**Work Zone Traffic Analysis Tool (WZTAT) ‘How to Guide’**

The work zone traffic analysis tool is a straight forward tool; however some guidance on how to use the tool and how it works is below.

Inputs Tab – basic project information, closure information and Queue Discharge Rate.

1. Cells shaded in yellow are editable and information should be filled in.
2. Projects Inputs – insert all the project information as much as possible.
3. Closure Inputs – select the closures you plan to analyze.
   1. Barrier Type:
      1. Hard = positive protection/concrete barrier temporary precast,
      2. Soft = drums, flexible tubular markers, etc.
   2. Construction Intensity:
      1. High: active construction work that is likely to substantially impact the behavior of drivers. (Examples: base patching, mill and overlay, workers next to adjacent lane of traffic without positive protection, joint repair, saw cutting, etc)
      2. Low: construction work that was unlikely to substantially impact the behavior of drivers traversing the work zone. (Examples: positive protection, off alignment work, cross-over with all work on a closed road, etc)
4. Results – daytime and night time queue discharge rates in passenger car per hour per lane.
5. Duration Inputs – select when you will have lane closures in the shaded yellow cells.
6. Heavy Vehicle Percentages – taken from HV% table in tab ‘Volume Input’
7. Print Feature – print to PDF and can select which months to print as well by checking or unchecking the box.
8. If you plan to have different lane closure hours for each direction, you will need to save two separate spreadsheets, on for each direction.

Volume Import – tab with all the volume and truck percentage data.

1. The Regional Work Zone Engineer will have input the data from the ATR station and the data should show up.
2. If the ATR site did not have truck percentages, fill in the table based on your traffic forecast. You can also use an overall truck percentage for the entire day. Insert the truck percentage in the shaded yellow cells where it says ‘Copy Truck % for All’.
3. From this page you may also had a growth or diversion percent that will be applied to all volumes in the spreadsheet.

Volume Stats – tab that shows the quality of the data.

1. The volume stats report shows the user the quality of the imported volume data.
2. 100% implies that each day of the particular month has volume data.
3. Less than 100% means some volume data is missing for that day of the particular month.

Calculations –

1. This tab contains all the calculations for work zone capacity estimates, queues, and costs.
2. The growth %, diversion %, and diversion delay time inputs are the only editable cells.
3. Growth/diversion updated will be reflected on every tab throughout the tool.

Queue Miles –

1. This tab contains queue miles for every hour of every day for both directions.
2. Shows the queue length at the end of each hour.
3. Hours with queues are present are highlighted based on the color scale at the top of the worksheet.
4. The growth %, diversion %, and diversion delay time inputs are the only editable cells.
5. Growth/diversion updated will be reflected on every tab throughout the tool.
6. The PDF below shows how the queue is determined in the spreadsheet:



Queue Minutes –

1. This tab contains queue minutes for every hour of every day for both directions.
2. Shows the delay per vehicle for each hour.
3. Hours with delay present are highlighted based on the color scale at the top of the worksheet.
4. The growth %, diversion %, and diversion delay time inputs are the only editable cells.
5. Growth/diversion updated will be reflected on every tab throughout the tool.

Total Costs –

1. This tab contains total costs for every hour of every day for both directions.
2. Shows the sum of queue costs and diversion cost for each hour.
3. Hours with costs present are highlighted based on the color scale at the top of the worksheet.
4. The growth %, diversion %, and diversion delay time inputs are the only editable cells.
5. Growth/diversion updated will be reflected on every tab throughout the tool.

Adj. Volumes –

1. This tab contains adjusted volumes for every hour of every day for both directions.
2. Hours are highlighted if the adjusted volume is greater than the estimated capacity.
3. The color scale is for how many times greater the volume is than capacity.
4. The growth %, diversion %, and diversion delay time inputs are the only editable cells.
5. Growth/diversion updated will be reflected on every tab throughout the tool.

Avg. Monthly Volumes –

1. This tab contains average weekday volumes by month for both directions.
2. Hours are highlighted if the average volume is greater than the estimated capacity.
3. The color scale is for how many times greater the volume is than capacity.
4. The growth %, diversion %, and diversion delay time inputs are the only editable cells.
5. Growth/diversion updated will be reflected on every tab throughout the tool.

If you have questions on the tool, please contact Erin Schwark with the Bureau of Traffic Operations at [erin.schwark@dot.wi.gov](mailto:erin.schwark@dot.wi.gov)