Chapter 1

Environmental Summary

CHAPTER 1 ENVIRONMENTAL SUMMARY

This chapter summarizes environmental impacts, mitigation strategies and significant unavoidable adverse impacts for four alternatives to height and density in the South Lake Union Neighborhood that are evaluated in this Environmental Impact Statement (EIS). This summary provides a brief overview of the information considered in this EIS. The reader should consult Chapter 2 for a detailed description of the alternatives and Chapter 3 of the Draft EIS for more information concerning the affected environment, environmental impacts and mitigation strategies for each element of the environment.

Chapter 1 Contents

1.1 Proposal

This EIS considers four alternatives to height and density in the South Lake Union neighborhood. Alternatives 1, 2 and 3 represent a range of potential height increases that could be achieved through incentive zoning and are collectively referred to as action alternatives. Alternative 4 would retain the existing zoning designations with no incentives for height increases and is referred to as the no-action alternative.

Among the action alternatives, Alternative 1 would provide the greatest potential for increases in height and density, Alternative 3 the least, and Alternative 2 falls between Alternatives 1 and 3. Alternative 1 would allow for building heights of 240 to 300 feet in much of the neighborhood, with maximum heights of 400 feet between John Street and Denny Way. Alternative 2 would allow for maximum heights of 300 feet in the area between Aurora and Westlake avenues north, with much of the rest of the neighborhood at maximum heights of 160 to 240 feet. Under Alternative 3, the majority of the neighborhood would have maximum building heights of 160 feet to 240 feet. Under Alternatives 2 and 3, existing zoning, with no provision for increased height through zoning incentives, would be retained in the majority of the Cascade neighborhood, with changes limited to areas near the western and southern boundaries in Alternative 2 and along the western boundary in Alternative 3. Similarly, under Alternative 3, the majority of the Fairview neighborhood would also retain existing zoning, with no provision for increased height through incentive zoning.

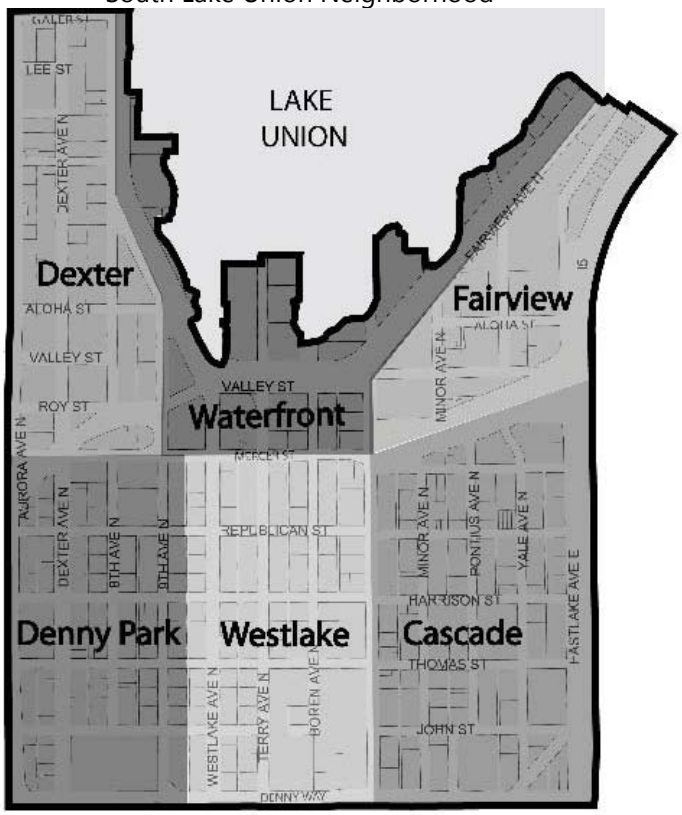
Alternatives 1 and 2 would provide for height and density increases for both commercial and residential development while Alternative 3 is focused primarily on residential development.

1.2 Location

The South Lake Union neighborhood is located in the center of the City of Seattle, immediately north of Downtown, and adjoining the Uptown and Capitol Hill areas to the west and east, respectively. Consisting of about 340 acres, the area is generally bounded on the east by Interstate 5, on the west by Aurora Avenue, on the south by Denny Way and on the north by the Lake Union shoreline.

For planning purposes, the City has identified six neighborhoods in the neighborhood, known as the Dexter, Denny Park, Waterfront, Westlake, Fairview and Cascade neighborhoods. See Figure 1-1.

Figure 1-1
South Lake Union Neighborhood



Source: South Lake Union Urban Center Neighborhood Plan, 2007

1.3 Objectives of the Proposal

The City has identified the following specific objectives of the proposal:

- Advance Comprehensive Plan goals to use limited land resources more efficiently, to pursue a development pattern that is economically sound, and to maximize the efficiency of public investment in infrastructure and services.

- Ensure adequate zoned development capacity for long-term growth consistent with the designation of South Lake Union as one of the City's six urban centers.
- Provide for a more diverse and attractive neighborhood character by providing a mix of housing types, uses, building types and heights.
- Promote a land use pattern that provides for a balanced mix of residential and employment opportunities.
- Enhance the pedestrian quality at street level by providing amenities, taking into consideration light and air as well as public view corridors and providing for retail activity at key locations.
- Use increases in height and density to achieve other neighborhood plan goals such as increasing the amount of affordable housing, open space, and other public benefits through an incentive zoning program.
- Determine how to best accommodate growth while maintaining a functional transportation system, including street network, transit, and non-motorized modes of travel. Similarly, determine how to accommodate growth while maintaining functional capacity of utility systems, including electrical energy, water, sewer and storm drain systems.

1.4 Alternatives

In order to meet the goals of the Comprehensive Plan, the City is considering adoption of incentive zoning provisions to allow increased height and density in certain areas of the South Lake Union neighborhood. The City has identified four alternatives, each of which describes a different pattern of height and density in the neighborhood. In general, Alternative 1 would provide for the greatest increases in building height and corresponding residential density. Similarly, Alternative 2 provides for height and density increases, but relatively less than Alternative 1. Alternative 3 provides for the least amount of height and density increase relative to the action alternatives. Alternative 4 would retain the existing zoning standards and height limits. **Table 1-1** summarizes the key features of the alternatives.

Table 1-1
Alternatives Overview

Features	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Podium Height	45′ – 85′	30 – 45′	20 – 45′	Not applicable
Incentive Zoning Height Limits	85′ – 400′	85′ – 300′	85′ – 240′	Not applicable
Floor Plate Size	Commercial - 24,000 sf above podium height for commercial Residential - 10,500 sf average/11,500 sf maximum above podium height			Not applicable
Commercial Floor Area Ratio	Base of 4.5 or 5; up to 7 with bonuses			4.5 to 5
Residential Densities	Varies according to building height and podium size. The range of densities at different heights is shown below. Note that not all alternatives include all of the heights listed. 400′ height limit: 720 – 890 units/acre 300′ height limit: 562 – 655 units/acre 240′ height limit: 465 – 535 units/acre 160′ height limit: 327 – 385 units/acre Lower building heights and corresponding densities are assumed for lots fronting Lake Union. See Draft EIS Appendix B for complete methodology.			Not applicable
Minimum Lot Size for Towers	22,000 sf (2 towers/block), 60,000 sf (1 tower/block)			Not applicable

Source: City of Seattle, 2010

A podium is the base of a building that supports a tower.

A floor plate is the horizontal plane of the floor of a building, measured to the inside surface of exterior walls.

Floor area ratio is the ratio of the total square feet of a building to the total square feet of the property on which it is located.

Incentives

An incentive program offers development bonuses, usually in the form of additional height or floor area, for development projects that offer public benefits and amenities. As shown in **Table 1-1**, the three action alternatives include the potential for an FAR bonus and increased height through the provision of public benefits as defined by incentive zoning.

Seattle Municipal Code Section 23.58A establishes conditions and process for development incentives. As described in this Section, buildings less than 85 feet in height may gain increased floor area only through the provision of affordable housing as established by the provisions of Section 23.58A.014. For buildings greater than 85 feet in height, other City

approved bonus options may be used for up to 40% of their increased floor area, as long as at least 60% of the increased floor area is supported by the provision of affordable housing through the process established in Section 23.58A.014.

Although not currently applicable in South Lake Union, future development under any of the action alternatives would be able to seek floor area bonuses consistent with the requirements of Seattle Municipal Code 23.58A. For buildings taller than 85 feet in height, potential public benefits that could be included as a future development incentive, in addition to the affordable housing requirement, will be specifically identified following public comment and City review of EIS findings.

Alternatives 1 – 3 (Action Alternatives)

The following features are common to all of the action alternatives.

- **Shoreline Designations**. No changes to the existing shoreline designations are proposed under any of the alternatives.
- **Permitted Uses**. No change to the permitted uses in the Seattle Mixed zone is proposed under any of the alternatives.
- **Floor Plate Size**. In all alternatives, commercial floor plates are limited to a maximum of 24,000 sf. Residential floor plates are limited to an average of 10,500 sf for the entire tower, with a maximum of 11,500 sf above the podium.
- **Floor Area Ratio**. In all alternatives, the commercial floor area ratio is limited to a base of 4.5 or five, with potential of increasing to a maximum of seven through use of incentives or transfer of development rights (TDR).
- **Tower Location**. In all alternatives, a maximum of one tower per block (equivalent to a minimum 60,000 sf lot size) near Lake Union, but outside of the designated shoreline area, is permitted. In all other areas, a maximum of two towers per block (equivalent to a minimum 22,000 sf lot size) is permitted.
- **Lake Union Seaport Airport**. In all alternatives, building heights in the approach/departure corridor for the Lake Union Seaport Airport would continue to be limited according to Federal Aviation Administration (FAA) requirements.

Key unique features associated with each of the action alternatives are described below:

Alternative 1

Zoning Designations. The underlying Seattle Mixed zoning designation would be retained in all parts of the neighborhood. The existing Industrial Commercial (IC) designation would be rezoned to Seattle Mixed.

Building Heights. Building Heights. Greatest heights are permitted along the southern edge of the neighborhood, between Denny Way and John Street. In this area, residential towers could be 400 feet and commercial towers 240 feet in height.

Lowest heights continue in the east central part of the neighborhood, roughly corresponding to the Cascade neighborhood. In this area, maximum heights of 160 feet for residential towers and 85 feet for commercial uses are established.

In the balance of the neighborhood, maximum heights range between 240 to 300 feet for residential towers. Commercial uses in mixed use buildings are limited to 20 feet along the 8th Avenue corridor, between John and Republican Streets and to 85 feet in the blocks bounded by Mercer, Valley and Roy streets and 9th Avenue. In the remaining areas, commercial height limits vary from 160 feet to 240 feet.

Podium Heights. Podium heights of up to 85 feet are allowed along the Mercer Street corridor. Along the Dexter, Westlake, Fairview and Denny Way corridors, maximum podium height is 65 feet. Podium heights are limited to 45 feet in the balance of the area.

Alternative 2

Zoning Designations. The underlying Seattle Mixed zoning designation would be retained in all parts of the neighborhood. The existing Industrial Commercial (IC) designation would be rezoned to Seattle Mixed.

Building Heights. Greatest heights are permitted in the southwestern portion of the neighborhood, corresponding to the Denny Park subarea. In this area, residential towers could be 300 feet and commercial towers 160 feet in height. Within this area, height limits are reduced along the 8th Avenue corridor, with commercial development limited to 20 feet and residential to 240 feet in height.

Height limits are lowest in the northern part of the neighborhood. In the blocks bounded by Mercer, Valley and Roy Streets and 9th Avenue North, commercial uses are limited to 85 feet and residential uses to 160 feet in

height. Immediately to the east, in the Fairview neighborhood, building heights are limited to 125 feet. In the balance of the neighborhood, maximum height for residential towers is 240 feet and for commercial buildings 160 feet.

Podium Heights. Podium heights are limited to 30 feet along the 8th Avenue corridor and 45 feet in all other parts of the neighborhood.

Alternative 3

Zoning Designations. The underlying Seattle Mixed zoning designation would be retained in all parts of the neighborhood. The existing Industrial Commercial (IC) designation would be rezoned to Seattle Mixed.

Building Heights. Alternative 3 allows building heights up to 240 feet for residential development and 125 feet for commercial uses between Denny Way, John Street, 9th Avenue North and the east side of Fairview Avenue.

Commercial use height limits vary between 65 feet to 85 feet in the rest of the area. In the central part of the neighborhood, residential height limits decrease from 240 feet along John Street to 125 feet in the blocks between Mercer and Valley Streets. West of 9th Avenue and north of Mercer Street (Dexter neighborhood), residential building heights are limited to 240 feet.

Podium Heights. Podium heights are limited to 20 feet along the 8th and 9th Avenue corridors. West and north of this corridor, podium heights are limited to 30 feet. In the remaining area, podium heights are limited to 45 feet.

No Action Alternative

Zoning Designations. The majority of the neighborhood would remain Seattle Mixed at varying heights, ranging from SM-125" along Denny Way, down to SM-40 in the north central part of the neighborhood. The Fairview area would retain the existing Commercial (C2) zoning. The central portion of the neighborhood would remain in an Industrial Commercial (IC) zone.

Shoreline Designations. No changes to the existing shoreline designations are proposed.

Building Heights. In general, height limits are lowest near Lake Union and in the Cascade Subarea, with height limits ranging between 40 and 75 feet in these areas. Greatest heights (up to 125 feet) are permitted along the southern edge of the neighborhood, along Denny Way and John Street. In this area, a maximum of 125 feet is permitted.

Podium Heights. Existing zoning standards do not specifically define podium heights, but do require upper level setbacks in certain areas. To some extent, these upper level setbacks define a podium for the development. In general, the area along Denny Way in the SM-125' zone requires an upper level setback for any portion of a structure greater than 75 feet in height. Similarly, along portions of Thomas and Harrison Streets, upper level setbacks are required for structures greater than 25 feet (in residential areas) and 45 feet in height.

1.5 Summary of Potential Impacts and Mitigation Strategies

Table 1-2 summarizes the potential environmental impacts for each element of the environment evaluated in Chapter 3 of the Draft EIS.

Table 1-2
Summary of Impacts

Alternative 1	Alternative 2	Alternative 3	Alternative 4 (No Action)
Geology and Soils			
Impacts common to all alternatives			
By itself, this proposal would not directly result in impacts to geology and soils. Future site-specific development proposals under any of the alternatives, however, could result in impacts to geology and soils. Potential impacts that could be associated with future site-specific development under any alternative are briefly listed below. • Native soils unsuitable for construction, particularly artificial fill and soft compressible soils near the waterfront may be removed and replaced with structural fill and/or other suitable material. • Excavation near existing slopes and/or landslides could result in slope instability. • Surface water and groundwater flow will likely be impacted by new construction. • Steep slopes, landslides, and liquefaction have the potential to impact existing development and new construction.			
• Excavation, grading, soil removal, placement of structural fill, and construction of new foundations could have direct impacts on soils and groundwater.	• Similar to Alternative 1, however impacts would be less in areas where building height limits are less, thereby requiring shallower building foundations.	• Similar to Alternative 1, however impacts would be less in areas where building height limits are less, thereby requiring shallower building foundations.	• Impacts under this alternative would be much less than those discussed under Alternative 1 since building height limits would remain as they currently exist.

Alternative 1	Alternative 2	Alternative 3	Alternative 4 (No Action)
Air Quality			
Impacts common to all alternatives			
By itself, this proposal would not directly result in impacts to air quality. Future site-specific development proposals under any of the alternatives, however, could result in impacts to air quality. Potential impacts that could be associated with future site-specific development under any alternative are briefly listed below. *Construction* • Construction activities could result in temporary, localized increases in particulate concentrations due to emissions from construction-related sources. • Demolition of existing structures would require removal and disposal of building materials that could possibly contain asbestos and lead based paint. • Emissions from construction equipment, especially from diesel-fueled engines, could result in a temporary degradation of local air quality. • Construction activities, such as paving operations using tar and asphalt, could result in short-term localized odors.			
Operation • Predicted PM peak hour auto trips are expected to be the highest under this alternative. Traffic sources would not cause an increase in ambient CO concentrations at receptors near two of the three intersections studied. Even with CO concentration increases at the Mercer Street/Fairview Avenue intersection, ambient concentrations would remain well below the NAAQS. Because increased traffic resulting from new development near the most congested intersections would not likely cause an impact to air quality, impacts are also unlikely at other less congested intersections. Therefore, Alternative 1 would be unlikely to affect air quality in the South Lake Union study area.	• Traffic generated under this alternative is predicted to be the same as Alternative 1. Therefore, ambient concentrations with Alternative 2 would likely be the same as that under Alternative 1. No impacts to air quality are expected	• Under this alternative, approx. 3,000 fewer vehicular trips would occur than under Alternatives 1 and 2, therefore it is likely that fewer trips would result in less traffic at the most congested intersections. Therefore, CO concentrations would likely be similar to or less than those predicted for Alternatives 1 or 2. No impacts to air quality are expected.	• Under this alternative trips generated would be slightly fewer than under Alternative 3, therefore maximum-predicted CO concentrations in 2031 would be less than the ambient air quality standards, so no impacts to air quality are anticipated.

Alternative 1	Alternative 2	Alternative 3	Alternative 4 (No Action)

Water Quality

Impacts common to all alternatives

Construction activities associated with new development or redevelopment under any of the alternatives would be accompanied by ground disturbing activities such as clearing and grading. These activities could result in minor erosion and sedimentation that might result in short-term turbidity increases to local receiving waters (Lake Union). In addition to sediment transport, runoff may also carry other contaminants such as fuel or oil, from construction vehicles and machinery used on-site. The risk of these effects would be of short duration (limited to the length of each project construction period) and can largely be minimized or eliminated with the proper use of construction best management practices (BMPs).

Construction Stormwater Runoff

- Construction activities could cause minor erosion, sedimentation that might result in short-term turbidity increases to local receiving waters (Lake Union), as well as possible fuel/oil contamination from construction vehicles.
- Implementation of construction best management practices, and compliance with applicable permit requirements and conditions would help to ensure that any impacts would be temporary and minor.

Urban Stormwater Runoff

- It is expected that the majority of future development within South Lake Union will exceed the Pollution Generating Impervious Surfaces (PGIS) 5,000 sq. ft. threshold, which will require provision of water quality treatment. Smaller redevelopment projects may not reach this threshold, and multiple, independent small-scale developments in an area could create new PGIS areas without any individual project tripping the 5,000 sq. ft. treatment requirement.
- Per city code water quality treatment facilities are designed based on surface area and not on traffic volumes. Under the current stormwater code, increases in density do not require increased stormwater treatment, although increased pollution would likely be generated as a result of increased vehicle traffic to support this level of development.

Alternative 1	Alternative 2	Alternative 3	Alternative 4 (No Action)

Plants and Animals

Impacts common to all alternatives

By itself, this proposal would not directly result in impacts to plant and animal habitat. Future site-specific development proposals under any of the alternatives, however, could result in impacts to plant and animal habitat. Potential impacts that could be associated with future site-specific development under any alternative are briefly listed below.

- Urban wildlife may be displaced on lots that currently provide urban habitat (such as blackberry thickets, debris piles, and landscaped areas) by future construction/development.
- Development of increased building height could indirectly result in increased bird strikes for migratory birds flying through the study area. However, the net effect on northward migrations of birds would likely be low since downtown buildings would still present the first obstacle to migratory birds.
- Increasing vehicle use in the study area by allowing increased density may contribute to adverse effects on juvenile salmonids associated with poor water quality.
- Potential increases in water quantity associated with increases in the amount of impervious surfaces are not expected to impact fish habitat in Lake Union or downstream waters.
- This alternative is not expected to result in increased predation of juvenile salmonids due to changes in shade or shoreline development.

Environmental Health

Impacts common to all alternatives

The proposal analyzed in this EIS considers the use of incentive zoning to increase height and density in the South Lake Union neighborhood. By itself, this proposal would not directly result in impacts to environmental health. Future site-specific development proposals under any of the alternatives, however, could result in impacts to environmental health. Development activities could include excavation associated with demolition of existing foundations and construction of new foundations. Potential indirect and cumulative impacts for all alternatives associated with property redevelopment include:

- Contaminated soil and/or groundwater may be encountered during excavation when properties in the study area are redeveloped.
- Asbestos Containing Material (ACM) and lead-based paint may be encountered during building demolition when properties in the study area are redeveloped.
- Contamination may be cleaned up as properties are redeveloped, resulting in less contamination in the study area.
- Contaminated materials may be uncovered during property redevelopment, allowing more direct exposure to the public.
- Contamination may be spread as a result of property redevelopment (for example, a new utility corridor could provide a new conduit for contamination to spread through; dewatering activities could pull contaminated groundwater into areas that were initially clean).

Alternative 1	Alternative 2	Alternative 3	Alternative 4 (No Action)
Noise			
Impacts common to all alternatives			
The proposal analyzed in this EIS considers the use of incentive zoning to increase height and density in the South Lake Union subarea. By itself, this proposal would not directly result in noise impacts in the subarea. Future site-specific development proposals under any of the alternatives, however, could result in impacts to noise. Depending on the nature of these site-specific actions, noise impacts could occur to existing, adjacent land uses in. Construction, parking, and mechanical equipment related to new developments have the potential to cause noise impacts to sensitive receivers (e.g., residences, schools, churches, parks, etc.). Larger residential and commercial structures could result in an increase in traffic volumes and traffic-related noise on local streets. Potential impacts that may be associated with future site-specific development under any of the alternatives are discussed below. *Construction* • Noise from demolition and construction activities has the potential to temporarily affect nearby receivers, particularly sensitive uses such as residences. *Operation* • Increased building heights within the flight path for the Lake Union Seaport Airport could result in increased noise impacts to residences and/or offices in upper portions of new buildings from aircraft overflights. • HVAC/mechanical equipment could result in increased noise impacts to nearby residences and/or commercial buildings. • Increases in population density and commercial activity could add more traffic to local streets, which would increase noise levels in South Lake Union area.			

Alternative 1	Alternative 2	Alternative 3	Alternative 4 (No Action)
Energy (GHG)			
Impacts common to all alternatives			
Climate Change • The assumed impacts of climate change would not be anticipated to have a disproportionate impact on the South Lake Union Neighborhood as compared to other sites in Seattle.			
Greenhouse Gas Emissions • Based upon the calculations from the King County SEPA GHG Emissions worksheet, this alternative would generate roughly 23,537,267 $MTCO_2e$ additional GHG emissions over existing conditions during the lifespan of future development.	• Same as Alternative 1.	• Same as Alternative 1.	• Based upon the calculations from the King County SEPA GHG Emissions worksheet, this alternative would generate roughly 16,393,154 $MTCO_2e$ additional GHG emissions over existing conditions during the lifespan of future development.
• Based on the calculations from the SEPA Greenhouse Gas Emissions Inventory Worksheets and the VMT GHG Tool, this alternative would generate roughly 24,160,080 $MTCO_2e$ additional GHG emissions during the lifespan of future development.	• Based on the calculations from the SEPA Greenhouse Gas Emissions Inventory Worksheets and the VMT GHG Tool, this alternative would generate roughly 24,144,150 $MTCO_2e$ additional GHG emissions during the lifespan of future development.	• Based on the calculations from the SEPA Greenhouse Gas Emissions Inventory Worksheets and the VMT GHG Tool, this alternative would generate roughly 22,686,472 $MTCO_2e$ additional GHG emissions during the lifespan of future development.	• Based on the calculations from the SEPA Greenhouse Gas Emissions Inventory Worksheets and the VMT GHG Tool, this alternative would generate roughly 18,063,203 $MTCO_2e$ additional GHG emissions during the lifespan of future development.

Alternative 1	Alternative 2	Alternative 3	Alternative 4 (No Action)
Land Use			
Plans, Policies, and Regulations • This section of the EIS contains an analysis of the consistency of each alternative with existing state, regional and local planning policies. The proposed action is generally consistent with adopted City plans, policies and regulations.			
Wind Analysis The addition of significantly taller buildings directly south of Lake Union could generally increase the potential for: • increased height of vertical and leeward wind wake zones and consequently shear layers; • introduction of wake effects extending into Lake Union; • increase in turbulence intensity north of the subarea; and; • change in local wind speed patterns.	• Similar to but less than Alternative 1.	• Similar to but less than Alternative 2.	• Impacts are not anticipated under this alternative since building height limits would remain as they currently exist.
• Under this alternative, the maximum height of buildings is higher than the anticipated elevation of float planes travelling over/through this area. Apart from the risk of physical impact, small aircraft flying through a "canyon" or "corridor" of tall structures can be significantly affected by turbulent, local winds channeling and accelerating between buildings	• Similar to but less than Alternative 1.	• Similar to but less than Alternative 2.	• Impacts are not anticipated under this alternative since building height limits would remain as they currently exist.

Alternative 1	Alternative 2	Alternative 3	Alternative 4 (No Action)
Housing			
• Increases in population and employment would result in an associated increase in demand for diverse housing opportunities, and public facilities within the subarea. With capacity for 21,000 units, Alternative 1 provides the greatest housing capacity.	• Similar to but less than Alternative 1. Alternative 2 would have capacity for 19,000 units,	• Similar to but less than Alternative 2. Alternative 3 would have capacity for 15,000 units.	• Similar to but less than Alternative 3. Alternative 4 would have capacity for 11,500 units.
• Increased residential capacity due to incentive zoning under this alternative has the potential to result in an increased number of affordable housing units.	• Same as Alternative 1.	• Same as Alternative 1.	• This impact would not occur relative to development under this alternative; no existing area-wide incentive zoning in place.
• This alternative has the largest development potential, therefore it would have the potential through incentive zoning programs to generate the greatest amount of developer financial contributions for affordable housing for lower wage workers.	• Similar to but less than Alternative 1.	• Similar to but less than Alternative 2.	• This impact would not occur relative to development under this alternative; no existing area-wide incentive zoning in place.
• Alternative 1 may also provide market-driven opportunities for new construction of affordable housing separate from the residential towers.	• Similar to but less than Alternative 1.	• Similar to but less than Alternative 2.	• This impact would not occur relative to development under this alternative; no existing area-wide incentive zoning in place.
• Redevelopment under this alternative has the potential to reduce the existing inventory of affordable housing due to displacement of existing wood frame buildings and older single family residences in the subarea.	• Similar to but less than Alternative 1.	• Similar to but less than Alternative 2.	• This impact would not occur relative to development under this alternative; no existing area-wide incentive zoning in place.

Alternative 1	Alternative 2	Alternative 3	Alternative 4 (No Action)
Housing (con't)			
• Under this alternative, height and density increases in the focus areas could result in increased residential development within these corridors.	• Similar to but less than Alternative 1.	• Similar to but less than Alternative 1.	• This impact would not occur relative to development under this alternative; no existing area-wide incentive zoning in place.
Aesthetics			
Area Context • As infill occurs in the South Lake Union Neighborhood, the greatest aesthetic difference resulting from the development under this alternative will be the visual expansion of the Downtown Seattle skyline north to the shores of Lake Union.	• Similar to but less than Alternative 1.	• Similar to but less than Alternative 2.	• This impact would not occur relative to development under this alternative.
Neighborhood Character • As infill occurs in the South Lake Union Neighborhood, the greatest aesthetic difference resulting from the development under this alternative will be the visual expansion of the Downtown Seattle skyline north to the shores of Lake Union.	• Similar to but less than Alternative 1.	• Similar to but less than Alternative 2.	• This impact would not occur relative to development under this alternative.

Alternative 1	Alternative 2	Alternative 3	Alternative 4 (No Action)
Aesthetics (con't)			
Height, Bulk and Scale • This alternative proposes a relatively new building typology for the neighborhood, which would feature a high-rise tower positioned atop a bulkier low-rise podium that would potentially fill the site from property line to property line. <u>These lower podium structures are intended to provide a stepped transition between new and existing development and create a more consistent street wall.</u>	• Similar to but less than Alternative 1.	• Similar to but less than Alternative 2.	• This impact would not occur relative to development under this alternative.
• This alternative would generally gradually transition down in height from the south boundary of the neighborhood toward Mercer Street on the north. Building heights increase slightly in the block north of Mercer Street.	• Same as Alternative 1, except that the transition downward in height extends north toward Lake Union, with no increase in proposed building height north of Mercer Street.	• Same as Alternative 1, except that the transition downward in height extends north toward Lake Union, with no increase in proposed building height north of Mercer Street.	• Same as Alternative 1, except that the transition downward in height extends north toward Lake Union, with no increase in proposed building height north of Mercer Street.
• Tower bulk (length and width) and podium bulk are not expected to create significant impacts given the restrictions on floor plate size for the towers and restrictions on podium height.	• Same as Alternative 1.	• Same as Alternative 1.	• This impact would not occur relative to development under this alternative.

Alternative 1	Alternative 2	Alternative 3	Alternative 4 (No Action)
Aesthetics (con't)			
Viewshed Designated Viewpoints • New high-rise buildings within the study area would be prominent in these views. However, the Space Needle, Elliott Bay, Seattle Downtown skyline, Bainbridge Island, the Cascade Mountains, and the Olympic Peninsula would still be visible.	• Similar to Alternative 1.	• Similar to Alternative 1.	• Similar to but much less than Alternative 1
Scenic Routes • New high-rise buildings within the study area would frame route corridors and would have the potential to screen/block some existing views of the Space Needle from these routes.	• Similar to Alternative 1.	• Similar to Alternative 1.	• Similar to but much less than Alternative 1.

Alternative 1	Alternative 2	Alternative 3	Alternative 4 (No Action)
Aesthetics (con't)			
Shadows • Cumulative shadow impacts would result due to the increased amount of development under this alternative.	• Similar to Alternative 1.	• Similar to Alternative 1.	• Similar to Alternative 1.
• Generally, the infill development on undeveloped or under-developed sites would increase the local shadows on streets, public parks, and adjacent properties	• Similar to Alternative 1.	• Similar to Alternative 1.	• Similar to Alternative 1.
• Shadows from this alternative could shade portions of the water area of Lake Union in the winter morning (southeast lake shore) and in the winter afternoon (southwest lake shore) hours.	• Similar to Alternative 1.	• Similar to Alternative 1.	• Similar to Alternative 1.
• Overall, the shadow impacts are not expected to result in significant adverse environmental impacts. The impacts are typical of an urbanizing area changing from lower intensity development to that of more intensive development.	• Similar to Alternative 1.	• Similar to Alternative 1.	• Similar to Alternative 1.

Alternative 1	Alternative 2	Alternative 3	Alternative 4 (No Action)
Aesthetics (con't)			
Light and Glare • The increased amount of buildings would increase the cumulative level of artificial illumination in South Lake Union. The new buildings will include towers that may potentially incorporate reflective surfaces that could on occasion create glare impacts. The exposure may extend to adjacent hillsides and the freeway because of the topographic basin location. .	• Similar to Alternative 1.	• Similar to Alternative 1.	• Similar to Alternative 1, although highrise towers would not be built under this alternative.
• Potential increases in building heights in this area and specular surfaces on buildings could, at times, generate increased light and glare impacts that may affect seaplane approaches to the south.	• Similar to Alternative 1.	• Similar to Alternative 1.	• Similar to Alternative 1, although highrise towers would not be built under this alternative.
• The distant visibility from Capitol Hill and Gas Works Park of artificial illumination of the towers is high because of their currently unobstructed location. Artificial illumination from new towers will be highly visible from those portions of Capitol Hill, Queen Anne Hill and Gas Works Park that currently have unobstructed views toward the study area.	• Similar to Alternative 1.	• Similar to Alternative 1.	• Similar to Alternative 1, although highrise towers would not be built under this alternative.

Alternative 1	Alternative 2	Alternative 3	Alternative 4 (No Action)
Historic Resources			
• This alternative allows for the greatest amount of development, which could also result in the greatest amount of development pressure on existing small scale structures that may be eligible for historic designation.	• Similar to Alternative 1.	• Similar to Alternative 1.	• Maintaining the existing zoning in the study area would not change the development pressure on historic resources.
• Differences in character, height, and bulk of new development adjacent to a designated historic structure or a structure that is potentially eligible for historic designation, could negatively impact the historic value of the existing structure.	• Similar to Alternative 1.	• Similar to Alternative 1.	• Not anticipated under this alternative.
Cultural Resources			
Impacts common to all alternatives			
• Because the study area is considered to have a low potential to contain intact archaeological deposits, no significant impacts to archaeological sites are anticipated. No pre-contact archaeological sites have been identified within the study area. One historic-period archaeological site has been recorded within the study area and was previously impacted by sewer line and trail construction. Further development is not anticipated to generate additional impacts to this site.			
Transportation			
Impacts Common to the Action Alternatives			
Study Corridors. Under all three action alternatives, the following study corridors experience significant impacts to traffic operations: • Westlake Avenue N from Valley Street to Harrison Street • Westlake Avenue N from Harrison Street to Denny Way • Mercer Street from Dexter Avenue N to Fairview Avenue N			**Study Corridors.** The following study corridors would operate at LOS E or F, exceeding the City's LOS standard, which constitutes a traffic operations deficiency (note that these facilities will also experience deficient

Alternative 1	Alternative 2	Alternative 3	Alternative 4 (No Action)
Transportation (cont.)			
• Denny Way from Aurora Avenue N to Stewart Street • Boren Avenue from Denny Way to Pine Street • Boren Avenue from Pine Street to University Street • Stewart Street from Eastlake Avenue E to Boren Avenue • Harrison Street from Aurora Avenue N to Eastlake Avenue E • 9th Avenue N from Roy Street to Republican Street In addition to those previously listed, the following study corridors are significantly impacted under Alternatives 1 and 2: • Fremont Bridge • Eastlake Avenue E from Fairview Avenue to Lakeview Blvd E • Dexter Avenue N from Valley Street to Denny Way • E Pine Street from Boren Avenue to Broadway • Howell Street/Eastlake Avenue from Stewart Street to Boren Avenue Poor operations on the study corridors identified above can also be assumed to translate to poor intersection operations (LOS E and F) at key intersections along these corridors, such as Mercer Street/Westlake Avenue N, Mercer Street/Fairview Avenue N, Denny Way/Westlake Avenue N, and Denny Way/Boren Avenue. **Transit.** Transit lines that would operate unacceptably under the action alternatives include: • Route 21 (northbound AM and southbound PM) • Route 28 (northbound AM and southbound PM) • Route 29 in both directions (AM and PM peak hours) • Route 56 (northbound AM and southbound PM) Planned capacity increases for the Seattle Streetcar will keep pace with the future ridership estimates from the City's travel model. Transit frequency is the same as under the No Action Alternatives and would not meet the frequency goals outlined in the Urban Village Transit Network (UVTN). **Bicycle and Pedestrian System.** No pedestrian or bicycle demand/capacity impacts are anticipated under the three action alternatives. While no bicycle or pedestrian demand/capacity impacts are anticipated, there are several adverse impacts to the pedestrian and bicycle system: • The increased heights and densities associated with each of the alternatives will lead to additional traffic demand on area roadways, which could result in longer traffic signal cycle lengths. Longer cycle lengths are associated with increased pedestrian delay, which discourages pedestrian travel. Any increases in pedestrian delay at intersections would be an impact to pedestrian mobility.			operations under the three Action Alternatives): • Fremont Bridge from N 35th Street to Westlake Avenue N • Westlake Avenue N from Valley Street to Harrison Street • Westlake Avenue N from Harrison Street to Denny Way • Fairview Avenue N from Eastlake Avenue to Yale Avenue N • Dexter Avenue N from Fremont Bridge to Valley Street • Dexter Avenue N from Valley Street to Denny Way • Mercer Street from Dexter Avenue N to Fairview Avenue N • Denny Way from Aurora Avenue N to Stewart Street • Boren Avenue from Denny Way to Pine Street • Stewart Street from Eastlake Avenue E to Boren Avenue • E Pine Street from Boren Avenue to Broadway • Harrison Street from Aurora Avenue N to Eastlake Avenue N • 9th Avenue N from Roy Street to Republican Street • Howell Street/Eastlake Avenue from Stewart Street to Boren Avenue **Transit.** Two transit routes serving South Lake Union will not operate with acceptable load factors – Route 29 and Route 56. Eight transit lines do

Alternative 1	Alternative 2	Alternative 3	Alternative 4 (No Action)
Transportation (cont.)			
• Additional vehicle traffic at the Mercer Street/Dexter Avenue N could increase vehicle-bicycle conflicts at this High Bicycle Accident intersection. **Parking.** If current parking demand trends continue, short-term shortages are likely for both on-street and off-street parking, particularly around office uses. The level of impact will vary depending on the intensity of land use. The balance between parking supply, parking cost, and alternative mode use will cause some travelers to change modes. Therefore, the parking impact may not be long-term since travelers will shift to other modes in response to limited parking supply and higher parking cost. Although Alternatives 1 and 2 would have the most demand, they would also provide more supply based on market trends. Because of the relationship between development intensity, parking supply, and parking demand, all action alternatives are expected to have short-term parking impacts. **Freight.** The increase in traffic congestion along the Major Truck Streets is caused by both additional development in South Lake Union and regional traffic. There are also potential localized freight impacts that could occur as the neighborhood develops. Impacts to freight mobility could be caused by lack of loading areas and small curb radii that cannot be navigated by trucks. **Traffic Safety.** While it is likely that the total number of vehicle collisions will increase proportionally with the increase in traffic in the South Lake Union area, there is nothing to suggest that the volume-based rate of vehicle-to-vehicle collisions will increase with the implementation of the height and density alternatives.			not meet the UVTN frequency goal of peak hour -- Routes 16, 25, 28, 29, 66, 15 minute headways during the AM 308, 313, and 316. Since the Height and Density alternatives do not affect transit frequency, these routes will also fail to meet frequency goals under the Action Alternatives. **Pedestrian and Bicycle System**. • Anticipated development will result in a substantial number of pedestrian and bicycle trips within the study area. Pedestrian and bicycle demand/capacity issues not likely, but could lead to consequences such as: • Additional pedestrian and vehicle travel at major intersections could lead to increased pedestrian delays if the City retimes traffic signals to facilitate vehicle flow. • Additional vehicle traffic at the Mercer Street/Dexter Avenue N could increase vehicle-bicycle conflicts at this High Bicycle Accident intersection. **Parking.** If current parking demand trends continue, there will likely be at least temporary shortages for both on-street and off-street parking, particularly around office uses. The

Alternative 1	Alternative 2	Alternative 3	Alternative 4 (No Action)
Transportation (cont.)			
			relationship between parking supply and cost will cause prices to climb as demand approaches or exceeds supply. In turn, this will cause some travelers to switch to modes such as transit, thereby freeing up some parking. **Freight.** Increase in traffic congestion on Mercer Street between Dexter Avenue and Fairview Avenue N will lead to increased difficulty for trucks to maneuver and increased travel times, which could delay trucking operations. This is considered a freight mobility deficiency in the area. With future development there could be localized freight deficiencies related to the lack of loading areas and small curb radii that trucks cannot navigate. The removal of Broad Street between 5th Avenue N/Thomas Street and Mercer Street will leave a gap in the City of Seattle Major Truck Street network. **Traffic Safety**. Increased traffic volumes could lead to the identification of additional High Accident Locations. While there may be more High Accident Locations there is no data available to suggest that a volume-based collision rate (e.g., collisions per million entering vehicles) will increase.

Alternative 1	Alternative 2	Alternative 3	Alternative 4 (No Action)
Public Services			
Impacts common to all alternatives			
Fire and Emergency Services • Construction activities associated with potential development under the proposed alternatives could result in an increase in demand for fire services. • The Fire Department would attempt to maintain response times consistent with current performance levels. An additional 1-2 EMS companies could be required over the next 10 years in order to maintain performance levels. However, given that Stations 2 and 25 are two of the busiest stations in the Department, additional EMS companies could be required in SLU even without potential development under this alternative *Police Services* • Potential construction under this alternative could result in an increase in demand for police services. • Potential increases in onsite population and employment associated with development under this alternative would be incremental and would result in associated incremental increases in demand for police services. • Sufficient staffing and facilities exist to accommodate the increased demand for service under this alternative and no additional safety problems are anticipated. *Public Schools* • Potential increases in population in the South Lake Union Neighborhood would be incremental and would be accompanied by subsequent incremental increases in demand for public schools.			
• Requests for fire department services could result in an increase of approximately 18 percent by 2031.	• Requests for fire department services could result in an increase of approximately 17 percent by 2031.	• Requests for fire department services could result in an increase of approximately 15 percent by 2031.	• Requests for fire department services could result in an increase of approximately 14 percent by 2031.

Alternative 1	Alternative 2	Alternative 3	Alternative 4 (No Action)
Public Services (con't)			
• Under the Action Alternatives, approximately 697 students would be generated by potential development at full buildout. It is estimated that new students would include approximately 175 elementary students, 123 middle school students, and 399 high school students.			• Approximately 118 elementary students, 82 middle school students, and 268 high school students would be generated under this alternative.
• Excess functional capacity is anticipated to be available at all school levels within the Seattle School District to serve the projected students that would be generated under the Action Alternatives. Attendance area middle schools (McClure MS and Washington MS) are also anticipated to have excess functional capacity to serve the projected students. However, projected elementary student and high school student generation is anticipated to exceed the available functional capacity at the elementary (John Hay ES and Lowell ES) and high school (Ballard and Garfield) level. It is anticipated that a portion of these students would need to be accommodated at other schools outside of the existing attendance area boundary. This could result in the need for the District to adjust the attendance area boundaries, provide transportation service for the students, and/or other measures to accommodate the number of students in excess of the forecasted functional capacity..			• Similar to the Action Alternatives, however, the number of students would be lower under this alternative.

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Alternative 1	Alternative 2	Alternative 3	Alternative 4 (No Action)
Utilities			
Water System • The increased density and intensity of development under this alternative could result in greater demands on the water supply and distribution system.	• Similar to Alternative 1.	• Similar to Alternative 1.	• Similar to but much less than Alternative 1.
Combined Sewer System • The increased density and intensity of development under this alternative could result in greater demands on the local sewer collection system and on the downstream conveyance and treatment facilities.	• Similar to Alternative 1.	• Similar to Alternative 1.	• Similar to but much less than Alternative 1.
Storm Sewer System • Potential development under any of the alternatives is not expected to result in increased demand on the storm water systems of the neighborhood.	• Similar to Alternative 1.	• Similar to Alternative 1.	• Similar to but much less than Alternative 1.
Electric Power • The increased density and intensity of development under this alternative could result in greater demands on electrical energy.	• Similar to Alternative 1.	• Similar to Alternative 1.	• Similar to but much less than Alternative 1.

Alternative 1	Alternative 2	Alternative 3	Alternative 4 (No Action)

Open Space and Recreation

Impacts common to all alternatives

- Potential increases in height and density associated with this alternative would subsequently result in an increase in population and employment in the SLU Neighborhood, which would result in an associated increase in demand for parks, open space and recreation facilities in the area.

- Based on current parks and recreation distribution guidelines and the estimated 2031 household and employment targets for SLU, the total estimated park and recreation demand under this alternative would be approximately 14.1 acres, which is an increase over the total 2024 estimated demand of 12.78 acres, but still less than the existing 15.7 acres of open space.

- Future residential and employment growth under this alternative would tend to increase the overall use and activity levels of existing parks and recreation facilities in the SLU Neighborhood and site vicinity.

- This alternative could include an incentive program that offers development bonuses for projects (typically an allowance for additional height or floor area). Potential public benefits that could be considered as part of a development incentive program include new park and recreation facilities such as a new center for community, arts, and culture, pocket plazas, and/or children's play areas.

Mitigation Strategies

All mitigation strategies listed in the EIS are organized by element of the environment and presented below. As described in the EIS, many of the strategies are intended to address future site-specific development that could occur under any of the alternatives. Other strategies focus on area-wide mitigation that is intended to directly address potential impacts associated with the increased height and density associated with the alternatives.

Geology and Soils

No mitigation measures are necessary or proposed to address potential impacts associated with the proposal or alternatives.

Depending on the nature of future site-specific development, mitigation may be necessary to address site-specific impacts that could occur with development under any of the alternatives. Site specific measures may include reducing the size of the project, placing limits on project timing and schedule, or requiring additional practices during construction to avoid adverse impacts (SMC 25.05.675(D)). Additional practices might include landscaping, supplemental drainage measures, water quality control, erosion control, and stabilization measures.

Air Quality

No mitigation measures are necessary or proposed to address potential impacts associated with the proposal or alternatives.

Depending on the nature of future site-specific development, mitigation may be necessary to address site-specific impacts that could occur under any of the alternatives. These are briefly described below.

Although significant air quality impacts are not anticipated due to construction activities, construction contractors would be required to comply with all relevant federal, state, and local air quality rules. In addition, implementation of best management practices would reduce emissions related to the construction of the developments.

Possible management practices for reducing the potential for air quality impacts during construction address measures for reducing exhaust emissions and fugitive dust. The Washington Associated General Contractors brochure Guide to Handling Fugitive Dust from Construction Projects and the PSCAA suggest a number of methods for controlling dust and reducing the potential exposure of people to emissions from diesel

equipment. A list of some of the possible control measures that could be implemented to reduce potential air quality impacts from construction activities include:

- use only equipment and trucks that are maintained in optimal operational condition;
- require all off-road equipment to have emission reduction equipment (e.g., require participation in Puget Sound Region Diesel Solutions, a program designed to reduce air pollution from diesel, by project sponsors and contractors);
- use car-pooling or other trip-reduction strategies for construction workers;
- implement restrictions on construction truck and other vehicle idling (e.g., limit idling to a maximum of 5 minutes);
- spray exposed soil with water or other suppressant to reduce emissions of PM and deposition of particulate matter;
- pave or use gravel on staging areas and roads that would be exposed for long periods;
- cover all trucks transporting materials, wetting materials in trucks, or providing adequate freeboard (space from the top of the material to the top of the truck bed), to reduce PM emissions and deposition during transport;
- provide wheel washers to remove particulate matter that would otherwise be carried off site by vehicles to decrease deposition of particulate matter on area roadways;
- cover dirt, gravel, and debris piles as needed to reduce dust and wind-blown debris; and
- stage construction to minimize overall transportation system congestion and delays to reduce regional emissions of pollutants during construction.

Operation

No impacts have been identified and no mitigation is proposed or necessary.

Water Quality

Although current City Stormwater Code provisions would not require additional mitigation for increased height or density within the study area, increased pollution would likely be generated as a result of increased vehicle traffic to support increased development under any of the alternatives. In addition to requiring water quality treatment in storm water basins and flow control in CSO basins for certain levels of

development, the Stormwater Code requires the use of green stormwater infrastructure (GSI) to the maximum extent feasible on all projects. These GSI techniques can provide additional water quality and/or flow control benefits.

Sustainable Drainage Strategies

The alternatives to increase height and density within the study area would not require additional water quality or flow control measures; however, several strategies are provided below that could further mitigate impacts from urban road runoff.

- Water quality treatment best management practices (BMPs) are facilities that remove pollutants by some combination of the following: gravity settling of particulate pollutants, filtration, plant Uptake, biological processes, and/or adsorption. Examples include bio-filtration swales, sand filtration systems, raingardens and stormwater wet ponds.

  Urban settings are challenging to provide water quality facilities since the space needed to provide these systems is typically not readily available. Incorporating the water quality facility into the streetscape design is an option designers can use to ensure roadway runoff is properly treated. Typical examples of integrated water quality BMPs into streetscape design include: roadside raingardens, porous paving, bio-filtration swales, filter strips and ecology embankments.

  Planning of streetscape improvements could consider incorporating water quality design features as noted above to treat runoff prior to discharging to the storm system. The City's Stormwater Code requires use of these and other Green Stormwater Infrastructure (GSI) methods as part of stormwater design.

- As noted, significant portions of the pollution generating surfaces are comprised of public rights-of-way. As such, the development of a regional or neighborhood treatment facility could become an alternative to individual solutions. Redevelopment of the area provides the opportunity for partnering to install regional stormwater treatment facilities. An example of this is the Swale on Yale/Capitol Hill Water Quality Facility which is the project being jointly developed through a public/private partnership with SPU to provide stormwater quality treatment via biofiltration for a large

portion of the approximately 500-acre basin draining through the 72-inch storm drain.

Plants and Animals

No mitigation measures are necessary or proposed to address potential impacts associated with the proposal or alternatives.

Depending on the nature of future site-specific development, mitigation may be necessary to address site-specific impacts that could occur under any of the alternatives, such as adverse impacts to vegetation, the avian patterns of use in the study area, and fish habitat in Lake Union. Potential impacts will be assessed in future project-level SEPA review associated with any specific development proposal to determine whether adverse impacts are significant. The mitigating measures described below address potential site-specific mitigation that may be associated with future site-specific actions.

When project-specific environmental review occurs in the future for development projects located within the South Lake Union neighborhood, an inventory of all non-native and native trees six inches or greater in diameter (measured 4.5 feet above the ground) would be required for the site-specific proposal. City staff would determine which trees qualify as exceptional and would determine protection requirements at that time. If exceptional trees or trees with a diameter of 2 ft. or greater are located within the site area of a new building, the project would be required to comply with the provisions of the City's code, as described above. In addition, Seattle Municipal Code 23.47A.016 requires landscaping and screening for most commercial developments, which would likely mitigate any vegetation loss in the study area.

City permitting of proposed redevelopment under all alternatives would generally require completion of the SEPA process, which includes an assessment of project impacts to fish and wildlife. General measures could include open space for vegetation, migrating animals, and human enjoyment. Other more specific mitigation requirements could include treatment of project-related stormwater, evaluation of outside lighting, installation of native plant species to reduce potential light impacts, and implementation of a "lights out" program to educate and encourage high-rise building tenants to turn off lights at night, particularly during the fall (southward) avian migration period. The City could also choose to reduce height limits on the three lots discussed above that could shade the juvenile outmigration corridor during spring mornings and evenings under Alternatives 1 and 2.

Environmental Health

No mitigation measures are necessary or proposed to address potential impacts associated with the proposal or alternatives.

Depending on the nature of future site-specific development, mitigation may be necessary to address site-specific impacts that could occur under any of the alternatives. Mitigation measures that could be required during future property redevelopment include:

- Further site investigations to determine the potential for contamination to be present on the property.
- Soil and groundwater investigations to evaluate the type, concentration, and extent of contamination, if present.
- Cleanup of contamination sources (e.g. removal of underground storage tanks, excavation of contaminated soil).
- Handling and disposing of contaminated soil and groundwater according to local and state regulations.

Noise

No mitigation measures are necessary or proposed to address potential impacts associated with the proposal or alternatives.

Depending on the nature of future site-specific development, mitigation may be necessary to address site-specific impacts that could occur under any of the alternatives. Mitigation measures that could be required during future property redevelopment include:

Construction

Practices which can reduce the extent to which people are affected by construction noise and ensure that construction noise levels stay within the applicable daytime sound level limits include:

- Use properly sized and maintained mufflers, engine intake silencers, engine enclosures, and turn off idle equipment.
- Construction contracts can specify that mufflers be in good working order and that engine enclosures be used on equipment when the engine is the dominant source of noise.
- Stationary equipment should be placed 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. These measures are especially effective for engines used in pumps, compressors,

welding machines, and similar equipment that operate continuously and contribute to high, steady background noise levels. In addition to providing about a 10-dBA reduction in equivalent sound levels, the use of portable barriers demonstrates to the public the contractor's commitment to minimizing noise impacts during construction.

- Substitute hydraulic or electric models for impact tools such as jack hammers, rock drills and pavement breakers could also reduce construction and demolition noise. And electric pumps could be specified if pumps are required.
- Although as a safety warning device, back-up alarms are exempt from noise ordinances, these devices emit some of the most annoying sounds from a construction site. One mitigation measure would be to ensure that all equipment required to use backup alarms utilize ambient-sensing alarms that broadcast a warning sound loud enough to be heard over background noise – but without using a preset, maximum volume. Another alternative would be to use broadband backup alarms instead of typical pure tone alarms. Such devices have been found to be very effective in reducing annoying noise from construction sites. Requiring operators to lift rather than drag materials wherever feasible can also minimize noise from material handling.
- Construction staging areas expected to be in use for more than a few weeks should be placed as far as possible from sensitive receivers, particularly residences. Likewise, in areas where construction would occur within about 200 feet of existing uses (e.g., residences, schools/classrooms, and noise-sensitive businesses), effective noise control measures (possibly outlined in a construction noise management plan) should be employed to minimize the potential for noise impacts. In addition to placing noise-producing equipment as far as possible from homes and businesses, such control could include using quiet equipment and temporary noise barriers to shield sensitive uses, and orienting the work areas to minimize noise transmission to sensitive off-site locations. Although overall construction sound levels would vary with the type of equipment used, common sense distance attenuation should be applied.

Operation

To minimize the potential for noise impacts, HVAC units should be located away from residences – or other sensitive receptors, whenever possible and/or shielded to comply with applicable noise limits. No other

specific impacts have been identified and, therefore, no other specific mitigation measures are necessary.

Energy (Greenhouse Gas Emissions)

The following potential mitigation strategies would address potential impacts to climate change, energy use and greenhouse gas emissions from future development in the South Lake Union neighborhood:

- **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. Green Stormwater Infrastructure (GSI) could also be used for flow control and water quality treatment.
- **Tree Protection**. The City of Seattle 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 office development by achieving 15-20 percent overall tree canopy within 30 years.
- **Urban Agriculture**. New P-patch Community Gardens and rooftop gardens could be provided or encouraged within the neighborhood for residents to grow food. Balconies, decks, and right-of-way planting strips could also be utilized for individual residents' agriculture needs. A farmer's market could be established for residents to sell locally grown food.
- **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 City code, could be planted to reduce water demand and integrate with the local urban ecosystem.
- **District Infrastructure Systems for Energy, Water and Waste**. District Infrastructure Systems aggregate enough service demands to make local neighborhood utility solutions feasible, and may reduce greenhouse gases by utilizing renewable sources of energy and increasing the use of local resources, materials and supplies. District parking solutions and car sharing are designed to reduce vehicle trips. Water reuse and anaerobic digesters may reduce sewer flows. Rainwater capture may reduce stormwater flows.

Water reuse and rainwater capture could also reduce potable water demands. District systems for the South Lake Union neighborhood could potentially include energy, potable water, wastewater, and solid waste.

- **Waste Management and Deconstruction**. When existing buildings need to be 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.
- **Building Design**. 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, such as Built Green, LEED, and the Evergreen Sustainable Development Criteria, could be encouraged or required for development within the South Lake Union neighborhood.

Land Use

Plans, Policies and Regulations

- In order to ensure that buildings do not obstruct the flight path and airspace established by FAR 77, maximum building heights in this area of South Lake Union will be adjusted to ensure that buildings do not penetrate the airspace.
- A vertical safety buffer – below the approach surface – should be considered to ensure adequate separation between the airspace and building rooftops.
- Consideration should be given to limiting the height of rooftop appurtences (e.g., antennae, flag poles, etc.) proximate to the flight path that could penetrate the airspace or the associated safety buffer.
- Consideration should also be given as part of the City's design review process to limiting rooftop specular surfaces that can act as a distraction for pilots.
- Proximate to the flight path, consideration should be given to limiting electrical interference on frequencies used by aircraft.

Wind Analysis

In order to provide more specific direction for future project-level wind analysis at the project-level of environmental review, the following mitigation measure is recommended as a mitigation strategy in the Draft EIS Land Use element (Draft EIS Section 3.8).

Future development proposals within the flight path corridor that exceed the base height permitted in the underlying Seattle Mixed zoning should provide a wind analysis in accordance with the following methodology.

1. Construct a physical scale model of the proposed project and/or the maximum building envelope allowed at that site, with the surrounding physical context (i.e., existing buildings, topography, etc.)
2. Install the model into a boundary layer wind tunnel and measure velocities and turbulence levels along the prescribed flight path with and without the proposed project
3. Test for prevailing wind directions and/or wind directions that are expected to have an impact on the flight path
4. Present resulting data in a form to allow for quantitative comparison between existing and proposed conditions
5. Provide a written report summarizing the methodology, results and interpretation of the results against any available published aviation standards for shear layers and turbulence levels. Analysis results require an assessment of acceptability of specific results for the aircraft actually used at this location by an aviation specialist.

In addition, the City may consider requiring additional analyses to address the following questions:

- Additional review to address potential future adjacent development (i.e., a future configuration which may augment or mitigate predicted impacts in the future)
- Testing of mitigation schemes if the project results are unacceptable (i.e., the wind tunnel study could be then used to help define a height, size and location on that site that could be acceptable)

Housing

Future population and employment increases in the South Lake Union neighborhood under Alternatives 1-4 would be incremental and would result in associated increases in demand for diverse housing opportunities within the subarea. In order to address the City's goals of providing

affordable housing, the following incentives and programs could be implemented in the South Lake Union subarea:

Existing Development Incentives

Multi-Family Property Tax Exemption

Seattle's Multifamily Tax Exemption (MFTE) program allows developers to receive a property tax exemption on the residential portion of a development for a specified number of years in exchange for providing a specified percentage of housing units in rental projects that are affordable for moderate-wage workers during the time the exemption is utilized. The current MFTE program expired on Dec. 31, 2010; however the Seattle City Council is currently reviewing the program for renewal. There may be changes to existing program requirements once the City Council renews the program. It is assumed that the MFTE Program will continue to be available in 39 target areas in Seattle, one of which is the South Lake Union Urban Center.

Incentive Zoning

Incentive zoning is a strategy to both encourage the desired density while ensuring growth contributes to livability and sustainability. The goal of incentive zoning is to link code flexibility, increased density and development potential with public benefits in the form of affordable housing and other amenities valued by communities. By helping to direct growth to areas targeted in the Comprehensive Plan, incentive zoning could also work to preserve the character of many of Seattle's neighborhoods. Incentive zoning is used to offer extra floor area for new development in exchange for community amenities. A baseline height limit or Floor Area Ratio (FAR) limit is created in a given neighborhood or a zone. Developers can then take advantage of additional height or FAR by purchasing TDR and/or acquiring bonus floor area in exchange for providing public benefits, which include low-income housing (defined as affordable to households making less than 80 or 100 percent of Area Median Income depending on tenure) and a long list of on-site public amenities (SMC 23.50.051).

The commercial/industrial bonus provision of Seattle's incentive zoning enables developers to achieve additional floor area ratio (FAR) in exchange for housing and childcare that is affordable to lower-wage workers. The housing and/or childcare can be provided by the developer or a contribution of $18.75 per bonus square foot for housing and $3.25 per bonus square foot for childcare facilities may be made to the City for those purposes. This bonus is currently available in high-rise downtown

commercial zones and on a few IC-zoned lots in the South Lake Union Urban Center (SMC 23.50.052).

The residential bonus provision of Seattle's incentive zoning enables residential developers to achieve extra floor area above the base height limit when affordable housing is provided. Developers can build affordable housing as part of their development or, in certain zones, make a contribution of approximately $19 per bonus square foot to the City to fund new affordable housing. The housing is intended to primarily serve Seattle's modest-wage workers. The residential bonus is currently available in midrise and high-rise zones, in certain Downtown zones, and in certain areas of the Dravus neighborhood; this program is not presently available in the South Lake Union subarea.

Transferable Development Rights (TDR)

This option helps Seattle maintain a more variable scale of buildings in the South Lake Union neighborhood by allowing density to be moved from one site to another (SMC 23.50.053). Owners of certified TDR sites — ones with low-income housing, an arts facility, or a designated Landmark building— can sell excess development rights to developers in certain IC zones and use the proceeds for preservation of those priority uses. A TDR program is also in effect in downtown.

Other Strategies Specific to South Lake Union to Achieve Affordable Housing Objectives

Preservation

Structure incentive programs to allow use of TDR to preserve the following older residential buildings (all red brick buildings):

- Grandview Apartments (409 Eastlake East)
- Carolina Court (527 Eastlake North)
- Carlton Apartments (603 Pontius North)
- 502 Minor North
- Carolyn Manor Apartments (1309 Dexter North)
- Jensen Apartments

Employers Promoting Living near Work

Involve employers in identifying strategies to promote living near work.

- Create innovative ways for employers to help develop a "live and work" community.

- Explore ways for South lake Union employers to contribute to housing if employees live in South Lake Union through Transportation Management Plans.

Surplus Sites for Affordable Housing

- Inventory publicly owned property in South Lake Union suitable for development in affordable housing.
- Identify key community properties for particular uses, including affordable housing.

Family Housing

- Encourage affordable family sized homes through employer-developer partnerships and direct City funding.
- Use surplus property to achieve housing objectives not being met through private market, such as family housing.
- Use zoning and design guidelines to encourage ground-related housing in the six block area along 8th Avenue from John to Republican.
- Encourage ground-related housing units with good access to open space around Denny Park and Cascade Park.

Subsidized Housing Resources

- Leverage public funding to preserve existing and create new subsidized housing within South Lake Union.
- Use South Lake Union commercial/industrial bonus payment option funds for new low-income housing in the South Lake Union subarea.

Aesthetics

Height, Bulk and Scale

A number of potential approaches for mitigation are discussed below. See also mitigation recommendations contained in SMC 25.05.675, some of which are incorporated below.

Possible mitigation strategies to reduce the impact of height, bulk and scale that may apply to all alternatives include:

a. Either limit the height of development or create additional zones that transition building heights down more gradually.
b. Implement measures to modify the bulk of development.

c. Modify building façades or envelopes through adjustments in building modulation, finish material, color, architectural detailing or fenestration (including type or percentage of glazing).
d. Reduce, relocate or rearrange of accessory structures.
e. Modify required building setbacks.
f. Relocate buildings on-site.
g. Modify building orientation.
h. Redesign the building profile of a project.
i. Create or modify on-site view corridors.
j. Reduce or modify walls, fences, screening or landscaping.
k. Require or encourage incorporation of open space or through-block pedestrian connections as part of development projects.
l. Develop and adopt design guidelines to specifically address bulk impacts identified with each alternative.

For South Lake Union, recommendations for specific migration strategies to reduce the potential impacts of the height, bulk and scale include the following:

a. Where multi-block development is anticipated, consider development agreements to achieve cohesive design solutions and appropriate site-specific mitigations for project height, bulk and scale.
b. On sites allowing podium heights of 65 and 85 feet (Alternative 1 only) consider providing an incentive to create public open space, limit overall height and step (or otherwise modulate) the podium mass by limiting the podium area to a maximum of 3 FAR.
c. In order to maintain a pedestrian character, street level uses and positive visual expression at the podium levels, discourage above-grade parking. Consider setting a maximum of one FAR for above-grade structured parking.
d. As inspired by the UDF (see pages 14 and 15 of Final UDF) , consider creating a sense of openness at designated street intersections by requiring a substantial percentage (i.e. 70%) of street level transparency (i.e. between 2 feet and 9 feet above street grade) for a distance of 40 feet from the corner in all directions. Proposed locations include all intersections of Dexter Avenue N, 9th Avenue N, Terry Avenue N and Fairview Avenue N. between John and Republican Streets, as well as Mercer Street between 9th and Boren Avenues N. Retail and other pedestrian-oriented uses could be encouraged in these locations through

incentives (but should not be a requirement lacking an established customer base).

e. Per the UDF (see pages 18 and 19), consider incentivizing or otherwise encouraging mid-block pedestrian connections and public open space. Additional, small scale open spaces are recommended throughout the study area. Mid-block pedestrian connections should also be encouraged throughout the neighborhood, but these would be particularly beneficial on the residential blocks between Mercer and John Streets on either side of 8th Avenue N and on the west side of Yale Avenue N.

f. As suggested by the language of the UDF (see page 37, Item 20), consider allowing TDRs (Transfer of Development Rights) for the older structures within the neighborhood that do not utilize their full development potential, in order to preserve neighborhood character, protect affordable housing and maintain a variety of building scales. This strategy could be applied to all structures over a certain age (i.e. 25 years) or to specific buildings identified through an inventory of South Lake Union's character-defining structures and affordable housing.

g. Consider incentivizing ground-level housing with street setbacks (i.e. 15 feet) to create sufficient privacy separation to encourage entry at grade or near-grade (porches or stoops).

In addition to the recommended mitigation measures outlined above, the upper-level setbacks as described in the Viewshed Section under 3.4.7 Mitigation Strategies will also ameliorate the impacts of height, bulk and scale.

Viewshed

While no significant impacts have been identified relative to protected viewpoints as a result of this programmatic analysis, there are notable impacts to views valued within the neighborhood. These currently unprotected views include views toward the Space Needle from Lake Union Park, along Thomas and John Streets, and views toward the open sky above Lake Union looking north along Fairview Avenue N, Boren Avenue N and Westlake Avenue N.

These impacts can be partially mitigated by the setback provisions recommended in the Urban Design Framework (see discussion and diagram on pages 22 and 23 of Final UDF, dated December 31, 2010). In addition to the recommendations contained in the UDF, consider adding upper-level setbacks on:

a. On the east-west rights-of-way north of Aloha Street between Westlake Avenue N and Aurora Avenue N in order to open up views toward Lake Union and Lake Union Park from Queen Anne Hill and Dexter Avenue
b. On 8th Avenue N between Denny Park and Mercer Street in order to reduce shading and bring light and air to the street – and possible woonerf – targeted principally for future residential development.

At such time site-specific development occurs, detailed viewshed analysis should be performed relative to any development that would be within the view corridor between Volunteer Park and the Space Needle.

Shadows

At such time site-specific development occurs, detailed shadow analysis should be performed relative to any development that could affect Denny Park, Cascade Playground or Lake Union Park with attention to times of the year and hours of the day the open space could be affected, the geographical area(s) of the open space affected, anticipated seasonal use of the open space, availability of other open spaces in the area, and the number of people affected.

SMC 25.05.675Q2e authorizes the City to employ measures to mitigate adverse shadow impacts to key open spaces, including:

a. limiting the height of development;
b. limiting the bulk of the development;
c. redesigning the profile of the development;
d. limiting or rearranging walls, fences or plant material;
e. limiting or rearranging accessory structures, i.e., towers, railings, antennae; and
f. relocating the project on the site.

Specific recommendations for limiting shading follow:

a. Throughout the study area, consider a requirement for a 60 foot separation (equivalent to a typical street separation) between a residential tower and any other high-rise tower (office or residential). This will contribute an added level of safety appropriate to the residential use, as well as improve privacy and diminish shadow impacts.
b. In order to minimize shading of Lake Union Park, consider a requirement for a half-block separation, in addition to the width of

the Valley Street right-of-way, between towers on the Mercer Blocks and the park.

c. In order to minimize shading of Lake Union Park, consider a requirement for a half-block separation in the east-west dimension, in addition to the width of the north-south street, between towers on adjacent Mercer Blocks

d. On parcels bordering on the east and west edges of public parks, consider requiring that towers be located as far north as feasible within their lot lines in order to limit shadowing of the parks.

In addition to the recommended mitigation measures outlined above, the upper-level setbacks as described below will also ameliorate the impacts of shading and shadows on the public realm.

Per the UDF, consider upper level setbacks on the following streets (see also plan diagram, Fig.2-10):

a. John Street between Eastlake Avenue N and Aurora Avenue N. A 30 foot setback on the south side of the street to improve solar exposure. A progressive setback on the north side starting at 15 feet between Fairview Avenue N and 9th Avenue N, and expanding to a 30 feet between 9th Avenue N and the Aurora Avenue N in order to open up street views toward the Space Needle.

b. Thomas Street between Eastlake Avenue N and Aurora Avenue N. A progressive setback on the south side of the street starting at 30 feet between Eastlake Avenue N and 9th Avenue N, expanding to 40 feet between 9th and 8th Avenues N and then to 50 feet between 8th Avenue N and Aurora Avenues N in order to open up street views toward the Space Needle, as well as improve solar exposure to the street.

c. Fairview Avenue between John and Mercer (or Valley) Streets. A 10 foot setback on the east side of the street side to improve solar exposure as well as views to the landmarked Ford Motor Plant Building. A 30 foot setback on the west side of the street between John and Mercer Streets, plus a 50 foot setback between Mercer and Valley Streets, to improve solar exposure and views toward Lake Union.

d. Boren Avenue between John and Mercer (or Valley) Streets. A 10 foot setback on both the east and west sides of the street side to improve solar exposure as well as views toward Lake Union.

e. Westlake Avenue N between Mercer and Valley Streets. A 50 foot setback on the east side of the street to improve views toward Lake Union.

f. 8th Avenue between Denny Park and Mercer Street. A 15 foot setback on both sides of the street to allow more light and air to street-level.

g. Valley Street between Fairview Avenue N and Westlake Avenue N. A progressive setback on the south side of the street, staring with 90 feet between Fairview and Boren Avenues N, expanding to 120 feet between Boren and Terry Avenues N and once more to 150 feet between Terry and Westlake Avenues N in order to reduce shadows on Lake Union Park and improve views toward the Space Needle from the Lake Union waterfront and trail system.

h. All street bordering on the east, south and west sides of Denny Park and Cascade Park and Playground. A 15 foot setback would apply only where the streets – 9th Avenue N, Dexter Avenue N, Thomas Street, Pontius Avenue N. and Minor Avenue N. – border directly on the parks, so as to improve solar exposure and reduce shading.

i. The remaining east-west rights-of-ways north of Aloha Street (aligned with Prospect, Highland, Comstock and Lee Streets) between Aurora and Westlake Avenues N. A 15 foot setback on both sides of the street to open up views from Aurora Avenue N and Queen Anne Hill toward Lake Union and the Cascades.

All proposed upper-level setbacks would be minimum dimensions measured from the property line and would start at the top of the podium structure.

As noted in the UDF, corresponding upper level setbacks should eventually be considered as well in the Uptown Triangle in order to fully realize the view benefits of the proposed setbacks along John and Thomas Streets.

Light and Glare

SMC 25.05.675K2d authorizes the City to employ measures to mitigate adverse light and glare impacts, including the following:

a. "limiting the reflective qualities of surface materials that can be used in the development;

b. limiting the area and intensity of illumination;

c. limiting the location or angle of illumination;

d. limiting the hours of illumination; and
e. Providing landscaping."

Other measures that may be also employed include:

a. install screening, overhangs, or shielding to minimize spillover lighting impacts – particularly near sensitive residential receivers;
b. shield exterior lighting fixtures and directing site security lighting away from nearby residential uses;
c. include pedestrian-scaled and pedestrian-oriented lighting for safety along sidewalks, parking areas, street crossings and building access points;
d. employ timers or motion sensors for lighting to reduce spillover lighting and generally reduce ambient light levels;
e. avoid large expanses of smooth, uniform, reflective building surfaces;
f. incorporate architectural relief and detail, such as exterior sun shades, deep spandrels, mullions or other features of façade articulation, that reduce reflectivity; and
g. as necessary, undertake project-specific solar impact analysis studies to determine the extent of light and/or glare impacts and to identify specific mitigation measures.

Historic Resources

In order to comprehensively assess existing resources and identify historic preservation priorities, potentially undertake a new inventory of historic resources in the South Lake Union neighborhood. Up-to-date information will allow proper assessment of potentially eligible properties. A new survey would address buildings such as 501 Dexter Avenue N, which appears to have architectural significance yet has not been cited in earlier surveys.

If higher-density alternatives (1, 2, or 3) are chosen, funding to the Department of Neighborhoods Historic Preservation Office for preparation of landmark nominations should be considered as mitigation. The work would allow the properties to be taken through the nomination process to clarify the status of potentially significant properties.

The *South Lake Union Urban Center Neighborhood Plan* of September 2007 identifies goals and policies that specifically relate to historic or older buildings in the neighborhood. The plan identifies the following policies, which would be appropriate as mitigation measures for increased

height and density allowed in the neighborhood (under Alternatives 1, 2, or 3).

- Establish incentives to encourage preservation, adaptive use, and rehabilitation of historically significant structures in the neighborhood.
- Explore incentives to encourage the adaptive use of older, character-providing buildings in the neighborhood.
- Provide incentives to support property owners who wish to maintain existing buildings.

A zoning capacity and financial feasibility model should be created and analyzed to determine whether an expanded transfer of development rights (TDR) program would be an effective financial incentive and mitigation tool for preservation of local landmark properties in the South Lake Union neighborhood.

A certified arborist should undertake a conditions analysis of the trees in Denny Park, including an assessment of their need for seasonal sunlight from the north. Design standards should be modified accordingly to allow ample light.

Cultural Resources

No mitigation measures are necessary or proposed to address potential impacts associated with the proposal or alternatives.

Depending on the location and nature of future site-specific development, mitigation may be necessary to address site-specific impacts that could occur under any of the alternatives.

Mitigation measures could potentially include archaeological monitoring, testing, or data recovery excavations; development of interpretive signs, markers, or exhibits; and/or minimization or avoidance of further impacts through redesign.

Transportation

Bicycle and Pedestrian System

Research has shown that vehicle trip generation and traffic congestion impacts can be reduced if a robust pedestrian system is provided.

Based on a review of the Pedestrian Master Plan, several improvements could be implemented in South Lake Union. Some of the improvements related to Tier 1 Pedestrian mobility issues in the South Lake Union neighborhood include, but are not limited to:

- Complete missing sidewalks along Terry Avenue consistent with the *Terry Avenue Street Design Guidelines*
- Add sidewalk to north side of Denny Way between Stewart Street and Melrose Avenue consistent with the proposed *Denny Way Streetscape Concept Plan*[1]
- Add sidewalk along the east side of Eastlake Avenue from Denny Way to Harrison Street and add a signalized[2] crossing at the Eastlake Avenue/Republican Street intersection
- Close pedestrian system gaps on Roy Street between Fairview Avenue and Minor Avenue and on Valley Street between Minor Avenue and Yale Avenue

The Bicycle Master Plan identifies the following relevant actions in the South Lake Union neighborhood including but not limited to:

- Add bikeways along Fairview Avenue from Valley Street to Eastlake Avenue E to connect to facilities provided as part of Mercer East and West projects on Valley and Roy Streets
- Add bikeways along Harrison or Thomas street between Fifth N and Eastlake and along Fairview Avenue between Denny Way and Valley Street
- Improve bicycle access through the Fairview Avenue/Denny Way intersection
- Signalize intersection at Minor Avenue N and Denny Way consistent with the *Denny Way Streetscape Concept Plan*

All Bicycle Master Plan improvements were considered for this analysis. However, before implementation, SDOT would review the projects during the design stage to address any potential concerns, such as safety. Other pedestrian and bicycle network projects include the following:

- Implement the planned Lake to Bay Loop
- Repair facilities in poor condition
- Require that projects which develop above the "base height" implement the mid-block connector concept consistent with the South Lake Union Urban Design Framework

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[1] *The Denny Way Streetscape Concept Plan* has not yet been adopted.

[2] To be implemented, a signal must meet warrants and be approved by SDOT.

- Provide additional signalized crossings on Thomas Street at the Dexter Avenue, 9th Avenue, and Westlake Avenue N intersections[3]
- Provide additional signalized crossings on John Street at the Dexter Avenue and Westlake Avenue N intersections[4]
- Evaluate opportunity to provide enhanced, marked crossing locations across Westlake Avenue N, between Galer Street and 9th Avenue N[5], and implement improvement as appropriate
- Implement the hill climbs defined in the Urban Design Framework
- Improve street lighting and way finding

Travel Demand Management and Parking Strategies

Implement best management practices for travel demand management including maximum parking limits and unbundled parking costs for residential and commercial properties. Research by the California Air Pollution Control Officers Association (CAPCOA), which is composed of air quality management districts in that state has shown that implementation of travel demand management programs can substantially reduce vehicle trip generation (see **Appendix E** for details), which, in turn, reduces traffic congestion impacts. Parking maximums would limit the number of parking spaces which can be built with new development. Unbundled parking separates parking costs from total property cost, allowing buyers or tenants to forego buying or leasing parking spaces. These types of potential mitigation measures would tend to reduce the number of work-based commute trips and all types of home-based trips .Shopping-based trips would also decrease, but at a lower level since these types of trips are less sensitive to parking costs and limited supply for short-term use.

The parking-based travel demand management strategies described above could be further supported by implementing the car sharing

[3] Given the multi-lane nature of these streets, a pedestrian signal or half-signal is necessary to provide a safe crossing. The signal is required because of the adjacent land uses and likely pedestrian desire lines.

[4] To be implemented, a signal must meet warrants and be approved by SDOT..

[5] The frequency of marked crossings is a key component of the pedestrian network. The exact location of each crossing is not known at this time. In the future, the City would evaluate pedestrian desire lines to determine the precise location and treatment for each crossing.

incentives identified in the Seattle Municipal Code[6] and through the development of a parking management program like the recently deployed e-park system in Downtown Seattle to better utilize private parking resources.

Note that the parking analysis in the previous sections identified potential short-term parking impacts related to an imbalance between supply and demand. Any reductions to the parking supply in the South Lake Union area would exacerbate this short-term impact. However, as described in the previous sections, while reduced supply will create a short-term shortage in parking spaces, over time prices will adjust and some drivers will switch to other modes. This shift to other modes is the primary goal of the potential travel demand management mitigation measures since it will reduce the impacts to traffic congestion and freight mobility.

In addition to the parking management strategies described above, the City of Seattle could also seek to expand the Downtown Growth and Transportation Efficiency Center (GTEC) program to include the South Lake Union area, or institute a separate GTEC for South Lake Union. As described in *Growth and Transportation Efficiency Center Program 2009 Report to the Legislature*, WSDOT describes the GTEC program as an extension of the existing CTR program. The GTEC program engages employers of all sizes in vehicle trip reduction programs through an area-wide approach. GTECs must also include an evaluation of transportation and land use policies to determine the extent to which they complement and support trip reduction goals. The South Lake Union Height and Density land use changes along with the potential mitigation packages conform well to the general goals of the GTEC program.

Transit Service Expansion

Impacts to transit load factors could be reduced and frequencies could increase by providing capital and/or operational support existing and planned transit service between Uptown and Capitol Hill. King County Metro should consider options to increase the frequency and capacity on the impacted routes by running additional busses. A South Lake Union shuttle service connecting destinations along Eastlake, the streetcar line, and the Aurora Rapid Ride line would provide additional transit service

[6] SMC – 23.54.020.J

opportunities in the area, while supporting the shift to other modes caused by the potential travel demand management mitigation measures.

Additional improvements to the transit network include transit signal priority at the Fairview Avenue N./Denny Way intersection, and a northbound queue jump lane and southbound transit signal priority at the Fairview Avenue N./Harrison Street intersection.

Roadway Capacity Enhancements

Impacts to traffic congestion and freight mobility along the Mercer Street corridor could be reduced by the completion of the Mercer West Corridor Project. The roadway changes include:

- Widen the Mercer Street underpass between Dexter and 5th Avenues N to include three lanes in each direction, left-turn lanes, wider sidewalks, and a bicycle path
- Connect 8th Avenue N between Mercer and Roy Streets
- Consider separating southbound left turn phase at 9th Avenue/Denny Way/Bell Street intersection

Potential Mitigation Measure Implementation

Implementation of the potential mitigation measures described above is anticipated to be achieved through an update of the South Lake Union Voluntary Impact Fee Program and updates to the City Code to support the potential travel demand management/parking mitigation measures. As the South Lake Union neighborhood builds out, the Seattle Department of Transportation will monitor the transportation system, prioritize projects, and use the fees collected to construct projects, much as the current Voluntary Impact Fee Program is operated.

Projects that develop within the South Lake Union neighborhood may pay the voluntary mitigation fee in order to receive a Master Use Permit. Alternatively, if a project applicant does not wish to pay the voluntary impact fee, project applicants must perform a supplemental environmental analysis to determine transportation impacts and appropriate measures to mitigate project impacts.

Some of these mitigation measures may be implemented through the City's street or alley vacation process. If proposed projects within the South Lake Union Urban Center include street or alley vacations, the city may require contributions to the above mitigation measures as part of the public benefit required for approval of petitions to vacate public rights-of-way, where such contribution would exceed the projects mitigation obligations and provide amenities that are identified as public benefits.

Specific Mitigation Measures

This section summarizes each impact along with potential mitigation measures.

Impact 1: Under all three alternatives, there will be significant impacts to study corridor traffic operations.

Potential Mitigation 1: The Roadway Capacity Enhancement mitigation measure, which includes the completion of the Mercer West Corridor Project, will reduce the impact on Mercer Street corridor and improve overall pedestrian and bicycle circulation in the area by implementing a key section of the Lake to Bay Loop.

Since no other roadway capacity expansion projects are planned or considered feasible, many of the remaining impacts can be lessened by implementing the Bicycle and Pedestrian System and Travel Demand Management mitigation measures, as described below.

Based on the output from the Mixed Use Development (MXD) model, the Bicycle and Pedestrian System mitigation measures will reduce vehicle trip generation by approximately 7 percent (for PM peak hour trips, see **Appendix E** for other time periods). The MXD trip generation tool predicts mode share based primarily on land use and demographic information, and does not take additional travel demand management into account. To estimate the reduction in trips prompted by travel demand management programs, research summarized by CAPCOA[7]was consulted. According to this research, the travel demand management strategies will reduce vehicle trip generation by 15 percent[8]. Combined, these two measures would reduce overall PM vehicle trip generation by about 21 percent for all three height and density alternatives[9].Additional

[7]*Quantifying Greenhouse Gas Mitigation Measures: A Resource for Local Government to Assess Emission Reductions from GHG Mitigation Measures,* CAPCOA, August, 2010.

[8] 15 percent reduction in trip generation assumes that the maximum parking limits reduce parking supply (on a per square foot/dwelling unit basis) by 25 percent compared to the No Action alternative. Unbundled parking is assumed to cost an average of $100 per month per space.

[9] As noted in Appendix E, the combined effects of two trip reduction strategies are not additive since there are diminishing returns when multiple strategies are implemented.

information regarding these calculations and the CAPCOA research are available in **Appendix E**.

As shown in **Table 1-3**, these trip generation rates would be lower than what is anticipated under the No Action Alternative and the impact on many study roadway segments would be reduced to a less-than-significant level. However, because the change in traffic congestion would affect drivers' behavior, some roadway segments would continue to be impacted, as described in the next section.

The Transit Service Expansion mitigation measure is also recommended. Based on the CAPCOA research, providing capital support that would lead to increased transit frequency would lead to an additional two percent reduction in vehicle trip generation. CAPCOA estimates an additional five percent reduction in vehicle trip generation could be achieved by providing new transit service (e.g., new service between Queen Anne, South Lake Union, and Capitol Hill via Mercer Street; South Lake Union shuttle service connecting the neighborhood with the Streetcar and the Aurora Rapid Ride). However, additional studies would need to be conducted to determine the exact level of ridership on new transit lines.

Any additional transit would also support and enhance the pedestrian, bicycle, and travel demand management mitigation measures described above. However, since the City of Seattle does not generally own and operate the transit service in South Lake Union, there is no guarantee that expanded transit service (beyond what is assumed in the Seattle travel model) will occur. Therefore, this mitigation measure was not assumed when reporting the results with mitigation in **Table 1-4**.

Impact 2: Under all three height and density alternatives, there will be impacts to bicycle and pedestrian mobility.

Potential Mitigation 2: To reduce the significance of this impact, it is recommended that the Bicycle and Pedestrian System mitigation measures be implemented.

Impact 3: Under all three height and density alternatives, freight mobility is significantly impacted.

Potential Mitigation 3: As discussed, the Roadway Capacity Enhancements will not address congestion on Mercer Street between Dexter Avenue and Fairview Avenue N. Therefore it is recommended that the Bicycle and Pedestrian System and Travel Demand Management mitigation measures also be implemented to reduce the automobile trip generation from

residents and employees of South Lake Union. These measures will free up more capacity on the Mercer Street corridor for freight traffic.

It is also recommended that the City update the Major Truck Street network to identify a replacement for Broad Street. Further, improvements to major truck streets and arterials expected to carry heavy vehicles on a regular basis will continue to be considered pursuant to the City's adopted Complete Streets policy which guiding principle is to design, operate and maintain Seattle's streets to promote safe and convenient access and travel for all users. For example, the need for wider corner radii to accommodate turning trucks must be balanced with the need to shorten pedestrian crossings and slow regular passenger vehicles. The City will evaluate these trade-offs on a case-by-case basis.

Also, as specific projects seek a Master Use Permit, the City should review the applications to ensure that adequate loading and truck circulation facilities are provided based on the proposed use.

Impact 4: Under all three height and density alternatives, there will be significant impacts to transit in terms of load factors.

Potential Mitigation4: To reduce the significance of this impact, it is recommended that King County Metro increase the frequency and capacity on the impacted routes by running additional busses.

Impact 5: Under all three height and density alternatives, there will be significant short-term impacts to parking. The impacts would be felt by employees who must pay more for parking, and building owners who must maintain active TDM programs to accommodate all the tenants.

Potential Mitigation 5: To reduce the significance of this impact, it is recommended that the Bicycle and Pedestrian System, Travel Demand Management, and Transit Service Expansion mitigation measures be implemented. There is a strong relationship between parking supply, parking cost, and mode share. Although there may be short-term impacts as individual developments are completed (causing parking demand to exceed supply), over the long-term the situation will reach equilibrium as drivers shift to other modes.

The City may have to review its on-street parking policies and consider implementing variable parking pricing to maintain supply. The shift from driving to transit may also require more transit service from King County Metro. The parking maximum limits suggested as mitigation for Impact 1 would also reduce supply and shift travelers to other modes.

Mitigation Results

The potential mitigation measures were taken into account and analysis was repeated on the three height and density rezone alternatives. The Pedestrian and Bicycle System and Travel Demand Management mitigation packages were factored in at the trip generation level. The Roadway Capacity Enhancement mitigation measures were integrated into the travel model. The trip generation results of the mitigated height and density alternatives are summarized in **Table 1-3** (more details may be found in **Appendix E**). The d/c ratios of the three action alternatives with mitigation are shown in **Table 1-4**, along with the No Action Alternative for comparison.

Table 1-3
PM Peak Hour Trip Generation with and without Mitigation

Alternative	No Mitigation			Mitigation		
	Auto Trips (mode share %)	Non-auto Trips (mode share %)		Auto Trips (mode share %)	Non-auto Trips (mode share %)	
		Internal, Bicycle & Pedestrian	Transit		Internal, Bicycle & Pedestrian	Transit
No Action Alternative - Current Zoning (Mitigation Not Applicable)	12,648 (51.4%)	7,279 (26.9%)	6,091 (21.7%)	12,648 (51.4%)	7,279 (26.9%)	5,871 (21.7%)
Alternative 1 - Maximum Increases to Height and Density	15,554 (50.5%)	9,429 (27.8%)	7,371 (21.7%)	12,244 (39.7%)	11,835 (34.9%)	8,606 (25.4%)
Alternative 2 - Mid-Range Increases to Height and Density	15,548 (50.4%)	9,435 (27.8%)	7,371 (21.7%)	12,236 (39.7%)	11,844 (34.9%)	8,606 (25.4%)
Alternative 3 - Moderate Increases to Height and Density	13,605 (50.3%)	8,334 (28.0%)	6,449 (21.7%)	10,715 (39.6%)	10,435 (35.1%)	7,526 (25.3%)

Source: Fehr & Peers, 2010

Note: See Appendix E for details on the mode share calculation. Auto trips include both SOV and HOV trips, so the number reported is not equivalent to person-trips. The Internal, Bicycle & Pedestrian and Transit categories are person-trips.

Table 1-4
Mitigated Action Alternative: Demand-to-Capacity Ratios of Study Corridors

Road	Segment	NO ACTION ALTERNATIVE			ALTERNATIVE 1			ALTERNATIVE 2			ALTERNATIVE 3		
		Volume	Peak Hour/ Direction	d/c Ratio/ LOS	Volume	Peak Hour/ Direction	d/c Ratio/ LOS	Volume	Peak Hour/ Direction	d/c Ratio/ LOS	Volume	Peak Hour/ Direction	d/c Ratio/ LOS
Fremont Bridge	1) N 35th Street to Westlake Avenue N	1,768	PM/N	1.11/F	1,754	PM/N	1.10/F	1,755	PM/N	1.10/F	1,733	PM/N	1.08/F
Westlake Avenue N	2) Fremont Bridge to Valley Street	1,330	PM/N	0.83/D	1,316	PM/N	0.82/D	1,316	PM/N	0.82/D	1,320	PM/N	0.83/D
	3) Valley Street to Harrison Street	1,040	PM/S	0.99/E	988	PM/S	0.94/E	991	PM/S	0.94/E	946	PM/S	0.90/E
	4) Harrison Street to Denny Way	1,061	PM/S	1.01/F	1,029	PM/S	0.98/E	1,030	PM/S	0.98/E	994	PM/S	0.95/E
	5) Denny Way to Stewart Street	624	PM/N	0.69/D	610	PM/N	0.68/D	616	PM/N	0.68/D	598	PM/N	0.66/D
Eastlake Avenue E	6) N 40th Street to E Hamlin Street	1,166	AM/SW	0.61/D	1,130	AM/SW	0.59/D	1,129	PM/NE	0.59/D	1,108	AM/SW	0.58/D
	7) E Hamlin Street to Fairview Avenue N	1,163	AM/S	0.61/D	1,130	AM/S	0.59/D	1,127	AM/S	0.59/D	1,109	AM/S	0.58/D
	8) Fairview Avenue to Lakeview Blvd E	578	AM/N	0.83/D	547	PM/N	0.78/D	544	PM/N	0.78/D	549	PM/S	0.78/D
	9) Lakeview Blvd E to Stewart Street	867	PM/S	0.62/D	849	PM/N	0.61/D	851	PM/N	0.61/D	858	PM/N	0.61/D
Fairview Avenue N.	10) Eastlake Avenue to Yale Avenue N	810	AM/SW	1.16/F	781	AM/SW	1.12/F	766	AM/SW	1.09/F	774	AM/SW	1.11/F
	11) Yale Avenue N to Harrison Street	1,389	PM/N	0.83/D	1,381	PM/N	0.82/D	1,384	PM/N	0.82/D	1,396	PM/N	0.83/D
	12) Harrison Street to Denny Way	1,009	PM/N	0.60/D	1,000	PM/N	0.60/D	1,000	PM/N	0.60/D	985	PM/N	0.59/D
Dexter Avenue N	13) Fremont Bridge to Valley Street	1,132	AM/S	1.18/F	**1,140**	**AM/S**	**1.19/F**	1,134	AM/S	1.18/F	**1,151**	**AM/S**	**1.20/F**
	14) Valley Street to Denny Way	1,787	PM/N	1.28/F	1,737	PM/N	1.24/F	1,734	PM/N	1.24/F	1,709	PM/N	1.22/F
Valley Street	15) Westlake Avenue N to Fairview Avenue N	624	PM/E	0.74/D	636	PM/E	0.76/D	633	PM/E	0.75/D	611	PM/E	0.73/D
Mercer Street	16) Queen Anne Avenue N to 5th Avenue N	1,091	PM/E	0.65/D	1,091	PM/E	0.65/D	1,091	PM/E	0.65/D	1,091	PM/E	0.65/D
	17) 5th Avenue N to Dexter Avenue N	1,445	AM/E	0.86/D	1,980	PM/W	0.79/D	1,983	PM/W	0.79/D	1,970	AM/W	0.78/D
	18) Dexter Avenue N to Fairview Avenue N	2,057	AM/W	0.98/E	2,054	AM/W	0.98/E	**2,072**	**AM/W**	**0.99/E**	2,040	AM/W	0.97/E
Denny Way	19) Broad Street to Aurora Avenue N	1,053	AM/W	0.63/D	1,031	PM/W	0.61/D	1,031	PM/W	0.61/D	1,032	AM/W	0.61/D
	20) Aurora Avenue N toStewart Street	1,607	PM/E	1.53/F	1,591	PM/E	1.52/F	1,586	PM/E	1.51/F	1,573	PM/E	1.50/F
	21) Stewart Street to Broadway E	1,151	AM/W	0.72/D	1,126	AM/W	0.70/D	1,122	PM/W	0.70/D	1,102	AM/W	0.69/D
Broad Street	22) Denny Way to Westlake Avenue N	Segment does not exist under future conditions											
Boren Avenue	23) Denny Way to Pine Street	1,297	AM/NW	1.08/F	1,289	AM/NW	1.07/F	1,282	AM/NW	1.07/F	1,270	AM/NW	1.06/F
	24) Pine Street to University Street	1,068	PM/SE	0.89/D	1,063	PM/SE	0.89/D	1,068	PM/SE	0.89/D	1,051	PM/SE	0.88/D
Stewart Street	25) Eastlake Avenue E to Boren Avenue	2,196	AM/SW	1.05/F	2,194	AM/SW	1.04/F	2,208	AM/SW	1.05/F	2,163	AM/SW	1.03/F
	26) Boren Avenue to 7th Avenue	1,334	AM/SW	0.74/D	1,344	AM/SW	0.75/D	1,347	AM/SW	0.75/D	1,340	AM/SW	0.74/D
	27) 7th Avenue to 3rd Avenue	873	AM/SW	0.73/D	860	AM/SW	0.72/D	862	AM/SW	0.72/D	840	AM/SW	0.70/D
Virginia Street	28) Denny Way to Westlake Avenue N	839	PM/NE	0.70/D	854	PM/NE	0.71/D	851	PM/NE	0.71/D	856	PM/NE	0.71/D
	29) Westlake Avenue N to 3rd Avenue	1,215	PM/NE	0.68/D	1,195	PM/NE	0.66/D	1,203	PM/NE	0.67/D	1,177	PM/NE	0.65/D
E Pine Street	30) Boren Avenue to Broadway	691	PM/W	0.96/E	676	AM/W	0.94/E	689	PM/W	0.96/E	678	AM/W	0.94/E
Lakeview/Belmont/Roy	31) Eastlake Avenue to Broadway E	415	PM/E	0.52/D	415	PM/E	0.52/D	415	PM/E	0.52/D	415	PM/E	0.52/D
Thomas Street	32) Aurora Avenue N to Eastlake Avenue E	429	PM/E	0.60/D	419	PM/E	0.58/D	436	PM/E	0.61/D	390	PM/E	0.54/D
Harrison Street	33) Aurora Avenue N to Eastlake Avenue E	537	PM/E	0.90/E	522	PM/E	0.87/D	515	PM/E	0.86/D	502	PM/E	0.84/D
9th Avenue N	34) Roy Street to Republican Street	698	PM/N	1.00/F	661	PM/N	0.94/E	667	PM/N	0.95/E	648	PM/N	0.93/E
Howell/Eastlake	35) Stewart Street to Boren Avenue	1,113	PM/N	0.93/F	1,099	PM/N	0.92/E	1,093	PM/N	0.91/E	1,095	PM/N	0.91/E

Source: Fehr & Peers, 2010

Note: Bold text signifies a significant impact.

* These study corridors intersect or are adjacent to other study corridors that are expected to operate at LOS F conditions. Actual LOS may be worse because of queuing.

Potential transit mitigation calculations were completed independently of the other potential mitigation measures. **Table 1-5** shows the number of additional busses that would need to run during the peak hour to reduce the load factor to acceptable levels. Details of the calculations may be found in **Appendix E**.

Table 1-5
South Lake Union Peak Hour Transit Mitigation

Route	Termini Locations	No Action Load Factor	Action Load Factor	Peak Hour Ridership	Additional busses required	Mitigated Load Factor
21 NB	Downtown, Arbor Heights	1.17	1.35	520	1	1.18
28 NB	Downtown, Broadview	1.19	1.40	240	1	1.06
29 NB	Downtown, Woodland Park	1.19	1.49	120	1	1.04
29 SB	Downtown, Woodland Park	1.49	1.79	144	1	1.25
56 NB	South Lake Union, West Seattle	1.38	1.53	396	2	1.07

Source: Fehr & Peers, 2010

Public Services

Future population and employment increases associated with potential development in the South Lake Union neighborhood under Alternatives 1-4 would be incremental and would result in associated increases in demand for fire and emergency services, police services, and schools in the area. These impacts could be addressed by the following mitigation measures.

1. A portion of the tax revenue generated from potential redevelopment in the neighborhood – including construction sales tax, business and operation tax, property tax and other fees, licenses and permits – would accrue to the City of Seattle and Seattle School District and could help offset demand for police, fire, and services from the district.

2. All new buildings would be constructed in accordance with the 2006 Fire Code which is comprised of the 2006 International Fire Code with Seattle amendments or the applicable fire code in effect at the time of permit submittal.
3. Design features could be incorporated into potential development in the South Lake Union neighborhood that would help reduce criminal activity and calls for police service, including orienting buildings towards the sidewalk and public spaces, providing connections between buildings, and providing adequate lighting and visibility.
4. It is anticipated that increases in student population over the buildout period would be addressed through the Seattle School District capital facilities capacity planning process (policy H13.00) to insure that no significant impacts would occur as a result of redevelopment in the South Lake Union Neighborhood. As stated previously, the Seattle School District could take any or a combination of the following actions to match capacity and enrollment as buildout occurs in the South Lake Union Neighborhood:

    - Adding, relocating or removing programs;
    - Adjusting school boundaries;
    - Adjusting geographic zones for option schools;
    - Adding or removing portables;
    - Adding to or renovating buildings; and/or,
    - Opening, reconstituting or closing buildings.

Utilities

No mitigation measures are necessary or proposed to address potential impacts associated with the proposal or alternatives.

Depending on the nature of future site-specific development, mitigation may be necessary to address site-specific impacts that could occur under any of the alternatives.

Leadership in Energy and Environmental Design (LEED) provides a framework and ranking system to reduce the impact of development on the environment including the utility infrastructure. By using LEED methods to reduce energy and other resources, projects can reduce the overall effects of new or re-development. Encouraging the use of the LEED or a similar standard score card (such as Built Green) for resource

use reduction with some type of development incentives would help to reduce the effects on the utility infrastructure.

Water

1. The use of low or no-flow fixtures and water saving devices in new construction and renovations.
2. Collection and re-use of storm water for non-potable uses (irrigation, toilet flushing, mechanical make up water, etc.) would reduce demand on the public water supply.
3. A replacement or rehabilitation plan for the oldest water mains in this neighborhood should be developed by SPU. Pipes adjacent to re-developed sites could be replaced as part of the related street improvements.

Combined Sewer & Storm Sewers

1. Modern low flow or no-flow plumbing will reduce the per capita waste water volume discharged to the combined sewer pipes and sent to the treatment facility.
2. New development in the area will be required to meet the 2009 City of Seattle Stormwater Code. Stormwater collected on site will be required to be held on site with Green Stormwater Infrastructure (GSI) methods, or detained before discharge to the city storm system. These measures will reduce the peak rate of water discharged to the combined and storm sewer systems.
3. A replacement or rehabilitation plan for the oldest sewer pipes in this neighborhood should be developed by SPU. Pipes adjacent to re-developed sites could be replaced as part of the related street improvements.
4. Installation of a separated storm sewer system in this area, sized for the approved level of development, would reduce the load of storm water sent to the treatment plant, and nearly eliminate combined sewer over flows in this area. The existing combined sewer system would be retained for use as a sanitary sewer.

Electric Power

1. The installation of photovoltaic and other local generating technologies will reduce the demand on the public generating and distribution facilities.
2. Construction and operation of LEED compliant (or similar ranking system) buildings will reduce the level of increase required in power systems.

3. Reduce the use of power in building heating and cooling with passive systems and modern power saving units.

Open Space and Recreation

Future population and employment increases in the South Lake Union Neighborhood under Alternatives 1-4 would be incremental and would result in associated increases in demand for park and recreation facilities in the area. These impacts could be addressed by the following mitigation measures.

1. A portion of the tax revenues generated from potential future development in the South Lake Union Neighborhood would accrue to the City of Seattle and could help offset demands for park and recreation facilities.
2. Future increases in population and employment in the South Lake Union Neighborhood could be planned for through the City's ongoing capital facilities planning process.
3. New park and recreation facilities could be provided in conjunction with potential future development as part of the development bonus process under Alternatives 1-3.
4. New open space facilities could be provided in the Fairview and Dexter Subareas in conjunction with potential future development.
5. Consider facilities to address the identified gaps in service in the 8th Avenue Corridor and the Fairview Corridor focus areas in conjunction with potential future development.

1.7 Significant Unavoidable Adverse Impacts

There are no significant unavoidable adverse impacts identified for any of the elements of the environment, except transportation. Significant unavoidable adverse impacts associated with transportation are as described below.

Transportation

Even with the proposed mitigation strategies, two study corridors would continue to have unmitigated traffic operations impacts:

- Dexter Avenue N from the Fremont Bridge to Valley Street – Alternatives 1 and 3
- Mercer Street from Dexter Avenue N to Fairview Avenue N – Alternative 2

The above impacts could be mitigated through additional roadway corridor widening. However, as described earlier, the City has no

additional roadway widening plans and additional roadway widening would have right-of-way, cost, and environmental consequences. Additionally, roadway widening would tend to induce more vehicle trips in the South Lake Union neighborhood, which could conflict with the transportation goals outlined in the Seattle Comprehensive Plan. Therefore, additional widening is considered infeasible.

In addition to the traffic operations impacts described above, the impacts to transit load factors may remain. Although transit service expansion was identified as a potential mitigation measure, the City of Seattle does not generally own and operate the transit service in South Lake Union. Therefore, expanded transit service cannot be guaranteed by the City and no expansion was assumed in the analysis.

All other impacts were reduced to a less-than-significant level with mitigation.

1.8 Major Issues to be Resolved

The key planning issue facing decision-makers is whether and how to change development regulations and standards for building height, bulk and scale in the South Lake Union neighborhood. Major environmental issues include potential impacts to the transportation system and to the aesthetic/visual character of the neighborhood.