

**SULTAN CITY COUNCIL**

**AGENDA ITEM COVER SHEET**

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**ITEM NO:** Presentation - 1

**DATE:** August 26, 2010

**SUBJECT:** Round - About – US 2 and Rice Road

**CONTACT PERSON:** Connie Dunn, Public Works Director 

**PRESENTERS:** Lorena Eng, Regional Administrator, WSDOT, Northwest Region  
Cathy George, Engineering Manager  
Mike Swires, Snohomish Area Traffic Engineer  
Sharif Shaklawun, Design Project Engineer

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**US 2 Rice Road/339<sup>th</sup> Avenue SE Intersection**

**ISSUE:**

The issue before the Council is a presentation by Washington Department of Transportation (WSDOT) for a roundabout on US 2 at Rice Road.

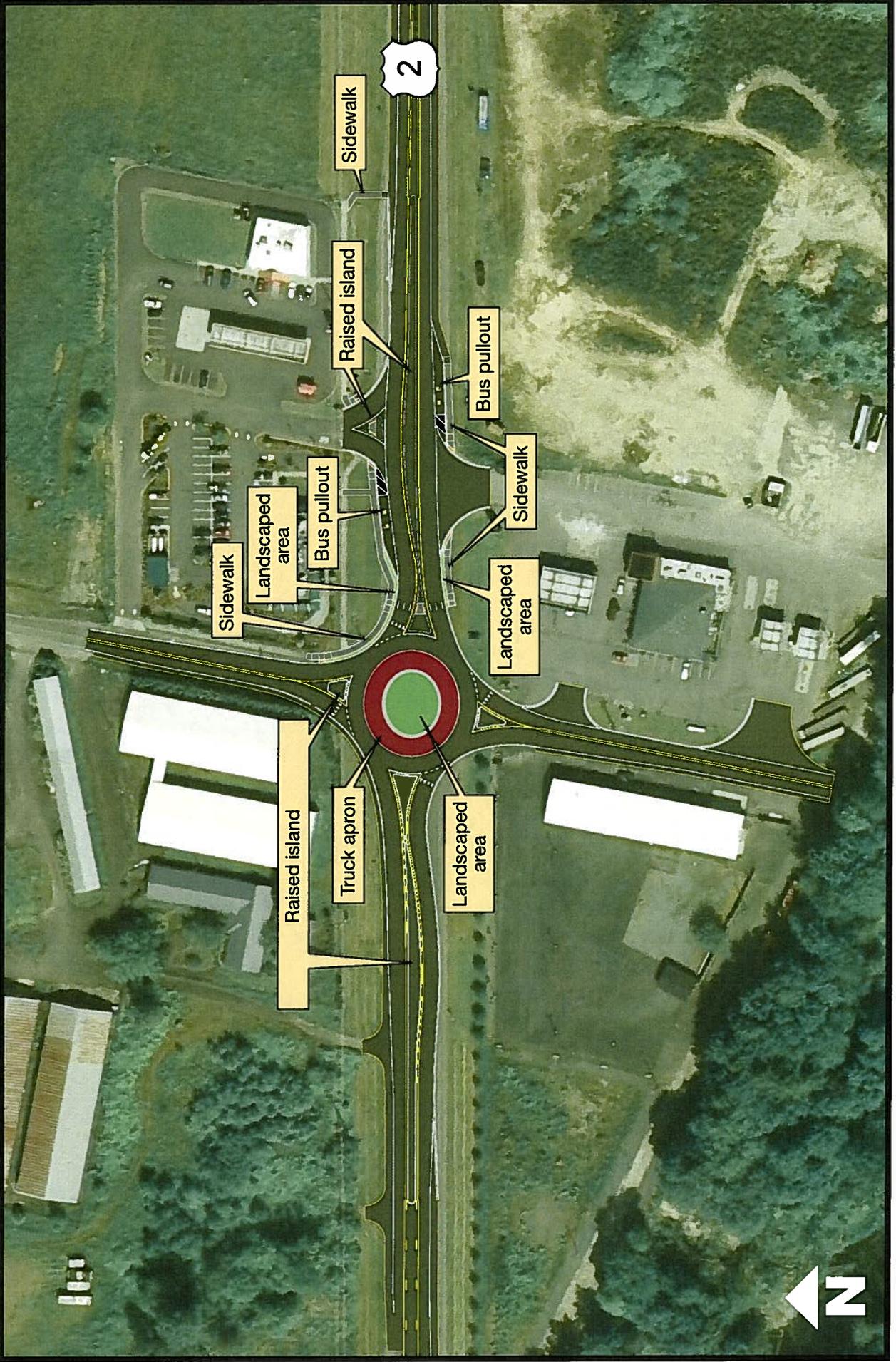
**SUMMARY:**

This intersection was the site of a fatal collision in February 2010. WSDOT's review following the collision showed that drivers are making high-risk movements through and near the intersection. A roundabout will help control traffic flow through the intersection and reduce potential conflict points for turning drivers.

WSDOT will discuss the proposed roundabout at this intersection and how this improvement will address the safety and access issues at this intersection.

**ATTACHMENTS:**

Attachment A	Draft Roundabout Design
Attachment B	FAQ's Roundabouts
Attachment C	Setting Speed Limits



2

Sidewalk

Raised island

Bus pullout

Sidewalk

Bus pullout

Landscaped area

Sidewalk

Landscaped area

Truck apron

Raised island

Landscaped area





## US 2 Safety Improvements – Rice Road Roundabout – Common Questions

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We are designing a single-lane roundabout at the intersection of US 2 and Rice Road in Sultan. The roundabout will help control traffic flow through the intersection and reduce potential conflict points for turning drivers.

### **How do roundabouts compare to signalized intersections?**

Studies have shown that roundabouts are safer than traditional stop sign or signal-controlled intersections.

There are several reasons why roundabouts help reduce the likelihood and severity of collisions:

- **Low travel speeds** – Drivers must slow down and yield to traffic before entering a roundabout. Speeds in the roundabout are typically between 15 and 20 miles per hour. The few collisions that occur in roundabouts are typically minor and cause few injuries since they occur at such low speeds.
- **No light to beat** – Roundabouts are designed to promote a continuous, circular flow of traffic. Drivers need only yield to traffic before entering a roundabout; if there is no traffic in the roundabout, drivers are not required to stop. Because traffic is constantly flowing through the intersection, drivers don't have the incentive to speed up to try and "beat the light," like they might at a traditional intersection.
- **One-way travel** – Roads entering a roundabout are gently curved to direct drivers into the intersection and help them travel counterclockwise around the roundabout. The curved roads and one-way travel around the roundabout eliminate the possibility for T-bone and head-on collisions.

### **How do roundabouts improve traffic flow?**

Contrary to many peoples' perceptions, roundabouts actually move traffic through an intersection more quickly, and with less congestion on approaching roads. Roundabouts promote a continuous flow of traffic. Unlike intersections with traffic signals, drivers don't have to wait for a green light at a roundabout to get through the intersection. Traffic is not required to stop – only yield – so the intersection can handle more traffic in the same amount of time.

While building a roundabout on US 2 at Rice Road will help simplify traffic flow through Sultan, it will not eliminate the congestion that drivers currently experience on the corridor. Drivers should still expect to see backups on busy holiday weekends and other peak travel periods.

### **Who can use a roundabout?**

Modern roundabouts are designed to accommodate vehicles of all sizes, including emergency vehicles, buses, and truck and trailer combinations. We are designing this roundabout with a truck apron – a raised section of pavement around the central island that provides extra space for large vehicles. The back wheels of the oversize vehicle can ride up on the truck apron so the truck can easily complete the turn, while the raised portion of concrete discourages use by smaller vehicles.



### **Why is WSDOT building a one-lane roundabout rather than a two-lane roundabout?**

When designing a roundabout, we look at several factors to ensure that the roundabout will operate efficiently and safely. We analyze collision history, the types of vehicles using the intersection, how the intersection operates, and current and project traffic volumes.

We've looked at projected traffic volumes on this stretch of US 2 for the next 20 years, assuming substantial development in Sultan. A single-lane roundabout is appropriate for current and projected traffic volumes. A two-lane roundabout would provide too much unused roadway capacity, which could encourage risky and aggressive driving behaviors.

### **Why isn't WSDOT installing a traffic signal, even temporarily?**

Traffic engineers follow specific, uniform guidelines to determine whether a traffic signal is necessary and will be an effective traffic control tool. These nationally-adopted guidelines include criteria such as traffic volumes, pedestrian volumes, school crossings, collision history and other factors. The US 2 and Rice Road intersection does not meet the guidelines for a traffic signal. In fact, a traffic signal could increase delay and the risk of collisions at this intersection.

Traffic signals only make traffic flow smoother and safer when used in proper situations. Signals cause traffic to stop where it may not have had to stop before, which can increase rear-end collisions. When used at an intersection where not justified, signals can cause frustration in drivers, who then seek alternate routes. These routes usually are not built to handle increased traffic flow. In addition, drivers frustrated by unnecessarily long waits at signals may begin to disobey the law.

Traffic signals can also cause delays that didn't exist before. In fact, minor side street traffic may experience excessive delay, particularly during off-peak hours. Because of this, drivers may actually avoid the signalized intersection and switch to alternate routes or, to residential streets not designed to handle through traffic.

### **Why isn't WSDOT lowering the speed limit on US 2, even temporarily?**

Lowering the speed limit at US 2 and Rice Road would not be a safe or effective change. Speed limits are based on the 85th percentile speed – that is, the speed that 85 out of 100 vehicles travel at or below. We know from our own experience and from national studies that people will not automatically drive slower when the speed limit is lowered. In fact, our data shows that roadways with speed limits set at the 85th percentile speed have fewer collisions.

Our recent speed study shows that the 85th percentile speed between Sultan-Basin Road and Sultan-Startup Road is 50 mph, which is the posted speed limit. The 85th percentile speed is based on the principle that reasonable drivers will consider road conditions when selecting their speed of travel. This stretch of highway is fairly straight, provides good sight distance, and has few driveways and little roadside development. Drivers are complying with the current speed limit because they feel comfortable traveling at that speed given the existing road conditions.



Lowering the speed limit on US 2 in Rice Road could have the unintended effect of increasing collisions. Some drivers would comply with the lower speed limit and others would not, resulting in a dangerous mix of slow-moving and fast-moving vehicles.

**What about adding additional law enforcement resources to enforce a lower speed?**

The solution is not to change the posted speed limit to an unjustifiably low speed and then expect law enforcement to control violators through constant monitoring. Our goal is to set realistic speed limits, based on the 85th percentile speed and roadway conditions. Realistic speed limits are better for drivers, better for law enforcement, and better for WSDOT.



State law sets Washington's basic speed law, as well as the maximum speed limits for state highways, county roads and city streets. The law also authorizes agencies to raise or lower these maximum speed limits, when supported by an engineering and traffic investigation.

## Setting speed limits

Setting speed limits is a technical science backed by many years of research and experience on what works and doesn't work to keep traffic safely moving. We often hear from citizens who feel that a change in the posted speed limit will help improve safety on a specific highway. Safety is always our highest concern; however, our data and experience show that lowering speed limits does not always lead to safer roadways.

### The "85th percentile speed"

Research and experience have shown that effective speed limits are those that the majority of motorists naturally drive, and that raising and lowering speed limits doesn't substantially influence that speed. Speed limits are determined by what engineers call the "85th percentile speed," or the speed that 85 out of 100 vehicles travel at or below.

The 85th percentile speed is based on the principle that reasonable drivers will consider road conditions when selecting their speed of travel. This method is based on several fundamental concepts that have proven true over the years:

- The majority of motorists drive in a safe and reasonable manner
- The normally careful and competent actions of a reasonable person should be considered to be legal
- Laws are established for the protection of the public and the regulation of unreasonable behavior of a few individuals
- Laws cannot be effectively enforced without the consent and voluntary compliance of the majority

Engineers also consider other factors when setting speed limits, including roadway characteristics, roadside development and lighting, parking practices, collisions rates, and traffic volume trends.

### But if you lower the speed limits, won't people drive slower?

The answer is no. People also won't automatically drive faster when the speed limit is raised. These are common misconceptions, along with the mistaken belief that speed limit signs will decrease the collision rate and that highways with posted speed limits are safer than those without posted speed limit signs.

Again, our experience shows that most drivers base their speed of travel on current road conditions. Studies have consistently shown that there are no significant changes in the 85th percentile speed when speed limits are modified.

### What if the majority of drivers are going too fast?

Highways are more dangerous when drivers are traveling at varying speeds. We set speed limits at the 85th percentile speed to reduce the range of speeds. This means more vehicles are traveling at or near the same speed, with fewer vehicles traveling at extremely high or low speeds.

Our data shows that roadways with speed limits set at the 85th percentile speed have fewer collisions than roads where the posted speed limit is above or below what the majority of drivers naturally travel.



## Realistic speed limits

Our goal is to set realistic speed limits, based on the 85th percentile speed. Realistic speed limits are better for WSDOT, better for law enforcement, and better for drivers:

- They invite public compliance by conforming to the behavior of the majority and by giving a clear reminder to the non-conforming violators.
- They offer an effective enforcement tool to law enforcement by clearly separating the occasional violator from the reasonable majority.
- They tend to minimize antagonism toward enforcement of unreasonable regulations.
- They inject an element of logic and reason into an otherwise arbitrary and often emotional issue.



## The law and your role as driver

All 50 states have adopted a basic speed law that recognizes that driving conditions vary widely from time to time, and place to place. No set of fixed driving rules will ever adequately serve all conditions. Drivers must constantly adjust their driving behavior to fit the conditions they meet.

The basic speed law is founded on the belief that most motorists are able to modify their driving behavior properly as long as they are alert to the conditions around them. If you are involved in a collision, you can still be cited for driving “too fast for conditions,” even if you are driving below the posted speed limit. Drivers should adjust their speed for the weather and road conditions even if it means driving below the posted limit.

## If I think the posted speed limit on a particular highway is wrong, what can I do about it?

If you believe that a posted speed limit is not appropriate for a particular roadway, you can contact the appropriate public agency responsible for the roadway. The agency will conduct engineering and traffic studies to determine whether a change in speed limit is warranted.

The solution is not to change the posted speed limit to an unjustifiably low speed and then expect law enforcement to control violators through constant monitoring.

## Who can I contact for more information about speed limits on state highways?

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