Welcome & Introductions

1. Approval of July 23 Committee Minutes* (page 2)

2. VOTE: Vice-Chair Election*

3. Two Minute Agency Updates

4. Proposed 2019 Meetings (page 5)

5. 2019 OGL Work Plan (page 6)

6. Olathe Traffic Signal Advancement Presentation – Olathe

7. Incident Management Diversion Planning - Olsson Associates (page 8)

8. Performance Measures - Olsson Associates (page 13)

9. Open Data Report and Future Direction (page 17)

10. Regional ATMS Systems Engineering Project - Iteris

11. MO CMAQ, KCMO CCTV, Blue Springs & Grandview Construction Project Update (page 27)

12. KCRPC Regional Procurement of Traffic Signal Components – Open discussion
   - Can OGL agencies benefit and have the ability to utilize KCRPC procurement

13. Quarterly Operations Update (page 28)


Other Business

Next Regularly Scheduled Meeting: Monday, January 28, 2019

Adjournment

*Action Items

Getting to MARC: Information on transportation options to the MARC offices, including directions, parking, transit, carpooling, and bicycling, can be found online. If driving, visitors and guests should enter the Rivergate Center parking lot from Broadway and park on the upper level of the garage. An entrance directly into the conference area is available from this level.

Parking: Free parking is available when visiting MARC. Visitors and guests should park on the upper level of the garage. To enter this level from Broadway, turn west into the Rivergate Center parking lot. Please use any of the available spaces on the upper level at the top of the ramp.

Special Accommodations: Please notify MARC at (816) 474-4240 at least 48 hours in advance if you require special accommodations to attend this meeting (i.e., qualified interpreter, large print, reader, hearing assistance). MARC programs are non-discriminatory as stated by Title VI of the Civil Rights Act of 1964. For more information or to obtain a Title VI Complaint Form, call 816-474-4240 or visit our webpage.
Welcome & Introductions
Meeting started at 1:30. Derek Olson, the Chair of the committee, welcomed all and conducted introductions

1. April 23 Committee Minutes – The minutes were approved unanimously.

2. Two Minute Agency Updates
   - MODOT will close one of two lanes for both NB and SB I-470 from 39th St to nearly Lakewood the weekend of August 3rd and then for several months starting mid-August for bridge repair.
   - President Trump’s visit on the 24th is expected to impact traffic around much of the city.
   - Shawnee is in construction on a road diet on Nieman Rd.
   - Johnson Dr. and Merriam Dr. intersection is closed for a couple weeks.
   - Olathe has started working with Miovision’s performance measures system on 119th St.
   - Summer 2019 KDOT will close the SB I-35 to SB US-69 bridge for about 4 months to rebuild.
   - Independence is rebuilding 39th & Noland.

3. MARC Automated Vehicle Task Force Presentation – Amanda Graor updated the committee on efforts underway in the region with MARC to prepare for Autonomous and Connected Vehicles. The main goal of the effort is to inform the Long Range Transportation Plan and ensure that all partners in the agency share information for mutual benefit. Amanda distributed a document the task force has drafted, intended to be an outline of their work and suggested regional policy priorities. Their intention is not to be involved in recommending specific technologies or pilot project locations but a framework for future efforts.
4. **OGL Program Vehicle Purchase Request** – OGL staff is looking to purchase an additional vehicle. It will likely be a Ford Transit Van that can be customized with shelving which will be better for transporting Miovision counting equipment. Staff plan to keep the two existing vehicles. Steve Schooley made a motion to approve the purchase of a new vehicle for up to $30,000, the motion was supported and passed.

5. **OGL Additional Staff Discussion** – OGL is looking to add another staff person for the OGL team. The additional person would assist the team as a whole to take on more hours, incident management responsibilities, in-house signal timing work, as well as helping with other MARC efforts such as TSMO and ICM, and planning for Autonomous and Connected Vehicles. The additional person would be technical but not necessarily an engineer. It was duly noted that farming out work to consultants does make the program better able to respond to budget cuts should they be necessary, since the contracted labor can be reduced rather than cutting staff.

6. **Incident Management Signal Timing Update** – Blake Hansen updated the committee. I-35 and I-435/I-70 initial incident management areas are almost complete in terms of the technical preparations. The team would like to schedule a table top exercise to make sure all partners are comfortable with the decision making and implementation process. Overland Park offered their Emergency Operation Center for a location. All agencies will be invited.

7. **Video Recording Proposal / Discussion** – Chris Jenkins presented a draft video recording proposal (included in the meeting packet) to the committee. MARC would need to buy some hardware to add recording storage capacity. There is still uncertainty on who owns the video imagery, how long it would be kept for, and who would be responsible for receiving and approving requests and extracting and distributing the video when requested by outside parties. The proposal also needs to be clearer on which cameras will be recorded on the MARC-owned servers. MARC will continue forward with the policy by verify participation and identify any legal issues.

8. **Regional ATMS Systems Engineering Project** – Steve Garbe introduced the project to the committee. We are at the beginning of the process of identifying the region’s requirements for ATMS software. The end of the process will be a drafted RFP document that will be used to select and procure a software package. The first workshop will be July 26th at MARC, 9:00 – 12:00 where agencies are encouraged to come provide input on the system. Later in the process there will be a Request for Information process where vendors are invited to present their products to us in order to better educate us on what state-of-the-art system’s capabilities are.

9. **2017 MO CMAQ Funding, Construction Project Update** – Ray updated the committee on the project which will add some Grandview and Blue Springs intersections and add about 30 cameras and some fiber for KCMO. Project design is complete and sent to MODOT. Environmental clearance is still needed. We hope to advertise for construction in September and enter a contract and start work in October.

10. **Quarterly Operations Update** – Scott Cutshall informed the committee that the OGL website traffic signal inventory map is posted and accessible to the public now, though some edits continue. – Barry Viss informed the committee of a few new features in TransSuite
   - Users have the ability to display plan number, plan cycle length, or actual cycle length inside the intersection icon in the map.
   - The Graphical Status Display shows a timeline of signal status as logged by the high-resolution data collected by the controllers or by the 1/sec polling data if that data logging is turned on.
   - Split Failure monitoring will track and optionally fail intersections for split failures as monitored by 1/sec polling data. It has proven overwhelming.
• OGL staff continues to encourage agencies that use Siemens/Eagle controllers to move to the 4.57 firmware, though we are still working through some integration issues with it in TransSuite. Version 4.58 firmware should NOT be used with TransSuite currently due to a firmware bug.
• OGL has asked TransCore to investigate working with a company called EMTRAC that can provide intersection calls for bicycles through a smartphone app that tracks the user’s location and reports to a server through the Internet.

–Chris Jenkins highlighted a few items from the Quarterly Operations Report that was included in the meeting packet. Most of the repair tickets were for planned upgrades to radios on the OP Sheraton and the 75th & Holmes towers. Many of the signal timing work items were tweaks to existing plans or responses to construction activities or intersection changes. OGL staff has installed a new firewall in response to the recent Cybersecurity Audit’s recommendations.

11. Quarterly Budget Report – Ray presented the budget report that was included in the meeting packet. We will soon drafting agreements for the STP 2019/20 funding, including the local agreements. The 2021/22 CMAQ funding selection process resulting in OGL getting slightly less than hoped for in Missouri. Four agencies still need to make payment on the agreements currently in effect. Note that the Equipment/Computer Supplies budget item shows over budget due to difficulties in categorizing different types of expenses. Total budget is in range with what was planned. Currently we are spending local funds only, having spent down the federal funds first.

12. Other Business
- A new OGL Steering Committee Vice-Chairperson from a Missouri agency will need to be selected at the October committee meeting.
- The Regional Traffic Signal Detection Forum held on June 28 was generally appreciated by those in attendance. Ray drafted and supplied some minutes from the meeting.
- Ray asked if any were interested in a Synchro training class led by Trafficware locally, possibly the first or second week of November. There was not much interest from the committee.

Next Regularly Scheduled Meetings: Monday, October 22, 2018, January 28, 2019

Adjournment – Meeting was adjourned at 3:23 PM
2019 OGL Steering Committee Meetings

January 28
MARC at 1:30PM

April 22
MARC at 1:30 PM

July 22
MARC at 1:30 PM

October 28
MARC at 1:30 PM
OGL WORK PLAN - 2019

Operation Green Light Program

Program Objectives

- Manage traffic signal operations on the arterial corridors included in Operation Green Light in cooperation with partner agencies.
- Support regional traffic incident management initiatives by managing traffic signal timing plans on the arterial corridors included in Operation Green Light.
- Maintain the regional shared wireless communication network in good working order.
- Collect Traffic Signal traffic data in support of the signal timing efforts
- Support the Regional Traffic Signal Software

Background/Previous Work

Operation Green Light is a regional effort to improve traffic flow and reduce vehicle emissions. Operation Green Light works with federal, state and local agencies to operate and coordinate traffic signal operations and communication between traffic signal equipment across jurisdictional boundaries on over 700 traffic signals. Coordinating traffic signal systems can significantly reduce travel delay, reduce ozone precursor emissions and provide a powerful tool to help manage incident-related congestion.

Program Activities and Products

1. **ACTIVITY: Program management.** Activities included in this work include project management, stakeholder engagement, training, Integrated Corridor Management (ICM) activities, Transportation System Management and Operations (TSMO) and all other work necessary to ensure the active prioritization of objectives to efficiently manage traffic signal infrastructure and control devices (ongoing)

2. **ACTIVITY: Signal Timing and Synchronization.** Activities include traffic data collection and analysis, field observation, controller programming and deployment, signal timing troubleshooting and reporting, traffic modeling and deployment, updating signal timing based on changes in traffic patterns, citizen concerns, special events, incidents or roadwork. (Ongoing)

3. **ACTIVITY: Regional network communications.** Activities include, database management, repair tracking, field investigation, equipment procurement, server and software administration, contractor oversight and other activities associated with the system network (ongoing)

4. **ACTIVITY: Strategic plan update.** Update of the existing strategic plan

5. **ACTIVITY: Communications Network Upgrades.** Continue technology plan upgrades of aging communication network equipment


7. **ACTIVITY: Missouri 2017 CMAQ funds.** Manage the funds and construction project that will add Blue Springs and Grandview to the OGL program with communication infrastructure, controllers and build CCTV’s in KCMO.

8. **ACTIVITY: Regional Systems Engineering.** Manage the consultant project that will step the regional through a process to develop systems requirements for the regional traffic signal system.

Funding

Operations 2019

Federal $490,000 FHWA-STP-MO
Federal $210,000 FHWA-STP-KS
Non-Federal $431,600 Local funds
Task Total $1,131,600
## 2019 OGL SIGNAL TIMING PLAN

<table>
<thead>
<tr>
<th>Corridor</th>
<th>Signals</th>
<th>Jurisdiction</th>
<th>Plans</th>
<th>Last timed</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>K-32</td>
<td>6</td>
<td>UG</td>
<td>All</td>
<td>N/A</td>
<td>Plans have been submitted to UG for approval</td>
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<tr>
<td>Lees Summit Rd</td>
<td>6</td>
<td>Independence, MODOT</td>
<td>All</td>
<td>2010</td>
<td>Schedule implementation after I-470 roadwork is complete</td>
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<tr>
<td>95th St Lenexa/OP</td>
<td>8</td>
<td>Lenexa, OP</td>
<td>All</td>
<td>2007</td>
<td></td>
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<tr>
<td>Douglas</td>
<td>7</td>
<td>Lees Summit, MODOT</td>
<td>All</td>
<td>2011</td>
<td>City going to install FYA's first</td>
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<tr>
<td>M-45</td>
<td>10</td>
<td>MODOT</td>
<td>All</td>
<td>2010</td>
<td>Final stages of Plan development</td>
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<td>Bann. Rd and Blue Ridge</td>
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<td>KCMO, MODOT</td>
<td>All</td>
<td>2015</td>
<td>Data collection after 435 roadwork is complete</td>
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<td>Kansas Ave</td>
<td>15</td>
<td>UG</td>
<td>All</td>
<td>2013</td>
<td></td>
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<td>Rainbow Blvd</td>
<td>11</td>
<td>KCK</td>
<td>All</td>
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<td>Noland Rd</td>
<td>17</td>
<td>Independence, MODOT</td>
<td>All</td>
<td>2010</td>
<td>Data collection in progress</td>
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<tr>
<td>US-71 / Prospect TRSP</td>
<td>10</td>
<td>KCMO, MODOT</td>
<td>All / Midday</td>
<td>2012</td>
<td>Additional plan to &quot;taper&quot; cycle lengths and Traffic Responsive Plan</td>
</tr>
<tr>
<td>Woods Chapel Rd</td>
<td>5</td>
<td>MODOT, Blue Springs</td>
<td>All</td>
<td>New</td>
<td>New OGL corridor</td>
</tr>
<tr>
<td>Adams Dairy</td>
<td>8</td>
<td>MODOT, Blue Springs</td>
<td>All</td>
<td>New</td>
<td>New OGL corridor</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>115</strong></td>
<td></td>
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</table>

### Special Plans

<table>
<thead>
<tr>
<th>Corridor</th>
<th>Signals</th>
<th>Jurisdiction</th>
<th>Plans</th>
<th>Last timed</th>
<th>Comments</th>
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<td>Incident Mgt for I-435, etc</td>
<td>30</td>
<td>MODOT, KCMO, Independence</td>
<td>Incident</td>
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<td></td>
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<tr>
<td>Holiday Plans</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td></td>
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OGL Incident Management Map
## Incident Diversion Plan

### General

<table>
<thead>
<tr>
<th>Highway/Direction</th>
<th>From</th>
<th>Segment #</th>
<th>To</th>
<th>Synchro Model</th>
<th>Updated</th>
<th>Time Period</th>
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</thead>
<tbody>
<tr>
<td>I-35 NB</td>
<td>75th St</td>
<td>227 NB</td>
<td>67th St</td>
<td>I-35 227 NB 75 to 67.syn</td>
<td>10/13/2017</td>
<td>Off-Peak</td>
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### Partner Agencies

<table>
<thead>
<tr>
<th>Agency</th>
<th>Contact Person</th>
<th>Phone</th>
<th>Requirement</th>
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<tr>
<td>Merriam, KS</td>
<td>Kevin Bruemmer</td>
<td>913-322-5571</td>
<td>Notification Required</td>
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<tr>
<td>Overland Park, KS</td>
<td>Shawn Gotfredson</td>
<td>913-895-8303</td>
<td>Approval Required</td>
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### Segment Descriptions

<table>
<thead>
<tr>
<th>Segment Description/Notes</th>
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<tbody>
<tr>
<td>Based on evening peak plan. Increased cycle lengths to 160 seconds with additional time added to EB phases at all intersections.</td>
</tr>
<tr>
<td>Based on evening peak plan. Increased cycle lengths with additional time added to EBL at 75th St and NB phases at all other intersections. Increased cycle length to 160 seconds at 75th Street, 150 seconds at Shawnee Mission Parkway, and 120 seconds from Johnson Drive to I-35 Ramps. “Non-OGL intersections will continue to run “free.”</td>
</tr>
<tr>
<td>Based on evening peak plan. Increased cycle lengths to 160 seconds with additional time added to EB &amp; EBL phase at 75th Street and NB phases at all other intersections.</td>
</tr>
<tr>
<td>Based on evening peak plan. Increased cycle lengths to 150 seconds with additional time added to WB phases at all intersections.</td>
</tr>
</tbody>
</table>

### OGL Command List (I-35 227 NB OffPeak ON & I-35 227 NB OffPeak OFF)

<table>
<thead>
<tr>
<th>Int.</th>
<th>Location</th>
<th>Controller</th>
<th>Plan</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>30009</td>
<td>Shawnee Mission Pkwy @ Antioch Rd</td>
<td>Econolite ASC3</td>
<td>74</td>
<td>Heavy Ph 4 (NBT) and Ph 7 (NBL)</td>
</tr>
<tr>
<td>30010</td>
<td>Shawnee Mission Pkwy @ Eby Ave</td>
<td>Econolite ASC3</td>
<td>74</td>
<td>Heavy Ph 2 (WBT)</td>
</tr>
<tr>
<td>30011</td>
<td>Shawnee Mission Pkwy @ I-35 NB Ramp</td>
<td>Econolite ASC3</td>
<td>74</td>
<td>Heavy Ph 6 (WB)</td>
</tr>
<tr>
<td>30012</td>
<td>Shawnee Mission Pkwy @ I-35 SB Ramp</td>
<td>Econolite ASC3</td>
<td>74</td>
<td>Not on diversion route. Coordinate for E/W traffic on bridge</td>
</tr>
<tr>
<td>30004</td>
<td>Antioch Rd @ Johnson Dr</td>
<td>Econolite ASC3</td>
<td>74</td>
<td>Heavy Ph 8 (NBT)</td>
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<tr>
<td>30003</td>
<td>Antioch Rd @ Merriam Mall S</td>
<td>Econolite ASC3</td>
<td>74</td>
<td>Heavy Ph 6 (NBT)</td>
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<tr>
<td>30002</td>
<td>Antioch Rd @ 57th St</td>
<td>Econolite ASC3</td>
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<td>Heavy Ph 6 (NBT)</td>
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<tr>
<td>30001</td>
<td>Antioch Rd @ 55th Ter</td>
<td>Econolite ASC3</td>
<td>74</td>
<td>Heavy Ph 2 (NBT)</td>
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</table>
### Overland Park Command List (I-35 227 NB OffPeak ON & I-35 227 NB OffPeak OFF)

<table>
<thead>
<tr>
<th>#</th>
<th>Location</th>
<th>Signal Type</th>
<th>Phases</th>
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<tr>
<td>22</td>
<td>75th St @ I-35 NB Ramp</td>
<td>Econolite ASC3RB Hybrid</td>
<td>74 Heavy Ph 5 (NBL)</td>
</tr>
<tr>
<td>23</td>
<td>75th St @ Frontage Road</td>
<td>Econolite ASC3RB Hybrid</td>
<td>74 Heavy Ph 4 (EBT)</td>
</tr>
<tr>
<td>24</td>
<td>75th St @ Grandview Rd</td>
<td>Econolite ASC3</td>
<td>74 Heavy Ph 8 (EBT)</td>
</tr>
<tr>
<td>25</td>
<td>75th St @ Antioch Rd</td>
<td>Econolite ASC3</td>
<td>74 Heavy Ph 4 (EBT) and Ph 7 (EBL)</td>
</tr>
<tr>
<td>29</td>
<td>75th St @ I-35 SB Ramp</td>
<td>Econolite ASC3 LS 1C</td>
<td>74 Not on diversion route. Coordinate for E/W traffic on bridge</td>
</tr>
<tr>
<td>18</td>
<td>75th St @ Conser</td>
<td>Econolite ASC3</td>
<td>74 Heavy Ph 8 (EBT)</td>
</tr>
<tr>
<td>12</td>
<td>75th St @ Metcalf Ave</td>
<td>Econolite ASC3</td>
<td>74 Heavy Ph 3 (EBL)</td>
</tr>
<tr>
<td>11</td>
<td>Metcalf Ave @ 71st St</td>
<td>Econolite ASC3</td>
<td>74 Heavy Ph 2 (NBT)</td>
</tr>
<tr>
<td>17</td>
<td>Metcalf Ave @ 65th St</td>
<td>Econolite ASC3</td>
<td>74 Heavy Ph 2 (NBT)</td>
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<tr>
<td>16</td>
<td>Metcalf Ave @ 61st St</td>
<td>Econolite ASC3</td>
<td>74 Heavy Ph 2 (NBT)</td>
</tr>
<tr>
<td>5</td>
<td>Antioch Rd @ I-35 NB Ramp</td>
<td>Econolite ASC3</td>
<td>74 Heavy Ph 5 (NBL)</td>
</tr>
<tr>
<td>6</td>
<td>Antioch Rd @ I-35 SB Ramp</td>
<td>Econolite ASC3</td>
<td>74 Not on diversion route. Coordinate for N/S traffic on bridge</td>
</tr>
</tbody>
</table>

### Non-OGL Signals (I-35 227 NB OffPeak ON & I-35 227 NB OffPeak OFF)

<table>
<thead>
<tr>
<th>Location</th>
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<tbody>
<tr>
<td>Antioch Rd @ 71st St</td>
<td>Non-OGL/No Comm</td>
</tr>
<tr>
<td>Antioch Rd @ 67th St</td>
<td>Non-OGL/No Comm</td>
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</table>

### Notes

**09.16.2016** Routes using Nieman and Quivira not included due to anticipated diversion of traffic during incident.
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This Report provides a framework for the creation of Operation Green Light’s (OGL’s) performance management program. The development of the program fulfils a major goal of OGL’s strategic plan. A performance measurement program will help optimize its efforts by routinely including performance measures in its operational processes and to communicate OGL’s effectiveness to its stakeholders and beneficiaries.

Input into the development of the program was provided by a performance measures subcommittee comprised of members of the OGL Steering Committee. Discussions included goals, tools, systems, models, and data could be used to define needed performance measures. OGL currently uses some short-term performance measures on a regular basis, while some partners use other performance measures within their jurisdictions. The development of the program focused on measures that can be used on a regional basis through the OGL system.

With the ever-tightening fiscal constraints for infrastructure investment along with evolution and anticipation of new technologies, such as connected and autonomous vehicles, many agencies are not adding capacity to their roadways but instead are using technology to optimize operations on existing facilities. Performance measures for arterial networks have historically been costly to collect without a significant investment in equipment, and most standard performance measures under-represent the performance of the arterial network. However, recent advancements in sensor technology, mobile data, wireless and wired communications networks, arterial performance measures research, and computing power have combined to create many new opportunities for monitoring and understanding arterial network performance.

There is an increasing need to communicate high-level system performance information about the status of the system to decision makers, management, and the public. There is also a strong need to provide detailed performance measures to assist operators in decision making and optimization of the system. This structured performance management process can help meet these needs.

The performance management program consists of the following steps:

1. measure performance
2. review performance measures
3. make operational decisions to improve performance
4. report performance.

The performance management program will provide tools for OGL and its partners to monitor performance in a consistent way across the region. Each agency can determine what is the best way to utilize OGL’s regional performance measures.

A list of available the data sources, existing and possible performance measures, and software tools was compiled, along with list of all OGL corridors. Experience indicates
that when managing the varying corridors within the Green Light system, some require more frequent monitoring and adjustment than others. To accommodate these differences, a spectrum of performance monitoring is offered. Basic monitoring can be completed using data available from the central traffic signal control system, as well as from probe data sources where available. When warranted, agencies can install a variety of additional sensors to provide additional performance measures and tools described by research documented in “Performance Measures for Traffic Signal Systems,” published by Purdue University in 2014.

Development of a regional dashboard was begun as part of this effort. The dashboard includes probe-based travel time data available from the RITIS system, currently available for Missouri agencies. Additional dashboard elements and performance measures should be developed and added as determined by the OGL steering committee.

System performance should also be incorporated into regular reports. Reporting is recommended on two levels: Strategic and Operational. Strategic analysis provides information on a higher level, which is useful to agency management and governance, as well as the public, and operational gets further into the details.

Looking to the future of performance management, software and technology are rapidly evolving, and it is anticipated that arterial system analytics tools will also improve quickly. As this industry and capabilities continue to emerge, it is recommended that OGL look toward adding or evaluating these additional analytics tools as they become available.
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1 Introduction

The development and integration of connected vehicle technologies provide the very realistic potential for significantly safer and more efficient transportation system. These technologies will certainly benefit both the users and the providers of our highways. One of the basic premise of connected vehicles is that the receive real-time information regarding traffic operations. For connected vehicle operations on the arterial network, traffic signal data is a critical need.

This data can be used to let vehicles know when a stop condition will develop and automatically slow them in advance. Conversely, it can also let approaching vehicles know that a green condition is about to occur, eliminating unnecessary braking and queuing of traffic. If an intersection is over capacity and delays are excessive, a vehicle receiving the delay information can turn off the engine, eliminating unnecessary idling.

Due to an increasing number of requests for data from third parties, Operation Green Light (OGL) is considering establishing an open data service to provide real-time traffic signal information (SPaT data – Signal Phase and Timing data) to those parties, public and private, who have needs for the information. By definition, an open data service is a program which aggregates and stores specific data sets and allow others to access the data by using a defined applications programming interface (API).

As local officials evaluated the benefits of providing open access to the information, a few concerns and questions were identified. These items are:

- Security of local jurisdictions’ data systems
- Liability exposure by providing the traffic signal data
- Safety (e.g. will the traffic signal information be used in a manner which compromises safety of arterial traffic operations)
- Cost of providing the data
- Potential for generating additional revenues
- Best practices in providing access to the data
2 Approach

To understand the impacts of the concerns with providing traffic signal data through an open data service, the practices of several agencies and private companies were reviewed. Interviews were conducted with two MPOs, five cities, and three private companies who consume traffic data. Most of the parties interviewed were recommended by Operation Green Light staff due to contacts made at a Regional Peer Exchange conducted by the National Operations Center of Excellence (NOCoE) and other parties with experiences in sharing traffic signal and other operations data. Additionally, the experiences of sharing traffic data by a Department of Transportation were also included.

The agencies consulted were:
1. East-West Gateway Council of Governments, St. Louis Metro Area
2. North Central Texas Council of Governments (NCTCOG), Dallas Metro Area
3. Seattle, WA
4. Olathe, KS
5. San Jose, CA
6. Norwalk, CT
7. Gainesville, FL
8. Iowa Department of Transportation
9. Inrix
10. HERE
11. Traffic Technology Services, Inc.

A summary of each party’s activities and positions on data sharing follows:

2.1 MPOs:

- Both the East-West Gateway COG and the NCTCOG make a variety of data available to the public, but not through an open data service.
- Neither of the MPOs currently offer any type of open sharing service for traffic signal information.
- Traffic signal data is frequently shared with adjacent jurisdictions for purposes of coordinating traffic signal operations.
- If requested by the public or private companies, traffic signal data is shared on an as-requested basis.
- The traffic signal data is generally considered public data and there is little concern about liability.
- Neither MPO has a standard agreement format for sharing data.
2.2 **Cities:**

**Olathe, KS** –
- The City of Olathe shares real-time SPaT data with a number of parties (e.g.: Live Traffic Data, Traffic Technology Services).
- The data is not available through an open data service but is provided by individual data feeds to each company. The format of these data feeds is defined within the software program where the data is stored, and access must be provided by the owner of the data.

**Seattle, WA** –
- The City of Seattle has established an open data service (Open Data Portal) and shares a variety of information regarding community services, city finances, GIS mapping, permit applications, public safety and transit.
- SPaT data is not presently available through the Portal.
- SPaT information is provided upon request.

**San Jose, CA** –
- The City of San Jose maintains an open data policy. Exceptions are made to this policy if there are concerns regarding public safety or liability.
- The City shares real-time SPaT data with a few private companies. Due to the City’s concerns regarding the impacts to public safety, they consider the present sharing arrangements to be a “trial”. At some point in the future, they will determine how they will ultimately share SPaT data.
- The SPaT information is provided through a data feed.
- The City has some concerns regarding public safety with Connected Signals use of SPaT information on their mobile application. They have been working with Connected Signals to make modifications to the app to alleviate the public safety concerns.

**Norwalk, CT** –
- The City of Norwalk considers sharing SPaT information a trial program. They do not have either a policy or agreements for sharing SPaT information.
- Presently, the City considers what benefits (not financial compensation) they get in return for sharing SPaT information.
- Live Traffic Data (LTD) provides the City performance measurement software and free communications to isolated intersections.
- Connected Signal provides a mobile application using the City’s SPaT data for local use.
- Traffic Technology Services (TTS) does not provide any direct benefits for the City’s use and are not presently receiving SPaT data from the City.
- The City considers any liability involved with sharing the SPaT data lies with the 3rd-parties who obtain the data and uses or sell the product derived from the data.
Gainesville, FL –

- The City of Gainesville does not share SPaT information publicly.
- The City is presently sharing SPaT information with two companies (Traffic Technology Services and Connected Signals), both connected vehicle-related data to the automotive industry.

2.3 **Department of Transportation:**

**Iowa Department of Transportation (DOT):**

- The Iowa Department of Transportation presently shares real-time ATMS and traveler information data with a considerable number of consumers (greater than 100). This data is shared with individual XML feeds which are pushed to the requesters.
- The DOT also shares access to traffic camera video and, if requested within three business days, provides recorded video.
- The Iowa DOT has worked with Iowa State University’s Center for Transportation Research and Education (CTRE) to establish an open data service for both the ATMS and traveler information.
- In addition, Iowa DOT is planning to establish a program where authorized parties can download recorded traffic video without DOT assistance.

2.4 **Private Entities:**

**Inrix and HERE:**

- In addition to probe data sources, both Inrix and HERE incorporate ATMS and traveler information data from state and local jurisdictions.
- Neither company is presently using SPaT data in production.

**Traffic Technology Services, Inc. (TTS):**

- TTS is a technology company and information provider to the automotive industry and other transportation services providers for connected vehicle applications.
- TTS ingests and processes SPaT data and intersection MAP data to produce a product which aides connected vehicles to travel more efficiently and safely.
- TTS receives data from numerous DOTs and cities around the country.
- In general, the only fees paid by TTS are only the costs required to make the data available.
- TTS prefers a direct data feed from each entity over access to an open data service. Open data services often do not include all the data they need (eg.: intersection MAP data, signal timing plans, etc.).
- TTS establishes an agreement with each entity describing the relationship, the data to be provided, cost (zero), indemnification requirements, liability limitations, contract termination and severance arrangements.
• TTS has worked with TransCore to develop a data feed from the TransSuite Traffic Control System (TCS) module. This data feed can be activated by checking a box from within TCS.
3 Summary

Based on the feedback from and the practices of the MPOs, cities, Iowa DOT and TTS, the responses to the concerns of OGL are summarized below:

3.1 Security of local jurisdictions’ data systems

Security of the data systems was very important to all the parties and was addressed in several ways.

For those providing data by a direct feed, the data feeds were a push-type feed and did not provide access to the owner’s system.

Open data services are typically designed where the data is provided from a variety of sources to a stand-alone data service. Doing so isolates the owner’s systems from access of unauthorized parties. The open data service also includes security measures, such as encryption, to protect the service.

3.2 Liability exposure by providing the traffic signal data

It was the consensus of all the parties contacted that they perceived there was minimal potential for liability associated with providing access to the data.

This opinion, coupled with the point of view that it was public data, made the concept of sharing SPaT data acceptable. While many of the agencies interviewed were not presently sharing SPaT data openly, most were willing to do so on request.

The parties which are sharing data more openly, whether by open data service or by direct data feeds, address the liability concerns with liability limitation and indemnification language, either in formal data sharing agreements or on web sites.

3.3 Safety – Will the traffic signal information be used in a manner which compromises safety of arterial traffic operations.

Most of the commercial uses for SPaT data focus on providing information for connected vehicles. To do so, the SPaT information must be processed (by third parties) for the information to be useful.

It is inherent to the success of the connected vehicle industry that the operations improve both the safety and efficiency of traffic operations.

The safety concerns regarding the integration of SPaT data and vehicle coordination with traffic signals will be subject to the oversight of the National Highway Traffic Safety Association (NHTSA) with the responsibility for safe connected vehicle operations maintained by the third-party data providers and the connected vehicle manufacturers.
3.4 Cost of providing the data

For those parties without the capability to provide data in an automated fashion, the cost of providing data is tied to the manual effort of staff in pulling the information together and making the data available.

Some of the agencies without open data services have the ability of providing real-time data by a direct data feed. The costs associated with this approach is significantly less manually aggregating the data. The cost of this approach is tied to the effort of staff in establishing agreements for use of the data and providing instructions for accessing the data feed(s).

While developing an open data service would have initial costs, it would certainly reduce the effort and cost of providing access to data on an ongoing basis.

3.5 Potential for generating additional revenues

None of the parties interviewed as part of this review required ongoing fees to obtain their data. One city did consider services provided by private parties as part of their evaluation to provide data.

In discussion with TTS, they have encountered only one party indicating there would be associated fees (outside of the cost of setting up the data feed). They are still in negotiations with that party.

3.6 Best practices in providing access to the data

Based on the input of the various agencies and companies, the following summarizes the thoughts and practices regarding providing SPaT data to others.

- The SPaT data is public information and providing it to others is appropriate.
- Many of the parties interviewed recognized the long-term benefits for safety and efficient travel will ultimately be realized due to the connected vehicle industry. In that light, providing SPaT data now will aid the advancement of these capabilities.
- Surveyed agencies perceive minimal liability, if any, associated with making this data available.
- Providing access to the SPaT data by agreement.
- Presently, more agencies are providing SPaT data by direct data feeds (rather than an open data service). This may be related to the relatively few number requests for this specific type of data. As a matter of interest, TransSuite’s TCS module has the capability to provide this data feed.
- Before providing the data, establish the expectations and responsibilities of each party. This can be accomplished by formal agreement. The City of Olathe has developed a “generic” agreement and shared it with OGL for their use and reference. Some of the items the agreement includes are:
  - Services provided
- Limitations
- Responsibilities of parties
- Restrictions
- Liability Limitations
- Term of the agreement
- Indemnifications
- Agreement termination
- Security breach responsibilities

Data sharing agreements used by other agencies typically contain similar items.
INVITATION TO BID
Traffic Signal & CCTV Enhancements
Notice to Contractors

Sealed bids for Traffic Signal and CCTV Enhancements, CMAQ 3302(423), will be received at: 600 Broadway, Suite 200, Kansas City, Missouri, 64105 until **11:00 o'clock AM (Prevailing Local Time) on the 24th day of October, 2018** at the office of the Mid-America Regional Council (MARC), and at that time will be publicly opened and read. All bids shall be submitted in an envelope marked “Traffic Signal and CCTV Enhancements”.

The work under this contract shall consist of installation of cameras, radios, controllers and controller upgrades in three municipal jurisdictions in Missouri and on MoDOT Right of Way. The contract includes listed items and peripherals needed to support the above mentioned equipment. The contract also contains conduit and fiber optic cable installation necessary to complete communications on the Operation Green Light (OGL) and Kansas City Intelligent Transportation System (ITS) network. All equipment and materials are necessary for MARC’s OGL system to add or maintain operations that will enhance the existing system’s operations including repair, restoration, and replacement of existing areas or features that are disturbed during the construction activities.

All Bids must be in accordance with Bidding Documents on file at the Drexel Technologies. Copies of plans and specifications can be seen or purchased for a Non-Refundable fee on-line at www.drexeltech.com in their eDistribution plan room, additional assistance is available at distribution@drexeltech.com. Information regarding this project can be found in the “Public Jobs” link on the website. Contractors desiring the Contract Documents for use in preparing bids may also obtain a set of such documents from Drexel Technologies; 10840 West 86th Street, Lenexa, KS 66214, telephone number is 913-371-4430. Bidding documents will be shipped only if the requesting party assumes responsibility for all related charges. Corporate, certified, or cashier’s checks shall be made payable to Drexel Technologies, Inc.

**Pre-bid conference: 10:00AM on the 10th day of October**, at the MARC office 600 Broadway, Suite 200, Kansas City, Missouri. The pre-bid conference is non-mandatory but bidders are encouraged to attend.

All labor used in the construction of this public improvement shall be paid a wage no less than the prevailing hourly rate of wages of work of a similar character in this locality as established by the Missouri Department of Labor and Industrial Relations (Federal Wage Rate), or state wage rate, whichever is higher.

The Mid-America Regional Council hereby notifies all bidders that it affirmatively ensure that in any contract entered into pursuant to this advertisement, businesses owned and controlled by socially and economically disadvantaged individuals shall be afforded full opportunity and are encouraged to submit bids in response to this invitation and shall not be discriminated against on grounds of race, color, religion, creed, sex, age, ancestry, or national origin in consideration for this award.

All bidders must be on MoDOT’s Qualified Contractor List per Section 102.2 of the Missouri Standard Specifications for Highway Construction, 2011 Edition including all revisions. The contractor questionnaire must be on file 7 days prior to bid opening.

A certified or cashier’s check or a bid bond in the amount of **5%** shall be submitted with each proposal.

The Mid-America Regional Council reserves the right to reject any or all bids.

The DBE Goal for this project is **7%**.

For more information contact:

MID AMERICA REGIONAL COUNCIL
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Phone: 816.474.4240
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Mid-America Regional Council’s Quarterly Report
For Operation Green Light

3rd Quarter 2018 Report
October 22nd, 2018

Prepared For:
OGL Steering Committee

Prepared By:
OGL Operations Team
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Operation Green Light (OGL) is a bi-state regional effort to improve traffic flow and reduce vehicle emissions. Managed by the Mid-America Regional Council (MARC), Operation Green Light works with federal, state and local agencies to operate a system that coordinates traffic signal timing and communication between intersections across jurisdictional boundaries.

This report details the work performed on the Operation Green Light communications network during the 2nd Quarter of 2018 and highlights of signal timing and agency coordination. OGL currently monitors/operates 705 signals and manages over 1,200 network devices. These devices include intersection controllers, wireless radios, switches, cameras, routers, serial-to-IP converters and servers. For more information on the program, visit [http://www.marc.org/Transportation/Commuting](http://www.marc.org/Transportation/Commuting).

**Operations Summary**

A summary of the operational results and activities of the OGL program staff during the reporting period is presented below.

**Repair tickets**

- OGL staff actively responded to 11 repair tickets. OGL uses the repair tracking database to manage work orders and billing for the contractor, but currently doesn’t differentiate between normal repair work and radio upgrades.

**Corridor/Signal Timing Efforts**

- 7/17 – new signal timing plans were implemented on Metropolitan Ave in Kansas City, KS
- 7/20 – 8/3 – Temporary signal timing plans were implemented on Johnson Dr while Merriam Dr was closed for roadwork
- 8/9 – Several intersections were modified in response to I-470 lane closures and ramp closures at I-70
- 8/23 – Updated signal timings were implemented on Barry Rd & N-Oak
- 8/29 – 9/13 -- Updated signal timings were implemented and revised several times on Barry Rd
- 9/5 – All incident management plans for the I-35 corridor were downloaded and command lists finalized
- 9/7 – Updated coordination times for new layout at 87th & Maurer
- 9/25 – Updated signal timings and controller programming were implemented at Bannister Rd & Holmes Rd after signal was changed from split-phase

**Training Sessions/Panels/Events**

- 7/12 – OGL staff participated in the Trafficware - Introduction to ATMS – Webinar
- 7/12 – Scott Cutshall attended the July KCITE chapter meeting
- 9/12 – OGL staff gave a training on the UCM to Independence Power & Light staff
- 9/13 – Scott Cutshall attended the September KCITE chapter meeting

**Additional Information**

- OGL staff set up and scheduled the Miovision equipment to conduct 25 counts. Most of these were 13-hour turning movement counts and the remaining were 24-hour ADT counts.
Notes on Operations Summary

1. Repair ticket levels used by OGL staff are defined in Exhibit I Scope of Services as follows:
   - Minor – investigate and resolve communication problem within 5 business days, weather permitting
   - Major – investigate and resolve communication problem within 2 business days, weather permitting
   - Critical – investigate and resolve communication problem within 24 hours, weather permitting

System Hardware/Software Activities/Issues

The following list represents major software or hardware activities performed during the 3rd Quarter of 2018:

- 8/28 – To complete planned upgrade of the core firewall installation, a backup firewall was installed at an off-site location. Testing and final configuration was completed.
- 9/11 – TransSuite was upgraded to version 18.3
- Genetec federation was reestablished with NKC following a fiber repair after a traffic cabinet was damaged
Interagency Coordination

During the 3rd Quarter, OGL staff participated in the following interagency activities:

- 7/2, 7/9, 7/16, 7/23, 7/30 – Barry Viss worked at the KCMO TMC
- 7/3 – OGL staff met with MoDOT staff to discuss OGL signal locations
- 7/10 – Ray attended the MO STP Priorities Committee
- 7/11, 7/25 – OGL and Olsson held bi-weekly conference calls for signal timing work status
- 7/10 – Ray attended the KS STP Priorities Committee
- 7/16 – OGL staff participated in ATSPM Developer and User Monthly Call Webinar
- 7/19 – OGL staff met with MoDOT staff to discuss vehicle detection at OGL locations
- 7/19 – OGL staff participated in the OGL Regional TransSuite Monthly Status meeting
- 7/23 – OGL team lead the July OGL Steering Committee meeting
- 7/26 – OGL hosted an ATMS Systems Engineering Partner Workshop
- 7/26 – Chris Jenkins attended meeting for MoDOT’s Traffic Signal Network Project
- 7/26 – Chris Jenkins attended KCMO City Manager’s Camera Coordination meeting
- 7/31 – Chris Jenkins met with MoDOT and Gerstner Electric staff to do final inspection on M-210 signal and camera integration
- 8/1 – Ray attended the Missouri Highway and Transportation Commission meeting
- 8/2, 8/9, 8/16, 8/23, 8/30 – Chris Jenkins attended construction meeting for the MoDOT Traffic Signal Network Project
- 8/6, 8/13, 8/20, 8/27 – Barry Viss worked at the KCMO TMC
- 8/8, 8/22 – OGL and Olsson held bi-weekly conference calls for signal timing work status
- 8/6 – Barry and Ray met with KCK to discuss city operations
- 8/8 – Barry and Ray met with KCSCOUT operators to discuss incidents
- 8/9 – OGL staff participated in the OGL Regional TransSuite Monthly Status meeting
- 8/13 – OGL staff attended T3 Webinar, Signal Timing Optimization Using Connected Vehicle Technology
- 8/14, 17 – Ray attended conference call for planning for ICM workshop
- 8/15 – Chris Jenkins met with MoDOT Design Core team for future signal communications project
- 8/17 – Barry met with MODOT staff to discuss M-152 bridge plans
- 8/20 – OGL staff participated in ATSPM Developer and User Monthly Call Webinar
- 8/20-23 – Ray attended the annual ITE meeting
- 8/23 – Barry met with KCMO staff to discuss and implement changes to Barry Rd corridor.
- 8/29 – OGL staff met with Olsson and Independence, MO staff to discuss Noland Rd. clearance interval review
- 8/30 – Ray attended the FHWA led ICM workshop at MARC
- 8/30 – OGL staff participated in the TRB Webinar: Hacks and Attacks: Keeping Critical Transportation Infrastructure Resilient webinar
- 8/31 – Chris Jenkins met with KCMO staff to discuss possible use of OGL radios for city network expansion for traffic signals
- 9/4 – OGL staff and many partner agencies traveled to the Springfield, MO TMC to discuss ATMS operations and systems engineering process
- 9/5, 6 – Ray attend the ITS Heartland TSMO Train the Trainer
- 9/6 – OGL staff met with KCScout and Google to discuss incident and roadwork management
- 9/7 – OGL staff attended the OGL Incident Management Table Top Exercise
- 9/5, 9/19 – OGL and Olsson held bi-weekly conference calls for signal timing work status
- 9/6, 9/13, 9/27 – Chris Jenkins attended construction meeting for the MoDOT Traffic Signal Network Project
- 9/10, 9/24 – Barry Viss worked at the KCMO TMC
- 9/10-12 – Ray attended the MO Highway Safety and Traffic Blueprint Conference
- 9/12 – Barry met with Independence Power and Light staff to discuss UCM with SEPAC
- 9/17 – OGL staff participated in ATSPM Developer and User Monthly Call Webinar
- 9/18 – OGL staff met with MoDOT staff for Live Traffic Data presentation
- 9/20 – OGL staff participated in the OGL Regional TransSuite Monthly Status meeting
- 9/26 – Ray attended and presented on TSMO at the MARC Highway Committee meeting
- 9/28 – OGL staff met with TransCore and MODOT staff to discuss Intelight integration
Quarterly Repair Ticket Statistics by Month

In the 3rd Quarter of 2018, OGL staff created and responded to 11 repair tickets in the Kansas City area.

Figure 1 – Quarterly Repair Ticket Statistics by Month

Additional Repair Ticket Details:

Figure 2 – Monthly Repair Ticket Statistics / Prior 15 months

Figure 2 shows the number of repair tickets that OGL staff responded to for the last 15 months. It is intended to show long-term trends in incidents that are occurring on the OGL network.
Additional Statistics

OGL Network Pod Diagram

Figure 3 shows the overall design of the OGL Network and Pod Locations. It is noted that the different color of lines between the Pods are representing the different type of network connections. A black line represents a FCC licensed link, an orange line represents a fiber optic connection, and a light blue line represents an unlicensed radio link. The OGL network now has 2 wireless rings as seen in the diagram.

Figure 3 – OGL Network Pod Diagram
Repair Tickets by Network Pod

OGL staff is continually working on improving the reliability of the OGL network. Therefore, staff monitors and tracks which network pods continually have incidents. Figure 4 shows the number of repair tickets for each Pod and Figure 5 shows the number of repair tickets year–to–date for each Pod.

Figure 4 – Repair Tickets by Network Pod

Figure 5 – Repair Tickets by Network Pod / Year – to – date
Repair Tickets by Equipment Type

Figure 6 – Repair Tickets by Equipment Type

Figure 6 shows the number and percentage of incidents that occur for each equipment type for the quarter.

![Pie chart showing repair tickets by equipment type for the quarter.]

Figure 7 – Repair Tickets by Equipment Type / Year – to – Date

Figure 7 shows the percentage of repair tickets year – to – date for each equipment type.

![Pie chart showing repair tickets by equipment type year-to-date.]
Repair Ticket Statistics by Severity Level

Figure 8 – Repair Ticket Statistics by Severity Level

Figure 8 shows the number and percentage of incidents by severity level for the quarter.

![Pie chart showing severity levels]

- Critical: 0%
- Major: 45%
- Minor: 55%

Figure 9 – Repair Ticket Statistics by Severity Type / Prior 15 months

Figure 9 shows the number of incidents by severity type that OGL staff has managed in the last 15 months.

![Bar chart showing repair ticket statistics by month for the year 2017/2018]
Summary of Critical Events
The OGL staff responded to 0 critical events during the 3rd Quarter of 2018.

Preventative Maintenance
Each year at the Pod locations for the OGL network, preventative maintenance is performed according to Exhibit I Scope of Services. Preventative maintenance for was not completed for 2018.

CCTV Operations
As part of the MO American Recovery and Reinvestment Act project in 2010 and the 2015 OGL CCTV and Network Enhancement project, 118 CCTV cameras were constructed at critical locations throughout the region. Since final installation, these cameras have routinely proven valuable to manage traffic and signal timing. During times of timing plan implementation, construction and detours, OGL staff, operations staff and signal electricians have routinely used these cameras to observe traffic and signal operations. Through the use of CCTV combined with TransSuite, malfunctions can be investigated remotely for a variety of issues including detection problems and timing concerns saving time investigating the issue in the field.

A bridge rehab project by MoDOT on Douglas St in Lees Summit has continued in an area that has existing CCTV coverage. This bridge work has needed various lane shifts and closures. These cameras have been used to respond to incidents or timing changes in the construction zone. At different times during construction, I-470 was closed for bridge demolition. This and surrounding cameras proved extremely useful to monitor traffic conditions and signal operations.

Work began on multiple bridges by I-470 & I-70 in Independence. This work has affected numerous routes in the area and OGL staff have been monitoring and making changes as needed.

A design build project by MoDOT on I-435 on the south side of the metro was started. OGL staff continues to monitor this corridor and alternate routes commuters are using and making timing adjustments. Most of this work involves timing changes on Route W/Bannister Rd.

The SB direction of the Broadway Bridge was closed for construction work. Therefore a significant increase of traffic was expected on M9 and on Armour Rd in North Kansas City. OGL staff continues to monitor these corridors and make timing changes in response to the increased traffic.

Construction continues on the 3 bridges that MoDOT is rebuilding along I-70 in Independence. OGL staff has continued to monitor alternate routes throughout the area to respond to traffic issues and incidents. OGL staff made numerous changes to help accommodate the increased traffic.

The 18th St Bridge over the Kansas River has been closed since April and will continue to be closed into November. OGL staff made changes to the operation of 7th St in response to increased traffic volumes in the PM Peak and continues to monitor.
# Traffic Signal Event Tracking

**SharePoint 2018, 3rd Quarter**

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<th>Count</th>
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<td>Lenexa</td>
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<tr>
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<tr>
<td>Mission</td>
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<tr>
<td>MODOT</td>
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<tr>
<td>UGOVT</td>
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<td>5</td>
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<tr>
<td>Green Time too short</td>
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<td>Poor Progression</td>
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<tr>
<td>MODOT</td>
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<td>1</td>
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<td>KCMO</td>
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</tr>
<tr>
<td></td>
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<td></td>
<td></td>
<td>NKC</td>
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<td>Indication burned out</td>
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<td>Program Replacement Controller</td>
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</tr>
<tr>
<td>Intersection Not running Correct Plan</td>
<td>MODOT</td>
<td>8</td>
<td></td>
<td>MODOT</td>
<td>2</td>
</tr>
<tr>
<td>Independence</td>
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<td>NKC</td>
<td>1</td>
</tr>
<tr>
<td>KCMO</td>
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<td>MODOT</td>
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<tr>
<td>Lee’s Summit</td>
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<td>UGOVT</td>
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<tr>
<td>NKC</td>
<td></td>
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<td>TransSuite Database Comparison</td>
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<td>Lee’s Summit</td>
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<td>Lenexa</td>
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<td>Prairie Village</td>
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<tr>
<td></td>
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<td></td>
<td></td>
<td>MODOT</td>
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<td></td>
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<td>Shawnee</td>
<td>24</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>UGOVT</td>
<td>4</td>
</tr>
</tbody>
</table>

**Total** 251
MARC’s OGL program operates from STP Federal revenues on a reimbursement basis from MoDOT and KDOT who administer the funds. The local match for 2017-2018 is collected annually with a two year agreement which coincides with the time frame of the two year MoDOT and KDOT agreements.

Local funds are combined with federal STP funds to comprise the total operations budget. The current federal to local funding split is 50/50. Reimbursement of federal funds from MoDOT and KDOT are at 80% federal, 20% local rate. In Kansas, all agreements are in the form of a single combined agreement for the 15 agencies. The agreements had been by individual agency till the 2017-2018 agreement but is now combined into a single agreement due to Kansas statues that were to require an inter-local agreement but was later revised.

**Budget summary:**
- The budget is for two years starting April 2017
- All but one Missouri side agreement has been executed
- 2018 local funds have been collected from all but 1 agency (requested late billing)
- Local funds remaining to be collected for 2018 are $166,400
- The % variance column can be used to compare variance to the current date of 75% (18 of 24 months) progress
- STP funds were fully expended in May. Now operating on local funds until new STP agreements are in place (January 2019)
- Equipment/Computer/Supplies line item at 136.6% includes accelerated expenses following the technology plan

**Considerations:**
The current local funds are expected to support the operations till the end of the year.

**Future Budget, 2019-2020**
Due to local budget funds large balance, options to balance the local funds include accelerated spending or a reduction in future funds or both. Concerns have been raised with skipping entire years of invoicing. Projections of future costs allow for the ability additional FTE as approved in July by the Steering Committee while reducing the local funds.

**Proposal:** reduce the amount of the local per signal match for 2019-2020 from $800 per traffic signal (controller) to $600. This will reduce the local funds by $143,200 / year.
### Mid-America Regional Council (MARC)
#### MO & KS OGL Operations 65210

#### 2-Year Budget Period Beginning April 1, 2017

#### Report ending September 30, 2018

<table>
<thead>
<tr>
<th>Expenses</th>
<th>Two-Year Budget</th>
<th>Cumulative To Date</th>
<th>Balance (yet to be spent)</th>
<th>% Variance 18/24 months =75%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Salaries, Fringe Benefits, Indirect Costs</td>
<td>$1,099,716.00</td>
<td>$794,727.83</td>
<td>$304,988.17</td>
<td>72.3%</td>
</tr>
<tr>
<td>Consultants/Contracted Services</td>
<td>$865,636.00</td>
<td>869,317.63</td>
<td>(3,681.63)</td>
<td>100.4%</td>
</tr>
<tr>
<td>Legal Fees</td>
<td>$10,000.00</td>
<td>5,264.92</td>
<td>4,735.08</td>
<td>52.6%</td>
</tr>
<tr>
<td>Meeting/Travel (In/Out of Region &amp; Registration)</td>
<td>$16,200.00</td>
<td>12,704.94</td>
<td>3,495.06</td>
<td>78.4%</td>
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<tr>
<td>Rent</td>
<td>$15,248.00</td>
<td>11,133.18</td>
<td>4,114.82</td>
<td>73.0%</td>
</tr>
<tr>
<td>Telephone/Maint. (Internet, mobile, ConferSave, USB modem)</td>
<td>$48,000.00</td>
<td>26,918.60</td>
<td>21,081.40</td>
<td>56.1%</td>
</tr>
<tr>
<td>Insurance</td>
<td>$8,000.00</td>
<td>5,415.00</td>
<td>2,585.00</td>
<td>67.7%</td>
</tr>
<tr>
<td>Postage</td>
<td>$200.00</td>
<td>31.72</td>
<td>168.28</td>
<td>15.9%</td>
</tr>
<tr>
<td>Equipment/Computer/Supplies</td>
<td>$249,000.00</td>
<td>340,157.98</td>
<td>(91,157.98)</td>
<td>136.6%</td>
</tr>
<tr>
<td>Service Agreements</td>
<td>$2,000.00</td>
<td>967.84</td>
<td>1,032.16</td>
<td>48.4%</td>
</tr>
<tr>
<td>Automobile Gas/Maintenance</td>
<td>$16,000.00</td>
<td>6,495.33</td>
<td>9,504.67</td>
<td>40.6%</td>
</tr>
<tr>
<td>Professional Memberships</td>
<td>$1,000.00</td>
<td>-</td>
<td>1,000.00</td>
<td>0.0%</td>
</tr>
<tr>
<td>Training</td>
<td>$3,000.00</td>
<td>-</td>
<td>3,000.00</td>
<td>0.0%</td>
</tr>
<tr>
<td>Utilities</td>
<td>$10,000.00</td>
<td>8,066.68</td>
<td>1,933.32</td>
<td>80.7%</td>
</tr>
<tr>
<td><strong>Total Expenses</strong></td>
<td><strong>$2,344,000.00</strong></td>
<td><strong>$2,081,201.65</strong></td>
<td><strong>$262,798.35</strong></td>
<td><strong>88.8%</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Revenues (Reimbursement from DOTs at 80/20)</th>
<th>Two-Year Budget</th>
<th>Cumulative To Date</th>
<th>Balance</th>
<th>% Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>STP Funding, KDOT</td>
<td>$450,000.00</td>
<td>$450,000.00</td>
<td>-</td>
<td>100.0%</td>
</tr>
<tr>
<td>STP-Funding, MoDOT</td>
<td>$770,000.00</td>
<td>$770,000.00</td>
<td>-</td>
<td>100.0%</td>
</tr>
<tr>
<td>Local Gov't Rev Required 20% match of $1,525,000</td>
<td>$305,000.00</td>
<td>$305,000.00</td>
<td>-</td>
<td>100.0%</td>
</tr>
<tr>
<td><strong>Total Revenues for Federal Grant</strong></td>
<td><strong>$1,525,000.00</strong></td>
<td><strong>$1,525,000.00</strong></td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

**Local Government Balances:**
- Funds available from previous budgets: $786,459.81
- Funds collected for current budget period: $953,800.00
- Local Operation Green Light Program #65375 (Deferred Rev Balance): $62,735.93
- Total available: $1,802,995.74

Less: Amount applied for current budget period (see above) (305,000.00)

**Ending Balance September 30, 2018**: $1,497,995.74

**Reserve/Emergency (local funds)**: $300,000.00
## Revenues

<table>
<thead>
<tr>
<th>Description</th>
<th>2019 Budget</th>
<th>2020 Budget</th>
</tr>
</thead>
<tbody>
<tr>
<td>Federal Pass-Through Missouri</td>
<td>$490,000.00</td>
<td>$490,000.00</td>
</tr>
<tr>
<td>Federal Pass-Through Kansas</td>
<td>$210,000.00</td>
<td>$210,000.00</td>
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<tr>
<td><em>Local Match - Actual ($600 / signal)</em></td>
<td>$431,600.00</td>
<td>$431,600.00</td>
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<tr>
<td><strong>Total Revenues</strong></td>
<td><strong>$1,131,600.00</strong></td>
<td><strong>$1,131,600.00</strong></td>
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</table>

## Expenses

<table>
<thead>
<tr>
<th>Description</th>
<th>2019 Budget</th>
<th>2020 Budget</th>
</tr>
</thead>
<tbody>
<tr>
<td>Salaries, Fringe Benefits, Indirect Costs</td>
<td>$665,515.00</td>
<td>$675,200.00</td>
</tr>
<tr>
<td>Consultants/Contracted Services</td>
<td>$323,585.00</td>
<td>$313,900.00</td>
</tr>
<tr>
<td>Legal Fees</td>
<td>$3,000.00</td>
<td>$3,000.00</td>
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<tr>
<td>Meeting/Travel (In/Out of Region &amp; Registration)</td>
<td>$10,000.00</td>
<td>$10,000.00</td>
</tr>
<tr>
<td>Rent</td>
<td>$8,900.00</td>
<td>$8,900.00</td>
</tr>
<tr>
<td>Telephone/Maintenance (mobile, ConferSave, USB modem)</td>
<td>$15,000.00</td>
<td>$15,000.00</td>
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<tr>
<td>Insurance</td>
<td>$4,000.00</td>
<td>$4,000.00</td>
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<tr>
<td>Postage</td>
<td>$100.00</td>
<td>$100.00</td>
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<tr>
<td>Supplies</td>
<td>$2,000.00</td>
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<tr>
<td>Service Agreements</td>
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<td>$1,000.00</td>
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<tr>
<td>Automobile Gas/Maintenance</td>
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<tr>
<td>Equipment/Computer</td>
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<td>Training</td>
<td>$5,000.00</td>
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<tr>
<td>Utilities</td>
<td>$5,000.00</td>
<td>$5,000.00</td>
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<tr>
<td><strong>Total Expenses</strong></td>
<td><strong>$1,131,600.00</strong></td>
<td><strong>$1,131,600.00</strong></td>
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## Reserve/Emergency

<table>
<thead>
<tr>
<th>Description</th>
<th>2019 Budget</th>
<th>2020 Budget</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Local Funds of $431,600 based on $600 / signal at 715 signals</em></td>
<td>$300,000.00</td>
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</table>