• Freeway and Arterial System of Transportation (FAST), under Regional Transportation Commission (RTC) of So. Nevada
• Transit under RTC
• Freeway Operation in Southern NV for NDOT
• Maintain and Operate ITS devices for NDOT
• TMC with Highway Patrol

Brief Introduction of FAST
• Signal coordination in Las Vegas Metropolitan Area (City of Las Vegas, North Las Vegas, Henderson, Clark County, Boulder City and Mesquite)

FAST provides Multi Agency Signal Coordination
Las Vegas Urban Region
AGENCY FACTOIDS
(SYSTEM/COMM.)

• Number of signalized intersections
  – >1000 connected by fiber
  – 0 connected by radio
  – >200 connected by twisted pair
  – 0 connected by cellular (Under testing)
  – <100 not connected to communication
• 1 engineer and 7 technicians devoted to signals
• Naztec is Central System Vendor
• 240 of signals collecting high resolution data
• 1 Year of experience with high resolution data
AGENCY FACTOIDS (DETECTION)

- Length of stop bar detectors on minor movement (One 6’x6’ for through lane, Four 6’x6’ for left turn lane)
- Use of dilemma zone or other detection on arterial main line (Yes)
- Detection Technologies used (Video, Loop, Radar)
- “Lane by Lane” or “Lane Group Detection” (Both)
- Link to detection standard number scheme (Yes)
- Detection Testing and Maintenance Practices (Yes)
- 100% of Signals with Emergency Vehicle Preemption
- 100% of Signals with RR Preemption
• Stop Bar Detection by Phase Direction
• Minimal Advance Detection
• Detection (Loops, Video, Radar) varies by Agency
• Older traffic signal cabinets (TS-1)

Detection Scheme Various by Agency
Case Study (Continuous Max-outs due to Ped Button Failure)
• MLK programmed SB through is 59 seconds
• Gain time from other phases
• 85 percentile split time is 80 secs
• 100% force off
Enhancements (Add Phase Direction)
Enhancements (Add Phase Direction)
Enhancements (Modified the hourly volume)
Ped Actuation Plot on New Year’s Day

Enhancements (Ped actuation plot)
Enhancement (Time Space Diagram)
- Purdue Coordination Diagram shows too many dots.
- Arrival on Green are higher than actual
- SP_PDCDetectorsBySignalAndDirection missing a criteria "Has_PCD = 1"
• Lane by lane adv zones will generate duplicate graphs.
• Lane group OK.

Customization for Vegas Detection Scheme
• Over 80% controllers no Purdue Logger
• Translate split history data in ATMS.Now to Pseudo-Purdue Log
• Siemens i2 NextPhase
• Signal phase data and event data
• Controller FTP goes down randomly, requiring restarting controller in the field. Agency liability issue.
• Preemption events are not logged.
• Add Preemption Event Report
• Add Ped Actuation Report
• Filter watchdog problem detection list and email
• Report query criteria can be customized

Future Enhancements
Future of SPM for FAST

- Signal Timing Strategies:
  - Flashing Yellow Arrow (FYA) Time of Day (TOD)
  - When to go into/out off Coordination
  - Dual Left PERMISSIVE during Non-Peak Hours
  - Others??
Future of SPM for FAST

Update ITS and Traffic Signal Design Standards:

- Count Data from Loops, Radar, Video
- Speed Data from Radar, Bluetooth
- Travel Time Data from Bluetooth
- Travel Signal Cabinets (TS Type 2)
- Others??

Future of SPM for FAST
BE THE FIRST TO KNOW!

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