Project Management Plan

SR 99
Aurora Avenue – George Washington Memorial Bridge
Seismic

XL2989
WIN A09946S

April 2010

WASHINGTON STATE DEPARTMENT OF TRANSPORTATION
Northwest Region
Seattle, Washington

Hung Huynh, P.E.
Project Engineer

Washington State
Department of Transportation

Initiate & Align Worksheet

SR 99 Aurora Ave. – George Washington Memorial Bridge - Seismic
MP 34.17 to 34.73
Project Manager: *Andrea Burgess*

Project Description:

This project will design a seismic retrofit for the SR 99 Aurora Avenue- George Washington Bridge's north approach span (bents N3 to N15) and south approach span (bents S3 to S9).

Team Mission/Assignment:

To deliver a well thought out PS&E that is prepared in accordance with all the applicable guidelines, on time, within budget, constructible and minimized alteration of the appearance of this historical bridge.

☐ Scoping ☒ Preliminary Engineering ☐ Construction

Team Identification

	Access		Local Agencies
	Architecture		Roadside Development
x	Bridge & Structures	x	Maintenance
x	Construction		Materials
	Consultant Liaison	x	Program Management
x	Design & Plans Review	x	Public Information Office
x	Environmental	x	Real Estate Services
	Geographical Services	x	Right-of-Way
	Geotechnical Services	x	Traffic
x	Highways & Local Programs		Transportation Data Office
x	Hydraulics	x	Utilities
x	Land Survey		Other

Major Milestones

The project team tracks major milestones, to provide an overview and status to the WSDOT Management, the Project Team, Legislature, and the public.

☒	*Project Definition Complete*	*04/22/09*
☒	*Begin Preliminary Engineering*	*06/06/07*
☒	*Environmental Documentation Complete*	*Aug. 2010*
☒	*Right of Way Certification*	*Sept. 2010*
☒	*Environmental Permits Received*	*Oct. 2010*
☒	*Advertisement (Ad Date)*	*Jan. 2011*
☒	*Bid Opening*	*Feb. 2011*
☒	*Contract Award*	*Mar. 2011*
☒	*PE Phase Complete*	*Apr. 2013*

Roles & Responsibilities

Biologist

- Provide biological recommendations to Design Team.
- Provide approved Biological Assessment for the project. Coordinates with the appropriate agencies for their concurrence on the BA.

Bridge and Structures

- Provide structural guidance on bridge retrofit needs.
- Provide alternative schemes or options.
- Prepare the Bridge Design Plans.
- Act as an advocate for the Bridge office by communicating concerns/issues between the design team and the Bridge office.
- Coordinate, prepare and administer the contracts with structural consultants as needed.

Construction Manager and Project Engineer

- Provide guidance and advice during the design phase to the Project Delivery Team on constructability issues.
- Review the engineer's estimate, project plans, and specifications and provide comments in a timely manner.

Construction Traffic (CTCO)

- Provide input and review traffic control strategies, construction staging plans, and traffic control plans.
- Coordinate with City of Seattle to provide lane, road, and ramp closure hours.
- Provide liquidated damage amounts for lane, ramp, and roadway closures as appropriate and obtain approval from HQ for these amounts.
- Assist in identifying critical closures and region-wide project coordination.
- Provide guidance for traffic control development in projects.

Cultural Resources Specialist

- Provide cultural resources reports and documentation for project advertisement.
- Communicate with the appropriate State, Local, and Federal agencies to obtain the required approvals.
- Act as an advocate for the Cultural Resources office by communicating concerns/issues between the design team and the Cultural Resources office.

Design Project Engineer

- Project Engineer of record.
- Liaison between the Project Delivery Team and the Management Team.
- Set goals and provide guidance and advice as the project progresses.
- Monitor the schedule and budget.
- Approve and stamp Design Office project plan sheets.

Design Project Manager

- Coordinate design team operations and incorporate products from specialty groups to the design file & PS&E.
- Design oversight; including meeting requirements of the Design Manual, other manuals, and the Team Mission.
- Provide technical advice regarding individual design elements.
- Develop and provide project information as needed by specialty groups.
- Bring concerns from the design team to the management team.
- Update the design team on decisions/recommendations of management.
- Manage the project schedule.
- Maintain a project issue log and hand over to the construction office upon project award.

Design Team Member

- Assist with preparation of the Design File and PS&E.
- Ensure design meets requirements of Design Manual, other manuals, & Team Mission.
- Provide information, as needed, to specialty groups.
- Bring concerns to the Project Manager's attention.

Design & Plan Review

- Preparation and advertisement for PS&E packages, including review, bid opening, award, and contract execution.
- Review and preparation of addenda.
- Review, process, and the recording of the design documentation files.

Environmental Permit Coordinator

- Provide environmental documentation and applicable permits for project advertisement.
- Coordinate any mitigation to address environmental impacts.
- Communicate with the appropriate State, Local, and Federal agencies to obtain the permits required.
- Act as an advocate for the Environmental office by communicating concerns/issues between the design team and the Environmental office.

Environmental Technical Advisor

- Coordinate with permit coordinator and design team on design and constructability issues and typical water quality protection measures for in or near water work
- Provide initial and interim feedback for the creation and review of the projects TESC plan as the design progresses
- Provide feedback to the environmental coordinator or the design team on water quality, water treatment, or mixing zone or other environmental sensitive area documentation development or submittals
- Attend design meetings as needed
- Scope of Work and Deliverables
    - Provide review comments and corrections for TESC plans

- Provide reviews and comments for 60% and 100% PS&E reviews
- Attend roundtable meetings for 90%, 100% and Ad Copy PS&E reviews
- Advise on special provisions related to TESC and SPCC Plans
- Participate in Constructability Reviews & Environmental Commitment Meetings

Highways and Local Programs

- Facilitate a link with local agencies and partners such as tribal governments, ports and transit.
- Work closely with public works staff, engineering staff, and elected officials.
- Guide, counsel, and collaborate with agencies on project scoping, funding, design, environmental documentation, construction, and project closure.
- Ensure representation of and advocacy for each agency's transportation concerns, interests, and needs to the Washington State Department of Transportation.

Hydraulics and Water Quality Coordinator

- Ensure that environmental protection and compliance is achieved with respect to the region's water resources.
- Coordinate with resource agencies and designers; participate in environmental initiatives and scope of work reviews.
- Issue approvals and concurrences with stormwater reports and reviewing PS&E submittal to ensure environmental compliance with all applicable regulations and overall safety of the roadway for the general public.
- Act as an advocate for the Hydraulics and Water Quality office by communicating concerns/issues between the design team and the Hydraulics and Water Quality office.

Program Manager

- Monitor the schedule and budget for program delivery.
- Participate in securing the necessary funds.
- Provide guidance and advice as the project progresses.

Public Information Office

- Support the project by providing clear communication with the public through news releases, webpage updates, and various written and graphical communication tools.
- Respond to inquiries from the public and news media through e-mail, as well as by telephone, and refer questions to the many experts within WSDOT.

Real Estate Services

- Performs and coordinates all real estate transactions for the department, and issues guidelines for all state agencies engaged in real estate activities covered by the Uniform Relocation Assistance and Real Property Acquisition Policies Act.
- As needed: perform appraisal to determine the market value of the property to be acquired, acquisition from property owners and, where necessary, relocation assistance for residents and businesses impacted by property acquisition.
- Manages WSDOT owned property and rights of way.

Structures Consultant – TY Lin

- In accordance with the consultant agreement, perform analysis and work needed to produce the following deliverables:
    - Written Report: An explanation of computer models and analytical procedures, followed by a summary of results showing computed force demands and drift computations (residual drift will not be concluded from the linear analysis model). A catalog of main member D/C ratios, a review of the detailing and expected ductility of the existing bridge members, a review of retrofit options, and a recommendation on retrofit strategies will be presented as an assessment of seismic vulnerability for the approaches. A geotechnical report will be attached as appendix to the structural vulnerability report.
    - Programmatic Retrofit Estimate: Construction cost estimate based on current price history for similar retrofit strategies as contemplated within the report.
    - Presentation: The results will be presented in a half day conference with WSDOT after completion of the analysis and report. All of the methods and items contained in the report will be discussed in the presentation.
    - Computations: The results of computerized computations will be presented in binder format. Computations will be included for the main member capacity determinations, and the evaluation of D/C ratios for the main elements. Analysis results will be summarized in spreadsheet-type tables, with detailed input and outputs provided in electronic format. The entire text package will be included in pdf format as well.

Structures Consultant – Washington State University

- In accordance with the consultant agreement, perform analysis and work needed to produce the following deliverables:
    - Task 1: The Principal Investigator (PI) will participate in the development of and provide recommendations to the WSDOT Bridge Office on the testing plan for the column specimens, including specimen configuration and details, testing setup, loading protocol, instrumentation, data collection, and documentation of the test results.
    - Task 2: Coordinate with the contractor constructing the specimens to gain access and install strain gauges and any other instrumentation embedded in the column specimens.
    - Task 3: Design and fabricate the fixtures that will be used to test the column specimens. The column specimens will be tested using fixed supports at the base and the top, producing double bending in the specimens.
    - Task 4: Perform tests on the specimen materials to document properties, including compression tests on concrete cylinders and tension tests on reinforcement samples.
    - Task 5: Handling of specimens as needed to move them into and out of the testing facility.
    - Task 6: Perform tests using the agreed-upon loading protocol on 1/3-scale column specimens.

- Task 7: Analyze the data collected from the tests and draw conclusions on the effectiveness of the FRP wrapping and reentrant corner anchorage detail for improving the shear strength of cruciform-shaped sections for both solid and modified split columns.
- Task 8: Prepare final report documenting the tests, test data and analyses, and conclusions and recommendations resulting from the study.

Sno-King Survey Crew

- Provide general survey need for Design Office.

Noise, Energy, and Air Quality Coordinator

- Provide guidance and advice to Design Team regarding AQ (fugitive dust control) and temporary nighttime construction issues.
- Obtain noise variance from the City of Seattle
- Identify potential risks and additional mitigation costs that the construction office may encounter if the nighttime work results in a high number of complaints.
- Work with the public affairs office to develop a communication plan to inform residents within the work zone about the nighttime work.

Utilities

- Evaluates and authorizes the installation of utilities and other facilities or activities within the state highway right of way, including oversight of utility permits, franchises, franchise consolidation, renewals and amendments.
- Coordinates the project's needs with the utilities companies. The areas of responsibility include: utility locates; utility relocation; subsurface utility engineering; utility agreements; control zone guidelines compliance; utility service agreements.

Measures of Success

The following is a list of requirements that we all must adhere to for this project to be successful:

- Maintain open, effective and timely communication within the team, with sponsors, other agencies, stakeholders, and the public.
- Develop a design that meets Local agency, Regional, Headquarters, Landmarks Preservation Board, and community needs.
- Meet project ad date of January 10, 2011.
- PS&E is clear and complete with minimal change orders in construction

Project Parameters

- ***Project limits*** – SR 99, MP 34.14 to 34.76

- ***Funding limits*** – Authorized PE: $1,951,847
  CN: $7,394,304

- ***Regulatory*** – Design must receive approval from the Seattle Landmarks Preservation Board and State Dept. of Archaeology and Historic Preservation (DAHP) if alterations are made to historic elements of the bridge.

- ***Maintenance*** – Design must allow access for maintenance operations, inspections, and painting.

Operating Guidelines

- Team decision-making process:
  - Voice and respect each other's opinions
  - All team members support final team decisions.
  - Resolve conflicts.
  - Early & continued involvement of key players (internal and external).

- Communication:
  - Refer to the Communication Plan.

- Manage team change:
  - Communicate change in a timely manner and manage in accordance with the Change Management Plan.

Project Team Directory

SR 99 Aurora Ave. – George Washington Bridge Seismic Retrofit

MP 34.14 to 34.76

Project Manager: *Andrea Burgess*

Department	Name	Phone
Biology	Colleen Kroe	206 440 4902
Biology	Brian Bigler	206 440 4519
Bridge and Structures	Craig Boone	360 705 7172
Bridge Maintenance	Archie Allen	425 739 3700
Construction Engineering Manager	Messay Shiferaw	206 440 4689
Construction PE	Mike Askarian	206 768 5861
Construction PE	Aleta Borschowa	206 768 5862
Construction Office Engineer	Sepehr Sobhani	206 768 5854
Construction Traffic Coordinator	Juan Reyes	206 440 4467
Cultural Resources Specialist	Leslie Schwab	360 570 2580
Design Engineering Manager	Martin Palmer	206 440 4773
Design PE - Project Development	Hung Huynh	206 440 4311
Design PE - Project Management	Mark Allison	206 440 4330
Design Engineer	Jason Ericson	206 440 4338
Design Project Manager/Controller	Andrea Burgess	206 440 4313
Design Review	Leslie Barben-Price	206 440 4783
Enviro. Permit Coordinator	Bob Caldwell	206 440 4907
Enviro. Business Manager / Tribal Coordinator	Steve Shipe	206 440 4531
Enviro. MBTA Review	Kelly McAllister	360 705 7426
Hazardous Materials Coordinator	Katherine Chesick	206 440 4542
Highways and Local Programs	Kathy Eldred	206 440 4671
Hydraulics Program Manager	Erik Hansen	206 440 5076
Hydraulics Coordinator	Nick Abedin	206 440 4905
Landscape Architecture	Katey Bean	206 440 4502
Landscape Architecture	Dave Peterson	206 440 4500
Noise, Air, and Energy Specialist	Laura Escude	206 440 4554
Plan Reviewer	Steve Howard	206 440 4115
Program Management	Azim Sheikh-Taheri	206 440 4761
Public Information Officer	Mike Murphy	206 440 4699
Real Estate Services	John Jensen	206 440 4163
Real Estate Services	Lisa Shawer	206 440 4184
Sno-King Survey Manager	Joe Simek	206 440 5020
Utility Coordinator	Heba Awad	206 440 4131
Compliance Manager	John Maas	206-440-4545
Environmental Technical Adviser	Mike Walker	206 440 5074

Communication Plan

SR 99 Aurora Ave. – George Washington Bridge Seismic Retrofit
MP 34.14 to 34.76
Project Manager: *Andrea Burgess*

The communication plan for the project is broken into two sub-areas, Internal and External Communication. Both sub-areas acknowledge that the project partners cannot realize their vision nor can the project delivery team attain our mission without a sufficient, timely and accurate flow of information. We also recognize that effective communication demands effective listening and viewing project decisions from our customer's perspective.

In order to assure successful delivery of this project, it will be necessary for the project delivery team to accurately inform each other of their needs, updates and timelines. Minutes from meetings listed below will be electronically routed to affected groups as appropriate.

External Communication

Timely and meaningful exchange of information external to the project team is critical to secure a positive commitment from stakeholders and the general public. As indicated in the table, that flow may be written or oral, formal or informal.

WHAT	WHO	HOW	WHEN
With Stakeholders			
Identify stakeholders	Andrea Burgess	A stakeholder list will be created and maintained	Feb. 2009
With the Public			
Public Involvement (PI)	Mike Murphy	Write Public Involvement Plan (PIP)	Sept. 2009
Project website	Mike Murphy	Regular Updates	Sept 2009 - Ongoing
WSDOT contact with public	Hung Huynh / Mike Murphy / Craig Boone	Community Briefings, Webpage, E-mail.	Ongoing

Internal Communication

The following is a list of recurring internal project-related meetings:

Bi-Weekly Coordination Meetings:

- *Purpose*: To facilitate the exchange of information and ideas between Bridge and Structures, Cultural Resources, Design Team, and Public Information Office.
- *Invitees:* All project team members, including Bridge and Structures, Cultural Resources, Public Information, and Design staff.
- *When:* Semi-monthly following identification of a preferred retrofit strategy

Monthly Project Update Meetings:

- *Purpose*: To share project status and discuss current issues.
- *Invitees:* Hung Huynh, Mark Allison, Andrea Burgess, and other team members as needed.
- *When:* Monthly

Design Team Meetings:

- *Purpose*: To discuss specific work in progress and the work plan.
- *Invitees:* Design team staff.
- *When:* Weekly

Regional Confidence Report

- *Purpose*: To discuss project status and Earned Value
- *Invitees:* Andrea Burgess, Hung Huynh, regional management.
- *When:* Second Thursday of each month.

Schedule Management Plan

SR 99 Aurora Ave. – George Washington Bridge Seismic Retrofit
MP 34.14 to 34.76
Project Manager: *Andrea Burgess*

Objective

To identify processes needed to manage completion of preliminary engineering and meet the ad date in January 10, 2011.

Define and Sequence Activities

The project Work Breakdown Structure (WBS) has been based on the WSDOT Master Deliverables List (MDL) and input from specialty groups. Each WBS component was analyzed to ensure the work was decomposed to a sufficient level of detail, and to determine logical predecessors and successors.

Estimate Activity Resources and Durations

Resources and durations for activities were determined using specialty group input, data from past projects, or data of typical time for completion. Where the exact scope of work is unknown, a conservative approach was taken to estimating the time and resources needed to complete a component of project work.

Develop Schedule

The schedule was developed using the critical path method. Resource leveling was applied to ensure consistent demands on workforce. A baseline for earned value management has been determined. The current schedule is included at the end of this document.

Schedule Control

The schedule will be controlled using the following tools:

- Project Management Software
  - The current schedule is in Primavera Scheduler as Project ID A09946S.
- Updates and Reviews
  - The schedule will be updated by the project manager on a semi-monthly basis to reflect actual start/finish dates and approved changes. Communication with specialty groups is integral to successful schedule assessment and updating.
- Variance Analysis
  - The project manager will calculate the project's Earned Value (EV), Planned Value (PV) and Actual Cost (AC) and report to region management on a monthly basis. Variances will be documented and an assessment will be made whether corrective action or preventative action is required.
- Resource Leveling
  - Resource leveling will be applied by the project manager to optimize the distribution of work scheduled among resources. Conflicts will be identified and resolved promptly to ensure timely completion of scheduled work.

Cost Management Plan

SR 99 Aurora Ave. – George Washington Bridge Seismic Retrofit
MP 34.14 to 34.76
Project Manager: *Andrea Burgess*

Objective

To identify processes needed to manage preliminary engineering and construction costs.

Estimate Costs

Estimated costs for the design phase were determined using specialty group input, data from past projects, or data of typical costs. Where the exact scope of work is unknown, a conservative approach was taken to estimating the cost to complete a component of project work. An assessment of project risk was performed to identify activities of work and costs required to mitigate known risk.

The construction phase cost estimate will be calculated in coordination of specialty groups, with review and input from the construction office included as an integral part of determining construction costs. A "Design Estimate Documentation Review Package" excel spreadsheet package will be prepared for use by Executive staff for review and project staff for reference at the 30, 60 and 90% design milestones. The construction estimate will be a topic of discussion at all constructability reviews.

Determine Budget

- Authorized PE: $1,951,847
- Authorized CN: $7,394,304

Control Costs

The project costs will be controlled using the following tools:

- Variance Analysis
    - The project manager will calculate the project's Earned Value (EV), Planned Value (PV) and Actual Cost (AC) and report to region management on a monthly basis. Variances will be documented and an assessment will be made whether corrective action or preventative action is required.
- Forecasting
    - Forecasting will be employed by the project manager to determine the project's Estimate at Completion on a weekly basis. The estimate at completion is the sum of the actual and accrued costs, plus the estimated cost of remaining work.
- Change Requests
    - When an assessment of project costs indicates the estimate at completion exceeds the project budget, the change management plan process will be followed to determine a course of action. Potential outcomes include changes to the project scope or schedule, or request for project termination or additional funds.

Change Management Plan

SR 99 Aurora Ave. – George Washington Bridge Seismic Retrofit
MP 34.14 to 34.76
Project Manager: *Andrea Burgess*

During the life of the project changes to the project scope, schedule, and resources may occur. The sources of these changes may be internal or external initiated by the customers. External changes can also result from other stakeholders, availability of resources, changes in technologies, etc. Whether the effects of changes are positive or negative, managing change is an important factor for success. Managing change will require planning, discipline, and communication among the project team, customers and stakeholders. As the Change Management Plan is executed, the following should occur:

- Improved relationship with customers
- Improved financial performance
- Reduced project delays
- Better project teamwork
- Improved management of project quality.

The following defines the plan this team will use to manage change.

Types of Change that can be anticipated on this project:

- Scope creep
- Staff changes
- Schedule change
- Change in deliverables
- Technical change
- Process/Policy change
- Resources/Technologies/Materials changes
- Public Opinion change

Step-by-Step Process to Manage Change

Use these steps, and sub-steps, as determined for the specific change proposed/encountered.

1. Identify source and nature of the change
    - Determine the type of change (work plan, schedule, technical, etc.)
    - Determine the potential impact and process (formal/informal)
    - Document origin of change (who initiated it, what precipitated it)
    - Identify potentially effected customers and suppliers
    - Identify who should lead the analysis/rest of process
    - Communicate potential to rest of team as needed
2. Analyze the effects of the change
    - How does it relate to purpose/mission?
    - Compare change against the current process
    - Quantify the change (how much, how long, how much risk)

- Cause-effect analysis
- Brainstorm, analyze, and prioritize strategies
- Identify impacts against agreed upon requirements
- Access profound knowledge

3. Develop a response/action plan strategy
   - Document analysis into proposal form
   - Identify customers/stakeholders/level of authority for endorsement
   - Plan steps for presentation by answering these questions:
     - What needs to be done, who will do it, and by when?
     - How will quality and customer service be ensured?
     - What will be the effects on other project tasks?
     - How will the team communicate with the other stakeholders?
4. Communicate strategy & gain endorsement
   - Schedule meeting(s)
   - Send letter/documentation package
   - Gain endorsement and/or feedback
   - Adjust strategy as needed and update database
5. Implement change plan and monitor the effects
   - Identify responsibilities and timelines for carrying out
   - Revise the work plan
   - Monitor and evaluate implementation

Develop and Apply a Change Management Record

The Change Management Record is a tool to be used to document, track, and measure the impact of change management on critical project factors. Use of this Change Management Record will be considered mandatory, and will include the following information:

Description of Change	Decision Description
Type of Change	Decision Impact Discussion (quantity/quality)
Origin of Change	Who “helped” develop response?
Lead Manager	Related Project Names
Analyst	Location
Customer(s) Contacted	Cost Change estimate
Time Change Estimate	Decision Made Date
Decision Made By	Justification Description

Quality Plan

SR 99 Aurora Ave. – George Washington Bridge Seismic Retrofit
MP 34.14 to 34.76
Project Manager: *Andrea Burgess*

This plan describes how the project team will implement quality assurance and quality control into the project.

Quality Assurance planning and review is performed by supervisors and Project Managers to insure systematic quality control activities are in place and followed by design team members.	*Quality Control* activities are performed by designers and reviewers at defined stages of development to insure the desired quality results are being achieved and to identify ways to make corrections.

- Quality Metrics:
  - Design Manual
  - Bridge Design Manual
  - Environmental Procedures Manual
  - Standard Specifications
  - Exec. Order E 1028.01 "Context Sensitive Solutions"
  - Exec. Order E 1032.00 "Project Management"
  - Cost Estimating Guidance for WSDOT Projects
  - Plans Preparation Manual
  - Electronic Engineering Data Standards
  - Project Management Body of Knowledge (PMBOK Guide)

QA/QC item	Lead	Checked	Standard(s) or References	Date scheduled	Date executed
Quality Identification & Assignment Meeting	Andrea Burgess	Yes	N/A	Feb 2009	2/9/2009
50% Design Quality Review	Jason Ericson		Project Quality Plan	Jun. 2010	
60% Constructability Review	Andrea Burgess		NWR Constructability Review Process	Aug. 2010	
Final Design Quality Review	Jason Ericson		Project Quality Plan	Sept. 2010	
90% Constructability Review	Andrea Burgess		NWR Constructability Review Process	Oct. 2010	
10-week PS&E review	Andrea Burgess		NWR Constructability Review Process	Nov. 2010-Jan. 2011	
Stamping of a Professional Document	Hung Huynh		Exec. Order 10.10	Jan. 2011	

* Refer to Major Milestones on page 3 to see how the QA/QC items interface.

- Process Improvement Assessment
    - To identify non-value added activities, the project schedule will be reviewed prior to endorsement and at the design quality reviews to ensure the following:
        - Each task has a clear purpose for being on the schedule
        - Each task has a logical predecessor and a successor
        - Duration of the task makes sense given the context of the work
- Quality Baseline
    - Design will adhere to WSDOT standards as noted in the quality metrics section.
    - Plan sheets should have zero CAD errors when distributed for review.
    - All calculations and assumptions should be documented.
- Project Management Plan updates
    - To ensure project quality, the Project Management Plan will be reviewed monthly by the project manager prior to the regional confidence report and updated as needed. A sheet is included at the end of the Plan for monthly sign-off.

Quality Assurance and Quality Control

Change requests, such as modification of work methods, product requirements, quality requirements, scope and schedule, must be analyzed for their effect on the quality management plan and quality metrics. All approved changes will be formally documented.

Quality Reviews

The project will undergo a quality review at approximately 50% design and prior to turn-in. The quality review will consist of:

- Measurements against the quality metrics and quality baseline
- Each checked item will include the reviewer's initials and date of review.
- Identification of project defects and recommendations for repair
- Recommended corrective and preventative actions
- Process improvement assessment (schedule) review and risk assessment review.
- To be done by experienced design office individuals who have not been actively involved in the design work assigned for review.
- The reviewed materials are to be kept for documentation of project development.

Constructability Reviews

- The design office and reviewers are to make a field trip with construction, maintenance and other appropriate representatives before the 60% and 90% reviews begin.
- To ensure project quality, materials for the 30, 60, and 90% constructability reviews will be delivered to reviewers at least one week prior to the scheduled meeting.
- When the design team has ensured that all review comments are received, a meeting will be held to discuss the comments prior making any changes.
- The constructability review process will include interdisciplinary review to identify design conflicts (Ex.: Bridge reviews Design sheets, Design reviews Bridge sheets).
- The design office will request that, if available, a member of the construction office participate in the PS&E Review process by co-locating with the design office at least one day per week during the 10-week review process.

Transition & Closure Plan

SR 99 Aurora Ave. – George Washington Bridge Seismic Retrofit
MP 34.14 to 34.76
Project Manager: *Andrea Burgess*

Optimal success for this project – realization of the project purpose - requires delivery of a quality product resulting in satisfied customers and conducting a deliberate closure – including an effective "hand-off" to a subsequent phase and team (i.e. transition or handoff from Design to Construction). Elements of a transition or closure plan are identified below.

a. Transition Points

- Identification of "Preferred Alternative" (selected retrofit strategy)
- Contract Ad and Award
- Turnover to Construction Office (design office to provide construction support for design changes).

b. Acceptance of Work

- The project will be advertised after completion of quality/constructability reviews, and full documentation that the project elements meet WSDOT design criteria as well as regulatory criteria established by involved agencies.
- All project files will be archived according to WSDOT guidelines with copies of all data made available to the Construction Office. Preliminary files including, including all work to date, will be made available no later than the project ad date.
- The project issue log, maintained by the project manager, will be turned over to the construction office upon award of the contract.

c. Demobilize Staff and Resources.

- The next project for the design team will be identified at least two months prior to the ad date for this project.
- An assessment will be made of preliminary workforce and individual training needs in preparation for the new project.
- Team members will be enrolled in training for the new project as applicable and will transition to the new project as their individual tasks on this project are completed.

d. Review and Document Lessons Learned.

- Lessons Learned will be a standing agenda items at project quality/constructability review meetings.
- Lessons Learned will be compiled and documented at each of the transition points identified above.

e. Evaluate, Reward and Recognize team members.

- Supervisors will meet with employees to discuss individual project performance and document items for the employee's Performance Management Plan.
- Following contract award, each design team member will receive a letter of recognition from the Engineering Manager. The letter will specifically recognize if any of the following target performance metrics are accomplished:
    - Completion of Preliminary Engineering within authorized budget.
    - Low bid amount lower than CPMS budget.
    - Contract PS&E completed early, allowing advancement of ad date.
- The Project Engineer and Engineering Manager will seek recognition for the design team by nominating the project and team members for departmental awards as appropriate.

f. Archive

- Electronic copies of all design team e-mail relating to the project will be archived with the project files.
- CADD documentation for the project will be kept up-to-date according to the WSDOT electronic Engineering Data Standards.

g. Schedule and Financial Closure

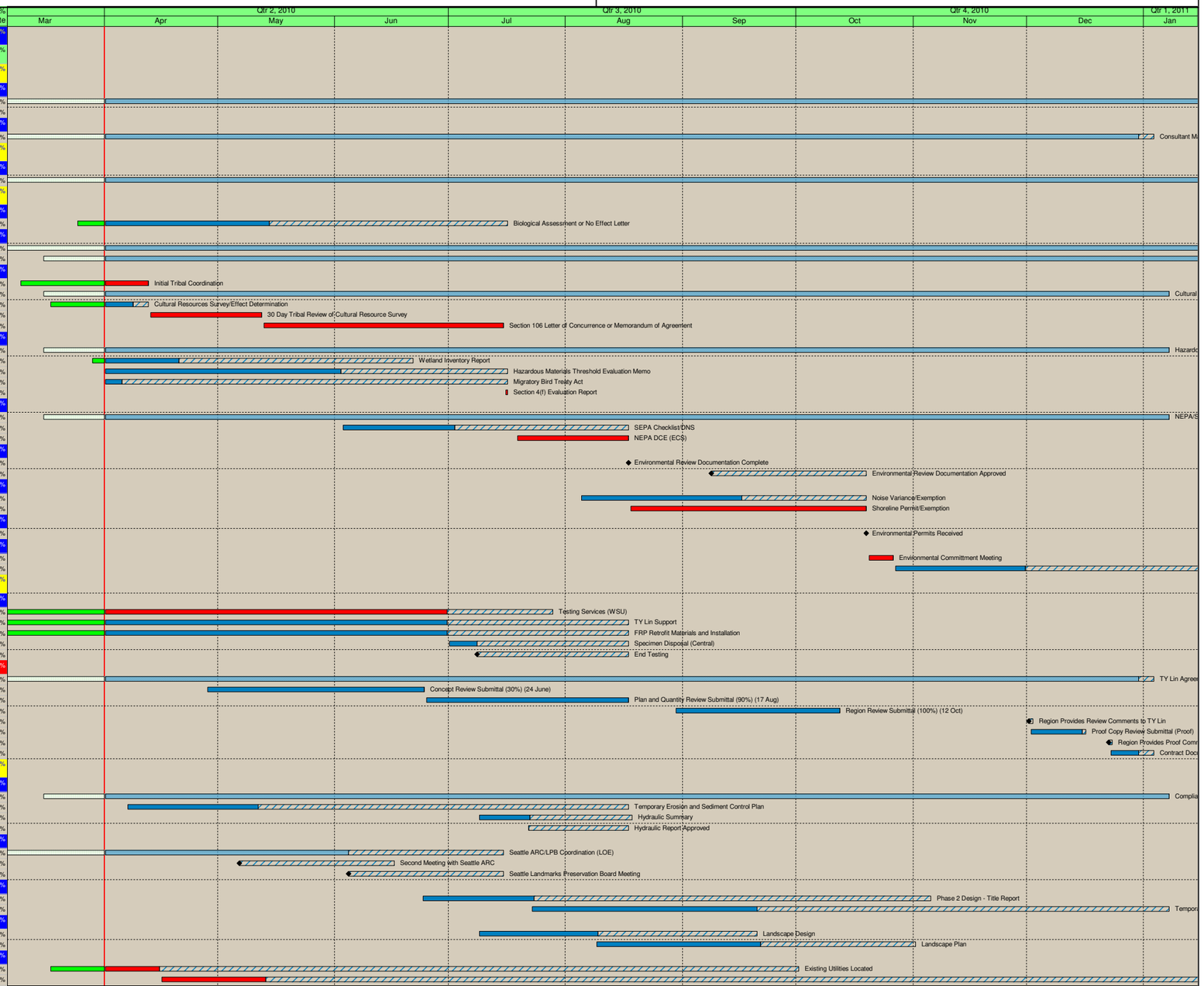
- Upon completion of scheduled Preliminary Engineering tasks, the electronic schedule will be archived and a request will be made to close the Work Order number.

A09946S - SR 99/Aurora Ave-George Washington Memorial Bridge-Seismic

Remaining PE Schedule - Small Font

Data Date: 01-Apr-10 Print date: 05-Apr-10 15:14

Activity ID	Activity Name	Start	Finish	Actual Start	Actual Finish	Remaining	Budgeted Total Cost	Duration %	Perf. % Complete
SR 99/Aurora Ave-George Washington ...		06-Jun-07 A	01-Apr-13	06-Jun-07		752	$9,001,821	40.65%	3.04%
Preliminary Engineering		06-Jun-07 A	29-Apr-11	06-Jun-07		272	$1,607,517	78.53%	22%
General Project Management & Overhe...		06-Jun-07 A	28-Apr-11	06-Jun-07		271	$512,081	72.54%	72.54%
Project Management and Overhead		06-Jun-07 A	28-Apr-11	06-Jun-07		271	$512,081	72.54%	72.54%
0025	General Project Management (Project Office) and Redistributed Charge...	06-Jun-07 A	28-Apr-11	06-Jun-07		271	$392,081	72.54%	72.54%
0026	Risk and Management Reserve	28-Apr-11	28-Apr-11			1	$120,000	0%	0%
Consultant Administration		01-Mar-10 A	30-Dec-10	01-Mar-10		189	$0	2.41%	0%
0110	Consultant Management for Design (LOE)	01-Mar-10 A	30-Dec-10	01-Mar-10		189	$0	2.41%	2.41%
Project Planning and Scoping		16-Feb-10 A	29-Apr-11	16-Feb-10		272	$500	10.82%	0%
Public Involvement for Planning		16-Feb-10 A	29-Apr-11	16-Feb-10		272	$500	10.82%	0%
0210	Public Involvement Plan	16-Feb-10 A	29-Apr-11	16-Feb-10		272	$500	10.82%	10.82%
Environmental Review and Permitting		07-Jun-07 A	01-Apr-11	07-Jun-07		252	$72,210	14.48%	12.35%
Endangered Species Act Compliance		25-Mar-10 A	14-May-10	25-Mar-10		32	$2,520	0%	25%
0345	Biological Assessment or No Effect Letter	25-Mar-10 A	14-May-10	25-Mar-10		32	$2,520	0%	25%
Environmental Management & Overhead		07-Jun-07 A	01-Apr-11	07-Jun-07		252	$705	14.48%	0%
A1000	Environmental Overhead (LOE)	07-Jun-07 A	01-Apr-11	07-Jun-07		252	$0	14.29%	14.29%
A1030	Env PMP Management (LOE)	16-Mar-10 A	01-Apr-11	16-Mar-10		252	$705	6.9%	6.9%
Section 106 & Executive Order 05-05 Compliance		10-Mar-10 A	07-Jan-11	10-Mar-10		194	$18,490	10.88%	0%
0366	Initial Tribal Coordination	10-Mar-10 A	12-Apr-10	10-Mar-10		8	$1,696	70.37%	75%
0362	Cultural Resources Design Support and Regulatory Assistance (LOE)	16-Mar-10 A	07-Jan-11	16-Mar-10		194	$3,400	10.88%	10.88%
0371	Cultural Resources Survey/Effect Determination	18-Mar-10 A	08-Apr-10	18-Mar-10		6	$9,010	60%	75%
0372	30 Day Tribal Review of Cultural Resource Survey	13-Apr-10	12-May-10			22	$440	0%	0%
0370	Section 106 Letter of Concurrence or Memorandum of Agreement	13-May-10	15-Jul-10			44	$3,944	0%	0%
Discipline Studies		16-Mar-10 A	07-Jan-11	16-Mar-10		194	$12,335	10.88%	0%
0569	Hazardous Materials Design Support and Regulatory Assistance (LOE)	16-Mar-10 A	07-Jan-11	16-Mar-10		194	$335	10.88%	10.88%
0580	Wetland Inventory Report	29-Mar-10 A	20-Apr-10	29-Mar-10		14	$610	0%	25%
0570	Hazardous Materials Threshold Evaluation Memo	01-Apr-10	02-Jun-10			44	$2,540	0%	0%
0590	Migratory Bird Treaty Act	01-Apr-10	05-Apr-10			3	$980	0%	0%
0560	Section 4(f) Evaluation Report	16-Jul-10	16-Jul-10			1	$7,870	0%	0%
NEPA/SEPA Compliance		16-Mar-10 A	07-Jan-11	16-Mar-10		194	$22,505	10.88%	0%
0699	NEPA/SEPA Design Support and Regulatory Assistance (LOE)	16-Mar-10 A	07-Jan-11	16-Mar-10		194	$8,125	10.88%	10.88%
0745	SEPA Checklist/DNS	03-Jun-10*	02-Jul-10			22	$8,340	0%	0%
0700	NEPA DCE (ECS)	19-Jul-10	17-Aug-10			22	$6,040	0%	0%
Environmental Review Documentation Complete		17-Aug-10	08-Sep-10			15	$0	0%	0%
0765	Environmental Review Documentation Complete		17-Aug-10			0	$0	0%	0%
0775	Environmental Review Documentation Approved		08-Sep-10			0	$0	0%	0%
Environmental Permits		05-Aug-10	19-Oct-10			53	$12,020	0%	0%
0845	Noise Variance/Exemption	05-Aug-10	16-Sep-10			30	$5,670	0%	0%
0850	Shoreline Permit/Exemption	18-Aug-10	19-Oct-10			44	$6,350	0%	0%
Environmental Permits Received		19-Oct-10	19-Oct-10			0	$0	0%	0%
0890	Environmental Permits Received		19-Oct-10			0	$0	0%	0%
Environmental Committment File		20-Oct-10	30-Nov-10			27	$3,635	0%	0%
A1040	Environmental Committment Meeting	20-Oct-10	26-Oct-10			5	$1,025	0%	0%
A1050	Environmental Compliance Notebook and Committment Database Entry	27-Oct-10	30-Nov-10			22	$2,610	0%	0%
Bridge and Structures		25-Sep-08 A	30-Dec-10	25-Sep-08		189	$809,000	67.53%	13.52%
Bridge / Structure Design & Plans		25-Sep-08 A	30-Dec-10	25-Sep-08		189	$809,000	67.53%	13.52%
0940	Testing Services (WSU)	25-Sep-08 A	30-Jun-10	25-Sep-08		64	$85,000	72.77%	90%
0970	TY Lin Support	01-Oct-08 A	30-Jun-10	01-Oct-08		64	$17,000	72.17%	90%
0966	FRP Retrofit Materials and Installation	23-Jun-09 A	30-Jun-10	23-Jun-09		64	$136,000	7.25%	90%
0967	Specimen Disposal (Central)	01-Jul-10	08-Jul-10			5	$5,000	0%	0%
0995	End Testing		08-Jul-10			0	$0	0%	0%
TY Lin Final Design		01-Mar-10 A	30-Dec-10	01-Mar-10		189	$566,000	4.06%	2.12%
0980	TY Lin Agreement (LOE)	01-Mar-10 A	30-Dec-10	01-Mar-10		189	$500,000	2.41%	2.41%
0991	Concept Review Submittal (30%) (24 June)	28-Apr-10	24-Jun-10*			41	$8,800	0%	0%
1005	Plan and Quantity Review Submittal (90%) (17 Aug)	25-Jun-10	17-Aug-10*			37	$17,600	0%	0%
1010	Region Review Submittal (100%) (12 Oct)	30-Aug-10	12-Oct-10*			31	$17,600	0%	0%
1015	Region Provides Review Comments to TY Lin		01-Dec-10			0	$0	0%	0%
1020	Proof Copy Review Submittal (Proof)	02-Dec-10	15-Dec-10			10	$0	0%	0%
1025	Region Provides Proof Comments to TY Lin		22-Dec-10			0	$0	0%	0%
1050	Contract Document Submittal (Final)	23-Dec-10	30-Dec-10			5	$22,000	0%	0%
Project Development		17-Feb-09 A	29-Apr-11	17-Feb-09		271	$213,726	60.44%	2.21%
Hydraulics		16-Mar-10 A	07-Jan-11	16-Mar-10		194	$16,240	10.88%	0%
1390	Compliance Design Support and Regulatory Assistance (LOE)	16-Mar-10 A	07-Jan-11	16-Mar-10		194	$1,600	10.88%	10.88%
1380	Temporary Erosion and Sediment Control Plan	07-Apr-10	11-May-10			25	$4,620	0%	0%
1350	Hydraulic Summary	09-Jul-10	22-Jul-10			10	$10,020	0%	0%
1360	Hydraulic Report Approved	22-Jul-10	22-Jul-10			0	$0	0%	0%
Partnerships		30-Oct-09 A	04-Jun-10	30-Oct-09		46	$4,400	77.11%	77.11%
1370	Seattle ARC/LPB Coordination (LOE)	30-Oct-09 A	04-Jun-10	30-Oct-09		46	$4,400	77.11%	77.11%
1400	Second Meeting with Seattle ARC		06-May-10			0	$0	0%	0%
1410	Seattle Landmarks Preservation Board Meeting		04-Jun-10			0	$0	0%	0%
Right of Way (R/W) Engineering		24-Jun-10	20-Sep-10			61	$16,140	0%	0%
1490	Phase 2 Design - Title Report	24-Jun-10	23-Jul-10			21	$7,070	0%	0%
1495	Temporary Construction Easement	23-Jul-10	20-Sep-10			41	$9,070	0%	0%
Roadside Restoration		09-Jul-10	21-Sep-10			52	$15,750	0%	0%
1545	Landscape Design	09-Jul-10	09-Aug-10			22	$9,470	0%	0%
1555	Landscape Plan	09-Aug-10	21-Sep-10			31	$6,280	0%	0%
Utilities		18-Mar-10 A	23-Sep-10	18-Mar-10		123	$16,286	9.56%	0%
1635	Existing Utilities Located	18-Mar-10 A	15-Apr-10	18-Mar-10		11	$2,590	0%	50%
1640	Existing Utility Plan	16-Apr-10	13-May-10			20	$2,040	0%	0%



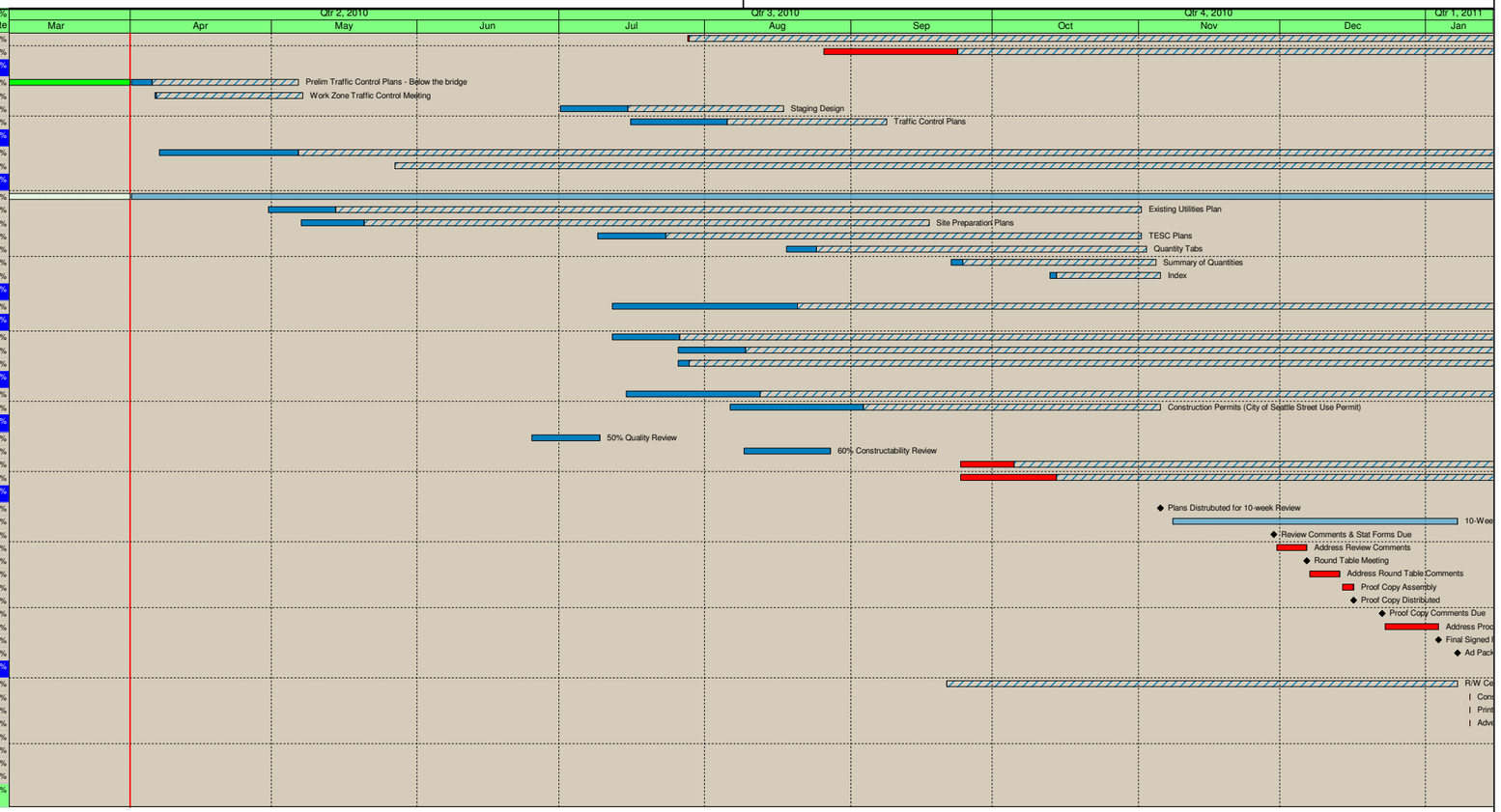
Remaining Level of Effort | Remaining Work | Float Bar

Actual Level of Effort | Critical Remaining Work

Actual Work | Milestone

A09946S - SR 99/Aurora Ave-George Washington Memorial Bridge-Seismic	Remaining PE Schedule - Small Font	Data Date: 01-Apr-10 Print date: 05-Apr-10 15:14

Activity ID	Activity Name	Start	Finish	Actual Start	Actual Finish	naining	Budgeted Total Cost	Duration %	Perf. % Complete
1645	Utility Relocation Plan	28-Jul-10	28-Jul-10			1	$8,676	0%	0%
1650	Utility Agreements	26-Aug-10	23-Sep-10			20	$2,980	0%	0%
Work Zone Traffic Control (WZTC) - Design & Plans		01-Mar-10 A	05-Aug-10	01-Mar-10		89	$15,500	20.54%	0%
1675	Prelim Traffic Control Plans - Below the bridge	01-Mar-10 A	05-Apr-10	01-Mar-10		3	$4,440	85%	90%
1660	Work Zone Traffic Control Meeting	06-Apr-10	06-Apr-10			1	$1,020	0%	0%
1665	Staging Design	01-Jul-10	15-Jul-10			10	$1,880	0%	0%
1680	Traffic Control Plans	16-Jul-10	05-Aug-10			15	$8,160	0%	0%
Design Documentation		07-Apr-10	27-May-10			36	$8,040	0%	0%
1700	Design Documentation for PDA	07-Apr-10	06-May-10			22	$8,040	0%	0%
1710	Project Development Approval Milestone	27-May-10	27-May-10			0	$0	0%	0%
Contract Plan Sheets Preparation		17-Feb-09 A	28-Apr-11	17-Feb-09		271	$8,400	51.95%	0%
1760	Contract Plan Workforce Hammock (LOE)	17-Feb-09 A	28-Apr-11	17-Feb-09		271	$0	50.99%	50.99%
1810	Existing Utilities Plan	30-Apr-10	14-May-10			11	$1,520	0%	0%
1805	Site Preparation Plans	07-May-10	20-May-10			10	$2,880	0%	0%
1825	TESC Plans	09-Jul-10	23-Jul-10			11	$1,880	0%	0%
1800	Quantity Tabs	18-Aug-10	24-Aug-10			5	$940	0%	0%
1770	Summary of Quantities	22-Sep-10	24-Sep-10			3	$710	0%	0%
1780	Index	13-Oct-10	14-Oct-10			2	$470	0%	0%
Contract Specifications Development		12-Jul-10	20-Aug-10			30	$2,960	0%	0%
1865	Contract Specifications	12-Jul-10	20-Aug-10			30	$2,960	0%	0%
Construction Estimate Development		12-Jul-10	09-Aug-10			21	$4,230	0%	0%
1890	Working Day Estimate	12-Jul-10	26-Jul-10			11	$1,880	0%	0%
1880	Engineer's Cost Estimate of Construction	26-Jul-10	09-Aug-10			11	$1,880	0%	0%
1885	Lump Sum Breakout	26-Jul-10	28-Jul-10			3	$470	0%	0%
Construction Permits		15-Jul-10	03-Sep-10			37	$6,860	0%	0%
1915	Haul Road and Detour Agreement	15-Jul-10	12-Aug-10			21	$3,880	0%	0%
1900	Construction Permits (City of Seattle Street Use Permit)	06-Aug-10	03-Sep-10			21	$2,980	0%	0%
Constructability Reviews		25-Jun-10	14-Oct-10			78	$45,470	0%	0%
1944	50% Quality Review	25-Jun-10	09-Jul-10			10	$3,920	0%	0%
1945	60% Constructability Review	09-Aug-10	27-Aug-10			15	$16,010	0%	0%
1950	Final Quality Review	24-Sep-10	05-Oct-10			8	$3,920	0%	0%
1970	90% Constructability Review	24-Sep-10	14-Oct-10			15	$21,620	0%	0%
PS&E Reviews		05-Nov-10	07-Jan-11			40	$40,680	0%	0%
1980	Plans Distrubuted for 10-week Review		05-Nov-10			0	$0	0%	0%
1965	10-Week Review (LOE)	08-Nov-10	07-Jan-11			40	$40,680	0%	0%
1981	Review Comments & Stat Forms Due		29-Nov-10			0	$0	0%	0%
1982	Address Review Comments	30-Nov-10	06-Dec-10			5	$0	0%	0%
1983	Round Table Meeting		06-Dec-10			0	$0	0%	0%
1984	Address Round Table Comments	07-Dec-10	13-Dec-10			5	$0	0%	0%
1985	Proof Copy Assembly	14-Dec-10	16-Dec-10			3	$0	0%	0%
1986	Proof Copy Distributed		16-Dec-10			0	$0	0%	0%
1987	Proof Copy Comments Due		22-Dec-10			0	$0	0%	0%
1988	Address Proof Copy Comments	23-Dec-10	03-Jan-11			6	$0	0%	0%
2000	Final Signed PS&E to Region		03-Jan-11			0	$0	0%	0%
2005	Ad Package to Headquarters		07-Jan-11			0	$0	0%	0%
Contract Ad & Award		21-Sep-10	29-Apr-11			151	$12,770	0%	0%
2050	R/W Certification	21-Sep-10	21-Sep-10			0	$0	0%	0%
2060	Construction Funding Approval	10-Jan-11	10-Jan-11			0	$0	0%	0%
2065	Printing	10-Jan-11	10-Jan-11			0	$5,220	0%	0%
2075	Advertisement (AD Date) (10-Jan-11)	10-Jan-11	10-Jan-11			0	$200	0%	0%
2090	Addendum Deadline	31-Jan-11	31-Jan-11			0	$6,950	0%	0%
2095	Bid Opening	15-Feb-11	15-Feb-11			1	$200	0%	0%
2100	Award	04-Apr-11	04-Apr-11			1	$200	0%	0%
2105	PE Phase End	29-Apr-11	29-Apr-11			0	$0	0%	0%
Construction		02-May-11	01-Apr-13			480	$7,394,304	0%	0%



Remaining Level of Effort
Actual Level of Effort
Actual Work
Remaining Work
Critical Remaining Work
Milestone
Float Bar

PROJECT RISK MANAGEMENT PLAN

Project Title SR 99/Aurora Ave-George Washington Memorial Bridge-Seismic Retrofit

Project PIN # 109946S

Date 4/5/2010

Project Manger Andrea Burgess **Telephone Number** (206) 440-4313

PROJECT RISK MANAGEMENT PLAN

Priority	Risk Identification								Qualitative Analysis			Risk Owner	Risk-Response Strategy		Monitoring and Control	
	Status	ID #	Date Identified Project Phase	Risk Event (threat/opportunity)	SMART Column	Risk Trigger	Impact Area	Affected MDL/WBS Level 2 process	Probability	Impact	Risk Matrix		Strategy	ACTION TO BE TAKEN (include advantages and disadvantages)	Status Interval or Milestone Check	Date, Status and Review Comments
	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
Instructions	**Active**=actively monitored & controlled **Dormant**=risk is not currently a high priority, but may become active in the future. **Retired**=no longer a threat to project objectives.	**E1**	For example: 6/30/99 Scoping	Risk is an uncertain event or condition that, if it occurs, has a positive (opportunity) or negative (threat) on a project. For example; Wetland Mitigation requires additional R/W.	Detailed description of the risk. Includes information on the risk that is **Specific, Measurable, Attributable, Relevant** and **Time bound.** Describe the consequences of the risk to scope, schedule, budget or quality.	Triggers are indications that a risk has occurred or is about to occur. Used to determine when to implement the Risk Response Strategy. For example: Wetland impact is greater than 1/2 acre.	Is the primary impact to the scope, schedule, or budget?	Which WBS element will be modified as part of the response strategy? For example: PC-19 Environmental Permits	Assessment of the likelihood of occurrence. Valid entries are Low or High.	The severity of the risk's effect on the projects objectives. Valid entries are Low or High.	**High**: Substantial impact on cost, schedule, or technical. Substantial action required to alleviate issue. **Low**: Minimal impact on cost, schedule, or technical. Normal management oversight	Name of the person or office responsible for managing the risk event.	**A**voidance **T**ransference **M**itigation **A**cceptance (See PM Online Guide for strategy definitions.)	Develop options and determine actions to be taken in response to the risk event. Immediate action may be required at the time of identification. Estimate value of risk and estimate cost to respond.	For example: Completion of wetland delineation expected: 2/28/00	For example: Last status update 4/30/00. Wetland delineation completed 3/15/00. Over 1 acre of wetland was delineated, action is being taken to expedite meetings with regulatory agencies & expedite the effort to provide appropriate wetland mitigation & at
	Active	**1**	2/1/2009 Design/PS&E	Engineer's estimate is too low.	Unusual construction methods makes estimating the retrofit difficult, threatening high bids. If the estimate does not account for premium wages for non-daytime work, the bids will be higher than anticipated, impacting the budget.	High bids received.	Budget	WBS 100 Project Management	Low	High	Probability H/L, Impact L/H, X	Bridge and Structures	**Avoidance**	Seek out data from past projects in similar locations to assist in determining appropriate bid prices. Estimator will use cost-basis approach to project bid item estimating, taking actual labor rates into account.	Estimate review: 60%, 90%, 100% level.	4/5/2010- TY Lin has prepared cost estimate and management has been advised of high cost. Design office is actively monitoring fluctuations in construction costs.
	Active	**2**	2/1/2009 Design/PS&E	SHPO does not sign Memorandum of Agreement, or ACHP (Advisory Council) involved to resolve issues of adverse cultural effect.	SHPO may not concur on a MOA, requiring a longer timeframe for resolution of adverse effects. ACHP may be involved if there is difficulty resolving issues of adverse effect, resulting in longer review periods for Section 106 compliance.	Determination of adverse effects is issued, and issues arise where there is no early agreement on how to resolve. SHPO indicates in coordination meetings that they will not sign MOA.	Schedule	WBS 100 Project Management	Low	High	Probability H/L, Impact L/H, X	Design Office / Cultural Resources Office	**Acceptance**	If an adverse effect determination is made and there appear to be conflicts on the horizon, call a meeting with involved parties to discuss how to resolve. If an indication is received that MOA will not be signed, meet with SHPO to determine actions needed to gain agreement.	Effect determination: April 2010	4/5/2010: Initiated DAHP/SHPO coordination in Feb 2010. Expect to receive comment on effect determination in April 2010. No adverse effect = no MOA.
	Active	**3**	2/1/2009 Design/PS&E	Traffic control conflicts with other projects.	Project scheduled to be constructed at the same time may have conflicting traffic control strategies, requiring redesign of TCPs or delay of construction.	Discovery of conflicting Traffic Control Plans.	Schedule	WBS 100 Project Management	Low	Low	Probability H/L, Impact L/H, X	Design Office / Construction Traffic Coordination Office	**Avoidance**	Monitor traffic control strategies of adjacent projects. Discuss during WZTC Strategy Meeting and all constructability reviews/	Status check: WZTC, 60, 90% meetings.	4/5/2010: Design office has been in contact with AWV project, K2H project, and will get "in the loop" with nearby city projects during the month of April 2010.
	Active	**4**	2/1/2009 Design/PS&E	Workforce is unavailable to design project.	Workforce issues (Over allocation, Promotion/Transfer, Illness) means staff is unavailable to work on project when needed.	Workforce analysis shows serious workforce issue.	Schedule	WBS 160 Perform Preliminary Engineering Studies and Prepare Draft Project Report	Low	Low	Probability H/L, Impact L/H, X	Design Office	**Acceptance**	Document design decisions so that project shelf/hand-off has minimal complications. Assess workforce needs monthly.	Monthly assessment.	4/5/2010: Design office has a resource-loaded schedule that can identify workforce needs in advance.
	Active	**5**	2/1/2009 Design/PS&E	Delay in approval from the Seattle Landmarks Preservation Board	Lack of a Certificate of Approval from the Seattle Landmarks Preservation Board will result in delays to schedule or risk of rework.	Indications from Architectural Review Committee that the board is unlikely to issue a CoA.	Schedule	WBS 100 Project Management	Low	High	Probability H/L, Impact L/H, X	Design Office	**Acceptance**	Meet regularly with Seattle Landmarks Preservation Board and Architectural Review Committee liaison.	Weekly assessment.	4/5/2010: Have held initial meeting with Seattle ARC; second meeting scheduled for April 30th, anticipate SLPB meeting in June 2010.
	Active	**6**	2/1/2009 Design/PS&E	Need to add structural reinforcement to bridge.	Final design may indicate the need for structural reinforcement to the bridge in order to make an effective retrofit. Would add to scope, could delay ad date if design is significant, and impact cost of project.	Final design indicates structural reinforcements or modifications are needed.	Scope	WBS 210 Prepare Preliminary Structures Design Data	Low	High	Probability H/L, Impact L/H, X	Bridge and Structures	**Acceptance**	Communicate with the design office regarding the final design and the need for structural reinforcement.	Final design to be complete fall 2010.	4/5/2010: TY Lin to submit concept for final design by June 24th 2010.
	Active	**7**	2/1/2007 Design/PS&E	Scope of retrofit changes, adding work not included in June 2008 TY Lin analysis and estimate.	TY Lin gave a specific set of recommendations in June 2008 report; final design may reveal need to add additional retrofit elements, which would increase the construction cost.	Final design analysis shows the need for additional retrofit work, or a higher cost for the work.	Budget	WBS 210 Prepare Preliminary Structures Design Data	High	High	Probability H/L, Impact L/H, X	Design Office	**Acceptance**	Options include phasing the work, looking for additional funding, changing the retrofit strategy.	Actively monitoring.	4/5/2010: TY Lin to submit concept for final design by June 24th 2010.

PROJECT RISK MANAGEMENT PLAN

Project Title SR 99/Aurora Ave-George Washington Memorial Bridge-Seismic Retrofit

Project PIN # 109946S

Date 4/5/2010

Project Manager Andrea Burgess **Telephone Number** (206) 440-4313

PROJECT RISK MANAGEMENT PLAN

Priority	Risk Identification								Qualitative Analysis			Risk Owner	Risk-Response Strategy		Monitoring and Control	
	Status	ID #	Date Identified Project Phase	Risk Event (threat/opportunity)	SMART Column	Risk Trigger	Impact Area	Affected MDL/WBS Level 2 process	Probability	Impact	Risk Matrix		Strategy	ACTION TO BE TAKEN (include advantages and disadvantages)	Status Interval or Milestone Check	Date, Status and Review Comments
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
Instructions	**Active**=actively monitored & controlled **Dormant**=risk is not currently a high priority, but may become active in the future. **Retired**=no longer a threat to project objectives.	**E1**	For example: 6/30/99 Scoping	Risk is an uncertain event or condition that, if it occurs, has a positive (opportunity) or negative (threat) on a project. For example; Wetland Mitigation requires additional R/W.	Detailed description of the risk. Includes information on the risk that is **Specific, Measurable, Attributable, Relevant** and **Time bound**. Describe the consequences of the risk to scope, schedule, budget or quality.	Triggers are indications that a risk has occurred or is about to occur. Used to determine when to implement the Risk Response Strategy. For example: Wetland impact is greater than 1/2 acre.	Is the primary impact to the scope, schedule, or budget?	Which WBS element will be modified as part of the response strategy? For example: PC-19 Environmental Permits	Assessment of the likelihood of occurrence. Valid entries are Low or High.	The severity of the risk's effect on the projects objectives. Valid entries are Low or High.	**High**: Substantial impact on cost, schedule, or technical. Substantial action required to alleviate issue. **Low**: Minimal impact on cost, schedule, or technical. Normal management oversight	Name of the person or office responsible for managing the risk event.	**A**voidance **T**ransference **M**itigation **A**cceptance (See PM Online Guide for strategy definitions.)	Develop options and determine actions to be taken in response to the risk event. Immediate action may be required at the time of identification. Estimate value of risk and estimate cost to respond.	For example: Completion of wetland delineation expected: 2/28/00	For example: Last status update 4/30/00. Wetland delineation completed 3/15/00. Over 1 acre of wetland was delineated, action is being taken to expedite meetings with regulatory agencies & expedite the effort to provide appropriate wetland mitigation & at
	Active	**8**	5/15/2008 Design/PS&E	Additional PE Cost	Cost for testing FRP was originally estimated at $100K, current at $235K and could increase further. Final design by consultant is estimated at $500k, but consultant may want more money before agreeing to do the work.	Selection of a testing contractor and negotiated cost being higher than estimated. RFP for final design higher than $500k.	Budget	WBS 210 Prepare Preliminary Structures Design Data	High	High	Probability H L / X / L H Impact	Bridge and Structures	**Acceptance**	Explore cost reduction opportunities to balance budget, if none, we will request additional PE funds	Actively monitoring	4/5/2010- Testing costs being watched; no current request for additional finds from WSU. TY Lin final design agreement is under budgeted amount; will monitor for cost increases.
	Active	**9**	5/15/2008 Design/PS&E	Ad Date Delay	WSDOT could get poor response to the request for bids for constructing FRP test specimens. The Contractor may request more time to procure materials & mobilize and the testing facility could have schedule conflicts. Duration for completing testing is uncertain, if any of the mentioned event occurs than estimated, Ad date will be impacted.	Testing procedure lasting longer than September 2009	Schedule	WBS 210 Prepare Preliminary Structures Design Data	Low	High	Probability H / X / L L H Impact	Bridge and Structures	**Acceptance**	Look for opportunity to recover schedule. If unsuccessful, request for Ad date delays	Completion of testing in June 2010	4/5/2010: Testing and concept review submittal received in June. Final design milestones have us on track for Jan 2011 ad.
	Active	**10**	5/15/2008 Design/PS&E	Impact to Fremont Troll	One of the Troll's arms is located too close to N-14 north column and may have to be removed to excavate to the base of the column..	Final design shows need to excavate in a manner that would impact the Troll.	Scope	WBS 160 Perform Preliminary Engineering Studies and Prepare Draft Project Report	High	High	Probability H / X / L L H Impact	Design Office	**Acceptance**	Coordinate with Fremont Art groups if impacts to the troll are indicated.	Final design to start Mar 2010	4/5/2010: Have talked to Fremont Troll designer. Obtained survey of troll arm and column. Will build model in InRoads to determine level of impact.
	Active	**11**	9/8/2009 Construction	Construction Debris Containment	During construction prep work and seismic retrofit, debris must be collected and contained for the environment and safety.	Construction start.	Budget	WBS 190 Prepare Structure Site Plans	High	Low	Probability H / X / L L H Impact	Design Office	**Acceptance**	Plan and design containment measures.	Will discuss at constructability reviews.	4/5/2010 - Will discuss at constructability reviews.
	Active	**12**	2/4/2010 Design/PS&E	Unable to obtain Right of Entry on the south end.	If we can not obtain right of entry from QA healthcare, may need to obtain ROE from Carleton Condos or access from 6th.	We are turned down by QA Healthcare.	Budget	WBS 195 Right of Way Property Management and Excess Land	Low	Low	Probability H / X / L L H Impact	Design Office	**Acceptance**	Seek ROE early in the final design to avoid last-minute surprises. Consider access from 6th if QA healthcare will not sign.	Initiation of ROE process in June 2010.	4/52010: Added to risk matrix. Will start process to gain Right of Entry this summer.

Northwest REGION

Scope of Work Agreement for Environmental

With *Hung Huynh's* Project Office

For the *SR99 Aurora Bridge Seismic Retrofit* project

I. For this project, as generally described earlier in this plan, the activities and deliverables needed from this specialty office, are as follows: ***See Primavera schedule dated March 1, 2010 for Details and Timelines.***

II. The responsible contact for this project (in this specialty office) will be ***Steve Shipe, Environmental Business Manager. (Ext. 4531)***

III. To accomplish the above scope of work, this specialty office will need the following items from the project office – ***See Primavera schedule dated March 1, 2010 for Details and Timelines.***

- ***All necessary task requests and supporting documentation.***
- ***Submittal of that supporting documentation in a complete and useful format and in the timeframes identified.***
- ***Consistent and continual communications with Business Manager (Scope, Schedule, or Budget issues) and/or Environmental Coordinator (Permitting and Documentation issues).***
- ***Immediate notification to the Business Manager of changes in scope or AD date.***
- ***Plans from the Design Office defining project footprint to allow us to meet the schedule of the BA.***

IV. To accomplish the above scope of work, this specialty office will need the following items from other specialty offices – ***See Primavera schedule dated March 1, 2010 for Details and Timelines.***

- ***Any necessary Rights of Entry from Real Estate for fieldwork.***

V. The following additional items apply –

- ***Overhead charges to this project will consist of 15% of the total labor costs for Environmental per the direction and agreement of Environmental Program Manager and ARA for Program Management and Transaid. (For example: If total labor for Environmental is $100,000, overhead will add another $15,000).***

VI. The full schedule for this project, including the above scope of work, is in the PMRS Primavera Scheduler (***See Primavera schedule dated March 1, 2010 for Details and Timelines.***) From this point on all changes to the role hours, durations, link logic, and expenses will require using the change management process once the PMP is signed and the project is baselined. The PMRS schedule

baseline used for this agreement is ***BL-001***. This schedule is included in this Project Management Plan.

VII. The estimated costs and hours to complete the activities and deliverables needed from this specialty group are as follows: - ***See Primavera schedule dated March 1, 2010 for Details and Timelines.***

Endorsement –

Project Manager

3/16/10

Specialty Office Business Manager/Date