



Road Operations

**Pierce County Public Works & Utilities  
Road Operations Division**



# **Road Maintenance Asset Management**

**NWPMA Conference  
Portland Oregon, October 2011**

# Asset Program

- Where is your Pavement & Asset Duties Managed?
- Program Concept
- Program Needs
- Program Assessment Criteria
- Old Processes/New Ideas
- What we are Learning



# Staff

- Road Operations
- Group Structure
- Skill Set & Experience
- Additional Resources Available



# Support Services

- Technical Support
- Program Development
- Maintenance Improvement Projects
- Application Process Evaluations
- Project Management
- Asset Management
- Documentation & Reporting
- Performance Monitoring
- Technology Development



# 8 Elements

1. Inventory
2. Level of Service (LOS)
3. Condition Assessment
4. Usage Data
5. Cost Data
6. Replacement Model
7. Risk Assessment
8. Performance Measures



# Asset Program Needs & Goals

- Technical Data & Operational Needs
- Develop Mechanism to Collect Information
- Organize Data and Define Condition Values
- Report/Generate Work Needs
- Communicate Work Flow
- Report/Complete Work Function
- Evaluate Overall Asset Condition



# Processes Development

- Inventory
- Condition Assessment (0-9 Scale)
- Develop Work Orders
- Track Work Activities
- Develop Maintenance & Repair Strategies
- Prioritize Work (0-9 Scale)
- Determine Level of Service Goals
- Document Processes
- Report Asset & System Condition



# Asset Category Types

- Pavement
- Drainage
- Roadside Shoulders
- ROW Structures
- Traffic Barriers
- Sidewalks & Ramps
- Facilities
- But What about;
  - **Overhead & Roadside Vegetation**
  - **Mowing & Sweeping**
  - **Gravel Roads**





# Program Background


- Pavement Concepts used to develop criteria for other asset categories
  - **To be based on Current PC Work Function & Work Standards**
  - **Evaluate and Quantify Distresses by Severity, Extent**
  - **Function and Condition Value Assigned to Trigger Work Order**
- Asset Categories that we are now working on;
  - **Drainage Infrastructure**
  - **ROW Structures**
  - **Traffic Barriers**
  - **Roadside Shoulders**
  - **Integrated Vegetation Management**
  - **Sidewalk & ADA Infrastructure**
  - **Mowing and Sweeping Programs**



# Rating Criteria

- Scale that can be applied to all asset categories
- Scale that defines defect severity and extent.
- Ability to assign appropriate Function/Task to the asset
- Align w/Standards



	Pierce County Public Works and Utilities Transportation Services Road Operations Division	Page 1 of 2  Effective Date 1/01/03  Revision Date 01/15/2009
	<b>Maintenance Standard</b>	

Function: **Rotary Brush Cutter** Function Code: **71B**

**Function Description**

**Purpose:**  
To control brush, small trees, and other undesirable vegetation along road shoulders, banks, slopes, ditches, and other portions of the road right of way.

**Procedure:**  
If work is being conducted in or near a wet area, an approved Work Order and/or HPA must be on site. Install BMPs as needed or dictated by permit or work order. All obstacles shall be marked, and avoided including, but not limited to: utility poles and pedestals, utility support wires, rocks, roadside debris, stumps, and changes in surface grades hidden by thick vegetation. A tractor mounted rotary or flail type mowing head shall be used to cut and mulch road side vegetation. Vegetation will be cut no closer than eight inches to the right of way surface. Care shall be taken to avoid depositing loose mulch into drainage courses. Any road side litter or accumulations of mulch that require removal shall be so noted and turned into the Supervisor with the daily time record.

**Safety:**  
Required PPE: Sturdy boots, shirt with sleeves, long pants, hardhat, class 2 garment  
Recommended: Gloves, approved eye protection, hearing protection  
Establish traffic control as necessary.  
The brush cutter operator shall inspect work area prior to cutting to locate potential obstacles  
Obstacles shall be marked and avoided  
Cut no closer than eight (8) inches to the right of way surface  
Be aware of ground personnel, pedestrians, and vehicle traffic  
Clear area and honk your horn twice prior to backing up, use a ground guide if available  
Guard against flying objects when working in close proximity to vehicle traffic or pedestrians  
When working in urban or residential areas or in close proximity to structures along the traveled way only a flail head mower shall be used

**Quality:**  
The cut area will be even, uniform, and cut no lower than eight inches from the right of way surface. Utilities structures will be exposed by manual cutting. All shredded or splintered stalks or branches left will be hand out for vegetation health and aesthetic value. Accumulations of mulch will be cleared from drainage courses. All work shall be recorded on the appropriate Regional Road Maintenance Guideline checklist.

**Inspection:**  
As soon as is practical upon completion of work, the site shall be reviewed by a Lead Worker or Supervisor. The inspection shall ensure that the scope of work completed meets service level expectations and environmental requirements.

**Resource Requirements**

Labor		Equipment			Materials			
Job Class Code	Job Class Description	Hours / work Unit	Equip Code	Equip Description	Hours per Work Unit	Material Code	Material Description	Quantity per Work Unit
9018	FS	.4370	005H	Crew Cab, Pick up	.5270	N/A	N/A	N/A
9158	HEO	5.9300	020E	Brush Cutter	6.0800			
9154	MT	1.4800						
9151	MW	.0710						

Note - Traffic Control For This Function Charged To: 71T

# Condition Assessment Scale

No Work Necessary	0	- No Defect	Good Condition
	1	- Minor Defect; Isolated	
	2	- Minor Defect; Several	Fair Condition
3	- Minor Defect; Predominant		
Work Should Be Scheduled Within 6 Months	4	- Significant Defect; Isolated	Poor Condition
	5	- Significant Defect; Several	
	6	- Significant Defect; Predominant	
Work Should Be Scheduled Within 2 Months	7	- Same as 4 with secondary damage	Very Poor Condition
	8	- Same as 5 with secondary damage	
	9	- Same as 6 with secondary damage	

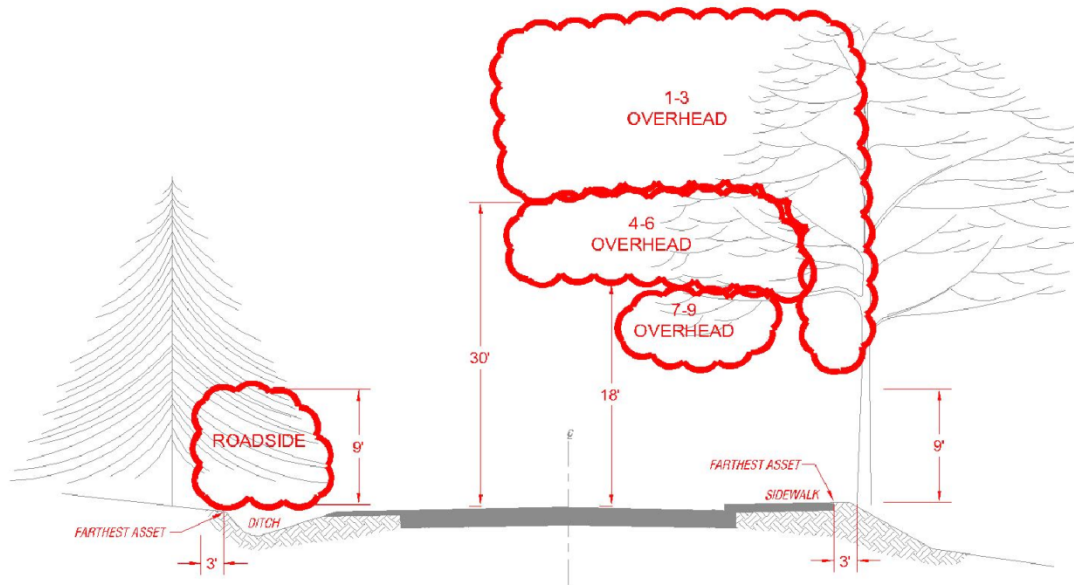
# Condition Assessment

## 2. Roadside and Overhead Vegetation

The roadside and overhead vegetation is located from the area along the side of the road and above the road, within the historic maintain corridor. Roadside vegetation can be trees planted along the roadway in pedestrian facilities or brush and trees located along the roadway, shoulder or ditch.

### Rating of roadside and overhead vegetation

	<b>0 – As-built condition</b>
<b>LOW</b> (Do Nothing)	1 – Isolated (1 within a segment)
	2 – Several (more than 1 or 2)
	3 – Predominate (multiple locations)
<b>MEDIUM</b> (Do before next Assessment)	4 – Isolated (1 within a segment)
	5 – Several (more than 1 or 2)
	6 – Predominate (multiple locations)
<b>HIGH</b> (Do within 2 months)	7 – Is a 4 but impacts another asset
	8 – Is a 5 but impacts another asset
	9 – Is a 6 but impacts another asset



Roadside and Overhead Vegetation



# Up Next

- Examples of Asset Concept Implementation
  - **Drainage**
  - **NPDES Requirements**
  - **Data Collection**
  - **Mapping of Assets**



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## Questions?

