



# Maintenance Accountability Process Field Data Collection Manual

**May 2015**

Maintenance Operations Division - Maintenance Office

# Maintenance Accountability Process Field Data Collection Manual

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# I – INTRODUCTION

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An important part of the Maintenance Accountability Process (MAP) is regular field condition surveys conducted on the highway system. The surveys assess the asset conditions that exist at a given point in time. The purpose of this manual is to document the procedures for consistent data collection on paved shoulders, drainage, roadside, traffic items and bridges.

## Data Collection Procedures

1. Statistical methods are used to identify approximately 2,200 randomly selected data survey sites around the state. These are 0.10 mile sections (528 feet) selected from the approximately 7,000-centerline miles of state highway inventory.
2. Each region will have dedicated MAP survey teams, two persons per team. Each region will also have two identified alternate surveyors, to fill in if one regular member is unavailable. These teams will be region wide teams, under regional direction rather than under the direction of an area or section. One member of each team will be a licensed applicator for weed identification purposes. The teams may conduct surveys in their regularly assigned area. Personal Digital Assistants (PDA's) will be used for data collection. Install the MAP PDA program and download survey sites.
3. Prior to conducting surveys, review the Pre Activity Safety Plan for MAP surveys. Ensure that all appropriate personal protective equipment and traffic control devices are available. Determine what the individual site may require before beginning each survey.
4. Using Milepost Markers and the vehicle's DMI, locate and mark the start and end points for each site. Mark the points with paint at the edge of the shoulder so that they can be located again if needed. Sites are always in the increasing direction from the starting milepost. For example: site location is 43.2. Survey site is from 43.2 to 43.3.
5. If any portion of the site falls on a **structure**, the site is to be moved forward or backward to the next tenth of a mile as necessary to avoid the structure.
6. Sites in construction zones will **not** be evaluated. Relocate the site outside of the construction area, but as close to the original site as possible, using an even tenth-mile section.
7. Sites located in areas not funded by WSDOT shall not be evaluated. Should a site fall inside city limits, measure only activities funded by WSDOT or move the site.
8. Activate flashing lights on vehicle, place cones for safety and use appropriate traffic control measures. Always wear required safety equipment, reflective vest, supportive footwear, etc.
9. Conduct field measurements and observations at the sites and record the data. When performing data collection, always try to walk facing traffic. On divided highways and freeways it may be necessary to drive around to the lanes in the opposite direction and set points on that side of the road as well. Remember **SAFETY FIRST**.

## General Comments

Beginning with the fall 2006 survey, pavement deficiencies were no longer collected in the traveled lane with MAP surveys. This data is now collected through WSPMS. Beginning 2011, pavement is no longer reported as a MAP activity, but is part of the WSPMS condition reporting.

Beginning in 2008, Bridge Deck data (MAP Activity 4A1) was no longer collected during the Bridge Survey. This data will come from the bridge inspections done through the Bridge Preservation Office.

### **Cumulative Deficiencies**

Shoulder pavement deficiencies are cumulative. Where one type of deficiency is found within the area of a second type of deficiency, both deficiencies are counted independently. For example, a 25 sq. ft. area of alligator cracking may contain a 2 sq. ft. pothole. Do not subtract the 2 sq. ft. of pothole from the 25 sq. ft. of alligator cracking.

### **Edge lines**

For the purposes of MAP field data collection, **the edge line is considered part of the paved shoulder**. Deficiencies occurring on the edge line are deficiencies of the paved shoulder.

**Funding and Maintaining** – The purpose of MAP is to measure the level of service provided by WSDOT personnel using funds allocated by the legislature. If the funding for maintenance activities comes from cities, counties, parks, etc., **do not measure**. If you are unsure, discuss with the supervisor prior to conducting surveys.

**Since in 2009, field data collection has been performed exclusively using PDA's. The original program was improved and updated for 2010.** The PDA program can be downloaded from M&O's Maintenance Management and data collection page at <http://midtierd2.wsdot.wa.gov/ceload.htm>.

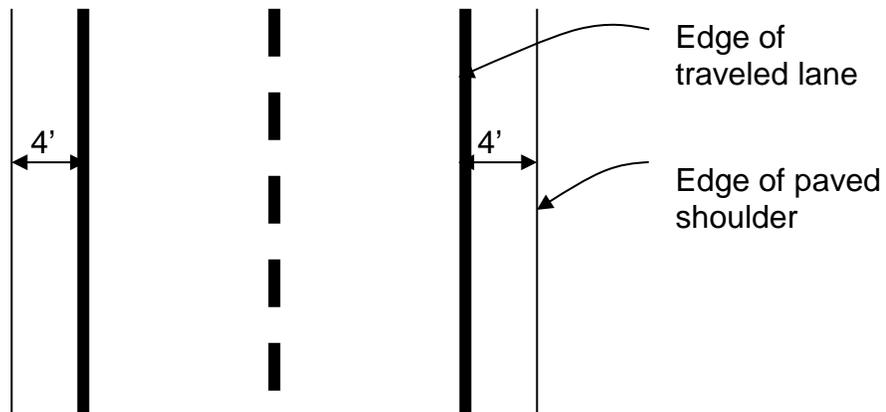
Questions or comments about this should be directed to Kelly Shields at 360-705-7860 or [Shieldk@wsdot.wa.gov](mailto:Shieldk@wsdot.wa.gov) or Anna Zaharris at 360-705-7813 or [zaharra@wsdot.wa.gov](mailto:zaharra@wsdot.wa.gov).

Field data that has been collected and downloaded to the server can be reviewed at <http://webprod4.wsdot.loc/maintenance/accountability/process/mainmenu2.aspx>. Changes may be made by field personnel to the data on this site until the end of August. Reports are available immediately upon data download. Of course, the scores will be based solely on the data input, and will be subject to change as more data is included.

## II PAVED SHOULDERS

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**General:** Record total combined width of paved shoulders for the site. Paved shoulder is defined as going from the inside of the edge line to the outer edge of the existing pavement. **The edge line is considered part of the paved shoulder.**



**Example: 8' total width**

## A. SHOULDER POTHOLES



- Units of Measure:** Total square feet of shoulder potholes per 0.10-mile section.
- Threshold:** Minimum size - (36 sq. in. x 1 in depth) or larger
- Methodology:** Calculate the total **square feet** for all potholes within the paved shoulder. Potholes smaller than the minimum size (36 sq. inches x 1 in) are not counted as potholes.
- Comments:** The minimum size of pothole that can be recorded is 1 square foot. For example, a pothole larger than 36 sq. inches (6"x6" or 3"x12") will be counted as 1 square foot. If two potholes of similar size exist together the two can equal 1 square foot.

## **B. SHOULDER ALLIGATOR CRACKING**



Shoulder Alligator Cracking

- Unit of Measure:** Total square feet of alligator cracking within the paved shoulder area, per 0.10-mile section.
- Threshold:** All unsealed shoulder alligator cracking.
- Methodology:** Calculate the total square feet for all unsealed alligator cracking in the paved shoulder. Use the average width of cracking to calculate square feet.

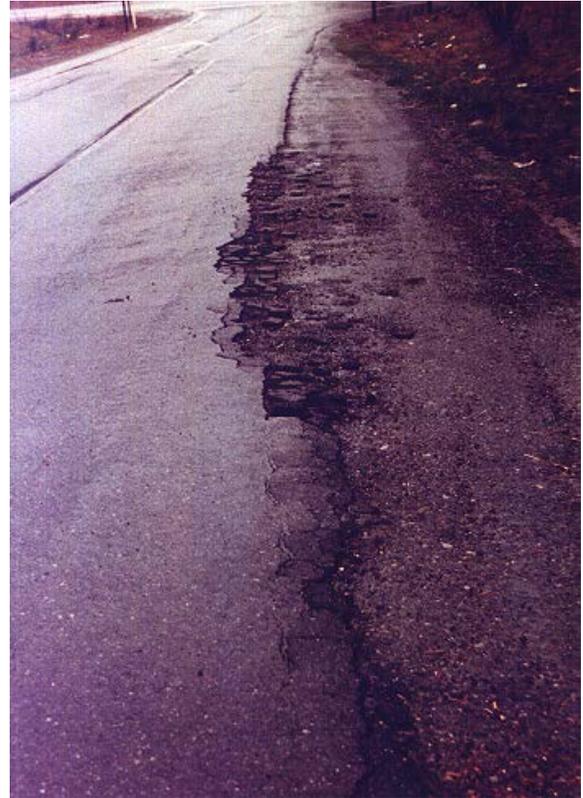
## **C. SHOULDER LONGITUDINAL CRACKING**

<b>Unit of Measure:</b>	Total linear feet of cracking within paved shoulder area, per 0.10-mile section.
<b>Threshold:</b>	All <u>unsealed</u> longitudinal cracking - cracking running generally parallel to the fog line striping.
<b>Methodology:</b>	Measure and record linear feet of all unsealed longitudinal cracking within the paved shoulder area. Sealed cracks are not counted as a deficiency.
<b>Comments:</b>	Unsealed panel and expansion joints in concrete pavement are not considered deficiencies for this survey. Where asphalt is overlaid on concrete pavement unsealed cracks in the asphalt pavement shall be counted as a deficiency.

## **D. SHOULDER TRANSVERSE CRACKING**

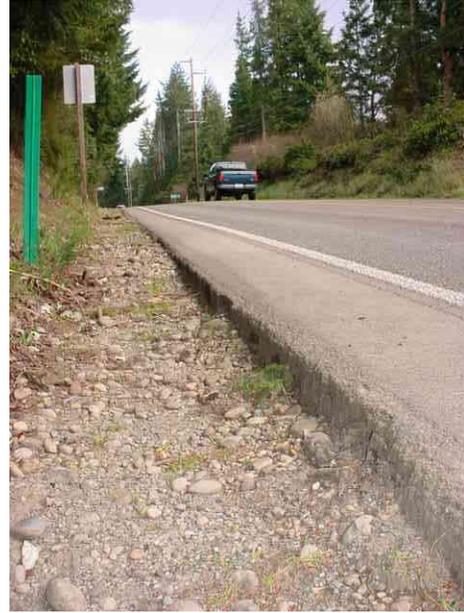
<b>Unit of Measure:</b>	Total linear feet of cracking within the paved shoulder area, per 0.10-mile section.
<b>Threshold:</b>	All <u>unsealed</u> transverse cracking - cracking running generally perpendicular to the fog line striping.
<b>Methodology:</b>	Measure and record linear feet of all unsealed transverse cracking within the paved shoulder area. Sealed cracks are not counted as a deficiency.
<b>Comments:</b>	Unsealed panel and expansion joints in concrete pavement are not considered deficiencies for this survey. Where asphalt is overlaid on concrete pavement unsealed cracks in the asphalt pavement shall be counted as a deficiency.

## E. SHOULDER EDGE RAVELING



- Unit of Measure:** Total linear feet of edge raveling, per 0.10-mile section.
- Threshold:** Count all shoulder areas where paving material is breaking off into pieces (raveling) or is missing along the edge of paved shoulder.
- Methodology:** Measure and record total linear feet of all edge raveling within shoulder area. All edge raveling is assumed to be 1 foot in width.
- Comments:** Count only areas where material is actually breaking off (raveling) or missing from the shoulder. Areas that show alligator cracking but are intact will be counted as alligator cracking.

## F. SHOULDER EDGE DROP-OFF



- Unit of Measure:** Total linear feet of shoulder drop-off, per 0.10-mile section.
- Threshold:** All shoulder edge drop-off 2 vertical inches or greater.
- Methodology:** Measure and record linear feet of all shoulder edge drop-off 2 vertical inches or greater that occurs within the section. Shoulder drop-off less than 2 inches is not counted.
- Comments:** In some cases the paved shoulder has been intentionally beveled to produce a gentle transition to the gravel shoulder. A beveled edge is not considered a deficiency. In some case, the shoulder drops off immediately from pavement edge down to ditch bottom or down slope and no shoulder can be built up at the edge of pavement. This will not be considered a deficiency. Also, drop off by design (contract paving does not extend out to edge of existing pavement) will not be counted as a deficiency.

## G. Shoulder Edge Buildup



**Unit of Measure:** Total linear feet of buildup of sand, dirt and/or vegetation at the edge of pavement, per 0.10-mile section

**Threshold:** All shoulder buildup greater than **two** vertical inches.

**Methodology:** Measure and record linear feet of all shoulder buildup **two** vertical inches or greater, occurring at the edge of pavement within the survey section, including areas under guardrail.

**Comments:** Shoulder buildup less than **two** vertical inches is not considered a deficiency.

## H. SHOULDER SWEEPING / CLEANING



- Unit of Measure:** Total **linear feet** of shoulder debris, per 0.10-mile section. Average width of shoulder debris, per 0.10-mile section
- Threshold:** All paved shoulder areas that contain debris or require sweeping/cleaning.
- Methodology:** Measure and record linear feet of shoulder debris. Measure and record the average width of shoulder debris.
- Comments:** Shoulder debris is based on the length of all combined shoulders, with one average width, i.e., 0.10 mile section on a two lane road is 1056 linear feet, if the debris is 2' on one side and 4' on the other, the average width entered would be 3'.

## I. SHOULDER HUMPS, SAGS, SETTLEMENTS and OTHER



Humps and Sags



Delamination

<b>Description:</b>	Localized depressions or elevated areas of the paved shoulder that result from settlement, frost heave, pavement shoving, subgrade swelling, or other displacement due to tree roots, utility line installation, etc. This item also includes delamination and any other deficiencies that do not fit in another category.
<b>Unit of Measure:</b>	Total <b>square feet</b> within the paved shoulder areas, per 0.10-mile section.
<b>Threshold:</b>	Humps, Sags and Settlements: Localized depressions or elevated areas within the paved shoulder areas. This is defined as a <b>vertical deviation of 2 inches or greater</b> at the time of the survey.  Delamination: must total a minimum of 36 sq. in.  Other deficiencies: include unique deficiencies that do not fit in another category.
<b>Methodology:</b>	Calculate the total <b>square feet</b> for humps, sags, settlements and other deficiencies located within the paved shoulder areas.
<b>Comments:</b>	The minimum size of delamination that can be recorded is 1 square foot. For example, a delaminated area larger than 36 sq. inches (6"x6" or 3"x12") will be counted as 1 square foot. If two delaminated areas of similar size exist together the two can equal 1 square foot.

## III – DRAINAGE

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### A. DITCHES



- Units of Measure:** Total linear feet of ditch, per 0.10-mile section. Total linear feet of filled ditch, per 0.10-mile section.
- Threshold:** Count as deficient the total linear feet of ditches that are 50% or more full.
- Methodology:** Measure all ditches within the section and record the total linear feet of ditches. Measure and record the linear feet of ditch that is 50% or more full of sediment or other material.
- For purposes of this survey, to be considered a ditch the following conditions must exist:
1. Must be designed and constructed to carry water - not a natural swale,  
or
  2. Must be maintained as a ditch by Maintenance.
- Comments:** Streams adjacent to the roadway are not considered ditches. Standing water (tidal or non-tidal) in ditches is not a deficiency. Vegetation growing in the ditch is not a deficiency. Ditches functioning solely to capture rock fall shall not be considered a ditch for this survey.

## B. CULVERTS



**Unit of Measure:**

**Total number of culverts, per 0.10-mile section.**

Total number of culverts greater than or equal to 50% filled or otherwise deficient, per 0.10-mile section.

**Threshold:**

Count as deficient if:

1. Any portion of the culvert is 50% or more filled with sediment or debris, or
2. Any end is significantly crushed or deformed, or
3. The volume of the inflow or outflow is reduced 50% or more by obstructions such as rocks, vegetation, or woody debris, or
4. The pipe is separated 1 inch or more, or damaged in a way that the function of the culvert is causing significant damage to the roadway prism or adjacent drainage channel.

**Methodology:**

Count and record all culverts within the section. Count and record any culvert that is 50% or greater filled or otherwise deficient. **Evaluate only those culverts that cross state highways or county roads at their intersection with state highways. Do not count culverts under private access roads.**

**Comments:**

Vegetation obscuring the end of a culvert is not a deficiency unless it obstructs the flow of water. Standing water (tidal or non-tidal) in culverts is not a deficiency. Culverts designed to be half filled with gravel for fish habitat should not be rated as deficient.



Common Indicator there is a cross culvert.

## C. SLOPE FAILURES



**Unit of Measure:**

Presence or absence of slope failure in a 0.10-mile section.

**Threshold:**

**ONLY** count as deficient a slide or erosion that is, **at the time of the survey:**

1. Jeopardizing the structural integrity of the paved shoulder or traveled lane(s), or
2. Blocking the paved shoulder or traveled lane(s), or blocking the ditch, or
3. Jeopardizing the structural integrity of guardrail or traffic signs.

Traffic may move slower through the area or lanes may be reduced, causing intermittent stoppages. Erosion or slides not meeting the thresholds above shall not be considered deficient.

**Methodology:**

Determine the presence or absence of slope failures within the survey section. **Both fill and cut slopes can be affected.**

**Comments:**

Chronic or ongoing slope failures that do not meet the criteria listed above **at the time** of the survey are not to be counted as failures.

**Edge drop-off is not considered a slope failure.**

**All slope failures should be documented with a photo.**

## IV - ROADSIDE

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**General:** Record the total combined width of right of way/roadside. If width of roadside varies use the combined averaged width for the section. Unpaved median areas are considered as roadside and would be added into the width, if present. If in doubt about where the right of way line is, contact the local shed. **DOES NOT INCLUDE ANY PAVED AREAS.**

### A. NOXIOUS WEEDS



**Units of Measure:** Total square feet of infestation, per 0.10-mile section.

**Threshold:** Presence of legally designated noxious weeds (**dead or alive**) on the roadside.

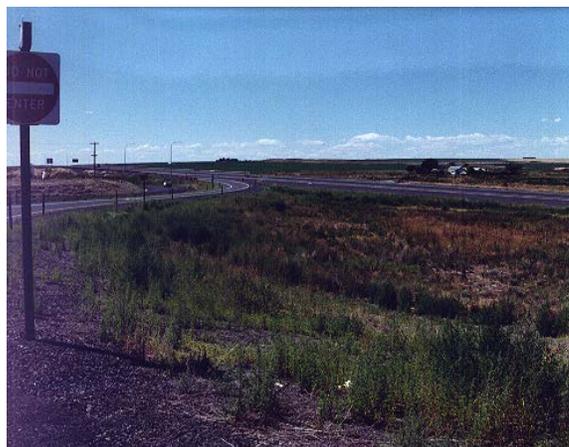
**Methodology:** Survey the entire roadside area and determine the presence of any legally designated noxious weeds, **dead or alive**. Measure the square feet of the infestation. **The total square feet of infestation shall not exceed the total square feet of roadside.**

**Comments:** Identifying noxious weeds can be difficult and is to be done by a person trained in weed identification. For MAP purposes the area IVM weed list will identify the weeds to be counted as noxious.

## B. NUISANCE VEGETATION



Weed Infestation



Weed Infestation

- Units of Measure:** Total square feet of infestation, per 0.10-mile section.
- Threshold:** Presence of nuisance vegetation (**dead or alive**) on the roadside, per the area IVM Plan.
- Methodology:** Survey the entire roadside area and determine the presence of any nuisance vegetation (**dead or alive**). Measure the square feet of the infestation. **The total square feet of infestation shall not exceed the total square feet roadside area.**
- Comments:** Identifying nuisance vegetation can be difficult and is to be done by a person trained in weed identification. For MAP purposes the area IVM weed list will identify the weeds to be counted as nuisance.

## C. VEGETATION OBSTRUCTIONS



Vegetation Obstruction

<b>Unit of Measure:</b>	Presence or absence of vegetation obstructions in 0.10 mile section.						
<b>Threshold:</b>	Vegetation blocking sight distance to guide or regulatory signs, or intersections as seen from the driver's perspective when waiting to enter or cross the highway.						
<b>Methodology:</b>	Measure and record the presence or absence of vegetation obstructing sight distance to signs or intersections.						
<b>Comments:</b>	For the purpose of judging adequate site distance for this survey, signs and intersections should be visible from distances of: <table><tr><td>Freeways</td><td>800 feet min.</td></tr><tr><td>Rural roads</td><td>500 feet min.</td></tr><tr><td>Urban roads</td><td>200 feet min.</td></tr></table>	Freeways	800 feet min.	Rural roads	500 feet min.	Urban roads	200 feet min.
Freeways	800 feet min.						
Rural roads	500 feet min.						
Urban roads	200 feet min.						

## D. LITTER



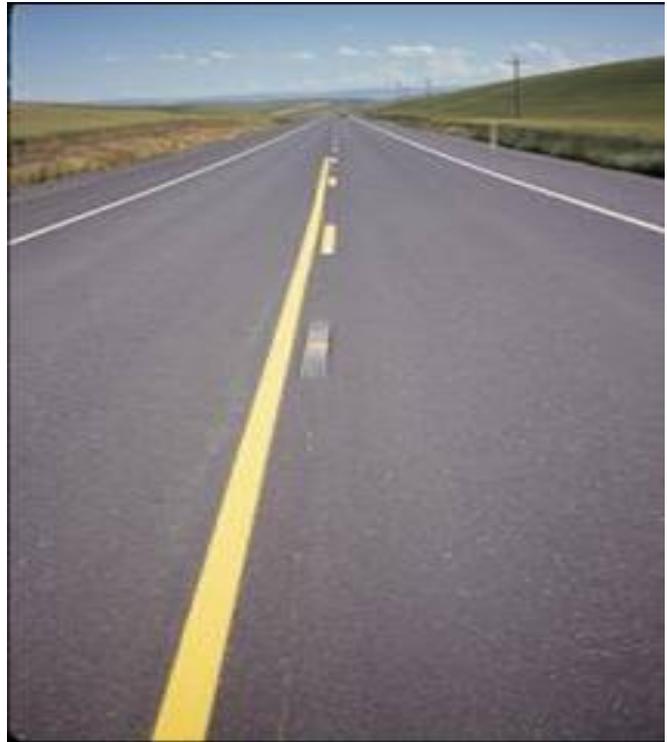
**Unit of Measure:** Total number of pieces of litter counted, per 0.10-mile section.

**Threshold:** Objects approximately 4 in. x 4 in. or larger.

**Methodology:** Observe and record all litter 4 in. x 4 in. and greater.

# V - TRAFFIC

## A. RAISED/RECESSED PAVEMENT MARKERS



- Units of Measure:** Total number of raised/recessed pavement markers, per 0.10 mile section.  
Total number of worn or missing markers, per 0.10-mile section.
- Threshold:** Missing or deficient pavement markers. If the markers are missing or broken, or the reflective surface is non-functional they should be considered as deficient.
- Methodology:** Count and record all pavement markers that **should be present** within the section. Count and record any markers that are deficient or missing.
- Methodology (cont.):** In counting markers, it may be helpful to determine the number of markers associated with each pavement stripe (grouping) and then count stripes (groups) to determine the total number of markers that should be present. Markers butted end to end, can, in most cases, be considered as one marker if the normal installation would require only one marker in that location.

**Comments:**

In many instances old markers are not removed as new markers are placed. Do not count old markers as deficient if new markers have been placed next to them.

The “bumps” on a plastic profile line are **not** to be counted as RPM’s.

The number of deficient markers will **not** exceed the number of markers that should be present.

Patterns or groups of RPM’s should be collected in the present standard. Coordination with the Regional striping and button crew is encouraged.

## B. PAVEMENT MARKINGS



- Units of Measure:** Total number of pavement markings, per 0.10-mile section. Total number of worn pavement markings, per 0.10-mile section.
- Threshold:** Count as deficient any pavement marking that is greater than 25% worn or worn in a way that makes it nonfunctional.
- Methodology:** Count and record the total number of pavement markings within the survey site. **Markings such as crosswalks and railroad crossings are counted as one pavement marking.** Stop bars are considered a separate marking.
- Count and record the total number of markings that are greater than 25% worn or worn in a way that make them nonfunctional.
- Do not count culvert or state patrol markings.  
Do not count skip stripes.  
Do not count gores or wide line.

## C. GUIDEPOSTS



- Units of Measure:** Total number of guideposts or fish sticks, per 0.10-mile section. Total number of broken or damaged guideposts or fish sticks, per 0.10-mile section.
- Threshold:** Count as deficient any guidepost that is broken or damaged to the point that the reflectivity or functionality is impaired.
- Methodology:** Count and record the total number of guideposts within the survey section. Count and record the total number of deficient guideposts within the survey section.
- Comments:** Count only guideposts and fish sticks located on the mainline. Guideposts located around the radii of an at grade intersection are considered a part of the mainline. Guideposts located on ramps or locations other than the mainline are not counted.
- Beginning in 2007, guidepost locations will be marked with a dot on the pavement. This dot will be maintained to allow the identification of missing guideposts.
- Reflectivity can be impaired when the sheeting is dirty or damaged.

## D. Traffic Barrier (Guardrail)



- Units of Measure:** Total linear feet of barrier which includes beam guardrail, cable barrier, concrete barrier, impact attenuators, per 0.10-mile section. Total linear feet of defective barrier, per 0.10-mile section.
- Threshold:** Count as deficient any portion of barrier (guardrail) to include guardrail (w-beam), cable barrier, and concrete barrier, which is damaged to the point that the structural integrity is compromised or the functionality is impaired.
- Beam Guardrail:** For beam guardrail, this would include broken or cracked posts (cracked blocks or posts must be cracked all the way thru the wood, not just surface cracks), broken, cracked or misaligned blocks, missing bolts, or where the face of the rail is deformed 6 inches or greater. **Do** count as deficient any portion of rail that is flattened from top to bottom and the “w” is not present. **DO NOT** count as deficient any portion of rail that has been partially flattened, does not meet the 6 inches of deformation, and is still functional and structurally sound.
- Cable Barrier:** For cable barrier, any damage within the survey section where the cable is intact, but the posts or hardware are compromised, measure the length between supported posts as deficient. If the cable has been severed, the entire survey section is deficient.
- Concrete Barrier:** Concrete barrier is counted as guardrail for the purposes of the MAP survey. To be considered deficient, concrete barrier must be out of alignment by 6 inches or more, or the barrier surface facing traffic must exhibit spalling severe enough to snag a vehicle.
- Methodology:** Count and record the total linear feet of barrier (guardrail) within the survey section. Count and record the total linear feet of deficient barrier within the survey section.

**Comments:**

Count as deficient only the linear feet of damage meeting the threshold. Do not count the linear feet of barrier (guardrail) that would have to be used for repair, i.e. a rail with 2 feet of damage would be reported as 2 feet of damage, even though the entire 12 foot rail will have to be replaced. Identify, in the PDA, the type of barrier on site. If more than two types are present, choose the predominant type.

**D. Traffic Barrier (Guardrail) cont.**



Partially flattened, but still functional.



Out of alignment, flattened, not functional.

# VI - BRIDGES

**General:** Bridge data is collected in the same time period as the field surveys. The length and width of all bridges are contained in the MAP database and will automatically be entered when the bridge number is entered correctly, i.e. 90/357. Use the MAP Bridge Data Collection Form to record data gathered in the field.

## MAP Bridge Data Collection Form

### Bridge Information

Bridge Number:  SR:  SRMP:  Region:  Area:   
Taken By:  Date:

### Bridge Size

Bridge Length:   
Bridge Width:

### Bridge Cleaning

#### Grates and Drains

Drain\_num   
Drain\_def\_num

#### Graffiti, moss, rust, etc.

% of Surface Dirty:  None 0%  
 Minor 1-10%  
 Moderate 11-30%  
 Major 31-50%  
 Significant >50%

#### Decks and Sidewalks

Sq. Ft. of Sand/Debris:

### Instructions

When filling out the **paper form**, record the bridge number found on the bridge or on the WSDOT Bridge List. Record the state route, milepost, region, area, names of inspection team members, and date.

When filling out the **computer form**, type in the bridge number (example 82/139), press enter and state route, milepost, region and bridge size will be filled in automatically.

**Grates and Drains:** Count and record the total number of bridge drains on the structure. Count and record the total number of blocked, plugged or covered bridge drains. Drains that are partially blocked are considered deficient. Catch basins with sediment buildup that exceeds the flow line elevation of the outlet pipe are considered deficient.

**Decks and Sidewalks:** Calculate and record the total square feet of sand and debris on the bridge deck and sidewalk.

**Graffiti, moss, rust, etc.:** Estimate and record the percent of bridge surfaces that are covered with graffiti, moss, rust, bird droppings or other surface dirt.

MAP Bridge Data Form - Revised 5/2009

Bridge data will be entered in the MAP data collection website at <http://webprod4.wsdot.loc/maintenance/accountability/process/mainmenu2.aspx>.

## A. DECKS & SIDEWALKS



- Unit of Measure:** Total square feet of sand or debris on the bridge deck and sidewalk.
- Threshold:** Presence of sand or debris.
- Methodology:** Measure the length and determine the average width of sand and debris on the bridge deck and sidewalk. Calculate and record the total square feet for all sand and debris.

## B. GRATES & DRAINS



- Unit of Measure:** Total number of drains on the structure. Total number of drains that are blocked.
- Threshold:** Blocked, plugged or covered bridge drains. Drains that are partially blocked are considered deficient. Catch basins with sediment buildup that exceeds the flow line elevation of the outlet pipe are considered a deficiency
- Methodology:** Count and record the total number of bridge drains on the structure. Count and record the total number of blocked, plugged or covered bridge drains. A flashlight may be needed to determine if the drain is blocked.

## C. RAILS, GIRDERS, TRUSSES, PIERS & ABUTMENTS



**Unit of Measure:** Percent of structure covered with graffiti, moss, rust, etc.

**Threshold:** Check box for None, Minor, Moderate, Major or Significant severity.

**None** - 0% severity

**Minor** - 1% - 10% severity

**Moderate** - 11% - 30% severity

**Major** - 31% - 50% severity

**Significant** - > 50% severity

**Methodology:** Observe the rails, girders, trusses, piers and abutments to determine the percentage of the structure covered with graffiti, moss, bird droppings, rust or other surface dirt. Check the appropriate box on the form.

## VII – MAP PDA

The Maintenance Accountability Process (MAP) PDA program was developed to input the information from field condition surveys conducted on the highway system. The intent is that this program will be used **while** data is collected, inputting data as the surveyor walks the site. It contains fields that will accept many entries, so no paper and pen have to be carried. It does the math, so no calculator is needed. Data is validated upon saving, catching some input errors and not allowing others, which permits the surveyor to review questionable data while still on site.

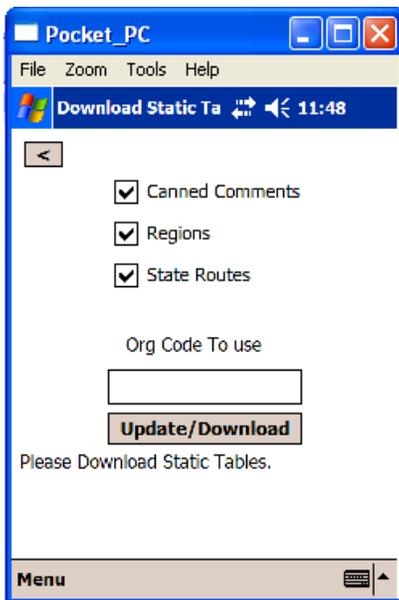
This application is unique in that two surveyors, using two PDA's, can collect data on the same site, then the data is merged when downloaded to the server. Each surveyor chooses the categories (paved shoulder, drainage, etc.) they will be collecting data on. **Only one surveyor can collect data in each category.** Only the chosen categories will be available for input on each PDA.

### To Begin:

#### A. Download Comments, Regions and SR's

With the PDA connected to the computer, on the PDA tap on Start, Internet Explorer, and enter the address for the Maintenance PDA load webpage, which is <http://midtierrd2.wsdot.wa.gov/ceload.htm>. **This address is entered on the PDA.** The applications already existing on your PDA will determine what you will need to download to make the MAP data collection program function. You will need to have the CE 2.0 Service Pack (number 1 under Steps) and then the MAP, which is number 4. After the program(s) are on the PDA, while still connected to the computer, click Start on the PDA, then Programs, scroll through the programs until MAPPDAV1 appears. Tap on it.

The first time into the program opens this page.

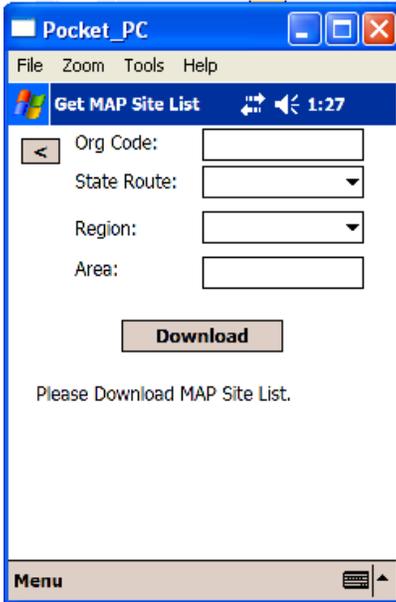


This page can also be located from Menu -> Downloads -> Initialize Static Tables, once the program set up has been completed. From here, click on Update/Download to begin the process of downloading Canned Comments, Regions and State Route tables. The message "Operation Completed Successfully" will come up when this step is done.

The next step is to get the MAP sites.

## **B. Get MAP Sites:**

From the Menu (bottom left hand corner), choose Downloads, and then Get MAP Assignments. The following page comes up.



This page allows filtering of which survey sites to download. The user can choose to filter by State Route, Region and Area, or any combination. When the “Download” button is clicked it will download only the filtered MAP Assignments.

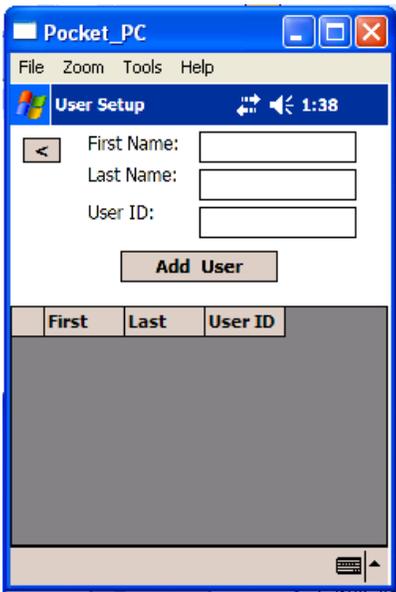
If you previously have had survey sites on the PDA that were not completed and/or uploaded, a message will pop up asking “Are you sure you want to replace the current assignments?” Choose wisely. If yes is chosen, any and all sites on the PDA will be overwritten. When this task is completed, a message will display stating “Assignments updated”. Click OK. The next step is to create a login. Click on the back arrow twice, top left hand corner of the screen.

## **C. Check the Web Service Address**

From the Menu in the lower left corner, select Set up, then Web service location. For 2012, the address bar should say  
<http://midtierp4.wsdot.loc/Maintenance/Accountability/process/MapCollectionWebService.aspx>

With the PDA still connected to the computer, click Test. A window should open up that says Success. Click Save. This means that when data is uploaded it will be going to the correct database and will be viewable online.

If the webservice test returns an error, check the address again, or contact your MAP coordinator.

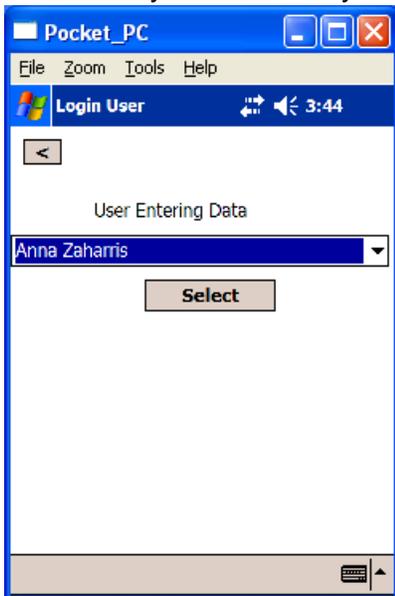
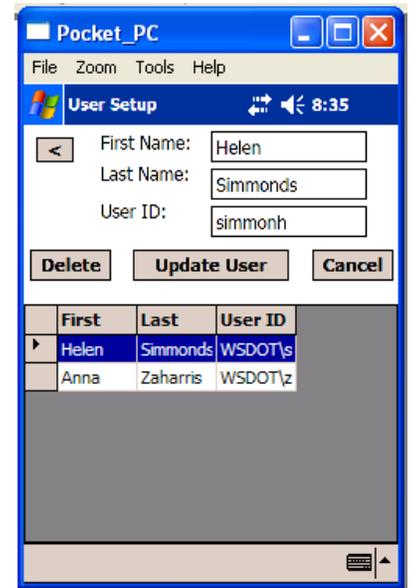


## D. Logging In:

The first time a user runs the MAP PDA program they will need to create a new user to access the program and databases. This is the page that automatically comes up after initially getting sites.

The user must enter a first and last name followed by their user id. Putting the cursor in the First Name box will bring up the keyboard. Fill in the boxes and click Add User. Several users can be added on this page.

From this form the user can also edit and or delete users from the list of users. To do so, you must first select a user from the list and then the options to delete, update and cancel become visible. When delete is selected, the program will ask you to confirm your choice to delete the user.

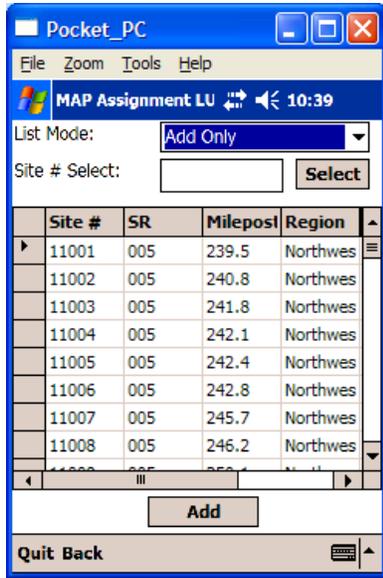


Once the users have been set up, click on the back button to choose the user entering the data and click select. A blank screen appears, with only "Menu" and "Quit" showing in the bottom left corner.

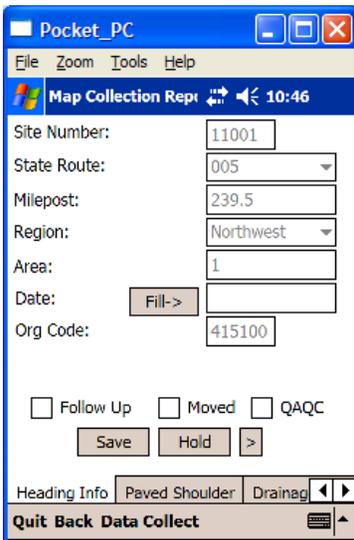
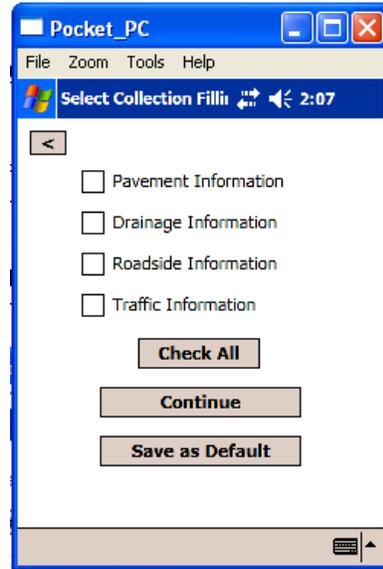
## E. Data Collection:

Go to Menu -> Fill In MAP Collection. The site list that was downloaded to the PDA comes up. Highlight the site you are conducting the survey on by clicking in the far left column, then click Add. **Or**, enter the site number in the Site # Select box at the top of the page, click Select, then click Add. The next page provides options for the **type of data** to be collected. All can be chosen or just one or two. The option exists to make whatever is chosen as a default, so the boxes will be automatically checked. Choose the appropriate items, and then click "Continue".

Site List

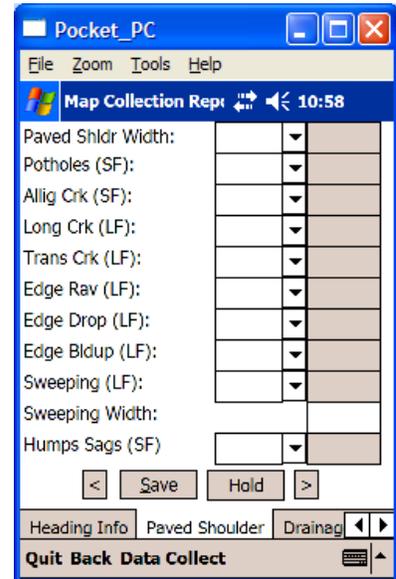


Data Type

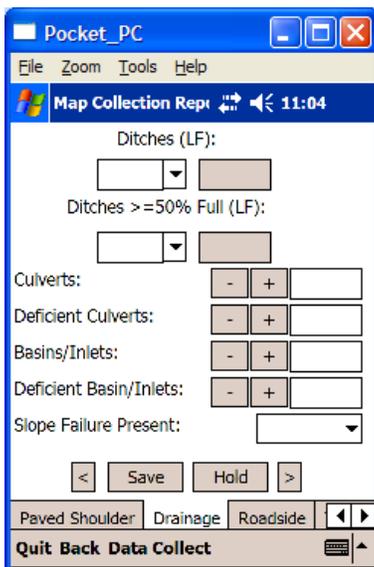


This is the header page. All assigned site info has been populated from the site list. Click on the "Fill" button and the current date is filled in. If the site has to be moved, this is where it is recorded. Click in the "Moved" box and a prompt comes up with a reminder to change the Milepost and/or SR. If the moved box is checked, the MP **must** be changed before the page can be left. Click the forward button to continue.

This is the pavement page. White boxes are the entry boxes, the shaded boxes are running totals. Several entries can be made in the white boxes. Choosing the down arrow between the white and shaded boxes will show all entries for that measurement and allow for corrections. This page requires an entry in the Paved Shldr Width prior to moving on to another page.

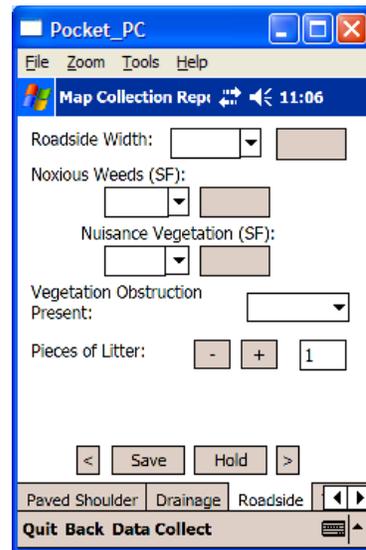


To move, click on the forward or back arrows, or choose a tab at the bottom of the page.

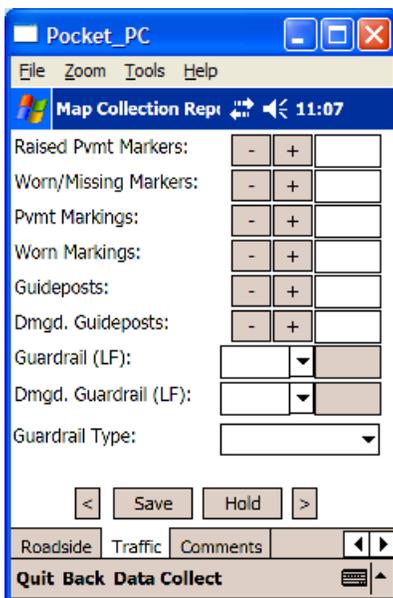


The drainage page contains running totals, but also gives the option of simply clicking a plus or minus to add a feature or feature deficiency.

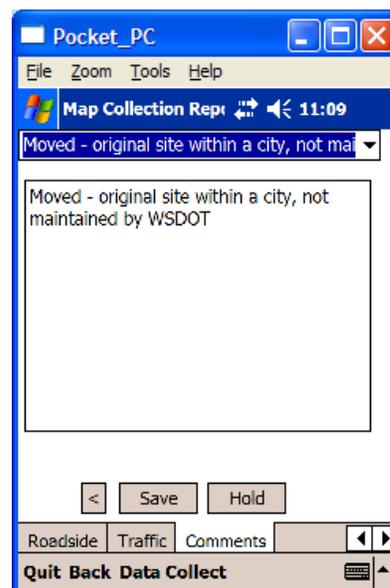
The Roadside page has running totals for the width, noxious and nuisance weeds, yes or no for vegetation obstruction and a clicker for counting litter.



The traffic tab contains mostly clickers (plus and minus signs) for counting traffic items, still having the running total boxes for guardrail.



The comment page contains a dropdown menu with the most common reasons for moving a site. Plus any other needed comments can be added to this page. Simply put the cursor in the comment box and the keyboard opens for typing.



Once all the information has been entered on all the tabs, select the “Save” button. The data is validated; all fields require an entry, even if it is only a zero. The system will provide a message, stating what is missing or in error. Clicking okay on the message moves the cursor to the appropriate field for editing.

A feature added in 2010 was the ability to enter only partial data. Notice the Hold button next to the Save button. This will save whatever data has been input, and close the record. This will be helpful working on divided highways, allowing data entry for several sites in one direction, NB I-5 for instance, then completing the other half of those same sites in the SB direction. The records will be closed, but not validated. This feature currently only works with old Dell PDA's

Another feature is the follow up button on the header page. Checking this box will allow you to find all records that you may have had a question or concern about. You may also make comments as to the reason for the follow up on the comment page.

After a record has been completed and saved or held, it will no longer show up on the site list add page, but will be moved either to the Edit page, the Hold page or the Follow Up page. Only records that have not been downloaded to the server will remain on the lists. Selecting “Edit” from the drop down menu will open the Edit page. From here the user can select which record they would like to edit and then click the “Modify” button. This will open the record with all data that was originally input. Now the user can navigate through the information using the right and left arrows and editing any information they need to. Once done, clicking the save button will save the changed information.

Choosing “Held” from the drop down menu will produce a list of those records that have not been completed and validated. Open the record of choice, continue with data collection, and then save. Validation occurs, the record is saved and ready for upload. Records on the Hold page cannot be downloaded until they are completed and validated.

Currently, records can only be modified on the old Dell PDA's. All other PDA's will lock a record once it is closed, and not allow modifications to the record on the PDA.

Choosing the “Follow Up” button will list only those items with the follow up box checked. This list can include complete and incomplete records, depending on what has been checked. Follow up records, that are complete and saved will download with all other saved records.

## F. Downloading Completed MAP Surveys From MAP PDA:

This option is found by going to Menu -> Send Finished MAP Survey(s). The Unsent radio button is checked by default, because sending items that have already been sent will cause the system to overwrite what is already in the database, but this can be changed if needed.

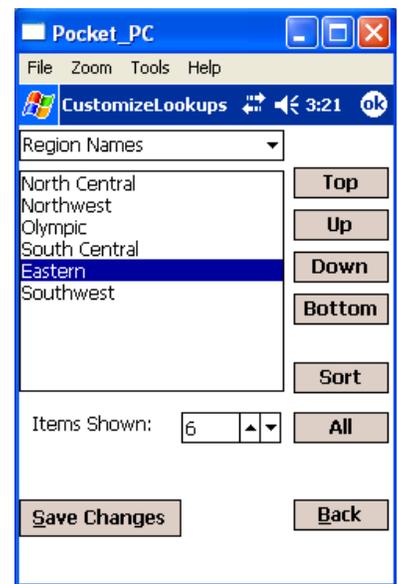
With the PDA connected to a computer, the user can now download their finished MAP surveys by clicking the "Send" button. The "Clear Sent Items" box is checked by default, and it will clear out the items that are sent.

## G. Other Items of Interest

### Customizing Lookups

This form is found from Menu -> Setup -> Customize Lookups. From here the user is able to filter the State Routes, Canned Comments and Region Names.

The user can select how many items they would like to work with and move them to the order they would like. The "Sort" button will put the options back in the original order. Saving will save the options in the order the user selected.



### Deleting the Database:

Again, you will probably not need to use this. If used, the program will delete the database and then rebuild a new one. Everything that has been entered, but not uploaded, will be lost. **BE CERTAIN OF WHAT YOU ARE DOING BEFORE YOU USE THIS.** After rebuilding the database, the program will have to be restarted and the user will have to create a new user once again.

Questions? Comments? Problems? Call Anna Zaharris at 360-705-7813.