



Tillamook County Public Works



2010 Road Performance Report



Submitted to:
Tillamook County
Public Works Department
503 Marolf Loop Road
Tillamook, OR 97141

Submitted by:
PBS Consulting, Inc.
3024 NE Bryce Street
Portland, OR 97212

Information through June 30, 2010
Prepared Fall 2010

**TCPW Road Performance Report - 2010
Document Control**

Revision Number	Date	Revision Details	Author	Reviewed	Approved	Informed
1.0	August 9, 2010	List Report Changes	PBS Consulting			
1.0	October 22 & 25, 2010	Review Report Changes		TCPW Director		
1.1	October 29, 2010	Revise Draft Report	PBS Consulting			
1.1	October 25, 2010	Review Draft Final Report		TCPW Director		
1.2	October 29, 2010	Revise Draft Report	PBS Consulting			
1.2	November 1, 2010	Review Draft Final Report		TCPW Director		
1.2	November 3, 2010	Revise Draft Final Report	PBS Consulting			
1.3	November 5, 2010	Receive Final Report			TCPW Director	
1.3	November 8, 2010	Distribute Final Report				BOCC & CRAC

Table of Contents

Transmittal Letter from Public Works Director.....	4
1. Introduction	6
a. Purpose, Goals & Objectives	6
b. Tillamook County Public Works Mission	7
c. County Road Network	8
d. County Road Services	9
e. County Road Network Inventory, Condition & Value	10
2. TCPW Road Revenues & Expenditures	11
3. Tillamook County Reporting Relationships.....	12
a. Management and Reporting	12
b. Road Management Strategy & Decision Making Process	13
c. Links to Other Plans & Strategies	14
4. Tillamook County Customers.....	15
5. Risk Assessment and Management.....	16
6. Performance of TCPW Road Services.....	18
a. Progress on Key Indicators	18
b. Detail of Road Service Performance, Condition, and Need	19
i. Road Surface Management	19
ii. Structures	27
iii. Traffic Safety	28
iv. Drainage	30
v. Vegetation Management	32
vi. Emergency Management	33
vii. Operations	
1. Engineering Services	34
2. Equipment Management	35
3. Facilities Management	36
4. Quarries	36
5. Administration	37
6. Service Requests	38
7. Asset Planning & Improvement Plan FY 2011-2013.....	39
8. TCPW Planning Processes.....	42
a. TCPW Mission, Vision & Values	42
b. Asset & Service Planning Processes	43
c. Confidence Level in Information	45
d. Asset Useful Life Assumptions	46
e. Information Sources & Data Maintenance Responsibilities	47
Appendix A. Asset Management Policy.....	48
Appendix B. Four-Year Detail of Road Services Performance.....	52
Appendix C. List of 2010 Project Accomplishments.....	53

Director's Transmittal Letter

This is the third annual *Tillamook County Road Performance* Report. It communicates the status and condition, accomplishments, innovations, and challenges of the Tillamook County Road Department. Tillamook County Public Works is responsible for Solid Waste and the Road Management. This report is specific to the Road Department.

Tillamook County's road network is critical for economic growth, safety and quality of life for those working, living and playing in the county. The County owns and operates transportation infrastructure assets valued in 2010 at \$406 million. This includes roads, bridges, levees, culverts, signs, maintenance yard buildings, vehicles and equipment. Our mission is to maintain the capacity and condition of the roads so that the travelling public's risks are managed and costs of road services minimized.

The County's road system needs more work than there is money to pay for it. County roads have been underfunded for years. Although we have stabilized road condition from 2008 to 2010, it is still in an overall condition of "Poor", and considered the worst system in the State with a network average Pavement Condition Index of 46, one point up from 2008 when the PCI was 45. Any PCI less than 50 is considered in poor condition.

While the community considers funding solutions for our transportation system, the Road Department remains committed to looking for better ways to manage the system while remaining accountable to those who rely on the County transportation network. Our County road management strategy is to provide a "Mix of Fixes," orienting toward asset preservation while recognizing that some of the deteriorated road network must be replaced. This strategy drives down the long term cost of road service and minimizes risk given available resources. For example, we have improved our current pavement management tactics, including a new road rehabilitation technique.

Traditional methods reconstruct failed roads by digging up and removing existing material, replacing the base rock and then paving with new material. This is a very expensive technique which costs \$88.63 per square yard. In 2010, Tillamook County began using Full Depth Reclamation, an innovative pavement management technique which digs up the road surface and base materials to a depth of 12 inches, mixes in 6% cement, re-grades and then paves the road surface. This is a more sustainable management system; this saves money, materials and energy, lasts about 15 to 20 years and costs \$39.40 per square yard, or 44% less than reconstruction. FDR has a slightly shorter useful life (15 to 20 years vs. 30 years when a road is reconstructed). However, the 30-year discounted economic cost of both techniques shows that FDR saves the County between 34-56%.

Better inventory and condition information is needed on culverts that manage Tillamook's average of 90" annual rainfall. We continue to have collapsing culverts with most of our culverts 50 to 60 years old. With over 3,000 culverts in the County this is a high risk to our system and the travelling public.

Our most valuable asset is the people who work at Public Works. Public Works staffing level is currently 23. The knowledge and dedication of our employees is crucial to providing the best road service possible, and storm response. Training remains a priority to ensure safety and cross-training among employees who are called on to perform many tasks as overall staffing has declined.

Our financial forecast and future planning efforts are targeting the loss of the federal forest receipts, also called the Secure Rural Schools fund. This represents a loss of 46% of our current budget which will result in less service and continued decline of the overall transportation system. In 2011, we will continue using the Board of County Commissioners adopted Asset Management policy and principles to guide community road service management priorities. Next year, we will initiate a public process to determine what services will be cut and what business the Road Department is in. This is part of Public Work's commitment to continuously improve the community's understanding of road services, engage them in setting priorities based on knowing what road assets are owned by the County, their condition, value, and the present and future transportation needs of the community. The assessment of road service and asset risks conducted in 2008 will be reevaluated in 2010 and guide these discussions as the Fiscal Year 2011-2012 budget is developed and future choices are made.

In spite of these challenges, we continue to find ways to provide value for the available road dollars. We support partnerships with other agencies and community groups such as:

- Working with ODOT to construct a temporary Bailey bridge over Boulder Creek on Blaine Road;
- Engaging Marion County to provide pavement marking for our road network, as well as assisting with the chip seal program;
- Seeking grant funds with resource agencies to replace culverts and improve culvert condition and fish passage;
- Overlaid over 10 miles of the county's roads with the help of the Federal Highway Administration; and
- Completed Fawcett Creek and Foland Creek bridges, replacements for failed culverts.

We continue our commitment to serve the public, responding to 685 requests for service in 2010.

In summary, current and projected revenues are not adequate to maintain our system, currently in poor condition. We are managing a deteriorated and failing system. New funding needs to be found or the community must understand that some road services will be eliminated while other service levels will continue to drop. In the end, this is the most costly choice. Rebuilding our transportation system is much more costly than preserving our investment. We challenge ourselves to work with the community to determine the desired level of road services and finding management solutions that prevent further decline of our county transportation system.



Liane Welch, Director
Tillamook County Public Works

1. Introduction

a. Purpose

This is the annual report on Tillamook County Public Works (TCPW) road service performance.

Monitoring and reporting performance serves to:

1. Establish current County road performance and identify future needs
2. Communicate with customers and partners
3. Monitor and report progress on delivering results based on strategic objectives and tactics of road asset management plan
4. Manage resources annually over a 3-year planning horizon
5. Measure and compare road services with similar agencies to understand and implement best appropriate practices at Tillamook County.

Three types of performance measures are included:

1. Strategic measures link the County's strategic vision and goals, legislative requirements and customer expectations with what Tillamook County Public Works must provide to achieve the desired community outcomes (e.g. smooth, safe and affordable roads rely on pavements and bridges in good condition with appropriate signs to ensure the safety of the traveling public). Current road network performance or significant aspects of road services are compared to a target level of service (e.g., 65% of paved road surfaces in Good or Very Good condition) where targets have been adopted. Strategic indicators are primarily used to report to external stakeholders.
2. Program or tactical measures link Tillamook County road services to measurements as perceived by the customer and the technical expert, and set targets of performance. Where possible, the current road service performance and future targets are identified so progress can be measured and reported.
3. Operational performance measures are related to the timeliness and cost efficiency of activities performed to deliver a program or service. These monitor and report the value for specific road services delivered.

Explicit performance targets are included where adopted. Performance targets align the road management strategy and Tillamook County Public Works road resources and efforts. Comparing targets with what is achieved annually indicates whether strategic objectives are being achieved, or road service needs are changing and why. Clear accountability helps decision makers, citizens, and TCPW employees communicate these choices by using the same information. Future impacts can be better managed and risks minimized if strategy and actions are linked and monitored.

This report should be read in conjunction with:

- The *Tillamook County Public Works Road Asset Management Plan 2008* which describes the links between Tillamook County road management strategy, tactics and current operations.
- The *Tillamook County Public Works Core Infrastructure Risk Management Plan for Road Assets*, January 2009. Road service priorities were established by a Risk Management Team as a part of a June 2008 workshop.

This report contains the most current funding and asset performance information available. Unless noted, information is through June 30, 2010. Updates of this information will occur annually.

b. Tillamook County Public Works Vision & Mission

Vision

Tillamook County's high quality, safe road network supports a thriving economy and a healthy environment. Well-trained and professional staff works in partnership with the community to ensure that the County road network meets the needs of citizens now and in the future.

Mission

Tillamook County Public Works serves the public by providing, maintaining and preserving a safe and efficient county road network, and quickly responding to weather events and hazards. The public's investment in the road network is protected by working with other agencies and targeting resources to minimize long term costs while providing the best possible service given available resources.

Strategic objectives that achieve this mission are to:

- Maintain a safe road system by
 - Responding to weather events
 - Identifying and repairing hazards
- Preserve county roads to prevent further deterioration and protect the public's investment
- Reconstruct the most critical road assets
- Bring road facilities up to standard and manage the County roads to meet current and future needs

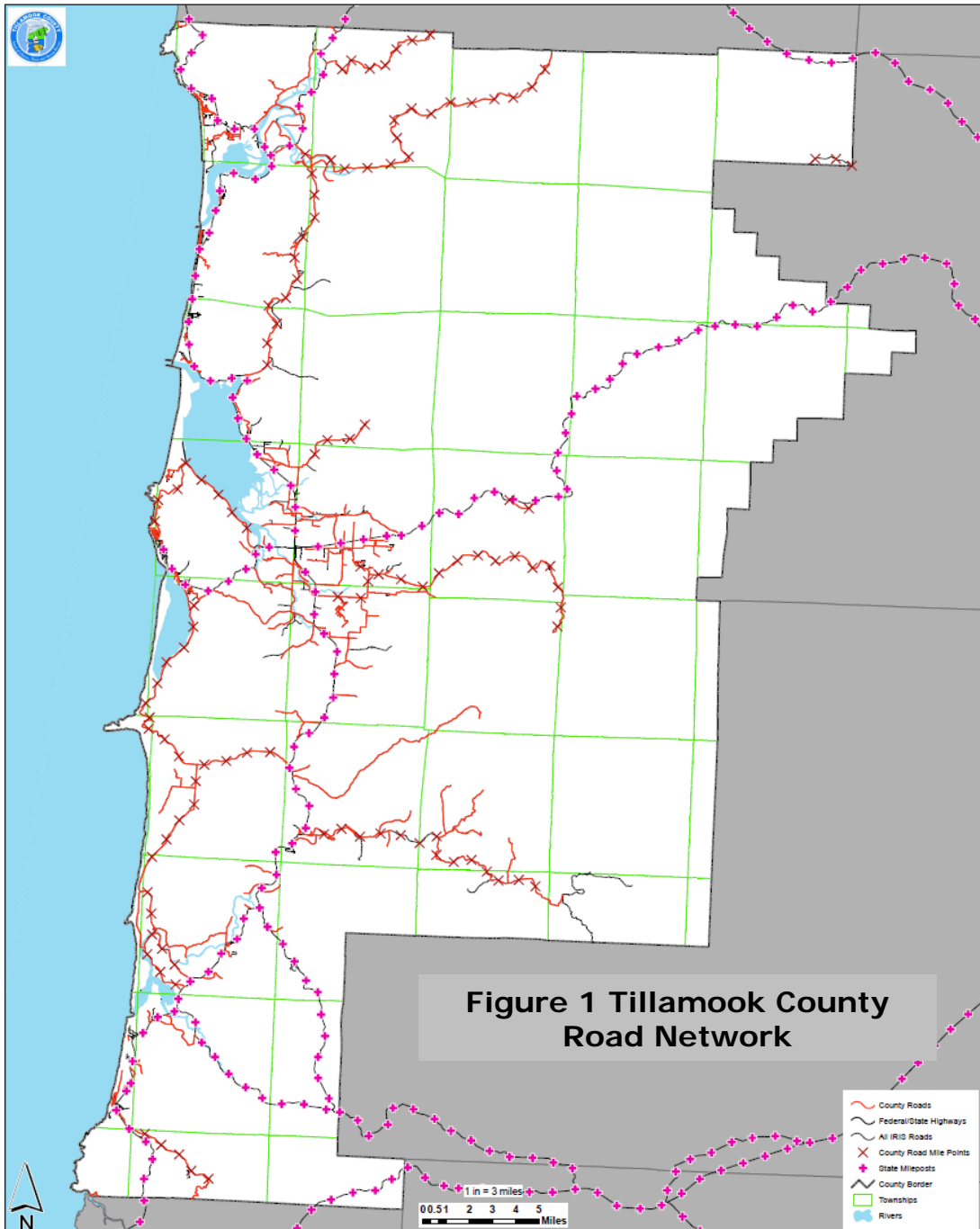
Tillamook County Public Works (TCPW) adopted this mission in 2008, and reconfirmed it in 2009.

The Board of County Commissioners adopted a Tillamook County Public Works Asset Management Policy July 1, 2009.¹ It embraces asset management strategies and best practices as the foundation to Public Works business processes. Performance reporting and a commitment to continuous improvement are the foundation of this approach. The accompanying 3-year improvement plan reflects how TCPW is implementing actions that minimize long term costs, manage risks to the community and meet legal obligations associated with managing the county road network for the citizens and businesses in Tillamook County.

¹ See Appendix A, Asset Management Policy.

c. County Road Network

Tillamook County Public Works (TCPW) manages a 380-mile county road network for 24,927 county citizens.²



² Tillamook County Comprehensive Annual Financial Report, June 30, 2009.

The road network provides safe access to services for county residents and movement of goods to and within the county.

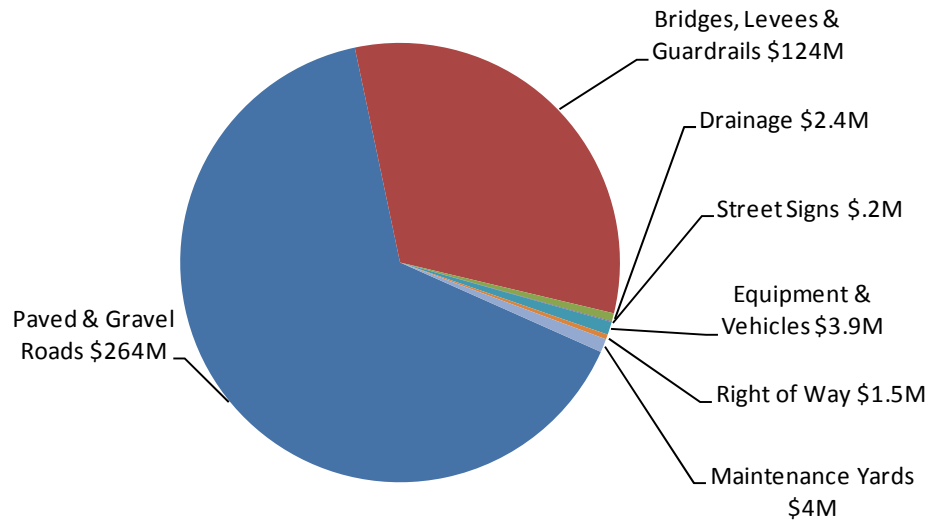


Figure 2 County Road Network Value \$406 Million - 2010

The 2010 County road network replacement value is conservatively valued at \$406 million. Sixty-five percent (65%) of the road network's value is in its roads, 32% bridges, levees and guardrails, and the remaining 3% in the culverts, ditches, signs, equipment and vehicles, right of way and maintenance yards.

d. County Road Services

TCPW is responsible for the following managing county:

- Roads (paved and gravel)
- Structures (bridges, levees and guardrails)
- Drainage (culverts and ditches)
- Traffic Safety (road signs, road markings, traffic signals)
- Equipment and vehicles
- Maintenance Yard Facilities (buildings)
- Quarries
- Operational services that support the above (Vegetation Management, Emergency Management, Engineering and Administrative Services, Materials and Stockpiling)

e. County Road Network Inventory, Value & Condition and Unmet Need

Table 1 Tillamook County Road Network Inventory, Value, Condition & Unmet Need

TILLAMOOK COUNTY ROAD NETWORK INVENTORY, CONDITION, AND VALUE JULY 2010										
FACILITY	GASB34	STATUS	REPLACEMENT VALUE	CONDITION*						TOTAL UNMET NEED**
				VG	G	F	P	VP	TBD	
PAVEMENT										
Paved	X	269 centerline miles	\$261,600,000		27%	15%	24%	34%		\$57,000,000
Gravel		65 centerline miles	\$2,405,670						X	N/A
			\$264,005,670							\$57,000,000
STRUCTURES										
Bridges	X	98	\$128,843,352		67%	20%	13%			TBD
Guardrails		10.1 miles	\$1,152,385	39%	8%	8%	33%	10%	2%	\$495,526
Levees		7	TBD						X	TBD
			\$129,995,737							\$495,526
DRAINAGE										
Culverts	X	3,210	\$2,374,438						X	TBD
Ditches		198 miles	TBD	1%	6%	63%	22%	8%		TBD
TRAFFIC SIGNALS		1	TBD						X	TBD
STREET SIGNS										
Signs (Condition for Stop Signs only)	X	5,406	\$172,992	85%	14%		1%			TBD
Delineators	X	457	\$8,226						X	TBD
Posts	X	4,165	\$58,310						X	TBD
			\$239,528							
PAVEMENT MARKINGS										
Painted center lines miles		299	N/A							N/A
Painted Stop Bars		TBD	N/A							N/A
VEHICLES & EQUIPMENT***	X	115	\$3,898,879						TBD	TBD
MAINTENANCE YARDS	X	3	\$4,000,000						X	
RIGHT-OF-WAY***		2,367 acres	\$1,475,557							
TOTAL			\$405,989,809							

*Asset condition categories vary using 3, 4 and 5-level condition assessment categories.
**Unmet need varies by asset class; the level of service is defined specific to the asset class' highest performance for the least cost, or can simply be the elimination of assets in poor condition (e.g., signs).
***Tillamook County Comprehensive Financial Annual Report, June 30, 2009. ROW width: minor arterials & major collector: 60 feet; minor collector width is 60 feet; locals 45 feet.
Notes: VG = Very Good, G = Good, F = Fair, P = Poor, VP = Very Poor, TBD = To Be Determined, N/A = Not Applicable

The average County Pavement Condition Index (PCI) in 2010 was Poor (46 PCI), stabilized from 2008 (45 PCI). \$57 million is needed over 5 years to bring County roads to Good condition. This long term investment represents the lowest lifecycle cost that is required to manage paved roads in a state of Good repair and is based on the less costly pavement management technique, Full Depth Reclamation, a best pavement management practice.

Two bridges replaced failed culverts in 2010. This changed the bridge inventory and replacement value. Bridge condition is rated every other year and will be updated in 2011.

Culverts are identified as a High risk asset. The confidence level in culvert inventory and replacement value is low.

2. TCPW Services – Sources of Road Revenues & Expenditures

Where did the money come from?*

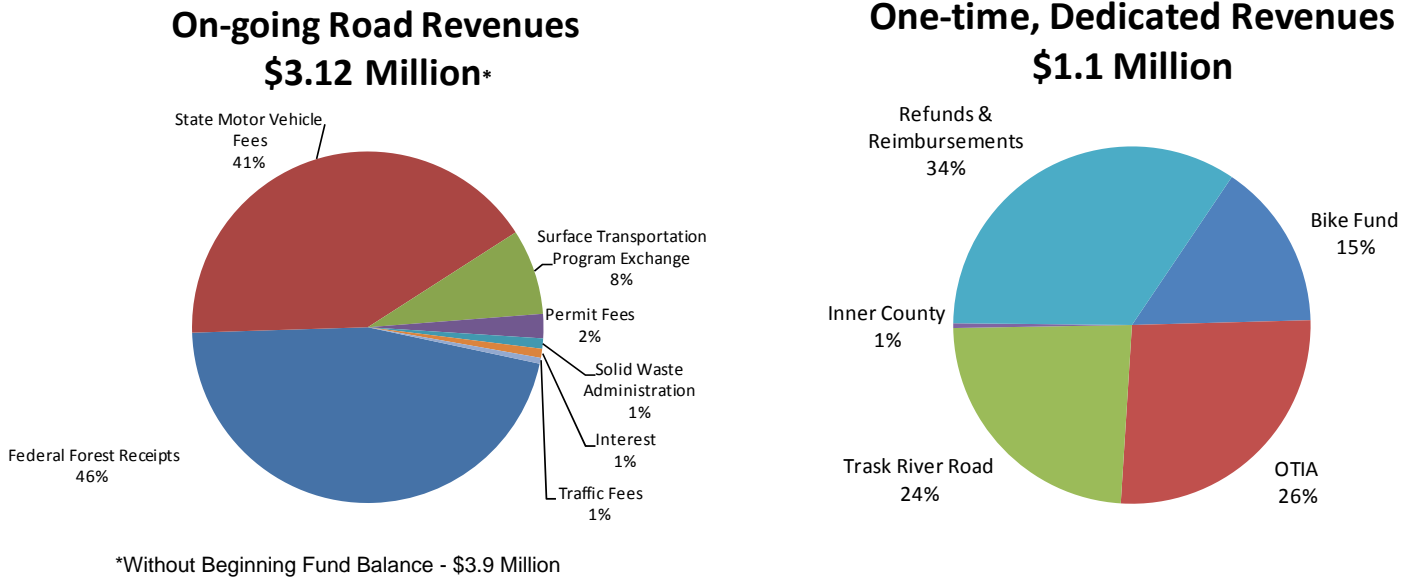


Figure 3 TCPW Road Revenues Fiscal 2010

What did we spend it on?

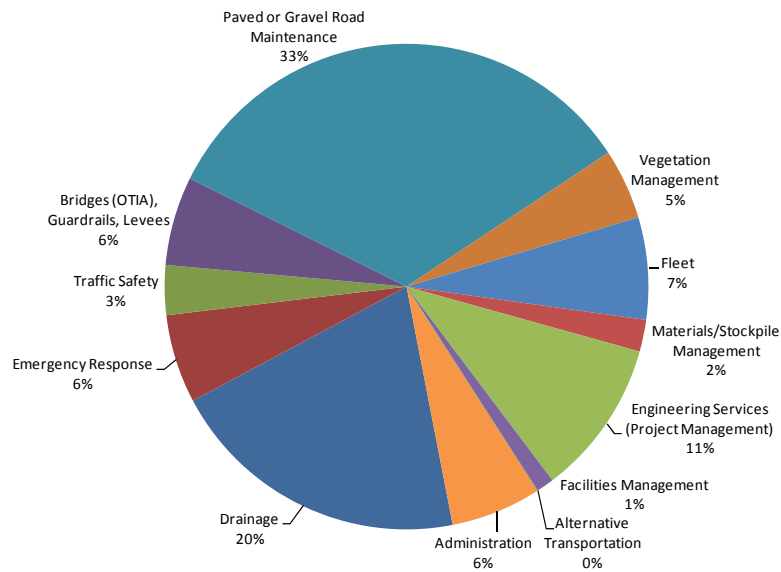


Figure 4 TCPW Road Services Fiscal 2010

3. Reporting Relationships

a. Management and Reporting

Tillamook County's road assets are managed by Public Works. TCPW is advised by the County Road Advisory Committee (CRAC) and reports directly to the Board of County Commissioners (BOCC). The organizational structure is shown below.

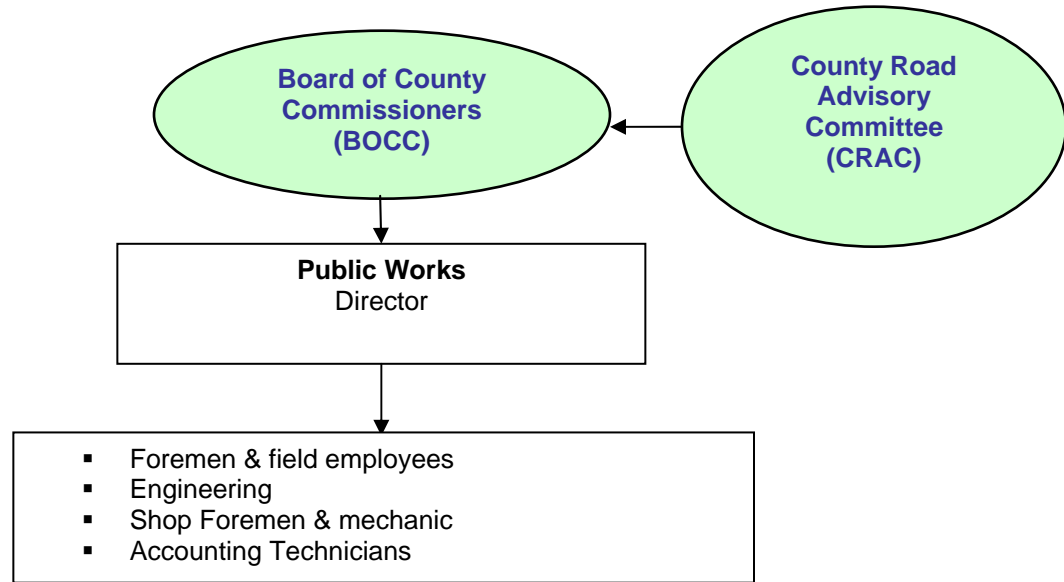


Figure 5 Tillamook County Management Structure

County asset management roles and responsibilities extend beyond TCPW and are considered critical to successful management of road services. This recognizes that asset management planning is a County responsibility and requires the commitment of the County Board to succeed.

b. Road Management Strategy & Decision Making Process

The TCPW county road network management strategy is to “Preserve investment at the least cost to meet present and future needs.” This approach uses key performance criteria to target the best investment timing. However, given the current Poor condition of county road assets, a “Mix of Fixes” strategy is pursued to ensure the safety of the traveling public. This requires major rehabilitation and reconstruction of some county road assets, while preserving the condition of other road assets so they do not fall into disrepair and require early replacement or reconstruction.

TCPW is committed to maintaining an inventory of its transportation assets—the pavement, bridges, signs, guardrails and other assets—that make up the county road network. Periodic inspection of these assets identifies their current performance. Regular maintenance, periodic renewal and eventual asset replacement and disposal are required.

Technical analysis is performed on high cost (e.g., pavement) and high risk (e.g., bridges, stop signs) assets to identify current and future performance. This and regular, documented and repeatable inspections identify network condition, and candidate repair and replacement projects.

TCPW reviews candidate projects considering other agency partnership and funding opportunities. An annual work plan of selected projects is discussed with the County Road Advisory Committee and approved by the Board of County Commissioners.

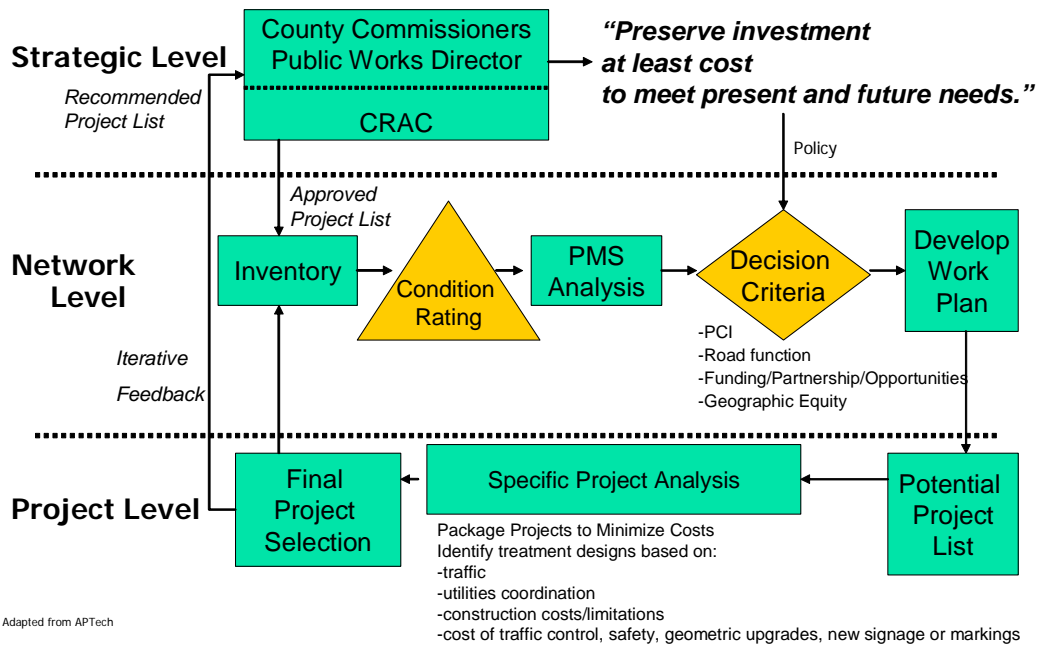


Figure 6 Strategic Alignment & Road Asset Management

c. Links to Other Plans & Strategies

Management of county road assets relates to adopted County strategic plans and processes, public expectations and legislative mandates.

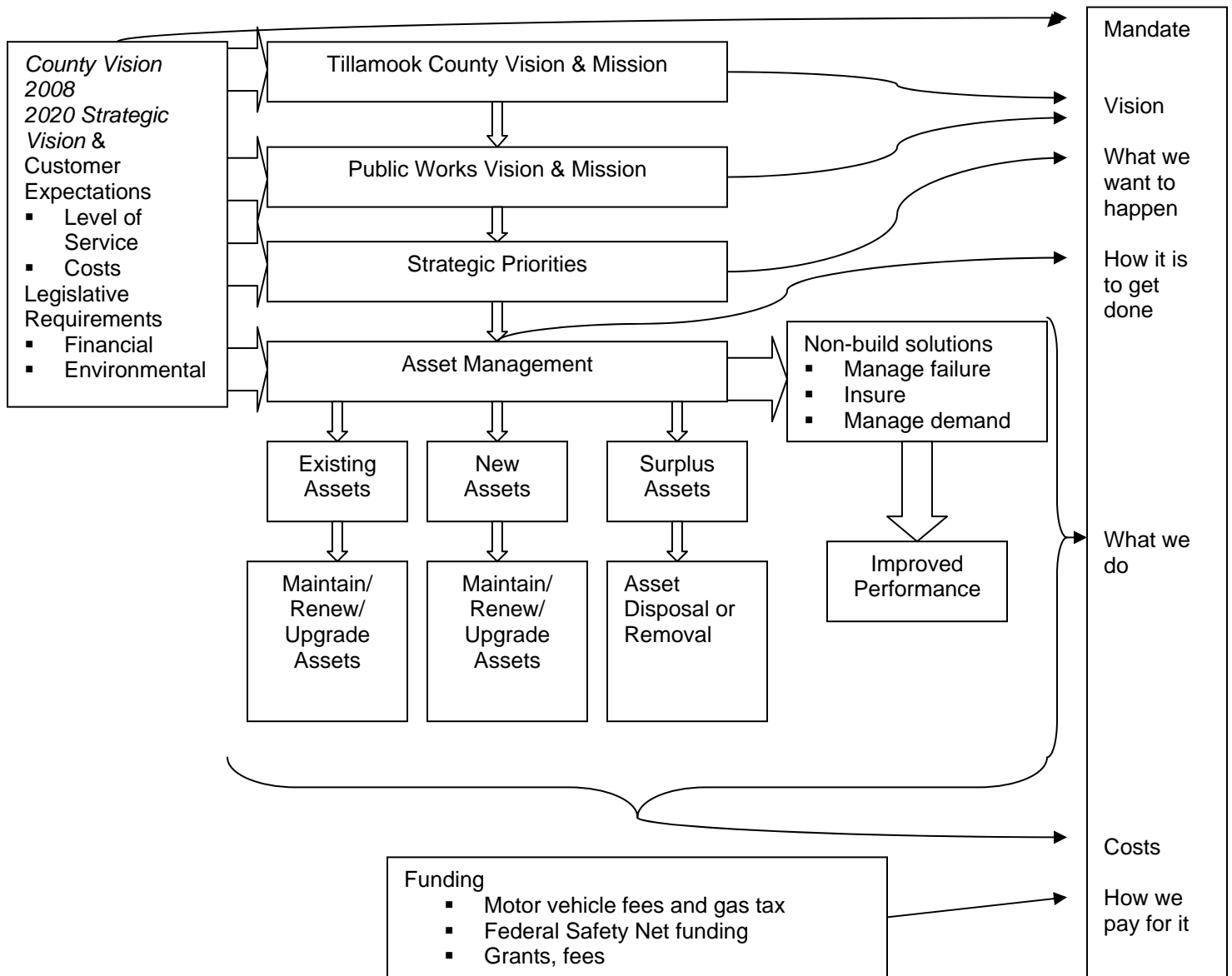


Figure 7 Tillamook County Strategy, Planning & Policy Framework

4. Tillamook County Road Customers

Tillamook County provides road services that meet the needs of the community. What services are provided, and how they are provided depends on the community served. Many agencies and jurisdictions directly influence the demands and management of roadways within Tillamook County.

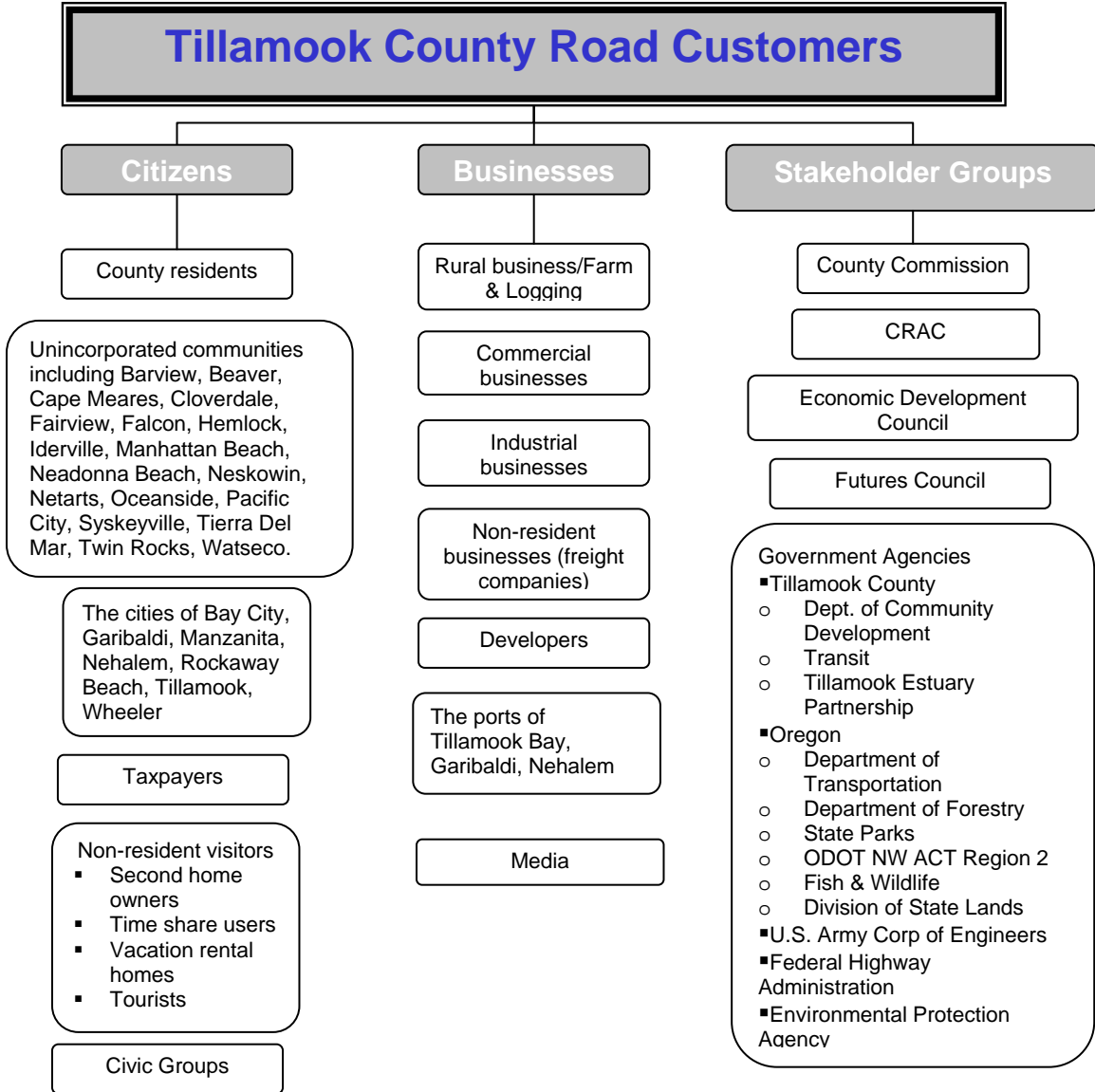


Figure 8 Tillamook County Road Customers

5. Risk Assessment and Management

The relative priority of TCPW services and their assets was established by a June 2008 Risk Workshop Team. This assessment will be updated in 2010. Members of the 2008 team are:

- Tillamook County Board of County Commissioners (BOCC)
- County Road Advisory Committee (CRAC) Members
- Tillamook County Public Works Director and management staff
- County Community Development Director
- Tillamook County Coastal Resource Planner
- Tillamook County Treasurer
- Tillamook County Human Resource Director

Using existing inventory, condition and value information and Tillamook County Public Works management knowledge, the Risk Workshop Team assessed the types of failure that might be expected, how likely failure was, and if failure was to happen, the consequences to Tillamook County road service customers.

Criteria used to evaluate consequence include:

- Economic (damages to community, losses, additional expenditures)
- Legal compliance
- Community impact
- Human health and safety
- Reputation
- Environment
- Human resource

Based on this analysis (likelihood and consequence), a risk level was assigned. Once rated as Extreme, High, Medium or Low risk, immediate action is required. Actions are document in a Risk Treatment plan; planned actions, resources and timeline are identified that manage risk, given the current level of resources. Risks are monitored as a regular course of business.

A risk treatment plan is required and actions needed to manage Extreme and High risks within available resources.

Table 2 Risk Treatment

Risk Rating		Action Required
E	Extreme Risk	Immediate action required to reduce risk
H	High Risk	Management attention required to manage risk
M	Medium Risk	Management responsibilities specified and risk controls reviewed
L	Low Risk	Manage by routine procedures

The results of the June 2008 Risk Workshop are shown below.

Table 3 Tillamook County Risk Rating 2008

Asset or Service Program	Asset or Service Subprogram	Risk Rating
Roads	Arterial & collector paved roads	Extreme
Vegetation Mgmt.	Spraying & mowing roadsides	Extreme
Equipment	Fleet & equipment	Extreme
Admin. Services	Staffing levels & succession	Extreme
Emergency Mgmt.	Roads, Structures, Drainage, Traffic Safety, Department Employees	Extreme
Roads	Gravel roads-county maintained	High
Roads	Local Access Roads	High
Structures	Bridges	High
Drainage	Culverts, ditches & shoulders	High
Traffic Safety	Signs-Regulatory (stop signs)	High
Traffic Safety	Pavement markings	High
Materials Mgmt.	Quarries	High
Structures	Guardrails	Medium
Traffic Safety	Signs-Other	Medium
Engineering	Engineering Services	Medium
Maintenance Yard Sites	Public Works buildings	Low













Within each asset class, critical assets for safe passage on County roads and bridges are identified and managed (see weight limited bridges, bridge sufficiency ratings, pavement management system, and Integrated Road Information System for these rank-ordered assets). Monitoring and addressing critical needs occurs as a part of the risk evaluation process, on-going inspection and are reflected in the annual operating and capital budget.

6. Performance of TCPW Road Services

a. Progress on Key Indicators

The table below provides a general state of County road indicators included in this report. Details about the progress of each indicator are within the report.

Table 4 Progress on Key Indicators - 2009

Trend	Progress	Indicator	Comment
	Good Progress	Levees	2010 inventory & condition assessment; general assessment of Satisfactory or Adequate except McDonald Dike
		Service Requests	685 requests tracked; 59% pothole related, 52% in Central District
		Emergency management	Significant reduction in expenses (5%). No federally declared storms in Fiscal 2010.
	No Trend	Quarries	
	Changes are not favorable	Culverts	Unknown condition & some catastrophic failures; replaced several culverts
		Ditches	No ditching program; 2008 inventory & condition assessment; 93% require some maintenance & 30% in Poor or Very Poor condition
		Signs	95% stop signs in Good condition; nighttime visibility signs deferred in 2010
		Equipment	68% Level A (Preventive Maintenance) performed as needed, based on use; crew & shop performed 100% safety check; replaced spray truck
		Guardrails	No guardrail program; reactive replacement only. 2007 inventory & condition assessment; 43% in Poor condition
		Paved roads	Average network condition stabilized at Poor condition (PCI 46); Inadequate funds to achieve Good condition or prevent future decline.
		Gravel roads	Inadequate staff to maintain regular maintenance
		Vegetation Management	Inadequate resources to maintain regular maintenance; not meeting customer expectations
		Bridges	2 bridges added to inventory in 2010; 13 bridges in Poor condition in 2009, up from 7 in 2008; OTIA funding ended in FY 2010
		Maintenance Yard Sites	Buildings exceed useful life and function

b. Detail of Road Service Performance, Condition and Need

b.1. Road Surface Management

b.1.1 Strategic Outcome and Objectives

Provide, maintain and preserve a safe and efficient county road network.

Strategic objectives are to:

- Preserve the condition of paved roads so they do not fall into disrepair and require early replacement or reconstruction.
- Ensure safety and minimize unpaved local road costs by blading and graveling every other year.

b.1.2 Inventory

There are 334 County maintained miles in the road network in 2010.³ Eighty-one percent (81%) are paved and the remaining 65 miles are local gravel roads.⁴

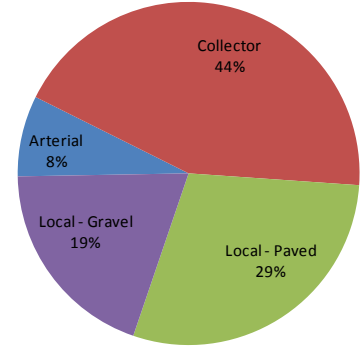


Figure 9 – 334 Miles of County Maintained Roads

b.1.3 Value

The June 30, 2010 replacement cost for County roads is \$264 million⁵

b.1.4 Road Surface Management Activities

Table 5 Road Surface Management Activities 2005 - 2010

	2005	2006	2007	2008	2009	2010
1101 - Pothole Repair	\$389,088.31	\$324,181.06	\$216,295.22	\$203,738.00	\$191,744	\$190,639
1102 - Surface Blading	\$56,543.72	\$79,373.67	\$68,813.14	\$42,388.00	\$24,850	\$112,502
1104 - Shoulder Maintenance	\$230,107.25	\$176,255.62	\$183,983.17	\$140,454.00	\$231,426	\$314,687
1105 - Brooming	\$8,188.82	\$10,185.33	\$11,145.66	\$3,526.00	\$7,699	\$8,424
1150 - New Base/Sub Base	\$50,870.12	\$101,351.90	\$112,304.56	\$98,630.00	\$122,726	\$134,220
1151 - New Oil Mat (Gravel)	\$186.65	\$5,200.00	\$9,805.00	\$9,673.00	\$1,008	\$3,715
1152 - Oil Seal Coat	\$631.49	\$1,171.52	\$0	\$0	\$0	\$146,753
1153 - Paving less than 2 in.	\$45,464.58	\$258,637.83	\$50,253.13	\$10,518	\$6,367	\$10,564
1154 - Paving (2 in. or more)	\$368,892.51	\$658,795.46	\$864,802.82	\$836,122	\$687,657	\$717,883
1181 - Road Conditions	\$0	\$20,787.96	\$24,082.26	\$17,788	\$14,754	\$20,654
Totals	\$1,149,973	\$1,635,940	\$1,541,485	\$1,362,837	\$1,288,231	\$1,660,041

In 2010, one-third (33%) of County road funds (\$1.7 million) managed County road surfaces. 43% rehabilitate and reconstructed deteriorated roads. 19% was used for shoulder maintenance.

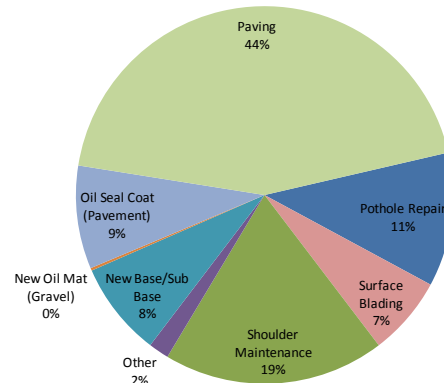


Figure 10 Road Surface Expenditures – 2010

³ Local Access Roads are not maintained by the County and therefore are removed from this report.

⁴ Source: *Tillamook County Public Works Pavement Management Program Budget Options Report*, Capitol Asset and Pavement Services, Inc., October 2010; and Tillamook County Road Status, Public Works Department, October 2010.

⁵ Ibid.

b.1.5 Pavement Condition

Pavement condition is a Key Performance Indicator for County road network needs. Road condition is evaluated every other year.

The 2010 Tillamook County road condition is Poor, or a network weighted average of 46 Pavement Condition Index (PCI).

Table 6 Pavement Condition - 2010

Condition	PCI Range	Road Condition
Good	70-100	-
Fair	50-69	Arterials 69
Poor	25-49	Collectors 49 Local 33
Very Poor	0-24	-

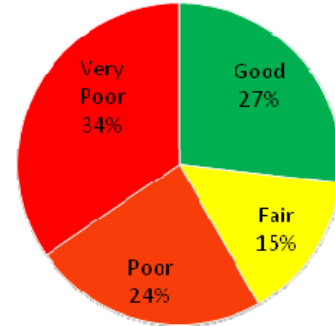


Figure 11 - Network Weighted Average Poor (46 PCI)

Arterial and collector roads are in better condition than local roads.

b.1.5 Pavement Condition - 2001-2010

Pavement condition has been tracked since 2001. Figure 12 shows a significant drop in county roads in Good condition in 2004, the year the county lost its investment in paved county maintained roads. In 2004, those roads in Good condition decline from 45% in 2001 to 22% in 2004, while those roads in Very Poor condition increased from 17% to 27%. By 2010, 35% of paved county roads were in Poor condition.

Road condition was stabilized between 2008 and 2010. However the overall network condition remains Poor (46 PCI).

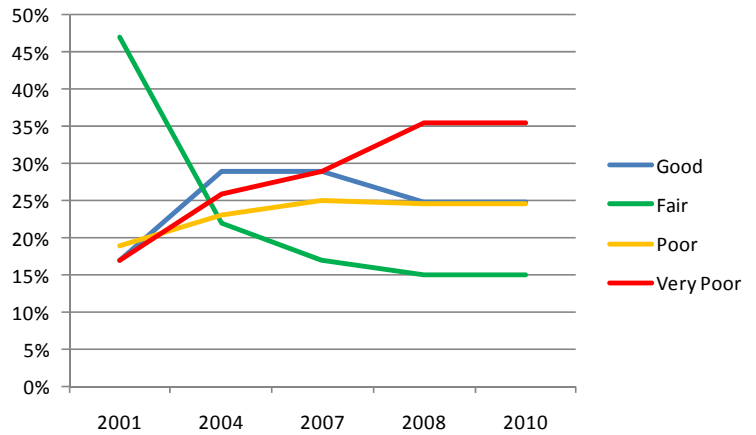


Figure 12 – County Road Condition declines in 2004 & Stabilizes in 2010

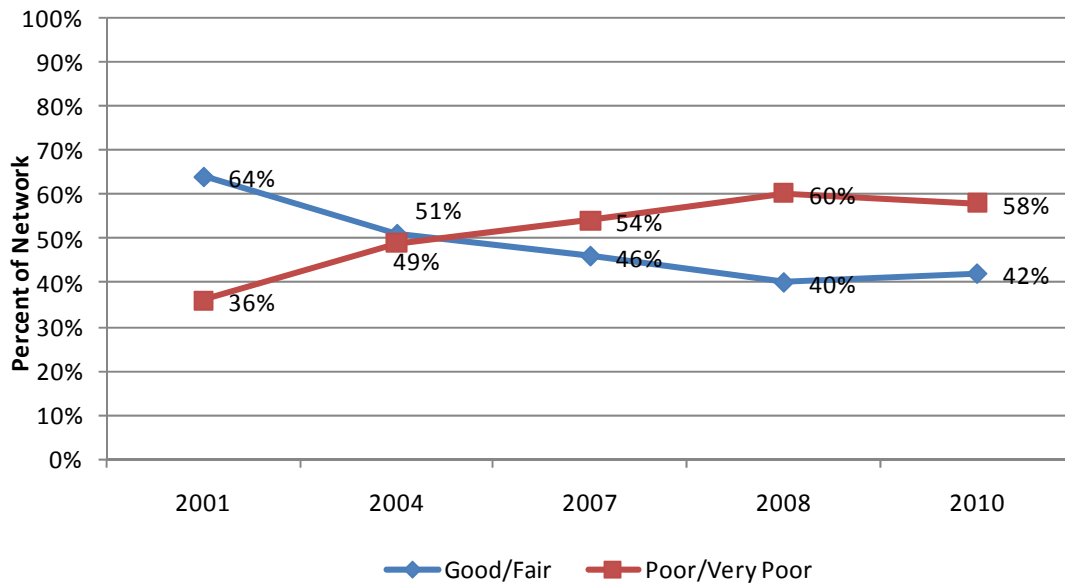


Figure 13 Road Condition Stabilized in 2010

b.1.6 Road Surface Treatments Target Preservation & Reduce Lifecycle Costs

Table 7 Pavement Management Strategy & 2010 Costs ⁶					
Strategy	Activity	Cost	Unit	Road Condition	
				Category	PCI
Routine Maintenance	Chip Seal	\$4.00	square yard	Good	80-90
Preventive Maintenance	Thin Overlay (1.5")	\$7.50	square yard	Fair	50-70
Minor Rehabilitation	Thin Overlay with leveling	\$17.30	square yard	Poor	25-50
Rehabilitation	Thick Overlay (3-5")	\$25.80	square yard	Poor	25-50
Recycled Reconstruction	Full Depth Reclamation	\$39.40	square yard	Very Poor	0-25
Replacement	Reconstruction	\$88.63	square yard	Very Poor	0-25

Chip seal and Full Depth Reclamation were introduced as pavement management techniques in 2010. Chip seal preserves roads in good condition. FDR saves 44% over traditional Reconstruction and between 33-56% over 30 years.



Figure 14 Intervention Strategy & Pavement Condition Index (PCI)

⁶ Tillamook County IRIS, Street Saver (Pavement Management System), 2010

b.1.7 Road Lifecycle Management & Activity Costs

Table 8 Road Management Activities by Lifecycle

Activity (Source: IRIS ⁷)	Routine Maintenance	Reactive Maintenance	Preventive Maintenance	Rehabilitation	Reconstruction
1101 – Pothole Repair		✓			
1102 – Surface Blading	✓				
1104 – Shoulder Maintenance	✓				
1105 – Brooming	✓				
1150 – New Base/Sub Base				✓	
1151 – New Oil Mat (Gravel)			✓		
1152 – Oil Seal Coat (Pavement)			✓		
1153 – Paving (includes blade patch) less than 2 in.			✓		
1154 – Paving (2 inches or more)				✓	
1181 – Road Conditions	✓				

**Road Lifecycle Expenditures
2005-2010**

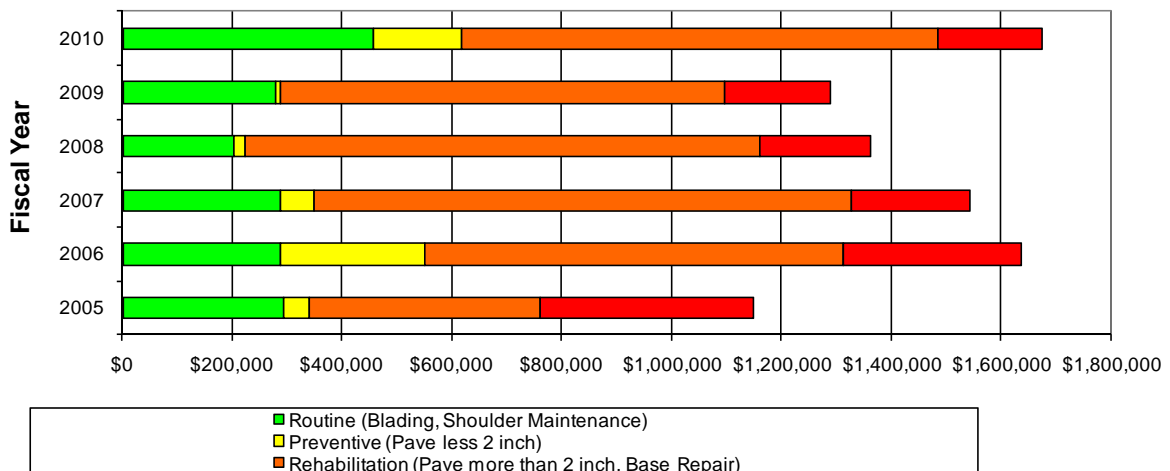


Figure 15 Road Lifecycle Management 2005-2010

An increasing percentage of road surface program expenditures were focused on routine and preventive maintenance, the County's adopted road asset management strategy. In Fiscal Year 2010, 37% of road surface program expenditures targeted routine and preventive maintenance, up from 22% in Fiscal Year 2009.

⁷ Integrated Road Information System (IRIS) is software that tracks Tillamook County Public Works road asset inventory and condition information, equipment management, cost accounting, service requests, accounts payable and receivable. IRIS is developed and maintained by the Association of Oregon Counties.

Table 9 Road TCPW Road Resurfacing Accomplishments – 1998-2010⁸

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Resurfacing (miles)	6.3	2.0	5.4	7.1	3.9	4.8	4.7	18.2	12.3	4.0	8.9	2.6	10.1

Road resurfacing projects include federal and state funded projects. In 2010, the County staff paved 5.1 miles and other agencies paved 4.95 miles of county roads. These collaborative efforts support the commitment of the County to partner with other agencies and road stakeholders.

b.1.8 Future Pavement Performance Decisions- 2011-2015

Target road performance is 60 PCI, or Fair. Tillamook’s paved road condition will decline from 46 (Poor) to 35 PCI (Poor) by 2015 given current road funding.

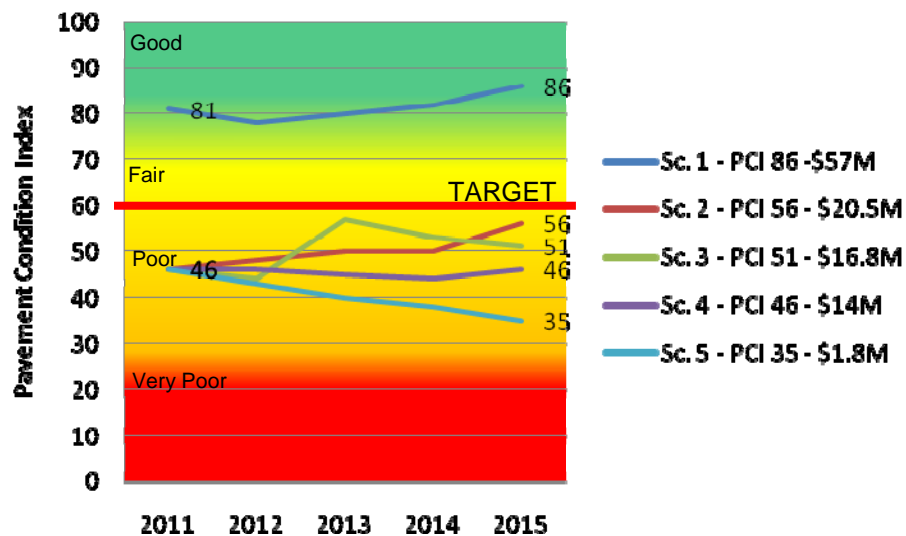


Figure 16 Pavement Condition Scenarios and Expenditures 2011-15⁹

Five pavement investment scenarios show the impact on pavement performance over 5 years. Scenario 2 would almost achieve the county road performance target, 60 PCI.

- Scenario 1 **Unconstrained** – Achieve 86 PCI requires \$57 million over 5 years.
- Scenario 2 **Target Performance, Increase PCI by 10** – Requires \$20.5 million
- Scenario 3 **Raise PCI to 51** – Requires \$16.8 million over 5 years.
- Scenario 4 **Hold Condition at 46** – Requires \$14 million over 5 years.
- Scenario 5 **Current Funding**, assuming lost of federal funds – Results in 35 PCI in 5 years, \$1.8 million.

Pavement Condition	PCI Range
Good	70-100
Fair	50-69
Poor	25-49
Very Poor	0-24

⁸ Tillamook County Comprehensive Annual Financial Report, June 30, 2009, and Tillamook County Public Works Department.

⁹ Pavement Management Program Budget Options Report, Capitol Asset & Pavement Services, 2010

b.2 Detailed Structures Performance

b.2.1 Strategic Outcome and Objectives

A continuous road network over rivers, streams and uneven terrain supporting the traveling public and safety of all road users with well maintained bridges, guardrails and levees.

Objectives to achieve this are:

- Build and inspect bridges, guardrails and levees to comply with established standards
- Maintain and repair bridges to ensure long-term sustainability
- Respond to requests within specified timeframe and complete based on risk and available resources.

b.2.2 Inventory & Value

Table 10 County Structures Inventory & Value - 2010

Structure Type	Number	Replacement Value
Bridges	98	\$128,843,000
Guardrail	10 miles	\$ 1,152,385
Levees	7	Unknown

Two bridges were added to the County bridge inventory; these replace failed culverts. Bridges were revalued in 2010. Bridge replacement value reflects the state average bridge replacement costs.

b.2.3 Condition

Bridge condition is assessed every other year. Bridge inspections will be conducted in 2011.

Bridge sufficiency ratings are used to indicate a bridge's condition based on structural adequacy, safety, reduction of load capacity, serviceability and functional obsolescence (roadway width, and vertical clearance), essentiality for public usage, and detour length. A rating of 75 or above is considered good, 50 to 75 is fair and below 50 is poor. It does not indicate the ability of a bridge to carry traffic loads or whether it will collapse but rather which bridges may need repair or replacement.

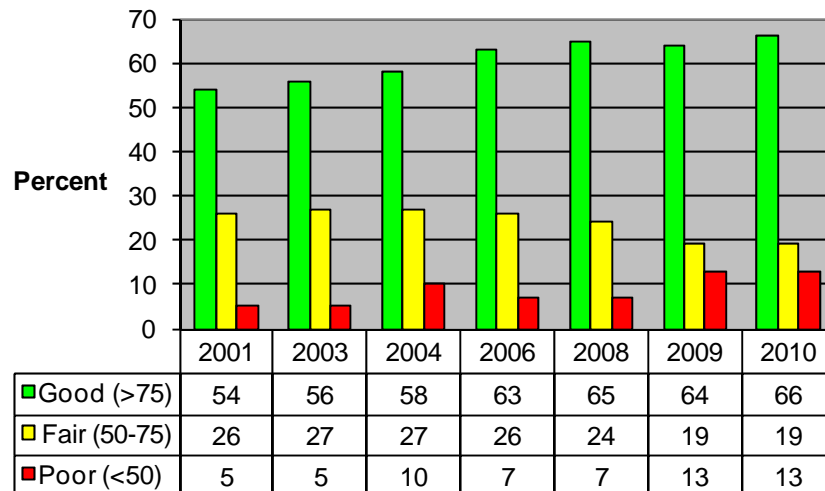


Figure 17 Bridge Condition 2001-2010

Two bridges that replaced failed culverts were added to the County bridge inventory. Two-thirds (67%) of the 98 bridges are in good condition, 20% in Fair and 13% were in Poor condition. The number of bridges in poor condition has increased from 7 to 13 since 2008.

Of the bridges in poor condition, Lommen Bridge over the Nehalem River has a sufficiency rating of 4 out of 100. This is the second worst bridge rating in the state. The County has recently received HBR funding to replace this bridge. The Salmonberry Bridge which was washed out in the December 2007 winter storm will be repaired in 2011. Ninety percent (90%) will be funded by Emergency Relief (ER) funding from the U.S. Federal Highway Administration, and 10% by local funding.

**Table 11 Bridges in Poor Condition - 2008
(less than 50 sufficiency rating)**

Bridge Name	Sufficiency Rating
Lommen	4.0
Holgate	8.7
Wyss	17.0
Minich Creek	24.6
Salmonberry	28.4
Cedar Creek	42.1
Lommen Overpass	44.2
Trask River, South Fork	44.9
Moss Creek	45.6
Hushbeck	46.1
Makinster	46.8
Prince (Blum Lane)	47.7
Fagan	48.5

Four County bridges are posted with weight limits [Foley Creek, Holgate, Hushbeck, and Prince (Blum Lane) bridges] and another 7 bridges require special permits for large loads, or narrow width restrictions.

The 2001 Oregon legislature approved a statewide bond measure, the Oregon Transportation Investment Act (OTIA), which provided funding for state, county and city bridge replacement. Tillamook County replaced 6 bridges in poor condition with OTIA funds:

- Johnson Bridge
- East Creek Bridge on Moon Creek Road
- Sorenson Bridge on Blaine Road
- Bewley Creek Bridge on Bewley Creek Road
- Josi Bridge on Kansan Creek Road
- Killam Creek Bridge on South Prairie Road

Once the OTIA program is completed, the County will continue to pursue state and federal bridge funds to replace County bridges.

In Fiscal Year 2010, two bridges were completed:

- Foland Creek Bridge on Bixby Road
- Fawcett Creek on South Prairie Road

b.2.4 Guardrails. Guardrails were inspected in 2007. The Oregon Standardized Drawings were the basis of the five-point condition assessment.

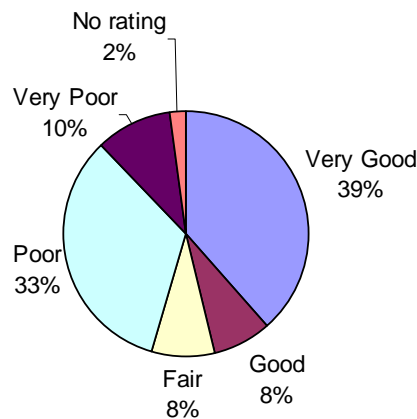


Figure 18 Guardrail Condition

Forty-three percent of the 10 miles of guardrail were in Poor or Very Poor condition in 2007.

b.2.5 Levees. Levee management responsibility was transferred to TCPW in 2008 from the U.S. Army Corp of Engineers. There are 7 levees managed by Tillamook County: Moss Creek Road, Beaver Creek, Tone Road, Makinster, Boquist Road, Bosetti Road, and Miami-Foley Road. Levees are inspected annually.

Levees were inspected by Tillamook County Public Works and the U.S. Army Corp of Engineers in 2010. In general, levees are rated as “satisfactory” or adequate. However, a list of overdue maintenance activities (including vegetation management) were identified in the inspection process.

b.2.6 Structure Activities

Structure-related expenditures declined 83% in Fiscal Year 2010. 2006-2009 expenditures reflect OTIA funding, statewide bonds used to repair and replace bridges throughout Oregon. With OTIA's completion, the County intends to seek state and federal funds to rehabilitate and replace bridges.

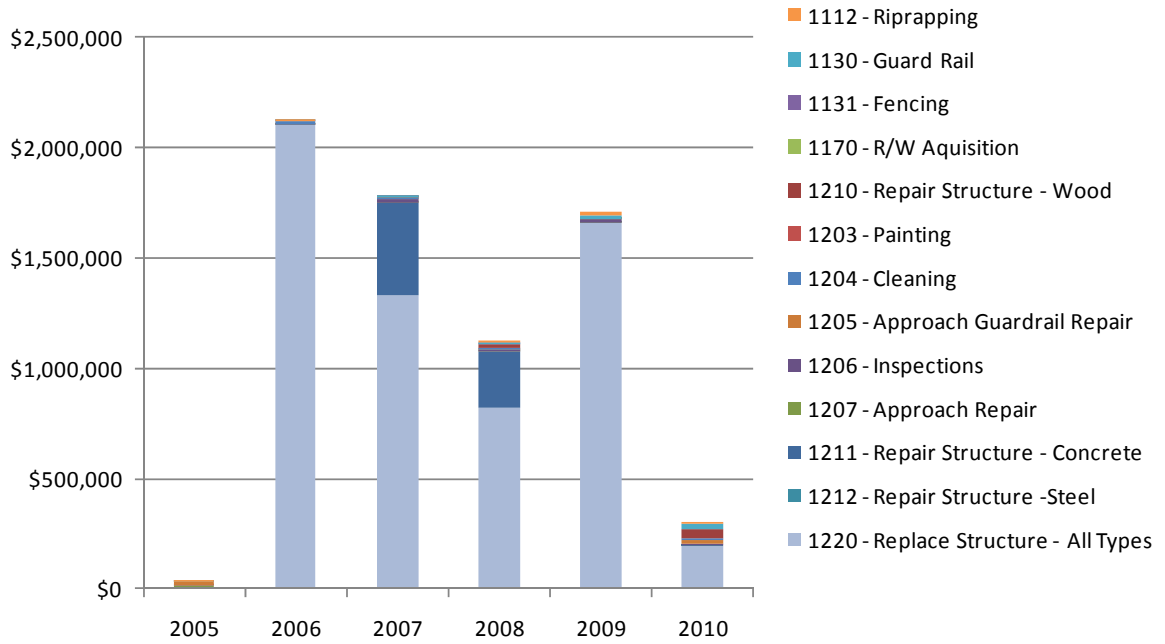


Figure 19 Structure Activity Expenditures – 83% decline in 2010

b.3 Detailed Traffic Safety Performance

b.3.1 Strategic Outcome and Objectives

A county road network safely and reliably used by the traveling public with well maintained road signs and markings so that state and local laws can be understood and enforced.

Traffic safety activities protect the motoring public by providing quality traffic control devices (signs & delineation) and pavement striping. This is accomplished by providing the public with signage and striping that meet at least the minimum standard required by federal, state and county regulations. Signs and delineators serve a variety of functions, including:

- Providing the motoring public with regulatory instructions which they are required to obey
- Warning travelers of temporary or permanent hazards
- Providing street name, and guide signs which identify where the traveler is or where sites are located

b.3.2 Traffic Safety Activities

Five activities make up the Traffic Safety program.

- Vandalism repair
- Sign maintenance
- Pavement striping
- Signal illumination
- Pavement striping at intersections and railroad crossings

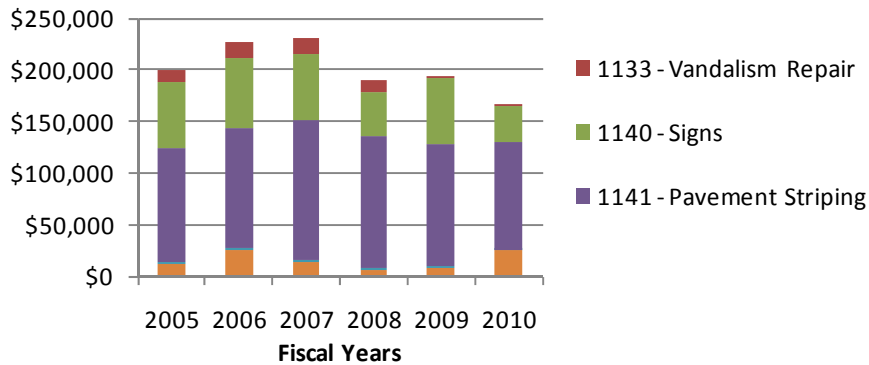


Figure 20 Traffic Safety Program Expenditures – 2005-2010

\$167,039 of the 2010 County road budget provided traffic safety services, a decline of 14% from 2009. Annual reapplication of pavement centerline markings and fog lines at the side of county roads required nearly ¾ of 2010 program resources. This included railroad crossings and intersections (stop bars) pavement markings. Maintaining regulatory signs (stop & yield signs) is a high priority and required 20% of program resources.

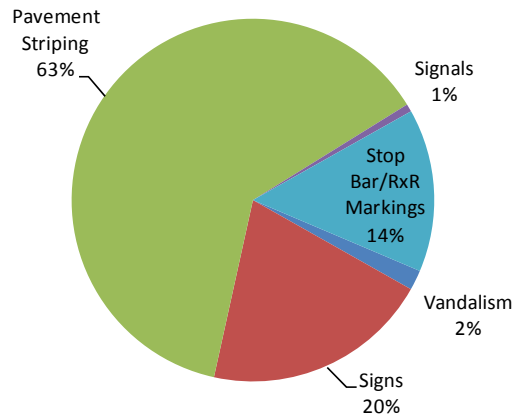


Figure 21 - 2010 Traffic Safety Program – 14% Decrease

b.3.3 Inventory & Replacement Value

There were 5,406 signs in IRIS in 2010.

Table 12 Traffic Safety Inventory and Value - 2010

Asset	Units	Unit Cost	Replacement Value
Signs	5,406	\$32	\$172,992
Delineators	457	\$18	\$8,226
Posts	4,165	\$14	\$58,310
Total Replacement Value			\$239,528

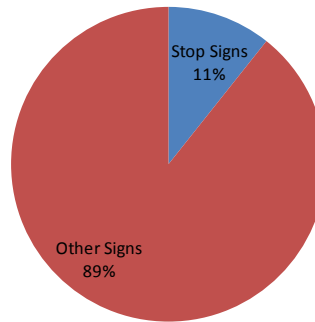


Figure 22 - 5,406 Signs

b.3.4 Pavement Markings

Pavement markings regulate and guide traffic movements and promote safety. Centerline, stop bar and railroad crossing pavement markings are applied annually on arterial and collector roads with fog lines reapplied every other year. Over three hundred (323) miles of county roads received pavement markings or stop bars in 2010 at an average cost of \$324 per mile.

b.3.4 Sign Condition & Performance

Staff reductions are resulting in reactive maintenance for all but regulatory signs. Regulatory signs (e.g., stop and yield signs) are a High risk asset and therefore receive the highest priority.

The majority of signs are in good physical condition. Night time visibility is evaluated every other year for all signs; the next inspection will occur in 2011. A four-point condition scale, from Very Good to Poor, is used to rate sign condition. Condition is based on professional judgement.

There are 578 stop signs on county roads; 99% are in Very Good and Good condition.

Table 13 Stop Sign Condition

Category	Condition	
Very Good	492	85%
Good	81	14%
Fair & Poor	5	1%
Subtotal	578	100%

b.4 Detailed Drainage Management Performance

b.4.1 Outcome and Strategic Objectives:

An accessible, safe and well maintained county road network clear of surface storm water and flooding.

Drainage management strategic objectives are to:

- provide and maintain adequate road drainage in order to prevent water damage to the roadway structure,
- maximize the use of the county road network,
- protect the rights of adjoining property, and
- provide fish passage where mandated.

b.4.2 TCPW Drainage Management Activities

Surface storm water and flooding is managed by maintaining vegetated ditches that serve as drainage and water quality facilities, maintaining culverts in the condition necessary to handle their design capacity, and where culverts carry streams, in maintaining them in a condition to provide fish passage.

Drainage management activities include:

- Culvert and catch basin cleaning,
- Culvert replacement
- Ditching
- Erosion control using best management practices with regards to steep slopes, drainage ways and permitted activities.

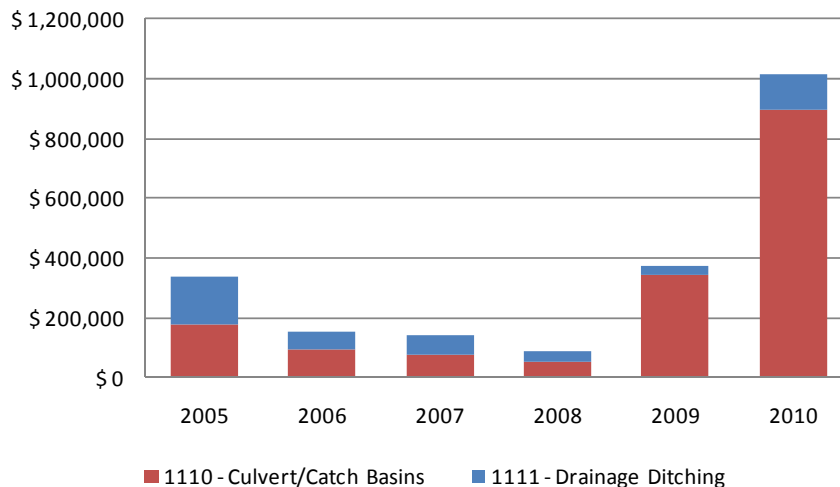


Figure 23 Drainage Expenditures 2005-2010 – 170% increase from 2009

Boulder Creek culvert was removed. Foland Creek and Fawcett Creek Road culverts were replaced with bridges in 2010.

Drainage management is considered a High risk. The bottoms of culverts are rusting out due to their age and the effects of salt water. \$1 million or 19% of the total road department expenditures in 2010 were used to manage county road drainage. This is up 170% from 2009. Eighty-eight (88%) of the drainage program resources focused on culvert repair and replacement while 12% addressed cleaning and grading ditches.

b.4.3 Culvert Inventory, Condition and Performance

There are an estimated 3,210 culverts in the county with a combined length of 124,577 feet, or almost 24 miles of culverts associated with draining Tillamook County roads and their approaches.¹⁰ Of these, 1,860 are classified as cross culverts which act as conduits that move water under the roadway. Based on a review of information in IRIS, the average length of a county culvert is 39 feet; 291 culverts (9%) have no information on length. There is limited condition assessment of the culvert inventory. The confidence in the culvert inventory is low. A culvert inventory and condition inspection is planned for Fiscal Year 2012.

b.4.4 Ditch Inventory, Condition and Performance

Ditches were inventoried and their condition assessed in 2008. Roadside ditches drain 60% of all county maintained roads, 2% have concrete curbs channeling water, and 38% have no ditches or curbs.

County roadway ditches should be cleaned annually. Ditches are generally graded during the dry summer months so that the vegetation can be removed, the original flow line defined and adequate roadway and ditch drainage can occur.

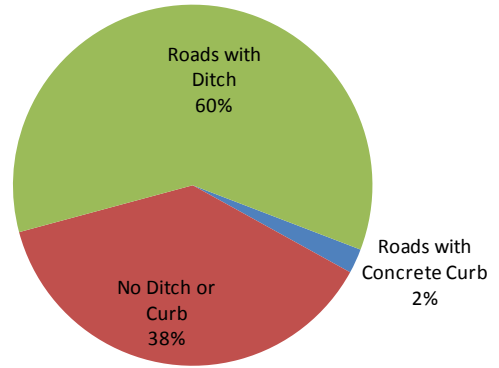


Figure 24 County Ditch Inventory 195 Miles - 2008

Table 14 Ditch Condition Rating

1	Very Good	This rating indicates ditch is clean and free of any debris, and is functioning as intended - No maintenance needed at this time
2	Good	Ditch is flowing fairly unobstructed - small amount of vegetation is present - No maintenance needed at this time
3	Fair	Ditch is carrying water with minor obstructions - Vegetation is present & growing - ditching required in some areas of main ditch channel
4	Poor	Vegetation & Sediment is blocking flow in numerous areas - still water depth reaches at least 1 foot or more before starting to flow
5	Very Poor	Ditch is more than 80% filled with Vegetation or Sediment and flow is severely impeded. Immediate maintenance is required

The county’s ditch standard¹¹ requires a ditch depth of 3:1 width, with a width of 5 feet.

Of the 195 miles of ditches along Tillamook County roads, 30% required some ditching maintenance in 2008; 22% were in Poor condition, and 8% were in Very Poor condition requiring immediate maintenance.

Currently, Tillamook County ditches are cleaned on a reactive basis due to inadequate resources.

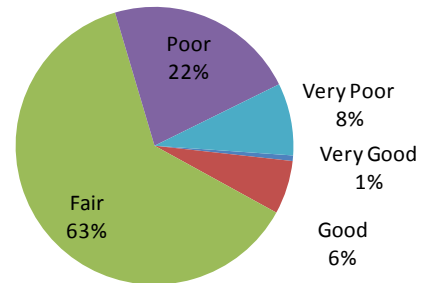


Figure 25 County Ditch Condition - 2008

¹⁰ Integrated Road Information System (IRIS)

¹¹ “Standard Roadway Section,” which reflects standards of the American Association of State Highways and Transportation Officials (AASHTO) Manual

b.5 Detailed Vegetation Management Performance

b.5.1 Outcome and Strategic Objectives

Roadside safety and visibility ensured by removing vegetation blocking sight lines to advisory signs, ditch lines, guardrail and guideposts.

Vegetation strategic objectives are to:

- regularly maintain roadside vegetation, including routine cutting and disposing of trees, brush, berry, and other vines that may become a traffic hazard.
- provide sight distance safety, drainage and prevent further damage to road surfaces and shoulders.

b.5.2 Vegetation Management Activities

County roadside vegetation is controlled and road infrastructure preserved through annual mowing, As a part of integrated vegetation management, small brush is cut, weeds are sprayed and trees removed or trimmed in the right of way. Debris in the right of way is removed as work is accomplished.

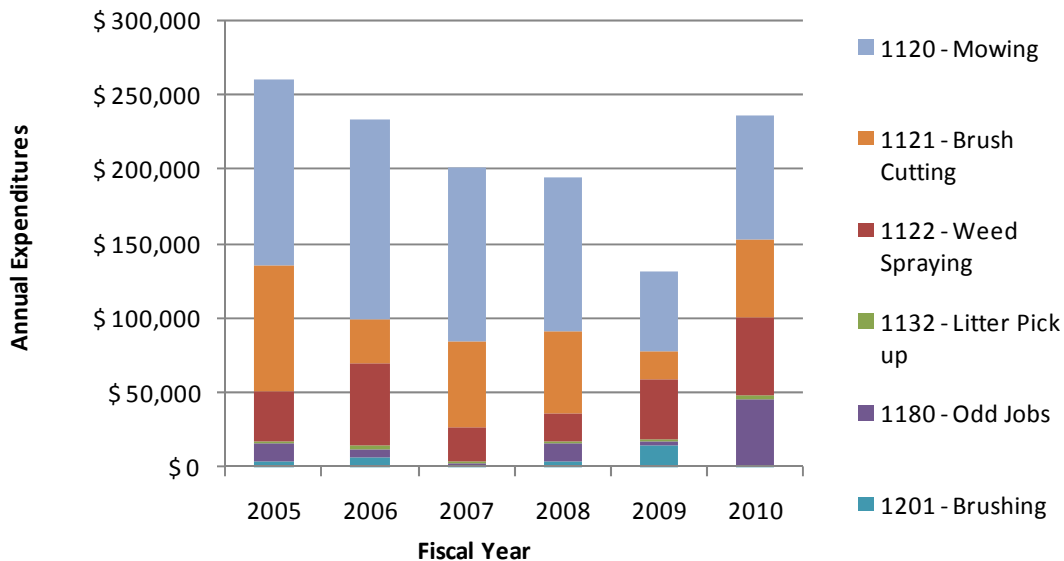


Figure 26 Vegetation Management Expenditures – 9% increase in 2010

Managing roadside vegetation is considered an Extreme risk in this wet county. \$236,106 or 5% of 2010 road funding managed roadside vegetation. This is up 9% from 2010. Fewer winter storms resulted in more time for preventive maintenance, including brush cutting and mowing.

b.5.3 Inventory, Condition and Performance

There is currently no inventory or condition assessment of the vegetation at the edge of county roads (e.g., obstructions/hazards, noxious weed inventory, presence of litter, appearance).

Tillamook County experienced a wetter than normal spring in 2010. Nine percent (9%) of all service requests from the public were to address mowing, brush cutting and litter removal from roadways.

b.6 Emergency Response Level of Service

b.6.1 Outcome and Strategic Objectives

A repaired and safe county road network by working in partnership with federal, state and county emergency responders, and preparing for and responding to weather events and hazards.

Objectives are:

- Respond to hazards due to weather events
- Respond to customer service requests in a timely manner to reduce hazards by participating in Incident Command center

b.6.2 Emergency Response Activities

Since 1996, Tillamook County has experienced numerous catastrophic storms. Over the last six years, the average annual road network emergency mitigation and recovery expense is \$422,945.

Table 15 Emergency Response Expenditures

	2005	2006	2007	2008	2009	2010
1160 - Snow Plow/Sanding	\$19,285	\$18,377	\$37,469	\$23,060	\$43,345	\$867
1161 - Flood/Wind/Slide	\$83,781	\$275,726	\$300,935	\$738,646	\$684,166	\$294,411
1202 - Debris Removal	\$230	\$5,925	\$558	\$2,307	\$6,676	\$1,906
Total	\$103,295	\$300,028	\$338,962	\$764,013	\$734,187	\$297,184

There were no federally declared storms in Fiscal Year 2010, and generally a milder winter. A total of \$297,184 was expended managing weather events and hazards in Tillamook County, a decline of 60% from the prior year.

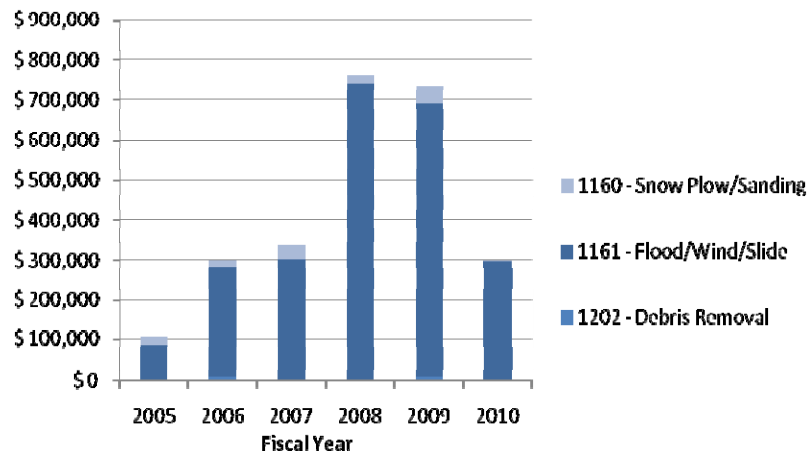


Figure 27 Emergency Management Expenditures - 60% decrease in 2010

b.6.3 Performance

Responding to customer Service Requests in a timely manner & reducing hazards is a high priority. 100% of emergency service requests are responded to. Their completion is dependent on their priority and staffing levels, given the event.

TCPW currently tracks the hours and costs of snow plowing and response to flood, wind events and land slides. Federal aid reimbursement requires documenting emergency costs.

b.7 Operations

b.7.1 Engineering Services

The purpose of Engineering Services is to plan, research, coordinate and manage right of way activities. This includes permit review, capital project, asset management and bridge design contract management. Engineering services also assist in emergency response and recovery.

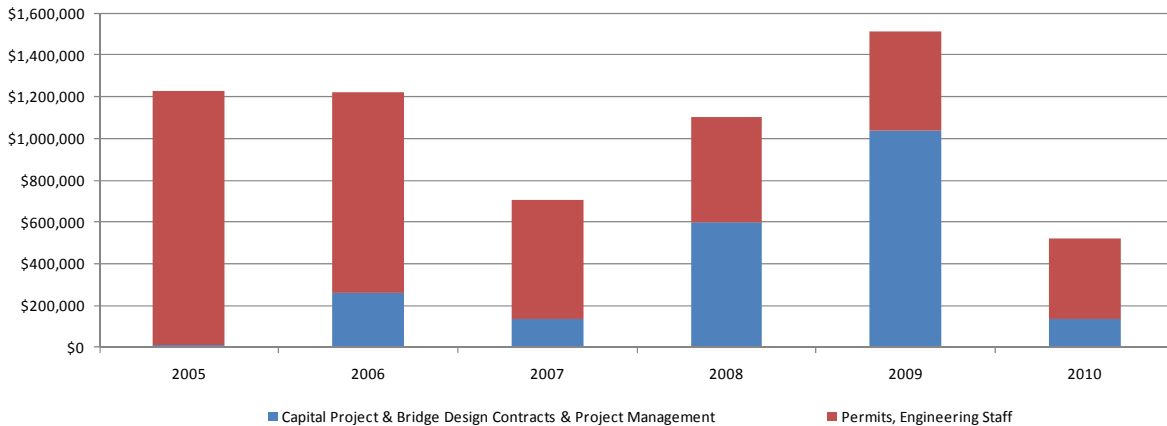


Figure 28 Engineering Services – 65% decline in 2010

Engineering expenditures declined 65% in 2010 to \$522,000. This is a result of completing the OTIA bridge program in Tillamook County. Two bridges were completed in 2010. Foland Creek Bridge was funded entirely with County funds. Fawcett Creek Bridge was funded at 90% with U.S. Federal Highway Emergency Relief funds. Also a temporary Bailey Bridge was installed with County and state work crews, and American Recovery and Reinvestment Act (ARRA) funds were identified to construct a new and permanent bridge in 2011. Utility and road approach permits are given priority to support economic development in the county. 248 utility and road approach permits were reviewed and issued in 2010.

Engineering staff reductions in 2010 have not been replaced. There is a lack of project management staff. This reduced staffing level is putting a stress on day to day operations and accomplishments.

The County lacks advanced technology (e.g., GIS), and staff to perform adequate data maintenance. This hampers the ability of the Road Department to manage road infrastructure and services, and responsiveness to requests for no parking signs, street vacations, jurisdictional transfers, and Commissioner Office calls.

b.7.2 Equipment Management

The purpose of equipment management is to provide optimum TCPW vehicle availability and reliability for the least lifecycle cost by providing timely maintenance and repairs given available resources.

Table 16 Equipment Management Activities

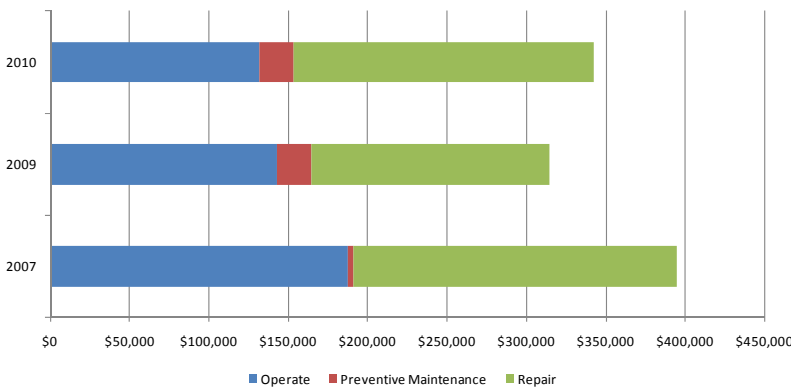
	2005	2006	2007	2008	2009	2010
1601 - Safety Inspections (shop)	\$206	\$617	\$0	\$435	\$0	\$2,725
1602 - Fuel/Oil/Lube	\$90,712	\$139,240	\$146,050	\$189,285	\$123,983	\$117,700
1603 - Tires	\$10,872	\$15,861	\$27,320	\$29,947	\$18,866	\$9,199
1604 - Communications Equipment	\$2,402	\$3,642	\$777	\$455		\$1,644
1610 - Other Repairs (shop crew)	\$228,121	\$248,084	\$203,744	\$200,241	\$148,929	\$187,928
1620 - Operator Maintenance and Repairs	\$17,282	\$16,170	\$13,526	\$14,720	\$15,827	\$18,921
1621 - Accident Repairs	\$0	\$221	\$0	\$0.00	\$0	\$0
1622 - Non-County Equipment/Oper. Rental	\$173	\$2,795	\$519	\$107	\$216	\$678
1630 - Fabrication	\$637	\$330	\$47	\$1,906	\$870	\$1,222
1640 - Chasing Parts	\$2,797	\$5,036	\$2,480	\$3,506	\$5,669	\$2,182
Total	\$ 353,203	\$ 431,994	\$ 394,462	\$ 440,602	\$ 314,360	\$ 342,199

Public Works manages 115 vehicles and rolling stock. The 2009 value was \$3.9 million.¹² Nearly 75% exceed the County's adopted useful life for vehicles; all 5-yard dump trucks exceed 30 years. Vehicle replacement funds are used to replace high maintenance vehicles. A spray truck was purchased in 2010.

Significant challenges are:

- Some vehicle parts are not available and must be made in house.
- Equipment reliability and safety is an increasing concern.
- Equipment may not be appropriate for all job requirements.

The shop foreman began analyzing and reporting on-going vehicle costs and performance (hours and miles of use) in 2008. Eighty (70%) Level A Maintenance, and 115 (100%) annual safety inspections were conducted in 2010. This is a reduced level of service due to the overall reduced number of Road Department staff. One foreman and 1 mechanic must perform all equipment maintenance, and are also required to perform other road maintenance activities.



In spite of a preventive maintenance focus, the 2010 equipment costs are 9% above 2009. Over half (55%) of program costs were spent on repairing the County's older equipment, up from 52% in 2009.

Figure 29 - Equipment Lifecycle Costs –55% on Equipment Repairs in 2010

¹² Tillamook County Comprehensive Annual Financial Report, June 30, 2009.

b.7.3 Facilities Management

The purpose of facilities management is to provide safe and effective shelter for TCPW employees, equipment and the materials used to provide county road services.

Table 17 Facilities Management – 27% Decline since 2009

	2005	2006	2007	2008	2009	2010
1720 - Building Maintenance	\$43,344	\$20,581	\$12,967	\$27,373	\$42,365	\$15,259
1721 - Utilities	\$23,912	\$26,615	\$26,263	\$29,885	\$22,776	\$28,381
1722 - Yard Maintenance/Cleanup	\$10,922	\$12,641	\$18,567	\$27,409	\$13,532	\$14,156
1723 - Building Construction	\$18,635	\$0	\$115	\$230	\$62	\$0
Total	\$96,813	\$59,837	\$57,912	\$84,897	\$78,735	\$57,796

The County Public Works buildings were built in the beginning of the 1900s. The estimated useful life of county buildings is 45 to 50 years. They substantially exceed their estimated useful life. Public Works buildings are inspected for health and safety annually. Building maintenance is being deferred.

b.7.4 Quarries, Materials Management & Stockpiling

Reliable materials are needed for county road maintenance. These must meet consistent standards of quality to support road maintenance activities.

Table 18 Materials & Stockpiling Activities

	2005	2006	2007	2008	2009	2010
1502 - Operation	\$1,133.55	\$1,168.47	\$4,817.57	\$6,478	\$3,120	\$1,721
1505 - Tack Oil	\$7,995.13	\$1,611.44	\$2,106.49	\$1,649	\$294	\$13,941
1507 - Signs	\$283.38	\$8,195.15	\$8,960.24	\$7,483	\$6,861	\$2,586
1510 - Pit/Stockpile.	\$37,275.85	\$7,617.18	\$2,767.01	\$44,177	\$17,535	\$23,145
1511 - Hauling to Stockpile	\$25,711.74	\$61,690.80	\$45,575.59	\$72,905	\$59,941	\$79,470
1521 - Material Purchase	\$0.00	\$349.47	\$0.00	\$261	\$0	\$0
Totals	\$ 72,400	\$ 80,633	\$ 64,227	\$ 132,953	\$ 87,751	\$ 120,863

There are two county quarries. The county quarries are located south of Cloverdale (near Clear Creek) and north of Nehalem.

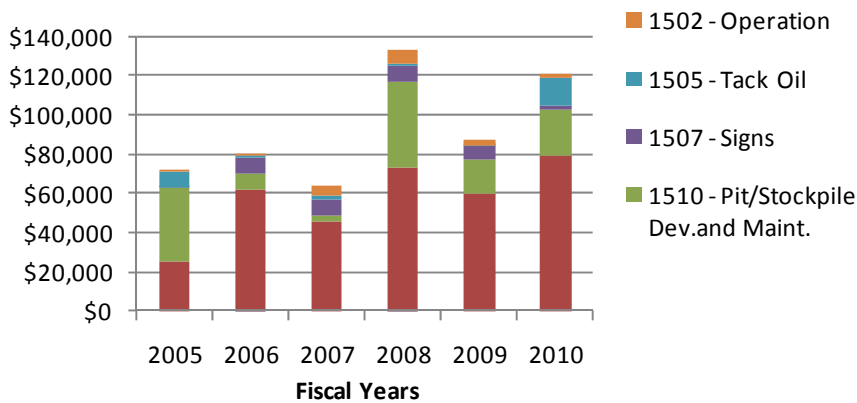


Figure 30 - Materials & Stockpiling – 38% increase

The 38% increase in 2010 materials management costs result from crushing rock and hauling gravel from County quarries to work sites. In addition, the the County spent \$169,000 contracting for rock crushing in Cloverdale and Nehalem pits (21,000 cubic yards). As this stockpile is used for County road projects, project costs will the cost of crushed rock used. Due to this standard inventory management practice, total 2010 rock crushing costs are not reflected in Figure 27.

b.7.5 Administration

County road managers and employees plan, budget and manage road resources (labor, materials and equipment) so that road services can be provided in a safe and cost effective manner. Results are communicated on road service performance, efficiency and effectiveness.

Administration includes payroll, training, and safety programs for employees, managing service requests, cost accounting, budgeting, accounts receivable and payable, management, insurance and audit services. Administrative costs that support a road service (e.g., training) are allocated to the programs served. Remaining Administration expenditures include department management costs and cost accounting services.

Table 19 Administration - \$303,375 in 2010

2005	2006	2007	2008	2009	2010
\$659,328	\$589,096	\$651,726	\$564,911	\$681,575	\$303,375

Only Administrative costs associated with department management and cost accounting are shown in Table 19 for 2010. Prior years reported Administration expenditures which had been allocated to road services as Overhead thus overstating total Administration costs. Table 19 corrects that error for 2010 but does not restate prior years.

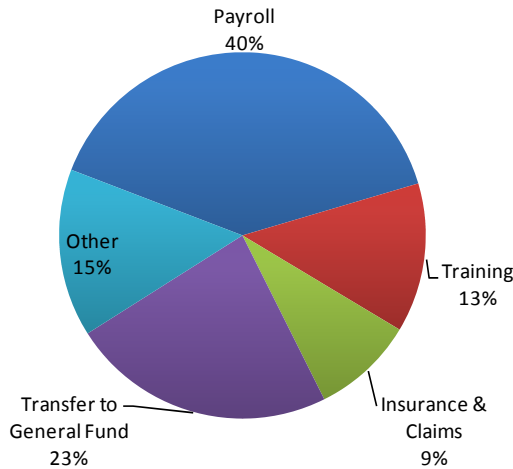


Figure 31 – Administration

Table 20 includes all Administration expenditures (allocated and non-allocated). Payroll is 40% of the total, down from 41% in 2009. This reflects reduced levels of road department staffing. Nearly a quarter of Administration (23%) reimburses the General Fund for support services (e.g., human resource management). Training remains a priority to ensure safety and cross-training among employees who are called on to perform many tasks as overall staffing declines.

Table 20 - Administration

Activities	2005	2006	2007	2008	2009	2010
1701 - Administration	\$438,143	\$427,724	\$475,645	\$342,733	\$278,284	\$259,407
1702 - Union Business	\$2,497	\$1,133	\$0	\$1,286	\$58	\$0
1703 - Paid Leaves	\$3,884	\$31,493	\$0	\$2,076	\$2,620	\$13,076
1704 - Road Cost Accounting	\$71,956	\$28,073	\$25,667	\$23,109	\$22,350	\$22,102
1705 - Admin.Exp.Transfer to GF		\$90		\$48	\$187,106	\$161,000
1706 - LWOP	\$0	\$0	\$0	\$0	\$0	\$77
1710 - Receiving Training	\$63,595	\$44,200	\$63,032	\$70,683	\$75,458	\$82,053
1711 - Giving Training	\$702	\$615	\$436	\$1,229	\$1,035	\$2,406
1730 - Safety Supplies/Services	\$8,278	\$9,345	\$11,638	\$14,058	\$16,902	\$12,621
1731 - Safety Committee	\$5,970	\$4,853	\$5,536	\$6,986	\$7,310	\$6,359
1740 - Overhead - Miscellaneous	\$10,317	\$7,583	\$4,465	\$4,359	\$4,816	\$12,210
1741 - Overhead - Tools/Equipment	\$24,318	\$14,126	\$13,384	\$13,845	\$19,053	\$10,071
1742 - Overhead - Medical	\$2,100	\$500	\$800	\$1,643	\$1,102	\$1,644
1743 - Overhead - Insurance/Claims	\$68		\$462	\$324	\$6,966	\$62,080
1744 - Overhead - Vehicle Accident	\$405	\$909	\$36	\$275	\$1,213	\$191
1752 - Overhead - Surplus Equip. Disposal	\$0	\$105	\$176	\$0	\$636	\$0
1753 - Overhead - Moving Equip (not related to route/job)	\$12,409	\$11,967	\$23,021	\$17,622	\$17,307	\$21,389
1754 - Interdepartmental Labor (non Road/SW)	\$8,449	\$983	\$4,820	\$14,943	\$0	\$9,146
1755 - Outside Billable	\$6,239	\$635	\$684	\$552	\$5,589	\$4,064
1756 - Administration-Storm Damage Assessment -1st storm	\$0	\$4,764	\$3,267	\$47,079	\$0	\$8,656
1756A - Admin-Storm Damage 2nd Storm	\$0	\$0	\$14,689	\$2,030	\$4,952	\$0
1756B - Admin-Wind 3rd Storm Dec13-06	\$0	\$0	\$3,969	\$31	\$28,818	\$0
Total	\$659,328	\$589,096	\$651,726	\$564,911	\$681,575	\$688,552

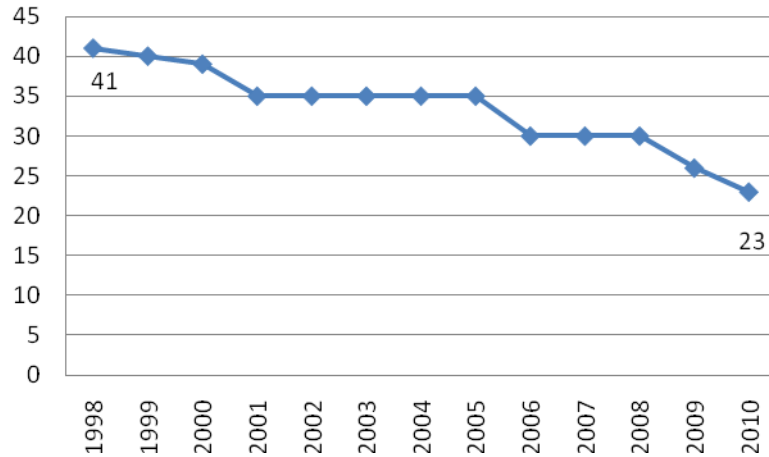


Figure 32 - Employees – 44% reduction since 1998

Road Department staffing has declined significantly. This is affecting the level of road services and response to requests for service.

b.7.6 Service Request Management

Responding to citizen road service requests is a high priority. Requests are evaluated based on priority and repairs completed as resources allow.

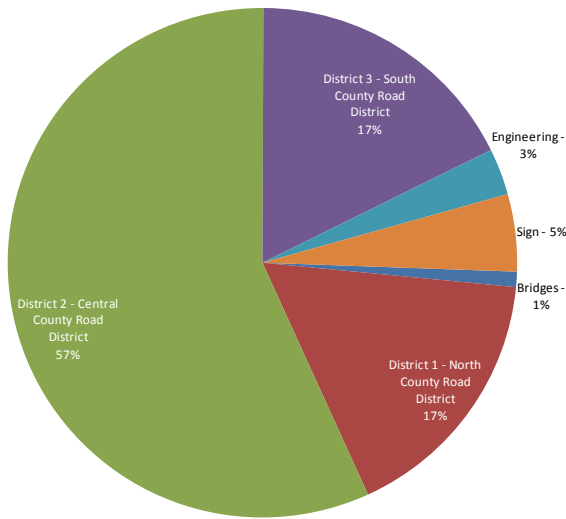


Figure 33 –FY 2010 Service Requests by District

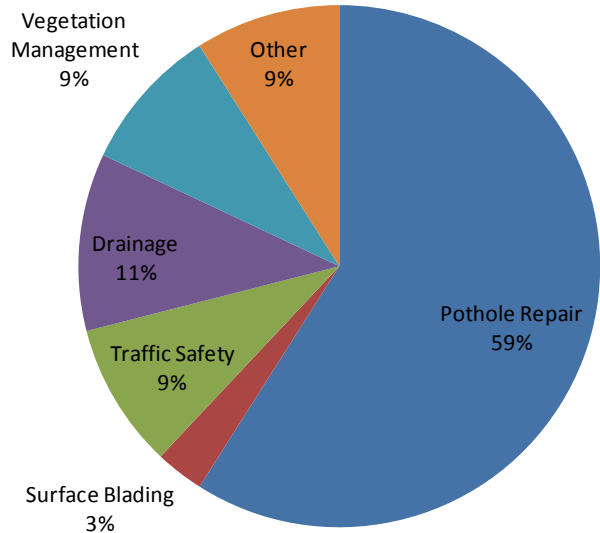


Figure 34 – 685 Service Requests in FY 2010

Over half (57%) of the 685 requests for service in 2010 were reported in the Central District. The majority (59%) were related to potholes in paved road surfaces. A common reaction is to increase the budget for pothole repair (reactive maintenance); potholes indicate a failing street and the need for increased preventive maintenance.

7. TCPW Asset Planning & Improvement Plan

Tillamook County road management requires cooperation and communication between the TCPW Department, other county agencies and partners. County asset management roles and responsibilities extend beyond TCPW and are considered critical to successful management of road services. This recognizes asset management planning is a County responsibility and requires the commitment of the County Board to succeed. Management and performance reporting occurs as follows:

Table 21 TCPW Management & Performance Reporting

Report & Monitoring Method	Frequency	Responsible	Approves	Conferred with	Informed
Asset Management Plan	Every 4 years	TCPW Director	BOCC	CRAC	TCPW Mgmt. & Employees Community & Partners
Three-Year Improvement Plan & Progress	Annual	TCPW Director	BOCC	CRAC	TCPW Mgmt. & Employees Community & Partners
Risk Management Plan	Every 3 years	TCPW Director	BOCC	Risk Team (TCPW Mgmt. Team, CRAC, BOCC, County Dept. Mgrs.)	Community & Partners
Risk Register – New Risks & Risk Status	Annual	TCPW Director	BOCC	Risk Team (TCPW Mgmt. Team, CRAC, BOCC, County Dept. Mgrs.)	Community & Partners
Performance Report	Annual	TCPW Director	n/a	TCPW Mgmt. & Employees BOCC CRAC	TCPW Mgmt. & Employees Community & Partners
Significant Service Level Changes	Annual	TCPW Director	BOCC	TCPW Mgmt. & Employees BOCC CRAC Community & Partners	TCPW Mgmt. & Employees Community & Partners
TCPW Budget	Annual	TCPW Director	BOCC	CRAC Community & Partners	TCPW Mgmt. & Employees Community & Partners
Asset Management Policy	Every 4 years	TCPW Director	BOCC	CRAC	TCPW Mgmt. & Employees Community & Partners

TCPW is committed to continuously improving the way it provides and reports on road services in Tillamook County. An improvement plan for Fiscal Years 2011-2013 follows and progress noted.

Accomplishments include:

- Adoption of asset management policy by Board of County Commissioners
- Benchmarking services with adjoining counties
- Annual reporting of performance, status and condition of assets and services
- Adopt asset management roles, responsibilities and reporting cycles
- Implement risk-based decision making
- Rescinded Board Orders for non-mandated services
- Establish service request tracking system and response standards
- Completed intergovernmental agreement (PMAT) which shares resources and services
- Incorporated asset life cycle management in financial decision making

Table 22 Improvement Plan FY 20011-2013 (continued)

Improvement Plan Schedule FY 20011-2013													
No.	Task	FY2010-2011				FY2011-2012				FY 2012-2013			
		Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4
	Operational Efficiency												
17	List operational efficiencies (e.g., changes in work practice or materials, partnerships with other jurisdictions, disposal of underutilized equipment) in the annual asset status and condition report so that employees, CRAC, the County Board and the public are aware progress.	In Progress	On-going										
18	Examine on-going costs such as equipment maintenance and repair versus equipment replacement, as well as gravel hauling. Identify whether more efficient mobilization can be achieved with fewer work sites.	In Progress	On-going										
	Data Collection and Organization												
19	Pavement, bridge, sign, ditches, guardrail and equipment inventory is current and condition known.	In Progress											
20	Initiate inventory and assess condition of culverts, signs. Enter sign and sign post condition in IRIS. Document methods of condition assessment for each inventory so a repeatable process can achieve similar results when conducted by more than one individual.			Annual Report				Annual Report					
21	Annually report on TCPWD assets' inventory, condition, the method of assessing condition and the confidence and frequency of methods used. Document roles, responsibilities and methods for collecting and maintaining inventory information.			Annual Report				Annual Report			Annual Report		
22	Establish regular schedule for assessing asset condition that reflects the risks to the community and County liability.		Update 2008 Risks	Annual Report				Annual Report			Annual Report		
23	Train managers responsible for data maintenance and condition assessment on use of IRIS.	On-going											
24	Budget development and annual reports to the public and decision makers should include:			Annual Report				Annual Report			Annual Report		
24a)	a) An explanation of the current level of service and targeted level of service given a specific timeframe for achieving a road asset condition. The annual budget should seek to link short term budget levels to long term consequence of budgets.			Annual Report				Annual Report			Annual Report		
24b)	b) Annual accomplishments (e.g., miles of roads overlayed, signs replaced or maintained, miles of guardrail repaired)			Annual Report				Annual Report			Annual Report		
24c)	c) Service requests by type			Annual Report				Annual Report			Annual Report		
24d)	d) Public surveys on perception of service priorities and needs	As exists in other sources in 2010						Conduct survey 2011					
	Financial Planning												
25	Support local funding efforts that explore additional Tillamook County road funding for critical needs of the road network.	In Progress											
26	Strengthen link between work planning, cost accounting and performance reporting. Track expenditures based on an assets life cycle, and work accomplishments so that performance can be reported. Incorporate life cycle cost consideration in capital project selection.	On-going		Annual Report				Annual Report			Annual Report		
27	Introduce annual revaluation and inventory, condition rating and unmet need in annual Status & Condition Report for County Transportation Network			Annual Report				Annual Report			Annual Report		
28	Continue to risk-rate services; highlight needs based on criticality or risk. Introduce risk-based decision making throughout TCPW decision making (project selection, service priorities, and budget requests).	In Progress	Update 2008 Risks										
29	Move from reporting historic depreciation for County road assets in financial reporting to current valuation. Base asset value on effective life of assets, current condition and anticipated service demands.	In Progress											
30	Develop long range capital improvement plan and capital improvement financing to address known rehabilitation, replacement and expansion needs. Integrate with County Transportation System Planning capital project priority setting.	As possible, on-going											

8. TCPW Road Asset Planning Processes

a. TCPW Mission, Vision & Values

The vision of Tillamook County Public Works is:

Tillamook County's high-quality, safe road network supports a thriving economy and a healthy environment. Our professional, well-trained staff works in partnership with our community to ensure that our road network meets the needs of our citizens now and in the future.

The TCPW mission that achieves its vision is:

We take pride in serving the public by providing, maintaining, and preserving a safe and efficient county road network, and quickly responding to weather events and hazards. We protect the public's investment by working with our partners and targeting resources to minimize long term costs while providing the best possible service.

The values that guide the performance of TCPW road services are:

Teamwork – *We work together as a team, dedicated to exploring all options while supporting each other in performing high quality work efficiently.*

Communication – *We keep the lines of communication open with our employees, our partners and our customers.*

Professionalism – *We strive for professional excellence by supporting employee training focused on improved service delivery.*

Change – *We anticipate and prepare for change to meet the needs of today and the future.*

Accountability - *We deliver on our promises, and we maximize the use of public funds to deliver the best possible results.*

Success – *We provide successful solutions to the meet the needs of the public, and we celebrate our successes.*

Safety – *We perform our work safely to protect our employees, our customers and our environment.*

b. Road Asset and Service Planning Processes

Information and business processes used by TCPW to manage each of these asset classes include the following.

Table 23 Asset Inventories and Tillamook County Road Management Processes

Asset Inventories	Process				
	Inventory?	Documented Condition?	Documented inspection process?	Established inspection schedule?	If yes, frequency?
Roads	Yes IRIS-SS	Yes	Yes	Yes	Every 2 years
Bridges	Yes Spreadsheet	Yes	Yes	Yes	Every 2 years
Traffic Signs -reflectivity	Yes IRIS-RI	Partial IRIS-RI	Yes	Yes	Every 2 year night time inspection
Traffic Signs -maintenance	-	Yes IRIS-RI	Yes Report	Yes	Continuous
Guardrail	Yes IRIS-RI	Yes	Yes	No ¹³	-
Culverts	Yes (partial) ¹⁴	Yes (2006)	No	No	-
Ditches	Yes (2008)	Yes	Yes	No	-
Pavement Markings	No ¹⁵	N/A	N/A	N/A	N/A
Levees	Yes (2009)	Yes	No	Yes	Annually
Maintenance Yards	No	No	No	No	-
Vehicles & Equipment	Yes IRIS-EM	Per preventive maintenance	Yes ¹⁶	Yes	Continuous
Quarry sites	No	No	No	No	No
Vegetation Management	No	No	Yes	Yes ¹⁷	Annually

¹³ Guardrail condition is based on an inspection completed in spring 2007.

¹⁴ Nestucca/Neskowin Watersheds: Culvert Prioritization and Action Plan for Fish Passage, August 2006.

¹⁵ Pavement markings are repainted by contractor (Marion County) one time a year with oil-based paint. An Excel spreadsheet notes the materials used and length of line and type to calculate materials.

¹⁶ Equipment Management tracks preventive maintenance performed by vehicle.

¹⁷ Vegetation management is performed routinely and spray reports comply with regulations.

Table 24 Method of Condition Assessment by County Asset Class

Asset Class – Asset Type	Inspection Method	Source of Standard	Condition Category		Frequency	Performed by
			Technical Scale	Qualitative Categories		
Road – Paved	Visual inspection	MTC Method	0-100	Good (70-100), Satisfactory (50-69), Fair (25-49), Poor (<25)	Every other year	Contract Inspection
Road – Unpaved	Complaint-driven	N/A	N/A	N/A	Per complaint	Foremen
Bridges	Visual inspection	National Bridge Inspection Standards (NBIS)	0-100	Good (75-100), Fair (50 to 75) Poor (0-49)	Every other year	Contract inspection
Guardrail	Visual inspection	Oregon Standardized Drawings	1-5	Very Good (1), Good (2), Fair (3), Poor (4), Very Poor (5)	No established cycle	TBD
Levees	Visual inspection	US Army Corp of Engineers (USACE)	TBD	TBD	Annually	Eng. Project Supervisor
Signs, Delineators & Posts	Visual inspection	Manual on Uniform traffic Control Devices (MUTCD)	1-4	Very Good (1), Good (2), Fair (3), Poor (4)	Every other year night time visibility	TBD
Culvert	TBD	TBD	TBD	TBD	TBD	TBD
Ditches	Visual	Industry Standard	1-5	Very Good (1), Good (2), Fair (3), Poor (4), Very Poor (5)	TBD	Contract inspection
Vegetation Management	N/A	Industry Standard	N/A	N/A	Annually	Vegetation Management Technician
Equipment	Hours or Miles of Service	IRIS Equipment policies	Per Vehicle	Per Vehicle	Ongoing	Shop Supervisor
Maintenance Yards	Visual	OSHA, fire	TBD	TBD	TBD	Eng. Project Supervisor

N/A: Not applicable.

TBD: To be defined.

c. Confidence Levels in Data & Information

The accuracy and reliability to forecast road asset needs is based on available information. The quality of forecasts varies by asset class. The expression of accuracy and reliability in the areas of information (source and reliability), process (ad hoc or repeatable) and documentation (documented or not documented).

The following table provides definitions for each confidence level:

Table 25 Confidence Level Definitions¹⁸

	Confidence Level	Inventory Completeness	Condition Assessment Method and Frequency	Process and Documentation
1	No confidence	No inventory	No assessment method	No process
2	Low confidence	Partially	Estimates used to assess condition	Process not well documented
3	Moderate confidence	Inventory complete	Subjective process to estimate condition	Some documentation in place
4	High confidence	Inventory complete	Condition surveys conducted on a regular schedule by well-trained personnel	Well documented process followed
5	Optimal confidence	Inventory complete	Condition survey on a regular schedule	Objective process followed; Accuracy of data verified and well documented

The following defines confidence levels¹⁹ in asset information presented in this report.

Table 26 Confidence Levels by Asset Class

Asset Information	Confidence
Pavement	Optimal for the first 3 years and Moderate in years 4-5
Bridge	Optimal
Culverts	Low; inventory estimated and condition unknown.
Guardrails	Moderate; inventory and condition assessment as of 2007; no inspection cycle established.
Signs	Moderate; inventory and condition managed by trained staff through 2008; condition not entered in IRIS
Equipment	Optimal
Maintenance Yards	Low; annual safety inspection only
Levees	Optimal; 2010 inspection & inventory by US Army Corp of Engineers
Quarries	Moderate
Ditches	Optimal; assessment, documentation and inventory 2008
Pavement Markings	Not applicable; repainted each year based on inventory

¹⁸ City of Portland Asset Status & Condition Report, December 2007

¹⁹ City of Portland Asset Status & Condition Report, 2007

d. Asset Useful Life Assumptions

Useful life assumptions are the basis of asset planning. Maintenance and renewal costs are required over the life of an asset to ensure the useful life is achieved for the least total lifecycle cost. This information is an input to annual and long range County financial planning and reporting.

Table 27 Useful Life by Asset Classification²⁰

Asset Classification	Useful Life
Roads²¹	
- Arterial & Collectors Paved	20 years
- Local Paved	40 years
- Local Gravel	N/A
Structures²²	
Bridges	
- Timber bridges, treated	30 years
- Steel bridges	65 years
- Reinforced concrete bridges	80 years
- Pre-stressed concrete bridges	100 years
Guardrails	40
Levees	TBD
Traffic Safety Facilities²³	
- Signs	7 years
- Signs-delineators	20 years
- Posts	10-30 years
- Painted pavement markings	6 months – 1 year
Drainage²⁴	
- Drainage culverts	40-60 years
- Major culverts (pipes/barrel, inlet/outlet structures)	40-60 years
- Ditches	50-100 years
Support Facilities	
Equipment	5-10 years
Maintenance Yard Buildings	45-50 years
Quarries	N/A

*TBD: To be determined.

N/A: Not applicable.

²⁰ Useful life assumptions are reported in the *Tillamook County Combined Annual Financial Report*, June 30, 2009. Several assumptions are considered inaccurate (e.g., 50 years for roads, equipment). Public Works will refine and provide more accurate assumptions with the County Treasurer for future financial planning, reporting and asset planning purposes. The estimated useful life for county paved roads currently used by the County in financial reporting is 50 years which is considered conservative. A more accurate useful life for the surface of low volume, paved rural roads is 20 years, based on AASHTO guidelines.

²¹ *Guidelines for Geometric Design of Very Low-Volume Local Roads*, AASHTO, 2001

²² Bridges, guardrail useful life assumptions from City of Portland Transportation System: Status and Condition Report, 2008.

²³ Tillamook County Public Works, 2008

²⁴ TC Public Works Director estimates 40-60 year useful life for drainage and major culverts; Oregon DOT assumes a 50-year service life for culverts.

e. Asset Management Information Sources & Data Maintenance Responsibilities

Table 28 Information Sources & Data Maintenance Roles & Contacts

Asset /Activity	Source of Data	Lead Staff Contact
Service Requests	- IRIS	Office Support Specialist
Road - Pavement inspection - Road inventory - Local gravel condition	- Contract management - Street Saver/IRIS - TBD*	Director Engineering Project Suprvsr. TBD
Structures - Bridges inventory, inspection & post weight limits - Guardrails inspection & inventory management - Levees inventory & inspection management	- Inspection contract management - IRIS - Inspection reports	Engineering Project Suprvsr.
Drainage - Culvert inventory & condition assessment - Ditches inventory & condition assessment	- IRIS - Contract Management	TBD Director
Traffic Safety - Signs - Signs-delineators - Posts - Painted pavement markings	- IRIS - IRIS - IRIS - Contract & spreadsheet	Engineering Project Suprvsr.
Vegetation Management - Mowing by lane, percent miles cleared of debris & herbicide by acres sprayed	- N/A**	Foremen & Office Staff
Emergency Management - Storm response hours - Hours spent plowing and sanding - Slides responses to - Culverts	- IRIS – CA - IRIS – CA - IRIS - CA - TBD	Foremen & Office Staff
Support Services/ Facilities - Equipment management - Facilities management - Materials Management - Cost acctg/Budget development	- IRIS - TBD - IRIS - IRIS	Shop Foreman Engineering Project Suprvsr. Office Support Specialist Office Support Specialist

*TBD: To Be Developed/Determined

** N/A: Not Applicable

Appendix A. Asset Management Policy

BOOK 111 PAGE 396 ✓
COUNTY COURT JOURNAL

**THE BOARD OF COUNTY COMMISSIONERS
FOR THE COUNTY OF TILLAMOOK IN THE STATE OF OREGON**

In the Matter of a Tillamook) ORDER
County Public Works Asset)
Management Policy) #09-054

FILED
[Signature]
JUL 14 2009
4:50
TASSI O'NEIL
COUNTY CLERK

This matter came on to be heard this 1st day of July 2009, at a regular meeting of the Board of Commissioners, at the request of Liane Welch, Tillamook County Public Works Director.

Being fully apprized of the records and files therein, the Board of Commissioners finds as follows:

1. Tillamook County's road network is the county government's most valuable physical asset. In 2008, the replacement value of the 374 miles of county roads was estimated at \$304 million. The County transportation network has been under funded for years and the condition of county roads is declining.
2. The Tillamook County Board of Commissioners, concerned about the declining condition of county roads and bridges, authorized the Road Department to document the condition and value of County road assets, and identify the risks that must be managed in the County. This approach, known as asset management, helps target available road dollars so that the greatest risks are managed for the least cost.
3. The purpose of the Asset Management policy is to set guidelines for implementing consistent asset management processes throughout Tillamook County Public Works Department.
4. The Road Advisory Committee at their May 5, 2009 meeting accepted the Asset Management report.

NOW THEREFORE, IT IS HEREBY ORDERED THAT:

5. The Tillamook County Asset Management Policy, Exhibit A attached and incorporated here by reference, be and hereby is adopted.
6. This order is to become effective immediately.

DATED THIS 1st DAY OF July 2009.

BOARD OF COUNTY COMMISSIONERS
FOR TILLAMOOK COUNTY, OREGON

	Aye	Nay	Abstain/Absent
<i>[Signature]</i> Tim Josi, Chair	✓		
<i>[Signature]</i> Mark Liebhart, Vice-Chair	✓		
<i>[Signature]</i> Charles J. Hurliman, Commissioner	✓		

ATTEST: Tassi O'Neil
County Clerk

APPROVED AS TO FORM:

By *[Signature]*
Special Deputy

[Signature]
William K. Sargent, County Counsel



EXHIBIT A

TILLAMOOK COUNTY PUBLIC WORKS

ASSET MANAGEMENT POLICY

- 1.0 Purpose** To set guidelines for implementing consistent asset management processes throughout Tillamook County Public Works Department.
- 2.0 Objective** To ensure adequate provision is made for the long-term replacement of major road assets as financial resources allow by:
- Ensuring that County services and infrastructure are provided in a sustainable manner, with the appropriate levels of service to residents, visitors and the environment.
 - Safeguarding County road assets including physical assets and employees by implementing appropriate asset management strategies and appropriate financial resources for those assets.
 - Creating an environment where all Public Works employees take an integral part in overall management of County road assets by creating and sustaining an asset management awareness throughout the County transportation system.
 - Meeting legislative requirements for asset management and financial reporting.
 - Ensuring resources and operational capabilities are identified and responsibility for asset management is allocated.
 - Demonstrating transparent and responsible asset management processes that align with demonstrated best practice.
- 3.0 Scope** This policy applies to all County public works activities.
- 4.0 Policy**
- 4.1 Background**
- 4.1.1** The County Commission is committed to implementing a systematic asset management methodology in order to apply appropriate asset management best practices across all road management areas of the County. This includes ensuring that assets are planned, created, operated, maintained, renewed and disposed of in accordance with Commission priorities for service delivery.

4.1.2 The County owns and uses approximately \$304 million road assets to support its core business of delivering road service to the community.

4.1.3 Asset management practices impact directly on the core business of the county and appropriate asset management is required to achieve our strategic service delivery objectives.

4.1.4 Asset management relates directly to the Tillamook County Transportation Strategic Plan goals and strategies:

- Protect the function, operation and safety of existing and planned roadways
- Consider land use impacts on existing or planned transportation facilities
- Coordinate with other jurisdictions to assure adequate connections to streets and transportation systems between incorporated and unincorporated areas
- The roadway network is not restricted to jurisdictional boundaries.
- Roadway maintenance and improvement are to be coordinated in cooperation with other jurisdictions.
- Road function, access and "level of service standards" are to be implemented through regulation.

4.1.5 A strategic approach to asset management will ensure that the County Commission delivers the highest appropriate level of service through its assets. This will provide positive impact on:

- Members of the public and staff;
- The ability of the County to deliver the expected level of service and infrastructure based on available resources;
- The political environment in which County Commission operates; and
- The legal liabilities of the County.

4.2 Principles

4.2.1 A consistent Asset Management Strategy must exist for implementing systematic asset management and appropriate asset management best-practice throughout the County's road department.

4.2.2 All relevant legislative requirements together with political, social and economic environments are to be taken into account in asset management.

4.2.3 Asset management principles will be integrated within existing planning and operational processes.

- 4.2.4 An inspection regime will be used as part of asset management to ensure agreed service levels are maintained and to identify asset renewal priorities, as funding allows.
- 4.2.5 Asset renewal plans will be prioritized and implemented progressively based on agreed service levels and the effectiveness of the current assets to provide that level of service.
- 4.2.6 Systematic and cyclic reviews will be applied to all asset classes and are to ensure that the assets are managed, valued and depreciated in accordance with appropriate best practice and applicable standards.
- 4.2.7 Future life cycle costs will be reported and considered in all decisions relating to new services and assets and upgrading of existing services and assets.
- 4.2.8 Future service levels will be determined in consultation with the community.

5.0 Standard	Government Accounting Standards Board (GASB) Statement 34
6.0 Related Documents	Tillamook County Road Asset Management Plan and Road Risk Management Plan.
Responsibility	<p>County Commissioners are responsible for adopting the policy and ensuring that sufficient resources are applied to manage the assets.</p> <p>The Public Works Director has overall responsibility for developing an asset management strategy, plans and procedures and reporting on the status and effectiveness of asset management within the County road network.</p>
Review Date	This policy has a life of 4 years. It will be reviewed in June 2013.

Appendix B. Four-Year Detail of Road Services Performance

Tillamook County Road Performance by Service 2007-2010										
Program	Unit/Type of Accomplishment	Effectiveness/Nework Impact								
		2007	2008	2009	2010		2007	2008	2009	2010
Road Management										
	Miles to maintain	378	378	380	268	PCI for arterial, collector, local roads	60/51/40	60/48/39	-	27/15/58
	Miles arterial/collector/local of asphalt resurfacing	8.9*	3.97	2.64	10.06	Percent of paved roads resurfaced (overlaid)	3%	3%	1%	4%
	Miles local gravel road	91	91	97	65	Percent of local gravel roads graded every other year	TBD	TBD	TBD	TBD
	Hours grading gravel roads			491	1125	Percent of Surface Road expenditures on preventive maintenance	4%	1%	1%	10%
	Miles inspected every other year	-	272	-	268	Percent of Surface Road expenditures on rehabilitation	63%	69%	63%	51%
Service Requests										
	Number of Service Requests	TBD	TBD	317	685	Percent service requests reported as completed	100%	TBD	87%	65%
Structures										
	Number of bridges inspected every other year	96	95	96	98	Average NBIS sufficiency rating	80%	80%	77%	77%
						Percent of bridges with sufficiency rating over 75 (Good)	66%	68%	67%	67%
						Percent of bridges with sufficiency rating under <50 (Poor)	7%	7%	13%	13%
	Number of weight limited bridges	6	3	3	4	Percent of weight limited bridges	6%	3%	3%	4%
	Miles of guardrail inspected	10	-	-	-	Percent of guardrail in Poor/Very Poor condition	43%	43%	43%	43%
Traffic Safety										
	Number of miles receiving pavement markings	299	299	299	323	Cost per mile for pavement marking	\$346	\$351	\$349	\$324
	Number of traffic signs maintained	4,807	4,807	4,651	TBD	Percent of Stop signs Very Good or Good condition	98%	TBD	99%	99%
						Percent of signs inspected for night-time visibility	100%	100%	100%	0%
						Percent of Stop signs repaired/replaced within 48 hours	100%	TBD	100%	100%
						Percent of Stop sign requests response within 24 hours	100%	TBD	100%	100%
Drainage										
	Number of lane miles of ditches to maintain annually	TBD	195	195	195	Percent ditches blocked flow (Poor) or requiring immediate maintenance (Very Poor)	TBD	30%	30%	30%
	Lane miles of ditches maintained	TBD	TBD	TBD	TBD	Percent of ditches maintained annually	TBD	TBD	TBD	TBD
	Lineal feet of culverts repaired or replaced	TBD	235	1,303	858	Percent of culverts maintained or replaced	TBD	TBD	1%	0.004%
	Number of levees inspected annually	TBD	2	7	7	Percent of Levees in Poor condition	TBD	TBD	0%	0%
Vegetation Management										
	Miles treated with herbicide	TBD	TBD	530	424					
	Hours mow & remove brush	TBD	TBD	TBD	541	Percent of lane miles mowed per year	TBD	TBD	TBD	TBD
Emergency Management										
	Storm response hours (total for department)	5,400	11,018	7,703	3,517	Percent of roads cleaned of snow and sanded within 24 hours	100%	100%	95%	100%
	Hours spent plowing and sanding	511	337	548	13	Percent of roads blocked by downed trees opened within 12 hours	95%	95%	100%	100%
Equipment Management										
	Number of pieces of equipment managed	99	99	115	115	Percent receiving 24 hour service fueling	TBD	100%	100%	100%
	Number of pieces of equipment serviced receiving preventive maintenance service (Level A)	TBD	TBD	115	80	Percent of equipment serviced every 90 days for preventive maintenance (Level A)	TBD	100%	100%	70%
	Number of pieces of equipment receiving safety inspection	TBD	TBD	115	115	Percent of fleet receiving safety inspection	TBD	0	100%	100%
Maintenance Yards										
	Number of Maintenance Yards inspected for structural, fire code and OSHA compliance annually	3	3	3	3	Percent of buildings certified by fire, OSHA, building inspector	TBD	100%	100%	100%
Alternative Transportation										
	Number of projects completed annually	0	0	0	0	Percent projects completed annually	0%	0%	0%	0%
Engineering Services										
	Total number of permits reviewed	TBD	380	475	248					
	Number of permits reviewed for Community Development	TBD	TBD	TBD	TBD					
	Number of bridge projects ready for construction/complete annually	TBD	0	1	2					
Administration										
	Number of employees	30.5	30.5	26	23	Percent of full time employees performance assessed per year	100%	100%	100%	100%
	Hours of training per year	1,256	1,607	1,416	1,561	Percent of turnover	3%	30%	8%	6%
*Included miles paved by federal and state agencies										
TBD To Be Determined										
N/A Not Available										

Appendix C. List of 2010 Accomplishments

<p>Overlay 10.06 miles</p> <ul style="list-style-type: none"> • Anderson Road • Alderbrook Loop Road • Bay Ocean Road • Brickyard Road • Brookfield Avenue • Cape Meares Loop • Gienger Road • Kilchis Ricer Road • Latimer Road • Long Prairie Road (.95 miles, OTIA/ARRA) • Makinster Road • McCormick Loop Road • McCoy Street • Blaine Road (4 miles, FHWA) • Holgate Bridge • Savage Road <p>Chip Sealed Miami Foley Road (3.96 miles & prepared for chip seal on Miami Foley)</p> <p>Graded gravel roads 1125 hours or ½ FTE)</p> <p>Pothole repair (\$191,000) Bridges added</p> <ul style="list-style-type: none"> • Temporary Bailey Bridge • Fawcett Creek Bridge • Foland Creek Bridge <p>Bridges repaired</p> <ul style="list-style-type: none"> • Holgate Bridge • Lewis Bridge • Waldron Bridge <p>Bioengineering Erosion Control (APWA Julian Award-2010)</p> <ul style="list-style-type: none"> • Miami-Foley Road • Nielsen/Gienger • Tone Road <p>Mowed and removed brush (521 hours) and weeds (424 miles)</p> <p>Ditching (1,562 hours)</p> <p>Replaced 12 culverts (858 lineal feet)</p> <ul style="list-style-type: none"> • Nehalem Quarry Road (18") • Nehalem Quarry Road (24") • Anderson Road • Washington Street • Kansas Creek Road • Reeder Street (12") • Reeder Street (24") • 2nd Street, Cape Meares • Brookfield • Trask River Road • Moon Creek • East Creek 	<p>Asset Management improvements:</p> <ul style="list-style-type: none"> • Adopt of asset management policy by Board of County Commissioners • Benchmark service level performance and costs with adjoining counties • Annually report performance, status and condition of assets and services (2010 Performance Report) • Adopt asset management roles, responsibilities and reporting cycles • Implement risk-based decision making • Rescind Board Orders for non-mandated services • Establish service request tracking system and response standards • Complete intergovernmental agreement (PMAT) which shares resources and services • Incorporate consideration of asset life cycle management and financial decision making <p>Reviewed 248 permits</p> <p>Received and managed 685 service requests</p> <p>Maintained Road Department equipment</p> <ul style="list-style-type: none"> • Serviced 80 (68%) pieces of equipment • Performed 115 (100%) equipment safety inspections <p>Replaced spray truck</p> <p>Re-striped & applied stop bars on county roads (268 miles)</p> <p>Sign maintenance (590 hours)</p>
--	---