

Nomination for  
Public Works Project of the Year



City of Oregon City  
Beavercreek Road Improvements Project



September 10, 2008

**PUBLIC WORKS PROJECT OF THE YEAR  
BEAVERCREEK ROAD IMPROVEMENTS PROJECT**

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# Public Works Project of the Year Nomination Form

**DEADLINE**

September 12, 2008

**PROJECT NAME** Beavercreek Road Improvements Project

**PROJECT COMPLETION DATE** October 30, 2007

**PUBLIC AGENCY** City of Oregon City

**PROJECT CATEGORY**

Water  Transportation  Wastewater  Storm Water

**MANAGING AGENCY**

**Name** Nancy J. T. Kraushaar, PE **Title** City Engineer / Public Works Director

**Agency/Organization** City of Oregon City

**Address (if post office box, include street address)** 320 Warner-Milne Road

**City** Oregon City **OR** 97045

**Phone** (503) 496-1545 **Fax** (503) 657-7892 **E-mail** nkraushaar@ci.oregon-city.or.us

**PRIMARY CONTRACTOR**

**Name** Corey Pelfrey **Title** Project Manager

**Agency/Organization** Dirt & Aggregate Interchange, Inc.

**Address (if post office box, include street address)** 20905 N.E. Sandy Blvd

**City** Fairview **OR** 97024

**Phone** (503) 661-5093 **Fax** (503) 669-1192 **E-mail** coreyp@dirtagg.com

**PRIMARY CONSULTANT**

**Name** Jason Irving, PE **Title** Project Engineer

**Agency/Organization** Wallis Engineering

**Address (if post office box, include street address)** 215 W. 4th Street Ste. 200

**City** Vancouver **WA** 98660

**Phone** (360) 695-7041 **Fax** (360) 694-1043 **E-mail** Jason.Irving@walliseng.net

## Public Works Project of the Year Nomination Form

**PLEASE ADDRESS EACH OF THE FOLLOWING AREAS IN YOUR SUPPORTING DOCUMENTATION. ADHERING TO THE BELOW SEQUENCE WHEN POSSIBLE.**

- General description of the project.
- Completion date contained in contract. Any time extensions granted should be addressed in the submittal,
- Construction schedule, management, and control techniques used.
- Safety performance including number of lost-time injuries per 7,440 man hours worked and overall safety program employed during the construction phase.
- Environmental considerations including special steps taken to preserve and protect the environment, endangered species, etc., during the construction phase.
- Community relations--- a summary of the efforts by the agency, consultant and contractor to protect public lives and property, minimize public inconvenience and improve relations.
- Unusual accomplishments under adverse conditions, including but not limited to, adverse weather, soil or site conditions, or other occurrences over which there was no control.
- Additional considerations you would like to bring to the attention of the project review panel such as innovations in technology and/or management applications during the project. Include a description of special aspects of the project.

**NOTE:** Supporting documentation is **limited to twenty (20) pages**, exclusive of photographs and nomination form. **This submittal will not be returned.** Include one "hard" copy and one electronic copy of the nomination form and supporting documentation.

**NOMINATED BY** *(Can only be nominated by managing public agency or APWA Chapters.)*

<b>Nancy J. T. Kraushaar, PE</b>		<b>City Engineer / Public Works Director</b>	
Name	<b>City of Oregon City</b>	Title	
Agency/Organization <b>320 Warner-Milne Road</b>			
Address (if post office box, include street address)			
<b>Oregon City</b>		<b>OR</b>	<b>97045</b>
City	<b>(503) 496-1545</b>	Fax	<b>(503) 657-7892</b>
Phone		State/Province	Zip-Postal Code
		<b>nkraushaar@ci.oregon-city.or.us</b>	
		e-mail	

**THESE MATERIALS SHOULD BE SENT TO:**

**Public Works Project of the Year • Awards Program**

Kennedy/Jenks Consultants  
 ATTN: Gordon Munro  
 200 SW Market Street, Suite 500  
 Portland, OR 97201

[GordonMunro@KennedyJenks.com](mailto:GordonMunro@KennedyJenks.com)

# APWA PUBLIC WORKS PROJECT OF THE YEAR AWARD NOMINATION

## Beavercreek Road Improvements Project

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### PROJECT SUMMARY

The Beavercreek Road Improvements Project was a \$4.2 million project undertaken by the City of Oregon City to upgrade 2500 feet of a heavily traveled regional arterial. Beavercreek Road is the primary link between Highway 213 and the City's main north-south arterial, Molalla Avenue. The project, a major component in the City's Transportation System Plan, expanded the existing three-lane roadway to five lanes with bike lanes and sidewalks on each side. It also incorporated green street design elements for stormwater collection, reduction, and treatment. The project's design and construction engineering was completed by Wallis Engineering, with construction completed by Dirt and Aggregate Interchange, Inc.

Design efforts for the project included significant public involvement efforts. Considerable efforts were made in the acquisition of right-of-way and easement dedications from 25 individual property owners. This effort alone took over five years from start to finish. Traffic engineering components included the planning and adoption of an Access Management Plan, along with the addition of two traffic signals and upgrades to an existing signal. Utility improvements were coordinated with public and private utilities, and included

undergrounding overhead utilities, replacing a 75 year old 16-inch water main with a 20-inch water main, and stormwater system improvements.

Project design began in December 2004, and construction began in January 2007. During the ten-month construction period, disruptions to traffic, local businesses and residents were kept to an absolute minimum. Key features to minimize disruptions included maintaining traffic in both directions and maintaining business access at all times. Construction was completed in October 2007, on schedule with a clean safety record. The completed Beavercreek Road Improvements Project is widely recognized by the community as an asset to the City and its residents.

### SCHEDULE

The project was substantially complete by the original completion date of October 30, 2007. No time extensions were issued for the project, despite difficult utility installation conditions caused by numerous existing utilities and the discovery of unknown eight-inch thick concrete panels running the length of the project that required removal.

Construction was expedited through thoughtful design and construction sequencing. Construction was phased into two phases, north and south. The majority of the utilities

# APWA PUBLIC WORKS PROJECT OF THE YEAR AWARD NOMINATION

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were designed on the north side of the road. This allowed for the north half of the road to be closed and to maintain two lanes of traffic, one in each direction, on the south side through the majority of this construction phase. This sequencing accelerated construction by allowing the contractor to construct the majority of the utilities without having to work around live traffic lanes. This not only accelerated construction and decreased traffic control costs, but increased safety for construction workers and the public by decreasing conflicts between vehicles, pedestrians, and construction equipment and construction zones. Once the utilities and base lift paving on the north half of the road were complete, traffic was moved to the north side and construction of the south half of the road began.

The construction schedule was maintained through weekly construction meetings attended by project managers from the City, engineer, and contractor, along with representatives from each of the private utilities involved. Continuous coordination and communication between all parties helped ensure that each entity stayed on schedule, completing their work in a timely manner, and allowing the project to progress efficiently. Advance discussion of each upcoming construction element provided for ample time to prepare and schedule work, helping ensure

that the City received the best final product on schedule.

Weekly e-mails detailing the upcoming 2-week work schedule were sent to property owners, business owners, tenants, citizens, and private utilities. This ensured that everyone affected by the construction activities was aware of the contractor's schedule, and that the contractor was aware of any of their concerns. Driveway closures and other activities that directly affected businesses were coordinated days in advance when possible, allowing the contractor to address concerns and minimize impacts.

The City, contractor and engineer employed a team approach to construction management. This team approach was based on open communication to help coordinate efforts between the multiple project stakeholders. The strong relationship during construction between the City of Oregon City, Dirt and Aggregate Interchange, Inc., and Wallis Engineering resulted in a very successful project. All the project partners effectively and responsively communicated with each other to move the project schedule forward.

Wallis Engineering's construction project engineer was also heavily involved in the project design phase, and brought a thorough understanding of the design into the field. This allowed for fast, effective design changes

# APWA PUBLIC WORKS PROJECT OF THE YEAR AWARD NOMINATION

## Beavercreek Road Improvements Project

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in the field. Particular attention was paid to being responsive to contractor requests for information, differing site conditions, and design changes. This high level of responsiveness by the City and engineer resulted in no claims against the City.

Extensive coordination with each private utility, property and business owner during the design phase ensured that utility undergrounding designs were completed well in advance of construction and that everyone was on board and ready to go after contract award and construction began.

### SAFETY CONSIDERATIONS

The project's contractor and City inspector placed a great deal of importance on safety. Evidence of their commitment to public and worker safety is the clean safety record of the project. No injuries occurred during the project, resulting in no lost time per 7,440 man hours worked. OSHA regulations for shoring, hard hats, and other safety equipment were strictly adhered to. Safety meetings were held every Monday morning to discuss the coming week's construction activities and possible safety hazards. Trench inspection forms were filled out daily by the project foreman detailing soil types, excavation depth, changes in conditions, and possible sources of vibration.

Public safety was the City's number one concern. Safe walking routes, existing crosswalks, and a temporary crosswalk were maintained to provide safe pedestrian access through the project and to businesses. The City elected to pay for an additional flagger throughout construction to assist elderly and disabled pedestrians when crossing the road, and to maintain safe business access.

During the school year, a dedicated flagger was positioned at school bus stop locations in the morning and afternoon to assure children safely boarded and unloaded the buses. After a concerned citizen phoned the City to discuss his developmentally disabled daughter walking through the site on her way home each evening, special arrangements were made to assist his daughter through the construction zone.



*A flagger assists a pedestrian with crossing Beavercreek Road during construction.*

# APWA PUBLIC WORKS PROJECT OF THE YEAR AWARD NOMINATION

## Beaver Creek Road Improvements Project

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### ENVIRONMENTAL CONSIDERATIONS

#### Reuse

Every effort was made to minimize waste by reusing construction materials when possible. During utility trench excavation, good quality aggregate was stockpiled for later reuse as trench backfill. Asphalt grindings from the old road surface were used as base material for the new sidewalks. Basalt remnants from a sound wall were reused as check dams in the bioswales, and retaining wall blocks from existing walls were stockpiled and later reused to build relocated walls.



*Construction material reuse (clockwise from top left): recycled aggregate used for trench backfill, asphalt grindings laid as sidewalk subbase, basalt used in the bioswales, and reused retaining wall blocks.*

#### New Materials

New materials were also sourced very carefully. The highest quality materials were used to increase the durability of the road and maximize the project life. When possible, materials were purchased from local suppliers, which reduced the energy required to transport materials from their source to the site, and supported the local economy. Plants and trees were also purchased from local nurseries.



*Locally-sourced materials included landscaping materials. Here, from left: blue oat grass, Kelsey dogwood, and common rush.*

#### Protection of Newell Creek

Erosion control provisions were installed early in the project and maintained regularly to minimize impacts to Newell Creek, located downstream of the project. Inlet sediment filters were installed on all existing and new catch basins and trench water was discharged to a Baker Tank or adjacent grassy fields to remove sediment. Silt fencing and gravel construction entrances also helped to reduce sediment transport.

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## Beavercreek Road Improvements Project

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### COMMUNITY RELATIONS

The Beavercreek Road Improvements Project included a significant public involvement effort prior to and during construction. This effort included a variety of components, as discussed below.

#### **Public Meetings**

One very important community relations tool was the public meetings held prior to and during construction. This provided the public the opportunity to ask project-related questions, or discuss concerns with the contractor, City, and design team. The project management staff was also readily available to address day-to-day concerns of business and property owners during construction. Each business along the project was personally visited the first week of construction by the City's project engineer and contact information was distributed giving easy access to project management staff. Subsequent visits were made throughout construction by the City, engineer, and contractor.

#### **Access Management**

Access management was a very important project component to improve access to local businesses, and also improve safety and mobility. Prior to construction, the project team met individually with property owners and business owners along Beavercreek Road to discuss both construction phasing and the

Access Management Plan. Feedback from these meetings and an initial open house was used to draft the initial Access Management Plan. The draft was discussed further at two subsequent open houses, and was modified numerous times to address comments



*Temporary signage during construction*

received from local property and business owners. This helped produce the Beavercreek Road Short-Term and Long-Term Access Management Plans that addressed the access needs of each business/property owner along the corridor.



*Access to all businesses along the corridor remained open during construction.*

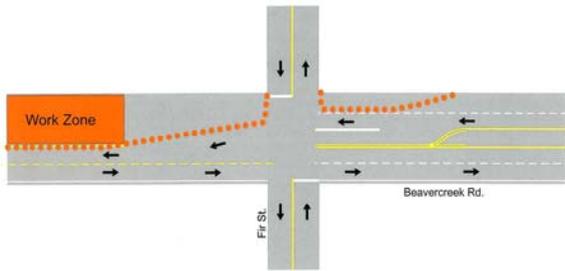
#### **Construction Phasing**

A construction phasing plan was developed during the project design to ensure that businesses could maintain their daily operations and through-traffic routes were maintained. The plan included staging construction in two phases, so that travel lanes in both directions were always open. Business

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access was maintained throughout the entire construction phase via access points and clear signage displaying the name of each business. Close cooperation between construction crews and business owners was a key factor in the success of the project.



*Fir Street Intersection Phase 1 Access plan during construction.*

### Project Public Relations

Keeping the public, local businesses, and residents happy during the 10-month construction period was a challenge. Due to diligent efforts of the contractor and engineer in keeping everyone informed of the project's progress and schedule, this was achieved. As shown below, local businesses were very appreciative of the contractor's efforts.



*Local businesses sponsored two barbeques to show their appreciation for the road crew's help in maintaining smooth daily operations during construction.*

### UNUSUAL ACCOMPLISHMENTS

#### Safety on a High Traffic Road Project

The 16,000 to 22,000 average daily traffic count on Beavercreek Road presented construction and safety challenges for the project. During construction, traffic volumes through the project were maintained by carefully thought-out traffic control plans. The contractor and engineer worked together to develop traffic control plans for a variety of different scenarios and configurations. The City's inspector paid particular attention to traffic control and public safety and reacted quickly to changing traffic conditions and altering traffic control as needed to maintain a high level of safety and traffic flow. The public continued to use Beavercreek Road

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during construction, a reflection of the well-designed and managed traffic control plans.

### ***Working With Underground Utilities***

The age of the existing roadway and the locations and large number of existing underground utilities within the project presented a challenge, particularly during installation of the new underground utilities. An existing two foot by three foot concrete encased fiber optic bank runs the length of the project at a depth of three to five feet. Installation of the new 20-inch ductile iron water line was exceptionally challenging due to existing underground utilities and the nine connections to the existing system that were completed. The engineering project manager's familiarity with the existing utilities and new design, along with excellent coordination between the contractor and engineer enabled utility conflicts to be resolved quickly and efficiently, effectively resulting in no claims against the City.

### ***Building a Sustainable Project***

A significant focus of this project was on delivering a road project that would provide meaningful sustainability benefits for future users. Beyond the care taken with environmental and community concerns prior to and during construction, the project incorporated long-term environmental,

community and economic sustainability features.

The project was designed to provide environmental benefits by reducing vehicular emissions and improving stormwater collection and treatment. Traffic signal improvements included flashing left-turn phasing lights. These permit a vehicle to turn left on a flashing yellow arrow when it is clear to go, rather than waiting for a green arrow. Both these improvements and improved signal synchronization help to reduce travel time and vehicle queuing, which result in decreased carbon emissions.

Improved multimodal transportation options include dedicated bike lanes, expanded bus stop amenities, and continuous sidewalks on both sides of the street. This provided residents with transportation alternatives to help reduce individual vehicle use and thus emissions. Additionally, the trees planted along the corridor provide carbon sequestration benefits to partially offset vehicle emissions.

The improvements to Beavercreek Road benefit the community by improving the livability of the area. Before the project, the road lacked pedestrian amenities and bus stop facilities. The only place to wait for the bus was to stand or sit on the curb, very close to oncoming traffic. The project expanded transportation options by providing better

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*Previous bus stop facilities on Beaver Creek Road.*



*Bus stop improvements completed as part of the Beaver Creek project.*

sidewalks, bus stops and bike lanes, helping to reduce reliance on automotive transportation. These options improved safety for pedestrians and bicyclists by providing dedicated space separate from vehicle travel lanes.

Additionally, native landscaping was planted along the median and within the bioswales, including shrubs, grasses and trees for shade,



*Prior to the project, both pedestrian and bicyclist facilities were deficient.*



*After the project completion, designated bike lanes and sidewalks improve safety and expand transportation options.*

contributing to a more beautiful and inviting atmosphere along the road.

Green street design played an important role in reducing stormwater runoff by incorporating stormwater collection, detention, and treatment into the roadway section. The stormwater bioswales along both sides of Beaver Creek Road play an important role in diverting water from storm sewers by returning it to the groundwater table, helping

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to replenish a natural resource. Reducing the volume of runoff discharged to the storm sewer system helps reduce the overall system load, conserving resources otherwise required for treatment. Runoff reduction also helps prevent system overflows by reducing peak flows into local streams, helping to decrease stream bank erosion and preserve stream habitat.



*Bioswales treat stormwater on the project site, and help to decrease runoff and downstream impacts.*

Improved transportation options and the implementation of the Access Management Plan also promote the economic well-being of local businesses by improving business access. They provide for long-term planning for access to future developed areas. The Access Management Plan identifies three priorities along the project corridor: safety, mobility and access. The project design addresses these goals with the addition of a raised center median, shown to reduce collisions by 35%, restricted

left-turn lanes, and driveway consolidation, which reduces the number of conflict points along the corridor. In addition to making it easier for drivers to access businesses, local residents are now able to walk or bike to nearby shops, making local shopping a convenient and preferred alternative.

The City has produced a video in partnership with Wallis Engineering, documenting the project. The video serves both to educate local citizens about the sustainable features of the Beavercreek project, and to further the message about local governments' responsibility to incorporate sustainability into public works projects. A DVD containing this video is included with this award application package.

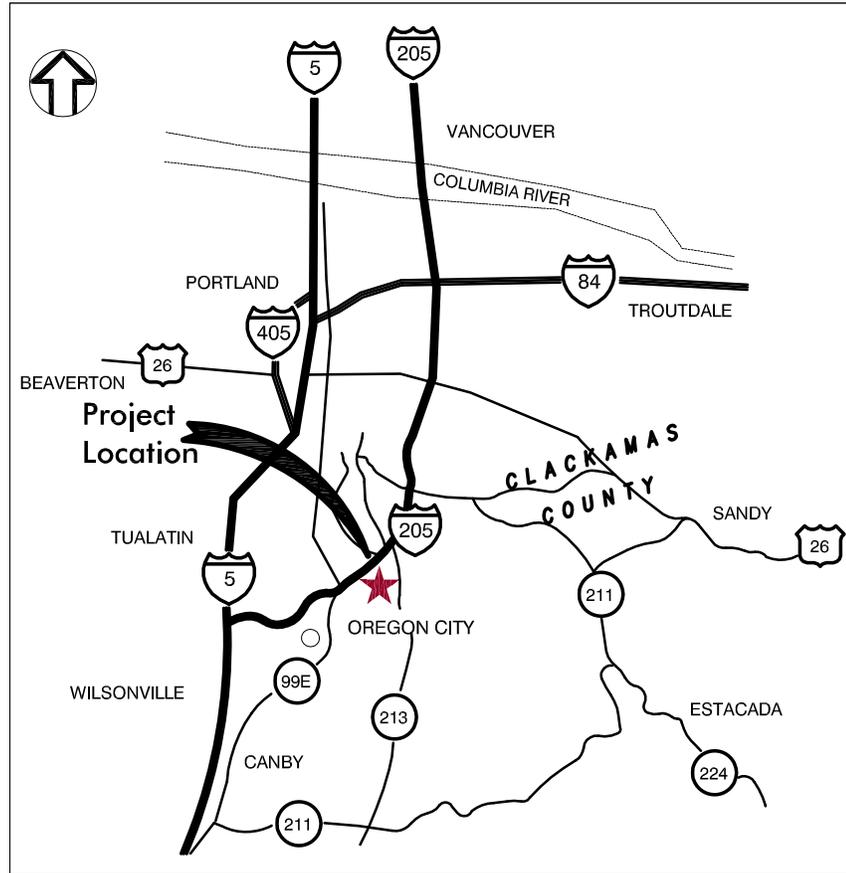


## APPENDIX A

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Project Maps

Project Vicinity Maps



**Location Map**

Not to Scale

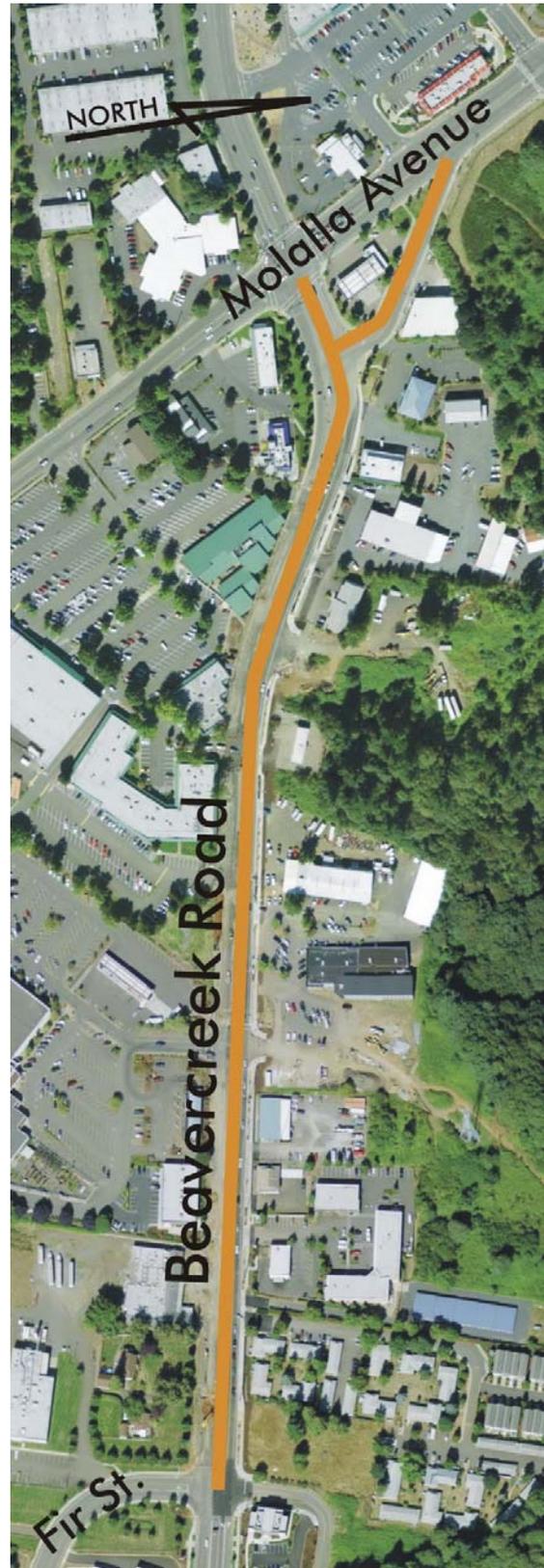


**Project Site Map**

Not to Scale

## Project Aerial

The project site extended one-half mile along Beaver Creek Road, from Molalla Avenue on the west end, to Fir Street at the east end of the project.



## APPENDIX B

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Project photos

# Project Before and After Photos



Before



After

# Project Before and After Photos



Before



After

# Project Before and After Photos



Before



After

# Project Before and After Photos



Before



After

## APPENDIX C

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Newspaper articles

# Oregon City News

LOCALLY OWNED BY PAMPLIN MEDIA GROUP LOCALNEWSDAILY.COM

Serving Oregon City & Clackamas County Since 1916 • Wednesday, May 2, 2007

## OC merchants show their thanks



photo by DAVID STROUP

Brad Meyer of Tan Rio (left) and Charlie Clark of Cherokee Laser (right) are throwing a free barbecue for the road workers — like Contractor Greg Parfitt — who have been laboring on their doorsteps.

■ Beaver Creek may be tied in knots by construction, but local businesses are staying on good terms with the workers

by David Stroup  
editor@clackamasreview.com

With all the problems that massive roadwork projects can mean for area business that find themselves behind the barricades, it's not uncommon for there to be some bad feelings — but not in Oregon City.

Businesses on Beaver Creek Road — where a road improvement project has meant tie-ups and construction hassles, with months more to come — are throwing a free barbecue lunch for the workers... and they want to make it a regular event until the work is finished.

"They're improving the community," said Brad Meyer of Tan Rio, on the south side of the street. "It holds up traffic, but

that's the price we pay for improving the community."

Charlie Clark runs Cherokee Laser on the north side of the street.

"They're such courteous people," he said, noting that the workers are helping him set up a new sign to replace the old one that was torn down. The construction crew has also set up temporary signs to direct people to the businesses cut off by the work, and flaggers keep traffic moving while smoothing over access to the stranded parking lots.

"I've never seen a construction crew like this," he said. "And I've been around construction... they're the most courteous people. And you

Turn to Beaver Creek, page A4

### Beaver Creek:

## "This is a large project..."

Continued from page A1

ought to see that guy on his heavy equipment — they'll have a hole that's eight feet long and 10 feet deep, and 10 minutes later he'll be scraping over the top and manicuring it.

"I think it's fantastic," said Greg Parfitt, general superintendent with Dirt & Aggregate Interchange, the general contractor for the project. "This has

been one of the easiest projects as far as dealing with the businesses, and even the public."

He said 26,000 cars come through the busy, gravel-strewn construction zone every day, and "the people have been just great."

"This is a large project for a city the size of Oregon City to take on on its own — it's commendable."

Drivers through the area have been thoughtful, and he said they're grateful for the support of the merchants — including the offer of the free barbecue. Meyers and Clark — and the UPS store down the street is pitching in, as well — are planning the free lunch for

road workers this Friday, May 4, although plans could change (or move indoors — if the weather turns bad).

Meyers will be barbecuing next to his business in the Fred Meyer shopping center, and Clark will host a simultaneous party at his business.

"The construction... really hasn't bothered me that much," he admitted. And he knows that when it's all over — after this summer — he and the other businesses will get a lot out of it, with a five-lane roadway, new sidewalks and a new sign for the businesses along his strip. "It's going to be awesome."



ANDY PARKER

COMMENTARY

## A maestro in the midst of maelstrom

Shortly after 7:30 a.m., rush-hour traffic on Beavercreek Road has slowed to a crawl, a stagnant soup of car exhaust and diesel fumes.

The tangle of school buses, commuters and dump trucks reaches out of sight in both directions and pushes back deep into the Fred Meyer parking lot. Yet the stoplights are dark.

Unequal to the task, they've been temporarily relieved of their duty.

As a chilly breeze sweeps across pavement still glistening from an early-morning rain, a small woman with dark hair pulled back beneath a white hard hat steps into the heart of the chaos.

A fast-approaching Dodge Ram truck roars toward the intersection. Amy Myers strides toward the truck and shoves out the palm of her orange-gloved hand, then pumps a handheld stop sign toward the sky.

The truck stops. She smiles and tosses a friendly wave to the driver before whirling 180 degrees and reaching dramatically toward the windshield of a sedentary Toyota Camry to get the attention of its cell-phoned driver.

No response. She jogs toward the car and begins swinging her arms in a dramatic circling motion.

The Camry awakens, lurches forward. Myers smiles and waves.

Behind her, in the left turn lane, an elderly woman in a Honda Civic beeps and points toward Fred Meyer as if she's missing some important appointment on the frozen foods aisle.

Myers jogs toward her with her arm thrust forward, shaking her finger and head "no." Then stops, smiles and waves.

The woman smiles back.

For a couple of years now, Myers has been lead flagger and court jester up in the Hilltop area of Oregon City as one construction project after another has tested the patience of drivers and road crews.

As the work moves around the city, Myers moves with it, her smile and her colorful traffic orchestrations making her somewhat of a fixture around town.

Her office is wherever she's standing, a cooler and thermos at her feet. On the alleged first day of spring, she's wearing only three layers. Many days, it's six or seven.

Impossibly, she loves her work.

"Yeah, I do. I really do. It's great," says Myers. "It's good pay—union. And I love being outside."

The 31-year-old says her life is her work and her 11-year-old son.

That doesn't mean she's content. She wants her boss's job. And her boss, Heidi DeLuca, says Myers will reach her goal. "Without her," said DeLuca, "we'd be in big trouble. She's unbelievable."

Watching Myers work, it's hard to imagine anybody doing it any better.

After traffic is stopped dead for several minutes so a flatbed truck can back from the construction site into Beavercreek Road, Myers is left to unclog the choked roadway.

She steps into the traffic lane, raises her hand high, then in one broad sweep pulls traffic back into motion, swiveling her hips and lunging as she steps and points toward the latest course change in the maze that is Beavercreek Road during a widening project that's expected to last into fall.

Her moves are classic.

There's the circle sweep, the arm first reaching high as she steps toward the next vehicle in a line to grab the driver's attention, then swinging counterclockwise in a dramatic arc from 12 to 3 that ends with an index finger pointing the way.

There's the swiveling left-turn jab. The hand starts close to her chest then begins to swivel as her arm sweeps across her body and extends toward the waiting car's destination.

When a tedious driver is moving too slowly, she steps toward the car, her hand reaching toward the windshield, then she pulls her hand back across her chest before shaking her index finger forward.

Then, of course, she smiles, and waves.

•  
Andy Parker: 503-294-5945;  
daparker@news.oregonian.com

## APPENDIX D

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Project video

## **Project Video**

The project video can be viewed online at: <http://www.youtube.com/watch?v=3Z-75pERCu0>