Welcome & Introductions

1. Approval of April 23 Committee Minutes* (page 3)

2. Two Minute Agency Updates

3. OGL Program Vehicle Purchase Request* (page 6)

4. OGL Additional Staff Discussion (page 7)

5. MARC’s Automated Vehicle Task Force Presentation – Amanda Graor, MARC

   - I-35 Diversion update
   - I-435 Diversion update
   - Table Top exercise

7. CCTV Video Recording Proposal / Discussion (page 11)

8. Regional ATMS Systems Engineering Project - Steve Garbe, Iteris (page 14)

9. 2017 MO CMAQ Funding, Construction Project Update

10. Quarterly Operations Update (page 15)
    - OGL and Regional Traffic Signal Map Update
    - TransSuite Features Update

11. Quarterly Budget Report (page 29)
    - STP 2019-2020 Program Agreements, MO and KS STP and Local
    - 2021/22 MO and KS STP Call for projects update

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.
Other Business
  • MO agency OGL Vice-Chair representative will be sought for the 2019 year and elected in October
  • Results from Traffic Signal Detection forum 6/28
  • Gauge Interest in an area Synchro Training class?

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

Adjournment
*Action Items

Future meetings / conferences:
  • IMSA Forum and EXPO, July 28-31, Orlando
  • ITE Annual Meeting, August 20-23, Minneapolis
  • MoVITE Fall Meeting, October 3-5, Lenexa, KS
  • Missouri Traffic and Safety Conference, September 10-12, Columbia MO
  • APWA PWX, August 26-29, Kansas City
Welcome & Introductions  
Meeting started at 1:30. Derek Olson, the Chair of the committee, welcomed all and conducted introductions  

1. January 22 Committee Minutes – The minutes were approved unanimously.

2. Two Minute Agency Updates  
KDOT just issued our call for projects for our HSIP Intersection Program for FFY 2020-2021. This is for cities in Kansas with populations greater than 5000. The contact is David.Northup@ks.gov (785) 296-0357. We will be using the AASHTO Safety Analyst software to do our analysis. Cities need to submit traffic count data, traffic crash reports, and their vision for scope of project. Each city may submit 4 project requests.

KDOT is working to update traffic signal standards. The primary updates are AASHTO 2013 mast arm poles, LED street lighting, new foundation designs, and Linux based controllers (both 2070 and NEMA). Noel informed the committee that Olathe started their connection with Live Traffic Data (LTD) on the 19th.

MODOT has a project to connect nearly 100 additional signals throughout the district to TransSuite that will raise the on-line signals from 55% to 80%.

Ray Webb was inducted in the Missouri S&T Academy of Civil Engineers

3. Network Security Assessment – Barry explained that we want to be sure to protect traffic signals from being tampered with. MARC contracted with RubinBrown to do a network assessment. Rob Rudloff with RubinBrown gave a brief presentation to the committee on their findings and the recommended path
forward for OGL to improve security. Barry Viss can provide hard copies of their Executive Summary Report for Committee members if desired. OGL staff are working on implementing their recommendations, which will require a significant amount of time and resources.

4. **Report on Open Data Service for Real-Time Traffic Signal Data** – Todd Fredericksen with Olsson Associates presented some findings that came out of research they did into other agencies around the country who are releasing transportation system data to the public or private companies. In the past few years the number of requests for access to traffic signal status feeds has been increasing. With connected and autonomous vehicles in the future this type of data access seems to be inevitable. Agencies that they contacted were releasing the data for free and were not worried about legal liability associated with doing so. TransSuite currently has a mechanism to provide the data that is ready to be used if needed. Dave Kumke spoke about efforts currently underway in Olathe: Connected Signals is operational which receives Olathe’s signal status for use in an app for drivers called EnLighten, Traffic Technology Services (TTS) is receiving Olathe’s data to provide to some vehicle manufacturers, Live Traffic Data (LTD) gives the city free intersection MOEs in exchange for their status feed, and Miovision will be installing their performance measures system on a couple corridors in Olathe for a fee.

5. **MO CMAQ 3302(423) Design/Construction Signal Enhancements Update** – Project scope includes the addition of Blue Springs (9 signals) and Grandview (5 signals) plus KCMO 30 CCTV and fiber on the plaza. Plans are at 70 – 80% done, working on specs and engineers estimate. The plan is to let the project and complete construction in 2018.

6. **Regional Traffic Signal Map Update and Demo** – OGL staff continues cleaning up and adding agencies to the new website map. This will show where OGL signals are as well as non-OGL signals for as many agencies as we have the info. It will only show the corridor, crossroad, maintaining agency and contact info. MARC will likely open the website for public access in the next few weeks.

7. **STP/CMAQ 2021/22 Call for Projects Submittal** – OGL has submitted projects based on responses from interested agencies. MO projects include detection for 30 approaches, 32 PTZ cameras, 117 controllers, and Traffic Responsive functionality on US-71 totaling $847k. KS projects include detection for 6 approaches, 15 PTZ cameras, some fiber-optic communications, 63 controllers, and HERE Data access totaling $712k. These projects could be funded by either CMAQ or STP. As in previous funding rounds, MARC has posted summaries of the applications received to our website to provide information and the opportunity to comment on the applications. The availability of this information has been distributed through the MARC website, various MARC committees, social media, and Transportation Matters, the news blog produced by the MARC Transportation and Environment Department. To access the summaries, please visit [http://www.marc2.org/tr_cfp/browseprojects.aspx](http://www.marc2.org/tr_cfp/browseprojects.aspx). To comment on a specific project, open the summary for the project and scroll to the bottom of the page. Comments will be taken through May 4, 2018.

8. **Quarterly Operations Update** – Chris Jenkins highlighted a few items from the operations report which was included in the meeting packet. Barry Viss reminded the committee that OGL has a monthly coordination meeting with TransCore staff to discuss various bug fixes and enhancements being worked on. Other agencies are welcome to join those calls if desired. All agencies who use SEPAC controllers are encouraged to use the 4.57 firmware now that it has been integrated. Barry also mentioned some signal timing efforts in the works for the next few months. ETI will be upgrading some radios in Pods 8 (Sheraton) and Pod 3 (75th & Holmes) starting this week. Ray mentioned that we just signed the System Engineering contract with Iteris. They will sign soon, then work will begin to establish system requirements.

9. **Quarterly Budget Report** – Ray presented the budget report that was included in the meeting packet. For the 2017/2018 term one Missouri member city has yet to execute an agreement. The federal funds should
be used up by the end of May, after which time we will spend only local money for the remainder of the term. We have a large balance of local funds built up still such that it may be an option to not invoice local agencies in 2018. It is also important to keep in mind that the System Engineering process coming up for a ATMS software could result in the need to spend a large amount of money on a new software system in the future. Dave Northup pointed out that the STP operations dollars OGL collects are advertised as being 50/50 federal/local and not invoicing would change that ratio. Following discussion, Brian Shields made a motion that MARC continue to invoice for OGL yearly as planned. The motion received a second and passed unanimously.

10. Adaptive Traffic Signal Control (ATSC) Systems and Training Course – Ray attended a week long course on adaptive signal systems. It included perspective and detailed info on many adaptive systems in use in North America. Also was provided were tools designed to assist with choosing system requirements. There is a large manual of information that Ray can loan out if any are interested.

11. Kansas City Regional Purchasing Cooperative Overview – Ray reminded the committee that many of the contracts OGL and other MARC programs enter have cooperative purchasing provisions meaning they are available for other public agencies to use for competitively bid purchasing.

12. Shared Best Practice Forum for Traffic Signal Detection – Lideana and Derek are working on organizing a meeting of agencies to discuss detection technologies and practices. The intent is to share knowledge and experience in order to improve detection reliability through the region. They will try to find a date in June and will call agencies to gather information prior to the meeting.


14. Adjournment – The meeting was adjourned at 3:16 PM

Next Regularly Scheduled Meetings: July 23, October 22, January 28, 2019
OGL New Vehicle Proposal

ISSUE
Authorize purchase of a new vehicle for the Operation Green Light program.

BACKGROUND

Operation Green Light staff utilizes two vehicles nearly daily with four staff. One vehicle is primarily dedicated to the network troubleshooting as it carries tools and supplied need for this work. The 2013 escape is used with the six Miovision data collection units, batteries and support equipment.

OGL currently conducts operations with two vehicles, a 2008 Ford Escape and a 2013 Ford Escape. Both vehicles were purchased using the regional KCRPC contract for government pricing. A third vehicle would allow for a vehicle more suited for the mobilization of the Miovision traffic count equipment. Over the past four years OGL has increased its inventory of Miovision equipment. Currently the Miovision equipment is housed and transported in the 2013 escape. A third vehicle that is more conducive to housing the Miovision equipment would be optimal for daily operations. The vehicle that is being considered is a Ford Transit which will allow for safe storage and better ease of access. Due to the 2008 Escape’s value we would not trade it in as it would provide better flexibility for staff.

BUDGET CONSIDERATIONS
OGL will use the Regional KCRPC Metro Vehicle Contract that provides local government with a previously bid contract. The price range would fall into approximately $23,500 to $27,500. STP funds are not allowed to be used for vehicle purchases thus local funds only would be used as was the case for the past vehicles.

RECOMMENDATION
Authorize the OGL staff to move forward with a purchase of new vehicle
ISSUE
Opportunities for growth in MARC’s work related to transportation systems management &
operations, emerging transportation technologies and the Operation Green Light (OGL) program
are creating demands for new staff capacities in the transportation & environment department.

BACKGROUND

Operation Green Light (OGL)
OGL was originally created to facilitate traffic signal coordination during peak travel periods
among approximately 500 traffic signals on regional commuter routes with plans to grow the
system to include up to 1500 intersections. The program has grown over the years and now
operates over 700 traffic signals for 26 agencies with real-time operations to cover approximately
7AM to 5:30PM including night and weekends to support traffic control for construction
activities and other planned and unplanned incidents. As the number of traffic signals managed
by the program has grown, the network communications system now includes over 1200 field
devices that must also be managed and maintained.

As recommended by the OGL strategic plan adopted in 2013 and updated in 2017, further
increases to OGL program workload are anticipated related to incident management, advanced
traffic signal performance measures (ATSPM), data and operation with 3rd party systems
including vehicle-to-infrastructure systems such as Signal Phase and Timing (SPaT) and
increased public awareness and communications.

OGL was originally supported by 5 full-time employees with part-time support from other
department personnel, consultants and contractors. As the initial build-out of the system was
completed, an administrative support position was vacated and never refilled, so the program
currently operates with 4 FTEs.

Transportation Systems Management & Operations (TSM&O)
Given the constraints on the provision of significant new roadway capacity, it is increasingly
important to operate the existing network to its fullest service potential, especially “taking back”
the capacity lost to congestion, incidents, construction, weather, poor signalization, etc.

TSM&O offers the potential to provide an integrated program to optimize the performance of
existing infrastructure through the implementation of specific systems and services that preserve
capacity and improve reliability and safety. TSM&O activities focus on a set of well-known
strategies such as incident management, traffic signal timing, ramp metering, road weather
management, and others.

As recommended by the I-35 Integrated Corridor Management Study completed in 2017, MARC
staff have worked with representatives from FHWA, KDOT, MoDOT, KC Scout and area local
governments to explore opportunities for effective TSM&O strategies in the Kansas City area to
better coordinate and leverage existing systems including KC Scout and OGL. MARC staff have
coordinated regional training and self-assessment activities for TSM&O but no formal structure
or dedicated resources have been identified for this work.

RECOMMENDED STAFFING STRATEGY
1) Hire 1 new FTE to support OGL, TSM&O and AV work including:
   • Support extended core OGL system coverage hours / weekends as needed
   • Support ATSPM and Performance measure advancement
   • Develop Synchro modelling work to reduce dependency on outsourcing
   • Support contract management and OGL administration
# Incident Diversion Plan

## General

<table>
<thead>
<tr>
<th>Highway/Direction</th>
<th>Segment #</th>
<th>From</th>
<th>To</th>
<th>Synchro Model</th>
<th>Time Period</th>
<th>Updated</th>
</tr>
</thead>
<tbody>
<tr>
<td>I-35 NB</td>
<td>224 NB</td>
<td>95th St</td>
<td>87th St</td>
<td>I-35 224 NB 95 to 87.syn</td>
<td>Off-Peak</td>
<td>8/22/17</td>
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</table>

## Partner Agencies

<table>
<thead>
<tr>
<th>Location</th>
<th>Contact Person</th>
<th>Phone Number</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overland Park, KS</td>
<td>Shawn Gotfredson</td>
<td>913-895-8303</td>
<td>Approval Required</td>
</tr>
<tr>
<td>Lenexa, KS</td>
<td>Steve Schooley</td>
<td>913-477-7662</td>
<td>Approval Required</td>
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</table>

## Segment Descriptions

<table>
<thead>
<tr>
<th>Segment Description/Notes</th>
<th>Notes:</th>
</tr>
</thead>
<tbody>
<tr>
<td>95th Street from I-35 Interchange to US-69 Interchange. Increased cycle lengths to 150 seconds with additional time added to EBT phase at all intersections and EBT/EBL phases at 95th with Quivira and 95th with US-69 NB.</td>
<td>9.15.2016 Route extending north along Quivira between 87th to 75th, east on 75th to I-35 not included due to expected dispersion of traffic and distance of route from incident.</td>
</tr>
<tr>
<td>Quivira Road from 95th St to 87th Street. Increase cycle lengths to 150 seconds with additional time added to NBT phase at all intersections.</td>
<td></td>
</tr>
<tr>
<td>87th Street and I-35 Interchange (Nieman Road and US69/Lenexa Drive). Increase cycle length to 150 seconds with additional time added to EBL at I-35. Additional time added to all phases at Nieman Road and US69/Lenexa Drive due to close proximity to interchange.</td>
<td></td>
</tr>
</tbody>
</table>

## OGL Command List (I-35 224 NB OffPeak ON & I-35 224 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>90052</td>
<td>95th St @ I-35 Interchange</td>
<td>Econolite ASC3</td>
<td>70</td>
<td>Heavy Ph 8 (NB)</td>
</tr>
<tr>
<td>90051</td>
<td>95th St @ Monrovia St</td>
<td>Econolite ASC3</td>
<td>70</td>
<td>Heavy Ph 4 (EB)</td>
</tr>
<tr>
<td>90050</td>
<td>95th St @ LBP</td>
<td>Econolite ASC3</td>
<td>70</td>
<td>Heavy Ph 4 (EB)</td>
</tr>
<tr>
<td>90105</td>
<td>Quivira Rd @ Santa Fe</td>
<td>Econolite ASC3</td>
<td>70</td>
<td>Heavy Ph 2 (NB)</td>
</tr>
<tr>
<td>90003</td>
<td>87th St @ Quivira Rd</td>
<td>Econolite ASC3</td>
<td>70</td>
<td>Heavy Ph 2 (NB)</td>
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<tr>
<td>90002</td>
<td>87th St @ I-35 Interchange</td>
<td>Econolite ASC3</td>
<td>70</td>
<td>Heavy Ph 4 (EB)</td>
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</tbody>
</table>

## Overland Park Command List (I-35 224 NB OffPeak ON & I-35 224 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>31</td>
<td>95th St @ Quivira Rd</td>
<td>Econolite ASC3</td>
<td>70</td>
<td>Heavy Ph 4 (EB)</td>
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<tr>
<td>230</td>
<td>Quivira Rd @ 91st St</td>
<td>Econolite ASC3</td>
<td>70</td>
<td>Heavy Ph 2 (NB)</td>
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<tr>
<td>32</td>
<td>95th St @ Mall Entrance W</td>
<td>Econolite ASC3</td>
<td>70</td>
<td>Heavy Ph 4 (EB)</td>
</tr>
<tr>
<td>33</td>
<td>95th St @ Mall Entrance E</td>
<td>Econolite ASC3</td>
<td>70</td>
<td>Heavy Ph 4 (EB)</td>
</tr>
<tr>
<td>34</td>
<td>95th St @ Nieman</td>
<td>Econolite ASC3</td>
<td>70</td>
<td>Heavy Ph 4 (EB)</td>
</tr>
<tr>
<td>35</td>
<td>95th St @ Bluejacket</td>
<td>Econolite ASC3</td>
<td>70</td>
<td>Heavy Ph 4 (EB)</td>
</tr>
<tr>
<td>36</td>
<td>95th St @ US 69 SB Ramps</td>
<td>Econolite ASC3</td>
<td>70</td>
<td>Heavy Ph 4 (EB)</td>
</tr>
<tr>
<td>40</td>
<td>95th St @ US 69 NB Ramps</td>
<td>Econolite ASC3</td>
<td>70</td>
<td>Heavy Ph 4 (EB)</td>
</tr>
<tr>
<td>71</td>
<td>87th St @ Nieman Rd</td>
<td>Econolite ASC3</td>
<td>70</td>
<td>Added All Ph</td>
</tr>
<tr>
<td>72</td>
<td>87th @ US69/Lenexa Dr</td>
<td>Econolite ASC3</td>
<td>70</td>
<td>Added All Ph</td>
</tr>
</tbody>
</table>
OVERVIEW

Since 2008 OGL has utilized the Genetec video monitoring software. Since that time over the span of many projects, the system has grown from only viewing KC Scout cameras to hosting over 100 cameras in 11 jurisdictions. The system also connects with other Genetec systems in the region and shares video images. The OGL system is currently connected to 8 other systems. They are: KC Scout, Overland Park, Lenexa, Shawnee, KCK, NKC, KCMO and Merriam. Most recently using STP funds, 66 cameras were installed in 2015 with another 35 locations planned in 2018 using CMAQ funds. In 2010, the AARA project installed 56 CCTV’s. OGL staff has found it very beneficial using these cameras to monitor traffic across the region, identify detection issues and respond to incidents on the freeways and arterials. OGL staff has also been able to go back and look at recorded video on other systems when responding to a citizen inquiry or traffic signal malfunction that has been observed by staff, notified by the public or alerted from TransSuite.

DISCUSSION POINTS

- Policies and Procedures
  - Which cameras to record
  - Retention period–3, 7, 15, 30 days, etc. Different times for different agencies? MO / KS?
  - Video Requests by the public
  - Cameras repairs / cleanings
  - Network uptime / outages

- Video Quality
  - # of cameras
  - Minimum requirements – Frame rate, resolution, etc.

- Hardware
  - May need more RAM or processors for server

- Software
  - Additional federation licenses may be needed

PROPOSAL

The OGL Steering Committee requested MARC staff to begin discussing with agencies to get permission to record CCTV images to the OGL system and develop a base policy. OGL will develop policies and procedures to guide the use, transmission, and dissemination of these images in conjunction with the owning agencies. OGL will also have to discern what difference in law may pertain whether in Missouri or Kansas.

COST

The cost of implementing recording on the OGL Genetec Security Center system would be relatively low as minimal new server hardware or software would be needed. The only anticipated costs would be for disk storage space for the recorded images. We are anticipating that this would be less than
$3000. This does not take into account any staff time in the future for video requests or any other IT related time.

**NEXT STEPS**

**WHO’S IS WANTING TO RECORD**

- KCK
- Gladstone
- Fairway
- Westwood
- Lee’s Summit

**WHO IS NOT WANTING TO RECORD**

- MoDOT

**UNKNOWN**

- Lansing
- Independence
- Bonner Springs
- Mission

**IDENTIFY ISSUES**

Some issues will need to be identified related to the potential for additional burdens to the OGL staff and the costs to hire an attorney to finalize the policy.

**DRAFT POLICY:**

**WHEREAS,** Operation Green Light (“OGL”) owns and operates an integrated wired/wireless network (“Network”); and

**WHEREAS,** such Network is composed of wireless radios, switches, routers, and servers; and

**WHEREAS,** such Network also has agency owned traffic intersection controllers, switches, traffic cameras, detection cameras and other network devices; and

**WHEREAS,** the monitoring and recording of such cameras can provide certain enhancements to the public health, safety and welfare, including, but not limited to, improved traffic flow on public streets, enhanced public safety and security during public events and when investigating crimes and vehicular crashes, and more effective emergency operations management during natural or man-made disasters; and

**WHEREAS,** the benefits of monitoring must be balanced against the right to be free of unwarranted intrusion into people’s lives and privacy; and
WHEREAS, in order to help OGL staff with determining the balance of the benefits of monitoring such cameras while insuring that the public has a reasonable expectation of privacy, these are the following guidelines

SECTION ONE: Purpose. The purpose of this policy is to provide guidance in the legal, responsible and effective use of video security and traffic cameras and recording equipment in public areas for the purpose of safety and traffic flow. The existence of this policy does not imply or guarantee that cameras will be monitored in real time or recorded 24 hours per day, seven days per week.

SECTION TWO: Guiding Principles. OGL staff and all users shall comply with all local, federal and state law applicable to the use of video cameras in public space. Camera use will be conducted within:

The following guiding principles shall be used by staff in the monitoring of the integrated video/camera network of OGL:

A. To ensure that there is no violation of a person’s reasonable expectation of privacy, video cameras shall be focused on public areas, agency streets, and the images shall not be used or disseminated improperly.

D. Information obtained through traffic intersection cameras, live video or recordings, will be used primarily to address traffic flow and congestion issues and for safety issues, but may be used for any official agency purpose. Information obtained through monitoring or recording will only be released and used in accordance with agency policy, or as required by law. OGL retains custody and control of all original video records. Video records will be stored securely and in accordance with applicable record retention guidelines. Comments or questions regarding the use of video security and traffic intersection cameras and recording equipment with the Agency should be addressed to the Agency.

E. Video recordings from the traffic intersection cameras shall be retained for X (X) days and then will be automatically overwritten unless the video is retained as evidence or for official agency use and business as authorized in this resolution.

F. Agency-owned camera systems will not be utilized for proactive or routine traffic law enforcement.

G. Video recorded images will be stored in a secure location with access by authorized personnel only.

H. All video requests will be made to the agency and then sent to OGL for processing.

I. A person shall not use a camera for any private purpose unrelated to the person’s assigned duties.

J. It shall not be stated or implied that access to any camera indicates or guarantees that cameras are being constantly monitored in real time.
OGL Advanced Transportation Management System

Systems Engineering Overview

What’s Happening

MARC is now beginning a process to update Operation Green Light’s (OGL’s) Advanced Traffic Management System (ATMS) Software, which is currently TransSuite®. During the effort, an OGL ATMS-Systems Engineering (SE) Working Group will:

- Discuss current operating conditions and needs,
- Assess the state of the practice,
- Develop a Request for Proposal (RFP) to solicit an ATMS software.

The OGL ATMS-SE Update kick-off was initiated in July and will continue through winter 2019. Two Workshops are planned as well as a Request for Information to the ATMS industry to present the current state of the practice. The first OGL Stakeholders Workshop will be Thursday, July 26, 2018 in the MARC Board Room (600 Broadway, Suite 200, Kansas City, Missouri) from 9 a.m. to Noon. All OGL partners are encouraged to attend.

Background

The Mid-America Regional Council (MARC) has led the Regional Traffic Signal Operations and Management program commonly referred to as OGL since early 2000’s. Our region uses it to coordinate traffic signal timing plans and communication between traffic signal equipment across jurisdictional boundaries. Through OGL, MARC currently operates over 700 traffic signals for 26 program partners in the region.

More Information

For additional information about the OGL ATMS-SE Update, please contact Ray Webb, MARC Manager of Traffic Operations, at rwebb@marc.org and 816-622-0731. A consultant team led by Iteris with support from Vireo and gbaSI is assisting the project.
Mid-America Regional Council’s Quarterly Report
For Operation Green Light

2nd Quarter 2018 Report
July 23rd, 2018

Prepared For:
OGL Steering Committee

Prepared By:
OGL Operations Team
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Introduction

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.

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 84 repair tickets. This is a significant increase over the previous quarter, but most of them are for upgrading the wireless network to the new Radwin radios. 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

- Updated coordination plans at M-45 & M-9
- Incident management plans were tested on 95th St, Quivira, and 87th St
- Updated coordination plans on 7th St, KCK, in response to 18th St bridge closure detours
- Temporary (multi-day) changes to 78 & Sterling for roadwork
- Multiple long-term changes on Bannister Rd for I-470 and I-435 roadwork detours
- Updated coordination plans on M-350 & Maple
- Updated phasing, ring structure, coordination, logic, etc at US40 & Little Blue Pkwy
- New coordination plans on M-9/Burlington for Broadway bridge SB closures
- Updated coordination plans at M-210 & Vernon for intersection rebuild
- Updated coordination at I-435 & Wornall for roadwork
- New coordination plans on M-Y/163rd St south of Markey Parkway
- Managed many corridor signals during I-70 closure June 9th
- Updated coordination plans on Noland Rd for Phelps bridge closure

Training Sessions/ Panels/ Events

- 5/4 – Barry gave a brief training to MODOT staff on TransSuite XPL diagrams
- 5/10 – OGL staff attended the May KCITE Chapter meeting in Overland Park, KS
- 6/6 – Chris Jenkins and Ray Webb attended the KAUTC Summer meeting in Lenexa, KS

Additional Information

- OGL staff set up and scheduled the Miovision equipment to conduct 22 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 2nd Quarter of 2018:

- 6/11 – A new core firewall was installed in the TMC. This new device has many more capabilities than the current Mikrotik that OGL plans on using to make the network more secure from the outside environment.
- 5/30 – TransSuite was updated to 18.2.3
- 6/18 – TransSuite was updated with a patch to fix some minor issues from previous upgrade
- ETI replaced remaining Alvarion radios in OP, Leawood, Prairie Village, and at Pod8 Sheraton
- ETI replaced all of the Alvarion radios at Pod3 75th & Holmes tower and surrounding areas
- OGL and MoDOT traffic staff worked together to move all of the traffic signals from the MoDOT TransSuite system over to the OGL system. This was done in coordination with KC Scout IT staff and MoDOT IT staff. This was done for preparation of the MoDOT Traffic Signal Network project. This included creating additional new network connections with Scout and a new connection to MoDOT.
Interagency Coordination

During the 2nd Quarter, OGL staff participated in the following interagency activities:

- 4/2 – OGL staff met with MoDOT, KC Scout and Lees Summit staff to discuss future fiber and network collaboration
- 4/3 – OGL staff met with Olsson and several agencies regarding Performance Measures for Signal Operations
- 4/4, 4/18 – OGL and Olsson held bi-weekly conference calls for signal timing work status
- 4/4 – OGL staff met with MoDOT staff to discuss non-OGL signal operations within TransSuite
- 4/6 – Chris Jenkins met with MoDOT staff for upcoming Traffic Signal Network Design Project
- 4/11 – OGL staff and several agencies met with TCC to discuss Centracs
- 4/11 – OGL staff met with KC Scout staff to meet new Workzone Coordinator
- 4/11 – Ray met with 435 Design/Build project staff to discuss ITS and Signal operations
- 4/13 – OGL staff attended Pre-Con meeting for upcoming MoDOT Traffic Signal Network Project
- 4/19 – OGL staff participated in the OGL Regional TransSuite Monthly Status meeting
- 4/23 – OGL staff attended the OGL Steering Committee Meeting
- 4/25 – OGL staff participated in the Improving the Maintenance of Signalized Intersections and Asset Management with Automated Traffic Signal Performance Measures webinar
- 4/26 – Chris Jenkins attended KCMO City Manager’s Camera Coordination meeting
- 4/26 – OGL staff met with a Rhythm Engineering representative
- 4/27 – OGL staff met with MODOT staff regarding potential addition of signals to OGL
- 5/1 – Ray attended the Regional ITS Architecture Steering meeting
- 5/2, 5/16, 5/30 – OGL and Olsson held bi-weekly conference calls for signal timing work status
- 5/2 – OGL staff met with MODOT regarding lessons learned in the I-470 bridge work weekend closures
- 5/4 – Ray met with the city of North Kansas City to discuss city’s operations needs
- 5/7 – Ray attended the Highway Committee Meeting
- 5/8 – Ray attended the MO STP Priorities Committee meeting
- 5/14 – Ray met with Merriam Public Works to discuss OGL planning
- 5/17 – OGL staff participated in the OGL Regional TransSuite Monthly Status meeting
- 5/17 – Barry met with MODOT staff for US-40 & Little Blue Pkwy re-wire planning
- 5/24, 5/31 – Chris Jenkins attended construction meeting for the MoDOT Traffic Signal Network Project
- 5/31 – Chris Jenkins attended KCMO City Manager’s Camera Coordination meeting
- 5/31 – OGL staff met with Olsson and several agencies regarding Performance Measures for Signal Operations
- 5/5 – OGL staff met with MoDOT staff to discuss upcoming I-70 closure in Independence, MO for bridge demolitions
• 6/7 – OGL staff met with Independence staff and Olsson regarding Noland and College and controller specs
• 6/7, 6/14, 6/27 – Chris Jenkins attended construction meeting for the MODOT Traffic Signal Network Project
• 6/7, 6/13, 6/21, 6/27 – OGL and Olsson held bi-weekly conference calls for signal timing work status
• 6/12 – Ray attended to MO STP Priorities Committee meeting
• 6/14 – Ray attended to KS STP Priorities Committee meeting
• 6/20 – OGL staff met with Independence and MoDOT staff about upcoming CMAQ project.
• 6/20 – OGL staff met with KC Scout staff for updates regarding operations and staff coordination
• 6/21 – OGL staff met with Olsson and several agencies regarding Performance Measures for Signal Operations
• 6/21 – OGL staff participated in the OGL Regional TransSuite Monthly Status meeting
• 6/22 – OGL staff met with MODOT to discuss reporting and tracking detection malfunctions
• 6/27 – Ray attended the Kansas City AV Task Force Meeting
• 6/28 – OGL staff attended regional Traffic Signal Detection Forum - Shared Best Practice
• 6/29 – Ray Webb met with KC Scout staff and MU faculty about information sharing and collaboration
Quarterly Repair Ticket Statistics by Month
In the 2nd Quarter of 2018, OGL staff created and responded to 5 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 4](image)

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

![Figure 5](image)
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.

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.
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]

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 and severity type]
Summary of Critical Events

The OGL staff responded to 0 critical events during the 2nd Quarter of 2018.

There was one critical event that wasn’t entered into the system. In North Kansas City a cabinet was hit by a driver in June. This damaged the fiber equipment in this cabinet, where the OGL connects to the NKC Genetec system. A temporary fix was installed to get the NKC network back up while awaiting a new cabinet and associated part. However, the OGL federation with NKC will be disconnected until final repairs can be done.

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 2018 hasn’t begun yet.

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. 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.

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 monitors these corridors and has made timing changes in response to the increased traffic.

MoDOT closed a 5 mile stretch of I-70 in Independence for bridge demolitions. OGL staff monitored alternate routes throughout the area to respond to traffic issues and incidents. OGL staff made numerous changes to help accommodate the increased traffic. This closure was in addition to other weekend and overnight projects/lane closures along I-470 involving bridge rehab projects and shoulder work in preparation for upcoming work.
# Traffic Signal Event Tracking

<table>
<thead>
<tr>
<th>Issue</th>
<th>Jurisdiction</th>
<th>Count</th>
<th>Issue</th>
<th>Jurisdiction</th>
<th>Count</th>
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<tbody>
<tr>
<td>All Directions Dark</td>
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<td>Long Wait For Green Time</td>
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<tr>
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<td>MODOT</td>
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<tr>
<td>All Directions Flashing</td>
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<td>Gladstone</td>
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<td></td>
<td>MODOT</td>
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<td>Phase Backing Up</td>
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<td>UGOVT</td>
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**Total** 262
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 5 agencies
- Local funds remaining to be collected for 2018 are $227,000
- The % variance column can be used to compare variance to the current date of 62.5% (15 of 24 months) progress
- STP funds were fully expended in May. Now operating on local funds only until new STP agreements are in place
- Equipment/Computer/Supplies line item at 128% includes accelerated expenses following the technology plan

Considerations:
The current local funds are expected to support the operations till the end of the year.
# Mid-America Regional Council (MARC)

MO & KS OGL Operations 65210

2-Year Budget Period Beginning April 1, 2017

Report ending June 30, 2018

<table>
<thead>
<tr>
<th><strong>Expenses</strong></th>
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<tr>
<td><strong>Two-Year</strong></td>
</tr>
<tr>
<td><strong>Program Budget</strong></td>
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<td>Salaries, Fringe Benefits, Indirect Costs</td>
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<td>Consultants/Contracted Services</td>
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<td><strong>Total Expenses</strong></td>
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<table>
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<tr>
<th><strong>Revenues (Reimbursement from DOTs at 80/20)</strong></th>
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<td><strong>Two-Year</strong></td>
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<td><strong>Program Budget</strong></td>
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<td>STP Funding, KDOT</td>
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<td>STP Funding, MoDOT</td>
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<td>Local Govt Rev-Required 20% match of $1,525,000</td>
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<td><strong>Total Revenues for Federal Grant</strong></td>
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</table>

**Local Government Balances:**

- Funds available from previous budgets | $786,459.81 |
- Funds collected for current budget period | $898,600.00 |
- Total available | $1,685,059.81 |

**Amount applied for current budget period (see above)** | ($305,000.00) |

**Ending Balance June 30, 2018** | $1,380,059.81 |

**Reserve/Emergency (local funds)** | $300,000.00 |