

**TILLAMOOK COUNTY
ROAD COUNTY ADVISORY COMMITTEE MEETING (CRAC)**

**Monday, January 11, 2016
Board of Commissioners Conf. Rm A
201 Laurel Street, Tillamook, OR 97141
3:00 PM TO 5:00 PM**

1. Call Meeting to Order
2. Review and Approve November 7, 2015 Meeting minutes
3. Commemoration of John Gettman
4. Draft paving list recommendation, add Kilchis River Road (culvert replacement 200ft)
5. Road Performance Report FY 2014-2015
6. December 2015 Storm presentation: Liane Welch
7. Road Maintenance Activities:
 - Wilson River Loop N-S
 - Resort Drive I & II
 - Wyss Bridge
 - Lommen Bridge
 - Whalen Bridge
 - Alternate Access @Neskowin
 - Cape Meares Loop Road
8. Next meeting
9. Public Comments
10. Adjourn

TILLAMOOK COUNTY ROAD ADVISORY COMMITTEE

Date: November 9, 2015

MEMBERS PRESENT: Curt Schonbrod, Darcy Jones, Bob Garrigues, Gary Hercher, Gary Hanenkrat, Gus Meyer, and Jerry Dove.

STAFF: Liane Welch, Ron Newton, Julie Kettner and Commissioners Josi and Labhart.

PUBLIC (signed in): Patsy Weber, Chris Weber, Mike Gum, Elise Gum, Tom Fellows, Anne Price, Suzan Strange, Bill Pritchard, Tom Ayres, Dee Koscheski, Bob Koscheski, Val Bobry, Howard Bobry, Susan Miller, Tom Sandoz, Todd Campbell, Dick Hall, Alice Hall, Janet Birmingham, James Birmingham, Ellen Morrison, Anne Price, Worth Caldwell, Steve Tratz, Diane Tratz, and Tom Campbell

Item 1. Call Meeting to Order: Meeting called to order at 3:03 pm.

Item 2. Minutes Approval: A motion was made by Jerry Dove to approve the September Minutes. The motion was seconded by Gary Hercher. The motion was carried unanimously.

Item 3. Sister Community Presentation: Liane Welch talked about the “Sister Cities” program between Tillamook and Umatilla counties. She shared a PowerPoint presentation. There were no questions from the audience.

Item 4. Draft Paving List and Budget Discussion: Ms. Welch then talked about Road Department priorities using a PowerPoint presentation. Included in the presentation was a draft list for the 2016-2017 paving season.

The CRAC board agreed to discuss the list at the December meeting. Once the CRAC board approves the list, it will go to the Tillamook County Board of Commissioners for their approval. After final approval, prepping of the roads listed will begin.

A member of the audience asked a question about speed bumps. Ms. Welch responded that speed bumps take a lot of time to install and a lot of maintenance, so are not generally placed them on county roads.

Item 5. Blanchard Road: Ron Newton introduced himself and gave a PowerPoint presentation regarding ownership of a portion of road near Blanchard Road. Mr. Newton described the right-of-way issue.

James Birmingham explained that Blanchard Road does not meet Highway 101. In 2000 he was rear ended turning onto Blanchard Road. He would like to know what could be done to make it a safer intersection, such as a left turn lane.

Road improvements on Highway 101 in that area have caused people to drive at higher speeds. There was a question whether signs that indicate “Congested Area” could be installed. It was noted that the same issues occur at Beaver Creek and Camper Cove.

Ms. Welch said that since no one claims ownership, Tillamook County could do some maintenance. The county needs to partner with Oregon Department of Transportation (ODOT) for safety funds. Ms. Welch said that she would contact ODOT to find out what would improve safety at that intersection.

Jerry Dove made a motion for the CRAC Board to approve Ms. Welch writing a letter to ODOT regarding this issue. It was seconded. The motion carried unanimously.

The question arose as to whether or not the church near Blanchard Road had been contacted. Mr. Newton explained that making improvements at that corner may cause more issues than it solves as people will go faster.

Ms. Welch said that the Road Department could do some grading and rock work until the right-of-way ownership is resolved.

There was a question about condemnation of the section in question. Mr. Newton explained that in order to go through that process there needs to be an entity to convey against, and trying to determine that is the problem. He said there needs to be a realignment.

Ms. Welch explained that it is difficult for the Road Department to agree to make these improvements to an area that does not belong to the county when there are so many county roads that need attention.

Item No. 6 – Road Maintenance Activities: The Road Department is currently working on the complex legal issues at R O Richards Road regarding road approach permits, utility and non-utility permits. The Road Department is also currently working on Trask River South Fork Bridge, using Oregon Forest Safety Funds. Resort Drive 1 and 2 are going to construction in the summer/fall of 2016. Lommen Bridge in under construction and Whalen Island Bridge is in design. Final inspection of Sand Lake culvert replacement is occurring. The design for a secondary egress out of Neskowin continues. The Road Department is in need of rock, so the quarries need to be developed.

The Road Department was recently informed that the bridge on Goodspeed Road is in need of repair or replacement by January 1. The Southern Flow Corridor project, which has taken 10 years, is moving forward and large equipment needs to cross this bridge.

Item 7. – Next meeting: Chair Schonbrod announced that the next CRAC meeting is December 7.

Item 8. Public Comments: Tom Ayers, thanked Ms. Welch for putting Beulah Reed Road on the draft paving list. He said that paving is an economic development issue. He explained that their housing market will improve with a better road.

A member of the audience thanked Ms. Welch for paving Victoria Street. She then questioned how she could cross at Washington and Highway 101 since the crosswalk was now gone. Ms. Welch gave her the phone number to contact ODOT since Hwy 101 is under their jurisdiction.

Someone from the audience asked about a project near Manzanita. Ms. Welch said that it is the Manzanita Curve Project, which will reduce curve radius as well as improve fish passage.

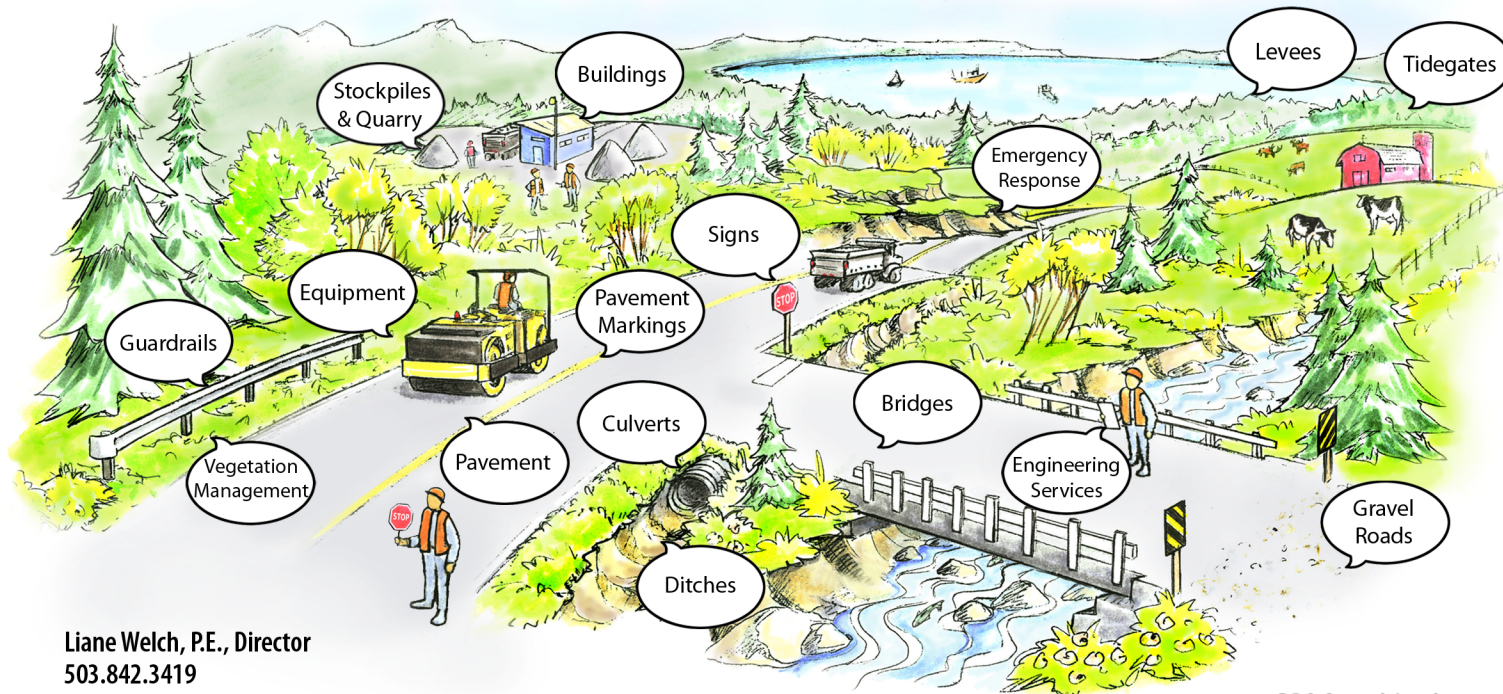
Dick Hall thanked Ms. Welch for taking the time to work with him during the Victoria Street project as it was interesting and educational. He appreciates the CRAC's active service for the community and Gus Meyer for trying to get funding.

Item 9. Adjourn: The meeting adjourned at 4:25 p.m.

Tillamook County Road Department Performance Report FY 2015



Your Tillamook County Road Dollars At Work \$845 Million Road System Value in 2015



Liane Welch, P.E., Director
503.842.3419
lwelch@co.tillamook.or.us

PBS Consulting Inc.

Version	Change	Changed by	Reviewed by	Approved by and date
V.1	Initial Draft Report through Structures, p. 13	PBS	LW	November 24, 2015
V.2	Draft Report – edit text, graphics, accomplishments and project detail; incorporate report changes from initial review	PBS	LW/JS	December 18, 2015
FINAL	Change Director’s Message and Drainage section to reflect December 2015 storm event; correct footers and spelling	PBS	LW	December 31, 2015



Report of the Director

Public Works Road Department

The Tillamook County Road Department appreciates the community's support of the passage of two local funding measures in 2013: the General Obligation Bond and the Transient Lodging Tax, which dedicates 30% to the Road Department. Since 2009, we have seen a reduction of federal forest funds to the road department by 68%. Local revenues make up 53% of road revenues in 2015. We continue to make risk-based decisions in managing our transportation system. This means that we look at the risks to the travelling public and assign resources to manage these risks. With the passage of the local funding measures in 2013, we have increased our expenditures on road maintenance to 49% of our budget.

The first year of the General Obligation Bond was used to "hold the system together" with small paving patches all over the County. The second year (2015) we focused our resources on high speed, high volume roads that serve as emergency routes and economic development routes (Brooten and Latimer Roads) in addition to many smaller paving projects across the County.

We're implementing the 10-year bridge management strategy developed in 2014. We have been successful in getting projects approved for replacement under the Federal Highway Bridge Program (HBP), which is funded about 90% from Federal Highways with a 10% local cash match. Bridges under design in FY 2015 included the Lommen Bridge (Nehalem River) and the Wyss Bridge (Trask Slough). In addition, we implemented small repairs and major rehabilitation to 6 bridges with local funds.

We are still lacking staff to have an active ditch cleaning program and guardrail replacement program. We continue to repair ditches and guardrails in a reactive mode. Culverts and drainage continue to be a large risk as many of our known 3,300+ culverts are in poor condition and need to be replaced. We replaced all the culverts on projects where we paved. December 2015 storm events wreaked havoc on this already fragile drainage system. We continue to work with our partners (watershed councils and resource agencies) to replace culverts with fish passage structures on County roads as opportunities present themselves. An example is the fish passage culvert on Brickyard Road that replaced a failing culvert. We actively participate in the Salmon Super Highway Project that is gaining momentum to replace fish barriers in the Nestucca and Tillamook Bay Watersheds. We continue to work on special projects such as the Cape Meares Loop realignment around a large complex active landslide; the secondary egress out of Neskowin; the Sister County partnership with Umatilla County for response to the Cascadia Earthquake; the storm damage repairs on Resort Drive; and development of our two rock quarries.

We appreciate that we are a part of this community and commit to providing the best service with County resources.



Asset Management Strategy

The Tillamook County Road Department manages the County road system. We become more knowledgeable about our transportation network each year. The overall transportation system is now valued at \$845 million. Tillamook County manages an old road system. Approximately one-third of County transportation assets are in poor / very poor condition. A risk management strategy is used we call “a mix of fixes.” This means that some roads and bridges have fallen into a state of disrepair which require major rehabilitation or complete replacement, even while preventive maintenance is our long term goal.

The cashflow from the 10-year General Obligation bond passed in 2013 varies widely year to year in compliance with federal regulations. This will impact the availability of funds over the next 10 years for road, culvert and bridge maintenance and improvements. Local revenues (bond and Transient Lodging Tax) make up 53% of 2015 road revenues. Funding remains insufficient to meet road service needs over the next 10 years. The Road Department will continue to use risk-based decision making to set priorities and will seek opportunities to partner with key stakeholders and apply for grants that augment resources.

Risk Management Strategy – Mix of Fixes

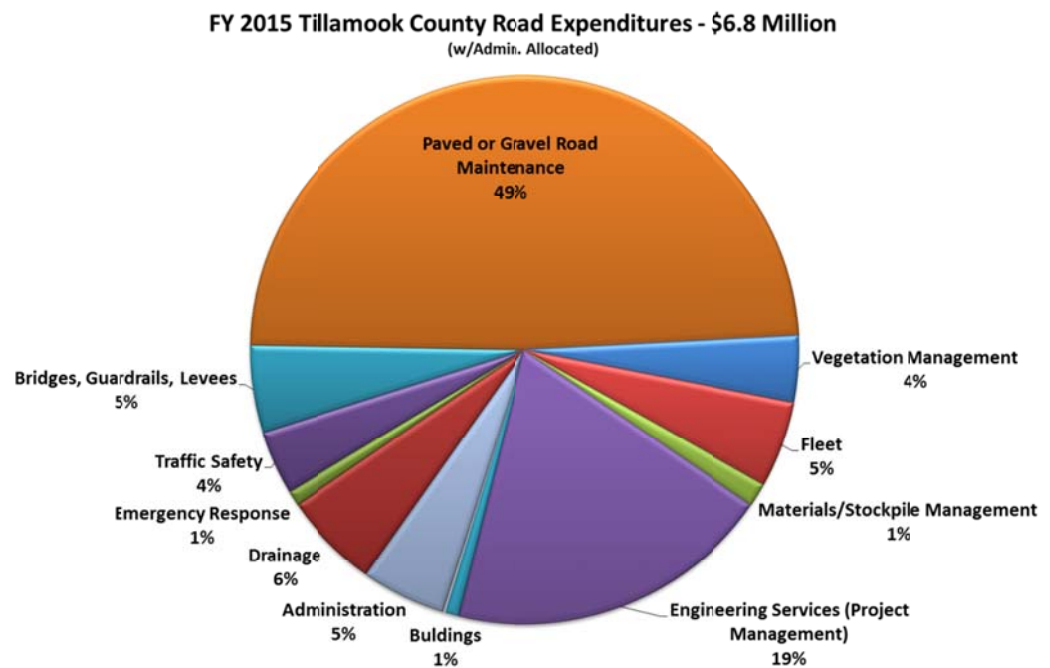
- *Do preventive pavement maintenance*
- *Increase bridge maintenance*
- *Increase drainage maintenance*
- *Increase culvert inventory, levee assessment and building maintenance programs*
- *Continue to do reactive maintenance with focus on safety*
- *Slow system deterioration; stabilize the rate of failure*
- * Identify additional funding through partnership & grants*
- *Continue to communicate critical failures with the Board and community*

What did we accomplish this year?

The Road Department is committed to **continuously improve** the skills, tools and business processes that support County road services. This annual Asset Plan communicates Road Department asset management strategy and performance information for Roadway and Traffic, Structures, Drainage, and support (Equipment and Buildings) services. Unit costs are updated each year to determine the cost of service, and replacement value of the system. Visual inspections verify asset performance. Resources are allocated to manage high risks given available funding and community priorities.

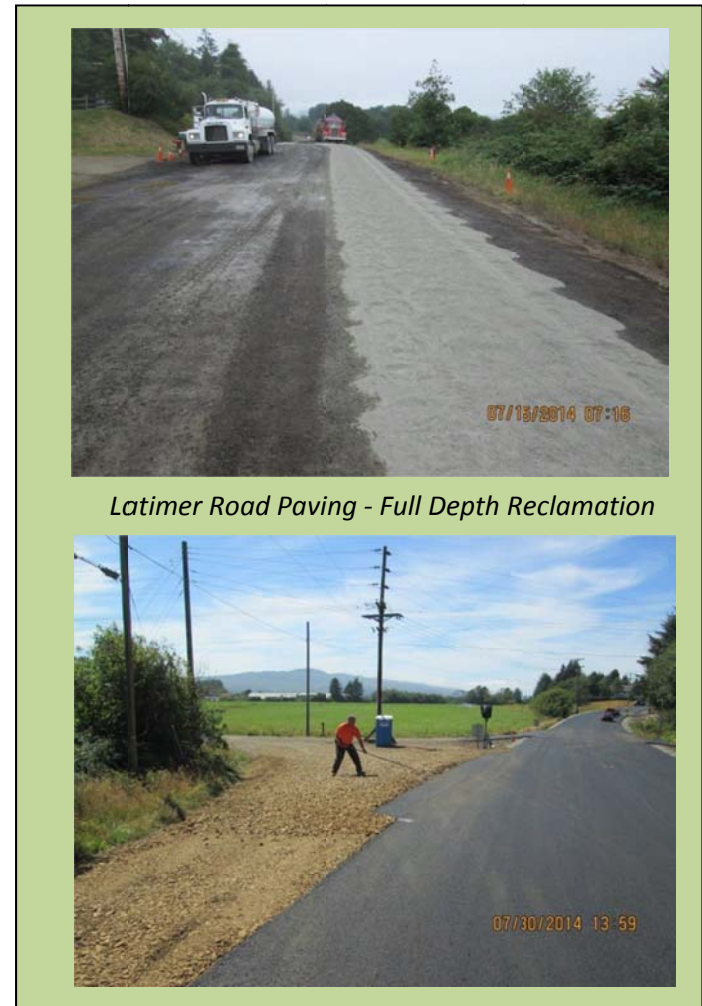
Specific 2015 **improvements** include:

- The County doubled the miles paved (while replacing culverts) on high volume County roads. Over 12 miles were paved in 2015.
- The 2014 *Strategic Bridge Plan* now guides County bridge maintenance, rehabilitation and replacement projects.
- The Road Department received the 2015 Pavement Asphalt Association of Oregon Pavement Excellence Award for the Latimer and Brooten Road projects in March 2015.
- Partnerships with federal, state and regional agencies to leverage County projects. This includes participating in the Sister County partnership with Umatilla County for response to the Cascadia Earthquake; and the Salmon Super Highway Community Project that is gaining momentum to replace culvert fish barriers in the Nestucca and Tillamook Bay.



Specific **achievements** include:

- Focused on paving 12.68 miles on high speed, high volume roads in 2015; this is double the miles paved in 2014. This included Latimer Road and Brooten Road, Idaville, Necarney City Road, Vaughn, and Magnolia.
- Three bridge replacements were in design phase: Lommen, Wyss and Whalen Island bridges. Guardrail repairs were made on the Salmonberry Bridge.
- Replaced culverts
 - Provided local revenues to match Federal and State Grants for Sand Lake Road and Bear Creek culvert replacement
 - Designed and partnered on Bear Creek culvert replacements
 - On Brooten, and Latimer Roads in preparation for road rehabilitation projects
 - On Kilchis River Road
- Worked with partners to design culverts for fish passage on Mapes Creek, Myrtle Creek, Bower Creek, and George Creek.
- Provide geotechnical analysis and alternatives for large active landslide areas (Cape Meares Loop Road closed January 2013), and provide slope failure designs (Resort Drive MP 1.3 and MP 2.1)
- Grading, shoulder work, and cattle crossing maintenance
- Managed vegetation on 573 miles of County roads
- Emergency Management
 - Storm response
 - Response to landslides and 911 callouts
 - Emergency preparedness for managing Cascadia Earthquake “Filling the Void of Leadership”
 - Neskowin emergency egress design
- Responded to service requests
- Engineering Department permit support
 - Reviewed and approved road approach and utility permits
 - Reviewed Department of Community Development permits
- Purchased a used pavement roller & two used tilt trailers



Latimer Road Paving - Full Depth Reclamation

The County continues to apply for federal and state grants. \$1.4 M in project funds was administered by ODOT and partners for County Projects in FY 2015.

State and Federal Funded Projects on County Roads in 2015		
Cape Meares Loop	Geotechnical Study	\$56,000
Lommen Bridge	Bridge Design	\$495,000
Emergency Relief - Resort Drive MP 1.3 (FHWA)	Slope failure design	\$116,000
Emergency Relief - Resort MP 2.1 (FHWA)	Slope failure design	\$125,000
Wyss Bridge	Bridge design	\$117,000
Sand Lake Road 10.5	Culvert replacement	\$35,900
Whalen Island Bridge	Bridge replacement design	\$13,000
Other partners' funds for County Projects in FY 15*		
Bear Creek	Culvert replacement with fish passage	\$112,000
Mapes & Myrtle Creek	Culvert design with fish passage	\$68,000
George Creek	Culvert replaced with bridge fish passage	\$234,728
Salmon River Highway	Replace culverts for fish passage	
Total		\$1.4 Million
**OWEB, Trout Unlimited, Tillamook Estuaries Partnership, Tillamook Bay Watershed Council, Nestucca/Neskowin Watershed Council, and USFWS		



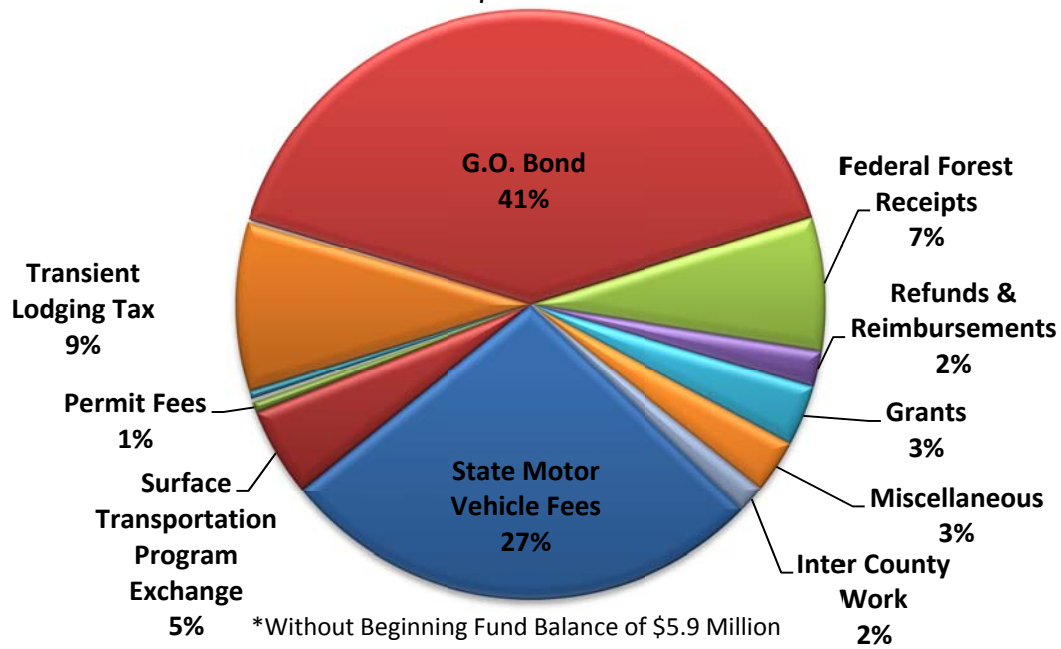
George Creek Culvert - Before



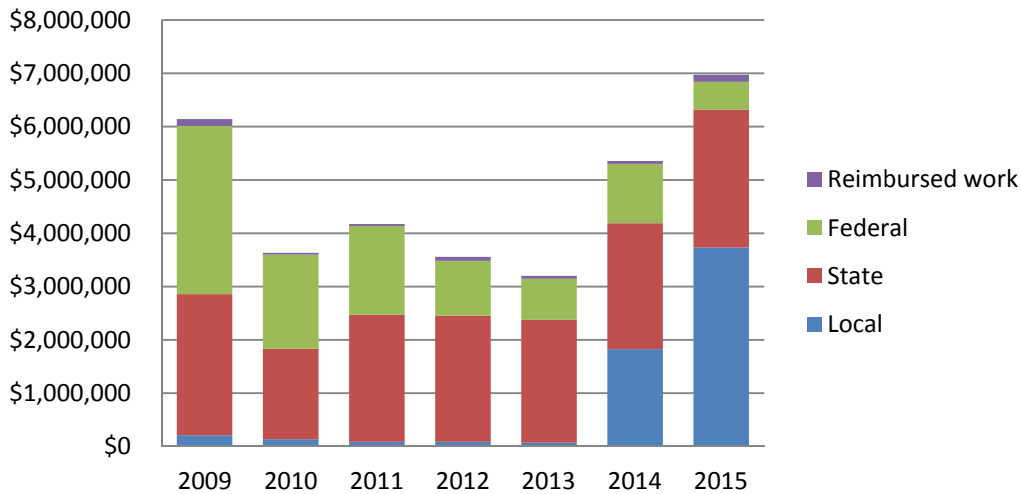
George Creek Bridge Replacement - After

Financial Summary

Road Department Revenues FY 2015 \$7 Million



Local revenues are now 53% of Road Revenues

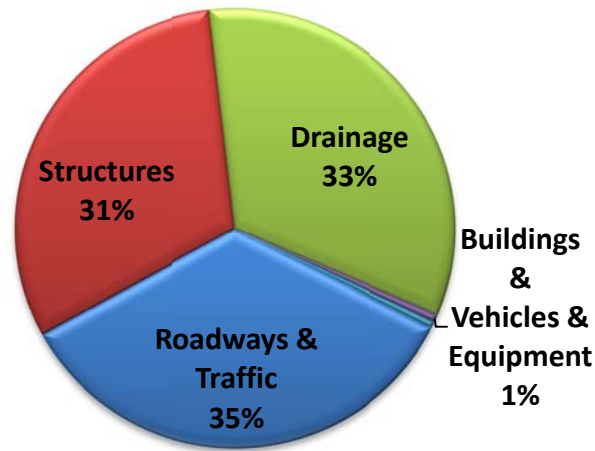


Voters approved a local bond measure and Transient Lodging Tax in 2013. **Local revenues now make up over 50% of County road funding** while federal funding declined 50% in 2015.

The Road Department also funded \$1.4 million in projects through grants and partnership with the Oregon Department of Transportation, and Federal Highway Administration, Oregon Watershed Enhancement Board, the U.S. Fish and Wildlife Service, Whole Watershed Restoration Initiative, the Tillamook Bay Watershed Council, and the Tillamook Estuaries Partnership.

What does the County Road Department manage?

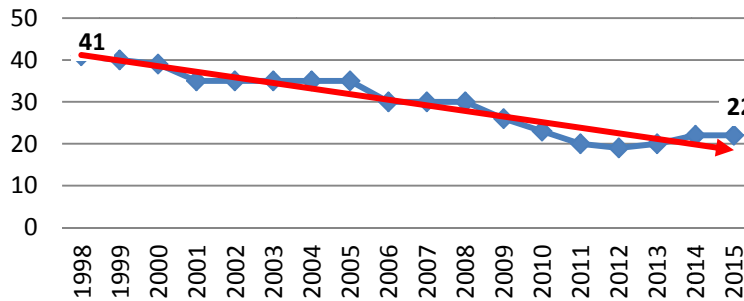
Tillamook County Road Network Value in 2015
\$845 Million



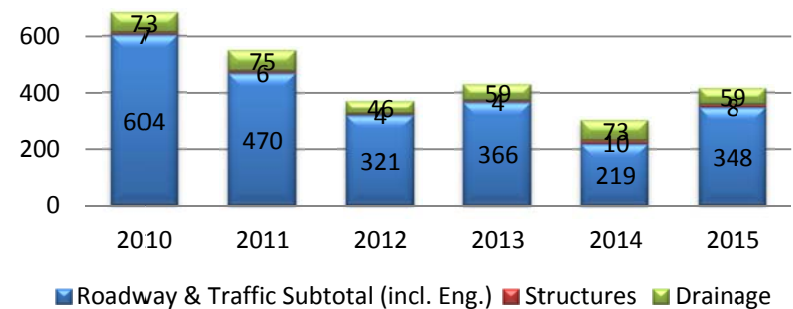
County Road Services

Assets	Services
263 paved miles	Vegetation Management
65 miles gravel roads	Traffic Safety
101 bridges	Materials/Stock Piles
3,300 culverts	Service Request management
7 levees	Emergency Response
5,169 signs	Engineering Services (permits & capital projects)
392 miles pavement markings	Fleet Management
10 miles guardrails	15 buildings

Employees have declined to 22



Service Requests 2010-2015










Public Works Road Department

Road Department
FY 2015 Performance

Goal/Key Performance Measure (KPI)	Last reporting cycle	Current reporting cycle	Draft Target	Trend	Comments
Goal: Maintain and preserve a safe and efficient county road network.					
Roadway and Traffic					
Pavement condition index	50 PCI (2012)	54 PCI (2014)	TBD	↑	Pavement condition improved with use of local revenues approved in 2013. However, over the next 5 years, pavement condition is expected to decline; funds are insufficient to meet need or achieve the performance target.
Percent of paved road miles in Good or Fair condition	50%	57%	78% (ODOT)	↑	A majority of County roads are in Good or Fair condition (PCI >50), an improvement since 2012.
Structures					
Percent of bridges in Good or Fair Condition (>80 SR)	84% (2014)	84% (2015)	78% (ODOT)	↑	A 2014 Bridge Management Program aims to maintain bridges in good condition through cyclic maintenance and preservation. Six bridge rehabilitation projects and various designs for bridge replacement occurred in Fiscal Year 2015.
Number of bridges in Poor or Critical Condition	16 (2014)	16 (2015)	TBD	↔	Six bridges are scheduled for replacement from 2015-2019 as funding allows. In Fiscal Year 2015, design for bridge replacements (Lommen & Whalen Island), or complete bridge replacement (Wyss) occurred. George Creek Bridge replaced a culvert with a design that provided adequate fish passage.

Goal/Key Performance Measure (KPI)	Last reporting cycle	Current reporting cycle	Draft Target	Trend	Comments
Drainage					
Percent of Culverts in Poor Condition (est. based on 2012 visual condition assessment of 20% of the inventory)	32% (2012)	32%(2012)	0% (<i>Drainage Asset Plan, 2012</i>)		Culvert inventory information has not been maintained, however a partial (20%) inventory and condition assessment in 2011-12 indicates that there are more culverts, the replacement cost is significantly greater, and culvert condition is worse than earlier estimates. There is a Low confidence in culvert information.
Number of Culverts Replaced	836 lineal feet (<1%)	595 lineal feet (<1%)	1,056 culverts, as funding is found		Drainage on county roads was rated an Extreme risk in 2010 given the wet environment and increasing frequency and severity of weather events. Culverts are replaced as paving projects occur (Kilchis River Road), or funding partnerships allow. Completed culvert replacements with fish passage significance (Bear Creek Culvert on Brickyard Road and George Creek Bridge on Evergreen Road).
Emergency Response					
Service Request Response	65%	66%	100%		All service requests related to emergency, health and safety received a response; Participating in Sister County emergency response partnership for managing Cascadia Earthquake ("Filling the Void of Leadership").
Staffing Levels	22	22	N/A		
Vehicles & Equipment					
Useful life of vehicles	75% exceed their useful life	75% exceed their useful life	50% remaining useful life		The County purchased a used roller and 2 tilt trailers in Fiscal 2015. Thirteen pieces of underutilized equipment will be sold.
Buildings					
Buildings in Poor Condition	2 (2012)	2 (2012)	0		The County needs to invest in its buildings. Health and safety code inspections occur quarterly; only critical building maintenance is performed. The Sign Shop was improved and portions of the Central Yard fence were replaced.

Roadways & Traffic – Pavement Condition



Performance Measure:
Percent of pavement in Fair & Good condition

Pavement Management Strategy

Ensure roads are safe to travel on throughout the County. Reduce expenses by maintaining roads in Good and Fair condition. Long term, continue to improve the County road system's average Pavement Condition Index (PCI). This slows deterioration long term. Rehabilitate the roads so that we can do more preventive maintenance. This extends the road life and reduces the lifecycle cost of paved roads.

Over the next 10 years, provide small patches Countywide to hold the system together (2014), focus expenditures on high speed, high volume roads and those that provide economic value to the community (2015), and move into the neighborhoods Countywide for safety and emergency response (2016). Inspect all roads every other year and respond to service requests, as resources allow. Where it makes sense, reduce the road inventory through jurisdictional transfer. Improve pavement workmanship and pavement equipment. Partner with other Counties for traffic marking services and share equipment when practicable.

Service Level Target

Working with the Board of County Commissioners and the Road Advisory Committee, set service level that are appropriate for our community. Once targets are set, reevaluate how our pavement management strategy matches up with our service level targets.

Current Service Level

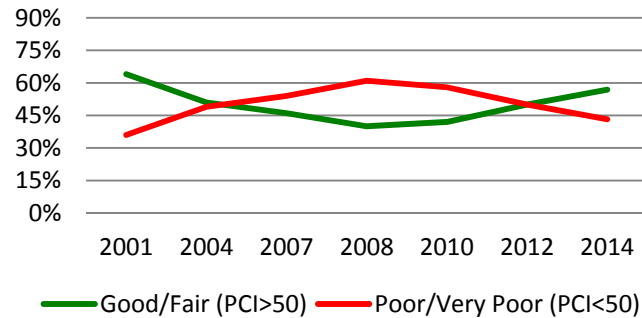
Almost half of the County's 2015 transportation system budget (\$3.3 million) was used to manage County paved roads. This doubled the road miles paved in 2015 to over 12 miles. In 2015, the Road Department focused expenditures on high speed, high volume roads and those that provide economic value to the community.

Current State

The majority of the 263 miles of County roads are in Good or Fair condition. The average road condition in 2014 improved to 54 or Fair, up from 50 in 2012. Road condition is rated every other year; the next update is in 2016.

Roadways are the County's most valuable asset with a replacement value of \$291M.

Since 2008, pavement condition has improved



Local Revenues Improve Pavement Services

In 2015 the Road Department focused on high speed, high volume roads and those that provide economic value to the community. The road miles paved in 2015 doubled to over 12 miles, including rebuilding 3.9 miles on Latimer and Brooten roads, and paving over 2 miles on Idaville, Necarney City Road, Vaughn and Magnolia.

Road miles paved doubled in 2015

Latimer Road (contract)	Brooten Road (contract)
Miami River Road	North Fork Road
Moss Creek	Tohl Road
Front Street	Sollie Smith
Fairview	Vaughn
Idaville	Hobsonville
Bay Ocean	Wilson River Loop E-W & N-S
Kilchis River Road	Brickyard
Hughey Lane	Magnolia
Elderberry PC Heights	Boquist
Hodgdon	Parkway Drive
Savage	Slab Creek S
Necarney City Road	

Risks for Roadways & Traffic

- 1 Insufficient funding for resurfacing will allow water to enter the pavement resulting in pavement failures and avoidable and expensive reconstruction.
- 2 Poor construction standards for many pavements mean that when they fail, reconstruction becomes very expensive. This problem is compounded by increasing heavy vehicle loads.
- 3 A substantial proportion of roads have poor design. This can have safety impacts
- 4 Lack of timely maintenance
- 5 Wet climate/storm damage reduces asset life, increases life cycle costs and diverts planned maintenance and renewal funds to reactive storm damage repairs.
- 6 Poor drainage
- 7 Insufficient construction inspection
- 8 Increased traffic loads
- 9 Vegetation impact

Risk Response

- 1 Rehabilitate roads so that preventive maintenance can be performed on roads in Good and Fair condition
- 2 Focus on high volume roads
- 3 Rate condition every other year and respond to service requests
- 4 Reduce the road inventory through jurisdictional transfer where possible
- 5 Improve road drainage
- 6 Improve workmanship and equipment
- 7 Partner with other Counties for traffic marking services and share equipment if possible.

Structures - Bridge Condition

Performance Measure:
Percent of bridges in Fair & Good condition



Structures Management Strategy

A Mix of Fixes. Maintain bridges in good condition by performing preservation and cyclic maintenance; seek funding partners to replace bridges with Sufficiency Rating less than 50%, inspect bridges every other year, develop an annual levee inspection program, and repair and replace guardrails as a part of ongoing road projects.

Service Level Target (to be reviewed and adopted by the County Road Advisory Committee in FY 2016)

Replace 20 bridges by 2029 (two per year for 15 years or \$610,000 annually), then replace 4 bridges every 3 years. Perform one major bridge rehabilitation project every year (\$250,000). Perform cyclic bridge maintenance (joint replacement) on five bridges/\$25,000 annually following initial investment of \$35,000 to address backlog; and resurface 4 bridges/\$48,000 annually following initial backlog catch up of \$300,000 . Conduct annual bridge maintenance (\$25,000) following initial investment (\$49,000) to address signage, clean debris, remove drift & vegetation, repair damage or missing hardware on railings.¹

Current Service Level

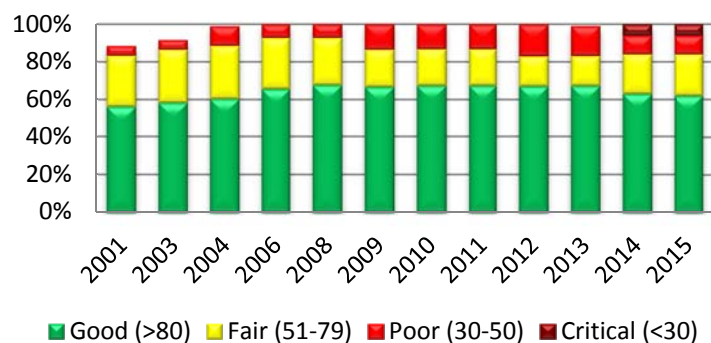
Continue to meet the target of 20 bridge replacements by 2029 by completing six bridge replacements, which are either in the design phase or in the process of replacement. Implement the Bridge Maintenance and Preservation Program developed in 2014 so that bridges are maintained in good condition through cyclic maintenance and preservation. Replace bridges with a sufficiency rating below 50 percent as funding partners are identified and local funding allows.

¹ Tillamook County Strategic Bridge Program Plan, OBEC, May 2014.

Current State

Bridges have a replacement value of \$261M. The majority of the 101 County bridges are in Good or Fair condition. However, 16% are in Poor or Very Poor condition.

The majority of County bridges were in Good or Fair condition in 2015



Bridges Repaired and Replaced

Lommen bridge construction began in November 2015. Wyss Bridge replacement is almost complete. An intergovernmental agreement is now in place for reconstruction of South Fork Trask River Bridge (MP 13). Whalen Island Bridge is in design. While Cedar Creek is on hold, the County is seeking revenues to remove East Beaver Creek. George Creek Bridge was added to replace a culvert.

The County contracted bridge rehabilitation and repairs on six bridges in 2015.

*Bridge currently closed due to road washout; the County plans to remove the bridge from the inventory and salvage the material.

Six Bridge Scheduled for Replacement

Lommen Bridge
Wyss Bridge
Cedar Creek Bridge
S. Fork Trask River Bridge (MP 13)
Holgate Bridge
Whalen Island Bridge
East Beaver Creek*

Six Bridges Repaired in 2015

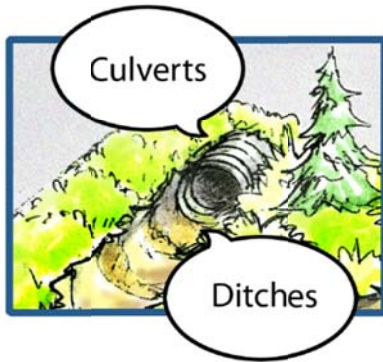
Jim Creek Bridge
Beaver Creek Bridge
Tillamook River (Burton) Bridge
Rice Creek Bridge
Munich Bridge
Lommen Overpass

Risks

- Four fracture critical bridges including three railroad car bridges (Cedar Creek, Three Rivers, and Dougherty Slough) and one twin-girder bridge (South Fork of the Trask). Two are on low volume roads (Three Rivers and Dougherty Slough).
- Three bridges are susceptible to scour /settlement following flood events.
- 27% of bridges are timber and 8% steel. Both materials wear more quickly in maritime environment. These bridges tend to be older and have the lowest Sufficiency Rating.
- Guardrail and levee failure due to poor design, crash impacts, weather events leading to flooding and embankment failure.
- Funding and the number of staff are insufficient to address maintenance and repair needs.

Risk Response

- Implement Strategic Bridge Program based on available funds.
- Replace two critical bridges (South Fork Trask and Cedar Creek).
- Inspect all bridges every other year
- Monitor susceptible bridges & levees following flood event.
- Contract repair of 6 bridges (Jim Creek, Beaver Creek, Tillamook River (Burton), Rice Creek, Minich Creek Bridges, and Lommen Overpass).
- Seek funding partners to replace high priority bridges.
- Develop an annual levee inspection program.
- Repair guardrails after crashes and try to collect insurance reimbursement.



Drainage - Culverts

Performance Measure:
Percent of culverts in Poor or Critical condition

Drainage Management Strategy

As paving lists are developed, inspect and replace culverts prior to paving. Continue to seek funding partners to replace culverts with fish passage facilities in all watersheds of the County. Replace culverts that are a high risk to the safety of the community.

Service Level Target (to be reviewed and adopted by the County Road Advisory Committee in FY 2016)

Drainage management strategic objectives are to:

- provide and maintain adequate road drainage in order to prevent water damage to the roadway structure,
- protect the rights of adjoining property, and
- provide fish passage where mandated and as funding partners are identified.

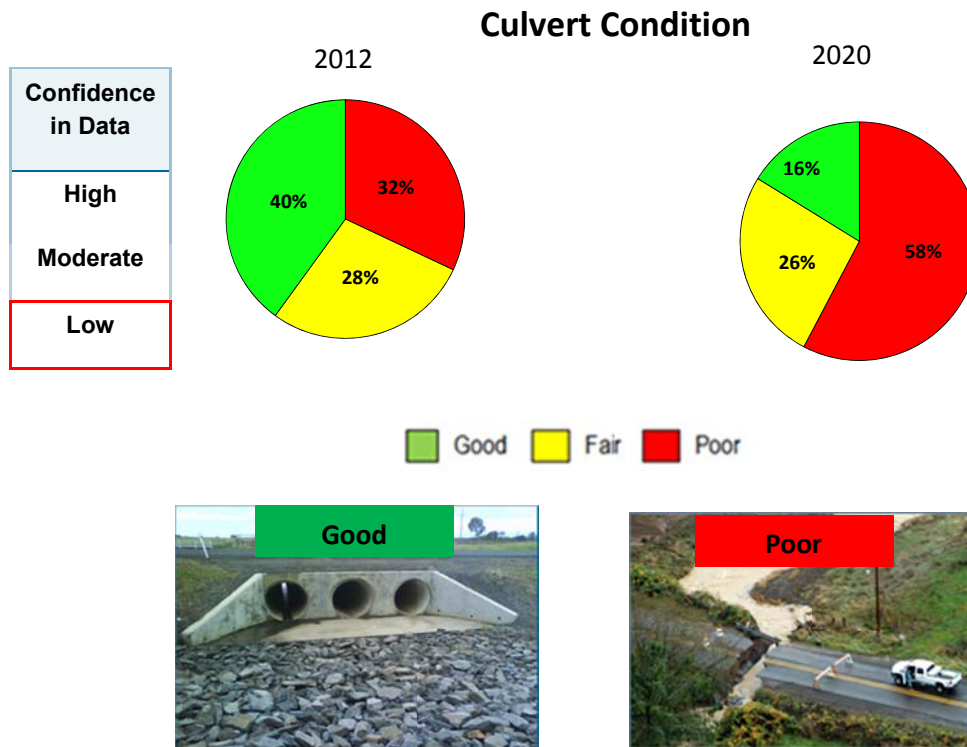
Manage surface storm water and flooding by maintaining vegetated ditches that serve as drainage facilities, maintain culverts in the condition necessary to handle their design capacity, and where culverts carry streams, maintain them in a condition to provide fish passage by performing

- culvert and catch basin cleaning
- culvert replacement as funding partners are identified
- ditching
- erosion control using best management practices with regards to steep slopes, drainage ways and permitted activities.

Current Service Level: One-third of the estimated 3,300 culverts are in Poor condition and 30% of ditches are in Poor condition.

Current State

The December 2015 storms wreaked havoc on an already fragile drainage system. We are not funding the needed lifecycle costs of the 3,300 culverts and 198 miles of ditches. Drainage on county roads was rated an Extreme risk in 2010 given the wet environment and increasing frequency and severity of weather events. In 2015, the County replaced 595 lineal feet of culverts in Poor condition. This represents less than 1% of the inventory. Culvert inventory information has not been maintained and culvert condition is not known. However, a partial (20%) culvert inventory and condition assessment in 2011-12 indicates that there are more culverts, the replacement cost is significantly greater, and culvert condition is worse than earlier estimates. While 1,222 hours of ditching was performed in FY 2015, this does not meet the needs of Tillamook County. A 2008 ditch inventory and condition assessment identified that 93% require some maintenance, and 30% are in Poor or Very Poor condition. The decline of TCPW employees has resulted in the elimination of a comprehensive ditching program for county roads. Currently, ditching occurs on a reactive basis only.



Risks

- 1 Outdated inventory & condition assessment
- 2 Lack of mapped culverts
- 3 Roads inundated by plugged or deteriorated culverts
- 4 Inappropriately sized outfalls, beavers, undersized culverts, stormwater and salt water
- 5 Inadequate staffing to manage vegetation
- 6 Changing environmental regulations
- 7 Ecological impacts
- 8 Failure due to age
- 9 Poor construction techniques
- 10 Heavy vehicle loads
- 11 Inadequate funding to address critical culvert replacement
- 12 No active ditching program

Risk Response

- 1 Replace culverts prior to paving
- 2 Seek additional funding and partner with other agencies on high priority fish passage culvert replacements
- 3 Inspect additional portion of culvert inventory in FY 2016
- 4 Develop inventory & and cleaning program
- 5 Report to Board on program costs & needs
- 6 Perform vegetation mowing and brush cutting as funding allows



Emergency Response

Emergency Response Performance Measure:
Service Requests response.

Emergency Response Management Strategy

Prepare for and respond to weather events and hazards to ensure a safe county road network. Work in partnership with federal, state and county emergency responders.

Service Level Target (to be reviewed and adopted by the County Road Advisory Committee in FY 2016)

Investigate and quickly respond to weather events and hazards. Eliminate critical bridges, culverts and levees before and after weather events.

Current Service Level

Investigate 100% of emergency service requests. Reduce hazards as a high priority. Inspect critical bridges, culverts and levees before and after weather events.

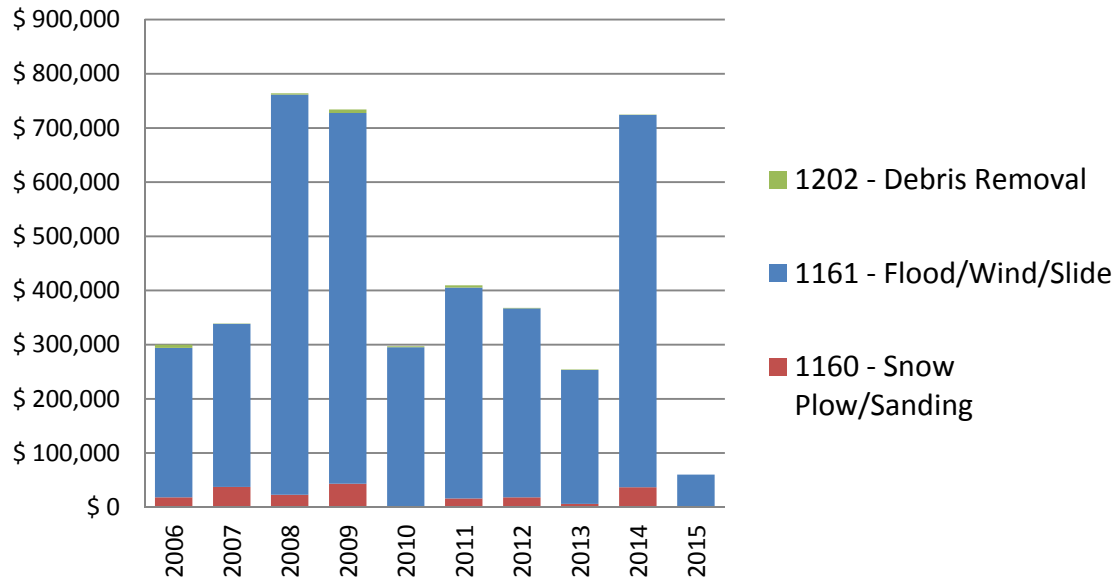


Alderbrook Road Flooding
Tillamook Headlight Herald, November 2015

Current State

There were fewer weather related emergencies in 2015 however storm response is hard to predict and impacts the budget. Emergency Response expenditures were down significantly in FY 2015.

2015 Emergency Response costs was significantly down in 2015

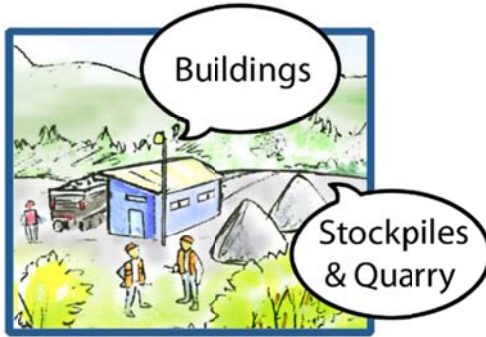


Risks

- 1 Wet climate/storm damage reduces asset life, increases life cycle costs and diverts planned maintenance and renewal funds to reactive storm damage repairs
- 2 Insufficient funding for road resurfacing will allow water to enter the pavement resulting in pavement failures and avoidable and expensive reconstruction.
- 3 Roads inundated by plugged or deteriorated culverts

Risk Response

- 1 Develop and regularly review appropriate emergency response capability.
- 2 Target key emergency response vehicle (e.g., snow plows) for safety, maintenance and repair.
- 3 Respond to storms
- 4 Respond to landslides and 911 callouts
- 5 Participate in statewide emergency preparedness initiative for the Cascadia earthquake “Filling the Void of Leadership”
- 6 Design Neskowin emergency egress route



Buildings

Building Performance Measure:
Percent of buildings in Poor or Critical condition

Building Management Strategy

Address the number, quality and location of TCPW buildings that influence the efficient and effective management of resources (labor, materials and equipment) used to deliver county road services.

Target Service Level

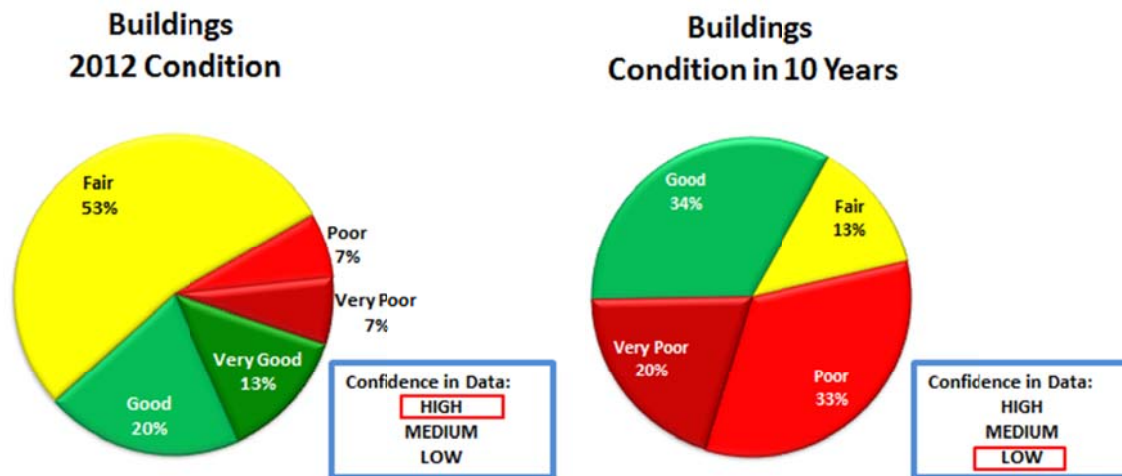
To be developed with the County Road Advisory Committee in FY 2016.

Current Service Level

There are 15 buildings with 2 (13%) in Poor condition based on a 2012 inspection. Buildings are inspected quarterly for safety code violations. Only critical building repairs are performed.

Current State

Improvements to the Sign Shop were made in 2015 and a fence repaired in the Central Yard. However, a 2012 estimate states that by 2022 a majority of Road Department buildings will be in Poor condition.

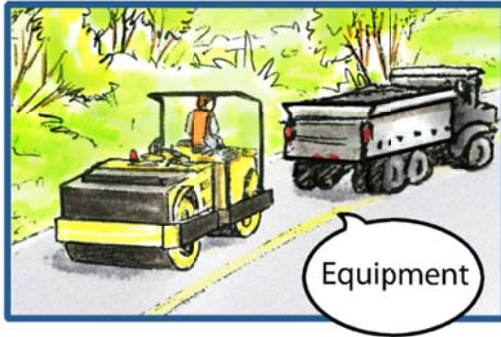


Risks

- 1 There is no building asset plan with an inventory and condition assessment of major building elements that assure worker safety and building code compliance
- 2 Buildings not to code
- 3 Buildings functionally is inadequate
- 4 Many buildings are in poor condition

Risk Response

- 1 Improve Sign Shop interior
- 2 Inspect buildings quarterly for safety code violations
- 3 Address critical repair needs identified in the 2012 inspection, especially on Main Office and fence
- 4 Implement improvements to use of existing office space in Central Office
- 5 Conduct annual building inspection for OSHA health and safety code compliance
- 6 Communicate the need for additional resources to address overall Road Department facility needs



Vehicles & Equipment

Performance Measure:

Percent of vehicles with less than 50% useful life remaining

Vehicles and Equipment Management Strategy

Ensure availability and reliability of vehicles and equipment for road crews by providing timely maintenance and repairs. Replace critical equipment and vehicles to manage fleet at lowest lifecycle cost as funds are available.

Target Service Level (Target to be reviewed and adopted by the County Road Advisory Committee in FY 2016)

Vehicles have 50% or greater remaining useful life. Perform preventive maintenance (Level A & B) on 100% of the fleet.

Current Service Level

Nearly 75% exceed the County's adopted useful life for vehicles. In Fiscal 2015, only twenty-four percent (24%) of the County fleet received Level A preventive maintenance. The Public Works Department staffing levels are inadequate; the Shop Foreman and crew are primarily assigned to field work.

Used vehicles and equipment that increase work efficiency and effectiveness are targeted for purchase. The County purchased a used roller and 2 tilt trailers in Fiscal 2015. Thirteen pieces of worn out equipment that requires high maintenance will be sold.



Worn out equipment to be sold

Risks

- 1 24% of the County fleet received Level A preventive maintenance. There is an inadequate staffing level; the Shop Foreman and crew are primarily assigned to field work in the summer.
- 2 Nearly 75% exceed the County's adopted useful life for vehicles.
- 3 57% of all Shop expenses are for vehicle repair.
- 4 Some vehicle parts are not available and must be made in house.
- 5 Equipment reliability and safety is an increasing concern.
- 6 Equipment may not be appropriate for all job requirements.

Risk Response

- 1 Continue tracking time and hours of performance & maintenance cost per vehicle.
- 2 Report on need.
- 3 Auction vehicles not in use or with high maintenance costs.
- 4 Procure used vehicles and equipment that increase work efficiency and effectiveness.

Appendix A- List of FY 2015 Projects on County Roads

List of 2015 Projects on County Roads		
Project	Purpose	Performed by
Paving (10.639 miles)		
Latimer Road	Full Depth Reclamation-1.69 miles	Contract
Brooten Road	Full Depth Reclamation-2.21 miles	Contract
Miami River Road		TCPW
Moss Creek		TCPW
Necarney City Road	One lift	TCPW
North Fork Road		TCPW
Tohl Road		TCPW
Front Street		TCPW
Sollie Smith		TCPW
Vaughn		TCPW
Idaville		TCPW
Hobsonville		TCPW
BayOcean		TCPW
Wilson River Loop E-W & N-S		TCPW
Kilchis River Road		TCPW
Brickyard		TCPW
Hughey Lane		TCPW
Magnolia		TCPW
Elderberry PC Heights		Partnership/LAR
Boquist	Spring Paving 2.040 miles	TCPW
Hodgdon	Spring Paving 2.040 miles	TCPW
Parkway Drive	Spring Paving 2.040 miles	TCPW
Savage	Spring Paving 2.040 miles	TCPW

List of 2015 Projects on County Roads

Project	Purpose	Performed by
Slab Creek S	Spring Paving 2.040 miles	TCPW
Bridges		
Salmonberry Bridge	Guard rail repair	TCPW
Lommen Bridge	Bridge design	ODOT
Cape Meares Loop Road	Geotechnical evaluation and alternative analysis around large active landslide	ODOT
Wyss Bridge	Bridge design	ODOT
Whalen Island Park Bridge	Reduce to one lane as a result of foundation issues, initiated procurement for consultant to design new bridge	ODOT
Neskowin Alternate Access Project		Grant, Citizens, TCPW
Lommen Bridge Overpass	Bridge repair and rehabilitation	Contract
Salmon River Highway Project	Replace culverts to reduce fish barriers	Partnership
Jim Creek	Bridge repair and rehabilitation	Contract
Beaver Creek Bridge	Bridge repair and rehabilitation	Contract
Tillamook River (Burton Bridge)	Bridge repair and rehabilitation	Contract
Rice Creek Bridge	Bridge repair and rehabilitation	Contract
Minich Creek Bridge	Bridge repair and rehabilitation	Contract
Culverts		
Kilchis River Road	Replaced culverts	TCPW
All paving projects	Replaced culverts	TCPW
Bear Creek Culvert (Brickyard Road)	Culvert replacement with fish passage	TCPW with funding partnership
George Creek Bridge (Evergreen Road)	Bridge replacement with fish passage	TCPW with funding partnership
Vegetation Management	Reduce vegetation on County ROW	TCPW in partnership with Soil & Water District
Signs	Replaced signs indicated in the night Inventory. Night Inventory scheduled late 2015.	TCPW

List of 2015 Projects on County Roads

Project	Purpose	Performed by
Buildings – Central Yard	Repair buildings – improve sign shop, repair fence in Central Yard	TCPW
Equipment	Purchased used roller and 2 tilt trailers	TCPW



Public Works Road Department



FY 2015 Road Performance

Road Department Briefing

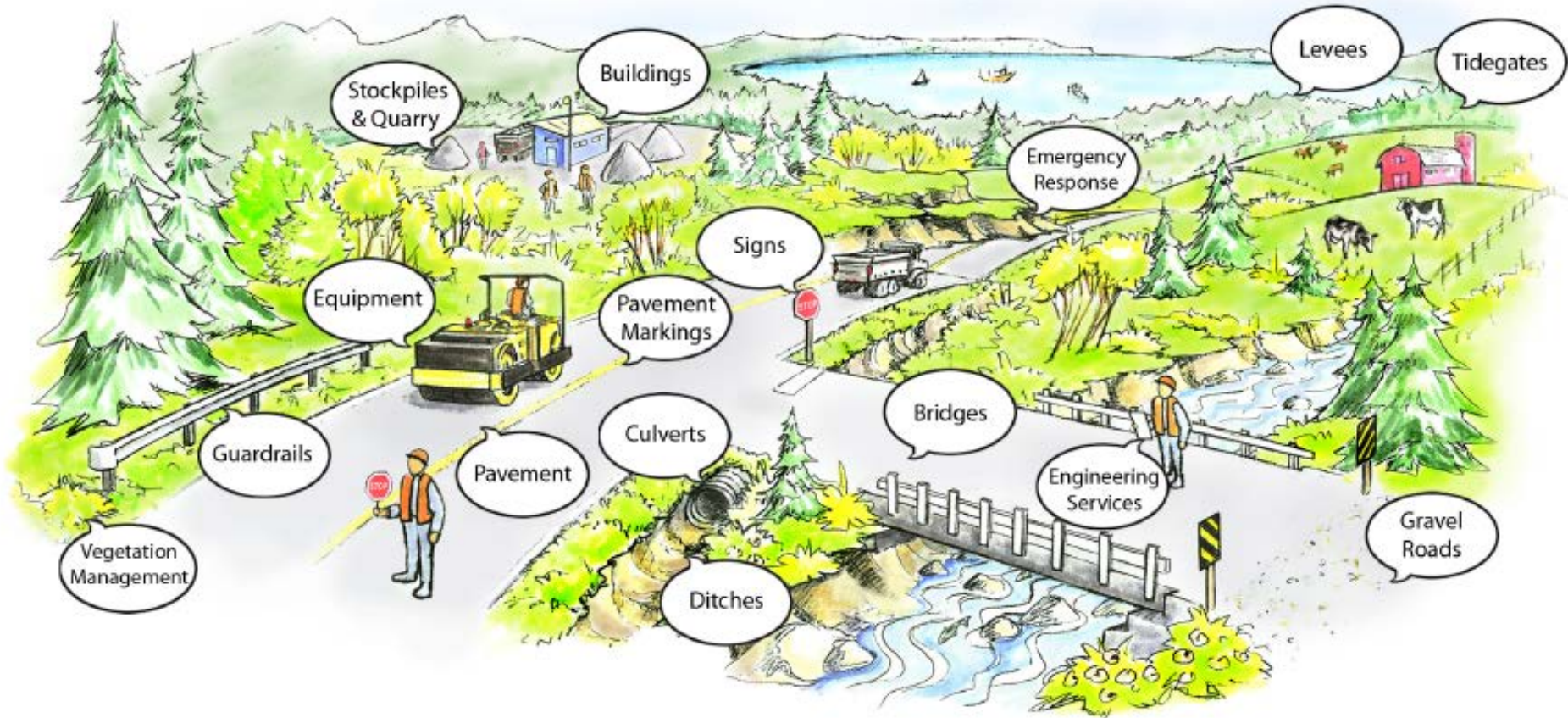
January 2016

Liane Welch, P.E.
Director
503.842.3419
lwelch@co.tillamook.or.us



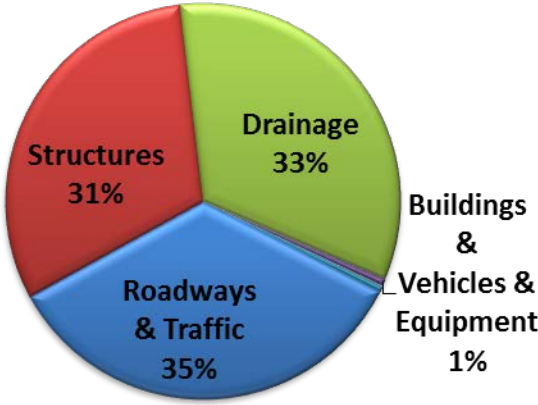
Your Tillamook County Road Dollars At Work

\$845 Million Road System Value in 2015



What does the Road Department manage?

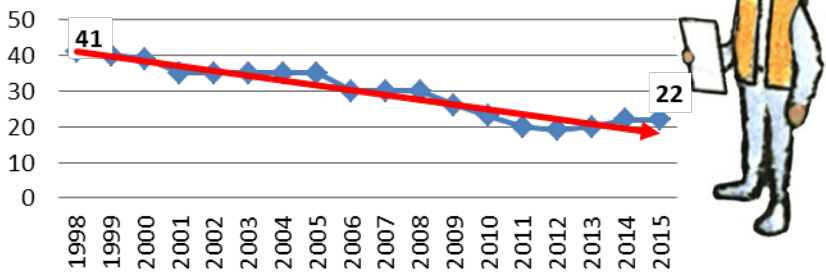
Tillamook County Road Network
\$845 Million



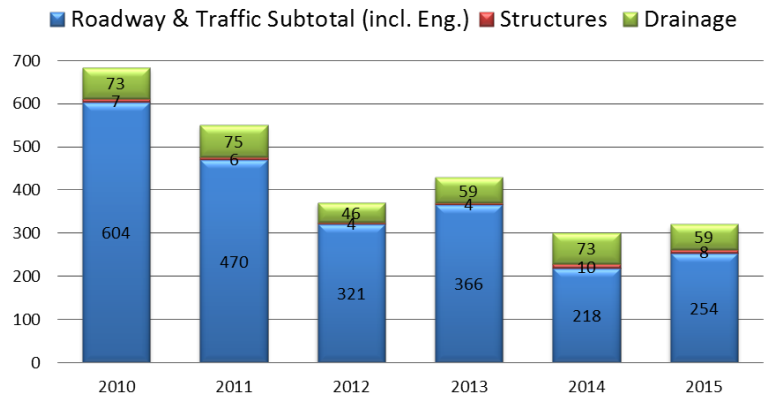
County Road Services	
Assets	Services
263 paved miles	Vegetation Management
65 miles gravel roads	Traffic Safety
101 bridges	Materials/Stock Piles
3,300 culverts	Service Request management
7 levees	Emergency Response
5,169 signs	Engineering Services (permits & capital projects)
392 miles pavement markings	Fleet Management
10 miles guardrails	15 buildings



Employees

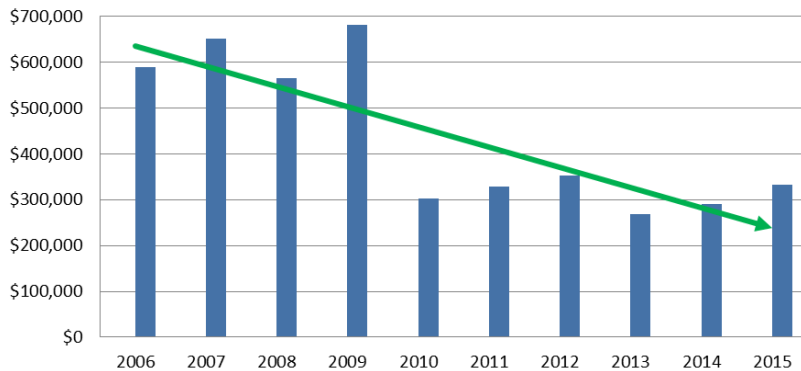


Service Requests
2010-2015

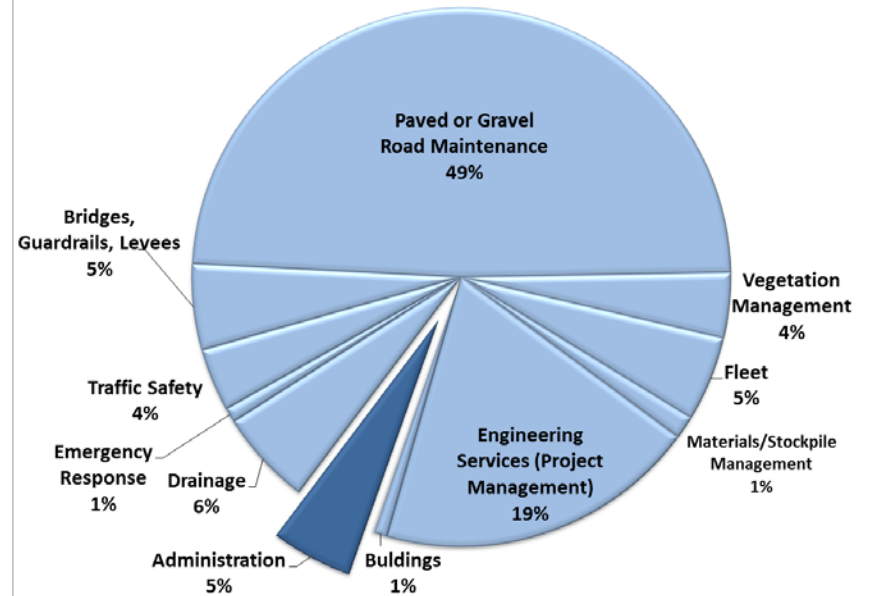


How do we manage everything?

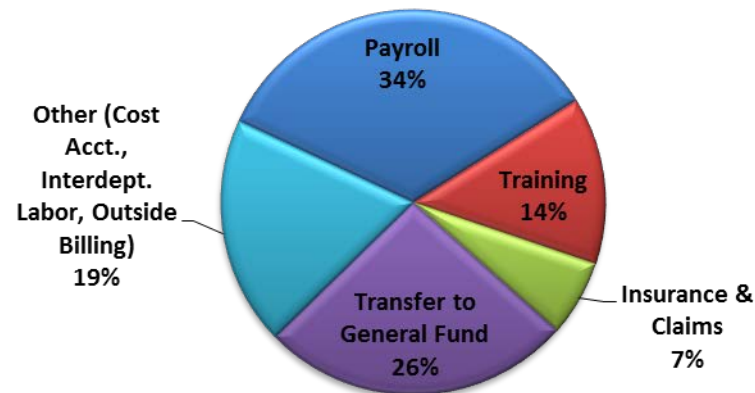
Administration 2005-2015
Overhead allocated to Services beginning in 2010



FY 2015 Tillamook County Road Expenditures - \$6.8 Million
(w/Admin. Allocated)

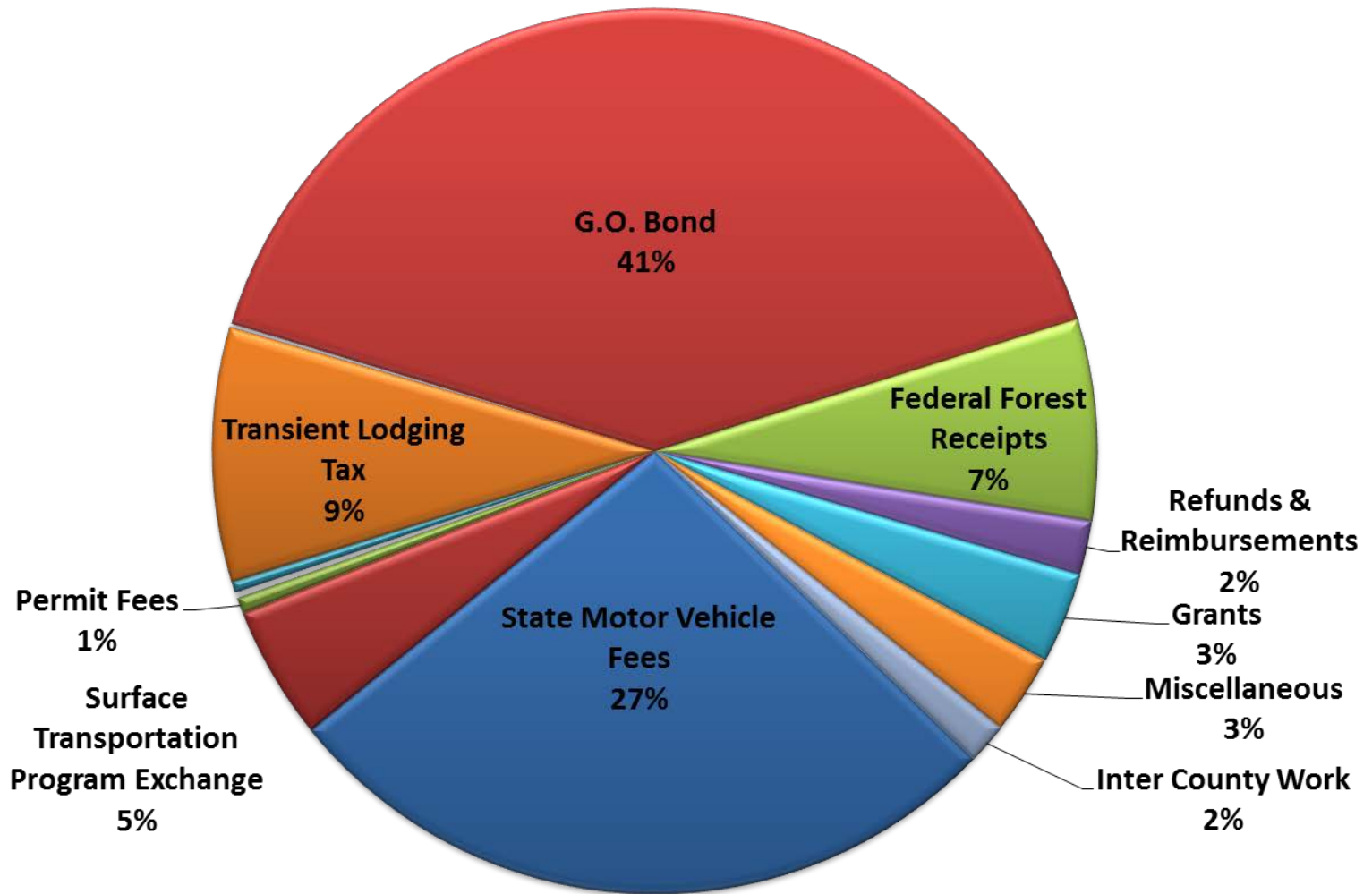


2015 Total Administration
\$334,000



Road Department Revenues FY 2015

\$7 Million

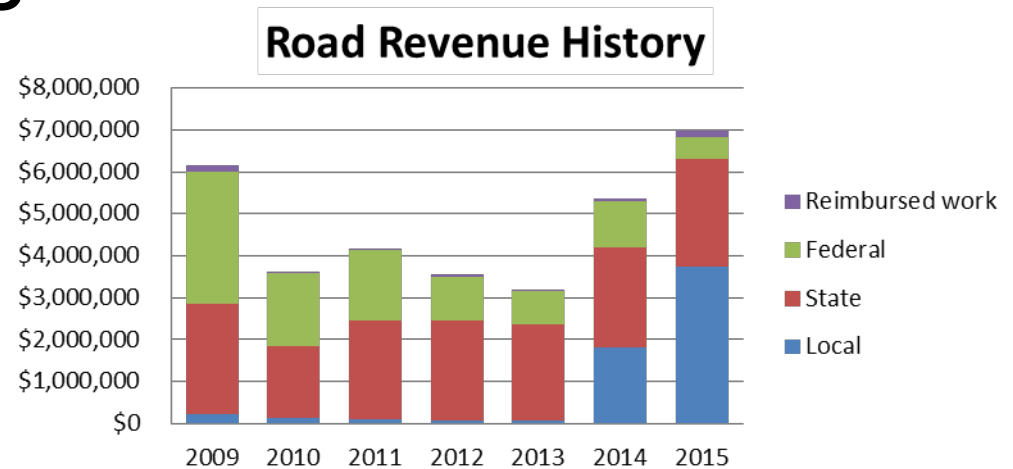


*Without Beginning Fund Balance of \$5.9 Million

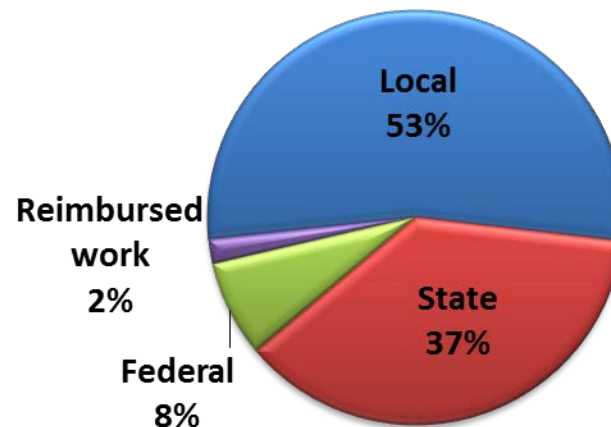


Local Revenues make up 53% of Road Revenues

- Local revenues (Bond, Transient Lodging Tax, permits) are 53% of Road Funds in 2015
- Local revenues were approved by voters in fall 2013
- Local revenues are making a difference however aren't enough to meet the estimated \$6.84M average annual funding shortfall



Local revenues are 53% of road funds



\$1.4 M in Funds Administered by ODOT & Partners for County Projects in FY 2015

State and Federal Funded Projects on County Roads in 2015		
Cape Meares Loop	Geotechnical Study	\$56,000
Lommen Bridge	Bridge Design	\$495,000
Emergency Relief - Resort Drive MP 1.3 (FHWA)	Slope failure design	\$116,000
Emergency Relief - Resort MP 2.1 (FHWA)	Slope failure design	\$125,000
Wyss Bridge	Bridge design	\$117,000
Sand Lake Road 10.5	Culvert replacement	\$35,900
Whalen Island Bridge	Bridge replacement design	\$13,000
Other partners' funds for County Projects in FY 15*		
Bear Creek	Culvert replacement with fish passage	\$112,000
Mapes & Myrtle Creek	Culvert design with fish passage	\$68,000
George Creek	Culvert replaced with bridge fish passage	\$234,728
Salmon River Highway	Replace culverts for fish passage	
Total		\$1.4 Million
**OWEB, Trout Unlimited, Tillamook Estuaries Partnership, Tillamook Bay Watershed Council, Nestucca/Neskowin Watershed Council, and USFWS		



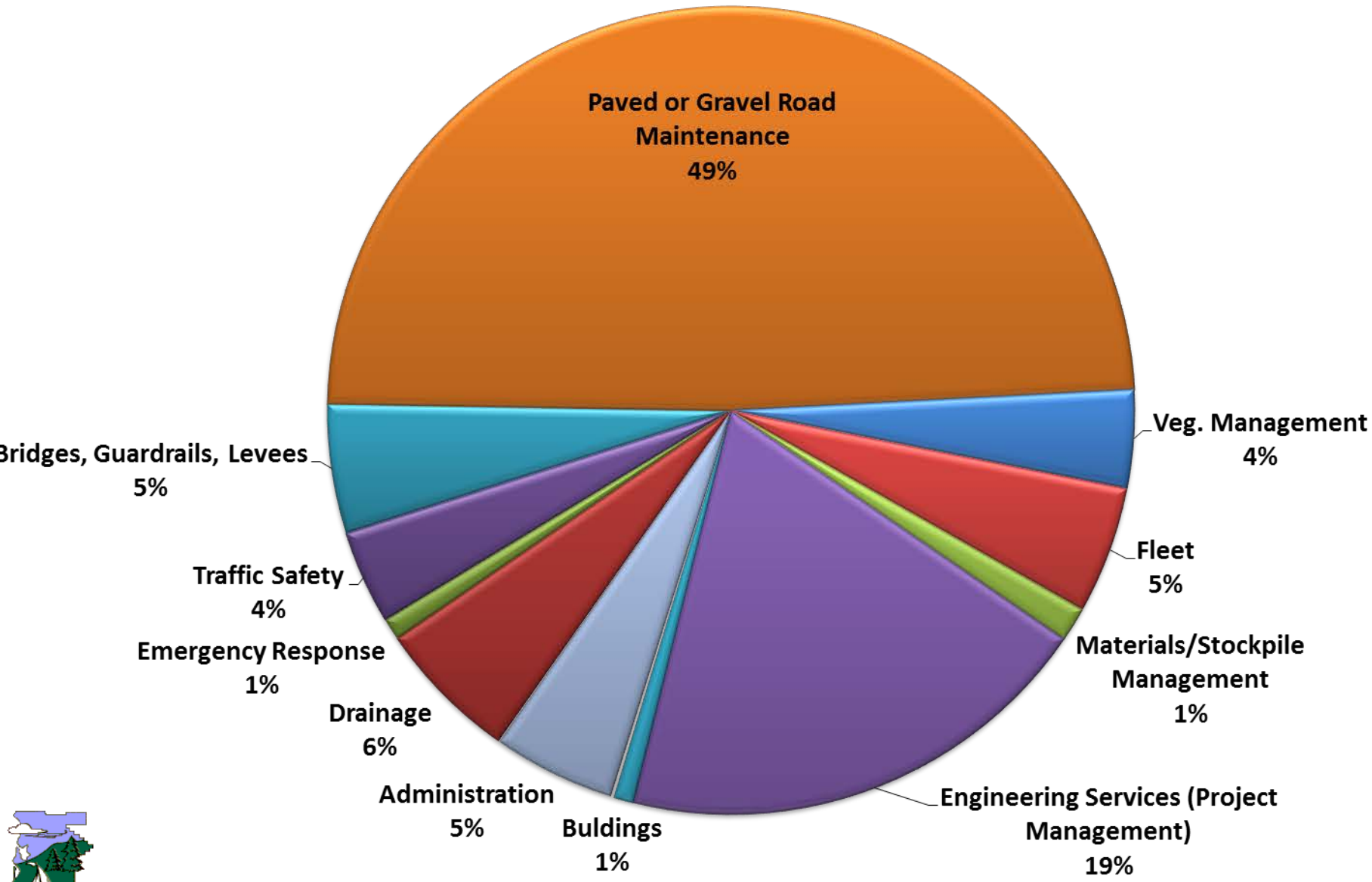
George Creek Culvert - Before



George Creek Bridge Replacement - After

FY 2015 Tillamook County Road Expenditures - \$6.8 Million

(w/Admin. Allocated)





Emergency
Response

Public Safety is our highest priority

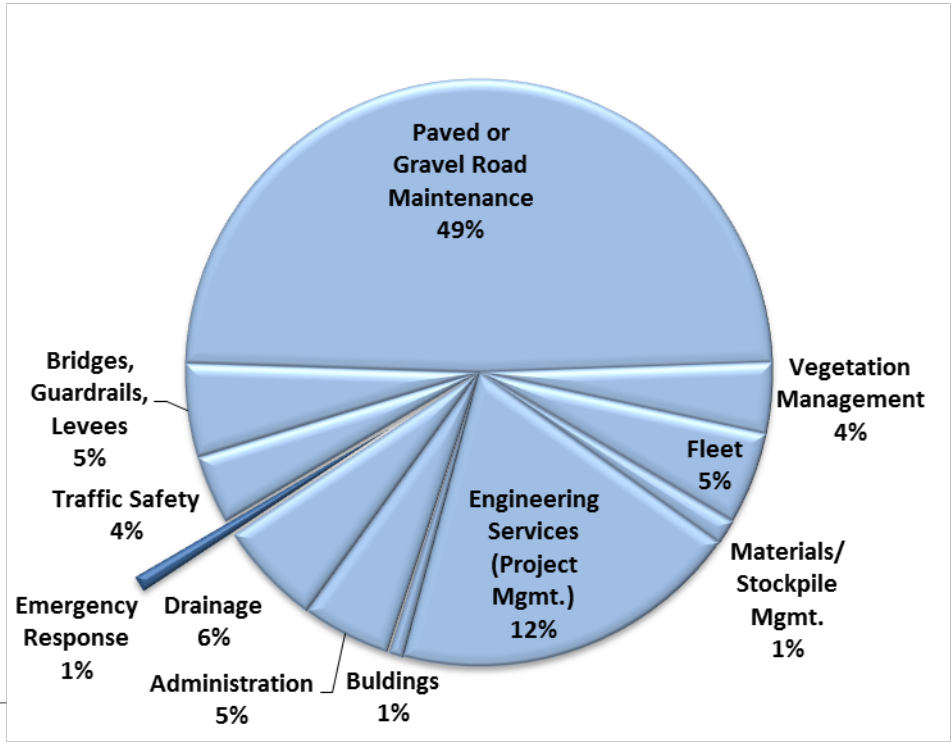
- ✓ Storm response
- ✓ Response to landslides and 911 callouts
- ✓ Emergency preparedness for managing Cascadia Earthquake “Filling the Void of Leadership”
- ✓ Neskowin emergency egress design



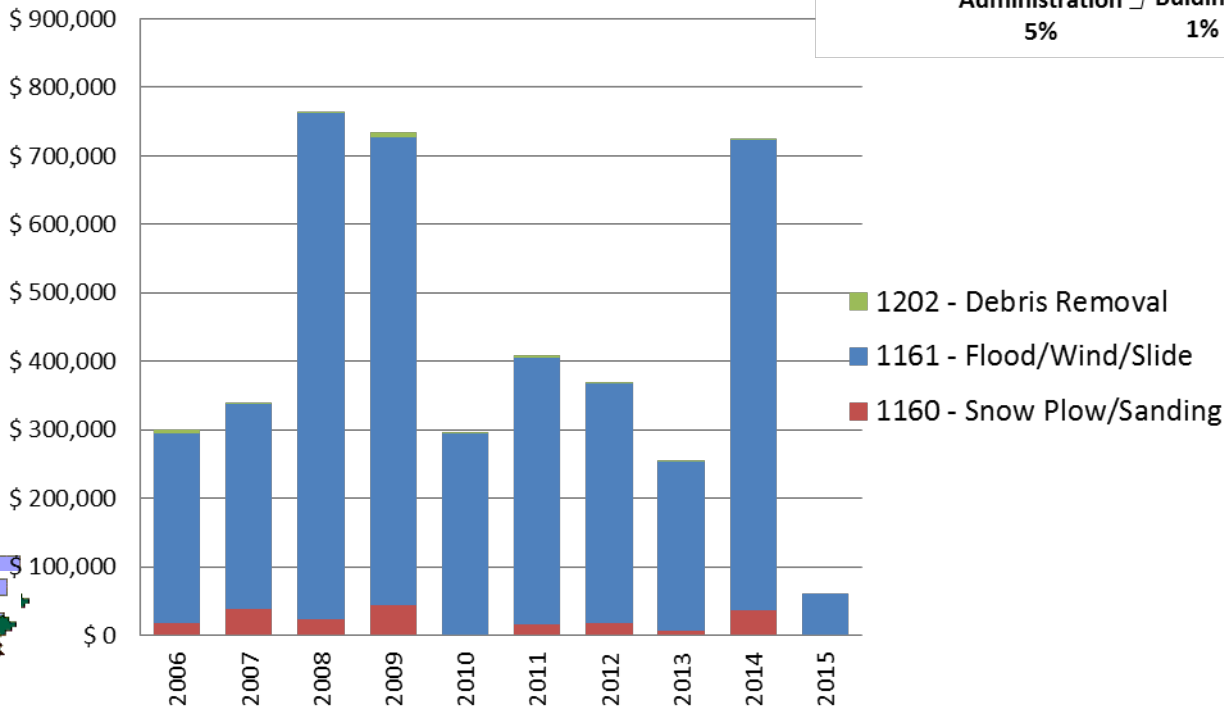
Alderbrook Road Flooding
Tillamook Headlight Herald, November 2015

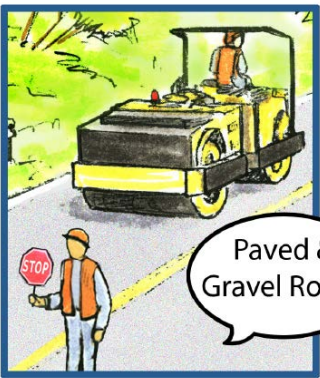


There were fewer weather related emergencies in 2015 however storm response is hard to predict and impacts the budget



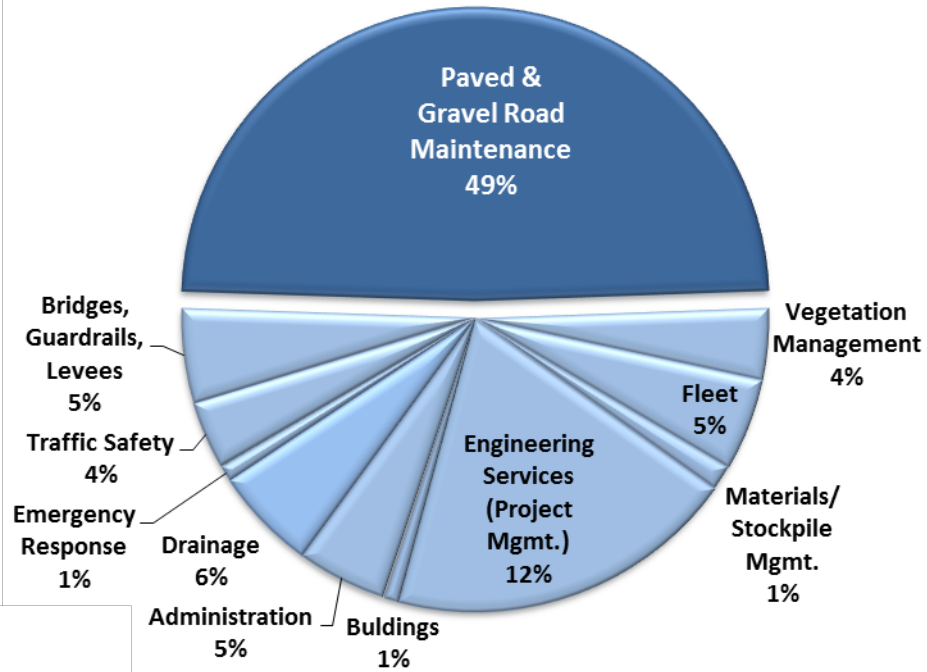
Emergency Response costs down significantly in FY 2015



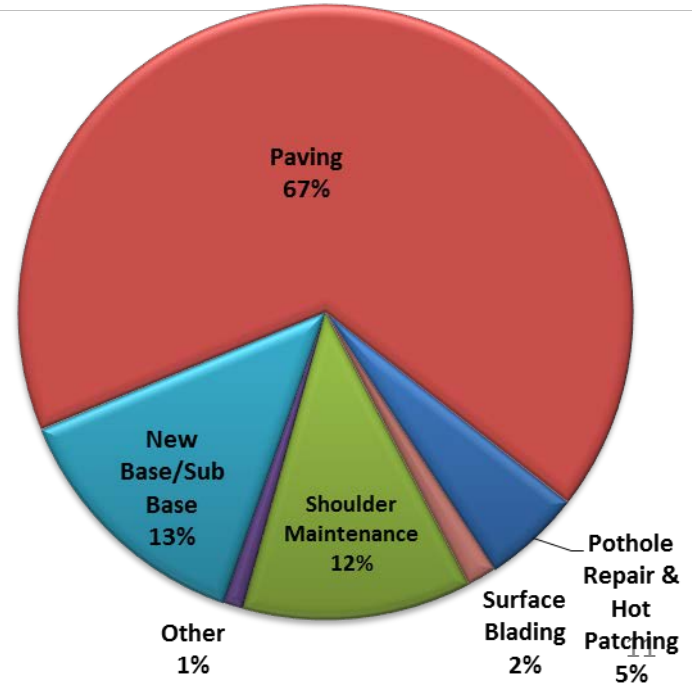
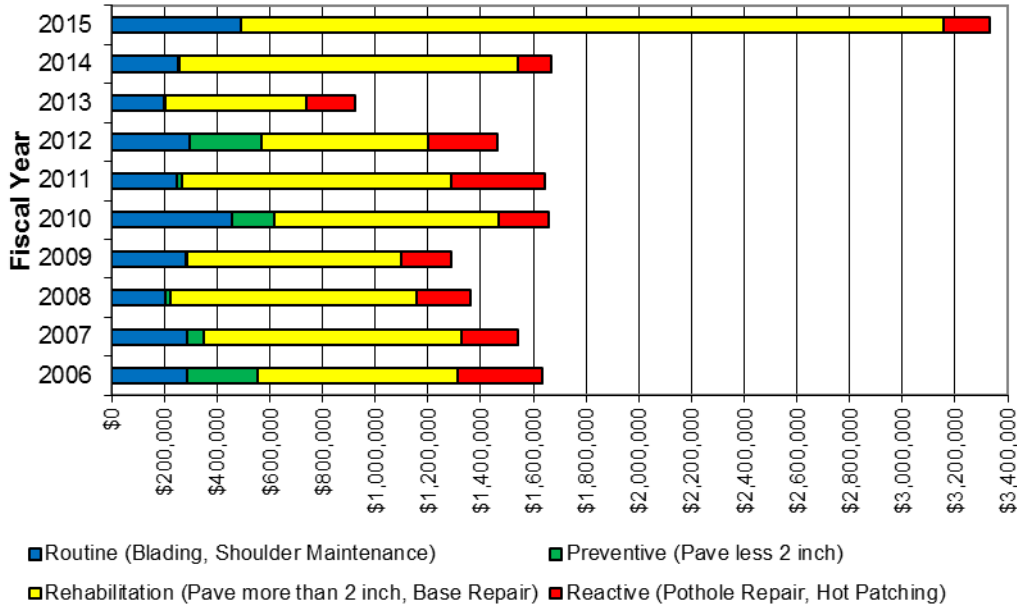


Paved & Gravel Roads

We've focused half of our Road Funds on road rehabilitation and maintenance



Road Lifecycle Expenditures 2005-2015

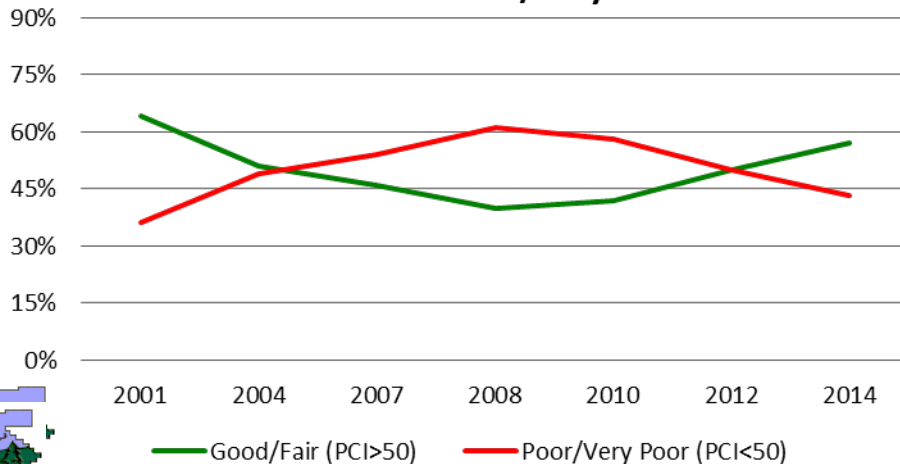


2015 focused expenditures on high speed, high volume roads and those that provide economic value to the community

We doubled the roads paved to over 12 miles, including rebuilding 3.9 miles on Latimer and Brooten roads, and paving over 2 miles on Idaville, Necarney City Road, Vaughn and Magnolia.

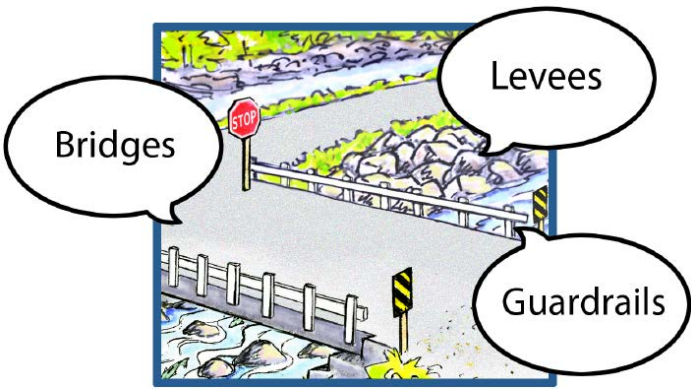
Road miles paved doubled in 2015	
Latimer Road (contract)	Brooten Road (contract)
Miami River Road	North Fork Road
Moss Creek	Tohl Road
Front Street	Sollie Smith
Fairview	Vaughn
Idaville	Hobsonville
Bay Ocean	Wilson River Loop E-W & N-S
Kilchis River Road	Brickyard
Hughey Lane	Magnolia
Elderberry PC Heights	Boquist
Hodgdon	Parkway Drive
Savage	Slab Creek S
Necarney City Road	

There are more roads in Good/Fair Condition but still 113 miles in Poor/Very Poor Condition



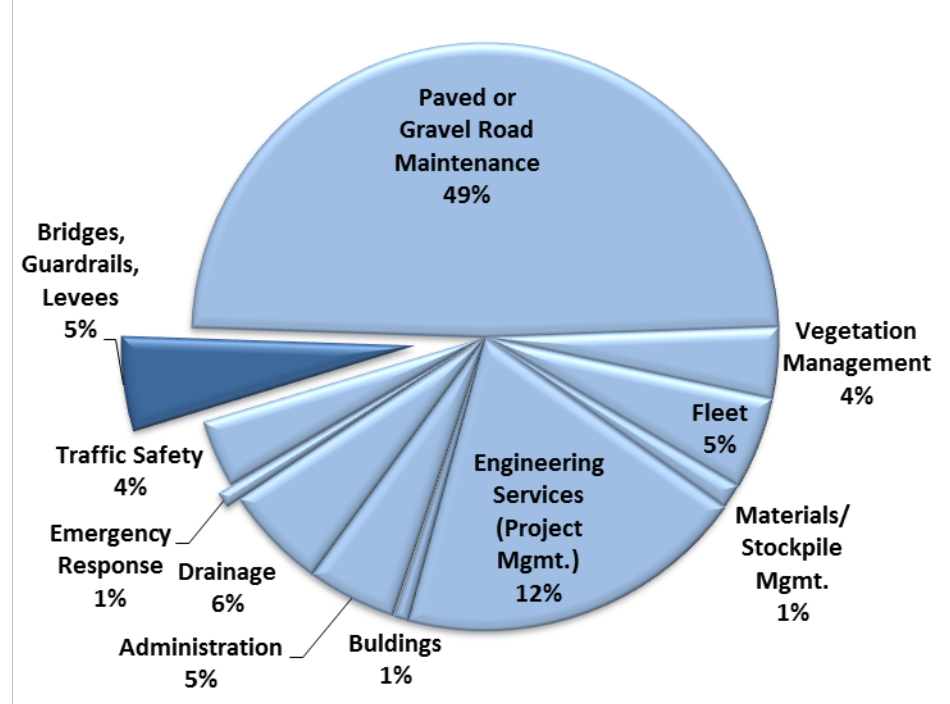
Rehabilitating Brooten Road



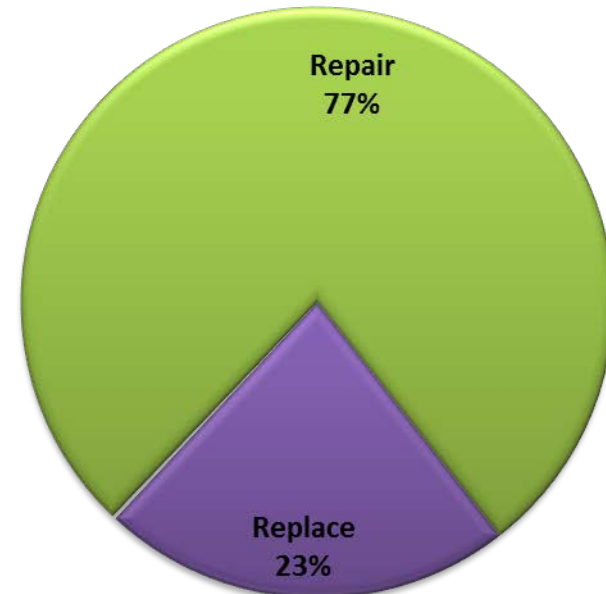


Structures

We are implementing a 10-year bridge management strategy focused on deferred maintenance, repair and replacement of our bridges.

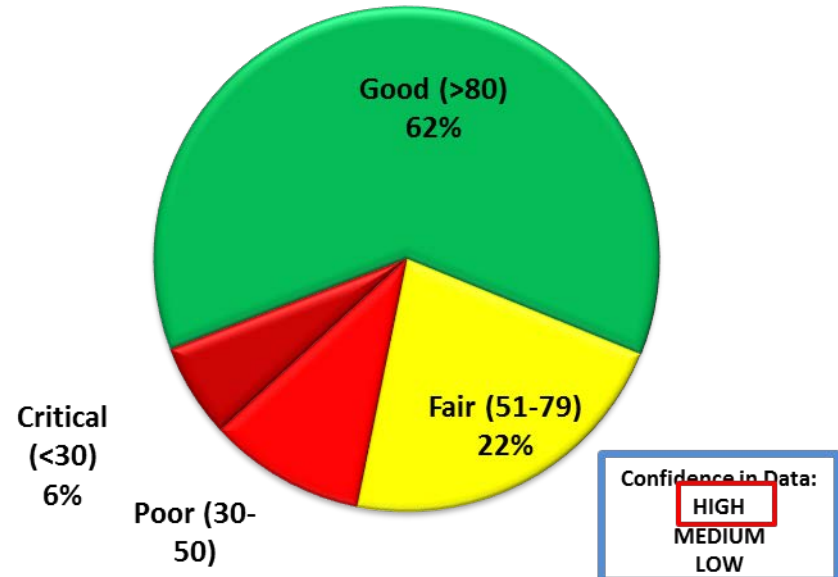


Bridge Management Expenditures 2015
\$351,631

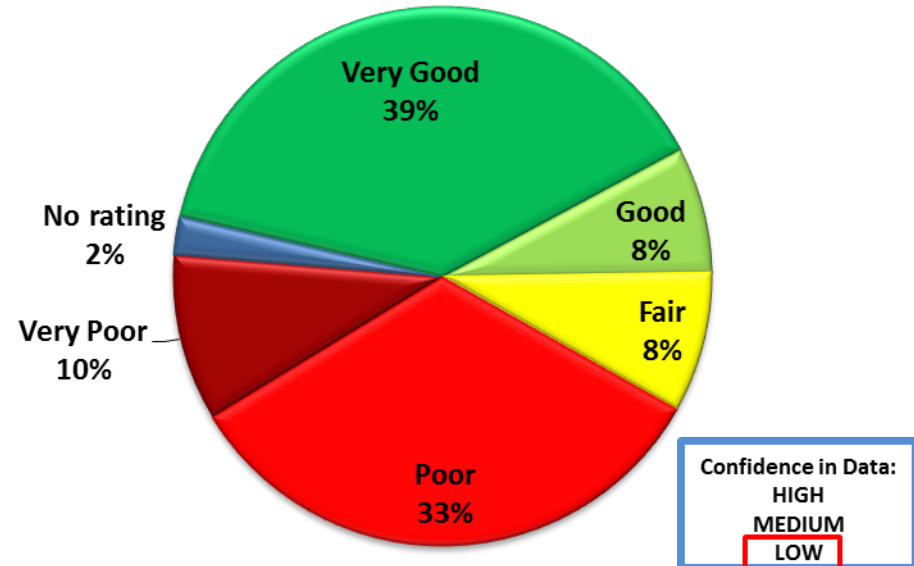


- There are 101 County bridges, 16% are in Poor or Critical Condition
- Almost half of the County's 10 miles of guardrail are in Poor/Very Poor condition.
- Guardrails are replaced after crashes and insurance reimbursement collected and as a part of bridge projects.
- One of 7 levies was inspected in 2015.

Bridge Condition 2015
101 Bridges



Guardrail Condition 2007
10.1 Miles



We're replacing 6 bridges and repaired 6 bridges

Six Bridge Scheduled for Replacement

Lommen Bridge

Wyss Bridge

Cedar Creek Bridge

S. Fork Trask River Bridge (MP 13)

Holgate Bridge

Whalen Island Bridge

East Beaver Creek*

Six Bridges Repaired in 2015

Jim Creek Bridge

Beaver Creek Bridge

Tillamook River (Burton) Bridge

Rice Creek Bridge

Munich Bridge

Lommen Overpass

*Bridge currently closed due to landslide; plan to remove from inventory and salvage material.



Wyss Bridge – Reconstruction almost completed



Burton Bridge – Deck replaced, structural welding and steel tie rods incorporated

Jim Creek Bridge – Deck replaced, structure excavated, repaired & reinforced



Even though we've made significant pavement and bridge improvements, we don't have enough money to address all needs



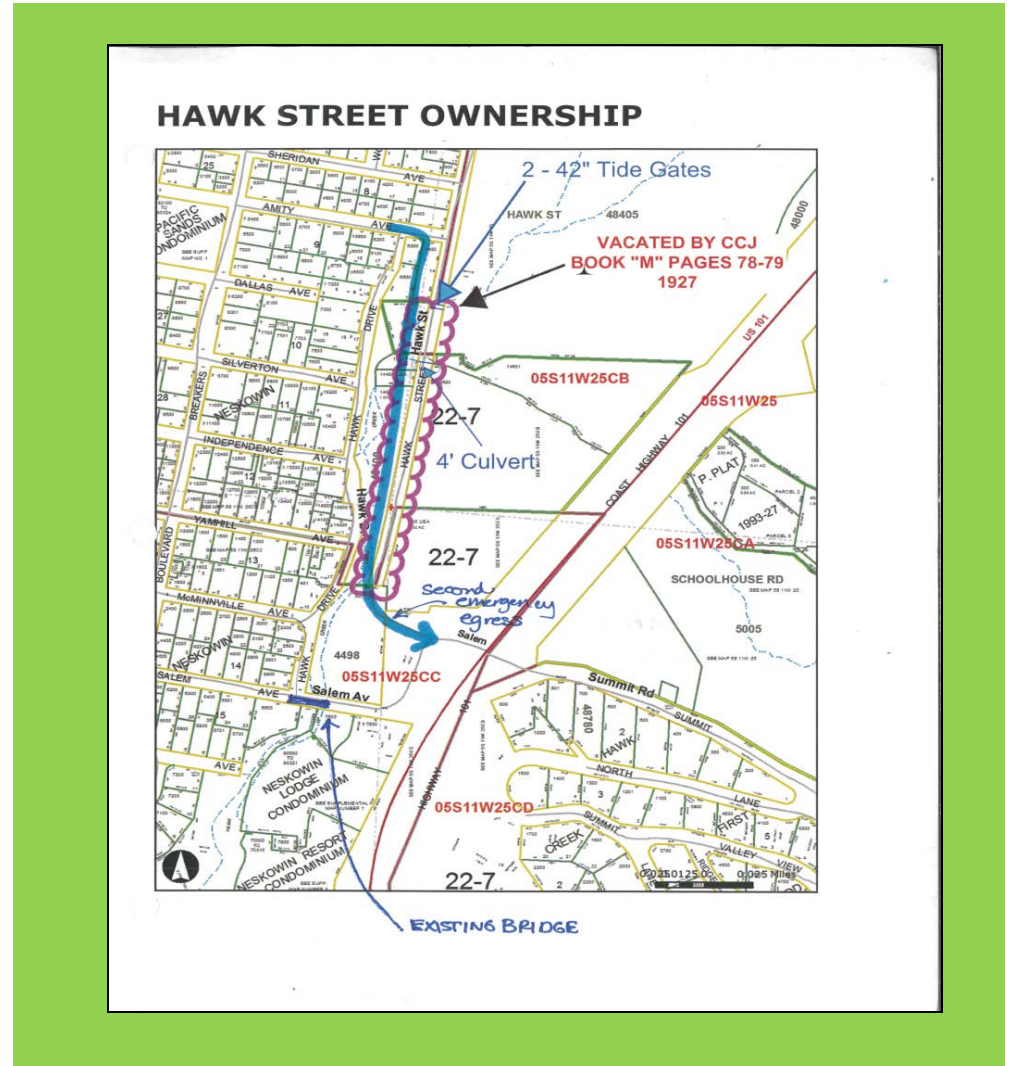
- \$2.5 ER Funds – WFLHD designing
- Applied for \$4 million FLAP Grant – **Awarded!**
- **Requires \$400,000 Match**
- Applied for \$6.1 million Tiger Grant, not awarded to County

Cape Meares Loop Road: Landslide

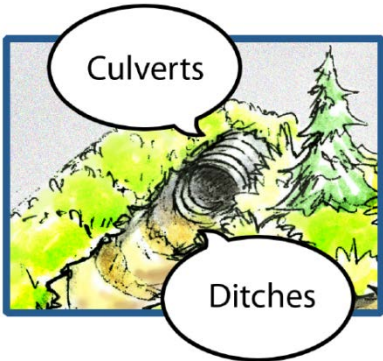


Neskowin 2nd Ingress/Egress

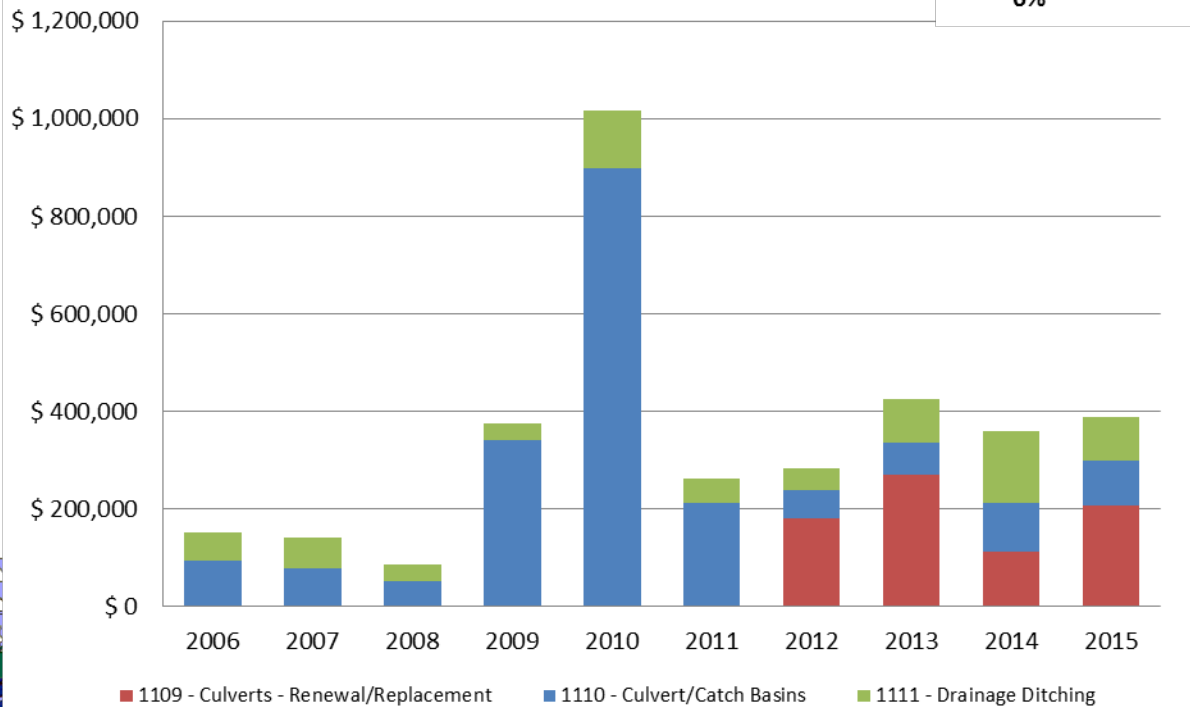
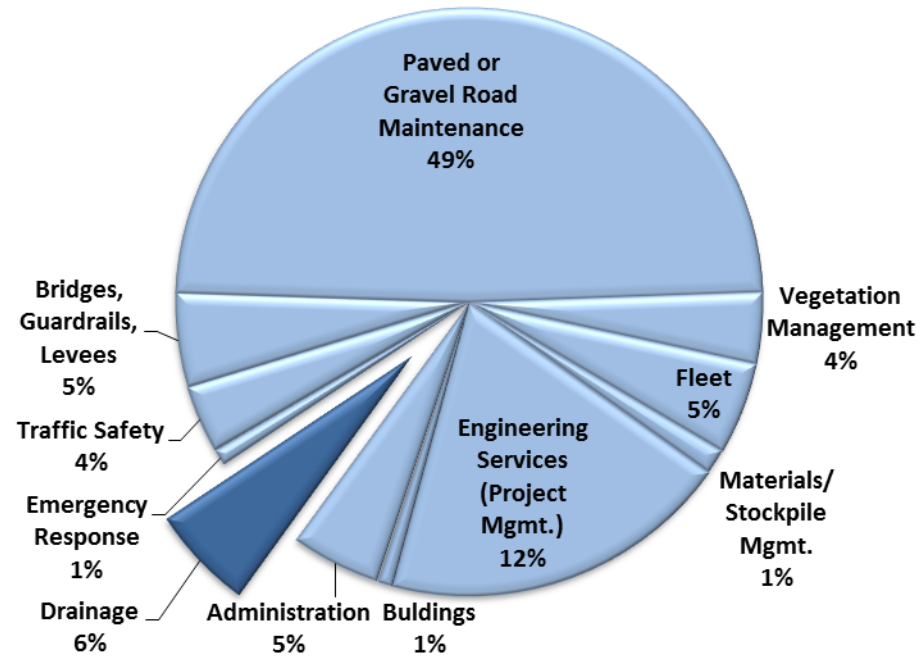
- Design is underway
 - County, Citizens and State are partnering to pay
 - Applied for \$670,000 NOAA Grant, not awarded to County



Drainage



- Culverts –
Renewal/Replacement
- Culvert/Cath Basins
- Drainage Ditching



Drainage on county roads is rated an Extreme risk given the wet environment and increasing frequency and severity of weather events.

- Culverts are replaced as paving projects occur (Kilchis River Road)
- We also replace culverts as funding partnerships are found to finance culvert replacements with fish passage significance (Bear Creek Culvert on Brickyard Road and George Creek Bridge on Evergreen Road).



Culvert Removal



Bear Creek Culvert removed on Brickyard Road

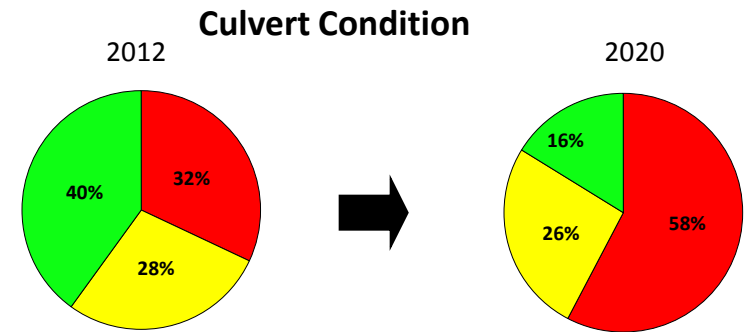


Bear Creek Culvert on Brickyard Road - After

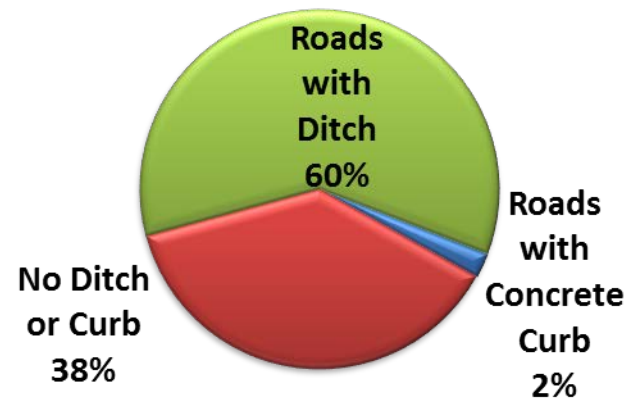


We are not able to keep up with culvert replacement needs. We still lack staff to have an active ditch cleaning program. We continue to repair ditches in a reactive mode.

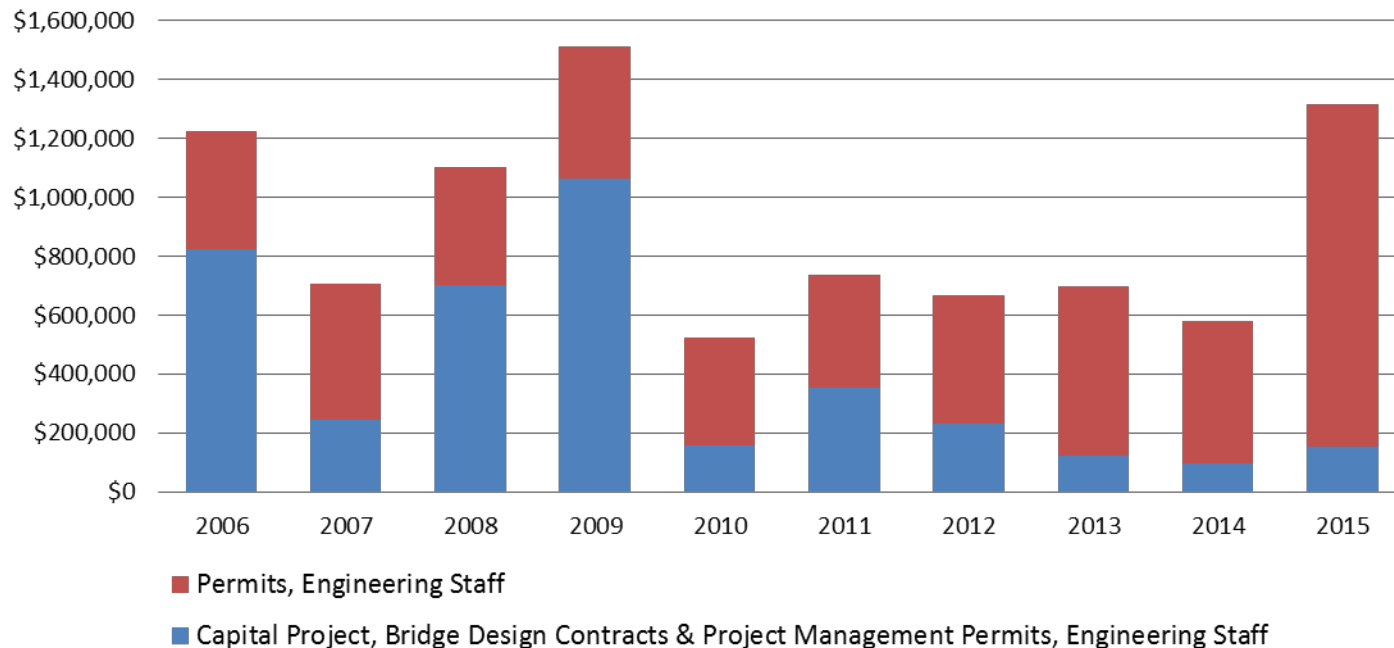
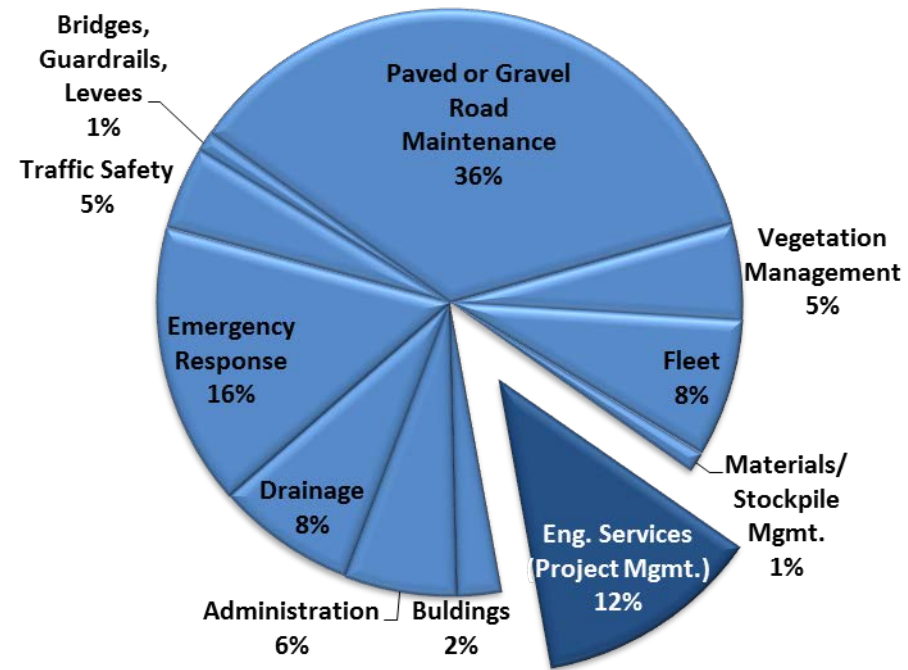
- We repaired or replaced 595 feet of culverts, less than 1% of the system
- By 2020, we estimate about 2/3 of culverts will be in Poor Condition.
- In FY 2016, another 20% of culverts will be inspected and their condition rated.
- 60% of all County roads have ditches that require some ditching maintenance.

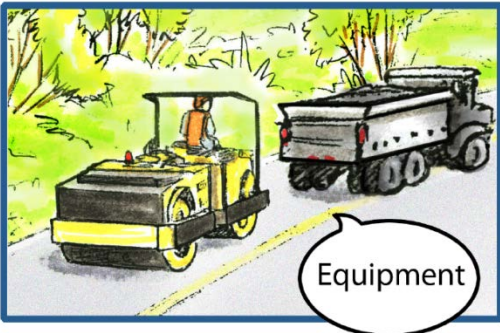


60% of County Roads have ditches that need to be maintained



Engineering Services managed capital road & bridge projects and reviewed 148 road permits & 60 community development permits in 2015

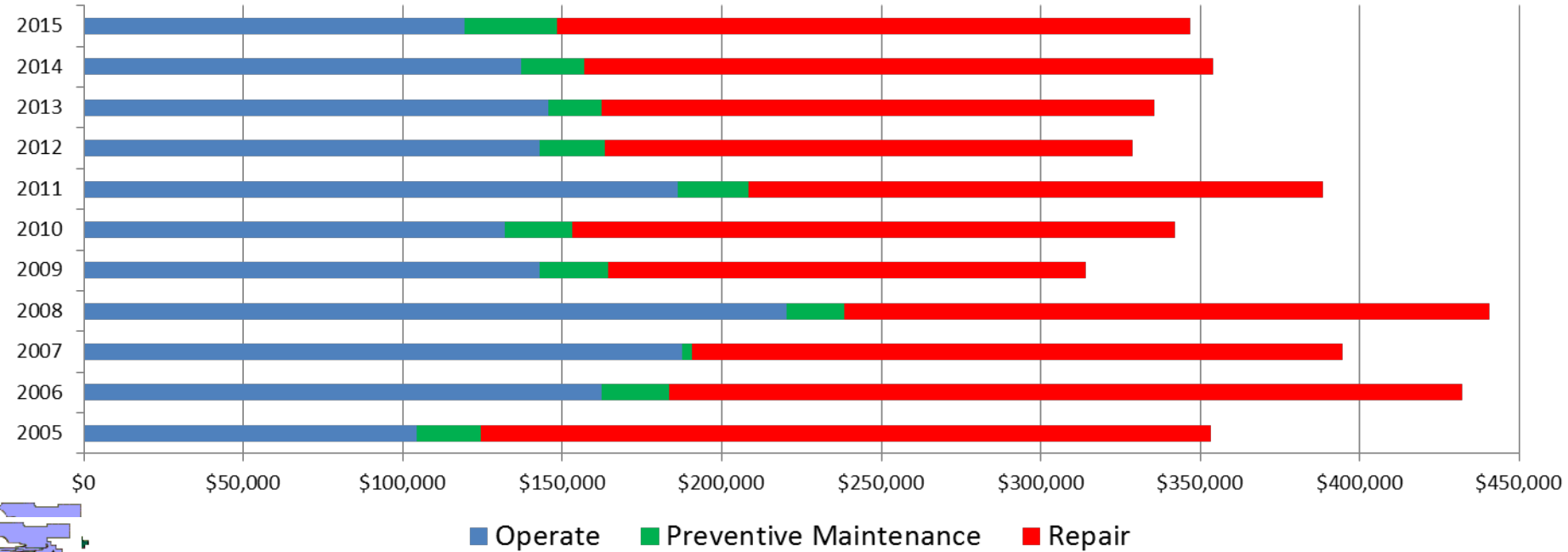




Vehicles & Equipment

We are falling behind on equipment maintenance because shop staff become part of the summer paving crew. Only 24% of the fleet received Level A maintenance in FY 2015.

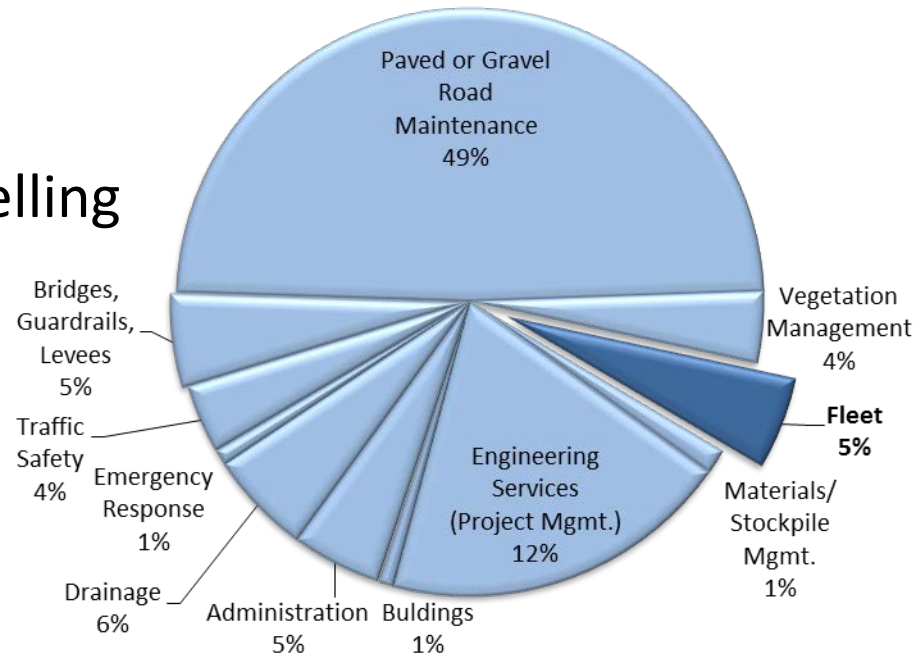
57% of all Shop expenses are for vehicle repair.



We're reducing our fleet costs by selling worn out equipment...



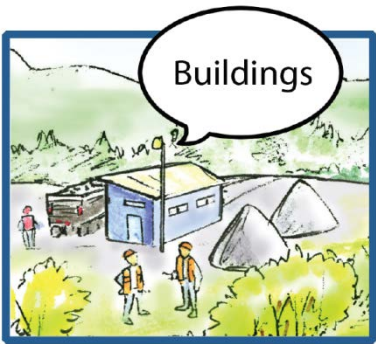
Thirteen pieces of worn out equipment to be sold.



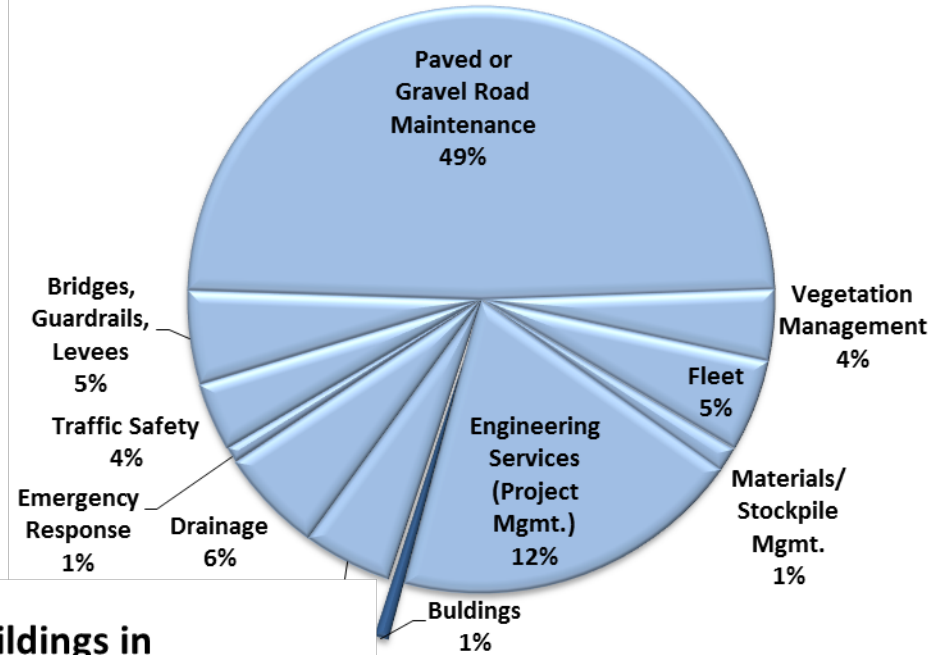
and targeting replacement of critical pieces of equipment...

2 pieces of equipment were replaced in 2015
 2 tilt trailers
 1 used roller

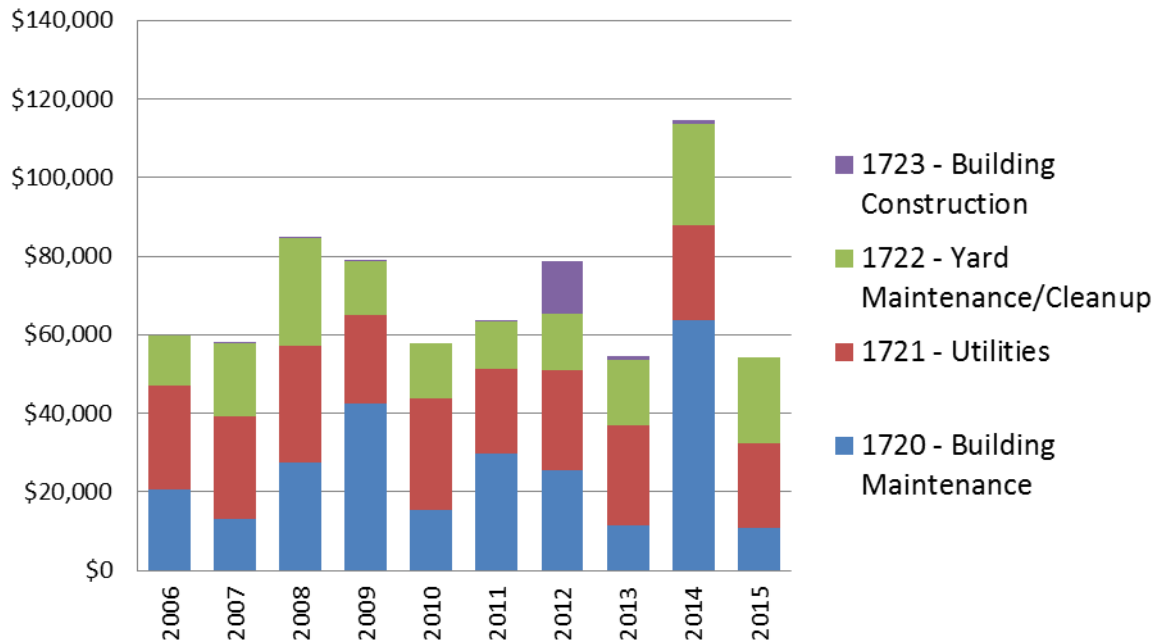




Buildings



Little was spent on Road Department buildings in 2015

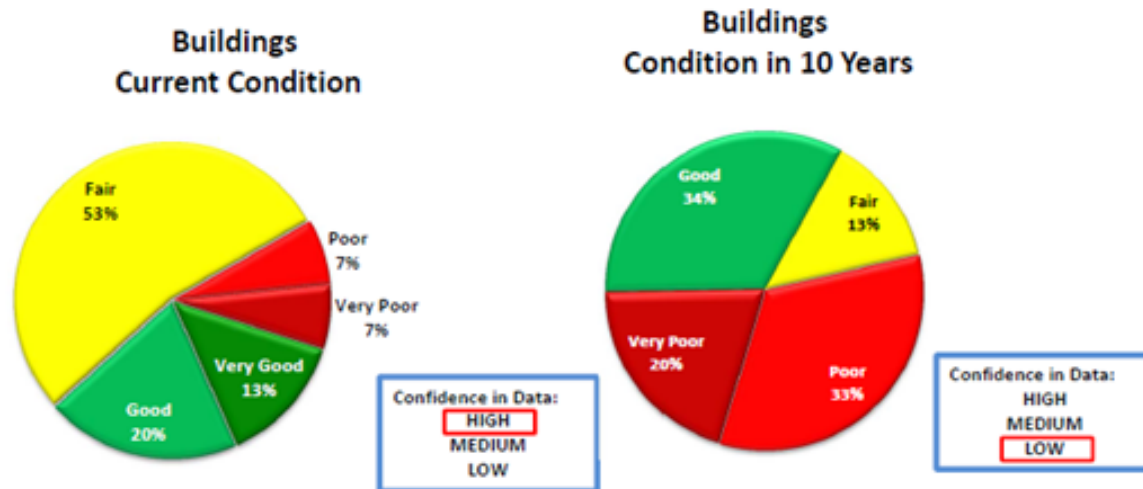


Aging buildings require critical repairs

- Improvements to the Sign Shop were made in 2015 and a fence repaired in the Central Yard.
- However, a 2012 estimate states that by 2022 a majority of Road Department buildings will be in Poor condition.



Sign Shop Improvements



Traffic Safety – High Risk

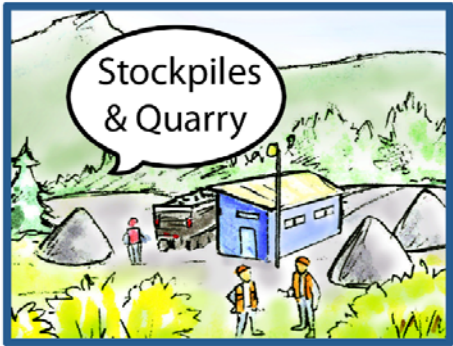


- Regulatory signs (stop & warning) control intersections and warn to slow for curves. These are a high priority and inspected every other year at night.
- Regulatory signs are in Good condition.
- Pavement markings are re-painted each year.

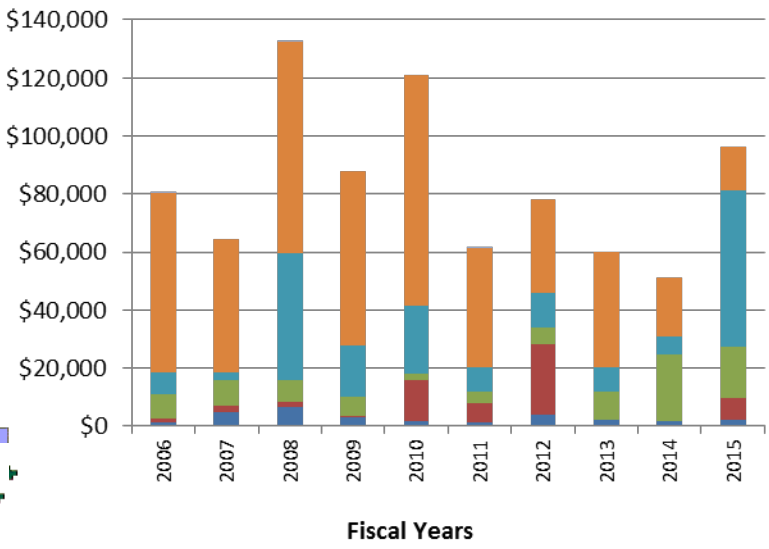
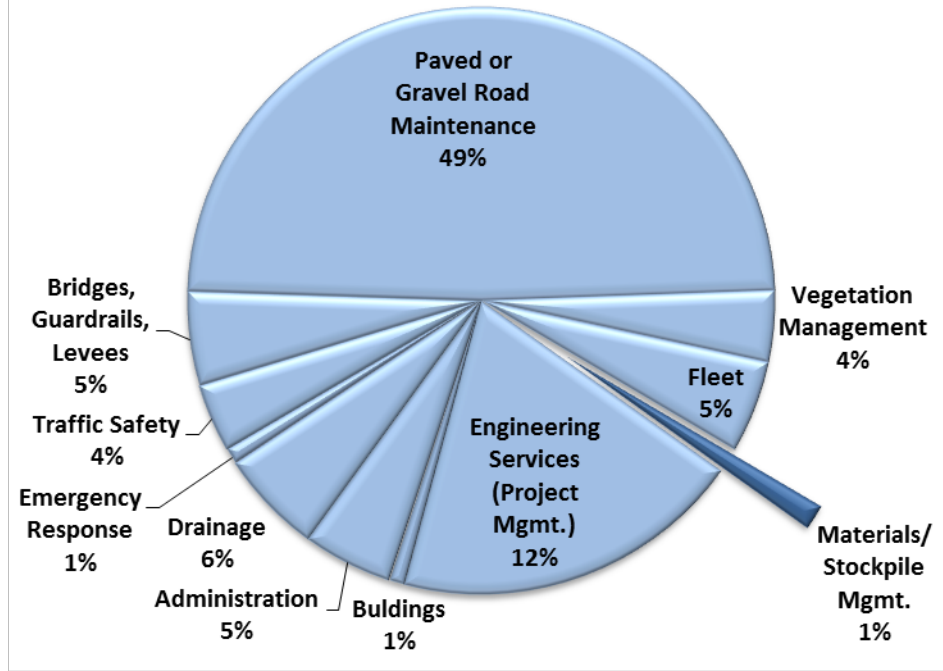


Trask River Road - Signing and Striping





Materials & Stockpiles



- 1521 - Material Purchase
- 1511 - Hauling to Stockpile
- 1510 - Pit/Stockpile Dev. and Maint.
- 1509 - Grates
- 1507 - Signs
- 1505 - Tack Oil
- 1502 - Operation

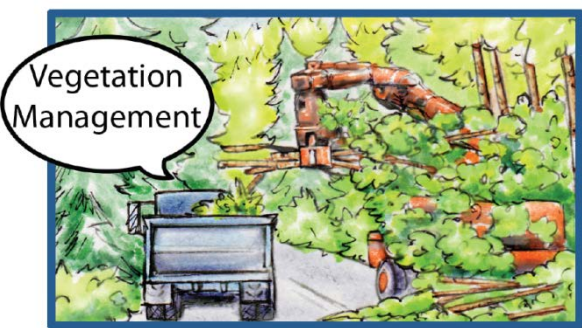


We crushed rock to support road services in 2015

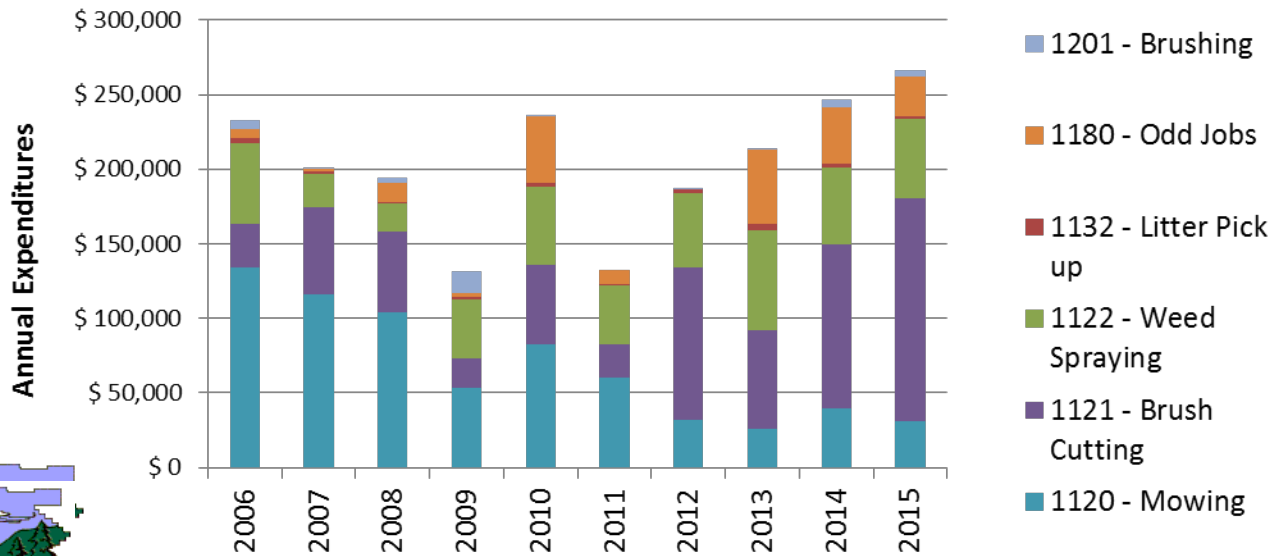
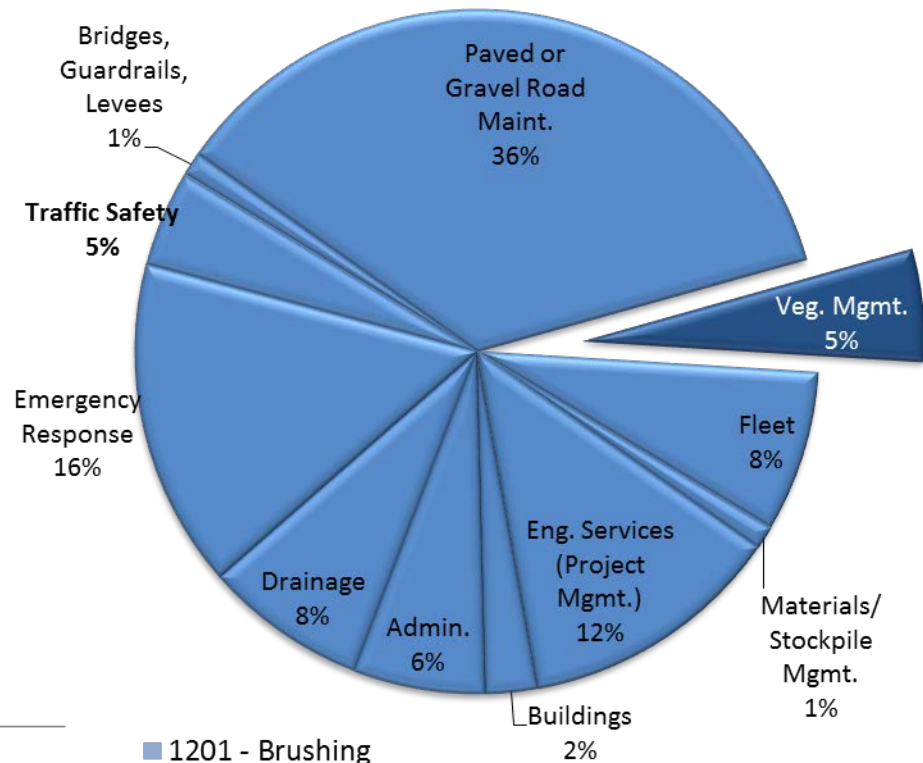


Quarry Development at Clear Creek and Nehalem





Vegetation Management



Brush cutting and mowing needs take an increasing amount of the budget and needs aren't met

- Staff reductions meant not meeting the needs, past accomplishments or community expectations.
- 10% of all complaints are about brush and mowing needs.
- Jail crew do some brushing and mowing when needed. This is paid out of inter-county budget item.



Cape Lookout Brush Cutting Project



We are committed to improve the community we live in and work for

- We improved the condition of paved roads, accomplished more & improved the quality of how we did paving work
- We actively participated in the Salmon Super Highway Community Project that is gaining momentum to replace fish barriers in the Nestucca and Tillamook Bay.



*Grant Graves, Road Supervisor & Project Manager with
Liane Welch, Director receiving
Pavement Asphalt Association of Oregon
Pavement Excellence Award
Latimer and Brooten Road Projects March 2015*



*93 projects in 10 years to "reconnect historic habitat,
reduce chronic flooding, improve recreation
opportunities and stimulate the local economy, both now
and for the future."*



We are focused on improving safety

- Neskowin 2nd Ingress/Egress Design is underway
- We are participating in the Sister County partnership with Umatilla County for response to the Cascadia Earthquake



What is our County Road Management Strategy in 2016?

Ensure roads are safe to travel on throughout the County by slowing long term deterioration.

- ✓ Year 1 (2014) Provide small patches Countywide to hold the system together.
- ✓ Year 2 (2015) Focus expenditures on high speed, high volume roads and those that provide economic value to the community.
- **Year 3 (2016) Move into the neighborhoods Countywide for safety and emergency response.**

Five Year Revenue Projections 2014-2018

Revenue	2014	2015	Budgeted 2016	Projected 2017	Projected 2018	Total
GO Bond	\$ 1,717,141	\$ 2,827,696	\$ 1,866,639	\$ 575,112	\$ 575,112	\$ 7,561,700
Road Budget	\$ 3,039,077	\$ 3,501,280	\$ 2,966,430	\$ 2,470,260	\$ 2,470,260	\$ 14,447,307
Secure Rural School	\$ 582,266					\$ 582,266
Transient Lodging Tax	\$ 16,558	\$ 645,819	\$ 650,000	\$ 400,000	\$ 400,000	\$ 2,112,377
Total	\$ 5,355,042	\$ 6,974,795	\$ 5,483,069	\$ 3,445,372	\$ 3,445,372	\$ 24,703,650

Note 1: Original budget of \$2,200,000. This was changed during the budget process. We had a carry over from FY 14 of 522,063.69 new total \$2,936,063.

Note 2: Over budget in FY 15 of \$100,000 as of 8/27/14. reduce this amount by \$200,000 +/- for contingency. Original budget \$2,034,117. New budget \$1,861,639.



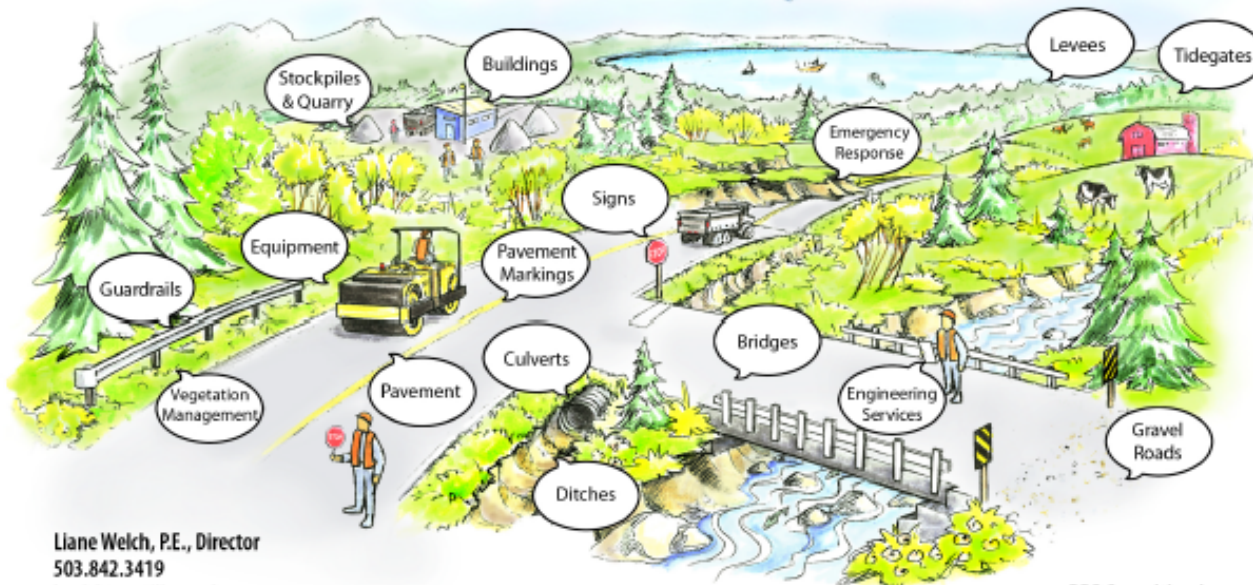
December 2015 storm wreaked havoc on our already fragile road system – \$8M in damage assessment



Questions?



Your Tillamook County Road Dollars At Work \$845 Million Road System Value in 2015



Liane Welch, P.E., Director
503.842.3419
lwelch@co.tillamook.or.us

PBS Consulting Inc.

December 2015 Storm Event

County Road Advisory
Committee Briefing
January 11, 2016





Issues from the Storm

- Road Closures
- Landslides
- Culvert & Drainage/Ditching
- Community Isolation
- Damage Assessment
- Staffing concerns
- Cost

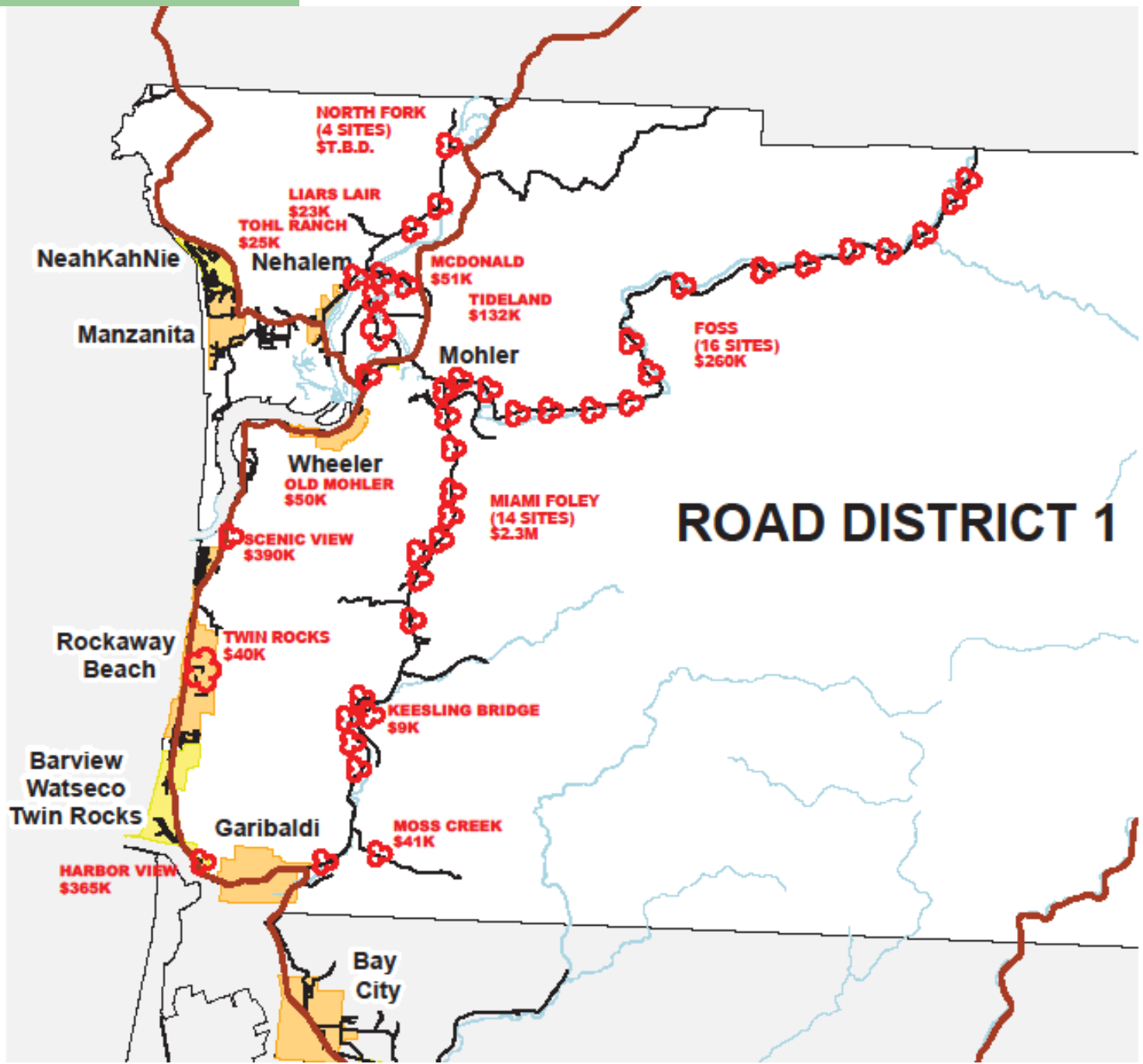


Public Safety is our highest priority

- ✓ Storm response
- ✓ Response to landslides and 911 callouts
- ✓ Emergency preparedness
- ✓ Egress design to prevent community isolation



Wilson River Loop road (N-S) High Water
December 2015





Miami Foley Road

Road Closures





Miami Foley Road

Landslide





Miami Foley Road

Culvert & Drainage/Ditching





Keesling Bridge (Miami)





Lommen Bridge (Miami)





Frank Crane Road (Pvt)

Culvert & Drainage/Ditching





Foss Road

Culvert & Drainage/Ditching





Foss Road

Culvert & Drainage/Ditching





Harbor View Drive

Culvert & Drainage/Ditching





Scenic View Court (Pvt)

Culvert & Drainage/Ditching





South Island Street

Culvert & Drainage/Ditching



AM 9:49 DEC/14/2015



Barview
Watseco
Twin Rocks

Garibaldi

Bay
City

PIKE
\$15K

KILCHIS
\$14K

ALDERBROOK
\$46K

Idaville

Siskeyville

BAYOCEAN
\$578K

BAYOCEAN
\$30K

Oceanside

SOLLIE SMITH
\$1.2M

Tillamook

HAPPY CAMP
\$35K

Netarts

WHISKEY CREEK
\$320K

ROAD DISTRICT 2



Pike Road

Culvert & Drainage/Ditching





Kilchis River Road

Culvert & Drainage/Ditching





Bayocean Road

Culvert & Temporary Bridge





Bayocean Road Community Toasts Public Works





Whiskey Creek Road

Landslide





Portland Avenue, Oceanside





Wilson River Loop Road (N-S)

Road Closures

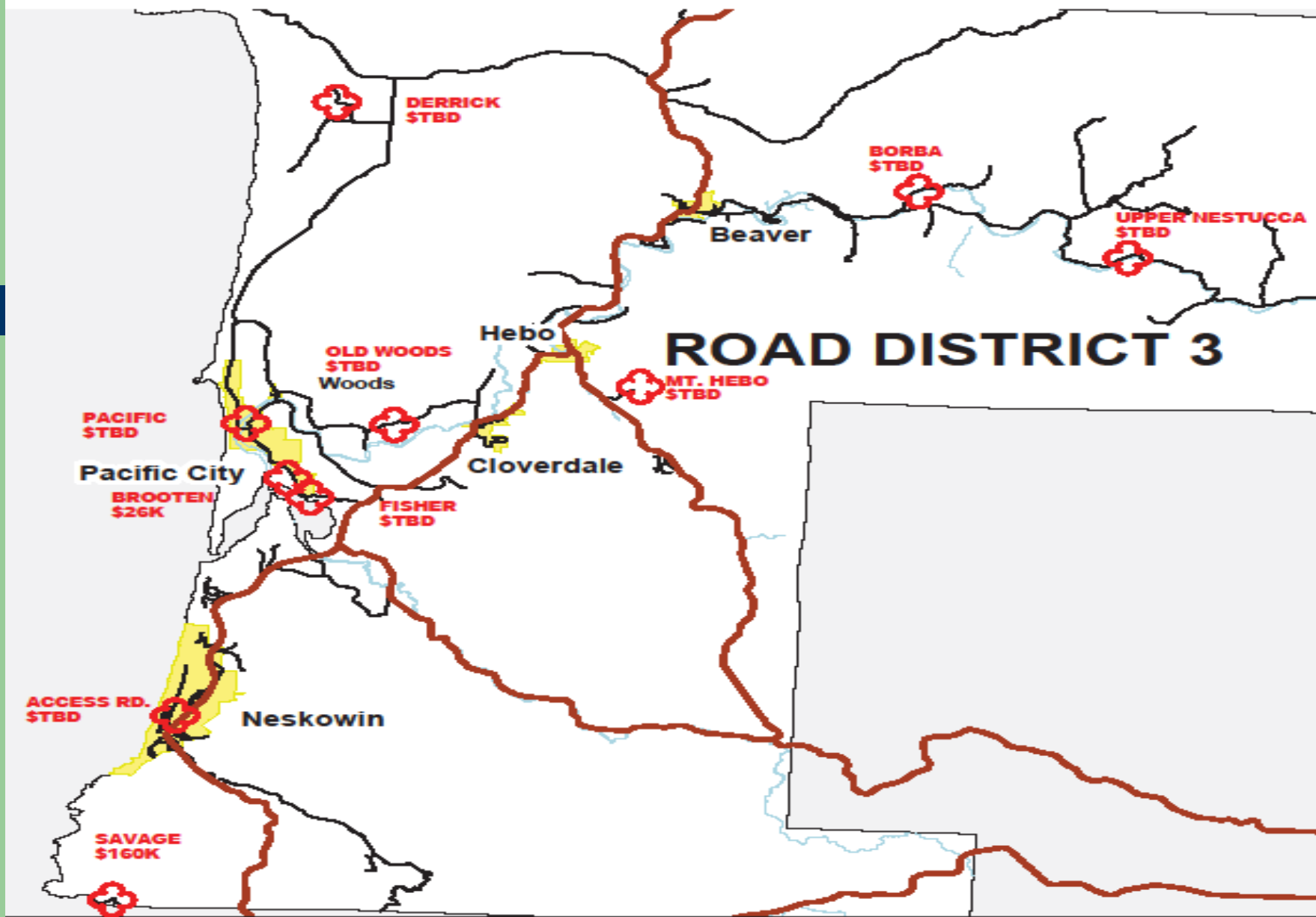




Sollie Smith Road

Culvert Blocked & Temporary Bridge to Avoid Community Isolation







Savage Road

Landslide





Borba Road

Landslide





Borba Road

Landslide





East Creek Road





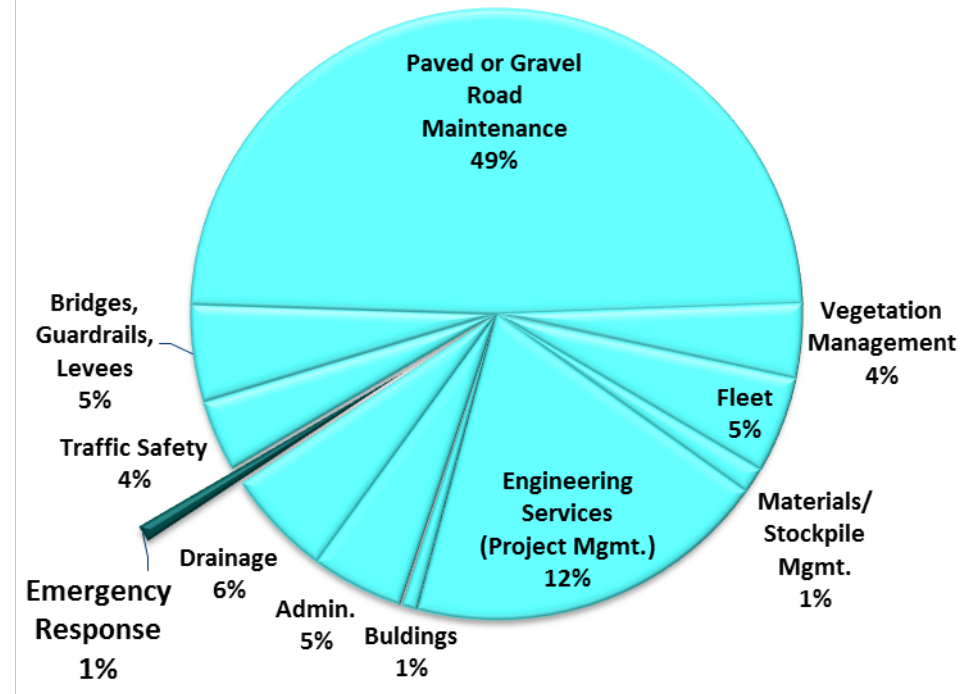
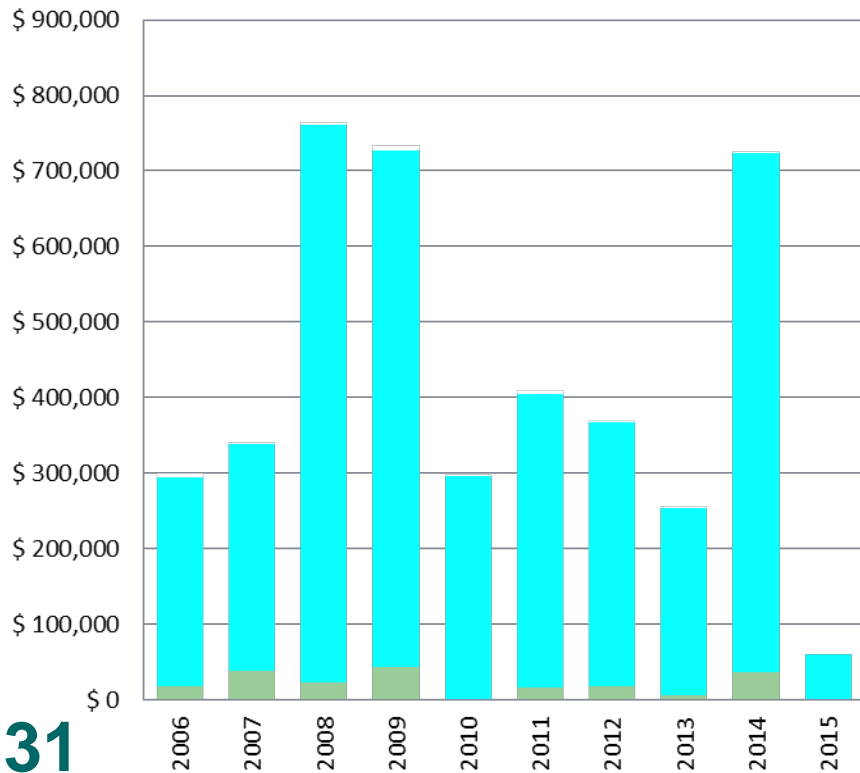
December 2015 Storm Costs - \$8M

Preliminary Cost Estimates

Site #	Brief Description of Damage or Cost	Location	Comments (Impacts)	On-system or off-system	Emergency Cost	Permanent Cost	Estimated Cost
1	Culvert and 15' of roadway damage. 12/12/15:	3460 Bayocean Road	Community of Cape	On	\$101,000	\$477,000	\$578,000.00
2	Culvert blocked and east bound lane destroyed,	8400 Sollie Smith Road	Potentially isolated	Off	\$279,000	\$939,000	\$1,218,000.00
3	Culvert destroyed, 35' of roadway destroyed.	14705 Harbor View Drive	Seven homes	Off	\$157,000	\$208,000	\$365,000.00
4	Culvert destroyed and 30' of embankment.	29000 Miami-Foley Road (MP	Main North-South	On	\$55,000	\$1,758,000	\$1,813,000.00
5	Culvert destroyed along with 40' embankment and	Miami Forest Road	At least one home	Off	\$0	\$1,825,000	\$1,825,000.00
6	Drift lodged on upstream side of bridge. County	New Miami River Road,	Potential to	Off	\$9,000	\$0	\$9,000.00
7	Landslide removal. County crew removed 800 Cuyd	Miami-Foley Road MP 8	Main North-South	On	\$32,000	\$428,000	\$460,000.00
8	Landslide removal, Contractor (Billstine) to remove,	Whiskey Creek Road MP 4.1	Whiskey Creek road	On	\$309,000	\$0	\$309,000.00
9	Damaged Culverts, 95 CUYD's of material	Kilchis River Road	no impacts at this	On	\$0	\$14,000	\$14,000.00
10	Landslide removal, approximately 100 cuyd's.	Whiskey Creek Road MP 5	road narrowed to	On	\$8,000	\$0	\$8,000.00
11	Landslide destroyed two twin 36" culverts and	Scenic View Court	Isolating one	Off	\$168,000	\$220,000	\$388,000.00
12	Multiple Landslides and Debris Flows. County	Foss Road MP 0 to 16	one lane restriction	On	\$261,000	\$0	\$261,000.00
13	Damaged 7' diameter Culvert with outfall section	Miami-Foly Road MP 7.5	Could close Main	On	\$0	\$53,000	\$53,000.00
14	Landslide on downhill side of road, potential to	Savage Road	serves 42	Off	\$0	\$160,000	\$160,000.00
15	36" pipe, road undermined and creek bypassing	Pike Road MP 0.1	7-10 residences	Off	\$0	\$15,000	\$15,000.00
16	Landslide, 600 Cuyd's. County Forces cleaning up.	Bayocean, MP 2	closed for a short	On	\$30,000	\$0	\$30,000.00
17	2 landslide boat launch. 12/17/15 occurrence. No	Brooten Road, Pacific City	Unknown at this	On	\$26,000	\$0	\$26,000.00
18	System wide drainage damage, culvert	washington street/island road.	Access does not	Off	\$40,000	\$0	\$40,000.00
19	Moss Creek Road,culvert blocked, pavement and	Moss Creek Road MP 1.3	Temp access	Off	\$0	\$41,000	\$41,000.00
20	60-80 cuyd's of slide material to remove, culvert may	Shiffman Road	Unknown at this	Off	\$0	\$7,000	\$7,000.00
21	Road flooded out with 350 Cuyd's of sediment, plus	McDonald Dike Road	Travel way open, but	Off	\$0	\$51,000	\$51,000.00
22	440 cuyd's of sediment removal, possible shoulder	Liars lair	Travel way open, but	Off	\$0	\$23,000	\$23,000.00
23	1,400' shoulder rock, 150 Cuyd's of shoulder repair	AlderBrook Road	Travel way open, but	On	\$0	\$46,000	\$46,000.00
24	125' of road replacement, shoulder repairs,	Tideland Road	Travel way open, but	Off	\$0	\$132,000	\$132,000.00
25	0.9 mile inundated with sediment and woody debris,	Tohi Ranch Road	Travel way open, but	Off	\$0	\$25,000	\$25,000.00
26	slow moving slide progressing	Old Wheeler Mohler road	Travel way open, but	Off	\$0	\$50,000	\$50,000.00
27	Shoulder and road surface	Gods Valley Road	Travel way open, but	Off	\$0	\$20,000	\$20,000.00
28	Contractor cleaned out culvert, need to restore	Happy Camp Road	None at this time	Off	\$10,000	\$25,000	\$35,000.00
Total					\$1,485,000	\$6,517,000	\$8,002,000



Storm response is hard to predict, impacts the budget and wreaks havoc on an already fragile drainage system



- 1202 - Debris Removal
- 1161 - Flood/Wind/Slide
- 1160 - Snow Plow/Sanding



Questions

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