October 11, 2016

TO: Commissioners, Director, and Deputy Directors

FROM: Mitch Skiles, Transportation Modeler

SUBJECT: **Standard Operating Procedure for Evaluating Roadway Reconfiguration Projects**
Staff Report for October 19, 2016 Work Session

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**Executive Summary**

Over the last few years, ACHD received an increasing number of requests for lane reconfiguration projects. Staff developed a set of Standard Operating Procedures (SOP) to measure performance of these types of projects for use moving forward. During the work session, Staff will present the prepared SOP for Commission review.

**Facts & Findings**

Roadway reconfiguration, as it is referred to in the SOP, implies any roadway treatment that removes a travel lane in order to improve safety and/or to provide space for other roadway elements such as bike lanes, sidewalks, or parking.

On December 2, 2015, ACHD Staff presented to the Commission the results of a survey conducted in the previous months regarding lane reductions in general and with respect to some of the projects under consideration by ACHD. The survey revealed that a majority of respondents would tolerate some added inconvenience in order to improve access and safety for users if impacts were understood.

In response to the survey results, ACHD saw the need to develop standards that provide guidance for data collection and analysis procedures to monitor roadway reconfiguration projects in a manner that is sensitive to tolerances expressed by the public. The goal of the attached SOP is to provide such guidance. Four stages of evaluation are presented in the SOP:

- Consideration of the context of a roadway and data needs
- Collection of existing and new data
- Projection of future conditions and impacts
- Review of performance measures and methodology as more data becomes available
Ultimately, the SOP is intended to be the starting point for evaluating both the feasibility of a roadway reconfiguration prior to implementation and the level of success accomplished after implementation.

**Fiscal Implications**

Several roadway reconfiguration projects are presently under consideration by ACHD as approved in the FY2016-2020 Integrated Five-Year Work Plan adopted October 28, 2015:

- Emerald Street and Americana Boulevard (programmed for construction in 2017)
- Orchard Street Reconfiguration (technical study in 2018)
- Main Street and Idaho Street (lane reduction on one-way streets, current study)
- Fairview Avenue and Main Street (lane reduction on one-way streets, current study)

Data collected in conformance with this SOP is in line with ACHD’s standard data collection procedures and can be completed with in-house resources.

**Policy Implications**

The SOP provides guidance and a level of accountability for measuring potential roadway reconfiguration projects against public tolerances and Commission goals. Before-and-after analysis standards will help staff to inform future policy and project decisions related to roadway reconfiguration.

Attachment: *Standard Operating Procedure for Roadway Reconfiguration (Draft)*
STANDARD OPERATING PROCEDURE FOR ROADWAY RECONFIGURATION

A RECOMMENDATION FOR DATA COLLECTION AND BEFORE-AND-AFTER ANALYSIS STANDARDS

INTRODUCTION

Roadway reconfiguration, as it is referred to in this document, implies any roadway treatment that removes a travel lane in order to improve safety and/or to provide space for other roadside amenities such as bike lanes, sidewalks, a turn lane, or parking. These treatments include “road diets” — reducing a two-way section with four undivided travel lanes to three lanes (one lane in each direction with a center turn lane). Another treatment is removing a travel lane from a multi-lane, one-way road. There is currently more national guidance related to analysis of the typical “road diet” than there is for the latter treatment on one-way streets.

Several roadway reconfiguration projects are presently under consideration by ACHD:

- Emerald Street and Americana Boulevard (programmed for construction in 2017)
- Orchard Street Reconfiguration from Overland to Chinden (study in 2018)
- Main Street and Idaho Street (lane reduction on one-way streets, current study)
- Fairview Avenue and Main Street (lane reduction on one-way streets, current study)

In December of 2015, ACHD released the results of a survey (henceforth referred to as the survey) conducted in the previous months regarding lane reductions in general and with respect to some of the projects listed above. In general the survey revealed that a majority of respondents would tolerate some added inconvenience in order to improve access and safety for users:

“There is majority support for reducing motor vehicle lanes to add features that increase access and safety, as long as the rise in congestion and drive time are small. People are willing to consider and make modest trade-offs that they understand, but their support depends heavily on exactly what those trade-offs are.”

In response to the survey results, ACHD saw the need to develop standards that provide guidance for data collection and analysis procedures to monitor roadway reconfiguration projects in a manner that is sensitive to tolerances expressed by the public. The goal of this standard operating procedure (SOP) is to provide such guidance.

1 Ada County Highway District, Reducing Traffic Lanes to Improve Safety and Access: Opinions of Ada County Commuters and Boise City Residents, Prepared by Strategic Intelligence, December 01, 2015
The graphic in Figure 1 summarizes the evaluation phases of this SOP. Each phase is detailed further in the following sections. ACHD should seek to provide context-sensitive solutions for each individual project. This document should be viewed as a starting point for evaluating roadway reconfiguration projects. Other data and considerations not provided within this SOP may be necessary depending on the specific roadway treatment under review and the location of the project.

### Figure 1: Summarized SOP with four phases of evaluation for roadway reconfiguration

**CONSIDER: PERFORMANCE MEASURES FOR ROADWAY RECONFIGURATION**

**CONTEXT OF PROJECTS**

The first consideration when evaluating a potential roadway reconfiguration is the context of the roadway. 45 percent of the survey respondents indicated that their support for roadway reconfiguration would "depend on the circumstances." The implications of roadway reconfiguration vary from city to city and from neighborhood to neighborhood. Many factors such as the type of reconfiguration, surrounding land use (existing and proposed), existing issues that the project addresses (safety, bicycle connectivity, parking, etc.), and potential stakeholders impact the practicality of a roadway reconfiguration. These factors should be acknowledged throughout the evaluation process. Furthermore, the impacts other proposed projects in the area should be considered. If a roadway under consideration for reconfiguration intersects another roadway under consideration for reconfiguration (e.g. Emerald and Orchard), the impacts that the two reconfigurations have on each other should to be considered. See the **Future Conditions** section for a list of plans and documents to reference.

**DATA NEEDS**

The second consideration is the type of data needed. It is important to collect adequate data prior to a reconfiguration in order to allow for a proper before-after comparison. With guidance from the survey and from
the Federal Highway Administration’s (FHWA) Road Diet Informational Guide\(^2\), the following performance measures are identified to be most relevant to roadway reconfiguration projects in Ada County:

- Traffic Volume
- Travel Speed
- Travel Time
- Crash History
- Bicyclist and Pedestrian Volumes

### TRAFFIC VOLUME

Traffic volumes are often readily available for major streets and provide high-level insight into the feasibility of a roadway reconfiguration. Traffic volumes should be recent (roughly within three years or after any major changes to the roadway or the surrounding area). Recommendations for requesting new data are outlined in the section Collect: Standards for Requesting/Obtaining Data. Daily volumes, peak hour volumes, and turning volumes all play a distinct role in the analysis of roadway reconfiguration and are explained below:

#### DAILY VOLUMES

Thresholds for the feasibility of a typical “road diet” are generally expressed in terms of average daily traffic (ADT). The maximum threshold varies by agency, but most sources are in agreement that any roadway above 20,000 ADT should be either removed from consideration or considered with caution. FHWA provides the following guidance:

“The FHWA advises that roadways with ADT of 20,000 [vehicles per day] or less may be good candidates for a Road Diet and should be evaluated for feasibility.”\(^2\)

Figure 2 shows general ranges for “road diet” candidacy. A roadway with ADT at or near 20,000 will require more cautious consideration with more emphasis on peak hour volumes, signal spacing, and access density. Access control may be a necessity with higher access densities and ADT near the upper threshold.

#### PEAK HOUR VOLUMES

Peak hour directional volumes are used to calculate level of service (LOS) which is a qualitative designation based on a quantitative measure of roadway capacity utilization. Roadway reconfiguration is likely infeasible if the existing configuration is at an unacceptable LOS. ACHD’s capacity thresholds for arterial roadways are documented within the Capital Improvements Plan (CIP)\(^3\). For most analysis PM peak volumes are sufficient, but there may be


\(^3\) Ada County Highway District, Capital Improvements Plan (2016-35), Adopted August 16, 2016, page C-9
cases, especially with one-way roads or in the central business district, where both AM and PM peak volumes should be considered.

**TURNING VOLUMES**

Intersection turning movement volumes are used to evaluate current intersection operations. If existing volumes are creating extended delays for drivers or long queue lengths that cannot easily be alleviated with signal timing changes or design elements, then roadway reconfiguration may not be the most appropriate treatment. If design elements are considered at intersections where reconfiguration is proposed, caution should be taken to ensure that the purpose of the roadway reconfiguration is not being negated by those elements. For example, if a roadway reconfiguration is proposed to add additional space for bicycle facilities, a dedicated right-turn lane without proper design considerations may create conflicts with the additional bicycle facilities.

Intersection analysis of critical intersections allows for the evaluation of cross-street impacts. The potential for additional queuing and longer delays on cross-streets should be monitored.

If a roadway under consideration for reconfiguration has large driveway densities, it may be appropriate to observe mid-block left-turn conflicts in addition to intersection turning movements. One observed benefit of the typical “road diet” is a safer environment for roadways with a high volume of mid-block left turns. Driveway consolidation should also be considered where appropriate to minimize left-turn conflicts.

**TRAVEL SPEED**

One goal of a roadway reconfiguration may be to reduce travel speeds. A speed study can reveal several characteristics of a roadway that are relevant to reconfiguration: average speed, 85th percentile speed – the maximum speed at which 85 percent of drivers travel (often used in determining posted speeds), and the percent of vehicles driving at excessive speeds (more than five miles-per-hour over the posted speed). The variability in travel speeds should also be noted when observing speed data. Recommendations for requesting new data are outlined in the section *Collect: Standards for Requesting/Obtaining Data.*

**TRAVEL TIME**

Many people think of their trips in terms of travel time. Therefore, the consideration of roadway reconfiguration should be sensitive to the impacts on users’ travel time. The survey indicated that some respondents were not in favor roadway reconfiguration regardless of their impact on travel time and others were in favor of roadway reconfiguration event if the impacts to travel time were significant. The majority of respondents would accept a modest increase in travel time and congestion if other benefits were realized:

“At least 57% would tolerate some added congestion and a minute or two of added drive time in a Boise trip to improve access and safety for users.”

If a roadway reconfiguration is projected to add significantly more than two minutes to the average peak-hour travel time, ACHD should either remove the reconfiguration from consideration or re-evaluate the public benefit to ensure that a majority of stakeholders and users will tolerate the additional delay.
Recommendations for requesting new data are outlined in the section **Collect: Standards for Requesting/Obtaining Data**. Recommendations for projecting the impacts of a roadway reconfiguration are outlined in the section **Project: Future Considerations**.

**CRASH HISTORY**

Crash history helps to identify safety issues along a corridor. Detailed crash data reflects crash type, crash severity, and many other factors that may be related to the cause of a crash (e.g. time, lighting, road conditions). If safety is the primary reason for considering a roadway reconfiguration, these data should be reviewed to ensure that past crashes are the types that can be alleviated by a roadway reconfiguration. Crash types with observed reduction after the implementation of a typical “road diet” include left-turning crashes, rear-end crashes specifically occurring mid-block in the inside travel lane, and sideswipe crashes related to vehicles trying to avoid slowed/stopped left-turning vehicles.

**BICYCLIST AND PEDESTRIAN VOLUMES**

If the primary goal of a roadway reconfiguration is to improve comfort and/or safety for bicyclists and pedestrians, volumes of each respective mode is recommended. These volumes do not speak directly to the success or failure of a roadway reconfiguration, but provide insight into additional use associated with added facilities. In some locations, the volumes prior to implementation will be minimal due to bicycle and pedestrian facilities that are lacking or non-existent. A roadway reconfiguration can provided space for such facilities and add to the connectivity of those networks, but it is important to ensure the facilities get utilized as they are intended.

**COLLECT: STANDARDS FOR REQUESTING/OBTAINING DATA**

The first step in collecting data is to obtain existing data that is available for each of the performance measures listed in the section **Consider: Important Metrics for Roadway Reconfiguration**. The next step is to request new data where existing data is outdated or unavailable.

**EXISTING DATA**

Data is typically available for both crash history and traffic volumes. Crash data is available from the Idaho Transportation Department (ITD) and is compiled periodically by ACHD in the form of a GIS. For purposes of evaluating roadway reconfiguration feasibility, crash data should be gathered for the preceding three years with completed datasets.

Traffic volumes are collected throughout Ada County at different times for many different reasons. Prior to requesting counts, ACHD’s count database should be queried. Existing count data is generally sufficient if they were collected within the preceding three years and no major changes occurred in the surrounding area since the counts were collected.

Other data such as speed data or bicycle/pedestrian volumes may also be available. ACHD’s Traffic Analyst should be consulted prior to making a data request.
NEW DATA

Data should be analyzed both before and after the completion of a roadway reconfiguration is implemented. If the data needed is not currently available, it needs to be requested. This section provides recommendations for the timing in which these requests should be made and details the specific items that should be included within a request for new data.

Traffic data can be impacted by several factors: weather, events, school activity, nearby road closures, other construction projects, etc. All of these factors need to be considered when requesting new data. For significant data requests, the requester should allow two to three months for the data to be collected and processed. Smaller data requests can be completed within about one month. The requester should target a time of year when the weather is fair, no major events are happening, school is in session, and there are no nearby construction projects that might skew the data.

Different performance measures require different durations of data collection. Table 1 provides recommendations for collection periods for each performance measure.

<table>
<thead>
<tr>
<th>Performance Measure</th>
<th>Collection Period*</th>
<th>In Standard Request Form (Y/N)</th>
<th>Multiple Collection Days for Comparison (Y/N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traffic Volume</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Road Segment</td>
<td>D, P, A</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Turning Movements</td>
<td>P, A**</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Travel Speed</td>
<td>O***</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Travel Time</td>
<td>P, A**</td>
<td>N</td>
<td>Y</td>
</tr>
<tr>
<td>Bike Volume</td>
<td>P, A**</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Pedestrian Volume</td>
<td>P, A**</td>
<td>Y</td>
<td>N</td>
</tr>
</tbody>
</table>

* D = Daily (24 hours), P = PM Peak Hour, A = AM Peak Hour, O = Off-Peak
** AM Counts should be collected along one-way streets, in the CBD, and in areas likely to experience heavier traffic in the morning
*** The collection period for speed studies should be left to the discretion of the traffic analyst as they need to capture free-flow speeds

Table 1: Recommended collection periods for different performance measures

Traffic segment data is needed between each major intersection along the corridor. Turning movement data is needed at each major intersection along the corridor. Travel speeds, bike volumes, and pedestrian volumes are likely only needed at one or two locations depending on the length of the corridor. An example of a completed standard data request form is provided in the Appendix.

Travel time data is not currently an item in ACHD’s standard request form. The process (a floating car study) is labor intensive and is not conducted frequently by ACHD. For roadway reconfiguration, a minimum of two days of peak hour travel time data should be collected for comparison. The data should be time stamped at each major intersection along a corridor in order to evaluate the travel time of individual segments. If a corridor study is contracted out, travel time data collection should be included in the contract to free up internal resources. However, if the study is conducted internally, the data should be requested with two to three months of notice.
DATA COLLECTION AFTER IMPLEMENTATION

Once a roadway reconfiguration is implemented, data needs to be collected to evaluate the impacts realized. To fully evaluate the impacts, three years of crash data are needed after the reconfiguration in order to compare like with like with the data gathered prior to the reconfiguration. However, data should be collected prior to the three year mark to monitor a reconfiguration. A recommendation for target data collection times is in Figure 3.

![Figure 3: Data collection targets after the implementation of a roadway reconfiguration](image)

The three month target allows time for traffic patterns to adjust to a reconfigured roadway. A preliminary evaluation of the reconfiguration can be conducted once crash data is available for the year following implementation. After three years, a final evaluation can be conducted to provide insight into the statistical significance of any changes associated with the reconfiguration.

PROJECT: FUTURE CONSIDERATIONS

FUTURE CONDITIONS

Several resources are available for considering the vision of ACHD and its partner agencies for future conditions:

- ACHD’s Integrated Five-Year Work Plan (IFYWP)
- ACHD’s Capital Improvements Plan (CIP)
- City and County-wide Comprehensive Plans
- ACHD’s Master Street Map (MSM)

These resources should be referenced to ensure that a roadway reconfiguration fits within the future context of its surrounding area. The Regional Travel Demand Model provides insight into future traffic and development conditions and can be used as an input in the evaluation of future impacts.

FUTURE IMPACTS

Impacts of roadway reconfiguration should be evaluated under future conditions. Several of the performance measures from the section Consider: Performance Measures for Roadway Reconfiguration can be projected to help identify the future impacts.

GUIDANCE FOR FUTURE PROJECTIONS

At a minimum, projections should be made for the time that the reconfiguration would likely be implemented. In some cases, projections may be needed for a horizon year further out if initial projections are near threshold margins for performance measures such as ADT, LOS, and travel time. FHWA provides the Seattle Department of Transportation’s (SDOT) standards for evaluating the feasibility of typical “road diets” shown in Figure 4. ACHD can
follow a similar process, but performance measure thresholds should be based on ACHD standards and the thresholds presented in other sections of this SOP. Thresholds will also vary depending on the type of reconfiguration. Furthermore, ACHD policy and guidance from the survey should be taken into consideration when using a flow chart like this.

Future traffic volumes and turning movements can be derived from the Regional Travel Demand Model. FHWA provides recommendations\(^4\) for crash modification factors (CMF) for typical "road diets" based on data from different regions. Data related to corridors in suburban areas surrounding larger cities (average population of 269,000) yields a CMF of 0.81 (crash reduction of 19%). Other regions show greater crash reduction rates, but in less populous areas. Until more local data is available, a CMF of 0.81 should be used to project crash reduction in areas where safety improvement is a focus. Projecting other performance measures such as travel speed and travel time may require more detailed analysis through mesoscopic or microscopic simulation methods.

An evaluation form was developed as part of this SOP. This form allows for data compilation and projections to be stored in one location. An example of the form is in the Appendix.

\[\text{Figure 4: SDOT flow chart\(^2\) for evaluating "road diet" feasibility. Note: ACHD thresholds vary from the values shown in this figure}\]
This SOP is intended to be the starting point for evaluating the feasibility of a roadway reconfiguration prior to implementation and the level of success accomplished after implementation. The imminent Emerald Street and Americana Boulevard reconfiguration should be used as a testing ground. The SOP should be reviewed regularly thereafter to ensure that performance measures are appropriate. Projection methods and CMFs need to be refined over time based on local observations to help bridge gaps between expected and realized impacts.
# APPENDIX

## ACHD TRAFFIC DATA REQUEST FORM

**From:** Mitch Skiles  
**Contact #:** 387-6238  
**Date:** 07/05/2016

<table>
<thead>
<tr>
<th>Count Locations:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emerald St, Orchard to Garden</td>
</tr>
<tr>
<td>Emerald St, Garden to Roosevelt</td>
</tr>
<tr>
<td>Emerald St, Roosevelt to Latah</td>
</tr>
<tr>
<td>Americana Blvd, Latah to Ann Morrison Park Entrance</td>
</tr>
</tbody>
</table>

**Comments:** Please do not collect until after school is in session.

<table>
<thead>
<tr>
<th>Type of count:</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Check all that apply)</td>
</tr>
<tr>
<td><strong>Volume</strong> ✔</td>
</tr>
<tr>
<td><strong>Speed</strong> ✔</td>
</tr>
<tr>
<td><strong>Classification</strong></td>
</tr>
<tr>
<td><strong>Radar</strong></td>
</tr>
<tr>
<td><strong>OMNI VIDEO</strong></td>
</tr>
</tbody>
</table>

**Length of Required Count in days:** 1

**Turn Movement:**
- AM Peak
- PM Peak
- Noon Peak
- Other (specify)

**Separate Ped count from bike count:** ✔ / N

**Pedestrian / Bicycle**
- AM Peak
- PM Peak
- Noon Peak
- Other (specify)

**School (Note Times):**

<table>
<thead>
<tr>
<th>Priority</th>
<th>By Date</th>
<th>Within 30 Days</th>
<th>Within 60 Days</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>09/30/2016</td>
<td>✔</td>
<td></td>
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</tbody>
</table>

**Purpose of Count:** Collect data prior to roadway reconfiguration

**Reason for Deadline:** After School is in session and before winter months

**Sketch:** (Include North Arrow) or Attach Map. Approximate count locations circled.
## Roadway Reconfiguration Standard Operating Procedure (Before-After Analysis)

**Street:** Emerald-American

**From Street (W/S):** Orchard

**To Street (E/N):** Ann Morrison Park Entrance

**Year of Project:** 2017

**Type of Reconfiguration:** 4 lanes undivided to 3 lanes

**CMF:** 0.81

### Crashes (3-year total)

<table>
<thead>
<tr>
<th>Road Segments</th>
<th>Before Reconfiguration</th>
<th>After Reconfiguration (Projected)</th>
<th>After Reconfiguration (Actual)</th>
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</thead>
<tbody>
<tr>
<td><strong>Segment 1: Emerald E/O Orchard</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Daily Volume</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>PM Peak Volume (Peak Direction)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Average Speed</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Speed (85th Percentile)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Travel Time</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>31</td>
<td></td>
<td>11374</td>
<td>11624</td>
</tr>
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<td>25</td>
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<td>543</td>
<td>644</td>
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### Intersections (PM Peak Hour)

**Intersection 1: Emerald/Orchard**

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<thead>
<tr>
<th>Turning Volumes</th>
<th>SBL</th>
<th>SBR</th>
<th>WBL</th>
<th>WBT</th>
<th>WBR</th>
<th>NBL</th>
<th>NBT</th>
<th>EBL</th>
<th>EBT</th>
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<tbody>
<tr>
<td>Before</td>
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<td>542</td>
<td>789</td>
<td>68</td>
<td>195</td>
<td>258</td>
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<td>After</td>
<td>3538</td>
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<td>61</td>
<td>224</td>
<td>263</td>
<td>111</td>
<td>103</td>
<td>148</td>
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<tr>
<td>After (Actual)</td>
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<td></td>
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**Modul Entering Volumes**

<table>
<thead>
<tr>
<th>Leg</th>
<th>North Leg</th>
<th>East Leg</th>
<th>South Leg</th>
<th>West Leg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traffic</td>
<td>473</td>
<td>307</td>
<td>544</td>
<td>146</td>
</tr>
<tr>
<td>Forecast Year</td>
<td>500</td>
<td>355</td>
<td>629</td>
<td>152</td>
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**Modul Exiting Volumes**

<table>
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<th>Leg</th>
<th>North Leg</th>
<th>East Leg</th>
<th>South Leg</th>
<th>West Leg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traffic</td>
<td>633</td>
<td>136</td>
<td>488</td>
<td>210</td>
</tr>
<tr>
<td>Forecast Year</td>
<td>681</td>
<td>226</td>
<td>521</td>
<td>211</td>
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**Intersection 2: Emerald/Garden**

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<th>Turning Volumes</th>
<th>SBL</th>
<th>SBR</th>
<th>WBL</th>
<th>WBT</th>
<th>WBR</th>
<th>NBL</th>
<th>NBT</th>
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<td>1132</td>
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<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
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</tr>
<tr>
<td>After</td>
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<td>1541</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
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**Intersection 3: Emerald/Roosevelt**

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<th>Turning Volumes</th>
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<th>SBR</th>
<th>WBL</th>
<th>WBT</th>
<th>WBR</th>
<th>NBL</th>
<th>NBT</th>
<th>EBL</th>
<th>EBT</th>
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<tbody>
<tr>
<td>Before</td>
<td>2181</td>
<td>1213</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<td>0</td>
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**Intersection 4: Emerald/Latiah**

**Intersection 5:**

<table>
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<th>Turning Volumes</th>
<th>SBL</th>
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<th>WBL</th>
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<td>0</td>
<td>0</td>
<td>0</td>
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</tr>
</tbody>
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### Notes:

- Counts from 7/23/2014
- Counts from 5/14/2014

**Base year = 2015; forecast year = 2020**