

Kansas City SCOUT

MoDOT + KDOT

E. Jason Sims P.E.

Innovative Solutions to Congestion Management

Kansas City Scout ITS Manager

getting you there



Partners









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What is Kansas City Scout?

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What is Scout?

- Freeway Management System
  - Safer Highways
  - Improved Traffic Flow
  - Improved Emergency Response

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Why Scout?

- The cost of an additional lane of pavement is around $1,500,000 per mile.
- The average cost of the initial deployment of the Scout system was $533,000 per mile.
- The average cost of additions to the Scout System is $280,000 per mile.

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Scout Technology

- Vehicle Detection Stations (VDS)
- Closed Circuit Television Cameras (CCTV)
- Dynamic Message Boards (DMS)
- Highway Advisory Radio (HAR)
- ATMS Expert System

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Vehicle Detection Stations

Traffic Sensors (Vehicle Detection Stations/VDS Loops)

(Detects Traffic Volumes – Not Individual Vehicle Speeds)

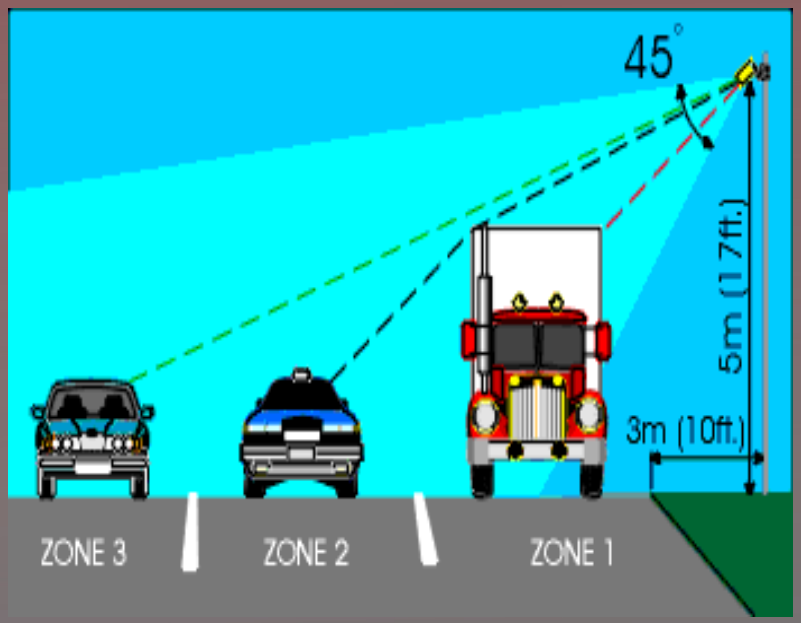


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Remote Traffic Microwave Sensors/ RTMS

Traffic Sensors (Remote Traffic Microwave Sensors/RTMS)
(Detects Traffic Volumes – Not Individual Vehicle Speeds)





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CCTV Cameras

Camera (CCTV)

(No Video-taping/No Law Enforcement)







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Dynamic Message Signs

Electronic Message Sign (DMS/CMS)

(For Urgent Traffic Messages Only)



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Scout Travel Times

Travel Times: Your "Heads Up" on the Road
When you drive a workweek commute you know the traffic



KC Scout

Enhancements for Quicker, Safer Drive Time

by Kerri Lewis

Since its 2004 debut, the Kansas City Scout system has reported and addressed traffic impacts along more than 90 miles of freeways in the bi-state Kansas City metropolitan area. Now, in 2007, Scout is offering new services, an enhanced Web site and system expansion developed to help travelers and commuters reach their destination

travel speeds along any given area of the Scout system and determine the amount of time it takes to reach certain destinations.

These times may vary based on any problems up ahead, such as accidents or severe weather. Drivers can read the posted travel times from hundreds of feet away when they are traveling

offers information via "Travel Times" posted on the large electronic message boards along several of the Scout's freeways. Sensors calculate the average

64th Street.

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Highway Advisory Radio

Highway Advisory Radio (HAR)

(For Urgent and Event-Related Traffic Information)



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Additional Scout Tools

Motorist Assist (DATA Integration project)

Scout Web Site (New site coming August 2013)

My KCScout Personalized Alerts (New Project Coming Fall 2013)

Twitter and Social Media

Technical and Performance Reports

New Technologies

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Motorist Assist & Emergency Response

Missouri (MoDOT)

- 21 Operators
- 12 Vehicles
- 105 Mile Coverage

Kansas (KHP)

- 8 Operators
- 4 Vehicles
- 123 Mile Coverage



Day and Evening Shift Coverage



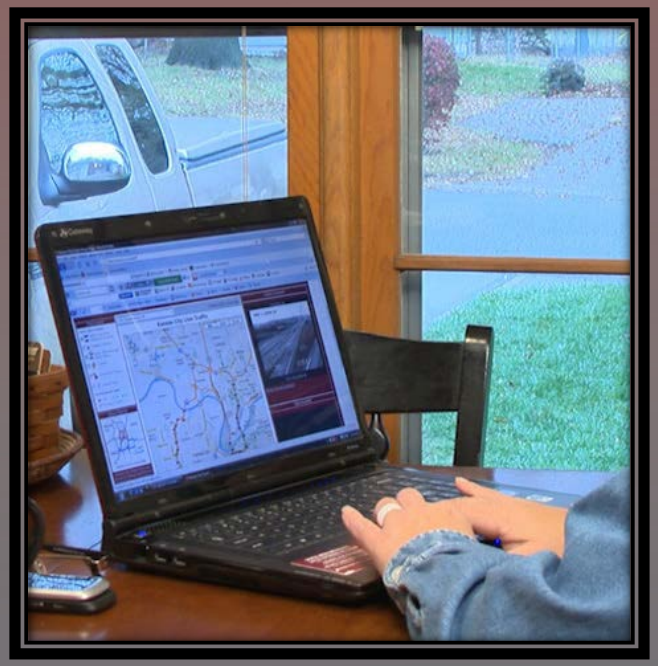
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Mobile & Web Applications

www.kcscout.net

Twitter @kansascityscout

MY KCScout web alerts





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Mobile Applications

www.kcscout.net

iPhone, iPad, iOS, Android

"Coming August 2013"





iTunes

ANDROID APP ON Google play

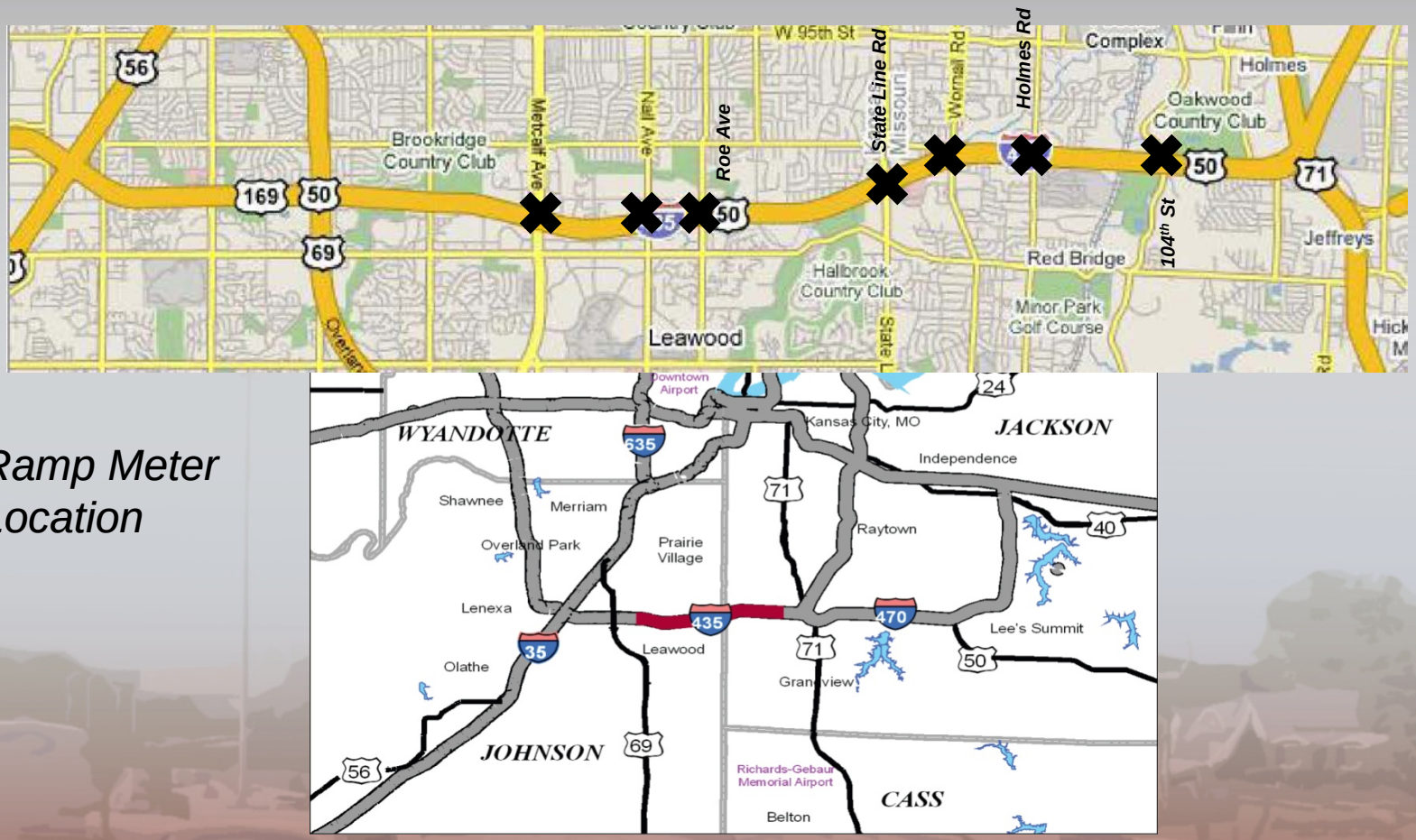
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Ramp Metering

- The meters will add to KC Scout's existing transportation management system, which is designed to:
  - Lessen traffic jams by improving rush hour speeds.
  - Increase safety by decreasing the number of rush hour accidents.
  - Improve emergency response and accident clearance times.



Project Map

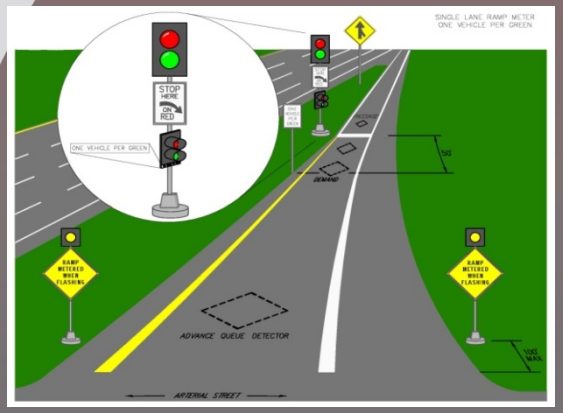


✖ *Ramp Meter Location*

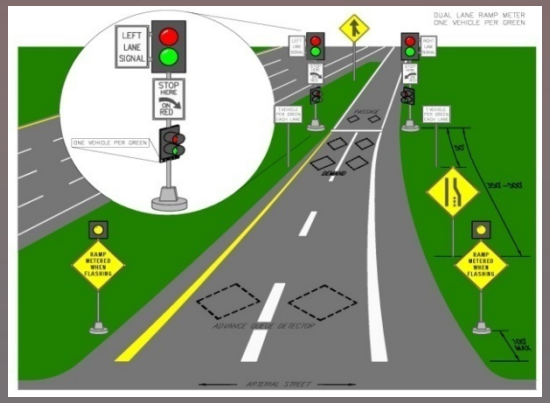
MAXIMIZING THE FLOW

How It Works

- Depending on the location, ramp meters will have one or two lanes. Both scenarios permit one vehicle to proceed per green light per lane.

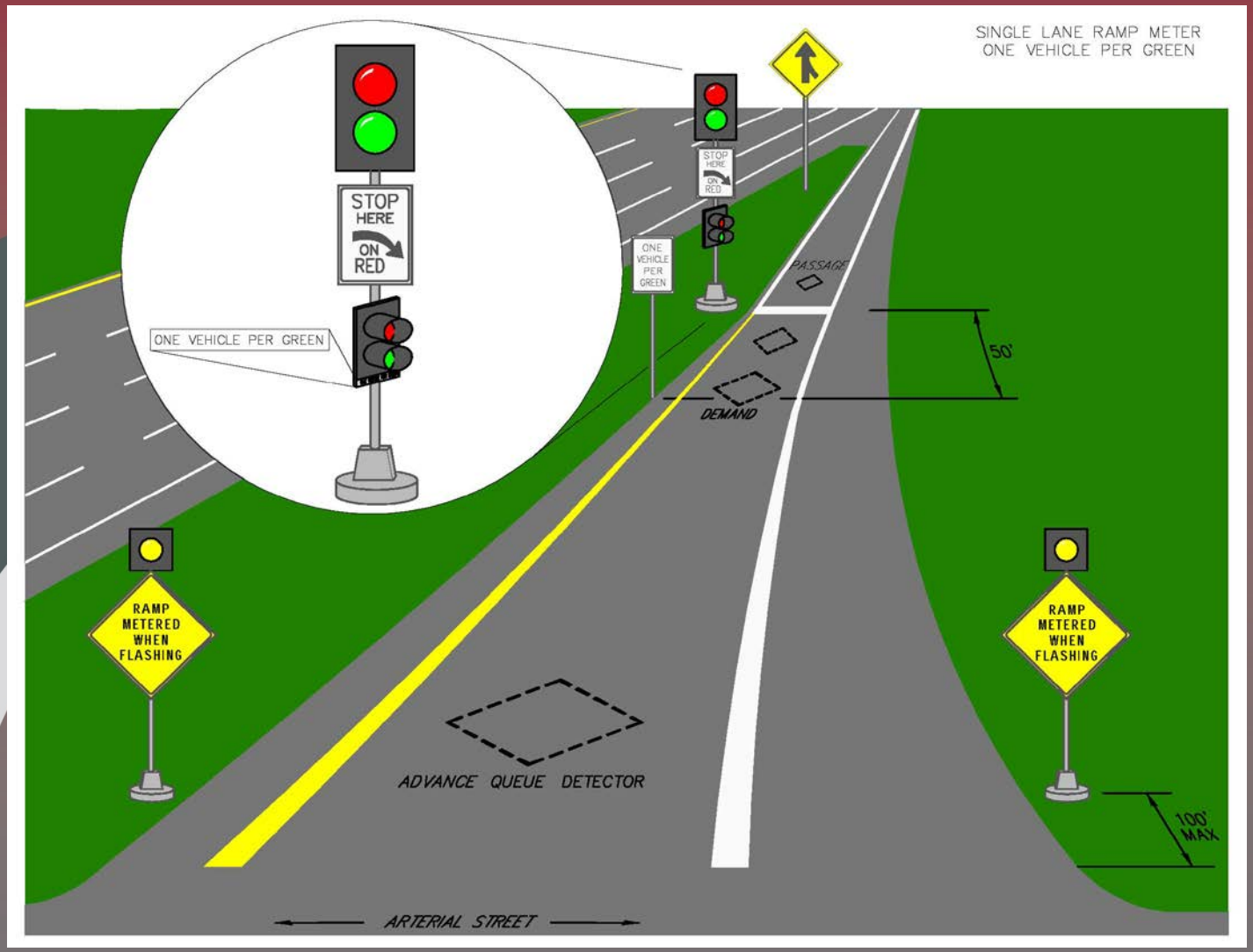


Single Lane, One Vehicle per Green



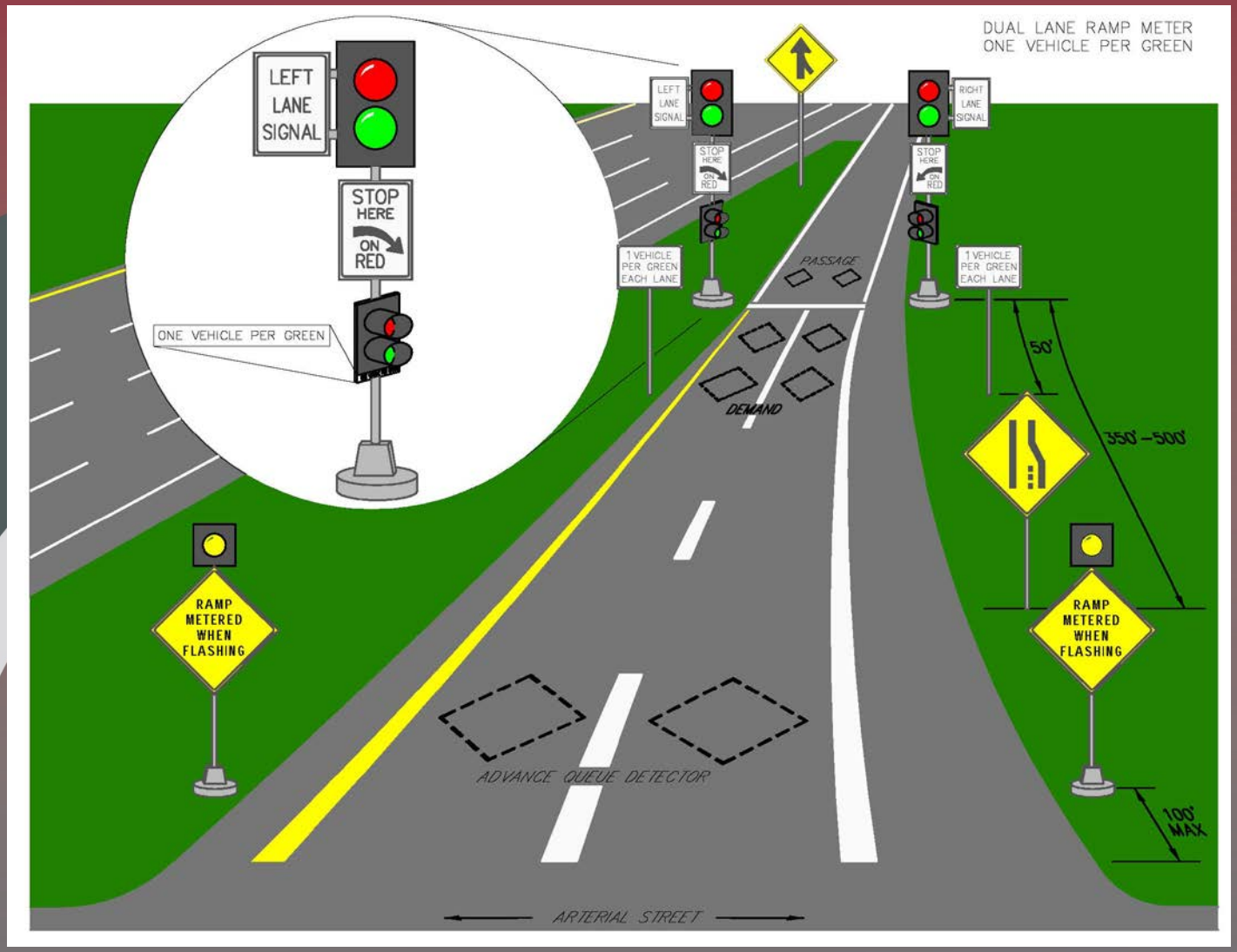
Dual Lane, One Vehicle per Green

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Single Lane Ramp Meter, One Vehicle per green light. Westbound Wornall Road and eastbound 104th Street are possible locations.

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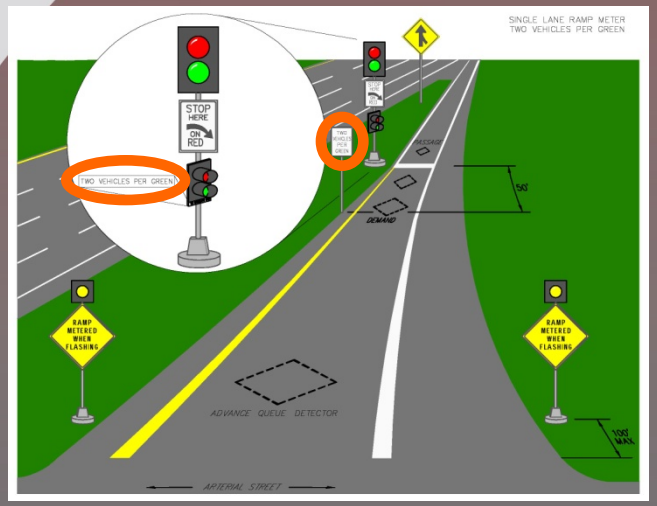


Dual-Lane Ramp Meter, alternating One Vehicle per green light per lane. Westbound State Line Road is a potential location.

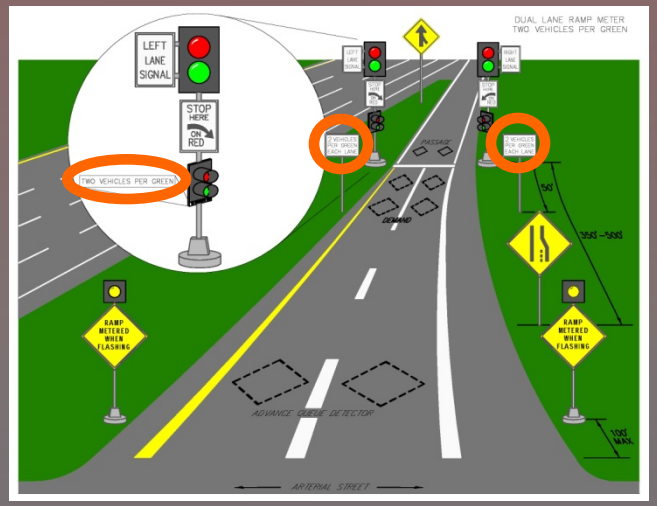
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How It Works

- Some locations will allow <u>two</u> vehicles per green light. **Signs** will indicate the number of cars permitted per green.



Single-Lane, Two Vehicles per Green



Dual-Lane, Two Vehicles per Green

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Ramp Metering Approach

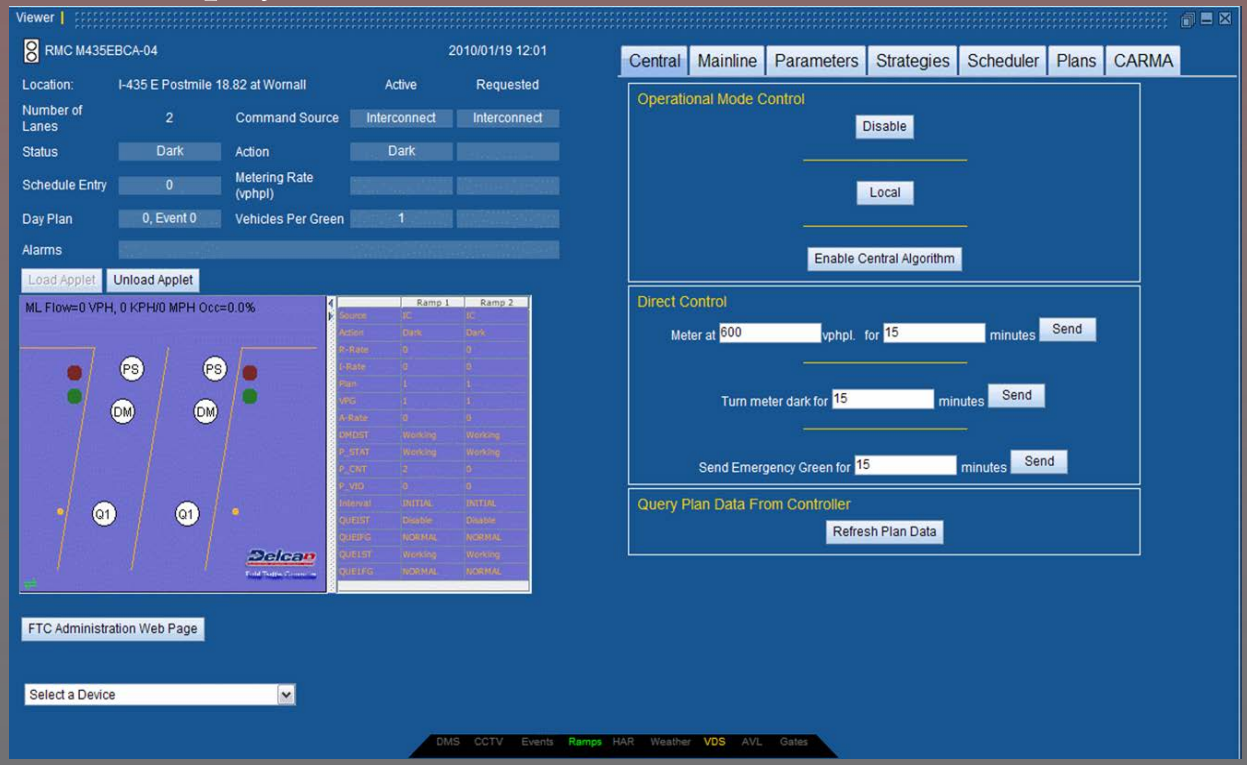
"New Locations"

Performance Studies

Adaptive Approach (CARMA)

I-35 & SW Trafficway

"Potential I-35 Deployment in 2015"



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Other New Technologies

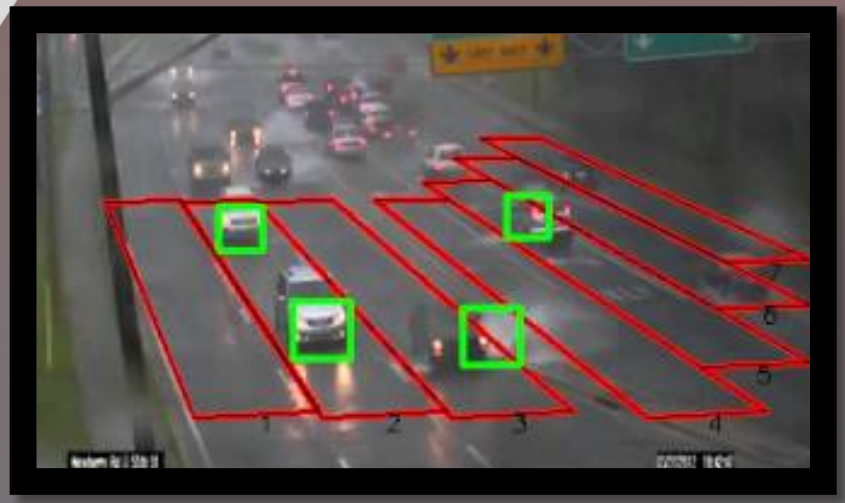
Weather Integration

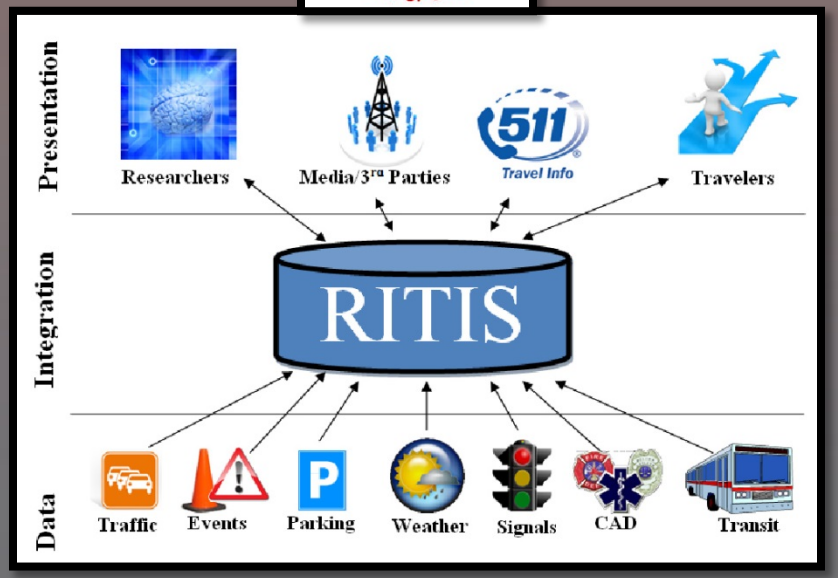
Automated Incident Detection (TrafficVision)

Computer Aided Dispatch Integration

Private Public Partnerships (DATA)

TrafficVision





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Useful Reports

Scout Monthly and Yearly Report

Congestion Report

Benefit/Cost Report

ITS Benefits Report

Ramp Metering Evaluation Report

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The Kansas City S

Kansas City Scout is Kansas City's bistate traffic manager
tem. It is a result of partnership between the Kansas Dep
of Transportation (KDOT), Missouri Department of Transp
(MoDOT), Mid-America Regional Council, and the
Highway Administration (FHWA). These partners designe
to lessen traffic jams by improving rush-hour speeds, to i
safety by decreasing the number of rush-hour crashes,
improve emergency response to traffic situations.

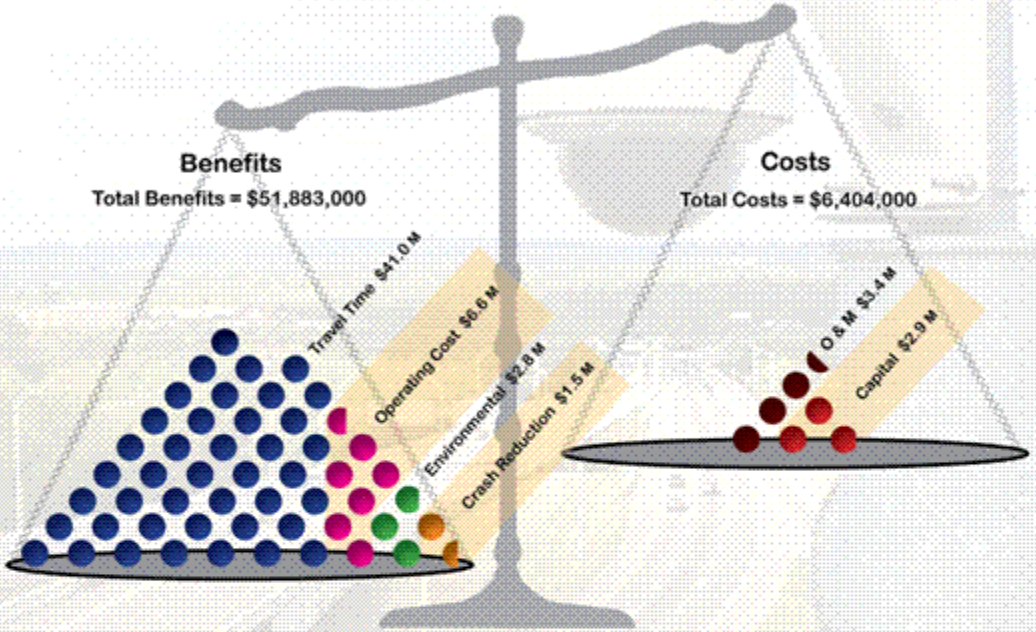
The Impact of the KC Scout

As Kansas City's driving population grows, traffic issues
congestion, crashes, and air pollution become even mar
lent. Inadequate funding and, in some cases, inadequa
to widen roadways have made new construction and lar
tions an increasingly difficult solution. Still, the need fo
and efficient system for freeway travelers continues.
states, technology and traffic management have beco
answer to these problems. For Kansas City, the answer is

Launched in 2004, Scout manages traffic on more than 1
of continuous freeways in the greater Kansas City metr
area. Scout uses cameras to monitor the highways from i
management center in Lee's Summit. The system relies on
to gauge traffic flow and to generate real-time accurat
times, and uses large electronic message boards to send
traffic notices to drivers along the freeways. Scout also u
Highway Advisory Radio system on 1690 AM that mot
Missouri can tune to in the event of a freeway incident.
bistate incident management program uses Motorist As
Emergency Response patrols to help clear roadways, redu
gestion, and aid injured or stranded travelers. Ad
congestion management tools include a pilot corridor
metering and the interstate to arterial program partners
MARC's Operation GreenLight (marc.org). There also is
of recent innovative technological enhancements such as
redesigned interactive web site (kcscout.net), "My KC
personalized web alerts, regional video distributi
jam cell cams.

Summary of Kansas City SCOUT Annual Program Benefits vs. Costs

Benefit to Cost Ratio = 8.1 → For every $1 spent on the KC SCOUT program, transportation system users and system management agencies see approximately $8 in benefits.



KEY

Each circle represents $1M in value.

Benefits

- **Travel Time** — Time saved by drivers due to reduced congestion
- **Operating Cost** — Fuel savings
- **Crash Reduction** — Elevated safety levels reduce secondary crashes
- **Environmental** — Reductions in carbon emissions

Costs

- **Annual O & M** — Costs to operate and maintain
- **Annualized Capital** — Includes initial capital investment and replacement costs

KANSAS CITY'S
TRAFFIC MANAGEMENT
SYSTEM

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...ncies. These
...gs in fuel and other
...age Signs are essential in
...the information that is disseminated
...nagement has become a regional
...tion of incidents lasting over 90 minutes,
...ne. Motorist Assist plays a key role in the suc
...llectively, these three major components of the KC
...costs to build and maintain the program.

...gram Benefits vs. Costs

...gram, transportation system users
...pproximately $8 in benefits.



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...apital Includes initial capital investment and replacement costs

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- Questions?

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