Ramp Meters on Randy Papé Beltline  
Frequently Asked Questions  
January 23, 2012

**What is an adaptive ramp meter?** It's a traffic signal that controls the rate at which vehicles enter a highway. The signal has only two colors: green for go and red for stop. The metering rate adjusts, within preset limits as traffic conditions change. With heavy traffic on Beltline, the metering rate slows down to let fewer cars merge, with lighter traffic the rate increases allowing more vehicles to merge.

**How does it work?** The signals can be set for different stop and go ranges to optimize traffic flow and minimize congestion. Regulating the timing of vehicles entering a highway avoids large groups of vehicles joining traffic all at once, which causes traffic flow to slow down on the highway behind the merge point. Signal timing will be adjusted for more effective results based on real-time data from mainline loop detectors.

**Do they work?** Yes! Ramp metering has increased traffic flow by 30 percent and increased peak period speeds by 60 percent at other sites. The time and length of congestion along the Beltline Highway will be reduced through ramp metering treatments.

**Why do they work?** The system responds to actual traffic conditions and regulates the number of cars and truck that enter a highway at one time. As a result, traffic flow is smoother and more vehicles can actually go through a corridor in less time than if a ramp meter was not present.

When there is less traffic on a highway, metering rates are increased to let more cars merge onto the roadway. Ramp meters are most effective when turned on before congestion begins, which extends free-flowing traffic for longer periods.

**Where will they be installed?** In the morning, congestion occurs on Beltline eastbound. To improve traffic flow, meters will be installed on the River Road on-ramp (2 lanes) and at River Avenue (1 lane). In the afternoon, congestion is greater going westbound and ramp meters will be installed on the Green Acres on-ramp (2 lanes) and Coburg Road on-ramp (2 lanes).

**Will traffic back up onto River Road, Green Acres Road or Coburg Road?** No. Enough vehicle storage exists at these locations to handle the expected traffic at the recommended metering rates. The metering rate is adjustable, so can be changed once the ramp meter is in operation.

**Are there many crashes on this section of Beltline?** The crash data shows relatively high incidents of crashes for the segment of Beltline near the River Road and River Avenue on-ramps. About 50 to 60 percent of all crashes occur during two hours in the peak AM and peak PM periods. A majority of these crashes were either sideswipe or rear-end.

**What impact do ramp meters have on fuel consumption and air pollution?** OR Department of Environmental Quality estimates that 40 to 50 percent of air toxics in Oregon come from vehicle exhaust. Stop-and-go driving on the freeway increases the amount of gas burned therefore increasing air pollution. Decreasing stop-and-go traffic and increasing overall freeway speeds can decrease fuel consumption with a corresponding decrease in air pollution.
If ramp meters work on Randy Papé Beltline, can we expect to see them in other locations? As congestion increases consideration of ramp metering will be part of the overall analysis of measures to implement improved traffic flow. Ramp meters are a proven low cost alternative to increase traffic flow and decrease congestion. Other factors considered include the capacity of the ramp, impact on local streets, estimated traffic increases and similar factors. With diminished state and local resources for major highway infrastructure improvements, effective implementation of ramp metering could extend the useful life of the roadway infrastructure and decrease the short-term need for major investment of public dollars.

**Where else are ramp meters used in Oregon?** Ramp meters have been used in the Portland Metro area since January 1981, which currently has more than 140 ramp meters.