

## Middleton/Linden Intersection Concepts

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### Concept Signalized Intersection vs. Roundabout- Side by Side Comparison

	<b>6x5x5x5 Signalized</b>	<b>Two-Lane Roundabout</b>
<b>Design Year</b>	2035	2035
<b>Design Traffic Volume<sup>1</sup></b>	23,600 vpd 2,250 peak hour	23,600 vpd 2,250 peak hour
<b>Design Vehicle</b>	WB-67 (uses all lanes)	WB-67 (uses all lanes)
<b>Design Speed</b>	50 mph	50 mph (at approach entries)
<b>Avg Delay/vehicle<sup>2</sup></b>	< 31 sec	<13 sec
<b>Safety Benefit (vs stop control)<sup>2</sup></b>	44% crash reduction	68-89% crash reduction Reduced crash severity
<b>ROW required</b>	+/- 5.5 acres total +/- 1.7 acres new	+/- 4.3 acres +/- 1.7 acres new
<b>Impacts to Existing Property</b>	Impacts existing residential parcels at three sides of intersection. R/W purchase from 9 parcels. Longer, narrower length of r-o-w required on all legs.	More significant impact to existing residential parcels at intersection. R/W purchase from 9 parcels. Larger impact to some parcels due to approach curves.
<b>Estimated Project Cost<sup>3</sup> (2013 \$)</b>	\$2.5 M	\$2.3 M
<b>Ability to Phase Improvements<sup>2</sup></b>	Can eliminate one NB left-turn and one EB thru lanes for service thru 2025.	Single-lane roundabout projected to function at LOS C until 2027, when additional circulatory lane is needed.
<b>Public Opinion</b>	Familiar with signals, NIMBY is biggest hurdle.	Some opposition to roundabouts still exists
<b>Pedestrian Access</b>	Long crossing lengths = longer signal phases = more delay per vehicle.	Single lane roundabouts accommodate pedestrian traffic safely. RRFB req'd for multi-lane roundabouts.

<sup>1</sup> Current (2013) Intersection Volumes: 10,370 vpd total, 1050 peak hour

<sup>2</sup> From "Middleton & Linden Traffic Evaluation", Aug 2013 by Arrowrock Engineering, LLC

<sup>3</sup> Consistent with survey of +/- 60 signalized intx/roundabout studies, projected costs generally within 20%