WISLR TRAINING MANUAL

HOW TO DISABLE POP-UP BLOCKERS
UNDERSTANDING

WISCONSIN INFORMATION SYSTEMS FOR LOCAL ROADS

(WISLR)

WISLR 101
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1.0 INTRODUCTION TO WISLR

- WISLR is a WEB-based GIS system
  - Supports Section 86.302(1) of the Wisconsin Statutes
    - Local Road Inventory and Certification
- WISLR is maintained by WisDOT
  - Mileage in WISLR is used in General Transportation Aides (GTA) computation

1.1 TOPICS COVERED IN THIS SESSION

- WISLR Program Overview: Mileage Certification
- What Road Data is in WISLR
- How to get access to your data
- How WISLR displays your data
- Maintenance Treatment Types

1.2 OVERVIEW: BENEFITS

- WEB Access
  - Statewide local road data and linework
  - Multiple Years (2002):
    - WISLR Reports
    - CVT Maps
  - WisDOT Inventory & Cert Forms
    - Construction Report Form
    - Roadway Data Collection Information
    - Related Local Road Statutes
1.3 ANNUAL CERTIFICATION

Where does WISLR data come from & how does it related to your annual mileage certification?

Local and County Gov't Officials submit changes annually to roads in their jurisdiction to WisDOT

- New Roads
- Vacated Roads
- Surface Type Changes
- Incorrect Road Names
- Pavement ratings (biennially)

![Figure 1: Construction Report Form](image1)

![Figure 2: CVT Map](image2)

![Figure 3: Certification Statement](image3)
# 2.0 What Road Data is in WISLR

## Table 2.0

<table>
<thead>
<tr>
<th>Rd/St Name</th>
<th>Certified Miles</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. Rd/St Name  
2. Total Road Length  
3. At Rd/St (offset)  
4. To Rd/St (offset)  
5. Length of Segment  
6. OW = one way  
7. L = # of lanes  
8. Surface  
9. Maintenance  
10. P = Parking  
11. Curb (L/R)  
12. Shoulder (L/R)  
13. Median (Type/Width)  
14. ADT = Avg Daily Traffic

### Surface
- 20 = Waterway
- 25 = Unimproved Road
- 30 = Graded and Drained Earth Road
- 35 = Gravel Road (not oil & grave)
- 40 = < 1" Wearing Surface
- 45 = Cold Mix Asphalt Pavement on Concrete
- 50 = Cold Mix Resurf on Asphalt Pavement Surface + Base < 7"
- 52 = Cold Mix Resurf on Asphalt Pavement Surface + Base > 7"
- 55 = Cold Mix Asphalt Pavement (CMAC)
- 57 = Cold Mix Asphalt Pavement (CMAC) Surface + Base > 7"
- 60 = Hot Mix Asphalt Pavement on Concrete (HMAC on PCC)
- 65 = Hot Mix Resurfacing (overlay) on Asphalt Pavement
- 70 = Hot Mix Asphalt Pavement (HMAC)
- 75 = Concrete Pavement (PCC)
- 80 = Brick or Block Pavement

### Median
- 0 = None
- 1= Clear paved, 4' wide or more
- 2= Clear grass with occasional shrubs
- 3= Fenced, not “Class A” barrier
- 4= Rumble strip - PC concrete
- 5= Rumble strip – bituminous
- 6= Concrete barriers/s/f<= 42” high
- 7= Concrete barriers/s/f > 42” high
- 8= Concrete barriers/d/f <= 42” high
- 9= Concrete barriers/d/f > 42” high
- 10= Guard rail
- 11= Barrier curb
- 12= Mountable curb
- 13= Shrubs and/or trees
- 14= Continuous median left turn
- 15= Interchange (> 99 ft)

### Shoulder Type
- 0 = None
- 1 = Grass
- 2 = Gravel
- 3 = Paved

### Shoulder Width
If no shoulders exist and curbs are present, enter that in the curb column

### Sidewalk
- 0 = None
- 1 = Right Side
- 2 = Left Side
- 3 = Both Sides

### Parking Permitted
- 0 = None
- 1 = Right Side
- 2 = Left Side
- 3 = Both Sides

### Curb
- 0 = None
- 1 = standard
- 2 = Mountable

### REPORT EACH SIDE

### Surface Width
Face of curb to face of curb OR inside edge of shoulder to inside edge of shoulder

### Sidewalk
2.1 INVENTORY REPORT SAMPLE

- Because of the report size, counties cannot access their inventory reports online.
- Instead, counties will receive a CD copy of their inventory report along with their CVT’s in their annual certification packet.

2.2 STATE HWY DATA IN WISLR

- State Highway **roadway attribute data** is not in WISLR.
- State Highway **line work** is in WISLR:
  - Visual reference
  - Creates continuous line work
3.0 **HOW TO GET ACCESS TO YOUR DATA**

3.1 **CREATE WISCONSIN USER ID (WAMS)**

**IF YOU HAVE A WISCONSIN USER ID (WAMS),**
Go to 3.2 Request WISLR Access

**IF YOU DO NOT HAVE A WISCONSIN USER ID (WAMS),**
Go to the Department of Administration Website
https://on.wisconsin.gov

Follow the steps to create a User ID and Password and Activate your Account

---

**OVERVIEW**

The self-registration process consists of two parts:

**Important:** We highly recommend that you complete Parts One and Two at the same time. You must complete Part Two within four (4) days of requesting the account or you will have to begin the self-registration process again.

- **Part One: Requesting a Wisconsin User ID and Password**
  
  In Part One, you will submit your contact and account information. You will be sent a confirmation e-mail immediately, containing a Web link to the Account Activation page.

  **Note:** You must have an accessible, valid, and unique e-mail address to complete the self-registration process.

- **Part Two: Activating your Account**
  
  In Part Two, you will click the Web link in your confirmation e-mail, taking you to the Account Activation page. You will log in using your new Wisconsin User ID and Password to activate your account.
3.2 REQUEST WISLR ACCESS

USERS WITH A VALID WISCONSIN USER ID (WAMS):

Navigate to WISLR
https://trust.dot.state.wi.us/wislr/NavigationDispatch

Enter your Wisconsin User ID and Password

Fill in Requested Information

Allow 2-3 days for WisDOT review and e-mail confirmation

1. Fill in Term End Date and Job Title
2. Select County / Muni you are requesting access to
3. Select the type of access you are requesting:
   A. highlight Action
   B. click arrow to move item to Requested Actions Box
4. Click Process button to Submit WISLR authorization approval Request
### 3.3 Different WISLR Access Types

- You do **NOT** need to request access or permissions every year
- Check your WISLR permissions by selecting Request Additional WISLR Access on the Main Menu. Permissions will be listed in the Access Status area

| WISLR Access (view only) | ACCESS:  
|--------------------------|--------------------------  
|                          | • All users receive Statewide View  
|                          | • View data and maps anywhere in the state  

| WISLR Pavement Entry Update | ACCESS:  
|----------------------------|--------------------------  
|                            | • Local Officials can get access  
|                            | • 3rd party vendors need permission from the municipality/county  
|                            | FEATURES:  
|                            | • Print / Download pavement spreadsheets  
|                            | • Update pavement ratings  
|                            | • Submit pavement ratings  
|                            | • Update surface type, width, year, offset data and local IDs  

| WISLR Pavement Analysis | ACCESS:  
|-------------------------|--------------------------  
|                         | • Local Officials can get access  
|                         | • 3rd party vendors need permission from the municipality/county  
|                         | FEATURES:  
|                         | • Run reports based on your pavement ratings and surface information  
|                         | • Report results are displayed in graph or on a map  
|                         | • Customize your cost worksheet  
|                         | • Create a 5-year budget plan  

| Update Physical Attributes | ACCESS:  
|-----------------------------|--------------------------  
|                             | • All users must complete an online On/At training  
|                             | • Local Officials can get access after completing the training and emailing their score to WISLR  
|                             | • 3rd party vendors need permission from the municipality/county  
|                             | FEATURES:  
|                             | • Update physical attributes, i.e. curb, shoulder, parking, sidewalk  
|                             | • Update Route Comments for your municipality/county  

3.4 ACCOUNT RECOVERY

FORGOT YOUR WISCONSIN USER ID OR PASSWORD?

Go to the Department of Administration Website
https://on.wisconsin.gov

Follow the steps to recover your Wisconsin User ID or Password

NOTE: This menu option will display when you CLICK Account Recovery. Fill in either your User ID or E-mail associate to your Wisconsin User ID then CLICK Submit. You will receive an email with additional directions.
4.0  How WISLR Displays the Data

4.1  Fundamentals

WISLR Home Page

Once you have logged onto the WISLR Website, the WISLR Select County/Municipality Home Page is displayed.

To begin working within WISLR, first choose a specific county/municipality.

1. Drop-down List Boxes
2. County/Muni Code Box
3. State Map

Note: Every Web page in the WISLR system contains a common header. The header allows you to navigate to other sections in WISLR by utilizing the section hyperlinks. In order to use these hyperlinks, simply CLICK the blue underlined word and the system takes you to that specific location.

WISLR Home Page

1. Home: WISLR home page
2. Main Menu: Allows user to choose which functions authorized to use from menu, e.g., View Physical Inventory Data, Pavement Rating Entry Screen, Local Government Information Requests, etc.
3. Route Name Discrepancy: Submit route name changes for existing routes
4. Log off: Log-off screen
6. On/At Training Quiz: View the On/At training video and take the quiz in order to Update Physical Inventory

Note: Create your bookmark/favorite AFTER you have logged in to WISLR
4.2 VIEW ADMINISTRATIVE DATA

### Global Location

<table>
<thead>
<tr>
<th>Attribute Name</th>
<th>Map</th>
<th>Occurs</th>
<th>At Intersection</th>
<th>From Offset</th>
<th>To Offset</th>
<th>Section Length</th>
<th>Attribute Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Owner</td>
<td>1</td>
<td>1 of 8</td>
<td>STH 19 (Termini)</td>
<td>3221</td>
<td></td>
<td></td>
<td>Owner: OSH-Medina, Cert Miles: 0.5</td>
</tr>
<tr>
<td>Road Category</td>
<td>1</td>
<td>1 of 8</td>
<td>STH 19 (Termini)</td>
<td>3221</td>
<td></td>
<td></td>
<td>Cat: 5 Municipal Road</td>
</tr>
<tr>
<td>Sub Road Category</td>
<td>0</td>
<td>0 of 0</td>
<td></td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Access Control</td>
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<td>1 of 8</td>
<td>STH 19 (Termini)</td>
<td>3221</td>
<td></td>
<td></td>
<td>Type: 0 Conversion</td>
</tr>
<tr>
<td>Urban Location</td>
<td>0</td>
<td>0 of 0</td>
<td></td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Federal UR Area</td>
<td>1</td>
<td>1 of 8</td>
<td>STH 19 (Termini)</td>
<td>3221</td>
<td></td>
<td></td>
<td>UR Area: 000-Rural, Cls: 1-Rural</td>
</tr>
<tr>
<td>Functional Class</td>
<td>1</td>
<td>1 of 8</td>
<td>STH 19 (Termini)</td>
<td>3221</td>
<td></td>
<td></td>
<td>Type: 45-Local Road (R)</td>
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<tr>
<td>NHS</td>
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<td>1 of 8</td>
<td>STH 19 (Termini)</td>
<td>3221</td>
<td></td>
<td></td>
<td>Type: NON-NHS, Rte: 000-0</td>
</tr>
<tr>
<td>HFMV</td>
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<td>0</td>
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<td>R0</td>
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<td>HOV</td>
<td>0</td>
<td>0 of 0</td>
<td></td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>STRANHM</td>
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<td>0 of 0</td>
<td></td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Assigned Route</td>
<td>0</td>
<td>0 of 0</td>
<td></td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**NOTE:** Administrative Attributes can only be updated by WisDOT staff

1. **Location:** County / Municipality

2. **Global Location Area**
   - A. On/At Toward Route Drop Downs
   - B. Certified Mileage
   - C. Rd/St Length
   - D. View by Intersection Radio Buttons
   - E. Unit of Measurement Radio Buttons
   - F. Retrieve At/Toward Button
4.3 VIEW PHYSICAL DATA

4.3.1 State of Wisconsin Map Icon
The interactive map is the engine behind WISLR’s machine and provides you with a tool to analyze and display roadway attribute information. This function can aid you with basic procedures like viewing information, and offers more advanced functions that furnish data to help facilitate roadway decision-making.

4.3.2 Occurs Column
If the value in the Occurs field is greater than 1 of 1, click on the \text{\textbullet} icon to see the details. This action expands the attribute and displays the changes in attribute information.

4.3.3 Maintenance Treatment
The map is grayed out because you can’t map maintenance treatments at this time.

4.3.4 Master ICON
You can expand the attributes one at a time or, all at once. Click on the master icon to expand or collapse all attributes.
4.4 MAINTENANCE TREATMENT TYPES

- Added in 2011
- 14 Maintenance Treatment type codes
- May select more than one Treatment Type
- Treatment Type is dependent on surface type; make sure the surface type is correct

**Note:** Surface type 40 remains at 40; update the year

**Note:** Add multiple maintenance treatments to the same route
4.5 UPDATE PHYSICAL DATA

HOW WISLR DISPLAYS DATA BY INTERSECTION OR DATA BREAK

**View Roadway Data by Intersection**
Yes = WISLR displays each intersection found between the AT field through the TOWARD field—including any changes in your attribute data, e.g., a different surface type that occurs between two intersections will display two (2) records.

**View Roadway Data by Data Break**
No = WISLR displays the two intersections that you selected using the AT and TOWARD fields – and displays records only when there are changes in attribute data between selected intersections.
4.6 HOW TO PRINT A MAP

There are many locations in WISLR that enable the user to print a map. This example shows how to print a map from the View Physical/Administrative Inventory screen.

- Use the Rd/St Name drop-down to select route
- CLICK the yellow Wisconsin map icon by Rd/St Name to launch map viewer
- Map Viewer will display and highlight selected route.

HOW TO PRINT A MAP

1. Click the white and red X in the top right corner of the Road Information popup to close this informational box
2. Click the printer icon
4.6 HOW TO PRINT A MAP (CONT)

NEW FEATURE: When the print map icon is clicked, the map viewer will change and display options for the user to select for printing.

3. Optional print settings
   - Format: PDF or JPG
   - Preserve: extend or scale
   - Title: add a title to your map
   - Template: page orientation & size

4. Click the Create button
   - Creating file... will appear **This may take a few minutes**

5. When your map is ready to print the Open File link will appear
   - Click Open File to open your map

**FIGURE 1:** Print Map example

HOW TO PRINT ROAD DATA

1. From the Road Information box click the Printable Report button
2. Press Ctrl + P on your keyboard to open your Browser print settings
3. Review your personal printer configurations and click Print

**FIGURE 2:** Print Data example
4.7 LOCAL GOVERNMENT INFORMATION REQUESTS

From the Main Menu, select Local Government Information Requests in order to view mileage inventory reports, a local or county CVT map, and download forms such as the construction and maintenance reports.
5.0 DATA QUALITY

5.1 REPORT ROUTE NAME DISCREPANCY

APPLICATION TOOL BAR
- used to navigate to other menus
  - home: Select County/Municipality
  - main menu: Choose a Function to Perform
  - log-off: close user session
  - route discrepancy: Report route names in error
  - manual and publications: step-by-step instructions for using WEB WISLR
  - On/At training quiz

REPORT ROUTE NAME DISCREPANCY MENU
1. User Information: Required
2. Rd/St To Correct: Required
3. Correction: Required
   A. Prefix: Drop down, e.g., N, S, E, W, etc.
   B. Name: root part of the route name, e.g., Albrecht
   C. Type: Drop down, e.g., Dr, Ln, Un, etc.
   D. Suffix: Drop down, e.g., N, S, E, W, etc.
   E. Extension: e.g., (1), (2), etc.
6.0 ROUTE COMMENTS FUNCTION

This feature allows users with Update Physical Attributes access to capture comments on roads within their jurisdiction.

ROUTE COMMENTS MENU WOULD PROVIDE:

1. Select Community - County and Municipality
2. Select Roadway and Year
3. Add a New Comment Area
   a. Add New Comments and Year
   b. View Historical Comment(s) / Year
4. Help Functions
   a. Save Changes when adding comments to Route
   b. Close – exit menu
5. Print/Download Spreadsheet Comments by:
   a. Single Route
   b. Routes within Municipality
   c. Year
WISLR 101 SUMMARY

- WISLR Administrative and Physical Roadway Attribute Data
- Updates / Data Quality for WISLR data comes from Local / County
  - Authorized Local / County can update Physical Attributes
  - Gain Update Access by completing On/At Exercises
  - Report Route Name Discrepancies via WEB WISLR
- How WISLR relates to Mileage Certification (GTA)
  - August Certification Packets
    - Local and County officials annually file changes for roads in their jurisdiction to WisDOT by December 15 of every year
- How to Gain WISLR Access
  - 2-step process
  - “View” provides access to local road data statewide
- WISLR displays data in many forms
  - CVT Maps
  - Annual Certification Statements
  - Inventory Reports
  - Interactive GIS
  - WEB

WISLR CONTACT INFORMATION

ANNUAL LOCAL ROAD CERTIFICATION QUESTIONS (WISLR):

Leave message:  (608) 266-2865

1. Name
2. County / Municipality
3. Phone Number where you can be reached
4. Brief description of concern / question

wislrinfo@dot.wi.gov
USING WISLR TO
UPDATE YOUR PAVEMENT RATINGS
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1. INTRODUCTION TO PAVEMENT RATINGS

1.1 TOPICS COVERED IN THIS SECTION

- Intro to Pavement Ratings
- Web-WISLR Pavement Rating Entry Screen
- Your 3 Submittal Options
  1. Online
  2. Electronic
  3. Paper
- Pavement Rating Tips

1.2 STATUTE REQUIREMENTS

Statute 86.302(2)
(2) Not later than December 15, 2001, and biennially thereafter, each municipality and county shall assess the physical condition of highways under its jurisdiction, using a pavement rating system approved by the department and report the results of that assessment to the department. …

1.3 DATES TO REMEMBER: ODD YEAR

- May Odd Yr
  - WisDOT
  - A reminder letter is sent out to all municipalities and county

- March – December Odd Yr
  - Local / Counties
  - A visual inspection of all roads must be completed, weather permitting.

- Dec 15 Odd Yr
  - Local / Counties
  - Pavement Ratings due to WisDOT

NOTE: May mailing date ensures that annual cert changes are reflected in the WISLR database and captured in the Pavement Rating spreadsheet.
1.4 PAVEMENT RATING SUBMITTAL OPTIONS

1. **Online (Web-WISLR)**
   Allows user to input pavement rating information, update other key roadway attributes and submit directly through the **online** application.

2. **Paper Spreadsheet**
   Allows user to directly input pavement rating and year into the highlighted yellow columns on a **paper** spreadsheet and submit by mail.

   **EMAIL COMPLETED SPREADSHEETS TO:**
   ratingsubmittal@dot.wi.gov

   Requires saving file to your computer.

   **Suggested folder & file name---**
   Folder: WisDOT/Pavement
   File Name: YYYY_COMUN_PR

3. **Electronic Spreadsheet**
   Allows user to directly input pavement rating and year into the highlighted yellow columns on a **excel** spreadsheet and submit by email.

   **EMAIL COMPLETED SPREADSHEETS TO:**
   ratingsubmittal@dot.wi.gov

   **MAIL COMPLETED SPREADSHEETS TO:**
   Wisconsin Department of Transportation
   WISLR Pavement Rating Coordinator
   4802 Sheboygan Ave, Rm 933
   P.O. Box 7913
   Madison, WI  53707-7913
**1.4.1 HISTORICAL SUBMITTAL COMPARISON**

**SUBMITTAL OPTIONS:**

1. **Online**: Web-WISLR Pavement Rating Entry Screen
2. **Electronic**: Web-WISLR Excel Pavement Rating Spreadsheet
3. **Paper**: Web-WISLR paper Pavement Rating Spreadsheet submittal
1.5 Third Party Approval

3rd Party Agreement

WISLR access guidelines requires Local Gov't Officials to send WisDOT a short note by email or mail, authorizing us to grant Update access to a 3rd Party

Types of 3rd Party
- Consultant
- MPO
- RPC
- County

Required Information

Local Gov't
- Name / Title
- County Name
- Municipality Name

3rd Party
- Name
- Title
- User ID

Authorization
- Short note authorizing WisDOT to grant access

Email: wislrinfo@dot.wi.gov

Mailing address:
Wisconsin Department of Transportation
WISLR Statewide Local Road Coordinator
4802 Sheboygan Ave, Rm 933
P.O. Box 7913
Madison, WI  53707-7913

WisDOT Approval

After receiving official notice, WisDOT will process the request and send confirmation within three (3) business days
2. Web-WISLR Pavement Rating Entry Screen

2.1 HOW TO NAVIGATE TO …

Note: If you DO NOT have a current Wisconsin User ID Account (WAMS), refer to page 7 of the section titled “WISLR 101”.

- Log into WISLR  https://trust.dot.state.wi.us/wislr/NavigationDispatch
- Enter your WAMS User ID & Password
- Use the drop down boxes to select your County and Municipality
- Select Continue

• From the WISLR Main Menu, select Web-WISLR Pavement Rating Entry Screen
2.2 SCREEN LAYOUT

Getting Started, Resources & Map Help: Help documentation.

Show Error Messages: ***UPDATED FEATURE*** Displays a list of routes with no ratings or a Rating Surface Mismatch (rsm)

Close: Exit the Web-WISLR Pavement Rating Entry Screen window.

County & Municipality: Prefilled with your community name. If incorrect, use the drop down list to make the necessary changes.

View by intersection & Expand Worksheet: Choose how to view your road segments.

Find Route: Go directly to a selected route using the drop down list.

Spreadsheet Instructions: Print/view a pdf of the spreadsheet coversheet.

Print/Download Spreadsheet: Download an Excel file or print a paper copy of your spreadsheet.

Send Submittal: Click once after all roads have been updated to notify WisDOT of your submittal.

Update All Rating Years: Update all segments to the selected rating year & the current rating.

Update Surface Data, Update Offset Data & Update Local ID: Optional attribute updating options.

Save Changes: Save often – Save Changes button does not notify WisDOT of changes.

The Worksheet area of your screen displays your road sections in the On/At Method. Mileage is provided in feet measurement. Road Ratings and other related data can be updated in this section.
3. ONLINE (WEB-WISLR) SUBMITTAL OPTION

3.1 ENTERING DATA INTO YOUR WORKSHEET

1. Worksheet
Make updates to Pavement Ratings, Years and additional road attributes here.

2. Save Changes
Click to save changes. We recommend that you save often. **Important:** The Save Changes button does not notify WisDOT of your changes or that you have completed your Pavement Ratings. You must click the Send Submittal button to submit your Pavement Ratings.

3. Send Submittal
Click when updates are completed for the entire municipality. Three pop-up messages will appear prompting you to validate that your worksheet was filled out correctly. If your worksheet contains any errors, select Show Error Messages: and make any necessary changes—then resubmit. You will receive an e-mail confirmation that your submittal was received.

4. Print/Download Spreadsheet
Click to print or save a copy of your submittal to keep for your records

5. Close
Click to close the Web-WISLR Pavement Rating Entry Screen after you have saved your updates and sent your submittal.
3.2 Updating Options

NOTE: The following updating options are available for you to use for your convenience and discretion.

Update Options - OFF

Update Options - ON

Update Surface Data: open Surface Type, Surface Year, and Surface Width fields for edits
Update Offset Data: open At Offset and Section Length (use to combine and split segments) fields for edits
Update Local ID: open Local ID field for edits
3.3 Viewing Options

3.3.1 View by Intersection

In the Select Community tier of the screen, you have the option to choose how you would like your road segments to be displayed in the Web-WISLR Pavement Rating Entry Screen and your Spreadsheet Download.

The two (2) viewing options are:

Checked = View by Intersection (default)
- Roads segments will break at all intersections AND where any data change occurs

Unchecked = View by Data Change
- Road segments will break ONLY where a data changes occurs
- By combining “like” road segments, this viewing option displays less total road segments.

View by Intersection ON

Total road segments = 427
Betsy Ln = 2 road segments
Big Timber Trl = 2 road segments

View by Intersection OFF

Total road segments = 265
Betsy Ln = 1 road segment
- All road attributes for Betsy Ln are the same
Big Timber Trl = 2 road segments
- Big Timber Trl breaks where the pavement rating changes
3.3.2 **Expand Worksheet**

You have the option to view and update more road segments per page by selecting the **Expand Worksheet** box.

This feature will expand and nearly double your worksheet area while “hiding” other options in the Pavement Rating Entry Screen. Uncheck the box again to revert back to the original settings.

**Expand Worksheet OFF**

**Expand Worksheet ON**

**OFF (unchecked) = view 10 rows of your data per screen**

**ON (checked) = collapses the top tiers of the screen to show 16 rows per screen**
3.4 WHAT CREATES A PAVEMENT SEGMENT?

A new pavement segment is created in WISLR if any one (1) of these eight (8) attributes change;

- Pavement Rating
- Pavement Year
- Surface Type
- Surface Year
- Surface Width
- Route name
- Local ID
- Functional Class (found on the Administrative tab of the WISLR View Administrative Inventory screen)
3.5 OFFSET AND SECTION LENGTH

- **On Route:** Airport Rd
- **At Route:** Enchanted Valley Rd and Airport Rd
- **View by Intersection checked ON:** Pavement Rating and Surface Type & Width change between intersection which causes two (2) records to display
### 3.6 Use of “Error Notification”

After clicking the SAVE CHANGES button, if your worksheet contains any errors, you will see the notification pictured below. Records containing errors are highlighted in red on your worksheet.

To view a list of all roads containing errors; check the **Show Error Messages:** box

The Error Message includes an error description & the On, At and Towards Route names.
3.7 HOW TO SUBMIT

STEP 1: Click often to save your changes throughout the updating process. We recommend that you save your edits at the end of every page.

STEP 2: Click when you have completed making updates for the entire municipality. Three pop-up messages will appear prompting you to validate that your worksheet was filled out correctly and completely. If your worksheet contains any errors, click Show Error Messages and make any necessary changes—then resubmit. Both WisDOT and you will receive an e-mail confirmation that your submittal was received.
4. **Electronic and Paper Submittal Option**

4.1 **Spreadsheet Download**

In 2013 WisDOT discontinued mailing out paper spreadsheets. We will continue to accept paper spreadsheets as a submittal option.

If you prefer to submit your Pavement Ratings by paper you can print a copy of your spreadsheet and the instructions from the Web-WISLR Pavement Rating Screen.

- From the *WISLR Main Menu* select the link *Web-WISLR Pavement Rating Entry Screen*
- Click **Print/Download Spreadsheet**
- Adjust the page set-up before printing
  - Change the **paper size** to legal
  - Change the **page orientation** to landscape

**Requirements to Print/Download:**
- MS Excel (2000 / higher)
- Adobe Acrobat Reader
- Printer with legal size (8 ½ x 14") paper

**TIP:** Print a paper copy of your pavement rating spreadsheet for field use before entering your ratings online and print a copy for your records after submitting your ratings.
4.1 SPREADSHEET DOWNLOAD – CONT

Spreadsheet Instructions

- Column D contains the current Pavement Rated for each segment.
- Fill in the yellow columns with your new ratings and year.

4.2 USE OF “AT/TOWARD MUNICIPAL LOCATION COLUMN”

On the Pavement Rating spreadsheet columns J and M may include a 5-digit county/municipal code. This feature should be used to make it easier for you to locate the starting and ending points of county highways and borderline roads.

In the example above, 10 is the two-digit county code for Clark County and 042 is the three-digit municipal code for the Town of Pine Valley.

NOTE: The “At/Toward Municipal” columns are not on the PR Entry Screen.
4.3 USE OF “MISSING DATA”

Fill in columns A and B with new pavement rating / year

If column D is blank, either the previously submitted rating is incompatible with the current surface type (rsm) OR no rating data is available.

If column E, F or G contain a n/a, there is no surface data available. Fill in any missing or incorrect data with the current data.

4.4 HOW TO SUBMIT

Email electronic submittal to:
ratingsubmittal@dot.wi.gov

Mail paper spreadsheet submittal to:
Wisconsin Department of Transportation
WISLR Pavement Rating Coordinator
4802 Sheboygan Ave, Room 933
P.O. Box 7913
Madison, WI 53707-7913
5. PAVEMENT RATING TIPS

5.1 USE OF “ROUTE NAME EXTENSIONS”

An extension number after a route name is used to distinguish one route from another with the same name (i.e., a road that branches off creating a “Y” route).

Web-WISLR Pavement Rating Entry Screen

<table>
<thead>
<tr>
<th>New Pavement Rating</th>
<th>New Rating Year</th>
<th>Current Rating Year</th>
<th>Surface Type</th>
<th>Surface Year</th>
<th>Surface Width</th>
<th>On Route</th>
<th>At Route</th>
<th>At Offset</th>
<th>Toward Route</th>
<th>Section Length</th>
<th>Local ID</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2015</td>
<td>10 (2013)</td>
<td>65</td>
<td>2011</td>
<td>20</td>
<td>Bass Lake Ct</td>
<td>Bass Lake Rd (2)</td>
<td>0</td>
<td>Terminal Bass Lake Ct</td>
<td>686</td>
<td>26-10</td>
</tr>
<tr>
<td></td>
<td>2015</td>
<td>0 (2013)</td>
<td>65</td>
<td>1993</td>
<td>22</td>
<td>Bass Lake Rd (1)</td>
<td>Bass Lake Rd (3)</td>
<td>0</td>
<td>CTH A</td>
<td>264</td>
<td>59-10</td>
</tr>
<tr>
<td></td>
<td>2015</td>
<td>6 (2013)</td>
<td>65</td>
<td>1993</td>
<td>22</td>
<td>Bass Lake Rd (2)</td>
<td>CTH A</td>
<td>0</td>
<td>Bass Lake Rd (1)</td>
<td>317</td>
<td>59-10</td>
</tr>
<tr>
<td></td>
<td>2015</td>
<td>6 (2013)</td>
<td>65</td>
<td>1993</td>
<td>22</td>
<td>Bass Lake Rd (2)</td>
<td>Bass Lake Rd (1)</td>
<td>0</td>
<td>Bass Lake Ct / Bass Lake Rd</td>
<td>2425</td>
<td>59-10</td>
</tr>
</tbody>
</table>

Web-WISLR Mapping Tool
5.2 USE OF “MORE THAN ONE ROUTE NAME”

To help identify the location of a road segment, the At Route and Toward Route fields may include more than one route name. The additional route names listed indicate that more than one road or highway intersect at that point. Each route name should be considered correct and either name can be used when locating a route section.

**Web-WISLR Pavement Rating Spreadsheet**

![Web-WISLR Pavement Rating Spreadsheet]

**Web-WISLR Pavement Rating Entry Screen**

![Web-WISLR Pavement Rating Entry Screen]

**Web-WISLR Mapping Tool**

![Web-WISLR Mapping Tool]
SUMMARY & CONTACT INFORMATION

✔ Pavement Rating cycle and key dates
  ☑ Pavement ratings are due to WisDOT December 15 of every odd numbered calendar year

✔ How to navigate to Web-WISLR
  ☑ https://trust.dot.state.wi.us/wislr/NavigationDispatch
  ☑ Main Menu
  ☑ Web-WISLR Pavement Rating Entry Screen

✔ How to update and submit your pavement ratings to WisDOT
  ☑ Online
  ☑ Electronic
  ☑ Paper

PVEMENT RATING CONTACT INFORMATION

EMAIL: DOWNLOADINFO@DOT.WI.GOV

HELPLINE: (608) 266-7139
  1. NAME
  2. COUNTY / MUNICIPALITY
  3. PHONE NUMBER WHERE YOU CAN BE REACHED
  4. BRIEF DESCRIPTION OF CONCERN / QUESTION
HOW TO DISABLE POP-UP BLOCKERS

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**Internet Explorer for PC**

1. Open Internet Explorer
2. From the “Menu bar” click **Tools**
   a. If the “Menu bar” is not active click the ALT key on your keyboard to display
3. Click **Pop-up Blocker**
   a. Click **Turn Off Pop-Up Blocker**
Edge for PC

1. Open Edge
2. Click the More actions button (3 dots) in the upper right hand corner
3. Click Settings
4. Scroll down to the “Advanced settings” section and click View Advance Settings
5. Slide the **Block pop-ups** toggle to off
Firefox for PC

1. Open Firefox

2. Click the **Menu** button (3 bars) in the upper right hand corner

3. Click **Options**
4. From the left side navigation pane, click **Content**.  
   a. Under the “Pop-ups” section uncheck **Block pop-up windows**
Firefox for Mac

1. Open Firefox
2. Click the **Firefox menu** in the top left hand corner
   a. Click **Preferences**.

3. Click the **Contents** tab.
   a. Uncheck **Block pop-up windows**.
Chrome for PC

1. Open Chrome
2. In the top right corner click More (3 dots). Click Settings.

3. Scroll down and click Advanced
   a. Under “Privacy and security” click Content settings
4. Click **Popups**

![Content settings image]

4. Click **Popups**

5. Click **Blocked (recommended)** to allow pop-ups

![Popups settings image]
Chrome for Mac

1. Open Chrome

2. Click the **Chrome menu** in the top left hand corner
   a. Click **Preferences**.

3. Click the **Under the Hood** section.
   a. Under “Privacy” click the **Content settings…** button.

4. From the left side navigation pane click **Pop-ups**
   a. Click **Allow all sites to show pop-ups**.
**Safari for PC**

1. Open Safari

2. Click the **Settings** button (gear icon) in the upper right hand corner of your browser

3. Uncheck the option **Block Pop-Up Windows**
How to Disable Pop-Up Blockers

**Safari for Mac**

1. Open Safari

2. Click the **Safari menu** in the top left hand corner
   a. Click **Preferences**.

3. Click **Security**
   a. Under “Web content:” uncheck **Block pop-up windows**.
WISLR
pavement Analysis Tool
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1.0 INTRODUCTION TO THE WISLR PAVEMENT ANALYSIS TOOL

TOOL PURPOSE:

Managing pavement systems has become an ever-increasing challenge as cost increases continue to exceed revenue increases. Therefore, the importance of making cost-effective pavement maintenance and improvement decisions has likely never been greater. To assist local governments with the very important task of pavement management, the Wisconsin Department of Transportation, with the assistance of the University of Wisconsin Transportation Information Center, has developed a pavement management tool that is offered through the Wisconsin Information System for Local Roads (WISLR) database.

The WISLR Pavement Analysis Tool is designed to assist local government with development of cost-effective pavement maintenance and improvement programs. The tool provides location specific estimates of pavement needs that are prioritized and placed within a 5-Year budget plan. The initial set of projects is a reasonable starting point for developing a cost-effective pavement budget plan. This starting point is derived from a value-based algorithm that attempts to maximize pavement service life at a low cost. Local government users can go beyond this starting point to create an actual budget plan by modifying the initial plan to incorporate user-assigned: project scope, project cost, and year of action.

Additionally, the tool contains a mechanism to measure effectiveness of a budget plan by providing an assessment of system pavement condition before and after the plan’s proposed improvements, along with an estimate of the unmet backlog of needs associated with that budget. The budget plan impact assessment shows tradeoffs associated with various budget levels, and it is a useful tool for substantiating pavement budget needs.

WHAT TO EXPECT FROM THIS USER GUIDE:

This user guide is intended to provide an efficient and friendly review of:

◊ What information the WISLR Pavement Analysis Tool provides
◊ How the tool works (i.e. how the calculations are derived)
◊ Suggestions for responsible and efficient tool use
IMPORTANT INFORMATION ABOUT WISLR DATA:

It is important to note that the WISLR Pavement Analysis Tool uses many inventory data items contained in the WISLR database. For example, the tool uses information such as roadway:

◊ Pavement Length and width  
◊ Pavement type  
◊ Pavement age  
◊ Pavement condition rating  
◊ Shoulder type, length, and width  
◊ Functional class

The WISLR database has evolved over more than a 30-year period through local government data submittals (e.g. construction report forms) and through WisDOT inventory field reviews. While there is much confidence in the overall integrity of the database, please keep in mind that only a small portion of data has been verified through audit. As a result, WisDOT expressly disclaims all liability regarding fitness of use of the information for other than official WisDOT business. Fortunately, local governments can edit WISLR physical inventory data in the event that data is inaccurate.

So, if you are going to use the tool, there is an incentive to update and maintain the WISLR physical inventory data for your city, village, town, or county. The more accurate the information, the more accurate the results provided from the pavement tool.

CONTACT INFORMATION

For Editing Privileges, Please Refer to the Section Titled “WISLR 101” or Contact the WISLR Hotline:

Leave message: (608) 266-2865

1. Name  
2. County / Municipality  
3. Phone Number where you can be reached  
4. Brief description of concern / question  

wislrinfo@dot.wi.gov
TERMINOLOGY & ABBREVIATIONS USED IN THIS SECTION:

WisDOT: Wisconsin Department of Transportation

UWTIC: University of Wisconsin Transportation Information Center

WISLR: The Wisconsin Information System for Local Roads Database

Tool: WISLR Pavement Analysis Tool

Pavement Tool: WISLR Pavement Analysis Tool

PA: Pavement Analysis (WISLR Pavement Analysis)

Pavement Analysis Menu: Pavement Needs Analysis Configuration Menu

✅: Reports identified with this symbol will be emphasized in this guidebook.

Responsible Use Tip
This document contains “Responsible Use Tips”, which are suggestions for efficient and responsible use of WISLR Pavement Analysis data. All Responsible Use Tips will be in a blue box for ease of recognition. Also, all tips will be introduced with the “idea figure” (shown to the left).
**BROWSER COMPATIBILITY**

**Internet Explorer 11 and Edge browser users**

Mapping in the Pavement Analysis Tool does not work properly in Internet Explorer 11 and Edge internet browsers. Follow the instructions below for opening Internet Explorer 10 in these browsers.

1. **Edge Browser**
   - Click on the dots on the upper right hand corner of the screen.
   - When the drop down menu appears, select “Open with Internet Explorer”.

Proceed to the Pavement Analysis Tool.
Internet Explorer 11

Click on the gear in the upper right hand corner of your browser window.

In the drop down menu, select *Compatibility View Settings*

Add the website listed in the “Add this website:” box by clicking the *Add* button. Click the *Close* button to exit the Compatibility View Settings popup window.

Proceed to the Pavement Analysis Tool.
2.0 WISLR PAVEMENT MANAGEMENT MODEL

Pavement management is a systematic process that uses roadway data to facilitate development of cost-effective maintenance and improvement programs. The WISLR Pavement Analysis 5-Year Budget Plan Tool takes a “value-based” approach to pavement management. The objective of this approach is to get more value (cost-effectiveness) from improvement expenditures by:

◊ Getting more pavement life at a lower cost
◊ Improving ride quality

Accomplishing this objective requires selecting the right projects and applying the right fix at the right time. The graph below is used to demonstrate a primary factor used for initial project selection (prioritization) by the WISLR 5-Year Budget Plan.

Typical Pavement Condition Life Cycle

WISLR prioritization emphasizes treating pavements in the region of opportunity (💥) because pavements in this condition range can typically be maintained at a much lower cost per year of service life extension. However, recognizing that the most important roads in poor to failed condition can’t be ignored, the WISLR model also places priority on roadway classification. The combined effect of this dual-priority approach is intended to select projects based on both cost-effectiveness and importance to overall system function.

This approach is only intended to provide a reasonable starting point for programming within a constrained budget. Ultimately, project selection will need to incorporate other important factors not included in the WISLR data such as: safety, utilities, roughness, construction considerations, etc.

The intent of the WISLR Pavement Analysis Tool is to provide abundant pavement condition and budget impact information in order to aid in project selection and in order to help substantiate budget levels.
3.0 NAVIGATING TO THE PA MENU

This section assumes that you have established access privileges to WISLR and WISLR Pavement Analysis. If you do not have access privileges, the “WISLR 101” section provides details on how to establish these privileges.

The Welcome to WISLR Page

The figure below shows the opening screen after logging on to WISLR.

- After reading the disclaimer and background information, click Continue to proceed toward the WISLR Home Page

WISLR Home Page

Once you have logged on to the WISLR Web site, the WISLR Select County/Municipality Home Page is displayed.

To begin working within WISLR, first choose a specific county/municipality. This can be accomplished one of three ways:

1. Drop-down List Boxes
2. County/Muni Code Box
3. State Map

- Then click continue to proceed to the WISLR Main Menu
3.0 NAVIGATING TO THE PA MENU

WISLR Main Menu

The preceding sequence of actions will bring you to the WISLR Main Menu for the municipality of choice as shown in the following figure.

- At the WISLR Main Menu, select **Pavement Analysis** to proceed toward the Pavement Analysis Menu

After clicking **Pavement Analysis** at the WISLR Main Menu, the following WISLR Pavement Analysis screen appears

- Click **Continue** to proceed to the Pavement Analysis Menu
4.0 PAVEMENT ANALYSIS TOOL REVIEW

PAVEMENT ANALYSIS MENU

This section provides a review of tool functionality. The section starts by showing how to initialize the Cost Worksheet, followed by a review of what information is provided by the tools and how to obtain that information.

The Pavement Needs Analysis Configuration menu is shown below. This User Guide will review the functionality of each menu item.

Reports identified with the symbol ▶ will be emphasized in this guidebook
4.1 INITIALIZE COST WORKSHEET

LOAD COST DATA - FIRST TIME USE

You’ll need to load unit cost data prior to running Pavement Analysis reports for the first time in your municipality. This section shows how to initialize (load) your Cost Worksheet with unit cost data.

At the Pavement Needs Analysis Configuration menu, begin the process of loading your cost data by clicking “Cost Worksheet” as shown below.

- Click Cost Worksheet

After clicking “Cost Worksheet”, the following screen appears. Follow the instructions.

The WISLR default costs are loaded into your cost worksheet. You can change these costs to meet your needs, but we will cover how to do that in Chapter 5.

- Click Save Custom Costs to save the WisDOT “default”
4.1 INITIALIZE COST WORKSHEET

LOAD COST DATA - FIRST TIME USE (CONT.)

Once saved, you will see this message at the top left of your screen to let you know your data is now saved and you are ready to run your reports.

- Now click Close to return to the Pavement Analysis Menu with the cost table loaded and we’re ready to go.

IF YOU FORGOT TO LOAD COST DATA

If you clicked “Create Report” prior to loading cost data, the following screen will appear:

- After selecting Click here to close this window, you’ll return to the Pavement Analysis Menu. At this point, follow the instructions on page 10.
4.2 RUDIMENTARY NEEDS ANALYSIS

RUNNING THE REPORT

The Rudimentary Needs Analysis report provides an estimate of all pavement need as indicated by existing pavement ratings (unconstrained needs analysis). Once you have cost data loaded, Rudimentary Needs Analysis will launch directly from the Pavement Analysis Menu.

The following figure shows how to produce a Rudimentary Needs Analysis Report.

- Click the Rudimentary Needs Analysis radio button
- Click Create Report to generate the Rudimentary Needs Analysis Report
4.2 RUDIMENTARY NEEDS ANALYSIS

RUNNING THE REPORT (CONT.)

A Rudimentary Needs Analysis report is shown below. Please recall that the Rudimentary Needs Analysis report provides an estimate of all pavement need as indicated by existing pavement ratings (unconstrained needs analysis).

The “green” column in the chart below represents the estimate of capital improvement need, which is $431,601, and the “yellow” column in the chart below represents the estimate of maintenance need, which is $126,534. The “white” columns adjacent to the capital and maintenance columns, represent the roadway miles associated with those need estimates. For this example, 7.09 miles are associated with the $431,601 estimate of capital need, and 12.86 miles are associated with the $126,534 estimate of maintenance need.

**The information shown is based on actual data. Pavement Sections without actual rating data were not included in this analysis. There are 43.69 miles of rated roadways and 2.35 miles of unrated roadways. Please note that mileage listed with the graph shown above is the portion of the rated roadway miles indicating need (designated as capital or maintenance).**
4.2 RUDIMENTARY NEEDS ANALYSIS

RUNNING THE REPORT (CONT.)

Rudimentary Needs Analysis – Assessing the Accuracy of Need Estimates

The disclaimer information listed below the report chart (see below) provides information that is helpful in assessing the accuracy of the report estimates. Keep in mind that this report generates need estimates based on existing, or current, pavement ratings. Not included in the need estimates are roads without pavement ratings and roads where there are pavement rating data discrepancies. So, two of the items listed in the disclaimer information become important for assessing the accuracy of the estimates:

1. The age of rating data/data accuracy – assess the percentage of needs associated with rating data greater than 2-years old. Paser ratings greater than 2-years old are potentially unreliable. In this example, 100% of the need estimates are tied to 1-year old rating data; hence, these ratings should still be reasonably representative of pavement conditions. It is assumed, of course, that the pavement rating data was an accurate description of pavement condition at the time of the rating, as defined in the PASER rating manuals produced by UWTIC. Accurate pavement ratings are the foundation of a credible needs analysis.

2. The percent of pavement system included in the need estimates.
   a. Total miles = 46.03 = miles rated (43.68) + miles without ratings (2.35)
   b. % of system included in estimate = % of system rated = 43.68/46.03 = 95%
      i. No estimates for 5% of system
      ii. Consider loading rating data where none exists, and then rerun the analysis

**The information shown is based on actual data. Pavement Sections without actual rating data were not included in this analysis. There are 43.68 miles of rated roadways and 2.35 miles of unrated roadways. Please note that mileage listed with the graph shown above is the portion of the rated roadway miles indicating need (designated as capital or maintenance).**

NOTE: LET’S NOT FORGET THAT THE UNIT COST OF REPAIR ASSOCIATED WITH THE PAVEMENT RATINGS IS ALSO A CRITICAL FACTOR IN THE ACCURACY OF NEED ESTIMATES. WE’LL COVER THIS LATER IN CHAPTER 5.
4.2 RUDIMENTARY NEEDS ANALYSIS

GRAPH BUTTON FUNCTIONS

- These three buttons can be found below the Rudimentary Needs Analysis graph.

- Click the Roadway List button to produce a report that lists the roads with capital and/or maintenance needs. A roadway list is shown here.

<table>
<thead>
<tr>
<th>Roadway Name</th>
<th>Maint. Cost</th>
<th>Capital Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bass Lake Ct</td>
<td>0.00</td>
<td>7545.50</td>
</tr>
<tr>
<td>Bass Lake Rd</td>
<td>470.31</td>
<td>0.00</td>
</tr>
<tr>
<td>Island Lake Rd</td>
<td>4726.87</td>
<td>0.00</td>
</tr>
<tr>
<td>Bigfoot Rd</td>
<td>6.68</td>
<td>58764.16</td>
</tr>
<tr>
<td>Center Rd</td>
<td>7147.83</td>
<td>73987.32</td>
</tr>
<tr>
<td>Dells Rd</td>
<td>10594.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Door Point Dr</td>
<td>677.60</td>
<td>0.00</td>
</tr>
<tr>
<td>Fravel Rd</td>
<td>2096.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Grouse Haven Rd</td>
<td>1756.11</td>
<td>0.00</td>
</tr>
<tr>
<td>Hills Rd</td>
<td>1006.19</td>
<td>0.00</td>
</tr>
<tr>
<td>Hill Rd</td>
<td>3842.46</td>
<td>0.00</td>
</tr>
<tr>
<td>Chilkoot Rd</td>
<td>6372.16</td>
<td>0.00</td>
</tr>
<tr>
<td>Chilkoot Dr</td>
<td>561.12</td>
<td>0.00</td>
</tr>
<tr>
<td>Chinook Rd</td>
<td>6432.11</td>
<td>0.00</td>
</tr>
<tr>
<td>Cold Spring Rd</td>
<td>27196.12</td>
<td>157211.82</td>
</tr>
<tr>
<td>Hubbard Camp</td>
<td>12785.88</td>
<td>0.00</td>
</tr>
<tr>
<td>Shady Willow Rd</td>
<td>4210.81</td>
<td>0.00</td>
</tr>
<tr>
<td>Park Fulton Rd</td>
<td>6981.14</td>
<td>0.00</td>
</tr>
<tr>
<td>Quilcene Rd</td>
<td>6096.12</td>
<td>0.00</td>
</tr>
<tr>
<td>Union Dunes Rd</td>
<td>7078.14</td>
<td>0.00</td>
</tr>
<tr>
<td>Vista Rd</td>
<td>390.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Longford Rd</td>
<td>0.00</td>
<td>520286.70</td>
</tr>
<tr>
<td>Total</td>
<td>125634.21</td>
<td>401609.16</td>
</tr>
</tbody>
</table>
4.2 RUDIMENTARY NEEDS ANALYSIS

GRAPH BUTTON FUNCTIONS (CONT.)

- Click the **Show Map** button to produce a map showing roads with capital and/or maintenance needs (example shown).

- Click the **Legend** tab to display the legend. Notice the colors associated with the capital and maintenance needs.

- To return to the Pavement Analysis reports, click the **Close Map** button located in the upper right portion of the map.

**NOTE:** Be patient, it may take a little while to load the maps.

- Click the **Open Printable Version** button to produce a graphic formatted to print on 8.5”X11” paper (no example).
4.3 RUDIMENTARY NEEDS ANALYSIS BY PAVEMENT TYPE

RUNNING THE REPORT

This report shows the amount of capital and maintenance need associated with each pavement type in a given municipality. The number of miles associated with this need is also listed.

Rudimentary Needs Analysis by Pavement Type
The report information might provide insight about the performance of a particular pavement type. For example, does a certain pavement type have capital or maintenance needs that are atypical with respect to other pavement types? Can the differences be explained?

The following figure shows how to produce the Rudimentary Needs Analysis by Pavement Type Report.

- Click the Rudimentary Needs Analysis by Pavement Type radio button

- Click the Create Report button to generate the Rudimentary Needs Analysis by Pavement Type Report
4.3 RUDIMENTARY NEEDS ANALYSIS BY PAVEMENT TYPE

RUNNING THE REPORT & REPORT FUNCTIONS

The report results are shown below

- Click the **Show Map** button to generate a map of the roads associated with the preceding graphic.

- Click the **Open Printable Version** button to open a printable version of the report formatted for printing on 8.5”X11” paper.

*Note: The information shown is based on actual data. Pavement Sections without actual rating data were not included in this analysis. There are 77.65 miles of rural roadway and 96.66 miles of urban roadway. Please note that mileage listed with the graph shown above is the portion of the total roadway miles indicated to need rehabilitation as capital or maintenance.*
4.3 RUDIMENTARY NEEDS ANALYSIS BY PAVEMENT TYPE

MAP FUNCTIONS

The map results are shown below

- Click the Legend tab to display the legend. Notice the legend showing the colors associated with Pavement Type
- To return to the Pavement Analysis reports, click the Close Map button located in the upper right portion of the map
4.4 RUDIMENTARY NEEDS ANALYSIS BY FUNCTIONAL CLASS

RUNNING THE REPORT

This report shows the amount of capital and maintenance need associated with each functional classification present in a given municipality. The number of miles associated with this need is also listed.

Rudimentary Needs Analysis by Functional Class
The report information may provide insight about the performance of pavement within a specific functional class. For example, does the need associated with a particular functional classification make sense given the number of miles and age of pavement within that class?

The following figure shows how to produce the Rudimentary Needs Analysis by Functional Class Report.

- Click the Rudimentary Needs Analysis by Functional Class radio button
- Click the Create Report button to generate the Rudimentary Needs Analysis by Functional Class report
4.4 RUDIMENTARY NEEDS ANALYSIS BY FUNCTIONAL CLASS

RUNNING THE REPORT & REPORT FUNCTIONS

The report results are here.

- Click the **Show Map** button to generate a map of the roads associated with the preceding graphic.

- Click the **Open Printable Version** button to open a printable version of the report formatted for printing on 8.5”X11” paper.
4.4 RUDIMENTARY NEEDS ANALYSIS BY FUNCTIONAL CLASS

MAP FUNCTIONS

The Map results are shown below

- Click the **Legend** tab to display the legend. Notice the legend showing the colors associated with functional class.

- To return to the Pavement Analysis reports, click the **Close Map** button located in the upper right portion of the map.
4.5 CONDITION FREQUENCY REPORT

RUNNING THE STANDARD REPORT

The Condition Frequency Report provides valuable summary information about the condition of pavement in your municipality. Basically, the standard (default) report shows the percentage of your pavement that is in failed, poor, fair, good, and excellent condition.

The following figure shows how to produce a Condition Frequency Report.

- Click the Condition Frequency Report radio button
- Click Create Report to generate the Condition Frequency Report
4.5 CONDITION FREQUENCY REPORT

RUNNING THE REPORT & REPORT FUNCTIONS

The figure below is the Condition Frequency Report. Notice that separate charts are produced for paved and unpaved roads.

- Click the Show Map button to generate a map of the roads associated with the preceding graphic.

- Click the Open Printable Version button to open a printable version of the report formatted for printing on 8.5”X11” paper.

**Important Information:**

- The information shown is based on actual data. Pavement Sections without actual rating data were not included in this analysis.
4.5 CONDITION FREQUENCY REPORT

MAP FUNCTIONS

The Map results are shown below

- Click the Legend tab to display the legend. Notice the legend showing the colors associated with pavement conditions.

- To return to the Pavement Analysis reports, click the Close Map button located in the upper right portion of the map.
4.5 CONDITION FREQUENCY REPORT

CUSTOMIZE YOUR CONDITION FREQUENCY REPORT

If you wish to have data displayed differently than the standard (default) report, you can choose how you want the pavement condition data reported. By selecting the range of conditions to be reported in each of the 5 series options, you can tailor how you want your condition data displayed.

The following figure shows how to customize the Condition Frequency report.

- You can modify how you want the condition data reported. Use the mouse to change the standard condition ranges to those you are interested in.
- Click **Create Report** to produce the results.
4.5 CONDITION FREQUENCY REPORT

CUSTOMIZE YOUR CONDITION FREQUENCY REPORT (CONT.)

Results from the modified Condition Frequency Report are shown below.

**The information shown is based on actual data. Pavement Sections without actual rating data were not included in this analysis.**
4.5 CONDITION FREQUENCY REPORT

CUSTOMIZE YOUR CONDITION FREQUENCY REPORT (CONT.)

Condition Frequency Report - Customizing your Condition Frequency Report

It might be helpful to query pavement condition information in an order that is congruent with WISLR’s pavement analysis model. For example, for asphalt pavement roads, Pavement Analysis applies the following actions with the given pavement ratings:

<table>
<thead>
<tr>
<th>Rating</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Reconstruct</td>
</tr>
<tr>
<td>2</td>
<td>Reconstruct</td>
</tr>
<tr>
<td>3</td>
<td>Mill &amp; Overlay</td>
</tr>
<tr>
<td>4</td>
<td>Resurface</td>
</tr>
<tr>
<td>5</td>
<td>Sealcoat w/Patching or Thin Overlay (~ 3/4&quot;)</td>
</tr>
<tr>
<td>6</td>
<td>Single Sealcoat</td>
</tr>
<tr>
<td>7</td>
<td>Crack Sealing</td>
</tr>
<tr>
<td>8</td>
<td>No Action</td>
</tr>
<tr>
<td>9</td>
<td>No Action</td>
</tr>
<tr>
<td>10</td>
<td>No Action</td>
</tr>
</tbody>
</table>

So, let’s modify a Condition Frequency Report to show the percent of rated pavement that corresponds to the action alternatives listed above.

The figure to the right shows how to set up this report.
This is the Customized run for paved roads.

- Click Create Report
4.5 CONDITION FREQUENCY REPORT

CUSTOMIZE YOUR CONDITION FREQUENCY REPORT (CONT.)

The customized report shown below identifies the percent of pavement that would fall within the PA rehabilitation strategies. This type of report offers a convenient way to assess how much of your system requires work, as well as the nature of that work.

![Condition Frequency Report - Paved]

Notice that summing the percentages above indicates that approximately 45% of this system has need. Approximately 15% is capital improvement need and approximately 30% is maintenance need.

By deduction, 55% of the paved roads in this municipality have ratings between 8 and 10.
4.6 AVERAGE RATING BY PAVEMENT TYPE

RUNNING THE REPORT

This report shows the average pavement rating for each pavement type in your municipality.

**Average Rating by Pavement Type**

**USE WITH CAUTION.** This report information is best viewed as a quick, simple measure of how a pavement type might be performing. The caution is because the report offers no insight into the dispersion of data. For example -- the average rating shown on the following page for type 57 pavement is 4.92—this average could be the result of all pavements having a rating of around 5, or it could result from half of the pavements having a rating of 9 while the other half of pavements have a rating of 1. Many other combinations could also yield this average.

The following figure shows how to produce the Average Rating by Pavement Type Report.

- Click the **Average Rating by Pavement Type** radio button
- Click the **Create Report** button for Average Rating by Pavement Type
4.6 AVERAGE RATING BY PAVEMENT TYPE

RUNNING THE REPORT & REPORT FUNCTIONS

Report results are shown below

![Average Rating of Pavement Type](image)

- Click the **Open Printable Version** button to produce a report that is formatted to print on 8.5"X11" paper

---

**The information shown is based on actual data. Pavement Sections without actual rating data were not included in this analysis.**
4.7 AVERAGE RATING BY FUNCTIONAL CLASS

RUNNING THE REPORT

This report shows the average pavement rating for each functional classification existing in your municipality.

Use With Caution. This report information is best viewed as a quick, simple measure of how a specific functional class might be performing. The caution is because the report offers no insight into the dispersion of data. For example -- the average rating in for Urban Arterial functional class pavement is 8.0 (see next page) — this average could be the result of all pavements having a rating of 8, or it could result from half of the pavements having a rating of 10 while the other half of pavements have a rating of 6. Many other combinations could also yield this average.

The figure below shows how to produce the Average Rating by Functional Class Report

- Click the **Average Rating by Functional Class** radio button
- Click the **Create Report** button for Average Rating by Functional Class
4.7 AVERAGE RATING BY FUNCTIONAL CLASS

RUNNING THE REPORT & REPORT FUNCTIONS

Report results are shown below. Notice that “paved” and “unpaved” roads are shown on separate graphs; this is for display scaling purposes due to the different maximum ratings for the categories.

- Click the Open Printable Version button to produce a report that is formatted to print on 8.5”X11” paper
4.8 CREATE NEW 5-YEAR BUDGET PLAN

RUNNING THE REPORT

The following instructions show how to produce a new 5-Year Budget Plan Report.

- Click the Create New Five Year Budget Plan radio button
- Add a budget amount for each year
  In this example, 400000 is added for each year
- Click the Create Report button

**TIP:** To fill all years with the same amount, type in a budget amount for the first year. While holding down the Ctrl key, click on the year 2 budget window.

5-Year Budget Plan

When selecting different budget levels to run in this report (for “what-if” purposes), it might be useful to draw on information provided through the Rudimentary Needs Analysis Report. Recall that Rudimentary Needs Analysis (RNA) provides an estimate of all need as indicated by existing pavement ratings. Therefore, the RNA estimate is the total need used at the beginning of the 5-Year Budget Plan – prior to potential need estimate increases in the 5-Year Plan due to pavement deterioration. That said, the RNA estimate can help establish budget levels that can substantially address pavement needs over a 5-year plan period.

Example: take the RNA estimate and divide it by 6 or 7 to get a trial estimate to use in each year of the 5-Year Plan.
4.8 CREATE NEW 5-YEAR BUDGET PLAN

RUNNING THE REPORT (CONT.)

Results of the 5-Year Budget Plan Report are shown below.
4.8 CREATE NEW 5-YEAR BUDGET PLAN

PRINTABLE SUMMARY FUNCTION

The **Printable Summary** button is located at the bottom of the 5-Year Plan project window. Clicking this button will produce a summary of budget and expenditure information, as well as condition impact graphics associated with the budget plan. The summary is formatted to print on 8.5”X11” paper.

The figure below is a Printable Summary example.

### 5-Year Budget Plan – Printable Summary

The information contained in this summary provides valuable insight into the potential effectiveness of the 5-Year Plan. The “before plan” and “after plan” condition information is intended to provide a measure of the proposed plan’s effectiveness on system condition. Some pertinent questions to ask are: does the plan adequately shift pavement conditions in a direction conducive to more cost-effective future treatment, and does the plan adequately address need backlog? The information provided might prove useful in substantiating one budget plan over another.

<table>
<thead>
<tr>
<th>Plan Year</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annual Budget Constraint</td>
<td>400000</td>
<td>400000</td>
<td>400000</td>
<td>400000</td>
<td>400000</td>
<td>2000000</td>
</tr>
<tr>
<td>Actual Dollars Expended</td>
<td>395920</td>
<td>375762</td>
<td>359490</td>
<td>410299</td>
<td>144833</td>
<td>1714242</td>
</tr>
<tr>
<td>Backlog of Needs Not Addressed in 5-Yr Plan</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

**Surface Type**

<table>
<thead>
<tr>
<th>Paved (56.25 Miles)</th>
<th>Condition before plan</th>
<th>Condition after Plan</th>
<th>Pavement Need &amp; Expenditure Graphic</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Unpaved (522 Miles)</th>
<th>Condition before plan</th>
<th>Condition after Plan</th>
<th>Pavement Need &amp; Expenditure Graphic</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Note:** Information shown is based on actual data. Pavement sections without actual data were not included in this analysis.

There were 36.25 miles of lateral roadways and 9.9 miles of standard roadways.
4.8 CREATE NEW 5-YEAR BUDGET PLAN

SORT BY YEAR FUNCTION

The Sort by Year Buttons

Clicking the Sort by Year buttons will sort projects according to the year in the button. For example, clicking Year 2 will list projects occurring in the second year of the budget plan. Clicking Year 3 will list projects occurring in year 3, and so on. Due to the number of records printed per page, you might have to scroll down the page somewhat to begin viewing the year you selected.

The following figure shows how to sort by plan year, and the result of the Year 2 sort.

- Click the Sort by Year 2 button to produce an alphabetical listing of projects occurring in Year 2

NOTE: There may be several pages of projects per year

You can scroll through projects using these buttons at the top and bottom right of your worksheet:

- Go To Next Page
- Go To Previous Page
4.8 CREATE NEW 5-YEAR BUDGET PLAN

BACKLOG FUNCTION

The Backlog Button

Clicking on the Backlog button produces a list of the projects not included in the 5 year plan. These projects are listed in the Backlog for one of the following reasons:

- They are sections requiring “no-action”
- They are sections with a priority score too low to successfully compete for inclusion in years 1 – 5 (constrained budget).
- No rating data exists for the section
- There is a problem with the rating data such as a mismatch between the surface type in WISLR and the surface type reported with the pavement rating.

NOTE: Hovering the mouse over any year in a Backlog project row will provide information about the backlog project.

In this test case, the backlog calls for crack sealing. The pavement cost is $387 and the shoulder cost is $0.0. The deterioration shows the rating to be “7” in each year on the 5 year plan. The priority score is a 49.96.

The figure below shows the result of a Backlog sort.

- Click the Backlog button to produce an alphabetical listing of projects not included in the 5 year plan
- These projects have no information displayed in years 1 thru 5.
4.8 CREATE NEW 5-YEAR BUDGET PLAN

MAP BY YEAR

The Map by Year Button

Clicking on the Map by Year button produces a map of the 5-Year Budget Plan projects. The map shows projects occurring in years 1 through 5, and it also shows no action projects and projects identified as backlog.

A Map by Year is shown below.

- Click the Legend tab to show the colors associated with the budget plan year
- Click the Close Map button located in the upper right portion on the map to return to the Budget Plan
4.8 CREATE NEW 5-YEAR BUDGET PLAN

MAP BY PROJECT TYPE

The Map by Project Type Button

Clicking on the Map by Project Type button produces a map showing projects identified in the 5-Year Budget Plan. The map delineates projects by type of repair action.

A Map by Project Type is shown below

- Click the Legend tab to show the colors associated with budget plan action type
- Click the Close Map button located in the upper right portion on the map to return to the Budget Plan
4.8 CREATE NEW 5-YEAR BUDGET PLAN

SPREADSHEET DOWNLOAD

The Spreadsheet Download Button

The Spreadsheet Download button produces a spreadsheet of the 5-Yr Budget Plan data. The spreadsheet, is produced in an Excel format, it contains a worksheet for each plan year, including a worksheet for Backlog. For each year, a list of roadway projects is provided with relevant section information and project cost estimates.

Create New 5 Year Budget Plan – Spreadsheet Download Button
For who like working in Excel, the Spreadsheet Download offers an efficient way to leverage project data for each year of the budget plan, including backlog. Not only does the spreadsheet offer a clean and efficient view of data, but Excel tools can be used to operate on the data to augment calculations based on user needs. It is advisable to save a Spreadsheet Download for each budget run. At a minimum, this provides a user-friendly record of the budget plan.

- After clicking the Spreadsheet Download button the following notification will appear

- Click the drop down arrow next to Save and select Save as to designate the specific file destination you would like to save your spreadsheet

  OR

- Click Open to view your spreadsheet
4.8 CREATE NEW 5-YEAR BUDGET PLAN

SPREADSHEET DOWNLOAD (CONT.)

The Spreadsheet Download Button

The following figure is a Spreadsheet Download example.

A worksheet for years 1-5 and the Backlog
4.8 CREATE NEW 5-YEAR BUDGET PLAN

EDITING AND SAVING YOUR BUDGET PLAN – CUSTOMIZING THE PLAN

WISLR allows you to modify, store and retrieve multiple 5-year budget plans. Customizing your budget plan in WISLR allows you to use the WISLR tools to calculate project costs and to assess condition and backlog impact.

Instructions on how to edit your 5-year budget plans are shown below. This is an example of only one type of user modification, but the procedures are applicable to other types of modifications.

- By clicking the **Edit** button, you enable the edit mode

Clicking the **Edit** button opens the data fields for editing

- Clicking the menu arrow displays the various action types available for selection
  - The existing action for the year is highlighted; however, another action type can be selected

**NOTE:** Edit mode enables you to move projects from year to year, change scope, change cost, change PMPC, and change Local ID
4.8 CREATE NEW 5-YEAR BUDGET PLAN

EDITING AND SAVING YOUR BUDGET PLAN – CUSTOMIZING THE PLAN (CONT.)

Example 1 – Move Crack Seal Project in Year 1 to Year 3.

In this example, we’ll move the Air Park Dr Single Sealcoat project from Year 1 to Year 3.

The following figures provide a sequence of instructions on how to move this crack sealing project from Year 1 to Year 3.

- Click the drop down arrow on the existing Year 1 Single Sealcoat to No Action.

- Click the drop down arrow for Year 3 and select Single Sealcoat for this pavement section.

- Once Single Sealcoat is selected, you have the option of entering your own project cost. If you don’t enter one, WISLR will calculate cost based on its unit cost data.

- Click Apply to apply this change to the on-screen budget.

CAUTION: Be sure to save your changes: Your changes are applied on-screen, but not yet saved. See the next page for important instructions on saving your changes.
4.8 CREATE NEW 5-YEAR BUDGET PLAN

EDITING AND SAVING YOUR BUDGET PLAN – CUSTOMIZING THE PLAN (CONT.)

Save This Forecast

The following screen appears after applying your changes (clicking the Apply button). **CAUTION**: these changes are saved in the active (on-screen) program only; this modified plan has not yet been saved for later use. Instructions on how to **Save This Forecast** are shown below so that it can be retrieved for later use.

- Give the forecast a original name and description
- Click **Save This Forecast** to store this modified forecast

Once saved, the following confirmation message appears in the upper left region of the screen.
4.9 RETRIEVING SAVED 5-YEAR BUDGET PLAN

BROWSE SAVED FORECASTS…

Instructions to retrieve a saved 5-Year Budget Plan are shown below.

- Click the **Browse Saved Forecasts** button

- Your stored forecasts are automatically saved with their Created Dates and Last Updated dates. They are listed in order of oldest created date first

- Scroll through the list of stored forecasts and click the forecast you would like to retrieve
5.0 CUSTOMIZING COST DATA

Having accurate unit cost data is integral to the accuracy of the needs analysis estimates. Therefore, WISLR allows the user to change unit cost data to reflect local costs and improvement practices. This section will demonstrate how to edit your unit cost data.

Customize Cost Data

To obtain the most value from Rudimentary Needs Analysis and the 5-Year Budget Plan, it is very important to keep in mind that the Pavement Analysis tool assumes that a reasonable standard of improvement is associated with pavement ratings. For example, the condition impact assessment information provided in the 5-Yr budget plan assumes pavement rating reset values based on the WISLR default improvement activities; therefore, user costs that do not adequately coincide with the complexity of the WISLR default improvement activities may compromise the credibility of the analysis results. Users are encouraged to modify unit costs to reflect "local" prices, but in order to preserve the integrity of the RNA, user costs should reflect actions compatible to the complexity of the WISLR default actions shown below:

<table>
<thead>
<tr>
<th>Asphalt Pavement &amp; Asphalt on Concrete (Composite) Pavement</th>
<th>Associated Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rating</td>
<td>Associated Improvement</td>
</tr>
<tr>
<td>1</td>
<td>Reconstruct</td>
</tr>
<tr>
<td>2</td>
<td>Reconstruct</td>
</tr>
<tr>
<td>3</td>
<td>Mill &amp; Overlay</td>
</tr>
<tr>
<td>4</td>
<td>Resurfacing</td>
</tr>
<tr>
<td>5</td>
<td>Sealcoat With Patching or Thin Overlay (~3/4-inch)</td>
</tr>
<tr>
<td>6</td>
<td>Single Sealcoat</td>
</tr>
<tr>
<td>7</td>
<td>Crack Sealing</td>
</tr>
<tr>
<td>8-10</td>
<td>No Action</td>
</tr>
</tbody>
</table>

Concrete Pavement

<table>
<thead>
<tr>
<th>Concrete Pavement</th>
<th>Associated Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rating</td>
<td>Associated Improvement</td>
</tr>
<tr>
<td>1</td>
<td>Reconstruct</td>
</tr>
<tr>
<td>2</td>
<td>Reconstruct</td>
</tr>
<tr>
<td>3</td>
<td>Crack &amp; Seat + HMAC Overlay or Full Depth Repair &amp; Slab Replacement on ~50% of Surface</td>
</tr>
<tr>
<td>4</td>
<td>HMAC Overlay With Patching &amp; Partial Depth Joint Repair or Full Depth Repair on ~25% of Surface</td>
</tr>
<tr>
<td>5</td>
<td>Patching &amp; Joint Repair (partial depth)</td>
</tr>
<tr>
<td>6</td>
<td>Patching, Crack Sealing, Joint Sealing</td>
</tr>
<tr>
<td>7</td>
<td>Joint Sealing</td>
</tr>
<tr>
<td>8-10</td>
<td>No Action</td>
</tr>
</tbody>
</table>

Brick & Block Pavement

<table>
<thead>
<tr>
<th>Brick &amp; Block Pavement</th>
<th>Associated Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rating</td>
<td>Associated Improvement</td>
</tr>
<tr>
<td>1</td>
<td>Reconstruct</td>
</tr>
<tr>
<td>2</td>
<td>Spot Repair</td>
</tr>
<tr>
<td>3-4</td>
<td>No Action</td>
</tr>
</tbody>
</table>

Sealcoat Pavement (sealcoat on stone base)

<table>
<thead>
<tr>
<th>Sealcoat Pavement (sealcoat on stone base)</th>
<th>Associated Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rating</td>
<td>Associated Improvement</td>
</tr>
<tr>
<td>1</td>
<td>Reconstruct: Double Seal on 6-inch Stone Base</td>
</tr>
<tr>
<td>2</td>
<td>Wedge/Patch &amp; Sealcoat</td>
</tr>
<tr>
<td>3</td>
<td>Sealcoat</td>
</tr>
<tr>
<td>4-5</td>
<td>No Action</td>
</tr>
</tbody>
</table>

Gravel Pavement

<table>
<thead>
<tr>
<th>Gravel Pavement</th>
<th>Associated Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rating</td>
<td>Associated Improvement</td>
</tr>
<tr>
<td>1</td>
<td>Add Stone &amp; Regrade + Ditch Work</td>
</tr>
<tr>
<td>2</td>
<td>Add Stone &amp; Regrade</td>
</tr>
<tr>
<td>3-5</td>
<td>No Action</td>
</tr>
</tbody>
</table>

Earthen Pavement

<table>
<thead>
<tr>
<th>Earthen Pavement</th>
<th>Associated Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rating</td>
<td>Associated Improvement</td>
</tr>
<tr>
<td>1</td>
<td>Reconstruct: Excavate &amp; Reshape</td>
</tr>
<tr>
<td>2</td>
<td>Grading</td>
</tr>
<tr>
<td>3</td>
<td>Routine Maintenance &amp; Spot Grading</td>
</tr>
<tr>
<td>4</td>
<td>No Action</td>
</tr>
</tbody>
</table>
5.1 GAINING ACCESS TO UNIT COST DATA

Cost Worksheet

The following figure shows how to gain access to the cost data.

- Click the Cost Worksheet button to access unit cost information

The initial Cost Worksheet screen is shown below

NOTE: That a unit cost ($/sq.yd.) for both pavement and shoulder improvement is provided for each possible pavement rating associated with the given pavement type and functional class.
5.1 GAINING ACCESS TO UNIT COST DATA (CONT.)

**TIP:** Pavement ratings with unit costs originally loaded with $0.0 for pavement unit costs are considered “No Action” alternatives by WISLR Pavement Analysis. Therefore, these costs cannot be modified by the user. However, using the 5-Year Budget Tool, a user can change a “No Action” project into an actual project with an assigned cost.

Gaining Access to Unit Cost Data

Please note that for each pavement type, there are 6 functional classifications associated with each pavement rating. So, be sure to modify costs for pavement types and pavement ratings in each functional classification. Editing suggestions will be presented later in this chapter.

Be sure to update your cost data for each of the 6 roadway classifications. Editing suggestion will be presented later in this chapter.

The 6 functional class types are shown below
5.2 MODIFYING UNIT COST DATA

HOW TO CHANGE COST & SAVE

Save Custom Costs

Using the mouse, highlight the cost that you want to change.

Once highlighted, change cost to desired amount.
   - Example $28.50

Then click **Save Custom Costs**

Once saved, the following confirmation message appears in the upper left region of the screen.
5.3 MODIFYING UNIT COST DATA

METHODS TO SELECT PAVEMENT TYPE & CLASS

The methods to access cost data specific to a given pavement (surface) type and functional classification are shown below. These methods are suggested as efficient ways to modify your cost table data.

Method 1 – Select Cost Data for a Specific Pavement Type & Functional Class

- To select cost data for a specific pavement (surface) type and classification, choose the combination you want from the menus for Surface Type and Functional Class.

In this Example, Concrete is selected as the surface type and Urban Arterial is selected as the Classification.

- Once the Surface (pavement) type and Class are chosen, click Update to obtain the data for this selection.

- This screen displays the retrieved cost information for Urban Arterial Concrete pavement. This data is available for review and editing.

Always SAVE your changes

- Click Save Custom Costs to save your new selection.
5.3 MODIFYING UNIT COST DATA

METHODS TO SELECT PAVEMENT TYPE & CLASS (CONT.)

Method 2 – Use the “Go to Next Page” Button to Scroll Thought Cost Table

- Clicking the **Go to Next Page** button is a convenient way to page through the cost data. Clicking this button lists the next 10 records in the cost table (see the following figure).

- You can page through the records and edit data as you go. Always be sure to SAVE your changes.

- After clicking **Go to Next Page**, notice that the next ten records appear. In this case, they are the unit cost data for asphalt pavement with an Urban Collector functional class.

- Using the mouse, highlight records that you want changed; then type in the updated cost.

- Save your changes using the **Save Custom Costs** button.
5.4 CUSTOMIZING COST DATA

OTHER BUTTON FUNCTIONS

The **Revert to Saved Custom Costs** button disregards all changes subsequent to your last save. So, if you don’t want to keep the changes you’ve recently typed in, you can use this button to restore the costs that were present at the time of your previous save.

The **Load DOT Default Costs** button loads the default WisDOT cost worksheet. So, if you don’t want to keep the changes you’ve recently typed in, you can use this button to restore the WisDOT defaults.

The **Export To Spreadsheet** button exports all cost data to a file that can be saved as an Excel Spreadsheet. This spreadsheet provides a useful record of unit cost data; it is also a useful tool for cost data quality control review. The figure at the bottom of the page is a product of the Export to Spreadsheet button.

The **Close** button closes the Cost Worksheet and returns you to the Pavement Analysis Menu.

The following figure shows the product of the **Export** button.

![Export Button Product](image)
6.0 HOW THE WISLR PAVEMENT TOOLS WORK

RUDIMENTARY NEEDS ANALYSIS

How It Works

The Rudimentary Needs Analysis report provides an estimate of all pavement need as indicated by existing pavement ratings (unconstrained needs analysis).

The total cost estimates in this report are developed by summing the costs associated with each pavement rating section. A rating section is a contiguous pavement area having the same pavement type, construction year, and condition rating. The cost calculation for each section is the result of summing the cost of repair for pavement and shoulders. Of course, “No Action” alternatives have zero cost.

Here's how it works:

\[
\text{Section Cost} = \text{Pavement Cost} + \text{Shoulder Cost}
\]

Cost = Area in square yards X Unit Cost per square yard
Cost = (Length in feet X Width in feet) X (1sq.yd./9sq.ft.) X (Unit Cost/sq. yd.)

Pavement Cost = \((L)(W)(1/9)(\text{pavement Unit Cost per square yard})\)
Shoulder Cost = \([L_{rs} W_{rs}]/9 + L_{ls} W_{ls}/9\] (shoulder Unit Cost/sq. yd.)

Total Cost = Summation of all Section Costs

Cost Worksheet Unit Cost of Repair

Upon first time use of Rudimentary Needs Analysis (RNA), the user cost table is loaded with WISLR default costs. The WISLR default costs coincide with what RNA assumes for pavement repair, based on a given pavement rating. The following tables identify what RNA considers for pavement repairs. Users are encouraged to modify unit costs to reflect “local” costs, but in order to preserve the integrity of the RNA, user costs should reflect actions compatible to the complexity of the actions shown on the next page.
Asphalt Pavement & Asphalt on Concrete (Composite) Pavement

<table>
<thead>
<tr>
<th>Rating</th>
<th>Associated Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Reconstruct</td>
</tr>
<tr>
<td>2</td>
<td>Reconstruct</td>
</tr>
<tr>
<td>3</td>
<td>Mill &amp; Overlay</td>
</tr>
<tr>
<td>4</td>
<td>Resurfacing</td>
</tr>
<tr>
<td>5</td>
<td>Sealcoat With Patching or Thin Overlay (~3/4-inch)</td>
</tr>
<tr>
<td>6</td>
<td>Single Sealcoat</td>
</tr>
<tr>
<td>7</td>
<td>Crack Sealing</td>
</tr>
<tr>
<td>8-10</td>
<td>No Action</td>
</tr>
</tbody>
</table>

Concrete Pavement

<table>
<thead>
<tr>
<th>Rating</th>
<th>Associated Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Reconstruct</td>
</tr>
<tr>
<td>2</td>
<td>Reconstruct</td>
</tr>
<tr>
<td>3</td>
<td>Crack &amp; Seat + HMAC Overlay or Full Depth Repair &amp; Slab Replacement on ~50% of Surface</td>
</tr>
<tr>
<td>4</td>
<td>HMAC Overlay With Patching &amp; Partial Depth Joint Repair or Full Depth Repair on ~25% of Surface</td>
</tr>
<tr>
<td>5</td>
<td>Patching &amp; Joint Repair (partial depth)</td>
</tr>
<tr>
<td>6</td>
<td>Patching, Crack Sealing, Joint Sealing</td>
</tr>
<tr>
<td>7</td>
<td>Joint Sealing</td>
</tr>
<tr>
<td>8-10</td>
<td>No Action</td>
</tr>
</tbody>
</table>

Brick & Block Pavement

<table>
<thead>
<tr>
<th>Rating</th>
<th>Associated Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Reconstruct</td>
</tr>
<tr>
<td>2</td>
<td>Spot Repair</td>
</tr>
<tr>
<td>3-4</td>
<td>No Action</td>
</tr>
</tbody>
</table>

Sealcoat Pavement (sealcoat on stone base)

<table>
<thead>
<tr>
<th>Rating</th>
<th>Associated Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Reconstruct: Double Seal on 6-inch Stone Base</td>
</tr>
<tr>
<td>2</td>
<td>Wedge/Patch &amp; Sealcoat</td>
</tr>
<tr>
<td>3</td>
<td>Sealcoat</td>
</tr>
<tr>
<td>4-5</td>
<td>No Action</td>
</tr>
</tbody>
</table>

Gravel Pavement

<table>
<thead>
<tr>
<th>Rating</th>
<th>Associated Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Add Stone &amp; Regrade + Ditch Work</td>
</tr>
<tr>
<td>2</td>
<td>Add Stone &amp; Regrade</td>
</tr>
<tr>
<td>3-5</td>
<td>No Action</td>
</tr>
</tbody>
</table>

Earthen Pavement

<table>
<thead>
<tr>
<th>Rating</th>
<th>Associated Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Reconstruct: Excavate &amp; Reshape</td>
</tr>
<tr>
<td>2</td>
<td>Grading</td>
</tr>
<tr>
<td>3</td>
<td>Routine Maintenance &amp; Spot Grading</td>
</tr>
<tr>
<td>4</td>
<td>No Action</td>
</tr>
</tbody>
</table>

Defining Capital and Maintenance Improvement

Rudimentary Needs Analysis categorizes need into two categories – capital and maintenance improvement. WISLR definitions follow:

Capital Improvements are those improvements that significantly extend service life. Examples of capital improvement are: resurfacing, mill and overlay, and reconstruction.

Maintenance Improvements help preserve roads, but typically, a single application does not significantly extend service life. Examples of maintenance improvement are: joint and crack sealing, patching, and sealcoating.
CONDITION FREQUENCY REPORT

The Condition Frequency Report shows the percentage of rated pavement in each pavement condition range (series). The percentage reported is based on rated pavement area.

For example:

\[
\% \text{ of rated pavement in condition series } "n" = \frac{\text{area of pavement in series } "n"}{\text{total area of rated pavement}}
\]

AVERAGE RATING BY PAVEMENT TYPE OR CLASSIFICATION

An average ratings calculated by these reports is an area weighted average.

Average Rating by Pavement Type:

The following equation is used to calculate an average rating by pavement type for a total of “n” roadway rating sections.

\[
\text{Avg. Rating Pvmt. Type } "XYZ" = \frac{\sum \text{Pvmt. Type } "XYZ" \text{Rating}_i (\text{Area})_i}{\sum \text{Pvmt. Type } "XYZ" \text{Area}}
\]

Average Rating by Functional Class:

The following equation is used to calculate an average rating by functional class for a total of “n” roadway rating sections.

\[
\text{Avg. Rating FClass } "ABC" = \frac{\sum \text{FClass } "ABC" \text{Rating}_i (\text{Area})_i}{\sum \text{FClass } "ABC" \text{Rating Area}}
\]
FIVE YEAR BUDGET PLAN

This budget planning tool starts with the pool of projects identified by RNA. The tool prioritizes each project and selects projects until the budget for Year 1 is insufficient to accommodate the next priority project. The tool then goes to Year 2 and applies its budget to the next series of projects (in priority order) until the budget is exhausted. The same process is repeated for the remaining years in the plan (years 3, 4, and 5). Projects that have insufficient priority to compete for constrained funding are considered as unmet need, or backlog.

If a “need” project can’t be accommodated in Year 1, the project will be evaluated according to WISLR pavement deterioration models. Therefore, the corresponding pavement rating may drop by the time a project’s priority warrants action in the plan. Consequently, if deterioration causes a pavement rating to be lowered, the corresponding unit cost and the complexity of repair action will increase.

Priority scores are based on the following logic.

Raw Priority Score = Importance Points / Rank

Priority Score Scaled to 100 point system = Raw Score X 4

The example below shows how to calculate a priority score for paved roadways.

Example: PMPC = Major, Pavement Rating = 7

Raw Priority Score = \( \frac{\text{Importance Points}}{\text{Rank}} = \frac{100}{4} = 25 \)

Priority Score @100 scale = 25 X 4 = 100

Please recall that Pavement Management Priority Class (PMPC) can be modified by the user to reflect the “relative” priority of the roadway section.

The tables on the following page list the priority scores associated with a given pavement type, pavement rating, and PMPC.
### WISLR 5-Year Budget Plan Prioritization Tables

#### Prioritization Ranking for Paved Roads (Type 45, 50, 52, 55, 57, 60, 65, 70, 77)

<table>
<thead>
<tr>
<th>Class (PMPC)</th>
<th>Paser rating</th>
<th>Priority scaled to 100</th>
</tr>
</thead>
<tbody>
<tr>
<td>Major</td>
<td>7</td>
<td>100.00</td>
</tr>
<tr>
<td>Major</td>
<td>6</td>
<td>80.00</td>
</tr>
<tr>
<td>Minor</td>
<td>7</td>
<td>74.90</td>
</tr>
<tr>
<td>Major</td>
<td>5</td>
<td>66.67</td>
</tr>
<tr>
<td>Minor</td>
<td>6</td>
<td>59.92</td>
</tr>
<tr>
<td>Major</td>
<td>4</td>
<td>57.14</td>
</tr>
<tr>
<td>Minor</td>
<td>3</td>
<td>50.00</td>
</tr>
<tr>
<td>Minor</td>
<td>5</td>
<td>49.93</td>
</tr>
<tr>
<td>Local</td>
<td>7</td>
<td>49.90</td>
</tr>
<tr>
<td>Major</td>
<td>2</td>
<td>44.44</td>
</tr>
<tr>
<td>Minor</td>
<td>4</td>
<td>42.80</td>
</tr>
<tr>
<td>Major</td>
<td>1</td>
<td>40.00</td>
</tr>
<tr>
<td>Local</td>
<td>6</td>
<td>39.92</td>
</tr>
<tr>
<td>Minor</td>
<td>3</td>
<td>37.45</td>
</tr>
<tr>
<td>Minor</td>
<td>2</td>
<td>33.29</td>
</tr>
<tr>
<td>Local</td>
<td>5</td>
<td>33.27</td>
</tr>
<tr>
<td>Minor</td>
<td>1</td>
<td>29.96</td>
</tr>
<tr>
<td>Local</td>
<td>4</td>
<td>28.51</td>
</tr>
<tr>
<td>Local</td>
<td>3</td>
<td>24.95</td>
</tr>
<tr>
<td>Local</td>
<td>2</td>
<td>22.18</td>
</tr>
<tr>
<td>Local</td>
<td>1</td>
<td>19.96</td>
</tr>
<tr>
<td>Low Use</td>
<td>7</td>
<td>19.90</td>
</tr>
<tr>
<td>Low Use</td>
<td>6</td>
<td>15.92</td>
</tr>
<tr>
<td>Low Use</td>
<td>5</td>
<td>13.27</td>
</tr>
<tr>
<td>Low Use</td>
<td>4</td>
<td>11.37</td>
</tr>
<tr>
<td>Low Use</td>
<td>3</td>
<td>9.95</td>
</tr>
<tr>
<td>Low Use</td>
<td>2</td>
<td>8.84</td>
</tr>
<tr>
<td>Low Use</td>
<td>1</td>
<td>7.96</td>
</tr>
</tbody>
</table>

#### Prioritization Ranking for Sealcoat Roads (Type 40)

<table>
<thead>
<tr>
<th>Class (PMPC)</th>
<th>Paser rating</th>
<th>Priority scaled to 100</th>
</tr>
</thead>
<tbody>
<tr>
<td>Major</td>
<td>3</td>
<td>80.00</td>
</tr>
<tr>
<td>Major</td>
<td>2</td>
<td>66.67</td>
</tr>
<tr>
<td>Minor</td>
<td>3</td>
<td>59.92</td>
</tr>
<tr>
<td>Minor</td>
<td>2</td>
<td>49.93</td>
</tr>
<tr>
<td>Major</td>
<td>1</td>
<td>44.44</td>
</tr>
<tr>
<td>Local</td>
<td>3</td>
<td>39.92</td>
</tr>
<tr>
<td>Minor</td>
<td>1</td>
<td>33.29</td>
</tr>
<tr>
<td>Local</td>
<td>2</td>
<td>33.27</td>
</tr>
<tr>
<td>Local</td>
<td>1</td>
<td>22.18</td>
</tr>
<tr>
<td>Low Use</td>
<td>3</td>
<td>15.92</td>
</tr>
<tr>
<td>Low Use</td>
<td>2</td>
<td>13.27</td>
</tr>
<tr>
<td>Low Use</td>
<td>1</td>
<td>8.84</td>
</tr>
</tbody>
</table>

#### Prioritization Ranking for Gravel Roads (Type 35)

<table>
<thead>
<tr>
<th>Class (PMPC)</th>
<th>Paser rating</th>
<th>Priority scaled to 100</th>
</tr>
</thead>
<tbody>
<tr>
<td>Major</td>
<td>3</td>
<td>80.00</td>
</tr>
<tr>
<td>Minor</td>
<td>3</td>
<td>59.92</td>
</tr>
<tr>
<td>Minor</td>
<td>2</td>
<td>42.80</td>
</tr>
<tr>
<td>Major</td>
<td>1</td>
<td>40.00</td>
</tr>
<tr>
<td>Local</td>
<td>3</td>
<td>39.92</td>
</tr>
<tr>
<td>Minor</td>
<td>1</td>
<td>29.96</td>
</tr>
<tr>
<td>Local</td>
<td>2</td>
<td>28.51</td>
</tr>
<tr>
<td>Local</td>
<td>1</td>
<td>19.96</td>
</tr>
<tr>
<td>Low Use</td>
<td>3</td>
<td>15.92</td>
</tr>
<tr>
<td>Low Use</td>
<td>2</td>
<td>11.37</td>
</tr>
<tr>
<td>Low Use</td>
<td>1</td>
<td>7.96</td>
</tr>
</tbody>
</table>

#### Prioritization Ranking for Brick & Block Roads

<table>
<thead>
<tr>
<th>Class (PMPC)</th>
<th>Paser rating</th>
<th>Priority scaled to 100</th>
</tr>
</thead>
<tbody>
<tr>
<td>Major</td>
<td>2</td>
<td>80.00</td>
</tr>
<tr>
<td>Minor</td>
<td>2</td>
<td>59.92</td>
</tr>
<tr>
<td>Major</td>
<td>1</td>
<td>44.44</td>
</tr>
<tr>
<td>Local</td>
<td>2</td>
<td>39.92</td>
</tr>
<tr>
<td>Minor</td>
<td>1</td>
<td>33.29</td>
</tr>
<tr>
<td>Local</td>
<td>1</td>
<td>22.18</td>
</tr>
<tr>
<td>Low Use</td>
<td>2</td>
<td>15.92</td>
</tr>
<tr>
<td>Low Use</td>
<td>1</td>
<td>8.84</td>
</tr>
</tbody>
</table>

#### Prioritization Ranking for Earthen Roads (Type 25, 30)

<table>
<thead>
<tr>
<th>Class (PMPC)</th>
<th>Paser rating</th>
<th>Priority scaled to 100</th>
</tr>
</thead>
<tbody>
<tr>
<td>Major</td>
<td>3</td>
<td>80.00</td>
</tr>
<tr>
<td>Minor</td>
<td>3</td>
<td>59.92</td>
</tr>
<tr>
<td>Major</td>
<td>2</td>
<td>50.00</td>
</tr>
<tr>
<td>Minor</td>
<td>2</td>
<td>40.00</td>
</tr>
<tr>
<td>Local</td>
<td>3</td>
<td>39.92</td>
</tr>
<tr>
<td>Minor</td>
<td>2</td>
<td>37.45</td>
</tr>
<tr>
<td>Minor</td>
<td>1</td>
<td>29.96</td>
</tr>
<tr>
<td>Local</td>
<td>2</td>
<td>24.95</td>
</tr>
<tr>
<td>Local</td>
<td>1</td>
<td>19.96</td>
</tr>
<tr>
<td>Low Use</td>
<td>3</td>
<td>15.92</td>
</tr>
<tr>
<td>Low Use</td>
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<td>9.95</td>
</tr>
<tr>
<td>Low Use</td>
<td>1</td>
<td>7.96</td>
</tr>
</tbody>
</table>

### WISLR Pavement Deterioration Curves

#### Local Road Pavement Deterioration Curves

- ST 45
- ST 50
- ST 55
- ST 57
- ST 60
- ST 65
- ST 70
- ST 75
- ST 80
- ST 30
- ST 35
- ST 40
- Type 50
USING THE
WISLR MAPPING
AND
GIS Tools
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1.0 INTRODUCTION TO GIS IN WISLR

By incorporating GIS technology and graphing capabilities, local officials now have the ability to view trends in data that might otherwise go unnoticed. GIS technology allows WISLR to map roadway data based on a given location. With WISLR’s Geographic Information System (GIS) map function, your tasks become easier and your road analysis more meaningful. You now have a method to visually identify information and trends. Examples of the types of maps that can be produced include maps by surface type, pavement rating, when roads were last resurfaced and even local one-way streets.

1.1 TOPICS COVERED IN THIS SESSION

Introduction to WISLR and GIS Tools
- Types of Knowledge / Tools for WISLR User
- Understanding Inventory Data and How GIS Can Be Used
- Advanced GIS Functions
  - Classify by Theme
  - GIS Query (Advanced)

1.2 BASIC TOOLS NEEDED

Topics that have been covered that will help build upon the use of WISLR GIS:
- Roadway Inventory in WISLR
- Navigate in WISLR
  - Gain Access / Login to WISLR Application
  - Launch Map Viewer
  - Print a Map (See WISLR 101 tab; page 15)
  - Customize Map Title
1.3 MAPPING AND GIS

Data Organization
- Roadway Inventory data
- Integration Layers
  - Bridge; Rail; Hydro, etc

Location
- Where Things Are

\[
\text{Data Organization} + \text{Location} = \text{MAP}
\]
2.0 EXAMPLES OF GIS AND WISLR

As a user, you may wish to identify roads that were resurfaced in 1999. You can input this attribute into WISLR’s GIS Query function, then view the results on your map.

Once you’ve retrieved the information, you can use it to make common-sense road-related decisions—and support those decisions with presentation-quality documents; documents that include customized map titles.

Another of WISLR’s useful tools is the Classify by Theme function, accessible via the interactive map. This function assembles attributes like surface type into groups, then displays them together on the map. Choose the main feature you sigh to view, such as surface type, and choose attributes to display in the optional data table. See the legend for descriptions.
3.0 MAP VIEWER LAYOUT BASICS

1. Map Toolbar
   A. Map icons found on the left side of WISLR’s map allow you to interact with the map, e.g., pan, zoom, query, etc.

2. Layers / Legend Tab
   A. Layers Tab allows you to draw, activate and label features on the map
   B. Legend Tab will identify your features. To view the symbols that identify the features on the map, click on the Legend Tab. The number of symbols expand and contract as you zoom in or out on the map.

3. Data Table
   A. Information source that drives the map. The data in the table mirrors the data on your View Physical and Administrative Inventory screens.

4. Close Map Button
   A. Closes map and returns you to prior screen.
3.1 TIP: LAUNCH THE MAP VIEWER

CLICK anywhere there is a Wisconsin Map icon to launch WISLR map viewer

- Route level
- Muni level

Route Level

Muni Level

What differences can you identify when launching the viewer by the Muni or Route?

1. Layers
2. Map
3. Data
4.0 GIS QUERY

4.1 HOW THE QUERY FUNCTION WORKS

When you perform a query, you ask WISLR to conduct a search within the border of the municipality defined in the Layers tab. As you input your query data, the system provides you with statewide sample values from which to choose. Enter the WISLR map by selecting a route via the WISLR inventory screen.

**Query:**

Use this icon to make an information request, usually in the form of a statement or logical expression.

1. **Select the layer** to use in your query from the Layers tab, under the Query column
2. **Click the Query icon**
3. **Select an attribute** to query on from the Fields drop-down list
4. **Select an Operator** from the drop-down list
5. **Click the Get Values button** to populate the Sample Values drop-down list
   a. Select value
   b. If the value is editable, make changes in textbox
   c. A non-editable sql textbox
   **Municipality may be auto populated from the WISLR selection**
5b. **Click the Execute button**
6. **Click the Execute button**
7. **Allow the map to refresh** with your results
1. Map highlights routes that meet ‘query’
2. Displays Data Table rows
### 4.2 CHART: FIELD SELECTIONS AND DATA DISPLAY

<table>
<thead>
<tr>
<th>Roadway Inventory Attribute</th>
<th>GIS QUERY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Field Selection</td>
<td>Display</td>
</tr>
<tr>
<td>1 Surface Type</td>
<td>S</td>
</tr>
<tr>
<td>2 Surface Width</td>
<td>S</td>
</tr>
<tr>
<td>3 Surface Year</td>
<td>S</td>
</tr>
<tr>
<td>4 Left Shoulder Type</td>
<td>S</td>
</tr>
<tr>
<td>5 Left Shoulder Width</td>
<td>S</td>
</tr>
<tr>
<td>6 Right Shoulder Type</td>
<td>S</td>
</tr>
<tr>
<td>7 Right Shoulder Width</td>
<td>S</td>
</tr>
<tr>
<td>8 One Way</td>
<td>S</td>
</tr>
<tr>
<td>9 ROW Indicator</td>
<td>S</td>
</tr>
<tr>
<td>10 ROW Width</td>
<td>S</td>
</tr>
<tr>
<td>11 Median Type</td>
<td>S</td>
</tr>
<tr>
<td>12 Left Curb Type</td>
<td>S</td>
</tr>
<tr>
<td>13 Right Curb Type</td>
<td>S</td>
</tr>
<tr>
<td>14 Parking</td>
<td>S</td>
</tr>
<tr>
<td>15 Traffic Lanes</td>
<td>S</td>
</tr>
<tr>
<td>16 Side Walk</td>
<td>S</td>
</tr>
<tr>
<td>17 Certified Mileage</td>
<td>S</td>
</tr>
<tr>
<td>18 Road Category</td>
<td>S</td>
</tr>
<tr>
<td>19 SubRoad Category</td>
<td>S</td>
</tr>
<tr>
<td>20 ADT Index</td>
<td>S</td>
</tr>
<tr>
<td>21 ADT Count</td>
<td>S</td>
</tr>
<tr>
<td>22 ADT Year</td>
<td>S</td>
</tr>
<tr>
<td>23 Access Control</td>
<td>S</td>
</tr>
<tr>
<td>24 Urban Location</td>
<td>S</td>
</tr>
<tr>
<td>25 Federal U/R Area</td>
<td>S</td>
</tr>
<tr>
<td>26 FedCLSN</td>
<td>S</td>
</tr>
<tr>
<td>27 Functional Class</td>
<td>S</td>
</tr>
<tr>
<td>28 HPMS</td>
<td>S</td>
</tr>
<tr>
<td>29 Road Name</td>
<td>S</td>
</tr>
<tr>
<td>30 Road Type</td>
<td>S</td>
</tr>
<tr>
<td>31 RdwayLinkID</td>
<td>S</td>
</tr>
<tr>
<td>32 Party Name</td>
<td>S</td>
</tr>
<tr>
<td>33 Median Width</td>
<td>S</td>
</tr>
<tr>
<td>34 Owner</td>
<td>S</td>
</tr>
<tr>
<td>35 Pavement Rating Year</td>
<td>S</td>
</tr>
<tr>
<td>36 Functional Category</td>
<td>S</td>
</tr>
<tr>
<td>37 Functional Group</td>
<td>S</td>
</tr>
<tr>
<td>38 RouteID</td>
<td>S</td>
</tr>
<tr>
<td>39 Pavement Rating</td>
<td>S</td>
</tr>
<tr>
<td>40 Maintenance Treatment Type</td>
<td>S</td>
</tr>
</tbody>
</table>
4.3 Tabular Data

Display Data
To view the tabular data from your query, click on the Selected Road Information window at the bottom of your screen to enlarge the table. Use the scroll bars to navigate through the rows and columns. The width of the column can be expanded by hovering the cursor over the dividing line between column names and then click-holding the left mouse button. While holding down the left mouse button, drag the column width to the right.

Printable Report
To print the data from your query click the Printable Report button. The columns are organized into 3 data categories; Physical Inventory, Administrative, and Identification.
4.4 **ZOOM TO THESE RECORDS**
To focus on a particular record and the location, click on the magnify glass next to the record.

1. Click the magnified glass next to the desired record
2. Map will zoom to and highlight the route
4.5 EXAMPLE: BUILD A SIMPLE QUERY

1. Select Pavement Rating Attribute from the Fields drop-down list
2. Select Operator from available options in the drop-down list
3. Click the Get Values button to populate the Sample Values drop-down list
4. Select Value from the Sample Values drop-down list
5. Click the Execute button to search WISLR and satisfy query request
6. To remove query from 'white query box' click the Clear button

4.6 EXAMPLE: BUILD A COMPLEX QUERY

1. Select Pavement Rating Attribute from the Fields drop-down list
2. Select Operator from available options in the drop-down list
3. Click the Get Values button to populate the Sample Values drop-down list
4. Select Value from the Sample Values drop-down list
5. Select And / Or radial
6. Repeat steps 1-4 to add a second query
7. Click the Execute button to search WISLR and satisfy query request
8. To remove query from 'white query box' click the Clear button

NOTE: And / Or radial will allow for an additional query*
NOTE: Your municipality may be auto populate from WISLR*
5.0 CLASSIFY BY THEME

5.1 HOW THE CLASSIFY BY THEME FUNCTION WORKS

Classify by Attribute Theme:
Click on this icon to display map features in a shared-attribute group.

For example, you can choose to display all roads by pavement condition rating.

1. Under the Layers tab, in the Active column, click the Local Roads radio button
2. Click on the Classify by Attribute Theme icon
3. In the Select Field drop-down list box, click on an attribute group to display. This action populates the selections available in the optional Select attributes for data table drop-down list box.
4. (Optional) Select the attributes to include in the data table from the Select attributes for data table drop-down list box. To select more than one attribute, press and hold the shift key
5. Click on either the Show Map and Data button to display both the map and the data table; or click on the Show Map button and view the map
6. To display the legend, click the Legend tab

NOTE: Clicking on the Show Map and Data button increase the time it takes WISLR to draw the map. Draw the map faster by clicking the Show Map button.
### 5.2 CHART: FIELD SELECTIONS AND DATA DISPLAY

<table>
<thead>
<tr>
<th>Roadway Inventory Attribute</th>
<th>CLASSIFY BY THEME</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Field Selection</td>
</tr>
<tr>
<td>1 Surface Type</td>
<td>S</td>
</tr>
<tr>
<td>2 Surface Width</td>
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</tr>
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<td>40 Maintenance Treatment Type</td>
<td></td>
</tr>
</tbody>
</table>
5.3 EXAMPLE: SELECT ADDITIONAL FIELDS

- Classify routes by Surface Type
- Select additional field to appear in the Data Table

Default selects Route Name and Community Code
- Hold down the Ctrl + Shift key to select additional attributes for the data table
- Click the Show Map and Data button
5.4 DATA TABLE

To view selected fields from the data table, scroll through the table at the bottom of your screen, OR CLICK the Toggle Text Frame icon found in the upper left-hand corner of your screen. This action enlarges the table, making it easier to read.
5.5 **HOW TO PRINT DATA TABLE**

**NOTE:** Refer to Slide from WISLR 101.4.4 to review modify print and page settings.

- Change **Title** to display on map
- CLICK **Print Data** radio button
- Click **Create Print Page** button

Click the printer icon to generate print page
6.0 MAP ICON DESCRIPTION

Following are descriptions and directions on how to use each of the map’s icons.

**Toggle Text Frame:** Click on this icon to expand or contract the data table at the bottom of the map.

**Print:** Print your map, including an optional title with this feature.
1. Click on the Print icon.
2. A pop-up box appears on your screen to type a title for your map.
3. Click the button for the Map Size you want.
4. Click the button for the Image Quality you want.
5. Click the Create Print Page button.

WISLR will produce a map output screen from which you can choose a print option.

Note: For better print quality, please use the landscape print option.

**Zoom In:** This icon shows a smaller area of the map at higher magnification, as if using a zoom lens on a camera.
1. Click on the Zoom In icon.
2. Click a point on the map that you’d like to magnify. Alternately, click and drag your mouse across the map to draw a box. This action allows WISLR to zoom to the boxed area.
3. Allow the map to refresh.

**Zoom Out:** This shows a larger area at a lower magnification, as if rising up from the ground.
1. Click on the Zoom Out icon.
2. Click, or click and drag a box on the map in an area that you’d like to make smaller.
3. Allow the map to refresh.

**Pan:** The Pan feature allows you to pull a new area into view on the map.
1. Click the Pan icon. This changes the cursor into a four-pronged arrow.
2. Place the arrow on the map, then click and drag a new area into view.
3. Allow the map to refresh.
**Back to Previous Extent:** This icon takes you back to the prior view.

**Identify:** Name a feature on the map.
1. Select the layer in which to search from the Active column on the Layers tab.
2. Click on the Identify icon.
3. Click on a road within a city, town, village, or county; this corresponds to the feature category you selected in the Layers tab.
4. Your results appear in the data table below the map.

Note: Use caution to place the cross hairs directly on the feature that you wish to identify.

**Query:** Use this icon to make an information request, usually in the form of a statement or logical expression.
Note: You can change the values in the query string. For example, if you choose 1,200 from the Sample Values drop-down box, but you’d prefer 1,000, type “1000” over “1200”.

**Classify by Attribute Theme:** Click on this icon to display map features in a shared-attribute group. For example, you can choose to display all roads by pavement condition rating. Additionally, display an optional data table of up to four data columns related to the map field you selected.
Note: Clicking on the **Display Map and Data** button increase the time it takes WISLR to draw the map. Draw the map faster by clicking the **Display Map** button.

**Clear Selection:** Click this feature to clear the map of any features that you’ve previously selected, and remove the yellow highlighting.

**Select by Rectangle:** Click this icon to select an area on the map to zoom to by clicking and dragging a box around it. Features or attributes that intersect with the line(s) display in the data table below the map.
1. Click on the Select by Rectangle icon.

**Click and drag a box across the map.**
2. Allow the map to refresh.

**Select by Line/Polygon:** Use this feature to draw a line or shape around an area or feature(s). Attributes or features that intersect with the line(s) display in the data table below the map.
1. Select the layer within which you’d like to view.
2. Click on the Select by Line/Polygon icon.

**Select Route Name:** Use this feature to zoom to a road on the map and display all of the route names associated with that road.
Note: WISLR displays the default route name on the map and in the data tables.
1. Click on the Select by Route name icon.
2. Click on the route that you wish to identify.

Allow the map to refresh.

**Go to Web WISLR by Selection Box:** View the data for the features you select on the Physical/Administrative Inventory screen, by drawing a box around features.
1. Click on the Go to Web WISLR by Selection Box icon.

Click and drag a box around the road for which you wish to view data.

If more than one road appears in the box, WISLR will prompt you to choose a road from a list.
2. A pop-up box prompts you to choose an At and Toward direction. Select OK for the direction the map currently shows, or select Cancel to choose the opposite direction.

WISLR takes you to the Physical/Administrative Inventory screen.

**Go to Web WISLR by Selection Point:** View the data for the features you select on the Physical/Administrative Inventory screen, by clicking and pointing to a road on the map.
1. Click on the Go to Web WISLR by Selection Point icon.
2. Click a road on the map using care to ensure that you center the cursor's cross hair on the road.
3. A pop-up box will prompt you to choose an At and Toward direction. Select OK for the direction the map currently shows, or select Cancel to choose the opposite direction.
4. WISLR will take you to the Physical/Administrative Inventory screen.

**Measure:** This feature allows you to calculate the distance between two or more points that you choose on the map.

Note: To change the measurement units, see Set Units, below.
1. Click the Measure icon.
2. Click a point on the map where you’d like to begin to measure.
3. Allow the map to refresh.
4. A red dot appears on the map where you clicked.
5. Repeat this process until you’ve measured the distance across the area.
6. The measurement sum appears in the Total box in the upper left-hand corner of your screen. The number in the Segment box indicates the distance from
the last red dot you clicked, and changes as you move around the screen until you click a new point on the map.

**Set Units:** Click on this icon to change the scale and display units on the map. To change the map scale, and affect the map’s ground units, click the Map Units drop-down box. To change the scale bar, and the measurement units for the Measure icon above, click the Display Units drop-down box.

**Map Units**
- Click on the Map Units drop-down box and choose from:
  - Feet or Meters for use with x and y coordinates.
  - Degrees for use with latitude and longitude coordinates. The WISLR map uses NAD 91 Wisconsin Transverse Mercator projection.
  - Click the **Set Units** button.

**Display Units**
1. Click on the Display Units drop-down box.
2. Choose the units of measure, either feet, or miles.
3. Click the **Set Units** button.

Note: This field also sets the measurement units for the map’s Measure function.

**Overview Map:** Displays the location currently selected in a “birds’ eye view” map of Wisconsin. Navigate to other areas of the state and click to view them. Toggle the Overview Map on or off, by clicking the icon.
WISLR MAPPING AND GIS TOOLS SUMMARY

- Introduction to WISLR GIS Basics
  - Map Toolbar
  - Layers / Legend Tab
  - Data Table
  - Close Map Button
  - Local Road Layer must be active
- Advanced WISLR GIS Functions
  - GIS Query
  - Classify By Theme
- Map Icon Descriptions

WISLR CONTACT INFORMATION

ANNUAL LOCAL ROAD CERTIFICATION QUESTIONS (WISLR):

Leave message:  **(608) 266-2865**
1. Name
2. County / Municipality
3. Phone Number where you can be reached
4. Brief description of concern / question

**wislrinfo@dot.wi.gov**
HOW TO REQUEST ADDITIONAL WISLR ACCESS

If you are a Local Government Official and have view access to WISLR, you can request additional WISLR access including:

- Web-WISLR Pavement Rating Entry Screen
- WISLR Pavement Analysis
- Update Physical Attributes

1. Log into WISLR at https://trust.dot.state.wi.us/wislr/NavigationDispatch
2. Select Main Menu on the application tool bar
3. Select Request Additional WISLR Access
   a. Once at the Request WISLR Access screen, highlight the Available Action
   b. Click the arrow button to move the available action to the Requested Actions field
   c. Click and allow 3 to 5 days for processing
Appendix A
Frequently Asked Questions

Why did WisDOT develop WISLR?
WisDOT developed WISLR to help local governments manage Wisconsin’s 100,000 miles of local roadways. Convenient and secure access to roadway data that helps local governments and WisDOT enhance decision-making is our aim.

This new system gives me a lot of information, but I’m having trouble remembering all the steps and options. How long will it take me to master this system?
With any new system, there’s a learning curve. You’ll learn this system faster than most, because WISLR’s step-by-step approach is easier to grasp once you become familiar with the logic. You’ll soon appreciate all the tools at your disposal.

Where can I go to retrieve certification information?
From the main menu, just below the Choose a Function to Perform header, click on Local Government Information Requests. Once on this screen, click to select the information that you need.

What fields can I update under the View Physical Inventory category?
You can update all Physical Inventory items provided you have update access privileges in the WISLR system.

Why doesn’t my View Physical/Administrative Inventory screen contain information?
Information appears once you’ve selected the following:
- Road or Street name
- At intersection
- Towards intersection

Be sure to click the Retrieve Inventory box.

What happens when I click the plus sign (+) on the Physical Inventory screen or the Administrative Inventory screen?
If the Occurs field shows a value greater than 1 of 1, clicking on the + plus icon displays the additional attributes. For instance, if the value 1 of 3 appears in the Occurs field, click the + plus icon to see all three attributes.

I don’t have Adobe Acrobat Reader software. How can I obtain it?
How do I view administrative inventory information? I have become stuck in View Physical Inventory. WISLR automatically defaults to View Physical Inventory mode first. To view administrative inventory, simply click on the Administrative Inventory box. You’ll find it beside the View Physical Inventory box.

Why can’t I load reports when I click on the Request Reports link? Remember to click the Process Request box.

Why can’t I retrieve my CVT Map? If the certification year is set to the current year, that information may not yet be available. At this time, data is available for 2002. Data becomes available after certification each year.

- Start at WISLR Main Menu
- Click on Local Government Information Requests Link.
- Scroll to the bottom section marked Other Forms
- Click on the report titled New Construction, Resurfaced
- Click on the Process Request box

Where can I find PASERWARE data downloads? From the WISLR Main Menu click on the Local Government Information Requests link.
- Under the Paserware Downloads header, select a report.
- Click on the Process Request tab
# Appendix B

## Glossary of WISLR Terms

<table>
<thead>
<tr>
<th><strong>TERM</strong></th>
<th><strong>MEANING</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Administrative Inventory</td>
<td>A named value that represents a non-physical classification of a road, for example owner or functional classification.</td>
</tr>
<tr>
<td>Attribute</td>
<td>The characteristics of a road that help WISLR to catalog either administrative or physical inventory data. For example, surface type is a physical road attribute. Owner is an administrative road attribute.</td>
</tr>
<tr>
<td>AT route</td>
<td>The road defined in the At field.</td>
</tr>
<tr>
<td>Construction Report</td>
<td>A form used to report road improvements by local units of government during the certification process.</td>
</tr>
<tr>
<td>CVT Map</td>
<td>A certification map that represents city, village or town.</td>
</tr>
<tr>
<td>Data Break</td>
<td>The point on a roadway where an attribute changes from one type or classification to another.</td>
</tr>
<tr>
<td>Geographic Information System (GIS)</td>
<td>Computer-based systems that allow users to organize and view data on a map, according to the data’s real-world location.</td>
</tr>
<tr>
<td>Inventory</td>
<td>An itemized list of road characteristics for both physical and administrative categories.</td>
</tr>
<tr>
<td>Location</td>
<td>The road defined using the On, At and Toward reference points.</td>
</tr>
<tr>
<td>Offset</td>
<td>The measured distance defined from the starting point to origin but not covering the road’s entire distance. The distance in feet or miles from a defined point on a roadway to another defined point on that roadway.</td>
</tr>
<tr>
<td>ON route</td>
<td>The road defined in the On field.</td>
</tr>
<tr>
<td>PASER</td>
<td>Pavement Surface Evaluation and Rating system developed by the University of Wisconsin Transportation Information Center.</td>
</tr>
<tr>
<td>PASERWARE</td>
<td>Software that supports the use of the PASER rating system.</td>
</tr>
<tr>
<td>Pavement Rating</td>
<td>A systematic way of determining and recording the physical condition of a roadway.</td>
</tr>
<tr>
<td>State Trunk Network (STN)</td>
<td>A collection of state, interstate, and national highways that support the roadway infrastructure of the United States and within the State of Wisconsin.</td>
</tr>
<tr>
<td>Termini</td>
<td>The intersection or point where a route begins or ends.</td>
</tr>
<tr>
<td>TOWARD route</td>
<td>The road defined in the Toward field.</td>
</tr>
</tbody>
</table>
## Appendix C

**Administrative Inventory Terms and Definitions**

<table>
<thead>
<tr>
<th>ATTRIBUTE NAME</th>
<th>DEFINITION AS USED IN WISLR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Access Control</td>
<td>The restriction of access to state trunk or other highways by the Department of Transportation for abutting owners.</td>
</tr>
<tr>
<td>Administrative Inventory Attribute</td>
<td>A named value that represents a non-physical classification of a road, for example, owner or functional classification.</td>
</tr>
<tr>
<td>Federal Urban/Rural Area</td>
<td>Federal Urban areas are designated by the U.S. Census Bureau as having a population of 5,000 to 49,000. The code in this field identifies the federal urban area designation in which the road section lies.</td>
</tr>
<tr>
<td>Functional Class</td>
<td>Three functional groups of streets and highway facilities are generally used in functional classification.</td>
</tr>
<tr>
<td></td>
<td>1) Arterial: streets and highways primarily moving traffic.</td>
</tr>
<tr>
<td></td>
<td>2) Collector: typically provide a mixture of both mobility and land access.</td>
</tr>
<tr>
<td></td>
<td>3) Local: roads that receive very limited traffic volume due to seasonality of use, physical barrier to through traffic, or other local factors that contribute to low or intermittent use.</td>
</tr>
<tr>
<td>Rural Codes</td>
<td>9 = PA - Interstate</td>
</tr>
<tr>
<td></td>
<td>10 = PA - Other Freeway</td>
</tr>
<tr>
<td></td>
<td>14 = PA - High Level Expressway</td>
</tr>
<tr>
<td></td>
<td>15 = PA – Other Freeway</td>
</tr>
<tr>
<td></td>
<td>20 = MA – Other</td>
</tr>
<tr>
<td></td>
<td>24 = MA – High Level Expressway</td>
</tr>
<tr>
<td></td>
<td>25 = MA – Other Freeway</td>
</tr>
<tr>
<td></td>
<td>30 = MAC – Other</td>
</tr>
<tr>
<td></td>
<td>34 = MAC – High Level Expressway</td>
</tr>
<tr>
<td></td>
<td>40 = MIC – Other</td>
</tr>
<tr>
<td></td>
<td>41 = MIC – Chart C (WISLR only)</td>
</tr>
<tr>
<td></td>
<td>45 = Local road</td>
</tr>
<tr>
<td>Urban Codes</td>
<td>49 = PA – Interstate</td>
</tr>
<tr>
<td></td>
<td>50 = PA – Other Freeway: Connecting link of Rural PA</td>
</tr>
<tr>
<td></td>
<td>51 = PA – Other Freeway: Connecting link of Rural MA</td>
</tr>
<tr>
<td></td>
<td>52 = PA – Other Freeway: Non-connecting link</td>
</tr>
<tr>
<td></td>
<td>53 = PA – High Level Expressway: Connecting link of Rural PA</td>
</tr>
<tr>
<td></td>
<td>54 = PA – High Level Expressway: Connecting link of Rural MA</td>
</tr>
<tr>
<td>Code</td>
<td>Description</td>
</tr>
<tr>
<td>------</td>
<td>-------------------------------------------------</td>
</tr>
<tr>
<td>55</td>
<td>PA – High Level Expressway: Non-connecting link</td>
</tr>
<tr>
<td>60</td>
<td>PA – Other: Connecting link of Rural PA</td>
</tr>
<tr>
<td>61</td>
<td>PA – Other: Connecting link of Rural MA</td>
</tr>
<tr>
<td>62</td>
<td>PA – Other: Non-connecting link</td>
</tr>
<tr>
<td>70</td>
<td>MA – Other: Connecting link of Rural MA</td>
</tr>
<tr>
<td>71</td>
<td>MA – Other: Connecting link of Rural MAC</td>
</tr>
<tr>
<td>72</td>
<td>MA – Other: Connecting link of Rural MIC</td>
</tr>
<tr>
<td>73</td>
<td>MA – Other: Non-connecting link</td>
</tr>
<tr>
<td>75</td>
<td>MA – High Level Expressway: Connecting link of Rural MA</td>
</tr>
<tr>
<td>76</td>
<td>MA – High Level Expressway: Connecting link of Rural MAC</td>
</tr>
<tr>
<td>77</td>
<td>MA – High Level Expressway: Connecting link of Rural MIC</td>
</tr>
<tr>
<td>78</td>
<td>MA – High Level Expressway: Non-connecting link</td>
</tr>
<tr>
<td>80</td>
<td>MA – Other Freeway: Connecting link of Rural MA</td>
</tr>
<tr>
<td>81</td>
<td>MA – Other Freeway: Connecting link of Rural MAC</td>
</tr>
<tr>
<td>82</td>
<td>MA – Other Freeway: Connecting link of Rural MIC</td>
</tr>
<tr>
<td>83</td>
<td>MA – Other Freeway: Non-connecting link</td>
</tr>
<tr>
<td>90</td>
<td>COL – Other: Connecting link of Rural MAC</td>
</tr>
<tr>
<td>91</td>
<td>COL – Other: Connecting link of Rural MIC</td>
</tr>
<tr>
<td>92</td>
<td>COL – Other: Non-connecting link</td>
</tr>
<tr>
<td>93</td>
<td>COL – High Level Expressway: Connecting link of Rural MAC</td>
</tr>
<tr>
<td>94</td>
<td>COL – High Level Expressway: Connecting link of Rural MIC</td>
</tr>
<tr>
<td>95</td>
<td>COL – High Level Expressway: Non-connecting link</td>
</tr>
<tr>
<td>97</td>
<td>Local street</td>
</tr>
<tr>
<td><strong>Highway Performance Monitoring System (HPMS)</strong></td>
<td>A database and analysis process used by the Federal Highway Administration (FHWA) for assessing and reporting the condition and performance of the nation’s highway system in a cost effective and consistent manner.</td>
</tr>
<tr>
<td>-----------------------------------------------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>High Occupancy Vehicle Lane (HOV)</strong></td>
<td>A traffic lane used for buses, car pools, motorcycles or vehicles containing two or more occupants.</td>
</tr>
<tr>
<td><strong>International Roughness Index (IRI)</strong></td>
<td>A standard reference index for road roughness that establishes nationwide uniformity in road roughness data.</td>
</tr>
<tr>
<td><strong>National Highway System (NHS)</strong></td>
<td>A network of nationally significant highways approved by Congress. It includes the interstate system and nearly 114,000 miles of arterial and other roads and connectors to major intermodal terminals.</td>
</tr>
<tr>
<td><strong>Owner</strong></td>
<td>The municipality that is responsible for a road’s construction, maintenance and reporting requirements.</td>
</tr>
<tr>
<td><strong>Road Category</strong></td>
<td>A collection of codes found within the existing local roads database that indicate the level of jurisdiction for a road.</td>
</tr>
<tr>
<td><strong>Strategic Highway Network (STRAHNET)</strong></td>
<td>A network of highway routes that are important to the United States’ strategic defense policy, and that provide defense access, continuity, and emergency capabilities for the movement of personnel, materials and equipment in both peacetime and war time.</td>
</tr>
<tr>
<td><strong>Urban Location</strong></td>
<td><strong>Codes</strong>&lt;br&gt;0 = Not applicable&lt;br&gt;1 = Central business district (CBD)&lt;br&gt;2 = Dense Business/Commercial District (not CBD)&lt;br&gt;3 = Low density commercial&lt;br&gt;4 = High density residential&lt;br&gt;5 = Low density residential&lt;br&gt;6 = Other: undeveloped, very low density</td>
</tr>
</tbody>
</table>
## Appendix D
### Physical Inventory Terms and Definitions

<table>
<thead>
<tr>
<th>Attribute Name</th>
<th>Definition as Used in WISLR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Daily Traffic Count</td>
<td>The number of vehicles that traverse a roadway averaged over a one-year period.</td>
</tr>
<tr>
<td>Average Daily Traffic Indicator</td>
<td>Codes</td>
</tr>
<tr>
<td></td>
<td>A = Actual</td>
</tr>
<tr>
<td></td>
<td>E = Estimated</td>
</tr>
<tr>
<td>Curb, left or right*</td>
<td>Identifies whether the curb is present on the road; if so, further defines whether the curb is on the left, right or both sides of the road.</td>
</tr>
<tr>
<td></td>
<td>* Report each side</td>
</tr>
<tr>
<td></td>
<td>Curb Type Codes</td>
</tr>
<tr>
<td></td>
<td>0 = none</td>
</tr>
<tr>
<td></td>
<td>1 = standard</td>
</tr>
<tr>
<td></td>
<td>2 = mountable</td>
</tr>
<tr>
<td>Local ID Number</td>
<td>Identification number or code that local governments define and use to identify the location of roadway data sections. Local governments often use this code along with WISLR’s Data Download information to match their data to the data in WISLR.</td>
</tr>
<tr>
<td>Maintenance agreements (Optional)</td>
<td>An agreement between two or more municipalities regarding the upkeep of a section of local roadway that lies between the named municipalities.</td>
</tr>
<tr>
<td>Median</td>
<td>The portion of a divided highway separating the traveled ways for traffic in opposite directions; includes curbs and gutters.</td>
</tr>
<tr>
<td></td>
<td>Median Type Codes</td>
</tr>
<tr>
<td></td>
<td>0 = none</td>
</tr>
<tr>
<td></td>
<td>1 = clear paved, 4’ wide or more</td>
</tr>
<tr>
<td></td>
<td>2 = clear grass with occasional shrubs</td>
</tr>
<tr>
<td></td>
<td>3 = fenced, not “class a” barrier</td>
</tr>
<tr>
<td></td>
<td>4 = rumble strip—PC concrete</td>
</tr>
<tr>
<td></td>
<td>5 = rumble strip—bituminous</td>
</tr>
<tr>
<td></td>
<td>6 = concrete barrier/s/f &lt;= 42” high</td>
</tr>
<tr>
<td></td>
<td>7 = concrete barrier/s/f &gt; 42” high</td>
</tr>
<tr>
<td></td>
<td>8 = concrete barrier/d/f &lt;= 42” high</td>
</tr>
<tr>
<td></td>
<td>9 = concrete barrier/d/f &gt; 42” high</td>
</tr>
<tr>
<td></td>
<td>10 = guard rail</td>
</tr>
<tr>
<td></td>
<td>11 = barrier curb</td>
</tr>
<tr>
<td></td>
<td>12 = mountable curb</td>
</tr>
<tr>
<td></td>
<td>13 = shrubs and/or trees</td>
</tr>
<tr>
<td><strong>One Way</strong></td>
<td>Traffic flow in only one direction.</td>
</tr>
<tr>
<td>-------------</td>
<td>-----------------------------------</td>
</tr>
<tr>
<td><strong>Parking Lane</strong></td>
<td>An auxiliary lane primarily for the parking of vehicles.</td>
</tr>
<tr>
<td><strong>Parking Permitted Codes</strong></td>
<td></td>
</tr>
<tr>
<td>0 = none</td>
<td>1 = right side</td>
</tr>
<tr>
<td><strong>Pavement Rating</strong></td>
<td>A systematic way of determining and recording the physical condition of a roadway.</td>
</tr>
<tr>
<td><strong>Physical Attribute</strong></td>
<td>A named value that represents a physical structure on a road, for example, surface type or number of traffic lanes.</td>
</tr>
<tr>
<td><strong>Right of Way</strong></td>
<td>The legal right to ingress and egress over a tract of land for transportation purposes.</td>
</tr>
<tr>
<td><strong>Shoulder</strong></td>
<td>The portion of the roadway between the traveled way and the inside edges of slopes of ditches or fills, exclusive of auxiliary lanes, curbs and gutters.</td>
</tr>
<tr>
<td><strong>Shoulder Type Codes</strong></td>
<td></td>
</tr>
<tr>
<td>0 = none</td>
<td>1 = grass</td>
</tr>
<tr>
<td><strong>Shoulder Width</strong></td>
<td>If no shoulders exist and curbs are present, enter that curb in the curb column.</td>
</tr>
<tr>
<td><strong>Sidewalk</strong></td>
<td>The walkway along the side of the road.</td>
</tr>
<tr>
<td><strong>Sidewalk Type Codes</strong></td>
<td></td>
</tr>
<tr>
<td>0 = none</td>
<td>1 = right side</td>
</tr>
</tbody>
</table>

*Report each side*
<table>
<thead>
<tr>
<th><strong>Surface</strong></th>
<th>Identifies the type of surface for the portion of road for the movement of vehicles, exclusive of shoulders and parking or auxiliary lanes.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Surface Type Codes</strong></td>
<td></td>
</tr>
<tr>
<td>20 = waterway</td>
<td></td>
</tr>
<tr>
<td>25 = unimproved road</td>
<td></td>
</tr>
<tr>
<td>30 = graded and drained earth road</td>
<td></td>
</tr>
<tr>
<td>35 = gravel road (not oil and gravel)</td>
<td></td>
</tr>
<tr>
<td>40 = &lt;1” wearing surface</td>
<td></td>
</tr>
<tr>
<td>45 = cold mix asphalt pavement on concrete</td>
<td></td>
</tr>
<tr>
<td>50 = cold mix resurf on asphalt pavement surface + base &lt; 7</td>
<td></td>
</tr>
<tr>
<td>52 = cold mix resurf on asphalt pavement surface + base &gt; 7</td>
<td></td>
</tr>
<tr>
<td>55 = cold mix asphalt pvmt (CMAC) surface + base &lt; 7</td>
<td></td>
</tr>
<tr>
<td>57 = cold mix asphalt pvmt (CMAC) surface + base &gt; 7</td>
<td></td>
</tr>
<tr>
<td>60 = hot mix asphalt pvmt on concrete (HMAC on PCC)</td>
<td></td>
</tr>
<tr>
<td>65 = hot mix resurfacing (overlay) on asphalt pavement</td>
<td></td>
</tr>
<tr>
<td>70 = hot mix asphalt pavement (HMCC)</td>
<td></td>
</tr>
<tr>
<td>75 = concrete pavement (PCC)</td>
<td></td>
</tr>
<tr>
<td>80 = brick or block pavement</td>
<td></td>
</tr>
<tr>
<td><strong>Surface Width</strong></td>
<td>Face of curb to face of curb or inside edge of shoulder to inside edge of shoulder.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Traffic Lanes</strong></th>
<th>The portion of a traveled way for the movement of a single line of vehicles.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Traffic lanes</strong></td>
<td>Excludes parking lanes.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Vertical (Optional)</strong></th>
<th>The rating applied to grades and vertical curves based on their design and the terrain in which they are situated.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Vertical Codes</strong></td>
<td></td>
</tr>
<tr>
<td>1 = Excellent</td>
<td>All grades and vertical curves meet minimum design standards appropriate for the terrain. Reduction in rate or length of grade would be unnecessary even if reconstruction was required to meet other deficiencies, i.e. capacity, horizontal alignment etc.</td>
</tr>
<tr>
<td>2 = Good</td>
<td>Although some grades and vertical curves are below design standards for new construction, all grades and vertical curves provide sufficient sight distance for safe travel and do not substantially affect the speed of trucks.</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>3 = Fair</td>
<td>Infrequent grades and vertical curves that impair sight distance and/or affect the speed of trucks if climbing lanes are not provided.</td>
</tr>
<tr>
<td>4 = Poor</td>
<td>Frequent grades and vertical curves that impair sight distance and/or affect the speed of trucks.</td>
</tr>
</tbody>
</table>