What is an Environmental Benefits Statement?
The purpose of an Environmental Benefits Statement (EBS) is to articulate the wide range of benefits that can result from responsible urban development. More specifically, a key goal of an EBS is to supplement the information that is furnished by a typical Environmental Impact Statement (EIS), and bring breadth and balance to the public debate.

Development is inherently controversial, simply because it entails change. Unfortunately, that built-in controversy has a tendency to obscure the potential benefits. Significant land use actions typically require an EIS, a document that frames the debate in terms of the potential negative impacts, often aggravating the unconstructive dynamic of contention.

An EBS, in contrast, attempts to inform the argument by holistically focusing on the potential benefits to the community and environment, providing appropriate attention to all there is to be gained—at the neighborhood, city, and regional levels.

SUMMARY

This Environmental Benefits Statement is a discussion of the potential benefits of height and density increases in the South Lake Union (SLU) neighborhood. The City of Seattle has been exploring options for updates to SLU’s zoning since 2008, and in February 2011 published a draft environment impact statement (DEIS) that analyzes four alternatives. The purpose of this document is to explore positive impacts that are beyond the scope of the DEIS, and to inform and enhance the debate concerning these vital policy decisions. The key points are summarized below:

- The core benefit of new development in SLU is the creation of housing and jobs.
- Between 2005 and 2025 a cumulative tax revenue of $1.3 billion could be generated by development in SLU.
- SLU represents one of Seattle’s best opportunities for accommodating growth while minimizing demand on roadways.
- Taller buildings provide superior options for a high-quality built environment and public realm.
- The redevelopment of SLU will benefit the neighborhood, the city, and the region.
- SLU presents an unmatched opportunity to create an urban center that fosters low-carbon lifestyles.
- New development in SLU can reduce regional energy demand and reduce stormwater runoff pollution.

The prospects for achieving each of the above benefits will be determined by the amount of new development that occurs. Maximizing the chances for that outcome calls for zoning that allows the greatest development capacity and flexibility. Of the alternatives studied in the DEIS, Alternative 1 provides the greatest heights and densities, and therefore is the best choice for providing the most benefits to the local community, the City of Seattle, and the greater region.
THE SOUTH LAKE UNION URBAN CENTER

The South Lake Union (SLU) neighborhood comprises 340 acres bounded by Interstate 5 to the east, Denny Way to the south, Aurora Avenue to the west and the Lake Union shoreline to the north (up to Galer and Ward Streets). In 2004, SLU was designated an “urban center,” and in 2007 the City adopted the South Lake Union Urban Center Neighborhood Plan, which articulated the vision summarized in the sidebar to the left.

SLU—one of Seattle’s oldest neighborhoods—has long been characterized by its dynamic range of uses. It is the site of Seattle's first public school, and is still home to the St. Spiridon and Immanuel Lutheran churches, both established in the 1890s. Through the early 20th century the neighborhood was made up of a mix of housing and industry, including a Ford Model T factory and Boeing's first facility. The neighborhood went into decline in the post-WWII years, and through the 1960s and 1970s was considered “blighted.”

Recovery began in the 1980s as the prime location began to attract new uses, and in recent decades the neighborhood has undergone significant redevelopment. Over the the last six years alone, South Lake Union has seen $3.0 billion in public and private investment, and has become an established biotech center, as well as home to thousands of new residents.

What’s next for SLU?

SLU’s growing importance as a job center, together with its central location adjacent to downtown Seattle, presents one of the City's best opportunities for high-intensity, mixed-use redevelopment. Recognizing this potential, in 2008 the City proposed increases in allowed building height and density, and in parallel crafted an Urban Design Framework, which states:

“South Lake Union has the potential to demonstrate smart growth at its best – a livable, vibrant urban neighborhood that builds on its history and physical setting, continues to grow an innovative local economy, supports a mix of residents of all ages and incomes, and provides rich cultural opportunities.”

The proposed increase in height and density required review under the State Environmental Protection Act, and the Draft Environmental Impact Statement (DEIS) that analyzes four alternatives was released for public comment in February 2011. The final EIS will be published Summer 2011.

The heights and densities studied begin with Alternative 1 as the highest, followed in order by Alternatives 2 and 3. Alternative 4 studies the existing zoning. Maximum heights for residential towers in certain zones are 400, 300, and 240 feet for Alternatives 1, 2, and 3, respectively. For heights above 85 feet, all three alternatives would require participation in an incentive zoning program that would grant additional height in exchange for public amenities provided by the developer.
The core benefit of redevelopment in SLU is the creation of new housing and jobs. In 2004, Seattle set growth targets of 16,000 new jobs and 8,000 new households in SLU by 2024. King County recently issued 2031 growth targets which, if allocated proportionally to SLU, translate to 21,900 new jobs and 11,900 new households. Accommodating this growth will depend on zoning that allows capacity for much more than those targets, because not all properties will be redeveloped by 2031 due to a host of economic and ownership factors. Furthermore, the region will not stop growing in 2031, and rezones should reflect the fact that these are 50 to 100-year decisions.

Housing
Between 2000 and 2010, the number of permanent housing units in SLU grew from 849 to 2,980. In a 2003 report authored by economist Paul Sommers, housing units were forecasted to grow by more than 10,000 between 2000 and 2020. For comparison, estimated housing unit capacities given in the DEIS are shown in the adjacent chart. Alternative 1 has capacity for 6,000 additional residential units compared to Alternative 3, and provides greatest potential to achieve the growth targets under real world conditions.

Affordable Housing
As is typical for growing cities, lack of affordable housing is a vexing problem in Seattle. According to the DEIS, as of 2007 SLU had more than 400 City-funded affordable housing units, equivalent to 13 percent of total housing units. (More recent data collected by private property owners reflects a total of 527 subsidized units out of a total of 2,980 units, or 18 percent City-funded affordable units.) For all three alternatives, assuming the City’s current incentive zoning system is expanded to SLU, any development above 85 feet would require either on-site affordable housing, or a contribution to fund low-income housing somewhere within SLU. According to the DEIS, Alternative 1 would create the greatest potential benefit for affordable housing in the neighborhood.

The Car-Free Advantage
The American Public Transit Association estimates that the average annual cost of owning a car in Seattle is $11,185. In urban neighborhoods like SLU, car-free living can be a viable option for residents, a choice that can significantly reduce household expenses. Studies have shown that on average, U.S. households in auto-dependent suburban neighborhoods spend 24 percent of their income on transportation, while those in walkable, transit-rich neighborhoods spend 12 percent.

1. DEIS
2. Potential Economic and Fiscal Impacts of South Lake Union Redevelopment, Paul Sommers, for City of Seattle Office of Policy and Management, July 2004
Jobs

Employment in SLU has been rapidly evolving over the last decade. Our region's growth industries—technology, biotechnology, and global health—are creating a knowledge hub in SLU, which is becoming a magnet for new businesses. Since 2004, 4.4 million square feet of new commercial space has been completed in SLU. Newly constructed offices in the neighborhood are bringing more than 9,000 additional jobs between 2010 and 2013 (though some of these are not new jobs for the City). Recent headlines report that Amazon will be hiring an additional 1,900 positions.

Each alternative has capacity to meet the estimated minimum job growth target of 21,900 new jobs in SLU by 2031. However, the Sommers report (cited previously) projected much higher job growth, with the potential for more than 22,000 new jobs as early as 2020, and actual job growth exceeded Sommers’ 2010 high-end projection by 29 percent. Therefore, if it is deemed important that job growth in SLU not be hamstrung by land-use regulation, then DEIS Alternative 1 is the best option.

Small, Independent Businesses

Small, independent businesses are an important ingredient of vibrant, equitable neighborhoods. More people living and working in SLU will lead to increased foot traffic—the lifeblood of small, independent businesses—and will create demand for the everyday products and these businesses provide. Reflecting this potential, the Sommers report projected that new development in SLU could result in the creation of nearly 7,000 new retail jobs by 2020.

Jobs-Housing Balance

When jobs and housing are geographically separated, more people end up traveling long distances to get to work, a trend that has a host of well-known negative impacts. Redevelopment in SLU has the potential to create a healthier jobs-housing balance at both the city and regional scales.

Locally, new housing created in SLU will provide the opportunity for residents to live “next door” to jobs in SLU, and in very close proximity to the region’s largest job center in downtown Seattle. New jobs created in SLU will offer more opportunities for short, car-free commutes from Seattle's residential neighborhoods. From the regional perspective, job growth in SLU will help reverse the decades-old trend of employment centers moving to the suburbs. The region's clogged freeways are a testimonial to the extended commutes caused by the segregation of jobs and housing. The potential for ameliorating the jobs-housing imbalance would be maximized by zoning that allows for the highest capacity of both housing and jobs in SLU.

3. DRAFT Update to Potential Economic and Fiscal Impact of South Lake Union Development, Paul Sommers and Mike Mann, 2011
ECONOMICS

New development in SLU has the potential to provide significant economic benefits in many different ways. The extent of each benefit is proportional to the intensity of redevelopment, a dynamic that favors the adoption of Alternative 1, since it allows for the greatest capacity and flexibility.

Jobs

As noted in the previous section, redevelopment in SLU will create new jobs—as many as 17,000 between 2008 and 2020 (see page 5). The creation of jobs in SLU will also stimulate the creation of additional jobs throughout the region. The Sommers report estimates that between 2008 and 2020 indirect economic impacts from job growth in SLU could result in approximately 39,000 new jobs statewide, of which 58 to 70 percent would be in Seattle. Redevelopment in SLU will also create construction jobs. Between 2004 and 2010, real estate development alone generated 996 annual construction jobs, 46 percent more than the high-end projection in the Sommers report.

Tax revenue

Based on a projected 2000-2020 scenario of 23,700 new jobs and 10,000 new housing units, the Sommers report estimates that between 2005 and 2025 a cumulative tax revenue of $1.3 billion could be generated by SLU development activities. From 2004 to 2010 new development in SLU resulted in an additional $35 million in tax revenue to the City of Seattle. Analysis by the Downtown Seattle Association has shown that a typical mixed-use high-rise building generates annual property taxes of $680,000 per acre of land, compared to just $32,000 per acre for a surface parking lot (see adjacent bar chart).

Investment

Since 2004, an estimated $2.7 billion has been invested in private development in the SLU neighborhood. An additional $289 million was invested in infrastructure, including affordable housing, parks, streets and transit, 35 percent of which came from the private sector. Major projects include the Mercer corridor ($161 million), the Seattle Streetcar ($52 million), and Lake Union Park ($30 million). As redevelopment continues over the coming years, it can be expected to catalyze further synergistic investment from both the public and private sectors.

Maximizing Return on Public Investment

A high return on public investments in SLU hinges on enough people to enjoy the benefits provided by those investments. For example, the City has recently invested in three parks in the neighborhood, bringing total open space in SLU to 15.7 acres. Based on the City’s guidelines, this is more than enough open space to serve the estimated 2031 targets for housing and jobs. Similarly, the streetcar has additional capacity, and streetscape improvements throughout the neighborhood are setting the stage for more pedestrians and cyclists.
TRANSPORTATION

SLU has great potential to become an urban neighborhood in which walking, biking, and transit are attractive and widely used alternatives to the private automobile. This will help reduce both environmental impacts and household living expenses.

Outside of the downtown core, **SLU represents Seattle’s best opportunity for accommodating growth while minimizing the increase of vehicular traffic on the City’s roadways.** Fully leveraging that opportunity hinges on robust private development, and Alternative 1 offers the flexibility that will be key to making this happen.

**Providing Transportation Choices**

SLU is particularly well-situated to embrace alternative transportation because:

- It is centrally located, adjacent to the downtown job center, close to the University of Washington, and surrounded by residential neighborhoods to north, east, and west.
- The existing street block network is relatively dense, an important ingredient for walkability.
- It has a streetcar line that will likely be expanded.
- It has jobs that provide opportunities for people to live and work in the same neighborhood.

There are several factors that correlate with reductions in travel by single occupant vehicles, including population density, jobs/housing balance, transit service levels, intersection density, and bicycle and pedestrian infrastructure. It turns out that residential density is a good proxy for these factors, and the relationship to travel mode shown in the graph to the left is typical of what has been observed in cities nationwide: In short, *more density = less driving.*

**What’s missing in SLU**

The most important piece of this puzzle that’s still missing is a sufficient population of neighborhood residents and workers to take advantage of the above opportunities. In recent years, development has brought new homes and jobs to the neighborhood, but there is room for much more. Progress to date is revealed by pedestrian counts conducted by the Downtown Seattle Association in late 2010 that show pedestrian traffic at Westlake and Harrison in SLU was up 59 percent from 2009.
New development in SLU presents a huge opportunity to enhance livability through thoughtful urban design. **Taller buildings facilitate superior options for a high-quality built environment and public realm.** Alternative 1, because it is most flexible with respect to height, is the best choice for enhancing livability.

### Height and Form

Urban neighborhoods benefit from a rich diversity of building form. One of the most important design considerations for achieving that end is the trade-off between bulk and height. Restricted height results in uniformly squat, bulky buildings. In contrast, greater height enables tall slender towers atop relatively short podiums, a building form that can provide benefits in many areas, including:

- **Pedestrian environment:** The average person on the street is aware of the podium portion of the building only, and the result is a more open-feeling streetscape.
- **Open space:** When building floor space can be accommodated in tall towers, it is possible to pull back the base of the building from the property line to create wider sidewalks, plazas, or pocket parks.
- **Views:** Tall, slender towers can actually have less impact on views because views are preserved between towers. In contrast, shorter, bulkier buildings tend to wall off views.
- **Shadows:** Tall buildings cast longer shadows, but compared with the shorter, bulkier alternative, the tower/podium form typically has reduced shadow impacts on the public right-of-way because the towers are set back.

### Real-World Versus EIS Scenarios

To explore worst-case scenarios the DEIS analysis assumes buildout to full capacity, with the caveat that “it is unlikely that full build-out would ever occur...” But even under those conditions, **the DEIS finds “no significant adverse environmental impacts” with respect to views or shadows for any of the alternatives.** In the real world, maximum buildout is improbable—a continuous wall of towers, for example, is a highly unlikely outcome. In addition, all three DEIS alternatives include a provision that sets a maximum of two towers per block (reduced to one tower on blocks near Lake Union). Even when zoning allows taller buildings, redevelopment occurs slowly over time, and the combination of newer buildings with existing buildings would maintain a diverse built environment.
The redevelopment of SLU will benefit the neighborhood, the city, and the region. And the key to maximizing these benefits is zoning that offers the greatest capacity and flexibility.

A Complete Neighborhood
Success for SLU is the achievement of a vibrant, healthy neighborhood that offers a high quality of life to people of all incomes, ages, ethnicities, and cultures. Creating such a place requires a balanced combination of uses, services, amenities, building form, and open space.

Today SLU already has jobs, parks, transit access, and a desirable location. But it lacks many of the services and amenities typically found in a residential neighborhood because revitalized blocks are often separated by many underused blocks that have fallen into disrepair. Increased development, including significant housing, will act as a catalyst for new businesses that will round out the neighborhood. And as more and more people live, work, and play in SLU, it will evolve into a complete neighborhood, where the streets are active most hours of the day, and evenings are safer because there are “eyes on the street.” And last but not least, a walkable SLU will help enhance the physical health of its residents.

The Central Puget Sound Region
At the regional scale, the quality-of-life benefits of new development in SLU include:

- preservation of farms and forests, because accommodation of growth in SLU would reduce development pressure at the urban fringe
- reduction of the “drive till you qualify” effect by providing centrally located housing and jobs
- reinforcement of Seattle as the hub of the regional transit network
- reduced demand on already overcrowded regional roadway networks.
- progress towards the goals of regional growth management (see chart below)

The benefits that new development in SLU can provide to the City of Seattle include:

- preservation of Seattle’s lower-density neighborhoods if a greater share of the City’s growth is directed to SLU
- provision of affordable housing in a neighborhood where car-free living is an attractive option
- reduced traffic impacts and less greenhouse gas emissions, because on average, future residents of SLU will drive less
- reestablishment of connections that will knit together surrounding neighborhoods of Capitol Hill, Eastlake, Queen Anne, and the Denny Triangle
CLIMATE CHANGE

Climate change is the defining environmental challenge of our time, and **SLU presents an unmatched opportunity to create an urban center that enables low-carbon lifestyles.** The critical factor in achieving that end is sufficient new development to bring a high concentration of housing and jobs to the neighborhood, and success will depend on zoning that facilitates that outcome.

Greenhouse Gases and Driving

In the central Puget Sound region, transportation is the largest source of greenhouse gas (GHG) emissions (see adjacent pie chart). And in cities worldwide, researchers consistently find that as residential density increases, people drive less, which directly translates to reduced GHGs (see adjacent graph).

The Center for Neighborhood Technology has developed a model that estimates household automobile GHG emissions based on land-use characteristics and transit access, and their Chicago-based studies have shown "78 percent reductions for households living in central business districts." Household GHGs estimated by their model for four Seattle neighborhoods are plotted in the adjacent bar chart. SLU scores the best because of its high number of jobs and good transit access, demonstrating the opportunity it presents for accommodating low-carbon households.

DEIS Analysis

The DEIS projects increases in total greenhouse gas (GHG) emissions under all three alternatives, which would be expected, given that there will be more activity and buildings. However, it is more relevant to consider emissions on a per-capita basis, because if those new homes and jobs did not go to SLU, they would most likely end up in a less urbanized area elsewhere, resulting in significantly more climate-changing emissions. According to the DEIS, **per-capita peak travel GHG emissions in SLU under the Alternative 1 buildout scenario would be 15 percent lower than emissions in the Bel-Red corridor in Bellevue and Redmond.**

Embodied Carbon

The GHG emissions that result from the construction of buildings are known as embodied carbon. In general, compact development can be expected to have relatively low embodied carbon simply because fewer materials are required. Concrete has more embodied carbon than other construction materials, but when considered on a per-capita basis, high-density building types can more than make up for that. For example, a 2006 Toronto-based study estimated that the **embodied carbon per resident was 35 percent lower in the high-rise residential case compared to the single-family case.** Assuming that high-density development in SLU would absorb growth that otherwise would have resulted in lower-density development elsewhere, the net impact would be reduction of embodied carbon region wide.
ENERGY AND WATER

Energy
The operation of buildings, including those in industrial use, accounts for nearly half of all energy consumption in the U.S. **New development in SLU can reduce the impact of our regional growth on energy demand.** And allowing for the the highest buildout capacity in SLU will help maximize this benefit.

Compared to typical low-density suburban development, high-density buildings in SLU are inherently more energy-efficient because of the shared wall effect, and because housing units tend to be smaller. For example, a 2011 EPA study found that on average, energy consumption by multifamily homes is half that of single family homes.

In addition, SLU’s incentive zoning will likely require LEED certification, which studies have shown can reduce building energy consumption by at least 20 percent. And lastly, because Seattle’s energy code is the most stringent in the state, buildings developed in SLU can be expected to be more energy-efficient than those outside the city limits.

Water
**New development has the potential to reduce toxic runoff to Lake Union and Puget Sound.** Today the SLU urban center is almost entirely covered by impervious surfaces, such that nearly all precipitation becomes runoff, with very little infiltration or ground-water recharge. About three-quarters of the neighborhood is connected to a combined sewer system, and in the remaining area, stormwater flows untreated into Lake Union. In either case, the reduction of stormwater flows would help reduce water pollution.

Every new development project in SLU will present opportunities to mitigate the negative impacts of impervious surfaces and associated stormwater runoff. Green roofs, rain gardens, and pervious pavement are three of the most common strategies. Green roofs have the greatest potential, and can reduce stormwater runoff by two-thirds or more. Seattle’s “Green Factor” code, which will become applicable to SLU when a rezone is adopted, will require new projects to implement some combination of these strategies.

The DEIS notes that increased vehicle traffic to support new development could result in more runoff pollution from streets. But that assessment is short-sighted because it ignores the regional picture. As discussed previously, the increased density that will come with redevelopment in SLU can be expected to reduce **per-capita** miles driven in the greater Seattle area, resulting in less runoff pollution overall.

Lastly, redevelopment will increase potable water consumption at the local level. However, because new buildings can be expected to be more water-efficient than existing buildings, per capita water consumption would actually be reduced.
About this document

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For more information on the South Lake Union height and density alternatives, please visit the Seattle Department of Planning and Development website: http://www.seattle.gov/DPD/Planning/South_Lake_Union/Overview/

For more information on the neighborhood, please visit the South Lake Union Community Council website: http://www.slucommunitycouncil.org/