

ATTACHMENT 6

Value Engineering Study Recommendations

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June 17, 2008

TO: Blane Long, Value Engineering Team Leader
Mailstop 47330

THRU: *mjc*
Mike Cotten/Pat McCormick

FROM: *DEF*
Dave Edwards, Project Engineer
Phone 425-225-8744

SUBJECT: SR 522, Snohomish River Bridge to US 2
Four Lane Widening
Value Engineering Recommendations

This office has completed our analysis of the VE Team recommendations for the subject project. We are pleased to report that several of the recommendations will be adopted into the design of the project. A summary of the recommendations being adopted, modified or rejected is as follows:

Summary of Recommendations SR 522 – Snohomish River Bridge to US 2 Four Lane Widening			
#	Description	*Cost Savings	Adopted, Modified or Rejected
1	Use floating access to the Snohomish River Bridge center pier	\$1.19 M	Adopted
2	Reconfiguration of SR 522 and US 2 junction		Rejected
3	Replace moment slab barrier	\$1.07 M	Modified
4	Construct a roundabout at the vicinity of 179 th Ave and 154 th St. in Monroe to allow pier to be constructed in roundabout for proposed bridge.	\$0.59 M	Adopted
5	Change the land portion of the Snohomish River Bridge to prestressed concrete girders	\$4.67 M	Adopted
6	Reduce the median from 40' with cable barrier to 18' with precast concrete barrier.	\$8.8 M	Modified
	Total	\$16.32 M	

*Note: The cost savings shown is from the original VE Report. The actual cost savings will change after the plans are developed to a higher design level.

Blane Long
June 17, 2008
Page 2

A detailed analysis of the VE recommendations adopted, modified or rejected is attached for your information. A brief explanation of why recommendations 2, 3 and 6 were rejected or modified is as follows:

Recommendation 2 to reconfigure the SR 522/US 2 junction was rejected due to a number of design deviations that would be required for the weaving movements, additional environmental impacts, additional right of way required and the proposal was not compatible with the proposed Monroe By-Pass project that is planned in the future at this location.

Recommendation 3 to replace the moment slab barrier with guard rail or precast traffic barrier will be analyzed for each wall location in conjunction with recommendation 6.

Recommendation 6 to reduce the median from a 40 foot rural section with cable barrier to an 18 foot urban section with precast barrier is being adopted. Further investigation of this proposal found that no additional widening is planned for this corridor in the next 20 to 30 years beyond the four lanes that are currently planned. This area of SR 522 in Monroe is considered to be urban at this time. The narrower median proposal generated a new proposal by the design team that will allow all of the widening to be completed on the northside of the existing highway. This will eliminate two additional retaining walls and work on Tester Road will be eliminated. Wetland and floodplain impacts will be reduced and construction staging and traffic control on SR 522 will be simplified.

We would like to thank the VE Team for their work in developing the recommendations to help reduce the cost and improve the performance of the SR 522 project. If you have any questions on this report, please contact me.

Attachments: June 12, 2008 Technical Memorandum from Kirk Wilcox/Parametrix
May 30, 2008 Email from Joe Merth, WSDOT Bridge and Structures office
June 16, 2008 Email from Brad Feilberg, Engineering Director, City of
Monroe

cc: Lorena Eng, MS NB82-101
Bill Vlcek, MS NB82-101
Azim Sheik-Tahari, MS 82-105

1231 FRYAR AVENUE
SUMNER, WA 98390-1516
T. 253.863.5128 F. 253.863.0946
www.parametrix.com

TECHNICAL MEMORANDUM

RECEIVED

JUN 16 2008

WSDOT ORG 410011

Date: June 12, 2008
To: Dave Edwards, PE WSDOT NW Region
From: Kirk Wilcox, PE *KW*
Subject: SR 522 VE Study- Design Team Response to VE Team Recommendations-Updated
cc: Brian Sperry, PE ABKJ
Project File
Project Number: 214-1631-038 (03/101)
Project Name: SR 522 Snohomish River Bridge to US 2

This memorandum provides updated responses to VE Team recommendations from the May 23-16 2008 VE session. The original responses were sent on May 24, 2008. There are no changes to the responses for VE Team Recommendations #1, #2, and #5.

VE Team Recommendation #1: Floating Access to Center Pier**Pros:**

- Schedule savings
- Less piles in the river- environmental benefit
- May save a construction season
- Should cost less than the work bridge on pilings.

Cons:

- Need to have adequate flow depth for floats
- The need for pilings isn't totally eliminated; an access structure to the river will still be needed.
- May need to re-initiate consultation with the Services for the Biological Assessment.

Unknowns/next steps

Need to figure out how to work this concept into the permitting and the contract documents. An internal meeting with the Bridge and Structures group and Derek Case would be helpful with a follow-up discussion with the AGC Bridge group.

Recommendation:

Carry forward for additional consideration. The potential environmental and schedule benefits are substantial.

VE Team Recommendation #2: Reconfiguration of SR 522/US 2 Interchange

Pros:

- Possible cost savings
- No need for the car wash parcel
- Simpler bridge work/utility conflicts over BNSF tracks
- Eliminates a signal for US 2 through traffic

Cons:

- Right of way would be needed from Fred Meyer shopping center and possibly the Evergreen State Fair.
- Approximately one new lane-mile of roadway- we think the costs have been underestimated by the VE Team.
- Bigger footprint: Increased wetland impacts and stormwater runoff.
- Staging would be very difficult. The new roadways cross or match with existing roadways at six locations.
- The project schedule would likely be delayed due to the substantial amount of traffic analysis and design work that would be needed. Maintaining the current AD date would be very difficult.
- WB US 2 becomes a more circuitous route with three curves added.
- The ability to extend SR 522 to connect to the future US 2 bypass would be compromised. The interchange would need to be re-configured back to the current alignment at that time.
- The proposed layout would violate driver expectations with several left-hand exit movements. There would also be a weave created: EB US 2 traffic would need to weave through the EB SR 522 to EB US 2 traffic in order to access the Kelsey Street left turn. There would be about 500 feet available for the weave.
- WB US 2 to WB SR 522 traffic would need to go through a signal. That traffic currently has a free right at the existing intersection.

Unknowns/next steps:

A detailed cost estimate based on a preliminary design would be needed to accurately evaluate the possible cost savings. The projected savings of \$5.25M seems very optimistic. Our very rough estimate shows that about 2800 feet of one-lane roadway and 1900 feet of two-lane roadway would need to be constructed. Paving costs would be about \$780,000 and embankment construction would be in the \$1.5 million range. With stormwater, bridge widening, staging, traffic control, wetland impacts, right of way purchase, and other miscellaneous costs, we don't see how the raw construction cost could possibly be in the \$3.34 million range as shown in the VE study report.

A traffic analysis would be needed to determine the operational feasibility of the concept.

Recommendation

This recommendation should be dropped for the following reasons: It is unlikely that the cost savings projected by the VE Team can be realized, the construction staging would be extremely difficult while maintaining existing traffic, and the substantial amount of design change would likely result in a delay in the project AD date. There doesn't appear to be enough operational benefit to warrant the change.

VE Team Recommendation #3: Replace moment slab traffic barrier with guardrail or precast concrete traffic barrier

Pros:

- Substantial cost savings per linear foot
- Construction schedule savings due to quicker installation

Cons:

- Retaining wall footprint would need to be widened by approximately four feet, which would increase wetland impacts and increase fill volumes, including fill in the 100-year floodplain, which would require additional compensatory floodplain storage excavation.
- The additional four feet of widening would impact Tester Road, US 2 and BNSF RR R/W.
- Increased impervious surface
- Maintenance and safety for the area behind the barrier/guardrail-fall protection may be needed.

Unknowns/next steps

Each wall location would need to be analyzed to determine the applicability of this recommendation. Also, this should be discussed with WSDOT Maintenance to see if there are advantages/disadvantages to each system (CIP moment slab, guardrail, or precast barrier). The applicability of this recommendation also depends on is some or all of Recommendation #6 (median reduction) is adopted.

Recommendation:

This recommendation should be carried forward for additional consideration. However, the alternative barrier system is not likely to work in all locations. There is a total moment slab barrier length of approximately 10,600 feet. If walls in floodplain areas and those holding fill from Tester Road, US 2, and the BNSF RR R/W are taken out of consideration, 6020 feet of alternate barrier could be used. There would be approximately 6800 square feet of additional wetland impact in this case. A spreadsheet is attached showing the breakdown of these totals.

This recommendation could be more widely adopted if the median is narrowed from the Snohomish River Bridge to the 164th Street Interchange as proposed in Recommendation #6. Narrowing the median could reduce the footprint by up to 22 feet. If this recommendation were to be applied in conjunction with the narrow median, the footprint could be reduced by 18 feet, which would still provide reduction of wetland impacts while also allowing the construction of less expensive traffic barrier.

VE Team Recommendation #4. Construct a roundabout at the 179th Ave./154th Street intersection to allow a pier to be constructed for proposed bridge in the center of the roundabout.

Pros:

- The SR 522 bridge span lengths could be substantially reduced.
- Value would be added by upgrading the current four-way stop intersection into a higher capacity intersection.

Cons:

- For maximum reduction of span length, this recommendation would need to be accepted in conjunction with Recommendation # 6, narrow median. If both of these recommendations are accepted and the main span length is minimized, future widening to the outside would require reconstruction of the entire bridge due to the "X" shape of the 154th Street and 179th Ave. crossroads.
- Both the 154th Street and the 179th Ave. corridors contain numerous utilities, some of which would likely need relocation. There are no impacts to the utilities with the current design.
- The design project schedule could be compromised with the additional work necessary for coordination with the utilities and the City of Monroe.

Unknowns/next steps

A review has been made of the roundabout layout proposed by the VE team and the potential utility impacts. A single-lane roundabout with an inscribed circle diameter of 120 feet will fit within the available area if the center of the roundabout is shifted slightly north and west of the center of the existing intersection. Physical constraints include the existing SR 522 bridge columns and a City of Monroe sewer pump station in the southeast quadrant of the intersection.

Several underground utilities would be in potential conflict with bridge pier locations. Our preliminary utility mapping shows that there are gas, buried telephone, buried fiber optic and sanitary sewer lines crossing the center of the roundabout. Potholing would be needed to determine the exact location of each utility in order to refine the final pier locations. A plot is attached showing the center of the roundabout with potential pier locations and utilities.

A full traffic analysis would need to be completed but based on ADTs provided in the VE Report, we feel that a single lane roundabout would have adequate capacity.

Recommendation:

This should be carried forward if Recommendation #6 is carried forward. If #6 is not carried forward, the bridge savings benefits are likely not substantial enough to overcome the additional cost for the roundabout and the associated utility costs/risks.

VE Team Recommendation #5. Change the land portion of the Snohomish River Bridge to prestressed concrete girders

Pros:

- Cost savings
- Reduced maintenance- the concrete girders would not require rust protection/painting.

Cons:

- Additional piers and/or different pier locations may be needed.
- Geotechnical borings have already been completed for the pier locations for the current design.
- The hydraulic analysis for the effects of the new piers on the river would need to be re-run.

Unknowns/next steps

The Bridge and Structures group is checking on the pier locations for this recommendation. An updated hydraulic analysis will need to be completed following the determination of the new pier layout.

Recommendation:

Carry forward for additional consideration. The potential cost savings are substantial without any apparent fatal flaws.

VE Team Recommendation #6. Reduce the median width from 40 feet to 18 feet with precast barrier

Pros:

- Substantial reduction in earthwork items, including gravel borrow, roadway excavation and rock excavation.
- The concrete barrier would provide a more substantial physical separation than the wider median with cable barrier.
- The concrete median barrier section has a more urban connotation for driver perception, which is appropriate for the approach to the US 2 interchange.

Cons:

- Construction staging is likely to be more difficult, particularly in the segment from the east end of the Snohomish River Bridge to the fish passage culvert area.
- Overall, the construction activities for building the new westbound roadway would be much closer to the existing traffic, which may be more of a distraction.
- Providing a median turnaround for enforcement and maintenance would not be possible.
- Schedule risk for design work due to the substantial changes, in particular the permitting documents.
- Impervious surface would be increased by 10 feet in width. The increased runoff will require upsizing most of the stormwater facilities. Pond 11 on the Young parcel may need additional R/W.

- Additional pipes and catch basins for stormwater conveyance will be needed. ABKJ completed a quick estimate for the changes and came up with about \$1 million, which is in line with the VE Team assumptions.
- Future widening may be more difficult (see discussion below).
- Retaining walls may need to be a more expensive type than SEW if they are constructed closer to the existing roadway than the current wall locations. There may not be adequate space for temporary excavation and SEW reinforcing straps.
- The current design with the 40-foot wide grassy median allows for the design profile of the new roadway to vary slightly from the existing profile of the current two-lane roadway. The difference in profile can be absorbed by minor variations in the median cross-slope. The current design is based on holding one side of the median at 6H:1V and allowing the other side to vary from 6H:1V to 8H:1V. The narrow median will either require the two roadways to match in profile, which will result in much more preleveling and/or grinding of the existing lanes or will require a single-slope median barrier/wall that will allow for grade differences between the opposing roadways. Some combination of the above options are likely to be necessary, both will require additional design effort and construction cost.
- Sight distance will be restricted by the median barrier. At the tightest curve in the rock cut area, an inside shoulder of 33 feet would be needed for unobstructed sight distance. Per Design Manual Fig. 650-13b, there is adequate stopping sight distance over the median barrier, but only if it is less than 42 inches in height. In this area, the eastbound roadway could not be lower than the westbound roadway as the necessary median wall would protrude up into the line of sight over the barrier.

Unknowns/next steps

The house above the rock cut may still be too close to be saved, especially since the well and drainfield are to the south of the driveway to the house. The narrower median will make construction staging more difficult due to the available work space being reduced. All critical locations for construction staging have been checked to verify that construction is still possible. Additional detail is provided below. Re-design of channelization, roadway profiles, stormwater, walls, preliminary bridge layouts, and construction traffic staging would be necessary. JARPA sheets would need to be updated to reflect the design changes. The 30% design submittal for the constructibility session would be missed.

Depending on the exact scenario adopted, it may be more difficult to construct future widening. In general, the more that cost savings are adopted now, the more difficult future widening will be. For instance, the VE Team recommends building retaining walls at the currently proposed location but not to full height in order to minimize impacts on future construction. This could work but it does not maximize current cost and wetland impact savings and the partially built walls may not be in the right place or considered structurally adequate at the time in the future when the next widening project occurs. The bridge at 179th Street falls into a similar situation. A decision needs to be made by the project team and WSDOT management to determine the willingness to increase the difficulty for possible future widening in order to save money now. There is substantial savings to be had with this recommendation and future widening in the corridor is far in the future, so it may be well worth the risk.

TECHNICAL MEMORANDUM (CONTINUED)

The impacts on staging and future construction are smaller in the east half of the project. This is also the segment with the greatest reduction in embankment construction. The narrow median could be adopted from 164th Street to US 2 with relatively minor effects on future construction (with the exception of the 179th Avenue bridge- maximum construction savings would preclude future widening the bridge).

Three specific options have surfaced during our evaluation of the recommendation. Option 1 would be from the vicinity of the 164th Street interchange to US 2, while Options 2 and 3 include the entire length of SR 522 east of the Snohomish River bridge.

Option 1: Narrow the median from 164th Street to US 2 as described above. This option is described above and makes sense to implement if WSDOT is comfortable with the restrictions on future widening at 179th Avenue.

Advantages include:

- Savings in earthwork
- Shortening the bridge at 179th (change bridge type to prestressed girder)
- Improve the traffic control issues at 179th.
- Reserved areas within ROW are available for stormwater
- Design changes are minimal.

Disadvantages include:

- Access to the construction zone is more difficult
- Construction area is narrower
- Some additional asphalt is need for the paved median.
- Concrete barrier is more expensive than cable rail and precast is less attractive that cast in place.
- Eastbound and westbound profiles are not the same (minor imperfections) causing the westbound lanes to be matched to the irregular eastbound (existing) or prelevel of the eastbound lanes will be needed to achieve a constant profile.

Option 2: During evaluation of Recommendation #6, we determined that with the narrow median, widening from the east end of the Snohomish Bridge to the rock cut area could be to the north side of the roadway instead of the south side as with the current design. This option substantially simplifies construction of the project by eliminating two crossover points where widening for the new lanes switches sides with the existing lanes.

Advantages include:

- Eliminates the crossovers and substantially reduces staging and traffic control costs.
- Eliminates two walls on the right side of the roadway.
- Reduces the length of major cross culverts by 22 feet each.
- Eliminates the need for the relocation of Tester Road.
- Reduces wetland impacts on the eastbound (south side).
- All advantages listed for Option 1 above except for design effort.

Disadvantages include:

- Increases Right of Way impacts and adds one new parcel to the plan.
- Increases the area of the rock cut. In order to meet the minimum curve radius for 70 MPH, the curve length for the westbound roadway must be lengthened at Sta. 723+00 causing the westbound pavement edge to actually move north into the rock cut.
- Walls approaching the curve at Sta. 723+00 are increased in length and height.
- Reduction of culvert lengths comes with the added cost impact of shoring walls added at the edge of existing pavements. The fish passage and wildlife crossing culverts would require cut walls (soldier pile or soil nail) for shoring to support the existing roadway during construction of the first half of the culverts and fill walls (geotextile “bag” walls) to support the new roadway during construction of the second half of the culverts.
- Minor ramp alignment revisions at 164th IC
- Major realignment revisions at Sta. 723+00
- All disadvantages listed in Option 1 apply here also.

Option 3: This option provides the narrow median while maintaining the general alignments of the current design (the two crossover points eliminated by Option 2 would remain). Options 2 and 3 are identical between the second crossover point near the rock cut area and the 164th Street Interchange.

Advantages include:

- The disadvantages for Option 2 for ROW and rock cut are no longer applicable.
- Reduces the walls along the eastbound (not eliminate)
- Reduces the impacts to Tester Road although not as much as Option 2.
- All advantages listed for Option 1 above.
- Advantages listed for Option 2 above for culvert lengths and wetland impacts
- Realignment design effort is less than for Option 2

Disadvantages include:

- Increases the difficulty in ingress and egress to the construction zone from Sta. 695+00 to 725+00 by narrowing the widening at the crossover points.
- All disadvantages listed in Option 1 apply here also.
- Disadvantages for Option 2 regarding culvert shoring walls applies here.

Recommendation:

We recommend that the narrow median is adopted as described in Option 1 from the vicinity of 164th Street to US 2. The potential for earthwork savings is substantial regardless if the bridge at 179th Street is modified.

Consideration should be given to narrowing the median for the west half of the project as well (Options 2 or 3) though there are greater risks associated with doing so. With both options, wetland impacts can be reduced, walls can be eliminated or reduced in size, and impacts to Tester Road can be avoided. There are risks to both schedule and cost since both options will require considerable re-design work and it is difficult to assess exact cost until detailed design is completed. Option 2 has the substantial benefit of eliminating two crossover points, thereby

TECHNICAL MEMORANDUM (CONTINUED)

simplifying the construction staging. However, the additional impact to right of way and increased rock cut leads us to recommend Option 3. A chart summarizing the advantages and disadvantages is attached. Our recommendations are based on the assumption that WSDOT is comfortable with the associated increase to future widening costs that comes with all of the options.

Below is an outline of impacts to the preliminary design effort and schedule to implement Options 2 or 3. Option 1 would have fewer schedule impacts since there would be minimal change to environmental impacts.

Item	Current Design (40 ft. Median)	Reduced Median Width (Options 2 or 3)
Channelization Plans	In final review, approval pending deviations	Two weeks delay to update plans following direction to proceed.
Bridge Site Data Plans	Completed, preliminary bridge design under way	164 th and 179 th structures affected, an additional week following Chan and Profile updates. Final bridge design time should still be adequate.
Roadway Profiles	Completed	Two to four weeks delay to update following direction to proceed.
Wall Plans	Preliminary location plans completed	Three weeks following Chan and Roadway Profile updates
Earthwork/footprint	Preliminary footprint completed	Need to revise based on new chan, profiles and walls, 3-4 weeks following Chan and Roadway Profile updates.
R/W Plans	Completed, appraisals/negotiations under way	4 existing/one new parcel affected by Option 2. Revise plans- 4 weeks, schedule is tightened for RES.
Drainage Plans	Draft Stormwater Report submitted	Impervious area increased by 10' for length of project, stormwater treatment areas and conveyance designs need re-work. 8-12 weeks following completion of Chan and Roadway Profiles
JARPA Sheets	Draft sheets reviewed by WSDOT, still need sheets for floodplain and stream mitigation sites. JARPA package due in August to meet schedule.	Need revised wall plans, earthwork/footprint, and preliminary stormwater treatment areas for footprint, Two weeks needed to update

TECHNICAL MEMORANDUM (CONTINUED)

		drawings, could be completed by late September.
CRA Session	Mid September, 2008 (counting on 30% design plans for quantities)	Hold to September, 2008 and work from interim design data or delay to late October, 2008
30% Design Review	Turn-in mid-August, 2008, review session 1 st week of Sept.	Suggest eliminating and replacing with a 45% turn-in mid-November
60% Design Review	Turn-in late December, 2008, review session early January 2009	Suggest replacing with 45% turn-in above.
90% Design Review	Turn-in early May, 2009, review session late May, 2009	Hold schedule
100% Turn-in for Region Review	August, 2009	Hold Schedule
Permits in hand	August, 2009	September/October, 2009
Advertisement	December 7, 2009	December 7, 2009

The critical path is likely to include channelization plans/profile updates, followed by earthwork, followed by JARPA drawings. However, the JARPA submittal may be delayed anyway by ongoing floodplain mitigation/stream mitigation work. Delay of the JARPA submittal beyond mid-October, 2008 will likely delay permit acquisition beyond the PS&E roundtable, which is the latest reasonable date to still hold the AD date. The AD date could slide to February 2010 and still complete in-water work during the 2010 fish window but then there is no room for any delay in bid opening or contract execution. Missing the 2010 fish window will result in the project taking an extra year to complete as the Snohomish River bridge is the most critical construction element.

Attached are backup sheets for the following:

Recommendation #3:

- Retaining wall changes spreadsheet

Recommendation #4:

- Diagram of roundabout/bridge pier impacts to utilities at US 2

Recommendation #6:

- ABKJ memo outlining stormwater impacts to narrowing the median
- Plan sheets showing Options 2 and 3 from the Snohomish River bridge through the rock cut area.
- A cross-section showing staging at the fish passage/wildlife crossing culverts with the narrow median
- Summary sheet of advantages and disadvantages to the narrow median.

Edwards, David L

From: Merth, Joe
Sent: Friday, May 30, 2008 7:10 AM
To: Edwards, David L
Cc: Zeldenrust, Richard; Brown, Nathan; Bedi, Gary; Tobin, Kevin; 'Kirk Wilcox'
Subject: RE: SR 522, Snohomish River Bridge to US 2 VE study

Dave,

Below is the Bridge Office response to recommendations 1, 4, and 5 of the SR522, Snohomish River Bridge to US2 VE Study.

Recommendation 1: *Floating Access to Snohomish River Bridge center pier.*

The recommendation to employ flexi floats to construct the river pier is an acceptable alternative to constructing a work trestle. The floating access may take less time to assemble than the work trestle and may eliminate one of the major drawbacks of the work trestle: namely the potential of having to remove and reconstruct it over 2 work seasons. There may also be cost savings although the numbers provided by the VE team was not verified.

While the floating access recommendation has merit, it is recommended that the work trestle remain as an alternate in the plans. The particular method of pier construction is more of a means and methods issue and generally up to the contractor. Not all contractors may have the capability or inclination to use a floating platform to construct the pier and may prefer the work trestle alternate.

Recommendation 4: *Placement of intermediate pier columns in the center of the 179th and 154th Street intersection (create roundabout).*

Creating a roundabout at the intersection of 179th and 154th Streets is structurally acceptable has definite cost savings over the current 179th St. Bridge configuration. Placing a pier in the roundabout eliminates a span and can reduce the overall bridge length from 520' to 320'. The revised configuration also shortens the maximum span lengths and eliminates the need for steel plate girders. Instead, a conventional prestressed concrete girder bridge can be used further reducing the cost. However, the exact roundabout placement and configuration may limit the potential for future bridge widening. The Region will need to determine whether future limits on widening is an acceptable tradeoff.

Recommendation 5: *Use prestressed concrete girders for the east end of the Shohomish River Bridge.*

Replacing the east end of the bridge with prestressed girders is feasible and would likely result in cost savings. However, as indicated in the VE Study, additional piers would be required. The current configuration consists of three 235' spans at the east end of the bridge. Given the 1860' bridge radius, the maximum span length for prestressed girders would be more in the range of 175' requiring at least one additional pier. The Region will need to access the impact of additional pier impacts to the flood plain.

From: Edwards, David L
Sent: Wednesday, May 21, 2008 2:49 PM
To: Zeldenrust, Richard; Merth, Joe
Cc: Bennion, Stuart
Subject: FW: SR 522, Snohomish River Bridge to US 2 VE study

Please review the attached VE recommendations and cost estimates for the bridge related items in recommendations 1, 4 and 5 and let us know if the VE recommendation can be accepted, modified or rejected for the bridge items of work. The Executive Summary is the short version of the report.

Please include a brief explanation if the VE recommendation is rejected.

Edwards, David L

From: Brad Feilberg [bfeilberg@ci.monroe.wa.us]
Sent: Monday, June 16, 2008 4:09 PM
To: Edwards, David L; Maggie Brown
Subject: RE: Roundabout at 179th and 154th

As the City Engineer for the City of Monroe, I endorse the concept of installing a roundabout at the intersection of 179th Avenue and 154th Street.

Brad Feilberg, P.E.

Engineering Director
City of Monroe
806 W Main St
Monroe WA 98272
360-863-4540
360-794-4007 fax
bfeilberg@ci.monroe.wa.us

From: Edwards, David L [mailto:EdwardD@wsdot.wa.gov]
Sent: Monday, June 16, 2008 2:17 PM
To: Maggie Brown; Brad Feilberg
Subject: RE: Roundabout at 179th and 154th

Attached is the conceptual roundabout at 179th and 154th proposed by the SR 522 Value Engineering Team. Please respond with your endorsement of the general proposal.

Thank you.

David L. Edwards, P.E.

WSDOT Project Engineer
Phone: 425-225-8744
Email: edwardd@wsdot.wa.gov

From: Maggie Brown [mailto:mbrown@ci.monroe.wa.us]
Sent: Monday, June 16, 2008 1:51 PM
To: Edwards, David L
Subject: RE: Roundabout at 179th and 154th

Excellent! Thanks.

Maggie Brown, PE | Managing Engineer | City of Monroe | Ph (360) 863-4542 | Fax (360) 794-4007

From: Edwards, David L [mailto:EdwardD@wsdot.wa.gov]
Sent: Monday, June 16, 2008 1:51 PM
To: Maggie Brown
Subject: RE: Roundabout at 179th and 154th

ATTACHMENT 7

Determination of Section 4(f) Net Benefit

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State
Cathc

SR 522

SR 522 Cathcart Road Vicinity to US 2

Project

Programmatic 4(f) Evaluation and Approval for Transportation Projects That Have a Net Benefit to a Section 4(f) Property

Submitted Pursuant to 49 U.S.C. § 303

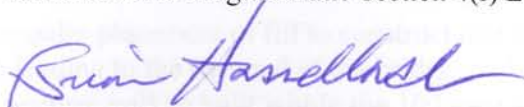
U.S. Department of Transportation Federal Highway Administration

The Federal Highway Administration (FHWA) has determined the State Route 522, Cathcart Road Vicinity to US 2 Widening Project and mitigation will have no significant impact on the environment.

This document has been independently evaluated by the FHWA and determined to accurately discuss the mitigation plan for the widening project, including purpose, need, environmental issues, proposed impact, avoidance alternatives, and evidence of coordination, it provides sufficient evidence and analysis for determining that additional environmental documentation is not required.

The Washington State Department of Transportation coordinated with the Snohomish County Parks and Recreation Department and the City of Monroe, the officials with jurisdiction of the Section 4(f) properties. They concur the proposed mitigation plan is acceptable and consistent with designated use of the resource property, and the location and design have been accomplished in a manner that will not cause substantial impairment to the function or use of the property.

FHWA takes full responsibility for the accuracy, scope, and content of this Programmatic Section 4(f) Evaluation.

 10/7/08

Approval Signature

Date

Brian Hasselbach, P.E.
Area Engineer
Federal Highway Administration
711 South Capitol Way, Suite 501
Olympia, Washington 98501

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