

During the weekday PM peak hour, increases in traffic volumes of up to 41 percent along E Cherry and E Jefferson Streets would make it progressively more challenging for side-street traffic to enter the traffic stream. By 2040, during the weekday PM peak hour with the development of Alternatives 9 and 10, intersections along E Cherry and E Jefferson Streets are projected to operate at LOS D or better, with the exception of four intersections, 13th, 15th, and 16th Avenue along E Cherry Street and 14th Avenue along E Jefferson Street. The three intersections along E Cherry Street are two-way stop controlled and the 14th Avenue/E Jefferson Street intersection is four-way stop controlled. All four intersections operate at LOS F as a result of increases in traffic volume with the proposed expansion.

Along E Cherry Street traffic signals exist at the 14th Avenue/E Cherry Street and 18th Avenue/E Cherry Street intersections. These traffic signals provide an opportunity to utilize a signal controlled intersection to exit from the neighborhood, if the unsignalized intersection approaches exceed the delay tolerance for a driver. The two existing signalized intersections are projected to operate at LOS C or better during the weekday AM and PM peak hours in 2040.

6.6.2 Corridor Operations

Consistent with the Affected Environment and No Build evaluations, the travel speeds and travel times along E Cherry Street/James Street from I-5 to 23rd Avenue were evaluated using Synchro. A comparison of travel times along the James Street and E Cherry Street corridors under No Build and Alternatives 9 and 10 conditions is provided in **Table 16** (see **Table 11** for 2023 conditions). Travel time calibration factors discussed in previous sections were applied to the Alternatives 9 and 10 projections.

As shown in **Table 16**, with development of Alternatives 9 and 10, corridor operations would degrade slightly in 2040 with average speed decreasing by one to two mph in the westbound direction along both James Street and E Cherry Street during the AM and PM peak hours. An increase in travel time of approximately three minutes between No Build and Alternatives 9 and 10 conditions would occur along James Street in the westbound direction during the PM peak hour. All other corridor travel times would have only small increases between No Build and Alternatives 9 and 10 conditions.

Table 16
Weekday Peak Hour Comparison of No Build and Alternatives 9 and 10 Travel Times (2040)

Segment	Direction	2040 Horizon Year			
		Travel Time (m:ss)[1]		Average Speed (mph)	
		No Build	Alternatives 9 and 10	No Build	Alternatives 9 and 10
AM Peak Hour					
James Street (6th Ave to Broadway)	EB	04:24	04:23	7	7
	WB	03:34	04:07	9	8
E Cherry Street (Broadway to 23rd Ave)	EB	04:09	04:12	13	13
	WB	02:53	03:04	13	12
PM Peak Hour					
James Street (6th Ave to Broadway)	EB	04:11	04:13	7	7
	WB	05:52	09:02	6	4
E Cherry Street (Broadway to 23rd Ave)	EB	01:51	01:52	19	19
	WB	03:11	03:37	11	10

1. m:ss = minutes:seconds

6.7 Traffic Safety

Impacts of Alternatives 9 and 10 on traffic safety would be similar to those described for Alternative 8 in Section 6.6.

6.8 Parking

The location of parking for Alternatives 9 and 10 would be consistent with Alternative 8. Code requirements and parking demand for Alternatives 9 and 10 would be slightly less than Alternative 8 given the reduced development. The following describes the code required parking and anticipated parking demand as a result of Alternatives 9 and 10.

Code Required Supply

The calculation of code required parking is consistent with the assumptions described as part of the Alternative 8 analysis. **Table 17** summarizes the code required parking for Alternatives 9 and 10 based on SMC. Projections for staff and patient population are consistent with the trip generation and are based on the *Swedish Medical Center Cherry Hill Campus Draft Major Institution Master Plan, March 31*, 2014. As shown in **Table 17**, SMC would require a minimum of 1,895 parking spaces and a maximum of 2,558 spaces with development of Alternatives 9 and 10.

Table 17
Alternatives 9 and 10 Parking Code Requirement

Zoning Code Category	Unit	Code Requirement[1]	Parking Stall Requirement
Long-term Parking			
Hospital Based Doctors	385	0.80 stalls	308
Staff Doctors	155	0.25 stalls	39
Other Employees Present During Peak	4,154	0.30 stalls	1,246
Short-term Parking			
# of Hospital Beds	534	1 stall per 6 beds	89
Average Daily Outpatients[2]	995	1 per five outpatient	199
Fixed Seats in Auditorium	140	1 stall per 10 seats	14
Minimum Required Parking Spaces			1,895
Maximum Allowed Parking Spaces (1.35 x Minimum)			2,558

1. Seattle Municipal Code 23.54.016.
2. There are 385 hospital beds and 149 beds in the Seattle Medical and Rehabilitation Center.

Demand

Future peak parking demand for Alternatives 9 and 10 were developed consistent with Alternative 8. **Table 18** summarizes the No Build and Alternatives 9 and 10 parking demand.

Table 18
Swedish Cherry Hill Estimated Parking Demand[1] – Alternatives 9 and 10

Facilities	No Build	Alternatives 9 and 10	
		2023	**2040**
Hospital	529	794	1,121
Clinic/Research	354	551	680
Education	40	87	121
Hotel	4	7	11
Long-Term Care	40	59	59
Other Support Facilities	47	47	47
Total Parking Demand	**1,014**	**1,545**	**2,039**
Effective Parking Demand	**-**	**1,700**	**2,245**

sf = square-feet
1. The parking demand by facility is estimated based on mode splits and is not reflective of actual parking classification counts.
2. Effective parking demand equals the calculated parking demand plus 10 percent. The 10 percent factor accounts for circulation and turnover within the parking area.

Table 18 by 2023 and 2040, additional parking would be needed to accommodate the anticipated parking demand. Relative to the code required parking supply, the anticipated Alternatives 9 and

10 effective parking demand of 2,245 vehicles by 2040 would be within the range of the minimum and maximum SMC requirement.

Existing parking surveys documented some vehicles associated with Swedish using on-street parking in the surrounding neighborhood. It is expected, without further action to discourage it, this activity would continue in the future, with or without MIMP approval. Given the current level of on-street parking use, the rate of occurrence may decrease as available on-street parking becomes increasingly scarce. Further TMP measures and/or cooperation with the City of Seattle parking enforcement may be required to help ensure the constructed on-site parking is used as intended.

7 Construction Impacts

The construction impacts associated with the proposed Swedish Cherry Hill MIMP on the transportation system elements, including the street system, campus access and circulation, pedestrian and bicycle transportation, transit service/facilities, traffic volumes, traffic operations, traffic safety and parking, are described below.

7.1 Street System

Construction impacts related to the street system would depend on the location of the construction within the Cherry Hill campus. The streets that would be most impacted would include E Cherry Street, E Jefferson Street, 15th Avenue, 16th Avenue, and 18th Avenue along the campus frontages. A construction management plan would mitigate these impacts. The plan could include scheduling street closures and other disruptions to the street system during off-peak periods to minimize impacts to the system.

7.2 Campus Access and Service Vehicle Loading

Construction impacts related to campus access and circulation would depend on the location of the construction within the Cherry Hill campus. Impacts could include the need to reroute traffic and close parking access and/or lots/garages. A construction management plan could be developed to mitigate impacts. Protocol could be included in the plan related to safe campus access and circulation adjacent to the construction site through the detours, signs, and providing information ahead of time to patients and employees on potential parking access or facility changes. In addition, construction truck loading and unloading off-street could be staged off-street and deliveries could be schedule at off peak times to avoid congestion..

7.3 Pedestrian and Bicycle Transportation

Construction impacts may result in intermittent sidewalk and bicycle facility closures and re-routing along E Cherry Street, E Jefferson Street, 15th Avenue, 16th Avenue, and 18th Avenue depending on the specific location of construction within the campus. A construction management plan could be developed to mitigate impacts. Protocol could be included in the plan related to safe pedestrian and bicycle circulation adjacent to the construction site through the use of temporary facilities, detours, and signs.

7.4 Transit/Shuttle Services

Construction impacts could result in some increase in ridership as a result of construction workers traveling to and from the site. Based on the review of transit capacity, presented previously in this document, there would be capacity at the campus to accommodate additional demand related to construction workers. In addition, construction related activities could impact nearby transit routes and stops as well as pedestrian accessibility to these facilities. A construction management plan could be prepared and impacts to transit could be coordinated with the transit agency in advance and appropriate relocation and signage provided.

7.5 Traffic Volumes

Construction of Alternative 8 or 9 would result in an increase in traffic volumes due to workers traveling to and from the site, delivery of material, and truck hauling. It is anticipated that the increase in traffic volumes due to construction would be less than generated with Alternatives 8, 9 or 10.

7.6 Traffic Operations

As described for traffic volumes, construction impacts related to traffic operations would occur as a result of increased traffic levels. To minimize impacts to operations, a construction management plan would be developed and could include scheduling the most intensive construction activities such that they are spread out over time and prohibiting material deliveries from leaving or entering the area during AM and PM peak hours.

7.7 Traffic Safety

Construction would increase vehicular traffic within the study area, which could result in increased conflicts between vehicular, pedestrian, and bicycle traffic. It is anticipated that safety impacts related to construction would be less than build-out of the MIMP.

7.8 Parking

Parking impacts due to construction would include increase parking needs related to workers as well as parking facility closures or access changes with the construction. As discussed in the campus access and circulation construction impacts discussion, impacts related closures and changes to parking could be minimized by providing the information ahead of time to patients and employees as well as through detours and signs. Construction worker parking would be accommodated on-site and secured in nearby parking lots and the use of alternative modes would be encouraged. It is anticipated that parking impacts related to construction would be less than with Alternatives 8, 9 or 10. In addition, construction activities could result in the need to close on-street parking adjacent to the site. These closures would be coordinated with SDOT and appropriate notice and signs would be provided.

8 Mitigation

Mitigation measures will be further defined and outlined based on coordination with the DPD, SDOT, and the applicant. A list of mitigation measures are described below. The primary mitigation would be through an enhanced Transportation Management Program (TMP) and physical improvements. The TMP applies to the entire Major Institution and all activities that occur within its boundaries.

As discuss previously, the MIMP includes bicycle, pedestrian, and transit enhancements along the campus frontages and internal to the site. Improvements include a “health walk” around the Cherry Hill campus along 15th Avenue, E Cherry Street, 18th Avenue, and E Jefferson Street, a direct pedestrian connection through the campus connecting 17th Avenue between E Cherry and Jefferson Streets, enhancements to the transit stops on E Jefferson Street at the campus, improvements to 18th Avenue along the frontage consistent with the City’s Greenway standards, and enhancements to the pedestrian environment along the E Cherry Street frontage.

The following describes the proposed TMP and physical mitigation measures for the Swedish Cherry Hill campus.

8.1 Proposed Transportation Management Program

The proposed TMP is described in the *Swedish Medical Center Cherry Hill Campus Draft Major Institution Master Plan,* March 2014. The overriding goal of the TMP is to decrease the number of vehicles accessing the Swedish Cherry Hill campus. The proposed TMP incorporates both elements from the existing TMP and proposed enhancements designed to achieve a SOV of 50 percent. The TMP is also being designed to address issues associated with neighborhood parking intrusion.

The program elements are intended to adjust the transportation patterns and habits of the employee groups on campus. The TMP applies to the entire Swedish Cherry Hill campus and all activities that occur within its boundaries. The program elements that are currently utilized and proposed as part of the updated TMP include:

- Transit Incentives - Increased levels of incentives, communication regarding schedules, and enhanced facilities
- Alternative Modes – promote the use of alternative travel modes, such as bicycle and walking through improved on-site facilities and incentive programs
- HOV Incentives – promote HOV programs through incentives for carpools/vanpools, preferred parking, and utilization of rideshare programs
- Parking Management Programs – consider alternative payment technologies, parking policies, review of RPZ designations, and other programs to reduce spillover into the adjacent neighborhoods.

Table 19 summarizes the existing and the proposed TMP inclusive of proposed enhancements. In addition to the additional TMP elements identified in the proposed TMP, there are several pilot programs that have been identified and will be tested. Depending on the overall effectiveness, these programs may be considered for ongoing implementation. The following provides an overview of the pilot projects, focusing on transit incentives, alternative transit modes, and parking management policies to better utilize the off-street parking supply and minimize impacts to the surrounding neighborhood.

- **Transit Incentives** – The intent of this pilot project is to increase transit usage at the Cherry Hill campus by working with King County Metro Transit to expand the ORCA passport program to all campus employees. The ORCA business passport program is a comprehensive, annual transportation pass program for employers. The passport program allows employers to manage their transportation benefits and gives employees access to bus, light rail, and ferry as well as subsidizes vanpool and vanshares and provides guaranteed rides homes.
- **Commuter Incentive** – The intent of this pilot would be to explore the potential of providing incentives to all employees to encourage alternative commuting as well as enhancing commuter incentives for the overall campus. The pilot would evaluate commuter incentive options campus-wide which could overlap with the Transit pilot's evaluation of the ORCA passport program. In addition, an evaluation of campus-wide biking and walking incentives including benefits such as stipends for bicycle and walking equipment and free tune-ups for bicycles. Lastly, contact will occur with the on-site retailers (e.g., Starbucks, gift shop, cafeteria) to see if benefits such as discounts on products could be offered for bicycle commuters.
- **Off-street Parking Management** – The current parking program provides monthly passes, which encourages employees to drive to work if they have already purchased a parking pass. In addition, parking rates vary across campus and there is little signage to direct drivers to available off-street parking. The intent of the parking pilot project would be to develop a more flexible system that would allow flexibility to commuters making daily travel mode choices, as well as evaluate parking rates for employees and visitors/patients, and review technology to provide drivers with information on parking availability and location. Working with the parking garage operators, this pilot project would explore a campus-wide flexible daily parking program with benefits such as on-demand carpool discounts and Smartcard access tied to parking debit accounts for employees. Parking policies would be reviewed for employees and visitors/patients and recommendations would be made to potential adjustments to encourage employees to use alternative modes while minimizing parking along neighborhood streets.
- **Neighborhood Parking** – Some of the parking associated with the Cherry Hill campus currently occurs in the neighborhood. There are several potential causes for this including the cost of off-street parking vs cost-free on-street parking. Another potential reason may be the relative convenience for commuters traveling to the east end of the campus since most public parking is at the west side. The neighborhood parking pilot would aim to reduce the amount of parking by Cherry Hill employees, visitors and vendors occurring on neighborhood streets. A program would be designed in consultation with campus employers to encourage off-street parking within the Swedish Cherry Hill garages as well as the use of non-SOV modes. This would include items considered as part of the Parking Pilot (described above) where parking policy is evaluated to encourage employees to park within the garages. In addition, Swedish

would work with the City to address the misuse of handicapped parking placards as well as discuss potential enhancements of the RPZ program with the neighborhood.

- **Coordination w/ Residential Properties** – Data indicates that employees living closer to campus are more likely to walk and bike to work. This program will create a partnership with local apartment and condominium owners to determine the feasibility of offering incentives to employees who choose to live close to campus.

These pilot projects would be implemented incrementally so the effectiveness of each pilot project can be evaluated. Projects that are feasible and show merit in reducing the SOV rate, encouraging alternative modes, and meeting the overall intent of the specific pilot would likely be adopted into the enhanced TMP. An update on each project would be included in the annual report to the City.

Table 19
Comparison of Current and Proposed TMP

Element	Current TMP	Proposed TMP	Pilot Projects with Commute Seattle
Transit	• Subsidize 50 percent of transit pass cost including ferry, rail for larger employee groups on-campus	• Provide all employees/ tenants with access to a minimum of a 50 percent subsidy of transit pass cost including ferry, rail. • Engage with tenants to inform about employee transportation benefits and options.	• **Transit Pilot:** Work with King County Metro Transit to expand eligibility to provide access to all campus employees
High Occupancy Vehicle (HOV)	• Preferred parking carpool/vanpool • Parking cost for carpools for two people subsidized 50% • Carpools of three or more and Vanpools subsidized 100% • Rideshare Online Network	• Preferred location for carpool and vanpool parking • Investigate alternative parking rate structures that incentivize vanpools and carpools and implement as appropriate. • Provide free vanpool parking for tenants • Facilitate rideshare match-ups for car pool and vanpool. • Encourage cooperation among tenant companies to promote vanpools and carpools.	• **Parking Pilot:** Work with parking operator to explore a campus-wide flexible daily carpool program

Table 19 (Cont'd)
Comparison of Current and Proposed TMP

Element	Current TMP	Proposed TMP	Pilot Projects with Commute Seattle
Bicycle	• Weather-protected, secure bicycle racks at no charge to Cherry Hill employees at preferred locations. • Shower accessibility in most cases • Bike lockers for a fee	• Weather-protected, secure bicycle racks at no charge to Cherry Hill employees at preferred locations • Shower accessibility • Bike lockers for a fee • Promote bicycle amenities • Signage indicating bike parking locations • Provide access to basic bike tools. Provide access to a bikeshare system when available	• **Commuter Incentive Pilot:** Work on a biking and walking incentive program. Work with onsite retail to offer bicycle benefits or other commuter incentives (e.g., Starbucks, gift shop, cafeteria)
Parking	• Monthly parking rate set equal to or greater than the current King County Metro rate for peak period one-zone transit passes. • Monthly parking is currently available only to employees hired since 1990 or if the vehicle is needed for work.	• Monthly parking rate set equal to or greater than the current King County Metro rate for peak period one-zone transit passes. • Restricted access to monthly parking passes.	• **Parking Pilot:** Work with parking operator to explore parking rates and flexible alternatives to encourage greater use of alternative transportation modes including: • Flexible on-demand (daily) parking accounts

Neighborhood Parking Reduction	• Subsidize the cost of the RPZ stickers for areas surrounding the campus	• Subsidize the cost of the RPZ stickers for areas surrounding the campus and review options to redirect RPZ permit payments into other neighborhood transportation funding sources.
		• Improve wayfinding signs to direct vehicles to on-campus parking
		• Develop a campus-wide policy to discourage employee and vendor parking in the neighborhood.
		• Regular contact with City parking enforcement to encourage patrolling
		• Regular meetings with community representatives to evaluate progress, communicate issues, consider solutions
			• **Neighborhood Parking Pilot:** Meet with employers to consult on designing solutions that get employees out of SOVs and the neighborhood
			  • Evaluate parking policy to encourage employees away from neighborhood parking
			  • Consider a hotline to alert institution to violations
			  • Discuss Enhanced RPZ with neighborhood

Table 19 (Cont'd)
Comparison of Current and Proposed TMP

Element	Current TMP	Proposed TMP	Pilot Projects with Commute Seattle
Other	• Building Transportation Coordinator • Intercampus shuttle between Cherry Hill, First Hill, and Metropolitan Park office buildings • Guaranteed ride home • Provide flex-car on campus • Telecommuting for some employees • Special taxi service for 10-12 hour shift employees that use transit • Encourage and promote alternative work schedules, where possible • Free taxi service to physicians that travel between First Hill and Cherry campuses	• Create a Transportation Committee for the campus. The committee would include a Campus Transportation Coordinator and all employer transportation coordinators on campus. The committee would meet regularly and be responsible for implementing the TMP. • Intercampus shuttle between Cherry Hill, First Hill, and Metropolitan Park office buildings • Guaranteed ride home • Provide car-sharing options on campus (e.g., ZipCar) • Telecommuting for some employees • Special taxi service for 10-12 hour shift employees that use transit • Encourage and promote alternative work schedules, where possible • Continue to work with City to address misuse of handicapped parking placards	• **Residential Pilot:** Partner with local apartment and condo building owners to explore partnership with employees who choose to live close to campus
Marketing	• Conduct one to three transportation fairs per year on-campus to promote trip reduction programs	• Actively engage and promote alternatives through transportation fairs and other promotional opportunities to promote trip reduction programs along	• Transportation Policy Roll-out Fair • Promote bike to work month and host activities including seminar, kick-off fair, organize teams

8.2 Physical Improvements

The results of the DEIS indicate that several unsignalized intersections in the immediate vicinity of the hospital are expected to experience an increase in minor street delay as a result of the build out of the proposed MIMP. The increases in traffic along E Cherry Street and E Jefferson Street will impact vehicle, pedestrian, and bicycle accessibility into the neighborhoods from arterials such as E Cherry Street and E Jefferson Street. For that reason the potential for the installation of a traffic signal will be considered at two possible locations. These locations include:

- 16th Avenue/E Cherry Street
- 14th Avenue/E Jefferson Street

While other intersections such as 15th/Cherry and 13th/Cherry are anticipated to experience an increase in delay as a result of the growth in traffic, the signalization identified at the 16th/Cherry intersection provides an improved connection to the neighborhood streets. If the delay experienced at these intersections are not acceptable to drivers then traffic may shift to the improved connections provided at the new signalized intersections.

The intersection of 14th Avenue/E Jefferson Street is currently controlled by an all-way stop. Signal warrants based on the *Manual of Uniform Traffic Control Devices* (MUTCD), 2009, this review indicates the four-hour volume warrant would be met at this location by 2023 under the No Build and Alternatives 8, 9 and 10 conditions. Future improvements at this intersection could include the installation of a traffic signal.

A signal warrant evaluation was also conducted at 16th Avenue/E Cherry Street. For both 2023 and 2040, the volume warrants would not be met. There are other conditions in which a signal warrant may be considered including corridor progression, safety, pedestrians, etc. In consideration of these other factors, a signal at this location is recommended. If a signal was installed at 16th Avenue/E Cherry Street, some of the traffic from 15th Avenue or other parallel corridors may shift to the improved connection.

8.3 Other Mitigation Measures

Some of the mitigation associated with the MIMP will need to be defined at the project level when additional definition on the specific uses, building features, and City of Seattle planned improvements are known.

Loading

Truck access and loading berths would need to be further reviewed as part of the MIMP projects process. This review should include:

- Assess loading berth requirements and where possible consolidate facilities so that the number of berths campus wide is less than the code requirement.
- Assess truck delivery routes between Swedish Cherry Hill and I-5 and along E Cherry Hill and E Jefferson Street to identify potential impacts to roadways along those routes.
- Reduce the impact of truck movements on local streets and potential conflicts with pedestrians by consolidating loading facilities and managing delivery schedules.

18th Avenue Neighborhood Greenway

Swedish should continue to coordinate with SDOT on the location of the neighborhood greenway and work to minimize campus impacts on users of the facility. To the extent possible, the greenway features should be incorporated into the proposed health walk. If the greenway is provided along 18th Avenue, it is recommended that the bicycle facility provided on the west side of the street.

9 Secondary and Cumulative Impacts

Secondary and cumulative impacts on area roadways are included in the analysis of direct impacts. In addition, there is a potential for cumulative impacts due to the combined effects of traffic being generated by build-out of the project and construction. This potential impact could be mitigated by scheduling construction activities such that arrival and departure of construction traffic occurs outside the peak hours.

10 Significant Unavoidable Adverse Impacts

Alternatives 8, 9 and 10 would accommodate additional amounts of future development at the Swedish Cherry Hill campus, which would contribute to additional travel demand and congestion along arterial corridors including E Cherry and E Jefferson Streets. The additional development also would increase traffic accessing and circulating in the area. This added congestion would contribute to measurably poorer performance of the transportation network, in terms of increased delays along several of the corridors and at some specific intersections. The increase in traffic and pedestrian and bicycle activity due to development would result in more conflict points and increased hazards to safety. .

10.1 Street System

As described in Section 10.5 and 10.6, increases in Swedish's traffic along the street system may result in an increase in traffic and related congestion that could be considered significant.

10.2 Campus Access and Service Vehicle Loading

Access to the parking facilities would occur along 15th and 16th Avenues similar to what exist today and a new access would be provided to the parking garage along 18th Avenue. While the overall circulation and access patterns associated with the campus would generally stay the same, the amount of parking on 18th Avenue would result in a shift of the traffic to the east side of the campus. No significant unavoidable impacts to campus access and loading were identified.

10.3 Pedestrian and Bicycle Transportation

Swedish would provide pedestrian and bicycle enhancements at the Cherry Hill campus including along the 18th Avenue Greenway. The proposal would increase potential conflicts between vehicular traffic and users of the neighborhood greenway. No significant unavoidable adverse non-motorized impacts are expected.

10.4 Transit/Shuttle Services

Swedish would improve transit access to the campus through the transit stop enhancements to the site. In addition, the analysis indicates that there would be sufficient capacity to accommodate anticipated increases in ridership at the Swedish transit stop as a result of Alternatives 8, 9 and 10. No significant unavoidable adverse shuttle and transit service impacts are expected.

10.5 Traffic Volumes

Future (2023 and 2040) growth in the area would result in increases in regional and local traffic within the study area both without and with the project. In addition, Alternatives 8, 9 and 10 would increase area-wide and local traffic on routes serving the site. Although Swedish would implement strategies to reduce its overall traffic, this impact is considered a significant and unavoidable adverse impact since Swedish would likely not be able to reduce its traffic volume contribution to zero, and therefore, would increase traffic volumes on roadways even with mitigation. While strategies to reduce travel demand and related impacts have been identified, a residual increase in traffic to the street system attributable to Swedish is likely.

10.6 Traffic Operations

The increase in Swedish's traffic along the street system, even with a successful TMP, may result in an increase in traffic and related congestion that could be considered significant.

10.7 Traffic Safety

No significant adverse impact to safety would occur. With the proposed mitigation, it is probable that overall safety would improve.

10.8 Parking

Swedish is providing enhancements to the TMP as well as piloting a parking program to provide flexible on-demand off-street parking. Currently, there is parking associated with Swedish that occurs along neighborhood streets. Some level of on-street parking within the residential area may continue to occur with the proposed project. This is not considered a significant impact.

Attachments C-1 through C-4 are available upon request.