Complete Streets Redesign of Washington Street

Technical Memorandum

Traffic Count Results and

Traffic Analysis Summary

Submitted March 31, 2014
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Overview
This Technical Memorandum summarizes the findings and supporting documentation and data described in Chapter 4, “Transportation,” of the Existing Conditions Report, March 19, 2014.

Methodology
Video technology was deployed at all signalized intersections on Washington Street to measure traffic volumes. These video traffic counters were set up between 7 a.m. and 7 p.m. on Tuesday, October 15, 2013 to understand traffic volumes on a typical weekday.

Traffic Volumes
- The collected data show that roughly 10,000 vehicles make a trip on Washington Street on a typical weekday, at a rate of 450-900 vehicles per hour, about equal per direction.
- Traffic volumes do not increase substantially during peak periods typically associated with the morning and evening commute, versus the rest of the day.
- Of the vehicles accessing Washington Street, 4-5% are trucks (of which most are single unit box trucks) and 4-5% are buses.
- Based on a review of the turning movements at each intersection, most of the motor vehicle traffic along Washington Street is local, not cut-through or continuous along the entire roadway.
- There are between 500-1500 pedestrians per hour south of 8th Street, 300-500 pedestrians per hour north of 8th Street.
- Up to 1,300 pedestrians cross Washington Street in peak hours at the south end, and hundreds of pedestrians per hour cross every street.
- Pedestrian and vehicular travel data are compared for the peak hours at each intersection in the following graphic.
Traffic Operations

Intersections
- There are 17 closely spaced intersections, 16 signalized, one all-way stop
- 2 signals are County (Observer and 14th)
- All remaining signals have only one undersized traffic signal head suspended over the roadway, no pedestrian heads, and long (120 second) fixed time cycles, with over 70 seconds of green to Washington Street. Pedestrians cannot see signal heads when crossing.
- Signals can most likely be removed at the following side streets, with stop signs on side streets at these five cross streets: 5th, 8th, 10th, 12th, 13th
- All-way stops may be feasible at these cross-streets, or signals replaced: 4th, 6th, 7th, 9th
- Signals would have to be replaced at these cross-streets: Newark, 1st, 2nd, 3rd, 11th
- No changes to Washington & 15th and Washington & 14th
- Signal timing changes only at Washington & Observer

Level of Service (LOS)
- Through an evaluation of the Level of Service (LOS) provided at each intersection, it was found that most intersections along Washington Street operate with an acceptable-to-good flow of vehicular traffic, expressed as LOS “C” or better on a scale of “A” to “F”, with “A” being the best and “F” being the worst.
- Intersections between Washington Street and Newark Street, 1st Street, 2nd Street, and 3rd Street, respectively, are each operating at LOS “D” or better.
- The intersection between Washington Street and Observer Highway is operating at LOS “E” or “F” for eastbound left turns and LOS “E” for the southbound approach from Washington Street.
- In terms of overall delay at peak hours (the time that vehicles are stopped for signals or congestion), it was found that the morning peak (8-9 a.m.) produced 73.6 vehicle-hours of delay, while the evening peak (5:30-6:30 p.m.) produced 57.1 vehicle-hours of delay.

Potential Traffic Operations
- Signal changes mentioned above.
- We do not need additional lanes.
- With changes, no movement will be worse than a LOS D for a signal
- Overall delay will be 64.9 vehicle-hours for morning peak hour, and 48.3 vehicle-hours for the evening peak hour (i.e. 12-15% reduction from existing).
Crash History
Crash history for 2010-2012 was studied and compared to typical traffic crash frequency predicted by the Highway Safety Manual.

Washington St from 8th St to 15th St (residential portion with angle parking)
- 77 total crashes, including 7 vehicle-pedestrian and 3 bicycle-pedestrian crashes.
- Expected would be 65 crashes, including 7 vehicle-pedestrian and 1 bicycle-pedestrian crash.
- Traffic safety in this area can be considered typical.

Washington St from Observer Highway to 8th St (commercial portion with parallel parking)
- 220 total crashes, including 17 vehicle-pedestrian and 5 bicycle-pedestrian crashes.
- Expected would be 68 crashes, including 8 vehicle-pedestrian crashes and 1 bicycle-pedestrian crash.
- This area has more than triple a typical crash rate for similar roadways.
- Nearly half of all crashes involve parked vehicles or backing vehicles, and therefore can be related to parallel parking and/or double parking.
- Sideswipe crashes are also high at more than 20% of crashes, and this may be related to double parking, or the physical width of Washington Street (since there is only one lane per direction).
- Washington and 3rd has the highest crash rate, Washington and Newark has the second highest crash rate.
- The block between 4th and 5th also stands out with high crash rate.

Washington St and Observer Highway Intersection
- 23 total crashes, including 3 vehicle-pedestrian crashes.
- Expected would be 11 crashes, with no vehicle-pedestrian or bicycle-pedestrian crashes.
- Consequently, this area has more than double a typical crash rate for similar intersections.

Vehicle-Pedestrian Crash Trends (2011 to October 28, 2013)
- 27 total, 25 resulting in injuries. No Fatalities.
- 18, or 67% occurred in darkness. Lighting may help these.
- 12, or nearly half, involved left or right turning vehicles.

Vehicle-Bicycle Crash Trends (2011 to October 28, 2013)
- 8 total, 6 resulting in injuries. No Fatalities.
- 4 or 50%, involved left or right turning vehicles.
- 2 involved double parked vehicles.
Data

Washington Street Traffic Volumes and Turning Movements

PEAK HOUR TRAFFIC VOLUMES: MORNING (8:00-9:00 AM) / AFTERNOON (5:30-6:30 PM)

Washington Street Complete Streets Redesign
Traffic Count Results & Traffic Analysis Summary

15th St

14th St
Washington Street Complete Streets Redesign
Traffic Count Results & Traffic Analysis Summary

Washington Street Traffic Volumes and Turning Movements

<table>
<thead>
<tr>
<th>Direction</th>
<th>Traffic Count</th>
<th>AM</th>
<th>PM</th>
</tr>
</thead>
<tbody>
<tr>
<td>13th St</td>
<td>21 / 23</td>
<td>6  / 8</td>
<td>34 / 21</td>
</tr>
<tr>
<td>12th St</td>
<td>21 / 29</td>
<td>273 / 298</td>
<td>278 / 292</td>
</tr>
</tbody>
</table>

Total AM = 711
Total PM = 660

Total AM = 753
Total PM = 716
Washington Street Complete Streets Redesign
Traffic Count Results & Traffic Analysis Summary

Washington Street Traffic Volumes and Turning Movements

11th St

<table>
<thead>
<tr>
<th>Direction</th>
<th>Volume</th>
<th>Direction</th>
<th>Volume</th>
</tr>
</thead>
<tbody>
<tr>
<td>AM</td>
<td>13 / 16</td>
<td>PM</td>
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<td>19 / 12</td>
</tr>
<tr>
<td>Total AM</td>
<td>986</td>
<td>Total PM</td>
<td>911</td>
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10th St

<table>
<thead>
<tr>
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<th>Direction</th>
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<tbody>
<tr>
<td>AM</td>
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<tr>
<td>Total AM</td>
<td>818</td>
<td>Total PM</td>
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<td>AM</td>
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<td>PM</td>
<td>346 / 239</td>
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<td>18 / 14</td>
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<td>AM Total</td>
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<td>911</td>
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<th>Direction</th>
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<tbody>
<tr>
<td>AM</td>
<td>12 / 13</td>
<td>PM</td>
<td>106 / 57</td>
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<td>76 / 48</td>
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<tr>
<td>AM Total</td>
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<td>PM Total</td>
<td>162</td>
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<table>
<thead>
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<th>Direction</th>
<th>Volume</th>
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<tbody>
<tr>
<td>AM</td>
<td>17 / 35</td>
<td>PM</td>
<td>263 / 367</td>
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<tr>
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<td>37 / 50</td>
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<tr>
<td>AM Total</td>
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<td>PM Total</td>
<td>57</td>
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<th>Volume</th>
<th>Direction</th>
<th>Volume</th>
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</thead>
<tbody>
<tr>
<td>AM</td>
<td>29 / 32</td>
<td>PM</td>
<td>415 / 272</td>
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<td>AM Total</td>
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<td>PM Total</td>
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<th>Direction</th>
<th>Volume</th>
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<tr>
<td>AM Total</td>
<td>328</td>
<td>PM Total</td>
<td>374</td>
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</table>
Washington Street Complete Streets Redesign
Traffic Count Results & Traffic Analysis Summary

Washington Street Traffic Volumes and Turning Movements

9th St

22 / 34
64 / 45
32 / 41

326 / 372
67 / 67

Total AM = 967
Total PM = 829

8th St

51 / 51
351 / 249

36 / 50
25 / 50
17 / 20

Total AM = 885
Total PM = 889
Washington Street Traffic Volumes and Turning Movements

<table>
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<th>Traffic Volume</th>
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<td>AM</td>
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<tr>
<td>PM</td>
<td>391 / 16</td>
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<tr>
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<table>
<thead>
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<tbody>
<tr>
<td><strong>6th St</strong></td>
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<td>AM</td>
<td>40 / 22</td>
</tr>
<tr>
<td>PM</td>
<td>62 / 41</td>
</tr>
<tr>
<td>Total</td>
<td>164 / 63</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Direction</th>
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</thead>
<tbody>
<tr>
<td><strong>6th St</strong></td>
<td></td>
</tr>
<tr>
<td>AM</td>
<td>40 / 22</td>
</tr>
<tr>
<td>PM</td>
<td>62 / 41</td>
</tr>
<tr>
<td>Total</td>
<td>164 / 63</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Direction</th>
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<tbody>
<tr>
<td><strong>7th St</strong></td>
<td></td>
</tr>
<tr>
<td>AM</td>
<td>391 / 16</td>
</tr>
<tr>
<td>PM</td>
<td>45 / 30</td>
</tr>
<tr>
<td>Total</td>
<td>966</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
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<tbody>
<tr>
<td><strong>7th St</strong></td>
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</tr>
<tr>
<td>AM</td>
<td>391 / 16</td>
</tr>
<tr>
<td>PM</td>
<td>45 / 30</td>
</tr>
<tr>
<td>Total</td>
<td>966</td>
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<table>
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<tr>
<th>Direction</th>
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<tbody>
<tr>
<td><strong>6th St</strong></td>
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<tr>
<td>AM</td>
<td>40 / 22</td>
</tr>
<tr>
<td>PM</td>
<td>62 / 41</td>
</tr>
<tr>
<td>Total</td>
<td>164 / 63</td>
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<table>
<thead>
<tr>
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<tbody>
<tr>
<td><strong>6th St</strong></td>
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</tr>
<tr>
<td>AM</td>
<td>40 / 22</td>
</tr>
<tr>
<td>PM</td>
<td>62 / 41</td>
</tr>
<tr>
<td>Total</td>
<td>164 / 63</td>
</tr>
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</table>
Washington Street Traffic Volumes and Turning Movements

Washington Street Complete Streets Redesign
Traffic Count Results & Traffic Analysis Summary

5th St

<table>
<thead>
<tr>
<th></th>
<th>AM</th>
<th>PM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Left</td>
<td>12/19</td>
<td>64/40</td>
</tr>
<tr>
<td>Right</td>
<td>54/31</td>
<td>48/45</td>
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</table>

Total AM = 998
Total PM = 850

4th St

<table>
<thead>
<tr>
<th></th>
<th>AM</th>
<th>PM</th>
</tr>
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<tbody>
<tr>
<td>Left</td>
<td>45/283</td>
<td>67/392</td>
</tr>
<tr>
<td>Right</td>
<td>50/42</td>
<td>42/32</td>
</tr>
</tbody>
</table>

Total AM = 1,020
Total PM = 902
Washington Street Complete Streets Redesign
Traffic Count Results & Traffic Analysis Summary

Washington Street Traffic Volumes and Turning Movements

3rd St

Total AM = 1,092
Total PM = 919

2nd St

Total AM = 1,057
Total PM = 1,033
Washington Street Complete Streets Redesign
Traffic Count Results & Traffic Analysis Summary

Washington Street Traffic Volumes and Turning Movements

- 1st St
  - Total AM = 1,205
  - Total PM = 963

- Newark Av
  - Total AM = 1,108
  - Total PM = 1,038
Washington Street Traffic Volumes and Turning Movements

Washington Street Complete Streets Redesign
Traffic Count Results & Traffic Analysis Summary

<table>
<thead>
<tr>
<th>Time</th>
<th>Total Movements</th>
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<tr>
<td>AM</td>
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<tr>
<td>PM</td>
<td>1,451</td>
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<table>
<thead>
<tr>
<th>Direction</th>
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</tr>
</thead>
<tbody>
<tr>
<td>North</td>
<td>288 / 181</td>
</tr>
<tr>
<td>South</td>
<td>70 / 38</td>
</tr>
<tr>
<td>West</td>
<td>59 / 97</td>
</tr>
<tr>
<td>East</td>
<td>396 / 356</td>
</tr>
<tr>
<td>West</td>
<td>382 / 380</td>
</tr>
<tr>
<td>East</td>
<td>341 / 385</td>
</tr>
<tr>
<td>North</td>
<td>13 / 3</td>
</tr>
<tr>
<td>South</td>
<td>5 / 5</td>
</tr>
<tr>
<td>West</td>
<td>4 / 4</td>
</tr>
<tr>
<td>East</td>
<td>5</td>
</tr>
</tbody>
</table>

Observer Hwy
Washington Street Pedestrian Volumes

Intersection Volume = 798 / 774

Intersection Volume = 946 / 963
Washington Street Pedestrian Volumes

13th St

Peds crossing Washington St = 123 / 213

Intersection Volume = 696 / 674

12th St

Peds crossing Washington St = 192 / 272

Intersection Volume = 753 / 716
Washington Street Pedestrian Volumes

11th St

138 / 107
96 / 155
194 / 118
173 / 285
444 / 394
317 / 392
Peds crossing Washington St = 275 / 234

Intersection Volume = 986 / 911

10th St

55 / 85
33 / 34
233 / 333
26 / 32
456 / 392
348 / 392
Peds crossing Washington St = 126 / 147

Intersection Volume = 818 / 728
Washington Street Pedestrian Volumes

9th St

Peds crossing Washington St = 220 / 151
Intersection Volume = 974 / 869

8th St

Peds crossing Washington St = 192 / 186
Intersection Volume = 885 / 889
Washington Street Complete Streets Redesign
Traffic Count Results & Traffic Analysis Summary

Washington Street Pedestrian Volumes

Intersection Volume =

435 / 981 / 817

7th St

317 / 252

Peds crossing Washington St =

249 / 275

165 / 113

335 / 475

104 / 130

409 / 435

305

450

981 / 817

Intersection Volume =

429

6th St

210 / 467

Peds crossing Washington St =

126 / 223

131 / 121

123 / 105

84 / 244

258 / 538

84 / 244

384 / 429

283

123 / 105

957 / 840
Washington Street Complete Streets Redesign
Traffic Count Results & Traffic Analysis Summary

Washington Street Pedestrian Volumes

5th St

Intersection Volume = 998 / 850

Peds crossing Washington St = 214 / 344

4th St

Intersection Volume = 884 / 749

Peds crossing Washington St = 395 / 274

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Washington Street Complete Streets Redesign
Traffic Count Results & Traffic Analysis Summary

Washington Street Pedestrian Volumes

3rd St

Intersection Volume = 1,092 / 919

2nd St

Intersection Volume = 1,057 / 1,033

Peds crossing Washington St = 429 / 539

Peds crossing Washington St = 394 / 493
Washington Street Pedestrian Volumes

1st St

- Peds crossing Washington St = 728 / 1,029
- Intersection Volume = 1,205 / 963

Newark Av

- Peds crossing Washington St = 1,298 / 1,170
- Intersection Volume = 1,057 / 1,033
Washington Street Complete Streets Redesign
Traffic Count Results & Traffic Analysis Summary

Washington Street Pedestrian Volumes

Intersection Volume =
1,558 / 1,451
Existing Average Delay per Vehicle
MORNING (8:00-9:00 AM) / AFTERNOON (5:30-6:30 PM)

Total Delay (veh-hours) =
72.3 / 57.1

Overall Intersection =
12.9 / 12.5

Overall Intersection =
16.5 / 17.2

Overall Intersection =
14.0 / 12.0
Existing Average Delay per Vehicle

12th St

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td>29.6 / 28.3</td>
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</table>

Overall Intersection =

11.4 / 10.2

11th St

<p>| | |</p>
<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>35.4 / 25.7</td>
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</tbody>
</table>

Overall Intersection =

15.2 / 12.0

10th St

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>8.1 / 8.3</td>
<td></td>
</tr>
</tbody>
</table>

Overall Intersection =

10.1 / 9.6
Existing Average Delay per Vehicle

- **8th St**
  - 32.2 / 29.5
  - Overall Intersection = 11.3 / 11.4

- **7th St**
  - 32.4 / 23.4
  - Overall Intersection = 12.7 / 9.8

- **9th St**
  - 6.4 / 5.1
  - Overall Intersection = 8.2 / 7.1

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Washington Street Complete Streets Redesign
Traffic Count Results & Traffic Analysis Summary

Existing Average Delay per Vehicle

Overall Intersection =

11.5 / 9.9

4th St

5th St

6th St

Overall Intersection =

10.5 / 8.5

34.9 / 30.5

7.3 / 7.5

7.7 / 7.1

8.4 / 6.3

27.5 / 25.6

27.6 / 28.1

7.3 / 7.3

7.7 / 7.7

10.7 / 7.3
Existing Average Delay per Vehicle

Washington Street Complete Streets Redesign
Traffic Count Results & Traffic Analysis Summary

<table>
<thead>
<tr>
<th>Intersection</th>
<th>Existing Average Delay per Vehicle</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st St</td>
<td>36.8 / 34.9</td>
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<tr>
<td>2nd St</td>
<td>38.2 / 41.5</td>
</tr>
<tr>
<td>3rd St</td>
<td>37.8 / 30.8</td>
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</tbody>
</table>

Overall Intersection =

14.6 / 11.6

15.0 / 17.3

14.6 / 13.3
Existing Average Delay per Vehicle

<table>
<thead>
<tr>
<th>Intersection</th>
<th>Existing Average Delay per Vehicle</th>
</tr>
</thead>
<tbody>
<tr>
<td>Newark Av</td>
<td>40.2 / 43.0</td>
</tr>
<tr>
<td>Observer Hwy</td>
<td>55.9 / 16.2</td>
</tr>
<tr>
<td>Washington St</td>
<td>6.3 / 8.0</td>
</tr>
<tr>
<td>Overall</td>
<td>16.3 / 20.0</td>
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</table>

<table>
<thead>
<tr>
<th>Intersection</th>
<th>Existing Average Delay per Vehicle</th>
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<tbody>
<tr>
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<tr>
<td>Washington St</td>
<td>10.2 / 10.3</td>
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<tr>
<td>Newark Av</td>
<td>7.6 / 6.6</td>
</tr>
<tr>
<td>Overall</td>
<td>42.7 / 22.6</td>
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</tbody>
</table>
Existing Vehicle Level of Service
MORNING (8:00-9:00 AM) / AFTERNOON (5:30-6:30 PM)

Overall Intersection = B / B

Overall Intersection = B / B

Overall Intersection = B / B
Existing Vehicle Level of Service

Overall Intersection = B / B

Overall Intersection = B / B

Overall Intersection = B / A
Existing Vehicle Level of Service

Overall Intersection = B / B

Overall Intersection = A / B

Overall Intersection = B / A
Existing Vehicle Level of Service

Overall Intersection = A / A

Overall Intersection = B / A

Overall Intersection = B / B
Existing Vehicle Level of Service

Overall Intersection = B / B

Overall Intersection = B / B

Overall Intersection = B / B
Existing Vehicle Level of Service

Overall Intersection = B / C

Overall Intersection = D / C
Peak Hour Average Vehicle Delay (Alternative)

Total Delay (veh-hours) =

\[
\begin{align*}
9.4 & / 48.3 \\
88% & / 85%
\end{align*}
\]

Overall Intersection =

\[
\begin{align*}
10.8 & / 11.2 \\
11.2 & / 11.2 \\
14.9 & / 15.2 \\
14.9 & / 14.1 \\
14.9 & / 14.1 \\
10.8 & / 11.2 \\
9.5 & / 9.4
\end{align*}
\]
Washington Street Complete Streets Redesign
Traffic Count Results & Traffic Analysis Summary

Peak Hour Average Vehicle Delay (Alternative)

Overall Intersection =

3.8 / 3.5

11th St

Overall Intersection =

16.2 / 14.7

12th St

Overall Intersection =

1.5 / 2.0

10th St

Traffic Count Results & Traffic Analysis Summary

Peak Hour Average Vehicle Delay (Alternative)

Overall Intersection =

0.0 / 0.9

Overall Intersection =

0.0 / 0.0

Overall Intersection =

0.5 / 1.0

Overall Intersection =

0.0 / 0.0

Overall Intersection =

19.8 / 21.9

Overall Intersection =

24.9 / 16.6

Overall Intersection =

11.5 / 8.9

Overall Intersection =

23.8 / 22.4
Peak Hour Average Vehicle Delay (Alternative)

Overall Intersection =

20.9 / 14.0

Overall Intersection =

3.7 / 8.7

Overall Intersection =

19.5 / 13.8
Peak Hour Average Vehicle Delay (Alternative)

Overall Intersection = 18.3 / 14.2

Overall Intersection = 8.4 / 5.5

Overall Intersection = 19.0 / 16.0
Peak Hour Average Vehicle Delay (Alternative)

Overall Intersection =

13.7 / 9.2

Overall Intersection =

15.7 / 18.3

Overall Intersection =

15.1 / 11.8
Peak Hour Average Vehicle Delay (Alternative)

Overall Intersection =
10.1 / 13.6

Overall Intersection =
26.9 / 13.5
Level of Service (Alternative)

Overall Intersection = A / A

Overall Intersection = B / B

Overall Intersection = A / A
Level of Service (Alternative)

Overall Intersection =

C / B

Overall Intersection =

A / A

Overall Intersection =

B / B
Level of Service (Alternative)

4th St

5th St

6th St

Overall Intersection = 
B / B

Overall Intersection = 
A / A

Overall Intersection = 
B / B
Level of Service (Alternative)

Overall Intersection = B / A

Overall Intersection = B / B

Overall Intersection = B / B

Overall Intersection = B / B
Level of Service (Alternative)

Overall Intersection = B / B

Overall Intersection = C / B

Washington Street Complete Streets Redesign
Traffic Count Results & Traffic Analysis Summary
## Crash History

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Crashes</th>
</tr>
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<tbody>
<tr>
<td>2010</td>
<td>67</td>
</tr>
<tr>
<td>2011</td>
<td>117</td>
</tr>
<tr>
<td>2012</td>
<td>143</td>
</tr>
<tr>
<td></td>
<td><strong>327</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type</th>
<th>Total Crashes</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Same Direction - Rear End</td>
<td>59</td>
<td>18%</td>
</tr>
<tr>
<td>2 Same Direction - Sideswipe</td>
<td>66</td>
<td>20%</td>
</tr>
<tr>
<td>3 Angle</td>
<td>21</td>
<td>6%</td>
</tr>
<tr>
<td>4 Opposite Direction (Head-On)</td>
<td>4</td>
<td>1%</td>
</tr>
<tr>
<td>5 Opposite Direction (Sideswipe)</td>
<td>2</td>
<td>1%</td>
</tr>
<tr>
<td>6 Struck Parked Vehicle</td>
<td>96</td>
<td>29%</td>
</tr>
<tr>
<td>7 Left Turn / U-Turn</td>
<td>3</td>
<td>1%</td>
</tr>
<tr>
<td>8 Backing</td>
<td>48</td>
<td>15%</td>
</tr>
<tr>
<td>9 Encroachment</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>10 Overturned</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>11 Fixed Object</td>
<td>9</td>
<td>3%</td>
</tr>
<tr>
<td>12 Animal</td>
<td>1</td>
<td>0%</td>
</tr>
<tr>
<td>13 Pedestrian</td>
<td>13</td>
<td>4%</td>
</tr>
<tr>
<td>14 Pedalcyclist</td>
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<td>2%</td>
</tr>
<tr>
<td>15 Non-fixed Object</td>
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<tr>
<td>16 Railcar-vehicle</td>
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<td></td>
<td><strong>327</strong></td>
<td>100%</td>
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</table>
Crash History compared to Typical Crash Frequency predicted by the Highway Safety Manual along Washington Street between 8th & 15th Streets

- Total Crashes: 77
- Vehicle-Pedestrian Crashes: 7
- Bicycle-Pedestrian Crashes: 3

Actual Occurrence
Expected Occurrence
Crash History compared to Typical Crash Frequency predicted by the Highway Safety Manual along Washington Street between Observer Highway and 8th Street

- Total Crashes: 220
- Vehicle-Pedestrian Crashes: 68
- Bicycle-Pedestrian Crashes: 8

Actual Occurrence
Expected Occurrence
### Accident Summary

<table>
<thead>
<tr>
<th>STREET</th>
<th>pedestrian</th>
<th>bicycle</th>
<th>animal</th>
<th>fixed obj</th>
<th>parked</th>
<th>backing</th>
<th>head on</th>
<th>rear end</th>
<th>sideswipe</th>
<th>left turn</th>
<th>angle</th>
<th>TOTAL</th>
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