



QuicTrac Adaptive

Presented by
Lakshmi Kurada
ITS Project Manager
McCain, Inc.

What is it?

- Integral part of QuicNet™ software
- Function of both the local controller and central system
- Leverages existing hardware and communications



Supported Equipment

- Works with 170 and 2070 controllers
- ATC support in development
- No additional hardware in the cabinet



Detector Requirements

- How many?
 - 1 system detector / lane / link
- What type?
 - Video, microwave / radar, loops

Detection Placement

- Works well with both upstream & downstream detectors
- Accurate volume & occupancies are critical
- Ideal location - where free flow is maximized
- Video, microwave or radar - over lane installations are more accurate

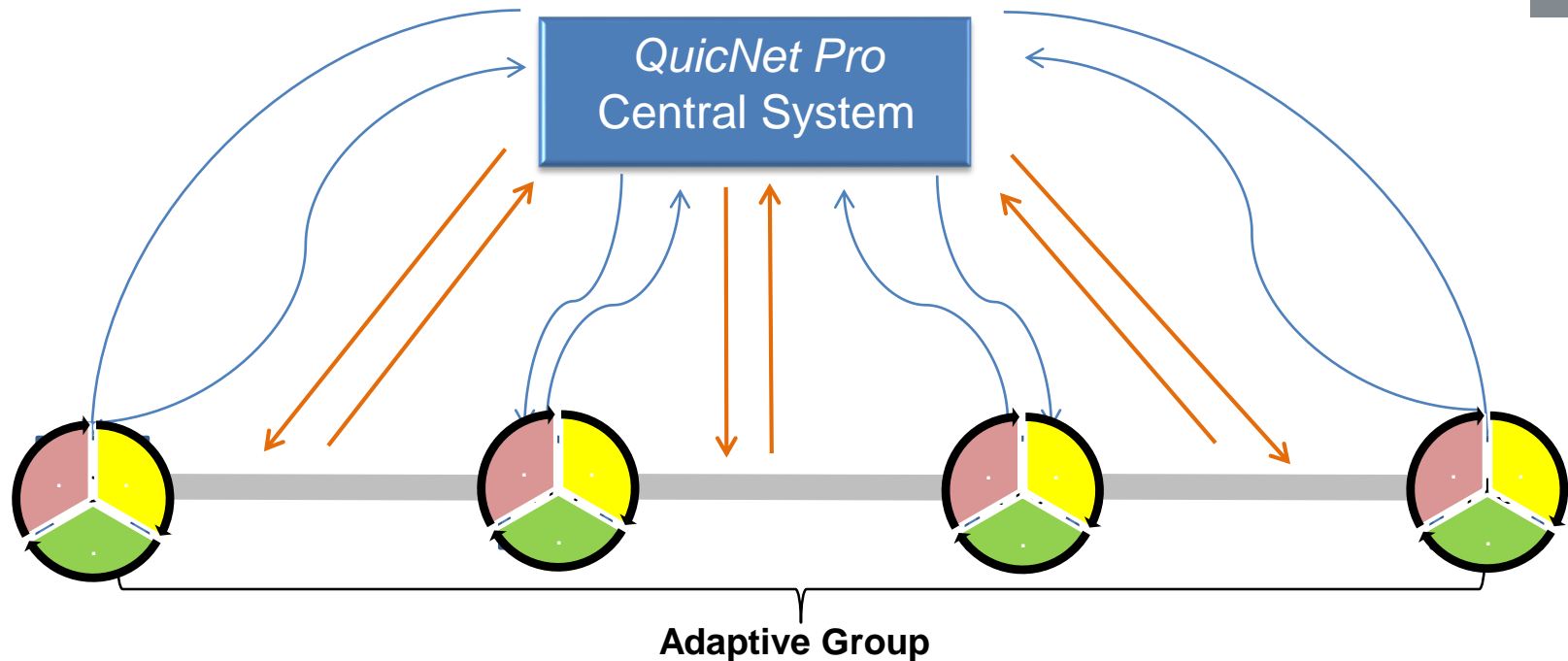
Communication Requirements

Communication requirements

- 1200 Baud acceptable, 9600 is desirable
- Serial or Ethernet protocols supported
- Communication faults?



Simplified Review of Operations



1. Local controller cycle length requests are calculated
2. Cycle length requests are uploaded to central along with system detector data.
3. New cycle length is calculated and passed down to the adaptive group / along with new offsets
4. Split adjustments are made by each controller before the new local cycle begins

City of Temecula Traffic Adaptive System

Presented By
Art Pina/Traffic Division



City Overview

City of Temecula

- 130 Traffic Signals (within city)
- 4 TOD Coordinated Arterials
- 25 CCTV Cameras
- Copper & Fiber Communications
- Detection
 - Standard loop
 - Stop bar and advanced loops
 - Advanced loops tied together
- Agency Staff
 - 2 Engineers
 - 2 Traffic signal technicians

State-of-the-art TOC



Project Objectives

- › **Generate new timing plans**
- › **Reduce travel times & number of stops**
- › **Increase average speeds**
- › **Provide enhanced access to freeway**
- › **Establish coordination with Caltrans ramp signals**



Study Area



Project scope

- 83 intersections
- 7 Caltrans signals

Major arterials

- 7 total
- East/West
- North/South



Project Implementation

Data collection

- Peak-hour turning movement counts
- Corridor travel times

Signal timing analysis

- Traffic signal timing optimization
- Traffic adaptive program

Equipment inventory

- Program module
- Vehicle detectors
- Communication

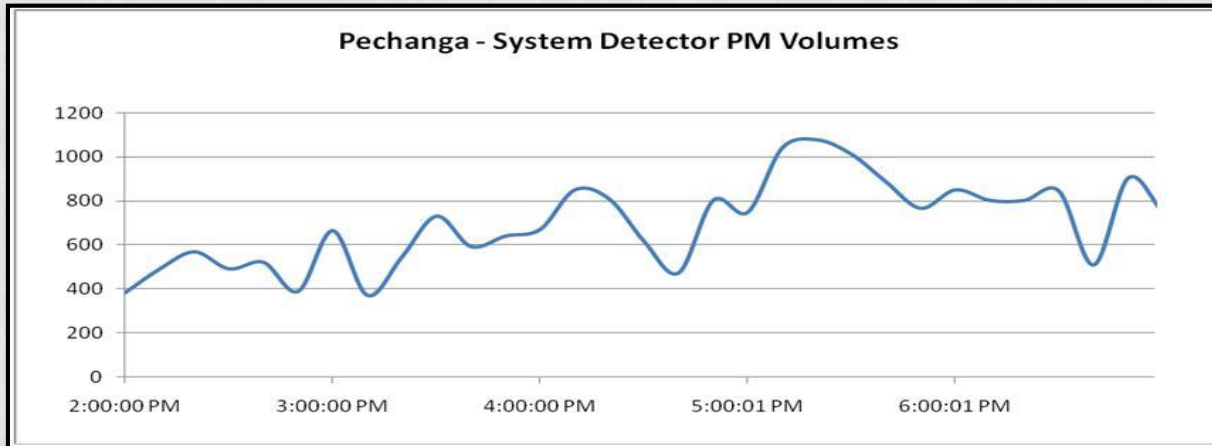
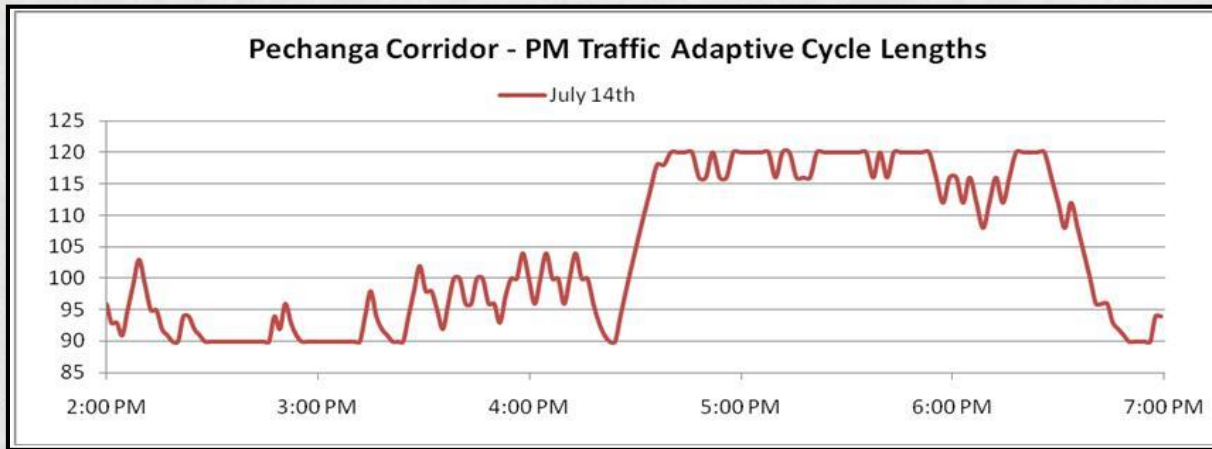


System Results

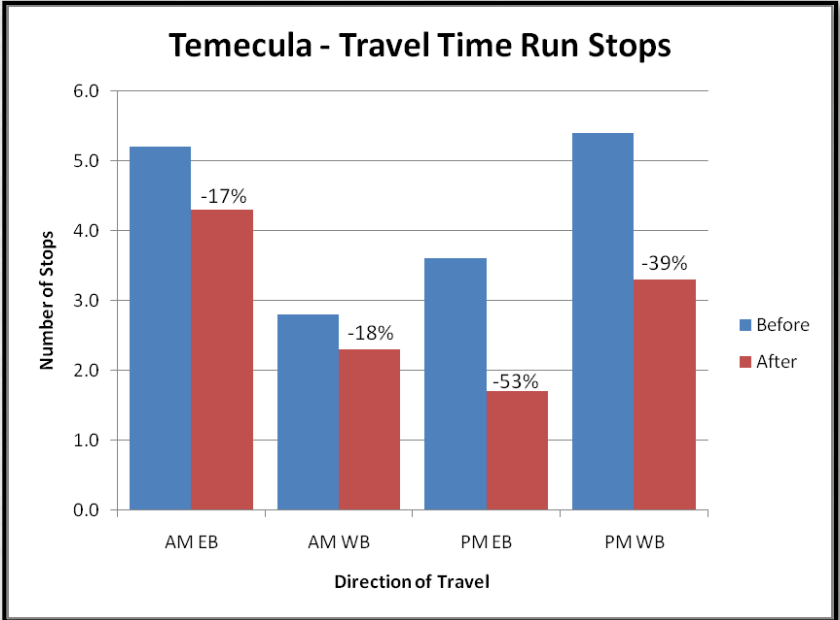
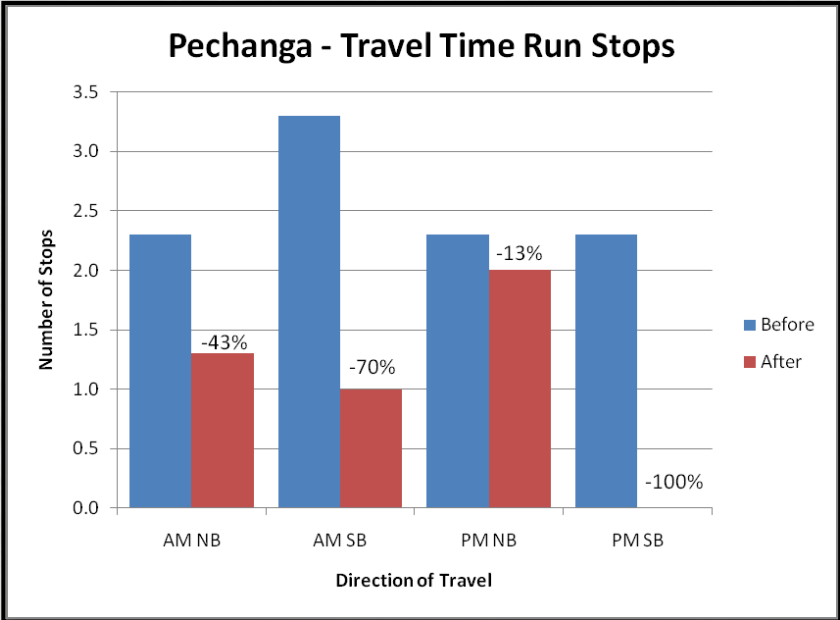
- › **14% reduction in travel time**
- › **17% improvement in speed**
- › **29% reduction in number of stops during the AM and PM peak periods**
- › **LOS operations improved at 81% of the intersections**
- › **\$437,000 annual fuel savings**



System Results



System Results



Benefit-Cost Ratio

First year

- Travel time savings: \$2.6 million
- Fuel consumption saving: \$437k

Lifetime

- Travel time savings: \$20 million
- Fuel consumption saving: \$3.3 million
- 30:1 lifetime benefit-to-cost ratio



Thank You

Art Pina

City of Temecula

Art.Pina@cityoftemecula.org

(951) 506-5161

