



STAFF REPORT

DATE: June 4, 2019

REGULAR

AGENDA ITEM: Approve Concept Layout for the State Highway 36 South Frontage Road Study

SUBMITTED BY: Jack Griffin, City Engineer

REVIEWED BY: Kristina Handt, City Administrator
Chad Isakson, Assistant City Engineer

ISSUE BEFORE COUNCIL: Should the City Council approve the preferred Concept Layout for the State Highway 36 South Frontage Road Study?

BACKGROUND/PROPOSAL DETAILS/ANALYSIS: In April 2013 the City of Lake Elmo entered into an Agreement with MnDOT to receive federal funding to complete preliminary engineering work to develop a preferred future alignment of a south frontage road and study approach alternatives to State Highway 36. Federal Aid Funding was obtained in the amount of 80% of the project costs, or \$64,000. The City retained SRF Consulting to lead the technical design efforts.

Over the past five years the project team has conducted several council workshops and has worked closely with MnDOT and Washington County staff as they have developed Concept Layouts along the TH 36 Corridor and Lake Elmo border. Design efforts were focused on minimizing property impacts and project costs for future improvements along TH 36 as well as developing strategies for maintaining access for Lake Elmo properties. The study reviewed alternative access locations, intersection layouts and a potential TH 36 South Frontage Road. The TH 36 Corridor Management Plan (2001) outlines a vision to implement an expressway design for TH 36 along the northern border of Lake Elmo. The plan reduces the number of at-grade intersections by closing them or replacing them with reduced access overpasses, and thereby reduces overall access to the proposed TH 36 expressway from Lake Elmo.

The Concept Layout prepared through this study identifies an alternative approach to maintaining acceptable access from Lake Elmo along the TH 36 corridor as corridor improvements are proposed. This concept proposes some non-traditional interchange layouts to better balance cost, impacts and access for these relatively low volume connections, and considers a south frontage road to provide an east-west roadway connecting Demontreville Trail, Keats Avenue and Lake Elmo Avenue.

Through this study the City of Lake Elmo is not recommending or proposing modifications to the public accesses along TH 36 at this time. However, the City is aware of the TH 36 Corridor Study and potential access modifications that may occur in the future. This study and the preferred Concept Layout submits Lake Elmo's vision for how these future TH 36 modifications can be made while maintaining an acceptable level of access for Lake Elmo. The City of Lake Elmo recognizes that the development of a South Frontage Road is a key part in accommodating a roadway system with future TH 36 modifications.

FISCAL IMPACT: None at this time.

RECOMMENDATION: Staff is recommending that the City Council approve a resolution, thereby approving the preferred Concept Layout for TH 36, directing the City Engineer to submit the Concept

Layout to MnDOT as the Lake Elmo's vision for how these future TH 36 modifications can be made while maintaining an acceptable level of access for Lake Elmo, and directing the City Engineer to close out the MnDOT grant agreement. The recommended motion for the action is as follows:

“Move to approve Resolution No. 2019-041 approving the Concept Layout for the State Highway 36 South Frontage Road Study”.

ATTACHMENTS:

1. Resolution Approving the Concept Layout for the State Highway 36 South Frontage Road Study.

**CITY OF LAKE ELMO
WASHINGTON COUNTY
STATE OF MINNESOTA**

**RESOLUTION NO. 2019-041
A RESOLUTION APPROVING THE CONCEPT LAYOUT FOR THE
STATE HIGHWAY 36 SOUTH FRONTAGE ROAD STUDY**

WHEREAS, the TH 36 Corridor Management Plan (2001) outlines a vision to implement an expressway design for TH 36 along the northern border of Lake Elmo that reduces overall access to the proposed TH 36 expressway from Lake Elmo; and

WHEREAS, in April 2013, the City of Lake Elmo received a grant in the amount of 80% of the total project agreement costs of \$80,000, to study roadway approach alternatives along State Highway 36 between Hilton Trail and Manning Avenue; and

WHEREAS, said grant funds are set to expire on June 30, 2019; and

WHEREAS, the City of Lake Elmo, with SRF Consulting, Inc., has prepared a preferred concept layout with associated cost estimates that identifies an alternative approach to maintaining acceptable access from Lake Elmo along the TH 36 corridor as corridor improvements are proposed; and

WHEREAS, this concept proposes some non-traditional interchange layouts to better balance cost, impacts and access for the relatively low volume connections, and considers a south frontage road to provide an east-west roadway connecting Demontreville Trail, Keats Avenue and Lake Elmo Avenue.

NOW, THEREFORE, BE IT RESOLVED,

1. That this Concept Layout is approved by the City Council as Lake Elmo's vision for how these future TH 36 modifications can be made while maintaining an acceptable level of access for Lake Elmo.
2. That the City Engineer is hereby authorized and directed to submit the Concept Layout to the Minnesota Department of Transportation as the City's vision for the corridor.
3. That the City Engineer is hereby authorized and directed to finalize all payments regarding this project, including final reimbursement for federal funding, and is directed to close out the MnDOT grant agreement No. 03330.

ADOPTED BY THE LAKE ELMO CITY COUNCIL ON THE FOURTH DAY OF JUNE, 2019.

CITY OF LAKE ELMO

(Seal)
ATTEST:

By: _____
Mike Pearson
Mayor

Julie Johnson
City Clerk

TH 36 SOUTH FRONTAGE ROAD STUDY
CITY OF LAKE ELMO
JUNE 4, 2019



Introduction

The City of Lake Elmo has been pursuing an alternative access plan to the TH 36 Corridor Management Plan (2001) over the past five years that includes alternative access locations, intersection layouts and a potential TH 36 South Frontage Road. The TH 36 Corridor Management Plan (2001) outlines a vision to implement an expressway design for TH 36 along the northern border of Lake Elmo. The plan reduces the number of at-grade intersections by closing them or replacing them with reduced access overpasses, and thereby reduces overall access to the proposed TH 36 expressway from Lake Elmo. The Concept Layout prepared through this study identifies an alternative approach to maintaining acceptable access from Lake Elmo along the TH36 corridor as corridor improvements are proposed. This concept proposes some non-traditional interchange layouts to better balance cost, impacts and access for these relatively low volume connections, and considers a south frontage road to provide an east-west roadway connecting Demontreville Trail, Keats Avenue and Lake Elmo Avenue.

Through this study the City of Lake Elmo is not recommending or proposing modifications to the public accesses along TH 36 at this time. However, the City is aware of the TH 36 Corridor Study and potential access modifications that may occur in the future. This study and the Preferred Concept Layout submits Lake Elmo's vision for how these future TH 36 modifications can be made while maintaining an acceptable level of access for Lake Elmo. The City of Lake Elmo recognizes that the development of a South Frontage Road is a key part in accommodating a roadway system with future TH 36 modifications.

Summary

The following provides a narrative into the thought process of the current Concept Layout dated March 5, 2019, and summarizes the proposed changes along TH 36 at Highland Trail, Demontreville Trail, Keats Avenue, Lake Elmo Avenue and direct private access.

Highlands Trail

- City prefers this intersection remain open as a right-in/right-out with the westbound U-turn connection at Demontreville Trail.
- Other agencies – MnDOT would prefer this access and all median cross-overs be closed.

Demontreville Trail

- The City prefers the intersection remain the current $\frac{3}{4}$ access (R-cut intersection). If modified, the City would like to retain the westbound U-turn for Highlands Trail and have a grade-separated access to provide all movements onto and from TH 36.
- The initial concepts placed the interchange bridge on Demontreville Trail. The bridge approaches would require Demontreville Trail to be raised, causing several challenges with residential driveways needing to also be raised and relocated. Another significant issue is the vertical clearance between the proposed roadway profile and the existing powerlines. These powerlines maybe be relocated, but at a significant cost. Therefore, the currently proposed layout moves the South Frontage Road east of Demontreville Trail to avoid these impacts.
- The current concept represents full access to/from TH 36 which is desired by the City of Lake Elmo at this location should median access and crossovers be closed. The layout is shown to not impact the powerlines or existing

residential properties along Demontreville Trail and bridges over TH 36 to accommodate movements to and from TH 36 westbound.

- Other agencies. MnDOT/Washington County suggests that other concepts be further explored in the future to lower road lengths and costs. The City of Lake Elmo may also feel that additional concepts should be evaluated, but ultimately the concept represents full access to/from TH 36. The City of Grant is not in-favor of the disruptive impacts of the proposed concept.

Keats Avenue

- The City prefers that Keats Avenue remain open as a ¾ access (R-Cut), but adding an eastbound acceleration lane on TH 36. The City is currently submitting (due June 2019) an application for Local Partnership Program (LPP) funding with MnDOT. MnDOT and Washington County are supportive of the project.
- The concept layout shows the South Frontage Road/Keats Avenue intersection located 300 feet south of the TH 36/Keats Avenue intersection, but keeping it open. An alternative concept would be for the South Frontage Road be placed in the TH 36 ROW, but would result in the Keats Avenue / TH 36 intersection to be closed. This condition of closure is not preferred by the City of Lake Elmo.
- Other agencies. MnDOT suggests a short-term strategy would be to add the eastbound acceleration lane, but the long-term condition would be closure of the intersection. The City of Grant would like the intersection to remain open or consider additional concepts including an interchange.

Lake Elmo Avenue

- The City prefers the intersection remain open and under the current traffic signal control. If modified, the city wants to retain all movements onto and from TH 36.
- The City wants to build the South Frontage Road along existing ground level at Lake Elmo Avenue to avoid the overhead power lines, impacts to wells and septic systems, property impacts, and relocation of driveways. The concept shows that TH 36 would partially go up and over Lake Elmo Avenue. Lake Elmo Avenue would be lowered slightly, but meet existing ground lines near the proposed South Frontage Road intersection. This concept allows the south frontage road to be constructed under existing conditions or with a potential future interchange. This concept has less impact on the northside of TH 36, than other previous considered concepts, by allowing the TH 36 North Frontage Road (60th Street) / Lake Elmo Avenue intersection to remain in its current location. Some of the driveways would need to be relocated to meet the new grades and retaining walls needed along portions of Lake Elmo Boulevard and 60th Street.
- The concept has gone thru several minor modifications based on comments from the City, County and MnDOT. This recent version of the concept includes TH 36 ramps reducing local back-tracking. The TH 36 westbound off-ramp would be accomplished at a re-designed TH 36 / Manning Avenue interchange (current Washington County project in preliminary/final design) and use the north frontage road (60th Street). The TH 36 westbound on-ramp would be a slip ramp from the north frontage road (60th Street) west of Lake Elmo Avenue. The TH 36 eastbound off-ramp is a partial buttonhook and the eastbound on-ramp would be a slip ramp from the South Frontage Road.
- The initial concepts with Lake Elmo Avenue going over TH 36 would have raised the South Frontage Road / Lake Elmo Avenue intersection 10 to 15 feet above the existing ground line. This caused all the impacts mentioned previously including relocating the full access point (Lake Elmo Avenue / North Frontage (60th Street)) on the northside.
- Other agencies. The City of Grant appreciates the effort in minimizing impacts and, at this time, thinks this could be a reasonable concept. MnDOT has several detailed design comments about the proposed concept, but perhaps the most notable is their concern about the spacing/weaving between the potential TH 36 eastbound on-ramp at Lake Elmo Avenue and a proposed ramp for the TH 36 eastbound off-ramp at Manning Avenue. Their preference would be the Lake Elmo Avenue TH 36 eastbound on-ramp be placed with the buttonhook at the location of the TH 36 eastbound off-ramp.

Manning Avenue

- Washington County is leading a project at TH 36 / Manning Avenue. The City supports this interchange as long as the interchange design does not preclude the ability to construct a future interchange at Lake Elmo Avenue. Washington County is in the Preliminary and Final Design Stage (June 2018 to November 2020). <https://www.co.washington.mn.us/Manning36Interchange>

Private Access Points

- Private access points directly connected to TH 36 would eventually be removed. Access would be replaced via the proposed TH 36 South Frontage Road or another public street.

Construction Costs / Potential Implementation Plan

Concept level costs were developed for the proposed layout. These costs are broken down to include construction costs, soft costs (administration, engineering and construction observation) and right-of-way needs from private properties. Construction costs were based on 2018 unit prices for construction with a 30 percent contingency for unknowns. Costs are reported in 2018 dollars and DO NOT include escalation costs. Soft costs are based on 25 percent of the construction costs and property acquisition is based the assessed value of the land, although costs are typically higher and could result in additional costs.

This larger South Frontage Road project was broken down into several logical smaller projects. These include:

- Project A – Approximately 7,000 to 7,500 feet of the South Frontage Road from 55th Street (Demontreville Trail) to Keats Avenue.
- Project B – Approximately 4,500 feet of the South Frontage Road on either side of Lake Elmo Avenue. It would include picking up the last driveway onto TH 36/property east of Lake Elmo Avenue (2,500 feet) to about 2,000 feet west of Lake Elmo Avenue. This would not include reconstruction of Lake Elmo Ave/TH 36 to an interchange or any ramps connections to TH 36.
- Project C – This would be for a Lake Elmo Avenue/TH 36 interchange project. The City of Lake Elmo is not proposing this project, but if MnDOT or County wanted to remove the existing signal, then the City would request full access.
- Project D – Approximately 3,000 feet of the South Frontage Road from Keats Avenue to the east at the Project B termini.
- Project E – This would be for a Demontreville Trail/TH 36 interchange project. The City of Lake Elmo is not proposing this project, but if MnDOT wanted to remove the existing signal, then the City would request full access.

The project costs are shown in the appendix, including potential right-of-way need/private property acquisition.

MnDOT, Washington County and City of Grant Comments on Current Concept

The current concept is a plan to better understand the City of Lake Elmo's position if access along TH 36 is proposed to change by other agencies. The City of Lake Elmo's plan is to pursue a South Frontage Road (shown in bright yellow) and not other projects shown in the concept.

At this time, the following comments have been received by MnDOT, Washington County and City of Grant on the current concept and are in the appendix.

- MnDOT – April 24, 2019
- City of Grant – May 6, 2019
- Washington County – May 21, 2019

April 24, 2019

City of Lake Elmo - Hwy 36 South Frontage Road Study

Adam Josephson 
MnDOT – East Area Manager

Thank-you again for the city's ongoing efforts to work with state, county and other interested parties to define an access and frontage road concept that the city finds acceptable along Hwy 36. Knowing what the city and other local partners want to see for improvements along the highway and having a level of buy-in will be important for future planning activities adjacent to and along the highway.

There are no projects or funds currently identified for the concept elements. Smaller interim projects may need to be considered to address maintenance and safety issues along the corridor.

MnDOT has a mill and overlay project along Hwy 36 from just east of I-35E in Little Canada to just east of Norrell/Washington in Stillwater being planned for construction in 2021-22. A new signal system for the Lake Elmo/36 intersection has also been tentatively scheduled for 2024.

When funding is secured for the whole or various parts of the interchange and frontage road concept; environmental review, public engagement, layout development, local approvals and other project development steps will be needed. The preferred alternative may not look like the current concept. The city study has been an important step to understand the city access vision for the intersection and a south frontage road. Understanding the interactions between the planned improvements at Manning/36 and the Lake Elmo/36 intersections has also been critical to the ongoing discussions.

I provide the following comments on the latest concept for consideration, I do not think the concept needs to be further refined at this point because full environment review and project development will be needed after funding is identified. The current concept will be part of that project development process.

Comments on concept received February 20, 2019

- MnDOT is supportive of the non-traditional interchange approach proposed in the concept. The concept does seem to better balance cost, impacts and access.
- Traffic modeling was not part of the concept process, this will be done in the future to verify any proposed interchange designs.
- Long-term all abutting local property access should be off the frontage road or via a modified local street network and not Hwy 36.

- Long-term it is anticipated that all median crossovers along Hwy 36 will be removed to improve overall corridor safety.
- Highlands Trail - long-term the RI/RO access should be closed.
- DeMontreville Trail - the study looked at concepts to provide an overpass and access to Hwy 36 in this area, further study and development will be needed to find an acceptable solution for this area.
- Keats Avenue – a good short-term strategy for this intersection is an eastbound acceleration lane. Long-term if/when a south frontage road is developed full closure of this access will be considered.
- Lake Elmo Ave interchange concept:
 - Moving the south frontage road entrance to the east side is undesirable due to the shorter spacing this creates to the exit ramp to Manning.
 - The geometry of the scissor ramp configuration of both entrances will need to be revised to improve crossing angles and insure that vehicles cannot enter Hwy 36 at an undesirable angle.
 - Long parallel acceleration lanes will be needed to better accommodate these low speed entrances.
 - The Hwy 36 alignment shift appears to be too short and will likely need to be smoothed out and lengthened, this will cause additional costs and impacts.
 - Hwy 36 being partially raised over Keats will increase interchange costs and construction staging impacts; however, it does reduce local property and possible power line impacts.



Jack Griffin <jack.griffin@focusengineeringinc.com>

RE: Lake Elmo - TH36 South Frontage Road

1 message

Frank Ticknor <Frank.Ticknor@co.washington.mn.us>

Tue, May 21, 2019 at 12:11 PM

To: "Josephson, Adam (DOT)" <adam.josephson@state.mn.us>, Jack Griffin <Jack.Griffin@focusengineeringinc.com>

Cc: Wayne Sandberg <Wayne.Sandberg@co.washington.mn.us>, Joe Gustafson <Joe.Gustafson@co.washington.mn.us>

Washington County concurs with MnDOT's comments and has no additional comments on the revised TH 36 South Frontage Road concept.

Thank you.

Frank

Frank Ticknor | Design Engineer

Phone: 651-430-4319 | Fax: 651-430-4350 | Cell: 651-428-5300

Frank.ticknor@co.washington.mn.us

Washington County Public Works Department

11660 Myeron Rd North | Stillwater, MN 55082

"Plan, build and maintain a better Washington County"



From: Josephson, Adam (DOT) [mailto:adam.josephson@state.mn.us]

Sent: Wednesday, April 24, 2019 7:04 AM

To: Jack Griffin <Jack.Griffin@focusengineeringinc.com>

Cc: Wayne Sandberg <Wayne.Sandberg@co.washington.mn.us>; Frank Ticknor

<Frank.Ticknor@co.washington.mn.us>; Joe Gustafson <Joe.Gustafson@co.washington.mn.us>

Subject: RE: Lake Elmo - TH36 South Frontage Road

I am not able to attend today's meeting due to a conflict.

Memorandum

To: ***Kristina Handt, Administrator, City of Lake Elmo***
Kim Points, Administrator, City of Grant

From: ***Brad Reifsteck, PE, City Engineer***
WSB & Associates, Inc.

Date: May 6, 2019

Re: Trunk Highway 36 Frontage Roads Layout

We have completed a preliminary review of the Trunk Highway (TH) 36 Frontage Road layout prepared for the City of Lake Elmo by SRF Consulting Group. The preliminary layout includes TH 36 frontage road alignments and typical cross sections between Demontreville Trl N and Manning Avenue. The City of Grant's corporate limits lie north of the north frontage road centerline.

WSB has reviewed the following documents prepared by SRF Consulting Group for the City of Lake Elmo:

- 8132_loe_ALT3_MOD_190227_2.pdf Preliminary Highway 36 Frontage Road layout

Comments:

1. The City of Grant is assuming no cost sharing or responsibilities for any of these improvements. Any work associated with local streets within the City of Grant as part of any or all future projects will be the responsibility of the City, County, State or other agencies pursuing these improvements.
2. The City would like to participate in any future meetings with the City, County, or State agencies during the development of the TH 36 Frontage Road Improvements.
3. The City of Grant approves the Manning Avenue interchange as shown. This layout seems consistent with the layouts shared by Washington County and SRF Consulting Group at the Local Advisory Team (LAT) meeting in January 2019
4. The interchange at Lake Elmo Avenue seems reasonable with minimal disruption for Grant residents to ingress and egress onto TH 36.
5. The City of Grant would prefer other options be reviewed at Keats Avenue to allow ingress and egress onto TH 36. A full access interchange should be studied as an alternative.
6. The Demontreville Trl N interchange is most disruptive to the City of Grant without obvious benefits. The City would prefer to eliminate this options or other alternatives should be explored.

Should you have any questions or comments regarding the items listed above, please contact me at 763-512-5243.



8132 - TH 36 South Frontage Road - Alternative 3 Modified

Concept Cost Estimate (based upon 2018 bid price information)

Prepared By: SRF Consulting Group, Inc., May, 29, 2019

ITEM DESCRIPTION	UNIT	UNIT PRICE	Project A Frontage Road from DeMontreville Trail to Keats Ave (City Funds)		Project B Frontage Road near Lake Elmo Ave (City Funds)		Project C Lake Elmo Underpass & TH 36 Overpass (MnDOT Funds)		Project D Frontage Road from Keats Ave to Lake Elmo Ave (City Funds)		Project D TH 36 Access Closure at Keats Ave (MnDOT Funds)		Project E Demotreville Trail Overpass (MnDOT Funds)		
			EST. QUANTITY	EST. AMOUNT	EST. QUANTITY	EST. AMOUNT	EST. QUANTITY	EST. AMOUNT	EST. QUANTITY	EST. AMOUNT	EST. QUANTITY	EST. AMOUNT	EST. QUANTITY	EST. AMOUNT	
PAVING AND GRADING COSTS															
1	2106 Excavation - common & subgrade	cu. yd.	\$10.00	25,700	\$257,000	19,200	\$192,000	102,800	\$1,028,000	12,900	\$129,000	2,700	\$27,000	22,900	\$229,000
2	2106 Common Embankment (CV)	cu. yd.	\$6.00					65,000	\$390,000					73,000	\$438,000
3	2106 Granular Subgrade (CV)	cu. yd.	\$14.00	17,200	\$240,800	12,800	\$179,200	78,500	\$1,099,000	8,600	\$120,400	2,200	\$30,800	16,900	\$236,600
4	Mainline Pavement	(1) sq. yd.	\$40.00					31,500	\$1,260,000					4,100	\$164,000
5	Mainline Shoulder Pavement	(1) sq. yd.	\$35.00					13,200	\$462,000			1,600	\$56,000	3,300	\$115,500
6	Local & Frontage Road Pavement	(1) sq. yd.	\$35.00	18,700	\$654,500	15,300	\$535,500	22,100	\$773,500	9,800	\$343,000			8,000	\$280,000
7	Local & Frontage Road Shoulder Pavement	(1) sq. yd.	\$30.00	6,800	\$204,000	3,600	\$108,000	4,900	\$147,000	3,100	\$93,000			2,500	\$75,000
8	Driveway Pavement	(1) sq. yd.	\$25.00	160	\$4,000	300	\$7,500	1,300	\$32,500						
9	Aggregate Pavement	(1) sq. yd.	\$20.00	180	\$3,600	200	\$4,000			100	\$2,000				
10	Concrete Walk / Trail / Median	(2) sq. yd.	\$45.00			530	\$23,850	4,600	\$207,000					200	\$9,000
11	Concrete Curb and Gutter	lin. ft.	\$20.00			2,100	\$42,000	8,600	\$172,000	200	\$4,000			1,900	\$38,000
12	Concrete Median Barrier (Permanent)	lin. ft.	\$80.00					1,600	\$128,000						
SUBTOTAL PAVING AND GRADING COSTS:					\$1,363,900		\$1,092,050		\$5,699,000		\$691,400		\$113,800		\$1,585,100
DRAINAGE, UTILITIES AND EROSION CONTROL															
1	Drainage - urban	10%					\$110,000		\$570,000						
2	Drainage - rural	(3) mile	\$110,000	1.4	\$154,000	0.9	\$99,000	2.3	\$253,000	0.7	\$77,000	0.7	\$77,000	1.7	\$187,000
3	Turf Establishment & Erosion Control	10%			\$137,000		\$110,000		\$570,000		\$70,000		\$12,000		\$159,000
4	Landscaping	2%			\$28,000		\$22,000		\$114,000		\$14,000		\$3,000		\$32,000
SUBTOTAL DRAINAGE, UTILITIES AND EROSION CONTROL					\$319,000		\$341,000		\$1,507,000		\$161,000		\$92,000		\$378,000
BRIDGE COSTS															
1	Bridge - EB TH 36	sq. ft.	\$250					7,500	\$1,875,000						
2	Bridge - WB TH 36	sq. ft.	\$250					7,500	\$1,875,000						
3	Bridge - Demontreville Trail Overpass	sq. ft.	\$250										14,700	\$3,675,000	
SUBTOTAL BRIDGE COSTS:									\$3,750,000						\$3,675,000
RETAINING WALLS & OTHER MINOR STRUCTURAL COSTS															
1	CIP Ret. Walls 10' high (50' pile foundation)	(4) lin. ft.	\$1,000	2,800	\$2,800,000	300	\$300,000								
2	CIP Ret. Walls 15' high (50' pile foundation)	(4) lin. ft.	\$1,500					5,300	\$7,950,000						
3	Ret. Walls Architectural Treatments (normal)	sq. ft.	\$15	28,000	\$420,000	3,000	\$45,000	79,500	\$1,192,500						
SUBTOTAL RETAINING WALLS & OTHER MINOR STRUCTURAL COSTS:					\$3,220,000		\$345,000		\$9,142,500						
SIGNING & STRIPING COSTS															
1	Mainline Signing (C&D)	mile	\$35,000	1.4	\$49,000	0.9	\$31,500	2.6	\$91,000	0.7	\$24,500	0.7	\$24,500	1.7	\$59,500
2	Mainline Striping	mile	\$5,000	1.4	\$7,000	0.9	\$4,500	2.6	\$13,000	0.7	\$3,500	0.7	\$3,500	1.7	\$8,500
SUBTOTAL SIGNING & STRIPING COSTS:					\$56,000		\$36,000		\$104,000		\$28,000		\$28,000		\$68,000
SUBTOTAL CONSTRUCTION COSTS:					\$4,958,900		\$1,814,050		\$20,202,500		\$880,400		\$233,800		\$5,706,100
MISCELLANEOUS COSTS															
1	Mobilization	5%			\$248,000		\$91,000		\$1,011,000		\$45,000		\$12,000		\$286,000
2	Non Quantified Minor Items	20%			\$992,000		\$363,000		\$4,041,000		\$177,000		\$47,000		\$1,142,000
3	Temporary Pavement & Drainage	2%			\$100,000		\$37,000		\$405,000		\$18,000		\$5,000		\$115,000
4	Traffic Control	3%			\$149,000		\$55,000		\$607,000		\$27,000		\$8,000		\$172,000
SUBTOTAL MISCELLANEOUS COSTS:					\$1,489,000		\$546,000		\$6,064,000		\$267,000		\$72,000		\$1,715,000
ESTIMATED TOTAL CONSTRUCTION COSTS without Contingency:					\$6,447,900		\$2,360,050		\$26,266,500		\$1,147,400		\$305,800		\$7,421,100
1	Contingency or "risk"	30%			\$1,935,000		\$709,000		\$7,880,000		\$345,000		\$92,000		\$2,227,000
ESTIMATED TOTAL CONSTRUCTION COSTS PLUS CONTINGENCY:					\$8,382,900		\$3,069,050		\$34,146,500		\$1,492,400		\$397,800		\$9,648,100
OTHER PROJECT COSTS:															
R/W ACQUISITIONS															
AREA ACQUIRED		Lump Sum			\$373,400		\$273,400		\$540,400		\$95,800				\$265,200
DESIGN ENG. & CONSTRUCTION ADMIN.		sq. ft.		562,360		362,860		224,770		223,030			539,710		
SUBTOTAL OTHER PROJECT COSTS		Lump Sum	25%		\$2,096,000		\$768,000		\$8,537,000		\$374,000		\$100,000		\$2,413,000
TOTAL PROJECT COST					\$10,852,300		\$4,110,450		\$43,223,900		\$1,962,200		\$497,800		\$12,326,300
TOTAL PROJECT COST (OPENING YEAR DOLLARS)					\$10,852,300		\$4,110,450		\$43,223,900		\$1,962,200		\$497,800		\$12,326,300

NOTE (1) Includes aggregate base class 5 and PASB or OGAB, as appropriate
 (2) Includes aggregate base class 5.
 (3) Does not include pavement edge drains, see separate item.
 (4) Assumes 50' Piled Foundations & Mn/DOT Standard Plan Sheet designs; does not include excavation or backfill

R/W Acquisitions based upon: Based on Washington County GIS Property Informatior