



**CITY OF EDGEWOOD
COUNCIL STUDY SESSION AGENDA**

Tues. September 19, 2017 – 7:00 PM ♦ City Hall – 2224 104th Avenue East ♦ Edgewood, WA

1. CALL TO ORDER

Pledge of Allegiance & Roll Call

2. COUNCIL BUSINESS

- A. Review/Discussion (pg. 2)* - Traffic Measures - Calming
- B. Review/Discussion (pg. 53)* - Resolution – Open Space Classification
- C. Review/Discussion (pg. 82)* - Resolution – Emergency Guardrail Installation
- D. Review/Discussion (pg. 94)* - Deshaux Road Transportation Study
- E. Review/Discussion (pg. 98)* - SW CIP Prioritization
- F. Review/Discussion (pg. 102)* - Ordinance - Stormwater Rates
- G. Review/Discussion (pg. 111)* - Mortenson Farm Demolition

3. OTHER COUNCIL ITEMS

4. ADJOURN

Study Sessions are meetings for Council to review upcoming and pertinent business of the City, no action is taken by the City Council. Study Sessions are open to the public, but public input is reserved for the regular Council meetings



**CITY OF EDGEWOOD
STAFF REPORT**

STUDY SESSION AGENDA ITEM: Traffic Measures - Calming

Date: September 19, 2017

Title: Transportation System – Traffic Calming, Speed Reduction

Attachments: Evolis Specs Sheet, 122nd/24th Roundabout Image and 2 White Papers

Submitted By: Aaron C. Nix, ACA Municipal Services

Approved For Agenda By: Daryl Eidinger, Mayor

Discussion: Staff, the Mayor and City Council have received continued feedback from constituents and others in the Public in regard to the volume and rate of traffic running through the City of Edgewood along the Meridian corridor, as well as other areas off of SR 161. Staff have proposed revisions to City code in regards to Concurrency management as it pertains to new development and the potential impacts associated with these proposals, as new development is often seen as the main contributor to increasing volumes, wait times and other issues associated with the numbers of cars on our City streets, but this only tells part of the story of what is occurring. Additional analysis on the local and regional level has shown that Edgewood streets are utilized as a bypass corridor for people wanting to gain access to Puyallup and Federal Way, by any means possible, often avoiding the Meridian corridor and utilizing Edgewood's side roads as alternatives. This creates problems. The intent of this study session item is to begin to look into this issue further and look at physical means in which City Public Works Staff may be able to help provide cost effective infrastructure options in order to help with the volume and speed problems that are present within Edgewood.

Recommendation: N/A, informational item.

Fiscal Impact: N/A, informational item.

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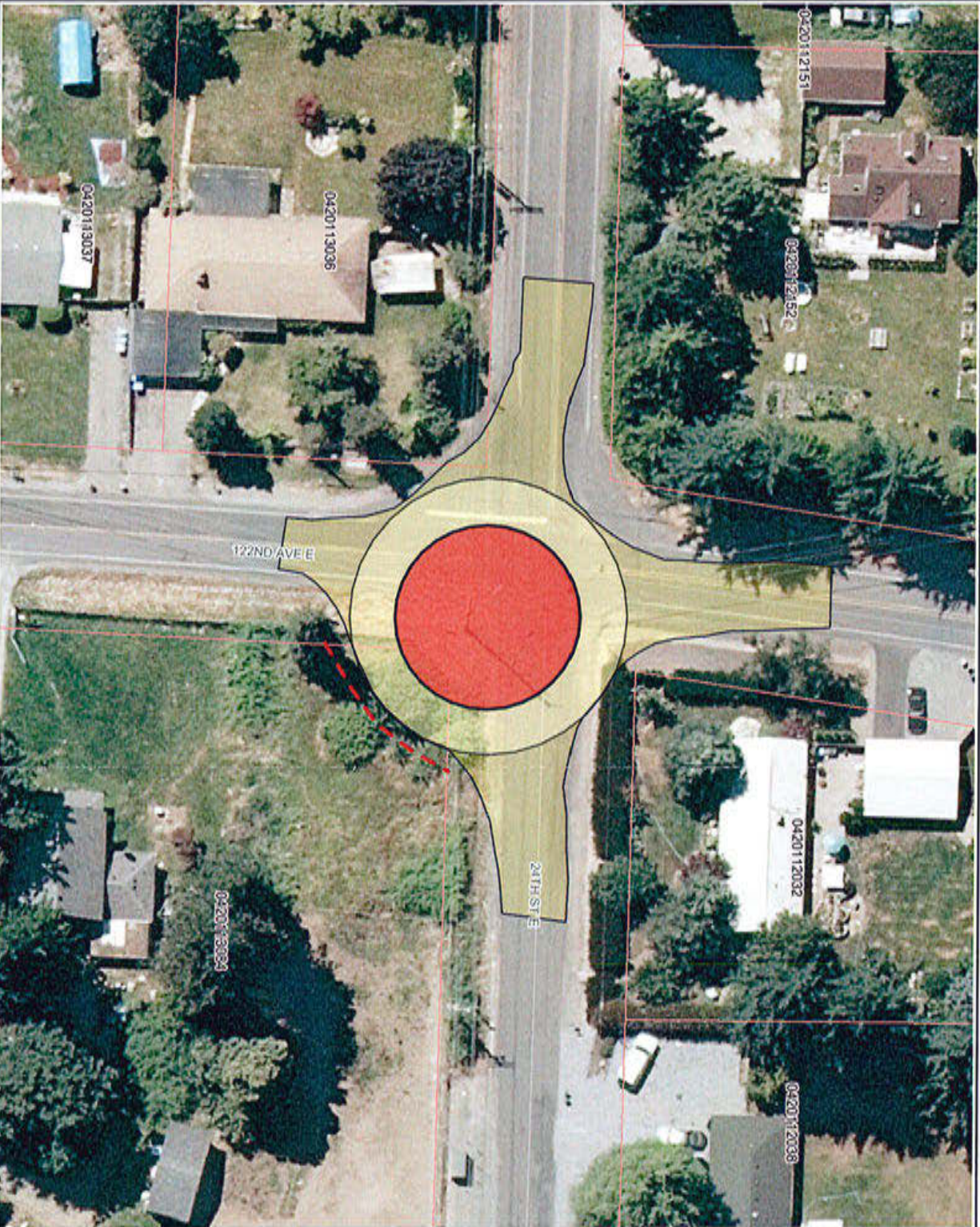


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SPEED DETECTION	5 – 160 Mph
DETECTION RANGE	500ft to 1,000ft (configurable)
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MATERIEL	Robust, anti-corrosive ABS / PC injected resin; Curved polycarbonate front face
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WATERPROOF RATING	NEMA 4R / IP 65
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ELECTRICAL SAFETY FEATURES	Two fuses (internal and external), internal pressure safety valve
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CONFIGURATION	
EVOCOM Software	Software for radar configuration + FREE updates
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THRESHOLDS	Speed (min, limit, max), anti-racing, flashing, color change (if activated)
TIMER MODE (school zone mode)	Alternative speed threshold: up to 2 settings / 4 time slots per day
STEALTH MODE	Continued traffic data collection with radar appearing to be off – blank display
TRAFFIC DATA ANALYSIS	
EVOGRAPH Software	Software for traffic data analysis + FREE updates
SPEED	Average and maximum speed, 85th percentile, distribution per speed group
COUNT	Estimated vehicle count
TYPE	Time-stamped data for both directions of the road
MEMORY STORAGE	Up to 1 million vehicles
FORMAT	Charts and graphs in Excel and/or Pdf form, for easy report printing
POWER OPTIONS	
“SOLAR” (solar-powered)	Internal solar regulator, solar panel, 2 batteries
“AC” (city lighting)	110V AC with internal charger, 1 battery (capacity for 2)
“AC MOBILE” (battery operated)	4 batteries (2 inside casing) + external charger and 110V AC with internal charger
ACCESSORIES	
MOUNTING KITS	Curved, ABS-injected resin, universal mounting-bar; aluminum bracket (for solar)
SOLAR PANEL	32” X 37”, 80 watt solar panel
BATTERIES	12V/22AH batteries included: 1(AC pack), 2(Solar pack), 4(AC Mobile pack)
EXTERNAL CHARGER	12V external charger (included in AC Mobile pack)

CountyView Web Map



The map features are approximate and are intended only to provide an indication of said feature. Additional areas that have not been mapped may be present. This is not a survey. Orthophotos may not align with other data. Pierce County assumes no liability for variations ascertained by actual survey. All data is expressly provided AS IS and WITH ALL FAULTS. Pierce County makes no warranty of fitness for a particular purpose.

Map Legend

- Tax Parcels
- Base Parcel
- Condominium
- Other
- Roads
- Interstate
- Limited Access State Routes
- Other State Routes
- Ramps
- Major Arterial
- Collector
- Local Access
- Unknown
- County - 2014 - Ortho



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Speed Management

A Manual for Local Rural Road Owners



U.S. Department of Transportation
Federal Highway Administration

<http://safety.fhwa.dot.gov>
FHWA-SA-12-027

[PDF](#) (4.70 MB)

You will need the [Adobe Reader](#) to view the PDFs on this page.

Speed Management: A Manual for Local Rural Road Owners

November 2012
FHWA-SA-12-027

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16. Abstract

In 2010, 35 percent of the 30,196 fatal crashes on U.S. roadways occurred on local rural roads, with nearly one-third (3,427) of these involving speeding. This document is intended to provide local road practitioners with information on how to address speeding-related crashes through the implementation of a comprehensive Speed Management Program. An effective program addresses all factors that influence speeding through engineering, enforcement, education, and emergency services—known as the four E's of safety.

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1: Introduction

1.1 Background

Speeding is defined as *exceeding posted speed limits or driving too fast for conditions*. This is a behavior that some drivers engage in without recognizing the risks or seriously considering the consequences. According to the National Highway Traffic Safety Administration (NHTSA), the consequences of excessive speed include the following:[\(1\)](#)

- Greater potential for loss of vehicle control, which may result in a crash.
- Reduced effectiveness of occupant protection equipment.
- Increased stopping distance after the driver perceives a danger.
- Increased degree of crash severity leading to more fatalities and disabling injuries.
- Unexpected economic and even psychological implications of a speed-related crash.
- Increased fuel consumption and cost.

The most serious consequences of speeding are the fatalities and serious injuries that result from crashes. Over the last ten years, speeding has been consistently identified as a contributing factor in nearly one-third of all roadway fatalities nationwide. Crashes involving speeding occur on all road types but are particularly prevalent on the local rural road system. The local road system refers to locally owned and maintained roads in rural areas. Of the 30,196 fatal crashes occurring on all road types in 2010, 35.4 percent—or 10,689—occurred on local rural roads, with nearly one-third (3,427) of these involving speeding.[\(2\)](#) As the speed increases, the likelihood of a crash resulting in a serious injury or fatality also increases.

Addressing this safety issue can be a challenge for local roadway agencies because of their limited resources. Nonetheless, all agencies, regardless of size and resources, can develop a comprehensive and coordinated program to address speeding.

1.2 Purpose

This document provides information on how to develop a Speed Management Program that is tailored to meet the needs of local rural road practitioners. A Speed Management Program can be effective in lowering the number of speeding crashes and the resulting fatalities and serious injuries on local rural roads. This document describes the various elements of a Speed Management Program, including the principles of setting speed limits appropriate for roads within the jurisdiction and various countermeasures that are effective in mitigating speeding as it relates to roadway safety in rural areas.

The following terms are commonly used in speed literature and discussions. Other references may use or define these terms somewhat differently as defined and used in this publication.⁽³⁾

Design Speed – the speed established as part of the geometric design process for a specific roadway.

Operating Speed – the speeds at which vehicles are observed operating during free flow conditions. Free flow conditions occur when vehicles are unimpeded by traffic control devices (e.g. traffic signals) or other vehicles in the traffic stream.

Posted Speed – the maximum lawful vehicle speed for a particular location as displayed on a regulatory sign. Posted speeds are displayed on regulatory signs in speed values that are multiples of 5 mph.

Statutory Speed – numerical speed limits (e.g. 25 mph, 55 mph), established by state law that apply to various classes or categories of roads (e.g. rural expressways, residential streets, gravel roads, primary arterials, etc.) in the absence of posted speed limits.

The intended audience is comprised of the local practitioners who have responsibility for the operation and maintenance of their road network and the safety of its users. This manual provides basic information to assist local road practitioners in assessing speeding problems and developing appropriate countermeasures. It is not, however, a comprehensive discussion of all aspects of speeding and speed management, and, therefore, local practitioners should seek technical advice from their State Department of Transportation (DOT), Governor's Highway Safety Office (GHSO), or Local or Tribal Technical Assistance Program (LTAP or TTAP). The Federal Highway Administration's (FHWA's) Office of Safety Web site lists numerous resources that provide information on implementing a successful Speed Management Program.⁽⁴⁾

1.3 Speed Management Program

A Speed Management Program is a strategy that addresses the concern of unlawful and undesirable speeds at a specific location, along a corridor, or within a jurisdiction's road network. The program should be comprehensive, addressing all factors that influence speeding: public awareness, user behavior, roadway design, surrounding land uses, traffic conditions, posted speed limits, and enforcement. Therefore, the program should encompass engineering, enforcement, education, and emergency services—known as the four E's of safety—when appropriate.

- **Engineering** is used to accomplish the following:
 - Establish speed limits that are appropriate to the primary purpose of the road, provide a balance between mobility and safety for all roadway users, and meet all state or local legal requirements.
 - Design roads that produce desired speeds.
 - Introduce physical countermeasures to create a self-regulating roadway that induces drivers to travel at the desired speed.
- **Enforcement** encompasses the actions taken by appropriate empowered authorities to check that drivers of motor vehicles are complying with the legal posted speed limit. Various countermeasures are used by law enforcement to deter motorists from speeding.
- **Education** entails providing information to drivers about their travel speeds and safety issues associated with speeding and to heighten their awareness of enforcement countermeasures that are designed to curtail speeding.
- **Emergency Services**, also known as emergency medical services (EMS), include quick response to crash locations and attention to victims to minimize the severity of the crash.

A Speed Management Program will generally follow the four-step process illustrated in Figure 1 and outlined below.

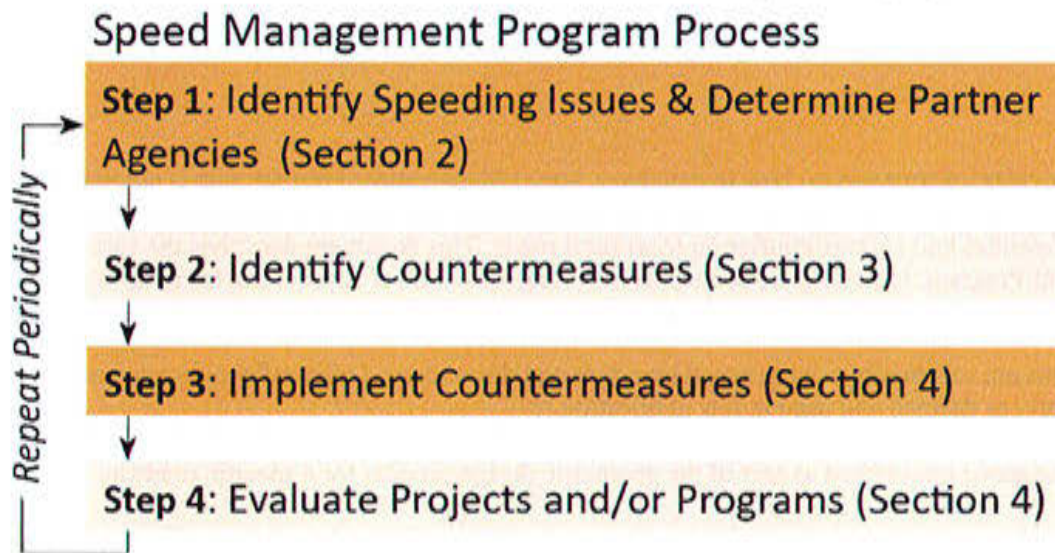


Figure 1. Speed Management Program Process.

- **Step 1—Identify speeding issues.** A review of crash data, coupled with site reviews and public input, is needed to determine if there is a speeding issue and, if so, to what extent and from what causes. Partner agencies will play an integral role in addressing speeding and should be identified for coordination in moving forward with a Speed Management Program. Specific goals should be set once the issue has been identified.
- **Step 2—Select countermeasures.** Identify engineering, enforcement, and education countermeasures that may address the problem.

Benefits of a Speed Management Program

- Reduced fatalities and serious injuries from speeding-related crashes.
- Greater potential for motorists to avoid a crash.
- Enhanced safety for pedestrians, cyclists, and other vulnerable road users.
- Driving population educated on the risks and consequences of speeding.
- Enhanced community-wide safety culture, where safety is a top priority.
- **Step 3—Implement countermeasures.** The identified countermeasures will need to be prioritized, funded, and implemented in a systematic way.
- **Step 4—Evaluate progress.** Individual countermeasures or projects should be evaluated to determine the progress being made towards achieving the goals that were established for the entire Speed Management Program.

Steps 1 through 4 are continuously pursued with appropriate adjustments made based on the progress. This four-step process is described in more detail in the subsequent sections of the guide.

1.4 Agency Partnerships

Collaboration and coordination between agencies are essential in addressing speeding and speed-related crashes at any level of government and even more so at the local community level. With limited resources, pooling resources will benefit the Speed Management Program in addressing the speed-related crashes. Among the agencies to engage at this stage of the process in order to develop partnerships are law enforcement and/or public safety, local and county engineering department, public works department, and State DOT. The level of involvement in the process will depend on the nature of the speeding issue(s) identified. In many instances it may be beneficial to convene a Speed Management working group. Bringing the right agencies or individuals together to be part of a working group will help foster a long-term commitment and build momentum to implement the plan. A successful Speed Management Program will typically have different roles shared by different agencies.

Local rural practitioners may also decide to notify relevant elected officials of the speeding issues and the steps being taken to address them. Elected officials can encourage partner agencies to participate in the process, assist with policy requirements, and obtain funds for the implementation of identified countermeasures. For example, if a village in a rural

- area identifies a speeding issue on a county road within the village, it should consider partnering with the county highway department and the local police or sheriff's department to address the issue.

2: Identify Speeding Issues

The greater tendency to speed in rural areas may be due to the typically lower traffic volumes there. In some locations, the geometry of the roadway may self-regulate motor vehicle speeds. On the other hand, the geometric and roadside characteristics of a roadway may encourage higher speeds, such as on flat, open areas. Because speed enforcement activities may be sporadic in rural areas, speeding may go undetected or underreported until a severe crash occurs, at which time an immediate reaction may be to reduce the posted speed limit. Studies have shown that lowering the speed limit without justification does not effectively lead to reduced vehicle speeds. Therefore, a systematic process must be employed in addressing speeding.

The first step in such a process is to identify if there is a speeding issue and, if so, determine its magnitude and contributing factors. This entails data collection, an assessment of the posted speed limit, and a determination of whether speeds are excessive. It also involves the review of available crash and roadway data to isolate the factors contributing to the problem. If there is a documented speeding issue, then countermeasures are selected and coordinated with partner agencies and other stakeholders.

2.1 Data Sources

Road owners can become aware of locations with speeding issues through a number of sources:

- Crash records.
- Road conditions.
- Citation history.
- Partner agencies.
- Citizen concerns.

An analysis of crash records provides a solid foundation for identifying speeding problems. In some States, there is a specific data element on the crash report for the police to code the crash as speed-related. As a result, speed-related crashes in those States can be more-readily identified from the crash data. Typically, at least three years of crash data are necessary to be able to identify trends.

Some local agencies may maintain a crash records database. The agency that collects and maintains crash data varies by State and may include the State's DOT, Department of Motor Vehicles, State Police or Highway Patrol, or Department of Public Safety. The appropriate agency can assist a local agency with obtaining crash data. A local practitioner can also contact the local law enforcement agency or the LTAP/TTAP representative to determine the availability of crash data. The Strategic Highway Safety Plans (SHSPs) in some States may include speeding as an emphasis area, so an SHSP may provide background information on the source of the data or identify opportunities to coordinate with other agencies.

The crash analysis can range from creating a simple "push pin" map (on which clusters of crashes attributed to speeding are located) to conducting a more detailed review of crash reports that can be used to identify other speed-related crash issues (e.g., crash type, time of day, weather conditions, and crash severity). For example, a high incidence of run-off-road crashes may be an indicator of speeding as a contributing factor.

In addition, exposure should be considered when analyzing crash data. Considering exposure allows for the more appropriate comparison of roadway segments or intersections. Two common types of exposure elements include crashes by roadway miles and crashes by traffic volume. More information on analyzing crash data is provided in *Roadway Safety Information Analysis: A Manual for Local Rural Road Owners*.

There may be evidence on the roadway that indicates there is a speeding problem. This evidence will not establish whether drivers were exceeding the speed limit or driving too fast for conditions but may provide information on locations where speed is a concern. This can be verified through agency staff actively observing conditions along the roadways that they routinely travel. Physical conditions that may indicate a speeding problem include the following examples:

- **Skid marks** are the result of rapid braking. One set of skid marks is not likely to indicate a chronic problem. However, multiple sets of skid marks could indicate a condition where motorists are choosing an inappropriate speed and are braking suddenly to correct their speed.

- **Rutting** on the outside of curves can indicate that motorists are choosing speeds too fast for the curve design. The ruts indicate a loss of control through the curve.
- **Worn centerline markings** on the inside of curves can indicate that motorists are choosing speeds too fast for the curve design.
- **Sign knockdowns or guardrail/fencing strikes** may indicate speeds too fast for roadway conditions. Evidence of sign knockdowns or guardrail strikes may be coupled with rutting.

Citations for speeding are another source of information about a speeding problem. Law enforcement often collects and maintains citation data that can be used to identify patterns in speeding. Linking these data to crash data provides a good understanding of the extent of the problem.

Concerns raised by a citizen or elected official are often based on personal observations and perceptions and should, therefore, be verified with field evidence. A concern expressed by an employee of a governing agency or law enforcement group is often based on evidence that can be found in the field or in the citation records. Regardless, the Speed Management Program should have a procedure for processing information brought forth by citizens and partner agencies. This information should be verified with crash data and citation records.

2.2 Assessing Speeding

Once an area of concern has been identified, and it has been determined that speeding is occurring, the next step is to determine any site-specific factors in speeding. As a starting point, the agency should address the following questions:

- Has the posted speed limit been set in accordance with accepted procedures for the location?
- Do the accepted procedures consider the types of users, such as vulnerable users like pedestrian and cyclists, and slower vehicles, such as farm equipment? Are other environmental characteristics considered?
- Are unexpected conditions being encountered, such as a transition into a developed area or a change in the geometry of the roadway?
- Are motorists provided with sufficient information regarding an unexpected condition (e.g., a gateway treatment or signage noting a change)?
- Are there any engineering deficiencies in the roadway or roadside, such as inadequate pavement markings or signing, that may be contributing to the observed speeding? For example, in a rural village, speeds may be higher than expected if the travel lanes and parking spaces are not properly marked, creating extremely wide lanes.

Although, a thorough review of police crash reports for an area of concern can provide insights, an agency should conduct a field review of the identified sites under free flow traffic conditions, which are usually observed outside of peak periods. Free flow traffic conditions are essential when studying a location to capture the natural tendencies of motorists unencumbered by traffic. Peak traffic conditions typically occur during the morning commute to work, lunchtime, the evening commute from work, and some special occasions (such as certain holidays). Field reviews can be either informal (e.g., using only an agency's own personnel) or formal (e.g., a road safety audit using an independent multi-disciplinary team).⁽⁵⁾

Understanding the factors in speeding will help identify effective speed management strategies.

2.2.1 Assessing the Speed Limit

Speed limits are only meaningful if the majority of motorists comply voluntarily, and that occurs only if a speed limit is reasonable for the conditions and meets drivers' expectations. There are two methods for establishing speed limits: the first involves applying the statutory speed limit, while the second involves establishing a speed limit through an engineering study.

Statutory speed limits are established by the authority of law in each State. Some State laws provide speed limits for all roads on the basis of functional class (i.e., arterial, collector, or local road) but are not limited to these speed limits if there is an overriding concern.⁽⁶⁾ In many cases, these speed limits typically apply in the absence of a posted speed limit and usually do not preclude the establishment of a speed limit based on an engineering analysis of site-specific conditions.

On the other hand, some States may provide reduced *prima facie* speeds under certain conditions. For example, speed reductions may be warranted based on access point/driveway density (i.e., an indication of how many driveways are located in a specific section of roadway). Local rural practitioners should understand the laws that govern speed limits in their

- State. If the speed limit is not mandated by State law, then an evaluation of a speeding concern provides an excellent opportunity to review the appropriateness of the posted speed limit.

Research has shown that setting speed limits based on driver behavior and the adjoining land use can reduce the number of speeding citations, speed variance, and, most importantly, speeding-related crashes.⁽⁷⁾ The establishment of a speed limit based on an engineering study allows for consideration of local conditions, such as geometry and crash history. FHWA provides an easy to use tool—USLIMITS, a Web-based expert advisor—for determining speed limits.⁽⁸⁾ The following information is needed to conduct a typical speed limit determination using USLIMITS:

- Land use type (e.g., high density, low density, hamlet, or rural).
- Frequency of roadside access (e.g., number of residential and commercial driveways, intersecting roads, etc.).
- Road function (e.g., traffic movement versus access to abutting properties).
- Facility characteristics (e.g., paved width, divided or undivided, lane width and number of lanes, sight restrictions, etc.).
- Current vehicle speed data (e.g., data from a speed study).
- Existing speed limits.
- Special conditions that may exist (e.g., adverse alignment, the presence of pedestrians and cyclists, roadside design, high crash rates, etc.).

Other information on establishing speed limits can be found in *Methods and Practices for Setting Speed Limits: An Informational Report*.⁽⁹⁾

2.2.2 Determining if Speeds are Excessive

A speed study should be conducted in order to assess whether vehicle speeds are in excess of the posted speed limit and/or compatible with conditions. Appendix A (How to Conduct a Speed Study) provides guidance for conducting a speed study. Speed limits are often set by the 85th percentile speed, which is the point in the speed distribution at which 85 percent of vehicles travel at or below.

Use of the 85th percentile speed concept is based on the theory that the vast majority of drivers can be characterized by the following:

- They are reasonable and prudent.
- They do not want to be involved in a crash.
- They desire to reach their destination in the shortest possible time.

A speed at or below which 85 percent of people drive at any given location under good weather and visibility conditions may be considered as the maximum safe speed for that location.

The results of numerous and extensive "before-and-after" studies substantiates the general value of the 85th percentile criterion. Experience has also proved these findings valid and shows that the 85th percentile speed is the one characteristic of traffic speeds that most closely conforms to a speed limit that is considered safe and reasonable.

The data collected during the speed study is typically plotted on a graph as depicted in Figure 2. The graph plots the cumulative percentage for increases in speed. From this plot, the 85th percentile can be determined, which in this example is 33.2 mph. The light blue line depicts the actual speed measurements on the road in question and the dark blue line depicts the 85th percentile speed. More information on how to conduct a speed study is provided in Appendix A or can be found in the *Handbook of Simplified Practice for Traffic Studies*.⁽¹⁰⁾

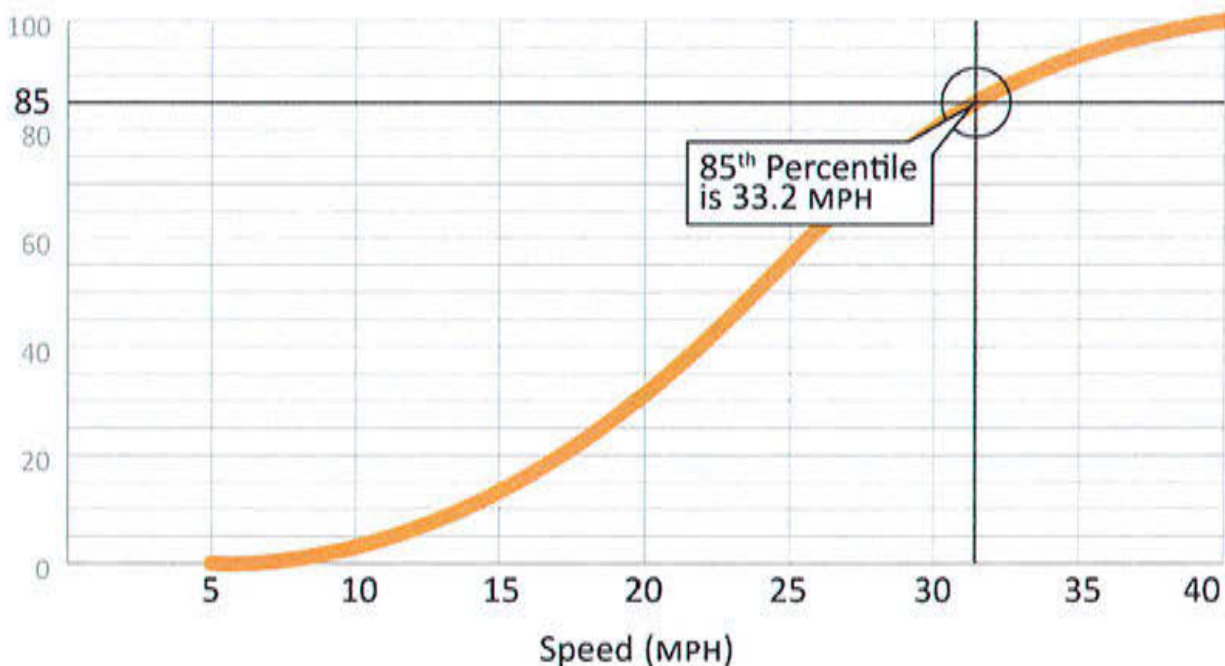


Figure 2. Graphical Depiction of 85th Percentile Speed.

2.2.3 Unpaved Roads

There are over 1.4 million miles of unpaved roads in the United States. In many rural areas of the country, local road agencies do not have any paved roads under their jurisdiction. Unpaved roads (e.g., limestone, natural aggregate, dirt, and sand) require special consideration when determining appropriate speed limits.



Unpaved roads frequently do not have posted speed limits.

Although usually low-volume facilities, unpaved roads typically lack adequate runoff areas, clear zones, and guardrails, making them more prone to injury and fatality-producing crashes. Hence, this type of road may require special consideration if a speed issue is identified.

A 2007 study conducted in Kansas supports the notion that gravel roads are fairly self-regulating with regard to speeds because of physical conditions, such as geometry, road width, and surface.⁽¹¹⁾ Speeding issues on gravel roads will be best addressed through the use of a combination of engineering, enforcement, and education countermeasures.

3: Identifying Countermeasures

- A coordinated approach to managing speeding and reducing speed-related crashes based on engineering, enforcement, and education countermeasures is desirable. When identifying countermeasures, practitioners should consider strategies that will minimize the severity of speed-related crashes. This will depend on location characteristics and the contributing factors of crashes identified from crash data and field reviews. One method to evaluate potential engineering countermeasures, and their ability to reduce crashes, is using Crash Modification Factors (CMF's). A CMF is a multiplicative factor used to determine the expected change in the number of crashes after implementing a specific countermeasure at a specific site. [\(12\)](#) This section provides information on engineering, enforcement, and education countermeasures that can be used to address a speeding issue.

3.1 Engineering

Reducing the speed limit alone generally does not result in lower speeds. Several engineering countermeasures have been identified that can be used to influence driver speed choice, and the following sub-sections describe engineering countermeasures that address speeding. They have been grouped into three categories: traffic control devices, road and street design, and traffic calming on lower-speed roadways. Since design details are not presented, the road owner should seek engineering expertise when selecting countermeasures.

3.1.1 Traffic Control Devices to Reduce Speed

Installing or upgrading signs and pavement markings on an affected roadway can be a cost-effective measure to reduce speeding. Such improvements include advisory speed signs and pavement markings, speed activated signs, and optical speed bars.

Advisory speeds are installed with curve warning signs (either on the same sign or as a supplemental plaque) to recommend a safe speed for traversing a horizontal curve. The warrant for when they should be used are prescribed in the Manual on Uniform Traffic Control Devices (MUTCD) (see Section 2C.07) [\(13\)](#) and the procedure for setting advisory speeds on curves can be found in *Procedures for Setting Advisory Speed Limits on Curves*. [\(14\)](#) Advisory speed signs have been found to reduce speeds by two to three mph [\(15\)](#) (CMF = 0.71-0.87). [\(16\)](#)



Advisory speed displayed with curve warning sign.

A **pavement speed limit marking** displays the posted speed limit on the pavement. It is used to emphasize the speed limit. A **SLOW** curve ahead pavement marking warns the driver of a potentially hazardous curve. This pavement marking is meant to supplement advisory signs. Because they are exposed to traffic wear, both types of pavement markings require regular maintenance to ensure their continued visibility.



Special pavement marking to encourage speed reduction for impending curve.

A **speed activated sign** is an electronic sign that is connected to a device that measures the speed of approaching vehicles. If the vehicle is exceeding the legal speed limit, then the electronic sign is activated to display the legal speed limit. This may also be accompanied by the word "SLOW" or other appropriate message. A similar device is a **speed feedback sign**. When connected to a speed-measuring device, a speed feedback sign displays the speed at which a vehicle is traveling. The speed-activated sign and the speed feedback sign can be effective in speed transition areas (e.g., entering a school zone or other area characterized by high volumes of non-motorized traffic). If used too frequently, the effectiveness of these signs is diminished. Speed feedback signs were found to reduce speeds between two and 10 mph⁽¹⁷⁾ (CMF = 0.54).⁽¹⁶⁾



A solar-powered speed feedback sign.

Optical speed bars are used at spot locations or along a corridor to reduce speeding. These are transverse pavement markings across the travel lane or along its edges placed with decreasing spacing in the direction of travel, which makes it appear to drivers that they are traveling faster than their true speed. They are placed in advance of a speed transition zone or other critical location. This treatment should be used sparingly, else it will lose its novelty effect, and should be maintained to ensure its usefulness. Optical speed bars have been found to reduce speeds by an average of two mph. More details can be found in Section 3B.22 of the MUTCD.



Optical speed bars on a rural roadway placed in advance of a horizontal curve.

3.1.2 Road and Street Designs

There are several modifications to the design of a road or street that can induce speed reductions and have other safety and operational benefits for all road users. These include reduced lane widths, road diet, center island or median, and roundabout. Several of these countermeasures can be implemented on higher-speed roadways.

Reducing lane width to as narrow as 10 feet can reduce speeds. This can be accomplished by restriping narrower lanes without reducing pavement width. The remaining space can then be used for non-motorized uses, buffer areas between travel lanes and non-motorized uses, or space for on-street parking. In rural areas, reducing lane width on roadway segments should only be considered on lower-speed roadways in towns or villages. A nationwide study found no increase in crashes or injuries when lanes were narrowed on urban and suburban roadways.⁽¹⁸⁾ Speeds may also decrease by one to three mph for each foot that the roadway is narrowed down to 10 feet.⁽¹⁹⁾ At two way stop controlled, rural intersections on high-speed two-lane, two-way roadways lane narrowing through the application of rumble strips on outside shoulders and in a painted yellow median island on major road approaches has been found to significantly reduce speeds and resulted in improved safety performance⁽²⁰⁾ (CMF= 0.69).⁽²¹⁾



The lane width for motor vehicle travel in this community was reduced to provide exclusive space for cyclists.

A **road diet** is a conversion of an existing street cross section to create space for other uses (e.g., bicycle lanes, sidewalks, turn lanes, or on-street parking). Figure 3 is a before-and-after drawing of a typical road diet. The original road was four lanes with two lanes in each direction.

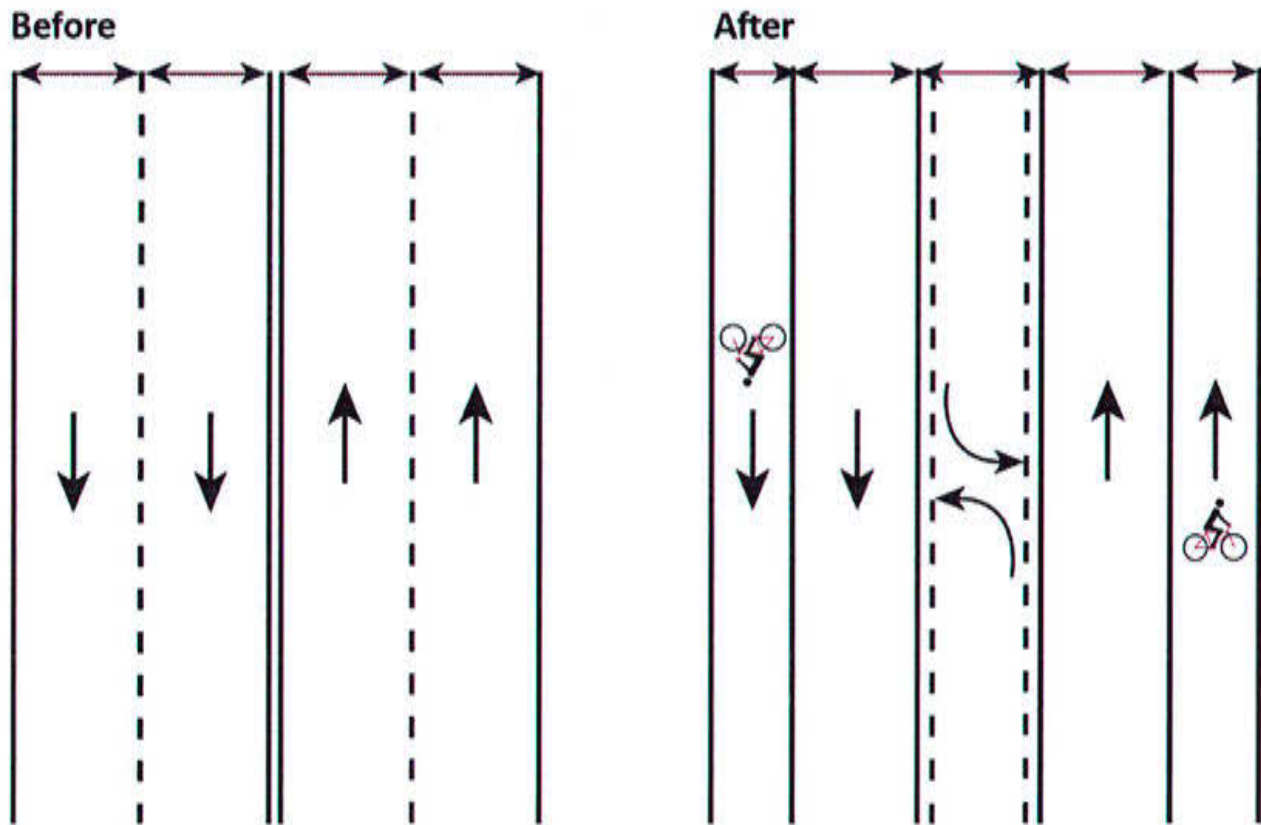


Figure 3. Road Diet Comparison.⁽²²⁾

The same road width remains after the road diet, but the number of travel lanes for motor vehicles is reduced providing space for bicycle lanes in each direction. Road diets have the potential to reduce speeds due to the perceived narrowing of the roadway, with the extra pavement used for center turn lanes, parking, bicycle lanes, or other uses. Road diets have also been found to reduce crashes ($CMF = 0.47-0.71$)^(23,24). More detailed information can be found in the *Road Diet Handbook: Setting Trends for Livable Streets*.⁽²⁵⁾

A **center island or raised median** can be used to create a shift in the travel path. Shifting traffic is an effective way to reduce speeds. A center island or raised median may also be used to narrow the "optical width" of the roadway, which will make the roadway appear narrower, thereby reducing speeds. Medians have been shown to be effective in lowering operating speeds, especially when they create a deflection in the vehicle path at the beginning of the median. However, attention must be given to the design of the deflection to achieve a speed reduction without compromising safety. For this reason center islands and raised medians are typically applied to developed areas- that is in towns or villages- within the rural context. Another positive aspect of installing medians is that pedestrians' safety is improved by providing a refuge when crossing the street. According to trafficalming.org installing medians as a measure for narrowing, results in an average speed reduction of 7 percent of the 85th percentile travel speed⁽²⁶⁾ ($CMF 0.29$).⁽²⁷⁾



A center island or median.

A **roundabout** is an intersection with a raised island in the middle that vehicles must travel around in a counterclockwise direction. In order to enter the roundabout, a driver must yield to vehicles traveling in the circulatory roadway. Roundabouts have become popular for intersection traffic control due to documented safety (CMF 0.213-0.58)(28,29) and operational benefits. Roundabouts can be extremely effective at improving safety by managing speeds. According to the FHWA's Proven Safety Countermeasures website, converting a two-way stop controlled intersection to a roundabout can reduce severe crashes by 82 percent and overall crashes by 44 percent. Similarly, converting a signalized intersection to roundabout conversion can reduce severe crashes by 78 percent and overall crashes by 48 percent. For more information concerning roundabouts, refer to FHWA's Web site on roundabouts at: http://safety.fhwa.dot.gov/provencountermeasures/fhwa_sa_12_005.htm.



A rural roundabout.

3.1.3 Traffic Calming

Traffic calming is the design or retrofit of a roadway to encourage uniform vehicle speeds and improve conditions for non-motorized users. Traffic calming tends to be applied to roads with operating speeds of 30 mph or less, as these roads are typically developed zones along rural roadways. There are numerous traffic calming countermeasures that can be applied on different types of roads and streets, and these are identified in ITE's *Traffic Calming: State of the Practice*(30) and the FHWA's *Engineering Countermeasures to Reduce Speeds*.(31) Some of the measures that can be applied in rural villages are described in this section.

A **speed hump** is a raised section of asphalt approximately 10 to 14 feet long and 3 to 4 inches high. Speed humps are typically used on lower-speed residential streets in rural areas that are experiencing a high incidence of speeding and/or cut-through traffic.(32) Speed humps are not to be confused with speed bumps, which are much shorter and usually found in parking lots. Speed humps have been found to reduce injury crashes by 40 to 50 percent and speeds by nine mph(33) (CMF = 0.5-0.6).



A speed hump delineated to notify motor vehicles of its presence.

Speed tables are similar to speed humps but have an extended flat section that can accommodate an entire car. This design allows for speeds of 25 to 30 mph, which are typical for local and collector streets. Speed tables are generally placed on roadways where there is minimal heavy truck and farm vehicle traffic.(34) Information on the design of speed humps and

speed tables are available in ITE's *Guidelines for the Design and Application of Speed Humps and Speed Tables* (see www.ite.org). According to trafficalming.org, speed tables have been found to reduce speed by an average of 7.5 mph. [\(35\)](#)



A speed table at a pedestrian crossing on a rural road.

A **mini-roundabout** is smaller than a conventional roundabout and has a mountable center island that is either flush with the pavement or slightly mounded. It is typically installed on roadways with speed limits of 35 mph or lower. This measure can reduce speeds by an average of 10 mph, since traffic is required to yield to road users in the mini-roundabout. [\(35\)](#)



A mini roundabout.

A **traffic circle** is intended for low-volume and low-speed roads, such as those in residential areas. A raised center island is constructed in the intersection. Landscaping can be added to the island for aesthetic value but should not obstruct the view of the intersection. A traffic circle is quite different from a roundabout or mini-roundabout, as a yield sign is not mandatory for this intersection. Also, it is permissible to turn left in front of the center island, a maneuver that is prohibited at a conventional roundabout. Traffic circles have been found to reduce speeds by up to 15 mph. [\(36\)](#)



A traffic circle.

For more information on traffic circles and mini-roundabouts, FHWA has published an informative technical summary on mini-roundabouts that can be found in FHWA's *Technical Summary: Mini-Roundabouts* or NCHRP 672, *Roundabouts: An Informational Guide*.[\(37\)](#)

3.1.4 Gateway Treatments

A common speeding-related problem occurs when a driver approaches a rural town or village from a higher-speed rural road. Gateway treatments (also called gateways) can be used in rural areas to capture the attention of drivers and inform them that the nature of the roadway is changing, and, as a result, they should reduce their speed.[\(36\)](#) A gateway is a "combination of traditional and nontraditional traffic control treatments, such as enhanced signing, lane reduction, colored pavements, pavement markings, experimental striping, gateway structures, and traditional traffic calming techniques or other identifiable features."[\(38\)](#) A key consideration is the proper use of transitional speed limits and the Reduced Speed Limit Ahead warning signs as prescribed in the MUTCD (see section 2C.38).



A gateway treatment entering a rural community

The gateway needs to be conspicuous to be effective. It is also important to ensure that devices used as part of a gateway treatment (1) are crashworthy if placed within the clear zone and (2) do not obstruct sight distance, as gateways placed in the roadway may become fixed object hazards. Gateways have been found to reduce speeds by an average of five mph.

Additional information on the effectiveness of engineering countermeasures is available in the FHWA publication *Engineering Countermeasures for Reducing Speeds*.[\(39\)](#)

3.2 Enforcement

Enforcement is critical in some locations to achieve compliance with posted speed limits. According to the *Uniform Guidelines for State Highway Safety Programs*, more than half of all traffic stops result from speeding violations, and public support for speed enforcement activities depends on the confidence of the public that the speed enforcement is fair, rational, and motivated by safety concerns.[\(40\)](#)

Speed enforcement that is perceived predominantly as a means to generate revenue will be met with indifference, at a minimum, and active resistance, at worst, from the motoring public. Speed enforcement countermeasures should primarily be at times and locations that can be directly tied to speeding-related crashes and areas of excessive speeding.

Traffic enforcement seeks to generate deterrent effects on speeding that are both specific and general. The specific deterrence is based on the idea that individual drivers who are caught and punished for speeding will be dissuaded from committing further speeding violations in the future. The general deterrence is based on the assumption that the process of apprehending individual violators can influence the behavior of a larger segment of the driving population.

There is an established linkage between speed education efforts and speed enforcement initiatives. Working together, these strategies amplify the impact of each element's contribution to traffic safety. NHTSA's high-visibility model recommends using a strategic combination of public information, education, and targeted speed enforcement at times and locations where excessive speeding and speeding-related crashes have been documented.⁽⁴¹⁾ These efforts are often conducted periodically and last from one to several weeks so that coordinated speed enforcement can take place among multiple law enforcement agencies on a consistent basis.

In many rural areas, individual traffic officers may be responsible for patrolling large areas. Rural law enforcement agencies often do not have resources available to respond to each traffic safety issue identified within their jurisdiction.

It is important that the engineering and law enforcement disciplines form a partnership to address speeding. Regular meetings between engineers and law enforcement officers responsible for traffic enforcement should be scheduled to discuss speeding concerns. Traffic engineers and law enforcement agencies must work closely together to identify roadway locations where engineering countermeasures alone will not address speeding, financial resources are not available to implement robust engineering measures, and speed enforcement strategies are needed.

The relationship between the engineering and enforcement communities will be beneficial to the Speed Management Program through the sharing of knowledge. For example, the engineering community can explain the process of setting speed limits to the police officers charged with enforcing them, and the enforcement community can discuss the need for and the optimal configuration of emergency pull-off areas to the individuals who are responsible for designing the roadway environment. Other community stakeholders (e.g., from schools, emergency services, hospitals, etc.) may also be invited to participate on a regular or as-needed basis. The Mississippi Demonstration Project, detailed on the following page, is an example of a successful partnership between engineers and local law enforcement personnel that was effective in educating the driving population.⁽⁴²⁾

In 2001, NHTSA, FHWA, and the Mississippi DOT teamed up with the Cities of Gulfport and Southaven to carry out an assessment of setting rational speed limits, enforcing those limits, and educating the public on speeding-related issues. Gulfport used the engineering process of setting speed limits to the 85th percentile, as well as strict enforcement and plenty of public education. Southaven was monitored, as well, although there were no changes in the speed limits, enforcement, or public education. Improvements were noted in Gulfport in drivers' compliance with the newly-introduced rational speed limits (based on the 85th percentile) as compared to Southaven, which kept the same speed limits as before.

3.2.1 Traditional Enforcement

The primary speed enforcement tools used by law enforcement patrol officers include RADAR (Radio Detection And Ranging), LIDAR (Light Detection And Ranging), and vehicle pacing. With proper training, these tools constitute effective means to identify and cite speeding violators. Due to the ease of use, accuracy, and steadily decreasing costs, RADAR and LIDAR (or laser) instruments have become the preferred method of speed detection by law enforcement. In some States, grants are available from organizations such as the GHSA to purchase or upgrade RADAR and/or LIDAR equipment.

For speed enforcement deployments, rural law enforcement agencies often make greater use of "moving" RADAR equipment (RADAR that can capture the speed of traffic when the patrol vehicle is moving). The size of a typical rural patrol area often requires officers to patrol for speeders in moving mode to allow them to canvas the large geographic areas assigned to them over the course of a work shift. In general, rural and suburban patrol officers are also more likely to work individually on speed enforcement compared to their urban counterparts. Often, when a new Speed Management Program is being unveiled, rural or suburban agencies will combine resources. Officers from several agencies within the same jurisdictional authority (e.g., village, township, county, and/or State agencies) will agree to work together to address specifically-identified stretches of a roadway where speeding and crashes are clearly a problem. These collaborative traffic safety efforts by law enforcement agencies are a means to maximize the impact of scarce resources and heighten awareness

- of speeding issues experienced by the motoring public. NHTSA provides each State's GHSA with Federal funds that can be used to target specific traffic safety issues—and speeding is being increasingly identified as a priority.

3.2.2 Automated Enforcement

Automated Speed Enforcement (ASE) systems are also effective methods to prevent speeding-related crashes. ASE combines RADAR or LIDAR with sophisticated digital camera systems and computer technology to detect speeding violations and record identifying information about the vehicle and/or driver. ASE is a supplement to traditional speed enforcement countermeasures.



The equipment within an automated speed enforcement van.

By utilizing ASE, an agency will be able to do the following:

- Conduct speed enforcement in areas where traditional traffic stops are dangerous or infeasible due to the roadway design.
- Continuously conduct speed enforcement on roadways identified as high-crash locations where traditional law enforcement is not practical.
- Reduce the impacts of driver distraction and congestion that often result during traditional traffic stops made by law enforcement, especially during peak travel periods.

Agencies should check for ASE laws or regulations within their State when considering the implementation of ASE. Communities considering ASE as an option should review the *USDOT Speed Enforcement Camera Systems Operational Guidelines* (March 2008) for information on implementing and operating an ASE program.⁽⁴³⁾

3.2.3 Vehicle Pacing

Officers in some jurisdictions may also use pacing. Pacing is an enforcement method in which the officer observes traffic speeds from a moving vehicle and then pursues a violator.⁽⁴⁴⁾ To apply this method, a police vehicle's speed is matched to that of a target vehicle, and the calibrated speedometer of the patrol car is used to infer the other vehicle's speed. Pacing can be an effective, more convenient alternative method of identifying a vehicle's speed if a more convenient if a speed-measuring device is not available.

3.3 Education

Citizen concerns and behavior often drive speed management policies and any associated education efforts. A comprehensive Speed Management Program attempts to address these concerns and behaviors through a data-driven approach.

NHTSA has developed a Speed Campaign Toolkit for public information and education outreach that has been tested and validated in programs across the United States.⁽⁴⁵⁾ This toolkit provides example marketing materials that can be used or distributed to fit local needs and objectives while partnering with other local or national communities and organizations on developing a speed management strategy. More information on the toolkit can be found at <http://www.trafficsafetymarketing.gov>.

NHTSA advises that traffic safety education campaigns should include participation from stakeholders representing law enforcement, engineering, public health, the judiciary, and prosecutors to ensure that agencies directly impacted by

enforcement countermeasures are "in the loop" and have input into the proposed effort.⁽⁴⁶⁾ This also includes private partners, such as hospitals, news organizations (newspaper, radio, and/or TV), major employers, and local businesses.

4: Implementing Countermeasures

4.1 Preparing for Implementation

After selecting the appropriate engineering, education, and enforcement countermeasures, the next step is to implement them. This will involve seeking support, prioritizing the countermeasures, identifying sources of funding, and implementing pilot projects.

4.1.1 Seeking Support

Seeking support for speed-related countermeasures will require engaging the appropriate stakeholders. Stakeholders may be anyone affected by the Speed Management Program, which could include appropriate agencies, community groups, or individuals. Enlisting stakeholder support may include holding a meeting and making a short presentation or providing a short written report to the stakeholders on the design and expected impact of the engineering countermeasure or on the plan for implementing enforcement and education campaigns to the group. When communicating with stakeholders it is essential that local practitioners understand their perspective and possible role in implementation of the program. Other methods of seeking support for a program may include hosting a public information meeting or establishing an electronic presence (e.g., Web page, Facebook page, etc.) that can be used to disseminate information and solicit feedback on the proposed countermeasures.

4.1.2 Prioritization of Countermeasures

With practically every agency being constrained by limited resources, countermeasures will need to be prioritized. Most often, the countermeasures proven to provide the most impact for the investment are given the highest priority. The following qualities of each countermeasure should be considered when establishing priorities:

- **Ability to reduce crashes**—Countermeasures with greater benefits should be prioritized higher. Information on the effectiveness of various engineering strategies can be found on the FHWA Crash Modification Factor (CMF) Clearinghouse Web site⁽⁴⁷⁾. Enforcement and educational countermeasures can be found in the NHTSA publication, *Countermeasures that Work*.⁽⁴⁸⁾
- **Potential for quick implementation**—Countermeasures that can be implemented quickly (within a year) should have a higher priority. By giving greater priority to countermeasures that can be implemented quickly, an agency can ensure that the issue does not go unaddressed for several years while waiting for the implementation. Signing, pavement markings, and traditional enforcement are examples of countermeasures that can be implemented quickly.
- **Benefit / cost results**—Countermeasures with a greater lifecycle benefit/cost (B/C) ratio should have a higher priority, as they represent the most cost effective solutions. Calculating a B/C ratio requires information on the effectiveness and costs of the speed management strategy.
- **Potential to reduce speeds**—Countermeasures that are expected to result in significant reductions in vehicle speeds should have a higher priority.

For example, The Pennsylvania DOT (PennDOT) has a system to prioritize traffic calming measures in which points are assigned to locations based on criteria that include speed, volume, crashes, proximity to a school, and pedestrian facilities/generators; the greater the number of points, the greater the priority that is given to that location.⁽⁴⁹⁾ Table 1 outlines the ranking system used with the PennDOT program.

Table 1 . Example Project Ranking System.

Criteria	Points	Basis for Point Assignment
Speed	0 to 30	Extent by which 85th percentile speeds exceed posted speed limit; 2 points assigned for every 1 mph
Volume	0 to 25	Average daily traffic volumes (1 point assigned for every 120 vehicles)
Crashes	0 to 10	1 point assigned for every crash reported within past three years

Elementary or Middle Schools	0 to 10	5 points assigned for each school crossing along the project street
Pedestrian Generators	0 to 15	5 points assigned for each public facility (such as parks, community centers, and high schools) or commercial use that generates a significant number of pedestrians
Pedestrian Facilities	0 to 10	5 points assigned if there are no continuous sidewalks on one side of the street; 10 points if sidewalk is missing on both sides.
Total Points Possible	100	

4.1.3 Funding

Identifying funding for each of the proposed countermeasures is essential to ensuring its implementation. There are a variety of different sources that can be used to implement the countermeasures. For engineering countermeasures, the Highway Safety Improvement Program (HSIP) [\(50\)](#) program is a good place to start, as it is a source of Federal funds that are typically administered by the State DOT. Because States use various methodologies to administer these funds, the practitioner should check with the State DOT on their availability.

For enforcement, education, and emergency services strategies, Section 402 funds should be considered. Section 402 funds are typically administered by each State's GHSO [\(51\)](#). Other State, local, and tribal funds may also be available for the implementation of selected countermeasures. Working with stakeholder agencies to develop speed management program can result in the pooling of resources for an effective program.

4.1.4 Planning and Using Pilot Projects

Implementing new strategies can be a challenge for an agency or community. It may be helpful to conduct a pilot project to introduce a new engineering strategy (e.g., a roundabout) or an (e.g., ASE method). Consider starting small by selecting a pilot location, or use a similar project located in a nearby location to demonstrate the effectiveness of the strategy. Effectiveness can be assessed by collecting data (e.g., speed and/or crash data) both before and after the installation of the countermeasure.

4.2 Evaluate Progress

Once a selected strategy has been implemented, it is important to evaluate its safety effectiveness. If it has been successful in reducing crashes and fatalities, then the evaluation will provide justification to potentially expand the use of the countermeasure. This section summarizes how to evaluate a speed management strategy that can be used for either one individual project or as part of a community-wide program. Each evaluation should be tailored to address specific countermeasures and conditions through analyses of the available data.

An evaluation of the impact on crash history should not be conducted until at least one year of post-installation data is available, and a minimum of three years of crash data are desirable to provide a larger sample size. The purpose of an effectiveness study is to determine if there has been a significant impact on the frequency or severity of crashes as a result of the installed countermeasure.

The recommended timeframe for a speed evaluation after a major engineering change (e.g., a new speed limit or road design element) is also one year. Waiting a full year will allow motorists to get acclimated to the new treatment and environment and will allow it to be encountered in all types of weather conditions.

The evaluation timeframe will depend on the type of countermeasure strategy pursued and the project types. The strategy must be evaluated to determine if it has been effective, partially effective, or not effective.

The simplest method for evaluating speed management strategies involves a comparison of the speed data collected before and after implementation, although it can lead to misleading results. One source of information on vehicle speeds is a full speed study conducted specifically for the purpose of evaluating speed management strategies. A formal speed study will provide the complete speed profile for the subject roadway segment and will allow a direct comparison of the observed

85th percentile speeds both before and after implementation. Additional information on how to conduct a speed study is provided in the appendix.

If an agency does not have adequate resources to execute a full speed study in conjunction with the evaluation, it may also look to some existing databases for information on vehicle speeds. For instance, the number of speeding citations issued during the before- and after-periods may be available from the files of a local law enforcement group. While the number of citations issued will not provide a complete speed profile for the subject roadway, it may still serve as a basic indicator of how successful a strategy was in mitigating a noted speeding problem. When resources other than a full speed study are used to gather speed information, one should consider any potential biases that could be introduced by those resources. For this example of using the number of citations issued, the evaluation should consider whether or not the intensity of the enforcement activities before the strategy implementation was significantly different than that afterward; i.e., did the number of citations issued increase or decrease simply because of changes in the nature of the enforcement practices.

After countermeasures have been in place for at least one year, an interim evaluation can take place. However, at least three years of after data are required for a comprehensive evaluation of implemented strategies. A before-and-after crash study can be conducted to evaluate the effectiveness of implemented strategies in improving safety when sufficient data are available. Details on creating a well-designed and executed before-and-after crash study can be found in *A Guide to Developing Quality Crash Modification Factors* (45) or in the *Highway Safety Manual* (HSM).

5: Summary

Speeding is defined as *exceeding the posted speed limit or driving too fast for conditions*. Crashes involving speeding occur on all road types but are particularly prevalent on the local rural road system. Of the fatal crashes occurring on local rural roads, nearly one-third involved speeding. As the speed increases, the likelihood of a crash resulting in a serious injury or fatality also increases.

Addressing this safety issue can be a challenge for local roadway agencies because of limited resources. Nonetheless, all agencies, regardless of size and resources, can develop a Speed Management Program that provides a comprehensive strategy to address the concern of unlawful and undesirable speeds. Accordingly, the program should encompass engineering, enforcement, education, and emergency services strategies—the four E's of safety—to address speeding and speed-related crashes that result in fatalities and serious injuries. In general, developing a Speed Management Program involves four steps:

- **Step 1. Identify speeding issues and partner agencies.**
- **Step 2. Select countermeasures.**
- **Step 3. Implement countermeasures.**
- **Step 4. Evaluate progress.**

Successful development of a Speed Management Program begins with identifying the speeding issue through data. A variety of data—including crash (at least three years of data), citation, roadway and conditions, citation, and input from partner agencies—can be used to identify areas where speeding is an issue. Once the data have been analyzed and a location has been identified, local practitioners should coordinate with partner agencies such as law enforcement, other road agencies (if applicable), and other stakeholders to identify program goals and determine the specific causes of the speeding issue. This usually entails a field assessment and evaluation. These partnerships will not only help with gaining a more thorough understanding of the problem, but they will also be essential in supporting and implementing the Speed Management Program.

Once the causes of the speeding issue have been identified, countermeasures are selected that comprehensively address the issues. Engineering, enforcement, and education countermeasures may be selected, and a combination of these strategies will often bring greater impact in addressing the speeding issue. Engineering countermeasures can range from upgrades to the signing and pavement markings to modifications to the geometric configuration of the roadway. Other countermeasures may include targeted enforcement campaigns, automated speed enforcement, or public information and education campaigns. The measures selected will then have to be communicated to the various stakeholders to gain support in implementing the program.

Resources to address speeding are generally limited. Therefore, countermeasures that address speeding issues will need to be prioritized and funded for implementation in a systematic way. Prioritization can be based on those strategies most likely to impact the issue or on the cost relative to the safety benefit or implementation time.

The individual countermeasures or projects should be evaluated to determine the progress being made towards achieving the goals established for the entire Speed Management Program. The evaluation will also determine the effectiveness of the countermeasure within the jurisdiction to determine if it should be applied at other areas.

Elements of this model Speed Management Program can be followed by all agencies, regardless of size and resources. In developing such a program, assistance should be sought from such organizations as the State DOT, LTAP, and TTAP. By following this process, local rural road practitioners can implement a comprehensive program that addresses the safety issues associated with speeding in their communities, and this, in turn, will help to protect the lives and improve the safety of all road users.

Appendix: How to Conduct a Speed Study

In conducting a speed study, there are three primary techniques by which vehicle speeds are routinely collected:

- Traffic counter method.
- Time-measured zone method.
- RADAR/LIDAR method.

The recommended minimum sample size is 100 free-flow vehicles. If a study is being conducted on a very low-volume roadway, then it is acceptable to collect speeds for two hours, regardless of how many vehicles are observed. Environmental conditions must be considered, as well, as drivers typically do not travel at a normal speed while the roadway is wet or snow-covered.

Another important consideration for the speed study is the time of day during which the data will be collected. For a low-volume roadway, the peak hours of the morning (typically from 7:00 to 9:00 AM) and the afternoon (typically from 4:00 to 6:00 PM) are time periods when the study *should* be conducted in order to increase the likelihood of observing a minimum of 100 vehicles. On more heavily-traveled roadways, however, the morning and afternoon peak periods are times when speed studies *should not* be conducted, since the speeds observed while the traffic volumes are at or near capacity are unlikely to be an accurate reflection of free-flow speeds.

Traffic Counter Method

One of the most common types of traffic counter is the portable traffic count station that is used routinely by State DOTs and other agencies to procure traffic volumes at various locations within their jurisdiction. These traffic counters are characterized by two hoses that are placed a short distance from one another across the travel lane(s) of interest. Many of these devices have the capability to collect multiple data variables, including vehicle speeds. If an agency's traffic counters are so equipped, set the control unit to collect vehicle speeds and deploy the apparatus as specified by the traffic counter manual. The data will be stored in the field unit and can later be downloaded into a spreadsheet and analyzed to compute various measures of speed.



Traffic counters.

Time-Measured Zone Method

A second method of conducting a speed study involves recording the length of time that it takes vehicles to traverse a known distance along the roadway. This process is a relatively straightforward one and begins by establishing a zone within the segment of interest having the length specified in Table 2. (The appropriate zone length is dependent upon the posted speed limit.) The zone should be an area in which both entering and exiting vehicles are clearly visible to a field observer. It will be helpful to mark the beginning and ending limits of the zone with some reference indicator (e.g., a sign, crack in the pavement, cone on the side of the road, etc.).

Table 2 . Length of Measured Zone per Speed Limit.

Speed Limit (mph)	Conventional Distance to Measure (ft)
Below 25	88
25-40	176
40 and Above	264

Source: <http://www.ctre.iastate.edu/PUBS/traffichandbook/2SpotSpeed.pdf>

A vehicle reference point should be identified to be used in determining the instant at which the observer will start and stop the stopwatch. This is typically the vehicle's front or rear tire, and either can be selected as long as the same reference point is used at both the entrance to and the exit from the zone. It is extremely important to be consistent in using the same reference point at each end of the zone, as failing to do so will render the recorded times (and corresponding vehicle speeds) inaccurate.

While conducting the survey, the observer should stand at a safe location on the side of the road where a vehicle will exit the measured zone, having a clear view of the beginning of the zone. The observer should start the stop watch at the instant the reference point on the vehicle reaches the beginning limit of the zone and stop the timer the instant that same vehicle reference point reaches the end of the zone. After each vehicle travels through the zone, its time should be recorded by the observer. When two hours have lapsed (or, if pressed for time, when 100 vehicles have passed), the recorded times can be converted into the observed vehicle speeds. Table 3 displays the speeds corresponding to the times (in seconds) recorded for the vehicles to travel the measured distance (in feet) defined by the zone.

Table 3. Speed of Vehicle Over Distance for Various Times.

Time (sec)	Speed by Distance (MPH)			Time (sec)	Speed by Distance (MPH)		
	88	176	264		88	176	264
1.0	60.0			3.6	16.7	33.3	50.0
1.2	50.0			3.8	15.8	31.6	47.4
1.4	42.9			4.0	15.0	30.0	45.0
1.6	37.5			4.2	14.3	28.6	42.9
1.8	33.3			4.4	13.6	27.3	40.9
2.0	30.0	60.0	90.0	4.6	13.0	26.1	39.1
2.2	27.3	54.5	81.8	4.8	12.5	25.0	37.5
2.4	25.0	50.0	75.0	5.0	12.0	24.0	36.0
2.6	23.1	46.2	69.2	5.2	11.5	23.1	34.6
2.8	21.4	42.9	64.3	5.4	11.1	22.2	33.3
3.0	20.0	40.0	60.0	5.6	10.7	21.4	32.1
3.2	18.8	37.5	56.3	5.8	10.3	20.7	31.0

3.4	17.6	35.3	52.9	6.0	10.0	20.0	30.0
-----	------	------	------	-----	------	------	------

Radar/Laser Method

Another method to conduct a speed study is by the use of RADAR or LIDAR. Observers select a safe location on the side of the roadway that is hidden from approaching traffic so as to not impact driver behavior and disturb the flow of traffic.

The observer must record the highest free flow speed of vehicles. If there is a large platoon of vehicles, only the first vehicle in the platoon should be measured for speed. The observer must also target subject vehicles so as to lessen the angle between the observer and the traveling vehicle. If there is a substantial angle between the observer and the vehicle, there speed measurement may be inaccurate. Any radar/laser equipment used to conduct speed studies should be calibrated, and users of the equipment should be properly trained.

Figure 4 provides a sample data collection sheet that may be used to conduct a speed study. Conditions such as weather, location, date, time, and the posted speed limit should be recorded on the sheet. It is important to accurately record this data for comparison to other studies. As a vehicle travels past the observer the maximum speed is marked on the data collection form. Each row starts at the left side of the page and each successive box is marked as speeds are observed.

Figure 5 provides an example of a completed data collection sheet.

Speed Survey Field Sheet

Speed Limit: _____		Name: _____																							
Direction: _____		Address: _____																							
Time: _____		Area of Roadway Studied: _____																							
Date: _____																									
Weather: _____																									
Speed	Number of Vehicles																								
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
75																									
70																									
65																									
60																									
55																									
50																									

[illegible]

Figure 4. Blank Speed Survey Field Sheet.

Speed Survey Field Sheet

[illegible]

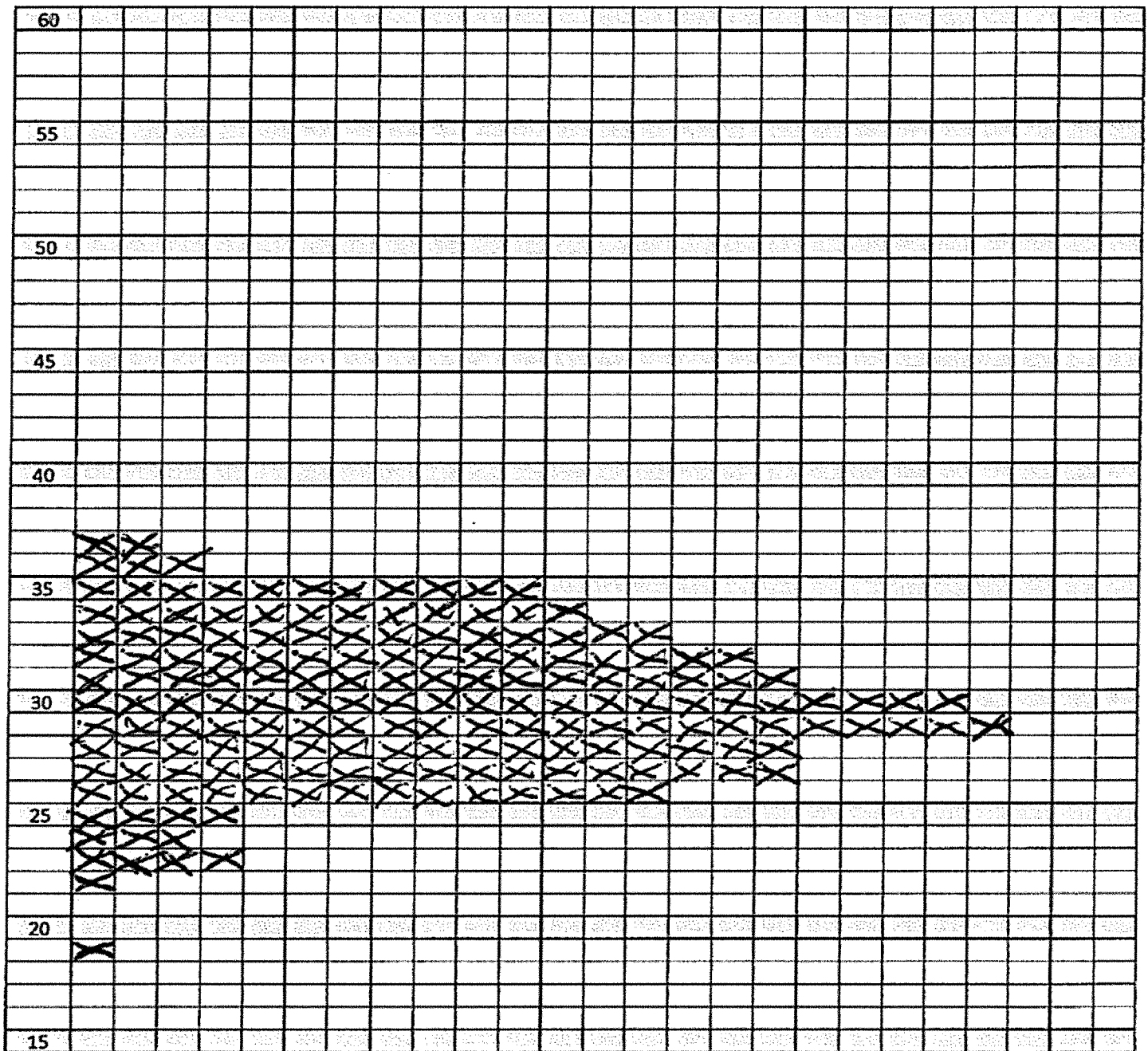


Figure 5. Sample Speed Survey Field Sheet.

Post Data Collection

Once speeds are collected by any of the three methods it is then essential to determine the 85th percentile speed to compare to the posted speed limit. The 85th percentile speed is computed by finding the cumulative frequency percentage. As seen in Figure 6, common spreadsheet programs can be utilized to automatically perform this computation.

A technique to graphically depict the 85th percentile speed is to graph the speed along the x-axis and the cumulative percentage along the y-axis. A line can be drawn at 85 percent horizontally across until it intersects the line for the recorded speeds. At that point, a line can be drawn from that intersection point to the x-axis providing the 85th percentile speed.

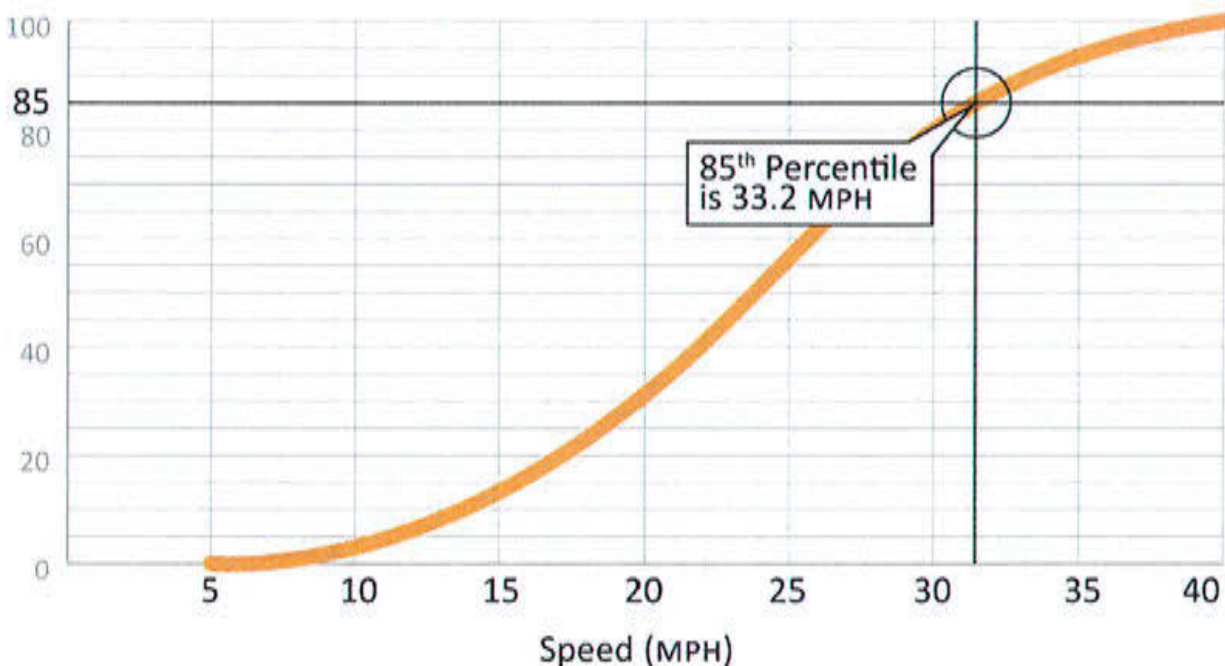


Figure 6. Graphical depiction of 85th percentile speed.

When evaluating the 85th percentile speed and readjusting the posted speed limit of the roadway, the speed limit can only be posted in increments of five miles per hour (i.e., 25, 30, or 35 mph). In the example above the 85th percentile is 33.2 mph, since this speed cannot be chosen as the speed limit it is advised to round the speed limit up to the nearest 5 mph increment, which would be 35 mph.

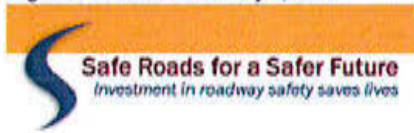
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Federal Highway Administration Research and Technology Coordinating, Developing, and Delivering Highway Transportation Innovations

TECHBRIEF

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Traffic Calming on Main Roads Through Rural Communities

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Introduction

Speed management is a significant challenge for most communities in the United States. This is particularly true for small, rural communities where the main roadway through the town serves a dual role. Outside the town, the roadway provides high-speed travel over long distances; within the built-up area, however, the same roadway accommodates local access, pedestrians of all ages, on-street parking, bicycles, and the many other features unique to the character of a community. This convergence of roadway purposes presents both an enforcement challenge for the community and a potential safety problem for the public.

Addressing the issue through law enforcement alone often leads to temporary compliance at a significant cost. A more permanent way to reinforce the need to reduce speed is to change the look and feel of the road by installing traffic calming treatments that communicate to drivers that the function of the roadway is changing. Traffic calming has been evaluated and used extensively within low-speed urban areas in the United States but less so in rural areas where driver expectations and traffic characteristics are different.

Traffic calming is more common in rural communities in Europe where multiple measures such as colored pavement, physical lane narrowing, signing, and landscaping are often combined.^(1,2) A gateway treatment intended to evoke lower speed on the approach and entrance to the community is usually followed by a series of other measures repeated throughout the community to encourage drivers to maintain appropriate speeds. Speed reductions up to 15 mi/h from rural traffic calming have been reported in France, Denmark, and the UK, although speed reductions of 5 mi/h were more typical.^(1,3) Total accidents were reduced by 50 percent and injury accidents by 25 percent or more.^(3,4)

This TechBrief summarizes an evaluation of the effects on speed of low-cost, traffic-calming treatments on main rural highways passing through small, rural communities in Iowa. The full report, *Appropriate Traffic Calming Techniques for*

Small Iowa Communities (TR-523), is available on Iowa State University's Web site at:
<http://www.ctre.iastate.edu/research/detail.cfm?projectID=226410767>.⁽⁵⁾

Study Methodology

Site Selection

Thirty rural communities (with populations less than 5,000) were identified as potential pilot-study locations through solicitation in a rural community newsletter. Site visits were conducted for each community; 18 met the initial selection criteria, which included the following:

- Through, paved, major county or state highway.
- No traffic calming currently in place or planned.
- No construction, reconstruction, or significant maintenance activities planned along the route during the study period.
- No access control.
- No adverse geometry such as sharp horizontal curves or steep vertical curves where treatments would be placed.

Initial speed studies were conducted in the 18 communities, and 5 were selected as pilot-study locations. These five locations were found to have the most significant speeding problems, as determined by the difference between the posted speed and prevailing travel speed.

Treatment Selection

An extensive list of both traditional traffic-calming treatments used in the urban areas of the United States and treatments used specifically for major roads in small communities (identified from European and other literature) was compiled. The appropriateness of each treatment for use in built-up areas along main rural roads was determined based on the following criteria:

- Low cost.
- Ability to accommodate farm vehicles and large trucks.
- Compatibility with the rural setting and driver expectations.

Treatments were selected for each study location in cooperation with local agencies.

A request for experimentation was submitted and approved by the Federal Highway Administration (FHWA) for three of the treatments that did not meet current provisions of the *Manual on Uniform Traffic Control Devices*.⁽⁶⁾

Seven different low-cost, traffic-calming treatments were implemented and evaluated in the five communities as shown in table 1. In some communities, a single traffic calming measure was installed, and in others, a combination of measures was implemented and evaluated. Speed limits ranged from 55 mi/h to 60 mi/h outside the community and from 25 mi/h to 35 mi/h inside the community where the treatments were applied.

Unless otherwise noted, treatments were placed from July through August 2006. Any treatment that included pavement markings was repainted in May 2007, just before the 12-month "after" data-collection period.

Table 1. Summary of treatments by Iowa community.

City (population)	Treatment	Roadway	AADT (veh/day)	Cross section (all are two-lane)
Union (427)	Transverse pavement markings ¹ with speed feedback sign	D-65 (west edge of City)	830	Asphalt (22.4 ft), unpaved shoulders
	Transverse pavement markings ¹ with speed feedback sign	S-62/SH 215 (from intersection with D-65 to north city limit)	1680	Concrete (40.0 ft),

	Lane narrowing using painted center island and edge line markings			curb and gutter
	Transverse pavement markings ¹	SH 215 (near south city limit)	1,000	Asphalt (22.4 ft), unpaved shoulders
Roland (1,324)	Converging chevrons ¹ with "25 MPH" pavement legend	E-18 (near east and west city limits)	2,300	Asphalt (22.6 ft), unpaved shoulders
	Lane narrowing using shoulder widening & "25 MPH" pavement legend	E-18 (from intersection with R-77 to east city limit)	2,300	Concrete (36.0 ft), curb and gutter
	"25 MPH" pavement legend	E-18 (from intersection with R-77 to west city limit)	2,300	Asphalt (22.6 ft), unpaved shoulders
Gilbert (987)	Speed table	E-23 (center of community)	1,480	Asphalt (22.0 ft), no shoulders
Slater (1,306)	Lane narrowing with center island using tubular markers channelizing markers	R-38 (from intersection with SH 210 to south city limit)	2,060	Concrete (25.8 ft), curb and gutter
	Speed feedback sign	R-38 (near north city limit)	2,870	Asphalt (22.6 ft), unpaved shoulders
	"SLOW" pavement legend	SH 210 (west from intersection with R-38 to west city limit)	2,940	Asphalt (22.5 ft), unpaved shoulders
Dexter (689)	"35 MPH" pavement legend with red background ¹	F-65 (near east and west city limits as well as at curve before west city limit)	1,000	Asphalt (25.4 ft), unpaved shoulders
¹ A request for experimentation was submitted to and approved by FHWA for this treatment.				

Data Collection

Speed and volume data were collected by a roadside traffic recorder using pneumatic road tubes placed across the road. Data were collected immediately downstream of each treatment or in the case of road narrowing near the midpoint of the section. For Roland and Union where combinations of treatments were applied, data were also collected 0.5 mi upstream of the first treatment in order to determine whether speed changes observed were due to the treatments or to normal variation in speeds.

Results in this TechBrief are presented only for vehicles in the direction of travel that actually passed through the treatment. An in-depth discussion on data collected at other locations is presented in the full report.

After final locations were selected, a formal "before" speed study was conducted to establish baseline speeds and volumes. Speeds of all vehicles were collected continuously for at least 48 hours during each deployment. Data collection was planned at 1-, 3-, 6-, 9- and 12-month intervals after installation of the traffic-calming treatments. In several cases, data were not collected for a particular "after" period, mainly due to adverse winter conditions.

Most of the communities do not have any police officers and have no regular traffic enforcement, instead relying mostly on county sheriffs who drive through the community occasionally. Each community was asked to not change or request additional enforcement during the study period and to report any unusual speed enforcement or any other unusual activities. When additional enforcement or any unusual situation coincided with data collection, the data were discarded and recollected the following week. For instance, one community decorated the area around the roadway for Flag Day, and in one community roadway maintenance occurred during a data-collection period. In both cases, data were discarded and recollected. Data were only collected during nonholiday weekdays.

Measure of Effectiveness

Vehicular speed was the primary measure used to evaluate the effectiveness of each treatment. This report presents changes observed in the 85th percentile speed of all vehicles. The 85th percentile speed is the speed at or below which 85 percent of the vehicles are traveling. Each data set had at least 630 vehicle speed samples. In almost all cases, differences were statistically significant at the 95-percent confidence level.

The effects on mean speed and the percent of vehicles exceeding the speed limit by various amounts, along with statistical significance, are presented in the full report but not within this TechBrief. In most cases, only minor reductions in mean speed resulted. The changes in the percentage of vehicles exceeding the speed limit by various amount correlated with the changes in 85th percentile speeds. Overall, the treatments appeared to have a greater effect on drivers traveling at higher speeds.

Results

The effectiveness of each traffic-calming treatment is discussed in the following sections. A brief description and photograph of each treatment is provided, along with a summary of the effects on speed.

Transverse Markings With and Without Speed Feedback Signs

Description

The transverse markings consisted of a series of parallel bars on the inside edges of the travel lane. The spacing between bars decreased approaching the community. The series of markings are intended to create the perception that the vehicle's speed is increasing to trigger driver awareness of the need to slow down. The transverse markings were 12 inches wide (parallel to roadway edge) by 18 inches long (figure 1). The markings were installed at the north, south, and west entrances to the city of Union. Markings were placed in advance of and terminated at the speed limit sign which established the speed within the community. The length of each series and distance between bars varied based upon each speed transition and location within the series.



Figure 1. Experimental transverse markings at entrance to Union.

Speed feedback signs (figure 2) were also installed within Union. These signs consisted of a static "Your Speed" sign and an electronic display of the approaching vehicle speed measured by radar. These signs were installed for inbound motorists at the north and west city entrances and were placed immediately downstream of the transverse markings as shown in figure 3. Due to purchasing and installation problems, the signs did not become operational until just before the 9-month data collection period.



Figure 2. Speed feedback sign in Union.

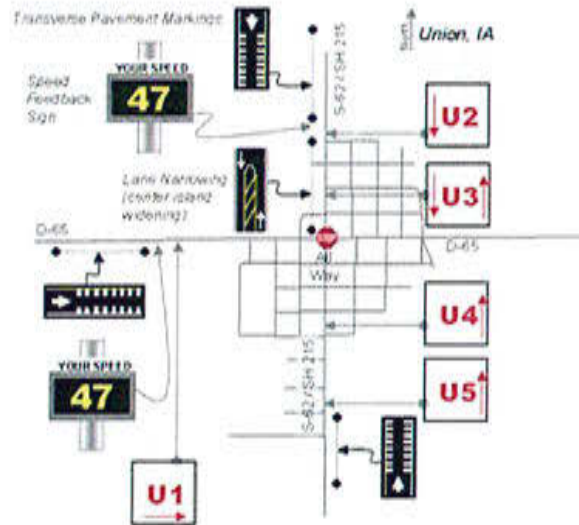


Figure 3. Treatment and data collection locations in Union.

Results

Table 2 shows the change in 85th percentile speed by location and observation period. For the south entrance (U5) where transverse markings were the only treatment installed, there was little change in prevailing speed. Similar results were found for southbound traffic entering the north side of town (U2) and eastbound traffic entering from the west (U1) prior to the installation of speed feedback signs.

Table 2. Speeds before and after transverse pavement markings with and without speed feedback sign (SFS) at the entrances to Union.

Location and analysis period	Sample size (veh)	Posted speed (mi/h)	85 th Percentile (mi/h)	Change in 85 th percentile speed from before period (mi/h)				
U2 SB Before	1870	30	41					

1-month	1785	30	41								0
3-month	1794	30	40							-1	
9-month (+SFS)	1737	30	35		-6						
12-month (+SFS)	1693	30	34	-7							
U5 NB Before	886	25	46								
1-month	783	25	45							-1	
3-month	943	25	45							-1	
9-month	908	25	44						-2		
12-month	871	25	45							-1	
U1 EB Before	893	25	53								
1-month	659	25	51						-2		
3-month	684	25	52							-1	
9-month (+SFS)	749	25	49				-4				
12-month (+SFS)	666	25	50					-3			

After the feedback signs were installed, speeds dropped an additional 3 mi/h to 6 mi/h at the north and west entrances during the 9- and 12-month analysis periods. Since the signs were only in place for a short period of time, it is not known if the observed speed reductions persisted over the longer term.

Lane Narrowing Using Painted Center Island and Edgeline Markings

Description

Median and shoulder pavement markings shown in figure 4 were used to reduce lane widths for a section of S-62/SH 215 within Union. The existing two-lane roadway was 40 ft wide from curb to curb with parallel parking allowed on one side. A 10-ft-wide painted center island was used to reduce the existing lane widths from roughly 16 to 11 ft in each direction. A solid 6-inch channelizing line was painted to separate the travel lane from an 8 ft parking lane. Drivers were expected to slow down due to feeling constrained by narrower lanes.

Results

Table 3 summarizes speed data collected midway through the narrowed section (U3), as shown in figure 3. Results are presented for both directions of traffic, as both were exposed to the lane narrowing. No other traffic-calming measures were in place at this location.

Table 3. Speeds before and after narrowing lane using painted center island and edge line

markings.

Location and analysis period	Sample size (veh)	Posted speed (mi/h)	85 th Percentile (mi/h)	Change in 85 th percentile speed from before period (mi/h)							
U3 NB Before	2055	30	35								
1-month	1808	30	36					+1			
3-month	1840	30	32	-3							
9-month	1807	30	36					+1			

12-month	2064	30	35					0				
U3 SB Before	2058	30	33									
1-month	1930	30	33					0				
3-month	1911	30	37									+4
9-month	1881	30	32			-1						
12-month	1771	30	34						+1			

No consistent changes in 85th percentile speed were observed for either direction. In some cases, vehicle speeds decreased; in other cases, vehicle speeds increased. The variability in speeds suggests that the treatment was not effective and that other factors may have influenced speeds. Speed data collected at a point upstream of the north section where vehicles were not influenced by any of the traffic-calming treatments exhibited an overall upward speed trend. This suggests the observed increases in speed were due in part to general time trends.

Even though the roadway was reduced from 16 ft to 11 ft lanes in each direction, the lanes may have still been too wide to affect driver behavior. A more drastic reduction in lane width (e.g., 9 ft lanes) or a physical barrier (e.g., raised curb) may be necessary to produce the desired effect since there are no consequences for driving over the pavement markings.



Figure 4. Painted center island and edgeline used to narrow lane.

Converging Chevrons with "25 MPH" Pavement Marking Legend

Description

A series of converging chevron markings shown in figure 5 were installed on County Road E-18 on both entrances to Roland. The markings began 221 ft in advance of and terminated at the speed limit sign which established the speed within the community. The distance between chevrons gradually decreased from 25 ft to 18 ft, and the width of the markings decreased from 36 inches to 6 inches in the direction of travel, giving the perception of increasing speed. The pavement marking legend "25 MPH" was installed at the end of each chevron series to reinforce the posted speed.



Figure 5. Experimental converging chevron markings followed by "25 MPH" pavement legend.

Results

As shown in table 4, the 85th percentile speed decreased up to 4 mi/h, while 1 mi/h was more typical for the various analysis periods. Although the chevron markings were somewhat effective in reducing vehicle speeds, prevailing speeds were still 7 mi/h to 9 mi/h above the posted speed limit 12 months after implementation.

Table 4. Speeds before and after installing converging chevron markings and "25 MPH"

pavement legend.

Location	Analysis period	Sample size (veh)	Posted speed (mi/h)	85 Percentile (mi/h)	Change in 85 th percentile speed from before period (mi/h)				
West entrance	Before	4216	25	35					
	1-month	4135	25	34				-1	
	3-month	3812	25	32		-3			
	9-month	3958	25	35					0
	12-month	3945	25	34				-1	
East entrance	Before	2397	25	36					
	1-month	2426	25	35				-1	
	3-month	3413	25	35				-1	
	9-month	2196	25	34			-2		
	12-month	1778	25	32	-4				

Lane Narrowing Using Shoulder Widening with "25 MPH" Legend

Description

A wide edgeline and cross-hatch markings, as illustrated in figure 6, were used to create a shoulder on both sides of the roadway and reduce lane widths for a section of E-18 within Roland. The existing two-lane roadway was 36 ft wide from curb to curb. The painted shoulders reduced the lane width to 10.5 ft in both directions. The narrow lane was intended to

make drivers travel slower due to feeling constrained. White pavement marking legends indicating "25 MPH" were placed at regularly spaced intervals within the narrowed section to remind drivers of the speed limit.



Figure 6. Shoulder markings used to narrow travel lanes in Roland.

Results

Data were collected at the midpoint of the narrowed section. As shown in table 5, the lane narrowing and speed limit markings were not effective in reducing vehicle speeds. There were no consistent changes in the 85th percentile speed by analysis period or direction of travel with both increases and decreases recorded. In most analysis periods, there was no change in traffic speed compared to speeds measured before the lane narrowing. No data were collected 6 months after the change due to adverse winter weather.

Table 5. Speeds before and after lane narrowing using shoulder markings combined with "25 MPH" pavement legend.

Direction of Traffic	Analysis period	Sample size (veh)	Posted speed (mi/h)	85 th Percentile (mi/h)	Change in 85 th percentile speed from before period (mi/h)				
Outbound	Before	2884	25	34					
	1-month	2708	25	34			0		
	3-month	2324	25	34			0		
	9-month	2489	25	33	-1				
	12-month	2727	25	34			0		
Inbound	Before	2864	25	31					
	1-month	2681	25	29	-2				
	3-month	2361	25	31			0		
	9-month	2562	25	31			0		
	12-month	2835	25	32				+1	

Even though the eastern section of E-18 was reduced from a 36 ft cross-section to 10 ft lanes, the lanes may have still been too wide to affect driver behavior. A more drastic reduction in lane width (e.g., 9 ft lanes) or a physical barrier (e.g., raised curb) may be necessary to produce the desired effect since there are no consequences for driving on pavement markings.

Speed Table

Description

A speed table (figures 7 and 8) was installed on County Road E-23 within the center of Gilbert. The two-lane asphalt roadway has grass shoulders, no curb, and a 25 mi/h posted speed limit. The speed table was 3 inches high and 22 ft in the direction of travel, including 6 ft ramps at both ends. The asphalt speed table was designed to be traversed at 30 mi/h to accommodate heavy trucks and farm vehicles.



Figure 7. Aerial view of speed table in Gilbert.



Figure 8. Driver view of speed table in Gilbert.

Results

The speed table was very effective in reducing speeds. As shown in table 6, 85th percentile speeds were reduced at the hump location by 4 mi/h to 5 mi/h over all "after" periods to within a few miles per hour of the 25 mi/h posted speed limit. Approximately 200 ft downstream of the speed table, speeds were still 4 mi/h lower than baseline speeds and within 5 mi/h of the posted speed.

Table 6. Speeds before and after installing speed table.

Location	Analysis period	Sample size (veh)	Posted speed (mi/h)	85 th Percentile (mi/h)	Change in 85 th percentile speed from before period (mi/h)				
200 ft downstream	Before	2257	25	34					

	1-month	2199	25	30		-4				
	3-month	2763	25	30		-4				
	9-month	3885	25	30		-4				
	12-month	3886	25	30		-4				
15 ft downstream	Before	3685	25	32						
	1-month	3355	25	27	-5					
	3-month	3413	25	28		-4				
	9-month	3982	25	27	-5					
	12-month	3279	25	27	-5					

Lane Narrowing with Center Island Using Tubular Markers

Description

Tubular markers shown in figure 9 were used to create two center islands along the southern section of R-39 in Slater. At this location, the roadway is 26 ft wide from curb to curb. Center islands were formed by placing two rows of 36-inch-tall yellow tubular channelizing markers to reduce lane widths to 11 ft in each direction. The tubular markers were spaced 4 ft apart in the taper and 8 ft elsewhere. A 25 mi/h speed limit sign was placed on a mountable sign support at both ends of each island. The first island was located at the southern entrance to Slater, just after the first posted 25 mi/h speed limit sign. The second island was located approximately one block north of the first island.



Figure 9. Tubular channelizing markers used for center island to narrow lanes.

Although the treatment was designed to accommodate agricultural equipment and maintenance vehicles such as snowplows, the markers were damaged during winter operations and were removed for 6 weeks. The markers were reinstalled as soon as no more snow events were expected.

Results

Table 7 shows the speed data collected midway between the two center islands. The data indicate the islands using tubular channelizing markers reduced vehicle speeds; 85th percentile speeds decreased by up to 3 mi/h when the tubular markers were in place and increased up to 4 mi/h when the tubular markers were removed. Similar speed changes were also observed for inbound traffic just downstream of the second island. Even with the speed drop, 85th percentile speeds were still 10 mi/h to 15 mi/h above the posted speed limit.

Table 7. Speeds before and after lane narrowing using center islands with tubular markers for traffic entering

(NB) and leaving (SB) Slater.

Dir	Analysis period	Sample size (veh)	Posted speed (mi/h)	85 th Percentile (mi/h)	Change in 85 th percentile speed from before period (mi/h)								
NB	Before	2669	25	40									
	1-month	2453	25	38	-2								
	6-month	2234	25	39		-1							
	9-mo/markers removed	1808	25	44									+4
	9-mo/markers replaced	1549	25	37	-3								
	12-month	2207	25	40				0					
SB	Before	2806	25	45									
	1-month	2657	25	42	-3								
	6-month	2387	25	42	-3								
	9-mo/markers removed	1665	25	45				0					
	9-mo/markers replaced	1402	25	42	-3								
	12-month	2172	25	43	-2								

Speed Feedback Signs

Description

A speed feedback sign pictured in figure 10 was installed on County Road R-38 for inbound traffic at the north entrance to Slater. This section of R-38 is adjacent to an elementary school, has a 25 mi/h posted speed limit, and has a rural cross-section with steep shoulders and open ditch drainage.



Figure 10. Speed feedback sign in Slater.

The sign display varied based upon vehicle speeds measured via radar. The sign remained blank (black) when no traffic was present or when the approaching vehicle speed was less than or equal to 25 mi/h (or greater than 75 mi/h). Between 26 mi/h and 29 mi/h, the sign displayed the text "Your Speed" along with the measure vehicle speed, as shown in figure 10. For vehicles approaching between 30 mi/h and 75 mi/h, the message "Slow Down 25" was displayed. No other traffic-calming treatments were in place at this location.

Due to sign purchasing and installation problems, the speed feedback sign was not installed at the same time as the other traffic-calming treatments in the study. Once the sign was in place, it experienced numerous electrical failures, and the analysis was limited to only one "after" period.

Results

The speed feedback sign, when operational, was very effective. Speeds measured just downstream of the sign decreased from 37 mi/h to 30 mi/h 3 months after the sign was operational. It is not known if the 7 mi/h speed reduction can be sustained over time.

"SLOW" Pavement Legend

Description

Pavement marking legends indicating "SLOW" (as shown in figure 11) were used at two locations along the western section of SH 210 in Slater. The first pavement legend was placed just inside the western community entrance. At this location, there was a park and a crosswalk that children used to cross to and from school and the park. The second was placed about 1,500 ft downstream of the first location.



Figure 11. "SLOW" pavement legend in Slater.

Results

The "SLOW" markings were not effective in reducing speeds. As shown in table 8, the 85th percentile speed actually increased for traffic entering Slater just downstream of the first pavement legend. There was little or no reduction in vehicle speed just downstream of the second "SLOW" marking. Data were not collected for the 12-month data collection interval because the road was resurfaced after the 9-month data collection period.

Table 8. Speeds before and after installing "SLOW" pavement legend.

Location	Analysis period	Sample size (veh)	Posted speed (mi/h)	85 th Percentile (mi/h)	Change in 85 th percentile speed from before period (mi/h)					
First legend	Before	2812	25	41						
	1-month	2888	25	44						+3
	6-month	2901	25	42				+1		
	9-month	2570	25	42				+1		
Second legend	Before	3503	25	34						
	1-month	3294	25	34			0			
	6-month	2886	25	32	-2					

9-month	3084	25	33	-1					
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Entrance Treatment Using "35 MPH" Legend with Red Background

Description

Speed limit markings (figure 12) modeled after European entrance treatments using colored pavement were used at the east and west community entrances to Dexter. The treatment was also placed west of the community on a curve just before a steel fabrication plant, as requested by the community. Community members were concerned about the combination of large trucks backing out of the plant and high-speed vehicles approaching the plant after negotiating a horizontal curve. A large red rectangle (9.5 ft by 12 ft) was used to frame the on-pavement "35 MPH" speed limit markings. An 8-inch edgeline was also painted along the treatments to enhance visibility.



Figure 12. Speed limit markings with experimental red background in Dexter.

Results

As shown in table 9, the treatment was very effective in reducing the speed of traffic entering the community. Speeds downstream of the curve on the western edge of Dexter and at the western entrance decreased from 4 mi/h to 9 mi/h during most analysis periods. The speed reductions at the eastern entrance to Dexter were not as dramatic. This may be due in part to the prevailing speed in the baseline period at the east entrance, which was already lower than the west entrance to the community.

Table 9. Speeds before and after "35 MPH" pavement legend with red background markings.

Location	Analysis period	Sample size (veh)	Posted speed (mi/h)	85 th Percentile (mi/h)	Change in 85 th percentile speed from before period (mi/h)									
Before curve	Before	2190	35	52										
	1-month	2150	35	47				-5						
	3-month	2022	35	47				-5						
	9-month	4033	35	43	-9									
	12-month	2031	35	51								-1		
West entrance	Before	2,369	35	45										
	1-month	2,256	35	40				-5						
	3-month	2,119	35	41				-4						
	9-month	4,027	35	37		-8								

	12-month	3,168	35	41							-4				
East entrance	Before	4254	35	40											
	1-month	3998	35	38								-2			
	3-month	2900	35	39									-1		
	9-month	4087	35	40										0	
	12-month	4031	35	39										-1	

Summary Of Effectiveness

Table 10 summarizes speed impact, cost, and maintenance requirements for the various traffic-calming treatments evaluated in this study. The effectiveness of the treatments in reducing speeds varied widely.

Table 10. Summary of impacts and costs of rural traffic calming treatments.

Treatment	Change in 85 th percentile speed (mi/h)	Cost	Maintenance	Application
Transverse pavement markings	-2 to 0	\$	Regular painting	community entrance
Transverse pavement markings with speed feedback signs	-7 to -3	\$\$\$	Regular painting	community entrance
Lane narrowing using painted center island and edge marking	-3 to +4	\$	Regular painting	entrance or within community
Converging chevrons and "25 MPH" pavement markings	-4 to 0	\$	Regular painting	community entrance
Lane narrowing using shoulder markings and "25 MPH" pavement legend	-2 to 4	\$	Regular painting	entrance or within community
Speed table	-5 to -4	\$\$	Regular painting	within community
Lane narrowing with center island using tubular markers	-3 to 0	\$\$\$	Tubes often struck needing replacement	within community
Speed feedback sign (3-months after only)	-7	\$\$\$	Troubleshooting electronics	entrance or within community
"SLOW" pavement legend	-2 to 3	\$	Regular painting	entrance or within community
"35 MPH" pavement legend with red background	-9 to 0	\$	Background faded quickly; accelerated repainting cycle	entrance or within community
\$ under \$2,500 \$\$ \$2,500 to \$5,000 \$\$\$ \$5,000 to \$12,000				

The most effective treatments were the speed feedback signs, speed table, median island using tubular markers, and speed limit markings with red background. The converging chevrons and transverse pavement markings were somewhat effective with speed reductions generally less than 3 mi/h. Lane narrowing using pavement markings to create a center island, lane narrowing using shoulder markings in combination with on-pavement speed limit markings, and on-pavement "SLOW" markings were either not effective or were only marginally effective.

Lessons Learned

The following lessons were learned during the course of the study and may be helpful to small communities considering traffic calming on main rural roads:

- Design vehicles should be considered when determining the type of traffic-calming treatment to implement. For example, farm vehicles and heavy truck traffic are common in many rural communities and must be accommodated.
- Maintenance can be an issue with many traffic-calming treatments. For example, the tubular channelizing markers used in this study to create a center island were effective in reducing speeds, but the tubular markers were frequently struck by vehicles and required frequent maintenance. The speed feedback signs provide a different example in that, to be effective, agencies must establish the capability to troubleshoot and maintain these signs within a reasonable response time.
- Cost effectiveness is always a factor in selecting traffic-calming treatments. While speed feedback signs were effective in all situations, their higher cost make them most appropriate for areas where it is critical that drivers slow down, such as near schools, playgrounds, or community pools.
- Durable pavement marking materials (such as thermoplastic, tape, epoxy, or other paint alternatives) should be considered when the markings extend within wheel paths. Standard paint products wear quickly and without frequent reapplication can reduce the effectiveness of the message.
- Community buy-in is important. In several cases, although community leadership was onboard, the community was opposed to the treatment, even when it was proven to be effective.
- Lane narrowing using just pavement markings to create a center island or shoulder was not effective. The lane narrowing treatment that used tubular markers to create a center island was more effective, suggesting that lane narrowing is most likely to be effective when drivers are presented with a physical object that causes deflection.
- Small communities may not be familiar with traffic calming and may need additional education.

Other Considerations

In visiting a large number of small communities to select pilot study locations, the research team observed a number of practices that could affect the successful outcome of main road traffic calming. These and other implementation issues are noted as follows:

- Small communities often do not have a traffic engineer and appear to be addressing perceived speeding problems by lowering the speed limit, believing wrongly that this will change driver behavior. While lower travel speeds may be desirable, reducing the speed limit is not likely to have much effect.
- Speed limits which are not consistent with the area characteristics and roadway function lead to disregard for posted speeds and create animosity toward law enforcement. The recently released USLIMITS Web-based speed zone advisor could be a useful tool in setting appropriate speed limits in rural communities.⁽⁷⁾
- Speed limits in the transition zone between the rural and built-up area in small communities were often improperly set, extending well passed the edge of the community into rural agricultural areas where there was no reason for reduced speeds. In other cases, the speed reductions were abrupt without appropriate speed reduction warning signs.
- The maximum speed reduction observed in this study was 9 mi/h. Physical measures such as roundabouts and curbed center islands may be needed to achieve the speed environment that rural communities often desire.
- Large areas of pavement markings, such as the speed limit markings with colored background, may become slippery when wet. Communities planning to use such treatments should ensure adequate skid resistance is provided. High friction surface material should be considered.
- Speed tables are only appropriate when the posted speed limit is 30 mi/h or less and approach speeds are less than 40 mi/h. Speed tables are not recommended for use on routes with significant (more than 5 percent) truck and bus traffic. Because emergency response times may increase, emergency service providers should be consulted before installing speed tables.
- STOP signs should not be used for traffic calming.
- The chevron markings, transverse markings, and red background for pavement legend evaluated in this study are not standard devices and require experimental approval in accordance with section 1A.10 of the MUTCD.

References

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4. Department for Transport. *Village Traffic Calming—Accident Reductions*, Traffic Advisory Leaflet 11/00, London, 2005.
5. Hallmark, S., Petersen, E., Fitzsimmons, E., Hawkins, N., Resler, J., and Welch, T. *Evaluation of Gateway and Low-Cost Traffic Calming Treatments for Major Routes in Small Communities*, Center for Transportation Research and Education at Iowa State University, October 2007. (<http://www.ctre.iastate.edu/research/detail.cfm?projectID=-226410767>)
6. *Manual on Uniform Traffic Control Devices for Streets and Highways* (2003 Ed), Federal Highway Administration, November 2004.
7. USLIMITS, (www2.uslimits.org).

Researchers—This study was performed by Center for Transportation Research and Education at Iowa State University under Cooperative Agreement Number DTFH61-06-H-00003 with the Iowa Department of Transportation. Tom Welch was the Project Director. Shauna Hallmark and Neal Hawkins were the Principal Investigators. For more information about this research, contact Ray Krammes, FHWA Project Manager, HRDS, (202) 493-3312, ray.krammes@fhwa.dot.gov or Edward Sheldahl, HSSD, (202) 366-2193, edward.sheldahl@dot.gov.

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Key Words—research, safety, Traffic calming, Speed management, Transverse markings, Chevron markings, Speed feedback signs, Lane narrowing, Tubular channelizing markers, Pavement legend, Rural roads

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TRT Terms: Traffic calming--Iowa--Evaluation, City planning--Iowa, Speed control. Insert Topics: research, safety, local & rural road safety

Scheduled Update: Archive - No Update needed

This page last modified on 01/31/2017

Feedback

CITY OF EDGEWOOD
STAFF REPORT
STUDY SESSION AGENDA ITEM: Open Space Classification

Date: September 19, 2017

Title: Resolution affirming open space application OS24-16

Attachments: Draft Resolution
RCW 84.34.037 – Pertaining to Application for current use classification
Pierce County Letter and Documents –Pierce County Ordinance 2017-33 relating to an application for classification of land in Edgewood

Submitted By: Darren Groth, AICP, CPM – Community Development Director

Approved For Agenda By: Daryl Eiding, Mayor

Discussion: Attached is a land use action that Pierce County recently adopted in regards to a property here in Edgewood. This specific parcel is identified as one included under a currently pending Comprehensive Land-Use Map Change, entitled Euchida, in which a conglomeration of properties are proposed to change from a residential to an industrial land use designation. Once this parcel is placed into the Open Space Program, there will be limitations placed on its future development. The intent of the program is to preserve properties in perpetuity as Open Space by placing significant limitations on future development of these parcels, with tax reductions given to the property owners in exchange for this commitment. The requested designation and placement of the subject parcel within this program with Pierce County may have some implications on the decision making process for the Planning Commission and Council in regards to the proposed future land use map modification. The requirements of Chapter 2.114 PCC have been met with respect to the subject application.

Recommendation: Forward to the next City Council meeting and affirm Application OS24-16, Reasonable Investments, LLC for classification of 10.78 acres as Open Space under the Current Use Assessment.

Fiscal Impact: N/A

RESOLUTION NO. 17-XXX

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF EDGEWOOD, WASHINGTON, AFFIRMING OPEN SPACE APPLICATION 0S24-16, REASONABLE INVESTMENTS, LLC BY THE PIERCE COUNTY COUNCIL UNDER THE CURRENT USE ASSESSMENT PROCEDURES IN PIERCE COUNTY CODE CHAPTER 2.114 AND ASSOCIATED PIERCE COUNTY ORDINANCE NO. 2017-33 FOR CLASSIFICATION OF 10.78 ACRES AS OPEN SPACE, BASED UPON THE OPEN SPACE PUBLIC BENEFIT RATING SYSTEM.

WHEREAS, a property owner filed an application with Pierce County for Open Space Classification in accordance with chapter 84.34 RCW; and

WHEREAS, RCW 84.34.037 provides that: “[a]pplications for classification of land in an incorporated area shall be acted upon by: (a) A granting authority composed of three members of the county legislative body and three members of the city legislative body in which the land is located in a meeting ...; or (b) separate affirmative acts by both the county and city legislative bodies where both bodies affirm the entirety of an application without modification of both bodies affirm an application with identical modifications;” and

WHEREAS, the property in Open Space Application OS24-16 is located inside the boundaries of the City of Edgewood; and

WHEREAS, the Pierce County Department of Planning and Public Works provided a copy of the application to the City of Edgewood, and both reviewed the application and the Pierce County Staff Report concerning the application; and

WHEREAS, the Staff Report determined that the requirements of chapter 2.114 PCC have been met and it also includes a recommendation of approval of 24 points for Parcel No. 0420162700 for Application No. 0S24-16, Reasonable Investments, LLC, for classification of 10.78 acres as Open Space under Current Use Assessment, based on the Open Space Public Benefit Rating System, consistent with the Findings of Fact, attached to Pierce County Ordinance No. 2017-33, attached hereto as Exhibit 1; and

WHEREAS, the Pierce County Council approved Ordinance No. 2017-33 granting the property 25 points under the Open Space Public Benefit Rating System for 10.78 acres, after finding that the Application for Open Space classification was properly reviewed and considered;

**NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF EDGEWOOD,
WASHINGTON, HEREBY RESOLVES AS FOLLOWS:**

Section 1. Affirmation. The Edgewood City Council hereby affirms Application OS24-16, Reasonable Investments, LLC for classification of 10.78 acres as Open Space under the Current Use Assessment, based on the Open Public Benefit Rating System, and adopting Pierce County's Findings of Fact (Exhibit A to Pierce County Ordinance 2017-33) by reference, consistent with RCW 84.34.037.

Section 2. Severability. If any section, sentence, clause or phrase of this resolution should be held to be invalid or unconstitutional by a court of competent jurisdiction, such invalidity or unconstitutionality shall not affect the validity or constitutionality of any other section, sentence, clause or phrase of this resolution.

Section 3. Effective Date. This resolution will take effect immediately upon passage by the City Council.

ADOPTED THIS _th DAY OF _____, 2017

Daryl Eiding, Mayor

ATTEST:

Rachel Pitzel, City Clerk

Exhibit A

Edgewood View Pointe Final Plat

RCW 84.34.037**Applications for current use classification—To whom made—Factors—Review.**

(1) Applications for classification or reclassification under RCW 84.34.020(1) shall be made to the county legislative authority. An application made for classification or reclassification of land under RCW 84.34.020(1) (b) and (c) which is in an area subject to a comprehensive plan shall be acted upon in the same manner in which an amendment to the comprehensive plan is processed. Application made for classification of land which is in an area not subject to a comprehensive plan shall be acted upon after a public hearing and after notice of the hearing shall have been given by one publication in a newspaper of general circulation in the area at least ten days before the hearing: PROVIDED, That applications for classification of land in an incorporated area shall be acted upon by: (a) A granting authority composed of three members of the county legislative body and three members of the city legislative body in which the land is located in a meeting where members may be physically absent but participating through telephonic connection; or (b) separate affirmative acts by both the county and city legislative bodies where both bodies affirm the entirety of an application without modification or both bodies affirm an application with identical modifications.

(2) In determining whether an application made for classification or reclassification under RCW 84.34.020(1) (b) and (c) should be approved or disapproved, the granting authority may take cognizance of the benefits to the general welfare of preserving the current use of the property which is the subject of application, and shall consider:

(a) The resulting revenue loss or tax shift;

(b) Whether granting the application for land applying under RCW 84.34.020(1)(b) will (i) conserve or enhance natural, cultural, or scenic resources, (ii) protect streams, stream corridors, wetlands, natural shorelines and aquifers, (iii) protect soil resources and unique or critical wildlife and native plant habitat, (iv) promote conservation principles by example or by offering educational opportunities, (v) enhance the value of abutting or neighboring parks, forests, wildlife preserves, nature reservations, sanctuaries, or other open spaces, (vi) enhance recreation opportunities, (vii) preserve historic and archaeological sites, (viii) preserve visual quality along highway, road, and street corridors or scenic vistas, (ix) affect any other factors relevant in weighing benefits to the general welfare of preserving the current use of the property; and

(c) Whether granting the application for land applying under RCW 84.34.020(1)(c) will (i) either preserve land previously classified under RCW 84.34.020(2) or preserve land that is traditional farmland and not classified under chapter 84.33 or 84.34 RCW, (ii) preserve land with a potential for returning to commercial agriculture, and (iii) affect any other factors relevant in weighing benefits to the general welfare of preserving the current use of property.

(3) If a public benefit rating system is adopted under RCW 84.34.055, the county legislative authority shall rate property for which application for classification has been made under RCW 84.34.020(1) (b) and (c) according to the public benefit rating system in determining whether an application should be approved or disapproved, but when such a system is adopted, open space properties then classified under this chapter which do not qualify under the system shall not be removed from classification but may be rated according to the public benefit rating system.

(4) The granting authority may approve the application with respect to only part of the land which is the subject of the application. If any part of the application is denied, the applicant may withdraw the entire application. The granting authority in approving in part or whole an application for land classified or reclassified pursuant to RCW 84.34.020(1) may also require that certain conditions be met, including but not limited to the granting of easements. As a condition of granting open space classification, the legislative body may not require public access on land classified under RCW 84.34.020(1)(b)(iii) for the purpose of promoting conservation of wetlands.

(5) The granting or denial of the application for current use classification or reclassification is a legislative determination and shall be reviewable only for arbitrary and capricious actions.



Pierce County

Office of the County Council

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August 21, 2017

Ms. Rachel Pitzel, City Clerk
City of Edgewood
2224 104th Avenue East
Edgewood, Washington 98372

Dear Ms. Pitzel,

Attached is a copy of adopted Pierce County Ordinance No. 2017-33 relating to an application for classification of land located in your jurisdiction. This letter serves as the official transmittal.

Pierce County has, through adoption of the attached ordinance, fulfilled its half of the statutory process for approving current use applications within an incorporated area.

RCW 84.34.037 provides that

[A]pplications for classification of land in an incorporated area shall be acted upon by: (a) A granting authority composed of three members of the county legislative body and three members of the city legislative body in which the land is located in a meeting where members may be physically absent but participating through telephonic connection; or (b) separate affirmative acts by both the county and city legislative bodies where both bodies affirm the entirety of an application without modification or both bodies affirm an application with identical modifications. (emphasis added)

To finalize the application process, the City's legislative authority must affirm the Pierce County Council's action and forward documents memorializing this affirmation to my attention. Pierce County will then complete administrative processing of the, now approved, application. We will need to receive your affirmation documents as soon as possible. Because contracts need to be signed by applicants, City affirmations received after December 15 of this year may jeopardize our ability to apply the tax credit to next year's property taxes.



By way of background, the County's process includes the following steps:

1. After the application is received by the County, Planning and Public Works and the Assessor-Treasurer staff will provide a review of the application pursuant to Chapter 2.114 of the Pierce County Code and Chapter 84.34 RCW, and make a recommendation in the form of a staff report, which is sent to the City or Town and the applicant.
2. Staff incorporates their recommendation and staff report into a proposed Council Ordinance and submits the proposal to the County Council.
3. The County Council holds a public hearing and acts on the Ordinance. The applicant and City/Town are notified of the public hearing date.
4. If passed, the adopted Ordinance is forwarded to the City or Town for its review and concurrence (affirmation). A cover letter explaining the process will be included and the applicant will be copied on this transmittal.
5. The City or Town affirms the application by a legislative action of its own.
6. The municipality forwards official documentation of its legislative action to the Clerk of the Pierce County Council.
7. After confirmation that the application affirmed by the City or Town has not been modified, the Council forwards the approvals to the Planning and Land Services Department. Please note that if the City or Town finds that a modification is desired or necessary, they should notify the Clerk of the Council (see County contacts below) and then the County will develop a new Ordinance and begin again at #3.
8. The Department sends a contract to the applicant for signature, obtains the Executive's signature, and records the document with the County Auditor.

The County contacts for this process include:

- Denise Johnson, Clerk of the Council, County Council Office, 253.798.6065, djohnso@co.pierce.wa.us
- Chad Williams, Planning and Land Services Department, 253.798.3683, cwillia@co.pierce.wa.us
- Sue Testo, Assessor-Treasurer Office, 253.798.7137, stesto@co.pierce.wa.us
- Jeff Cox, Deputy Legal Counsel, County Council Office, 253.798.7579, jcox@co.pierce.wa.us

Regards,



Denise D. Johnson, CMC
Clerk of the Council

Attachment

- c: Reasonable Investments LLC, Applicant
Chad Williams, Pierce County Planning and Public Works

1 Sponsored by: Councilmember Douglas G. Richardson
2 Requested by: County Executive/Planning and Public Works
3
4
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11 **ORDINANCE NO. 2017-33**

12
13
14

15 **An Ordinance of the Pierce County Council Affirming an Application for**
16 **Open Space Classification Under Current Use Assessment**
17 **on Certain Properties Located Within the Incorporated**
18 **Boundaries of the City of Edgewood in Pierce County;**
19 **Directing the Clerk to Forward this Ordinance to the City of**
20 **Edgewood for its Affirmation of this Application Consistent**
21 **with Revised Code of Washington 84.34.037; and Adopting**
22 **Findings of Fact. (Application No. OS24-16)**
23

24 **Whereas,** a certain property owner has filed an application with Pierce County
25 for Open Space Classification in accordance with Chapter 84.34 Revised Code of
26 Washington (RCW), as amended; and
27

28 **Whereas,** RCW 84.34.037 provides that, "...applications for classification of land
29 in an incorporated area shall be acted upon by: (a) A granting authority composed of
30 three members of the county legislative body and three members of the city legislative
31 body in which the land is located in a meeting where members may be physically
32 absent but participating through telephonic connection; or (b) separate affirmative acts
33 by both the county and city legislative bodies where both bodies affirm the entirety of an
34 application without modification or both bodies affirm an application with identical
35 modifications."; and
36

37 **Whereas,** the property in Open Space Application OS24-16 is located inside the
38 boundaries of the City of Edgewood; and
39

40 **Whereas,** the provisions of Chapter 2.114 of the Pierce County Code (PCC) set
41 forth applicable procedures for the review and hearing of Current Use Assessment
42 Applications; and
43

1 **Whereas**, the Pierce County Department of Planning and Public Works provided
2 a copy of the application to the City of Edgewood, as required by PCC 2.114.090 A.2.;
3 and
4

5 **Whereas**, the requirements of Chapter 2.114 PCC have been met with respect to
6 the subject application; and
7

8 **Whereas**, the Pierce County Departments of Planning and Public Works and
9 Assessor-Treasurer, in cooperation with the City of Edgewood, has reviewed the
10 application and provided a Staff Report concerning the application; and
11

12 **Whereas**, the Staff Report includes a recommendation of approval of 25 points
13 for Parcel No. 0420162700 for Application No. OS24-16, Reasonable Investments LLC,
14 for classification of 10.78 acres as Open Space under Current Use Assessment, based
15 on the Open Space Public Benefit Rating System, consistent with Findings of Fact,
16 attached hereto and incorporated as Exhibit A;
17

18 **Whereas**, the Pierce County Council has followed all applicable procedures and
19 finds that the Application set forth herein for Open Space classification, as more fully
20 described in the attached Exhibit, has been properly reviewed and considered; **Now**
21 **Therefore**,
22

23 **BE IT ORDAINED by the Council of Pierce County:**
24

25 Section 1. Application Case No. OS24-16 for Reasonable Investments LLC is
26 approved for 25 points based on the Open Space Public Benefit Rating System in
27 Chapter 2.114 PCC for Open Space classification of 10.78 acres, as more fully
28 described in Exhibit A, which is attached hereto and incorporated by reference.
29

30 Section 2. The Clerk of the Council is hereby directed to forward this Ordinance
31 to the City of Edgewood for its affirmation of the application contained herein, and
32 subsequent filing of official documentation of its legislative action of affirmation with the
33 Clerk of the Council.
34

35 Section 3. The applicant shall take all steps specified by the Planning and Public
36 Works Department to ensure that the legal descriptions set forth in the application are
37 true and correct descriptions of the properties to be placed under the Current Use
38 Assessment.
39
40

1 Section 4. The applicant shall execute the required agreement regarding its
2 particular Current Use Assessment authorization as provided by Chapter 2.114 PCC.

3
4 Section 5. Findings of Fact are hereby adopted as set forth in Exhibit A; the
5 Findings are incorporated herein by reference.

6
7 **PASSED** this 8th day of August, 2017.

8
9 ATTEST:

10 **PIERCE COUNTY COUNCIL**

11 Pierce County, Washington

12
13 Denise D. Johnson

14 **Denise D. Johnson**

15 Clerk of the Council

16 Douglas G. Richardson

17 **Douglas G. Richardson**

18 Council Chair

19 Bruce F. Dammeier

20 **Bruce F. Dammeier**

21 Pierce County Executive

22 Approved X Vetoed _____, this
23 15th day of August,
24 2017.

25 Date of Publication of

26 Notice of Public Hearing: July 19, 2017

27 Effective Date of Ordinance: August 25, 2017

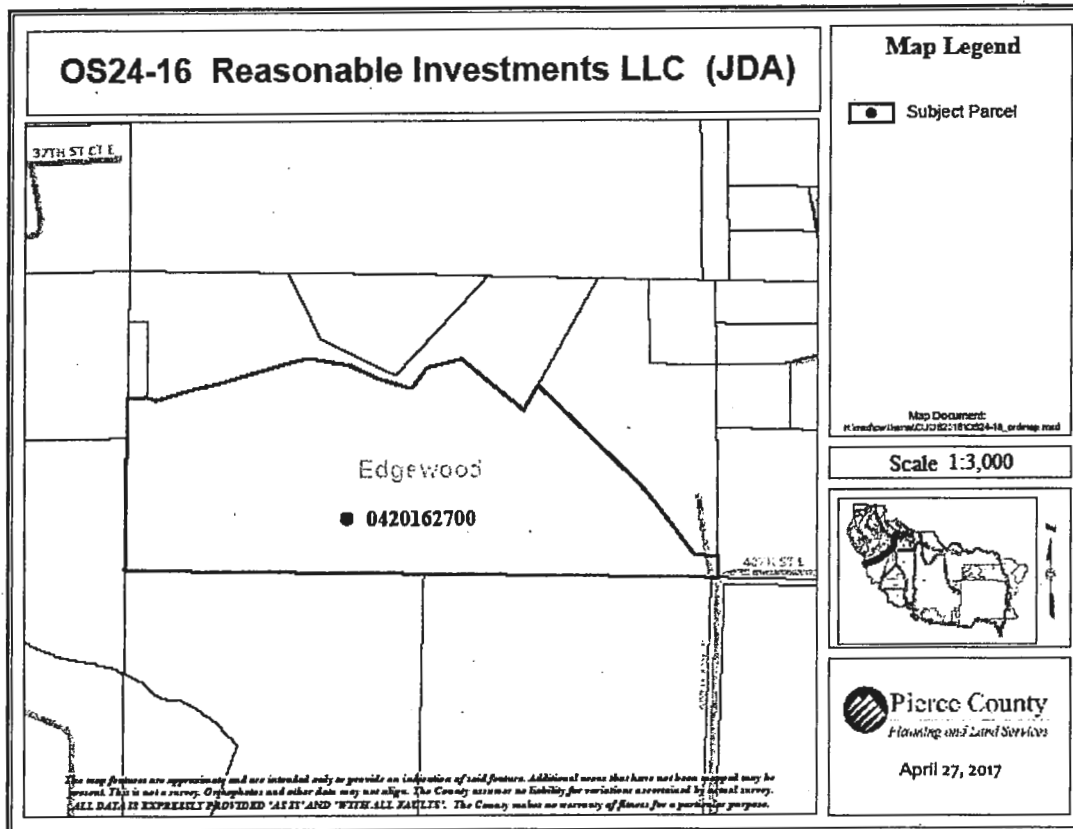
OS24-16, Reasonable Investments, Parcel No. 0420162700, 3926 90th Avenue East,
City of Edgewood:

LEGAL DESCRIPTION OF THE PROPERTY
UNDER CURRENT USE ASSESSMENT

RTSQQ: 04201623

0420162700; CANNOT BE SOLD OR SUBD WITHOUT PARCEL 2-010 BEG AT W 1/4 COR
OF SEC 16 TH N ALG W LI OF SD SEC 383.14 FT TH N 89 DEG 33 MIN 57 SEC E 40 FT TH
S 74 DEG 02 MIN 28 SEC E 19.15 FT TH N 70 DEG 50 MIN 22 SEC E 69.2 FT TH N 74 DEG
58 MIN 43 SEC E 84.49 FT TH N 72 DEG 54 MIN 21 SEC E 92.02 FT TH N 70 14 MIN 19 SEC
E 62.39 FT TH N 73 DEG 51 MIN 10 SEC E 49.76 FT TH S 79 DEG 36 MIN 23 SEC E 46.16
FT TH S 81 DEG 41 MIN 22 SEC E 44.86 FT TH S 64 DEG 58 MIN 42 SEC E 57.34 FT TH S
75 DEG 13 MIN 17 SEC E 72.82 FT TH S 83 DEG 32 MIN 27 SEC E 15.28 FT TH S 34 DEG
02 MIN 25 SEC E 10.84 FT TH N 35 DEG 50 MIN 24 SEC E 53.35 FT TH N 72 DEG 32 MIN 39
SEC E 80.23 FT TH S 51 DEG 23 MIN 32 SEC E 182.69 FT TH N 30 DEG 27 MIN 08 SEC E
67.23 FT TH S 48 DEG 42 MIN 57 SEC E 4.44 FT TO COR OF FENCE TH CONT S 48 DEG
42 MIN 57 SEC E 155.1 FT TH S 48 DEG 17 MIN 44 SEC E 106.76 FT TH S 48 DEG 24 MIN
05 SEC E 39.99 FT TH S 44 DEG 29 MIN 28 SEC E 14.83 FT TH S 40 DEG 49 MIN 43 SEC E
34.62 FT TH S 39 DEG 38 MIN 16 SEC E 82.12 FT TH S 39 DEG 00 MIN 28 SEC E 71.01 FT
TH N 89 DEG 33 MIN 57 SEC E 62.97 FT TO E LI OF SW OF NW TH N ALG E LI SD SUBD
274.88 FT TO NW COR OF S 1/2 OF S 1/2 OF SE OF NW TH E ALG N LI SD SUBD 574.65
FT TO W LI OF E 748.72 FT OF SD SUBD TH S ALG SD W LI 337.24 FT TO S LI OF SE OF
NW TH W ALG SD S LI 571.18 FT TO SW COR SD SUBD TH W ALG S LI OF SW OF NW
1338.61 FT TO POB EXC THAT POR THEREOF LY IN SE OF NW EASE OF RECORD
CURRENT USE RCW 84.34 AS AMEND 1989 AGRI CONTD 1994 C866112 CONTD 1995
Q889423 10.78 ACS SEG PER SUP CT 94-2-11543-5 OUT OF 2-063 SEG H-0170 CH/JU
9/25/95JU





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FINDINGS OF FACT

Case No. OS24-16, Reasonable Investments LLC

The County Council finds as follows:

1. The applicant has applied for classification of land as Open Space land pursuant to Revised Code of Washington (RCW) 84.34.020(1).
2. The property in Case OS24-16 qualifies for open space pursuant to RCW 84.34.020(1).
3. The property in Case OS24-16, Parcel No. 0420162700, qualifies for a total of 25 points on 10.78 acres under the Open Space Public Benefit Rating System (PBRs): Five high priority resource points each for containing agricultural land, fish & wildlife habitat conservation areas, and streams; five bonus points for providing a continuing Open Space corridor and five bonus points for being located within the municipal boundaries of the City of Edgewood.
4. At a properly noticed hearing, the County Council finds that the property in Case OS24-16 meets the purpose and intent of RCW 84.34.020(1) and recommends approval of the classification of 10.78 acres as Open Space land with 25 points under the Open Space Public Benefit Rating System on Parcel No. 0420162700.
5. Pursuant to RCW 84.34.037, the Council's affirmative approval of this application by this Ordinance will be forwarded to the City of Edgewood for its affirmation of the application.



STAFF REPORT

DATE: April 19, 2017

TO: Joint Determining Authority of Pierce County and the City of Edgewood

FROM: Chad R. Williams, Senior Planner

SUBJECT: Current Use Assessment Case No. OS24-16

APPLICANT: Reasonable Investments LLC

SUMMARY: The property owners have applied to transfer all 10.78 acres of a parcel from Current Use Farm & Agriculture tax classification to Current Use Open Space classification. The property is located at 3926 90th Avenue East within the city limits of Edgewood, Pierce County Council District 1. The site qualifies with three High Priority Resources and one Medium Priority Resource.

TAX PARCEL DESCRIPTION: **0420162700;** CANNOT BE SOLD OR SUBD WITHOUT PARCEL 2-010 BEG AT W 1/4 COR OF SEC 16 TH N ALG W LI OF SD SEC 383.14 FT TH N 89 DEG 33 MIN 57 SEC E 40 FT TH S 74 DEG 02 MIN 28 SEC E 19.15 FT TH N 70 DEG 50 MIN 22 SEC E 69.2 FT TH N 74 DEG 58 MIN 43 SEC E 84.49 FT TH N 72 DEG 54 MIN 21 SEC E 92.02 FT TH N 70 14 MIN 19 SEC E 62.39 FT TH N 73 DEG 51 MIN 10 SEC E 49.76 FT TH S 79 DEG 36 MIN 23 SEC E 46.16 FT TH S 81 DEG 41 MIN 22 SEC E 44.86 FT TH S 64 DEG 58 MIN 42 SEC E 57.34 FT TH S 75 DEG 13 MIN 17 SEC E 72.82 FT TH S 83 DEG 32 MIN 27 SEC E 15.28 FT TH S 34 DEG 02 MIN 25 SEC E 10.84 FT TH N 35 DEG 50 MIN 24 SEC E 53.35 FT TH N 72 DEG 32 MIN 39 SEC E 80.23 FT TH S 51 DEG 23 MIN 32 SEC E 182.69 FT TH N 30 DEG 27 MIN 08 SEC E 67.23 FT TH S 48 DEG 42 MIN 57 SEC E 4.44 FT TO COR OF FENCE TH CONT S 48 DEG 42 MIN 57 SEC E 155.1 FT TH S 48 DEG 17 MIN 44 SEC E 106.76 FT TH S 48 DEG 24 MIN 05 SEC E 39.99 FT TH S 44 DEG 29 MIN 28 SEC E 14.83 FT TH S 40 DEG 49 MIN 43 SEC E 34.62 FT TH S 39 DEG 38 MIN 16 SEC E 82.12 FT TH S 39 DEG 00 MIN 28 SEC E 71.01 FT TH N 89 DEG 33 MIN 57 SEC E 62.97 FT TO E LI OF SW OF NW TH N ALG E LI SD SUBD 274.88 FT TO NW COR OF S 1/2 OF S 1/2 OF SE OF NW TH E ALG N LI SD SUBD 574.65 FT TO W LI OF E 748.72 FT OF SD SUBD TH S ALG SD W LI 337.24 FT TO S LI OF SE OF NW TH W ALG SD S LI 571.18 FT TO SW COR SD SUBD TH W ALG S LI OF SW OF NW 1338.61 FT TO POB EXC THAT POR THEREOF LY IN SE OF NW EASE OF RECORD CURRENT USE RCW 84.34 AS AMEND 1989 AGRI CONTD 1994 C866112 CONTD 1995 Q889423 10.78 ACS SEG PER SUP CT 94-2-11543-5 OUT OF 2-063 SEG H-0170 CH/JU 9/25/95JU

DATE OF SITE VISIT: April 14, 2017

PHYSICAL CHARACTERISTICS OF PROPERTY: This tract is flat and is presently in agricultural production and has been in commercial farming for many years. The site is void of trees and improvements. A regulated water way, Simons Creek, is present along the northerly boundary of the parcel. Simons Creek is a tributary to Wapato Creek, which flows into Commencement Bay.

GENERAL CHARACTERISTICS OF SURROUNDING AREA: North: Residential/Vacant Residential/Wooded; South: CU Farm & Agriculture; East: Residential/Commercial; West: Residential/Vacant Residential/Wooded.

PUBLIC BENEFIT RATING SYSTEM PROGRAM ELIGIBILITY - Please see Pierce County Code 2.114 for specific requirements.

A review of the submitted application identifies three High Priority Resources: Agricultural Land, Fish & Wildlife Habitat Conservation Areas, and Streams. One Medium Priority Resource is also present, Potential Flood Hazards. A maximum of 15 resource points are allowed for any one application. A review of the qualifying resources according to the eligibility criteria follow here.

Eligible Resource Categories:

1. High Priority Resources

- a. Agricultural Lands*** – The United States Department of Agriculture, Soil Conservation Service’s 1979 Soil Survey of Pierce County Area, Washington identifies three prime agricultural soil present on 97% of this site: Briscot loam, Puget silty clay loam, and Sultan silt loam. Therefore, the property qualifies for five high priority resource points.
- c. Fish and Wildlife Habitat Conservation Areas*** - This site contains a portion of a Fish & Wildlife Habitat Conservation polygon identified by Pierce County and the City of Edgewood related to the stream present on the site providing habitat. Therefore, the site qualifies for five high priority resource points.
- f. Streams*** – The site contains portions of Simons Creek, a regulated waterway. Therefore, the site qualifies for five high priority resource points.

Bonus Category:

3. Designated Urban Lands.

- b.*** Properties located within the municipal boundaries of an incorporated city or town.

This property is within the municipal boundaries of the City of Edgewood. Therefore the site qualifies for bonus points for being within a designated urban area.

4. Provides Linkage of Open Space Parcels.

- a.*** The subject property abuts another parcel which currently provides a high or medium priority resource and when both are left undeveloped create a corridor.
- b.*** The subject parcel must abut a parcel of land which is already in the current use assessment program or is subject to a conservation easement or restrictive covenant as such is defined above.

This property abuts a parcel to the north (0420162701) that is presently enrolled in the Current Use Open Space Program. The site also abuts two parcels to the south (0420163054 & 0420163702) that are enrolled in the Current Use Farm & Agriculture program. These properties contain the required high priority resources to qualify for the continuation of an open space corridor. Therefore the site qualifies for bonus points.

ATTRIBUTES SUPPORTING CURRENT USE ASSESSMENT: The site is eligible for the maximum allowable Priority Resource points: 15, and is eligible for 10 Bonus points for a total of 25 points on the 10.78-acre site.

CW:tf
N:\Long Range Planning\CUA\Staff Reports\CUOS2016\OS24-16SR.docx

OS24-16 Reasonable Investments LLC

Map Legend

 Subject Parcel

 Hydro - Centerlines

 Stream

 Piped Stream Sections

 Wetlands

 Yes or Not Verified

 No

 National Wetlands Inventory

 Tax Parcels

 Base Parcel

 Condominium

 Other

 Flood Hazard Areas (FEMA)

 100 year(A Zone)

 500 year(X500 Zone)

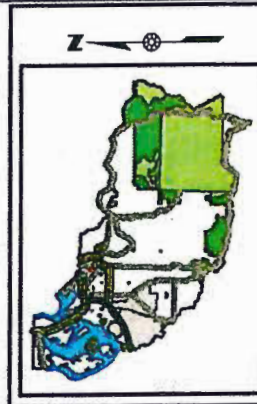
 Cities in Pierce County

 Soils

 Priority Habitat/Species

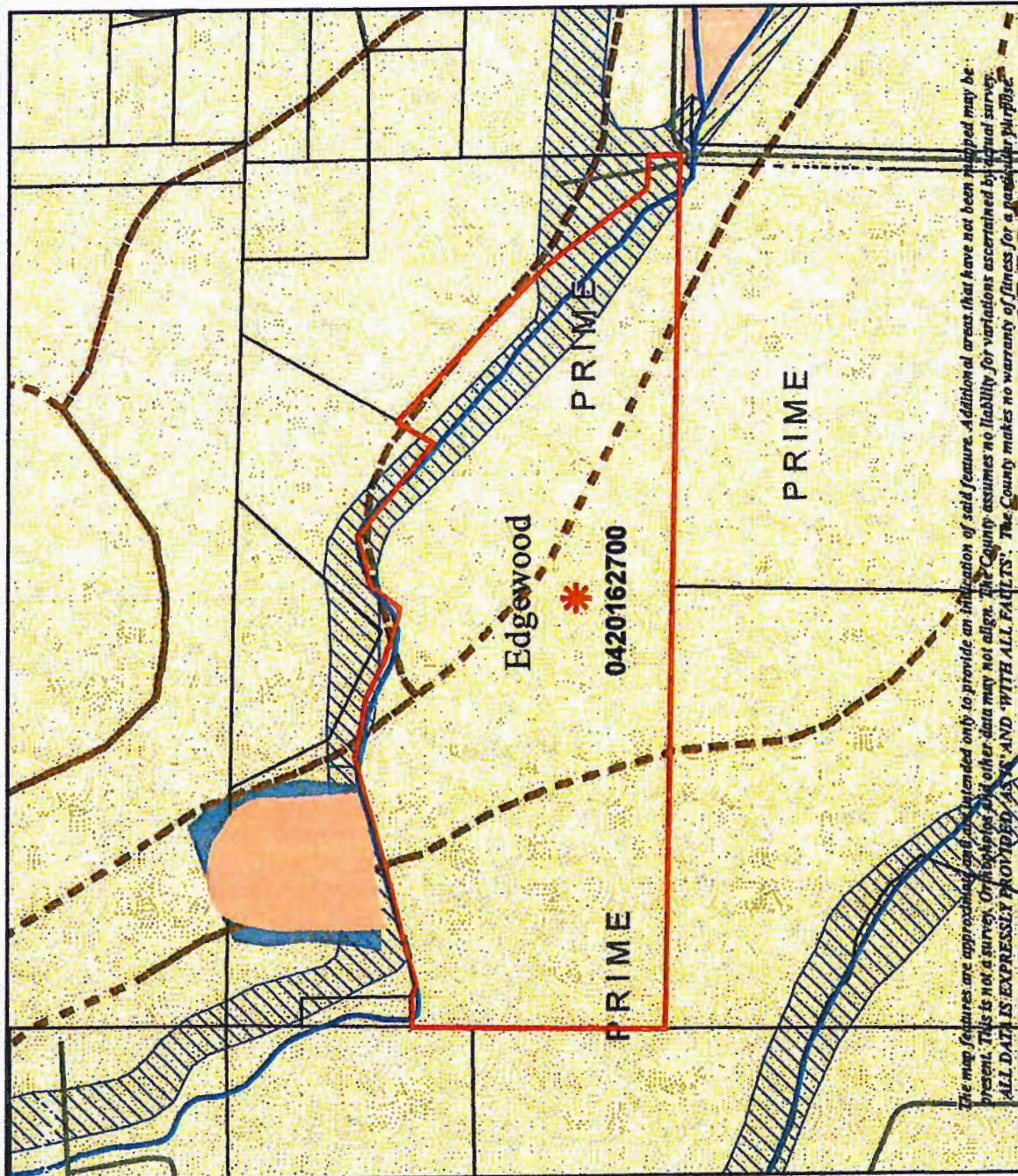
Map Document:
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Scale 1:3,000



Pierce County
Planning and Land Services

January 18, 2017



The map features are approximated and not intended only to provide an indication of said feature. Additional areas that have not been mapped may be present. This is not a survey. On the map, other data may not align. The County assumes no liability for variations ascertained by actual survey. ALL DATA IS EXPRESSLY PROVIDED "AS IS" AND "WITH ALL FAULTS". The County makes no warranty of fitness for a particular purpose.

OS24-16 Reasonable Investments LLC

Map Legend

Subject Parcel

Tax Parcels

- Base Parcel
- Condominium
- Other

Roads

Road Class

- Interstate Highway
- Highway Ramp
- Limited Access State Highway
- Other State Highway
- Major Road
- Arterial
- Residential
- Unknown
- Cities in Pierce County

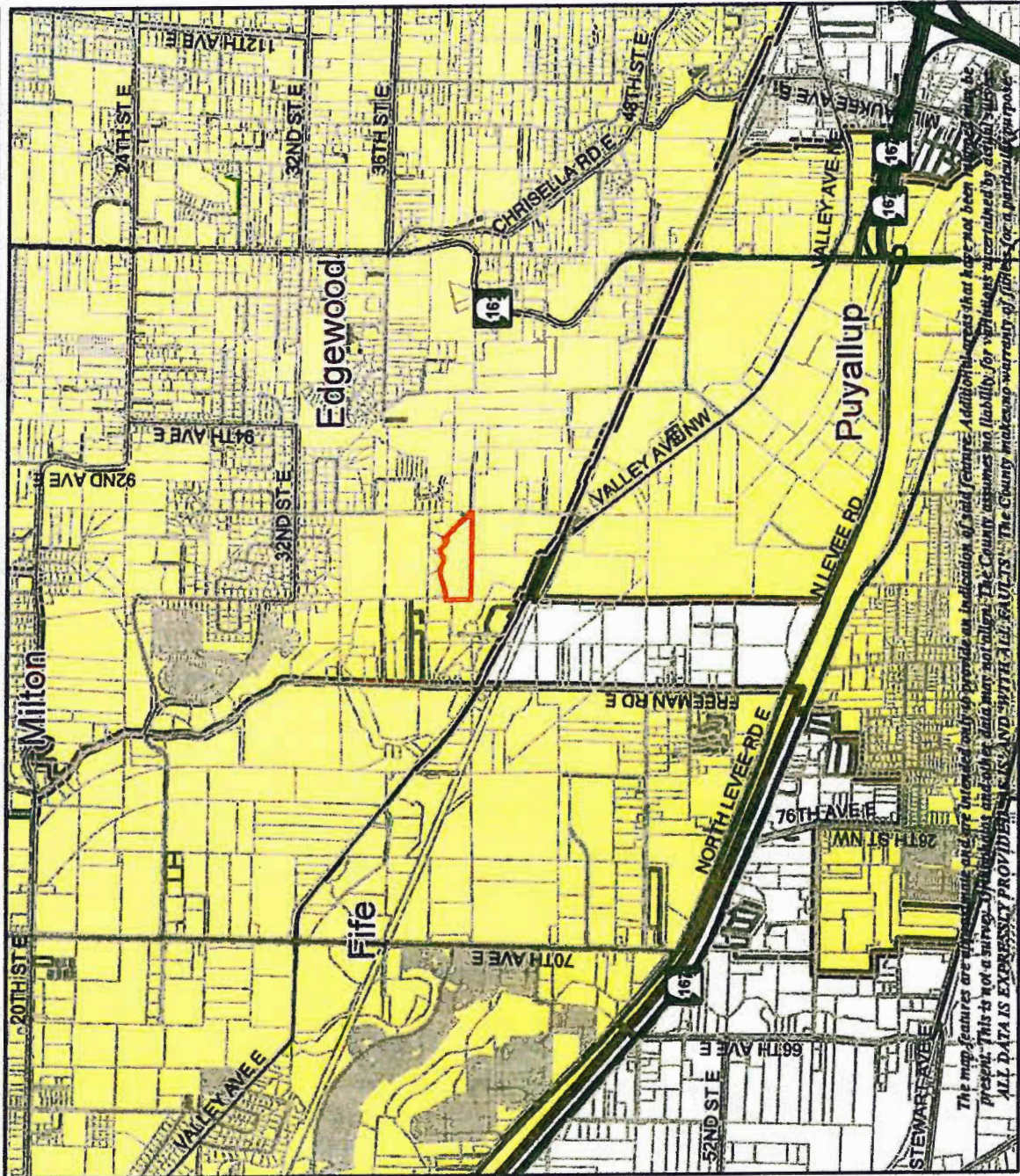
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January 18, 2017



The map features are derived from aerial photography and are intended only to provide an indication of field features. Additional areas that have not been mapped may be present. This is not a survey. The County assumes no liability for violations or inaccuracies in the map. ALL DATA IS EXPRESSLY PROVIDED "AS IS" AND "WITH ALL FAULTS". The County makes no warranty of fitness for a particular purpose.

OS24-16 Reasonable Investments LLC



Map Legend

 Subject Parcel

Orthophoto Date: Summer 2014

Map Document:
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Scale 1:3,000



Pierce County
Planning and Land Services

January 18, 2017





Pierce County

Office of the Assessor-Treasurer

2401 South 35th Street, Room 142
Tacoma, Washington 98409-7498

MIKE LONERGAN
Assessor-Treasurer

This is an estimate for the **land** value only. Values and tax rates, which affect taxes, may change by the time this classification is approved.

OPEN SPACE: CASE # OS 24-16

NAME: REASONABLE INVESTMENTS LLC

PARCEL #(s): 0420162700

25 POINTS

☒ **TRANSFER FROM:** ☒ **Productive Farm & Ag (income required)**

<i>SHOWS THE CURRENT REDUCTION</i>		<i>SHOWS THE CHANGE TO CURRENT REDUCTION</i>	
TAX BASED ON MARKET LAND VALUE	\$1,615.00	TAX BASED ON FARM & AGRICULTURE VALUE	\$ 155.00
TAX BASED ON FARM & AGRICULTURAL VALUE	- \$ 155.00	TAX BASED ON NEW PBRs VALUE	- \$ 162.00
INCREASE/DECREASE	= \$1,460.00	INCREASE /DECREASE :	= \$ 7.00

2016
APPLICATION
YEAR

2017
IF APPROVED, THIS YEAR
VALUE CHANGED

2018
PROPERTY TAX
YEAR

Prepared by Sue Testo – Assessor/Treasurer Office –May, 2017

PIERCE COUNTY
APPLICATION FOR CLASSIFICATION OR RECLASSIFICATION
AS OPEN SPACE FOR CURRENT USE ASSESSMENT
RCW 84.34

PIERCE COUNTY PLANNING
& LAND SERVICES

JAN 03 2017

OPEN SPACE LAND MEANS:

- (a) Any land area so designated by a comprehensive land use plan adopted by a city or county authority, or
- (b) Any land area, in which the preservation in its present use would:
- (i) Conserve and enhance natural or scenic resources,
 - (ii) Protect streams or water supply,
 - (iii) Promote conservation of soils, wetlands, beaches or tidal marshes,
 - (iv) Enhance the value to the public of abutting or neighboring parks, forests, wildlife preserves, nature reservations or sanctuaries or other open space,
 - (v) Enhance recreation opportunities,
 - (vi) Preserve historic sites,
 - (vii) Preserve visual quality along highway, road, and street corridor or scenic vistas, or
 - (viii) Retain in its natural state tracts of land not less than one acre situated in an urban area and open to public use on such conditions as may be reasonably required by the granting authority.
- (c) Or, any land meeting the definition of "farm and agricultural conservation land".

Fees: (a) The non-refundable application fee must be submitted with the application. \$1200.00 in unincorporated or \$1450.00 within city limits. Cities may charge an additional fee. Contact your city to inquire.

(b) Fee for advertising the final public hearing will be billed and payable prior to recording the final contract. The cost varies depending on length of legal. (Approx. \$50.00)

(c) If public access is requested or mandatory, signage requirements are available at the Pierce County Planning and Land Services office.

Name of Applicant: REASONABLE INVESTMENTS LLC A site visit must be scheduled for approval.

Mail Address: 28123 9th Ave Ct E List several phone #'s where you can be
Red, WA 98580 reached 253-381-0534

E-Mail Address: WILLIAMABENNETT777@GMAIL-LOW

1. Interest in property: Fcc owner X Contract Purchaser _____ Other _____

2. Property location: 3926 90th Ave E Edgewood

3. Is property within city limits? Yes X No _____ If yes, which city? _____

4. Assessor's parcel #(s): 0420162700

5. (a) Total acreage of parcel(s): 10.78 (b) Total acreage of unqualified or excluded areas: 0

6. Legal description of land to be classified Open Space: (may attach copy) ATTACHED

7. Legal or detailed description of area excluded (if any) from Open Space classification in 5(b) (may attach copy) N/A

8. Describe the present improvements on this property: (buildings, etc.) _____

9. Is this land subject to a lease or agreement, which permits any other use than it's present use? Yes _____ No X
If yes, attach copy of the lease agreement.

10. Include a Map or Drawing of the Parcel(s), including location of excluded areas and all structures, etc.

11. Is this a reclassification (transfer) under 84.34.070 or 84.33? If yes, complete form 64.0060 or 64.0038.

STATEMENT OF ADDITIONAL TAX, INTEREST AND PENALTY DUE UPON REMOVAL OF CLASSIFICATION

1. Upon removal of classification, an additional tax shall be imposed which shall be due and payable to the county Treasurer 30 days after removal or upon sale or transfer, unless the new owner has signed the Notice of Continuance. The additional tax shall be the sum of the following:
 - (a) The difference between the property tax paid as "Open Space" and the amount of property tax otherwise due and payable for the last seven years had the land not been so classified; plus
 - (b) Interest upon the amounts of the difference (a), paid at the same statutory rate charged on delinquent property taxes, plus
 - (c) A penalty of 20% shall be applied to the amount determined in (a) & (b) above if the classified land is applied to some other use except through compliance with the property owner's request for withdrawal process, or except as a result of those conditions listed in (2) below
2. The additional tax, interest, and penalty specified in (1) above shall not be imposed if removal resulted solely from:
 - a) Transfer to a governmental entity in exchange for other land located within the State of Washington.
 - b) A taking through the exercise of the power of eminent domain, or sale or transfer to an entity having the power of eminent domain in anticipation of the exercise of such power.
 - c) A natural disaster such as a flood, windstorm, earthquake, or other such calamity rather than by virtue of the act of the landowner changing the use of such property.
 - d) Official action by an agency of the State of Washington or by the county or city where the land is located disallows the present use of such land.
 - e) Transfer of land to a church when such land would qualify for property tax exemption pursuant to RCW 84.34.020.
 - f) Acquisition of property interest by State agencies or agencies or organizations qualified under RCW 84.34.210 and 64.04.130 (See RCW 84.34.108(6)(f)).
 - g) Removal of land classified as farm & agricultural land under RCW 84.34.020(2) (f) (farm homestead).
 - h) Removal of land from classification after enactment of a statutory exemption that qualifies the land for exemption and receipt of notice from the owner to remove the land from classification.
 - i) The creation, sale, or transfer of forestry riparian easements under RCW 76.13.120
 - j) The creation, sale, or transfer of a fee interest or a conservation easement for the riparian open space program under RCW 76.09.040.
 - k) The sale or transfer of land within two years after the death of the owner of at least a fifty percent interest in the land if the land has been assessed and valued as designated forest land under chapter 84.33 RCW, or classified under this chapter 84.34 RCW continuously since 1993. The date of death shown on the death certificate is the date used.
 - l)
 - (i) The discovery that the land was classified under this chapter in error through no fault of the owner. For purposes of this subsection (6)(1), "fault" means a knowingly false or misleading statement, or other act or omission not in good faith, that contributed to the approval of classification under this chapter or the failure of the assessor to remove the land from classification under this chapter.
 - (ii) For purposes of this subsection (6), the discovery that land was classified under this chapter in error through no fault of the owner is not the sole reason for removal of classification pursuant to subsection (1) of this section if an independent basis for removal exists. Examples of an independent basis for removal include the owner changing the use of the land or failing to meet any applicable income criteria required for classification under this chapter.

AFFIRMATION

As owner(s) of the land described in this application, I hereby indicate by my signature that I am aware of the potential tax liability involved when the land ceases to be classified as Open Space under provision of CH 84.34 RCW, and that the Assessor-Treasurer's office may require pertinent data be periodically submitted as to the continued use of the land. I also declare under the penalties for false swearing that this application and any accompanying documents have been examined by me and to the best of my knowledge it is a true, correct, and complete statement.

The agreement to tax according to use of the property is not a contract and can be annulled or canceled at any time by the Legislature (RCW 84.34.070)

Signatures of all Owner(s) or Contract Purchaser(s):

Date:

W - C DUNN REASONABLE INJ LLC

1-3-17

Submit application and fee to: **Pierce County Planning and Land Services Development Center**
2401 S 35th St Ste 2
Tacoma WA 98409

Change of Classification
(Chapters 84.33 and 84.34 RCW)

File With County Assessor

Tax Code: 770

County: PIERCE COUNTY

Applicant(s) name and address:

REASONABLE INV LLC
~~2841~~ 28123 9th AVE CT E
ROY, WA 98580

Phone No: 253-381-0534

Land subject to this application (legal description):

Assessor's Parcel or Account No:

0420162700

Auditor's File No. on original application:

N/A

Change of Classification

(Check appropriate box)

The land is currently classified as Farm and Agricultural land under RCW 84.34.020(2) and I hereby request reclassification as:

- ☐ Timber land as provided under RCW 84.34.020(3), unless county has merged their timber land classification into their designated forest land program. (Attach completed form REV 64 0109 or 64 0111 and a timber-management plan)
- ☒ Open Space land as provided under RCW 84.34.020(1). (Attach completed form REV 64 0021)
- ☐ Forest Land classification under Chapter 84.33 RCW. (Attach completed form REV 62 0021 or 62 0110)
- ☒ Farm and Agricultural Conservation land as defined in RCW 84.34.020(8)(a). (Attach completed form REV 64 0021)

The land is currently classified as Farm and Agricultural Conservation land under RCW 84.34.020(8)(a) and I hereby request reclassification to:

- ☐ Farm and Agricultural land under RCW 84.34.020(2). (Attach completed form REV 64 0024 or 64 0108)

The land is currently classified as Timber land under RCW 84.34.020(3) and I hereby request reclassification as:

- ☐ Forest land classification under Chapter 84.33 RCW. (Attach completed form REV 62 0021 or 62 0110)
- ☐ Open Space land as provided under RCW 84.34.020(1). (Attach completed form REV 64 0021)
- ☐ Farm and Agricultural land as provided under RCW 84.34.020(2). (Attach completed form REV 64 0024 or 64 0108)

NOTE: If request to change classification is approved, no additional tax, interest, and penalty will be imposed.

Requests to transfer from Forest Land designation under provisions of Chapter 84.33 RCW to Current Use classification under Chapter 84.34 RCW should be made on REV 64 0038.

Attachment:

- | | | | |
|---|---|--------------------------------------|--------------------------------------|
| ☐ REV 62 0021 | ☒ REV 64 0021 | ☐ REV 64 0108 | ☐ REV 64 0111 |
| ☐ REV 62 0110 | ☐ REV 64 0024 | ☐ REV 64 0109 | |
| ☐ Timber Management Plan | | | |

General Information

RECLASSIFICATIONS are defined in
RCW 84.34.070(2) as follows:

- (2) The following reclassifications are not considered withdrawals or removals and are not subject to additional tax under RCW 84.34.108:
 - (a) Reclassification between lands under RCW 84.34.020(2) and (3);
 - (b) Reclassification of land classified under RCW 84.34.020(2) or (3) or Chapter 84.33 RCW to open space land under RCW 84.34.020(1);
 - (c) Reclassification of land classified under RCW 84.34.020(2) or (3) to forest land classified under Chapter 84.33 RCW; and
 - (d) Reclassification of land classified as open space land under RCW 84.34.020(1)(c) and reclassified to farm and agricultural land under RCW 84.34.020(2) if the land had been previously classified as farm and agricultural land under RCW 84.34.020(2).
- (3) Applications for reclassification shall be subject to applicable provisions of RCW 84.34.035, 84.34.037, 84.34.041, and Chapter 84.33 RCW.
- (4) The income criteria for land classified under RCW 84.34.020(2)(b) and (c) may be deferred for land being reclassified from land classified under RCW 84.34.020(1)(c) or (3), or Chapter 84.33 RCW into RCW 84.34.020(2)(b) or (c) for a period of up to five years from the date of reclassification.

FARM AND AGRICULTURAL CONSERVATION LAND is defined in **RCW 84.34.020(8)(a & b)** as follows:

- (8) "Farm and agricultural conservation land" means either:
 - (a) Land that was previously classified under RCW 84.34.020(2), that no longer meets the criteria and is reclassified under RCW 84.34.020(1)(c); or
 - (b) Land that is traditional farmland that is not classified under Chapter 84.33 or 84.34 RCW, that has not been irrevocably devoted to a use inconsistent with agricultural uses, and that has a high potential for returning to commercial agriculture.

And also defined in RCW 84.34.037(2)(c) as follows:

- (c) Whether granting the application for land applying under RCW 84.34.020(1)(c) will; (i) preserve land previously classified under RCW 84.34.020(2) or preserve land that is traditional farmland and not classified under Chapter 84.33 or 84.34 RCW; (ii) preserve land with a potential for returning to commercial agriculture; and (iii) affect any other factors relevant in weighing benefits to the general welfare of preserving the current use of property.

Signatures of Owner(s) or Contract Purchaser(s):

W-a Dineo REASONABLE INC LLC

Date 6-3-17

Assessor Use Only

If the parcel(s) subject to this document is considered contiguous, as defined in RCW 84.34.020(6), with other parcels having different ownerships, verify all remaining classified parcels with different ownerships are still:

- ☐ Adjoining
- ☐ Being managed as part of a single operation
- ☐ Meeting the definition of "family" as defined in RCW 84.34.020(6)(b)(ii) with the owner of an adjoining parcel

To ask about the availability of this publication in an alternate format for the visually impaired, please call 1-800-647-7706. Teletype (TTY) users may use the Washington Relay Service by calling 711. For tax assistance, call (360) 534-1400.



PIERCE COUNTY

Property Account Summary

As Of 1/3/2017 Status: Active

Account No.: 0420162700 Alternate Property Number: 0420162700
 Account Type: Real Property
 TCA: 770
 Situs Address: 3926 90TH AV E
 PIERCE COUNTY WA

Legal: Section 16 Township 20 Range 04 Quarter 23 : CANNOT BE SOLD OR SUBD WITHOUT PARCEL 2-010 BEG AT W 1/4 COR OF SEC 16 TH N ALG W LI OF SD SEC 383.14 FT TH N 89 DEG 33 MIN 57 SEC E 40 FT TH S 74 DEG 02 MIN 28 SEC E 19.15 FT TH N 70 DEG 50 MIN 22 SEC E 69.2 FT TH N 74 DEG 58 MIN 43 SEC E 84.49 FT TH N 72 DEG 54 MIN 21 SEC E 92.02 FT TH N 70 14 MIN 19 SEC E 62.39 FT TH N 73 DEG 51 MIN 10 SEC E 49.76 FT TH S 79 DEG 36 MIN 23 SEC E 46.16 FT TH S 81 DEG 41 MIN 22 SEC E 44.86 FT TH S 64 DEG 58 MIN 42 SEC E 57.34 FT TH S 75 DEG 13 MIN 17 SEC E 72.82 FT TH S 83 DEG 32 MIN 27 SEC E 15.28 FT TH S 34 DEG 02 MIN 25 SEC E 10.84 FT TH N 35 DEG 50 MIN 24 SEC E 53.35 FT TH N 72 DEG 32 MIN 39 SEC E 80.23 FT TH S 51 DEG 23 MIN 32 SEC E 182.69 FT TH N 30 DEG 27 MIN 08 SEC E 67.23 FT TH S 48 DEG 42 MIN 57 SEC E 4.44 FT TO COR OF FENCE TH CONT S 48 DEG 42 MIN 57 SEC E 155.1 FT TH S 48 DEG 17 MIN 44 SEC E 106.76 FT TH S 48 DEG 24 MIN 05 SEC E 39.99 FT TH S 44 DEG 29 MIN 28 SEC E 14.83 FT TH S 40 DEG 49 MIN 43 SEC E 34.62 FT TH S 39 DEG 38 MIN 16 SEC E 82.12 FT TH S 39 DEG 00 MIN 28 SEC E 71.01 FT TH N 89 DEG 33 MIN 57 SEC E 62.97 FT TO E LI OF SW OF NW TH N ALG E LI SD SUBD 274.88 FT TO NW COR OF S 1/2 OF S 1/2 OF SE OF NW TH E ALG N LI SD SUBD 574.65 FT TO W LI OF E 748.72 FT OF SD SUBD TH S ALG SD W LI 337.24 FT TO S LI OF SE OF NW TH W ALG SD S LI 571.18 FT TO SW COR SD SUBD TH W ALG S LI OF SW OF NW 1338.61 FT TO POB EXC THAT POR THEREOF LY IN SE OF NW EASE OF RECORD CURRENT USE RCW 84.34 AS AMEND 1989 AGRI CONTD 1994 C866112 CONTD 1995 Q889423 10.78 ACS SEG PER SUP CT 94-2-11543-5 OUT OF 2-063 SEG H-0170 CH/JU 9/25/95JU

Parties:

Role	Name & Address
Owner	NOVAK ANDY A TTEE 1617 PARK AVE PUYALLUP WA 98372-4713
Taxpayer	NOVAK ANDY A TTEE 1617 PARK AVE PUYALLUP WA 98372-4713

Property Values:

Value Name	2017	2016	2015	2014	2013
Taxable Value Regular	\$11,665	\$11,665	\$11,665	\$11,665	\$11,665
Assessed Value	\$11,665	\$11,665	\$11,665	\$11,665	\$11,665
Market Land	\$120,300	\$111,600	\$105,600	\$92,600	\$100,400
Market Improvement	\$0	\$0	\$0	\$0	\$0
Current Use Land	\$11,665	\$11,665	\$11,665	\$11,665	\$11,665
Current Use Improvement	\$0	\$0	\$0	\$0	\$0

Property Characteristics:

Tax Year	Characteristic	Value
2017	Notice of Value Mailed Date	06/23/2016
	Use Code	8300-CU FARM & AGRI RCW 84.34 CURRENT USE
	Unit of Measure	Acre(s)
	Total Size	10.78
	CU Acres	10.78

Exemptions:

(End of Report)



Pierce County

Department of Planning and Land Services

DENNIS HANBERG
Director

2401 South 35th Street
Tacoma, Washington 98409-7460

January 24, 2017

Kevin Stender
Community Development Director
City of Edgewood
2224 – 104th Avenue East
Edgewood, WA 98372

Subject: Current Use Open Space Application OS24-16

Dear Mr. Stender:

Our office received a 2016 application for Current Use Open Space classification consideration for property within your municipal boundaries. We collect applications throughout one calendar year for processing the following year. Pierce County Planning & Land Services and the Pierce County Assessor Treasurer's office processes all Current Use applications within the county, regardless of jurisdiction. This process is referred to as a Joint Determining Authority action and is established through RCW 84.34.037.

Applicable County language:

PCC Chapter 2.114

CURRENT USE ASSESSMENT ADMINISTRATIVE PROCEDURES

2.114.090 - Multiple Jurisdictions.

A. Incorporated Jurisdictions.

- 1. An owner of land who desires a current use classification for open space land and whose land is in an incorporated area within Pierce County shall apply with the Department.*
- 2. The Department shall send copies of such application to the respective town or city administrative authority within ten days of receipt.*
- 3. Open space land current use assessment applications for properties located within incorporated areas shall be subject to the public benefit rating system provisions established in Section 2.114.060 of this Chapter.*
- 4. A Joint Determining Authority established by RCW 84.34.037 shall have the authority to grant applications for properties in incorporated areas.*
(Ord. 2015-36 § 3 (part), 2015; Ord. 99-96 § 1 (part), 1999; Ord. 98-114S § 3 (part), 1999)

The field work, staff report preparation, recommendation to County Council, public hearings and the signing of an Open Space Taxation Agreement will occur in 2017. The applicants, if successful, will see their tax benefit start in the first half of 2018. The taxing district which these parcels are located will also see a minor tax shift at the same time. Properties coming out of the Current Use Farm & Agriculture and into the Current Use Open Space classification normally will see an increase in taxation value. An estimate of the new land value will be included with the upcoming staff report/recommendation.

A copy of the application and three source documents are attached. The applicant, Reasonable Investments LLC, is applying to transfer a 10.78 acre parcel from Current Use- Farm & Agricultural to Current Use- Open Space. The tax parcel ID # is 0420162700 and the site address is 3926 – 90th Avenue East.

The Pierce County adopted Public Benefit Rating System (PBRs) will be utilized to determine the tax benefit level appropriate for the property. This is a resource point system based on the protection of those resources present on the property. The County's GIS data is utilized to determine these resources. This link will take you to the Assessor Treasurer's site and the adopted PBRs table: <http://www.co.pierce.wa.us/index.aspx?NID=686>

Although much of our GIS data sets stop at municipal boundaries, we do have a number of resource data sets that include Edgewood. Our data shows 95% of this site being in prime agriculture soils, and it contains a regulated waterway and associated habitat elements. Potential flood hazards are present as well as potential volcanic hazards on the site. The site also qualifies for bonus points for providing a linkage of Open Space parcels and additional bonus points for being within municipal boundaries.

I would appreciate it if your office could provide a resource inventory of the site so we can compare/verify findings. This will assist in assuring a smooth and successful joint decision on the tax benefit appropriate for this parcel.

My goal is to complete the site visit and write the staff report/recommendation for County Council's consideration by the end of April 2017.

If you have any questions, please do not hesitate to contact me at 253.798.3683 or cwillia@co.pierce.wa.us

Regards,



Chad Williams
Senior Planner

CW:ds
N:\Long Range Planning\CUA\JDA 2016\Edgewood JDA ltr.docx

Attachments



**CITY OF EDGEWOOD
STAFF REPORT**

STUDY SESSION AGENDA ITEM: Emergency Guardrail Installation

Date: September 19, 2017

Title: 92nd Avenue Emergency Guardrail Removal and Replacement Resolution

Attachments: Resolution 17-XXXX, Exhibit A

Submitted By: Aaron C. Nix, ACA – Municipal Services

Approved For Agenda By: Daryl Eidinger, Mayor

Discussion: City Staff were made aware of the decrepit status, non-compliant height of the guardrail system along 92nd by the Public on several occasions. Staff made a site visit to the guardrail system in late July and determined that many of the guardrail structural components (wooden posts) were rotten through or missing in sections and that the steel beam was rusted along a good portion of guardrail system. With these complaints and the onsite visual inspection conducted by Staff, City Staff determined that the guardrail system was in need of immediate removal and replacement, so as not to compromise the health, safety or welfare of the public and looked to the small works roster to identify a company that could do this work immediately, bypassing the purchasing and procedural policies, including bidding requirements, as outlined within state law. In order to fulfill the requirements of taking such action, Staff is required to follow procedures, as outlined within RCW 39.04, including taking a Resolution to the City Council that includes the elements identified within the attached Resolution. In addition, Staff has provided the relevant bid/invoice information for the work and before and after documentation that demonstrates the state of the previous guardrail system and what was installed to replace the insufficient guardrail system

Recommendation: Forward Resolution 17-XXXX onto the City Council for formal adoption.

Fiscal Impact: \$29,534.65 actual. \$15,000 had been budgeted within the 2017 budget as a line item within the Street Fund (BARS FUND 101)

RESOLUTION NO. 17-XXXX

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF EDGEWOOD, WASHINGTON, DECLARING AN EMERGENCY RELATING TO THE REPLACEMENT OF THE DECREPIT GUARDRAIL SYSTEM THAT EXISTED ALONG 92ND AVENUE, STARTING AT ITS INTERSECTION WITH YUMA, HEADED SOUTH, APPROXIMATELY 500 LINEAR FEET, AND WAIVING THE PUBLIC BIDDING REQUIREMENTS TO PERFORM THE REPLACEMENT WORK PURSUATN TO RCW 39.04.280(1)(C).

WHEREAS, the City of Edgewood is a Non-Charter Code City, as identified under RCW, Chapter 35A, under Washington State statute; and

WHEREAS, City Staff were advised by a member of the Public of the inadequate height and observed and verified that significant decay existed of the supporting beams were components of the beam guardrail that existed along the western edge of 92nd Avenue, starting at its intersection with Yuma Street, headed south towards 24th Street East for approximately 550 linear feet; and

WHEREAS, The City's need to remove and replace the existing guardrail system in this location constitutes an emergency beyond the City's control, which presents a real, immediate, threat to traffic safety along this stretch of roadway or will result in material loss or damage to property, bodily injury or loss of life if action is not taken immediately to remove and replace said guardrail system; and

WHEREAS, in accordance with City Policy pertaining to Emergency Purchases, City Staff utilized the City's current Small Works Roster and identified Peterson Brother's, Inc. off of that roster in order to obtain a bid in order to do this work, which was received by the Public Works Department in the amount of Twenty Nine Thousand, Five Hundred Thirty Four Dollars and Sixty Five Cents (\$29,534.65); and

WHEREAS, Peterson Brothers, Inc. are the only known guardrail installers located within the Puget Sound Region capable of installing guardrail systems and able to do so quickly, the Public Works Director directed the contractor to move forward with this work immediately in order to eliminate the immediate threat identified above, bypassing the bidding requirements in accordance with RCW 39.04.280(1) (C); and

WHEREAS, in support of these actions and in compliance with City Policy, the City must adopt a Resolution certifying the existence of the emergency situation;

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF EDGEWOOD, WASHINGTON, HEREBY RESOLVES AS FOLLOWS:

Section 1. Emergency Guardrail Replacement. An Emergency Resolution of the City Council of Edgewood, WA, declaring an emergency for the immediate replacement of the guardrail along the south side of 92nd Avenue, starting at its intersection with Yuma Avenue, ratifying the contract with Peterson Brothers, Inc. in the amount of \$29,534.65 and directing Staff to follow the requirements of State law relating to

“Emergency” Public Work, as outlined and defined within RCW 39.04.280. Exhibit A - 1. Bid/Invoice Statement for Guardrail Replacement. 2. Pictures of Existing and New Guardrail System.

Section 2. Effective Date. This resolution will take effect immediately upon passage by the City Council.

ADOPTED this 26th day of September, 2017

Daryl Eiding, Mayor

ATTEST:

Rachel Pitzel, City Clerk

Exhibit A

Petersen Brothers, Inc.
2008 East Valley Hwy
Sumner, WA 98390
(253)863-8136

RECEIVED
AUG 11 2017
City of Edgewood

City of Edgewood
2224 104th Ave E
Edgewood, WA 98372

INVOICE ID: 1710101
DRAW ID: 1710101
DATE: August 5, 2017

SALESPERSON:

CONTRACT ID: 17-101
Edgewood Guardrail Replacement
LOCATION: 2720 Edgewood/Use Tax

CUSTOMER ID: CITYOFEDGE
PO #:

Item	Description	Units Contracted	Unit of measure	Unit Price	Total Units in Place	Units in Place this Period	Current Billing
1	Remove Guardrail	550.00	LF	4.05	550.00	550.00	2,227.50
2	GR Type 31, 6' SP	500.00	LF	37.12	500.00	500.00	18,560.00
3	Type 31 NFT - MGS SKT TL2 SF	2.00	EA	2,226.96	2.00	2.00	4,453.92
4	Project Traffic Control	1.00	LS	4,293.23	1.00	1.00	4,293.23
Total							29,534.65

Invoice Sub-total

29,534.65

Amount due this Invoice

\$29,534.65

Billed to date:

Paid to date:

Retainage

Total amount due:

29,534.65

0.00

\$29,534.65

Date: 8/16/17
Reviewed by: *[Signature]*
Contract

Current week quantities are estimated and subject to verification and adjustment at contract completion. For questions regarding this billing please contact Jean Denison at 253-863-8136, ext. 126.

OK to Pay
8/11/2017
101.000.000.542.44.41.19

















**CITY OF EDGEWOOD
STAFF REPORT**

STUDY SESSION AGENDA ITEM: Deshaux Road Transportation Study

Date: September 19, 2017

Title: Deshaux Road Study and Neighborhood Meeting

Attachments: Proposed Scope of Work and Cost Estimate from Transpo Group

Submitted By: Aaron C. Nix, ACA Municipal Services

Approved For Agenda By: Daryl Eidinger, Mayor

Discussion: Late in 2016, residents along Deshaux Road came to a City Council meeting to express their concerns to the City Council in regard to several issues related to drive through traffic, vandalism, theft and other less than desirable elements that were utilizing the public roadway in this area to conduct the community believed to be illegal and/or dangerous activities in and around their properties. As a result of this, the City Council directed Staff to pursue options as it pertained to looking at traffic alternatives, as this roadway is being utilized as a bypass mechanism for highway 161 when traffic builds during the pm peak periods from people trying to get into Puyallup. Due to the complexity of this traffic issue, Staff recruited the help of its Transportation consultant, Transpo Group in order to begin looking at this issue, begin gathering data and then hold a public meeting in order to discuss this issue with the community in this area and begin looking at some potential options as it pertains to potentially changing the current traffic patterns in order to better meet the needs of the community in this area. Staff has now found the time to move this issue forward and is ready with a scope of work and cost estimate in order to begin this work for the Council's consideration and go ahead.

Recommendation: Approval from the City Council to move forward with the proposed scope of work, as requested by the Mayor/City Council in investigating options as it pertains to reducing speeds and collecting comments/suggestions from the property owners along Deshaux Road.

Fiscal Impact: Estimated cost is \$5,700 and funds slated to come from Capital Roads Fund (BARS Fund 340), Identified as CIP Transportation CIP Engineering.

Exhibit A – On-call Task Order

Client Name:	City of Edgewood		
Project Name:	Deshaux Road Study		
Exhibit Dated:	September 8, 2017	TG:	1.17286.00 Task 1

Background

Based on discussions with City staff, the following services have been requested to (1) work with the public to identify concerns and develop a list of potential strategies to address cut-through traffic on Deshaux Road, and (2) evaluate the strategies to identify a package of improvements that the City could consider implementing.

Scope of Work

The work program will include two phases consistent with the services described above. The first phase will include helping host a public meeting to identify issues and potential improvement strategies that should be considered. The second phase, will evaluate the strategies identified in phase one and solicit input from impacted stakeholders, then present recommendations to the City for implementation.

Phase 1: Public Engagement

Working with City staff, a public meeting will be organized to listen to and discuss current issues along the corridor, and to help identify potential improvement strategies they would like the City to consider implementing. To assist the meeting discussion and respond to questions from the audience, a comprehensive set of traffic data will be collected along Deshaux Road to understand the extent of the existing problem. The data will include daily vehicle volumes at one location, and a PM peak hour intersection turning movement count at SR 161 / Deshaux Road, including observed vehicle queue lengths. Collision history data will also be assembled and summarized utilizing the latest 3-year collision history data from WSDOT.

After the data has been collected and summarized, a meeting with the general public will be held. It is expected that City staff will take the lead in hosting, advertising, and leading the meeting. The data will be shared with the group, and Transpo will help facilitate the meeting to identify current issues and potential ideas for addressing them.

Phase 2: Improvement Evaluation

Scope of work to be determined based on outcomes of the public meeting.

Schedule

- **Late-September:** Confirm meeting date/time/location and order traffic data for last week of September.
- **Early October:** Summarize the traffic data
- **Late October:** Hold public meeting
- **Early November:** Summarize meeting outcomes, and prepare scope of work for Phase 2



Cost Estimate Worksheet

Number / Project Name
17286 T01 Deshaux Road Study

Pay rates are effective from July 8, 2017 through June 29, 2018, within the ranges shown in the attachment.
Only key staff are shown and other staff may work on and charge to the project as needed by the project manager.

	Project Manager	Quality Control	Project Engineer	Project Coor	Project Admin
initials	JCP	KLJ	PWS	IMR	CLF
job title	Prin L7	Prin L7	Eng L3	PA L2	PA L2
cost rate	\$225.00	\$225.00	\$120.00	\$90.00	\$90.00

Labor:

	Work Task					Hours	Cost
1	Phase 1: Stakeholder Engagement					0	\$0
2	City Meeting/Site Visit	2	2			4	\$900
3	Public Meeting	4		6	1	11	\$1,710
4	Traffic Data	2	1	12		15	\$2,115
5						0	\$0
6	Phase 2: TBD					0	\$0
7						0	\$0
8						0	\$0
9						0	\$0
10						0	\$0
11						0	\$0
12						0	\$0
13						0	\$0
14						0	\$0
15						0	\$0
16						0	\$0
17						0	\$0
18						0	\$0
19						0	\$0
20						0	\$0

Total Hours	8	3	18	0	1	30	
Labor Costs	\$1,800	\$675	\$2,160	\$0	\$90		\$4,725

Reimbursable Expenses:

	Item	Reimburs. Cost
1	Application	
2	Business Meals	
3	Mileage	\$30
4	Miscellaneous	
5	Models/Renderings/Photos	
6	Parking	
7	Records Filing	
8	Registrations	
9	Reproductions	
10	Shipping/Courier	
12	Supplies	
13	Traffic Accident Data	\$30
14	Traffic Count Vendors	\$810
15	Travel, Hotel, Taxi, & Air Fare	

Sub Total	\$870
Total (Cost + 5 percent)	\$914

Subconsultants:

	Firm	Subs. Cost
1		
2		
3		
4		
5		

Sub Total	\$0
Total (Cost + 5 percent)	\$0

TOTAL ESTIMATE	\$5,700
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CITY OF EDGEWOOD

STAFF REPORT

STUDY SESSION AGENDA ITEM: SW CIP Prioritization

Date: September 19, 2017

Title: Surface Water CIP Update – Project Prioritization

Attachments: DRAFT CIP List and Spot Improvement Program List

Submitted By: Jeremy Metzler, PE – Senior Engineer / SW Program Manager

Approved For Agenda By: Daryl Eidinger, Mayor

Discussion: As discussed on August 29, we met with the Planning Commission on September 18 to review the Surface Water Management Plan update and status, focusing on the Capital Improvement Plan (CIP) and project prioritization. Attached are the draft lists as prioritized by staff, for discussion and review. A public workshop is scheduled for Monday, September 25, 2017, at 6:00 pm to formally gather public input and ensure a transparent process.

Recommendation: Staff requests the Council's input and feedback on the proposed project prioritization. These lists will be updated prior to the workshop next week, to incorporate comments from the Planning Commission and Council.

Fiscal Impact: The SWMP Update is fully under contract and paid for exclusively by existing Surface Water Utility Funds. The CIP Update occurs annually through the budget review and adoption process, and this prioritization is needed in order to complete the CIP funding program and schedule.

Former Project IDs											
1997 SWMP	2009 CIP	2017 CIP	Project Name	Description / Summary	Status	Problem Description	Project Description	Priority	City Needs and Next Steps (Narrative)	Notes	Budget Estimate
	31	SW-6	Comprehensive Surface Water Management Plan Update	City-wide planning, targeted development standard evaluation, floodplain management, and annual updates	IN PROGRESS	The City's comprehensive SWMP has not been formally updated since its initial adoption in 1997, and is in need of review to ensure compliance with current regulations and permit requirements.	Compile all issues identified in 1997 SWMP, the draft 2009 update, and issues brought to staff attention since then. 2017: Completing comprehensive update 2017-18: Wet season water monitoring	High	Preparing for wet season monitoring, awaiting scope of work for bids, preparing for property use agreements	2017: \$150,000 remaining as of 9/7/2017	2018: \$100,000 +/- 2019+: \$25,000 +/-
		SW-1	City Drainage Infrastructure Program / Spot Improvements	Annual Small Project Improvements	ONGOING	See separate list		High	Annual small project review and prioritization		\$100,000 Annually
	32		Closed Depression Basin Plan	Study long-range surface water needs for closed depressions	PENDING	A basin-level determination of issues is needed, including exploring the need for basin-specific standards to address said issues (i.e., flooding).	Conduct a series of basin studies to determine long range surface water needs.	High	<i>Problem and project definition updated based on SWMP Update work.</i>		\$1,070,000
LC-1 - LC-3			Lake Chalet Flooding	Flooding of 29th St E and adjacent properties	PENDING	Street closure due to flooding, property flooding.	TBD by further pothole evaluation. Water quality concerns and proximity to wells present challenges for infiltration.	High	Prepare cost estimates for pump, siphon, and gravity designs	Estimate for pump station w/ conveyance to Simon's Creek via the Simon's Mill Apartments; only 4' to 6' above current lake flood stage.	\$500,000
EB-1 - EB-6			Edgewood Bowl Flooding	Flooding of 110th and 114th Ave E, and 16th St E	PENDING	Edgewood Bowl flooding: Street closed with up to 3 feet of water overtop, House crawlspace and garage flooded (10704 16th St. E).	TBD by further pothole evaluation.	High	UIC Evaluation and Pilot Project	Awaiting wet season monitoring results and grant funding to proceed	\$1,500,000
122-1 - 122-3			122nd Ave Pothole Flooding		NEEDS RE-EVALUATION	Meadow Vista tracts flooded, homes on 122nd flooded, driveway flooding (1997) There is no imminent threat to private property other than one driveway and EVA.	TBD by further pothole evaluation.	High	Flooded driveway recently elevated another foot, water levels seem to be rising, several new homes in the basin.	Coordinating with elevated driveway property owner, possible exploration and injection site	TBD
114-1 - 114-5			Pinedale Pond Pothole (114th Ave) Flooding	Flooding of 32nd St E and adjacent properties	PENDING	Street closed due to flooding, excessive flooding over driveway (2614 115th Ave E.) so only house access is via rowboat.	TBD by further pothole evaluation.	High	Driveway nearly submerged last two winters, waiting on UIC Evaluation and Pilot Project	Site is currently under consideration for Conservation Futures grant funding to acquire property, \$100K match req'd.	TBD
108-1 - 108-3	5	SW-5	108th Ave. E. / 36th St. E. Road Flooding	Pothole / Wetland Seasonal Flooding	PENDING	During heavy rains, this area is prone to flooding where the entire roadway ends up being underwater. Roadway intersection and adjoining streets routinely flood during wet winters resulting in the closure of the roadways.	This project is located within 500 feet of the subject intersection. A study is needed to assess alternatives, including raising the intersection to prevent roadway flooding.	High	Partially submerged last two winters, waiting on UIC Evaluation and Pilot Project	May be opportunity to perform spot improvement(s) along 36th St E, route water to pothole to the northeast	\$1,000,000
			Surprise Lake Pothole Flooding		NEEDS RE-EVALUATION	1 house flooded, 1 septic system flooded (1997). Potential flooding risk for two houses	TBD by further pothole evaluation. Commercial property is amenable to investigative work.	High	Waiting on UIC Evaluation and Pilot Project before determining next step(s)	Recent development to the north (View Pointe / Domus Townhomes) is now routing extreme flows awa from pothole	TBD
SE-2	23		Edgewood Drive Drainage Improvements	Tightline drainage between 48th and 53rd - work has been done along part of this corridor, paving shoulders and ditches for stabilization	NEEDS RE-EVALUATION	Inadequate roadway drainage.	Install tight-lined drainage system along roadway.	Medium	Review 2009 Draft CIP Appendix sketch and review scope of work needed, need to evaluate capacity of receiving system and adequacy of energy dissipation	Revisit assumptions and improvement extents, refine cost before public discussion	\$860,000
JC-1, JC-2	7	SW-11	Jovita Boulevard Rehabilitation	Evaluate slope drainage and seeps, road alignment, add'l walls?	PENDING	Annual problems with seeps, slope stability, and culvert drainage	Focusing between 114th Ave E and West Valley Highway, this project may include the following: * Reconstruction of roadway, redefining alignment and superelevation * Slope protection (guardrails & walls) * Stream protection, storm drainage conveyance installation	Medium	No imminent threats or issues, ongoing box culvert maintenance concerns being evaluated, need to coordinate with Roads Funding / TIP before going much further		TBD
			Meridian Ave E.	Meridian Ave E (SR-161) Corridor	NEW	WSDOT widening project had the effect of isolating some properties on the east side of Meridian from adequate surface water drainage	Review existing infrastructure and identify properties with inadequae service, then develop plans for providing adequate service	Medium	Currently relying on new development project(s) to identify needs and establish conveyance	Collecting / conveying surface water from adjacent properties along the corridor, re-establishing natural drainage patterns, and sizing conveyance to accommodate growth	TBD
JC-3, JC-4	6, 27, 28	SW-3	Jovita Creek Regional Improvement Feasibility Study	TMDL / WQ Improvements, Regional Detention Evaluation, Slope Stability and Sediment Transport Prevention	PENDING	Uncontrolled stormwater runoff.	Prepare an Engineering Feasibility Study for design and construction of regional facilities to reduce peak flow rates and address TMDL in Jovita Creek, addressing basin-wide issues and identifying possible locations and impacts of development of a regional pond system.	Low	Need to identify a scope for evaluating this area and addressing TMDL requirements	Unlikely to proceed without neighboring agency participation	\$500,000
		SW-2	Mortenson Farm Regional Stormwater Improvements	WQ Improvements, Stream Channel Restoration, Regional Detention Evaluation, Wetland Enhancement, Passive Recreation	PENDING	Uncontrolled stormwater runoff can damage sensitive salmon bearing streams and wetlands.	Purchased in 2003 with Surface Water Funds, the site was identified for future stormwater quality enhancements and possible park use. WQ enhancement could improve the health of the Hylebos Creek watershed. Restoration of the stream channel will create salmon rearing and spawning habitat. Efforts could be made to increase base flows through wetland area enhancement, and restoration could include a passive trail or boardwalk.	Low	Waiting on coordination with other jurisdictions and potential partnership(s) with adjacent developing properties		\$1,250,000

SL-1, SL-2	4	SW-7	25th St. E. Drainage Improvements	Slope stability and drainage - Road is currently abandoned / closed	PENDING	Downhill erosion and sliding of roadway embankments cause road closures.	Work to be done to include catch basin and pipe installation, controlling and conveying road runoff safely to the bottom of the hill. This work is necessary in order to stabilize and repair historical slide damage, and prevent future slides along the route.	Low	Slope stability analysis underway by Grey & Osborne, performing routine mainenance activity in the interim, considering use of abandoned roadway for passive use trail.	This site is not an imminent threat to property or public.	\$200,000
WE-1, WE-3			Wapato Creek / Simon's Creek Ravine Drainage	Sediment transport and channel erosion (private property)	NO ACTION - MAYBE MONITOR?	Erosion in steep channel is depositing large sediment load at base of ravine.	Possible solutions include armoring the open channel, adding a buried pipe down the steep slope, or adding a detention vault or dry well in the basin above the slope to reduce runoff.	Low	No concerns identified during last two wet winters, keeping this on the list for future evaluation as needs arise.	Floodplain management. Future development feasibility and evaluation?	TBD
SC-4			Creek Bed Slippage (9608 29th St Ct E?)	Ravine wall erosion due to stream flows	NO ACTION TAKEN	Creek eroding ravine walls, threatening home?	Evaluate flow rates and energy dissipation feasibiliy	Low	Need to contact the adjacent land owners and evaluate needs, then prioritize a solution	Floodplain management. Future development feasibility and evaluation?	TBD
	30		SW Maint. Utility Storage Yard	Review needs and determine site for possible yard establishment	PENDING	Lack of a maintenance yard results in inefficiencies in conducting maintenance operations.	Conduct a study to determine required facility improvements and identify possible locations and costs.	Low	Work curently performed under conract by Pierce County, will look into establishing local yard as resources become available.		TBD
	33		FEMA Flood Study	Establish flood plain limits for closed depression areas in the city	PENDING	Floodplain Limits have not been established within the Closed depression regions of the City to allow for FEMA funding of improvements.	Conduct a flood study to determine FEMA Floodplain Limits.	Low	Recently adopted 2017 FEMA FIRMs, updated relevant sections of EMC to maintain eligibility - Closed Depression Basin Plan may lead into BFE determination		TBD

Note: Projects in green are studies or ptojects not related to a single location.

Former Project IDs											
1997 SWMP	2009 CIP	2017 CIP	Project Name	Description / Summary	Status	Problem Description	Project Description	Priority	City Needs and Next Steps (Narrative)	Notes	Budget Estimate
SLP-1, SLP-2	19		13th St E Sag Flooding	10410 13th St Ct E - Road drainage flooding adjacent property	PENDING	Road drainage flooding adjoining property.	Provide new catch basin and ACP berm across driveway frontage to depression area to the south using existing pipes.	High	Preparing to address with Spot Improvement Program		\$10,000
			Spot Improvements	10200 - 10400 block, 32nd St E	NEW	Shoulder and Culvert Improvements	Provide new catch basin over existing pipe, relieve seasonal flooding problem	High	Annual small project review and prioritization	Listed as possible Spot Improvement in Summer 2017 Newsletter	\$10,000
			Spot Improvements	Intersection of 24th St E & 122nd Ave E	NEW	Shoulder and Culvert Improvements		High	Annual small project review and prioritization	Listed as possible Spot Improvement in Summer 2017 Newsletter	\$5,000
			Spot Improvements	11100 - 11200 block, 24th St E	NEW	Shoulder and Culvert Improvements	G&O Design and Survey, new structures and buried conveyance along north shoulder	High	Annual small project review and prioritization	Partially listed as possible Spot Improvement in Summer 2017 Newsletter	\$50,000
EB-8, EB-9			108th Ave E Neighborhood (8th St E to 16th St E)	Elevated groundwater and seasonal flooding	STUDY IN PROGRESS	Property to west developed, and now runoff flows across property, creating a large pond. Runoff from 108th causing driveway erosion.	Perform design survey and preliminary engineering, for capital project cost estimating. Schedule TBD by further pothole evaluation.	Medium	Waiting on UIC Evaluation and Pilot Project in Edgewood Bowl to proceed	Preliminary Survey and Design Budget shown, listed as possible Spot Improvement in Summer 2017 Newsletter	\$20,000
		SW-1	City Drainage Infrastructure Program / Spot Improvements	16th St E at 122nd Ave E	PENDING	Shoulder and Culvert Improvements		Medium	Annual small project review and prioritization	Identified as part of the 2017 CIP Program, Listed as possible Spot Improvement in Summer 2017 Newsletter	\$15,000
		SW-1	City Drainage Infrastructure Program / Spot Improvements	94th Ave E (28th St Ct E to 32nd St E, Both Sides)	PENDING	Shoulder and Ditch Repair		Medium	Annual small project review and prioritization	Identified as part of the 2017 CIP Program, Listed as possible Spot Improvement in Summer 2017 Newsletter	\$25,000
	22		Residential Drainage Improvement	Erosion along school path on 36th St E	PENDING	Ditch and shoulder erosion from water sheeting across pathway due to lack of drainage.	stabilization for sides of ditch and install open-topped French drain.	Medium	Considering future year Spot Improvement Program implementation		\$10,000
		SW-1	City Drainage Infrastructure Program / Spot Improvements	West Side of 112th Ave E (south of 24th St E)	PENDING	Culvert and Ditch Improvements		Medium	Annual small project review and prioritization	Identified as part of the 2017 CIP Program, partially listed as Spot Improvement in Summer 2017 Newsletter	TBD
			Spot Improvements	12500 - 12700 block, 48th St E; 4200 - 4800 block, 127th Ave E	NEW	Shoulder and Culvert / Ditch Improvements		Medium	Annual small project review and prioritization	Listed as possible Spot Improvement in Summer 2017 Newsletter	TBD
NE-1			12th St E Drain	Erosion under road drain outlet at top of slope	NO ACTION TAKEN	Inadequate energy dissipation at outlet, signs of significant washouts in 2009 and 2013	Install energy dissipator, evaluate for piped slope drain feasibility	Medium	Need to contact adjacent land owners and evaluate needs, then prioritize solution		TBD
NE-2			1411 126th Ave E	Suspect erosion under outlet at top of slope	NO ACTION TAKEN	Possibly inadequate energy dissipation at outlet, no evidence of significant washouts in aerials, recent slide at toe	Install energy dissipator, evaluate for piped slope drain feasibility	Medium	Need to contact adjacent land owners and evaluate needs, then prioritize solution		TBD
	18	SW-1	16th St E Shoulder Erosion	Replace gravel shoulder west of 112th Ave E with paved shoulder	PENDING	Shoulder erosion and roadway flooding.	Provide paved shoulder between basins to confine flows to shoulder area.	Low	New subdivision pending nearby, may coordinate effort with project and/or Spot Improvement Program	Identified as part of the 2017 CIP Program, Listed as possible Spot Improvement in Summer 2017 Newsletter	\$2,000
	29		53rd St Ct E Outfall	Construct outfall to bottom of hill, following private road alignment (124th Ave Ct E)	PENDING	Inadequate capacity no defined outfall, shoulder, private road and hillside erosion.	Construct outfall to bottom of hill following the route of the private road.	Low	No concerns identified during last two wet winters, keeping this on the list for future evaluation as needs arise.		TBD
	9		Residential Drainage Improvement	12304 53rd St Ct E - Bank Erosion	NO ACTION TAKEN	Bank erosion.	Extended asphalt berm.	Low	No concerns identified during last two wet winters, keeping this on the list for future evaluation as needs arise.		TBD
	24		Yuma St Culvert Replacement	Culvert causing flooding on adjacent parcel near 90th Ave E	NO ACTION TAKEN	Inadequately sized culvert causing flooding of adjoining property.	Install new roadway crossing culvert.	Low	No concerns identified during last two wet winters, keeping this on the list for future evaluation as needs arise.		TBD
NE-3			Top O' Valley Subdivision (24th St E)	Suspect erosion under outlet at top of slope	NO ACTION TAKEN	Possibly inadequate energy dissipation at outlet, no evidence of significant washouts in aerials, recent slide at toe	Install energy dissipator, evaluate for piped slope drain feasibility	Low	Need to contact adjacent land owners and evaluate needs, then prioritize solution		TBD

CITY OF EDGEWOOD
STAFF REPORT
STUDY SESSION AGENDA ITEM: Stormwater Rates

Date: September 19, 2017

Title: Ordinance Amending Edgewood Municipal Code Section 13.10.070, Method of Calculating Service Charges, for the Surface Water Utility

Attachments: DRAFT Ordinance No. 17-0509
Financial Model Calculations by FCS Group

Submitted By: Jeremy Metzler, PE – Surface Water Program Manager

Approved For Agenda By: Daryl Eidinger, Mayor

Discussion: The Edgewood City Council establishes storm water rates charged for various land use classifications according to factors set forth in RCW 35.67.020(2) and (3), which are then adopted in the Edgewood Municipal Code. The City is required to impose uniform charges for the same class of customers or service and facilities furnished [RCW 35.67.020(2)]. In classifying customers served or service and facilities furnished by the storm water utility, the City may consider “the difference in cost of maintenance, operation, repair and replacement of various parts of the system,” and “any other matters which present a reasonable difference as a ground for distinction.”

During review and update of the City’s comprehensive Surface Water Management Plan (SWMP), staff has discovered the annual maintenance and operations budget exceeds the existing surface water fee revenue. The City’s consultant also identified a significant inequity between the commercial and residential rates: the commercial and industrial rate is currently 25% of the residential rate, while these uses typically impose higher costs on surface water utility maintenance and operations. See Fiscal Impact for more information.

Upon review of existing storm water rates and operating budget, the City’s consultant has recommended the increases to various service classifications shown on the attached ordinance to close the maintenance and operations deficit. However, please note that the utility will be unable to consider capital investments without future increases in Fiscal Year 2019 and beyond, as shown in the attached calculations.

Recommendation: Forward ordinance for First Reading at next Regular Council Meeting

Fiscal Impact: The current surface water fee rate results in a fee-to-expense deficit of nearly \$200,000 annually. By modifying the commercial / industrial use rate to be equal to residential uses, we are able to reduce this deficit by \$100,000 to \$150,000 annually. Please note this proposal does not include the consultant’s recommended base rate (residential equivalent) increase of 35% for FY 2018.

ORDINANCE NO. 17-0509

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF EDGEWOOD, WASHINGTON, ADJUSTING THE SURFACE WATER UTILITY ANNUAL SERVICE CHARGE FOR THE “OTHER” CLASSIFICATION OF SERVICE TO MATCH THE “MULTIFAMILY” CLASSIFICATION, IN ORDER TO ADDRESS A DEFICIT IN THE ONGOING MAINTENANCE AND OPERATIONS BUDGET FOR THE UTILITY, TO BE EFFECTIVE AS OF JANUARY 1, 2018, AMENDING EDGEWOOD MUNICIPAL CODE SECTION 13.10.070, AND ESTABLISHING AN EFFECTIVE DATE.

WHEREAS, the City of Edgewood has “full jurisdiction and authority to manage, regulate and control” its storm water utility (RCW 35.67.020(1)); and

WHEREAS, the City has the authority to fix, alter, regulate and control the rates and charges associated with the storm water utility, which charges must be uniform for the same class of customers of service and facilities furnished, taking into account the factors identified in state law (RCW 35.67.020(2)); and

WHEREAS, the City has established a storm drainage and surface water management utility, and has codified regulations pertaining thereto at Chapter 13.10 EMC; and

WHEREAS, Pierce County collects storm water charges for the City, as directed and authorized by the mayor through an established interlocal agreement, and designates each property by one of the eight (8) categories defined in EMC 13.10.070; and

WHEREAS, the City is updating its capital improvement and comprehensive plans for the maintenance, repair, replacement, and new construction of storm water projects which are paid for by the revenue from storm water charges; and

WHEREAS, in review of said plan updates, the City has discovered a deficit in the ongoing maintenance and operations budget for its surface water management utility; and

WHEREAS, the City recognizes that said utility cannot consider capital project spending while said budget deficit exists; and

WHEREAS, the City desires to adjust the annual service charge to immediately address said maintenance and operations budget deficit; and

WHEREAS, on September 19, 2017 and **October 3, 2017**, the City Council considered this ordinance during a study session; and

WHEREAS, on September 26, 2017, the City Council held a first reading of this ordinance during its regular City Council meeting; and

WHEREAS, on **September 26, 2017**, the City Council held a public hearing on this ordinance, after proper notice was sent out to the public; and

WHEREAS, on **October 10, 2017**, the City Council considered the adoption of this ordinance during a second reading, which was held during a regular City Council meeting;

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF EDGEWOOD, WASHINGTON, DOES ORDAIN AS FOLLOWS:

Section 1. Findings. The recitals above are hereby adopted as legislative findings in support of this ordinance. The City Council further adopts by reference the staff report dated September 19, 2017, and agenda bill dated September 26, 2017 as additional findings.

Section 2. Section 13.10.070 amended. Section 13.10.070 of the Edgewood Municipal Code is hereby amended to read as follows:

13.10.070 PCC ~~11.02.050(A)~~ amended— Method of calculating service charges. An annual service charge schedule is hereby established for all areas of the city.

A. Annual service charges for all parcels within the city are as follows:

1. Residential: \$159.00.
2. Duplex: \$205.10.
3. Multifamily: \$0.06022 per square foot of impervious area.
4. All mobile homes other than subsection (A)(1) of this section: “\$159.00 x 55 percent” (\$87.45) per vacant or occupied mobile home site (mobile home equivalent).
5. Vacant/undeveloped: \$0.80/acre, but in no case shall the minimum service charge be less than \$40.00/parcel.
6. Forest and timber land: \$40.00 per parcel, ~~plus \$0.008/acre~~ on lands classified as forest lands under Chapters 84.33 and 84.34 RCW.
7. State, county and federal public highways: \$0.01805 per square foot of impervious area.
8. All parcels other than subsections (A)(1) through (7) of this section: ~~\$0.015055~~ \$0.06022 per square foot of impervious area.

B. Credit Program. Sites that utilize rainwater harvesting systems, which retain stormwater on-site for later non-potable use, are eligible for a 10 percent credit. To qualify for a service charge credit, the following must be completed before June 1 of the year preceding the year for which the owner is requesting credit:

1. Credit may be applied to all categories listed in EMC 13.10.070 A, except for items 5, 6, and 7. Newly developed properties must fully complete the development process in accordance with EMC 13.05 before applying for a credit.

2. To qualify for a credit, the Owner of Record shall provide the City the following documentation, each stamped and signed by the Owner's Engineer, that all storm drainage systems serving the entire site are fully compliant with the current requirements for storm water control, both water quantity and water quality, in EMC 13.05:
 - a. Engineering calculations, demonstrating they are properly sized for their intended use and have a capacity of at least 1,500 gallons per structure; and
 - b. "As Constructed Plans"; and
 - c. Maintenance and Operations Manual for all drainage facilities, including applicable source control BMPs.
3. Once accepted into the credit program, a system will remain eligible for a credit for a period of five years, even if the requirements in Title 13 EMC change, assuming the system is not modified, continues to function as designed, and is adequately maintained.

C. The annual service charge credit will be calculated by multiplying the annual service charge by the applicable credit percentage when all of the conditions established for a service charge credit have been met.

D. The annual service charge shall be calculated and collected as described in PCC 11.02.050 (E), as adopted by Pierce County Ordinance 2016-72s.

Section 3. Rates Effective. The rates described herein shall take effect and be in full force for fees collected beginning January 1, 2018.

Section 4. Severability. Should any section, paragraph, sentence, clause or phrase of this Code, or its application to any person or circumstance, be declared unconstitutional or otherwise invalid for any reason or should any portion of this Code be pre-empted by state or federal law or regulation, such decision or preemption shall not affect the validity of the remaining portions of this Code or its application to other persons or circumstances.

Section 5. Effective Date. A summary of this Ordinance consisting of its title shall be published in the official newspaper of the City, and shall take effect and be in full force five (5) days after the date of publication.

ADOPTED BY THE CITY COUNCIL ON THE 10TH DAY OF OCTOBER, 2017.

Daryl Eidinger, Mayor

ATTEST:

Rachel Pitzel, City Clerk

APPROVED AS TO FORM:

Carol Morris, City Attorney

Date Published: September 28, 2017

Ordinance Effective Date: October 3, 2017

City of Edgewood
Utility Rate Study: Surface Water Utility
Current and Projected Rate Schedule

Table 1: 2018 Rate Projection

Table 1: 2018 Rate Projection					Rate Increase	Current Structure				Re-balanced Commercial Rates				
					60.00%					34.62%	Goal seek setting cell O21 to J21 by changing M6			
Customer Class	Customer Description	Fee Component	2017 Rates by Customer Class ¹		2017 Calculated	2018				% Rate Increase over 2017	2018			
			2017 Accounts	2017 Fee Revenue	Estimated Rates	2018 Accounts	2018 Fee Revenue	Estimated Rates	2018 Accounts		2018 Fee Revenue	% Rate Increase over 2017		
1	RESIDENTAL	Parcel	\$159.00	3,351	532,757	\$254.00	3,686	936,178	60%		\$214.00	3,686	788,749	34.59%
2	DUPCONDO	Parcel	\$102.55	30	3,074	\$164.00	30	4,929	60%		\$138.00	30	4,147	34.57%
2a	DUPLEX	Parcel	\$205.10	127	26,142	\$328.00	128	41,912	60%		\$276.00	128	35,267	34.57%
3	MULTI	Impervious Cover	\$0.060220	313,230	18,863	\$0.09635	314,014	30,255	60%		\$0.081070	314,014	25,457	34.62%
4	MHP (85 MH sites)	Units	\$87.45	85	7,443	\$139.92	85	11,939	60%		\$117.73	85	10,045	34.63%
4	MHP (85 MH sites)	Impervious Cover	\$0.060220	86,214	5,192	\$0.09635	86,430	8,328	60%		\$0.081070	86,430	7,007	34.62%
5	VACANT	Parcel	\$40.00	526	21,025	\$64.00	527	33,725	60%		\$54.00	527	28,455	35.00%
5	VACANT	Acre	\$0.008000	0	0	\$0.01280	0	0	60%		\$0.010770	0	0	34.63%
6	FOREST	Parcel	\$40.00	4	160	\$64.00	4	256	60%		\$54.00	4	216	35.00%
6	FOREST	Acre	\$0.008000	0	0	\$0.01280	0	0	60%		\$0.010770	0	0	34.63%
7	ROADS	Impervious Cover	\$0.018050	0	0	\$0.02888	0	0	60%		\$0.024300	0	0	34.63%
8	ALLOTHER	Parcel	\$39.75	52	2,073	\$63.60	52	3,324	60%		\$53.51	52	2,797	34.62%
8	ALLOTHER	Impervious Cover	\$0.015055	2,977,110	44,820	\$0.02409	2,984,553	71,898	60%		\$0.081070	2,984,553	241,958	438.49%
Total					661,550	1,142,744					1,144,099			

City of Edgewood
Utility Rate Study: Surface Water Utility
Summary

Combined Operating and Capital Activity	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Annual Rate Increases: Above Currently Adopted Rates	0.00%	60.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Combined Beginning Fund Balance	\$ 696,250	\$ 204,481	\$ 239,170	\$ 405,228	\$ 537,153	\$ 659,220	\$ 770,716	\$ 870,892	\$ 958,961	\$ 1,034,100
Rate Revenues (Before Rate Increases)	661,550	715,148	744,772	757,402	770,280	783,409	796,795	810,443	824,358	838,546
System Development Charge Revenue	-	-	-	-	-	-	-	-	-	-
Other Revenues	56,299	28,381	29,312	5,389	6,708	7,929	9,044	10,046	10,926	11,678
Rate Revenues: Additional from Rate Increases	-	429,089	446,863	454,441	462,168	470,045	478,077	486,266	494,615	503,127
Grants	-	-	-	-	-	-	-	-	-	-
Other Debt Proceeds	-	-	-	-	-	-	-	-	-	-
Revenue Bond Net Proceeds	-	-	-	-	-	-	-	-	-	-
Total Resources	1,414,099	1,377,099	1,460,117	1,622,461	1,776,308	1,920,603	2,054,631	2,177,646	2,288,860	2,387,451
Baseline Operating Expenditures	(877,278)	(911,329)	(938,189)	(965,109)	(993,282)	(1,022,367)	(1,052,394)	(1,083,398)	(1,115,416)	(1,148,483)
Existing Debt Service	-	-	-	-	-	-	-	-	-	-
New Debt Service	-	-	-	-	-	-	-	-	-	-
Additions to Reserve Requirement	-	-	-	-	-	-	-	-	-	-
Capital Projects	(332,340)	(226,600)	(116,699)	(120,200)	(123,806)	(127,520)	(131,346)	(135,286)	(139,345)	(143,525)
Total Expenditures	(1,209,618)	(1,137,929)	(1,054,888)	(1,085,309)	(1,117,088)	(1,149,887)	(1,183,740)	(1,218,685)	(1,254,761)	(1,292,008)
Ending Fund Balance	\$ 204,481	\$ 239,170	\$ 405,228	\$ 537,153	\$ 659,220	\$ 770,716	\$ 870,892	\$ 958,961	\$ 1,034,100	\$ 1,095,443
Combined Minimum Target Balance	887,342	897,554	908,996	918,498	928,378	938,577	949,105	959,974	971,196	982,785
Ending Total Days of Operating Expenditures	85	96	158	203	242	275	302	323	338	348
Operating + Capital Fund Check	-	-	-	-	-	-	-	-	-	-

High Level Summary	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Annual Rate Increases: Above Currently Adopted Rates	n/a	60.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Operating Reserve										
Beginning Balance	\$ 296,250	\$ 132,821	\$ 297,499	\$ 308,358	\$ 317,259	\$ 326,521	\$ 336,082	\$ 345,953	\$ 356,145	\$ 366,671
Total Operating Revenues	713,849	1,171,901	1,220,947	1,216,264	1,236,957	1,258,056	1,279,569	1,301,505	1,323,871	1,346,677
Total Operating Expenditures & System Reinvestment	(877,278)	(911,329)	(938,189)	(965,109)	(993,282)	(1,022,367)	(1,052,394)	(1,083,398)	(1,115,416)	(1,148,483)
Operating Surplus: Transfers to Capital Reserve	-	(95,894)	(271,899)	(242,255)	(234,412)	(226,128)	(217,304)	(207,914)	(197,930)	(187,323)
Ending Reserve Balance	132,821	297,499	308,358	317,259	326,521	336,082	345,953	356,145	366,671	377,541
Minimum Target Balance	288,420	297,499	308,358	317,259	326,521	336,082	345,953	356,145	366,671	377,541
Capital Reserve										
Beginning Balance	\$ 400,000	\$ 71,660	\$ (58,330)	\$ 96,870	\$ 219,894	\$ 332,699	\$ 434,634	\$ 524,939	\$ 602,816	\$ 667,429
Total Capital Inflows	4,000	96,610	271,899	243,223	236,611	229,455	221,650	213,163	203,958	193,997
Total Capital Expenditures	(332,340)	(226,600)	(116,699)	(120,200)	(123,806)	(127,520)	(131,346)	(135,286)	(139,345)	(143,525)
Ending Reserve Balance	71,660	(58,330)	96,870	219,894	332,699	434,634	524,939	602,816	667,429	717,901
Minimum Target Balance	598,921	600,054	600,638	601,239	601,858	602,496	603,152	603,829	604,525	605,243
Debt Reserve	-	-	-	-	-	-	-	-	-	-
Total Operating, Capital, and Debt Reserves	204,481	239,170	405,228	537,153	659,220	770,716	870,892	958,961	1,034,100	1,095,443
Operating Fund Check	-	-	-	-	-	-	-	-	-	-
Capital Fund Check	-	-	-	-	-	-	-	-	-	-

City of Edgewood
Utility Rate Study: Surface Water Utility
Summary

Operating Reserve Summary	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Summary of Existing Operations Before Rate Increases										
Rate Revenues Under Existing Rates	\$ 661,550	\$ 715,148	\$ 744,772	\$ 757,402	\$ 770,280	\$ 783,409	\$ 796,795	\$ 810,443	\$ 824,358	\$ 838,546
SDC Revenue Towards Debt Service	-	-	-	-	-	-	-	-	-	-
Non-Rate Revenues	52,299	27,665	29,312	4,420	4,509	4,602	4,697	4,796	4,898	5,003
Total Revenues	713,849	742,813	774,084	761,823	774,789	788,011	801,492	815,239	829,256	843,549
Total Expenditures	(877,278)	(904,893)	(942,345)	(967,193)	(995,612)	(1,024,877)	(1,055,094)	(1,086,297)	(1,118,522)	(1,151,807)
Cash Surplus / (Deficiency) Before Rate Increases	\$ (163,429)	\$ (162,080)	\$ (168,261)	\$ (205,370)	\$ (220,823)	\$ (236,866)	\$ (253,602)	\$ (271,058)	\$ (289,266)	\$ (308,257)
Annual Rate Increase		60.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Cumulative Rate Increase		60.00%	60.00%	60.00%	60.00%	60.00%	60.00%	60.00%	60.00%	60.00%
Revenues After Rate Increases										
Rate Revenues (Before Rate Increases)	\$ 661,550	\$ 715,148	\$ 744,772	\$ 757,402	\$ 770,280	\$ 783,409	\$ 796,795	\$ 810,443	\$ 824,358	\$ 838,546
Additional Revenue from Rate Increases	-	429,089	446,863	454,441	462,168	470,045	478,077	486,266	494,615	503,127
SDC Revenue Towards Debt Service	-	-	-	-	-	-	-	-	-	-
Other Revenues & Interest	52,299	27,665	29,312	4,420	4,509	4,602	4,697	4,796	4,898	5,003
Total Revenues With Rate Increases	\$ 713,849	\$ 1,171,901	\$ 1,220,947	\$ 1,216,264	\$ 1,236,957	\$ 1,258,056	\$ 1,279,569	\$ 1,301,505	\$ 1,323,871	\$ 1,346,677
Expenses & Transfers										
Cash Operating Expenses	\$ 877,278	\$ 904,893	\$ 931,486	\$ 958,292	\$ 986,350	\$ 1,015,316	\$ 1,045,223	\$ 1,076,104	\$ 1,107,997	\$ 1,140,936
Existing Debt Service	-	-	-	-	-	-	-	-	-	-
New Debt Service	-	-	-	-	-	-	-	-	-	-
System Reinvestment Funding	-	-	-	-	-	-	-	-	-	-
Additional Taxes After Rate Increase	-	6,436	6,703	6,817	6,933	7,051	7,171	7,294	7,419	7,547
Additions to Debt Reserve	-	-	-	-	-	-	-	-	-	-
Transfer of Surplus to Capital	-	95,894	271,899	242,255	234,412	226,128	217,304	207,914	197,930	187,323
Total Expenses	\$ 877,278	\$ 1,007,223	\$ 1,210,088	\$ 1,207,364	\$ 1,227,695	\$ 1,248,495	\$ 1,269,698	\$ 1,291,312	\$ 1,313,345	\$ 1,335,806
Additions / (Subtractions) to Operating Reserve	(163,429)	164,678	10,859	8,901	9,262	9,561	9,871	10,193	10,525	10,871
Impacts to Operating Reserve										
Beginning Operating Balance	\$ 296,250	\$ 132,821	\$ 297,499	\$ 308,358	\$ 317,259	\$ 326,521	\$ 336,082	\$ 345,953	\$ 356,145	\$ 366,671
Net Cash Flow After Transfers to Capital	(163,429)	164,678	10,859	8,901	9,262	9,561	9,871	10,193	10,525	10,871
Ending Operating Balance	\$ 132,821	\$ 297,499	\$ 308,358	\$ 317,259	\$ 326,521	\$ 336,082	\$ 345,953	\$ 356,145	\$ 366,671	\$ 377,541
Minimum Target Balance: 120 days	\$ 288,420	\$ 297,499	\$ 308,358	\$ 317,259	\$ 326,521	\$ 336,082	\$ 345,953	\$ 356,145	\$ 366,671	\$ 377,541
Net Cash Flow After Rate Increase	(163,429)	260,572	282,758	251,155	243,674	235,689	227,175	218,106	208,455	198,194
Coverage After Rate Increase: Bonded Debt	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Coverage After Rate Increase: Total Debt	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Operating Fund Check	-	-	-	-	-	-	-	-	-	-

City of Edgewood
Utility Rate Study: Surface Water Utility
Summary

Capital Reserve Summary	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Beginning Capital Balance	\$ 400,000	\$ 71,660	\$ (58,330)	\$ 96,870	\$ 219,894	\$ 332,699	\$ 434,634	\$ 524,939	\$ 602,816	\$ 667,429
Total System Reinvestment	\$ -	\$ 95,894	\$ 271,899	\$ 242,255	\$ 234,412	\$ 226,128	\$ 217,304	\$ 207,914	\$ 197,930	\$ 187,323
Capital Grants / Contributions / Other Resources	-	-	-	-	-	-	-	-	-	-
SDC Revenue Towards Capital	-	-	-	-	-	-	-	-	-	-
Net Debt Proceeds Available for Projects	-	-	-	-	-	-	-	-	-	-
Interest Earnings	4,000	717	-	969	2,199	3,327	4,346	5,249	6,028	6,674
Capital Project Expenditures	\$ (332,340)	\$ (226,600)	\$ (116,699)	\$ (120,200)	\$ (123,806)	\$ (127,520)	\$ (131,346)	\$ (135,286)	\$ (139,345)	\$ (143,525)
Ending Capital Balance	\$ 71,660	\$ (58,330)	\$ 96,870	\$ 219,894	\$ 332,699	\$ 434,634	\$ 524,939	\$ 602,816	\$ 667,429	\$ 717,901
Minimum Target	\$ 598,921	\$ 600,054	\$ 600,638	\$ 601,239	\$ 601,858	\$ 602,496	\$ 603,152	\$ 603,829	\$ 604,525	\$ 605,243

Capital Fund Check

- - - - - - - - - - -

Ending Reserve Balances	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Actual Ending Reserves										
Operating Reserve	\$ 132,821	\$ 297,499	\$ 308,358	\$ 317,259	\$ 326,521	\$ 336,082	\$ 345,953	\$ 356,145	\$ 366,671	\$ 377,541
Capital Reserve	71,660	(58,330)	96,870	219,894	332,699	434,634	524,939	602,816	667,429	717,901
Debt Reserve	-	-	-	-	-	-	-	-	-	-
	\$ 204,481	\$ 239,170	\$ 405,229	\$ 537,153	\$ 659,220	\$ 770,716	\$ 870,892	\$ 958,961	\$ 1,034,100	\$ 1,095,443
Minimum Target Reserves										
Operating Reserve	\$ 288,420	\$ 297,499	\$ 308,358	\$ 317,259	\$ 326,521	\$ 336,082	\$ 345,953	\$ 356,145	\$ 366,671	\$ 377,541
Capital Reserve	598,921	600,054	600,638	601,239	601,858	602,496	603,152	603,829	604,525	605,243
Debt Reserve	-	-	-	-	-	-	-	-	-	-
	\$ 887,342	\$ 897,554	\$ 908,996	\$ 918,498	\$ 928,378	\$ 938,577	\$ 949,105	\$ 959,974	\$ 971,196	\$ 982,785

Debt Management	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Debt Service Coverage										
Bonded Debt (1.25 to 2.0)	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
All Debt (Above 1.0)	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Debt Service Load (<= 25% very strong)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Formula: (Debt Service ÷ Rate Revenues)										



CITY OF EDGEWOOD
REQUEST FOR COUNCIL ACTION
Study Session Staff Report: Mortenson Farm Demolition

Date: September 19, 2017

Title: Mortenson Farm Demolition

Attachments: Mortenson Farm Demolition Call for Bids 2012 and 3-Kings Proposal/Bid 2017

Submitted By: Aaron Nix, ACA-Municipal Services

Approved For Agenda By: Daryl Eiding, Mayor

Discussion: The City had a comprehensive request for proposal study done in 2012 including the environmental evaluation that illuminated the need for asbestos abatement in the Farm House at the Mortenson Farm Property. The City accepted a bid from the MRSC small works roster in 2017 for asbestos abatement that was part of the matrix within the bonding agent utilized in the placement of the tile work within the master bath of the original farm house. This work has been completed. The Mayor managed the contract and is very pleased with the result and the work by 3 Kings Environmental. We are ready to move forward with the rest of the demolition work.

During the abatement work, the Mayor asked staff from 3 Kings if they would be interested in doing the demolition work and requested a bid. This bid has been included within the packet material as a discussion item, as funds need to be allocated to this budget line item in order to do this work.

Recommendation: Direct the Mayor and Staff to make the appropriate modifications to the budget in order to allow for the demolition work at the Mortenson Farm to proceed and get this work completed.

Fiscal Impact: \$30,000 of Real Estate Excise Tax Funds

Bonnie Valens

From: Bonnie Valens
Sent: Thursday, May 10, 2012 2:02 PM
To: Bonnie Valens
Subject: Edgewood Requests Demo Quotes for House and Outbuilding(s)

Follow Up Flag: Follow up
Flag Status: Flagged

Categories: Yellow Category

The City of Edgewood is seeking quotes for the demolition of a main house site and shop, including immediate surrounding out buildings. We would also like to receive as a separate additional option to remove two outlying barns. The property is located at 2417 Freeman Road. You are welcome to enter the property without being accompanied by City staff for the purpose of estimating the cost for the project. This project is not on the fast track, but we would appreciate receiving quotes within the next few weeks.

For more information, please contact Public Works Director Joe Seet you can email him at joe@cityofedgewood.org or by phone at 253.952.3299. Thank you for your interest!

Bonnie Valens
Administrative Services Manager
City of Edgewood
2224 104th Ave E
Edgewood WA 98372-1513

Ph: 253.952.3299

Fx: 253.952.3537

Web: www.cityofedgewood.org



Please consider the environment before printing this email



September 14, 2017

To: Dave Gray
City of Edgewood
2221 Meridian Ave E
Edgewood, WA 98372

Proposal #217105

RE: **Mortenson Farm – Structure Demolition**
2417 Freeman Rd. Edgewood, WA 98372

Mr. Gray,

Thank you for the opportunity to submit a proposal for the structure demolition for the above mentioned project.

3 Kings Environmental Inc. will provide labor, materials, equipment, and disposal to perform the following:

- 1) Perform the removal and disposal of the single family home and adjacent garage structure. Price includes cleaning up debris immediately around the home. Area will be graded smooth and safety slope edges using existing native soils onsite. Price includes 1 sewer cap near the right away.

Price \$23,400.00

- 2) Seed and Straw placement over disturbed soils.

Price \$1,500.00

Proposal exclusions

State taxes or fees, bonds, engineering, more than 1 mobilization, salvage, work area to be clear and free of all furnishings/ debris, temp controls and facilities, any repairs or replacement of disturbed materials, private or publicly installed utilities, backfill or site grading other than listed above, erosion control, seed or straw placement unless selected above, unforeseen conditions not normally found in this type of construction. This proposal is to become a part of the contract. In case of any conflict between the terms of this proposal and those of the bid documents in this contract, the terms of this proposal control and supersede the terms contained in the bid or contract documents.

If you have any questions feel free to contact me.

Thank You,

Jason Hawks

3 Kings Environmental, Inc.

Seattle Division VP

Mobile: 360-949-5822

Phone: 360-666-5464

Email: jhawks@3kingsinc.com