Montana Department of Transportation
2701 Prospect
PO Box 201001
Helena MT 59620-1001

Michael T. Tooley, Director
Steve Bullock, Governor

August 18, 2014

Subject: Request for Proposals (RFP)

Project: NCDP 56(55)
Billings Bypass
UPN 4199

The Montana Department of Transportation (MDT), Engineering Division, is accepting proposals from consulting firms interested in performing engineering services for the design of the Billings Bypass project.

The anticipated work effort includes the project development and the preparation of final construction plans packages for the noted project. This will include the preparation of road plans, bridge plans, traffic plans, R/W plans, utility relocation plans, and any other plans/specs required for complete plans packages.

Detailed road design, bridge design, traffic analysis, geometric design, and public involvement will be necessary. The work will take substantial coordination between multiple disciplines through the design process.

Teams may be established as necessary; however it is expected that the prime consultant will be capable of completing the vast majority of the work. As a rule, the prime consultant must complete at least 50% of the work for a specific project or assignment unless written exception is given.

Montana professional engineering licensure is required for this work.

LOCATION

The Billings Bypass project is located in Yellowstone County in the eastern and northeastern portion of the Billings urban area, and will consist of a new arterial facility and improvements to an existing secondary facility. The project area is generally bounded to the north by Main Street / US 87 and Old Hwy 312 and to the south by the I-90 / I-94 corridor, and consists of two proposed roadways: a primary route approximately 4.8 miles in length, and a secondary route approximately 1.5 miles in length. In general, the project traverses the area from a southeast to northwest direction with stationing following the same direction.

Consultant Design Bureau
Phone: (406) 444–6209
Fax: (406) 444–6253

Engineering Division
TTY: (800) 335–7592
Web Page: www.mdt.mt.gov

BACKGROUND

The purpose of the project is to improve access and connectivity between I-90 and Hwy 87 / Old Hwy 312 through the development of mobility in the eastern area of Billings where no such mobility currently exists. An EIS process was performed to address several transportation-related issues in the study area that were identified through previous studies, public scoping, and agency involvement. These issues stem from a lack of connectivity and a lack of mobility resulting from major physical barriers located within eastern Billings that impede movement and north-south connections in the study area, especially from Lockwood to Billings Heights. The specific projects needs are identified as:

- Reduce Physical Barrier Impacts to the Transportation System
- Improve Connectivity between Lockwood and Billings
- Improve Mobility To and From Billings Heights
- Improve Truck/Commercial Vehicle Access To and Through Billings

The Final Environmental Impact Statement (FEIS) was signed on March 18, 2014 and identified the Mary Street Option 2 Alternative as the Preferred Alternative.
The Record of Decision (ROD) was signed for the Billings Bypass project on July 28, 2014 and identified Phase 1 of the Preferred Alternative (Mary Street Option 2) as described in the FEIS as the selected alternative. This alternative will provide a 4.8-mile-long two-lane roadway connection across the Yellowstone River between I 90 and Old Hwy 312. Secondary corridor improvements associated with this alternative include reconstruction of the existing Five Mile Road to MDT standards, and construction of a new segment of Five Mile Road extending from Dover Road to Old Hwy 312.

A copy of the Billings Bypass Final Environmental Impact Statement is available on the MDT website at: http://www.mdt.mt.gov/pubinvolve/eis-ea.shtml.

SCOPE OF WORK

The Billings Bypass Final Environmental Impact Statement is the general guide document for the design. The project is being constructed on a new alignment (Mary Street Option 2) as identified in the *Billings Bypass Record of Decision for the Final Environmental Impact Statement* (July 2014).

As noted above, the project consists of the construction of two proposed roadways: new construction of a primary route approximately 4.8 miles in length, and improvements on a secondary route approximately 1.5 miles in length. Major design considerations for the project are as follows:

- The primary route generally traverses the area from a southeast to northwest direction, beginning at and including the Johnson Lane / I-90 Interchange and terminating near the intersection of Hwy 87/Old Hwy 312/Main Street. The primary new arterial corridor at *Full Build-out* is ultimately anticipated to be a four- lane facility (four 12-foot travel lanes with a median or median turn lane, 8-

foot shoulders, and a design speed of 55 mph). **However, the concept for this current design project will be to prepare a design for the *Interim Design* which would generally provide a two-lane design (2 travel lanes and median turn lanes (as necessary) for the primary corridor).**

- The secondary route will utilize the existing Five Mile Road corridor. This road is an existing gravel surfaced roadway located between Mary Street and Dover Road. The extension of Five Mile Road north of Dover Road to Old Hwy 312 does not currently exist. Five Mile Road will be reconstructed and completed to Yellowstone County road standards between the Mary Street Option 2 alignment and Old Hwy 312 to address expected additional traffic demand as a result of the Mary Street Option 2 alignment. Improvements to Five Mile Road will be two 12-foot travel lanes with 8-foot shoulders and a design speed of 60 mph.
- Three new bridges will be included along the Mary Street Option 2 alignment, excluding structures necessary to reconstruct the Johnson Lane / I-90 Interchange. These structures are located at the crossing of the Montana Rail Link mainline, the crossing of the Yellowstone River, and the crossing of Five Mile Creek. These bridges would be designed to be constructed as two-lane facilities, but which would accommodate widening for the *full-buildout* four-lane section in the future (this accommodation could be either a widening of the first structure or a separate adjacent structure; evaluating/recommending the appropriate option would be part of the design process). Structures will be designed in accordance with the current AASHTO Specifications for Highways and Bridges and the procedures outlined in the Department's Design Manual(s). Initial investigation will identify issues and select bridge structure types to be advanced to the Final Size, Type, and Location Study. Details include options considered, probable advantages and preliminary cost ranges, and a recommendation on options to move forward. Overall bridge length and impacts to roadway design will be considered.
- The interchange at Johnson Lane will be reconstructed as a part of this project. Several reconstruction concepts were studied and evaluated for the EIS to ensure improvement solutions were feasible and to identify likely areas of impact. A specific reconstruction concept was not identified for the EIS. As such, vertical profiles and horizontal alignments of the connecting roadways and ramps have not been developed as they will be addressed during the design phase of this project. The Consultant will need to evaluate the concepts identified in the FEIS (and possibly others, as applicable) and recommend an appropriate concept (see note on Traffic evaluations below).
- The intersection of Main Street/US87/Old 312 with the bypass alignment also had several reconstruction concepts evaluated and did not identify a specific construction concept. As above, The Consultant will need to evaluate the concepts identified in the FEIS (and possibly others, as applicable) and recommend an appropriate concept.
- The Right-of-Way design/plans will be prepared to accommodate the Full Build (four-lane) concept for the project (see note on Traffic evaluations below).
- The overall Billings Bypass project will be split into several separate construction segments as described in the Preliminary Construction Split Analysis Memorandum. Each segment will be designed to have its own stand-alone

construction plans package so they can be awarded separately for construction. This Memorandum will be used as a guideline for the split locations of the anticipated construction projects. The exact project lengths will be determined during the design phase of the overall bypass project.

Preliminary vertical profiles and horizontal alignments were developed for the EIS process based on standard MDT and FHWA design guidelines for an urban principal arterial, and based on project constraints including basic design parameters (design speed, minimum radii, K-values, etc.), utility locations, environmental and social considerations, right-of-way, and minimizing impacts overall. Photogrammetric mapping of the corridor was used to determine the vertical and horizontal elements of the alignment identified in the EIS document. The maximum gradient expected is 4%. The survey work completed was for the environmental document and is not generally adequate for design. Therefore, the Consultant will need to perform a new survey in accordance with current MDT requirements for a design project. A cadastral survey and a full SUE survey will also be required.

The traffic analysis/evaluation will be a critical component of this project. This is particularly the case at the Johnson Lane Interchange and in the Main Street/US87/Old 312 /Bypass intersection area. In both areas, the FEIS listed several potential concepts and identified a footprint, but did not specify a preferred concept. The Consultant will carefully evaluate the concepts identified in the FEIS (and potentially other concepts, as applicable) and recommend the most appropriate concept with which to proceed through final design. The Consultant's traffic analysis/evaluations will need to include (but are not limited to) the following considerations:

- Johnson Lane Interchange:
    - The Consultant will fully analyze/model current/projected traffic. This includes identifying the current operating conditions of the interchange & adjacent intersections to have a current baseline operation. It also includes preparing no-build traffic projections for comparison to build alternatives to be developed by the Consultant.
    - The Consultant will be responsible for obtaining updated current traffic counts as required for evaluation/analysis, including operations of the adjacent intersections. This includes identifying am/pm flows and capacities of these adjacent intersections.
    - The Consultant will be responsible for evaluating traffic signal phasing operations, both for standard signals and for any innovative concepts considered.
    - The Consultant will provide computer modeling of the recommended alternative to identify how it functions (this may need to be done for several alternatives, depending on how close the evaluations are).
    - The Consultant will evaluate construction phasing plan considerations, including Accelerated Bridge Construction considerations, for the various alternatives.
    - The Consultant will provide a comparison of the concepts considered comparing the pros/cons (probably in matrix form).

    - The public involvement process needs to identify how the concept selected will benefit the public (i.e., how design selected will improve operations and impact businesses/travelers, travel time projected for each movement, etc.)
- Main Street/US87/Old 312/Bypass Intersection:
    - The Consultant will evaluate the design options noted in the FEIS.
    - The Consultant will also look at the viability of innovative intersections (ThrU Turn, CFI, roundabouts, Superstreet, etc.) to determine potential applications for such options.
    - Similar issues as noted for the Johnson Lane interchange above will also need to be considered at this location.

SCHEDULE

The Project schedule will be negotiated prior to developing the contract agreement for services.

PROPOSAL SUBMITTAL

Submit four (4) copies of the proposal. The correct number of proposals must be submitted in order for your firm to be considered. Clearly label each proposal with the project name. All proposals must be submitted in hard copy format; electronic proposals will not be considered.

The Department must receive the proposals no later than 3:00 PM MST, September 11, 2014. Send the proposals to:

Ryan Dahlke, P.E.
Consultant Design Engineer
Montana Department of Transportation
2701 Prospect Avenue
P.O. Box 201001
Helena, MT 59620-1001

Regardless of cause, late proposals will not be accepted and will automatically be disqualified from further consideration. It shall be solely the vendor's responsibility to assure delivery at the specified office by the specified time. Offeror may request the State return the proposal at vendor's expense or the State will dispose of the proposal if requested by the offeror. (See Administrative Rules of Montana (ARM) 2.5.509.)

The costs for developing and delivering responses to this solicitation are entirely the responsibility of the offeror. The State is not liable for any expense incurred by the offeror in the preparation and presentation of this submittal.

Once submitted, proposals become the property of the Department.

PROPOSAL CONTENTS

Keep proposals short and concise. Avoid large copies and binders. The proposal is **limited to fifteen (15) pages**, not including Appendices A or B or the Unbound References attachment. The proposal must contain the information listed in this section. Please organize your proposal in the same order and numbering format as shown below, which will assist MDT in reviewing your proposal:

Cover page/Introduction

The cover page/introduction should include contact information for questions and follow-up regarding this proposal, including name of individual, title, telephone number, mailing address, and email address.

Quality of Firm and Personnel

A) Related experience on similar projects.

Provide a discussion of your firm/team's previous related project experience as it relates to the scope of services detailed herein.

B) Qualifications, experience and training of personnel to be assigned to projects.

Discuss the qualifications, experience, and training of the professional staff that will be utilized. Include an organization chart that indicates the project staff, their area of expertise, registration, and office location(s). Clearly state your firm's qualifications regarding any licensing requirements. Discuss any subcontractors and support services that you anticipate utilizing and describe their expertise.

Capacity/Capability of Firm and Project Approach

A) Capability of firm to meet project time requirements.

Describe your ability to meet the schedule(s) for this project(s) based on available staff and projected workload during the next two years, and how your team will accomplish this. Discussion should include how your firm/team is able to respond to shifting project needs and Department requirements in a dynamic project delivery process. Describe your firm's approach in preparing work plans, managing workload and managing projects. Briefly discuss your firm's ability to respond to shifting project demands while maintaining the project schedules. Use specific project example(s) where you have been successful in this regard, including a description of the project(s), major issues faced and actions taken to address the issues, the overall results, and an evaluation of your process. Provide a reference contact for the project(s).

B) Ability to meet overall project design requirements.

This project has many challenging design aspects. Provide discussion on the elements that your firm sees as the most challenging, what your firm/team strategy is and how you plan on meeting these challenges. Discuss why your team is best-suited to complete the design. Use specific project example(s) where you have been successful in this regard, including a description of the project(s), major issues faced and actions taken to address the issues, the overall results, and an evaluation of your process. Provide a reference contact for the project(s).

Appendix A

Resumes

Include brief resumes that describe the education, training, experience, and qualifications of the personnel listed in the Proposal.

Appendix B

References

List as references all of the firm's clients from the past three (3) years for projects that deal with work similar to the proposed work. Include client name, a currently employed contact person, and a corresponding valid phone number. Give range of contract value.

Unbound attachment

References

Submit separately ONE UNBOUND COPY of the reference list from Appendix B, regardless of how many proposals are submitted.

EVALUATION OF PROPOSALS

All proposals will be evaluated in accordance with the following factors:

1) **Quality of Firm and Personnel (30 points)**
   A) Related Experience on similar projects
   B) Qualifications, experience, and training of staff to be assigned to project
2) **Capacity/Capability of Firm and Project Approach (40 points)**
   A) Capability of firm to meet project time requirements
   B) Ability to meet overall project design requirements
3) **Record of past performance of firm and personnel on previous projects (30 points)**
   A) Previous record with the Department, quality of work, on-schedule performance, and cooperation with the Consultant Design Engineer and other Department personnel.
   B) No previous record with the Department will require reference checks.

Two Contracts will be executed for this project.

a. Contract 1
   - Johnson Lane Interchange
   - Red segment
   - Orange segment

b. Contract 2
   - Yellow segment
   - Green segment
   - Blue segment
   - Purple segment

The segments are described in the Preliminary Construction Split Analysis Memorandum. The Department will decide whether to select separate Consultants for the two Contracts, or select a single Consultant for both Contracts.

Following the review, evaluation, and rating of all proposals, the list of firms may be narrowed down to an appropriate short list. If this is done, short listed firms will either be asked to provide a supplement RFP or asked to be interviewed before the Rating Committee (if a supplement RFP or an interview is utilized as part of the selection process, scores from this would be worth another 30 points). Scores from proposals, supplement project proposals (if used), and interviews (if used) will be carried forward to determine final consultant score. Consultant selection is finalized by MDT at the Consultant Selection Board meeting.

INDIRECT COST RATE REQUIREMENTS

Proof of the firm's Indirect Cost Rate (overhead rate) is ***not required*** with this proposal submittal. However, an Indirect Cost Rate may be required prior to executing a contract according to MDT's Indirect Cost Rate Requirements:

All submitted indirect cost rates must be calculated in accordance with 23 CFR 172.7(b) for the cost principles of 48 CFR part 31 and include the required items identified in the MDT Indirect Cost Rate Policy located on the MDT Internet website. http://www.mdt.mt.gov/other/cdb/external/policies/INDIRECT-COST-RATE-POLICY.PDF

Do <u>not</u> show any actual numerical financial information such as the overhead rate or personnel rates within your proposal. Specific cost information of the firm or team should not be part of the proposal.

AGREEMENT REQUIREMENTS

Contract agreements will generally be administered on a cost plus fixed fee basis. The contracts will have negotiated cost ceilings. If a consulting firm is selected for a specific project and a contract agreement is successfully negotiated, certain financial information will be required as part of the contract agreement. As described in the <u>Indirect Cost Rate Requirements</u> section above, all Consultants and subconsultants must provide the Department with an Indirect Cost Rate (as applicable) audited (when applicable) in accordance with 23 CFR §172.7(b) for the cost principles of 48 CFR Part 31 and based on the firm's latest completed fiscal year's costs. Personnel rates, profit, and direct expenses must be clearly outlined and provided to the Department.

Do not submit actual numerical financial information within this proposal.

STATE OPTION TO AWARD

While the State has every intention to award a contract resulting from this RFP, issuance of the RFP in no way constitutes a commitment by the State to award and execute a contract. Upon a determination such actions would be in its best interest, the State, in its sole discretion, reserves the right to:

- Cancel or terminate this RFP (18-4-307, MCA);
- Reject any or all proposals received in response to this RFP (ARM 2.5.602);
- Waive any undesirable, inconsequential, or inconsistent provisions of this RFP that would not have significant impact on any proposal (ARM 2.5.505);
- Not award a contract, if it is in the State's best interest not to proceed with contract execution (ARM 2.5.602); or
- If awarded, terminate any contract if the State determines adequate funds are not available (18-4-313, MCA).

SINGLE POINT OF CONTACT

From the date this solicitation is issued until the consultant selection is finalized by MDT at the Consultant Selection Board meeting, offerors are not allowed to communicate with any state staff or officials regarding this solicitation, except at the direction of the Consultant Design Engineer. Any unauthorized contact may disqualify the offeror from further consideration. Contact information for the single point of contact is as follows:

Ryan Dahlke
Consultant Design Engineer
Montana Department of Transportation
(406) 444-7292 (Direct Line)
(800) 335-7592 (TTY)
rdahlke@mt.gov

DBE/WBE GOALS

There are no DBE/WBE goals for this work, but firms are strongly encouraged to utilize DBE firms if applicable. A Montana certified DBE list is available and can be found on the MDT web page, *http://www.mdt.mt.gov/business/contracting/civil/dbe.shtml*.

NONDISCRIMINATION COMPLIANCE

Consultants will be subject to Federal and Montana nondiscrimination laws and regulations (see attached notice).

If you have any questions, please contact me at (406) 444-7292 or (406) 444-7696 TDD, or by email at rdahlke@mt.gov .

Ryan Dahlke, P.E.
Consultant Design Engineer

Attachment

copies: Jay Skoog – ACEC Executive Director
Consultant Design Bureau File
e-copies: Patricia McCubbins – MDT Civil Rights Bureau Chief
Lynn Zanto – MDT Rail, Transit & Planning Division Administrator
Dwane Kailey, P.E. – MDT Acting Chief Engineer
Jim Walther, P.E. – MDT Preconstruction Engineer
Stefan Streeter, P.E. – MDT Billings District Administrator
Kevin Christensen, P.E. – MDT Construction Engineer
Tom Martin, P.E. – MDT Environmental Services Bureau Chief
Robert Stapley – MDT Right of Way Bureau
Kent Barnes, P.E. – MDT Bridge Engineer
Roy Peterson, P.E. – MDT Traffic & Safety Engineer
Paul Ferry, P.E. – MDT Highways Engineer
Bryan Miller, P.E. – MDT Consultant Plans Engineer

MDT NONDISCRIMINATION
AND
DISABILITY ACCOMMODATION NOTICE

Montana Department of Transportation ("MDT") is committed to conducting all of its business in an environment free of discrimination, harassment, and retaliation. In accordance with State and Federal law MDT prohibits any and all discrimination on the grounds of race, color, national origin, sex, age, physical or mental disability, parental/marital status, pregnancy, religion/creed/culture, political belief, genetic material, veteran status, or social origin/ancestry (hereafter "protected classes"). by its employees or anyone with whom MDT chooses to do business.

For the duration of this contract/agreement, the PARTY agrees as follows:

(1) Compliance with Regulations: The PARTY (hereinafter includes consultant) will comply with all Acts and Regulations of the United States and the State of Montana relative to Non-Discrimination in Federally and State-assisted programs of the U.S. Department of Transportation and the State of Montana, as they may be amended from time to time, which are herein incorporated by reference and made a part of this contract.

(2) Non-discrimination:

a. The PARTY, with regard to the work performed by it during the contract, will not discriminate, directly or indirectly, on the grounds of any of the protected classes in the selection and retention of subcontractors, including procurements of materials and leases of equipment, employment, and all other activities being performed under this contract/agreement.
b. PARTY will provide notice to its employees and the members of the public that it serves that will include the following:
    i. Statement that PARTY does not discriminate of the grounds of any protected classes.
    ii. Statement that PARTY will provide employees and members of the public that it serves with reasonable accommodations for any known disability, upon request, pursuant to the Americans with Disabilities Act as Amended (ADA).
    iii. Contact information for PARTY's representative tasked with handling non-discrimination complaints and providing reasonable accommodations under the ADA.
    iv. Information on how to request information in alternative accessible formats.
c. In accordance with Mont. Code Ann. § 49-3-207, PARTY will include a provision, in all of its hiring/subcontracting notices, that all hiring/subcontracting will be on the basis of merit and qualifications and that PARTY does not discriminate on the grounds of race, color, national

origin, sex, age, pregnancy, parental/marital status, disability (physical or mental), religion, creed, political ideas, or genetic material.

(3) Participation by Disadvantaged Business Enterprises (DBEs):

a. If the PARTY receives federal financial assistance as part of this contract/agreement, the PARTY will make all reasonable efforts to utilize DBE firms certified by MDT for its subcontracting services. The list of all currently certified DBE firms is located on the MDT website at mdt.mt.gov/business/contracting/civil/dbe.shtml

b. By signing this agreement the PARTY assures that:

The contractor, sub recipient or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR part 26 in the award and administration of DOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the recipient deems appropriate.

c. PARTY must include the above assurance in each contract/agreement the PARTY enters.

(4) Solicitation for Subcontracts, Including Procurement of Materials and Equipment: In all solicitations, either by competitive bidding, or negotiation, made by the PARTY for work to be performed under a subcontract, including procurements of materials, or leases of equipment, each potential subcontractor or supplier will be notified by the PARTY of the PARTY's obligation under this contract/agreement and all Acts and Regulations of the United States and the State of Montana related to Non-Discrimination.

(5) Information and Reports: The PARTY will provide all information and reports required by the Acts, Regulations, and directives issued pursuant thereto and will permit access to its books, records, accounts, other sources of information and its facilities as may be determined by MDT or relevant US DOT Administration to be pertinent to ascertain compliance with such Acts, Regulations, and instructions. Where any information required of a contractor is in the exclusive possession of another who fails or refuses to furnish the information, the PARTY will so certify to MDT or relevant US DOT Administration, as appropriate, and will set forth what efforts it has made to obtain the information.

(6) Sanctions for Noncompliance: In the event of a PARTY's noncompliance with the Non-discrimination provisions of this contract/agreement, MDT will impose

such sanctions as it or the relevant US DOT Administration may determine to be appropriate, including, but not limited to:

a. Withholding payments to the PARTY under the contract/agreement until the PARTY complies; and/or
b. Cancelling, terminating, or suspending the contract/agreement, in whole or in part.

(7) Pertinent Non-Discrimination Authorities:

During the performance of this contract/agreement, the PARTY, for itself, its assignees, and successor in interest, agrees to comply with the following non-discrimination statues and authorities; including but not limited to:

Federal

- Title VI of the Civil Rights Act of 1964 (42 U.S.C. § 200d *et seq.*, 78 stat. 252), (prohibits discrimination on the basis of race, color, national origin); and 49 CFR Part 21;
- The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, (42 U.S.C. § 4601), (prohibits unfair treatment of persons displaces or whose property has been acquired because of Federal or Federal-aid programs and projects);
- Federal-Aid Highway Act of 1973, (23 U.S.C. § 324 *et seq.*), (prohibits discrimination on the basis of sex);
- Section 504 of the Rehabilitation Act of 1973, (29 U.S.C. § 794 *et seq.*), as amended, (prohibits discrimination on the basis of disability); and 49 CFR Part 27;
- The Age Discrimination Act of 1975, as amended, (42 U.S.C. § 6101 *et seq.*), (prohibits discrimination on the basis of age);
- Airport and Airways Improvement Act of 1982, (49 U.S.C. § 471, Section 47123), as amended, (prohibits discrimination based on race, creed, color, national origin, or sex);
- The Civil Rights Restoration Act of 1987, (PL 100-209), (broadened the scope, coverage, and applicability of Title VI of the Civil Rights Act of 1964, The Age Discrimination Act of 1975, and Section 504 of the Rehabilitation Act of 1973, by expanding the definition of the terms “programs or activities” to include all of the

programs or activities of the Federal-aid recipients, sub-recipients, and contractors, whether such programs or activities are Federally funded or not);

- Titles II and III of the Americas with Disabilities Act, which prohibits discrimination on the basis of disability in the operation of public entities, public and private transportation systems, places of public accommodation, and certain testing entities (42 U.S.C. §§ 12131-12189) as implemented by Department of Transportation regulations at 49 CFR parts 37 and 38;
- The Federal Aviation Administration's Non-Discrimination statute (49 U.S.C. § 47123) (prohibits discrimination on the basis of race, color, national origin, and sex);
- Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, which prevents discrimination against minority populations by discouraging programs, policies, and activities with disproportionately high and adverse human health or environmental effects on minority and low-income populations;
- Executive Order 13166, Improving Access to Services for Persons with Limited English Proficiency, and resulting agency guidance, national origin discrimination includes discrimination because of Limited English Proficiency (LEP). To ensure compliance with Title VI, you must take reasonable steps to ensure that LEP persons have meaningful access to your programs (70 Fed. Reg. at 74087 to 74100);
- Title IX of the Education Amendments of 1972, as amended, which prohibits you from discriminating because of sex in education programs or activities (20 U.S.C. § 1681 *et seq.*).

State

- Mont. Code Ann. § 49-3-205 Governmental services;
- Mont. Code Ann. § 49-3-206 Distribution of governmental funds;
- Mont. Code Ann. § 49-3-207 Nondiscrimination provision in all public contracts.

(8) Incorporation of Provisions: The PARTY will include the provisions of paragraph one through seven in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Acts, the Regulations and directives issued pursuant thereto. The PARTY will take action with respect to any subcontract or procurement as MDT or the relevant US DOT Administration may direct as a means of enforcing such provisions including

sanctions for noncompliance. Provided, that if the PARTY becomes involved in, or is threatened with litigation by a subcontractor, or supplier because of such direction, the PARTY may request MDT to enter into any litigation to protect the interests of MDT. In addition, the PARTY may request the United States to enter into the litigation to protect the interests of the United States.

DOWL HKM

Physical Address:
222 North 32nd Street
Suite 700
Billings, Montana 59101

Phone: (406) 656-6399

Mailing Address:
P.O. Box 31318
Billings, Montana 59107-1318

Fax: (406) 656-6398

To: **Fred Bente**
MDT Consultant Design

Ron Bockelman
David Evans and Associates, Inc.

From: **Todd G. Cormier, PE, PTOE, AVS**
DOWL HKM Project Manager

Date: **July 31, 2014**

Subject: **Billings Bypass Project**
Preliminary Construction Split Analysis

Introduction

At the request of the Montana Department of Transportation, DOWL HKM has performed a cursory review of the preferred alternative of the Billings Bypass FEIS for the purpose of developing a possible strategy for developing the project as several distinct construction projects. The proposed strategy is based on logical beginning and ending points, estimates of construction cost, maintaining connectivity (utility), and coordination with MDT District staff.

The intent of this document is to present a proposed strategy to be used internally by MDT staff for project planning and funding purposes. It is intended to be a guideline and not a rigid scope of work that would be adhered to in all details.

Preferred FEIS Alternative

Three build alternatives and a No Build Alternative are analyzed in the *Billings Bypass Final Environmental Impact Statement* (FEIS). Each of the build alternatives begins at the Johnson Lane Interchange with I-90 and uses approximately the same alignment north across the railroad to one of two potential locations for crossing the Yellowstone River. North of the river, three corridors have been identified to complete the connection to Old Hwy 312:

- Mary Street Option 1 Alternative
- Mary Street Option 2 Alternative
- Five Mile Road Alternative

Each build alternative consists of a "primary" corridor (new arterial roadway), which is the new alternative alignment, and a "secondary" corridor, which is an existing roadway that would be improved to accommodate shifted traffic patterns resulting from the project.

The preferred alternative defined by the *Billings Bypass Final Environmental Impact Statement* (FEIS) is the ***Mary Street Option 2*** alternative, based on its ability to best meet the project's purpose and need while minimizing impacts of the project. As part of this alternative, "secondary" improvements will be made to Five Mile Road to offset an expected increase in traffic due to the new arterial roadway.

The project is expected to be phased, with an initial facility consisting of a single travel lane in each direction, turn lanes as necessary, and a single structure over the MRL railroad and over the Yellowstone River. Subsequent improvements will incorporate either a 4-lane split roadway or a 5-lane roadway, as appropriate, and will complete a second bridge structure over the MRL railroad and over the Yellowstone River. Due to the size and scope of the project, construction is expected to consist of multiple construction segments and occur over several years.

Mary Street Option 2 Proposed Strategy

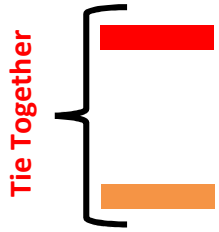
A meeting was held with MDT District staff on May 14, 2014 to consider a strategy for developing logical project segments. Based on this discussion, the following segments have been identified, in the following proposed sequence of construction, for further consideration.

A figure depicting the Mary Street Option 2 alignment and the segments identified below is attached to this document.

GREEN – Five Mile Road improvements from the proposed arterial to Old Highway 312; *approximate cost = $3.395M*.

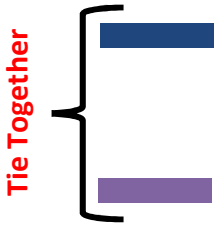
YELLOW – From the intersection with Five Mile Road to just north of the MRL rail line, including the Yellowstone River bridge structure, and including a temporary connection to Coulson Road; *approximate cost =*

$27.911M. Due to the scope of this segment, construction is expected to take at least 2 seasons to complete. During this time, the RED-ORANGE segment could commence.



RED – From just south of the MRL rail line, including a temporary connection to Coulson Road, to the Johnson Lane interchange; *approximate cost = $7.125M*.

ORANGE – From just north of the MRL rail line to just south of the MRL rail line and including the bridge over the MRL rail line; *approximate cost = $7.936M*. By tying this segment to the RED segment, connectivity is maintained within the existing roadway network. It is expected that this "tied" project could begin during the second construction season of the YELLOW segment, thus maintaining utility upon concurrent completion.



BLUE – From approximate STA 212+00 to the intersection with Five Mile Road, and including the Five Mile Creek bridge; *approximate cost = $7.714M*.

PURPLE – From the intersection of Hwy 87 / Main St / Hwy 312 (± STA 285+00 ~ 295+00) to just before the first curve (± STA 212+00); *approximate cost = $7.005M*.

GREY – Johnson Lane interchange and surrounding intersection improvements; *approximate cost = $21.3M*. It is anticipated that under the phased approach, this project segment would be completed last.

The RED and ORANGE segments are expected to be tied together and developed concurrently. The BLUE and PURPLE segments are also expected to be tied together and developed concurrently. To maintain flexibility in how the construction segments might ultimately be combined, these four segments remain as separate segments but are "tied" together for purposes of this memo.

Redirection of traffic flow from / to existing routes is a consideration in determination of the project limits and sequencing of the individual construction segments. A potential nuance to the sequencing presented above would be to consider closing Five Mile Road south of the new arterial roadway during the time period between the development of the RED-ORANGE segment and the BLUE-PURPLE segment. Closing Five Mile Road at its southern end would serve to block the ability for traffic from the new arterial to access Mary Street until the BLUE-PURPLE segment can be completed. Under this scenario, connectivity in the area is maintained and traffic volumes along Mary Street would be kept low.

Estimates of possible construction costs for logical segments were determined based on Phase I estimates for the Billings Bypass project, as reported in the FEIS, and based on 2012 dollars. A summary table of the Phase I estimate used for this analysis is provided as an attachment to this document.

A planning-level opinion of cost was developed for each segment based on expected surfacing, earthwork, hydraulic features, and bridge structures for that segment, exclusive of potential right-of-way costs. Estimated construction costs presented for each segment are opinions of cost based on numerous factors and may not represent actual improvement costs.

Mary Street Option 2 Segment Analysis

Estimated Primary Alignment Segment *Pavement* Lengths:

	2 LANE	3 LANE	
Length - RED	2,861	2,985	*ft*
Length - ORANGE *(minus ±620' for RR bridge)*	2,180	0	*ft*
Length - YELLOW *(minus ±1850' for Yellowstone bridge)*	5,000	0	*ft*
Length - BLUE *(minus ±400' for Five Mile Creek bridge)*	797	2,829	*ft*
Length - PURLPLE *(plus ±1600' for intersection w. 312 / 87)*	0	7,824	*ft*

Typical Road Section:

	2 LANE	3 LANE	
PMBS (Aggregate), Depth	0.67	0.67	*ft*
Base Course, Depth	0.92	0.92	*ft*
Pavement Top Width (Total)	40.0	56.0	*ft*
Pavement Bottom Width (Total)	45.8	61.8	*ft*
CBC Top Width (Total)	45.8	61.8	*ft*
CBC Bottom Width (Total)	56.0	72.0	*ft*
PMBS (Aggregate) X-Section Area	28.6	39.3	ft^2
Base Course X-Section Area	46.6	61.3	ft^2

Typical Road Section: ***Secondary (Rural Collector Road)***

Length - GREEN	7,514	*ft*
PMBS (Aggregate)	0.67	*ft*
Base Course	0.92	*ft*
Pavement Top Width (Total)	40.0	*ft*
Pavement Bottom Width (Total)	45.8	*ft*
CBC Top Width (Total)	45.8	*ft*
CBC Bottom Width (Total)	56.0	*ft*
PMBS (Aggregate) X-Section Area	28.6	ft^2
Base Course X-Section Area	46.6	ft^2

Cut/Fill Quantities (By Segment):

	Excavation	Fill (20% Shrink)	
Primary - RED	144,492	79,045	*cy*
Primary - ORANGE	0	284,798	*cy*
Primary - YELLOW	61,829	152,211	*cy*
Primary - BLUE	39,630	79,295	*cy*
Primary - PURPLE	120	228,906	*cy*
Secondary - GREEN	38,418	35,993	*cy*

Road Quantities Per Station Per Typical:

	Primary 2 Lane	Primary 3 Lane	Secondary	
PMBS (Aggregate)	220.6	302.9	220.6	*ton/Sta*
Base Course	172.7	227.0	172.7	*cy/Sta*
Aggregate Cover	444.0	622.0	444.4	*sy/Sta*
Asphalt Cement	11.9	16.4	11.9	*ton/Sta*
Seal	0.8	1.1	0.8	*ton/Sta*
Tack	13.0	17.0	13.0	*gal/Sta*

Unit costs are based on 2010 & 2011 MDT Average Prices, Right-of-Way costs based on current (2011) real estate prices

Method of estimating is based on the alignment and cost information presented in the Billings Bypass FEIS

RED Segment (STA 17+54.35 to STA 76+00)

Construction Costs

Item	Units	Unit Price	2-Lane Section Quantity	3-Lane Section Quantity		Cost
PMBS (Aggregate)	TON	$23.78	6,311	9,042	$	365,016
Crushed Base Course (CBC)	CY	$17.49	4,942	6,777	$	204,963
Cover	SY	$0.43	12,703	18,567	$	13,446
Asphalt Cement	TON	$628.11	341	488	$	520,760
Seal	TON	$516.80	21	32	$	27,441
Tack	GAL	$2.50	372	507	$	2,198
Excavation/Emb	CY	$6.97		144,492	$	1,006,387
Curb & Gutter (Concrete)	LF	$14.28	0	0	$	-
Sidewalk (5')(Concrete)	SY	$43.48	0	0	$	-
Subtotal					**$**	**2,140,211**

Bridges & Channel Crossings

Yellowstone River Bridge (Cost data from Table 6-3, Hydraulics Report dated November 2011)	$	-
New Five Mile Creek Bridge (Cost data from Table 6-2, Hydraulics Report dated November 2011)	$	-
Replace Existing Five Mile Creek Bridge for secondary improvements	$	-
Remaining Hydraulic Features (Cost data from Table 6-3, Hydraulics Report dated November 2011)	$	255,325
RR Bridge (Cost data from Bridge Selection Report dated August 2011)	$	-
Subtotal	**$**	**2,395,536**

Mobilization	@	7%	$	167,688
Subtotal			**$**	**2,563,224**
Miscellaneous Items	@	10%	$	256,322
Subtotal			**$**	**2,819,546**
Contingency (% of total)	@	20%	$	563,909
Subtotal			**$**	**3,383,456**
Construction Engineering (Percentage of Subtotal)	@	8%	$	270,676
Preliminary Engineering (Percentage of Subtotal)	@	8%	$	270,676

Construction Costs Subtotal **$ 3,924,808**

Right-of-Way

Land Use	Units	Unit Price	Quantity		Cost
Agricultural (Rural)	AC	$ 3,000	*0*	$	-
Agricultural (Urban)	AC	$ 10,000	*0*	$	-
Res - Rural (Acres)	AC	$ 25,000	*0*	$	-
Res - Occupied Home	EA	$ 200,000	*2*	$	400,000
Commercial (Urban/Ru	AC	$ 100,000	*28*	$	2,800,000
Exempt Property	AC	$ 3,000	*0*	$	-
Right-of-Way Costs Subtotal				**$**	**3,200,000**

Utility Relocation *UNKNOWN*

Grand Total **$ 7,124,808**

Unit costs are based on 2010 & 2011 MDT Average Prices, Right-of-Way costs based on current (2011) real estate prices

Method of estimating is based on the alignment and cost information presented in the Billings Bypass FEIS

ORANGE Segment (STA 76+00 to STA 104+00)

Construction Costs

Item	Units	Unit Price	2-Lane Section Quantity	3-Lane Section Quantity		Cost
PMBS (Aggregate)	TON	$23.78	4,809	0	$	114,336
Crushed Base Course (CBC)	CY	$17.49	3,765	0	$	65,856
Cover	SY	$0.43	9,679	0	$	4,162
Asphalt Cement	TON	$628.11	260	0	$	163,081
Seal	TON	$516.80	16	0	$	8,450
Tack	GAL	$2.50	283	0	$	709
Excavation/Emb	CY	$6.97		284,798	$	1,983,618
Curb & Gutter (Concrete)	LF	$14.28	0	0	$	-
Sidewalk (5')(Concrete)	SY	$43.48	0	0	$	-
Subtotal					**$**	**2,340,211**

Bridges & Channel Crossings

Yellowstone River Bridge (Cost data from Table 6-3, Hydraulics Report dated November 2011)	$	-
New Five Mile Creek Bridge (Cost data from Table 6-2, Hydraulics Report dated November 2011)	$	-
Replace Existing Five Mile Creek Bridge for secondary improvements	$	-
Remaining Hydraulic Features (Cost data from Table 6-3, Hydraulics Report dated November 2011)	$	50,000
RR Bridge (Cost data from Bridge Selection Report dated August 2011)	$	2,505,670
Subtotal	**$**	**4,895,881**

Mobilization	@	7%	$	342,712
Subtotal			**$**	**5,238,593**
Miscellaneous Items	@	10%	$	523,859
Subtotal			**$**	**5,762,452**
Contingency (% of total)	@	18%	$	1,037,241
Subtotal			**$**	**6,799,694**
Construction Engineering (Percentage of Subtotal)	@	8%	$	543,975
Preliminary Engineering (Percentage of Subtotal)	@	8%	$	543,975

Construction Costs Subtotal **$ 7,887,645**

Right-of-Way

Land Use	Units	Unit Price	Quantity		Cost
Agricultural (Rural)	AC	$ 3,000	*16*	$	48,000
Agricultural (Urban)	AC	$ 10,000	*0*	$	-
Res - Rural (Acres)	AC	$ 25,000	*0*	$	-
Res - Occupied Home	EA	$ 200,000	*0*	$	-
Commercial (Urban/Ru	AC	$ 100,000	*0*	$	-
Exempt Property	AC	$ 3,000	*0*	$	-
Right-of-Way Costs Subtotal				**$**	**48,000**

Utility Relocation *UNKNOWN*

Grand Total **$ 7,935,645**

Unit costs are based on 2010 & 2011 MDT Average Prices, Right-of-Way costs based on current (2011) real estate prices

Method of estimating is based on the alignment and cost information presented in the Billings Bypass FEIS

YELLOW Segment (STA 104+00 to STA 172+50)

Construction Costs

Item	Units	Unit Price	2-Lane Section Quantity	3-Lane Section Quantity		Cost
PMBS (Aggregate)	TON	$23.78	11,030	0	$	262,238
Crushed Base Course (CBC)	CY	$17.49	8,636	0	$	151,046
Cover	SY	$0.43	22,200	0	$	9,546
Asphalt Cement	TON	$628.11	596	0	$	374,040
Seal	TON	$516.80	38	0	$	19,380
Tack	GAL	$2.50	650	0	$	1,625
Excavation/Emb	CY	$6.97		152,211	$	1,060,150
Curb & Gutter (Concrete)	LF	$14.28	0	0	$	-
Sidewalk (5')(Concrete)	SY	$43.48	0	0	$	-
Subtotal					**$**	**1,878,024**

Bridges & Channel Crossings

Yellowstone River Bridge (Cost data from Table 6-3, Hydraulics Report dated November 2011)	$	14,137,500
New Five Mile Creek Bridge (Cost data from Table 6-2, Hydraulics Report dated November 2011)	$	-
Replace Existing Five Mile Creek Bridge for secondary improvements	$	-
Remaining Hydraulic Features (Cost data from Table 6-3, Hydraulics Report dated November 2011)	$	1,244,000
RR Bridge (Cost data from Bridge Selection Report dated August 2011)	$	-
Subtotal	**$**	**17,259,524**

Mobilization	@	7%	$	1,208,167
Subtotal			**$**	**18,467,690**
Miscellaneous Items	@	10%	$	1,846,769
Subtotal			**$**	**20,314,459**
Contingency (% of total)	@	18%	$	3,656,603
Subtotal			**$**	**23,971,062**
Construction Engineering (Percentage of Subtotal)	@	8%	$	1,917,685
Preliminary Engineering (Percentage of Subtotal)	@	8%	$	1,917,685
Construction Costs Subtotal			**$**	**27,806,432**

Right-of-Way

Land Use	Units	Unit Price	Quantity		Cost
Agricultural (Rural)	AC	$ 3,000	*35*	$	105,000
Agricultural (Urban)	AC	$ 10,000	*0*	$	-
Res - Rural (Acres)	AC	$ 25,000	*0*	$	-
Res - Occupied Home	EA	$ 200,000	*0*	$	-
Commercial (Urban/Ru	AC	$ 100,000	*0*	$	-
Exempt Property	AC	$ 3,000	*0*	$	-
Right-of-Way Costs Subtotal				**$**	**105,000**

Utility Relocation		*UNKNOWN*
Grand Total	**$**	**27,911,432**

Unit costs are based on 2010 & 2011 MDT Average Prices, Right-of-Way costs based on current (2011) real estate prices

Method of estimating is based on the alignment and cost information presented in the Billings Bypass FEIS

BLUE Segment (STA 172+50 to STA 212+76)

Construction Costs

Item	Units	Unit Price	2-Lane Section Quantity	3-Lane Section Quantity		Cost
PMBS (Aggregate)	TON	$23.78	1,758	8,569	$	245,530
Crushed Base Course (CBC)	CY	$17.49	1,377	6,423	$	136,416
Cover	SY	$0.43	3,539	17,596	$	9,088
Asphalt Cement	TON	$628.11	95	463	$	350,327
Seal	TON	$516.80	6	30	$	18,586
Tack	GAL	$2.50	104	481	$	1,461
Excavation/Emb	CY	$6.97		79,295	$	552,290
Curb & Gutter (Concrete)	LF	$14.28	0	0	$	-
Sidewalk (5')(Concrete)	SY	$43.48	0	0	$	-
Subtotal					**$**	**1,313,698**

Bridges & Channel Crossings

Yellowstone River Bridge (Cost data from Table 6-3, Hydraulics Report dated November 2011)	$	-
New Five Mile Creek Bridge (Cost data from Table 6-2, Hydraulics Report dated November 2011)	$	2,741,250
Replace Existing Five Mile Creek Bridge for secondary improvements	$	-
Remaining Hydraulic Features (Cost data from Table 6-3, Hydraulics Report dated November 2011)	$	50,625
RR Bridge (Cost data from Bridge Selection Report dated August 2011)	$	-
Subtotal	**$**	**4,105,573**

Mobilization	@	7%	$	287,390
Subtotal			**$**	**4,392,963**
Miscellaneous Items	@	10%	$	439,296
Subtotal			**$**	**4,832,260**
Contingency (% of total)	@	18%	$	869,807
Subtotal			**$**	**5,702,067**
Construction Engineering (Percentage of Subtotal)	@	8%	$	456,165
Preliminary Engineering (Percentage of Subtotal)	@	8%	$	456,165

Construction Costs Subtotal **$ 6,614,397**

Right-of-Way

Land Use	Units	Unit Price	Quantity		Cost
Agricultural (Rural)	AC	$ 3,000	*0*	$	-
Agricultural (Urban)	AC	$ 10,000	*0*	$	-
Res - Rural (Acres)	AC	$ 25,000	*20*	$	500,000
Res - Occupied Home	EA	$ 200,000	*3*	$	600,000
Commercial (Urban/Ru	AC	$ 100,000	*0*	$	-
Exempt Property	AC	$ 3,000	*0*	$	-
Right-of-Way Costs Subtotal				**$**	**1,100,000**

Utility Relocation *UNKNOWN*

Grand Total **$ 7,714,397**

Unit costs are based on 2010 & 2011 MDT Average Prices, Right-of-Way costs based on current (2011) real estate prices

Method of estimating is based on the alignment and cost information presented in the Billings Bypass FEIS

PURPLE Segment (STA 212+76 to STA 275+00)

Construction Costs

Item	Units	Unit Price	2-Lane Section Quantity	3-Lane Section Quantity		Cost
PMBS (Aggregate)	TON	$23.78	0	23,699	$	563,441
Crushed Base Course (CBC)	CY	$17.49	0	17,764	$	310,692
Cover	SY	$0.43	0	48,665	$	20,926
Asphalt Cement	TON	$628.11	0	1,280	$	803,985
Seal	TON	$516.80	0	83	$	42,860
Tack	GAL	$2.50	0	1,330	$	3,325
Excavation/Emb	CY	$6.97	228,906		$	1,594,330
Curb & Gutter (Concrete)	LF	$14.28	0	0	$	-
Sidewalk (5')(Concrete)	SY	$43.48	0	0	$	-
Subtotal					**$**	**3,339,559**

Bridges & Channel Crossings

Yellowstone River Bridge (Cost data from Table 6-3, Hydraulics Report dated November 2011)	$	-
New Five Mile Creek Bridge (Cost data from Table 6-2, Hydraulics Report dated November 2011)	$	-
Replace Existing Five Mile Creek Bridge for secondary improvements	$	-
Remaining Hydraulic Features (Cost data from Table 6-3, Hydraulics Report dated November 2011)	$	325,650
RR Bridge (Cost data from Bridge Selection Report dated August 2011)	$	-
Subtotal	**$**	**3,665,209**

Mobilization	@	7%	$	256,565
Subtotal			**$**	**3,921,774**
Miscellaneous Items	@	10%	$	392,177
Subtotal			**$**	**4,313,951**
Contingency (% of total)	@	20%	$	862,790
Subtotal			**$**	**5,176,742**
Construction Engineering (Percentage of Subtotal)	@	8%	$	414,139
Preliminary Engineering (Percentage of Subtotal)	@	8%	$	414,139

Construction Costs Subtotal **$ 6,005,020**

Right-of-Way

Land Use	Units	Unit Price	Quantity		Cost
Agricultural (Rural)	AC	$ 3,000	*20*	$	60,000
Agricultural (Urban)	AC	$ 10,000	*24*	$	240,000
Res - Rural (Acres)	AC	$ 25,000	*20*	$	500,000
Res - Occupied Home	EA	$ 200,000	*1*	$	200,000
Commercial (Urban/Ru	AC	$ 100,000	*0*	$	-
Exempt Property	AC	$ 3,000	*0*	$	-
Right-of-Way Costs Subtotal				**$**	**1,000,000**

Utility Relocation *UNKNOWN*

Grand Total **$ 7,005,020**

Unit costs are based on 2010 & 2011 MDT Average Prices, Right-of-Way costs based on current (2011) real estate prices

Method of estimating is based on the alignment and cost information presented in the Billings Bypass FEIS

GREEN Segment (STA 10+00 to STA 85+15)

Construction Costs

Item	Units	Unit Price	2-Lane Section Quantity			Cost
PMBS (Aggregate)	TON	$23.78	16,577		$	394,107
Crushed Base Course (CBC)	CY	$17.49	12,979		$	227,000
Cover	SY	$0.43	33,363		$	14,346
Asphalt Cement	TON	$628.11	895		$	562,129
Seal	TON	$516.80	56		$	29,125
Tack	GAL	$2.50	977		$	2,442
Excavation/Emb	CY	$6.97		38,418	$	267,581
Curb & Gutter (Concrete)	LF	$14.28	0		$	-
Sidewalk (5')(Concrete)	SY	$43.48	0		$	-
Subtotal					**$**	**1,496,732**

Bridges & Channel Crossings

Yellowstone River Bridge (Cost data from Table 6-3, Hydraulics Report dated November 2011)	$	-
New Five Mile Creek Bridge (Cost data from Table 6-2, Hydraulics Report dated November 2011)	$	-
Replace Existing Five Mile Creek Bridge for secondary improvements	$	-
Remaining Hydraulic Features (Cost data from Table 6-3, Hydraulics Report dated November 2011)	$	207,225
RR Bridge (Cost data from Bridge Selection Report dated August 2011)	$	-
Subtotal	**$**	**1,703,957**

Mobilization	@	7%	$	119,277
Subtotal			**$**	**1,823,234**
Miscellaneous Items	@	10%	$	182,323
Subtotal			**$**	**2,005,557**
Contingency (% of total)	@	18%	$	361,000
Subtotal			**$**	**2,366,557**
Construction Engineering (Percentage of Subtotal)	@	8%	$	189,325
Preliminary Engineering (Percentage of Subtotal)	@	8%	$	189,325

Construction Costs Subtotal **$ 2,745,206**

Right-of-Way

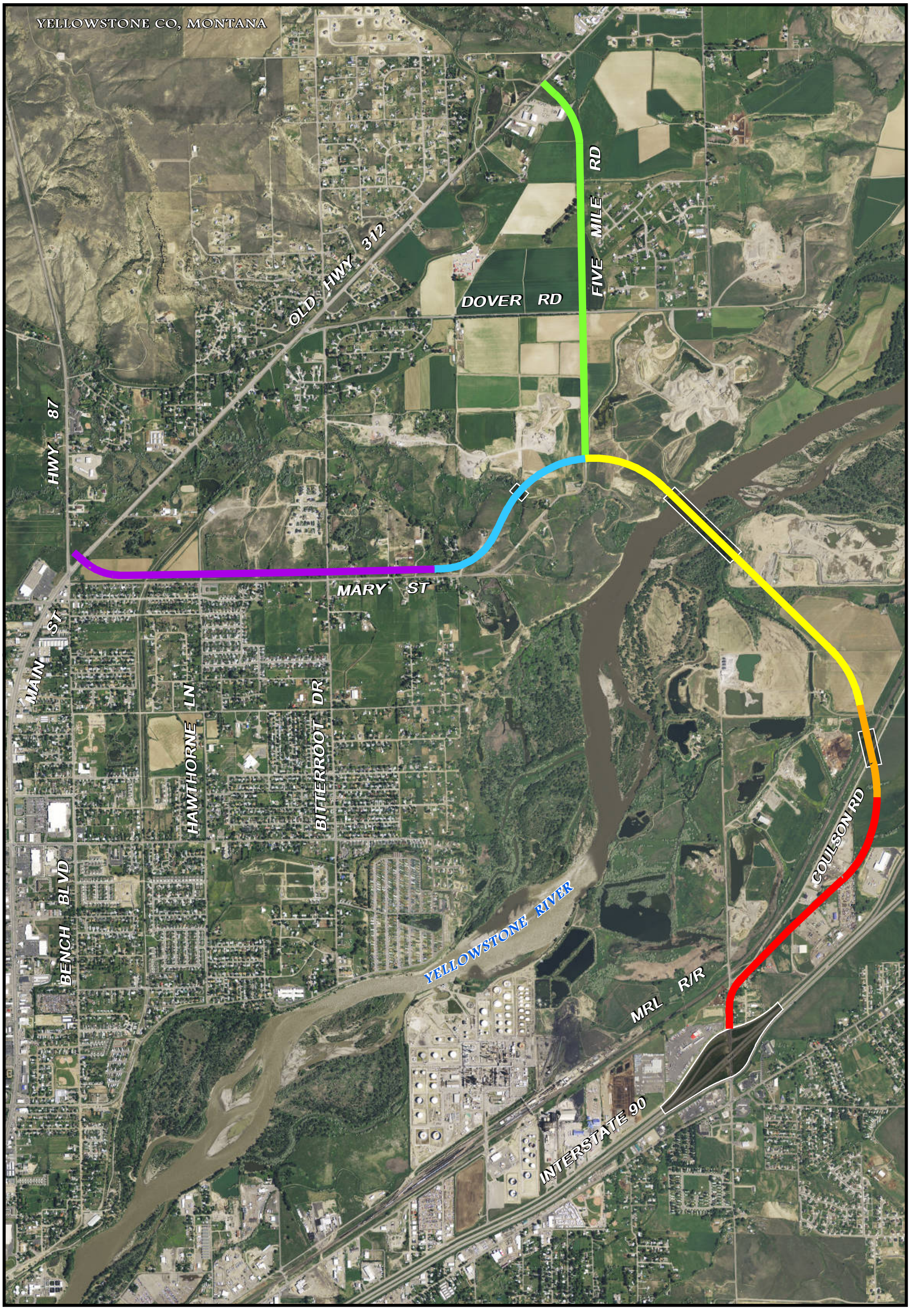
Land Use	Units	Unit Price	Quantity		Cost
Agricultural (Rural)	AC	$ 3,000	*0*	$	-
Agricultural (Urban)	AC	$ 10,000	*0*	$	-
Res - Rural (Acres)	AC	$ 25,000	*26*	$	650,000
Res - Occupied Home	EA	$ 200,000	*0*	$	-
Commercial (Urban/Ru	AC	$ 100,000	*0*	$	-
Exempt Property	AC	$ 3,000	*0*	$	-
Right-of-Way Costs Subtotal				**$**	**650,000**

Utility Relocation *UNKNOWN*

Grand Total **$ 3,395,206**

Unit costs are based on 2010 & 2011 MDT Average Prices, Right-of-Way costs based on current (2011) real estate prices

Method of estimating is based on the alignment and cost information presented in the Billings Bypass FEIS



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