



CITY of NOVI CITY COUNCIL

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Agenda Item G
November 13, 2007

SUBJECT: Approval to award a contract for engineering services for the Sanitary Sewer SCADA (Supervisory Control and Data Acquisition) System Implementation project to Stantec Consulting Michigan Inc. for a not-to-exceed fee of \$44,269.

SUBMITTING DEPARTMENT: Engineering

CITY MANAGER APPROVAL: [Signature]

Table with 2 columns: Description, Amount. Rows: EXPENDITURE REQUIRED (\$44,269), AMOUNT BUDGETED (\$500,000), LINE ITEM NUMBER (592-592.00-158.050)

BACKGROUND INFORMATION:

This project is a recommendation from the Capacity, Management, Operations and Maintenance (CMOM) Program initiated by the City in 2004. During Phase II of the CMOM, the City and its consultant Orchard, Hiltz & McCliment (OHM) developed a scope of services and performance specification for soliciting vendor proposals for the installation of a Supervisory Control and Data Acquisition (SCADA) system.

With the specifications for the equipment already completed, the scope of work for this phase of the project includes assisting the City with bidding and construction (implementation) phase services. This engineering scope of services includes: evaluation of the vendor proposals, vendor selection, coordination and liaison between the vendor and City staff, review of submittals provided by the vendor, contract administration during the implementation phase, field engineering during implementation, and assisting with testing and start-up of the delivered and installed SCADA system.

The attached Request for Proposals for engineering services was sent to the six firms that City Council pre-qualified for utility-related projects. Three proposals were received and each was evaluated using Qualifications Based Selection, with a greater emphasis on the each firm's understanding of and approach to completing the project scope. The following table summarizes the results of the proposal review process:

Table with 4 columns: Firm, Total Fee, Staff Review Score, Rank. Rows: Orchard Hiltz & McCliment, Spalding DeDecker & Associates, Stantec

Of the three firms that submitted proposals, Stantec had the highest staff review score, the lowest overall fee, and met all requirements listed in the request for proposals (see attached Stantec proposal dated October 25, 2007). Engineering staff's scoring summary is attached for reference.

Stantec recently completed the design phase for the Hudson Sanitary Sewer Pump Station Rehabilitation project, which is currently in construction.

The budget for the project, including engineering, is \$500,000. The project is scheduled for completion by August 31, 2008.

RECOMMENDED ACTION: Approval to award a contract for engineering services for the Sanitary Sewer SCADA (Supervisory Control and Data Acquisition) System Implementation project to Stantec Consulting Michigan Inc. for a not-to-exceed fee of \$44,269.

	1	2	Y	N
Mayor Landry				
Council Member Capello				
Council Member Crawford				
Council Member Gatt				

	1	2	Y	N
Council Member Margolis				
Council Member Mutch				
Council Member Staudt				

SCORING SUMMARY FOR RFP REVIEW

Project Description: SCADA

RANK 1= LOW, x= BEST (x = number of firms repoding)

<u>SCORES</u>	<i>Item weight:</i>	<u>TOTAL OF STAFF REVIEW SCORES</u>					<i>Totals</i>	<i>Rank</i>
		25	15	25	20	15		
		1	2	3	4	5		
Orchard Hiltz & McCliment		8	8.5	9	7.5	11	867.5	2
Stantec		12	4	10	11	9	965	1
Spalding DeDecker		4	11.5	5	5.5	4	567.5	3
TOTALS		24	24	24	24	24		

SCORING CRITERIA

1. Engineering Fee
2. Evaluation of Schedule
3. Evaluation of Approach, Statement of Understanding of Project, and proposed staff
4. Analysis of subjective statements applicable to the project as required on the RFP (Value added items)
5. Evaluation of past performance on City projects

REQUEST FOR PROPOSALS CITY OF NOVI

ENGINEERING ASSISTANCE WITH SANITARY SEWER SCADA IMPLEMENTATION

October 8, 2007

This Request for Proposals (RFP) for **ENGINEERING ASSISTANCE WITH SANITARY SEWER SCADA IMPLEMENTATION** is being sent to the firms selected in the Utility Qualification Process completed on March 19, 2007.

Project Description

The City of Novi Engineering Department is soliciting proposals from our engineering consultants to assist with implementation of SCADA for the city's sanitary sewer system. The City has worked previously with Orchard, Hiltz & McCliment to develop a scope of services and performance specification for soliciting vendor proposals for the system (please see exhibit B for more information). The scope of work for this phase of the project includes assisting the City with evaluation of the proposals, coordination with the vendor to meet the needs of the City, review of submittals provided by the vendor, contract administration during the implementation phase, field engineering during the implementation, and assisting with testing and start-up of the delivered and installed system.

The budget for the project, including engineering, is \$500,000. The project is scheduled for completion by August 31, 2008.

SCOPE OF SERVICES

The selected consultant shall conduct the following activities:

Upon authorization by the City Council and the City Engineer, the consultant will complete the tasks necessary to complete the project which include, but are not necessarily limited to, the following:

1. Attend scope verification meeting with City staff. At the consultant's request, the meeting could include a visit to each sanitary site included in the project.
2. Review background information, scope of services and performance specification that was previously provided to City staff.
3. Work with City staff to develop a final request for proposals.
4. Prepare final proposal documents and provide assistance to the City Engineering and Purchasing Departments with the award of the project, including coordinating and facilitating the pre-bid meeting if needed, preparation of addenda, responding to bidder inquiries, coordination of the review of proposals, and providing assistance to City Engineering with the award of the project to the vendor.
5. Assist City staff with negotiating a contract with the selected vendor. The consultant will prepare the contract documents as directed by the City for execution by the selected vendor.
6. Coordinate the implementation of the project with the selected vendor as the City's agent and primary point of contact. The consultant will be expected to maintain close contact with the vendor and the City staff throughout the project. The proposed scope of work for the vendor is attached in Exhibit B
7. Coordinate progress payments to the vendor as determined by the contract documents with City staff.
8. Perform contract administration services. Contract administration services shall include, but not be limited to: reviewing shop drawings furnished by the contractor at the pre-construction meeting,

- coordinating and running the pre-construction meeting, ensuring compliance with contract documents, regular consultation with City Engineering, interpretation of plans and specifications, preparation and certification of pay estimates, full-time construction inspection during active construction, coordination of system start-up, and final testing and approval of the finished product.
9. Construction phase services shall also include submittal to City Engineering of all project reports and documents, and written recommendation regarding final acceptance of the project. The Consultant, within this phase, shall also prepare record drawings and transmit one (1) digital copy of as-built plan in .tif format (400 dpi minimum), two (2) plan copies, and a CD containing the digital file of the record drawings in the City standard format (AutoCAD), and provide such information to the Engineering Department within three (3) months following substantial completion of the project.
 10. The consultant will be responsible for final acceptance testing and for making a formal recommendation of acceptance to the City.

The City will provide the following information to the selected consultant:

- The specification information in Exhibit B in Word format.
- Record drawings for the sanitary sewer sites, as available.
- Reasonable access to the sites to become familiar with their operation.
- Additional information required and as available to complete the tasks requested above.

DOCUMENT AND FILE FORMAT

All documents shall be submitted to the City of Novi in an electronic format as specified by the Engineering Department.

Documents: MS Word

Digital copies of files, maps, or drawings:
 files: ArcView Shape file, AutoCAD,
 maps/drawings: ArcView layouts print file or
 AutoCAD format (.dxf)

All digital data should correspond to:
 Project – State Plane Coordinate System
 Michigan, South Zone – 6401
 Datum – NAD83, NAVD 88
 Spheroid – GRS1980
 Units – International Feet

CONSULTANT QUALIFICATIONS

The Consultant has been pre-qualified to provide engineering consulting services for 2007-2008 Utility Projects.

CONSULTANT SELECTION

As a pre-qualified consultant, the selection for this utility project will be based on an evaluation of the fee proposal, which is labeled as Exhibit A, in addition to the Consultant's project approach, schedule, and value-added concepts that would improve the overall project (i.e., cost savings, time savings, innovation, etc.). The following table provides the selection criteria that will be applied to this project:

<u>Criteria</u>	<u>Weight</u>
Engineering Fee	20%
Evaluation of Schedule	15%
Evaluation of Approach, Statement of Understanding of Project, and Proposed Staff	30%
Analysis of subjective statements applicable to the project as required on the RFP (Value added items)	15%
Evaluation of past performance on City projects	20%

By submitting a proposal, the Consultant agrees that neither the firm, sub-contractors, nor suppliers will discriminate against any person with respect to hiring or employment on the basis of religion, race, color, national origin, age, sex, height, weight, marital status, or a handicap that is unrelated to the individual's ability to perform tasks particular to a job or position.

The selected consultant will enter into an agreement with the City of Novi to perform the services listed in this Request for Proposals. The City's standard Consulting Engineering Agreement is included as Exhibit C.

PROPOSAL SUBMITTALS

To be considered, sealed fee proposals (one UNBOUND original and five bound copies) must arrive at the Purchasing Department, 45175 W. Ten Mile Road, Novi, Michigan 48375 on or before **3:00 P.M.** Local Prevailing Time, **Thursday October 25, 2007** addressed to Carol J. Kalinovik, Purchasing Official, and clearly labeled **ENGINEERING ASSISTANCE WITH SANITARY SEWER SCADA IMPLEMENTATION**. There will be no exceptions to this requirement and the City of Novi shall not be held responsible for late, lost, or misdirected proposals. Submitted proposals shall include:

- The proposed approach to the project, in detail along with a detailed description of cost-saving or value added scope items that would be a benefit to the City and project.
- The completed fee proposal (Exhibit A)
- A proposed design and construction schedule for the project.
- A detailed cost breakdown showing the hours needed to complete each task for the project by staff (name or labor category) and hourly rate.
- A rate sheet or fee schedule depicting the consultant hourly rates that could be applied to additional work as may be necessary, for each category of staff that would work on the project.
- A description of the project team and proposed staffing for the project.

All proposals must remain valid for one hundred twenty (120) days from due date and cannot be withdrawn during this period.

Questions regarding this Request for Proposals may be directed to:

City Engineer, Rob Hayes, P.E. (248) 735-5606

-or-

Civil Engineer, Brian Coburn, P.E. (248) 735-5632

The City of Novi reserves the right to accept any or all alternative proposals and to award the project to other than the firm with the lowest fee proposal, waive any irregularities or informalities, or both, to reject any or all proposals, and in general, to make award in any manner deemed by the City, in its sole discretion, to be in the best interests of the City of Novi.

Exhibits

- A - Fee Proposal
- B- Background Information
- C - Engineering Consultant Agreement

**EXHIBIT A
FEE PROPOSAL
CITY OF NOVI**

**ENGINEERING ASSISTANCE WITH
SANITARY SEWER SCADA IMPLEMENTATION**

We the undersigned propose to furnish to the City of Novi services consistent with the Request for Qualifications dated January 11, 2007 and Request for Proposals dated October 8, 2007, respectively. Design fees will be paid on an hourly basis for actual work performed to a maximum as proposed. A separate fee schedule is being provided should the City request additional work on an hourly basis.

Project	Total Fee
ENGINEERING ASSISTANCE WITH SANITARY SEWER SCADA IMPLEMENTATION	\$

PLEASE TYPE:

Company Name: _____

Address: _____

Agent's Name: _____

Agent's Title: _____

Agent's Signature: _____

Telephone Number: _____ Fax Number: _____

E-mail Address: _____ Date: _____

Proposal of Professional Services for:
Engineering Assistance with Sanitary Sewer SCADA Implementation

Prepared for: **City of Novi, Michigan**

Prepared by:
Stantec Consulting Michigan, Inc.
3959 Research Park Drive
Ann Arbor, MI 48108
Ph: 734-761-1010
Fax: 734-761-1200
www.stantec.com

October, 2007



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Ann Arbor MI 48108-2216
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stantec.com



Stantec

October 25, 2007

Carol J. Kalinovik
Purchasing Director
City of Novi
45175 W. Ten Mile Rd.
Novi, MI 48375-3024

Dear Ms. Kalinovik:

Reference: Engineering Assistance with Sanitary Sewer SCADA Implementation RFP

Thank you for the opportunity to provide our proposal for the Sanitary Sewer SCADA Implementation project. Based upon your RFP dated October 8, 2007, Stantec Consulting Michigan, Inc. (Stantec) is pleased to submit this proposal for Engineering Services for the Sanitary Sewer SCADA Implementation.

We believe that we are uniquely positioned to provide the needed services for the following reasons:

- The experienced project team dedicated to this project is available to meet the detailed schedule proposed in our proposal.
- We possess highly qualified electrical engineers with special skills in instrumentation, controls and in supervisory controls and data acquisition (SCADA) systems.
- Stantec has designed and successfully implemented a number of SCADA systems as shown in our experience matrix.
- We propose an enhanced and innovative approach to the project. In addition to providing services as outlined in the Request for Proposal (RFP), we are offering additional services for an alternative system with no increase in fee. The alternative system has a potential to result in a very cost effective, yet reliable system.

Stantec believes in the importance of delivering a quality product in a timely manner. Proof of our abilities is the successful design of the Hudson Street Pump Station for the City of Novi, which is now entering the construction phase.

Stantec

October 25, 2007
Ms. Carol J. Kalinovik
Page 2 of 2

Reference: Sanitary Sewer SCADA Implementation RFP

We understand the importance of completing this project on the timeline presented in this proposal. We have the staff allocated to execute the work and are dedicated to the success of your project. Please do not hesitate to contact us with any questions. Thank you.

Sincerely,

STANTEC CONSULTING MICHIGAN, INC.

Ishwar M. Naik, PE

Ishwar M. Naik, PE
Principal
Tel: 734-214-2515
Fax: 734-761-1200
ish.naik@stantec.com

Attachment: Proposal

TABLE OF CONTENTS



Proposal for:
Engineering Assistance with Sanitary Sewer SCADA Implementation

Prepared for:
City of Novi, Michigan

<u>Section</u>		<u>Pages</u>
I	Project Understanding..... Value-Added Concepts 1. Alternate Controller 2. Alternate Communication / Data Acquisition 3. Performance-Based Bidding	1-8
II	Work Plan.....	9-11
III	Staffing Plan.....	12
IV	Project Schedule.....	13-14
V	Fee and Rate Information..... Required Fee Proposal Form	15-18
	Appendix: Automation Instrumentation and Controls Matrix Radio Profiles Site Layouts Orthographic Layout	

Submitted by:
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October, 2007



SECTION I

Project Understanding



BACKGROUND

The City owns and operates several sanitary lift stations, meter pits, rain gauges, and fresh water pump stations, and related facilities located throughout the community. These facilities are monitored and controlled using various methods. This City is planning to integrate these stations into a single platform utilizing a Supervisor, Control and Data Acquisition (SCADA) system. The SCADA system will be able to announce, store, trend and alarm the information from these sites and display or notify the information in a timely manner. Detection, generation and communication of abnormal conditions (alarms) are the critical and most important functions of the SCADA System. At this time, the City has elected to only implement the sanitary portion of SCADA.

PROJECT UNDERSTANDING

The City has decided to bid this project on performance-based bidding documents. We further understand that the City intends to utilize the document prepared by Orchard Hiltz and McCliment (OHM) as a basis for this proposal. The request for proposal for furnishing and installation of SCADA system would allow a variety of vendors (contractors) to bid.

PROJECT GOAL

In the performance-based bidding, only major goals for the project are defined and the contractor is allowed a wide range of freedom in the choice of systems, and the contractor is responsible for a lot of upfront work, such as field verification, detailed design, procurement, and construction coordination.

Stantec has used this approach for some of our clients and agree that it is a cost-effective approach, and allows a wide variety of vendors to bid. Since detailed design is bypassed, the approach could potentially shorten the project schedule.

The scope of work for the RFP is summarized below:

- Using OHM's document (Appendix B in the RFP) as a basis, prepare bidding documents to receive proposals from vendors/contractors to implement the SCADA system for the sanitary system.
- Assist the City in evaluation of proposals.
- Assist the City in selecting vendors/suppliers.
- Assist the City in awarding of the contract for implementing the SCADA system.
- Review submittals, such as drawings, equipment cut sheets, O & M manuals, etc.
- Provide construction administration and field engineering.
- Assist the City in testing and final acceptance of the system.

Additionally, the City is interested in providing this information in Wide Area Network (WAN) format that would allow two (2) desktop computers and three (3) additional laptop computers to access the information from WAN. A Web Portal would be provided to allow status from any location (i.e., from Web-enabled cell phones).

MAJOR SYSTEM COMPONENTS

The system, based on OHM documents (Appendix B) in the RFP, would be based on the traditional PLC system using radio communication and would include the following major components:

- A traditional Programmable Logic Controller (PLC) at each site,
- Licensed radio as a communications backbone,
- A master PLC at the Department of Public works to collect and relay settings, and
- Human Machine Interface (HMI) system that uses a SQL standard database to store and retrieve information from each site.

The Allen-Bradley family of PLC's by Rockwell Automation and related Rockwell software appear to be the most popular systems to offer a very reliable and robust system if a decision have been made to use this type of architecture.

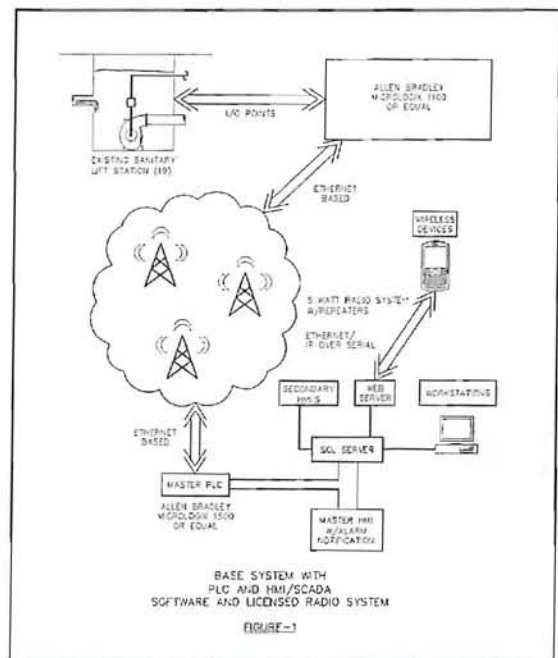
For systems using Allen-Bradley PLC's, the sanitary lift stations would be retrofitted with Allen-Bradley MicroLogix 1100s and the Master PLC would be an Allen-Bradley MicroLogix 1500. All HMI, database, logging, trending, alarming, web interface and SQL systems will be based on the family of RSView products by Allen-Bradley. We have found by single sourcing, the equipment vendor gives a better integrated product which results in lower operation costs. A typical system architectural diagram of this system is shown as Base System A and the system would include these components.

A description of the necessary design verification and construction services as requested in the RFP is as follows:

- Review of existing conditions at each sanitary site
- Review and development of performance-based contract documents, including specifications and drawings
- Review of proper technology applications with manufacturers
- Confirmation of proper installation and reliability with validation testing at each site
- Proper training and maintenance procedure for the SCADA system
- Project closeout including field verified as-built drawings

This system is shown as Figure 1.

A detailed scope of services to implement this SCADA system is included in the Section II – Work Plan. Please note: the Scope of Services will be the same regardless of the choice of system.





VALUE-ADDED CONCEPTS

As an alternate to OHM's approach of using performance-based bidding and presumably allowing a system using PLC's and radio communications, Stantec proposes the following modifications for project implementation. These modifications are as follows:

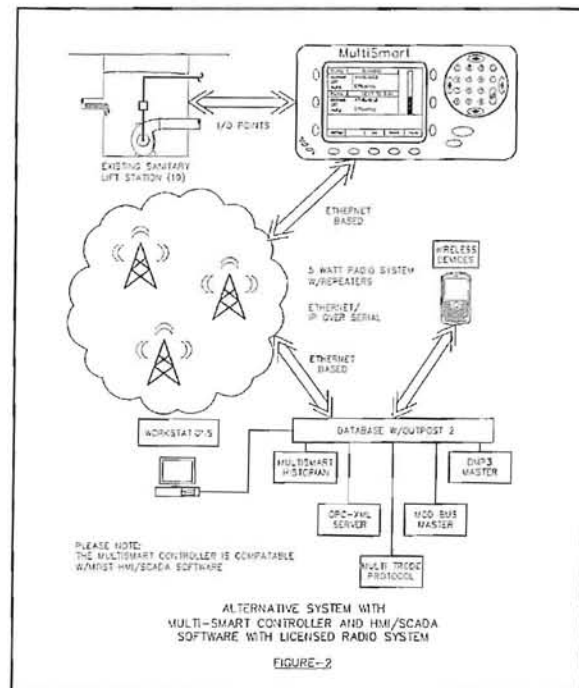
1. Alternative Controller
2. Alternative Communication / Data Acquisition
3. Performance-Based Bidding Supplemented by Preliminary Design

Having recently completed many similar projects for other Michigan communities, Stantec has gained valuable experience in various types of SCADA systems. Based on this experience we propose the following value-added concepts which can provide considerable cost savings in capital investment, short turn around, improved operations by eliminating the need to rely on outside technical support and in turn will reduce maintenance costs.

Alternative #1 – Alternative Controller

Novi's existing SCADA system is based on traditional Programmable Logic Controllers (PLC) by manufactures that include Allen-Bradley by Rockwell Automation. The City has started the installation of pump controllers with Remote Telemetry Unit (RTU) capabilities. This system is shown in Figure 2.

These units are manufactured by Multi-Trode. Their latest controller is known as the Multi-Smart and can be updated to meet the requirements of the City to perform the functions of the SCADA system. These controllers offer significant saving over traditional PLC's by eliminating the need for custom programming, which can be as much as 50% of the cost of a SCADA system. Multi-Trode has customized these units for water and wastewater applications and the programming is included in the cost of each unit. These system are serviceable by field technicians and do not require extensive knowledge of ladder logic/PLC programming code. Further, spare units can be stored on the shelf with backups of the programs which could allow the unit to be brought back online in matter of minutes.



A disadvantage of traditional PLC is that they do require servicing and repair. Having to call a PLC service technician is time-consuming, requiring a minimum time of four hours to restore a PLC back to normal operating condition—provided that the proper spare parts have been brought to the site.

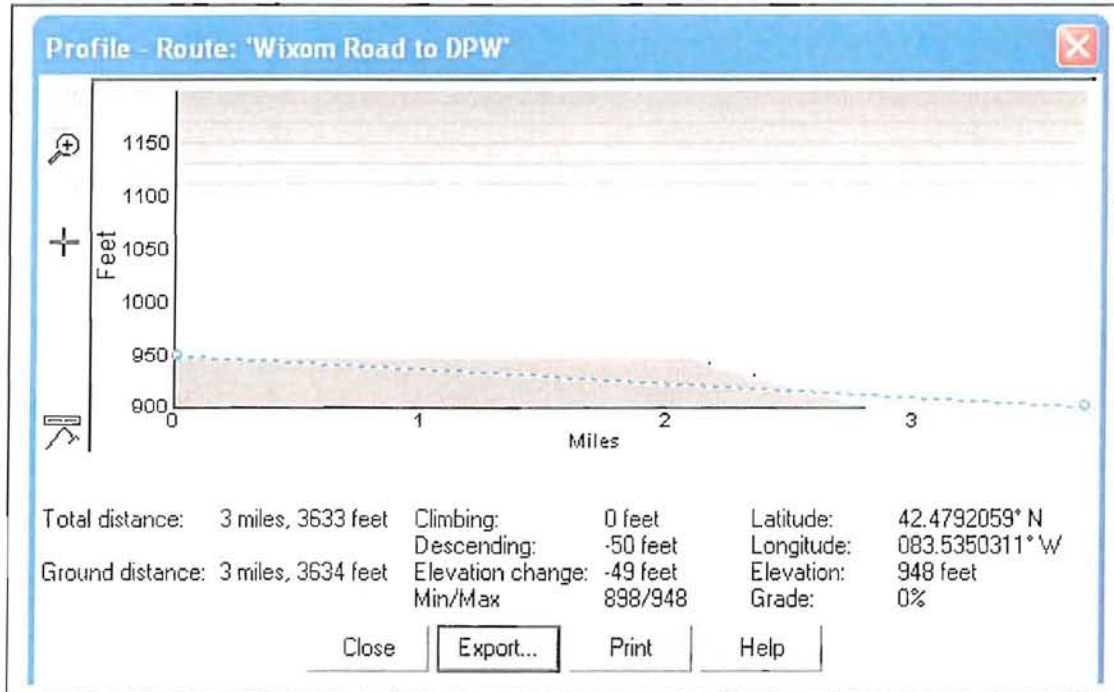


Figure 4: The interference in line of sight between the DPW Facility and the Wixom Road Lift Station.

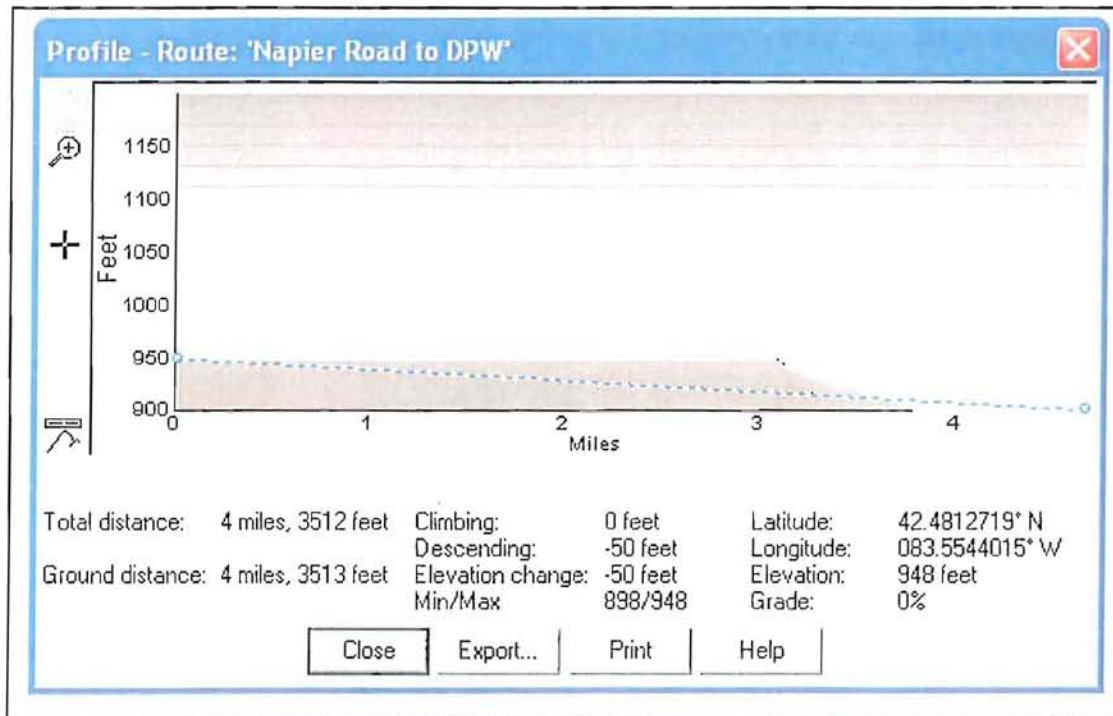


Figure 5: The interference in line of sight between the DPW Facility and the Napier Road Lift Station.



PRELIMINARY COST ESTIMATES / COMMUNICATION BACKBONES

Multi-Trode offers an option that can be added to any of the existing lift station controllers which allows them to communicate via the cellular backbone. The data in turn can be communicated to various SCADA packages including Multi-Trode Historian, Wonderware, Intellution and Human Machine Interfaces (HMI).

This system would eliminate the need for a propagation study, repeaters, and lower installation/programming costs and would give the City the ability to diagnose and repair the communication bone themselves. Typical costs for these two communication systems is summarize below:

Traditional 5 Watt License Radio (cost per site):		
	Capital Costs	Annual O & M
Propagation Study:	\$200	
Tower and Radio Equipment:	\$18,000	
Radio Modem Programming/Site Testing:	\$1,200	
Radio Engineering:	\$1500	
Average Yearly Maintenance (including License):		\$100
Total estimate (per site):	\$20,900	
Total Estimate for 19 sites:	\$397,100	\$1,900

Cellular Backbone Radio:(cost per site):		
	Capital Costs	Annual O & M
Data Modem:	\$800	
Monthly Access Fee:		\$480
Cellular Engineering:	\$500	
Spare Data Modem (may not be needed):	\$800	
Total estimate (per site):	\$2,100	
Total Estimate for 19 sites:	\$39,990	\$9,120

Summary of Life Cycle Cost for Seven Years			
	Capital Cost	O & M Cost	Total
Radio	\$397,100	\$13,300	\$398,850
Cellular	\$39,900	\$63,800	\$103,740

Regardless of which communication system is selected (radio or cellular), the Multi-Trode appears to present a very cost-effective, robust, and reliable method to manage and present the data than a traditional Master PLC with a Human Machine Interface (HMI) with SQL data storage capabilities. Multi-Trode offers a Master Telemetry Units with a Historian data storage system and Outpost 2 – Municipal SCADA HMI package to achieve the same objectives quite efficiently.

This full feature SCADA package offers the requested alarming, trending, data archiving and include ability for fully customizable screens. This system also can interface to many standard SQL, ODBC and databases and can be ported to the City’s standard databases. It also has a built in web interface portal as a standard package.



It also includes stand-alone HMI package that has been preconfigured with direct interface screens for Multi-Smart controllers. This package known as the Outpost -2 Municipal SCADA is based on Iconics Genesis 32 system. This system can be expanded to handle all of the City's SCADA needs.

Alternative #3 – Performance-Based Bidding Supplemented by Preliminary Design

The OHM document (Appendix B of the RFP) is a good start in the process of obtaining bids for the comprehensive SCADA system. Stantec proposes to expand on this document in order to prepare more comprehensive bidding documents:

The objectives of this effort are as follows:

- A comprehensive, yet tightly-defined project scope.
- Establish standards of quality in terms of materials, equipment, and installation.
- Tightly-competitive bid pricing.
- The goals of the project and level of expectations are well-defined.
- The system does not become prematurely obsolete.
- The system can be expanded efficiently and cost-effectively.
- The system reliability is enhanced.
- Field problems and anticipated and minimized.
- City procure are user-friendly with this system.

In order to achieve these objectives, we would provide additional engineering and would address the following issues:

The proposed tasks highlighted in the RFP include the following:

- Define the types and number of signals (discrete or continuous)
- Methods of communication and equipment specifications
- Fail safe modes
- Surge protection
- Protection against loss of power
- Expansion capabilities of the system
- Numbers of details of Human Machine Interface (HMI) screens
- Data acquisition and storage capacities
- Trend analysis and displays
- Number coordination, location, duration, and reporting of workshops
- Location, duration, procedures, and details of Factory Acceptable Tests (FAT)
- Location, duration, procedures, and detail of Field Validation Test (FVT)
- Final Field Acceptance Test (FFAT)
- Warranty
- Submittal number, timeline, and processing
- As-built drawings
- Operations and Maintenance (O & M) manuals
- Operator Training
- Documentation and ownership transfer of software



- Licensing and upgrading of software
- Preliminary drawings would include:
 - System architecture with PLC controller
 - System architecture with customized controllers such as the Multi-Trode
 - Communication diagram with licensed radio
 - Communication diagram using cellular phones
 - Typical site I/Os
- Equipment/system specifications would include:
 - System specifications for controllers and RTUs
 - Control panel fabrication – material and NEMA ratings
 - General requirements defining overall NFPP schedules, facility access, system interruption, submittal requirements, and other contractual issues
 - Detailed requirements of Factory Acceptance Test (FAT), Field Validation Test (FVT), and Final Field Acceptance Test (FFAT)
 - Number, duration, and sequence of HMI and screen development workshops

The City of Novi will benefit by receiving competitive bids with well-defined and technically-sound bidding documents.



SECTION II

Work Plan

WORK PLAN

We propose to provide the following scope of services using the task requested in the RFP as the basis, we expand by providing the following breakdown of our activities and subtasks as follows:

1. Attend scope verification meeting with the City staff. We propose the following tasks:
 - a. Meet with City staff to coordinate the meeting to each site.
 - b. Determine the goals of the project from City of Novi staff's standpoint.
 - c. Prepare a narrative of the expected goals and objectives of the project.
 - d. Discuss with the City staff the required input and output (I/O).
 - e. Verify the list of input/output (I/O).
 - f. Field verify the interface points for these I/Os and the need for additional field devices, if required.
 - g. Prepare sketches and take digital images of the existing facilities and devices.
 - h. Determine the available power and branch circuits for existing and proposed devices.
2. Review background information. We propose the following tasks:
 - a. Review the existing documents including the drawings of the existing facilities.
 - b. Determine the relevant documents to be provided to the potential bidders.
 - c. Review the other information, reports and documents or studies performed by other Consultants.
 - d. Determine the type, manufacturer, and condition of the existing main control panel at the DPW building.
3. Work with city staff to develop final request for proposal. We propose the following tasks:
 - a. Determine methods of procuring the results with cost effective methods.
 - b. Prepare additional drawings and system architecture for alternative systems and/or proposal.
 - c. Refine a list of I/Os.
 - d. Define the HMI screens.
 - e. Define the data acquisitions, communication and storage methods and magnitude.
4. Prepare final proposal documents. We propose the following tasks:
 - a. Provide assistance to City Engineering/Purchasing Department.
 - b. Prepare the final proposal form.
 - c. Determine the Factory Acceptable Testing (FAT) protocol for the control panels and communication system.
 - d. Determine the scope and number of workshop to finalize the HMI screens and data logging requirements.
 - e. Determine the intermediate milestones such as submittal of shop drawings, submittal of testing protocol and field testing and commissioning of the system.
 - f. Prepare a list of documents to be submitted by the bidders with the bids.
 - g. Prepare advertisements for bids.
 - h. Prepare bidding documents using the City's boiler plate front end.
 - i. Set-up the chain of communication with the Engineer and Owner.
 - j. Receive request for information and clarification from bidders.
 - k. Issue any addenda, as necessary.



- and the testing protocol, Stantec would be able to notify the City staff of the testing requirements, in order for the City to coordinate their staff and operations.
- f. Once the system is installed and tested, we would add at least 30 days of full scale trial so that the City's personnel become familiar with the system. During this 30 day period, Stantec would be available to assist the City, along with the Contractor to troubleshoot and resolve and problems that may arise.
 - g. The contract would require the submittal or relevant Operations and Maintenance (O & M) manuals before fifty percent completion of the project.
 - h. Operation and Maintenance (O & M): After the initial 30-day start-up trial period, Stantec would coordinate the operation and maintenance of the system by the contractor/vendor. The Stantec contract documents would require comprehensive operation and maintenance manuals and training for the City staff after the initial one month of system operations. This way, the staff will become familiar with the system being installed and will be able to familiarize themselves with the system and ask intelligent and meaningful questions.
 - i. Only after successful completion of the factory acceptance test, field acceptance test and full scale testing and operation and maintenance training, would Stantec consider issuing a final completion certificate.
 - j. Stantec normally recommends that the Owner retain a substantial amount of funds in order to obtain full compliance of all requirements.
 - k. The Contractor would be preparing a majority of the drawings as part of this submittal process. Stantec will verify that any changes in these submitted documents have been corrected and documented. Once those are finalized, Stantec would submit a full package for the City's records.
 - l. It should be noted that, in as much as detail drawings are not being prepared by Stantec, the as-built plans will reflect those prepared and provided by the Contractor. Stantec would verify that these drawings are in fact produced in AutoCAD standards with the latest format acceptable to the City.
10. Final acceptance testing and formal recommendation to the City.
- a. After full submittal of all documents including the O & M manuals, the required spare parts and submittal of waivers of liens and release from security, and other documents required by the contract, Stantec would issue a final acceptance certification and make recommendation of final payment.

SECTION III

Staffing Plan

STAFFING PLAN



We have assembled a highly experienced team to provide the best possible design and construction services. The following is a brief summary of the team that has been specifically assembled for this project.

PROJECT TEAM

Ishwar M. Nalk, P.E., will serve as Principal-in-Charge. Ishwar has a Bachelor's Degree in Civil Engineering and over 36 years of engineering experience. His recent projects include a \$4 million wastewater plant expansion for the City of Cadillac, and a \$6 million dollar water treatment plant for the City of Berea, Ohio. Both of these projects were designed with Allen Bradley controllers for full-scale SCADA systems. Also included are the \$12 million Anthony Ragnone Treatment Plant Pump Station Enhancement project in Genesee County and a \$25 million chlorination and dechlorination project for the Detroit Water and Sewerage Department. Each of these projects incorporated over 300 I/Os.

Gregory S. Schofer will serve as Project Engineer and be in charge of SCADA Instrumentation and Controls for the project. Greg holds an Associate's Degree in Electrical/Electronics Engineering and a Technical Degree in Computer/Industrial Technologies. Recent project experience includes needs assessment and design of a new SCADA system and electrical systems for Marquette Township, Charter Township of Pittsfield Township, City of Cadillac and Northville Township. The assessments have included full review of existing electrical and instrumentation and controls, SCADA systems, radio and communication systems, field instruments and security procedures. He has engineered various degrees of SCADA and control systems for Genesee County Drain Commissioner, Village of Lexington, City of Howell, City of Fenton and Detroit Water and Sewerage Department.

Dennis M. Darling, PE, MS, will provide technical direction, consultation, and quality assurance for the electrical and control disciplines. Dennis has a Master's Degree in Electrical and Computer Engineering and extensive experience. He has authored several publications and has been an active member of the National Electrical Code, Code Making Panel, as well as serving on the local Electrical Examiners Board and has been involved with many recent University of Michigan projects including UH Generator #4, Med School Generator and dozens of other Hospital and Campus electrical projects. He was also involved in the High Service Pump Improvement project for the City of Flint.



SECTION IV

Project Schedule

PROJECT SCHEDULE



PROJECT SCHEDULE

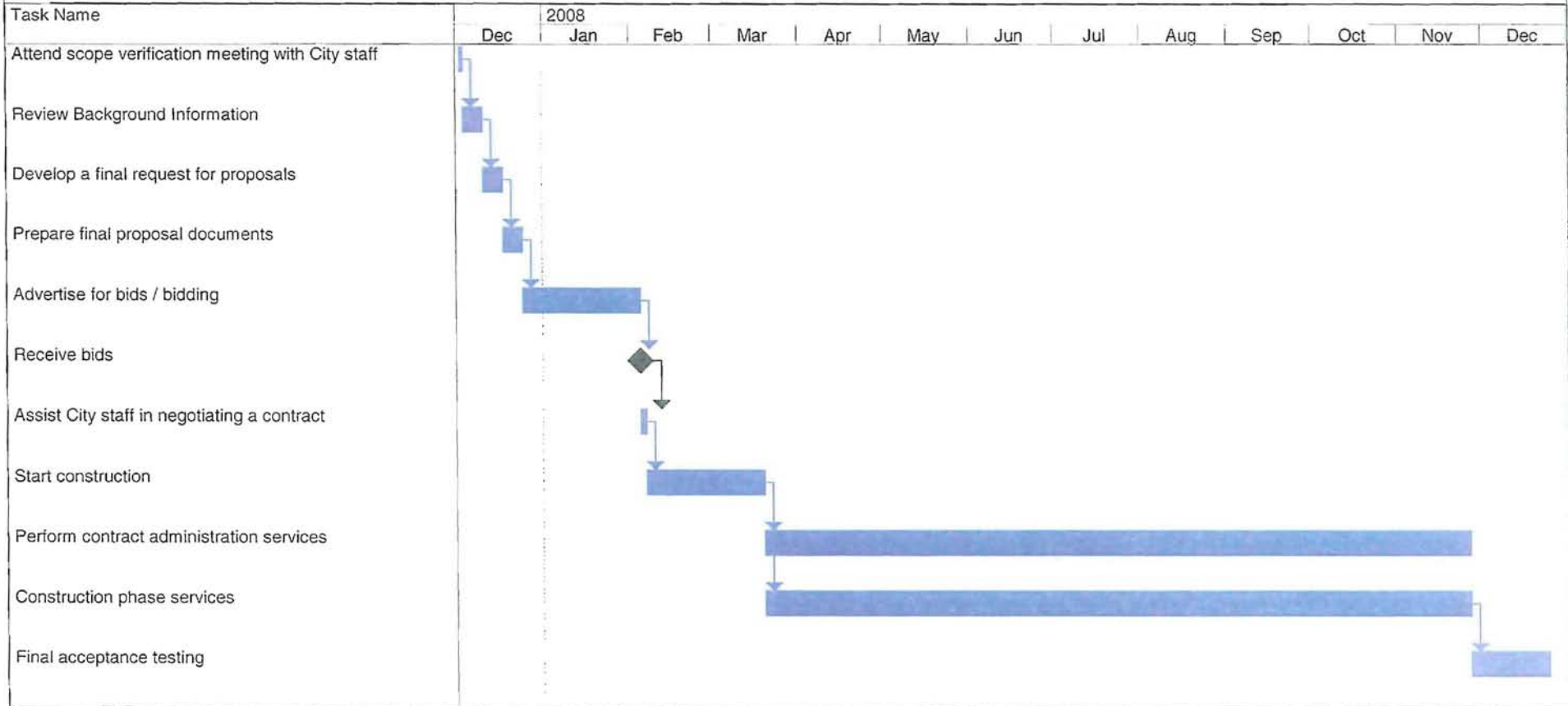
We have prepared the project schedule based on our recent experience with similar projects and the ideal timeline and benefits to the City to provide the scope of services identified in this proposal. Please note the following regarding our schedule:

- Stantec will be able to complete Tasks #1 through #4 within the timeline as proposed.
- Tasks #5 through #10 will depend on contractor's schedule. We have assumed a p-month construction for this project.

Please refer to the attached project schedule for additional details.

**City of Novi, Michigan
Engineering Assistance with
Sanitary Sewer SCADA Implementation**

Project Schedule



Project: Novi SCADA Implementation
Date: Thu 10/25/07

Task 
 Progress 
 Summary 
 Split 
 Milestone 



SECTION V

Fee and Rate Information

FEE AND RATE INFORMATION



FEE PROPOSAL

The completed fee proposal from Exhibit A in the RFP is attached.

We have also included a detailed cost breakdown showing hours for each task. Please note, our fee includes the efforts needed to implement the value-added concepts as outlined in our proposal.

RATE SCHEDULE

Our rate schedule as requested in the RFP follows. We understand that the rate schedule may be used for additional work as may be necessary.



**EXHIBIT A
FEE PROPOSAL
CITY OF NOVI**

**ENGINEERING ASSISTANCE WITH
SANITARY SEWER SCADA IMPLEMENTATION**

We the undersigned propose to furnish to the City of Novi services consistent with the Request for Qualifications dated January 11, 2007 and Request for Proposals dated October 8, 2007, respectively. Design fees will be paid on an hourly basis for actual work performed to a maximum as proposed. A separate fee schedule is being provided should the City request additional work on an hourly basis.

Project	Total Fee
ENGINEERING ASSISTANCE WITH SANITARY SEWER SCADA IMPLEMENTATION	\$ 44,269

PLEASE TYPE:

Company Name: Stantec Consulting Michigan, Inc.
 Address: 3959 Research Park Drive, Ann Arbor, MI 48108
 Agent's Name: Ishwar M. Naik, PE
 Agent's Title: Principal
 Agent's Signature: Ishwar M. Naik, PE
 Telephone Number: 734-761-1010 Fax Number: 734-761-1200
 E-Mail Address: ish.naik@stantec.com Date: October 25, 2007



**City of Novi, Michigan
Engineering Assistance with
Sanitary Sewer SCADA Implementation
Proposed Fee Schedule
October 25, 2007**

Tasks	Title	Principal in Charge /Project Manager	Instrumentation and Controls	Senior Electrical Engineer	Assistant Engineer	Drafting	Word Processing	Direct Expenses	Total
	Employee Name	Ishwar Naik	Greg Schofer	Dennis Darling	Various	Jerry Brzys	Various		
	Billing Rate	\$149	\$115	\$130	\$80	\$91	\$65		
PROJECT SCOPE									
Attend scope verification meeting with City staff		4	4						8
Review background information		4	8		8			\$ 50	20
Develop a final request for proposals		4	20	4		24			52
Prepare final proposal documents									
Provide assistance to the City			4						4
Coordinate and facilitate a Pre-Bid meeting			6					\$ 50	6
Prepare addenda		1	4		4		4		13
Coordination of proposal review		1	8	2					11
Award of project to vendor		1	4				2		7
Assist City staff in negotiating a contract		1	4						5
Coordinate project implementation with vendor		1	8						9
Coordinate progress payments		4	8						12
Perform contract administration services									
Review shop drawings		2	16						18
Coordinate and facilitate a Pre-Con meeting		4	4					\$ 100	8
Interpretation of plans and specifications		2	8						10
Inspection during active construction			40		40			\$ 250	80
System start-up and final testing			40		40			\$ 100	80
Construction phase services									
Submit project reports and documents							12		12
Submit recommendation of final acceptance of project		2	8						10
Prepare record drawings			4			8			12
Final Acceptance Testing									
Prepare formal recommendation of acceptance		2	16		24			\$ 50	42
Project Scope - SUB TOTAL HOURS		33	214	6	116	32	18		419
Project Scope - SUB TOTAL LABOR		\$4,917	\$24,610	\$780	\$9,280	\$2,912	\$1,170		\$43,669
Project Scope - EXPENSE								\$ 600	\$600
Project Scope - TOTAL									\$44,269

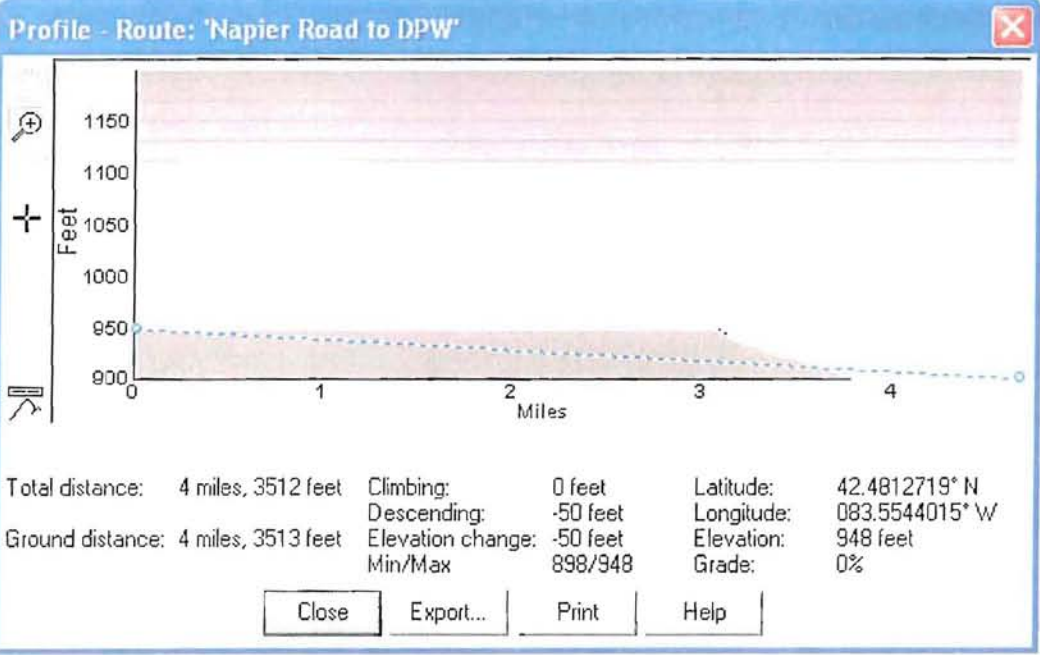
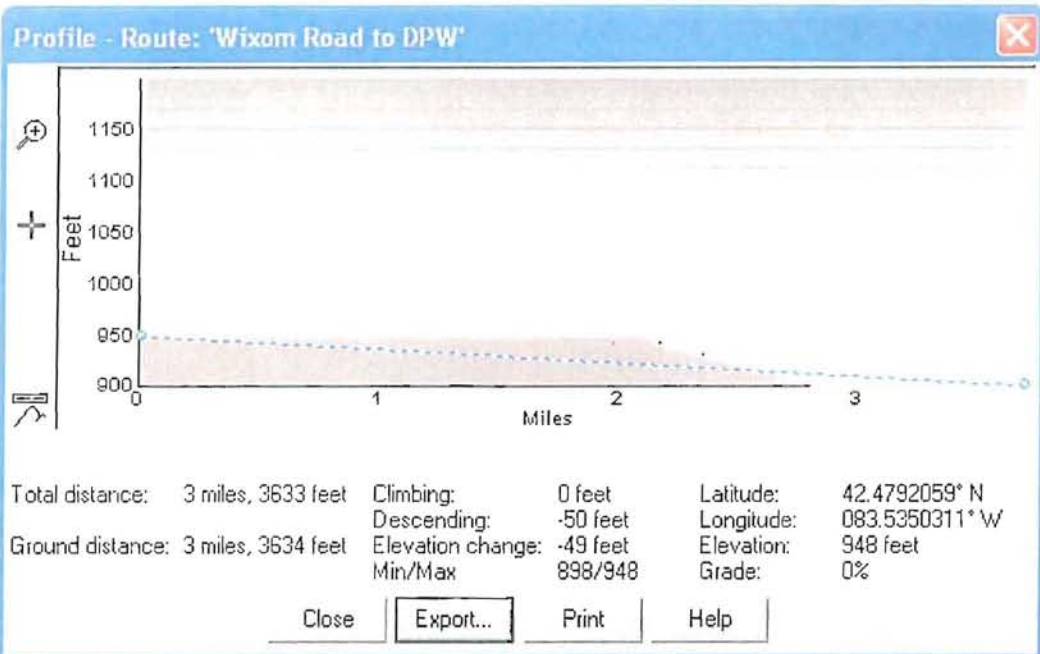


2007 Fee Schedule

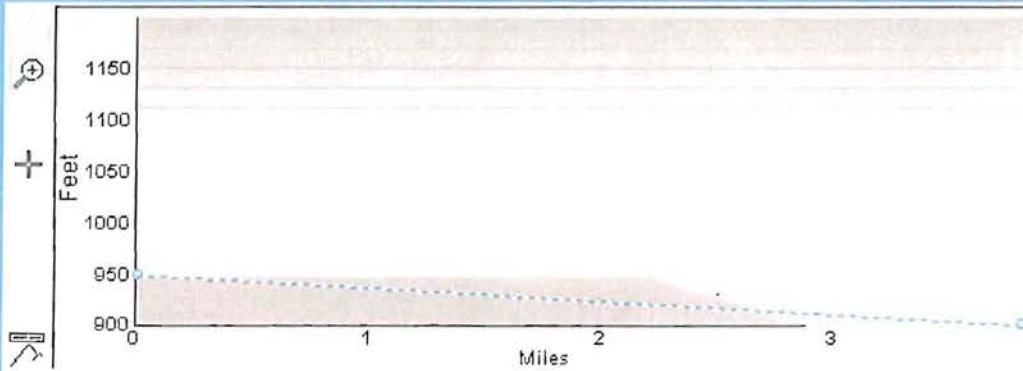
Title	Hourly Rate	Description
Technician	\$41 - \$47	<ul style="list-style-type: none"> • Entry-level position • Works under the supervision of a senior professional • Recent graduate from an appropriate post-secondary program or equivalent • Generally, less than four years experience
Engineering Assistant Construction Technician Environmental Technician	\$53 - \$65	<ul style="list-style-type: none"> • Junior-level position • Independently carries out assignments of limited scope using standard procedures, methods and techniques • Assists senior staff in carrying out more advanced procedures • Completed work is reviewed for feasibility and soundness of judgment • Graduate from an appropriate post-secondary program or equivalent • Generally, four years work experience
Senior CADD Technician Project Engineer Designer Senior Engineering Designer	\$71 - \$84	<ul style="list-style-type: none"> • Fully qualified professional position • Carries out assignments requiring general familiarity within a broad field of the respective profession • Makes decisions by using a combination of standard methods and techniques • Actively participates in planning to ensure the achievement of objectives • Works independently to interpret information and resolve difficulties • Graduate from an appropriate post-secondary program, with credentials or equivalent • Generally, six years experience
Senior Designer Senior Project Engineer Project Manager	\$91 - \$109	<ul style="list-style-type: none"> • First level supervisor of first complete level of specialization • Provides applied professional knowledge and initiative in planning and coordinating work programs • Adapts established guidelines as necessary to address unusual issues • Decisions accepted as technically accurate, however may on occasion be reviewed for soundness of judgment • Graduate from an appropriate post-secondary program, with credentials or equivalent • Generally, nine years experience
Senior Project Manager Associate Registered Surveyor	\$119 - \$140	<ul style="list-style-type: none"> • Highly-specialized technical professional or supervisor of groups of professionals • Provides multidiscipline knowledge to deliver innovative solutions in related field of expertise • Participates in short and long range planning to ensure the achievement of objectives • Makes responsible decisions on all matters, including policy recommendations, work methods, and financial controls associated with large expenditures • Reviews and evaluates technical work • Graduate from an appropriate post-secondary program, with credentials or equivalent • Generally, ten years experience with extensive, broad experience
Principal	\$149 - \$174	<ul style="list-style-type: none"> • Senior level consultant or management function • Recognized as an authority in a specific field with qualifications of significant value • Provides multidiscipline knowledge to deliver innovative solutions in related field of expertise • Independently conceives programs and problems for investigation • Participates in discussions to ensure the achievement of program and/or project objectives • Makes responsible decisions on expenditures, including large sums or implementation of major programs and/or projects • Graduate from an appropriate post-secondary program, with credentials or equivalent • Generally, fifteen years experience with extensive professional and management experience
Survey Crew	\$147	

APPENDIX

Automation Instrumentation and Controls Matrix
Radio Profiles
Site Layout
Orthographic Layout

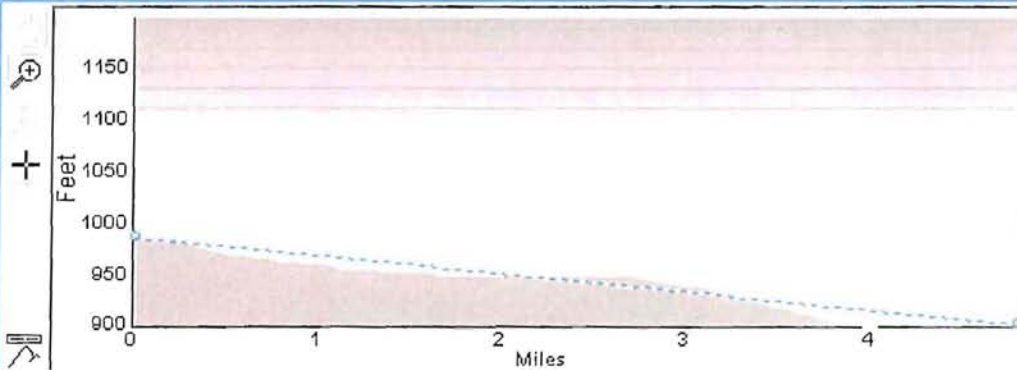


Profile - Route: 'Drakes Bay to DPW'



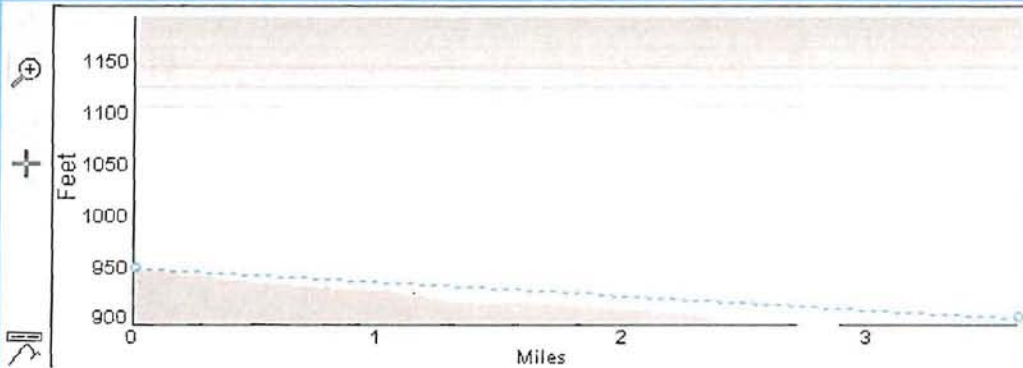
Total distance:	3 miles, 4232 feet	Climbing:	0 feet	Latitude:	42.4679986° N
Ground distance:	3 miles, 4232 feet	Descending:	-50 feet	Longitude:	083.5344167° W
		Elevation change:	-50 feet	Elevation:	948 feet
		Min/Max	898/948	Grade:	0%

Profile - Route: 'Park Place to DPW'



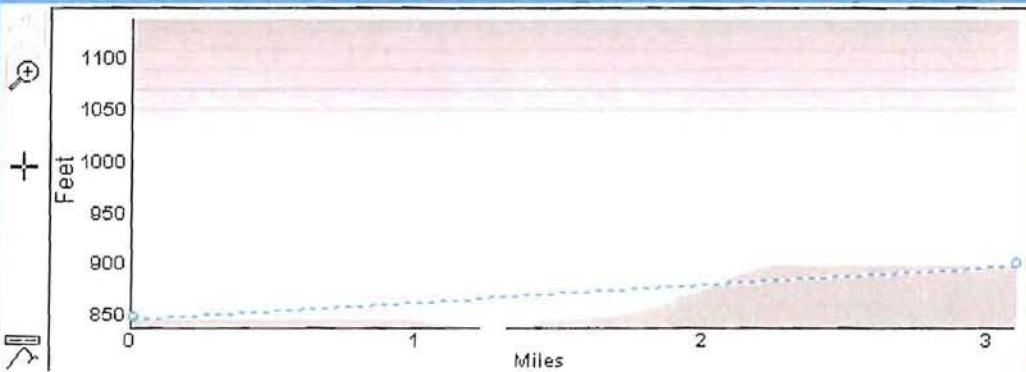
Total distance:	4 miles, 4215 feet	Climbing:	2 feet	Latitude:	42.4494573° N
Ground distance:	4 miles, 4215 feet	Descending:	-88 feet	Longitude:	083.5448425° W
		Elevation change:	-86 feet	Elevation:	984 feet
		Min/Max	896/984	Grade:	0%

Profile - Route: 'Bellagio to DPW'



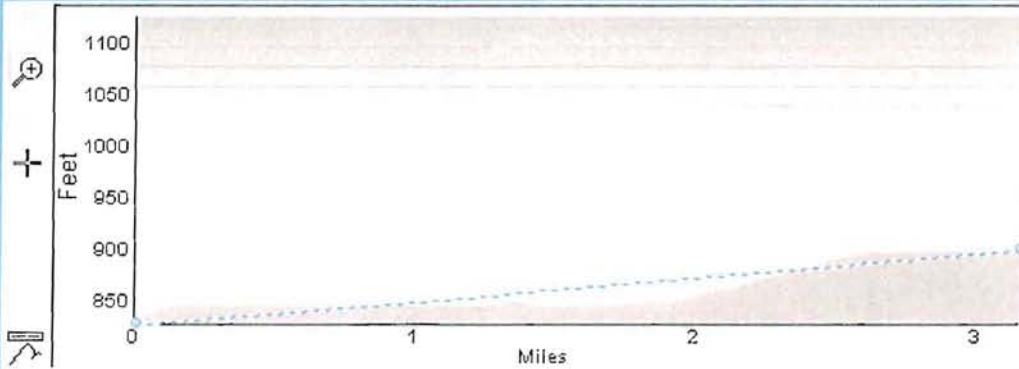
Total distance:	3 miles, 3207 feet	Climbing:	13 feet	Latitude:	42.4470832° N
Ground distance:	3 miles, 3208 feet	Descending:	-63 feet	Longitude:	083.5134214° W
		Elevation change:	-50 feet	Elevation:	948 feet
		Min/Max	892/948	Grade:	0%

Profile - Route: 'Country Place to DPW'



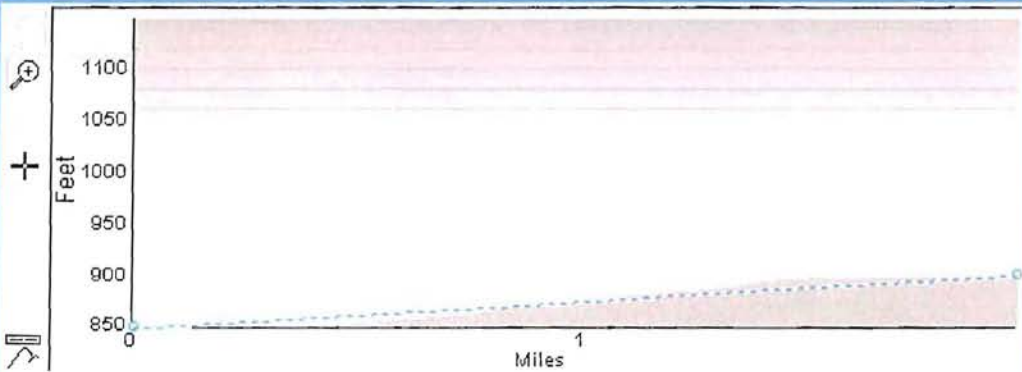
Total distance:	3 miles, 484 feet	Climbing:	61 feet	Latitude:	42.4393279° N
Ground distance:	3 miles, 485 feet	Descending:	-9 feet	Longitude:	083.4545728° W
		Elevation change:	52 feet	Elevation:	846 feet
		Min/Max	836/898	Grade:	0%

Profile - Route: 'Hilton to DPW'

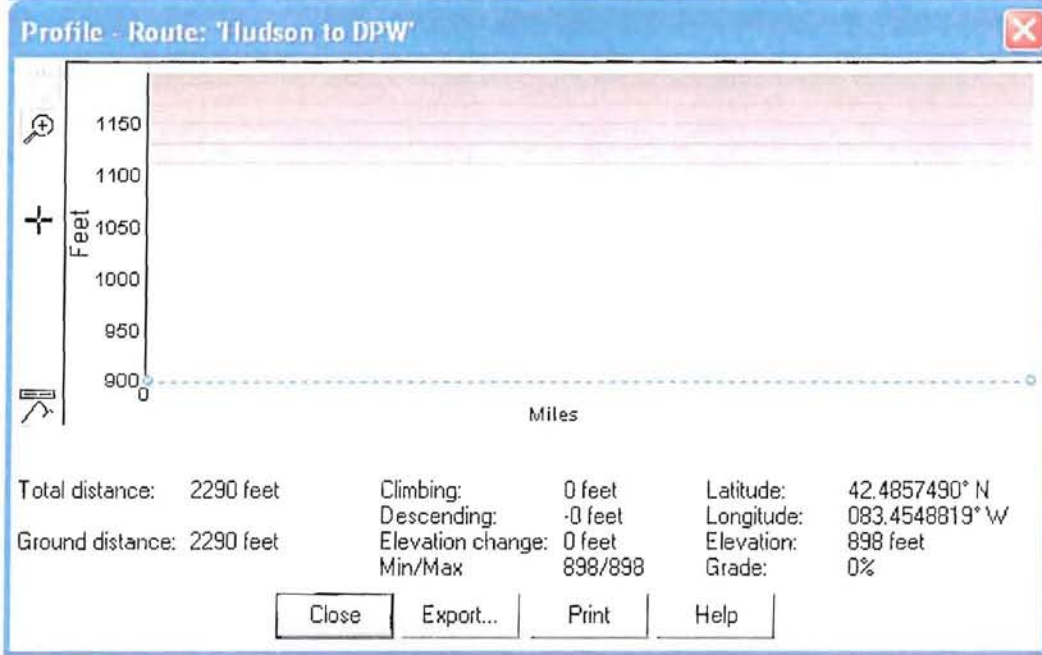
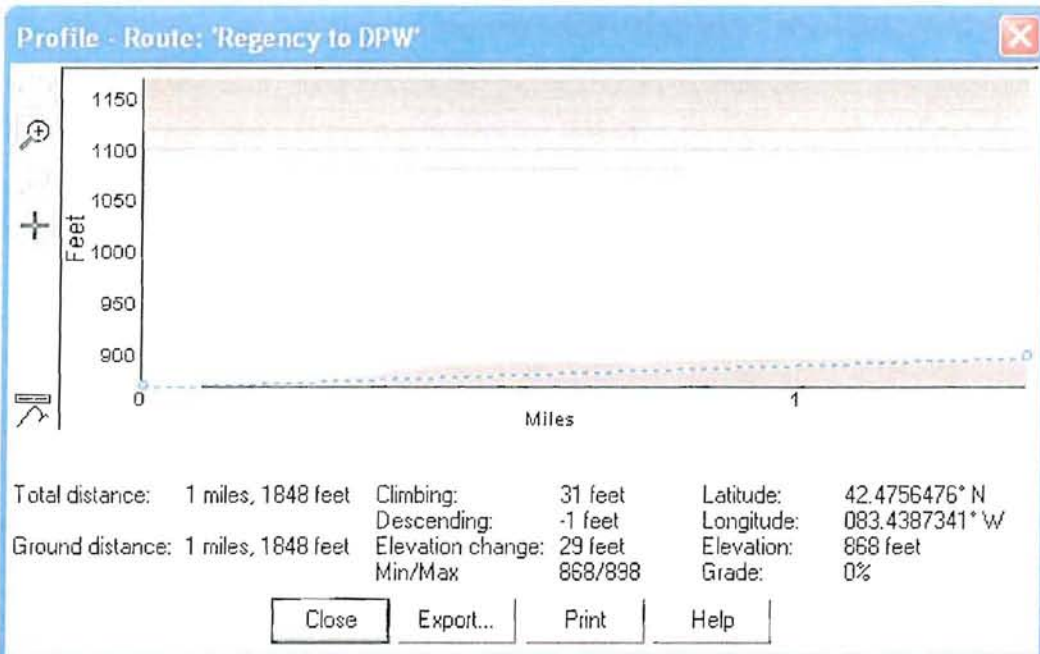


Total distance:	3 miles, 793 feet	Climbing:	76 feet	Latitude:	42.4432067° N
Ground distance:	3 miles, 794 feet	Descending:	-3 feet	Longitude:	083.4343711° W
		Elevation change:	73 feet	Elevation:	825 feet
		Min/Max	825/898	Grade:	6%

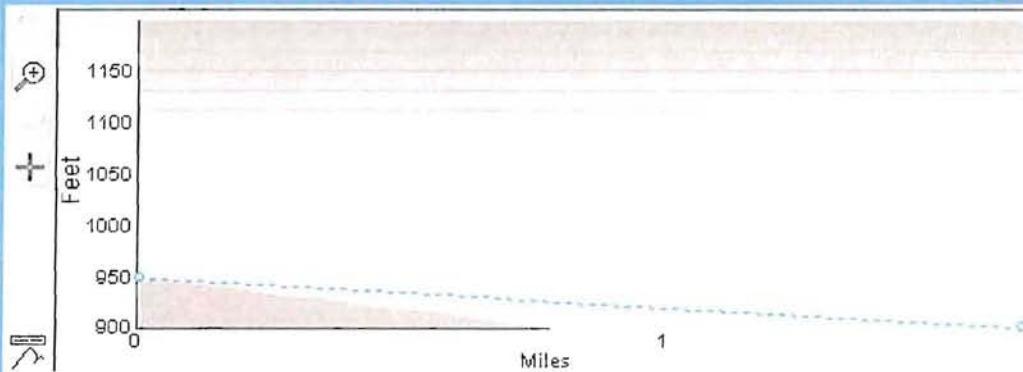
Profile - Route: 'Stonehenge to DPW'



Total distance:	1 miles, 5098 feet	Climbing:	52 feet	Latitude:	42.4639542° N
Ground distance:	1 miles, 5098 feet	Descending:	-0 feet	Longitude:	083.4350765° W
		Elevation change:	52 feet	Elevation:	846 feet
		Min/Max	846/898	Grade:	0%

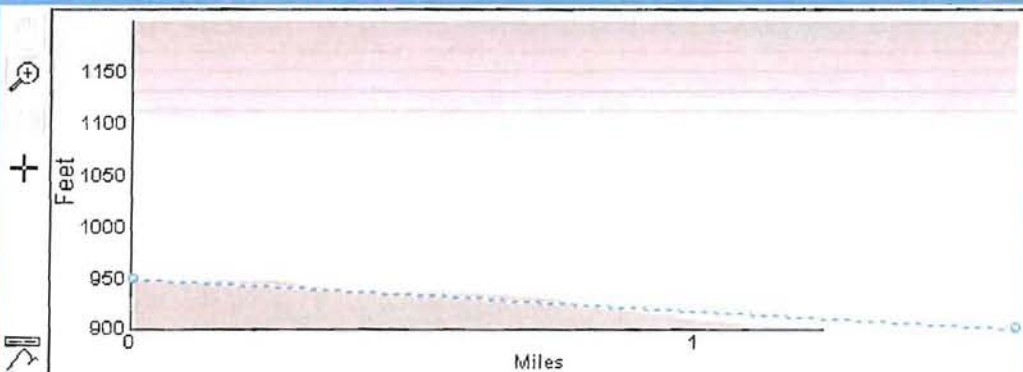


Profile - Route: 'Taft Knolls to DPW'



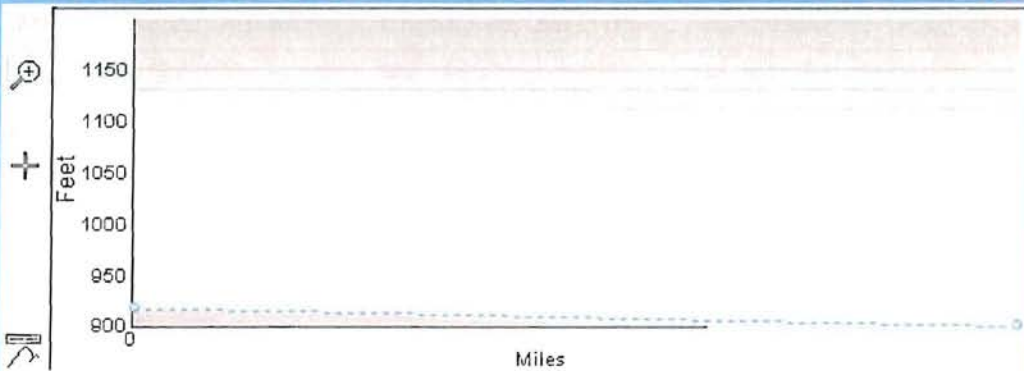
Total distance:	1 miles, 3565 feet	Climbing:	0 feet	Latitude:	42.4795698° N
Ground distance:	1 miles, 3566 feet	Descending:	-50 feet	Longitude:	083.4953122° W
		Elevation change:	-50 feet	Elevation:	948 feet
		Min/Max	898/948	Grade:	0%

Profile - Route: 'Liberty Park to DPW'



Total distance:	1 miles, 2990 feet	Climbing:	1 feet	Latitude:	42.4954655° N
Ground distance:	1 miles, 2991 feet	Descending:	-51 feet	Longitude:	083.4891440° W
		Elevation change:	-50 feet	Elevation:	948 feet
		Min/Max	898/948	Grade:	0%

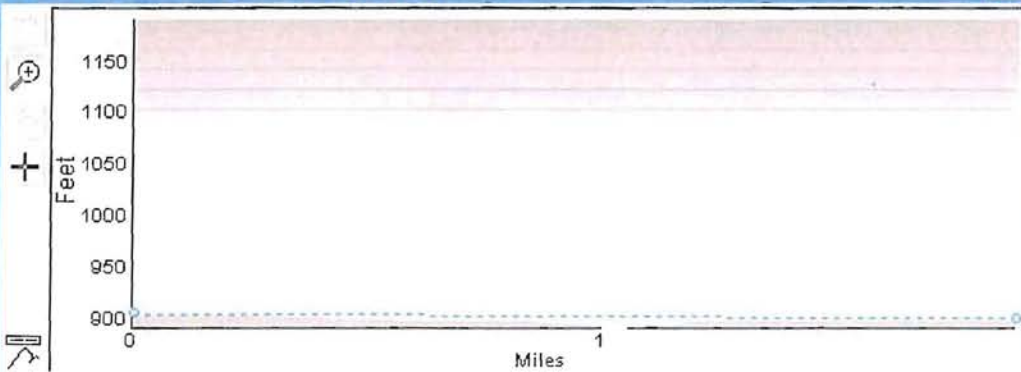
Profile - Route: 'I-96 to DPW'



Total distance:	5160 feet	Climbing:	0 feet	Latitude:	42.4880847° N
Ground distance:	5160 feet	Descending:	-19 feet	Longitude:	083.4811209° W
		Elevation change:	-18 feet	Elevation:	917 feet
		Min/Max	898/917	Grade:	0%

Close Export... Print Help

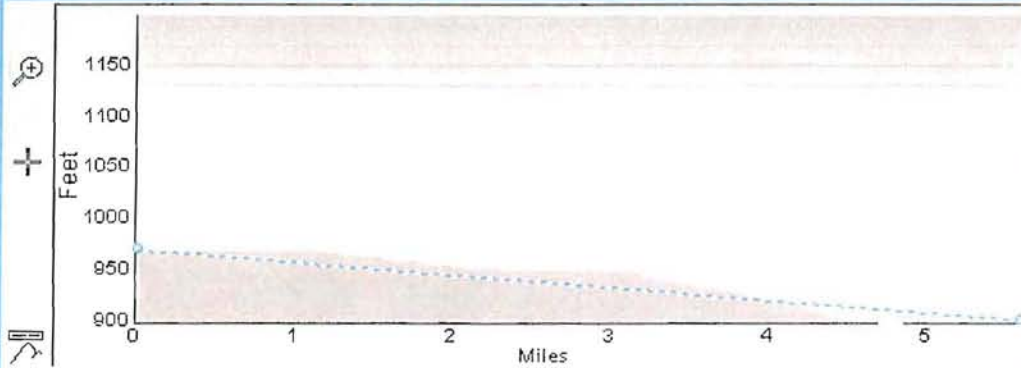
Profile - Route: 'Power Park to DPW'



Total distance:	1 miles, 4678 feet	Climbing:	11 feet	Latitude:	42.4631484° N
Ground distance:	1 miles, 4678 feet	Descending:	-17 feet	Longitude:	083.4873345° W
		Elevation change:	-6 feet	Elevation:	904 feet
		Min/Max	889/905	Grade:	0%

Close Export... Print Help

Profile - Route: 'Community Sports Park to DPW'



Total distance:	5 miles, 3087 feet	Climbing:	6 feet	Latitude:	42.4358823° N
Ground distance:	5 miles, 3087 feet	Descending:	-75 feet	Longitude:	083.5512799° W
		Elevation change:	-69 feet	Elevation:	967 feet
		Min/Max	895/968	Grade:	0%

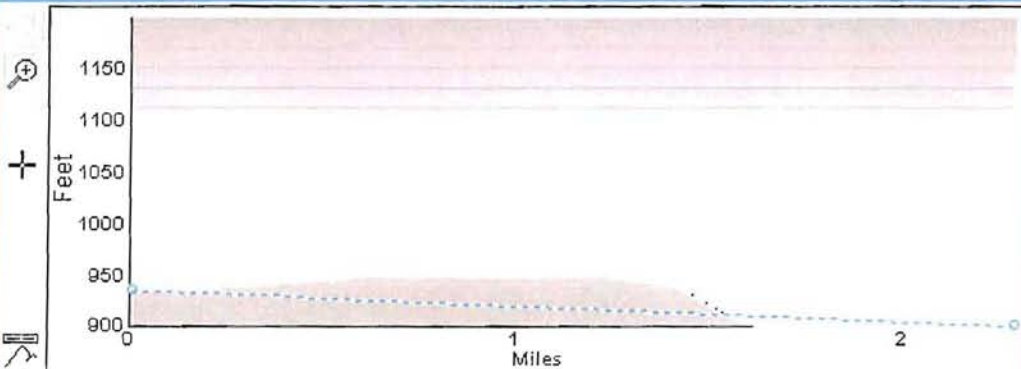
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Help

Profile - Route: 'Lakeshore to DPW'



Total distance:	2 miles, 1502 feet	Climbing:	15 feet	Latitude:	42.5134689° N
Ground distance:	2 miles, 1502 feet	Descending:	-50 feet	Longitude:	083.4822796° W
		Elevation change:	-35 feet	Elevation:	934 feet
		Min/Max	898/948	Grade:	0%

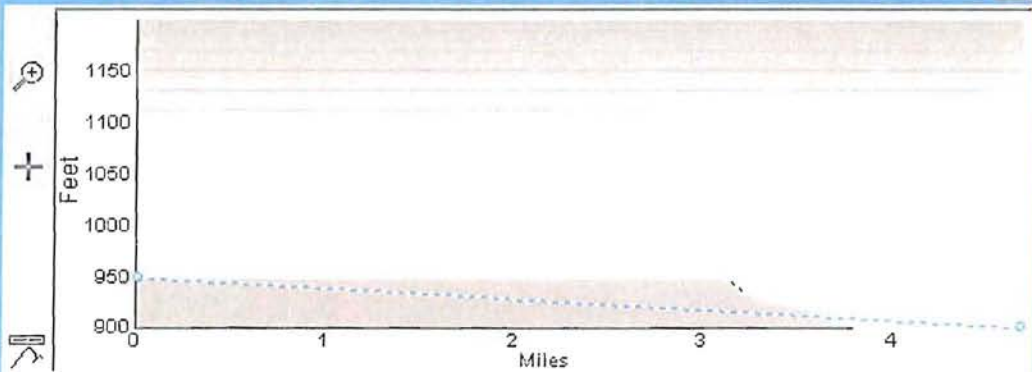
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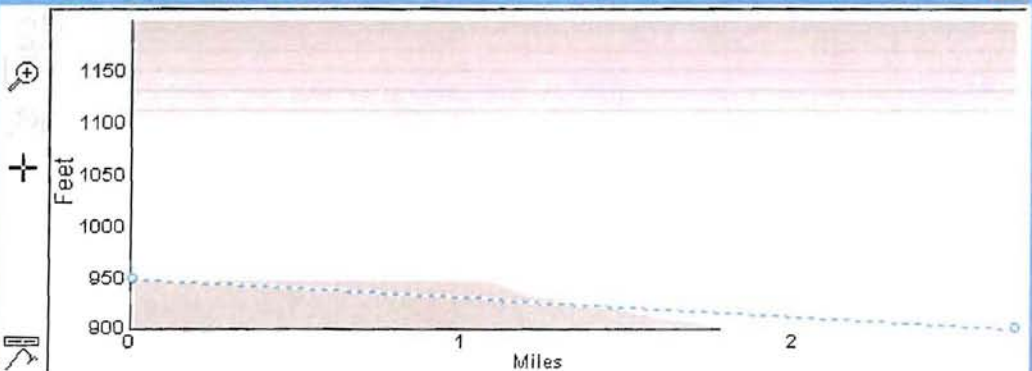
Help

Profile - Route: 'Knightsbridge to DPW'



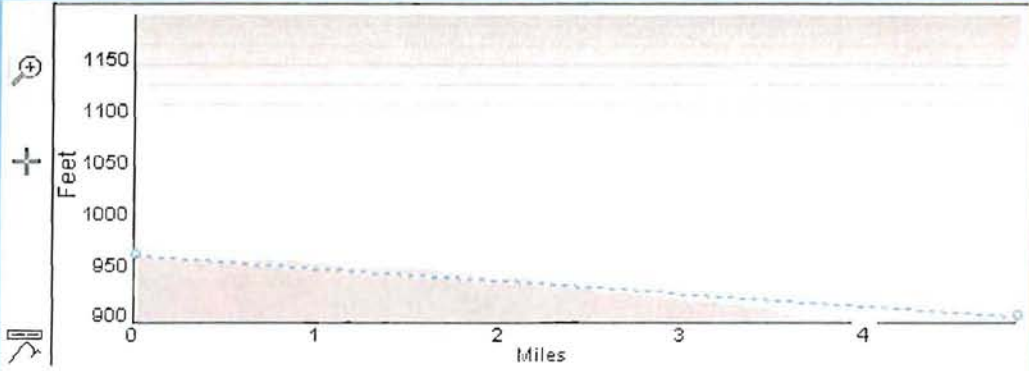
Total distance:	4 miles, 3563 feet	Climbing:	0 feet	Latitude:	42.4856829° N
Ground distance:	4 miles, 3564 feet	Descending:	-50 feet	Longitude:	083.5546105° W
		Elevation change:	-50 feet	Elevation:	948 feet
		Min/Max	898/948	Grade:	0%

Profile - Route: 'Lanny's District to DPW'



Total distance:	2 miles, 3494 feet	Climbing:	0 feet	Latitude:	42.4848085° N
Ground distance:	2 miles, 3494 feet	Descending:	-50 feet	Longitude:	083.5151179° W
		Elevation change:	-50 feet	Elevation:	948 feet
		Min/Max	898/948	Grade:	0%

Profile - Route: 'SAD 170 to DPW'



Total distance: 4 miles, 4390 feet	Climbing: 15 feet	Latitude: 42.4369514° N
Ground distance: 4 miles, 4390 feet	Descending: -75 feet	Longitude: 083.5334496° W
	Elevation change: -60 feet	Elevation: 958 feet
	Min/Max: 892/958	Grade: 0%

