How to Succeed with Your Road Diet and Lose a Lane: 4-Lane to 3-Lane Conversions

36th Avenue Mill and Overlay

Presented by

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Analysis Study Limits

Segment 1
16,300 18,800 16,400

Segment 2

Segment 3

Segment 4
12,400 12,100 15,400 18,700

Regent Ave
Noble Ave
France Ave

Douglas Ave
Welcome Ave

Winnetka Ave
Louisiana Ave

Nevada Ave
Regent Ave

BOLTON & MENK, INC.
Consulting Engineers & Surveyors
Before: 4-Lane Undivided
After: 3-Lane Undivided
After: 3-Lane Undivided
Conversion Study Results

- Conversion Results in:
  - Increase in safety
  - Reduction in access delay
  - Decrease in speed
  - Increase in travel time
Analysis Study Limits
Noble Avenue Intersection
Douglas Drive Intersection
Louisiana Avenue: All-Way Stop

All-Way Stop: 4-Lane Undivided Roadway (Existing)

All-Way Stop: 3-Lane Undivided Roadway (2-Lanes plus Two-Way-Left-Turn-Lane (TWLTL))
Louisiana: Remove All-Way Stop

- **PM Peak:**
  - From LOS F to LOS A
  - 36th Avenue queues eliminated
Analysis Study Results

Implemented in 2010

- 3-Lane Conversion
  - Segment 1
    - Highway 100 to France Avenue
  - Segments 3 and 4
    - Douglas Drive to Winnetka Avenue

- Maintain Undivided 4-Lane
  - Segment 2
    - Highway 100 to Douglas Drive
Reasons for 3-Lane Conversion

- Acceptable operations with the traffic volumes
- Reduction in travel speed (0-4 mph decrease)
- Increase in pedestrian safety
  - Shorter crossing distances
  - Only one lane of vehicle traffic in each direction
  - Vehicle traffic separated 5’ from sidewalk traffic
- Bicyclists can use shoulder
- More conducive to residential area
12-month Review
Traffic Volume

- Traffic volumes have not changed significantly

<table>
<thead>
<tr>
<th>Average Daily Traffic (ADT)</th>
<th>2010</th>
<th>2011</th>
<th>±% change</th>
</tr>
</thead>
<tbody>
<tr>
<td>36th Avenue North, East of Douglas Drive</td>
<td>15,400</td>
<td>14,300</td>
<td>– 7%</td>
</tr>
<tr>
<td>36th Avenue North, West of Douglas Drive</td>
<td>12,100</td>
<td>12,400</td>
<td>+ 2%</td>
</tr>
<tr>
<td>36th Avenue North, East of TH 100</td>
<td>16,300</td>
<td>16,400</td>
<td>+ 1%</td>
</tr>
</tbody>
</table>

- AM Peak Hour traffic volumes:
  - increased ≈ 10% on Douglas and 36th

- PM Peak Hour traffic volumes:
  - increased ≈ 5% on Douglas
  - decreased ≈ 5% on 36th
12-month Review
Segment 1 Traffic Speed

36th Avenue North, West of Noble Av
Speed Measured West of Orchard Avenue

- **Westbound**
  - Speed Limit: 30 mph
  - Before (85th %ile): 34 mph
  - After (85th %ile): 36 mph

- **Eastbound**
  - Speed Limit: 28 mph
  - Before (85th %ile): 32 mph
  - After (85th %ile): 35 mph

1 to 4 mph decrease

More than 50% of westbound traffic is traveling faster than the speed limit.
12-month Review
Segment 2 Traffic Speed

No change

More than 50% of traffic is traveling faster than the speed limit.
12-month Review
Segment 3 and 4 Traffic Speed

More than 50% of traffic is traveling faster than the speed limit.
12-month Review

Safety

- Segment 1: 40% reduction in crashes
- Segments 2-4: No change in crashes

- 36th Avenue at Douglas Drive Intersection
  - September 2009 to September 2010
    - 10 reported crashes
  - September 2010 to September 2011
    - 18 reported crashes
12-month Review
Safety

- Especially snowy and icy season
- 15 of the 18 crashes occurred November to February

One crash cited as attributable to the lane drop
  – inattention to the presence of the merge
12-month Review
Citizen Input

- Few complaints to City since implementation
- No complaints about Louisiana Avenue since stop signs were first removed
Summary
36th Avenue 3-Lane Roadway Section

- Traffic volume has been maintained
- Driver speeds have decreased slightly
- No negative impact in terms of crashes
- Drivers have adjusted to the changes
Summary

36th Avenue 3-Lane Roadway Section

- Bisects a residential area with multiple access driveways
- Quieter feeling to the roadway with vehicle traffic restricted to one lane in each direction
- Roadway provides a safer environment for pedestrians and bicyclists
3-Lane Section
Questions/Comments?
After: At Douglas Drive