Traffic Safety Study Session
Joint City Council/Traffic Safety Committee meeting
June 13, 2023
Folsom Lake Corridor

- Folsom-Auburn Road
- Folsom Lake Crossing
- East Natoma Street
- Green Valley Road
Folsom Lake Corridor

- Folsom-Auburn Road
  - 39,300 vpd (2019)
  - 56,000 vpd (2035)

- Folsom Lake Crossing
  - 31,900 vpd (2019)
  - 38,400 vpd (2035)

- East Natoma Street
  - 30,500 vpd (2023)
  - 40,500 vpd (2035)

- Green Valley Road
  - 23,600 vpd (2022)
  - 34,200 vpd (2035)
Corridor Traffic Safety Issues

1. Fatal/Severe Injury collisions
2. Vehicles entering curves at unsafe speeds
3. Concerns about excessive speed along East Natoma corridor
4. Concerns about sight distance at East Natoma/Gionata intersection
5. Request for traffic signal at East Natoma/Gionata intersection
Standard Assessment Methods

- **Frequency**
  - Collisions per million vehicle miles (MVM) for road segments
  - Collisions per million entering vehicles (MVE) for intersections

- **Location**
  - Utilize pin map and/or GIS to determine locations with high number of collisions
  - Intersection collision diagrams

- **Severity**
  - Ranked from Fatal (most severe) to Property Damage Only (PDO, least severe)
  - Degrees of injury range from Severe to Other Visible to Complaint of Pain

- **Involved parties**
  - Focusing on specific groups such as Driving Under Influence (DUI), Vehicle vs. Pedestrian

- **Primary Collision Factors**
  - Speeding, DUI, Right-of-Way,

- **Secondary Collision Factors**
  - Weather, lighting, surface conditions
## Collision Severity (Citywide)

<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>Fatal or Severe Injury</td>
<td>14</td>
<td>17</td>
<td>16</td>
<td>15</td>
<td>21</td>
<td>16.6</td>
<td>83(^a)</td>
</tr>
<tr>
<td>Other Injury Levels</td>
<td>243</td>
<td>217</td>
<td>220</td>
<td>216</td>
<td>192</td>
<td>217.6</td>
<td>1,088(^b)</td>
</tr>
<tr>
<td>Property Damage Only</td>
<td>358</td>
<td>375</td>
<td>339</td>
<td>308</td>
<td>360</td>
<td>348.0</td>
<td>1,740</td>
</tr>
<tr>
<td>Total by Year</td>
<td>615</td>
<td>609</td>
<td>575</td>
<td>539</td>
<td>573</td>
<td>582.2</td>
<td>2,911</td>
</tr>
</tbody>
</table>

Source: City of Folsom Local Road Safety Plan, June 2021

- \(^a\) 29 fatal, 54 severe injury
- \(^b\) 297 visible injury, 791 complaints of pain
The Four “E”s of Traffic Safety

- Engineering
- Education
- Enforcement
- EMS

- Campaigns
- Social Media
- Planning
- Instruction

- Design
- Construction
- Operations
- Maintenance
- Assessment

- Speed enforcement
- Signal/Sign violations
- DUI checkpoints
- Fines
- License revocation

- Response times
- Training
- Access to care
Local Road Safety Plan

Goal 1: Systematically identify and analyze roadway safety problems and recommend improvements

Goal 2: Improve the safety of pedestrians and bicyclists by using proven, effective countermeasures

Goal 3: Ensure coordination of key stakeholders to implement roadway safety improvements and response within Folsom

Goal 4: Continually seek funding for safety improvements

Goal 5: Ensure that safety improvements are made in a fair and equitable manner for all Folsom residents
Speed Studies and Speed Limits

- Review the Basic Speed Law and regulations governing speed limits
- What is an Engineering and Traffic Survey?
- What are the current speed conditions on the corridor?
Regulations governing speed limits

Section 627 – Engineering and Traffic Survey (defines parameters of a valid Engineering & Traffic Survey)
Section 21400 – Rounding of Speed Limits (Allows for rounding 85th percentile to nearest 5mph increment)
Section 22349 – Maximum Speed Limits
Section 22350 – Basic Speed Law
Section 22351 – Speed Law Violations
Section 22352 – Prima Facie Speed Limits
Section 22357 – Increase of Local Speed Limits
Section 22358 – Decrease of Local Speed Limits
Section 22358.5 – Downward Speed Zoning

Section 40802 – Prima Facie Speed Limits (requires a valid ETS in order to use radar for speed enforcement)

Manual of Uniform Traffic Control Devices – Establishes Policy and Methodology
California Manual of Setting Speed Limits – Standards and Procedures for determining speed limits

Section 10.08.030 – Speed Limits shall be established by an ETS and adopted by ordinance of City Council
“No person shall drive a vehicle upon a highway at a speed greater than is reasonable or prudent having due regard for weather, visibility, the traffic on, and the surface and width of, the highway, and in no event at a speed which endangers the safety of persons or property.”

(California Vehicle Code, Section 22350)
What is an Engineering & Traffic Study?

• Determine the prevailing (prima facie) speed
• Enables use of radar for speed enforcement
• Encourages uniform driving behavior

“The setting of speed limits can be controversial and requires a rational and defensible determination to maintain public confidence. Speed limits cannot be set arbitrarily low, as this would create violators of the majority of drivers and would not command the respect of the public.” (from California Manual on Uniform Traffic Control Devices)
Engineering & Traffic Study

1. Name of street, location of survey, direction of travel
2. Prevailing speed data
   Map of road segment
3. Traffic factors (daily traffic volume, length, street classification)
4. Collision history (5-year collision history, collision rate, comparison to State average)
5. Roadway conditions (adjacent land use, road geometrics, engineer’s comments)
6. Engineer’s conclusions, recommendations, signature, engineering stamp

Each ETS was performed under the supervision of a licensed engineer with extensive experience in the collection of speed data and determination of recommended speed limits.
Name of street
Location of survey
Survey Date and time of day
Direction of travel
Weather conditions

Number of vehicles surveyed
Number of vehicles in each speed range (graphically and numerically)

Total range of speeds (lowest 27 mph, highest 53 mph)
50th Percentile (40 mph)
85th Percentile (46 mph)
10-MPH Pace (34 to 43 mph)
Percent of vehicles in, above and below the Pace (64% in pace)
“The establishment of a speed limit of more than 5 mph below the 85th percentile speed should be done with great care as studies have shown that establishing a speed limit at less than the 85th percentile generally results in an increase in collision rates; in addition, this may make violators of a disproportionate number of the reasonable majority of drivers.”
From: California Manual on Uniform Traffic Control Devices
ETS: Rounding to nearest 5 MPH

85th percentile speed = 46 mph
ETS: Downward Speed Zoning

85th percentile speed = 48 mph
Folsom Lake Corridor

Folsom-Auburn Road
85th percentile: 54 MPH
Average: 51 MPH
10-MPH pace: 45-54 MPH
Posted: 50 MPH

Folsom Lake Crossing
85th percentile: 64 MPH
Average: 58 MPH
10-MPH pace: 52-61 MPH
Posted: 55 MPH

East Natoma Street
85th percentile: 47 MPH
Average: 43 MPH
10-MPH pace: 37-46 MPH
Posted: 45 MPH

Green Valley Road
85th percentile: 60 MPH
Average: XX MPH
10-MPH pace: XX MPH
Posted: 55 MPH

85th percentile: 54 MPH
Average: 51 MPH
10-MPH pace: 45-54 MPH

85th percentile: 64 MPH
Average: 58 MPH
10-MPH pace: 52-61 MPH

85th percentile: 47 MPH
Average: 43 MPH
10-MPH pace: 37-46 MPH

85th percentile: 60 MPH
Average: XX MPH
10-MPH pace: XX MPH
## East Natoma Speed Data

<table>
<thead>
<tr>
<th>Date</th>
<th>D.O.W.</th>
<th>Location</th>
<th>85&lt;sup&gt;th&lt;/sup&gt; Percentile</th>
<th>10-mpg Pace</th>
<th>% in Pace</th>
<th>Avg Daily Volume</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/30/19</td>
<td>Wed</td>
<td>West of Folsom Point</td>
<td>47</td>
<td>37-46</td>
<td>72%</td>
<td>34,100</td>
</tr>
<tr>
<td>6/16-23/21</td>
<td>Var.</td>
<td>West of Gionata</td>
<td>55</td>
<td>48-57</td>
<td>29%</td>
<td>12,700</td>
</tr>
<tr>
<td>4/4/23</td>
<td>Tue</td>
<td>West of Gionata</td>
<td>49</td>
<td></td>
<td></td>
<td>30,500</td>
</tr>
<tr>
<td>4/4/23</td>
<td>Tue</td>
<td>East of Gionata</td>
<td>48</td>
<td></td>
<td></td>
<td>30,100</td>
</tr>
<tr>
<td>4/5/23</td>
<td>Wed</td>
<td>West of Gionata</td>
<td>49</td>
<td></td>
<td></td>
<td>30,900</td>
</tr>
<tr>
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<td></td>
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<td></td>
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</table>
✓ Review the Basic Speed Law and regulations governing speed limits
✓ What is an Engineering and Traffic Survey?
✓ What are the current speed conditions on the corridor?

Any questions about speed studies, speed limits or current speed conditions on the corridor?
Explain what traffic signals can do (traffic flow, operations, safety) and what they cannot do effectively (such as speed regulation).

Explain signal warrants and why we need minimum standards for determining signal placement.

“Traffic control signals, even when justified by traffic and roadway conditions, can be ill-designed, ineffectively placed, improperly operated, or poorly maintained. Improper or unjustified traffic control signals can result in one or more of the following disadvantages:
A. Excessive delay,
B. Excessive disobedience of the signal indications,
C. Increased use of less adequate routes as road users attempt to avoid the traffic control signals, and
D. Significant increases in the frequency of collisions (especially rear-end collisions).”

(from California Manual on Uniform Traffic Control Devices)
# Traffic Signal Warrants

<table>
<thead>
<tr>
<th>Warrant No.</th>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Eight-Hour Vehicular Volume</td>
<td>Sustained, high volumes of intersecting traffic</td>
</tr>
<tr>
<td>2</td>
<td>Four-Hour Vehicular Volume</td>
<td>High volumes of intersecting traffic, any four hours</td>
</tr>
<tr>
<td>3</td>
<td>Peak Hour</td>
<td>Excessive minor street delay</td>
</tr>
<tr>
<td>4</td>
<td>Pedestrian Volume</td>
<td>Pedestrian delay</td>
</tr>
<tr>
<td>5</td>
<td>School Crossing</td>
<td>School-age pedestrian crossing</td>
</tr>
<tr>
<td>6</td>
<td>Coordinated Signal System</td>
<td>Maintain platooning along a coordinated system</td>
</tr>
<tr>
<td>7</td>
<td>Crash Experience</td>
<td>Severity/Frequency of collisions correctable by traffic control</td>
</tr>
<tr>
<td>8</td>
<td>Roadway Network</td>
<td>Intersection of two major routes</td>
</tr>
<tr>
<td>9</td>
<td>Intersection Near Grade Crossing</td>
<td>Proximity to an at-grade rail crossing</td>
</tr>
<tr>
<td>Warrant No.</td>
<td>Name</td>
<td>Staff Review (Planning)</td>
</tr>
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<td>-------------------------------------------</td>
<td>-------------------------</td>
</tr>
<tr>
<td>1</td>
<td>Eight-Hour Vehicular Volume</td>
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Insert KHA slides here.
Corrective Action Summary

✓ Radar speed feedback sign and reflective bollards installed on westbound East Natoma at curve between Gionata and Folsom Lake Crossing

✓ Median Barrier Project (Phase 1)
  ✓ HSIP funding obtained Design completed
  ❑ Out for construction bids Spring 2023
  ❑ Construction expected Summer 2023
  ❑ CDS funding secured for Phase 2

❑ Open-grade asphalt Friction Course to be installed Summer 2023
❑ Additional radar speed feedback signs
❑ Updated engineering studies for speed zoning and possible speed limit changes
❑ Local Road Safety Plan Update