

UIIG Intersection Assessment and Inventory Form

OVERVIEW/GENERAL INSTRUCTIONS

The Unsignalized Intersection Assessment and Inventory Form (the Form) was developed as part of the *Unsignalized Intersection Improvement Guide* (UIIG) under the National Cooperative Highway Research Program (NCHRP) Project 03-104. The purpose of the Form is to provide users with the following:

- A comprehensive listing of topic areas and data elements directly or indirectly contributing to the safety, operations, and mobility at unsignalized intersections that should be considered by road owners when investigating road issues; and
- A user-friendly interface through which the intersection data can be entered and ultimately summarized in a basic spreadsheet.

The Basics

- The Form is a Microsoft Excel spreadsheet with macros compatible with version 2007 and newer. It must be downloaded onto a computer desktop or server.
- The Form was designed to function via an interactive interface through which users can input intersection data. As such, it includes various dropdown menus that present multiple-choice type responses, as well as multiple links through which data entered into one tab are employed by one or more additional tabs. *Because of its inherent interactive qualities, the Form was designed to be utilized via Microsoft Excel and not in hard-copy format.*
- The list of data elements comprises a comprehensive catalog of variables generally associated with unsignalized intersections. The data elements incorporate both qualitative and quantitative assessments of the intersection conditions, as well as some basic details common to an agency's inventory.

Using the Form

- Upon opening the Form, users should click on the "Enable Content" button to enable macros and allow the spreadsheet to function correctly.
- Because of the programming and coding involved, additional data elements beyond those already presented cannot be added to the Form. However, users may tailor the Form to meet their individual needs by right-clicking on a given row and hiding it, which will exclude this data element from the data summary tab.
- Once the Form has been modified as desired, the user should save the file as an "Excel Macro-Enabled Template." Each time this template file is subsequently opened, users will be unable to overwrite the master file with intersection-specific data and will instead be required to save the information as a new file.

- While users are free to input or omit data elements throughout the Form as they please, basic data regarding the fundamental intersection characteristics are required to properly set up the Form for the subject intersection. As such, users should do the following to begin entering data:
 - 1) Complete the *1-Intersection Identification* tab, especially the *Intersection no. of approaches*. Click the "Step 1: Update Approaches" button when finished.
 - 2) Complete the *2-Approaches* tab, especially the *Street Name* and *Approach Direction* elements. Click the "Step 2: Update Workbook" button when finished.
 - 3) Continue entering data elements on interactive tabs *3 - 10*, as desired.
 - 4) When all desired data elements have been entered, go to tab *11-Data Summary* and click the "Step 3: Collect Data for this Intersection" button to produce a column of data that summarize the user's inputs.
- Once all data for an intersection have been entered, the user should save the spreadsheet as a "Macro-Enabled Workbook" with a unique file name.

Creating a Simple Database for Multiple Intersections

- The output generated on the *11-Data Summary* tab can be used to create a database for multiple intersections that have been cataloged by the Form. It is imperative that all intersection data are entered using the same master template file so that the individual data elements listed on all summary tabs are identical.
- To compile data from multiple intersections, do the following:
 - 1) Open the *UIIG Intersection Database Template* spreadsheet.
 - 2) Open the spreadsheet for the first inventoried intersection. Go to its *11-Data Summary* tab, select cells B14 – L14 right-click, and select "Copy."
 - 3) In the *Intersection Database Template* spreadsheet, on the *Intersection Identification* tab, right-click on cell A3 and select "Paste."
 - 4) In the spreadsheet for the first inventoried intersection, select all the detailed intersection data beginning with cells B17 – F17 and continuing to the final row of data; right-click and select "Copy."
 - 5) In the *Intersection Database Template* spreadsheet, on the *Intersection Details* tab, right-click on cell A2 and select "Paste."
 - 6) Save the database spreadsheet.
 - 7) To compile the data from all of the inventoried intersections, repeat steps 2 – 6 for each intersection and paste the data immediately below the preceding intersection.

See the Worksheet Instructions for additional information about the Form.

UIIG Intersection Assessment and Inventory Form

WORKSHEET INSTRUCTIONS

The Unsignalized Intersection Assessment and Inventory Form (the Form) comprises 10 worksheets (or tabs) through which users can enter data related to the following aspects of their unsignalized intersection:

- 1- *Intersection Identification*
- 2- *Approaches*
- 3- *Geometry & Cross Section*
- 4- *Traffic Signs*
- 5- *Pavement Markings*
- 6- *Traffic Volumes & Operations*
- 7- *Environment & ISD*
- 8- *Pedestrians & Bicyclists*
- 9- *Nighttime Conditions*
- 10- *Potential Problems*

An eleventh worksheet (*11-Data Summary*) is provided to summarize all of the user-inputted data from tabs 1 – 10.

General Worksheet Information

- Review and follow the procedures outlined in the *Overview/General Instructions* that accompany the Form.
- Because of the programming and coding involved, additional data elements beyond those already presented cannot be added to the Form. However, rows may be hidden by right-clicking on them and selecting “Hide,” which will also serve to exclude this data element from the data summary tab.
- While a field visit may be required to retrieve all of the listed data variables, much of the information noted in the Form may be compiled from the office using existing data files, publically-accessible internet mapping and aerial imagery, and other sources.
- Most of the worksheets utilize dropdown menus for some of the data elements; cells having dropdown menus will display a down arrow when selected.
- Do NOT enter data in the tabs 3 – 10 until tabs 1 and 2 have been completed and the Step 1 and Step 2 buttons have been employed.

Worksheet-Specific Details

Listed below are some additional details regarding each of the interactive worksheets.

1-Intersection Identification

- Intersection ID: enter a unique identifier (e.g., 001 or Oak-Second) in any format established by the user.
- Major Street: enter the name of the major road, which will usually be the higher-volume road.
- Cross Street: enter the name of the minor road, which will usually be the lower-volume road.
- Location – County: enter the name of county.
- Location – city/town: enter the city name, if applicable.
- Date of inventory entry: enter the date as a date value (e.g., MM/DD/YYYY).
- Intersection no. of legs: select the appropriate value from the dropdown menu.
- Intersection geometry: select the appropriate type from dropdown menu.
- Intersection traffic control: select the appropriate type from dropdown menu.
- Intersection control beacon: select yes or no, as appropriate. An intersection control beacon consists of one or more signal faces directed toward each intersection approach; the beacon flashes red for all stop-controlled approaches and yellow for the approaches not required to stop.
- Rural/Urban/Suburban Designation: select the appropriate area type descriptor.

After entering the data for worksheet 1, click the "Step 1 Update Approaches button" to update the Approach data on worksheet 2.

2-Approaches

The Approach Data sheet should show columns for the same number of approaches as entered in worksheet 1.

- Road Name: enter the name of the street or road for each approach.
- Approach Direction: select from the dropdown menu the appropriate cardinal direction for each approach.
- Route No.: enter the state or county route number for each approach, if applicable; this element can be hidden by right-clicking on the associated row and selecting "Hide."
- Milepost: enter the intersection milepost for each approach, if applicable; this element can be hidden by right-clicking on the associated row and selecting "Hide."

After the data are entered, click on the "Step 2 Update Workbook" button to apply the responses to worksheet 3.

3-Geometry & Cross Section

- For all data elements that have a blank cell, key in the appropriate value.
- For all data elements that have a dropdown menu, select the appropriate value.
- To omit a data element from the summary, right-click on the associated row and select "Hide."

4-Traffic Signs

- For all data elements that have a blank cell, key in the appropriate value.
- For all data elements that have a dropdown menu, select the appropriate value. Note that, for some entries, a "Pick from photo" option is available.
- To omit a data element from the summary, right-click on the associated row and select "Hide."

5-Pavement Markings

- For all data elements that have a blank cell, key in the appropriate value.
- For all data elements that have a dropdown menu, select the appropriate value.
- To omit a data element from the summary, right-click on the associated row and select "Hide."

6-Traffic Volumes & Operations

- For all data elements that have a blank cell, key in the appropriate value.
- For all data elements that have a dropdown menu, select the appropriate value.
- To omit a data element from the summary, right-click on the associated row and select "Hide."

Volumes & Queues

- Approach AADT: enter the average annual daily traffic volume (AADT) for both directions of the approach.
- Approach AADT year: enter the year for which the above data applies.

Turning Movements

- Indicate the presence of signs by selecting from the MUTCD sign code or from the photo in the dropdown menu.

Vehicular Speed

- Upstream posted speed limit (mph): select the value from dropdown menu.
- 85th percentile speed (mph): if a speed survey was conducted, enter this value.

7-Environment & ISD

- For all data elements that have a blank cell, key in the appropriate value.
- For all data elements that have a dropdown menu, select the appropriate value.
- To omit a data element from the summary, right-click on the associated row and select "Hide."

Environment

- Intersection(s) w/in 250 ft: enter "yes" or "no" to indicate whether there are other intersections with public streets within 250 feet of the subject intersection along each approach.
- Driveway(s) w/in 250 ft of intersection: enter "yes" or "no" to indicate whether there are any driveways within 250 feet of the subject intersection along each approach.
- Adjacent land use: select the appropriate response from the dropdown menu.
- Land use comments: provide comments about the land use, as appropriate.
- Noticeable drainage deficiencies: provide comments, as appropriate (e.g., clogged drainage inlet or standing water).
- Unprotected roadside hazards: provide comments, as appropriate (e.g., lack of guardrail to protect exposed head wall).

Intersection Sight Distance (ISD)

- Intersection sight distance qualitative assessment: select a response from the dropdown menu.
- ISD (ft) looking left/right: enter the distance in feet that the driver can first see oncoming vehicles looking to the left or right from the minor road stop position.
- Noted obstructions to ISD: select the appropriate response from the dropdown menu.

8-Environment & ISD

- For all data elements that have a blank cell, key in the appropriate value.
- For all data elements that have a dropdown menu, select the appropriate value.
- To omit a data element from the summary, right-click on the associated row and select "Hide."

9-Nighttime Conditions

- For all data elements, select the appropriate value.
- To omit a data element from the summary, right-click on the associated row and select "Hide."

10-Potential Problems

- For each Problem Type, select “yes” or “no” from the dropdown menu to indicate whether it may be an issue at the subject intersection; provide comments, as appropriate, to provide additional details.
- Other problems beyond the ten defined by the UIIG—including concerns raised by the public—can be described in the cells under “Concerns Expressed by the Public or Description of Other Problems Observed.”

11-Data Summary

- After all desired data elements for the intersection have been entered in tabs 1 – 10, click on the “Step 3 Collect Data for this Intersection” button, which will draw all of the data entries for the intersection into this worksheet.

Final Steps

- Save the spreadsheet as a “Macro-Enabled Workbook” with a unique file name.
- To compile the data from multiple intersections, see the Creating a Simple Database for Multiple Intersections in the Overview/General Instructions.

