

# **The Olympics as potential Catalysts for enhancing Urban Transport**



# The Key Question

---

**How can Olympic host cities make the best of the requirements the IOC imposes on the city?**

**Introduction**

**Challenge**

**Obligations**

**Comparative  
Analysis**

**Conclusion**

**Leverage the opportunities**  
**Avoid most common mistakes**  
**Build your own legacy**



# Phases of the Olympics

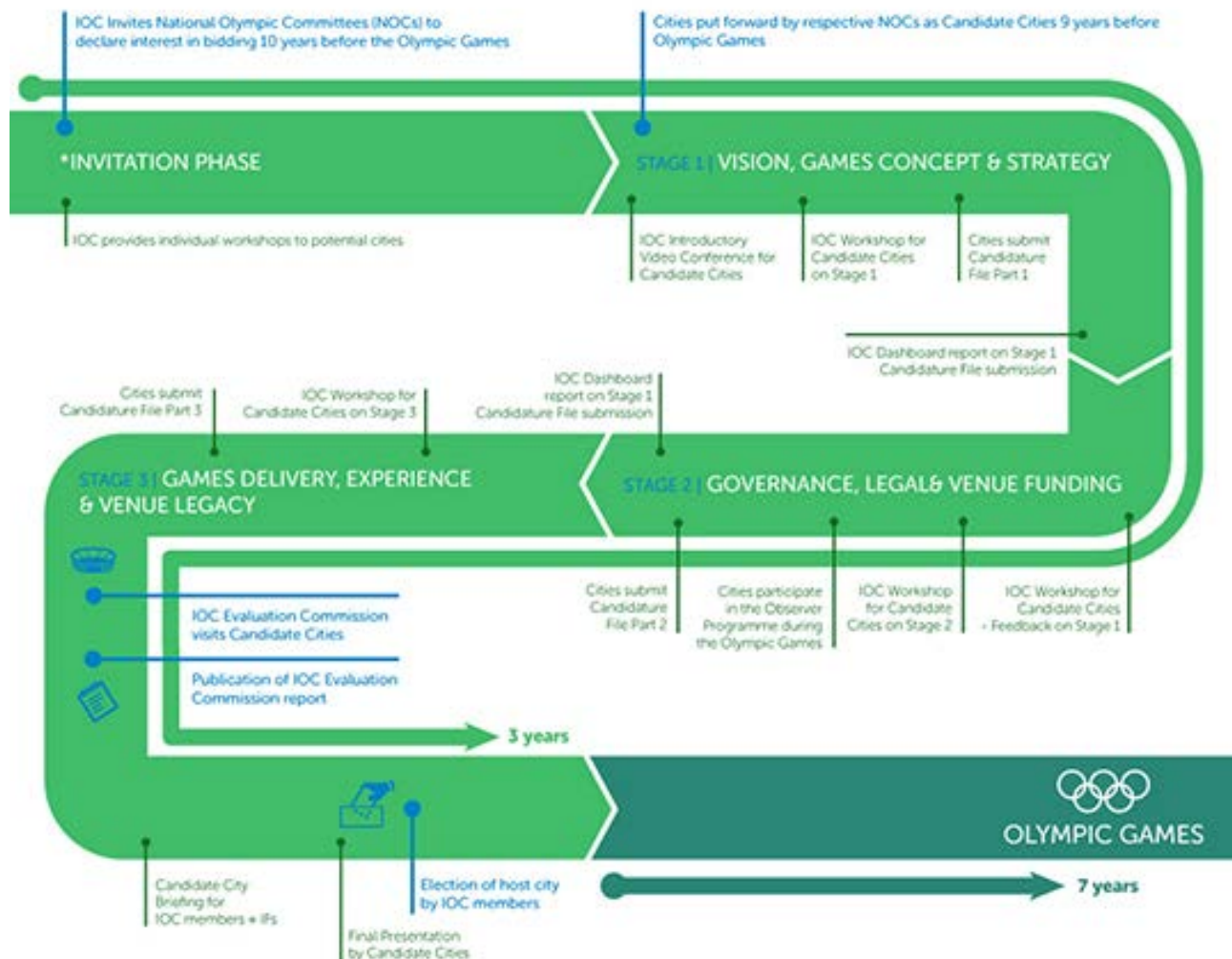
## Introduction

## Challenge

## Obligations

## Comparative Analysis

## Conclusion

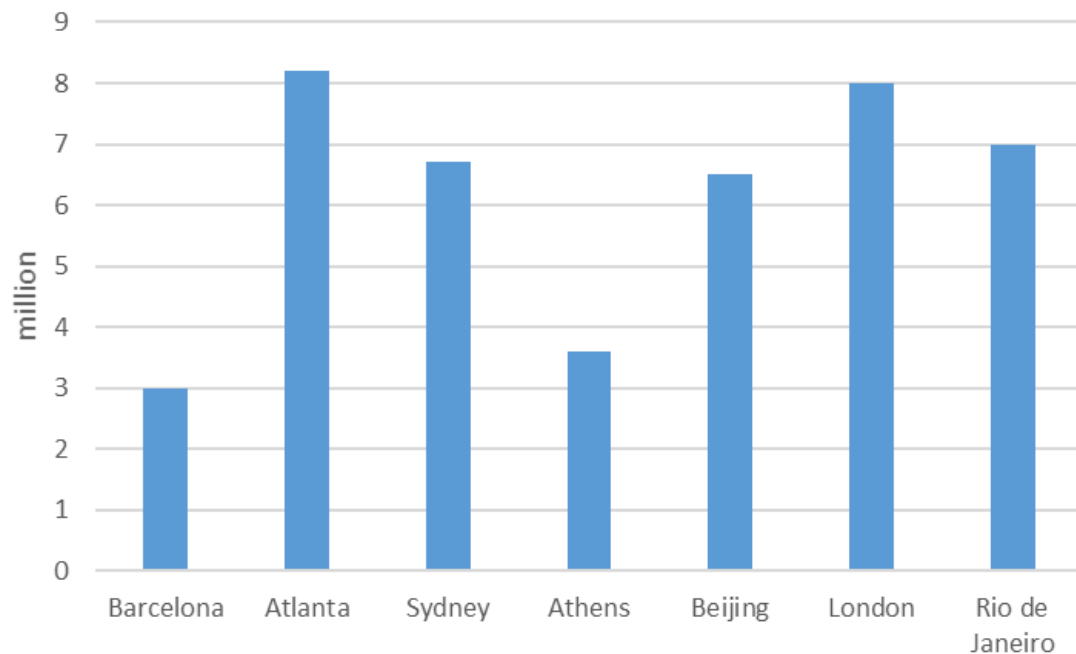


\*Introduced in 2015 as a result of Olympic Agenda 2020; applied for the first time to the Candidature Process 2024

source: IOC 2015



# What to prepare for?



source: Olympic Games Evaluation Plans, 93-14

## Visitors:

- Unfamiliar with area
- Language barrier

## Olympic Family Members:

- ~80.000 members
- Group transport by teams
- Equipment
- Security

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Source: the author







# Mobility Requirements

Serving different client groups:

- VIP's
- Media
- Volunteers
- Working staff
- Athletes
- Visitors
- Residents
- etc.

Theoretical service design:

- LOS
- Travel time
- Frequency
- Routes
- Vehicles
- Hours of Service
- Fare Structure
- Supporting services
- etc.

Impact on the transportation system

- during the event (Peak demand)
- and thereafter (Sustain)

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# Mobility Requirements

|                  | Athletes | Visitors   |
|------------------|----------|------------|
| LOS              | high     | low        |
| Travel time      | << 45min | ?          |
| Frequency        | high     | high       |
| Routes           | OV - Ven | Centre-Ven |
| Vehicles         | low occ. | high occ.  |
| Hours of Service | 24h      | 24h        |
| Fare Structure   | none     | (un)paid   |

Athletes ← Separation of traffic flows → Visitors

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# Accessibility Requirements

Serving different hallmarks for client groups:

- Hotels
- Olympic Village
- Exhibition halls
- Stadiums
- Training facilities
- etc.

Theoretical accessibility design:

- Congestion levels
- Distance
- Capacity
- Proximity to public transport
- Proximity to exclusive transport
- Security
- etc.

Impact on the urban system

- during the event (Peak demand)
- and thereafter (Sustain)

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# Research Methods

## Comparative Case Study – the Olympic Games: Policy analysis: Triangulation of qualitative data

### Primary sources:

- Interviews with IOC, political leaders, planners, private contract companies, citizens
- Archival analysis in five languages
- Observation and ethnography

### Secondary sources:

- Forecasts of traffic flow patterns in inner cities throughout Olympic period (mapping/GIS)
- Olympic Transportation plans
- Metropolitan policy and planning documents
- Surveys conducted by transport authorities (Statistics)

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Obligations

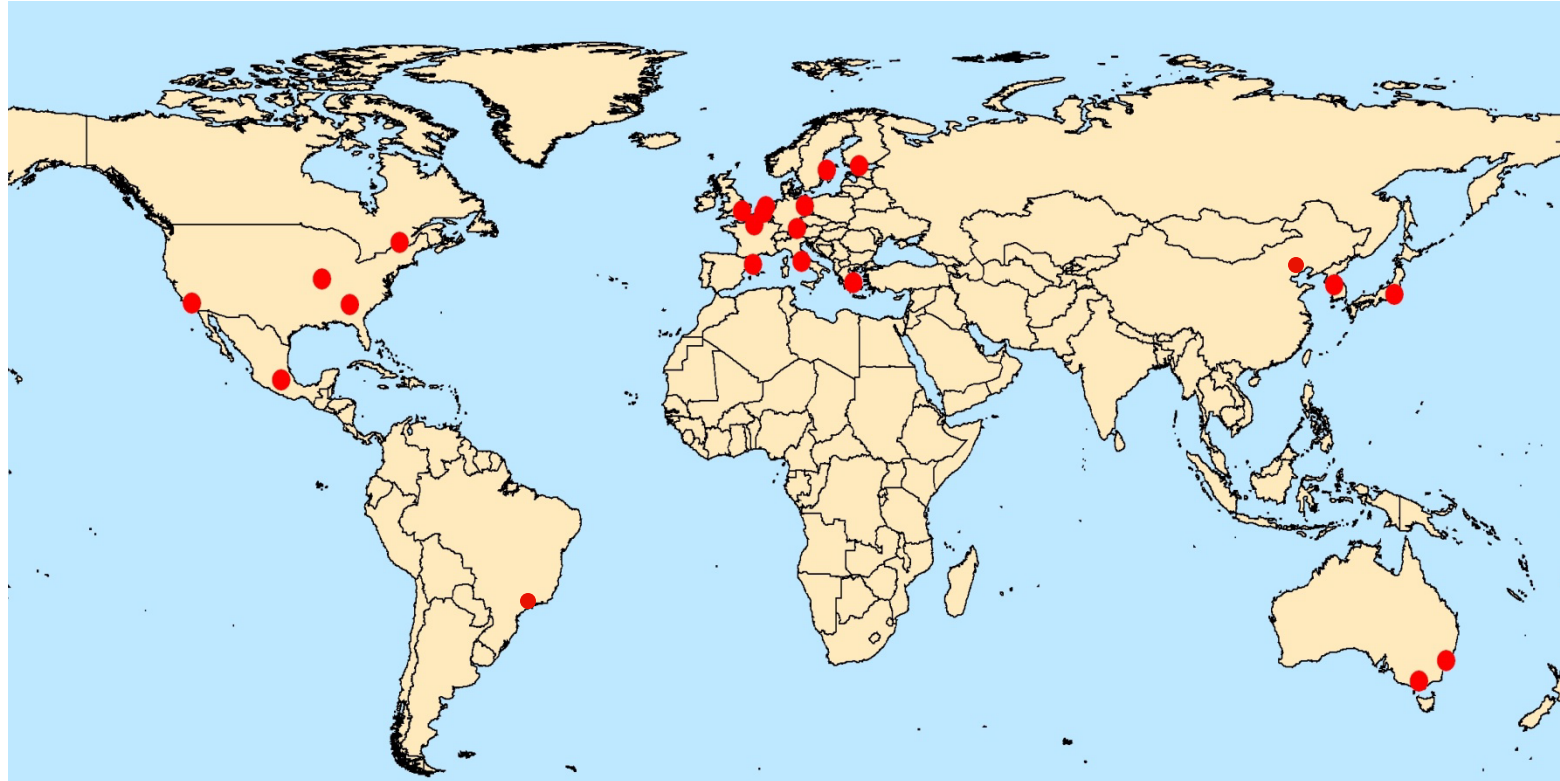
Comparative  
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Conclusion



# Case Studies

## Six Summer Olympic Games and their Host Cities



**Barcelona**



**Atlanta**



**Sydney**



**Athens**



**London**



**Rio**

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Eva  
Kassens-Noor  
Associate Prof.  
MSU



# **Transport Stimuli of the Olympics**

Stimuli evoked by mega events can be grouped as being physical, behavioral or institutional in nature.

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Analysis reveals five categories:

- Transport Infrastructure
- Transit Operations Management
- Traffic Operations Management
- Management of Transport Demand
- Institutional Policies





# Transport Infrastructure

**Stimuli** – new or upgraded btw. election and host year

Private: upgrade of key roads predicted to carry Olympic traffic, Streets and plazas in the central city, new roads that circle/bypass the city (BAR+ATH+RIO)

Public: minor improvements to public transport (except LON): funiculars, escalators (BAR), rail loop (SYD), extension of MARTA (ATL), 2 subway lines, tram (ATH), metro, LRT (RIO) vs. BRT is privately owned

## Impacts

Private: Ring roads still relieve the burden of the inner cities traffic; improved interconnections among highways, They “will be very congested”

*Interview Halkias (ATH)*

Public:

Investments mainly driven by the Olympics failed to meet expectations in the long-term.

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# Transit Operations Management

## Stimuli – measures implemented during OG

- Olympic bus networks
- Park and ride facilities with access to public transport
- Shuttle busses
- Extended operating hours of public transit
- Free public transport

## Impacts

- HOV lines
- Express busses
- Interregional bus lines
- Bus Rapid Transit

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# Traffic Operations Management

## Stimuli – ease and prioritize traffic flows

- Road closures
- Driving and parking restrictions
- Speed up traffic, e.g. prohibiting left turns
- Provisions for pedestrians and cyclists
- Upgrade traffic management systems
- Overhaul traffic management centers

## Impacts

- State of the art traffic management centre
- Upgrade in incident management systems
- Citywide information system

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Associate Prof.  
MSU



# Management of Transport Demand

## Stimuli – Reduction of base load demand

- Flexible working hours
- Telecommuting
- Relocation of workers
- Vacations during the three weeks
- Prohibition of certain vehicle types
- Freight deliveries during night time
- immediate ITS communication to travellers

## Impacts

- Rarely any of these measures were sustained
- For individuals possibly different working conditions
- Businesses returned to their usual practices

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# Institutional Policies

## Stimuli – Coordination

- Centralized command, control and communication structure
- Coordination among all planning and transport agencies
- Combined ticketing



## Impacts

- Short term nothing was sustained
- Long term, a few changes are observable:  
combined ticketing scheme
- Metropolitan Planning Agencies

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# Results of six host cities

**Infrastructure – remains in cities and is underused – if it was Olympically induced.**

**Political ones never change.**

**Behavioral ones adjust to the infrastructure.**

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| Category       | Requirements             | Outcome                             |
|----------------|--------------------------|-------------------------------------|
| Infrastructure | Capacity enhancements    | Road based preference               |
| Transit        | 100% PT                  | New fleet, lengthening of platforms |
| Traffic        | Free-flow for athl.      | ITS                                 |
| Demand Mgmt.   | Reduction of base demand | none                                |
| Policies       | Coordination             | Integrated ticketing                |



# Policy implications

## Key aspects to consider for rapid urban development and peak-demand transport

1. Holistic, integrated and comprehensive planning
2. Strongest influence lies in the early planning stages, but constant review is crucial.
3. Centralized planning, communication and coordination empowering *one* authority to act *across* jurisdictions (ministries, department, planning councils, etc.)
4. Importance of public support considering the country's historical context and culture
5. People are willing to change their behavior and accept rules across countries for a *greater good!*

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# PLANNING OLYMPIC LEGACIES

Transport Dreams and Urban Realities

EVA KASSENS-NOOR



# Thank you!



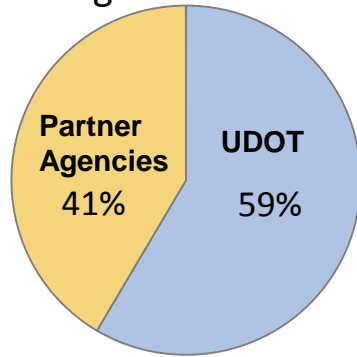
# Managing Traffic for Special Events: The Role of Traffic Signals

Jamie Mackey

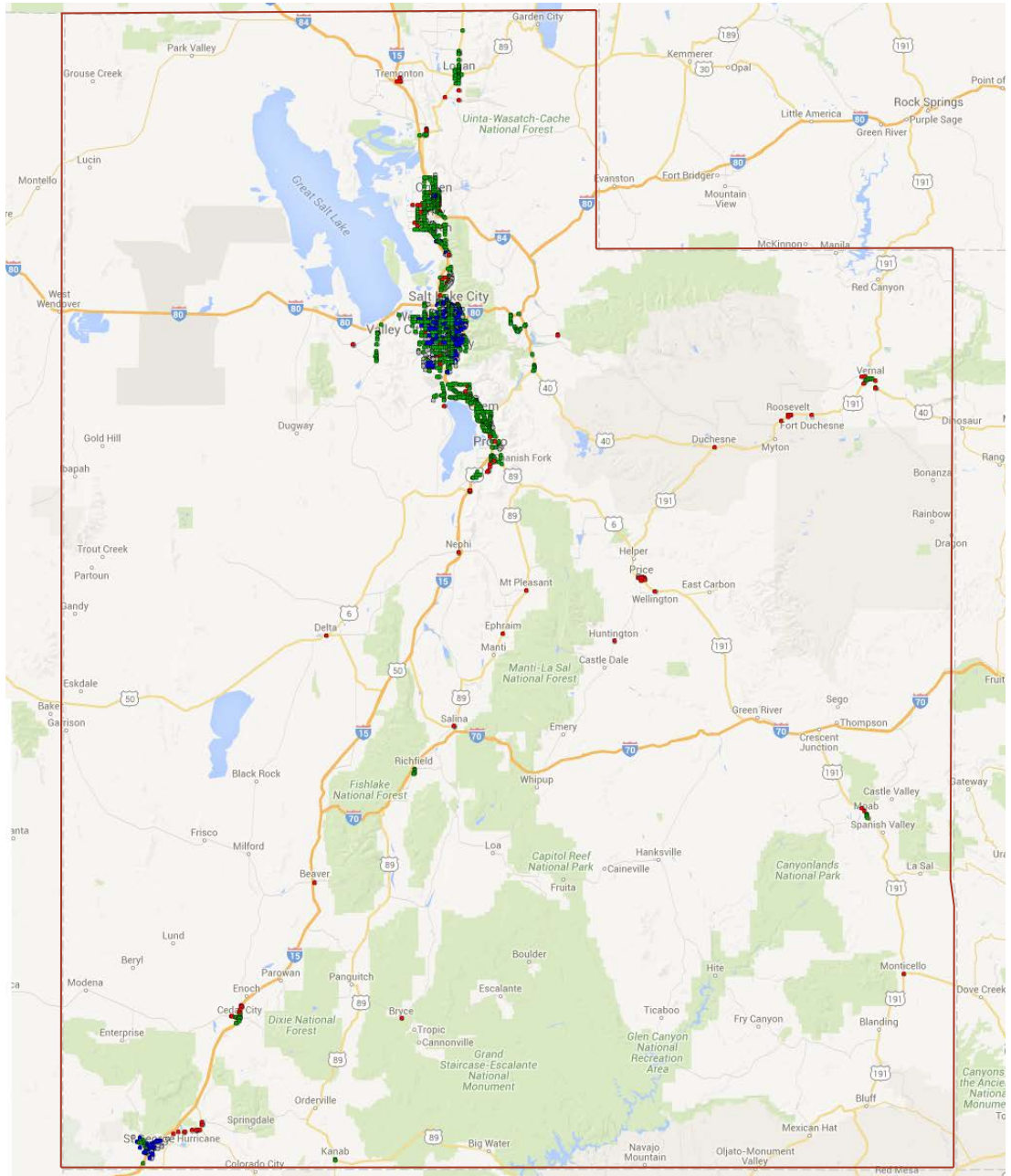
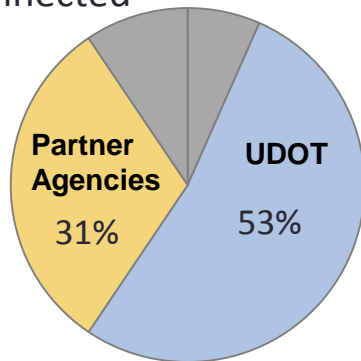
UDOT Statewide Signal Engineer  
jamiemackey@utah.gov

# Traffic Signals in Utah

2100 Traffic Signals



84% Connected



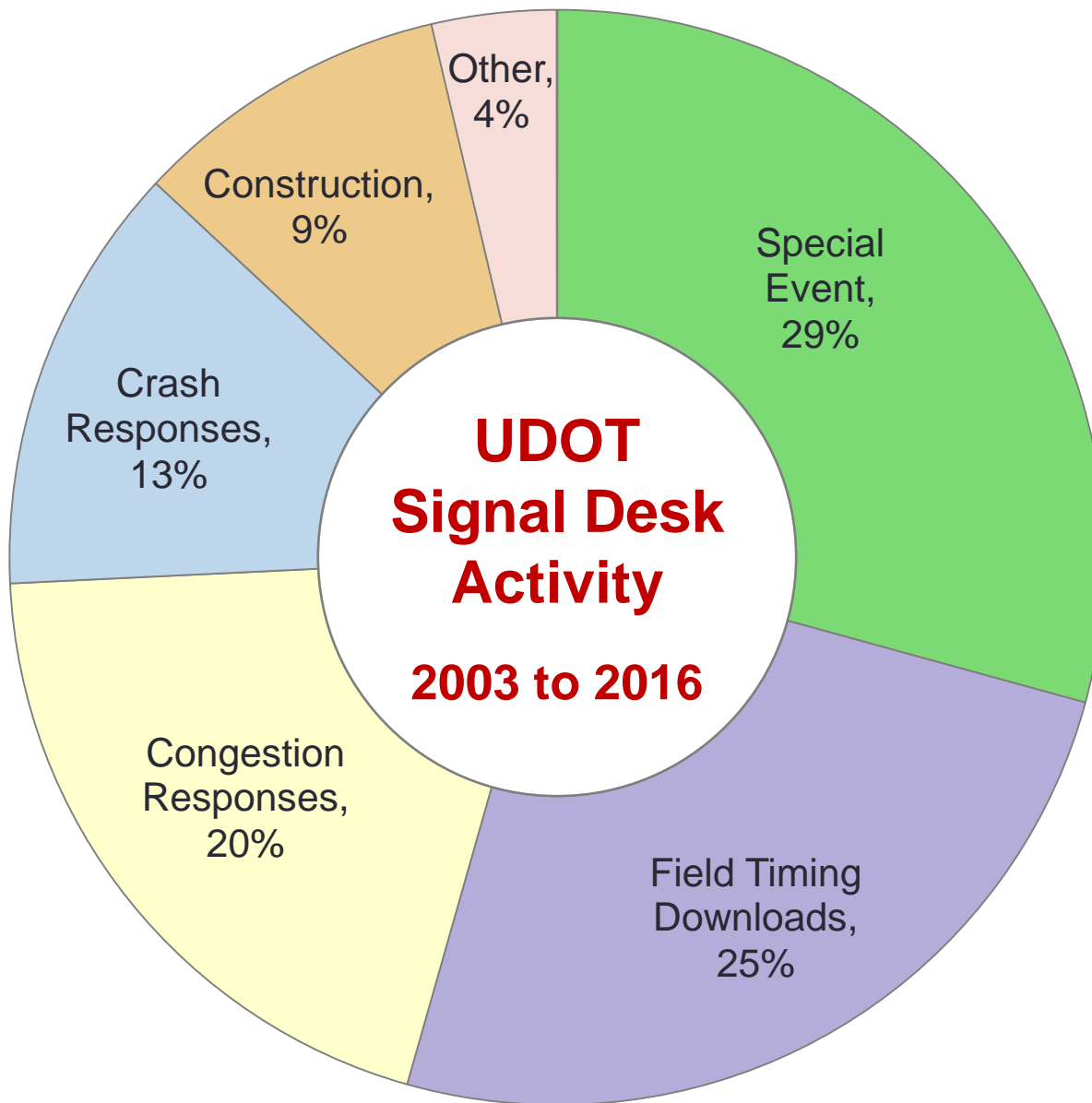
# UDOT Traffic Operations Center



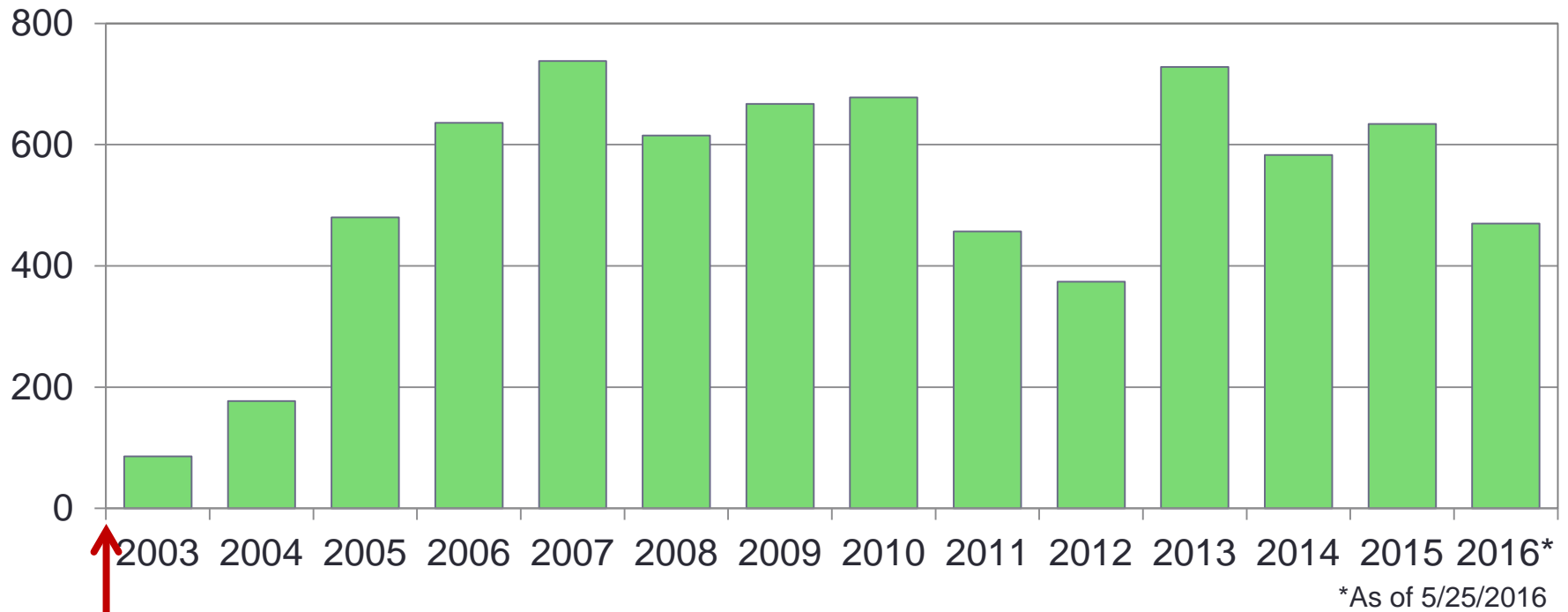


# TOC Control Room





# Special Event Plans Enabled



Salt Lake 2002  
Winter Olympics



# Event Types

U of U Football



Real Soccer



Bees Baseball



Jazz Basketball



YU Football





# Event Types

U of Concerts



Conventions



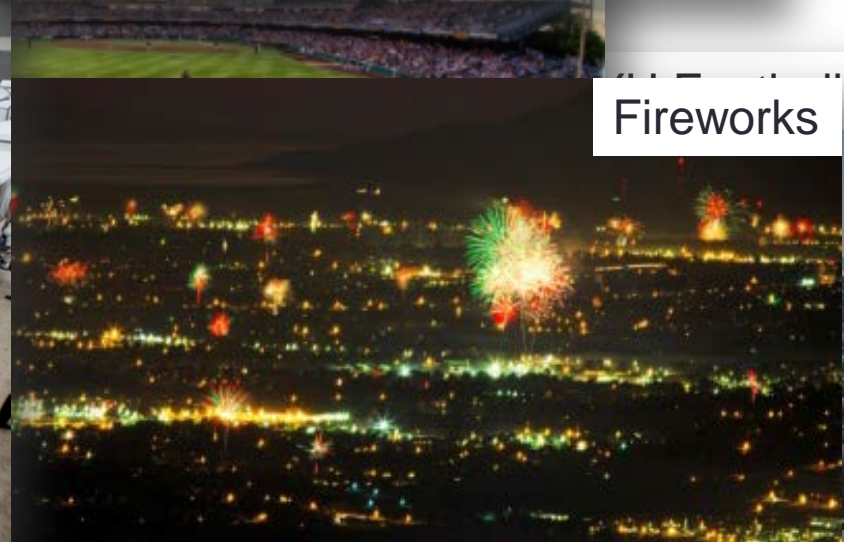
Re



Holiday Celebrations



Fireworks

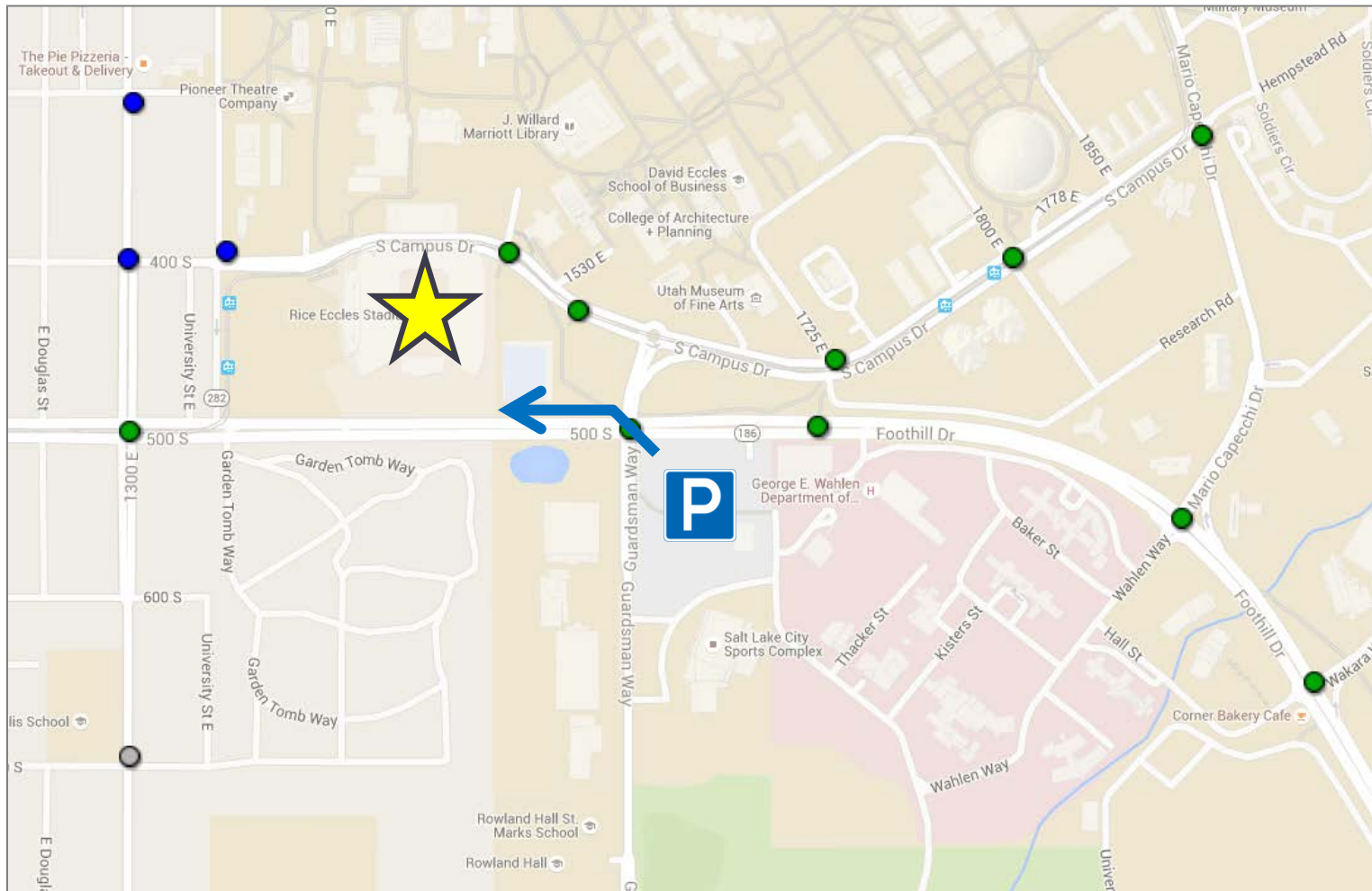




# Traffic Management by Law Enforcement



# Example: Heavy Pedestrian Demand at U of U Football





# Police Control of Signal Operation





# Police Assistance with Exclusive Pedestrian Phase

1



# Police Assistance with Exclusive Pedestrian Phase 2





# Police Assistance with Exclusive Pedestrian Phase

3



# Police Assistance with Exclusive Pedestrian Phase

4



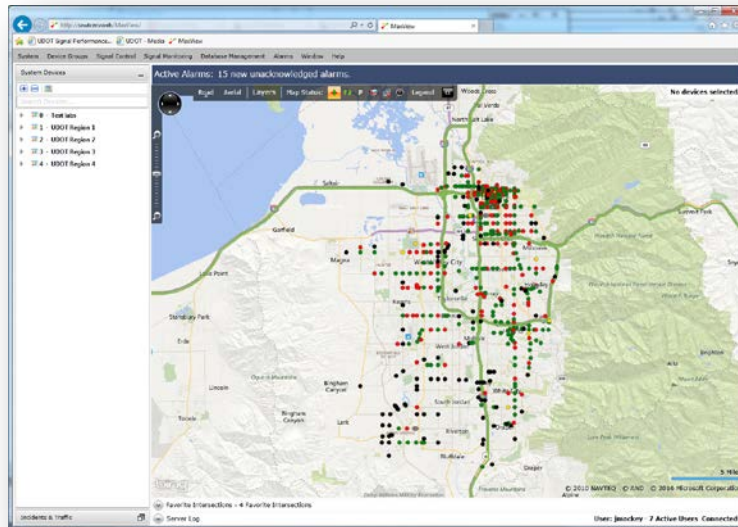


# Event Signal Management Requirements

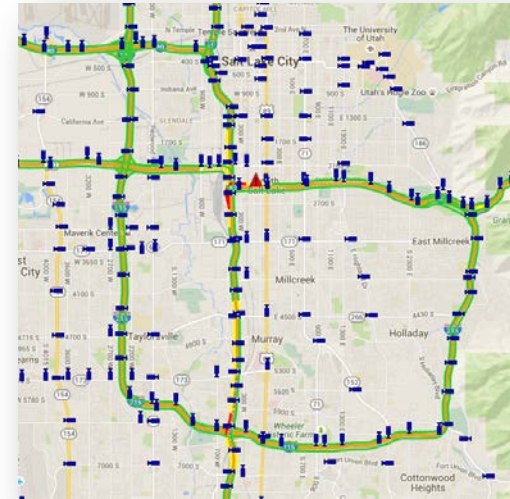


**Communication**

**Central System**



**Cameras**



**Staff**

- Coordinate
- Develop & Maintain
- Enable
- Monitor



# Steps to Develop Special Event Plans

|                     |   |
|---------------------|---|
| <b>Prepare</b>      | <ul style="list-style-type: none"><li>• Meet with event staff, law enforcement, and/or public information officers<ul style="list-style-type: none"><li>- Consider Travel Demand Management to reduce background traffic</li></ul></li><li>• Estimate or monitor event ped &amp; vehicle traffic</li><li>• Use existing patterns or create new patterns<ul style="list-style-type: none"><li>- Consider a few alternate plans if it's a large event</li></ul></li><li>• Program controller</li><li>• Set up action sets in central system</li><li>• Do a test run</li></ul> |
| <b>Manage Event</b> | <ul style="list-style-type: none"><li>• Field &amp; Control Room staff – Use radios, not cell phones</li><li>• Fine tune plans</li></ul>  |
| <b>Review</b>       | <ul style="list-style-type: none"><li>• Host After-action Review Meeting</li></ul>  |
| <b>Maintain</b>     | <ul style="list-style-type: none"><li>• Develop event plan documents</li><li>• Schedule future events</li><li>• Review live event on schedule</li></ul>   |

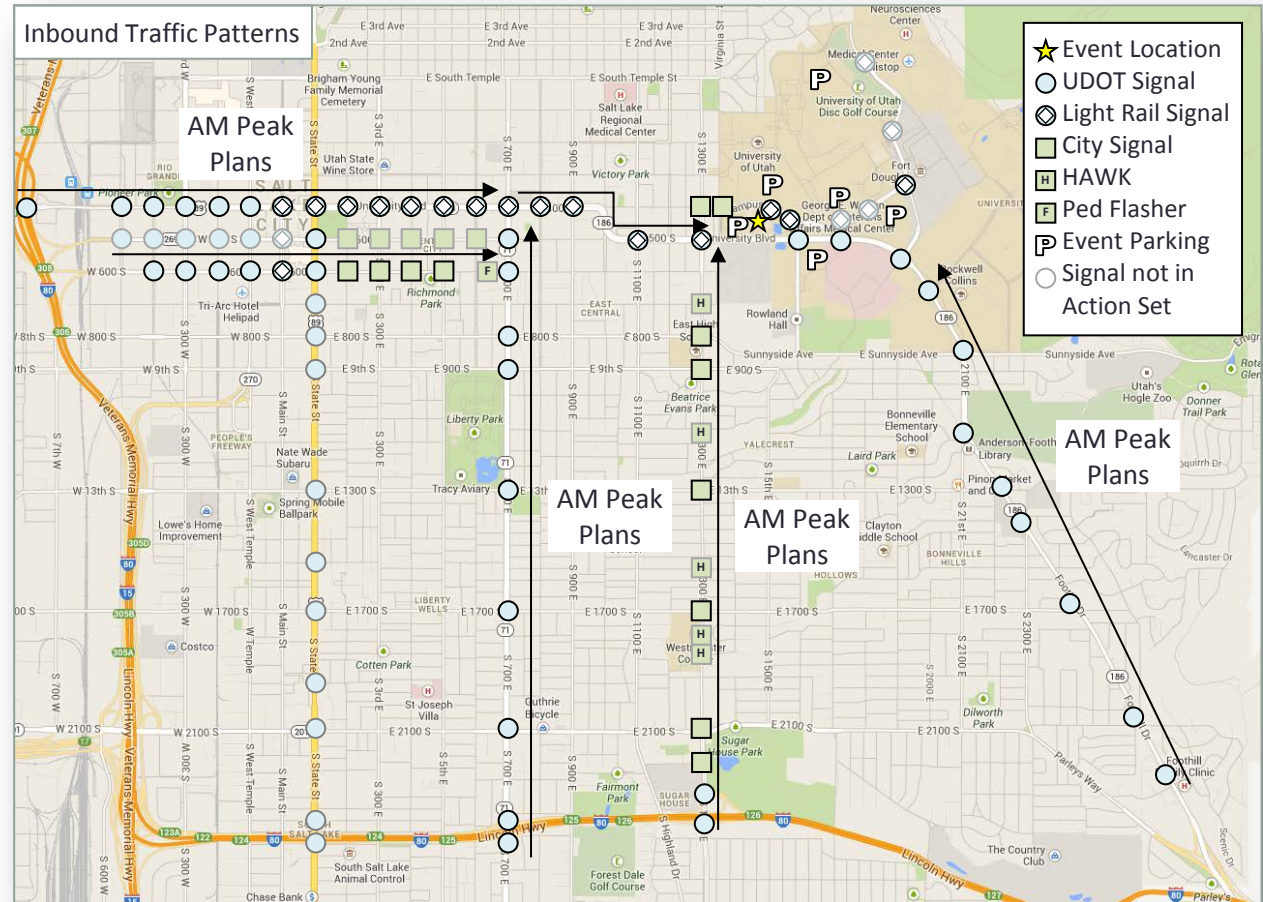
**Prepare**

# Meet with Stakeholders



Prepare

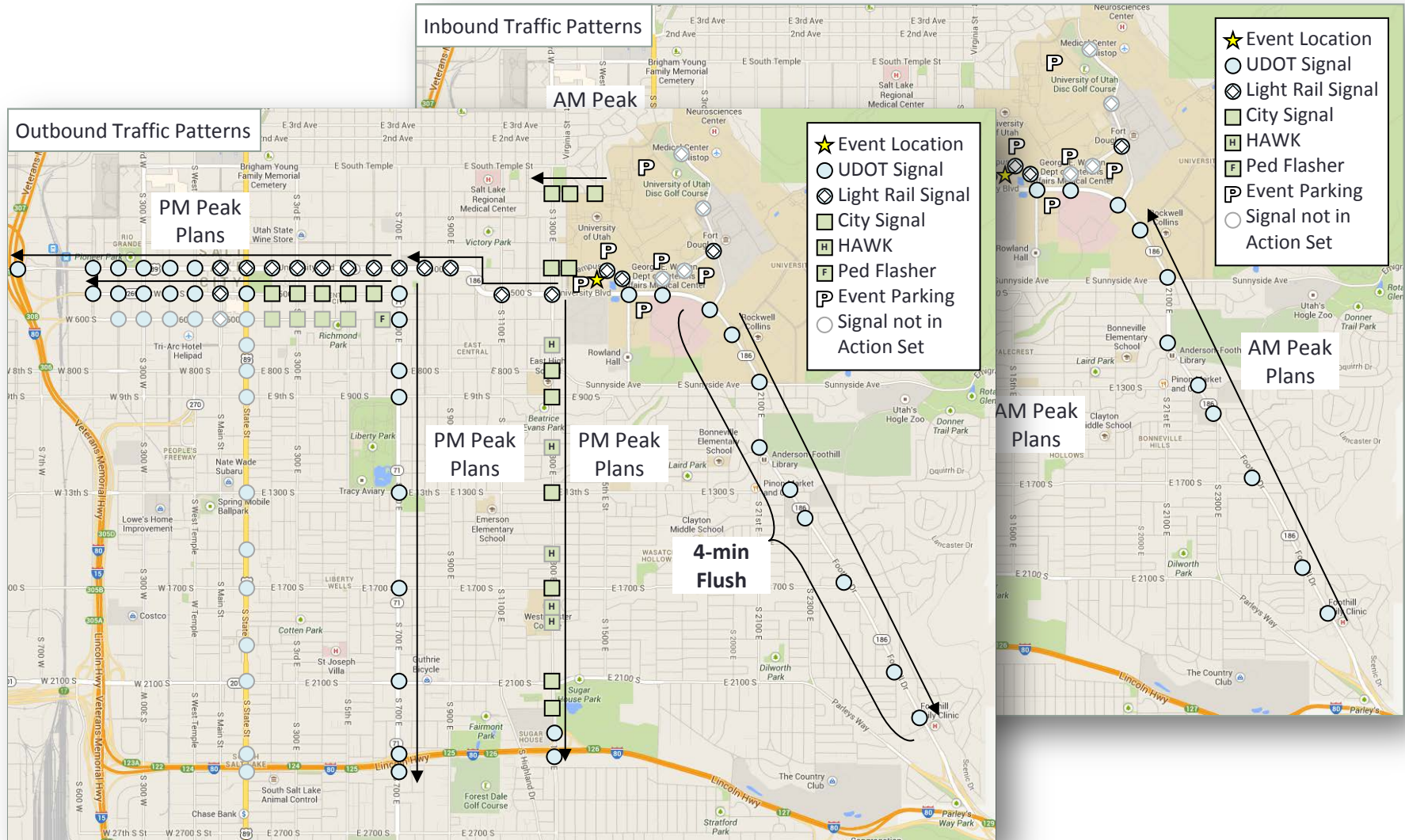
# Develop Event Plans





Prepare

# Develop Event Plans



# Prepare

# Program Controller

Through Front Panel:



Using Central System:

MaxView ATMS

System Device Control Monitoring Databases Alarms Assets Window Help

System Devices Active Alarms: 2 new unacknowledged alarms

Database Editor

Device: 7220 - 1300 S @ Foothill Blvd (SR-186) Database Version: Econolite\_2.61

Database: Live Front Panel Editor

Change Database... Lock Database...

Device

- Configuration
- Controller Settings
- Coordinator
  - Coordinator Options
    - Patterns
    - Split Patterns
    - Auto Perm Min Green
    - Split Demand
  - Preemptor/TSP
  - Time Base
  - Detectors

Device Administration

Patterns

| Pattern | Split Number | Cycle Time | Offset | Actuated Coord | Actuated Walk Rest | Reservice | Timing Plan | Sequence | Action |
|---------|--------------|------------|--------|----------------|--------------------|-----------|-------------|----------|--------|
| 40      | 40           | 0          | 0      | Disabled       | Disabled           | Disabled  | 1           | 1        | 40     |
| 41      | 41           | 0          | 0      | Disabled       | Disabled           | Disabled  | 1           | 1        | 41     |
| 42      | 42           | 0          | 0      | Disabled       | Disabled           | Disabled  | 1           | 1        | 42     |
| 43      | 43           | 240        | 127    | Disabled       | Disabled           | Disabled  | 1           | 1        | 43     |
| 44      | 44           | 180        | 50     | Disabled       | Disabled           | Disabled  | 1           | 1        | 44     |
| 45      | 45           | 150        | 89     | Disabled       | Disabled           | Disabled  | 1           | 1        | 45     |
| 46      | 46           | 150        | 106    | Disabled       | Disabled           | Disabled  | 1           | 3        | 46     |
| 47      | 47           | 0          | 0      | Disabled       | Disabled           | Disabled  | 1           | 1        | 47     |
| 48      | 48           | 180        | 52     | Disabled       | Disabled           | Disabled  | 1           | 1        | 48     |
| 49      | 49           | 0          | 0      | Disabled       | Disabled           | Disabled  | 1           | 1        | 49     |
| 50      | 50           | 0          | 0      | Disabled       | Disabled           | Disabled  | 1           | 1        | 50     |
| 51      | 51           | 0          | 0      | Disabled       | Disabled           | Disabled  | 1           | 1        | 51     |

Description

Done

Dismiss All Dismiss

Incidents & Traffic

Favorite Devices - 4 Favorite Devices

Server Log

User: jmackey - 6 Active Users Connected



# Central Signal Management Software

MaxView ATMS

System Device Control Monitoring Databases Alarms Assets Window Help

System Devices

Search Devices...

- 0 - Test labs
- 1 - UDOT Region 1
- 2 - UDOT Region 2
- 3 - UDOT Region 3
- 4 - UDOT Region 4

Active Alarms: 13 new unacknowledged alarms.

Road Aerial Layers Map Status: Legend

No devices selected.

Map showing signal locations (colored dots) across a region including Saltair, West Salt Lake, South Salt Lake, Millcreek, Holladay, Taylorsville, Bountiful, Midvale, West Jordan, White City, South Jordan, Draper, Bluffdale, Lark, Bingham Canyon, Lincoln, Erda, Stansbury Park, Lake Point, and Jordan Meadows. The map includes a scale bar (5 Miles) and copyright information (© 2010 NAVTEQ © 2016 Microsoft Corporation © AND).

Favorite Devices - 4 Favorite Devices

Server Log

Incidents & Traffic

User: jmackey - 9 Active Users Connected

# Central Signal Management Software

Intersection Status - 7102 - 3500 S (SR-171) @ Redwood Rd (SR-68)

Unit Status  
Phase & Call Status  
Coordination Status  
Detector Status  
Overlap Status  
Recorded Splits  
Preempt Status  
Prioritor Status  
Alarm Status  
Channel Status  
Input & Output Status  
Special Function Status  
Cabinet Status  
Peer Status  
Master Status  
Config Validation  
EDI SMU Status

Apply Changes Refresh Database Editor Database Management Export Print

Phase Status

| Phase Group   | 1 |   |   |   |   |   |   |   | 2 |   |   |   |   |   |   |   |   |
|---------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
|               | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 1 |
| Reds          | ● | ● | ● |   | ● | ● | ● |   |   |   |   |   |   |   |   |   |   |
| Yellows       |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Greens        |   |   |   | ● |   |   |   | ● |   |   |   |   |   |   |   |   |   |
| Min Calls     | ● | ● | ● | ● | ● | ● | ● | ● |   |   |   |   |   |   |   |   |   |
| Max Calls     | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| Ped Calls     |   |   |   | ● |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Ped Call      | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| Alt Ped Calls |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Dont Walks    | ● |   |   |   |   | ● |   | ● |   |   |   |   |   |   |   |   |   |
| Ped Clears    |   |   |   | ● |   |   |   |   |   |   |   |   |   |   |   |   |   |

7102  
3500 S (SR-171) @ Redwood Rd (SR-68)

Incidents & Traffic Server Log

User: jmackey - 7 Active Users Connected

# Prepare

# Action Set Setup

Action Set Configuration

2071 - Downtown PM City Creek (More time)  
2072 - Downtown PM City Creek (More time)  
2075 - LDS Conference Center Inbound  
2076 - LDS Conference Center Outbound  
2077 - LDS Conference Center Simult. Ped E  
2078 - LDS Conference Center Inbound (Mc  
2079 - LDS Conference Center Outbound (M  
2082 - U of U Football Inbound (Sunnyside  
2083 - U of U Football Inbound (Sunnyside  
2084 - UofU Football Inbound - PM Peak  
2085 - U of U Huntsman Inbound  
**2086 - U of U Football Inbound**  
2087 - U of U Outbound Plans  
2088 - Foothill 4 min SB Flush  
2089 - Foothill 3 min Flush SB  
2090 - Foothill 2.5 min Flush SB  
2091 - U of U Huntsman Outbound 150CL  
2092 - U of U Huntsman Outbound 180CL  
2093 - Liberty Park Fireworks 700 E SB - 120  
2094 - Liberty Park Fireworks 700 E SB - 150  
2095 - Liberty Park Fireworks State SB - 120  
2096 - Liberty Park Fireworks 900 S  
2097 - Liberty Park 1300 S WB - PM Peak  
2099 - SLC Marathon 1300 E 4-10-14

Action Set Detail

Number 2086

Action Set Name U of U Football Inbound

Default Duration Hours: 1 Mins: 0 Secs: 0

Action Set Commands

Add Remove  
Command Command

Drag a column header and drop it here to group by that column

| Command Target  | Command                  | Command Value  |
|---|--------------------------|----------------|
| 7635 - 600 S (SR-269) @ 300 W                         | Pattern                  | Pattern 1      |
| 1227 - 1300 S @ 1300 E                                | Pattern                  | Pattern 1      |
| 7369 - 400 S @ 500 W                                  | Pattern                  | Pattern 1      |
| 7216 - 500 S (SR-186) @ Guardsman Wy/1580 E (SR-282)  | ASC3 Action Plan Control | Action Plan 37 |
| 7224 - 500 S (SR-186) @ 1300 E                        | Pattern                  | Pattern 37     |
| 7366 - 400 S @ 400 W                                  | Pattern                  | Pattern 1      |
| 7219 - Sunnyside Ave (850 S) @ Foothill Blvd (SR-186) | Pattern                  | Pattern 1      |
| 7230 - I-80 WB Off-ramp / 2290 S @ 1300 E             | Pattern                  | Pattern 1      |
| 7231 - I-80 EB Ramps @ 1300 E                         | Pattern                  | Free           |
| 7241 - 400 S (US-89) @ 300 W (US-89)                  | Pattern                  | Pattern 1      |
| 7242 - 400 S (US-89) @ 200 W                          | Pattern                  | Pattern 1      |
| 7503 - Foothill Dr (SR-186) @ 2100 E                  | Pattern                  | Pattern 1      |
| 7076 - Sugar House Streetcar (2250 S) @ 700 E (SR-71) | Pattern                  | Pattern 1      |

Add Remove

Done Cancel

## Manage Event

# Schedule Action Set

The screenshot displays the 'Action Set Control' window, which is used for scheduling action sets. The window is divided into several sections:

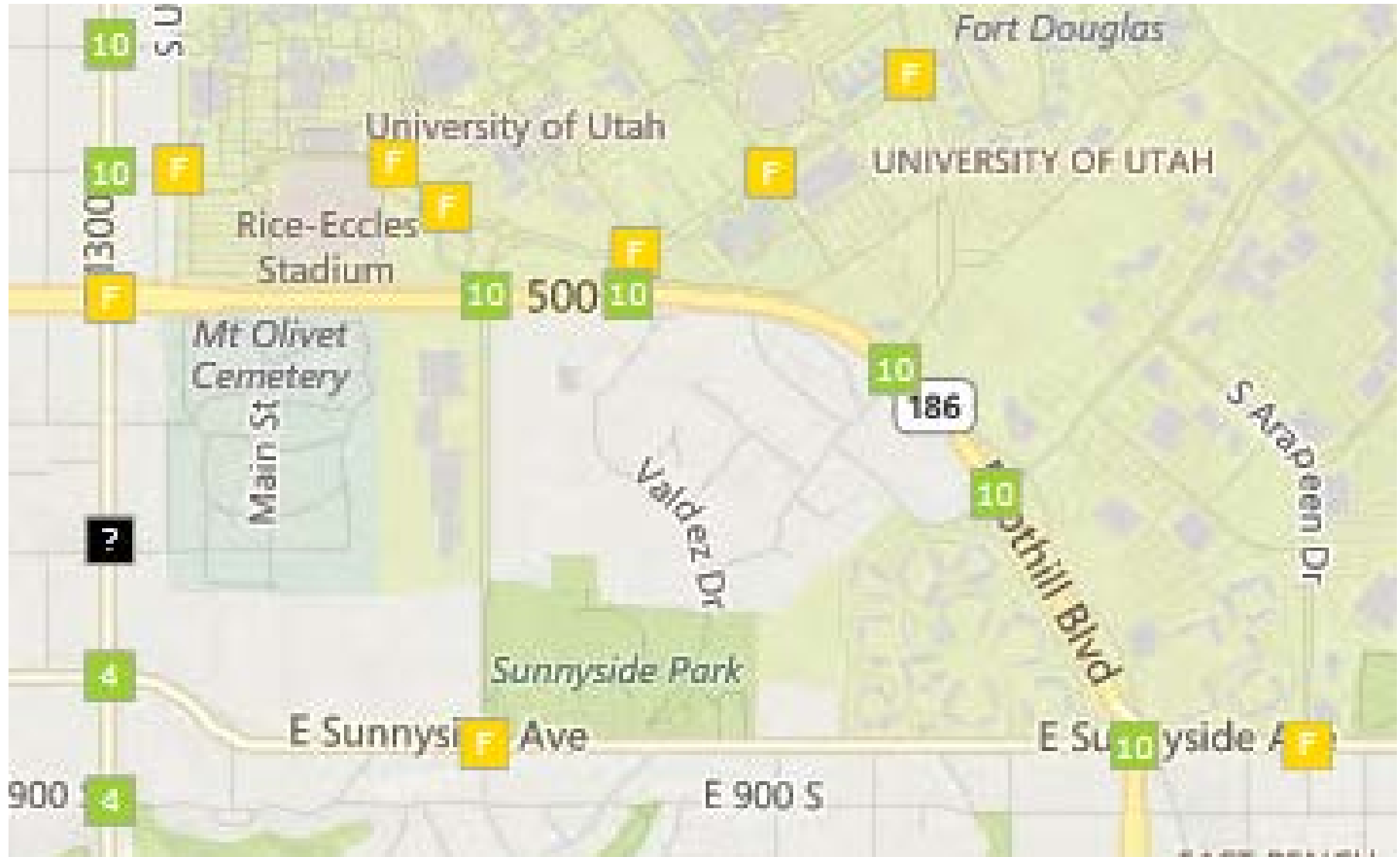
- System Devices:** A list of devices on the left, including '0 - Test labs', '1 - UDOT Reg', '2 - UDOT Reg', '3 - UDOT Reg', and '4 - UDOT Reg'.
- Set Action Sets:** A central area for configuring action sets. It includes a 'Refresh' button, a 'Cancel' button, and an 'Action Set' button. Below these are input fields for 'Start Time' (3/10/2016 1:42 PM) and 'End Time' (3/10/2016 2:42 PM), along with an 'Apply Default Duration' button.
- Search Action Sets...** A search bar above a list of action sets. The list includes various events such as '2078 - LDS Conference Center Inbound (Modified Free)', '2079 - LDS Conference Center Outbound (Main St Parking Egr)', '2082 - U of U Football Inbound (Sunnyside Extra NBL time)', '2083 - U of U Football Inbound (Sunnyside Use during PM pea)', '2084 - UofU Football Inbound - PM Peak', '2085 - U of U Huntsman Inbound', '2086 - U of U Football Inbound' (which is highlighted), '2087 - U of U Outbound Plans', '2088 - Foothill 4 min SB Flush', '2089 - Foothill 3 min Flush SB', '2090 - Foothill 2.5 min Flush SB', '2091 - U of U Huntsman Outbound 150CL', '2092 - U of U Huntsman Outbound 180CL', and '2093 - Liberty Park Fireworks 700 E SB - 120 CL'.
- Map:** A map on the right side showing the location of Summit Park and Mount Baldy. A scale bar indicates 10 Miles.
- Buttons:** At the bottom, there are 'Add', 'Cancel', 'Done', and 'Cancel' buttons.

The 'Incidents & Traffic' tab is visible at the bottom left, and the 'Users Connected' status is shown at the bottom right.



Manage Event

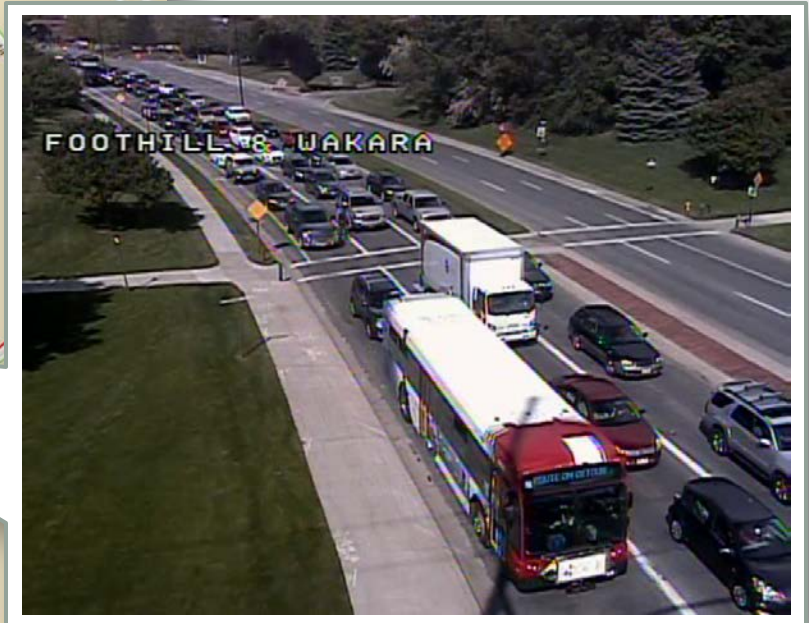
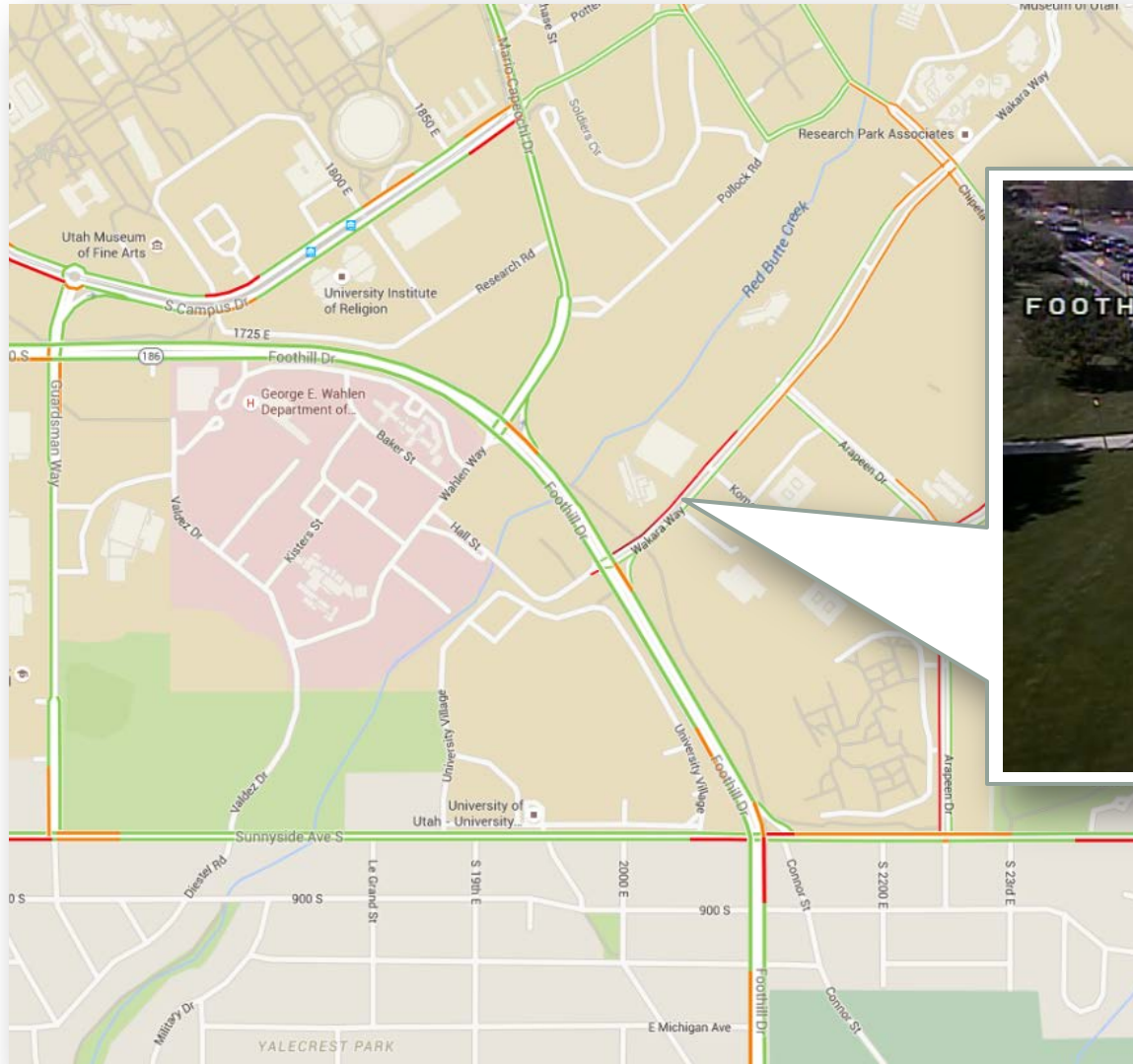
Monitor





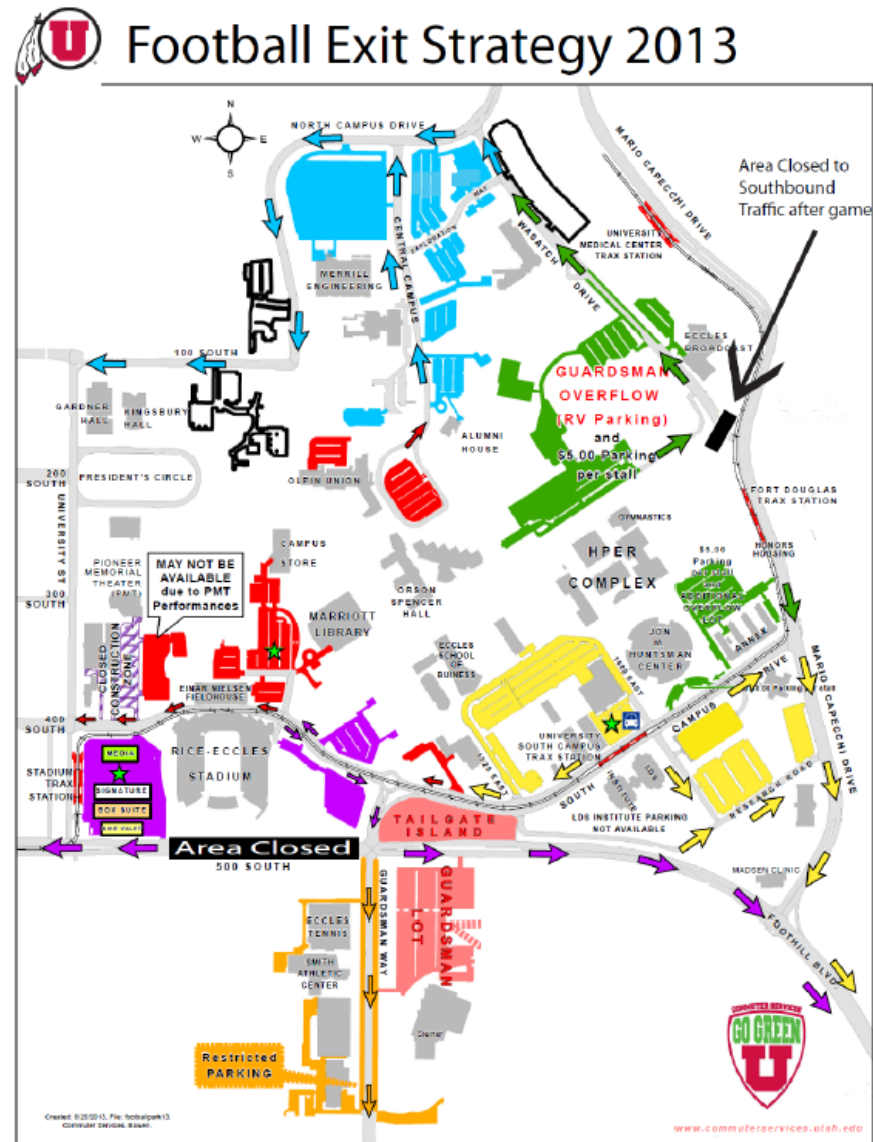
**Manage Event**

**Monitor & Fine tune**



## Review

# Assess Performance with Stakeholders



# Review & Maintain

# Event Plan Documents

## UTAH DEPARTMENT OF TRANSPORTATION TRAFFIC OPERATIONS CENTER

### GUIDELINE AND PROCEDURE UPDATE

|   |   |
|---|---|
| <b>SUBJECT:</b> University of Utah Special Event Plans<br>– Rice-Eccles Stadium | <b>EFFECTIVE DATE:</b> November 2006 – mod 10-8-11,<br>09-19-12, 10-2-2013, 02-25-2016 (removed references to<br>Huntsman Center which will now be treated<br>separately) |
| <b>NUMBER OF PAGES:</b> 5   | <b>APPROVAL:</b> Matt Luker   |

#### PURPOSE:

Special event signal timing plans have been developed to help traffic flow around football or large-scale events at the Rice-Eccles Stadium at the University of Utah. Generally, the Traffic Engineer at the Signal Timing Desk will schedule the timing for Football or large-scale *INBOUND* events. The Traffic Engineer will not schedule *OUTBOUND* events, due to the unpredictable nature of the sporting event. In the absence of the Traffic Engineer at the Signal Timing Desk, the TOC operators will need to run specific action sets when the sporting event is out for *OUTBOUND* traffic. Contact John Doe ([john.doe@utah.edu](mailto:john.doe@utah.edu)) or phone at 801-555-3987 to get the estimated attendance for the event.

#### OPERATIONAL GUIDELINE:

You may run the action sets for *INBOUND* or *OUTBOUND* by direction from the Traffic Engineer(s) in the field, or your observations on the CCTV cameras.

#### Inbound Plans

- Usually, the Signal Desk will program the *INBOUND* action sets. You can verify that the *INBOUND* action sets are enabled on 12 by clicking on: CONTROL-MANUAL ASSIGNMENT. You will see the scheduled action sets scheduled to run in the right hand side of the Manual Assignment window. Please verify that the *INBOUND* action sets are running.
- SET:7 MaxView 2086** or **SET:1 MaxView 2084** – Implement the *INBOUND* timing plans to start 90 minutes prior to the start of the event, unless a request is made to start it earlier, and end 15 minutes after the start of the event. This plan runs the AM peak plans on Foothill Blvd, 1300 E, 700 E, 400 S, and 600 S. Additional NBL time is provided at Sunnyside and Foothill. Do not run SET:7 MaxView 2086 before 6 p.m. on weekdays, instead run SET:1 MaxView 2084, which runs AM plans on 1300 E and adjusts PM peak splits at Foothill and Sunnyside.
- SIG#7219, APL:38 or APL:39** – At Foothill & Sunnyside for *INBOUND*, starting 3 hours before the event on Saturdays only and ending prior to the implementation of Action Set 7, run one of two coordination plans (dependent on the existing TOD cycle length along Foothill Blvd). Both provide more time for the NB to WB left turn. APL-38 (108s cycle length) should run on Saturdays only between 1600 and 2230. APL-39 (120s cycle length) should run on Saturdays only between 1000 and 1600. Make sure plan 38 or 39 is no longer running 90 minutes before game time because Action Set 7 will run a different plan for Sunnyside.
- SIG#7216, APL:41 or APL:42** – Pedestrian Scramble at 500 South & Guardsman is implemented for *INBOUND*, starting 60 minutes prior to the event and extending 15 minutes after the event begins. APL-41 should run for 25 minutes, starting 1 hour before the event. APL-42 starts 35 minutes before the event and runs for 35 minutes. Run APL-41 again starting at event time for 15 minutes.

**NOTE:** The pedestrian scramble at 500 South and Guardsman separates the pedestrian timing from the vehicle timing. An exclusive pedestrian phase (phase 10) will come active immediately following the north/south red. During the pedestrian scramble, all the vehicle signal heads will be red, all the pedestrian signal heads will have the walk indication followed by the pedestrian clearance indication. Pedestrians are allowed to cross diagonally. There are usually police officers present to direct pedestrians.

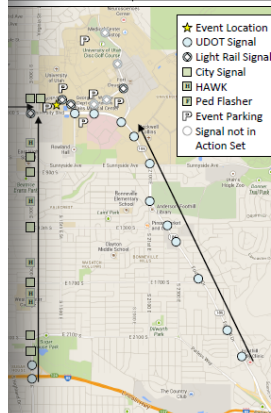
University of Utah Special Event Plans  
C:\Users\jamiesmackey\Documents\Meetings\2016-02\_NWTC\U of U Rice-Eccles 2016-02-25.docx

Page 1

a pedestrian time is provided for Phases 4 & 8 in these  
phases 2 & 6 (E/W).

#### BALL PLANS

| NOTES  | SPECIAL INSTRUCTIONS  |
|--|---|
| ie Ph 10: 20s walk and 35s<br>ie. Schedule APL to run<br>ie 35 min; then from event<br>(minutes).  | Police will be at intersection<br>controlling pedestrians. Monitor<br>on CCTV.  |
| ie Ph 10: 30s walk and 40s<br>ie.  | Police will be at intersection<br>controlling pedestrians. Monitor<br>on CCTV.  |
| CL) on Saturdays only<br>30. Run plan 39 (120s CL)<br>between 1000 – 1600. Do not<br>run Action Set 7 is running<br>ingress routes (Foothill, 1300<br>E S). Extra NBL at<br>and 1400 EB runs free<br>ie. | Do not run SET:7 before 6 p.m. on<br>weekdays, instead run SET:1.<br>Email tom.stetch@slg.gov.com and<br>bryan.meese@slg.gov.com with<br>the date and time you run SET:7 or<br>SET:1. |
| ie Foothill & Sunnyside  |   |
| ie N/S   |   |
| ie N/S, reduced E/W green  |   |
| ie N/S, reduced E/W green  |   |



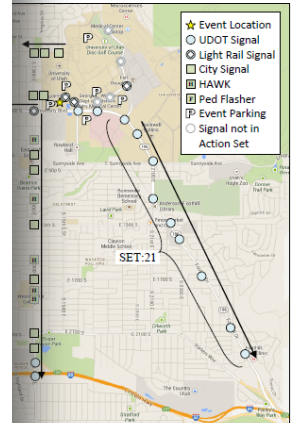
a the game lets out by observing large amounts of  
s and 1300 E, Foothill Blvd & Guardsman, Wasatch, or  
the internet. If the game is a blowout, then the crowds  
*TBOUND* plans a few minutes before the end of the  
th or 1300 East and 500 S to observe pedestrian traffic.  
**axView 2088** for 60 minutes after the event ends. You  
**axView 2088** is running since it uses a very large cycle  
Please monitor the CCTV at Foothill & 2100 East.  
y vehicles, please run **MaxView 2088** off. You can  
I", then "Manual Assignment". You can then see  
ting on the blue checkmark in the "EN" column, the

**OUND SET:219 MaxView 2087** for 80 minutes after the

ent. Remotely flash the signal at Guardsman & Foothill  
ck up 500 S) after the event for *OUTBOUND*. Only  
is closed, and police officers are present. Monitor  
South reopens to vehicle traffic.

#### BALL PLANS

| NOTES   | SPECIAL INSTRUCTIONS   |
|---|--|
| on on CCTV carefully. Flash<br>lanely when game is out and<br>is present, when 500 S is<br>officers are present. Turn<br>S reopens.   | Notify TOC operators so they<br>know signal is intentionally in<br>flash.  |
| Radio Caspech to<br>south Blvd are running a 4-<br>raph favoring SB   | Monitor this plan with CCTV. If<br>the traffic slow down SB on<br>Foothill Blvd, please run off. Best<br>to use Foothill & 2300 East CCTV. |
| near normal PM Peak plans or<br>plan. Foothill Blvd from<br>adjoining, 400-500 South from<br>7 S from 700 E to I-15, 700 E<br>State St from 400 S to I-80,<br>50 S to I-40. | Email tom.stetch@slg.gov.com and<br>bryan.meese@slg.gov.com and<br>inform them of the date and time<br>you run action set #219.            |



# Review & Maintain

# Event Plan Documents

## Action Set Details

| SET:2005                  |  |        |  |      |      |        |    |    |    |    |    |    |    |    |
|---------------------------|--|--------|--|------|------|--------|----|----|----|----|----|----|----|----|
| Rio Tinto Ingress 120s CL |  |        |  |      |      |        |    |    |    |    |    |    |    |    |
| Sig. ID                   | Location                               | Action | CL   | Off. | Seq. | Splits |    |    |    |    |    |    |    |    |
|                           |  |        |  |      |      | 1      | 2  | 3  | 4  | 5  | 6  | 7  | 8  | 9  |
| 7015                      | 9000 S & 700 W <small>(ASC2)</small>   | PAT:37 | 120  | 23   | 1    | 20     | 70 | 0  | 30 | 20 | 70 | 0  | 30 |    |
| 7014                      | 9000 S & 450 W <small>(ASC2)</small>   | PAT:37 | 120  | 37   | 1    | 15     | 49 | 16 | 40 | 15 | 49 | 16 | 40 |    |
| 7077                      | 9000 S & I-15 (SPUI)                   | PAT:37 | 120  | 83   | 2    | 35     | 32 | 1  | 53 | 6  | 35 | 0  | 53 | 26 |
| 7621                      | 9000 S & Monroe <small>(Eagle)</small> | PAT:37 | 120  | 116  | 0    | 17     | 67 | 18 | 18 | 20 | 64 | 18 | 18 |    |
| 7173                      | State & 8720 S <small>(ASC2)</small>   | PAT:37 | 60   | 19   | 1    | 0      | 40 | 0  | 20 | 0  | 40 | 0  | 20 |    |
| 7174                      | State & 9000 S                         | APL:37 | 120  | 4    | 5    | 19     | 41 | 16 | 44 | 22 | 38 | 20 | 40 |    |
|                           |  |        | Act. Coord ON; AUX FCT 1 ON (dual EB right turn) |      |      |        |    |    |    |    |    |    |    |    |
| 7643                      | State & Rio Tinto                      | APL:37 | 120  | 49   | 1    | 0      | 74 | 0  | 46 | 0  | 74 | 0  | 0  |    |
|                           |  |        | PH4: Walk 2 (15s WALK, 26s FDW)                  |      |      |        |    |    |    |    |    |    |    |    |
| 7175                      | State & 9400 S                         | PAT:37 | 120  | 62   | 2    | 29     | 37 | 16 | 38 | 15 | 51 | 17 | 37 |    |
| 7640                      | State & 9620 S                         | PAT:37 | 120  | 1    | 5    | 30     | 42 | 15 | 33 | 15 | 57 | 15 | 33 |    |
| 7176                      | State & 10000 S                        | PAT:37 | 120  | 88   | 1    | 15     | 50 | 16 | 39 | 21 | 44 | 18 | 37 |    |
| 7352                      | State & 10200 S                        | PAT:37 | 120  | 79   | 1    | 15     | 58 | 12 | 19 | 19 | 34 | 15 | 32 |    |
| 7177                      | State & 10400 S                        | PAT:37 | 120  | 54   | 1    | 17     | 50 | 15 | 38 | 18 | 49 | 15 | 38 |    |
| 7178                      | State & 10600 S                        | PAT:37 | 120  | 100  | 4    | 15     | 39 | 15 | 51 | 16 | 38 | 30 | 36 |    |
| 7614                      | 10400 S & 1055 W                       | PAT:37 | 120  | 69   | 1    | 20     | 65 | 0  | 35 | 20 | 65 | 0  | 35 |    |
| 7613                      | 10600 S & 700 W                        | PAT:37 | 120  | 114  | 5    | 18     | 70 | 0  | 32 | 19 | 69 | 0  | 32 |    |
| 7612                      | 10600 S & 400 W                        | PAT:37 | 120  | 18   | 1    | 20     | 43 | 20 | 37 | 20 | 43 | 20 | 37 |    |
| 7079                      | 10600 S & I-15 (SPUI)                  | PAT:37 | 120  | 76   | 1    | 25     | 58 | 0  | 37 | 5  | 42 | 0  | 37 | 36 |
| 4149                      | 10600 S & 120 W                        | PAT:37 | 120  | 97   | 1    | 20     | 52 | 15 | 33 | 15 | 57 | 18 | 30 |    |



# Maintain

# Signal Desk Calendar

| Sun  | Mon  | Tue   | Wed  | Thu   | Fri  | Sat  |
|--|--|---|--|---|--|--|
| <b>10</b><br><b>10 BRC: Stake Conferer</b><br><b>11 STEC - SL Home Sh</b><br><b>2p BRC: Stake Conferer</b><br><b>6p BRC: YSA World Wid</b>                                 | <b>11</b><br><b>8 UVU First Week Inloac</b>  | <b>12</b><br><b>8 UVU First Week Inloac</b><br><b>7p USU - men's b-ball</b>                                   | <b>13</b><br><b>8 UVU First Week Inloac</b><br><b>9 Signal Desk Staff Mee</b><br><b>7p Maverik - Grizzlies</b> | <b>14</b><br><b>8 UVU First Week Inloac</b><br><b>10:15 Weather Briefing</b><br><b>7p Vivint Arena - Jazz</b><br><b>8p UofU: Basketball</b>       | <b>15</b><br><b>7 Provo City Center Terr</b><br><b>8 UCCU - The Rumble</b><br><b>8 UVU First Week Inloac</b><br><b>11 STEC - Utah Auto Ex</b><br><b>7p Maverik - Grizzlies</b>                                     | <b>16</b><br><b>7 Provo City Center Terr</b><br><b>10 STEC - Utah Auto Ex</b><br><b>7p Maverik - Grizzlies</b><br><b>7p Vivint Arena - Jazz</b>  |
| <b>17</b><br><b>10 STEC - Utah Auto Ex</b><br><b>10 BRC: Stake Conferer</b><br><b>2p BRC: Stake Conferer</b><br><b>6:30p UofU: Basketball</b>                              | <b>18</b><br><b>7 Provo City Center Terr</b><br><b>10 STEC - Utah Auto Ex</b><br><b>1:30p Maverik - Grizzlies</b><br><b>7p Maverik - Grizzlies</b> | <b>19</b><br><b>7 Provo City Center Terr</b><br><b>3:15p Weather Briefing</b><br><b>9p USU - Men's b-ball</b> | <b>20</b><br><b>7 Provo City Center Terr</b>   | <b>21</b><br><b>Sundance in Park City</b><br><b>7 Provo City Center Terr</b>  | <b>22</b><br><b>7 Provo City Center Terr</b><br><b>10:15 Weather Briefing</b><br><b>7:30p Vivint Arena - Mor</b>   | <b>23</b><br><b>7 Provo City Center Terr</b><br><b>8 STEC - Rocky Mounta</b><br><b>2p Vivint Arena - Monste</b><br><b>3p UofU: Gymnastics</b><br><b>7:30p Vivint Arena - Mor</b>   |
| <b>24</b><br><b>Sundance in Park City</b><br><b>10 BRC: Stake Conferer</b><br><b>2p BRC: Stake Conferer</b><br><b>6p BRC: Bountiful Temp</b>                               | <b>25</b><br><b>7 Provo City Center Terr</b><br><b>11 Maverik Ctr: Funeral</b><br><b>7p Vivint Arena - Jazz</b>                                    | <b>26</b><br><b>7 Provo City Center Terr</b>  | <b>27</b><br><b>7 Provo City Center Terr</b><br><b>7p Vivint Arena - Jazz</b><br><b>9p UofU: Basketball</b>    | <b>28</b><br><b>7 Provo City Center Terr</b><br><b>3:15p Weather Briefing</b><br><b>5p Maverik - UHSAA Wr</b><br><b>9p Marriott Center - BYL</b>  | <b>29</b><br><b>7 Provo City Center Terr</b><br><b>2p STEC - Morris Murdo</b><br><b>2p Weather Briefing (jan</b><br><b>3p STEC - Bridal Show</b><br><b>7p Maverik - Grizzlies</b><br><b>7p Vivint Arena - Jazz</b> | <b>30</b><br><b>7 Provo City Center Terr</b><br><b>9 STEC - Gun show</b><br><b>10 STEC - Morris Murdo</b><br><b>11 STEC - Bridal Show</b><br><b>3p UofU: Basketball</b><br><b>7p Maverik - Grizzlies</b><br><b>+2 more</b>                         |
| <b>31</b><br><b>Sundance in Park City</b><br><b>9 STEC - Gun show</b><br><b>10 BRC: Stake Conferer</b><br><b>10 Weather Briefing (jan</b><br><b>2p BRC: Stake Conferer</b> | <b>Feb 1</b><br><b>7 Provo City Center Terr</b><br><b>7p UofU - Gymnastics</b><br><b>7p Vivint - Jazz</b>  | <b>2</b><br><b>7 Provo City Center Terr</b>   | <b>3</b><br><b>7 Provo City Center Terr</b><br><b>7p Vivint - Jazz</b>   | <b>4</b><br><b>7 Provo City Center Terr</b><br><b>10 UCCU - Drill Team S</b><br><b>7p Marriott Center - BYL</b><br><b>8:30p Deer Valley: Worl</b> | <b>5</b><br><b>7 Provo City Center Terr</b><br><b>10 UCCU - Drill Team S</b><br><b>11 STEC - Golf Expo</b><br><b>7p Vivint - Jazz</b><br><b>8p Maverik - PBR BlueD</b><br><b>9p Deer Valley: World C</b>           | <b>6</b><br><b>7 Provo City Center Terr</b><br><b>8 UCCU - Drill Team Sta</b><br><b>9 STEC - Golf Expo</b><br><b>10 STEC - Winter Paloo;</b><br><b>2p Marriott Center - BYU</b><br><b>7p Maverik - PBR BlueD</b><br><b>8:40p Deer Valley: Worl</b> |

# Maintain

# Event Email

2016-6-4 Events @ STEC, Vivint, Maverik, USU, UofU and BRC



[\\_Sigs/Events](#) x [\\_Sigs/Signal Desk](#) x



SignalDesk

Mar 4 (6 days ago) ☆



to Peter, James, me, Kent, Mark, Matt, TC-ControlRoom, Erik, Bryan, Cabot, Kurt, Scott, Tom, Can ▾

## Signal Timing Event Modifications

### SUMMARY

| Event Location                                | Time Period   | Control Room Operator Action   |
|---|---|--|
| South Towne Expo Center – AutoRama            | 3-4-16 15:00 - 22:00<br>3-5-16 10:00 - 22:00<br>3-6-16 10:00 - 18:00  | Enable action sets as needed.  |
| 500 W Construction Support                    | 3-4-16 22:00 – 3-5-16 07:00   | <b>Region 1 Signal Engineer, Carrie Jacobsen will be contacting the TOC to enable MaxView Action Set 103 once lanes are taken.</b> |
| Vivint Arena – Disney On Ice                  | 3-4-16 15:30, 19:00<br>3-5-16 11:30, 15:30, 19:00<br>3-6 11:30, 15:30 | Monitor traffic and <b>modify</b> outbound action sets as necessary.   |
| Maverik Center - Concert                      | 3-5-16 16:00  | Inbound scheduled.   |
| USU – Men's Basketball                        | 3-5-16 19:00  | Outbound SET:1005 Scheduled.   |
| Rice – Eccles Men's Basketball                | 3-5-16 19:30  | <b>Outbound is enabled, please monitor game and verify that start time aligns with the end of the game.</b>                        |
| Bountiful Regional Center – Stake Conferences | 3-6-16 9:00, 12:00, 15:00   | None   |

Details contained in this event memo serve as a guide to action sets enabled or available as necessary for operators and Signal Staff. Detailed guidelines for venue locations should be referenced for start time and duration of action sets. They can be found in the following UDOT share drive location and: S:\TMD 8384 Traffic Signal Operations\Project Files\Special Events\Guidelines - Recurring Events

## Bountiful Regional Center

| WHAT:                   | WHEN:  | Start: | End:  |
|-------------------------|--------|--------|-------|
| Layton Utah Valley View | 3-6-16 | 9:00   | 11:00 |
| Bountiful Utah South    |        | 12:00  | 14:00 |
| Centerville Utah North  |        | 15:00  | 17:00 |

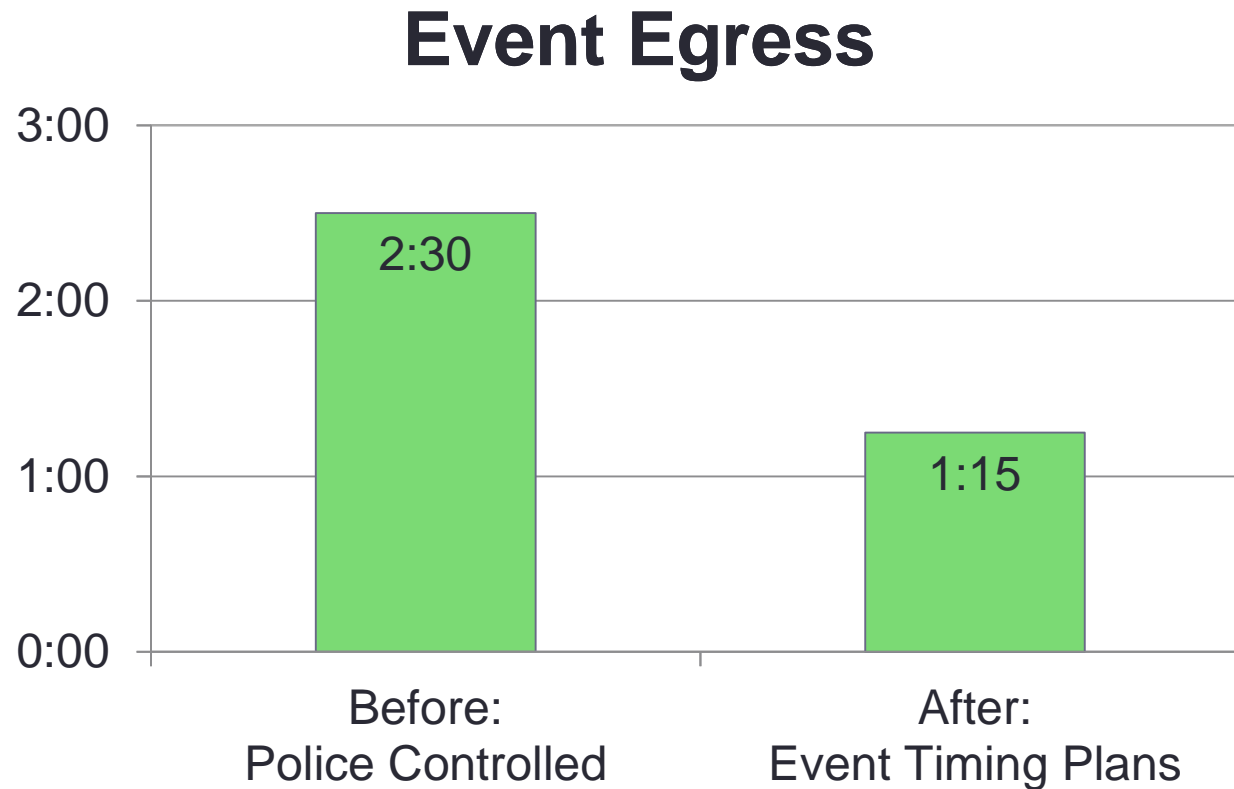
**ACTION:** The Bountiful Regional Center is located just off of I-15 near the 2600 S exit in Woods Cross. Traffic exiting the freeway for events at this location can be monitored using the CCTV camera at: I-15 SB @ 2600 S and Main St / US-89 @ 2600 S / SR-93

# BYU Football Before/After Example

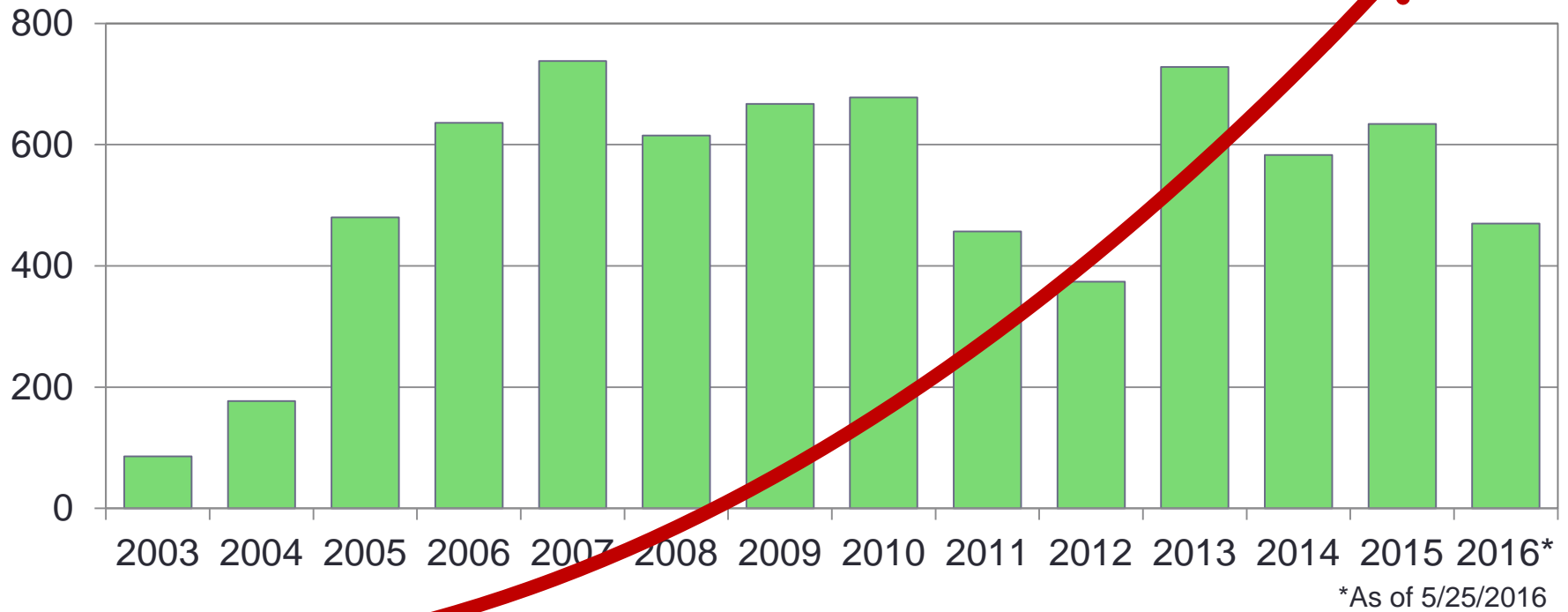




# BYU Football Before/After Example



# Special Event Plans Enabled



**Cumulative Benefit**

# Lessons Learned

- Build **relationships**
  - Signal Partners
  - Event Coordinators
  - Law Enforcement
- Maintain reliable **communication** to traffic signals
- Locate **CCTV** at critical signals
- Retain dependable **staff** (e.g. TOC Operators, engineering consultants)
- Reevaluate on **schedule**
- **Keep It Simple, Sweetheart**





# TRB Webinar: Impact of Mega Events on Urban Growth through Sustainable Transportation Solutions

## FHWA's Planned Special Events (PSE) Program and TRB Strategic Highway Research Program 2 (SHRP2) Reliability Research

June 2, 2016

Laurel J. Radow

Federal Highway Administration, U.S. DOT

# Annual Estimates of PSEs with more than 10,000 Attendees

- \* 24,000 large PSEs
- \* 600 million people in attendance
- \* \$40 billion “in-event” revenue or spending
- \* \$160 billion in economic impact
- \* \$4 billion in local government revenue
- \* \$1.7 to \$3.5 billion in congestion cost
- \* 90-185 million hours and 65-130 million gallons of fuel wasted (sitting in traffic)

# What is a Planned Special Event?

- \* Permanent multi-use venues

- \* Sporting events
- \* Concerts
- \* Festivals
- \* Conventions

- \* Other public events

- \* Parades
- \* Fireworks displays
- \* Bicycle races
- \* Sporting games
- \* Motorcycle rallies
- \* Seasonal festivals



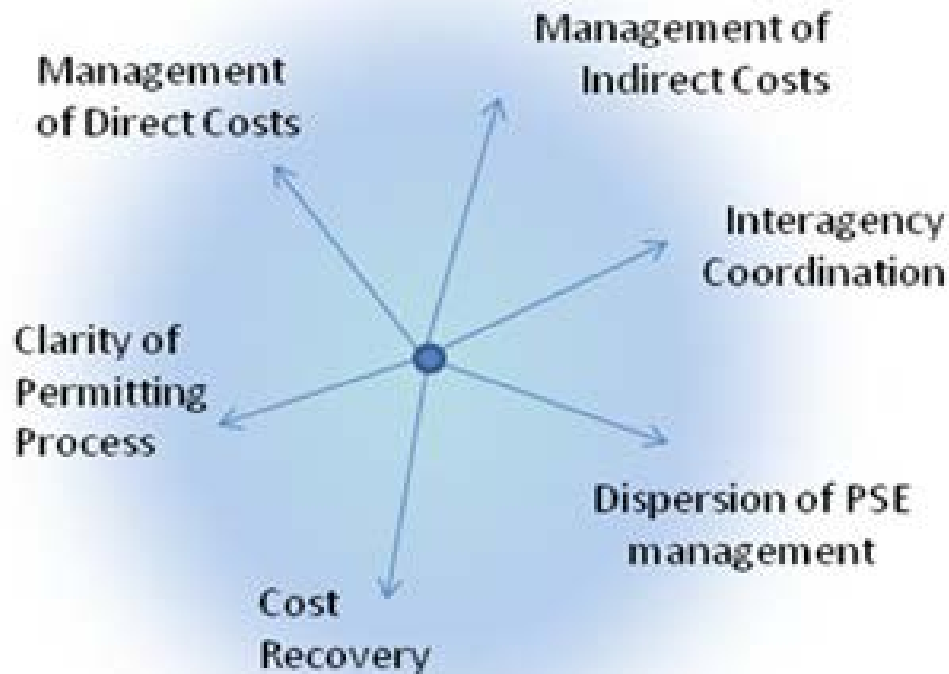


# Transportation System Users Affected by Planned Special Events

- \* Event patrons or participants
- \* Non-attendee road users:  
local residents and  
businesses, commuters, truckers
- \* Emergency Responders
- \* Non-attendee transit users
- \* Public agency service  
providers



# Management of Direct and Indirect Costs for Planned Special Events



# Dispersion of Planned Special Events Costs



# Benefits of Managing Planned Special Events

- \* Promote interagency coordination, resource use and sharing
- \* Incorporate new procedures, plans, and practices into day-to-day operation of agencies
- \* Form partnerships and build trust
- \* Reduce traffic congestion
- \* Improve mobility
- \* Improve travel safety





# Meeting the Challenges



## Multi-agency Traffic Management Team

- Develops traffic management plan
- Prepares procedures and protocol
- Day-of-event traffic control and coordination

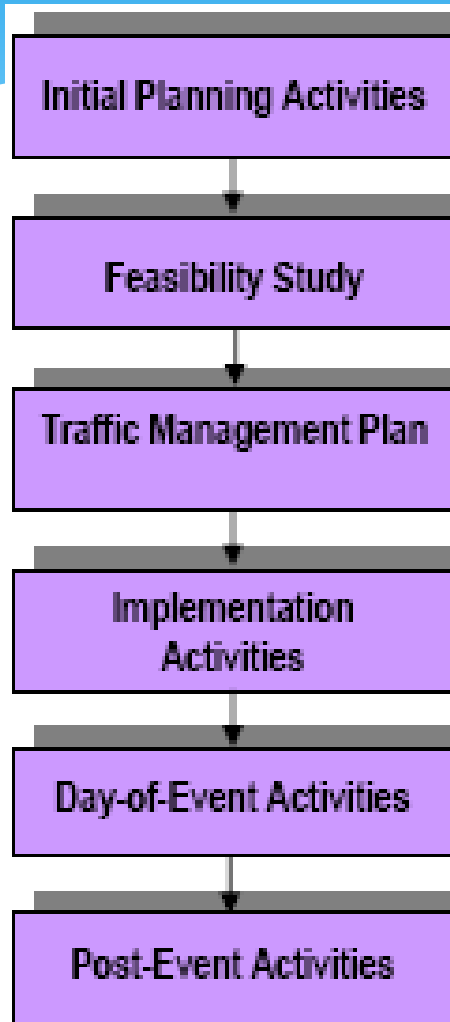
## Safety and Security Team

- Consists of stakeholder representatives involved in event-specific safety and security planning
- Develops Safety & Security Plan and responses
- Implements and, if necessary, modifies the safety and security plan on the day-of-event
- Conducts post-event debrief

# Resources and Tools

- \* Operational Strategies
  - \* Checklists
  - \* Tabletop Exercises
  - \* Incident Command System for Planned Special Events
  - \* PSE Capability Maturity Framework Workshops

# Checklists



Includes common sequential steps:

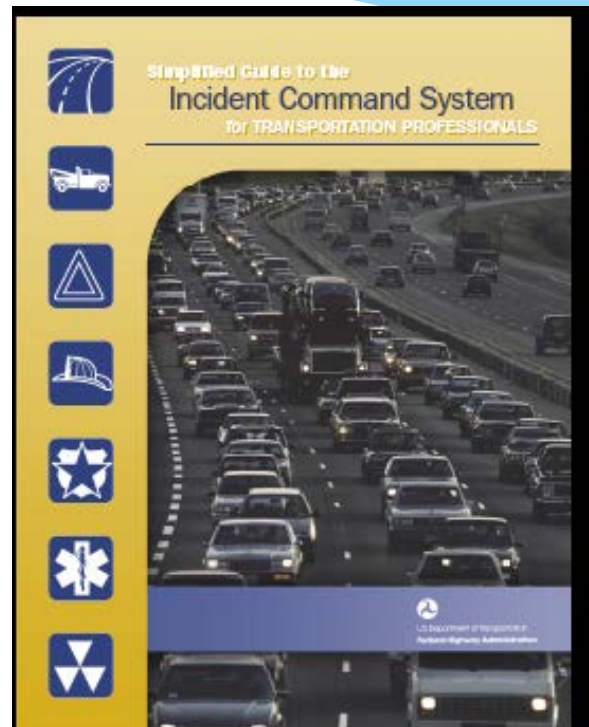
- Useful for a range of planned special event practitioners: transportation, public safety, event operator and community interest stakeholders

# Tabletop Exercises

- \* Effective test of transportation management plans developed for the venues
  - \* Tests the written assumptions in the plan
  - \* Notes what must be changed and how the plan can be improved
- \* Exercises for participants
  - \* Decision makers
  - \* Staff from the agencies with the venue managers/planners
  - \* Volunteers/Day-of-event field staff
- \* Helps to prepare for all contingencies



# Incident Command System (ICS)



[http://ops.fhwa.dot.gov/publications/ics\\_guide/ics\\_guide.pdf](http://ops.fhwa.dot.gov/publications/ics_guide/ics_guide.pdf)

# ICS and Planned Special Events: What to Consider

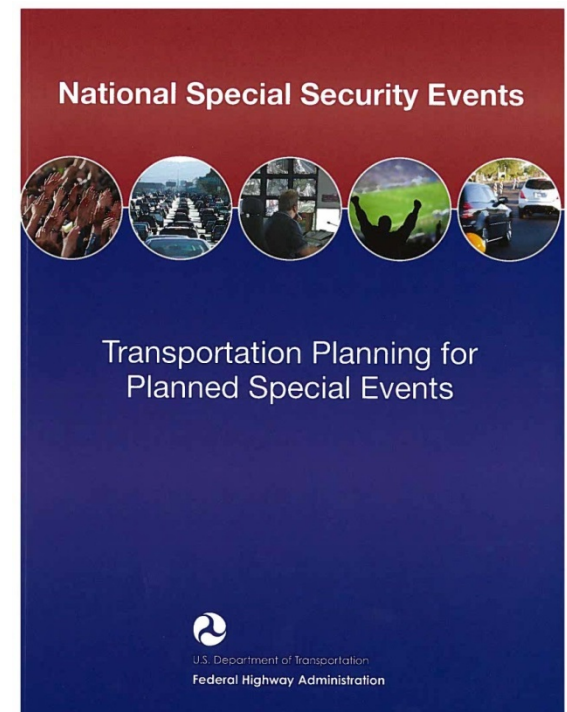
- \* Does the event involve a single agency or multiple agencies?
- \* Does the event involve a single jurisdiction or multiple jurisdictions?
- \* What command staff needs exist?
- \* What kind, type, and amounts of resources are required by the event?
- \* Are there any projected aviation operations?

# ICS and Planned Special Events: What to Consider (cont'd)

- \* Are there any staging areas and other required facilities?
- \* What kind and type of logistical support needs are required by the event?
- \* Are there any known limitations or restrictions of local resources?
- \* What kind and type communications resources are available?
- \* ICS can be expanded as the event demands increase in volume or complexity.

# National Special Security Events

- \* These events include:
  - \* Presidential inaugurations
  - \* Presidential nominating conventions
  - \* Major sports events
  - \* Major international summits including G-20, APEC, 2016 Nuclear Security Summit



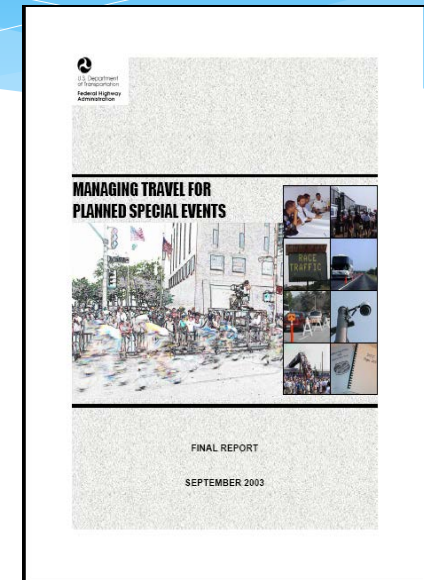
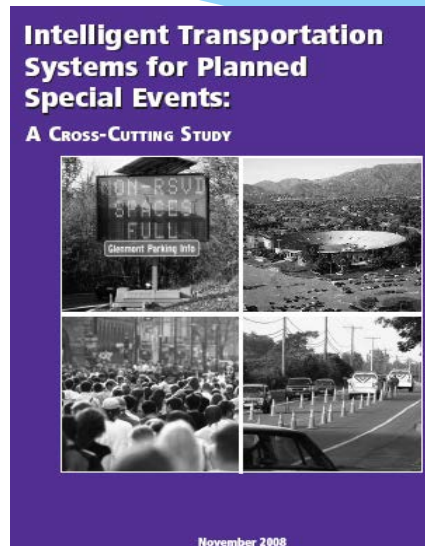
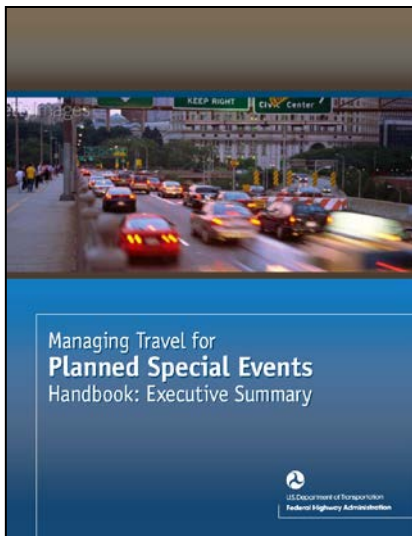


# NSSE Factors and Considerations

- \* Size of the event
- \* Significance of the event
- \* Duration of the event
- \* Anticipated attendance by dignitaries
- \* Availability of state and local resources
- \* Multiplicity of jurisdictions
- \* Threat assessments



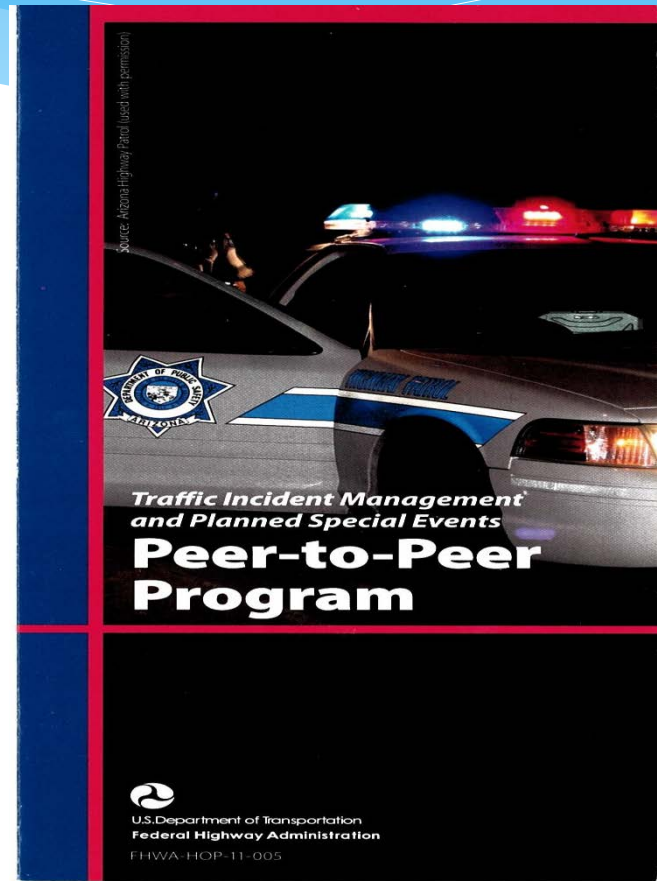
# Planned Special Events Publications



<http://ops.fhwa.dot.gov/publications/publications.hm#pse>

# Peer-to-Peer Program

- Traffic Incident Management/Planned Special Events Peer-to-Peer Program:
  - \* APEC, November 2011
  - \* RNC, August 2012
  - \* Super Bowl 2013
  - \* RNC 2016
- Please contact me for a peer-to-peer session



# PSE Resources and Tools

- \* National Highway Institute course, “**Managing Travel for Planned Special Events (2-Day)**”

FHWA-NHI-133099

[http://www.nhi.fhwa.dot.gov/training/course\\_search.aspx?tab=0&key=planned+special+events&sf=0&course\\_no=133099](http://www.nhi.fhwa.dot.gov/training/course_search.aspx?tab=0&key=planned+special+events&sf=0&course_no=133099)



# Capability Maturity Framework (CMF) Objectives and Background

- \* Develop, test and validate Capability Maturity Frameworks for five areas
  - \* Traffic Incident Management, **Planned Special Events**, Road Weather Management, Work Zone Management, and Traffic Signal Control
- \* Builds on earlier work done as part of SHRP2
  - \* L01– Integrating Business Processes to Improve Reliability
  - \* L06 – Institutional Architectures to Advance Operational Strategies
- \* Both projects focused on the role of institutions, process needed to achieve operational objectives

# Capability Maturity Frameworks

## Process Matters

Projects fail or do not achieve desired functionality for a variety of reasons unrelated to the technology

## Prioritizing the right actions

Is your agency ready?  
How would you know?  
What should you do next?

## Focus on the weakest link

What is holding the agency back in becoming a leader in this area?

## Capability Maturity Frameworks for Transportation Operations

### Process

- Adapted from software development world
- A consensus-driven consistent structured evaluation or assessment of a process
- Guides an agency towards a higher level of implementation, standardization, and return on investment

### Outcomes

- Clear identification of weak links in the process
- Prioritization of areas of improvement
- List of process-oriented actions that an agency can implement


# Capability Maturity Framework

| Process Improvement Areas  |   | Capability Levels                          |  |         |   |
|----------------------------|---|--|--|---------|---|
| Dimensions or Process Area | What is it                              | Level 1<br>Ad-Hoc. Low Level of Capability | Level 2  | Level 3 | Level 4<br>Optimized. High Capability   |
| Business Process           | Plans, Programs, Budgets                | Statement of capability                    | Step 1. Self-Assessment<br>Work with your stakeholders to assess where you are in terms of the capabilities in each area | ..      | Step 2. Identify areas of improvement and the desired levels of capability to improve program effectiveness |
| Systems & Tech             | Approach to building systems            | ..   |  | ..      |   |
| Perf. Measurement          | Use of performance measures             | ..   |  | ..      |   |
| Workforce                  | Improving capability of workforce       | ..   | ..   | ..      | ..  |
| Culture                    | Changing culture and building champions | ..   | ..   | ..      | ..  |
| Collaboration              | Improving working relationships         | ..   | Identify actions that you need to take to move to the desired levels of capability                                       |         |   |

# Program Area Frameworks

- \* FHWA continues the development of these capability frameworks to support improvements at program-level

- \* Traffic Incident Management
- \* **Planned Special Events**
- \* Work Zone Management
- \* Road Weather Management
- \* Traffic Signal Management
- \* Traffic Management

- 
- **More focused actions**
  - **Bottom-up improvement in capability**
  - **Engagement of program-specific stakeholders**



# SHRP2 and AASHTO TSM&O Guidance

- \* SHRP2 Lo6

- \* Undertook a comprehensive and systematic examination of the way agencies should be organized to successfully execute operations programs that improve travel time reliability
- \* Developed a version of Capability Maturity Model for highway operations and in turn travel time reliability

- \* AASHTO

- \* Support the conversion of the SHRP 2 Reliability Project Lo6 research into a web-based tool that would be user friendly, easy to access, and updatable. (NCHRP Project 03-94, Transportation Systems Operations and Management Guide)

# AASHTO Transportation Systems Management and Operations (TSM&O) Guidance

- \* AASHTO SOM Guidance -
- \* <http://www.aashtotsmoguidance.org/>
- \* Capability Maturity Framework (CMF) is being used widely as part of SHRP2 implementation efforts
- \* Focuses on capability for all operations



# CMF On-Line Tool

Business Process Frameworks for Transportation Operations - FHWA Operations

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## Welcome to Business Process Frameworks for Transportation Operations

This website contains a set of capability maturity frameworks to support the implementation of Transportation Systems Management and Operations (TSM&O).

TSM&O is a set of integrated strategies to optimize the performance of operations on existing infrastructure through implementation of multimodal and intermodal, cross-jurisdictional systems, services, and projects designed to preserve capacity and improve security, safety, and reliability of a transportation system.

Improving institutional capability and business process is necessary to improve implementation of TSM&O strategies. The Strategic Highway Research Program 2 (SHRP2) recognized this need and created the institutional architectures for TSMO as part of the L06 project. Building on SHRP2 results, American Association of State Highways and Transportation Officials (AASHTO) has continued development of this concept and a capability maturity concept was published as part of the [TSM&O guidance](#). SHRP2 Implementation activities have successfully used the overall framework to work with State DOTs to develop action plans to improve their TSM&O capabilities.

To continue the emphasis on capability maturity and to provide program-level guidance, FHWA developed additional frameworks that focus on improvement actions for specific TSM&O program areas. These frameworks are designed for agencies and regions to assess the current strengths and weaknesses and to help develop a targeted action plan for the program area. Agencies can use the tools available on the website to walk through the framework.

For more information, please [contact us](#) or visit:

- [Capability Maturity Frameworks Overview](#)
- [Using the Frameworks](#)
- [Available Frameworks](#)
  - [Road Weather Management](#)
  - [Planned Special Events](#)
  - [Traffic Incident Management](#)
  - [Traffic Management](#)
  - [Traffic Signal Management](#)
  - [Work Zone Management](#)

### Workshop Request

Request a facilitated workshop to use the frameworks from FHWA at:

**Wayne Berman**  
[Wayne.Berman@dot.gov](mailto:Wayne.Berman@dot.gov)

**Jim Hunt**  
[Jim.Hunt@dot.gov](mailto:Jim.Hunt@dot.gov)

These workshops will be facilitated to walk through the frameworks and support the development of an implementation plan in the region.

# Thank you.

## Questions?

**Contact Information:**

***Laurel J. Radow***

*Evacuations/Emergencies and Planned*

*Special Events Program Manager*

Federal Highway Administration,

U.S. Department of Transportation

**202.366.2855**

**[Laurel.Radow@dot.gov](mailto:Laurel.Radow@dot.gov)**