Ivins City Staff Report
City Council Meeting 1/16/20

Agenda Item: Approval of expenditure for engineering services to prepare Transportation Master Plan, Impact Fee Facilities Plan, and Impact Fee Analysis

Submitted by: Thomas J Jorgensen, P.E., Assistant Public Works Director

Recommended City Council Action:
Approve expenditure of $57,000 for engineering services to prepare Transportation Master Plan, Impact Fee Facilities Plan, and Impact Fee Analysis plus an additional $3,000 for contingency for a total of $60,000

BACKGROUND:

Ivins City last updated the Master Plan in 2016. With the high level of growth that Ivins is currently experiencing, it is required by the state's code that the studies be updated every five years. The master plan identifies all capital facilities that are needed regardless of whether a specific project is growth related. It also provides a funding plan for these facilities, identifies projects that are related to growth, and provides an analysis calculating the maximum allowable impact fee that can be charged to new development.

Some of the major goals for this project include the following: updating traffic projects, population projections, and land use changes; review bicycle and pedestrian network plan; update roadway cross-sections; identify level of service for all roads and significant intersection; provide cost estimates for recommended improvements; further evaluate the "Wester Corridor"; develop an Intelligent Transportation System plan; and provide a funding analysis.

In addition to these goals, Ivins City is planning on hiring a specialty firm to conduct a street condition analysis. The firm would analyze and score the maintenance condition of all existing streets using best available technologies. Using that information, the firm will provide a recommended level of funding to properly maintain the City's current roadway network. The master plan will take this analysis and integrate it into the funding analysis.

The City has received two $50,000 grants, a total of $100,000, for these planning projects.

Staff has submitted a request for proposals for engineering services to prepare the Transportation Master Plan, not including the street condition analysis, to several engineering firms.

FINDINGS AND ANALYSIS:

Staff received one proposal. The proposal was submitted by Horrocks Engineers. Horrocks Engineers completed the master plan that was prepared in 2016. After reviewing the proposal Staff is recommending the selection of Horrocks Engineers and are confident of their qualifications and reasonable pricing. Staff requests a total expenditure of $60,000, which includes a contingency of $3,000 to help account for possible unforeseen expenditures during the planning process.

Council should anticipate that between the master plan preparation and the street condition analysis to spend $100,000 total. It should be noted that Ivins City will be reimbursed $100,000 for these two projects, 50% from a Community Impact Board grant and 50% from the Dixie MPO.

SUPPORT MATERIALS:

- Horrocks Engineers Proposal

FINANCIAL IMPACT:

The expense has been budgeted.
GL 44-40-720: $60,000 ($50,000 to be reimbursed by the Community Impact Board grant and another $50,000 to be reimbursed by the Dixie MPO)

Respectfully Submitted: _____

Thomas J Jorgensen, P.E., Assistant Public Works Director

Content Review: _____

Dale Coulam, City Manager

SUBMITTED TO

IVINS CITY
UTAH

PROPOSAL FOR ENGINEERING / FINANCIAL SERVICES TO UPDATE

THE TRANSPORTATION MASTER PLAN



SUBMITTED BY

HORROCKS
ENGINEERS

IVINS CITY UTAH

January 14, 2020

Chuck Gillette, Director of Public Works
Ivins City
55 Main Street
Ivins UT 84771

RE: Proposal for Engineering / Financial Services to update the Transportation Master Plan

DEAR SELECTION COMMITTEE

Horrocks Engineers is pleased to submit our proposal to update the Ivins City Transportation Master Plan (TMP), a plan that Horrocks Engineers prepared in April 2016. As a full-service engineering firm, we have spent the past 50 years assisting many rural communities with planning, designing and constructing their growing communities. We have provided similar transportation planning services for many communities in Washington County, including Ivins, St. George, Washington, and Hurricane as well as many other communities across Utah.

We have witnessed the steady growth that Ivins is experiencing and appreciate that this growth is expected to continue for several years. Due to these conditions, we expect this master plan update to be of significant importance to the City in meeting its future transportation infrastructure needs and goals. We also realize that master plans have the potential to generate significant interest within the community, as well as opening doors for opportunities to construct transportation projects. We will work closely with the City to understand the key values that are important to the community for this update so that we can weave them into the final product. Our role as transportation professionals is to use sound principles to predict realistic future conditions based on the anticipated growth and land uses of the City, and provide practical recommendations to accommodate the City's future transportation needs.

THE HORROCKS TEAM IS A GREAT FIT FOR THIS PROJECT BECAUSE IT OFFERS IVINS THE FOLLOWING ADVANTAGES

- A truly local team whose members all work and reside in Washington County, are actively involved in solving local transportation issues on a daily basis, and are immediately available to respond to project issues.
- The most recent update to the Ivins City Transportation Master Plan in 2016. We are intimately familiar with the document and will require less effort to get up to speed on how to proceed with the update process. We understand the guiding principles that the City holds for transportation and the issues that will be addressed in this plan. We are familiar with the City's staff, policies, and procedures.
- Our portfolio of recent experience in performing transportation planning and design for Ivins and many of the surrounding communities within Washington County. Also, as the on-call engineering firm for the Dixie Metropolitan Planning Organization (DMPO) for the past decade, we help them maintain the Washington County regional travel demand model which will be the primary tool for future travel demand analysis in the TMP update.
- Our experience with master transportation studies and our ability to produce a practical plan that the City can use to guide its infrastructure development.
- Our knowledge of Active Transportation planning in the area having helped many of the local communities, Dixie State University, Washington County, and UDOT with active transportation plans and projects.

We appreciate the opportunity to submit this proposal for your consideration. We enjoy working with Ivins City staff and we are looking forward to helping them with this important project. We are committed to mobilizing our resources to complete the project on time and within budget and are immediately available to begin working on the project. Please feel free to call me at 435-986-7888 or email at lee@horrocks.com with any questions.

Sincerely,

Lee Cabell

HORROCKS ENGINEERS

Lee Cabell, Principal-in-Charge

PROJECT TEAM AND APPROACH

COMPANY PROFILE

Horrocks Engineers has been providing Washington County municipalities with professional transportation planning and design services out of our local St. George office since 2005. We are the area's recognized transportation leader in all aspects of public transportation projects, focusing on assisting municipalities develop, finance, and implement their Capital Facility Plans (CFP).

Our transportation planning capabilities have most recently been demonstrated through projects such as the Ivins TMP, St. George Master Traffic and Transportation Study, Washington TMP and Impact Fee Update, Hurricane TMP and Impact Fee, and the DMPO Travel Demand Model Update.

PROJECT TEAM

We recognize that the most important element in any project is the project team. A key advantage of our team is the capability of our local staff to perform all the work on the project. Each key team member is based in the St. George office and brings unique previous working experience from the Washington County area that will benefit this project. The organizational chart outlines the make-up of our team members. Resumes of each team member are provided in the Appendix.

Aron Baker, PE - Project Manager

Aron has over 25 years of experience varying in multiple disciplines including bike/pedestrian route design, community transportation planning, traffic planning, and roadway and intersection design. Some of his previous projects include Ivins TMP, Ivins Traffic Impact Fee Analysis, St. George Master Traffic and Transportation Master Plan, Hurricane TMP and Impact Fee Plan, Washington TMP and Impact Fee Plan, 2012-2023 DMPO On-Call, and Washington City Active Transportation Plan.

Lee Cabell, PE - Principal in Charge

Lee has over 25 years of experience in multiple transportation disciplines from multi-use trail design, traffic planning, community master plans, roadway design, and environmental analysis. His role as Principal-in-Charge will be to lead the quality control efforts and ensure that Aron has the staff and resources required to perform the work. Some of his previous projects include Ivins St. George Master Traffic and Transportation Study and Washington TMP and Impact Fee Plan.

Michael Heaps, PE - Travel Demand Modeling

Michael has over 15 years of experience in traffic operations, planning analysis, and traffic modeling. Combined with his knowledge in interchange and freeway traffic operations; he has worked on the Northern Corridor Project, 2012-2023 DMPO On-Call, and St. George Master Traffic and Transportation Study.

Emily Andrus - Active Transportation

A recent graduate, Emily's experience consists of traffic modeling and analysis, transportation planning, bike and pedestrian planning and design and street lighting analysis. She has worked on the St. George Master Traffic and Transportation Study and various traffic impact studies. Her role will be to focus on the active transportation plan and updating the street lighting plan.

Tyrone Atkin, PE - Roadway Design

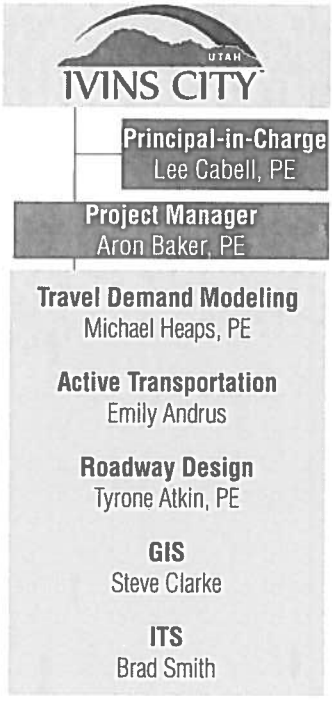
Tyrone has over 8 years of experience in roadway and trail design. He has worked on Ivins 600 West Alignment and Roundabout Concept, Snow Canyon Parkway and 2000 N Roundabout, and Washington City Transportation Master Plan and Impact Fee Update. His role will be to provide engineering design support for typical section evaluations and in generating cost estimates for alternatives analysis, the CFP, and impact fees.

Steve Clarke - GIS

Steve has over 20 years of experience as a GIS Analyst, with a vast knowledge of ESRI applications, GIS applications, HTML, JavaScript, Python, and other web services. Past projects include DMPO ITS Communications Study Update, and St George Master Traffic and Transportation Study. His role will be to develop all the GIS mapping and deliverables.

Brad Smith - ITS

Brad has over 17 years of experience working as a Fiber Design/Field Manager with knowledge ranging in fiber mapping, design, and inspections. Some of his previous work includes SR-18, Bluff and Sunset Intersection Improvements; I-15 MP 4-5 Design; UDOT On-Call Fiber Optics Supports; and the DMPO ITS Communications Study Update. Brad's role will be to assist with the development of the ITS Plan and coordinate this effort with the regional ITS planning done by DMPO and UDOT.



APPROACH TO THE PROJECT

All communities have unique features such as topography, climate, waterways, neighborhoods, landforms, cultures, and history. Therefore, using a standard "boiler plate" approach to address transportation needs is a formula for failure. Many transportation plans fail to fully understand and identify the vision and transportation problems of a community. Too often planners and engineers rush to the analysis of solutions and recommendations that meet the technical needs before fully understanding the details of transportation, social, environmental, and other community issues. Therefore, our approach is based on updating the plan to reflect and incorporate the unique values of Ivins City.

In order to accomplish the stated objectives and goals delineated in the RFP in the most efficient manner possible, we suggest the following work plan:

TASK 1 - ANALYSIS OF EXISTING CONDITIONS

Task 1 is broken into the following elements:

- Intersection Counts and Traffic Volumes
- Accident Analysis
- Intersection and Roadway Level of Service (LOS) Analysis
- Trail Network Map Update

We understand that the City would like all of the peak hour traffic counts for the intersections shown in Figure 6 of the existing TMP updated. To accomplish this task, we will work with the City to develop a detailed data collection and analysis plan to identify and verify the needed data, data sources, and the most efficient way to obtain the data. We will discuss what data is available and determine with staff what data is essential, keeping in mind the limited budget. The peak hour

traffic counts will be used to refine and calibrate the DMPO model specific to Ivin's street network in order to produce more accurate future traffic conditions.

We will obtain accident reports for the past three years from the Santa Clara/ Ivins City Police Department and UDOT's Numetrics Crash Database and provide collision descriptions to ascertain any accident trends and potential safety problems. If patterns are determined, solutions to prevent future accidents will be discussed and recommended that may include such measures as signing, striping, traffic control devices, or roadside barrier.

Upon completion of traffic counts and compiling all traffic data, LOS analyses will be completed. The LOS data will be used to update Figure 7 of the existing TMP. We will use the latest version of the Synchro traffic analysis software to perform the LOS analyses. To complement the roadway, traffic, and typical section analysis, updates to the Trail Network Map from the newly approved Trail Master Plan will be inserted into the updated TMP.

TASK 2 – ANALYSIS OF FUTURE CONDITIONS

The completion of Task 1 will provide the needed information to forecast and evaluate future traffic conditions for 2050 and interim years consistent with the DMPO Long Range Plan phasing dates. The DMPO's regional travel demand model, CUBE, will be used to project Ivins' future growth trends. Horrocks has been uniquely involved in the continual updating of the DMPO model over the past ten years implementing more accurate input data so output delivered by the model more accurately predicts future trends in growth.

We have also been instrumental in assisting the DMPO with the development of their Long Range Plan. Because of our intimate involvement and knowledge of the inter-workings of the DMPO model, we will save the City time and money by quickly gleaning the necessary information needed from the model. We will collaborate with staff to provide a base level review of the model output and double check the model's input data for accuracy. This will meet the goal of obtaining defensible traffic projections for 2020 through 2050 which will be used to develop recommendations of infrastructure needs and traffic impact fees.

Upon obtaining the 30-year forecasts and current proposed developments, the classification of roads can be reviewed to ensure that capacity needs are met for the future and potential connectivity problems are addressed. UDOT's Functional Classification Map will also be reviewed to compare how the two plans integrate and discover if there are any changes that should be made in either plan so opportunities for vital funding is not lost. The "Western Corridor" will be reviewed to verify adequate integration with existing and proposed plans.

Road cross-sections are guiding standards that help staff to maintain consistency in road design. With our years of community planning experience, we are well-suited to helping Ivins review the current cross-sections that are used in development and road design. One objective that has been a priority for Ivins has been the emphasis of considering bicycles and pedestrians in street design, or "complete street" principles. We will incorporate these principles into our cross- section review, evaluation, and recommendations for a complete Active Transportation Plan.

TASK 3 – SPECIAL CONSIDERATIONS

During the TMP update process in 2009, Ivins made the decision that modern roundabouts will be selected as the preferred traffic control for intersections with long delays to improve LOS. We will evaluate key intersections throughout the city to provide recommendations as to where roundabouts could be placed to preserve LOS and increase safety for all users. In an effort to continue to plan for the integration of modern roundabouts in the community, estimates and capacities for roundabouts versus signals will be evaluated.

One thing that could be added into the TMP would be to highlight and discuss corridors and intersections of special concern and identify a plan for these locations. These could be locations that seem to have unique issues or receive a disproportionate number of complaints from residents relating to excessive speed, cut-through traffic, difficult pedestrian crossings, poor sight distance, higher than expected crash histories, high usage from vulnerable populations (elderly, children), etc. During the TMP process, we can work with the City and residents to identify these locations, understand the issues, and recommend special treatments to address them. These could involve traffic calming measures, special pedestrian crossing treatments, green bike lanes, wider sidewalks, location-specific cross sections, or a variety of other treatments specific to the location and issue to be addressed. These special projects could then be added into the CFP and factored into the priorities and funding.

TASK 4 – ITS PLAN

Horrocks recently completed the Dixie ITS Communications Plan Update that coordinated the Intelligent Transportation system needs of stakeholders within the DMPO area. This knowledge and experience will prove to be invaluable when preparing the City's first ITS Plan, identifying key goals, and developing strategies to reach these goals.

TASK 5– STREET LIGHTING PLAN

The streetlight plan will be updated from the prior plan to match the current program. The plan will be revised to be meet the latest City street lighting specifications with GIS mapping, cost estimates, and funding methods identified.

TASK 6 – CAPITAL FACILITIES PLAN (CFP) AND IMPACT FEE UPDATE

We will add any new recommended projects to the CFP as well as verify and update cost estimates of projects already in the CFP using the "Net Present Value" standard and then assist with funding options. One thing that sets Horrocks apart from other firms is our experience with traffic design and construction that we bring to the planning process when evaluating alternatives and generating cost estimates. This experience assures the City that as they develop the CFP budget and calculate impact fees, they are allocating sufficient resources to implement the plan.

The impact fees will be updated consistent with the new CFP to comply with state regulations and identify the proportions of projects that can be funded with impact fees and amount of legally justifiable fees that can be charged.

TASK 7 – PROJECT COORDINATION, SCHEDULE, AND DELIVERABLES

Regular and consistent coordination with Ivins staff is essential in keeping the project on schedule and within budget. We expect to exceed staff's expectations by keeping them informed on a regular basis through e-mails, phone calls, meetings, and status reports. We will be available to meet with the City Council and Planning Commission as appropriate.

Horrocks is able to provide the periodic data, plans, and reports that are requested. We will also prepare the necessary exhibits, maps, drawings, and information to support the City in the planning and execution of the open house.

FIRM EXPERIENCE AND REFERENCES

FIRM EXPERIENCE

The Horrocks team's strong qualifications are evident by each individual team member's reputation in their specific area of expertise. By integrating each team members capabilities, it produces the best possible outcome. Our team is able to draw on the full potential of each individual to ensure that sufficient resources are available to Ivins City; to successfully provide the quality transportation planning and engineering needed to complete the project in a thorough and timely manner.

WE OFFER IVINS CITY

- The ability to efficiently complete the transportation master planning update process with a core team based in our local St. George office.
- The understanding and experience to implement an approach regarding the community's vision statement and specific transportation goals based on previous involvement with Ivins City and Washington County transportation issues.
- A strong technical expertise to address the detailed travel demand modeling, traffic engineering, capital improvements, and engineering feasibility elements of the project, and to develop sound technical options, alternatives, and solutions.
- The assurance that Horrocks Engineers is well acquainted with the City's Transportation Master Plan from our previous work in updating the plan in 2009 and 2016.
- Our efficiency and dedication which are demonstrated by an abundance of understanding, commitment to fulfill the project requirements within the allocated time frame and budget, and the resources to perform the work. Our reputation and track record on similar projects are the best evidence of our capability to meet this commitment.
- Experience in walkable/bikeable community planning, which includes: trail design and planning, sidewalk design, bicycle lane design, traffic calming measures, safe routes to school and more.

MASTER PLANNING, TRAVEL DEMAND MODELING, AND TRAFFIC ANALYSIS

The expertise of Horrocks Engineers in the field of travel demand modeling is well known throughout the transportation planning community in Utah including UDOT, DMPO, and numerous local entities. We have utilized regional travel demand models for transportation projects in Ivins, St. George, Hurricane, Washington City, Riverton, Draper, Sandy, Kaysville, Syracuse, South Jordan, Bountiful, West Bountiful, Provo, Orem, Lehi, Pleasant Grove, American Fork, Lindon, Ogden, Heber, and Farmington in completing master plans, area plans, corridor studies, environmental documents, and roadway design projects.

Recent projects that demonstrate Horrocks' ability to provide the detailed technical modeling required for this project include:

- St. George City Traffic and Transportation Study
- City of Hurricane Transportation Master Plan Update
- DMPO Regional Travel Demand Model Update
- Washington City Traffic and Transportation Master Plan
- Washington City Road Impact Fee Update
- Bluff Street Corridor Study
- River Road Capacity Study

ENGINEERING SOLUTIONS

Horrocks has a proven history of working with local governments and regional agencies on transportation projects. Our ability to work with local governments and state and federal agencies to develop appropriate and context sensitive solutions has been demonstrated multiple times. One advantage our team offers is the actual roadway design and construction experience and understanding that we bring to the table in support of our transportation planning efforts. Because we have actually designed and constructed numerous projects from cities' Capital Facility Plans, we understand how to properly evaluate the construction feasibility and provide realistic cost estimates. We have worked with local municipalities on several design and construction projects that provide us with a better understanding of the local construction costs for capital improvement projects including:

- Snow Canyon Drive and Center Street Roundabout
- I-15 MP 8-10 Widening, Auxiliary Lanes and Mall Drive Underpass
- Mall Drive Roadway and Bridge
- SR-7; Southern Parkway
- SR-18; Bluff and Sunset Intersection Improvements
- I-15 400 South Pedestrian Underpass

RESOURCES

Horrocks has over 550 employees at our disposal with expertise in all the critical technical areas of the project to support our local 18-person office. Our core team members have some of the best hands- on knowledge of transportation planning issues in Southern Utah with specific knowledge and experience in Ivins. We utilize the latest computer software for transportation, travel demand, land planning, demographics analysis, socio-economic analysis, GIS, traffic operations, scheduling, budget tracking, cost estimating and project management. We have allocated our resources so that our local staff is immediately available for this project.

QUALITY CONTROL/QUALITY ASSURANCE

To ensure accuracy and quality are maintained, we have developed our own internal TMP QC/QA process that is strictly followed. This process involves the following key components:

- Travel Demand Modeling and Traffic Analysis – Review of the travel demand model and traffic operations analyses by independent technical staff to verify the appropriate methodologies were followed for calibration and execution and that the results are reasonable.
- Engineering – Review of engineering criteria, quantities, and cost estimates by independent engineer's to verify accuracy of engineering data and results.
- Legal Compliance – Review of impact fee methodology by independent planning and legal staff to verify compliance with current State of Utah legal requirements.
- Technical Editing – Review of the final report, figures, text, exhibits, etc. by our professional technical editing staff for spelling, grammar, punctuation, consistency, and other non-critical errors.
- As the Principal-in-Charge, Lee will ensure these QC/QA procedures are followed.

REFERENCES

Please refer to the chart below showing a summary of projects completed by Horrocks Engineers, including a contact list for each.

PROJECT	DATE	WORK PERFORMED	REFERENCE
Ivins City Transportation Master Plan, Ivins, UT	2015	The study included analyzing current traffic conditions within Ivins City. Using the latest proposed land use plans, future traffic demands were identified and recommendations made to accommodate growth and maintain quality of life for local residents. The transportation planning efforts included working with local stakeholders, Ivins City staff, and the DMPO to build consensus regarding the recommended improvements. The study included evaluating street cross sections, the Western Corridor, and the inclusion of a newly approved trail plan. The findings of the study were used to identify construction costs for planned improvements and update traffic impact fees.	Chuck Gillette Public Works Director 435-634-0689
Washington City Transportation Master Plan, Washington, UT	2014	Project included: travel demand modeling, traffic analysis, typical section evaluation, roadway classification, capital improvement recommendations and plan development, and traffic impact fee analysis.	Mike Shaw Public Works Director 435-656-6319
Dixie MPO On-Call Engineering Services, Washington County, UT	2012-2023	Horrocks is providing on call traffic engineering services with respect to the DMPO Cube Travel Demand model. Services include updating the Model to reflect latest land use plans and population projections, updating the model network to reflect latest transportation plans from state and local governments, evaluating various roadway projects using the travel demand model measurements of effectiveness, developing interim year models, helping coordinate various traffic studies in the area to maintain consistency with projected traffic volumes, and preparing cost estimates to be used in the development of the MPO's Long Range Plan.	Myron Lee DMPO Director 435-673-3548
St. George Master Traffic & Transportation Study, St. George, UT	2007-2019	Project included travel demand modeling; traffic analysis; roadway classification evaluation; integration of bike paths, trails and public transit; capital improvement recommendations and plan development; cost estimating; and stakeholder coordination.	Cameron Cutler Public Works Director 435-627-4050
Washington City Active Transportation Plan, Washington, UT	2016	As a subconsultant to Alta Planning and Design, Horrocks assisted the City in developing their active transportation plan. Work included: development of goals, preparation of base mapping, pedestrian and bike data collection, development and implementation of public outreach plan, participated in community Steering Committee meetings, recommended street crossing sections, reviewed design and guided plan to integrate into the City's Transportation Master Plan, and prepared cost estimates and project phasing.	Mike Shaw Public Works Director 435-656-6319
Dixie MPO ITS Communications Plan, Washington County, UT	2019	Horrocks assisted the municipalities in the St. George/Dixie region to create short, medium, and long-rang plans for ITS implementation on City and State-owned transportation facilities. Some of the ITS elements included: traffic signal interconnect, variable message signs, CCTV cameras, and fiber optic connectivity. Horrocks created an interactive online GIS and designed a custom GIS StoryMap to display geographic data on maps to inform users of project statuses for the different cities throughout Washington County.	Myron Lee DMPO Director 435-673-3548
Snow Canyon Drive and Center Street Roundabout, Ivins, UT	2012	Horrocks Engineers designed a modern roundabout for the City of Ivins at the gateway to Snow Canyon State Park and to Tuacahn Center for the Arts. Located on Center Street at Snow Canyon Drive, this multi-lane roundabout efficiently and safely conducts vehicles through the intersection. Ivins chose a roundabout to replace a two-way stop sign that required police assistance whenever patrons would exit a nightly event at the 2,200-seat Tuacahn Center for the Arts. The roundabout operates smoothly with a much higher capacity than a stop sign or signal eliminating the need for any police involvement. Horrocks Engineers implemented the latest state-of-the-practice criteria for roundabouts along with Ivins City design and construction standards for various roadway, pedestrian, and utility features.	Chuck Gillette Public Works Director 435-634-0689

IVINS CITY UTAH

FEE PROPOSAL

Our cost estimate provided on the following page is based on our understanding of the work from our previous experience with City staff, the information presented in the RFP, and our approach to the work as outlined in the preceding sections of this proposal. We understand that the City has a limited budget for the project and we have made every effort to develop our cost proposal accordingly. Therefore, our cost proposal reflects the actual amount of time and effort we feel will be necessary to complete the tasks in a professional and thorough manner and provide the City with the expected quality product.

Upon selection, our first item of business will be to sit down with the City and have a detailed discussion of the project scope and budget to make sure that we all have a shared understanding of what is expected and what is required to meet that expectation. We are confident that this negotiation process will produce a refined scope of work and cost estimate that will allow us to complete the work within the City's budget parameters.

We should point out that the effort required to collect the traffic count data that will be required to properly update the current Master Plan, and Figure 5 "Existing Volumes", is fairly significant and may make our cost proposal, at first glance higher than expected. We are prepared in our estimate to cover this effort so there are no surprises when discussing the details of our costs. This count data would provide the data needed to analyze traffic trends, perform the existing conditions analysis, predict future growth in a timely and cost efficient manner, and will help calibrate the DMPO CUBE model for the Ivins area as required by the RFP.

We can also discuss with the City ways to streamline the collection effort and still provide the data required to perform a sound analysis.

MANHOUR AND FEE ESTIMATE

Task & Description	Total Cost	Total Hours	Project Manager Aron	QC/QA Engineer Lee	Traffic Engineer Mike	ITS Coordinator Brad	Staff Engineer II Tyrone	E.I.T. Engineer Emily	Jr. Field Tech II Stu	Sr. Design Technician Shannon	Sr. GIS Analyst Steve
BILLING RATE			$167	$213	$169	$138	$152	$94	$51	$96	$123
TASK 1 - Analysis of Existing Conditions											
Collect Traffic Data	$9,554	94	8		12		8	24	34	0	8
Compare Current MPO Model to Ivins Land Use Data (See Task 2)	$1,076	8			2						6
Accident Analysis	$167	1	1		0			0			
Intersection Level Of Service	$2,458	15	2		12					1	
Roadway Level Of Service	$939	6	1		4					1	
Incorporate Trail Map	$248	2			0		1			1	
TASK 2 - Analysis of Future Conditions											
Traffic Model Review, Comparison and Forecasting	$3,553	27	2	1	10			14			
Road Classification Review and Developer Plans	$749	5	2		1		1	1		0	
Road Cross-Section Review	$922	7	2	0	0		2	2		1	
TASK 3 - Special Considerations											
Intersection Traffic Control	$843	5	1		4						
TASK 4 - ITS Plan											
ITS Plan map, specifications, and details	$9,210	70	10			24	8			16	12
TASK 5 - Street Lighting Plan											
Street Lighting Plan	$3,440	28	2			0	8			12	6
TASK 6 - Capital Facilities Plan and Impact Fee Update											
Review Plan, Update Costs, Prepare List	$4,194	30	12		2	0	6	10			
TASK 7 - Project Coordination, Schedule & Deliverables											
Kickoff Meeting	$1,836	12	2	2	2	0	2	2	0		2
Meeting with City-Identified Developers	$522	4	2		0			2			
Meeting with Santa Clara & St. George	$522	4	2		0			2			
Monthly Team Meetings	$1,532	10	4		4			2			
Work meeting with City Council & Planning Commission	$860	6	2		2			2			
Public Open House	$1,210	10	2		2		1	2	2	1	
Public Hearing at Planning Commission Meeting	$672	4	2		2						
Public Hearing at City Council	$860	6	2		2			2			
Reports for Deliverables	$6,456	50	12		4	0	2	16			16
Total Labor	**$51,823**	**404**	**73**	**3**	**65**	**24**	**39**	**81**	**36**	**33**	**50**

Direct Costs: (10%) $5,180

PROJECT TOTAL **$57,003**

IVINS CITY
UTAH

APPENDIX

Resumes

Previous Project Report (attached separately)

Ivins City Transportation Master Plan Update, April 2017

IVINS CITY

RESUMES



ARON BAKER PE - Project Manager

Aron is a senior transportation engineer at Horrocks. He has over 25 years of municipal engineering experience, including 14 years with the City of St. George. His responsibilities include transportation master planning; capital facilities planning; traffic studies and analysis; safety evaluations; and active transportation facility planning and design. He is involved in the design and construction of traffic signals, roundabouts, and several roads and bridges. As the project manager, Aron is committed to the project and will ensure that the project team will have the resources, leadership, and direction necessary to deliver the goals of the project.

Education: B.S. Civil Engineering Brigham Young University
Professional Registrations Utah PE No. 181351
Experience:

- 1995, 2006 & 2015 St. George City Traffic and Transportation Master Plan Update - St. George, UT
- Ivins City Master Traffic and Transportation Study - Ivins, UT
- Washington City Traffic Impact Fee Study - Washington, UT
- Washington City Master Transportation Plan - Washington, UT
- Dixie MPO Regional ITS Communications Plan - Washington County, UT
- Snow Canyon Drive and Center Street Roundabout - Ivins, UT
- River Road Corridor Study - St. George, UT
- Dixie State College Traffic, Pedestrian and Parting Study, - St. George, UT



LEE CABELL PE - Principal-in-Charge

Lee is a Principal of Horrocks Engineers with 27 years of experience as a project manager and roadway, safety, traffic, and signal/lighting designer. His projects have included roadway design, roundabout design, traffic signal design, highway lighting design, striping and signing design, safety analysis, intersection design and operations analysis, and traffic control design. His general experience also includes transportation master planning, corridor studies, access management studies and design, traffic impact studies, environmental analysis, and public involvement. His role as Principal-in-Charge will be to lead the quality control efforts and ensure that Aron has the staff and resources required to perform the work.

Education: B.S. Civil Engineering M.S. Civil Engineering
Professional Registrations Utah PE 188020 Arizona PE 49885 Nevada PE 21596
Experience:

- I-15 MP 8-10 Widening and Mall Drive Underpass - St. George, UT
- Ivins City Master Transportation Plan and Capital Facilities Plan - Ivins, UT
- Snow Canyon Drive and Center Street Roundabout - Ivins, UT
- St. George Transportation Plan - St. George UT
- SR-18; Bluff St/Sunset Blvd Intersection Improvements - St. George, UT
- I-15 400 South Underpass - St. George UT
- Mall Drive Roadway and Bridge - St. George, UT
- SR-7; Southern Parkway - Washington County, UT
- I-15 MP 0-16 EA - Washington County, UT
- I-15 MP 11 EIS - Washington, UT
- SR-9, 300 West to 850 North - Hurricane, UT
- 600 North to SR-9 - Hurricane, UT
- Northern Corridor EIS - Washington County, UT



TYRONE ATKIN PE - Roadway Designer

Tyrone is a professional engineer with 11 years of experience in transportation and infrastructure projects. He has preliminary design, preconstruction design, and construction management experience in projects with Design-Bid-Build, Design-Build, and CM/GC delivery methods. Tyrone's technical comprehension, project experience, and history of designing complex projects have resulted in the delivery of a wide range of projects to meet schedule and budget. His design experience includes interstate, interchange, urban and rural arterials, urban and rural collectors, intersection improvements, roundabouts, as well as bicycle and pedestrian facilities. He is familiar with AASHTO, UDOT, ITD, AZDOT, and NDOT design requirements and their application in roadway design.

Education: B.S. Civil Engineering M.S. in Civil Engineering Utah State University
Professional Registrations Utah PE No. 8689113
Experience:

- I-15; Exit 16 Interchange Improvements - Washington UT
- Snow Canyon Parkway and 2000 North Roundabout - St. George, UT
- I-15 400 South Underpass - St. George, UT
- Washington City Engineering On Call - Washington UT
- I-15 Brigham Road to Dixie Drive Widening and Virgin River Replacements - St. George UT
- I-15 Exit 8-10 Auxiliary Lanes and Mall Drive Underpass - St. George UT
- Cedar Valley Belt Route Alignment Study - Iron County, UT
- SR-18; Bluff St/Sunset Blvd Intersection Improvements - St. George, UT
- Northern Corridor EIS - Washington County, UT
- I-15 MP 11 EIS - Washington, UT
- Purgatory Road EA - Washington County, UT



MICHAEL HEAPS PE - Traffic Engineer/Traffic Modeling

Michael has 16 years of experience working on civil engineering projects providing traffic operations and planning analysis with an emphasis in traffic modeling. His recent experience includes traffic analysis and alternatives development for various transportation improvement projects, transportation master plans, freeway and arterial corridor studies, project prioritization for use in long-range plans, user-benefit studies, and travel demand model development and maintenance. Recent projects included using Cube, VISSIM, Synchro, SimTraffic, and Highway Capacity Software to project future traffic volumes and to model traffic operations.

Education: B.S. Civil Engineering Utah State University
Professional Registrations Utah PE No. 5252497 Arizona PE No. 49152
Experience:

- Dixie MPO Traffic On-Call - Washington County, UT
- St. George City Transportation Master Plan - St. George UT
- Washington City Transportation Master Plan - Washington UT
- Ivins City Transportation Master Plan - Ivins City, UT
- SR-18; Bluff St/Sunset Blvd Intersection Improvements - St. George, UT
- River Road Corridor Study - St. George, UT
- I-15 MP 0-16 EA - Washington County, UT
- Ivins Traffic Impact Fee Analysis - Ivins, UT
- SR-7; Southern Parkway - Washington County, UT



BRAD SMITH - Fiber Specialist

Brad has 20 years of experience working in the fiber optics field. He has extensive experience in the design, installation, inspection, maintenance, and management of various types of fiber optic projects. Brad is certified from IMSA for ITS Fiber Optics Level II. Brad has worked on several fiber projects as a designer and inspector. His experience includes managing the day-to-day fiber optic operations for a local citywide fiber optic network in American Fork, Utah. His duties included network design, bidding, installation oversight, maintenance, troubleshooting, and testing of the network. Brad has an uncanny ability to apply real-world applications of fiber optic construction to design efforts. He has an eye for constructability and resolving construction issues in the field.

Experience:

- Dixie MPO Regional ITS Communications Plan - Washington County, UT
- Snow Canyon Drive and Center Street Roundabout - Ivins, UT
- SR-18; Bluff St/Sunset Blvd Interchange Improvements - St. George, UT
- SR-7; Southern Parkway - Washington County, UT
- I-15 400 S Underpass - St. George, UT
- I-15 MP 8-10 Auxiliary Lanes and Mall Drive Underpass - St. George, UT
- I-15, Brigham Road to Dixie Drive, St. George, UT
- Atkinville Interchange ITS Integration - St. George, UT
- I-15 Dixie Drive Interchange - St. George, UT
- I-15, North Beaver to Manderfield ITS - Beaver County, UT
- I-15 Fiber, Payson to Santaquin - Utah County, UT
- I-15 Exit 16 Interchange Improvements - Washington, UT



EMILY ANDRUS - Active Transportation

A recent graduate, Emily's experience consists of traffic modeling and analysis, transportation planning, bike and pedestrian planning and design and street lighting analysis.

Education: B.S. Civil Engineering Brigham Young University

Experience:

- Dixie MPO Traffic On Call - St. George, UT
- Washington City Engineering On Call Contract - Washington City UT
- Northern Corridor EIS - St. George, UT
- US-89 Farmington to I-89 - Farmington UT
- St. George Master Transportation and Traffic Plan - St. George, UT
- I-15 Interchange Feasibility Studies - Washington County, UT
- Red Cliffs Mall Expansion Traffic Impact Study - St. George, UT
- Vista School Expansion Traffic Impact Study - Ivins, UT
- The Commons at Sun River Traffic Analysis - St. George, UT
- I-15, Planning Study from I-80 to 31 Street - Weber County, UT
- Crimson Park Traffic Impact Study - Washington, UT

IVINS CITY



STEVE CLARKE - GIS Analyst

Steve has over 20 years of GIS experience. He worked for the GIS software company, Esri for 11 years where he started as a database analyst, building digital GIS databases for clients. His experience includes ArcSDE implementations, specializing with the Oracle, SQL Server and IBM DB2 relational databases. Steve has worked with state DOTs and municipalities to plan, design, program, and implement GIS systems for a variety of uses. His specialties included building and maintaining ArcSDE geodatabases, developing versioning workflows, install and administer ArcGIS Server. Prior to joining Horrocks, Steve served as the St. George City GIS Database Administrator. There he created the city's digital basemaps and published the GIS data to ArcGIS Server as map services; established the city's geodatabase replication procedure and automated the synchronization process; and built interactive mapping applications for the desktop and mobile devices using HTML and JavaScript.

Education: B.S. Georgraphy University of Utah

Experience:

- Dixie MPO Regional ITS Communications Plan - Washington County, UT
- St. George Traffic and Transportation Master Plan - St. George, UT
- Statewide Fiber Optics Project Support - Statewide, UT
- I-15, Exit 16 Interchange Improvements - Washington, UT
- Dixie MPO Traffic On Call - Washington County, UT
- Cedar Valley Belt Route Alignment Study - Iron County, UT
- I-15 Tech Corridor - Utah County, UT
- Bangerter Highway, 6200 South - Salt Lake County, UT
- I-515/I-215 Interchange Feasibility Study - Henderson, NV
- US-89, Farmington to I-84 - Davis County, UT
- Northern Corridor EIS - Washington County, UT