Brockton Avenue Restriping
Public Works Department

April 11, 2013

RiversideCa.gov
City Goals

- Improve quality of life
- Decrease rates of obesity, diabetes etc.
- Enhance traffic and pedestrian safety
- Reduce vehicle related emissions
- Encourage bicycling / alternate transportation

Goals are achieved by implementing the City’s General Plan and Bicycle Master Plan
The Bicycle Master Plan

• Updated May 22, 2007
  – Expansion of bikeway network & connectivity

• Addendum approved March 27, 2012
  – Designated Class II lanes on Brockton

• Brockton bike lanes provide valuable connections
  – Local schools and parks
  – Downtown, Riverside Plaza, Magnolia Center
  – Existing bicycle trails (SART) and lanes
Proposed Concept - Striping

• Restripe Brockton from Mission Inn to Beatty:
  – Converts Brockton from 4-lanes to 3 lanes
    ➢ 2 thru lanes and a new two way left-turn lane
  – Includes dedicated right-turn lanes at major intersections
  – Additional on-street parking

RiversideCa.gov

Brockton Avenue Restriping
Additional Components

- Retime and synchronize signals
- Convert 4 signals to Protected/Permissive
- Install right-turn green arrows at select intersections
- Pavement repair and sealing
Road Configuration - Before
Road Configuration - After

10’ 10’ 10’ 11’
Similar Roadways

WELLS AVENUE

WATKINS DRIVE

RiversideCa.gov  Brockton Avenue Restriping
Brockton Traffic Volumes

- Feb. 2012 sampling of 24-Hr Volume Counts
- Highest volume (14,120) north of Terracina
- Lowest volume (11,501) north of Dewey
- Capacity with 3 lane configuration:
  - 18,000 to 20,000
  - (30 – 50% room for growth)
<table>
<thead>
<tr>
<th>Street Name</th>
<th>Volumes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Palm N/O Gardena</td>
<td>7,100 (12,500)</td>
</tr>
<tr>
<td>Palm S/O Tequesquite</td>
<td>6,600 (12,500)</td>
</tr>
<tr>
<td>Magnolia S/O Elizabeth</td>
<td>23,000 (33,000)</td>
</tr>
<tr>
<td>Magnolia S/O Terracina</td>
<td>21,000 (33,000)</td>
</tr>
</tbody>
</table>
## Similar 2 & 3 Lane Streets

<table>
<thead>
<tr>
<th>Street</th>
<th>Vehicles per hour</th>
</tr>
</thead>
<tbody>
<tr>
<td>Madison St</td>
<td>15,000</td>
</tr>
<tr>
<td>Riverside Ave</td>
<td>16,000</td>
</tr>
<tr>
<td>Canyon Crest Dr (UCR)</td>
<td>17,000</td>
</tr>
<tr>
<td>Watkins Dr</td>
<td>11,000</td>
</tr>
<tr>
<td>Third Street</td>
<td>13,000</td>
</tr>
</tbody>
</table>
Benefits to Motorists

• Facilitates entry/exit from side streets & driveways

• Retains on-street parking

• Moves left turners out of path of thru traffic
  – safer & reduces delay

• Improves sight distance as all left turns are aligned
Improved Sight Distance

4 Lane

3 Lane
Additional Benefits to Motorists

• Optimize traffic flow:
  – 4 Signals converted to Protected / Permissive
    ➢ University, 13th, Tequesquite, Bandini
  – 10 of 12 will allow permissive left turns
  – New left turn pockets at 4 Signals
    ➢ 10th, Terracina, Ramona, Garden Home
  – Signals will be retimed and synchronized

RiversideCa.gov

Brockton Avenue Restriping
## Estimated Accident Reduction

<table>
<thead>
<tr>
<th>Type</th>
<th>Total Past 10 Yrs</th>
<th>Reduced By</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rear End</td>
<td>87</td>
<td>58</td>
</tr>
<tr>
<td>Side Swipe</td>
<td>45</td>
<td>31</td>
</tr>
<tr>
<td>Broadside</td>
<td>142</td>
<td>17</td>
</tr>
<tr>
<td>Head-on</td>
<td>31</td>
<td>1</td>
</tr>
<tr>
<td>Pedestrian</td>
<td>13</td>
<td>13</td>
</tr>
<tr>
<td>Bicyclist Involved</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td>Hit Object</td>
<td>22</td>
<td>0</td>
</tr>
<tr>
<td>Overturned</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Other</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>Not Stated</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>367</strong></td>
<td><strong>137</strong></td>
</tr>
</tbody>
</table>

- New striping should reduce total accidents by over 1/3
Significant Collision Statistics

• Based upon a review of most recent 10 year collision history the proposed project could:

  – Reduce pedestrian / bicyclist involved collisions by more than 90%
  – Diminish parked car involved collisions by over 85%
  – Reduce sideswipe collisions by over 68%
  – Cut rear-end collisions by almost 67%
  – Drop fatalities by 50%
Fewer Points of Conflict
Emergency Vehicles

• Emergency vehicles may utilize 2-way left turn lane for faster response time

• Motorists pulling over for emergency vehicles:
  – can pull adjacent to curb, or
  – can pull into bike lane

Brockton Avenue Restriping

RiversideCa.gov
Improved Emergency Access

Four - Lane Emergency Vehicle Access

Three - Lane Emergency Vehicle Access

RiversideCa.gov

Brockton Avenue Restriping
Benefits to Cyclists

• Separates cyclists from vehicular traffic
• Improves access to RCC, Central Middle & Magnolia Elementary Schools
• Provides connection to Santa Ana River Trail
• Connects to Downtown, the Plaza & Magnolia Ctr
• Serves as alternate route for cyclists currently using Magnolia Avenue
• Provides encouraging environment for new riders
Benefits to Pedestrians

- Improves Safety:
  - Reduces number of travel lanes pedestrians must cross
  - 2-Way left turn lane may provide refuge
  - Reduces multiple threat
  - More consistent vehicle speeds

RiversideCa.gov  Brockton Avenue Restriping
Safety Components

• Improves traffic safety by:
  – Providing dedicated Left-turn and Bike Lanes
  – Providing traffic calming/reduces top end speeds
  – Improving sight distance and safer entry/exit
  – Reducing conflict points
  – Separating bikes/parked cars from moving traffic
  – Improving Emergency access & response
  – Improving pedestrian safety
Public Outreach

• April 17, 2012 – City Council approved grant application
• July 24, 2012-Charlie Gandy reports to Chamber EDC
• December 5, 2012 – Transportation Board received Consultant Report including Brockton Restriping
• January 17, 2013 – Land Use Committee received Consultant report including Brockton Restriping
• March 12, 2013 – City Council receives update
• March 20, 2013 – Community meeting
• Second LUC meeting to be held on April 22
Can we add sidewalks as well?

- Existing sidewalk on W/S & signalized crossings
- Requires right-of-way (costly)
- Removes landscaping in front yards
- Removes street trees
- Requires retaining walls for slopes
Frequently Asked Question #2

How will hospital expansion and other major traffic generators be accommodated?

- Working with hospital on updating traffic study
- Generally do not generate traffic at peak times
- Projects will be phased in over several years
- As traffic changes will evaluate and adjust as needed
Frequently Asked Question #3

Will delays at signalized intersections increase?

➢ Traffic signals will be timed so that traffic waiting will clear in one cycle
Frequently Asked Question #4

How will one-lane handle traffic between Central and Jurupa?

- This segment has the lowest volume
- 2 lanes will be maintained SB south of Sunnyside
- Existing right-turn green arrow at Central
- New right-turn only lane NB at Jurupa
Frequently Asked Question #5

Bike lanes exist on Magnolia, why add them to Brockton?

- Magnolia not as conducive to encourage new riders
- Magnolia lanes are narrower/gutter adjacent
- Parked cars
- Higher speeds & volumes
Frequently Asked Question #6

Has HOV construction caused volumes in the area to increase?

- Historical traffic volumes before HOV and after are similar
- Magnolia s/o Jurupa – 23,182 (9/09) / 22,945 (3/13)
- Palm s/o Jurupa – 7,185 (1/10) / 7,105 (3/13)
Frequently Asked Question #7

Will this help to reduce speeds along Brockton?

- More compliance with existing speed limit
- 1 lane - no passing allowed
- Enforcement
- Signal timing

RiversideCa.gov Brockton Avenue Restriping
Questions / Comments