

Building the Monorail Green Line: Highlights of the Agreement

The Seattle Monorail Project (SMP) and Cascadia Monorail Company, LLC, have reached an agreement for the construction of Seattle's new Monorail Green Line.

The Green Line will provide 14 miles of elevated, automated transit along the voter-approved route from Ballard to West Seattle through Downtown. Scheduled to open on December 1, 2010, it will serve key destinations including Seattle Center, Key Arena, Belltown, the Downtown retail core, Pike Place Market, Pioneer Square, Chinatown-International District, Qwest Field, Safeco Field, and SODO. The agreement's fixed price is \$1.615 billion (year of expenditure dollars). The fixed price to build the Green Line, and all other costs to build and operate the Green Line, including the cost of running the Seattle Monorail Project, will fit within voter-mandated funding limits.

Reflected throughout the agreement are many of Seattle's core values, including strong commitments to environmental sustainability, local economic development, equal opportunity in employment and contracting, and community involvement.

The Green Line will be friendly to the environment by providing a clean, quiet, fast alternative to cars. The agreement calls for Monorail trains with regenerative braking that reuses energy; aggressive reuse and recycling programs during construction and operations; minimizing energy use in both construction and operation of stations; and encouraging even greater use of non-polluting transit by allowing bicycles on trains.

Construction of the Green Line will stimulate local economic development. Building the Green Line will add an estimated 2,100 construction-related jobs to the local economy during each year of construction, and the agreement includes provisions to promote opportunities for local residents and businesses. Contractors and subcontractors will be required to pay prevailing wages and benefits with cost-of-living adjustments for Green Line construction jobs.

Green Line construction will offer equal opportunity to all citizens in employment and contracting. The agreement sets high goals for apprenticeships and diversity in contracting, and it incorporates a Helmets-to-Hardhats program to bring military veterans into construction jobs.

The Green Line will be built with the community in mind. Cascadia can earn a financial reward if it exceeds goals for safety, excellent design, sustainability, diversity, community relations, and overall public satisfaction. A community panel will help decide whether Cascadia qualifies for the reward, which will be available if Motor Vehicle Excise Tax revenue grows faster than expected and the overall Project is a success.

This booklet summarizes the highlights of the agreement between SMP and Cascadia Monorail Company. For more information, including contract documents and the financial plan, visit www.elevated.org.



NOT TO SCALE

Seattle Monorail Green Line Route & Station Locations

LEGEND

Monorail Green Line Route



Sound Transit Light Rail

Central Link



Planned North Link



Easy connections to Metro buses will be possible at every station. Many stations will also allow easy connections to other transit, including light rail, regional buses, ferries, streetcar, and commuter rail.

NOTE:

This map is the sole creation of the Seattle Monorail Project and does not represent the detailed route or access plans.



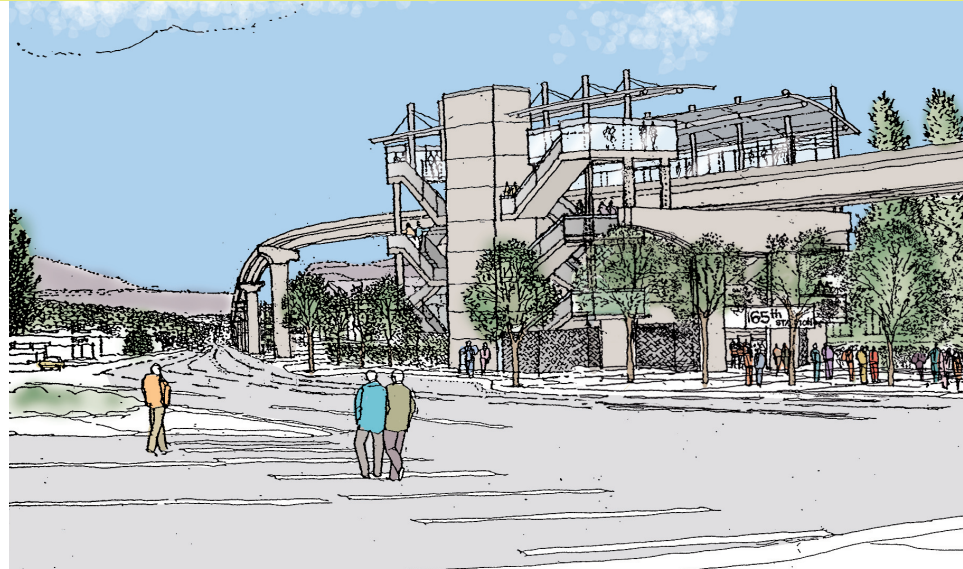
Monorail Green Line System Elements

SMP began its design of the Monorail Green Line in 2003 with a series of public meetings. The design information gathered during those meetings was incorporated into the Request for Proposals that Cascadia used as a basis for the proposal it submitted in 2004.

This section presents the major elements of system design – stations, trains, guideway, and columns. The final design, including public art, will incorporate comments from a future series of public meetings led by Cascadia, with close oversight by SMP and the City of Seattle.

Monorail Stations

The Green Line currently includes 16 stations, with funds set aside in the budget for a 17th station at 2nd & Madison downtown. This station will be constructed after the property, now occupied by the Federal Reserve Bank, is available for purchase by SMP. The Federal Reserve Bank has purchased other property, but its schedule for relocation remains uncertain. The guideway will be designed to accommodate three more stations – at 35th & Avalon, Elliott & Mercer, and Blaine & 15th – that can be added in the future.



Conceptual sketch of the station at 65th and 15th Avenue NW in Ballard

The following features will be incorporated in each station to provide elements of consistency for ease of passenger use, environmental sustainability, and good fit in each surrounding neighborhood:

- Open-air design with weather protection suitable for our Northwest climate, similar to the stations for the SkyTrain system in Vancouver, B.C.
- Safety features, such as clear visibility in stations and elevators, consistent with principles of Crime Prevention Through Environmental Design
- Multiple elevators at each station to provide easy access for all passengers – whether on foot, with bicycles, with strollers, or in wheelchairs
- Universal access that meets or exceeds Americans with Disabilities Act (ADA) standards, including safe and convenient sidewalk access to stations
- Clear, consistent signage, as well as audible and tactile wayfinding for people who are visually impaired
- A sound system to announce train arrivals that minimizes intrusion of noise in surrounding neighborhoods
- An easy-to-use fare collection and ticket vending system
- Bicycle storage at stations
- Durable and attractive station details, such as stainless-steel handrails
- An energy-efficient design that meets sustainable building goals for the Green Line with minimal energy use and low-cost maintenance
- Landscaping and other elements incorporated into the final station designs, with specific requirements that the stations at 2nd & Yesler and King/Weller be compatible with the historic character of the surrounding neighborhood

Monorail Green Line System Elements *(continued)*

Monorail Trains

- Automated Hitachi monorail trains with the latest proven technology for safety and reliability (an upgraded version of the trains in Okinawa)
- Two-car trains that can carry more than 200 passengers with a walk-through design – meaning riders can move from car to car
- Accessibility for people in wheelchairs, with strollers, and on bicycles, including bicycle storage on the trains
- An initial purchase of 13 trains to meet start-up rider demand – trains can be added over time to provide more frequent service at each station to meet the projected number of riders by 2020
- Enough trains to meet rider capacity, while allowing time for maintenance and repair
- An open and airy interior design, with seating configuration and other details to be determined in the final design process led by Cascadia
- Environmentally sustainable design for the electric trains, including regenerative braking that captures generated energy for reuse by the train

Service and Reliability

- A Monorail that operates 19 hours a day, 365 days a year
- Trains that arrive every 8 minutes during the busy times of day – more trains can be added to arrive every 3 minutes Downtown and every 6 minutes in West Seattle and Ballard
- Stations and trains, including elevators and fare collection equipment, that meet the highest availability and reliability standards in the industry – meaning that passengers have a high degree of certainty that they will get to their destination on time, every time
- Easy connections among the Monorail, light rail, buses, commuter rail, and more – SMP will continue to coordinate with the Seattle Department of Transportation, King County Metro, and Sound Transit to integrate transit services; for example, Metro may reroute certain buses to carry passengers between surrounding neighborhoods and Monorail stations
- Needed relief while the Alaskan Way Viaduct is closed for repair or reconstruction
- A single access fare card or Smart Card, developed for use by passengers on any type of transit throughout Puget Sound, being coordinated between SMP and other regional transit agencies

Guideway, Switches, and Columns

- 14 miles of Green Line guideway that provides a smooth, high-quality ride all along the route, including on hills and turns
- A guideway that includes sections of dual- and single-beam track that will meet the operating requirements for train frequency and travel time with more dual beam than estimated earlier – ultimately the mix of dual and single beam will be determined in the final design and permitting processes
- Fewer and smaller switches needed along the Green Line than estimated earlier
- Between the King/Weller station and the 5th & Broad station at Seattle Center, more frequent

service will be possible using a downtown turnback – allowing more frequent train arrivals at stations downtown to handle high-volume commute times or on busy event days to move people to and from Mariners, Seahawks, Sonics, or Storm games and big festivals like Folklife, Chinese New Year celebration, or Bumbershoot

- Primarily oval columns designed to minimize the column footprint
- Columns of many different sizes, depending on the height of the guideway, the distance between columns, proximity to turns, or other factors in each specific location; the most common column size is likely to be about 4.25 ft by 5 ft

Operations and Maintenance

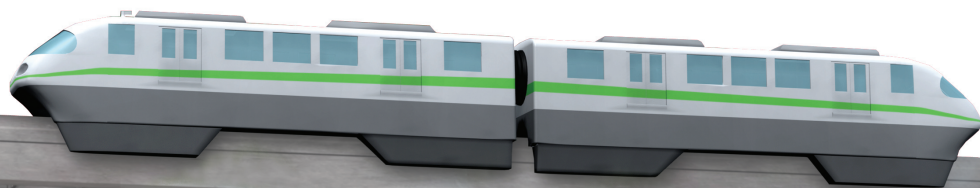
- An Operations Center in the Interbay area, on the west side of 15th Avenue
- A state-of-the-art Command and Control Center where routing, tracking, and protection of automated trains occurs, in addition to remote observation for safety monitoring of all stations
- An operations agreement that covers the costs to operate and maintain the Green Line and its stations, including the cost of staff for the Operations Center, maintenance and cleaning, vandalism repair, graffiti removal, and passenger assistance and security
- Train control technology that is expandable for future Monorail lines or extensions

Safety

- An elevated Monorail, which has one of the best safety records of all types of public transit, with an emergency walkway along the entire guideway and stairs in stations for alternative exit
- Crime Prevention Through Environmental Design principles incorporated throughout the system, with clear visibility and lighting that promote safety in elevators, stations, and other public areas
- A rigorous safety certification process for the entire Monorail Green Line system before service may begin

Project Guarantees

- Assignment of risk to the contractor for Project completion, cost increases, and system performance
- \$500 million of performance and payment bonds from the contractor to ensure delivery of all components, including trains, stations, guideway, and operating system, in addition to overall Project completion
- Financial penalties for the contractor if completion dates are not met



Computer-simulated visualization of the Monorail train for the Green Line

Financing the Green Line

Before approving the contracts, the SMP Board must determine that the agreement with Cascadia is “financially sound,” meaning that it is reasonable to assume that SMP will be able to meet all of its obligations within its projected available resources.

Budget Fits Within Taxpayer Protections

The taxpayer protections apply to the total cost of the Project, which includes the \$1.615 billion contract for Cascadia to build the Green Line and other costs shown below, as well as the total amount spent since SMP was created in 2002. In addition to the borrowing cap of \$1.5 billion (2002 dollars) and the maximum rate of 1.4 percent for the Motor Vehicle Excise Tax (MVET), taxpayer protections restrict SMP from spending the MVET revenue for operating expenses after the year 2020. Therefore, SMP is drawing up plans and developing products and services to make Green Line operations self supporting no later than 2021. Unique features of the Green Line will also result in lower operating costs, including the fact that the automated Monorail will not have the labor cost of operators, a major expense for other types of transit.

COSTS

Contracts: The fixed price to design and build the Monorail is \$1.615 billion (\$1.35 billion in 2005 dollars), plus allowances for other costs that will be incurred (see below). The cost of the operations and maintenance contract with Cascadia, for each of the first five years of revenue service, escalates each year based on factors specific to labor, material, and foreign exchange costs. Even though Cascadia is required to operate and maintain the Green Line for three five-year periods, SMP has the right not to renew the agreement in order to hire another operator after the first five years.

Allowances, Reserves, and Contingencies: In any public project, it is prudent to set aside funding for unknowns to ensure that sufficient resources are available. SMP’s set-asides are estimated to be approximately \$285 million. Any of these funds that are not spent can be used to retire debt, reduce borrowing, or increase scope (e.g., add trains or stations), or can be saved for future use. Allowances cover contracted work for which the actual costs are not yet known

(such as utility relocations) though they are expected to be incurred. Construction Reserves cover possible requests for additional work from the contractor or third parties, or costs incurred by the contractor for which SMP is responsible (e.g., possible station enhancements, guideway landscaping, or litigation and damage claims). Contingencies cover unforeseen items (e.g., unexpected hazardous material cleanup, changes in law) or delays caused by third parties. After construction, amounts left in some of the set-asides are shared with the contractor, so there is an incentive to minimize set-aside use. Agency Reserves cover additional costs not already covered which may arise during Green Line operations, additional capital costs (e.g., for trains or stations), or paying off debt early.

Agency Costs: During construction, SMP costs consist of personnel and equipment necessary to manage the contract, participate in transit integration, and complete 2nd Phase planning. This includes: design-build oversight; compliance with environmental requirements, historic preservation,

COSTS *(continued)*

and third-party contracts; quality assurance; third-party payments; public art; government and community relations; product development; property purchase; dispute resolution; and administration (e.g., legal, finance, information technology, and human resources). After construction, SMP costs will be associated with oversight, policy development, interagency relations, marketing, and transit system policing. After 2010, Cascadia will be responsible for Green Line operation and maintenance, so most Green Line employees will work for Cascadia, thus

keeping the number of SMP employees small. The SMP estimate for agency costs is approximately \$136 million.

Purchase of Remaining Property:

The cost for acquiring the site for the 2nd & Madison station, plus any remaining property that may be needed for construction of the guideway, stations, and Operations Center, is estimated to be approximately \$30 million. This covers negotiated purchase prices, easement agreements, leases, and, in some cases, relocation expenses.

REVENUES

Motor Vehicle Excise Tax Revenue:

Since late 2003, SMP has been using the expertise of ECONorthwest, an economic forecasting firm, to forecast the MVET growth rate. SMP revenue forecasts use an average annual MVET growth rate of 6.1 percent from 2005 through 2030. The assumptions and analyses in this forecast were reviewed by a panel of the state's leading economists. To read the full MVET revenue forecast report, see: http://www.elevated.org/_downloads/project/updates/ECONW_MVET_Base_Update_2004.pdf.

Borrowing: The revenue source (MVET) to repay the borrowed money is very stable and has a long history of growing over time. To make the most of the timing between when revenues are needed to pay for construction and the availability of revenues to repay the debt, SMP will borrow using “deferred interest” financing, a technique used for the Tacoma Narrows Bridge, Pacific Place Garage, and rebuilding one of the World Trade Center buildings in New York City. That approach takes advantage of SMP's credit strengths: 1) the MVET is a stable revenue stream that grows over time, 2) the MVET can be levied until costs of constructing the Green Line have been paid,

and 3) the 1.4 percent MVET cannot be used for Green Line operating expenses after the year 2020, so virtually all of the MVET collected after 2020 will go toward paying off debt. The SMP Board has set the goal to pay the debt as quickly as possible. Once the debt is paid, the MVET will be discontinued.

Fare Revenue: By the end of 2030, the Green Line is projected to carry 21.8 million riders per year. Riders will consist of residents (some buying prepaid passes), tourists (some buying special tourist products), and event attendees (some paying “event” fares). The closure of the Alaskan Way Viaduct for repair or reconstruction will likely increase the number of Monorail riders, some of whom will probably continue to travel to and from Downtown using the Green Line after the Viaduct is open again for automobile traffic.

Other Revenue: Business plans indicate that additional revenue will be generated by Monorail services and products targeted to tourists (e.g., a one- or three-day Seattle Explorer Pass, possible tourist trains, and souvenir merchandise featuring the Monorail brand), and from advertising in stations and on the trains.

Next Steps



The SMP Board of Directors wants to hear from you about whether they should move forward with the negotiated agreement to build the Monorail Green Line.

Where to Get More Information

This booklet presents highlights of the negotiated agreements, which are contained in several contract documents, including the financial plan. To review those documents, go to www.elevated.org. Hard copies of the documents are available at the main Seattle Public Library downtown and at the SMP offices. If you would like a copy of the documents on a CD, e-mail info@elevated.org or call (206) 262-5000.

How to Provide Your Comments to the Board

Make your voice heard by sharing comments by 5:00 p.m. on July 11, 2005, in any of the following ways:

- Website: Fill out the web form posted at www.elevated.org
- E-mail: contractcomments@elevated.org
- Mail: Seattle Monorail Project, Attn: SMP Board, 1904 3rd Ave, Ste. 105, Seattle, WA 98101
- Fax: (206) 382-1279
- In Person: Attend any of three public hearings held by the SMP Board:

NORTH

Ballard High School
1418 NW 65th St.
Tuesday, July 5
5:30 p.m.

CENTRAL

SMP Community Room
1913 Fourth Ave. entrance
Wednesday, July 6
7:00 p.m. (following the SMP Board meeting)

SOUTH

West Seattle High School
3000 California Ave. SW
Thursday, July 7
6:30 p.m.

Possible Actions After the Comment Period

The SMP Board will determine when it is ready to vote to approve or reject the negotiated agreement. If the Board rejects the contracts, it can direct staff to try to negotiate changes, or pursue another procurement method. If the Board approves the contracts, the major steps after that will be:

- SMP issues Notice to Proceed for the Cascadia Monorail Company
- Cascadia finalizes Green Line design (stations, trains, guideway, operations center), with public input
- Construction permitting process begins
- Green Line construction begins
- System testing takes place
- Green Line Opening Day

The Cascadia Monorail Company is a wholly owned entity of Fluor Enterprises, one of the world's largest construction companies. The Cascadia team consists of 28 local and international companies, including Hitachi, with more than 40 years of experience in manufacturing monorail trains; Mitsui; Alcatel; Atkinson Construction; HDR Engineering; Howard S. Wright Construction Company; Hoffman Construction; and many local companies. For more information about the Cascadia team, visit www.cascadiamonorail.com.

Available in alternative formats upon request: please call 206-382-1220 (TTY-enabled)