

Troubleshooting Roundabouts

ITE District 2 Annual Meeting

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TRANSPORTATION ENGINEERING/PLANNING

Presentation Agenda

- › Brief History
- › Towson Roundabout
- › Charles Street/Bellona Avenue
- › MD 100/Snowden River Parkway
- › Odenton Roundabout



Roundabouts in Maryland

- Information was collected from:
 - *KAI database*
 - *County engineers in Maryland*
 - *SHA*
- Currently there are at least 80 roundabouts constructed by SHA and about the same on County roads



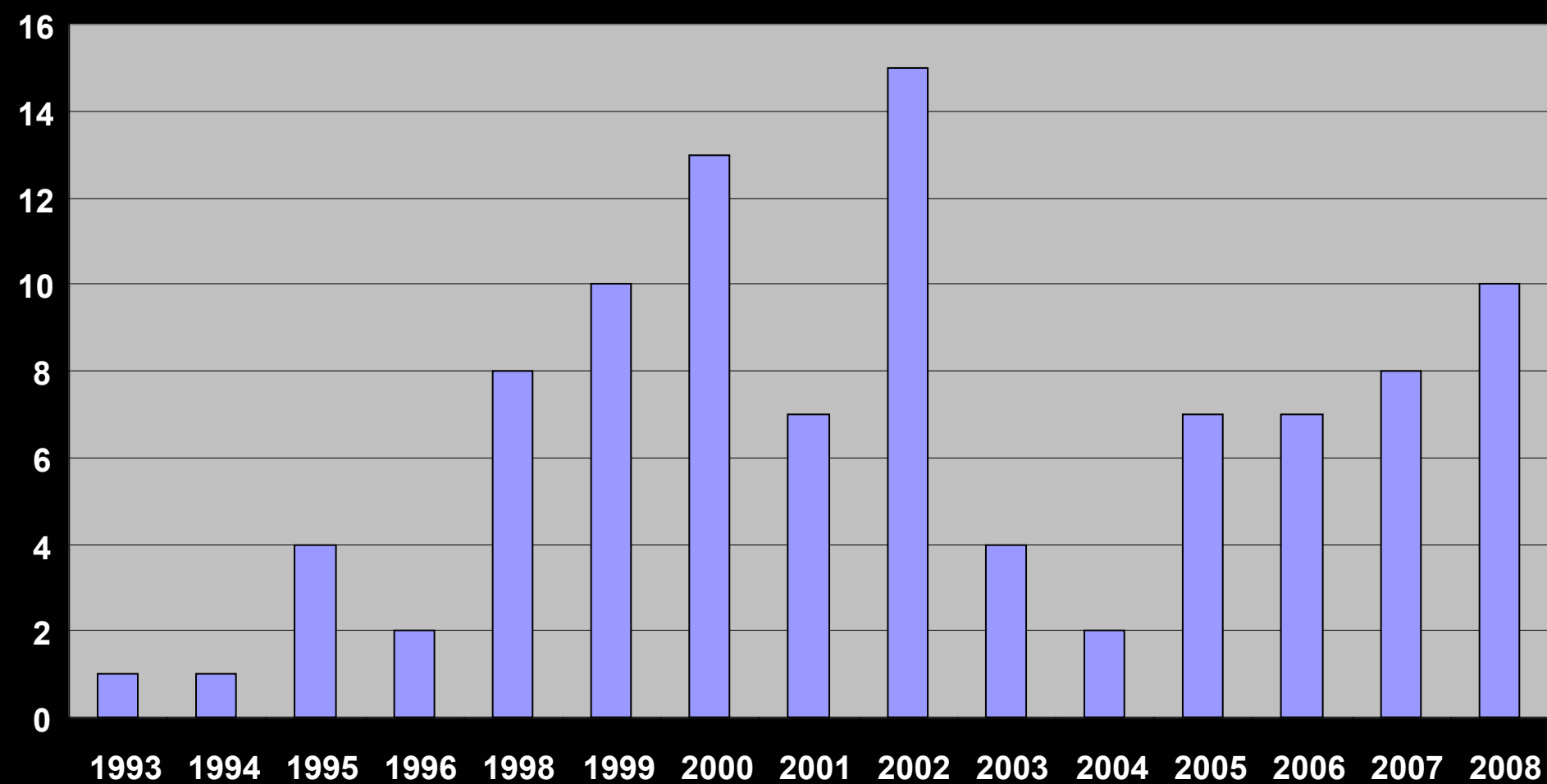
MD 307/MD 313/MD 318 - Federalsburg, Maryland

Location of Roundabouts in Maryland

County	Number
Allegany County	2
Anne Arundel	12
Baltimore County	3
Calvert	3
Caroline	1
Carroll	4
Cecil	2
Charles	3
Frederick	13
Harford	21
Howard	83
Kent	2
Montgomery	7
Prince Georges	8
Queen Anne's	2
St. Mary's	3
Washington	2
Wicomico	1
Worcester	1
Total	173



Roundabouts Constructed by Year



**Construction date was not found for 68 roundabouts which are not included in the chart*

Ownership of Roundabouts in Maryland

Owner	Number
Local	8
County	84
Military	1
State	80
Total	173



Towson Roundabout

- First multi-lane in the state, and one of the first in the US
- Unusual Constraints and Geometry
 - *Five approach legs*
 - *Joppa Road Bridge*
 - *Bowers & Snyder Building*

Initially no striping...



Towson Roundabout

- › Opened as a partial two-lane
- › Designed for ultimate expansion to three lanes
- › Traffic volumes have changed very little since opening
- › One of the highest roundabout crash sites in MD



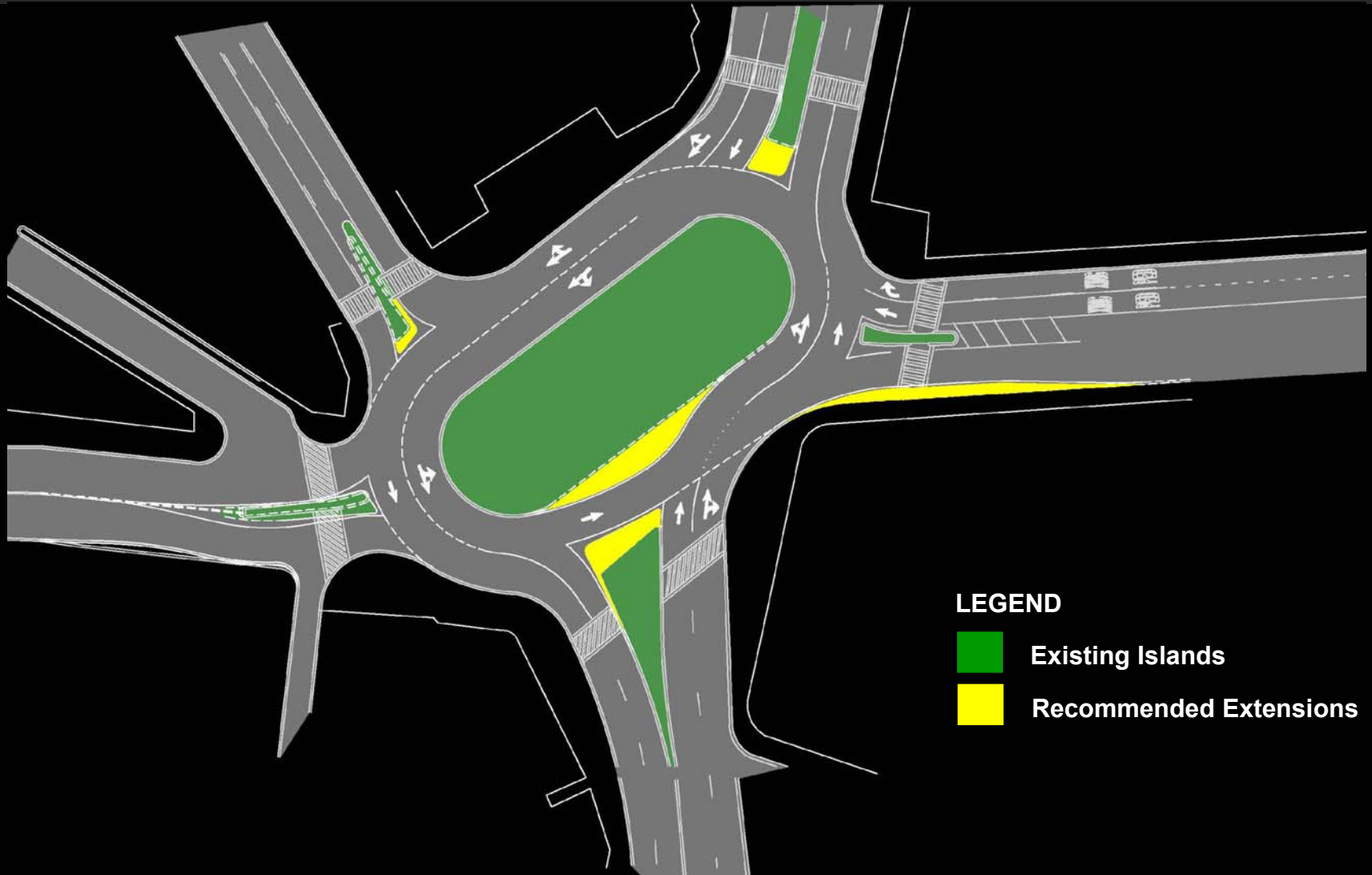
Initial striping changes





In 2000, added exit striping to



Towson Roundabout



LEGEND

-  Existing Islands
-  Recommended Extensions



Charles Street/Bellona Avenue



MD 100 @ Snowden River Parkway

- 975 vph entering MD 100 and 775 exiting MD 100
- Only 2 entering movements
- SRP movement dominates the ramp movement
- Sight distance is restricted
- Queues extending along MD 100 mainline
- 1200 ft from the SRP @ MD 108 intersection



Project Goals

- Reduce delay on the MD 100 Ramp - did not expect to fix failing operations
- Minimize impact to the intersection of SRP @ MD 108
- Reduce the risk of a severe collision along MD 100 or MD 100 Ramp



Conclusions

- PM Delay: With – 74 seconds
Without – 118 seconds
- Safety:
 - *After data is very limited – too early to draw conclusions*
 - *On SRP no increase in accidents*
 - *On the Ramp – rear-end, wet surface, AM and PM peaks*
 - *Ramp accidents appear to have decreased*
- Negative:
 - *The roundabout still fails*
 - *The timing is complex*
 - *Could be confusing*



Conclusions

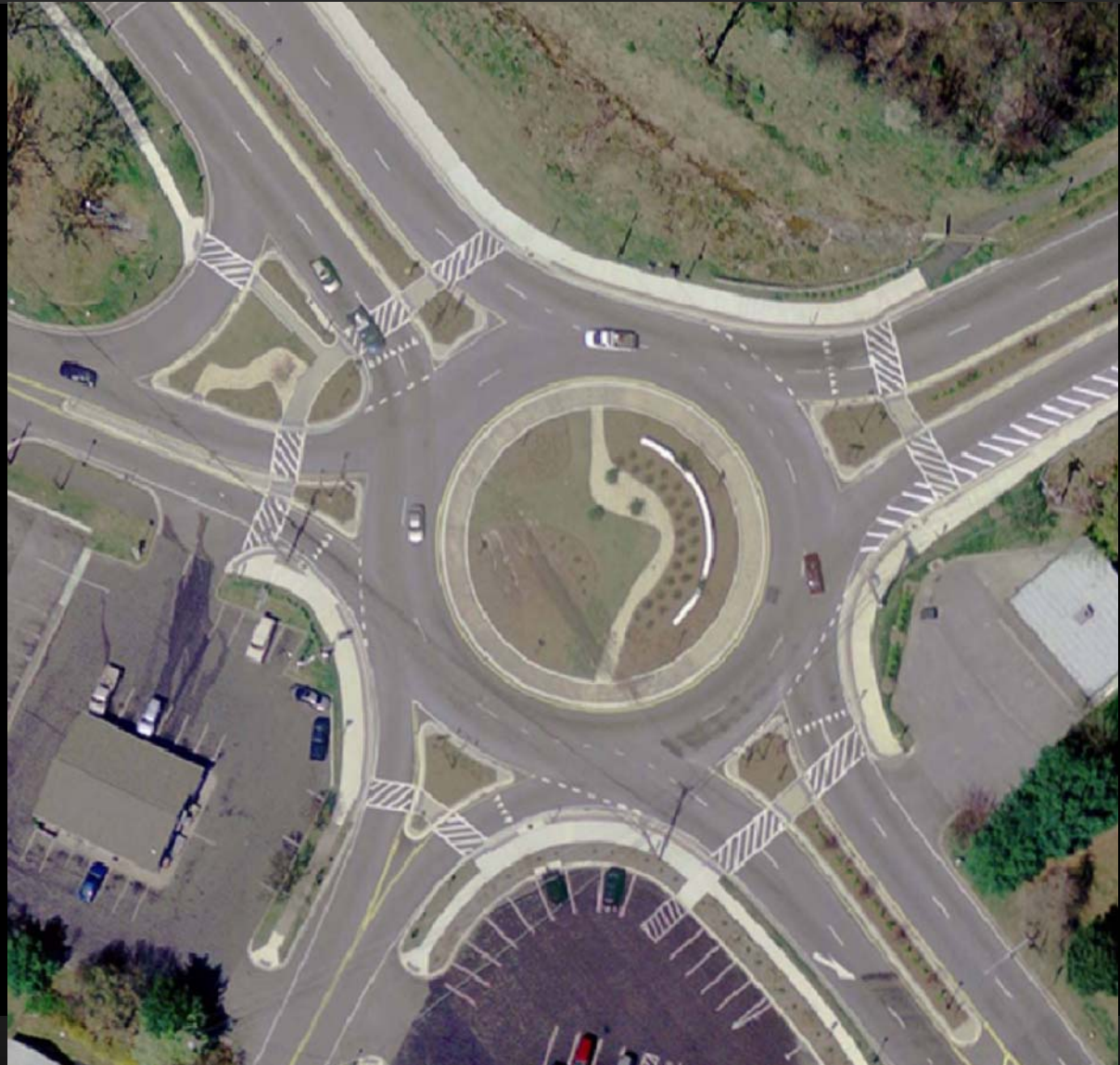
• Positive:

- *There is less delay on the ramp*
- *The impact to SRP @ MD 108 has been minor*
- *The signal is responsive to spikes in traffic*
 - *Pre-empts in the PM, frequently in the AM and sometimes during the Midday*
- *The signal is self regulating*
- *Drivers have been quick to adapt*



Odenton Roundabout

Existing conditions



Odenton Roundabout

Recommended changes

