

July 26, 2007

# US 87 ARTERIAL CORRIDOR STUDY

North School Street to Wal-Mart Driveway  
in Boerne, Texas



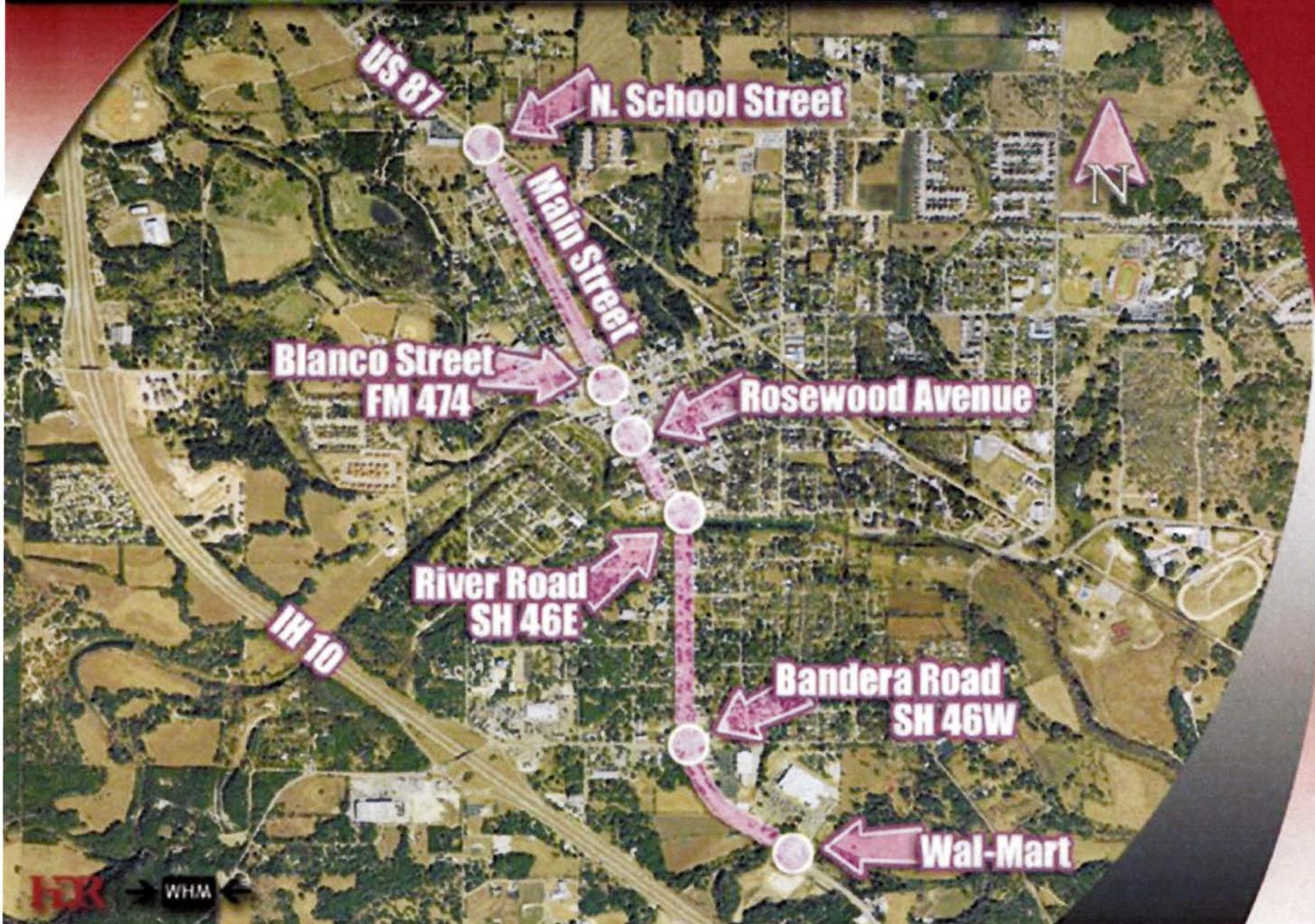
HDR



→ WHM ←

# Project Location

One Company | Many Solutions



HDR → WHM ←

# Project Scope

- Data Collection
- Traffic Forecast
- Parking Analysis
- Crash Evaluation
- Corridor Analysis for Existing/Future Conditions
- Network Optimization/Progression



### LEGEND



SIGNALIZED



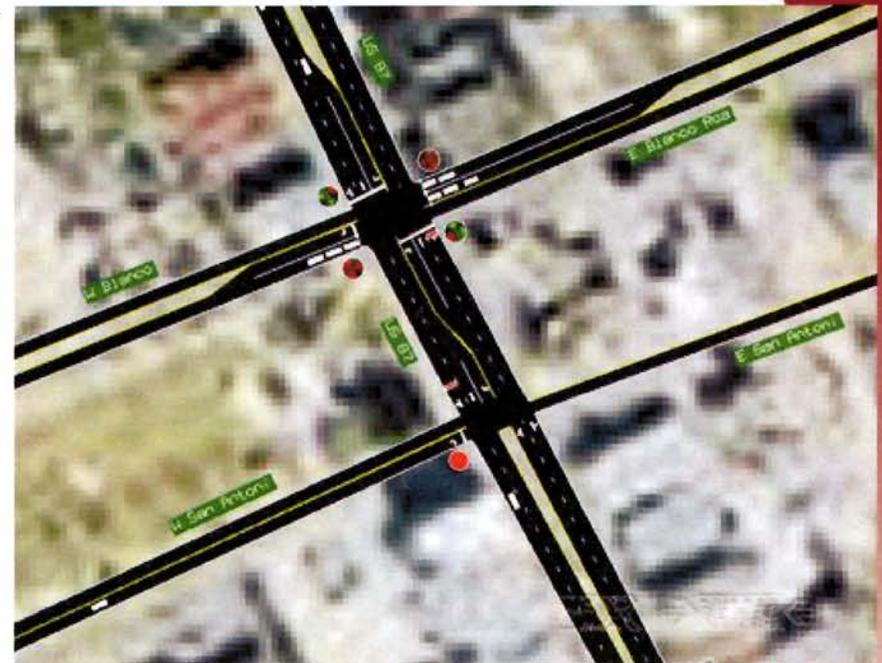
UNSIGNALIZED

XXX 2006 ADT



# Analysis

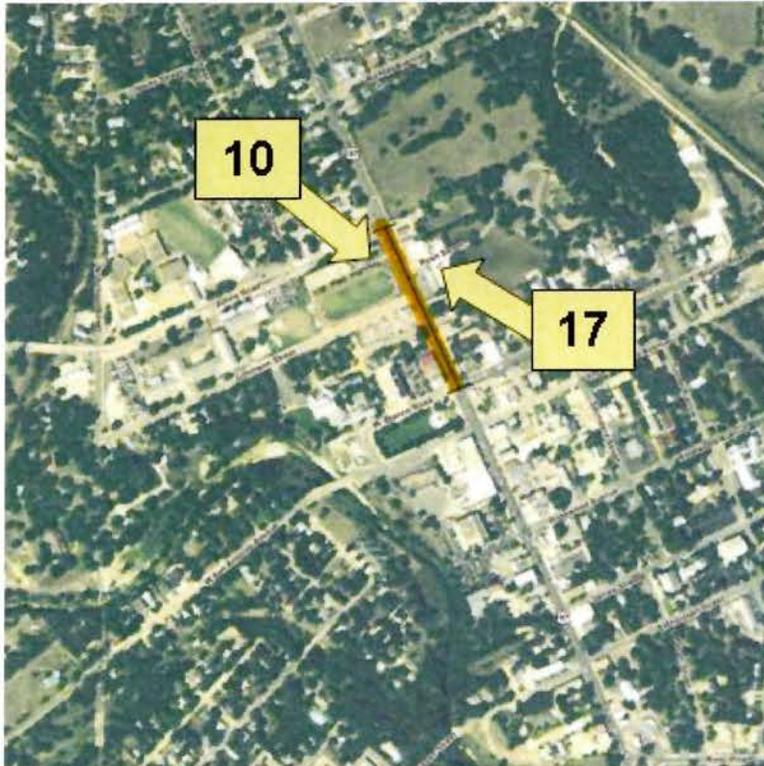
- Existing year analysis (2006)
- Forecasted design year traffic (2011)
- Developed no-build 2011 traffic models
- Defined alternative solutions
- Considered parking impacts
- Analyzed Crash Data
- Developed traffic models
- Summarized results
- Presented results to City, TxDOT, and Public





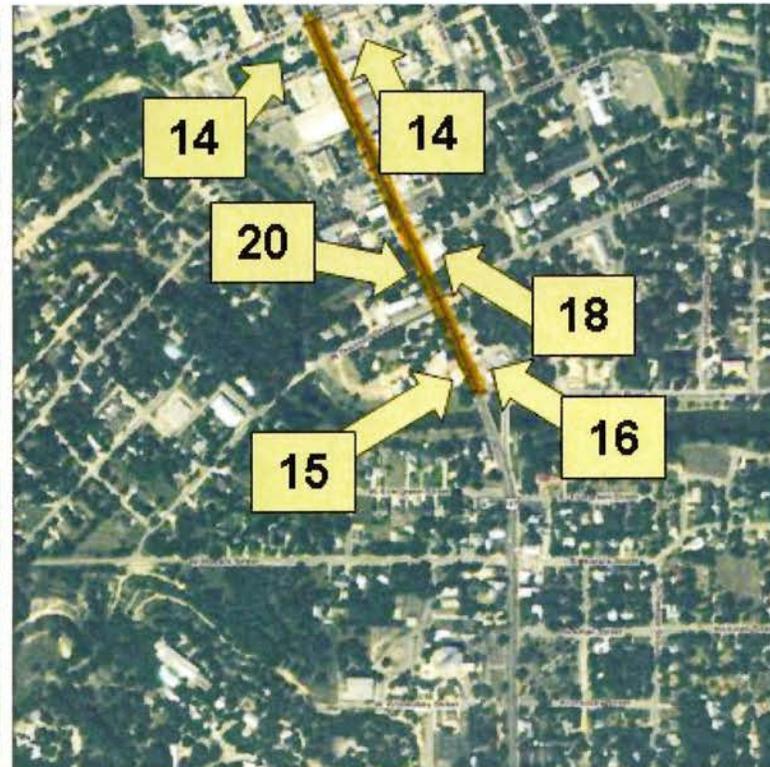
# Parking Analysis

Johns Road  
to West Blanco Road



**27** Existing Parking Spaces

West Blanco Road  
to River Road

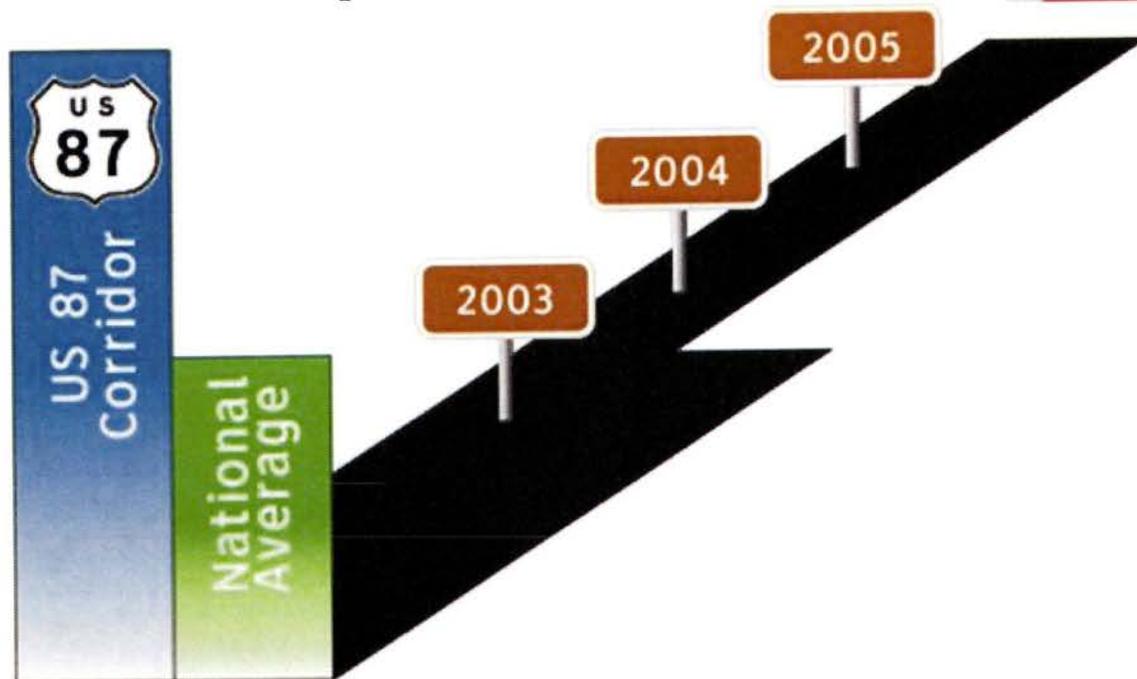


**97** Existing Parking Spaces



## US 87 Crash History

- Total Crashes within Study Area
  - 2003 – 39 crashes
  - 2004 – 47 crashes
  - 2005 – 67 crashes
- Approximately 70% increase in 3 years
- Crash Types
  - Right Angle
  - Rear End
  - Miscellaneous





# Crash Intensity Map

North School Street to West Blanco Road



West Blanco Road to River Road



River Road to Wal-Mart Driveway



## Legend

Rear End Collisions

Right Angled Collisions



Miscellaneous Collisions

Accident Intensity

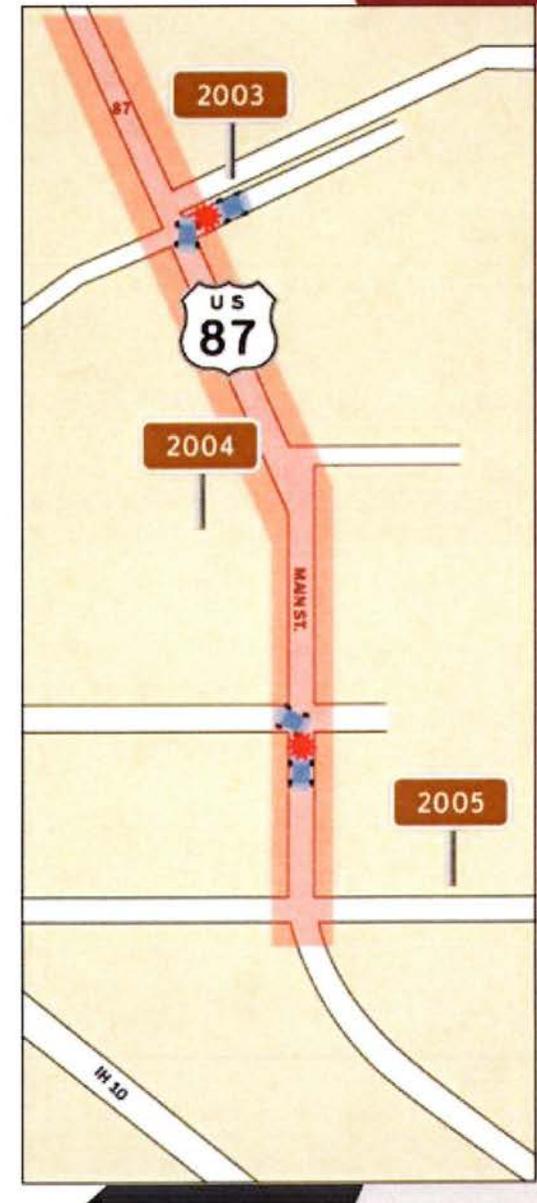
⊗ 1-5      ⊗ 11-15

⊗ 6-10     ⊗ 16-20



## US 87 Crash History

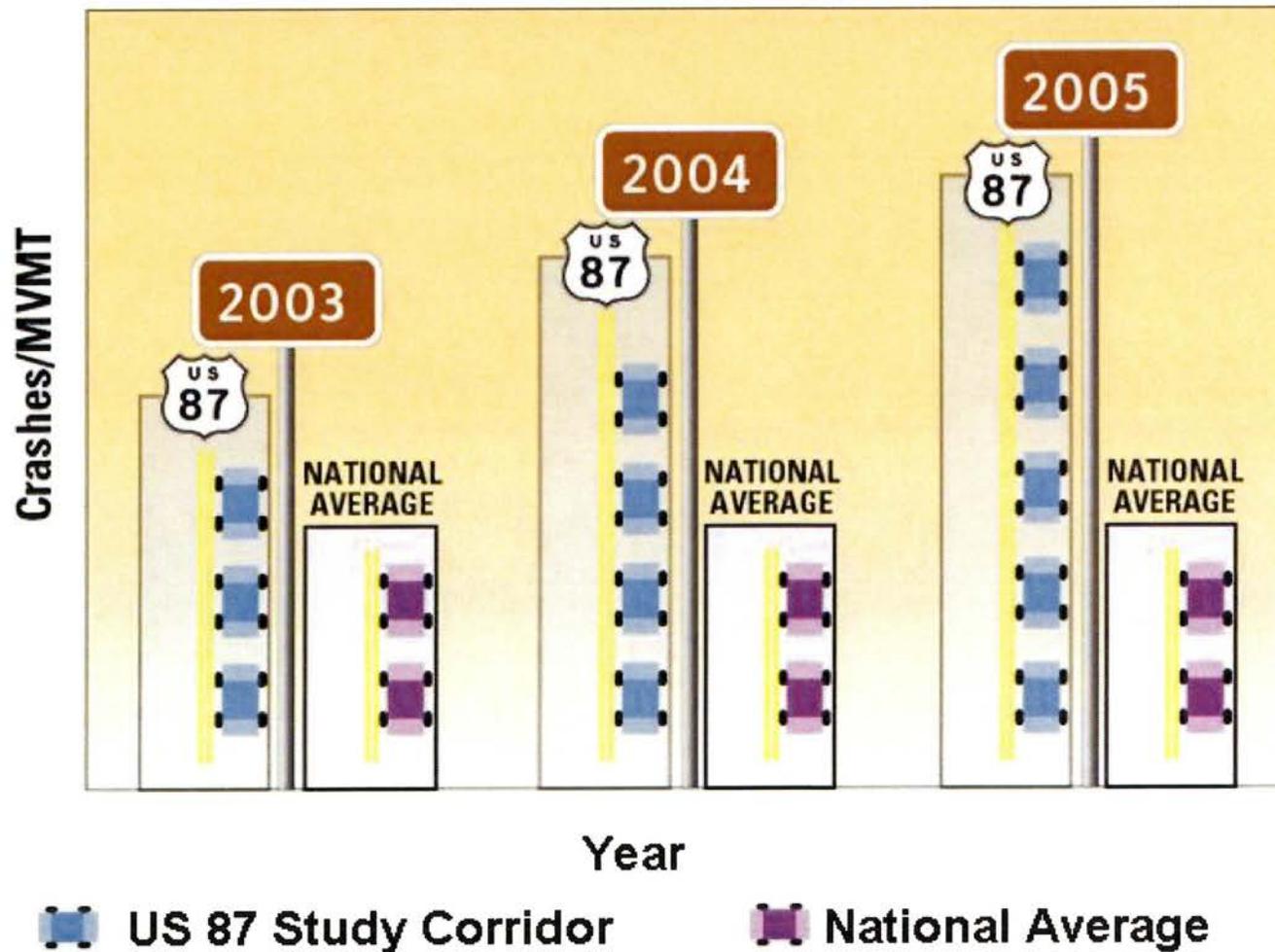
- **Crash rates**
  - Evaluated for years 2003, 2004, and 2005
  - US 87 = 4.51 crashes/MVMT
  - National Average = 2.12 crashes/MVMT\*
- **Crashes due to:**
  - High number of access points
  - Lack of refuge area for turning vehicles
  - Sight distance issues



\*Source: NHTSA



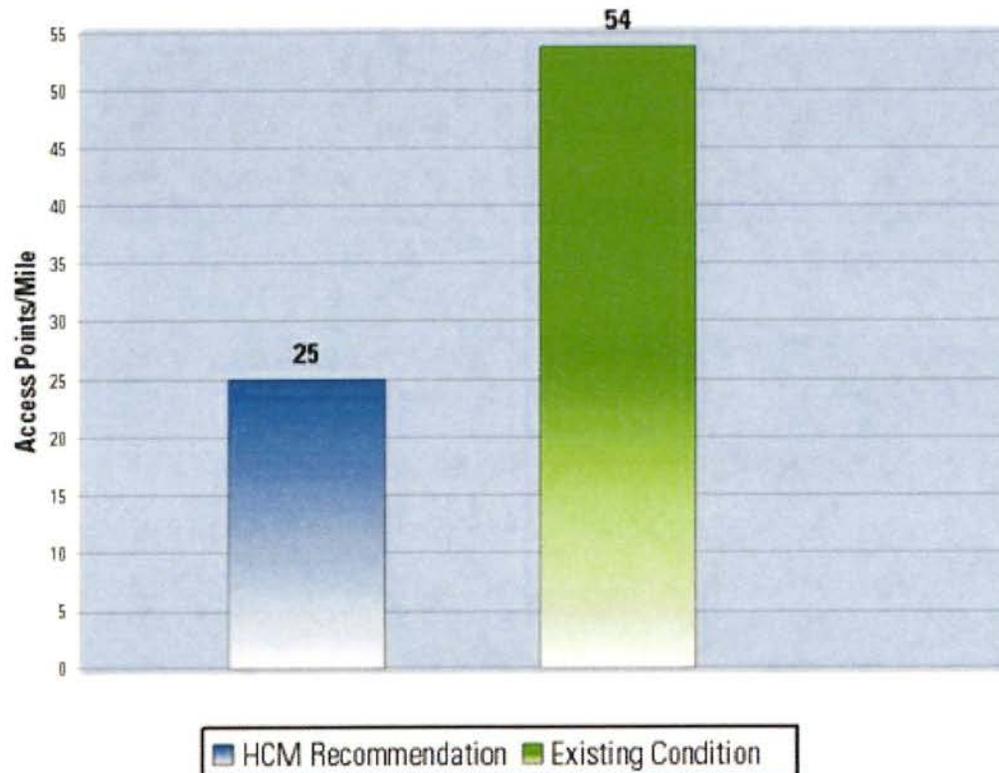
## US 87 Crash Rates (2003-2005)



# Access Points

## (Highland Drive to Hill Country Square Driveway)

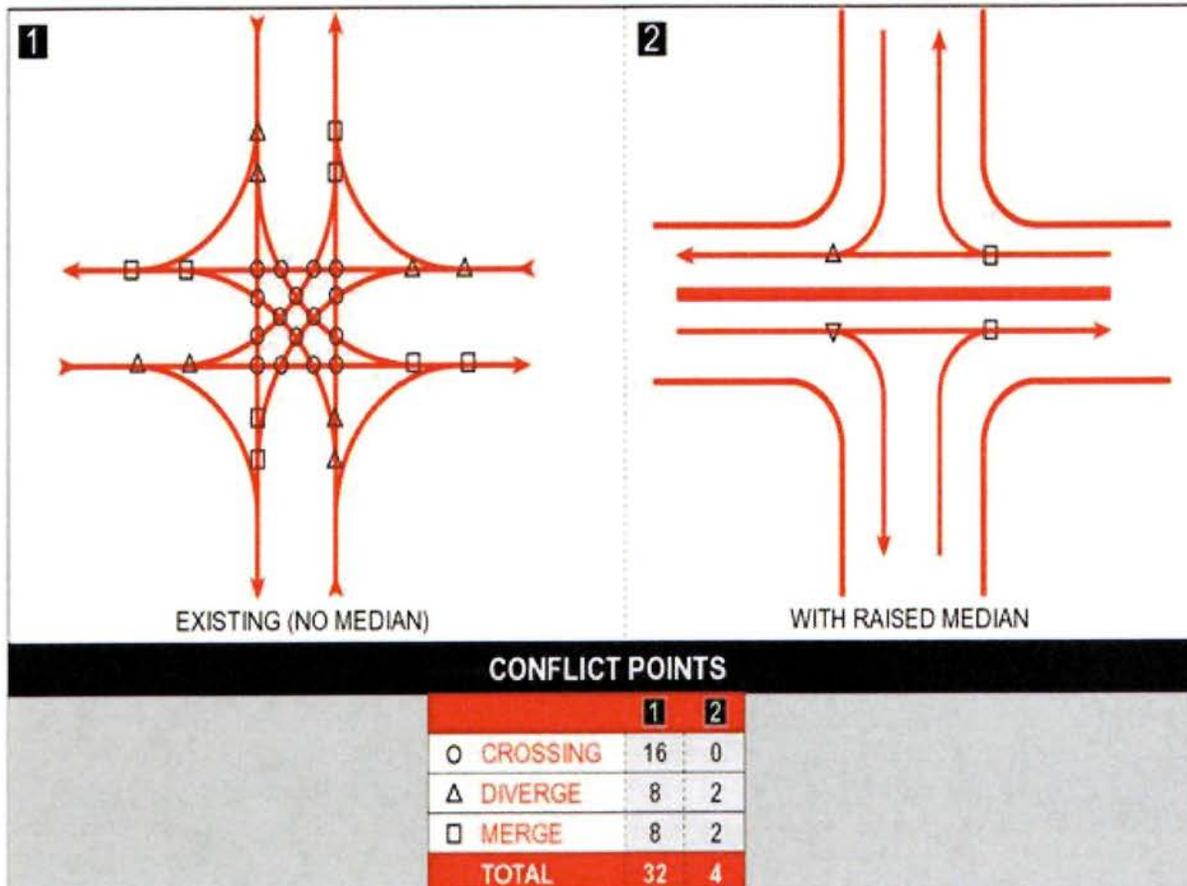
Access Point Comparison





# Conflict Points

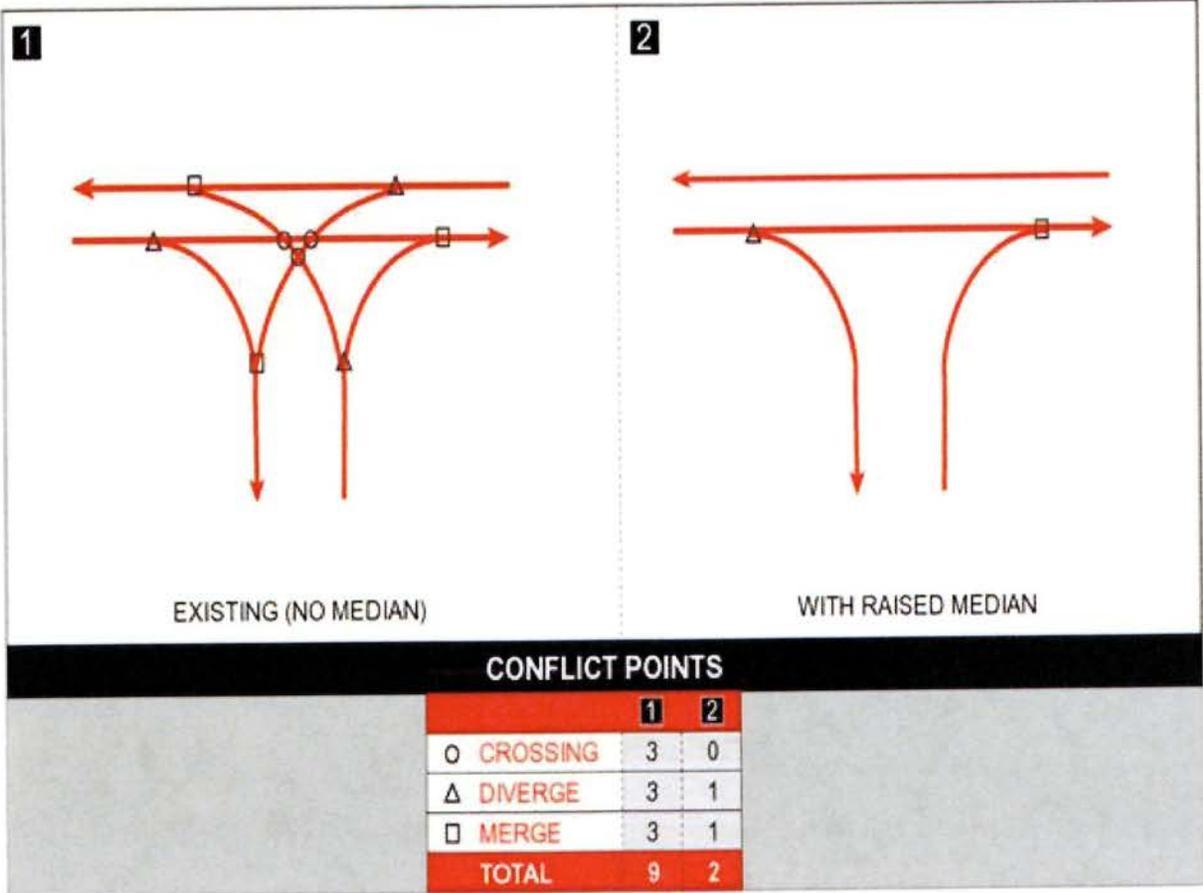
## Four-Legged Intersection





# Conflict Points

## Three Legged Intersection



# Conflict Points

(Highland Drive to Hill Country Square Driveway)

400+ conflict points

Raised median decreases conflict points by approximately 55%

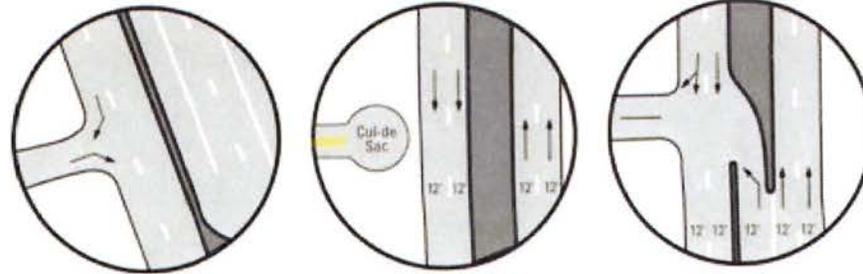
Consider consolidation of driveways to further reduce conflict points

TxDOT Access Management Manual recommends considering raised medians on roadways with ADT greater than 20,000 vpd



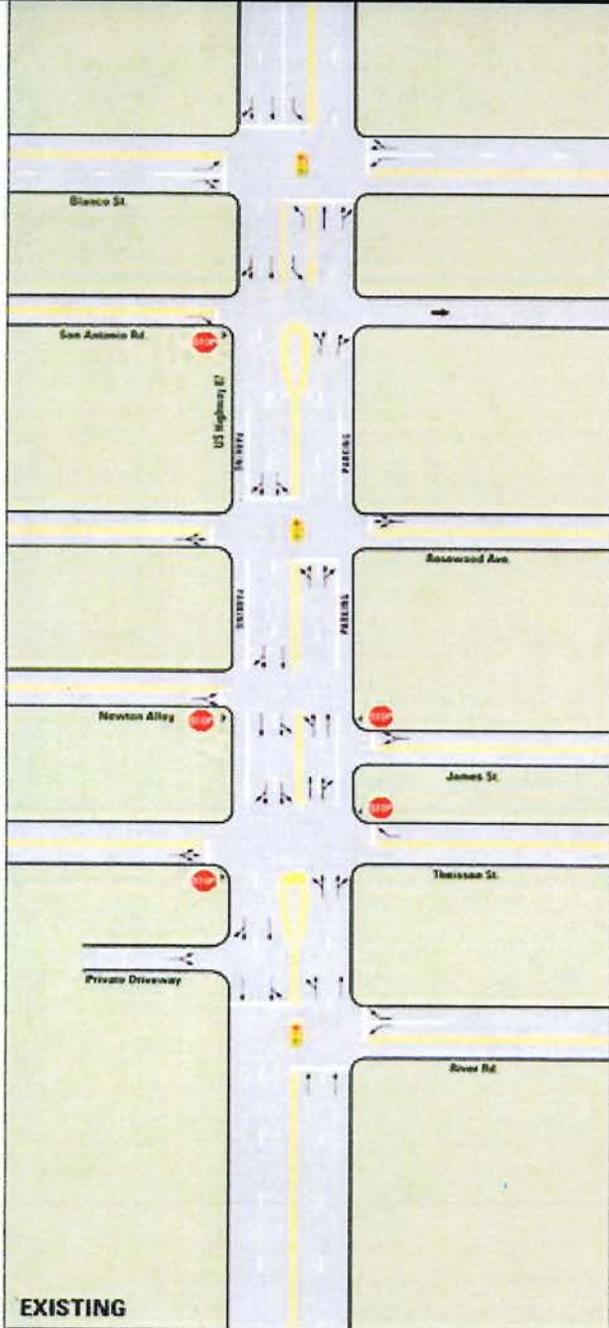


## Recommendations

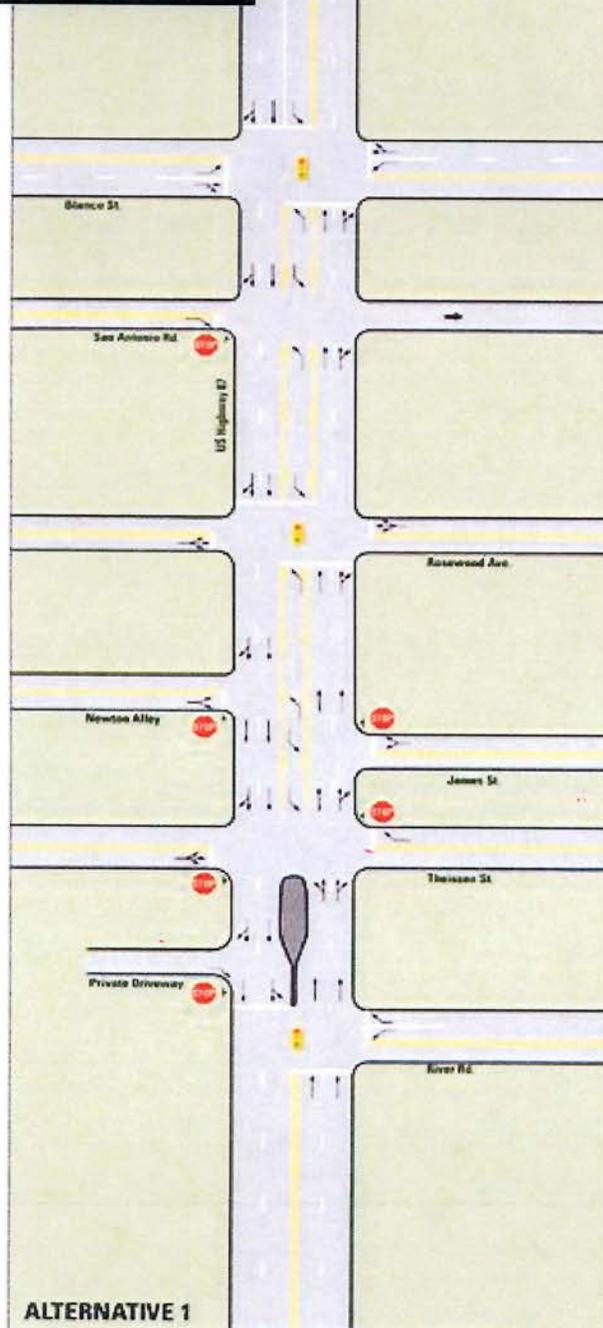


- **Alternatives 1 and 2 Developed**
  - **Alternative 1 = Eliminate parking + Add center turn lane**
  - **Alternative 2 = Eliminate parking + Install raised medians**
  - **Both alternatives...**
    - Increase storage lengths
    - Remove parking
    - Close driveways/prohibit movements
    - Coordinate signal network/progression

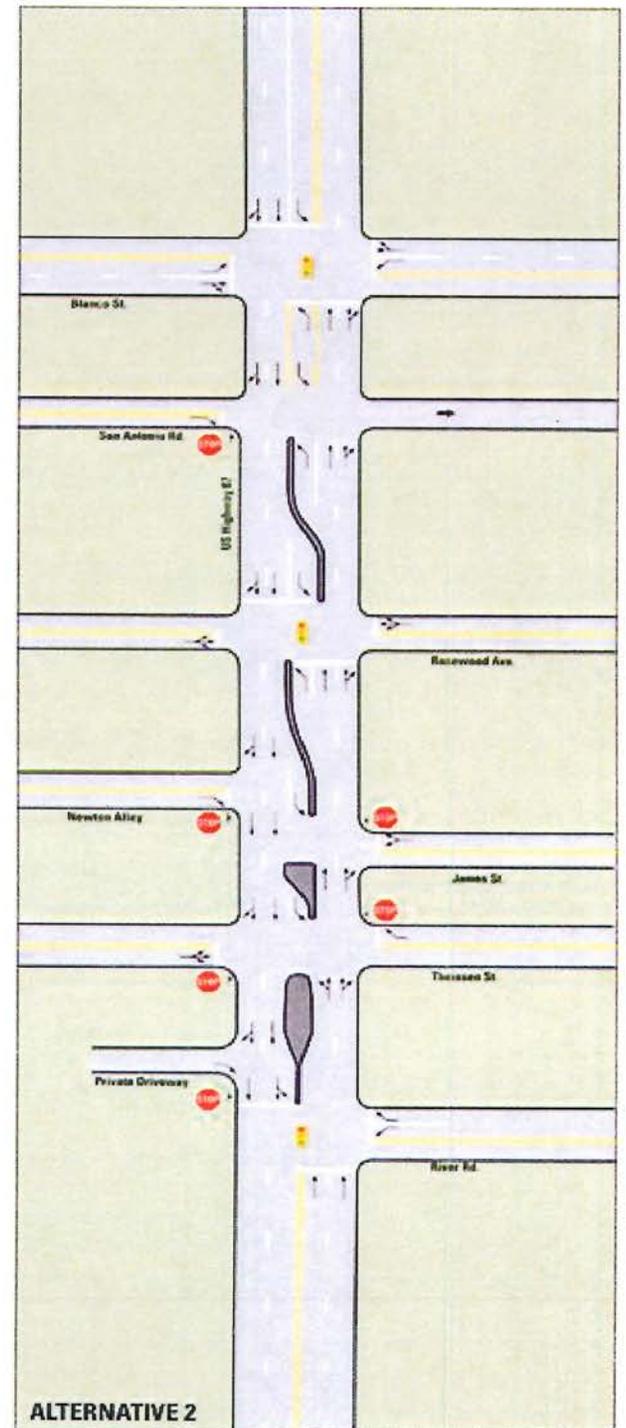
# Improvements Blanco Road to River Road



EXISTING

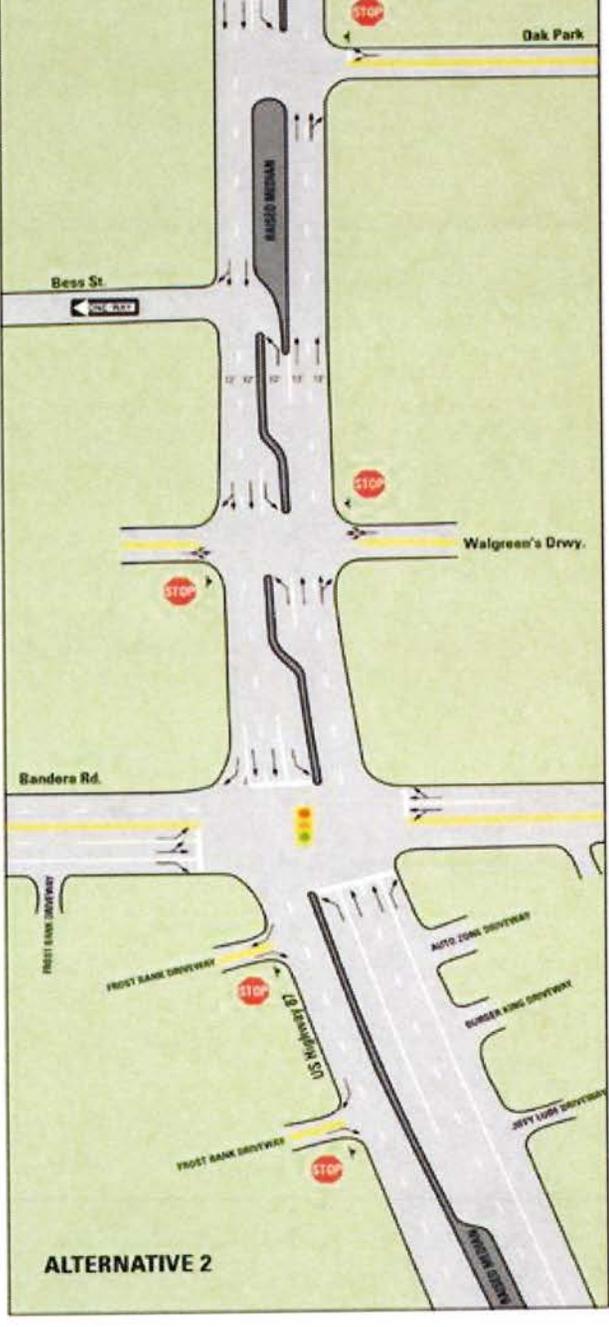
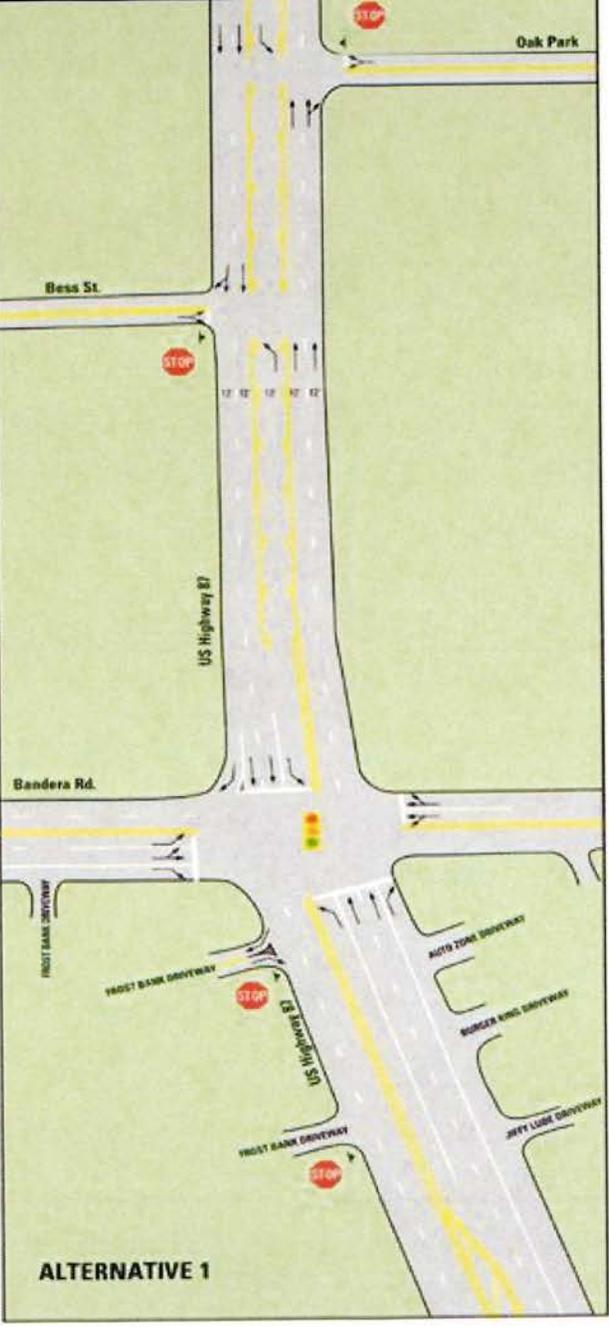
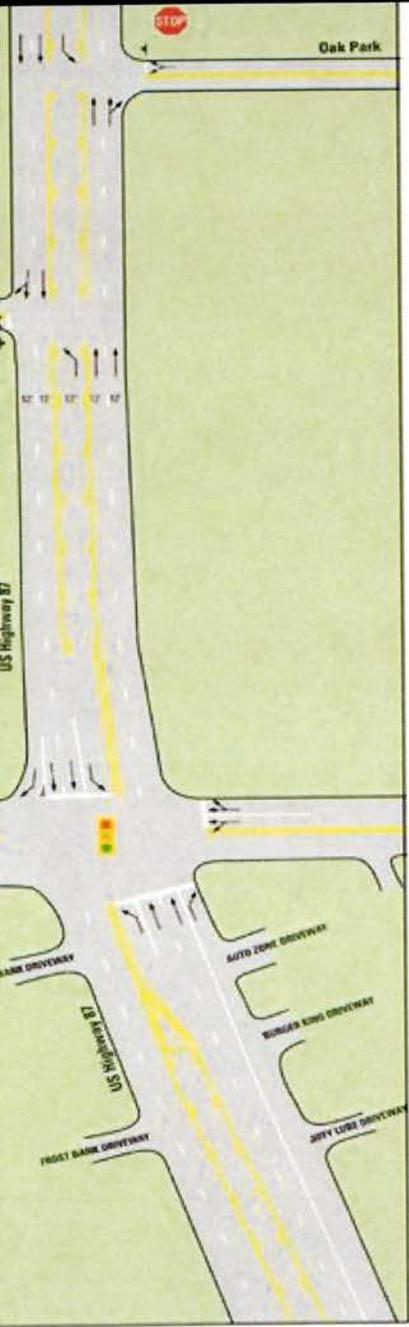


ALTERNATIVE 1



ALTERNATIVE 2

# Improvements Street to Bandera Road





## **Study Summary**

- **The proposed improvements reduce network delay and improve operations along US 87**
- **Removing parking minimizes conflicts and improves traffic operations**
- **Raised medians improve traffic safety and operations**
- **Consolidating driveways will further reduce conflicts and improve operations**



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