Town of Gardnerville Nevada

Gardnerville Town Board

AGENDA ACTION SHEET

1. **For Possible Action: Discussion on an ADA transition plan and award up to $19,200 for a contract to conduct a sidewalk and accessible ramp survey to provide data for and possibly prepare an ADA transition plan for the Town of Gardnerville, with public comment prior to board action.**

2. **Recommended Motion: To approve the contract with Beneficial Designs, LLC. in the amount of $19,748 to perform the existing sidewalk and ramp evaluation survey data collection efforts and include the preparation of the town's preliminary transition plan.**

   Funds Available: ☑ Yes ☐ N/A

   Funding for this project can be covered by the larger than anticipated income the town has received and monies not spent on budgeted expenses during the 12/13 budget cycle. Or we can use the funds set in the CIP for sidewalk improvements to pay for the town's plan and data collection.

3. **Department: Administration**

   Prepared by: Tom Dallaire

4. **Meeting Date: July 2, 2013 Time Requested: 20 minutes**

5. **Agenda: ☐ Consent ☑ Administrative**

   Background Information: Town staff has started to prepare an ADA transition plan. Many of the plans indicating ramp issues are identified and have been presented to the board, but there is a lot more information needed in the transition plan. This contract will provide the missing information. The data provided under this project will be invaluable to establish the baseline issues of the town's sidewalk regarding: cross slopes, ramp slopes, overhead obstacles, sidewalk obstructions, and heaving obstacles within the sidewalk infrastructure that exist within the Town of Gardnerville. We have already identified where there is and is not sidewalk. We have identified where ramps do not comply with the current ADA requirements and we have the GIS background to build upon for this project. This would complete the transition plan information if they were able to do the entire town within the ten days. Staff would not recommend evaluating sidewalk along the Highway 395 or 756, as NDOT is doing their own transition plan which will include those roads someday.

6. **Other Agency Review of Action: ☐ Douglas County ☑ N/A**

7. **Board Action:**

   ☐ Approved ☐ Approved with Modifications
   ☐ Denied ☐ Continued

Back Ground information on why we need a transition plan:

Legal Requirements:

The development of a Transition Plan is a requirement of the federal regulations implementing the Rehabilitation Act of 1973, which require that all organizations receiving federal funds make their programs available without discrimination toward people with disabilities. Section 504 of the Rehabilitation Act, which has become known as the "civil rights act" of persons with disabilities, states that: "No otherwise qualified handicapped individual in the United States shall, solely by reason of handicap, be excluded from the participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance."

Subsequent to the enactment of the Rehabilitation Act, the federal statute known as the Americans with Disabilities Act (ADA), enacted on July 26, 1990, provides comprehensive civil rights protections to persons with disabilities in the areas of employment, state and local government services, access to public accommodations, transportation, and telecommunications. Title II of the ADA specifically refers to state and local government programs, services and activities.

Title II of the ADA (28 CFR Section 35.150 (d)) requires that state and local entities develop a Transition Plan specific to curb ramps:

... If a public entity has responsibility or authority over streets, roads, or walkways, its transition plan shall include a schedule for providing curb ramps or other sloped areas where pedestrian walks cross curbs, giving priority to walkways serving entities covered by the Act, including State and local government offices and facilities, transportation, places of public accommodation, and employers, followed by walkways serving other areas.

(3) The plan shall, at a minimum --

(i) Identify physical obstacles in the public entity's facilities that limit the accessibility of its programs or activities to individuals with disabilities;

(ii) Describe in detail the methods that will be used to make the facilities accessible;

(iii) Specify the schedule for taking the steps necessary to achieve compliance with this section and, if the time period of the transition plan is longer than one year, identify steps that will be taken during each year of the transition period; and

(iv) Indicate the official responsible for implementation of the plan.

In 2002, the United States Court of Appeals for the Ninth Circuit, whose jurisdiction includes California, held for the first time that sidewalks constitute a service, program or activity of a city, and sidewalks are therefore subject to the ADA's program accessibility regulations. Barden v. City of Sacramento, 292 F.3d 1073 (9th Cir. 2002).

Before the Barden decision, the law was unclear whether municipalities' transition plans should address barrier removal from sidewalks.

Goals:

The goals of the ADA Public Right-of-Way Transition Plan are:

- *To conduct an accessibility evaluation of the Public Rights-of-way Sidewalks;*
- *To develop facility accessibility recommendations for "Agency Name"; and*
- *To ensure that the views of the disability community are included in the development of "Agency Name" Transition Plan.*

The process of making *"Agency Name"* public Rights-of-way accessible to all individuals will be an on-going one, and "Agency Name" will continue to review accessibility issues and periodically evaluate the success of improving access to its facilities.

Dallaire, Tom

From: Nathan Tolbert [nathan@beneficialdesigns.com]
Sent: Thursday, June 13, 2013 4:52 PM
To: Dallaire, Tom
Subject: Beneficial Designs - Sidewalk Assessment Proposal
Attachments: IP-216-ToG NV Proposal 2013-06-13.pdf; IP-216-ToG NV BUDGET 2013-06-13.pdf

Mr. Dallaire:

We are excited that your agency appears to be ready to invest in the accessibility and safety of your sidewalk environment. We would like to offer assessment services to assist you with initiating your self-evaluation process. Attached is our proposal to conduct a pilot assessment in your jurisdiction to initiate a sidewalk inventory database and to help you develop a preliminary Accessibility Transition Plan for your pedestrian environments.

You are welcome to use our proposal to communicate the need to identify tripping hazards to reduce liability and to explain the legal requirement for evaluating the accessibility of your sidewalk environment. Our proposal outlines our services and the processes we are proposing to assess your sidewalks. In Appendix A, we have included a sample "Assessment Scope" that will be created for your agency based on your input and the results of the proposed pilot work. We have also included a sample schedule for the project and a separate Budget Document.

We have proposed both a five-day or ten-day scenario. There are many benefits to the ten-day option:

- The cost per mile of assessment is lower.
- The larger sample size covered will allow us to collect data from more priority areas within your city.
- The additional coverage will increase the quality of the data that will be used to calculate the cost of assessing the entire jurisdiction.
- Data from more priority areas can also be used to justify accessibility enhancement proposals to leverage federal, state and local funding.
- The increased sample size will increase the validity of the data for use in the self-evaluation portion of your Transition Plan.
- More data in your GIS system will allow you to better monitor and communicate about the conditions of your existing infrastructure.

We are also available for consulting work beyond assessment services. Beneficial Designs can provide assistance with:

- Preparation of your Transition Plan documents
- Facilitation of a public workshop to obtain input
- Creation of a survey instrument to identify tripping hazards and access issues
- Implementing a process for the public to request access improvements and
- Developing a schedule for implementation

If you have any questions about the information provided, please contact me directly. Thank you for your consideration of our services to meet your agency needs.

Thank you,

Nathan Tolbert
Assessment Coordinator
Beneficial Designs Inc
P O Box 69
2240 Meridian Blvd, Suite C
Minden NV 89423
(v) 775-783-8822 x111 (f) 775-783-8823

The Town of Gardnerville, Nevada: Pedestrian Transition Plan Self-Evaluation Pilot Project

Prepared by:

Peter W. Axelson, Director of Research & Development
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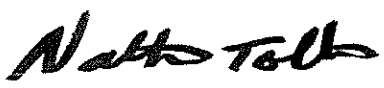
13 June 2013



Nathan Tolbert

The Town of Gardnerville, Nevada: Pedestrian Transition Plan Self-Evaluation Pilot Project

BACKGROUND

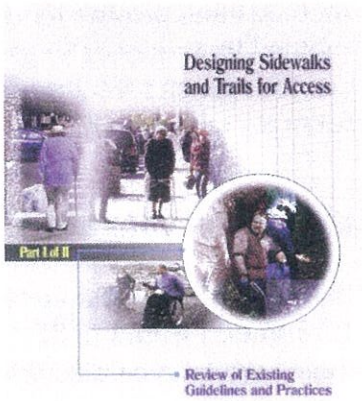
Mission

Beneficial Designs works towards universal access through research, design, and education. We believe all individuals should have access to the physical, intellectual, and spiritual aspects of life. We seek to enhance the quality of life for people of all abilities, and work to achieve this aim by developing and marketing technology for daily living, vocational, and leisure activities.

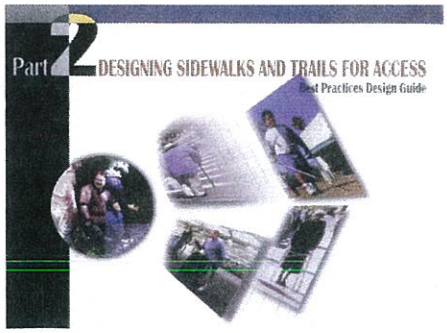
History and Qualifications

Beneficial Designs, Inc (BD) is a rehabilitation engineering design firm that works towards universal access through research, design, and education and that specializes in the development of mobility technologies and accessibility standards. Peter W. Axelson is the founder (1981) and the Director of Research and Development at Beneficial Designs, Inc. **Axelson received a B.S. degree in Mechanical Engineering and Product Design in 1979 and an M.S.M.E. degree in Smart Product Design in 1982, both from Stanford University**. Axelson sustained a spinal cord injury while in the U.S. Air Force Academy and has over 30 years of experience as a wheelchair user. Axelson and his staff have initiated and led the following access-related projects:

Developed the Universal Trail Assessment Process (UTAP), trail access symbols, and trail guide products to enable hikers of all abilities to choose appropriate trails. Developed UTAP workshops and Train-the-Trainer courses to ensure availability of courses throughout the country. Created data processing software, TrailWare, to manage and process data collected from UTAP and create signage to disseminate information to users. Created the TrailExplorer Website, www.trailexplorer.org, with a database containing trail access information and a search engine.



Developed a portable surface measurement device to determine the firmness and stability of surfaces for accessibility. Participated on an US Architectural and Transportation Barriers Compliance Board Committee to create the technical report and a committee on accessibility guidelines for the proposed guidelines for access to outdoor developed areas. Created a Research Report and Design Guide, Designing sidewalks and trails for access – Part I of II: Review of existing guidelines and practices and Part II of II: Best practices design guide, for the Federal Highway Administration. Developed a pedestrian facility design course for the National Highway Institute



based on the Federal Highway Administration work. Developed the Sidewalk Assessment Process and created a Research Report, Development of an Assessment Process to Evaluate Sidewalk Accessibility, for the Transportation Research Board.

Updated the Pedestrian Area Policies and Design Guidelines for the Maricopa Association of Governments in Phoenix, AZ with HDR. Developed a General Management Plan to incorporate universal access in the facilities and programs offered for The Forest of Nisene Marks, a California Department of Parks and Recreation site, with Royston, Hanamoto, Alley, and Abey (RHAA).

Axelson has served on the American Trails Board of Directors, and has been a member of standards committees for the Recreation Access Advisory Committee to the U.S. Access Board (U.S. Architectural and Transportation Barriers Compliance Board) and also the Regulatory Negotiation Committee on Outdoor Developed Area Guidelines. In addition, Axelson is Chair of the RESNA Standards Committee on Wheelchairs.

Beneficial Designs has been awarded Phase I & II Small Business Innovation & Research (SBIR) funding to create the tools and an assessment process for an automated method to evaluate the sidewalk environment. This funding is provided by the U.S. Department of Transportation through Federal Highways Administration grant number DTRT57-08-C-10058. This new process will serve to replace current manual methods and provide more accurate and complete data and a more efficient data collection method that reduces physical strain and time. The software development portion of this project is complete and Beneficial Designs is currently looking to assist agencies implement the federally required self evaluation of the sidewalk corridors by local agencies.

U.S. Department of Transportation
Federal Highway Administration

LEVELS OF ASSESSMENT SERVICE

It is important to begin analyzing the sidewalk environment by assuming that **all Pedestrian Circulation Paths (PCP)[i] can be completely accessible**. Assessment of the PCP has four main targets to be discussed in detail later:

Component 1:	Trip Hazards: Vertical Discontinuities, Gaps, Protruding Objects, etc.
Component 2:	Curb Ramps: Parallel, Perpendicular, Perpendicular with Setback Turning Space, and Blended Transitions
Component 3:	Cross Slopes: Assessment of the Pedestrian Access Route (PAR)[ii] that

[i] Pedestrian Circulation Path (PCP): A prepared exterior or interior surface provided for pedestrian travel in the public right-of-way; or, the sidewalk/pedestrian environment.

[ii] Pedestrian Access Route (PAR): A continuous and unobstructed path of travel provided for pedestrians with disabilities within or coinciding with a pedestrian circulation path; or the path a pedestrian would take within sidewalks and other pedestrian circulation paths located in the public right-of-way. The pedestrian

represents the Best Path of Travel (BPOT)[iii] through the PCP

Component 4: Features Recording

From that assumption, however, it is important to take into account budget restraints and the environmental considerations that ultimately determine the level of assessment to be provided. Thus, three potential assessment solutions are proposed that are defined as:

1) **Minimum Access Requirements:** Simplest and quickest assessment that only evaluates those elements that are defined in the applicable guidelines for the jurisdiction. Correction of the issues discovered by this process will provide reasonable accommodation and meet the structural intent of the applicable accessibility guidelines.

    a. PAR Fields include: segment length, grade, cross slope, tread width, surface type, and surface stability. Grades will be tagged when they are not planar with the roadway, cross slopes when they are a result of driveway crossings, and tread widths will be tagged when they are a minimum clearance width which is a width that the pedestrian is forced to fit through because of obstructions on both sides.

    b. Curb ramp collections will only include the measurements and observations that verify the specific text of the guidelines. Pedestrian crossings that do not have a curb ramp provided will be identified, but no data about the corner will be collected.

    c. Obstructions and hazards in the PCP that are discovered will be identified and the extent of the element that exceeds the minimum requirement of the guideline will be recorded.

2) **Beyond Minimum Access Requirements:** This level of assessment exceeds verification of the structural intent of the applicable accessibility guidelines and provides a level of detail that will allow the agency or department responsible for the pedestrian circulation path to define the corrective action, materials and costs associated with most conditions without a second visit to the site. This level typically includes "Minimum Access Requirements" assessment criteria.

    a. PAR fields are extended to include when a cross-slope creates a drainage issue.

    b. Curb Ramp collections will be extended to include approach surfaces to provide the designer with additional information to determine the amount of effort

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access route connects accessible elements, spaces, and facilities to accessible routes required by section 206.2.1 of Appendix B of 36 CFR part 1191 or section F206.2.1 of Appendix C of 36 CFR 1191 that connect building and facility entrances to public streets and sidewalks.

[iii] Best Path of Travel (BPOT): The path of least resistance for a pedestrian within the Pedestrian Circulation Path. The assessment coordinator will look for the least grade and/or cross slope and the fewest obstructions even if the path is not the shortest route through the circulation path.

required to resolve grade or surface issues at the curb ramp. Dimensions, grade, and cross slopes of the elements that exist at pedestrian crossings that do not have a curb ramp will be included to provide the designers with minimum data to determine the level of effort required to provide a curb ramp at that location.

c. Collections for obstructions and hazards discovered in the PCP will be expanded to include data on the severity of the condition, replacement area, and other conditions of the feature to help prioritize and estimate the costs of repairs.

3) **Maximum Assessment beyond Minimum Access Requirements:** Provides a full assessment of all elements and features in the PCP defined by the applicable guidelines to the extent feasible. This level of assessment will include the identification of all observed features located in the PCP including: Landscape elements, street furniture, driveway crossings, and hazards. This level typically includes "Beyond Minimum Access Requirements" and "Minimum Access Requirements" assessment criteria.

COMPONENTS OF ASSESSMENT AND METHOD COMPARISON

Component 1: Tripping Hazards: Vertical Discontinuities, Gaps, Protruding Objects, Etc.

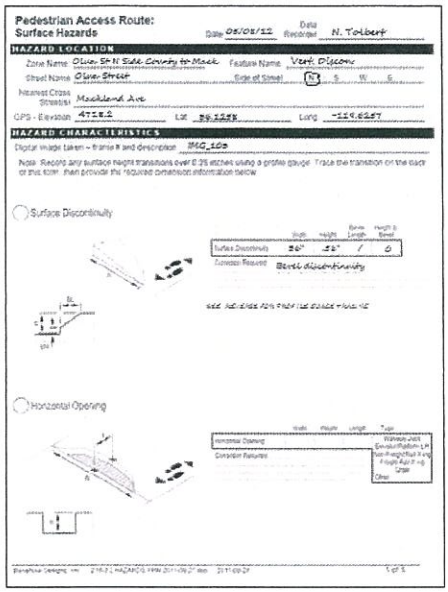
Why is the identification of Tripping Hazards important?

Pathway obstructions are features that fall within the Pedestrian Circulation Path (PCP) and may **obstruct passage along the sidewalk or pose a danger** to sidewalk users. Any level change or vertical discontinuity of more than 0.25 in. vertical or 0.5 in. beveled is considered a tripping hazard.

Medical claims of pedestrians who trip and fall in the public right-of-way are **one of the most expensive liabilities** for agencies that have responsibility or authority over streets, roads, or walkways. According to the Centers for Disease Control and Prevention (CDC), there are over 1 million reported injuries a year and an estimated 7 million more individuals are injured in unreported accidents. To reduce the liability potential, vertical discontinuities must be discovered and measured to determine the appropriate corrective action (grind below 0.5 in. or reconstructed if greater than 0.5 in.). The fast, accurate, and efficient detection of tripping hazards is critical for a complete sidewalk assessment.

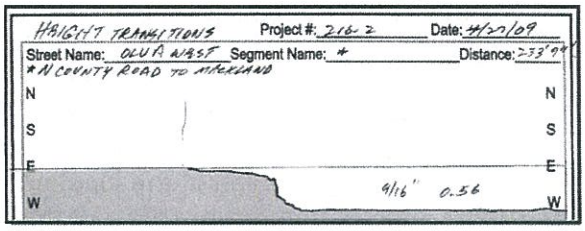
Manual Sidewalk Assessment Process (SWAP)

Measuring tripping hazards manually is a **time consuming and physically demanding** process given the available methods. In order to identify a vertical discontinuity, the assessment coordinator must first be diligent in keeping an eye out for potential hazards, then squat down at each one to measure the height and width. The measurement process requires the assessment coordinator to work through numerous steps to

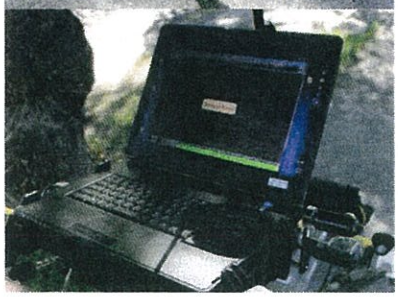


determine the magnitude of the discontinuity as well as the collection of a number of attributes. **The information collected includes: Height, width, distance from the start of the sidewalk segment, GPS coordinates, remaining tread width, and any action(s) required.** The information about a trip hazard is recorded on a paper data form and then can be entered into a database or spreadsheet at a later time.

There are two methods to determine the magnitude of a vertical discontinuity, the first is to trace, measure, and record. This method uses a profile gauge and requires the assessment coordinator to kneel down, press the gauge over the level change to create a mold, lay the gauge across the back of the data sheet, trace the profile, measure the height of the change in level, and then record that measurement on the front side of the data form. The second method uses a shim or other tool that provides the profile of the maximum allowable change in height. In this scenario, the assessment coordinator places the shim next to or over the level change and determines if the change is a hazard or not and then would measure and record the associated data similar to the profile gauge method.



Pedestrian Right-of-Way Assessment Process (PROWAP): Minimum Requirement Assessment

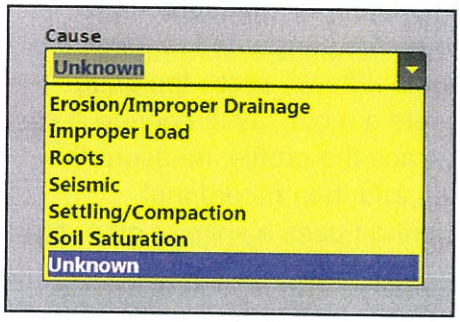


The PROWAP **greatly increases the efficiency and accuracy** of Trip Hazard detection and collection **while reducing the physical requirements** at the same time. The first advantage is that of detection. The PROWAP system is programmed with an algorithm that electronically monitors the sensor readings taken over time while traversing the Pedestrian Access Route PAR) and provides both audible and visible alerts when the cart impacts a vertical discontinuity greater than 0.25 in.

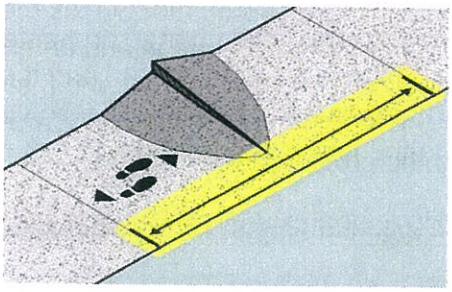
The wireless height measurement device measures the height of the level change to determine if it exceeds the conditions allowed by the applicable guidelines. A simple user interface on the device initiates the collection of the trip hazard and **enables collection of the height without kneeling or squatting**. It also

allows for the user to quickly determine the extreme condition posed by the change in level. The wireless measuring wheel enables the automated measurement and recording of the width of the hazard and the remaining tread width. The PROWAP system also provides **automated collection of GPS data, a digital image, the distance along the stroll path, and provides the user a method to add the potential corrective actions and materials needed to rectify the condition, all in less time than it takes to manually measure and record the basic information.**

PROWAP: Assessment Beyond Minimum Requirements



Beneficial Designs has conducted research with many different jurisdictions to identify the information needed to complete a work order to rectify the hazard. If personnel are already in the field, the logical, efficient solution would be to evaluate the situation completely. There is **no need for an additional trip to re-evaluate the conditions** to generate a work order that requires yet another trip to the site for the maintenance crew to correct the situation. The additional information includes, but is not limited to: Replacement length, width, and height so the total surface area in inches squared is available to obtain a quote from a sidewalk cutting or grinding contractor. If known, the responsible party, cause, and description of the location is documented. Additionally, grades and cross slopes of the adjacent and affected panels can be recorded to prioritize the most extreme circumstances within the entire jurisdiction.



Summary of Tripping Hazard Assessment

The days when a public works official could say "Let's not put it in writing because it will increase Liability" are over. With the number of liability claims and the development of an accessibility guideline specific to the pedestrian environment, unawareness can no longer be argued. **The correct detection, measurement, and corrective action regarding tripping hazards are perhaps the most important components of the sidewalk assessment process because they are the most expensive liability for the city.**

With the use of PROWAP, **trip hazards can be discovered and assessed in the sidewalk environment 89% faster** than the traditional SWAP and the **accuracy of discovery can be increased by 225%**[iv] at the same time.

Protect yourself: document needs and establish a plan going forward given the resources

[iv] Based on a test trial of 1500 ft. of sidewalk in an urban area conducted between August 2012 and March 2013 by Beneficial Designs.

available. Then you can answer: "Yes we are aware and are addressing the issue. We are dedicating these resources towards it." When it comes to liability issues, BD can provide the resources to help you avoid, minimize, and mitigate them.

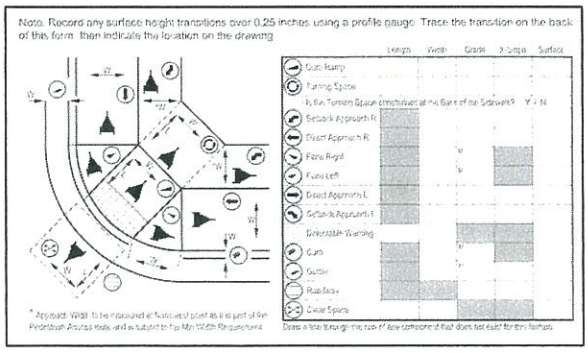
Component 2: Curb Ramps (Parallel, Perpendicular, Perpendicular with Setback Turning Space, and Blended Transitions)

Why are Curb Ramps such a High Priority?

Curb Ramps, or surface transitions, are **critical to providing access between the sidewalk and the street** for people who use wheelchairs or other mobility devices. Curb ramps are most commonly found at intersections, but they may also be found at other locations such as on-street parking, loading zones, bus stops, and midblock crossings. Without curb ramps, wheelchair users would be excluded from the sidewalk because of the barrier created by the curb, however, they can create major information barriers for people with vision impairments who rely on the curb to identify the transition point between the sidewalk and the street. **Curb ramps should be provided that provide access for people with mobility impairments while minimizing the drawbacks for people with vision impairments**.

The 1990 Americans with Disabilities Act (ADA) stipulated that **every public agency with more than 50 employees have an ADA Transition Plan** completed by January 26, 1995. Section 35.150 further states that if a public entity has responsibility or authority over streets, roads, or walkways, its **transition plan shall include a schedule for providing curb ramps or other sloped areas where pedestrian sidewalks crosses a curb into the street.** First priority is given to walkways serving entities covered by the ADA, including State and local government offices and facilities, transportation, places of public accommodation, and places of employment; followed by walkways serving other areas. In order to complete this transition plan, agencies must complete a self-evaluation to determine where curb ramps need to be provided and the level of access provided at each existing curb ramp.

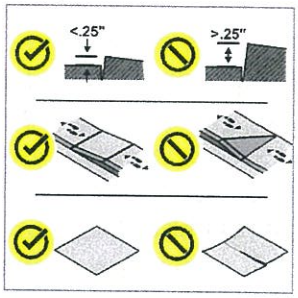
Manual Sidewalk Assessment Process (SWAP)



At a perpendicular curb ramp with a setback turning space, there are a **minimum of 11 elements that require measurement to confirm compliance** with the US Access Boards draft Pedestrian Right-of-way Accessibility Guidelines (PROWAG). The potential measurements required for each element include length, width, grade, and cross slope. Grade and cross-slope are measured with a SmartTool over a 24 in. (610 mm) distance to simulate the stance and stride of the average pedestrian as well as resemble the typical footprint of a mobility device.

Length and width measurements are taken with a tape measure or mini roll-a-wheel. Type of curb ramp, GPS data location information, and other compliance related observations are noted as well. The presence or absence of a detectable warning surface or other attempts at providing tactile information on the surface are noted and identified. All the information is recorded on a paper data form that will be later used to manually input all the data into a spreadsheet or database program for analysis and comparison.

PROWAP: Minimum Requirement Assessment



Data collection for curb ramps is effectively streamlined by use of the PROWAP. All data recorded is immediately saved to the project database during collection and the assessment coordinator is guided through the workflow by the software. The process begins with the recording of the GPS data and an image of the feature (if desired by the requesting agency). Then a series of observations are made and the resultant data recorded within the PROWAP Software. **The PROWAP cart is used to measure the grade and cross-slope of each element of the curb ramp** by positioning the cart on the surface of each element and recording the sensor data for grade and cross-slope with just a single keystroke on the laptop computer.

Next the wireless measuring wheel provides an **automated method to capture all the dimensions without having to manually enter any values**. Simply roll the surface, press capture and move on to the next dimension to be measured.

Once the dimension measurement portion of the curb ramp assessment is finished, the entire assessment is complete and the software is ready to continue cross-slope assessment or ready to assess another feature.

PROWAP: Beyond Minimum Requirements

Given that there are already personnel in the field, **additional information can be collected along with the minimum compliance assessment information** without requiring a second trip to the feature. The PROWAP can **provide key information that will provide engineers or maintenance managers** with the information they need to establish the amount of repair required to remedy any access barriers at a curb ramp that may be discovered. For example: there are over 60 attribute fields associated to a perpendicular curb ramp with a setback turning space, this level of data will provide an agency with all the information needed to verify compliance or verify if the space exists to correct non-complaint conditions at a curb ramp.

Summary of Curb Ramp Assessment

Asking an employee to measure all the elements at every curb ramp with **SWAP requires them to bend or kneel down over 22 times at each curb ramp**. Measuring this many elements is physically demanding, time consuming, and tedious. These combined conditions create an environment that can lead to **increased error potential and increases the injury potential** for the employee. The **PROWAP virtually eliminates the need for bending and squatting, provides a 76% time savings for data collection and provides higher accuracy data**. With the option to increase the amount of data collected, BD can provide all the data necessary to complete the self-evaluation portion of an agencies transition plan as well as provide a management tool that facilitates the prioritizing, costing and implementing the installation and repair of all curb ramps within the agency's jurisdiction.

Component 3: Cross Slopes (Path of Travel Assessment Includes: Cross Slope, Grade, Tread Width, and Surface)

Why is Cross-slope an Important Factor in Sidewalk Safety?

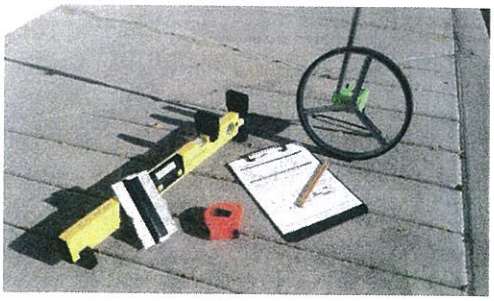
Excessive cross-slope is a major barrier to travel along sidewalks for pedestrians who use wheelchairs and scooters, pedestrians who use walkers and crutches, pedestrians who have braces or lower-limb prostheses, and those with gait, balance, and stamina impairments. Energy that might otherwise be used in forward travel must be expended to resist the perpendicular force of a cross-slope along a travel route. Cross slopes that exceed 1:48 (2%) significantly impede forward progress on an uphill slope and compromise control and balance in downhill travel and on turns. Because the cross-slope of a sidewalk is typically toward the roadway, the pedestrian who loses traction or balance will be directed toward the street. In wet or freezing weather, travel across a slope always carries the threat of sliding into the roadway.[v]

Wheelchair users traveling on sidewalks with cross slopes have to use more energy to keep from tipping over. Driveway crossings have been known to have angled slopes that direct a pedestrian with visual impairments into the street. **Flares, such as those found on driveway crossings, confront wheelchair users with severe and rapidly changing cross slopes that put a wheelchair user in a precarious position** on three wheels which could cause loss of control of the direction of the wheelchair and gravity then directs the user into the street. The angles slopes present at driveway crossings have been known to direct a pedestrian with visual impairments into the street. These **excessive cross-slopes make driveway crossings unusable by many pedestrians with mobility impairments**.

Manual Sidewalk Assessment Process (SWAP)

There are 5 tools needed to assess the Best Path of Travel (BPOT) through the sidewalk environment properly:

- A roll-a-wheel used to roll down the best path of travel along the sidewalk for measuring the length of the sidewalk and locating features.
- A digital inclinometer (level, or Smart Tool) used to measure cross-slope and can be used to measure any grades that appear to be steeper than the roadway at the same time. The level is



[v] Accessible Rights-of-Way: A Design Guide, US Access Board, 1999

24 in. (610 mm) long, and with feet installed it provides measurements over the same distance covered by the length and width of an average wheelchair, walker, crutch span, or pedestrian stance.

- A tape measure used to record the sidewalk width at each station; width and length of segments narrower than specified for the sidewalk (minimum clear width); and dimensions of features, obstacles, and protruding objects that might obstruct passage or require maintenance or repair.
- A profile gauge used to measure the severity of trip hazards in the side walk environment.
- Data forms to document all measurements and findings collected during the assessment.

The pedestrian access route grade, cross-slope, and surface are measured continuously each time there is a change and maximum 25 ft. apart. Grades are recorded when they exceed the general grade established for the adjacent street or highway and they exceed 5%. The distance over which the grade occurs is also recorded. Cross slopes are recorded if they exceed 2% in either direction and the distance over which the cross-slope occurs is also recorded.

PROWAP: Minimum Requirement Assessment

The PROWAP for cross slopes is an automated process to collect cross slope, grade, tread width and surface type data for the pedestrian access route through the sidewalk environment. The assessment coordinator will **roll the PROWAP cart along the best path of travel** and record stations every time one of the conditions changes. There are **three major advantages of the PROWAP over SWAP**. The first is the **electronic monitoring of the grade and cross-slope sensors** that alerts the assessment coordinator to changes in slope. These alarms increase accuracy of the data and greatly contribute to **the second advantage**, which **is speed of collection**. The **third advantage is the quality and usefulness of data collected**. The PROWAP Software assists

with identifying the location of every section of cross-slope that exceeds the maximum 2% requirement. **PROWAP identifies cross-slope issues along the best path of travel** and specifically tags those caused by driveway crossings as well as recording the grade, tread width, surface type, stability of the surface and an image of the sidewalk at each station. It also provides this station data for the path of travel in table form or as a Line Feature Layer for use in an agency's GIS system. **The data allows the local agency to analyze the data on their own and create walking plans for their jurisdiction to enhance access through their sidewalk environments.**

PROWAP: Beyond Minimum Requirements

The PROWAP Software offers the ability to tag each station with notes to indicate the cause of the conditions recorded at the location like when a street light or utility pole reduces the available tread width. **This additional data will provide agencies responsible for the repair and maintenance of the sidewalk environment the ability to quickly and easily recognize what elements exist that create barriers, prioritize repairs, and identify trends that repeatedly cause problems** in their jurisdiction.

Summary of Cross-slope Assessment

In 2002, the United States Court of Appeals for the Ninth Circuit held that sidewalks constitute a service, program, or activity of a city, and are therefore subject to the ADA's program accessibility regulations[vi]. Before this decision, the law was unclear whether municipalities' transition plans should address barrier removal from sidewalks. **With the compounding pressure of liability for the sidewalk environment and the federal requirement to provide access, agencies need an efficient and accurate method to assess their sidewalk environment and create a transition plan that addresses repair and improved access** throughout their jurisdiction. BD uses **PROWAP, which has a nearly 70% time savings over the manual SWAP method** and provides more detailed information, to provide an efficient and cost-effective solution. Remember, there is good news: "... the City is not liable forever; it is responsible only for correcting its own mistakes. This is not too much to ask, even when the City's mistakes have gone unchallenged..."[vii]

[vi] Barden v. City of Sacramento, 292 F.3d 1073 (9th Cir. 2002).

[vii] Frame v. City of Arlington, 657 F.3d 215 (5th Cir. 2011).

Component 4: Features Recording

Why Assess more than the Path of Travel and Curb Ramps?

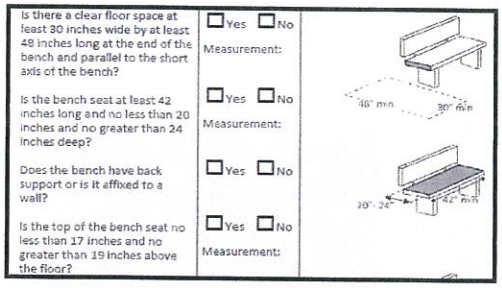
The current 2010 ADA Standards were developed primarily for buildings and facilities on sites. Some of the requirements in the standards can be readily applied to pedestrian facilities in the public right-of-way, while other requirements need to be adapted for pedestrian facilities in the public right-of-way. **The US Access Board's Draft Pedestrian Right-of-Way Accessibility Guidelines (PROWAG) have been developed specifically for pedestrian facilities in the public right-of-way**. They address conditions and constraints that exist in the public right-of-way. This document contains scoping and technical requirements to ensure that facilities for pedestrian circulation and use located in the public right-of-way are readily accessible and usable by pedestrians with disabilities. Once adopted, **compliance with this document is mandatory** when required by regulations issued by federal agencies that include accessibility standards for the design, construction, and alteration of pedestrian facilities in the public right-of-way.[viii]

In addition to curb ramps, trip hazards, and other barriers within the pedestrian access route, **BD has identified six additional categories of features that require compliance with the draft PROWAG**. The categories are transit stop elements, wayfinding elements, path events, structural elements, pedestrian amenities, and parking elements. These categories contain over 30 different feature types that can be assessed for compliance, including but not limited to: boarding platforms, transit shelters, benches, pedestrian pushbuttons, doors & gates, ramps, stairs, tables, counters, water fountains, parking meters, pedestrian signs, and on-street parking (See Below for complete list). **Obtaining objective, reliable information about elements and evaluating whether they comply with accessibility standards will increase the availability of pedestrian facilities, enhance access, safety and satisfaction for users; and allow managing agencies to more accurately forecast maintenance budgets for existing facilities. Increased pedestrian environment facility information will enhance enjoyment by individuals of all abilities; including older adults, families with young children, people with disabilities, and their families and friends.**

Manual Sidewalk Assessment Process (SWAP)

There are many resources available for assessing facility elements which may be applicable to the pedestrian right-of-way. There are checklists available from the various sources for many elements of the sidewalk environment and most private ADA inspection firms have created their

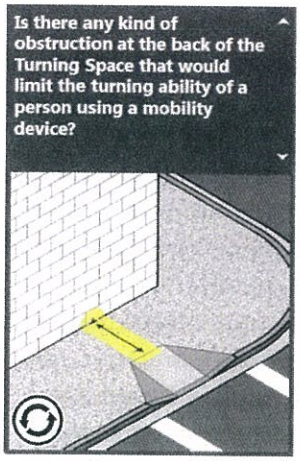
[viii] Proposed Accessibility Guidelines for Pedestrian Facilities in the Public Right-of-Way, July 26, 2011, United States Access Board.



own forms and specialized tools to increase the speed and accuracy of the collection process. However, most firms keep their forms and tools proprietary and the forms available publicly do not address the PROWAG requirements when they differ from the 2010 ADA Standards.

As expected, most forms consist of yes/no answers that require the assessment coordinator to verify that a specific condition is met by measuring the element and checking the associated compliant or non-compliant box. **Research conducted by BD about assessing outdoor designs revealed that without a standardized assessment process, what could be assumed as a simple verification- as described in the applicable guidelines, was discovered to be unverifiable and not reproducible**. Many features in the pedestrian environment suffer from this same dilemma making a manual process limited at best.

PROWAP: Minimum Requirement Assessment - Significant Features



The PROWAP system provides a guided workflow for assessing features in the pedestrian environment accompanied by visual guides and help text to aid the assessment coordinator in the evaluation of the feature. These additional aides to the collection **increase the accuracy and validity of the data collected** because every assessment coordinator has the same reference material provided; even for features that appear rarely in the sidewalk environment. The next significant advantage, beyond the speed and accuracy of collection, is that **each element is measured and the result is recorded, rather than simply verifying compliance with the current guideline.** This allows the element to be compared with other guidelines. For instance, when states adopt their own guidelines, they tend to be stricter than the Federal requirements in some areas. If an element was evaluated against the Federal guidelines and only recorded as a pass fail, it cannot be verified as compliant with another, potentially more restrictive guideline, without re-assessing the feature.

PROWAP: Beyond Minimum Requirements

Assessments can be expanded to include more information about each element and/or to include the location and identification of all features that exist in the sidewalk environment. Collections can include attributes like manufacturer, full dimensions, clear space around and elements beyond the minimum space required, images, text descriptions, etc. **Additional features that can be located and identified are unlimited**; agencies can specify that specific

elements be identified inventory while the assessment coordinator is already in the field. These features can include: street signs, utility poles, manhole covers, mail boxes, trees, irrigation sprinklers or bubblers, historic markers, etc.

Complete list of PROWAG features:

Category:	Feature Type:
Amenities	Bench
	Counter
	Drinking Fountain
	Table
Parking	Parallel On-Street Parking
	Perp On-Street Parking
	Parking Meter
	Parking Pay Station
	Passenger Loading Zone
Path Event	Access Route at Roundabout
	Access Route Obstruction
	Door/Gate - Double Leaf
	Door/Gate - Opening Only
	Door/Gate - Recessed Swinging
	Door/Gate - Revolving
	Door/Gate - Sliding
	Door/Gate - Swinging
	Pedestrian Signal - Passive Detector
	Transit Sign

Category:	Feature Type:
Structure	Ramp - Bottom Landing
	Ramp - Intermediate Landing
	Ramp - Ramp Run
	Ramp - Top Landing
	Stairway - Bottom Landing
	Stairway - Intermediate Landing
	Stairway - Stair Flight
	Stairway - Top Landing
	Handrail
Transit Stop	Boarding Platform
	Street Level Boarding
	Transit Shelter
Wayfinding	Pedestrian Pushbutton
	Pedestrian Sign
	Pedestrian Signal
	Pedestrian Signal - Passive Detector
	Transit Sign

PROJECT SCOPE

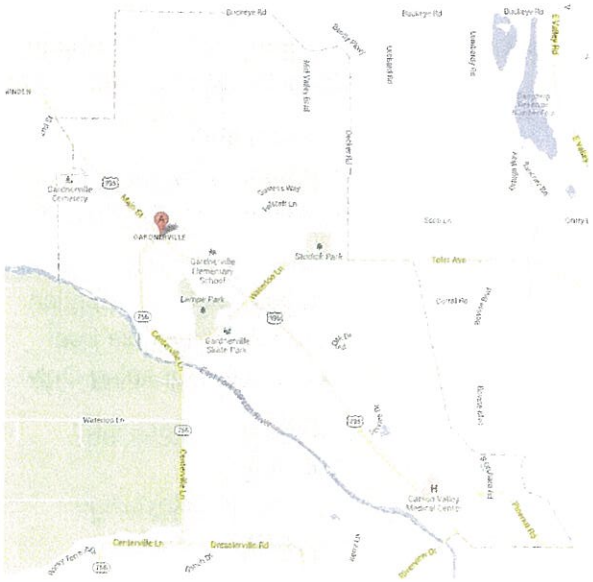
Overview

BD proposes to complete either a five-day or ten-day Pilot Assessment that begins in the priority area designated by Town of Gardnerville staff and will extend into the next designated priority area as time permits (See accompanying Budget Document for the cost proposals for both project options). The pilot project will consist of four parts.

1) Two Beneficial Designs assessment experts will meet with representatives of the Town of Gardnerville to review each feature type and determine the level of detail to be assessed. This meeting will take place on the morning of the first day of the assessment period.

2) Each member of the assessment team will be accompanied by a Town of Gardnerville representative to review sample areas and establish the design criteria and finalize the level of detail to be completed on the feature types encountered in the field. This session will serve to both educate Town of Gardnerville representatives about guideline issues and give the assessment staff necessary information about the expectations of the Town of Gardnerville for the assessment results.

3) The third part of the pilot assessment will encompass the next eight days of the ten-day pilot, or three days of the five-day pilot, in which both members of Beneficial Designs' assessment team assess priority areas as defined by Town of Gardnerville staff. Complete assessments of the sidewalk environments will be completed to begin populating the Town of Gardnerville's inventory database as well as establish the collection times based on the specific conditions encountered. Representatives of the Town of Gardnerville will break off into neighboring areas outside of the target districts to inventory typical block lengths, count the number of curb ramps and other outstanding features using BD Data Collection Forms. Town of Gardnerville representatives will also count obvious trip hazards and driveway crossings in order to increase the accuracy of the Complete Sidewalk Assessment Project Scope.



4) Summary meeting on the last day of the pilot period with the assessment team and the representatives of the Town of Gardnerville to review the results of the sample assessments and inventory. This final meeting will confirm the level of detail to be assessed in future assessments and approve the final estimates of sidewalk miles and feature counts to be assessed. **The results of this meeting will be used to create an annual assessment plan, determine a timeline for completion of the entire jurisdiction, and to draft the final proposal and potential contract for the assessment of all the sidewalks that the Town of Gardnerville has jurisdiction over.**

The scale of a complete sidewalk assessment for an entire city is large and baseline estimates provide significant opportunity for error. To remedy this situation, Beneficial Designs will use the data collected during the pilot project and the values that a representative of the Town of Gardnerville will provide for an estimate of total sidewalk miles to generate a more accurate estimate of the scope of a complete assessment of the sidewalks within the Town of Gardnerville. Beneficial Designs will apply an estimated number of trip hazards and other features defined in PROWAG based on the pilot data to complete the estimate. The

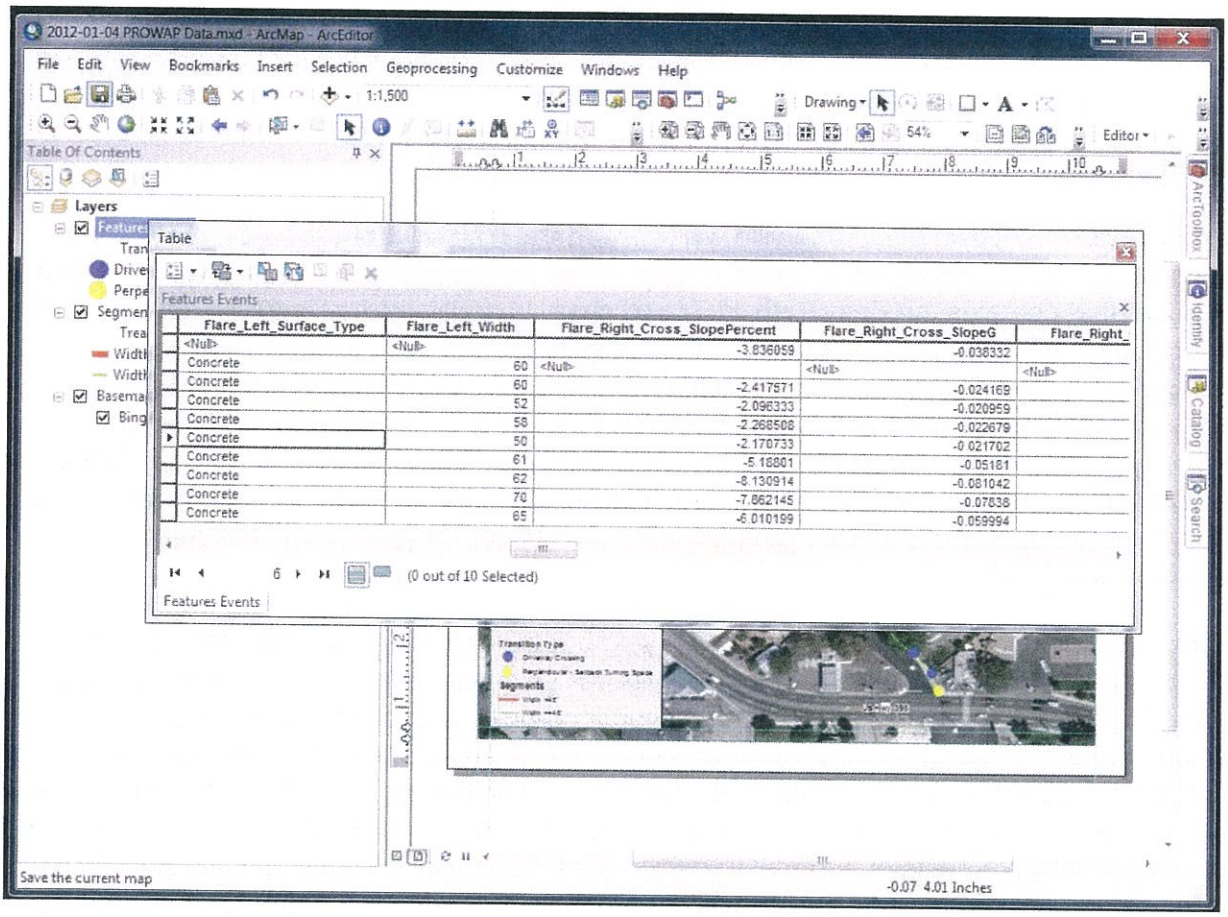
Sidewalk Assessment Scope derived from actual sidewalk data and agency provided data can be considered for estimation of project costs. This will allow the Town of Gardnerville to prepare for and plan future assessments. Appendix A to this document contains a sample of the Sidewalk Assessment Scope that will be created and refined for the Town of Gardnerville as a result of the pilot assessment work.

Project deliverables

BD will provide the Town of Gardnerville with **spreadsheet data in Microsoft Excel format** that contain a worksheet with the collected **data for each feature type** assessed as well as a worksheet that contains the **Best Path of Travel data**. In addition to the spreadsheet data, BD **will provide a File Geodatabase** that contains a point feature layer for all the features identified during the assessment. Relatable data tables will also be included in the File Geodatabase. Data from the first day of the assessment will be provided to the Town of Gardnerville so that any migration issues can be addressed between Douglas County GIS data management personnel and BD prior to project completion. BD will continue to append the day one data set and **will provide the complete data set upon completion of the pilot assessment period**.

For an additional fee defined in the accompanying budget document, BD will use the data collected during the pilot assessment to populate the self evaluation section of a transition plan that the Town of Gardnerville can use until a more complete and formal transition plan can be developed after a larger percentage of the Town of Gardnerville's infrastructure has been assessed and public involvement has been completed. Additionally, Beneficial Designs offers consulting services under a separate contract to assist the Town of Gardnerville in completing the additional requirements of a formal transition plan. Beneficial Designs can assist with public workshops and the determination of priority areas within the Town of Gardnerville's jurisdiction or provide other counsel as required.

Data Samples




Legend
XSlope
> -5%
-2% to - 5%
2% to -2%
2% to 5%
> 5%


Legend
Features
Curb Ramps
Non-Planar PAR
Protruding Object
Reduced Vertical Clearance
Vertical Discontinuity

Appendix A – Sample Sidewalk Assessment Scope

Project Information

Requesting Agency:	Office of the City Manager
Contact Person:	Jane Doe
Phone:	555.123.4567
Address:	123 Any Streeet Any Town, USA 00000
Email:	J.Doe@ci.anytown.state.us
Project Name:	Sidewalk Assessment

Jurisdiction Specifications

Total length of street center line	533	Miles
Estimated percent w/ Sidewalk	69%	
Estimated Total Amount of Sidewalk:	735.54	Miles
Estimated percent of Sidewalks in Downtown Area	20%	
Estimated Percent of Sidewalks in Urban Area	30%	
Remaining Percent in Suburban Area	50%	

Downtown Area Estimates

Average Block Length	250	Feet
Number of Block Lengths	3107	
Percent of Corners w/ No Ramp	5%	
Percent of Corners w/ (1) Ramp	60%	
Percent of Corners w/ (2) Ramps	35%	
Number of DWC per Block	1.0	
Percent of Parallel Ramps	0%	0
Percent of Perp Ramps w/ Setback	85%	3433
Percent of Perp Ramps w/o Setback	15%	606
Percent of Parallel DWC's	33%	1025
Percent of DWC's w/ Setback PAR	33%	1025
Percent of DWC's w/o Setback	34%	1056
Total Number of Sidewalk Segments	3107	
Total Number of Driveway Crossings	3107	
Total Number of Curb Ramps	4039	

	per Block	Quan
Bench	0.5	1554
Counter	0	0
Drinking Fountain	0.002	7
Table	0.01	32
Parallel On-Street Parking Space	1	3107
Perpendicular On-Street Parking	0.5	1554
Parking Meter	4	12428
Parking Pay Station	0.25	777
Passenger Loading Zone	0	0
Access Route at Roundabout	0	0
Access Route Obstruction	2	6214
Door/Gate - Double Leaf	0	0
Door/Gate - Opening Only	0	0
Door/Gate - Recessed Swinging	0	0
Door/Gate - Revolving	0	0
Door/Gate - Sliding	0	0
Door/Gate - Swinging	0	0
Ramp - Bottom Landing	0.125	389
Ramp - Intermediate Landing	0	0
Ramp - Ramp Run	0.125	389
Ramp - Top Landing	0.125	389
Stairway - Bottom Landing	0	0
Stairway - Intermediate Landing	0	0
Stairway - Stair Flight	0	0
Stairway - Top Landing	0	0
Handrail	0	0
Boarding Platform	0	0
Street Level Boarding	0.025	78
Transit Shelter	0.025	78
Pedestrian Pushbutton	2	6214
Pedestrian Sign	0.25	777
Pedestrian Signal	2	6214
Pedestrian Signal - Passive Detector	0	0
Transit Sign	0.01	32

Urban Area Estimates

Average Block Length in Downtown Area	500	Feet
Number of Block Lengths	2331	
Percent of Corners w/ No Ramp	20%	
Percent of Corners w/ (1) Ramp	49%	
Percent of Corners w/ (2) Ramps	31%	
Number of DWC per Block	2	
Percent of Parallel Ramps	4%	103
Percent of Perp Ramps w/ Setback	50%	1293
Percent of Perp Ramps w/o Setback	46%	1190
Percent of Parallel DWC's	33%	1538
Percent of DWC's w/ Setback PAR	33%	1538
Percent of DWC's w/o Setback	34%	1585
Total Number of Sidewalk Segments	2330	
Total Number of Driveway Crossings (DWC)	4660	
Total Number of Curb Ramps	2587	

	per Block	Quan
Bench	0.025	59
Counter	0	0
Drinking Fountain	0	0
Table	0	0
Parallel On-Street Parking Space	0.25	583
Perpendicular On-Street Parking Space	0	0
Parking Meter	0	0
Parking Pay Station	0	0
Passenger Loading Zone	0	0
Access Route at Roundabout	0	0
Access Route Obstruction	2	4662
Door/Gate - Double Leaf	0	0
Door/Gate - Opening Only	0	0
Door/Gate - Recessed Swinging	0	0
Door/Gate - Revolving	0	0
Door/Gate - Sliding	0	0
Door/Gate - Swinging	0	0
Ramp - Bottom Landing	0	0
Ramp - Intermediate Landing	0	0
Ramp - Ramp Run	0	0
Ramp - Top Landing	0	0
Stairway - Bottom Landing	0	0
Stairway - Intermediate Landing	0	0
Stairway - Stair Flight	0	0
Stairway - Top Landing	0	0
Handrail	0	0
Boarding Platform	0	0
Street Level Boarding	0.025	59
Transit Shelter	0.025	59
Pedestrian Pushbutton	2	4662
Pedestrian Sign	0.25	583
Pedestrian Signal	2	4662
Pedestrian Signal - Passive Detector	0	0
Transit Sign	0.01	24

Appendix B – Sample Project Schedules

PROWAP 5-Day Pilot Project Schedule

DAY 1

Pre-Assessment Meeting

8:00 AM Beneficial Designs Assessment Professionals meet with Agency Representatives

- Determine the priority areas for assessment during the pilot project
- Identify the critical elements of each feature for assessment
- Review the role of City Staff participating in the Pilot Project

12:00 PM Lunch Break & Travel to First Assessment Area

Group Sidewalk Assessment Session

1:00 PM Initial Sidewalk Assessment Session

Assess highest priority areas to verify level of detail & critical elements for collection

- BD Staff will review the process with agency representatives
- Agency Representative will observe and verify the level of detail for collection

6:00 PM End of Group Assessment Session

Off load data from Assessment Computers and upload to Beneficial Designs remote site for compilation of Database

- BD Representative will provide the Initial Assessment Data to the Agency GIS or IT personnel after processing to review data within GIS Software

DAYS 2, 3 & 4

Sidewalk Assessment Session

7:00 AM Assessment of Agency determined Priority Areas

- BD Staff will use PROWAP to Assess the Sidewalk Corridors
- Agency Staff will perform general Inventory Assessments

12:00 PM Lunch Break and Assessment Team Check-in

- Review features encountered during morning session
- Clarify and resolve any issues encountered during assessments

1:00 PM Assessment of Agency determined Priority Areas

6:00 PM End of Day

Off load data from Assessment Computers and upload to Beneficial Designs remote site for compilation of Database

DAY 5

Sidewalk Assessment Session

7:00 AM Assessment of Agency determined Priority Areas

12:00 PM Lunch Break and Assessment Team Check-in

Post-Assessment Meeting

1:00 PM Debriefing of Assessment w/ Agency Representatives

- Confirm the level of detail to be assessed in future assessments
- Review & approve the final estimates of sidewalk miles and feature counts
- Create final Scope of Assessment document
  - Create an annual assessment plan
  - Determine a timeline for completion of the entire jurisdiction

5:00 PM End of Pilot Project

Suburban Area Estimates

Average Block Length in Other Area	1500	Feet
Number of Block Lengths	1295	
Percent of Corners w/ No Ramp	26%	
Percent of Corners w/ (1) Ramp	42%	
Percent of Corners w/ (2) Ramps	32%	
Number of DWC per Block	16	
Percent of Parallel Ramps	33%	453
Percent of Perp Ramps w/ Setback	33%	453
Percent of Perp Ramps w/o Setback	34%	467
Percent of Parallel DWC's	10%	2071
Percent of DWC's w/ Setback PAR	40%	8285
Percent of DWC's w/o Setback	50%	10356
Total Number of Sidewalk Segments	1295	
Total Number of Driveway Crossings	20713	
Total Number of Curb Ramps	1372	

	per Block	Quan
Bench	0.025	33
Counter	0	0
Drinking Fountain	0	0
Table	0.025	33
Parallel On-Street Parking Space	1.5	1943
Perpendicular On-Street Parking	0.5	648
Parking Meter	0	0
Parking Pay Station	0	0
Passenger Loading Zone	0	0
Access Route at Roundabout	0	0
Access Route Obstruction	2	2590
Door/Gate - Double Leaf	0	0
Door/Gate - Opening Only	0	0
Door/Gate - Recessed Swinging	0	0
Door/Gate - Revolving	0	0
Door/Gate - Sliding	0	0
Door/Gate - Swinging	0	0
Ramp - Bottom Landing	0.25	324
Ramp - Intermediate Landing	0	0
Ramp - Ramp Run	0.25	324
Ramp - Top Landing	0.25	324
Stairway - Bottom Landing	0	0
Stairway - Intermediate Landing	0	0
Stairway - Stair Flight	0	0
Stairway - Top Landing	0	0
Handrail	0	0
Boarding Platform	0	0
Street Level Boarding	0.0125	17
Transit Shelter	0.0125	17
Pedestrian Pushbutton	0.2	259
Pedestrian Sign	0.1	130
Pedestrian Signal	0.2	259
Pedestrian Signal - Passive Detector	0	0
Transit Sign	0	0

0	Estimated Value (user Entry)
0	Calculated Total per Estimated Value

Project Totals:

Total Sidewalk Blocks (Zones) in Project:		6732
Total Curb Ramps in Project:		7998
Total Number of DWC's in Project:		28480
Trip Hazards (Vert Discontinuities)		11755
Downtown Area (per Mile)	26	*3825*
Urban Area (per Mile)	18	*3884*
Suburban Area (per Mile)	11	*4046*
Horizontal Openings (per Mile)	15	11034
Non-Planar Pedestrian Access Route (per Mile)	2	1472
Pathway Obstruction (per Mile)	10	7356
Protruding Object (per Mile)	3	2207
Reduced Vertical Clearance (per Mile)	1.5	1104
Unstable Pedestrian Access Route (per Mile)	0.5	368
Grate (per Mile)	0.25	184
Access Route @ Round-About (per Mile)	0.015	12
Detectable Warning Surface (per Mile)	1.75	1288
Bench		1646
Counter		0
Drinking Fountain		7
Table		65
Parallel On-Street Parking Space		5633
Perpendicular On-Street Parking Space		2202
Parking Meter		12428
Parking Pay Station		777
Passenger Loading Zone		0
Access Route at Roundabout		0
Access Route Obstruction		13466
Door/Gate - Double Leaf		0
Door/Gate - Opening Only		0
Door/Gate - Recessed Swinging		0
Door/Gate - Revolving		0
Door/Gate - Sliding		0
Door/Gate - Swinging		0
Ramp - Bottom Landing		713
Ramp - Intermediate Landing		0
Ramp - Ramp Run		713
Ramp - Top Landing		713
Stairway - Bottom Landing		0
Stairway - Intermediate Landing		0
Stairway - Stair Flight		0
Stairway - Top Landing		0
Handrail		0
Boarding Platform		0
Street Level Boarding		154
Transit Shelter		154
Pedestrian Pushbutton		11135
Pedestrian Sign		1490
Pedestrian Signal		11135
Pedestrian Signal - Passive Detector		0
Transit Sign		56

PROWAP 10-Day Pilot Project Schedule

DAY 1

Pre-Assessment Meeting

8:00 AM Beneficial Designs Assessment Professionals meet with Agency Representatives

- Determine the priority areas for assessment during the pilot project
- Identify the critical elements of each feature for assessment
- Review the role of City Staff participating in the Pilot Project

12:00 PM Lunch Break & Travel to First Assessment Area

Group Sidewalk Assessment Session

1:00 PM Initial Sidewalk Assessment Session

Assess highest priority areas to verify level of detail & critical elements for collection

- BD Staff will review the process with agency representatives
- Agency Representative will observe and verify the level of detail for collection

6:00 PM End of Group Assessment Session

Off load data from Assessment Computers and upload to Beneficial Designs remote site for compilation of Database

- BD Representative will provide the Initial Assessment Data to the Agency GIS or IT personnel after processing to review data within GIS Software

DAYS 2 thru 9

Sidewalk Assessment Session

7:00 AM Assessment of Agency determined Priority Areas

- BD Staff will use PROWAP to Assess the Sidewalk Corridors
- Agency Staff will perform general Inventory Assessments

12:00 PM Lunch Break and Assessment Team Check-in

- Review features encountered during morning session
- Clarify and resolve any issues encountered during assessments

1:00 PM Assessment of Agency determined Priority Areas

6:00 PM End of Day

Off load data from Assessment Computers and upload to Beneficial Designs remote site for compilation of Database

DAY 10

Sidewalk Assessment Session

7:00 AM Assessment of Agency determined Priority Areas

12:00 PM Lunch Break and Assessment Team Check-in

Post-Assessment Meeting

1:00 PM Debriefing of Assessment w/ Agency Representatives

- Confirm the level of detail to be assessed in future assessments
- Review & approve the final estimates of sidewalk miles and feature counts
- Create final Scope of Assessment document
- Create an annual assessment plan
- Determine a timeline for completion of the entire jurisdiction

5:00 PM End of Pilot Project

The Town of Gardnerville, Nevada:

Pedestrian Transition Plan Self Evaluation Pilot Project Budget

Labor Costs

			5 Days	10 Days
Sidewalk Assessment				
Two BD Assessment Experts working with two Agency Representatives			$ 6,720	$ 14,720
On-Site Consulting w/ City Staff				
Pre & Post Assessment meetings with Agency Representatives			$ 1,280	$ 1,280
Off-Site Consulting & Data Analysis			$ 640	$ 1,280
Optional Preliminary Transition Plan based on Pilot Assessment	$ 2,400			
			$ 8,640	$ 17,280

Travel Costs

					5 Days	10 Days
Daily per Diem	$ -	/day			$ -	$ -
Lodging per Diem	$ -	/day			$ -	$ -
Round Trip Travel Time (1/2 Rate x two Staff)	$ -		0	hrs	$ -	$ -
Airfare	$ -	Round Trip			$ -	$ -
Airport Parking					$ -	$ -
Ground Transportation	$ 7	/day			$ 34	$ 68
Equipment Shipping	$ -				$ -	$ -
					$ 34	$ 68

Total Project Cost: **$ 8,674** **$ 17,348**

Total including optional Preliminary Transition Plan: $ 11,074 $ 19,748

Prepared for:
The Town of Gardnerville
Tom Dallaire
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Prepared by:
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13-Jun-2013

Peter W. Axelson

Town of Gardnerville Nevada

Gardnerville Town Board

AGENDA ACTION SHEET

1. **For Possible Action: Discussion on amending the NHC (Northwest Hydraulic Consultants) existing contract by placing the existing contract Task 3 on hold, adding the additional channel analysis using Flo-2D model and provide final improvement plans, revise the hydraulic report and provide a final presentation to the board and the public for an amount, not to exceed, $39,525.00; with public comment prior to board action.**

2. **Recommended Motion: Motion to amend the contract by placing Task 3 on hold, performing the flo-2d analysis, incorporating required changes to the final plans, provide final presentation to the board and approve the not to exceed cost of $39,525.00.**
   Funds Available: ☑ Yes ☐ N/A
   Funds have been set aside for this project and can be utilized for this final design phase.

3. **Department: Administration**

   Prepared by: Tom Dallaire

4. **Meeting Date: July 2, 2013 Time Requested: 15 minutes**

5. **Agenda: ☐ Consent ☑ Administrative**

   Background Information: A presentation was made to the Board last month. We discussed changing to the flow 2D model as the HEC-RAS model was limiting the flow to the channel. This modification will improve model performance and show a greater benefit of the proposed channel. The construction documents will need to be revised and report updated with the change in methodologies. This should be the last modification needed to get the channel constructed.

6. **Other Agency Review of Action: ☐ Douglas County ☑ N/A**

7. **Board Action:**

   ☐ Approved ☐ Approved with Modifications
   ☐ Denied ☐ Continued

nhc
northwest hydraulic consultants

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June 17, 2013

Mr. Tom Dallaire, PE
Town Manager / Town Engineer
Town of Gardnerville
1407 Highway 395 N
Gardnerville, NV 89410

RE: Phase 2 Additional Services Proposal
Hellwinkel Channel Analysis, Construction Documents, and Permitting
Town of Gardnerville, NV

Dear Tom:

Northwest Hydraulic Consultants (NHC) is please to present the Town of Gardnerville (Town) with the following proposal for additional services to our current Phase 2 scope of work on the Hellwinkel Channel improvements. As you will recall, the need for these services originated through our project progress discussions and the Town Board Public Hearing held in Gardnerville on June 4, 2013. NHC further outlined the framework for the tasks proposed herein via an e-mail correspondence sent to you on June 10th (2013) For continuity with current Phase 2 tasks and to simplify project accounting, the number labels for the tasks proposed in this additional services proposal include an 'a' label attached to the original task number in the current Phase 2 scope of work.

First, it should be noted that while some of the efforts outlined in this additional services proposal represent new work, most of the tasks descriptions herein are intended to modify and/or augment all or portions of recently completed Phase 2 tasks. To help clarify which proposed tasks represent revisions to work already completed, the phrase "Revisions" has been added to front the original task labels. Similarly, to assist in the understanding of which proposed tasks represent new work - in addition to efforts already competed for Phase 2 - the phrase "Additions" has been added to front the original task labels. Asks with both revisions and additions proposed have been appropriately double labeled. To further explain how each revised or additional task will be integrated into the overall project program, a non-task section is included at the end of this proposal. This section clarifies how these additional services will be integrated into the entire Phase 2 and pending Phase 3 (as applicable) work effort.

Lastly, this additional services proposal does not include any revisions or additions to the originally proposed FEMA applications included in the Phase 3 scope of work. At the time of this proposal, it is unclear to what extent the effective FEMA Flood Hazard Zone encumbering the project site and its surroundings may be altered by the redesign and analysis efforts included herein. If during the execution and/or completion of the tasks listed in this proposal, it becomes evident that the currently established Phase 3 scope of work tasks related to FEMA applications should be revised, amended, or advanced into Phase 2 of the project, NHC will notify the Town and suggest appropriate alternatives and strategies for such applications.

SCOPE OF WORK

PHASE TWO ADDITIONAL SERVICES

Task 8a. REVISIONS: Channel/Pathway Improvement Plans (95% Design Level)

NHC will revise the Hellwinkel Channel and Pathway designs initially developed under Task 5 and then subsequently refined into the 95% Improvement Plans under Task 8 of the original agreement. The revisions will include:

a. Modifying the left (looking downstream) or westerly channel bank by laying the bank back to nearly flat slopes (between 0.5 and 1%). This bank "flare" will be proposed in an attempt to promote some portion of large storm flows conveyed by and within the near vicinity of the Martin Slough to migrate easterly into the Hellwinkel Channel;

b. Lowering the channel design grade to maximize the potential for colleting Martin Slough flows from the west and to allow for additional flexibility in possible future culvert and storm drain improvements that might be directed toward and discharge into the channel;

c. Redesigning proposed channel appurtenances, such as grade control structures, channel inlet and outlet configurations, and channel protections (linings) as needed to address the channel bank and grade modifications listed above;

d. Realignment and redesign of the pedestrian pathway adjacent to the channel in connection with the channel grade and inlet modifications to minimize or eliminate the need for guardrailing between the pathway and the channel and to ensure ADA slope compliance and proposer grading tie-ins for the pathway;

e. Changes to the Channel Plan and Profile, Horizontal Control and Demolition/Protection Plans to address channel grading and pathway alignment modifications; and

f. Updating the earthwork and quantity estimates for the channel and pathway modifications;

The revised channel and pathway designs will be iteratively integrated into the new and revised hydraulic modeling proposed in Task 10a below. Updated 95% Improvement Plans will be delivered to the Town for review and subsequent permit application purposes.

Task 10a. REVISIONS and ADDITIONS: Hydraulic Analyses and Floodplain/Floodway Mapping

To understand the hydraulic implications and potential benefits from the proposed channel bank and grade modifications of Task 8a, NHC will revise the HEC-RAS models initially developed under Task 5 and then subsequently refined for the initial 95% Improvement Plans under Task 10 of the original agreement. The HEC-RAS revisions will include:

a. Modifying the 10-, 25-, 50-, and 100-year proposed conditions HEC-RAS models to integrate channel bank and grade revisions included in Task 8a. These modifications will be made in concert with the channel redesigns so that both the models and the designs reflect a maximized approach to colleting Martin Slough flows from the west; and

b. Preparation of preliminary floodplain inundation maps for the 10-year (minor storm) and 100-year (major storm) proposed conditions HEC-RAS models based on the proposed channel bank and grade redesigns.

Due to the shallow and multi-directional, sheet flow nature of the flood flows anticipated to inundate the subject site and the urbanized lands immediately upstream and to the west during large storm events,

NHC proposes to develop a 2-dimensional hydraulic model appropriate for floodplain pattern and flow depth determinations. To achieve this, NHC will construct a new Flo-2D model encompassing the subject site and adjacent floodplain areas to estimate how the Task 8a proposed channel modifications may alter current flood conditions. Unlike the regionally based, 500-year Flo-2D model from the recent Pine Nut LOMR, this new Flo-2D model will be developed specifically for this project and its immediate surroundings. The new model will have considerably smaller grid cell sizes, include substantially greater model detail, and be used to analyze the flooding for both the 100 and 500-year storm events. Specifically, the development of a new Flo-2D model will include:

c. Obtaining and compiling GIS geospatial data for the new model area (i.e., existing ground topography, land use descriptions, soil coverages, vegetative cover estimates, existing structure footprints, and surface drainage features). Topographic features will be defined from the digital LiDAR and traditional topographic surveying data previously provided by the Town for the subject site. Surface improvements, such as structures and roadway improvements, will be evaluated using available aerial, street-level photography, and other internet resources. During the development of this model, additional survey measurements may become necessary to adequately define existing surface and/or underground drainage features within the model extents. It is assumed with this proposal that the Town will again provide NHC with this survey data as needed;

d. Constructing the new Flo-2D model (base model) using the compiled GIS data, survey data for critical 1-dimensional drainage features, and a 20' by 20' (or smaller) grid cell size;

e. Building and analyzing approximately 8 variations of the new Flo-2D base model, including variations for both existing site and proposed project conditions, for both the 100-year and 500-year storm events, and for both levee and non-levee conditions. To ensure compliance with the FEMA Effective Flo-2D model, output flow hydrographs from appropriate Pine Nut LOMR Flo-2D model variations will be used as inflow hydrographs into the corresponding new Flo-2D model variations;

f. Iteratively integrating channel bank and grade redesign concepts into the proposed project condition model variations to maximize potential flood flow migration from the Martin Slough flooding area into the new channel. Incorporated into this phase of the model development will be the emphasis on redefining the existing FEMA Floodway and 100-Year AE Zone away from the Marin Slough and into the subject site and proposed channel to the greatest extent possible;

g. Preparation of revised floodplain inundation maps for the 100-year and 500-year existing conditions and proposed conditions Flo-2D models; and

h. Preparation of preliminary Topographic Work Maps for possible FEMA Flood Zone revisions based on the proposed conditions Flo-2D models. These maps may constitute the bases for a future FEMA Letter of Map Change application, which is currently provided for in Task 17 of the original Phase 3 scope of work.

Task 11a. REVISIONS and ADDITIONS: Hydraulic Analysis Report and Presentation

Portions of the original Task 11 scope of work will require revisions to address the new hydraulic modeling and mapping changes included in Task 10a. Specifically, the new floodplain inundations mapping created from the Flo-2D modeling will need to be incorporated into the Hydraulic Analysis Report. This report will also need to be expanded to include a discussion of the development of the Flo-2D model and the presentation of the data used for and results obtained from the new Flo-2D model. Following the completion of Task 10a, NHC anticipates the Town will require another public presentation

at a Town Board meeting. To address this, NHC proposes to prepare for and attend an additional public hearing, in which, the results of the channel redesigns, new hydraulic modeling, and subsequent floodplain mapping will be presented.

Task 16a. ADDITIONS: Project Meetings

In addition to the public presentation included in Task 11a, NHC anticipates the need for two additional project meetings with Town management/staff and one meeting with Douglas County personnel in support of the additional services listed in this proposal.

FEE ESTIMATE – Phase Two Additional Services

***Task 8a. REVISIONS:* Channel/Pathway Improvement Plans**	***$10,500.00***
Task 10a. REVISIONS and ADDITIONS: Hydraulic Analyses and Floodplain Mapping	***$20,725.00***
Task 11a. REVISIONS and ADDITIONS: Hydraulic Analysis Report and Presentation	***$4,700.00***
Task 16a. ADDITIONS: Project Meetings	***$3,600.00***
Phase Two Additional Services Total:	***$39,525.00***

The fee estimates listed above represent Time & Materials not-to-exceed budgets for each task in accordance with the attached Schedule of Standard Charges (Effective November 1, 2010).

Phase 2 Remaining Tasks and Work Efforts

With reference to the tasks included in the original Phase 2 scope of work, NHC has yet to complete any work on Tasks 9 and Tasks 12 through 15. Conversely, all of the originally proposed work efforts for Tasks 8, 10, and 16 have been completed. At the time of this additional services proposal, portions of Task 11 and 16 have been performed. Specifically for Task 11, NHC has compiled many of the documents and maps needed for the Hydraulic Analysis Report and has begun writing the report. NHC has also prepared and presented the design, analysis, and floodplain mapping work efforts completed in Task 8 and 10. At this time, NHC has completed roughly 60% of Task 11. While the 95% channel plan revisions (Task 8a herein) and the additional Flo-2D modeling (Task 10a) will generate additional work for Task 11 (as described herein for Task 11a), the proposed scope of work and fee estimates originally presented for Task 9 and Tasks 12 though 15 will remain unchanged. The project meetings originally included in Task 16 have been exhausted and Task 16a (herein) will provide for additional meetings to support the extra services outlined in this proposal.

NHC appreciates the opportunity to submit this additional services proposal and we are looking forward to our continued working relationship with Gardnerville. If you have any questions or require additional information, please don't hesitate to call me or Brad Hall at (916-371-7400).

Sincerely,
Northwest Hydraulic Consultants Inc.

Denny Peters, PE
Senior Project Manager

Brad Hall
Principal

Town of Gardnerville Nevada

Gardnerville Town Board

AGENDA ACTION SHEET

:

1. **Not For Possible Action: Discussion on the Town Attorney's Monthly Report of activities for June 2013.**

2. **Recommended Motion: No action required.**
   Funds Available: ☐ Yes ☑ N/A

3. **Department: Administration**

   Prepared by: Tom Dallaire

4. **Meeting Date: July 2, 2013 Time Requested: 5 minutes**

5. **Agenda: ☐ Consent ☑ Administrative**

   Background Information: Presented at meeting. Also, see attached Open Meeting Law Memo

6. **Other Agency Review of Action: ☐ Douglas County ☑ N/A**

7. **Board Action:**

   ☐ Approved ☐ Approved with Modifications
   ☐ Denied ☐ Continued

ROWE HALES YTURBIDE

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Michael Smiley Rowe
James R. Hales
Jennifer A. Yturbide

Tyler B. Altom

MEMORANDUM

To: Tom Dallaire, Town Manager
Town of Gardnerville

From: Michael Smiley Rowe, Rowe Hales Yturbide, LLP MR

Subject: Analysis and Impact of AB65

Date: June 10, 2013

The 77th Legislative Session has just wrapped up and one of the bills that was passed, AB65, changed provisions relating to the Open Meeting Law. The bill was first heard in the Assembly's Government Affairs Committee where it was amended. It then passed the Assembly and was referred to and heard by the Senate's Government Affairs Committee. Both the Assembly and the Senate passed the bill unanimously. The Legislature completed its work on May 24, 2013, and, on May 28, 2013, it was approved by the Governor with an effective date of July 1, 2013. The following is an overview of the key changes made by AB65;

1. Specific exemptions made by a public body in terms of requirements to close a meeting or hearing will prevail over the general provisions under the Open Meeting Law. This aligns the law with the convention that specific rules prevail over general rules.

2. The bill prohibits a member of a public body from designating a person to attend a meeting of the public body in place of that member unless there are provisions in the public body's constitution to allow such a substitution. If there is such a provision in the public body's constitution, then that designated person will be able to participate fully including voting for the regular member.

3. The bill also provides that the public body can take corrective action which in the past has only been available through the AG's office. Any action taken by the public body in violation of the Open Meeting Law is void. With this change the public body can now take corrective action within 30 days after an alleged violation. The AG's office may still become involved if they find that it is in the best interests of the public, but they no longer have to be the ones to take the corrective action. If the public body takes corrective action, the agenda for such an item must provide: "For Possible Corrective Action".

4. The bill defines the term "deliberate". Deliberate means collective examining, weighing and reflecting on the reasons for or against an action and includes a collective discussion or exchange of facts preliminary to the ultimate decision. By clarifying what constitutes a "meeting" as "a gathering of members...at which a quorum is present, whether in person or by means of electronic communication", it is clear that the term "deliberate" includes e-mail, text or other electronic communication.

5. The bill also clarifies that a quorum of members may be present either in person or by means of electronic communication.

6. The bill makes changes to the requirements of providing supporting material to the public. Previously, the Open Meeting Law required a public body to make available a copy of the agenda for the meeting, any proposed ordinance or regulation to be discussed at the meeting and other supporting material to the public. Now, the public body must include on the notice of a meeting, the name and contact information for the person designated by the public body from whom a member of the public may request supporting material for a meeting and list of locations where that supporting material is available to the public.

   Also, in certain counties, or cities with a population of 45,000 or more, which includes Douglas County, the bill requires the supporting material be posted on the website no later than when the material is provided to the members of the governing body or if handed out at a meeting not later than 24 hours after the meeting. The bill allows the supporting material to be provided via a link to a website as long as the person requesting the material agrees to take it in an electronic format.

   NOTE: This requirement does not apply to the Town of Gardnerville.

The key changes were made to keep the Open Meeting Law current with the increasing use of electronic means of communication and participation. The addition of allowing a public body to take corrective action on its own is a positive development and one we can discuss further at an upcoming meeting.

Town of Gardnerville Nevada

Gardnerville Town Board

AGENDA ACTION SHEET

1. **Not For Possible Action: Discussion on the Town Manager/Engineer's Monthly Report of activities for June 2013.**
   a. **For Possible Action: Approve, deny or modify a design for ornament handout at NLC/NACO conference.**

2. **Recommended Motion: Approve design for ornament at NLC/NACO conference.**
   Funds Available: ☑ Yes ☐ N/A

3. **Department: Administration**

   Prepared by: Tom Dallaire

4. **Meeting Date: July 2, 2013 Time Requested: 15 minutes**

5. **Agenda: ☑ Consent ☐ Administrative**

   Background Information: See attached report.

6. **Other Agency Review of Action: ☐ Douglas County ☑ N/A**

7. **Board Action:**

   ☐ Approved ☐ Approved with Modifications
   ☐ Denied ☐ Continued

Town Manager/Engineer's Monthly Report
June 2013 Board Meeting

A. Agendized under my report. Nevada League of Cities Conference combined with NACO.

A. Microsurfacing: Is complete and was paid last Friday.

B. Storm Drain cleaning: We are going to start locating the problem area in the storm drain pipe adjacent to Highway 395 down by Service Drive. We may need to hire that fix out to a contractor as the storm drain line is completely blocked.

C. Walmart: needs to fix the cracked concrete sections within the pond area and then the improvements will be coming to the board for dedication and approval.

D. New Beginnings: Construction continues behind Heritage Bank, they are framing the building now. They are working on the pond construction. The storm drain has been installed.

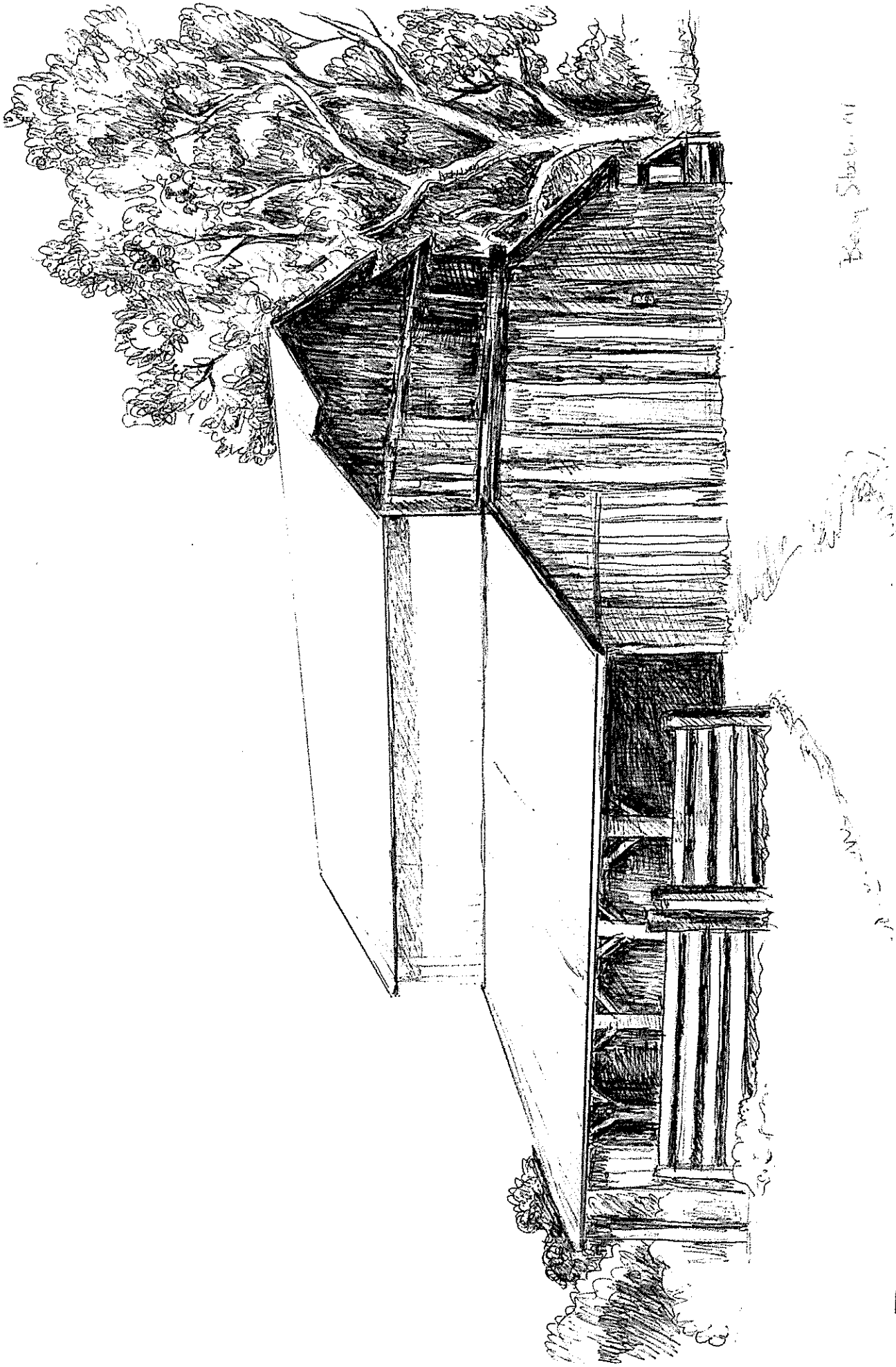
E. Hellwinkel Channel: The state is scheduling a meeting for the week of the 8th. We will have the updated report for them to consider. We have made progress on the plans over the past year, with many design and re-design considerations. The revised contract is set for the board meeting this month.

F. Bench Easements: Staff is working on the installation of the concrete pad now.

G. Office Items:

- Installed the hanging baskets and picked up the Adopt a pots. Thank you to Berry Jones for the use of two (2) Carson Valley Movers trucks to haul the baskets and pots from Smith Valley, and Sertoma for the use of the covered trailer to haul the hanging baskets from China Springs.
- Carson Valley Days set up and take down went well. There was not a big mess to clean up.
- The palm reader building plan for sidewalk improvements is on the agenda for discussion.
- Started doing a parking analysis of the Southgate area, need building information from the county.
- Heritage Park Garden Labyrinth – moved the center rock in place and moved more rocks in per the committee's plan.
- Attended the Valley Vision Meeting. We have provided a copy of the draft vision plan. I had some concerns with the document and would like your input on it so I can include a review of the document for the next round of public meetings coming up in July.
- Eagle Scout project for David Olges installed the doggie pots at Wal Mart pond and along Toler.
- Eagle Scout Project for Dan Gourley will be working on the barn area on Saturday the 29th.
- Met with Anne Vaudagna of Aspen Park to review the proposed sidewalk and her partnering with an accessibility grant from NDOT which Jeff Foltz updated. We are not far enough along for agreements yet. Waiting on NDOT to see how the grants are awarded. That presentation is on July 29th.

- Paula and I did a presentation to the Leadership Douglas County group at Heritage Park. The presentation was well received. Next month I will present to them again on what the town does and services it provides for local government day.
- Josh and I worked a lot on the route for the 5K, signs and trail improvements.
- Worked with staff on getting Eagle Gas presentable, coordinating tank testing and discussing the process with Brett Bottenberg on Brownfield's funding vs. petroleum funding.



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Ornament front example

Ornament back example

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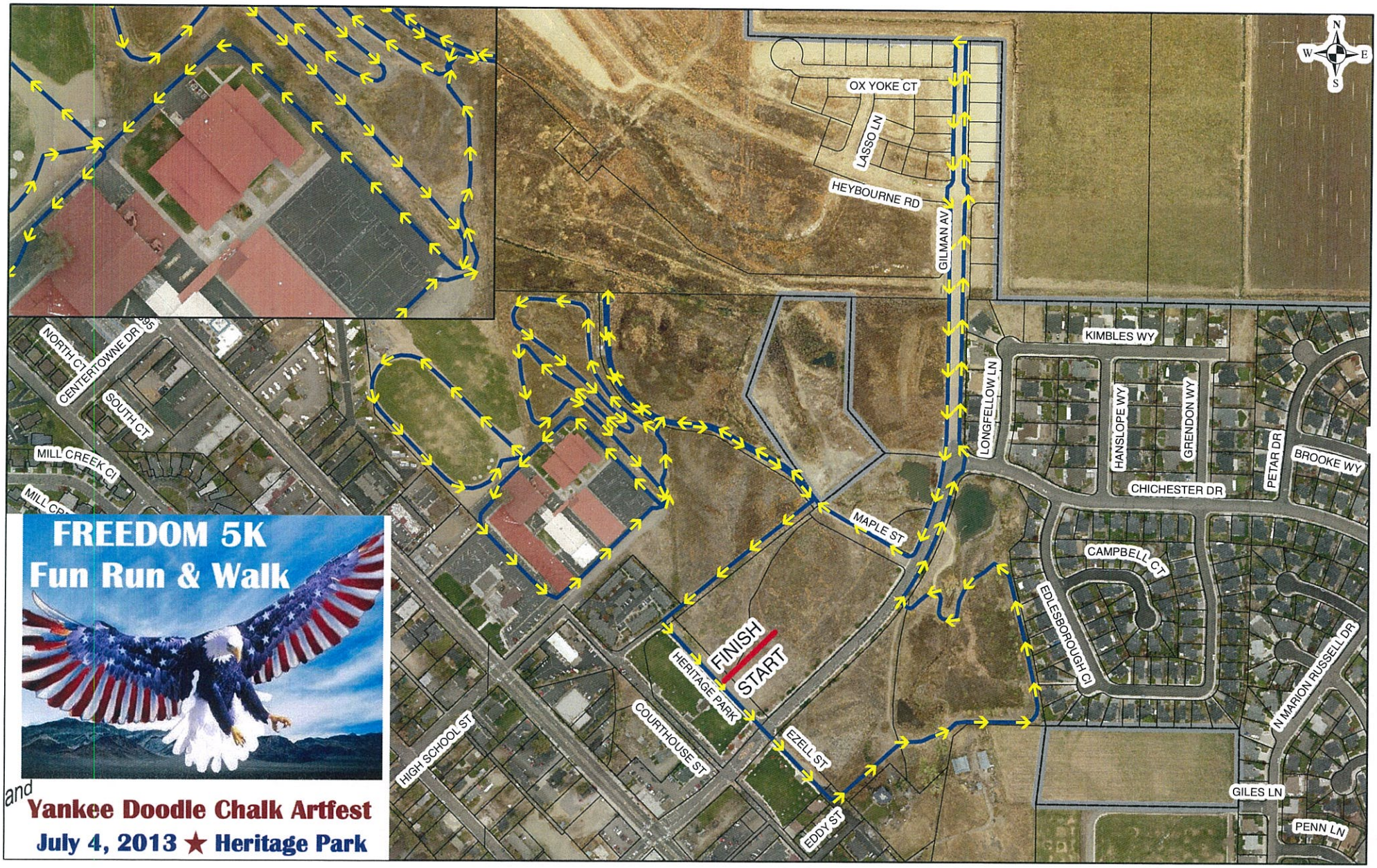
FREEDOM 5K
Fun Run & Walk
and
Yankee Doodle Chalk Artfest
July 4, 2013 ★ Heritage Park
OX YOKE CT
LASSO LN
HEYBOURNE RD
GILMAN AV
KIMBLES WY
LONGFELLOW LN
HANSLOPE WY
GRENDON WY
PETAR DR
BROOKE WY
CHICHESTER DR
NORTH CT
CENTERTOWNE DR
SOUTH CT
MILL CREEK CI
MAPLE ST
CAMPBELL CT
EDLESBOROUGH CI
FINISH
START
HERITAGE PARK
COURTHOUSE ST
HIGH SCHOOL ST
EZELL ST
EDDY ST
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