PSRC's 2014 Regional FHWA Application

Important: Please review the following information before beginning the application.

Definition of a project: For the purposes of this competition, a project must be clearly defined by geographic limits and/or functionality. If a project contains multiple components, the sponsor must clearly indicate how they are logically connected to one another. A project with multiple geographic locations must demonstrate their functional relationship (for example, signal coordination work in various locations tied together through a traffic control center).

Projects that include multiple components or sponsors are allowed to be submitted, but the scope of work, funding amounts and schedules for each individual agency and/or component must be clearly identified at the time of application. If awarded PSRC funds, these projects may be separated into their individual components or lead agency in the regional Transportation Improvement Program. Each individual TIP project will be subject to PSRC's project tracking policies and will be administered according to the scope of work and funding awarded for each. If you have questions please contact Kelly McGourty at (206) 971-3601 or kmcgourty@psrc.org.

Resources: A resource document has been developed to assist sponsors in completing PSRC's online applications for the 2014 project selection process. The document summarizes information needed by sponsors to complete applications, as well as provides useful information on various topic areas such as financial constraint and project tracking requirements.

Submitting Applications: The importance of complete and accurate information on every application cannot be overemphasized. The evaluation and scoring of all submitted projects will be based on the answers provided in this application.

There is no set page limit for applications submitted to the regional competition. It is important to provide complete, detailed responses, but please be as concise as possible. Additional supporting information such as maps and other diagrams are encouraged, but other attachments such as comprehensive plan materials are unnecessary.

All applications must be submitted by 5:00p.m. April 8, 2014.

Project Information

Project Title

Route 48 South Electrification

Transportation 2040 ID#

NA

The current list of investments that are required to be on the Transportation 2040 Regional Capacity Project List and have a designated ID # can be accessed at Appendix N of the 2014 Transportation 2040 Update, here. If your project is exempt from this requirement, please enter "N/A." Helpful information on those exempt investments that are considered programmatic in nature or are on local facilities and therefore not required to be on the Project

List can be found here.

For assistance or questions regarding these issues, contact Kimberly Scrivner at 206-971-3281 or kscrivner@psrc.org.

Sponsoring Agency

City of Seattle

Co-Sponsoring Agency

CA Status

- (●) Yes
- ( ) No

CA Sponsor (if applicable)

Contact Information

Project Contact Name

Jim Storment

Project Contact Phone

206-684-5013

Project Contact Email

jim.storment@seattle.gov

Project Description

Project Scope

The City of Seattle has been actively working toward making multi-modal improvements along the 23rd Avenue corridor to improve the corridor for all users and to support economic development and growth within several local centers and Regional Growth Centers served by the corridor. The improvements extend from Rainier Avenue South, near the Mt. Baker Light Rail Station, to NE 50th Street, in the University District.

This grant request is for transit related elements for the entire corridor, including trolley electrification along two segments of 23rd Avenue. These transit improvements overlap geographically with SDOT's 2012 23rd Avenue corridor application, but they represent a distinct scope of work. The 2012 application was for a limited portion of this corridor from S Jackson Street to E John Street. It was focused on adding multimodal elements to this segment of the corridor – elements such as sidewalks, lighting, and safety upgrades. It did not include the trolley electrification elements. Since award of $5 million from PSRC for what SDOT has designated Phase 1 of the 23rd Avenue Corridor Improvement project, Seattle has been awarded additional state grant funds to extend the project and to broaden its scope.

The scope of this grant application includes two sets of elements:
A - Electrification of two gaps in the electric trolley network within the segment funded during PSRC's 2012 grant process, S Jackson Street to E John Street in order to convert King County Metro's (Metro) Route 48 South to electric trolley bus operation. The electrification project includes electrical substations and minor modifications to the existing trolley electrical infrastructure along the entire route and at Mount Baker Link Station Transit Center as needed to accommodate additional electric trolley buses at the transit center and other terminal locations, which is already served by other electric trolley bus routes. This electrification project is already under design using a combination of non-PSRC funding: a Department of Energy Block Grant and Seattle Bridging the Gap funds, in partnership with King County Metro.

B - Transit operational, facility and access improvements along the 2 segments of Route 48 South that are not funded through the 2012 PSRC grants. These segments are from E John Street north to the University District and from South Jackson Street south to the Mount Baker Light Rail Station. Elements funded by this application could include bus stop improvements, thicker pavement at bus stops, upgrades to passenger amenities, and access improvements for pedestrians and cyclists connecting to bus stops.

The attached PowerPoint slides show the current phasing for the 23rd Avenue Corridor Improvement project.
Phase 1 – South Jackson Street to East John – $5 million PSRC funds for multimodal improvements, excluding trolley system electrification.
Phase 2 – South Jackson Street to Rainier Avenue South – no PSRC funding – multi-modal improvements. Partially funded by TIB grant.
Phase 3 – East John Street to East Roanoke Street – no PSRC funding – multi-modal improvements.

Project Purpose

The purpose of this grant application is to improve the reliability and convenience of Route 48 South while also greatly reducing carbon dioxide and other diesel emissions, lowering noise impacts in growing communities, significantly improving energy efficiency, and improving utilization of the existing trolley infrastructure. The grant request includes filling two gaps in the electric trolley network and other transit operational, facility and access improvements.

Project Location

15th Ave NE, NE Pacific St, 24th/23rd Ave, Rainier Ave

Please identify the county(s) the project is located in. Check all that apply.

- [x] King County
- [ ] Kitsap County
- [ ] Pierce County
- [ ] Snohomish County

Please identify the crossroad, milepost or landmark nearest the beginning and end of the project below, if applicable. Crossroad/landmark nearest to the beginning of the project:

Rainier Ave (Sound Transit Mount Baker Station)

Crossroad/landmark nearest to the end of the project:

NE 50th St

Please identify the center(s)

The northern terminus of the project is located within the University Community Regional Center. The project supports the University Community Regional Center along with the First Hill/Capitol Hill Regional Center.

Federal Functional Classification

Roadways must be approved on the federally classified roadway system before projects on it may use federal transportation funds (this includes proposed new facilities), unless the project meets certain exceptions. Resources to identify a facility's functional classification or exceptions to this requirement may be found here.

Federal Functional Class

Urban Functional Classification Population over 5,000

You have selected Rural. If this is not the appropriate classification, please go back and change your selection.

Please select the appropriate rural classification.

You have selected Urban. If this is not the appropriate classification, please go back and change your selection.

Please select the appropriate urban classification.

14 Principal Arterial

Plan Consistency

All projects must be consistent with a comprehensive plan that has been certified by PSRC as being consistent with the Growth Management Act, VISION 2040 and Transportation 2040. Projects must be consistent with the comprehensive plan of each jurisdiction in which the project is located. If a comprehensive plan has not been certified, projects located in that jurisdiction may not be included in the Regional TIP.

Is the project specifically identified in a local comprehensive plan?

- ○ Yes
- ◉ No

Is the project specifically identified in a local comprehensive plan?

If no, describe how the project is consistent with the applicable local comprehensive plan, including specific local policies and provisions the project supports.

Specific City of Seattle Comprehensive Plan policies that support this project include:
TG1: Ensure that transportation decisions, strategies and investments are coordinated with land use goals and support the urban village strategy (p. 3.3)
T4: Provide sufficient transportation facilities and services to promote and accommodate the growth this Plan anticipates in urban centers, urban villages and manufacturing/industrial centers while reducing reliance on single occupancy vehicles (p. 3.3).
TG13: Provide mobility and access by public transportation for the greatest number of people to the greatest number of services, jobs, educational opportunities, and other destinations (p. 3.9).
T21: Support development of an integrated, regional high capacity transit system that links urban centers within the city and the region (p. 3.10).
T24: Work with transit providers to design and operate transit facilities and services to make connections within the transit system and other modes safe and convenient. Integrate transit stops, stations, and hubs into existing communities and business districts to make it easy for people to ride transit and reach local businesses (p. 3.10).
T58: Coordinate with regional, state and federal agencies, local governments, and transit providers when planning and operating

Category Specific Questions

Select the project category

Corridor Serving Centers

Designated Regional Growth Center

In the sections below,please provide complete but concise responses, addressing as many bullet points as possible. The evaluation and scoring of all submitted projects will be based on the answers provided by the sponsor. Refer to the 2014 Regional Project Evaluation Criteria for PSRC's FHWA Funds in PSRC's Call for Projects for guidance, examples, and details on scoring for additional information.

A1. Regional Growth Center Development

A2. Project's Benefit to the Regional Growth Center

Manufacturing/Industrial Center

B1. Development and Users Benefit

In the sections below,please provide complete but concise responses, addressing as many bullet points as possible. The evaluation and scoring of all submitted projects will be based on the answers provided by the sponsor. Refer to the 2014 Regional Project Evaluation Criteria for PSRC’s FHWA Funds in PSRC's Call for Projects for guidance, examples, and details on scoring for additional information.

Corridor Serving Center(s)

In the sections below,please provide complete but concise responses, addressing as many bullet points as possible. The evaluation and scoring of all submitted projects will be based on the answers provided by the sponsor. Refer to the 2014 Regional Project Evaluation Criteria for PSRC's FHWA Funds in PSRC's Call for Projects for guidance, examples, and details on scoring for additional information.

C1. Benefit to Regional Growth or Manufacturing/Industrial Center

HOUSING AND EMPLOYMENT
The project elements included in this grant request connect two regionally-designated growth centers, First Hill/ Capitol Hill and University Community, and are located within three locally-designated centers, 23rd & Union-Jackson, Madison-Miller and North Rainier. The Capitol Hill /First Hill and the University Community regionally-designated growth centers have over 70,000 existing jobs and 34,000 households. The centers will add more than 10,000 new jobs and nearly 7,400 new households by 2040. Current data shows that the First Hill/Capitol Hill regional growth center has reached its 20-year growth targets within 10 years. Currently permitted construction will allow the First Hill/Capitol Hill center to exceed its growth targets by a wide margin in the next several years. The project improves circulation within three locally-designated centers that are expected to add more than 1,100 housing units by 2040.

Provision of more reliable, convenient and less polluting transit service supports the development of both regional growth centers and each of the locally-designated centers served by the route. It will improve transportation access, improve public health and support the quality of life of the region, which is identified as an economic foundation in the region's economic strategy.

TRAVEL MODES
The electrification element of this grant request will convert Metro Route 48 South from a diesel bus route to a fixed guideway transit route that utilizes electric trolley buses. This conversion will provide a sense of permanence for Route 48, encouraging residents, businesses and visitors to rely on this service, resulting in increased transit ridership. Implementing electric trolley bus service along this route is a key component of Seattle's improvement plan for this priority transit corridor identified in Seattle's Transit Master Plan.

The transit improvement element of this grant request includes a set of improvements on 23rd Avenue, for the Phase 2 and 3 segments of the corridor, which will enhance access to transit between Seattle's major employment centers. This will improve the speed and reliability of transit on the eighth highest ridership transit route in King County and one of the highest ridership routes in the State. The project also improves walking connections to transit service and bus stops will be upgraded. Major multi-modal transit hubs are located at each end of 23rd Avenue at Sound Transit's University of Washington and Mt. Baker Link light rail stations.

All of these improvements are part of the entire 23rd Avenue Corridor Improvement project, which is improving safety and mobility for all modes within and between the regional and local centers along the corridor by improving pavement, signals, transit speed and reliability, freight movement, pedstrian and bicycle facilities and installing ITS elements. It converts a portion of the corridor to a 3-lane section and provides wider sidewalks as well as a parallel neighborhood greenway along the entire corridor to encourage increased use of bicycles by riders of all ages and abilities. This multi-modal corridor project grew out of Seattle's Complete Street program and is coordinated with King County Metro, Seattle's Department of Planning and Development, Seattle's public utilities and a variety of neighborhood and stakeholder groups.

USER GROUPS
The 23rd Avenue corridor stretches from the University Community regional growth center to the North Rainier urban village, one of Seattle's locally designated centers, and is located primarily in Seattle's Central Area. Nearly 31% of the residents in one census tract along the project area are below the poverty level compared to 14.7% city-wide. The minority population in the same area is over 79% compared to 30% city-wide. The project also links some of the region's most diverse communities, including the Rainier Valley, University District and Capitol Hill/First Hill, to jobs, housing, health care and educational opportunities throughout the corridor.

Many of the people using the corridor do not own or use cars. In Capitol Hill, one of the neighborhoods served

LONG-TERM STRATEGY TO MAXIMIZE EFFICIENCY
Problem: 23rd Avenue is a long and heavily congested corridor with an outdated signal system, a challenging pedestrian environment, a high collision rate and poor pavement condition, making it one of Seattle's top capital project priorities. This section of the corridor carries 18,500 vehicles on an average weekday, and the arterial is a T-3 truck route carrying over 1,200 trucks per day. With 5,800 daily riders, Route 48 South, which serves the corridor, is the eighth highest transit ridership route in King County. There are pedestrian safety deficiencies (obsolete crossings, damaged sidewalks, insufficient bus stop facilities) throughout corridor. Route 48 South is currently served by diesel powered buses, though about 70% of the route currently has trolley bus catenary lines. Because of the gaps in the system the two regionally designated and three locally designated centers connected by the line suffer increased emissions, more noise, less reliable and less direct transit service than might be otherwise provided.

Remedy: This grant request funds filling a gap in the electric trolley bus network by electrifying the entire route. Conversion of the line to a fixed guideway transit route that utilizes electric trolley buses will result in a lower life cycle costs and make the route more efficient and reliable. The grant request includes other transit operational and facility improvements for the Route 48 South, including equipment to enable transit signal priority and accommodating ITS upgrades. The request includes transit related scope elements that are part of the broader multi-modal 23rd Avenue Corridor Improvement project. The 23rd Avenue Corridor Improvement project improves safety and mobility for all users.

LOGICAL SEGMENT
The 23rd Avenue Corridor Improvement project is located on 23rd Avenue, a principal arterial and T-3 truck route, running between the First Hill / Capitol Hill and University Community regional growth centers. It links major regional transportation facilities, including I-90, SR 520 and Link Light Rail. It is "Main Street" for three of Seattle's locally designated centers. Route 48 South is one of the most used transit routes in the Puget Sound region.

This grant application includes funding to complete transit related elements along this corridor, providing additional funded to implement transit improvements along the two segments of the corridor not funded in the 2012 PSRC grant for 23rd Avenue, which was from South Jackson Street to East John Street. The grant application also completes two necessary stretches of the electric trolley network that were not part of the scope of the previous grant.

MISSING LINK
The 23rd Avenue Corridor Improvement project improves one of the key north/south corridors providing access to and from two regional growth centers and three locally-designated centers. The Route 48 South will be the primary access route from the centers along its length to three key stations on the Sound Transit Link Light Rail system, linking the Mt. Baker (Central Link), I-90 (East Link) and the University of Washington (U-Link) light rail stations to each other and the surrounding neighborhoods. This effort supports growth and development in these centers by improving access, mobility and safety for freight, general purpose traffic, transit and pedestrians. The transit corridor improvement project provides a parallel bike facility to fill missing link in citywide bike network.

This grant request fills in the missing gaps of trolley wire along Route 48 resulting in the route becoming a fixed guideway transit route that utilizes electric trolley buses. Filling this gap will result in more efficient and reliable transit service making the regional transit system more cost effective. It will also result in reductions in noise and diesel emissions improving the quality of life in numerous regional and locally designated centers.

BOTTLENECK
The 23rd Avenue corridor is currently experiencing heavy congestion due to an outdated signal system. It is a T-3 truck route and carries 5,800 daily transit riders and 18,000 weekday total volume. The corridor is an important alternative to I-5, providing connections from Seattle neighborhoods and the entire region to the CBD and helps to relieve pressure on the I-5 / I-90 interchange, one of WSDOT's Highway System Plan's identified Bottlenecks and Chokepoints. The 23rd Avenue Corridor Improvement project will improve system efficiency and reliability by converting the diesel route to electric operation and providing other transit

Please describe how your project will reduce emissions. Include a discussion of the population served by the project (who will benefit, where, and over what time period). Specific questions have been prepared to assist you in responding to this criterion depending on the type of project.

Please select all of the elements in the list below that are included in the project's scope of work, and provide the requested information in the text box below.

- ☐ Diesel Particulate Emissions Reduction Projects (e.g. diesel engine retrofits)
- ☐ Roadway Capacity (general purpose and high occupancy lanes)
- ☑ Transit
- ☐ Bicycle/Pedestrian Facilities
- ☐ Intelligent Transportation Systems (signalization, etec.)
- ☐ Alternative Fuels or Vehicle Technology
- ☐ Other

This grant application reduces emissions through two elements. The electrification element will significantly reduce diesel emissions by allowing Metro to operate electric trolley buses on Route 48 South, one of King County's highest ridership bus routes. The electrification element will also result in more efficient and reliable transit service. The other transit elements of this grant application improve the speed and reliability of transit as well as making access to transit stops safer and more convenient. These elements encourage residents, employees and visitors to use transit service rather than driving their car.

Metro electric trolley vehicles operate exclusively on electricity from Seattle City Light. The distribution of primary energy sources for Seattle City Light is very nearly carbon neutral, with 98 percent of their electricity generated from non-greenhouse gas (GHG) emitting sources. The energy consumption reduction is a result of ETB vehicles consuming approximately 69% of the energy consumed by diesel hybrid vehicles. The conversion from diesel to ETB includes upgrades to electrical substations which will improve operating efficiencies on other ETB routes. The primary factor for emission reductions of this grant application is the conversion of Route 48 from diesel to electric trolley bus by constructing trolley wires in two segments along the corridor. The majority of the corridor already contains trolley wire, completing these missing segments will allow for Route 48 to operate as an electric trolley route.

As a bus route with a high number of annual trips and miles travelled the benefits of converting Route 48 South to electric power are very large. Buses on Route 48 made 52,071 trips and traveled 344,748 miles in 2010. A Metro analysis, prepared in 2010 for a TIGGER grant application, estimated the energy reduction and air quality benefits that would be expected from the electrification of Route 48 South. The annual energy savings from converting this route is estimated to be 5.3 Billion BTUs. Converting to electric trolley buses is expected to reduce CO2 emissions by over 4,800 kilograms each weekday. This results in over 1,300 tons of CO2 emission reductions each year. In comparison to PSRC's guidance for the CMAQ program, which lists the most effective types of projects for emissions reduction, the Route 48 conversion is expected to produce more than three times as much air quality benefit as the next most effective project type (new high-capacity transit service). Metro's documentation shows that trolley infrastructure can have a useful life of 40 years, resulting in a reduction in CO2 emissions of almost 55,000 tons over the lifetime of the improvements.

The local benefits of the Route 48 South Electrification and related elements of the 23rd Avenue Corridor Improvement project will largely occur in Central Area neighborhoods, which include some of the most diverse, lowest-income populations in King County. With completion of the electrification element of this grant application, these populations will receive better transit service and be subjected to reduced pollution and noise. Previous King County Metro grant applications for the electrification of Route 48 South indicate that the trolley system improvements made by this project will also benefit users of other high ridership trolley routes in the Central District, including the Routes 2, 3, and 4, as well as the trolley system overall. By encouraging more use of clean electric transit lines, the project will result in additional air quality benefits beyond the electrification of Route 48 South.

The transit elements of this grant application will result in a safe, convenient and reliable connection between transit-oriented centers and between two stations on Sound Transit's Link Light Rail system. With 5,800 daily riders

Financial Plan & Project Readiness

In this section, sponsors will address questions regarding the PSRC funding request, the total estimated project cost and schedule, and the project's readiness to obligate PSRC funds. Sponsors should be aware of the following information before completing this section:

Funding Request: Sponsors may request funding for any single project phase, but requests for multiple phases are limited to preliminary engineering plus the subsequent phase necessary. I.e, a sponsor may request funding for both preliminary engineering and right of way phases or preliminary engineering and construction phases, but not both right of way and construction phases.

Funding Requirements: A minimum of 13.5% of local matching funds is required for both Surface Transportation Program (STP) and Congestion Mitigation and Air Quality Improvement Program (CMAQ) funding. The combination of the requested PSRC funds plus all other funding must be adequate to fully fund that phase. Requests that do not result in a phase being fully funded will be considered ineligible for PSRC funding.

Obligation Requirements: Per PSRC's project tracking policies, all project phases awarded PSRC funds must obligate by June 1st of the program year selected. For more information, see PSRC's project tracking policies here.

PSRC Funding Request

Please identify the phase(s) for which PSRC funds are being requested, the funding source,the amount, and expected year of obligation. Confirm the total by pressing the calculate button.

Funding Source

- ○ STP
- ◉ CMAQ

Phase

Preliminary EngineeringDesign

Obligation Year

2015

Amount Requested

200000

Phase

Construction

Obligation Year

2017

Amount Requested

9800000

Total PSRC Funding Request

10000000

Total Estimated Project Cost and Schedule

In the table below, please provide the total estimated cost and schedule for all phases of the project, from start to finish, and indicate when each phase was, or is planned to be, completed. If a phase is not required for the project, indicate with N/A.

Please include all funding amounts and sources (including the requested PSRC funds) and identify whether they are secure, reasonably expected, or unsecure. PSRC's definitions and guidance for determining secure and reasonably expected funds may be found here.

NOTE: If you find that you need more rows than provided in the tables below, please fill out the supplemental project cost spreadsheet available here and upload in the area below.

Upload (only if necessary)

Planning Phase

Please note, the planning phase of a capital project is considered to be part of the preliminary engineering phase. Complete this section only if this project is an independent planning study.

Funding Source

Funding Status

Funding Amount

Funding Source

Funding Status

Funding Amount

Funding Source

Funding Status

Funding Amount

Funding Source

Funding Status

Funding Amount

Funding Source

Funding Status

Funding Amount

Funding Source

Funding Status

Funding Amount

Total Planning Phase Cost

0

Actual or estimated completion date

Preliminary Engineering/Design Phase

Funding Source

Federal (CMAQ)

Funding Status

Unsecured

Funding Amount

200000

Funding Source

Federal (Energy Efficiency and Conservation Block Grant)

Funding Status

Secured

Funding Amount

100000

Funding Source

Local

Funding Status

Secured

Funding Amount

1884400

Funding Source

Regional Mobility Grant

Funding Status

Secured

Funding Amount

660000

Funding Source

Funding Status

Funding Amount

Total Preliminary Engineering/Design Cost

2844400

Actual or estimated completion date

October 2015

Right of Way Phase

Funding Source

Funding Status

Funding Amount

Funding Source

Funding Status

Funding Amount

Funding Source

Funding Status

Funding Amount

Funding Source

Funding Status

Funding Amount

Funding Source

Funding Status

Funding Amount

Total Right of Way Phase Cost

0

Actual or estimated completion date

Construction Phase

Funding Source

Federal

Funding Status

Unsecured

Funding Amount

9800000

Funding Source

Local

Funding Status

Secured

Funding Amount

2500000

Funding Source

Regional Mobility Grant

Funding Status

Secured

Funding Amount

1914000

Funding Source

Funding Status

Funding Amount

Funding Source

Funding Status

Funding Amount

Total Construction Phase Cost

14214000

Actual or estimated completion date

Other Phase

Funding Source

Funding Status

Funding Amount

Funding Source

Funding Status

Funding Amount

Funding Source

Funding Status

Funding Amount

Funding Source

Funding Status

Funding Amount

Funding Source

Funding Status

Funding Amount

Total Other Phase Cost

0

Actual or estimated completion date

December 2017

Project Summary

The calculated total project cost below is based on the entries completed above. Please review for accuracy before proceeding to ensure all funding is reflected.

Total Estimated Project Cost

17058400

Estimated Project Completion Date

December 2017

Financial Documentation

Please provide supporting documentation using the upload function below to demonstrate that all additional funds for the phase(s) for which PSRC funds are being requested are secure or reasonably expected.

Upload

http://fs19.formsite.com/psrc/files/f-0-475-7876419_X1IiYeOR_23rd_Adopted_CIP.pdf

Upload

Upload

Please describe the secure or reasonably expected funds identified in the supporting documentation. For funds that are reasonably expected, an explanation of procedural steps with milestone dates for completion which will be taken to secure the funds for the project or program should also be included. For more information, refer to PSRC's financial constraint guidance.

The City of Seattle has adopted a 2014-2019 Capital Improvement Program (CIP) that identifies local and federal fund sources dedicated to the Preliminary Engineering/Design phase. If this grant is awarded, $200,000 will be used toward the completion of the Preliminary Engineering/Design phase. The adopted CIP shows $2 M in dedicated local funds in 2015 for the Construction phase. With the requested federal grant, construction of this project would be funded as shown above.

Project Readiness

PSRC recognizes that the complexity of some projects can trigger a variety of prerequisites that must be satisfied before federal funding is typically eligible to be obligated. The questions in this section are designed to identify those requirements and assist sponsors to:

- Identify which obligation prerequisites and milestones apply to their specific project.
- Identify which of these have already been satisfied at time of application.
- Provide an explanation and realistic completion date for all obligation prerequisites and milestones not yet completed.

In the following section, sponsors will be asked a series of questions about the project. Based on these responses, sponsors will be directed to the appropriate set of subsequent questions addressing the project's readiness.

NOTE: Sponsors applying for funds for only planning studies or preliminary engineering/design phases are not required to provide further information for project readiness and will be directed to the next required set of questions.

Are you requesting funds for ONLY a planning study or preliminary engineering?

- ○ Yes
- ◉ No

Is preliminary engineering for the project complete?

- ○ Yes
- ◉ No

What was the date of completion (month and year)?

Have preliminary plans been submitted to WSDOT for approval?

- ○ Yes
- ◉ No

When are preliminary plans expected to be complete and approved by WSDOT (month and year)?

June 2015

Are there any other PE/Design milestones not listed above?

30% design - July 2014
60% design - December 2014
100% design - June 2015

Project Readiness

What is the current level of NEPA documentation?

- ○ Environmental Impact Statement (EIS)
- ○ Environmental Assessment (EA)
- ○ Documented Categorical Exclusion (DCE)
- ◉ Categorical Exclusion (CE)

Has the NEPA documentation been approved?

- ○ Yes
- ◉ No

Please provide the date of NEPA approval, or the anticipated date of completion (month and year).

September 2014

Project Readiness

Will right of way be required for the project?

- ○ Yes
- ◉ No

How many parcels do you need?

What is the zoning in the project area?

Discuss the extent to which your schedule reflects the possibility of condemnation and the actions needed to pursue this.

Does your agency have experience in conducting right of way acquisitions of similar size and complexity?

- ○ Yes
- ○ No

If not, when do you expect a consultant to be selected, under contract, and ready to start (month and year)?

In the box below, please identify all relevant right of way milestones, including the current status and estimated completion date of each. For example, these might include:• True cost estimate of right of way• Right of way plans (stamped)• Relocation plan• Right of way certification• Right of way acquisition• Certification audit by WSDOT • Relocation certification

Project Readiness

Are funds being requested for construction?

- (●) Yes
- ( ) No

Do you have an engineer's estimate?

- ( ) Yes
- (●) No

Identify the environmental permits needed for the project and when they are scheduled to be acquired.

NEPA will be required if PSRC funds are federally administered funds; if funding is only State issued, SEPA will be required. Other permits that could be potentially triggered are the Master Use Permit from Dept. of Planning and Development, NPDES permit, and permits that are part of the NEPA and/or SEPA process. Date anticipated 6/2015.

Are Plans, Specifications & Estimates (PS&E) approved?

- ( ) Yes
- (●) No

Please provide the date of approval, or the date when PS&E is scheduled to be submitted for approval (month and year).

June 2015

When is the project scheduled to go to ad (month and year)?

July 2015

Other Considerations

Please describe any additional aspects of your project not previously addressed in the application that could be relevant to the final project recommendation and decision-making process. In addition, please describe any innovative components included in your project: these could include design elements, cost saving measures, or other innovations.

File Submission

Please provide any additional supporting documents, including maps, through the upload functions below.

Upload

http://fs19.formsite.com/psrc/files/f-0-477-7876419_FM1ybMdF_Route_48_Electrification_Project_Report_8

Upload

Final Review

Please review all application form questions to ensure you have completed all fields. An email containing a PDF version of the project application will be sent to the project contact upon submission.

NOTE: Sponsors may update and resubmit information included in the application until the April 8th deadline. After the deadline has passed, the form site will close and sponsors will not have access for revisions.

Last Update

2014-03-19 15:52:58

Start Time

N/A with Save & Return

Finish Time

N/A with Save & Return

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Route 48 South Electrification Improvements

Project Scope

The City of Seattle has been actively working toward making multi-modal improvements along the 23rd Avenue corridor to improve the corridor for all users and to support economic development and growth within several local centers and Regional Growth Centers served by the corridor. The improvements extend from Rainier Avenue South, near the Mt. Baker Light Rail Station, to NE 50th Street, in the University District.

This grant request is for transit related elements for the entire corridor, including trolley electrification along two segments of 23rd Avenue. These transit improvements overlap geographically with SDOT's 2012 23rd Avenue corridor application, but they represent a distinct scope of work. The 2012 application was for a limited portion of this corridor from S Jackson Street to E John Street. It was focused on adding multimodal elements to this segment of the corridor – elements such as sidewalks, lighting, and safety upgrades. It did not include the trolley electrification elements. Since award of $5 million from PSRC for what SDOT has designated Phase 1 of the 23rd Avenue Corridor Improvement project, Seattle has been awarded additional state grant funds to extend the project and to broaden its scope.

The scope of this grant application includes two sets of elements:
A - Electrification of two gaps in the electric trolley network within the segment funded during PSRC's 2012 grant process, S Jackson Street to E John Street in order to convert King County Metro's (Metro) Route 48 South to electric trolley bus operation. The electrification project includes electrical substations and minor modifications to the existing trolley electrical infrastructure along the entire route and at Mount Baker Link Station Transit Center as needed to accommodate additional electric trolley buses at the transit center and other terminal locations, which is already served by other electric trolley bus routes. This electrification project is already under design using a combination of non-PSRC funding: a Department of Energy Block Grant and Seattle Bridging the Gap funds, in partnership with King County Metro.

B - Transit operational, facility and access improvements along the 2 segments of Route 48 South that are not funded through the 2012 PSRC grants. These segments are from E John Street north to the University District and from South Jackson Street south to the Mount Baker Light Rail Station. Elements funded by this application could include bus stop improvements, thicker pavement at bus stops, upgrades to passenger amenities, and access improvements for pedestrians and cyclists connecting to bus stops.

The attached PowerPoint slides show the current phasing for the 23rd Avenue Corridor Improvement project.

Phase 1 – South Jackson Street to East John – $5 million PSRC funds for multimodal improvements, excluding trolley system electrification.
Phase 2 – South Jackson Street to Rainier Avenue South – no PSRC funding – multi-modal improvements. Partially funded by TIB grant.
Phase 3 – East John Street to East Roanoke Street – no PSRC funding – multi-modal improvements.

Project Purpose

The purpose of this grant application is to improve the reliability and convenience of Route 48 South while also greatly reducing carbon dioxide and other diesel emissions, lowering noise impacts in growing communities, significantly improving energy efficiency, and improving utilization of the existing trolley infrastructure. The grant request includes filling two gaps in the electric trolley network and other transit operational, facility and access improvements.

Benefit to Regional Growth or Manufacturing/Industrial Center

- SUPPORT FOR HOUSING AND EMPLOYMENT DEVELOPMENT IN CENTERS

- RANGE OF TRAVEL MODES
- RANGE OF USER GROUPS
- SUPPORT FOR JOBS AND BUSINESSES, AND INDUSTRY CLUSTERS WITHIN THE REGIONAL ECONOMIC STRATEGY

HOUSING AND EMPLOYMENT

The project elements included in this grant request connect two regionally-designated growth centers, First Hill/Capitol Hill and University Community, and are located within three locally-designated centers, 23rd & Union-Jackson, Madison-Miller and North Rainier. The Capitol Hill /First Hill and the University Community regionally-designated growth centers have over 70,000 existing jobs and 34,000 households. The centers will add more than 10,000 new jobs and nearly 7,400 new households by 2040. Current data shows that the First Hill/Capitol Hill regional growth center has reached its 20-year growth targets within 10 years. Currently permitted construction will allow the First Hill/Capitol Hill center to exceed its growth targets by a wide margin in the next several years. The project improves circulation within three locally-designated centers that are expected to add more than 1,100 housing units by 2040.

Provision of more reliable, convenient and less polluting transit service supports the development of both regional growth centers and each of the locally-designated centers served by the route. It will improve transportation access, improve public health and support the quality of life of the region, which is identified as an economic foundation in the region's economic strategy.

TRAVEL MODES

The electrification element of this grant request will convert Metro Route 48 South from a diesel bus route to a fixed guideway transit route that utilizes electric trolley buses. This conversion will provide a sense of permanence for Route 48, encouraging residents, businesses and visitors to rely on this service, resulting in increased transit ridership. Implementing electric trolley bus service along this route is a key component of Seattle's improvement plan for this priority transit corridor identified in Seattle's Transit Master Plan.

The transit improvement element of this grant request includes a set of improvements on 23rd Avenue, for the Phase 2 and 3 segments of the corridor, which will enhance access to transit between Seattle's major employment centers. This will improve the speed and reliability of transit on the eighth highest ridership transit route in King County and one of the highest ridership routes in the State. The project also improves walking connections to transit service and bus stops will be upgraded. Major multi-modal transit hubs are located at each end of 23rd Avenue at Sound Transit's University of Washington and Mt. Baker Link light rail stations.

All of these improvements are part of the entire 23rd Avenue Corridor Improvement project, which is improving safety and mobility for all modes within and between the regional and local centers along the corridor by improving pavement, signals, transit speed and reliability, freight movement, pedstrian and bicycle facilities and installing ITS elements. It converts a portion of the corridor to a 3-lane section and provides wider sidewalks as well as a parallel neighborhood greenway along the entire corridor to encourage increased use of bicycles by riders of all ages and abilities. This multi-modal corridor project grew out of Seattle's Complete Street program and is coordinated with King County Metro, Seattle's Department of Planning and Development, Seattle's public utilities and a variety of neighborhood and stakeholder groups.

USER GROUPS

The 23rd Avenue corridor stretches from the University Community regional growth center to the North Rainier urban village, one of Seattle's locally designated centers, and is located primarily in Seattle's Central Area. Nearly 31% of the residents in one census tract along the project area are below the poverty level compared to 14.7% city-wide. The minority population in the same area is over 79% compared to 30% city-wide. The project also links some of the region's most diverse communities, including the Rainier Valley, University District and Capitol Hill/First Hill, to jobs, housing, health care and educational opportunities throughout the corridor.

Many of the people using the corridor do not own or use cars. In Capitol Hill, one of the neighborhoods served by 23rd Avenue, over one-third of households do not own cars. Seattle's 2011 Neighborhood Business District Intercept Survey showed that only one-quarter of visitors to Capitol Hill used single occupant vehicles. In 2009, 75% of the commuters to the University District used modes other than the single occupant vehicle. This project provides a safe, convenient and reliable connection between transit-oriented centers and between two stations on Sound Transit's Link Light Rail system.

Many residents of First Hill / Capitol Hill work in the high tech employment centers east of Lake Washington and use 23rd Avenue to access transit service at SR 520 and I-90. A large number of visitors use the corridor to reach the University of Washington, Capitol Hill, the Arboretum, Volunteer Park and other cultural attractions.

The 23rd Avenue Corridor Improvement project has an extensive public engagement component and is coordinated with Seattle's Department of Neighborhoods and Department of Planning and Development. SDOT is coordinating with the 23rd Avenue Advisory Core Team (ACT), an advisory group that collaborates directly with the City of Seattle and the community.

REGIONAL ECONOMIC STRATEGY

This grant request supports the Regional Economic Strategy and serves major employment centers with a large number of existing and future family-wage jobs. It connects the First Hill / Capitol Hill and University District regional growth centers, which have over 70,000 existing jobs and will add more than 10,000 new jobs by 2040. The 23rd Avenue Corridor Improvements Project connects residents in both regional centers, the three locally designated centers along the route and other neighborhoods to jobs in both regional centers and throughout the rest of the Puget Sound region with improved access to Link Light Rail, regional bus service and the regional highway system.

The 23rd Avenue Corridor Improvements project helps create and retain jobs in two targeted clusters that are part of the Regional Economic Strategy: Life Sciences and Tourism. The 23rd Avenue Corridor links the University of Washington Medical Center with hospitals and research facilities on Seattle's "Pill Hill," including University of Washington's Harborview Medical Center. It provides access to jobs in the Life Sciences cluster for residents of some of the region's most diverse neighborhoods, including the Central Area and Rainier Valley. The elements of this grant application are critical to completing the planned corridor improvements.

The 23rd Avenue Corridor also supports the Tourism cluster by providing access to some of the region's most important tourist attractions, including Volunteer Park, the Arboretum, the Museum of History and Industry, Husky Stadium, Hec Ed Pavilion and Capitol Hill. Tourism destinations that reflect the Puget Sound's rich cultural heritage are located along, or very near, the 23rd Avenue corridor. These include the Northwest African American Museum, in the historic Colman School Building, Jimi Hendrix Park, the Seattle Asian Art Museum, the Langston Hughes Performing Arts Center and Seattle Japanese Garden at the Arboretum.

System Continuity/Long-Term Benefit and Sustainability

- LONG-TERM STRATEGY, INCLUDING TDM AND TSM OPPORTUNITIES
- PROVIDES A LOGICAL SEGMENT THAT LINKS TO A DESIGNATED URBAN CENTER
- FILLS A MISSING LINK OR REMOVES BARRIERS
- RELIEVES PRESSURE OR REMOVES A BOTTLENECK TO POSITIVELY IMPACT OVERALL SYSTEM PERFORMANCE
- IMPROVES SAFETY, REDUCES MODAL CONFLICT, AND PROVIDES OPPORTUNITIES FOR ACTIVE TRANSPORTATION

LONG-TERM STRATEGY TO MAXIMIZE EFFICIENCY

Problem: 23rd Avenue is a long and heavily congested corridor with an outdated signal system, a challenging pedestrian environment, a high collision rate and poor pavement condition, making it one of Seattle's top capital project priorities. This section of the corridor carries 18,500 vehicles on an average weekday, and the arterial is a T-3 truck route carrying over 1,200 trucks per day. With 5,800 daily riders, Route 48 South, which serves the corridor, is the eighth highest transit ridership route in King County. There are pedestrian safety deficiencies (obsolete crossings, damaged sidewalks, insufficient bus stop facilities) throughout corridor. Route 48 South is currently served by diesel powered buses, though about 70% of the route currently has trolley bus catenary lines. Because of the gaps in the system the two regionally designated and three locally designated centers connected by the line suffer increased emissions, more noise, less reliable and less direct transit service than might be otherwise provided.

Remedy: This grant request funds filling a gap in the electric trolley bus network by electrifying the entire route. Conversion of the line to a fixed guideway transit route that utilizes electric trolley buses will result in a lower life cycle costs and make the route more efficient and reliable. The grant request includes other transit operational and facility improvements for the Route 48 South, including equipment to enable transit signal priority and accommodating ITS upgrades. The request includes transit related scope elements that are part of the broader multi-modal 23rd Avenue Corridor Improvement project. The 23rd Avenue Corridor Improvement project improves safety and mobility for all users.

LOGICAL SEGMENT

The 23rd Avenue Corridor Improvement project is located on 23rd Avenue, a principal arterial and T-3 truck route, running between the First Hill / Capitol Hill and University Community regional growth centers. It links major regional transportation facilities, including I-90, SR 520 and Link Light Rail. It is "Main Street" for three of Seattle's locally designated centers. Route 48 South is one of the most used transit routes in the Puget Sound region.

This grant application includes funding to complete transit related elements along this corridor, providing additional funded to implement transit improvements along the two segments of the corridor not funded in the 2012 PSRC grant for 23rd Avenue, which was from South Jackson Street to East John Street. The grant application also completes two necessary stretches of the electric trolley network that were not part of the scope of the previous grant.

MISSING LINK

The 23rd Avenue Corridor Improvement project improves one of the key north/south corridors providing access to and from two regional growth centers and three locally-designated centers. The Route 48 South will be the primary access route from the centers along its length to three key stations on the Sound Transit Link Light Rail system, linking the Mt. Baker (Central Link), I-90 (East Link) and the University of Washington (U-Link) light rail stations to each other and the surrounding neighborhoods. This effort supports growth and development in these centers by improving access, mobility and safety for freight, general purpose traffic, transit and pedestrians. The transit corridor improvement project provides a parallel bike facility to fill missing link in citywide bike network.

This grant request fills in the missing gaps of trolley wire along Route 48 resulting in the route becoming a fixed guideway transit route that utilizes electric trolley buses. Filling this gap will result in more efficient and reliable transit service making the regional transit system more cost effective. It will also result in reductions in noise and diesel emissions improving the quality of life in numerous regional and locally designated centers.

BOTTLENECK

The 23rd Avenue corridor is currently experiencing heavy congestion due to an outdated signal system. It is a T-3 truck route and carries 5,800 daily transit riders and 18,000 weekday total volume. The corridor is an important alternative to I-5, providing connections from Seattle neighborhoods and the entire region to the CBD and helps to relieve pressure on the I-5 / I-90 interchange, one of WSDOT's Highway System Plan's identified Bottlenecks

and Chokepoints. The 23rd Avenue Corridor Improvement project will improve system efficiency and reliability by converting the diesel route to electric operation and providing other transit system improvements that can benefit a variety of modes, including ITS improvements and pedestrian and bicycle system improvements. By updating the signal system with TSP and other ITS features, the congested conditions will be greatly improved.

SAFETY

The electrification element of this grant application is expected to reduce air pollutants resulting in a public health benefit for the entire region. The localized air quality improvements will result in a public benefit for the residents along the corridor and users of the corridor. Transit elements of the grant will result in a safer, more inviting environment for riders who walk or bike to the Route 48 South.

The 23rd Avenue Corridor Improvement project is estimated to have an annual accident reduction value of over $1,200,000. It includes further safety elements, improving the pedestrian environment with signals and lighting, upgrading the signal system, reconstructing pavement and fixing sidewalks as well as providing a parallel bicycle facility on less travelled side streets. The parallel greenway will create a safe route for bicyclists of all ages and abilities.

Air Quality and Climate Change

Please describe how your project will reduce emissions. Include a discussion of the population served by the project (who will benefit, where, and over what time period). Specific questions have been prepared to assist you in responding to this criterion depending on the type of project.

This grant application reduces emissions through two elements. The electrification element will significantly reduce diesel emissions by allowing Metro to operate electric trolley buses on Route 48 South, one of King County's highest ridership bus routes. The electrification element will also result in more efficient and reliable transit service. The other transit elements of this grant application improve the speed and reliability of transit as well as making access to transit stops safer and more convenient. These elements encourage residents, employees and visitors to use transit service rather than driving their car.

Metro electric trolley vehicles operate exclusively on electricity from Seattle City Light. The distribution of primary energy sources for Seattle City Light is very nearly carbon neutral, with 98 percent of their electricity generated from non-greenhouse gas (GHG) emitting sources. The energy consumption reduction is a result of ETB vehicles consuming approximately 69% of the energy consumed by diesel hybrid vehicles. The conversion from diesel to ETB includes upgrades to electrical substations which will improve operating efficiencies on other ETB routes. The primary factor for emission reductions of this grant application is the conversion of Route 48 from diesel to electric trolley bus by constructing trolley wires in two segments along the corridor. The majority of the corridor already contains trolley wire, completing these missing segments will allow for Route 48 to operate as an electric trolley route.

As a bus route with a high number of annual trips and miles travelled the benefits of converting Route 48 South to electric power are very large. Buses on Route 48 made 52,071 trips and traveled 344,748 miles in 2010. A Metro analysis, prepared in 2010 for a TIGGER grant application, estimated the energy reduction and air quality benefits that would be expected from the electrification of Route 48 South. The annual energy savings from converting this route is estimated to be 5.3 Billion BTUs. Converting to electric trolley buses is expected to reduce CO2 emissions by over 4,800 kilograms each weekday. This results in over 1,300 tons of CO2 emission reductions each year. In comparison to PSRC's guidance for the CMAQ program, which lists the most effective types of projects for emissions reduction, the Route 48 conversion is expected to produce more than three times as much air quality benefit as the next most effective project type (new high-capacity transit service). Metro's documentation shows that trolley infrastructure can have a useful life of 40 years, resulting in a reduction in CO2 emissions of almost 55,000 tons over the lifetime of the improvements.

The local benefits of the Route 48 South Electrification and related elements of the 23rd Avenue Corridor Improvement project will largely occur in Central Area neighborhoods, which include some of the most diverse, lowest-income populations in King County. With completion of the electrification element of this grant application, these populations will receive better transit service and be subjected to reduced pollution and noise. Previous King County Metro grant applications for the electrification of Route 48 South indicate that the trolley system improvements made by this project will also benefit users of other high ridership trolley routes in the Central District, including the Routes 2, 3, and 4, as well as the trolley system overall. By encouraging more use of clean electric transit lines, the project will result in additional air quality benefits beyond the electrification of Route 48 South.

The transit elements of this grant application will result in a safe, convenient and reliable connection between transit-oriented centers and between two stations on Sound Transit's Link Light Rail system. With 5,800 daily riders, Route 48, which serves the corridor, is the eighth highest transit ridership route in King County. Those who will benefit from improving transit along 23rd Avenue include high concentrations of low income, college students and minority populations many of whom do not own cars. In Capitol Hill, one of the neighborhoods served by 23rd Avenue, over one-third of households do not own cars. Seattle's 2011 Neighborhood Business District Intercept Survey showed that only one-quarter of visitors to Capitol Hill used single occupant vehicles. In 2009, 75% of the commuters to the University District used modes other than the single occupant vehicle. All users will benefit from the pedestrian improvements, improvements to transit speed and reliability, ITS and traveler information.

Improving the corridor

- Elements included in all phases:

New pavement

Sidewalk improvements

Lighting improvements

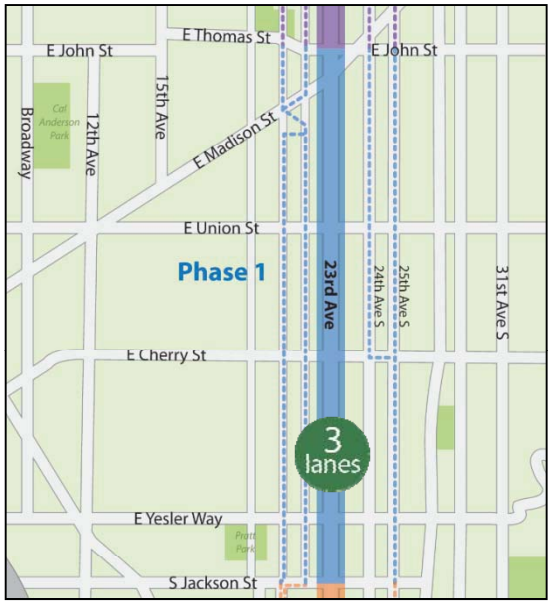
Increased transit reliability

Traffic signal improvements

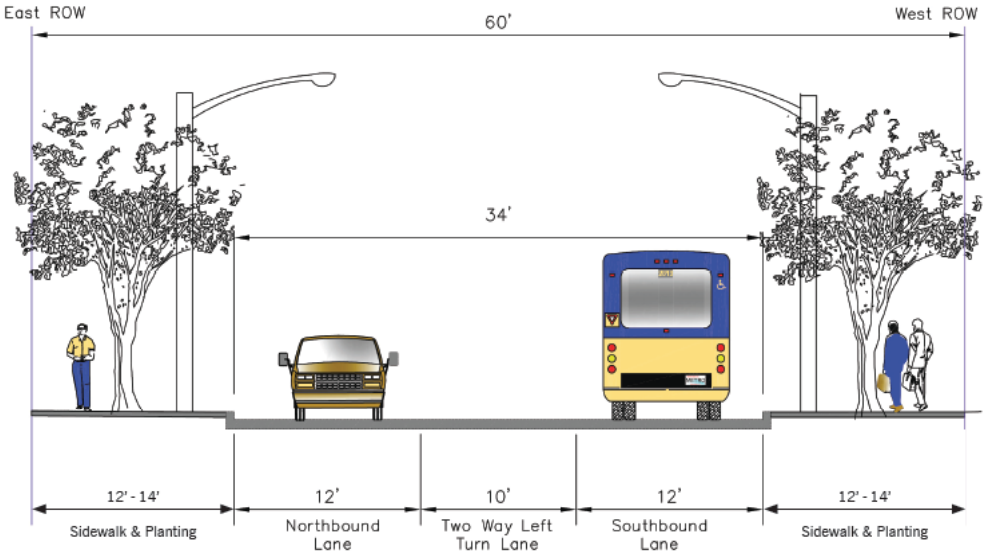
Public art

Phase 1: E John Street to S Jackson Street

- Phase 1 specific elements:
  - Reconfiguring the roadway to three lanes (one lane in each direction with a center-turn lane)
  - Sidewalk improvements
  - Landscaping enhancements
  - Construction of nearby greenway
  - Intersections at S Jackson Street and E Yesler Way will remain four lanes



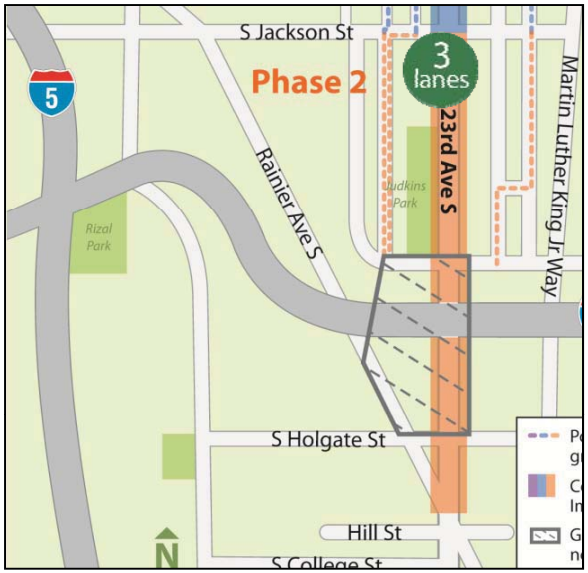
3 lanes



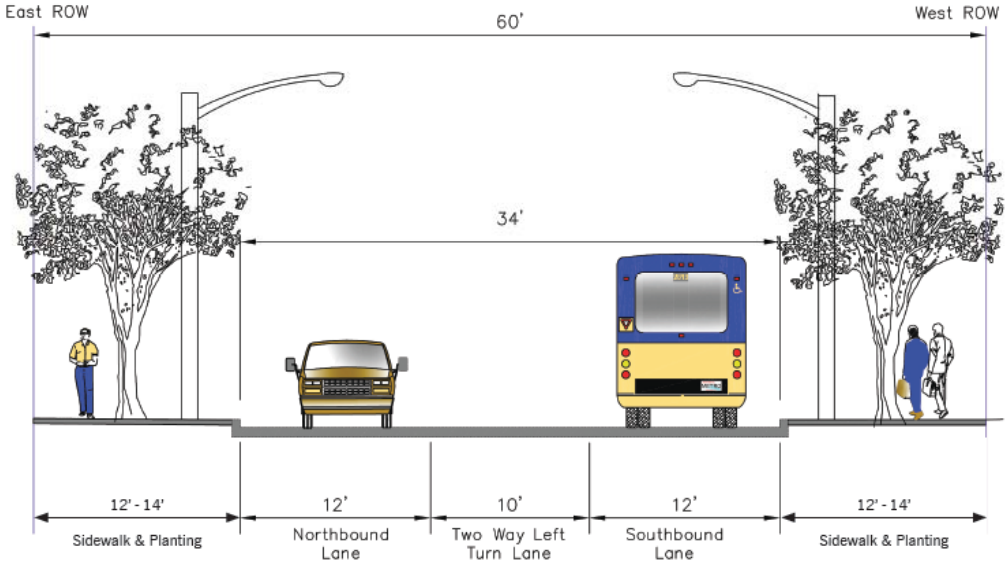
Proposed cross-section

Phase 2: S Jackson Street to Rainier Avenue S

- Phase 2 specific elements:
  - Reconfiguring the roadway to three lanes (one lane in each direction with a center-turn lane)
  - Sidewalk improvements
  - Landscaping enhancements
  - Closure of Hill Street



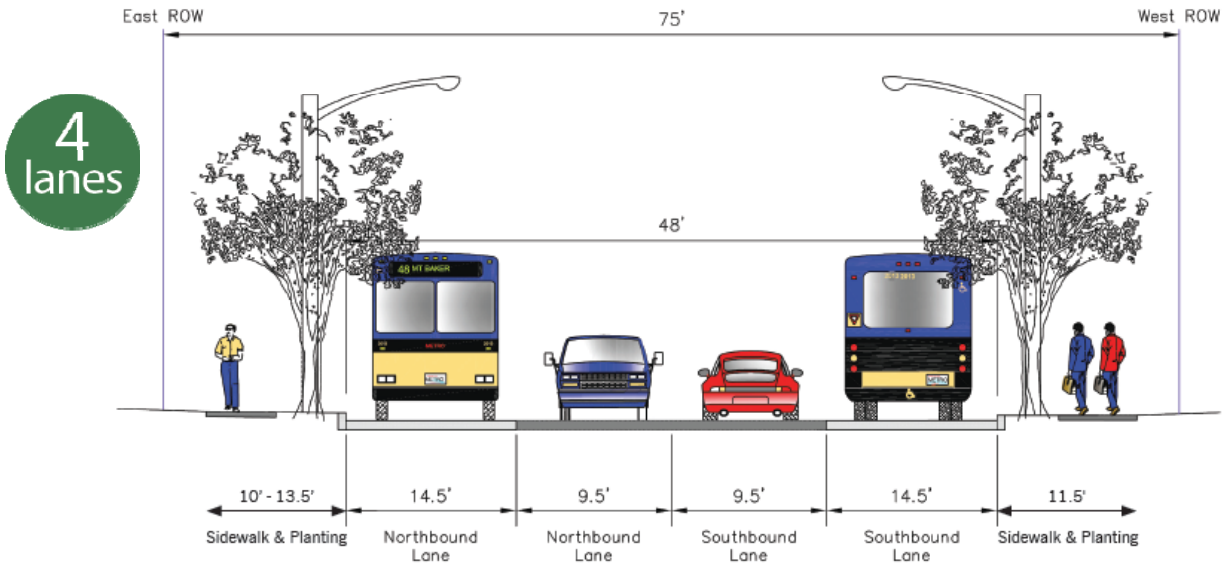
3 lanes



Proposed cross-section

Phase 3: E Roanoke Street to E John Street

- Phase 3 specific elements:
  - Maintains four-lane cross section
  - Sidewalk repair
  - Intersection at E Madison Street will remain four lanes



Proposed cross-section (same as today)