Regional Highway Inventory Update

Southern California Association of Governments (SCAG)

Steve Taylor, P.E, PTOE
Project Manager
Carter & Burgess, Inc.

October 24, 2007

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Gather Inventory Data and Build the Highway Inventory

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Objective

- Build the highway inventory ArcGIS database through in-field observations

Innovative Applications

- Map Roadway Segments Simultaneously
- Methodology used to Geocode and Develop Linear Reference System (LRS) for:
  - Phoenix, AZ (exported to TransCAD)
  - Nashville, TN (exported to TransCAD)
  - Tucson, AZ (exported to TransCAD)
  - Oakland, CA
  - Savannah, GA
  - McAllen, TX
  - Corpus Christi, TX
  - Harlingen, TX
  - Denver, CO
- Geo-Referenced Digital Video

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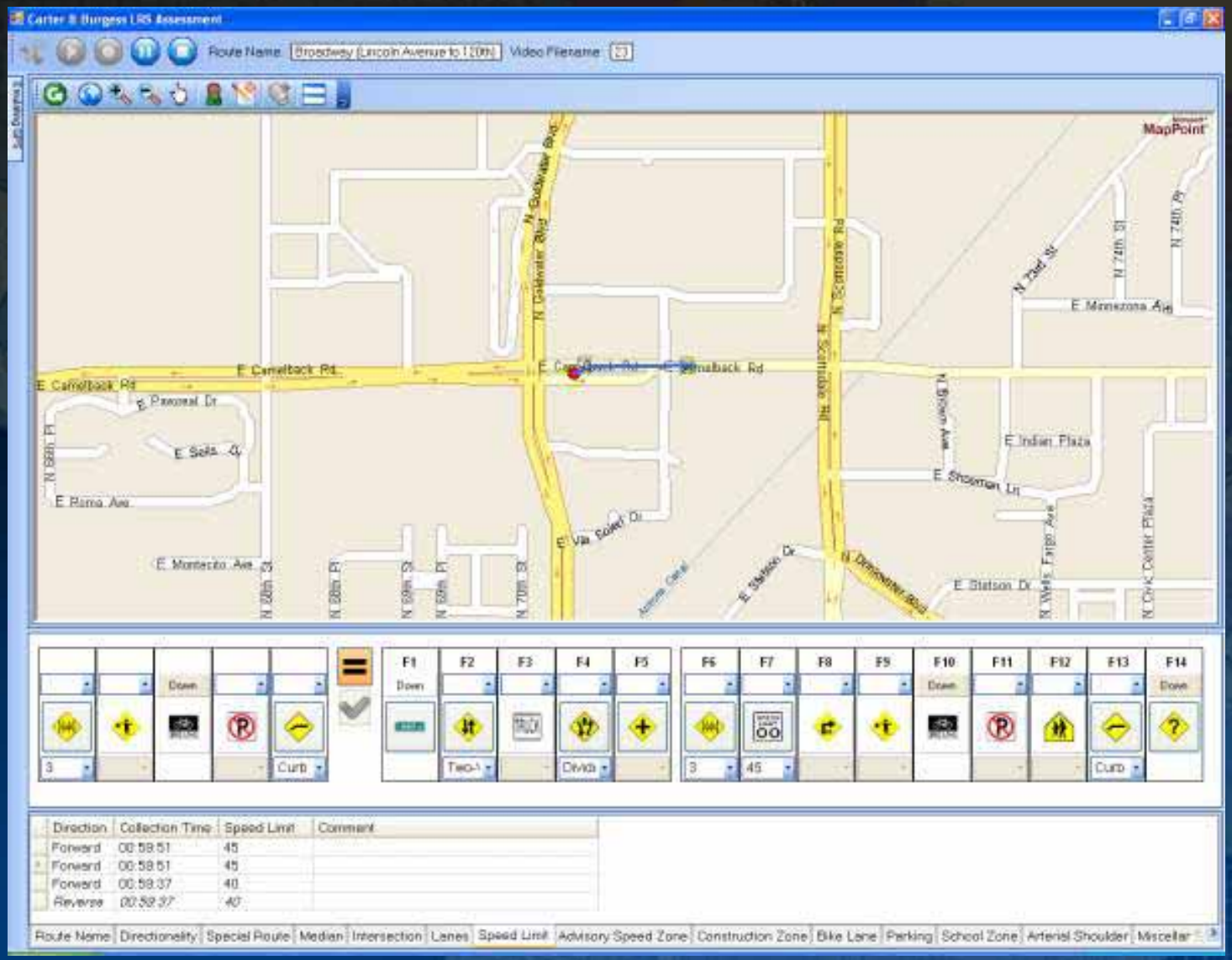
Innovative Applications



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Key Map

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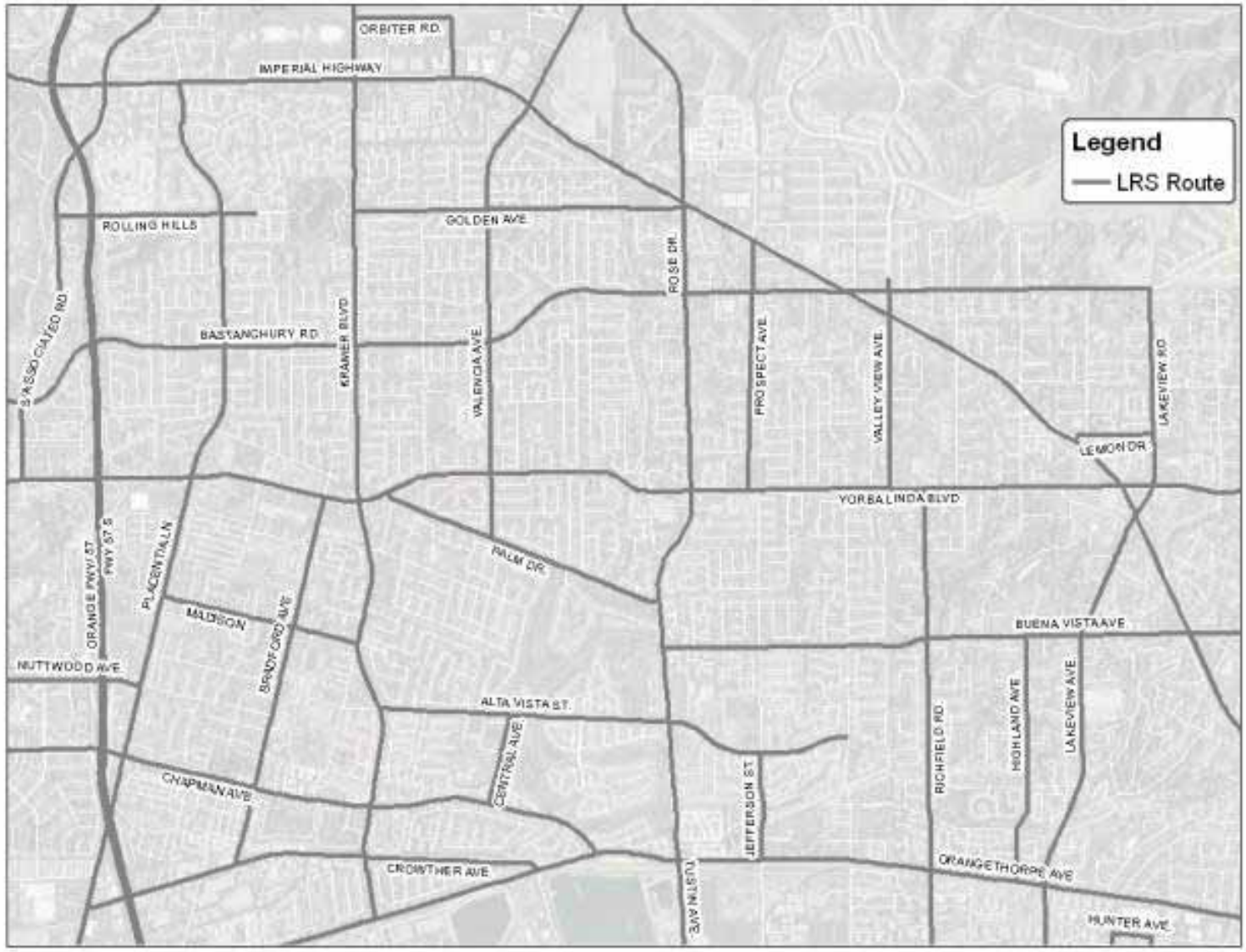
Routes



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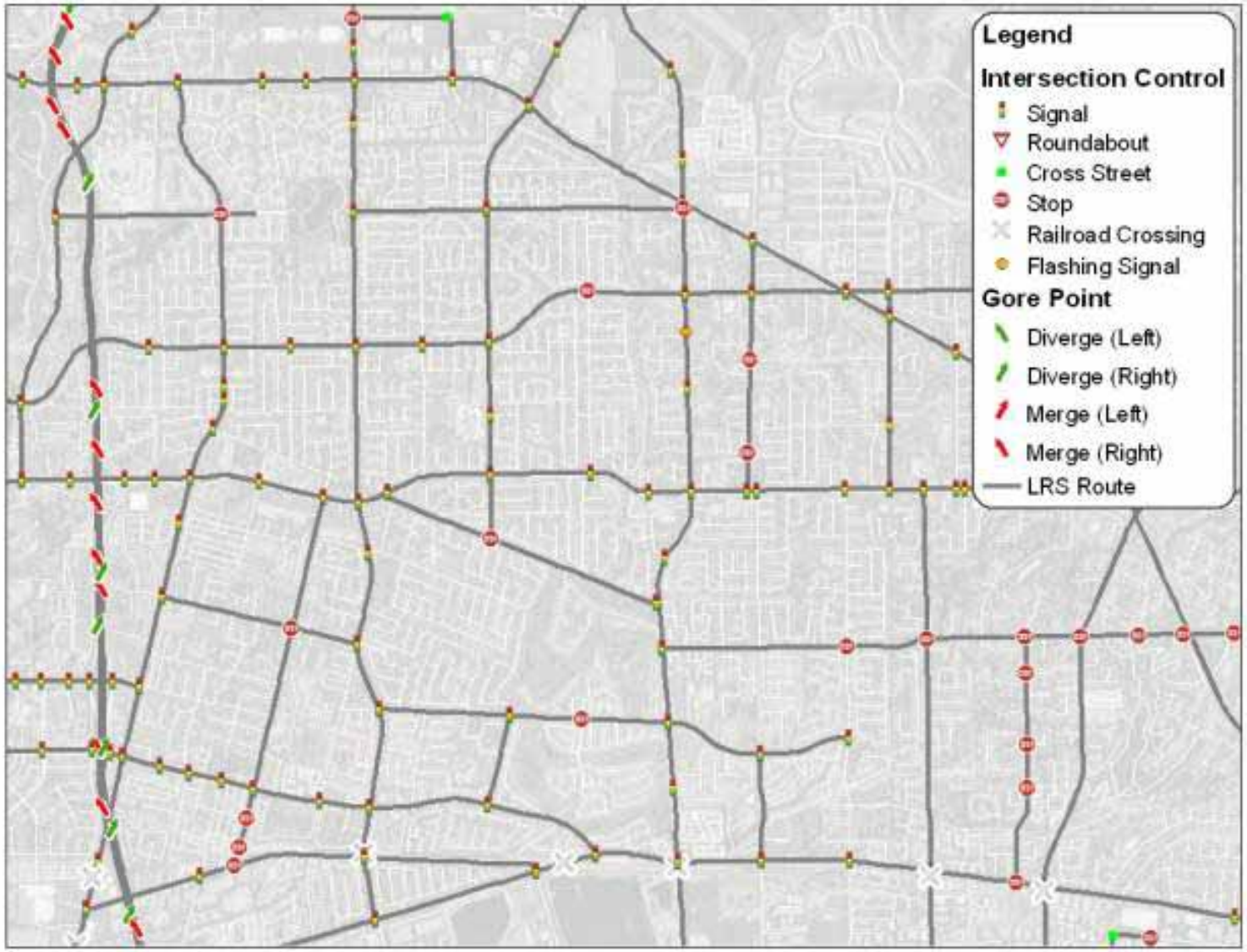
Controlled Intersections and Ramp Gores



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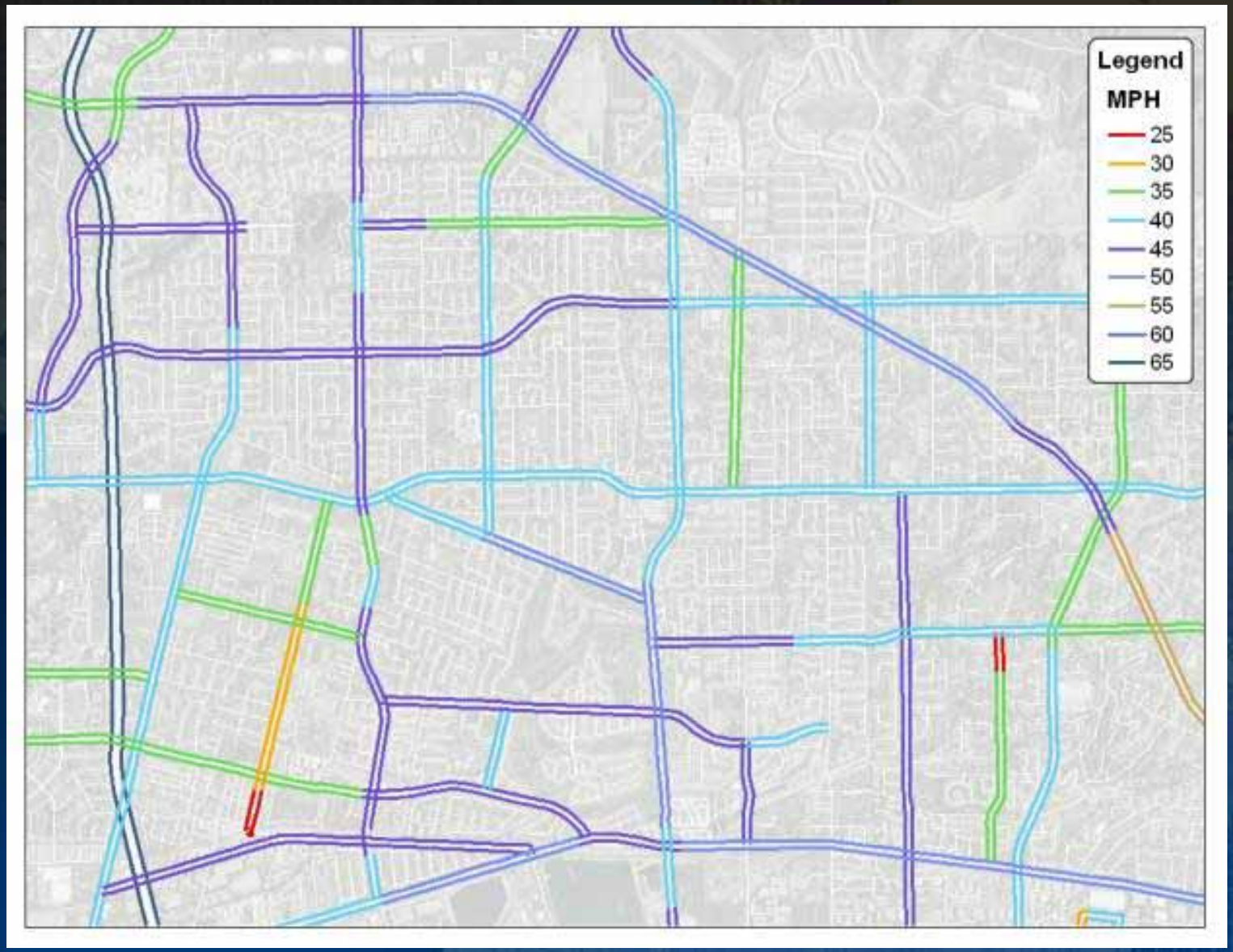
Speed Limits



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Lanes

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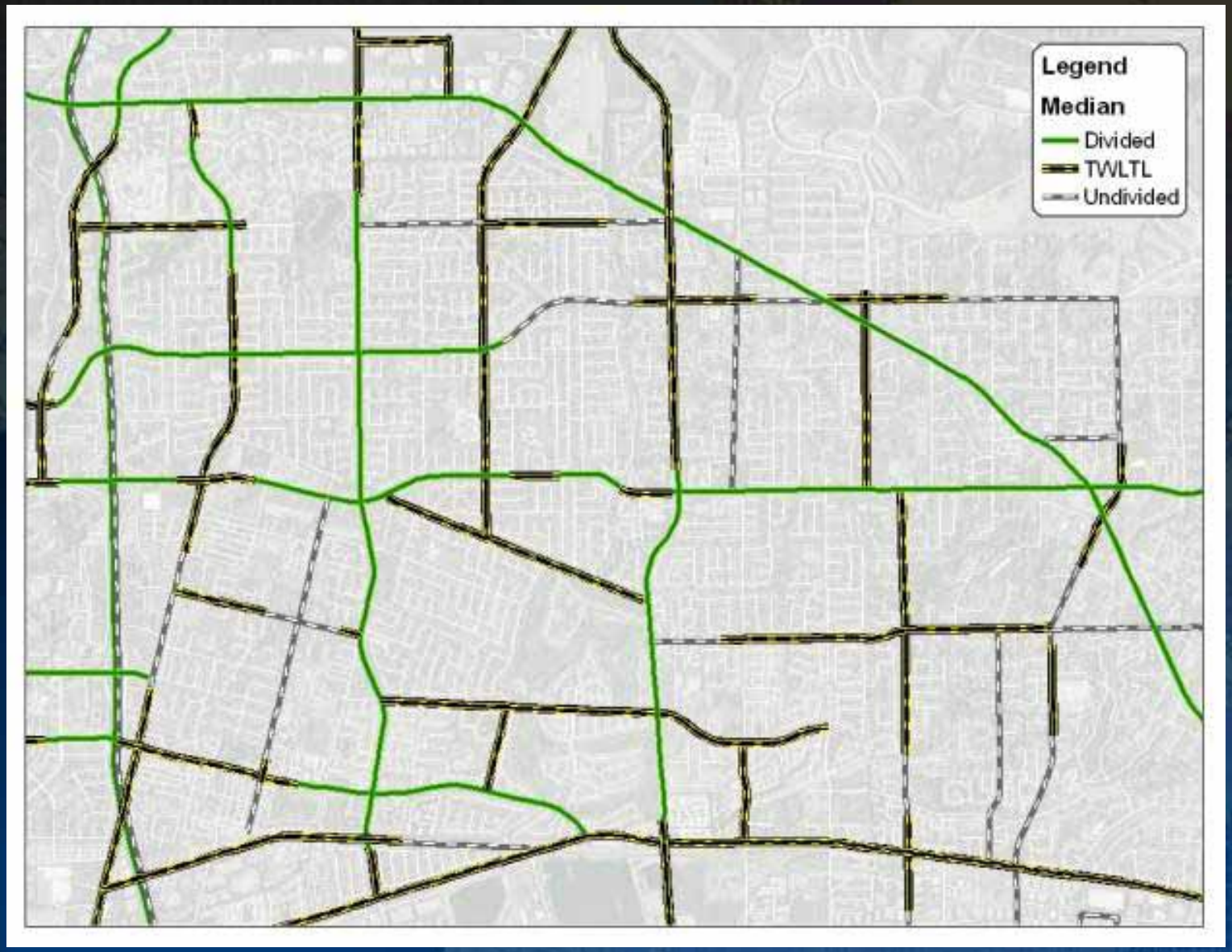
Median Type



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School Zones

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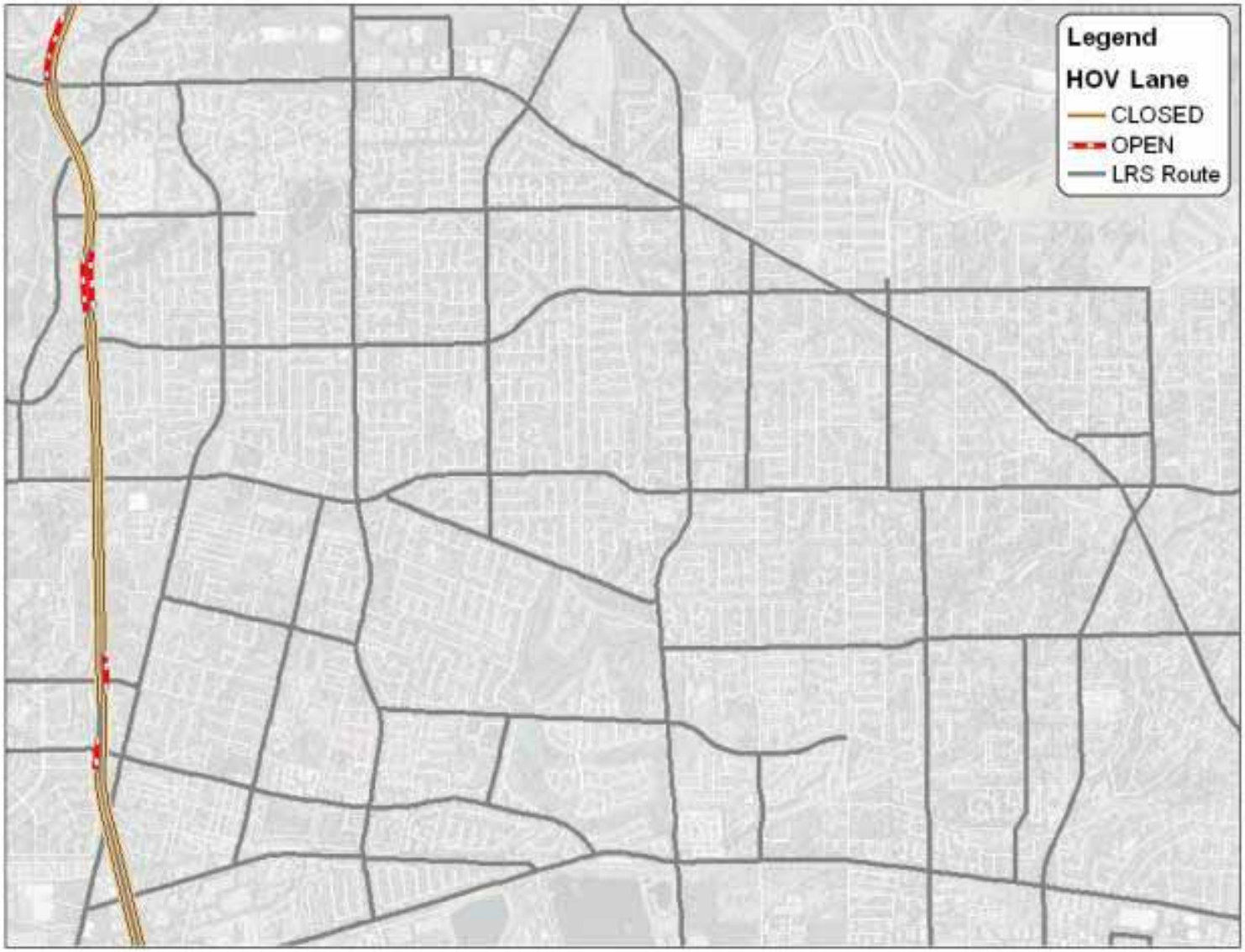
HOV Lanes & Access



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Parking

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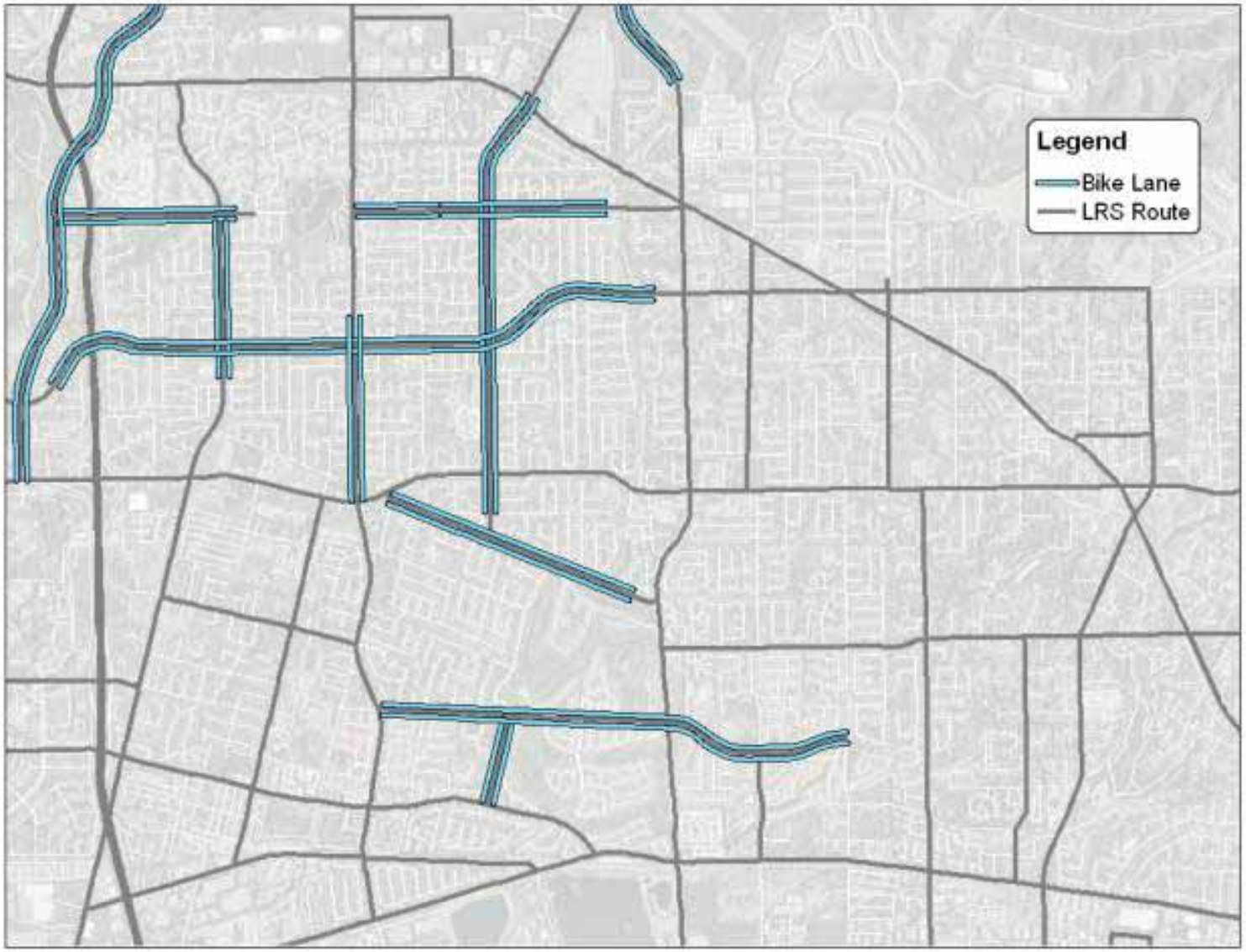
Bike Lane



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Advisory Speed

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Model Speed / Capacity Methodology and Calculation

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Objectives

- Develop a new methodology to calculate network input speeds and capacities that are more sensitive to intersection delay
- Coordination with Arterial Speed Study
  - Develop stratification of categories
    - Functional class
    - Area type
    - Speed limit
    - Number of lanes
    - Intersection geometry
    - Intersection control
    - Presence of Signal coordination
    - g/C – effective green time / signal cycle length
    - Others….

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HCM Link Capacities

- Capacity = s (g/C)
  - s – Saturation Flow Rate (VPH of green)
  - g/C – effective green to signal cycle length ratio
- $s = s_0 n_{fw} f_{HV} f_g f_p f_{bb} f_a f_{LU} f_{RT} f_{LT}$
  - S_0 – ideal saturation flow rate
  - n – number of lanes
  - f_w – lane width
  - f_{HV} – heavy vehicles
  - f_g – approach grade
  - f_p – parking characteristics
  - f_{bb} – block effect of buses
  - f_a – area type
  - f_{LU} – lane utilization
  - f_{RT} – right turns
  - f_{LT} – left turns

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