



# ADOT WORK ZONE QUEUE & DELAY ANALYSIS SPREADSHEET

Use this spreadsheet to estimate the length of queue and delay at a work zone.

Analysis can be completed for: Shoulder closure, lane reduction, median crossover or Temporary Bypass lane

For Flagger operations, use a supplemental spreadsheet.

## Data Needed for this analysis

Project location:	District
Area Type:	Rural, Urban, Sub-Urban, CBD, Small Town
Facility type:	Freeway, Major/Minor Arterial, Collectors should be referenced as minor arterials
Roadway Information:	ADT, Speed, Number of lanes, Signal, Grade, Lane Width
Work Zone:	Type of Work, Location of work from travel lanes, Type of barriers, Intensity of work, Time of work, Detour

Enter information into the **HIGHLIGHTED** cells.

<b>Green</b>	Fill in information
<b>Blue</b>	Choose from Drop Down Menu
<b>White</b>	No Change to Inputs

The following links will provide additional details regarding the assumptions made in this spreadsheet and ADOT's Traffic Control

ADOT Engineering Policy Guide: <https://azdot.gov/sites/default/files/2019/09/TrafficControlDesignGuidelines2019.pdf>

ADOT Guidelines & Processes <https://azdot.gov/business/engineering-and-construction/traffic/guidelines-and-processes>

This Spreadsheet refers to values and formulas from Highway Capacity Manual: HCM 6.0 & HCM 2010

This spreadsheet was developed by: Anita S Johari, PE, PTOE, Wood Environmental & Infrastructure Solutions, Inc.

Direct any questions regarding this spreadsheet to:

**Adam Carreon, PE**  
Operations & Safety Engineer – Special Projects  
[acarreon@azdot.gov](mailto:acarreon@azdot.gov)

Credit: This spreadsheet was developed with reference to MoDOT's Work Zone Impact Analysis Spreadsheet