Welcome & Introductions

1. Approval of July 25 Committee Minutes* (page 3)

2. VOTE: Acknowledge Vice-Chair move to New Chair; Vice-Chair Election*

3. VOTE: Request for purchase of wireless equipment* (page 7)

4. Proposed 2017 Meetings (page 8)

5. OGL Strategic Plan (Report and mini-Workshop) – 1 hour (page 9)
   - Report on Survey and Discussion
   - Steering Committee Strategic Planning

6. OGL STP & CMAQ 2017-2018 Program Agreement Status
   - Update on MARC / Local share agreements and MARC / DOT’s Federal funding agreements
   - Discuss recent concerns related to the KS AG office and an interlocal agreement

7. 2017 OGL Work Plan (page 12)

   - Fiber Redundancy / OP / KC Scout
   - K-7 Corridor Studies

9. Quarterly Budget Report (page 28)

10. IMRCP (Integrated Modeling for Road Condition Prediction) and Connected Signals

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.
11. Agency updates, construction projects, closures, etc. effecting traffic signals

12. Other Business

Next Regularly Scheduled Meeting: Steering Committee, Monday, January 23, 2017

Adjournment

*Action Items
Welcome & Introductions
Steve assumed the Chair duties due to Andy’s absence. Steve welcomed all and conducted introductions

1. Approval of April 25th Committee Minutes* (page 3)
The chair asked for approval of the minutes, the committee voted unanimously. The motion carried.

2. Notice of OGL Steering Committee Vice-Chair Opening for October (MO seat)
It was noted for the October meeting the MO chair will pass the seat to the current KS Vice-Chair and a new MO Vice-Chair will be elected. Members from MO interested in serving the role of Vice Chair are requested to talk with Ray.

3. OGL Strategic Planning Update
Ray noted that the current OGL Strategic Plan expires this year as has been 3 years since adopted. The plan has provided a good foundation for some of the areas of focus for the program. The Technology Plan resulted from the direction provided by the plan. Blake detailed the scope that Olsson and Associates will undertake for the strategic plan update that includes reaching out to each committee member for input to the future direction of the program.

Some of the steps of the process include:
- Survey
- Workshop (in conjunction with a steering committee meeting)
- Review and input on the continued appropriateness of the program’s mission and organization

Please provide Ray any thoughts as we plan the work to come that you would like to see included.
4. **OGL Incident Management Planning Efforts**

Blake updated the committee on the past efforts that included the conceptual plan shared last fall and meeting table top exercise of scenario planning. Ray discussed one of the main elements includes Operating Procedures to work with KC Scout as to what events OGL should react to and how to get the details needed to respond. The task has slowed slightly in recent weeks in order to evaluate and select an appropriate incident management diversion route information management tool. The team is including the planned evaluation of a tool developed by CBB (a subconsultant to Olsson), which is currently being transitioned from a linked PDF to web-based. This transition is scheduled to be completed this month. Also, it was noted that MoDOT is currently undergoing a statewide focus coming from their operations efforts to focus on incident management.

5. **Missouri Statewide Operations Planning Report**

Under contract with MoDOT, Olsson Associates is currently assisting with the development of a department-wide Traffic Systems Management and Operations (TSM&O) plan. The objective of the plan is to further integrate operations strategies into the organization and culture of the program. The plan addresses this desire from a high level, addressing organization, performance measures, funding, workforce development, and strategic direction, and does not include a toolbox of individual strategies at this time. MoDOT will be selecting four major focus areas to begin, with the intention of adding focus areas as the program matures over time. The four focus areas are: integration of operations into the planning process, freeway and arterial operations, incident management, and workzone management. The document will provide guidance to the districts, which will then develop and follow region-specific implementation plans. The first version of this plan is scheduled to be available this fall.

6. **FHWA Integrated Modeling for Road Condition Prediction** (page 7-8)

The Kansas City Region was chosen by FHWA and the project team of Liedos and Synesis Partners for this project. KC Scout and OGL and MARC recently met with Kyle Garret with Synesis partners who are local and leading the local efforts. The attachment provides details of the scope of the work which includes needing static and real time data for freeway and arterial. KC Scout has a fair amount of real time info. The project also would like traffic signal data along the I-435 corridor. Transcore has setup data libraries for others to share their data so the effort that it would cost for TransCore's work is nominal.

The committee discussed sharing their traffic signal data with the FHWA research modeling project and were in agreement to share the data and proceed with this project.

7. **2017-18 CMAQ Project update (Addition of Blue Springs, Grandview and Systems Engineering)**

OGL program team has met with Blue Springs on more than one occasion and has developed a concept for adding some of their traffic signals. Staff also recently met with Grandview. Possibly 6-10 signals have been identified and some concepts for communication are being looked into.

The other part of the project involves work to develop our ATMS software system requirements. For some time we have been using sole source for TransSuite. We will need to go to market in the future due to FHWA requiring a solicitation from time to time and cannot approve sole source indefinitely.

Staff will send out an RFP for support on this in the fall for system engineering work. We will need help from the region to help us develop system requirements.

The CMAQ Funding agreement currently is in the hands of MoDOT as MARC has already executed.

8. **Revisit OGL Network Security** (last presented July 2014) (page 9-10)

The handout in the packet is the same as presented July 2014. Since that time, OGL has done further work to segment some areas with layer 3 networking. Some agencies have installed padlocks on a number of their cabinets.

OGL would like to know at what level to work toward for network security.

Some of the most basic items to do include padlocks on cabinets, notification of employee’s separation and some minor changes.
Barry reminded the group that if you access TransSuite on your phone or other device and let it remember the password, you should be certain to lock your phone and let staff know immediately if you lose that phone. MARC is currently undergoing an IT consultant security review. The OGL external IP’s were part of the assessment. The discussion resulted in a request to OGL staff to develop a scope for a consultant to do an IT evaluation.

9. OGL Program Funding and Agreement Status
   - STP 2015-2016 Program Invoice Update -- MARC has collected for 2016 from all but 2 agencies; 1 is in process of payment and 1 is waiting till October
   - OGL STP 2017-2018 Program Agreement Status -- An agreement has been provided to KCMO for review and a presentation to the council recently. Others can follow in the next two months. If you need or have a timeframe in mind let Ray know but all should be to you for review by Mid-September.
   - KS 2016 STP Funding ($163,000) Obligation Status -- An agreement is currently being signed by MARC and sent to KDOT for final signatures.

10. Quarterly Operations Update (page 11-13)
    Chris detailed a large number of tickets due to the contractor replacing / upgrading radios proactively. Pod 5 (KCMO city hall) is completed which included a large number of radio change outs. Pod 1(MoDOT) and the south AU on Pod 8 (OP Sheraton) also had change outs.
    There were no critical incidents. On page 2 (15 of the packet) other hardware and software, Genetec was updated to the latest version which still has some minor bugs to fix.
    Some of the old radios have now been transfer to KCScout and KDOT
    Some layer 3 communication updates have been completed in the last quarter. Redundant communication rings built with last year’s project are now fully working and tested. The system now has two redundant rings.
    More radios are still to be replaced and thus we will have more available for transfer. Let Chris and Ray know if you have needs for the used Alvarion radios

Barry noted that TransSuite was upgraded in May. TransCore has started a pattern of quarterly releases. We will likely not take Q2 release but will wait for Q3 that is scheduled to be ready in November. This release includes Sepac 4.57 support that has been a moving target. OGL is still using an old firmware version for the EPAC controller, which should be upgraded at some point to make the controllers more modern. This affects over 200 EPAC controllers. OGL will work with the agencies affected and look to deploy following some internal testing of the new firmware and its TransSuite integration.

Benefit / Cost reports on K7 are in progress for Bonner and Lansing/Leavenworth.
A new Southwest Trafficway off peak coordination plan is in the works.
In May, extensive work and analysis was done to identify and report on the traffic signals on the OGL server which had failed detection or suspicious recalls. Lists were provided to applicable agencies of possible problems to address.

11. Quarterly Budget Report
    The budget report could not be produced in time and will be updated and provide at a later date. Currently, the budget is underspending but has some major radio replacement work to come as dictated by the OGL Technology Plan. An updated budget report is in progress.

    This is now in the hands of Overland park to do the final signatures. Once complete, OGL needs to purchase equipment on the OGL network end. Lenexa has cited the critical need for this connection due to weather issues causing loss of network for short periods of time.
13. Agency updates, construction projects, closures, etc. affecting traffic signals
Merriam Lane and 34th continues to be under construction
Turner Diagonal at Riverview will experience taking a bridge down for an at-grade crossing in the future

14. Open Discussion / Requests / Other Business
MoDOT is pushing integrated corridor management statewide. Safety and mobility are both a focus. Crashes have begun to rise in Mo.
Sponsored by the [www.savemolives.com](http://www.savemolives.com), the hOUR Project has gotten underway to focus on businesses. Focus is on the cost to business with loss of production with employees in crashes. It’s an hour long program piloted in central Missouri currently. This is sponsored by the roadway safety coalition.

It was noted that this year’s conference is now open and it combines Missouri Traffic Conference with the Blueprint for Safety Conference, Missouri’s 2016 Traffic Safety and Blueprint Conference, October 18-20.

Kansas crashes appear to also be on the rise as is VMT.

Also discussed was the issue of shared maintenance contracting. Lenexa has a contract that has been bid for pricing on-call maintenance work. They do this with street lights and signal work and covers set prices for a variety of work. If others are interesting in getting a regional contract that others could share on a set price for this kind of work, they should contract Steve or Ray. Also, if anyone has examples of these types of contracts, please share with Ray. MARC would work with [KCRPC](http://www.kcrpc.org) to develop a regional contract for traffic signal and lighting maintenance. There was some discussion on what might go into this and the pricing structure.

MoDOT has developed a contract that sets the price due to good known costs.

**Next Regularly Scheduled Meeting and Schedule for 2016:** Steering Committee, Monday, October 24, 2016

**Adjournment**

**Action Items**

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<td>Provide name/candidate to Ray for interest in the Vice-Chair position</td>
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<td>Next Meeting</td>
<td>MARC staff</td>
<td>Provide recommendation on possible cybersecurity audit of the OGL program</td>
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<td>Provide Ray your interest in a signal and lighting maintenance contract and any examples you can send</td>
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ISSUE
VOTE: Authorize purchase of field communications equipment for the Operation Green Light (OGL) program.

BACKGROUND
OGL is an initiative that assists state and local governments that own and operate traffic signals on regional arterial roadways work together to coordinate traffic signal timing and operation oversight to improve traffic flow, reduce excessive fuel consumption and reduce emissions. MARC staff currently assists in the management and operation of traffic signal timing for nearly 700 intersections in 24 jurisdictions throughout the region.

MARC owns and operates an extensive field communications network to support the regional traffic signal control system. OGL manages over 1,200 network devices ranging from the licensed 18 GHz microwave backhaul equipment to unlicensed radios at the traffic signals, various network switches and supporting equipment. The components of the network are located throughout the region in 16 locations that include water towers and rooftops and at the traffic signals.

Currently the backbone 18 GHz microwave equipment is manufactured by Ceragon. The current radios are now considered end of life and no longer supported. The FCC licensed Ceragon backbone equipment and Alvarion unlicensed on-street distribution radio equipment have been in service for over 10 years. In 2014, OGL underwent a comprehensive technology study of the current system network servers and field communications. Current and future needs including equipment obsolescence were analyzed. This purchase request represents the continued process of systematic planned replacement of the system components over the next several years. The technology study was presented and adopted by the OGL Steering Committee July 2014 and can be found on MARC’s website in the OGL steering committee agenda packet.

This purchase represents the replacement of the aging backbone microwave links from Pod 1B (Woods Chapel tower) to 7 (Bennington), Pod 5 (KCMO City Hall) to Pod 6 (Barry Road) and Pod 7 (Bennington) to Pod 8 (Sheraton). Also being replaced are aging distribution radios (tower to traffic signals and traffic signal to traffic signal). This work represents communication to over 59 traffic signals or approximately 9% of the distribution radio network. The Kansas City Regional Procurement Cooperative (KCRPC) has competitively bid equipment contracts for the region and will be utilized for this purchase. Ceragon microwave radio products are available for purchase from Electronic Technology, Inc. (ETI) as the regional vendor. The Ceragon equipment is the best value for the cost and stays with a proven product. The unlicensed on-street distribution radio equipment from Radwin was tested during the spring of 2014 and proven to be the radio of choice to replace the Alvarion radio products.

BUDGET CONSIDERATIONS
Funds for this purchase are included in the Operation Green Light operations budget. This procurement will be funded through Federal STP agreements administered by the Kansas and Missouri Departments of Transportation. Participating local governments provide matching funding for this program.

RECOMMENDATION
Authorize the Executive Director to issue a purchase order to ETI utilizing the KCRPC agreement for up to $256,000 for the acquisition of Ceragon and Radwin equipment as well as network switch equipment.

STAFF CONTACT
Ron Achelpohl
Ray M. Webb
2017 OGL Steering Committee Meetings

January 23
MARC Board Room 1:30-3:30

April 24
MARC Board Room 1:30-3:30

July 24
MARC Board Room 1:30-3:30

October 23
MARC Board Room 1:30-3:30
Re: Strategic Plan Member Agency Survey Results Memorandum

The purpose of this memorandum is to provide a summary of results for a survey regarding the Operation Green Light (OGL) strategic plan. OGL is currently utilizing a strategic plan that was developed in 2013; the plan is for the years 2013-2016. OGL staff is in the process of reviewing the current strategic plan and revising for 2017-2020. Part of the strategic plan process includes obtaining opinions of the current OGL program from member agency representatives via survey.

The OGL program consists of 24 local partner agencies as well as the oversight agencies of KDOT, MoDOT and the Missouri and Kansas FHWA field offices. The survey was e-mailed to member agency representatives using the online tool Survey Monkey. Agencies were provided three weeks to submit the survey. Twenty survey responses were received, including more than one respondent from a single agency in some cases.

Survey Development

The survey was developed utilizing the existing strategic plan and previous surveys. Respondents were asked to review current services provided by OGL, mission/vision, funding, outreach and programming. Focus areas of the survey can be divided into:

- Review of Current Services
  - Communications
  - TransSuite
  - Signal Timing
  - Data Collection
- Program Organization
- Outreach/Public Education
- Mission/Vision/Strategic Plan Goals
- Funding

Survey Results

Overall, survey results were positive. Responses reflected a favorable review of the services provided by OGL staff. Further summary is provided based on focus areas of the survey.
Review of Current Services
All responses received regarding current services ranged from neutral to positive, with the majority of the responses indicating OGL is meeting the needs of member agencies and providing an adequate level of service. The following highlight two items of somewhat mixed response, which may benefit from additional discussion by the Steering Committee:

- The availability of OGL staff and office hours. Responses were mixed regarding the need for early morning/late evening/weekend staff. Further discussion of the benefits or disadvantages of providing extended hours service should be explored.

- A mixed response was also received regarding OGL staff providing direct agency support for citizen complaint response. Further discussion for this topic could be focused on how citizen contact should be provided. Responses indicated that some agencies prefer to maintain contact with citizens with OGL staff providing input. In other cases OGL staff may be providing direct citizen contact.

Recommendations for new or improved services included on-call services for after-hours work, public education/outreach, traffic count assistance and improvements/training regarding TransSuite.

Communications: Respondents that use the communications network indicated overall approval with the system and support provided by OGL.

TransSuite: The majority of respondents (70%) indicate that they occasionally to regularly use TransSuite. Overall, users indicated satisfaction with the system and support provided by OGL. Of those respondents that do not use TransSuite, there is an indication that training could be valuable in increasing agency use of the program.

Signal Timing: Respondents that utilize OGL for signal timing assistance indicate overall satisfaction of the work product and support provided by OGL. Of those not utilizing OGL for signal timing assistance, respondents indicate that they have agency staff conducting that work.

Data Collection: Only 25% of the respondents indicate that they utilize OGL for data collection services. Of the agencies utilizing data collection services, there was overall approval with the work product provided. Of those agencies not using the service, most conduct their own data collection or are not aware of the data collection assistance OGL can provide.

Program Organization
Survey respondents indicated overall support of the organizational structure of the program. There is support for the use of one or more specialized technical committees (in addition to the steering committee) on an as-needed basis. Respondents overall indicated support for meeting content, length, frequency and location. Comments indicate that there should be a consideration for an opportunity for agencies to discuss technical trends, equipment and best practices; there should be further discussion on how this can be integrated into the program. This may be provided through training, sub-committee meetings, or other opportunities. There was not strong support indicated for vendor presentations at the steering committee meeting; comments indicate that if these opportunities are provided, they should be presented at a different time.
Outreach/Public Education
There was a mixed response regarding OGL providing assistance to local agencies to educate elected officials, management staff and the public on the benefits and purpose of OGL. Responses indicate that elected officials and management staff have a better understanding of the program, while public understanding of the program is weighted more from neutral to strongly disagree. A 50/50 split was received regarding OGL staff providing outreach to elected officials and staff. There was stronger agreement from respondents for OGL publicizing the activity and accomplishments of the program.

Based on responses, OGL assistance in developing and promoting a common message may be beneficial. Focusing outreach/public education using methods currently utilized by local agencies – social media, website and local newspaper/city newsletter may be a consideration when developing an outreach/public education plan. A topic for further discussion should be how OGL staff can assist agencies in educating elected officials and management staff, and how agencies can notify OGL when this assistance is needed.

Mission/Vision/Strategic Plan Goals
Based on survey results, the mission and vision remains appropriate for the organization and does not need re-consideration. Survey respondents indicated support for the existing strategic plan goals.

Funding
The majority of respondents agree that OGL is adequately funded for the current program. There is also overall support for OGL continuing to petition for ‘off-the-top’ program funding. Respondents support the current local agency funding model, but do indicate interest in having a menu of services available. Further discussion could include education of member agencies of the services that can be provided by OGL staff. Consideration should be given that as OGL provides more services, additional staffing may be necessary.

(OGL currently operates with STP funds but program expansion requiring construction / capital improvements such as new communications or advance traffic signal operations require different funding sources. The next call for project funding opportunity is in two years.)
# 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 nearly 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, 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 traffic modeling and deployment (ongoing)
3. **ACTIVITY: Regional network communications.** Activities include, database management, repair tracking, field investigation, equipment procurement, server 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
6. **ACTIVITY: KS Integrated Corridor Management (ICM).** Support ICM work
7. **ACTIVITY: Incident Management Work.** Continue development of an incident management plan, and development of signal timing plans.
8. **ACTIVITY: Missouri 2017 CMAQ funds.** Manage the funds and project that will add cities and systems engineering analysis of the regional traffic signal control system.

## Funding

### Operations 2017

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## 2017 OGL SIGNAL TIMING PLAN

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I-35 Integrated Corridor Management

Program Objectives

This project will allow MARC to identify corridor improvements to better utilize the current system. Currently, there are a number of tools as identified in the I-35 optimization study, KC Scout ramp metering and incident management plan that will be used to assist with the development of the ICM development.

Background/Previous Work

Initial ground work has been done that includes an FHWA workshop on ICM attended by a diverse group of DOT and agencies in the region. Other meetings have been held to gain an understanding of the scope and direction of the project. OGL staff is supporting this effort.

Program Activities and Products (Estimated Completion Dates)

3. ACTIVITY: System Overview and Operational Description (9/2016).
5. ACTIVITY: ICM Operational Scenarios (7-10/2016).

Funding

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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 3rd Quarter (July, August, and September) of 2016 and highlights of signal timing and agency coordination. OGL currently monitors/operates 699 signals and manages over 1200 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 61 repair tickets, representing about a 4% increase compared to last quarter.

**Corridor Timing Efforts**
- 8/4 – I-70 WB closure past K-7 in AM forced traffic to the Speaker Road signal. Worked the event with timing changes at Canaan, Speaker and Kansas to accommodate diversion.

**Training Sessions/panels/Events**
- 7/12 – 7/15 – Chris Jenkins attended Genetec video software training in Merriam, KS
- 7/14 – Ray Webb attended the KCITE meeting in Grandview, MO
- 8/11 – OGL staff participated in a Centracs Webinar
- 9/22 – Ray Webb presented ICM Training for KCITE members
- 9/29 – Ray and Barry attended the St Louis TEAM fair

**Additional Information**
- OGL staff set up and scheduled the Miovision equipment to conduct 19 counts. Most of these were 13-hour turning movement counts and the remaining were 24-hour ADT counts.
- OGL staff completed 1 travel time studies.
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 2016:

- 8/25 – OGL transferred 25 end-of-life Alvarion radios to Kansas City, MO
- 9/8 – OGL completed Genetec federation with Kansas City, KS
- Pods 4 & 4A in Independence were upgraded with new Radwin radios replacing the older Alvarion units.
- Pod 10 in Kansas City, KS was upgraded with new Radwin radios replacing the older Alvarion units.
- Alvarion radios on Quivira Rd in Shawnee, KS were upgraded new Radwin radios
Interagency Coordination

During July through September, the OGL staff participated in the following interagency activities:

- 7/1 – 9/23 – Ray Webb participated in numerous meetings regarding the I-35 ICM Project
- 7/7, 7/11, 7/14, 7/18, 7/21, 7/25 – Barry Viss worked from the KCMO operations center
- 7/8, 7/29, 8/17, 9/2, 9/16 – OGL and Olsson held bi-weekly conference calls for signal timing work status
- 7/14 – Ray Webb presented at the KCMO T&I Committee meeting
- 7/25 – OGL staff attended the OGL Steering Committee Meeting
- 7/28, 8/18, 9/21 – OGL staff participated in the OGL Regional TransSuite Monthly Status meeting
- 8/1, 8/4, 8/8, 8/11, 8/15, 8/18, 8/22, 8/25, 8/29 – Barry Viss worked from the KCMO operations center
- 8/15, 8/31 – Ray Webb and Chris Jenkins had conference call with GBA regarding a bridge project on SMP and I-35 in Merriam, KS. CCTV’s to be included in the project.
- 8/16 – Ray Webb met with KC Scout staff to discuss DOE Clean Cities/Smart Cities Grant Opportunity
- 8/22 – OGL staff and MoDOT staff met to discuss communications on Colbern Rd in Lees Summit for a future bridge project.
- 8/24 – OGL staff met with Merriam, KS staff to discuss CCTV placement
- 8/30 -- OGL staff met with several agencies and TTS representatives regarding their V2I system
- 8/30 -- OGL staff met with OA and CBB representatives regarding their arterial management interface
- 8/31 – OGL staff met with MoDOT traffic staff to discuss OGL operations
- 9/1, 9/8, 9/12, 9/19, 9/22, 9/26 – Barry Viss worked from the KCMO operations center
- 9/15 – OGL, KCMO, and MoDOT staff attended a Connected Signals discussion
- 9/20 – Ray Webb and Barry Viss had a peer exchange with Denver regional governments
- 9/20 – OGL staff met with Independence staff to discuss intersection controller operations
- 9/26 – Chris Jenkins met with Google contractor for a site survey of the Booth tower for a fiber connection
- 9/27 – Ray Webb presented to the MARC Board
- 9/27 – Chris Jenkins and Ray Webb had a conference call with KDOT about using a communications tower in Bonner Springs, KS.
- 9/28 – OGL staff met with Kevin Manning of Shawnee to discuss TransSuite operations and wireless communications
- 9/29 – Chris Jenkins attended KCMO’s City Manager’s Camera Coordination Meeting
- 9/29 – 9/30 – Barry Viss and Ray Webb met with Springfield and St. Louis freeway and arterial operators
Quarterly Repair Ticket Statistics by Month

In the 3rd Quarter of 2016, OGL staff created and responded to 61 repair tickets in the Kansas City area. This number represents an increase of about 17% compared to the 3rd Quarter of 2015 and a 4% increase compared to the 2nd quarter of 2016. All repair tickets are shown by month in Figure 1.

Figure 1 – Quarterly Repair Ticket Statistics by Month

Additional Repair Ticket Details:

Figure 2 – Monthly Repair Ticket Statistics / Prior 12 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.

- Alvarion SU: 61%
- Alvarion AU: 31%
- Switches: 6%
- Backhaul: 2%
- Comtrols: 0%

**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 for the year-to-date.

- Alvarion SU: 69%
- Alvarion AU: 27%
- Backhaul: 3%
- Comtrols: 1%
- Switches: 0%
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.

Figure 9 – Repair Ticket Statistics by Severity Type / Prior 12 months

Figure 9 shows the number of incidents by severity type that OGL staff has managed in the last 15 months.
Summary of Critical Events
The OGL staff responded to 0 critical events during the 3rd Quarter of 2016.

Preventative Maintenance
Each year at the Pod locations for the OGL network, preventative maintenance is performed according to Exhibit I Scope of Services.

There was no preventative maintenance performed in the 3rd quarter of 2016. Preventative maintenance is expected to resume in spring 2017.

CCTV Operations
As part of the MO ARRA project, CCTV cameras were installed at numerous locations throughout the project at select locations. Since final installation, these cameras have proved valuable at many times. During times of timing plan implementation, construction and detours, OGL staff, engineers, 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.
## Traffic Signal Event Tracking

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<tr>
<th>Issue</th>
<th>Jurisdiction</th>
<th>Count</th>
<th>Issue</th>
<th>Jurisdiction</th>
<th>Count</th>
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**Total**: 243
Federal revenues are on a reimbursement basis whereas the local match is according to agreements executed for the years 2015-2016 and collected annually. Local funds are combined with federal STP funds to comprise the budget. The current federal to local target funding split is 50/50. Current local match funds being collected for 2015-2016 agreements have all been received for 2015 operations and one agencies payment for 2016 remain to be collected but is in process. Program funds for 2017 and 2018 are soon to be worked on get in place. Federal funds for 2019 and 2020 will be presented to the MARC Board of Directors on October 25, 2016 to be accepted.

Items to note from the below budget summary:

- The budget has been combined for 2015 and 2016 to better reflect the total two-year program budget.
- Supplies expense is now combined with Equipment/Computer due to MARC accounting tracking codes changing.
- Current year total collection of local revenues includes 24 of 25 agencies.
- The Reserve/Emergency fund is unchanged at $300,000.
- The ending balance from the 2009-2014 local funds is $69,187.

### Mid-America Regional Council (MARC)
**MO & KS OGL Operations**
2-Year Budget Period Beginning April 1, 2016
Report as of September 30, 2016

<table>
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<th>Revenues</th>
<th>Two-Year</th>
<th>Cumulative To Date</th>
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<tr>
<td>STP Funding, KDOT</td>
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<td>STP-Funding, MoDOT</td>
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<td>Local Gov't Revenue</td>
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<td>$1,598,855.98</td>
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<table>
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<th>Expenses</th>
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<td><strong>Total Expenses</strong></td>
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### Balances:

- **Beginning Local Funds Balance April 1, 2016**: $69,187.56
- **Ending Balance June 30, 2016**: $851,223.61
- **Reserve/Emergency**: $300,000.00