EUCLID AVE. DILEMMA: 5-Lane or 3-Lane+Bikes

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Study Area
Initial Design

TO
A pedestrian walked along a narrow median on Euclid Avenue. A state plan would eliminate the median and add a turn lane.

Euclid’s geometry debated

More opposition expected today to

Alternatives for an avenue

State transportation officials want to add a center turn lane to four-lane

Some opponents want Euclid Avenue reduced by a lane, leaving a center turn lane and a lane
Public Input
Methodology

- Use microscopic simulation
- Conduct travel time study
- Run 60 min simulation @ 3 random numbers
  - Existing volumes
  - Future volumes (20% increase)
- Use Euclid only related output
Simulation Graphics--1
Simulation Graphics--2
Existing Conditions

- 4 traffic actuated signals; 13 access points
- Travel speeds
  - PM peak EB: 19.5 mph
  - PM peak WB: 21 mph
- Travel times
  - PM peak EB: 2.42 min (2.31 min--simulated)
  - PM peak WB: 2.31 min (2.17 min--simulated)
- Acceptable delays
  - 35 sec/trip
Existing Conditions
Measures of Effectiveness

- Average total delay (sec/trip)
- Move/total time ratio
- System speed (mph)
## Current Volumes

<table>
<thead>
<tr>
<th>Direction</th>
<th>Speed</th>
<th>Delay</th>
<th>Move/Total time</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ex</strong></td>
<td>19.5 mph</td>
<td>42 sec/trip</td>
<td>0.57</td>
</tr>
<tr>
<td><strong>3L</strong></td>
<td>20.9 mph</td>
<td>39 sec/trip</td>
<td>0.59</td>
</tr>
<tr>
<td><strong>5L</strong></td>
<td>22.5 mph</td>
<td>32 sec/trip</td>
<td>0.62</td>
</tr>
<tr>
<td></td>
<td>20.8 mph</td>
<td>34 sec/trip</td>
<td>0.60</td>
</tr>
<tr>
<td></td>
<td>22.6 mph</td>
<td>33 sec/trip</td>
<td>0.64</td>
</tr>
<tr>
<td></td>
<td>24.3 mph</td>
<td>28 sec/trip</td>
<td>0.67</td>
</tr>
</tbody>
</table>
Future Volumes

Assume a 20% increase

Ex
- Speed: 17.4 mph
- Delay: 48 sec/trip
- Move/Total time: 0.54

3L
- Speed: 19.2 mph
- Delay: 43 sec/trip
- Move/Total time: 0.56

5L
- Speed: 21.8 mph
- Delay: 34 sec/trip
- Move/Total time: 0.61

Ex
- Speed: 19.1 mph
- Delay: 39 sec/trip
- Move/Total time: 0.58

3L
- Speed: 21.0 mph
- Delay: 39 sec/trip
- Move/Total time: 0.60

5L
- Speed: 22.9 mph
- Delay: 31 sec/trip
- Move/Total time: 0.65
Alternative Summary

Percent Improvement

Alternative

5L-EB  3L-EB  5L-WB  3L-WB

Speed  M/T ratio  Delay
Evaluation Conclusion

- 3-lane alternative performs well and better than existing conditions
- Both alternatives perform well with future volumes
- 3-lane alternative was recommended to support the Context Sensitive Design solutions of KyTC
Safety Benefits of Restriping

- Motor vehicle safety is improved as travel lanes are moved away from curb, fixed objects, and parking.
- Bike lanes increase sight distance and turning radii at intersections and driveways.
Euclid Signage
The Road Diet
A “Lean” Road
Lessons Learned

- Involve public as early as possible
- Bike lanes work well
- Successful use of road diet concept
- Bike lanes too wide
- Need to continue bike lanes
- A good start
The 3 E's

- Engineering
- Education
- Enforcement
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