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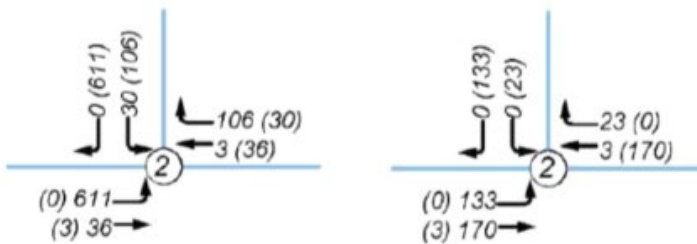
DATE: September 24, 2020

SUBJECT: Resolution Copper Project: Traffic Impact Analysis Sensitivity Analysis

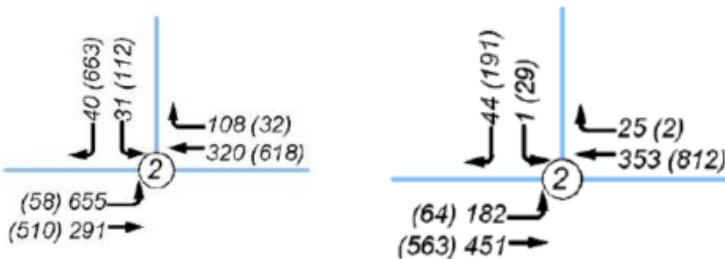
## SENSITIVITY ANALYSIS

Mitigations and conclusions described in the Original TIA<sup>1</sup> and TIA Addendum #1<sup>2</sup> are based on conservative estimates of Resolution Copper Mine Project trip generation and traffic forecasting for the peak construction year (2022) and the beginning of normal operation (2027).

The goal of this sensitivity analysis is to test a 10 percent margin of error on traffic volumes predictions for each intersection movement and see if this would impact the suggested mitigations or conclusions presented in the TIAs. In TIA Addendum #1, the United States (U.S.) 60/Main Street intersection is mentioned as a sub-standard intersection during peak construction because the added 611 and 106 vehicles per hour to eastbound left and westbound right -turn movements (TIA Addendum #1, Figure 9) eliminate gaps for southbound traffic to turn onto U.S. 60.



Source: TIA Addendum #1, Revised Weekday Peak Hour Trip Assignment (U.S. 60/Main Street Intersection, Years 2022 (Figure 8) on Left and 2027 (Figure 9) on Right



Source: TIA Addendum #1, Weekday Peak Hour Traffic Volumes with Project (U.S. 60/Main Street Intersection, Years 2022 (Figure 12) on Left and 2027 (Figure 13) on Right

<sup>1</sup> Traffic Impact Analysis – Resolution Copper Mine, Superior, AZ; Southwest Traffic Engineering, LLC; July 1, 2016 (Revised April 13, 2017).

<sup>2</sup> Traffic Impact Analysis – Addendum #1 – Resolution Copper Mine, Superior, AZ; Southwest Traffic Engineering, LLC; July 2, 2020 (Revised August 19, 2020).

## POTENTIAL CONCERNS

Several key concerns could emerge at this intersection.

- Southbound turning movements have a predicted level of service (LOS) ranging from E to F during the AM and PM peak hours in 2022 during construction. This excessive side street delay could lead to unplanned route shifting into the town of Superior for trips heading to and from U.S. 60 to the east.
- The existing eastbound left-turn lane queue estimate of 220 feet is equal to the maximum available storage length. Any additional vehicles queuing for this movement would extend (spillover) into the eastbound through traffic and create a safety risk.
- The predicted westbound right-turn volume warrants the installation of a westbound right-turn lane during peak construction.

## SENSITIVITY ANALYSIS FINDINGS

Sensitivity testing for each of the listed concerns revealed the following:

- Southbound traffic needs additional gaps to turn onto U.S. 60 during the peak construction years, but this is not necessary during normal operation. A temporary signal at the U.S. 60/Main Street intersection should be considered during the construction years.

Eastbound left-turn traffic will queue beyond the available storage length of 220 feet (resulting in spillover into the eastbound through traffic and create a safety risk) if there is a 10 percent increase in the westbound through and eastbound left-turn traffic volumes. This scenario is only apparent during peak construction years. A temporary signal at the U.S. 60/Main Street intersection with the ability to provide a protected eastbound left-turn phase should be considered during the construction years.

- Westbound right-turn traffic will meet turn lane warrants under normal operations if there is a 10 percent increase in the westbound through and right-turn traffic volumes. Updated intersection counts should be collected as normal operations of the Resolution Copper project begin and the need for a right-turn lane should be re-evaluated at that time.