



U.S. 52 at Holy Cross Rd Intersection

Public Information Meeting
August 11, 2016

Overview

- Introduction
- Project History
- Alternatives
- Roundabout Information
- Project Schedule

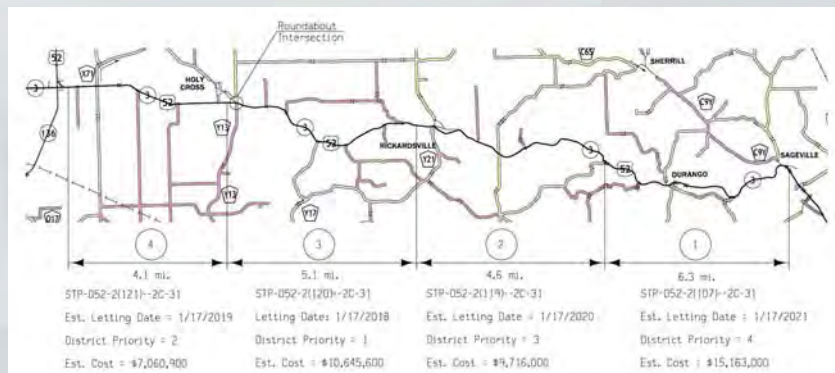


Project Team

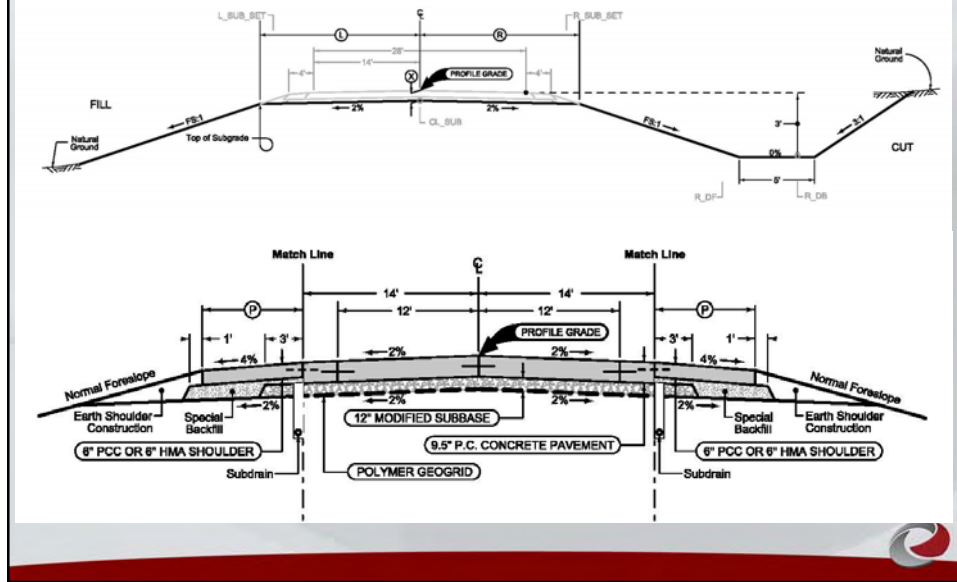
- Iowa DOT
 - Arthur Gourley
 - Sam Shea
 - Yanxiao Jia
 - Dustin Skogerboe
- GHD Inc.
 - Ben Wilkinson



Proposed Overall Project



Proposed Overall Project



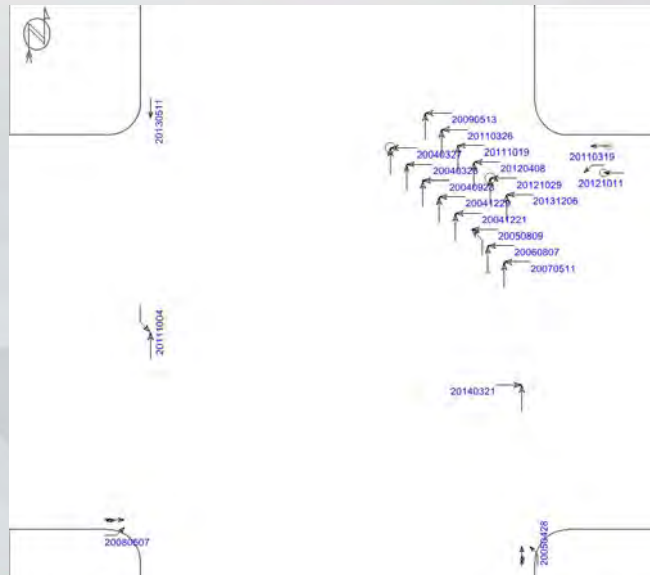
Project History

- 1927 – First constructed
- 1927- 2011 – numerous resurfacing projects
- 1991 - Vertical alignment improved through intersection
- 2008 – Request from Holy Cross mayor for improvements at several intersections
- 2008 – Safety audit
- 2009 – County project with some improvements

Crash History at Holy Cross Rd

- Crash history at the intersection
 - 2004 - 2014 Crashes (does not include animal-related crashes)
 - 19 crashes
 - 7 injury crashes (13 total injuries)
 - 12 property damage only
 - 7 crashes since 2009 (last improvement)

Crash History at Holy Cross Rd



Alternatives

- No major geometric changes
- Advanced Warning Signals
- Realign Tollgate Rd/Holy Cross Rd to square up intersection
- All-way stop
- Roundabout



Alternatives

- No major geometric changes
 - Pros
 - No changes for users, least expensive
 - Cons
 - No changes in crashes



Alternatives

- Advanced Warning Signals
 - Pros
 - Slight reduction in crashes (<10% in national studies)
 - Cons
 - Still could have significant right-angle crash, \$100,000 cost, typically used as short term measures (lose effectiveness over time)



Alternatives



Alternatives

- Realign Tollgate Rd/Holy Cross Rd to square up intersection
 - Pros
 - Slight reduction in crashes (about 10% in national studies), no major change for users
 - Cons
 - Still could have significant right-angle crash (maybe increase for other directions), higher cost, requires more right-of-way



Alternatives



Alternatives

- All-way stop
 - Pros
 - Likely to reduce right-angle crashes (about 50% reduction in national studies), less expensive
 - Cons
 - Still could have significant right-angle crash, mainline traffic will need to stop (2500 vpd vs. 700 vpd)

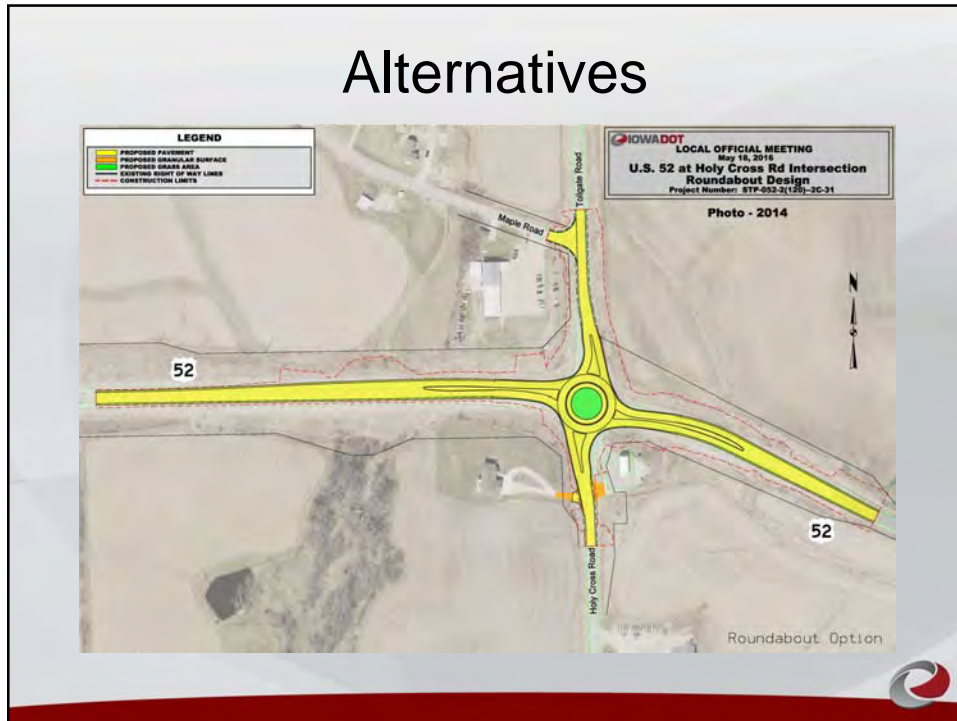


Alternatives

- Roundabout
 - Pros
 - Eliminates right-angle crashes, most traffic will not need to stop
 - Cons
 - Mainline traffic will need to yield, most expensive



Alternatives



Summary

- Roundabout is the best way to reduce crashes
 - Approximately \$410K more expensive
 - 80-90% reduction in injury/fatal crashes in national studies
 - Cost benefit is 4.4:1 (reduction in crash cost to cost of improvement)

Conclusion: The roundabout is cost-beneficial and the preferred alternative

Roundabout Information

I've heard they're taking roundabouts out on the East Coast?



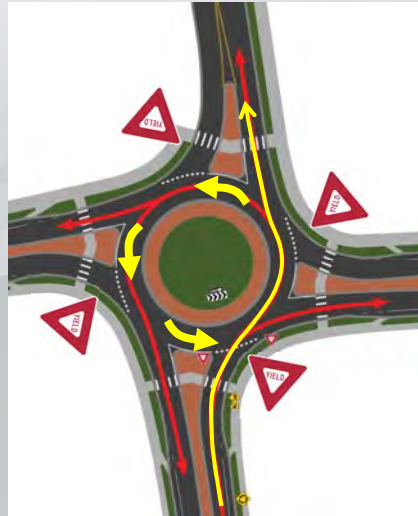
I've heard they're taking roundabouts out on the East Coast?



Greenfield,
MA

What is a Modern Roundabout??

- A compact circular intersection in which traffic flows counter-clockwise around a center island
- Entering traffic yields
- Approaches are channelized to deflect traffic into a proper entry path
- Designed to slow the speed of vehicles

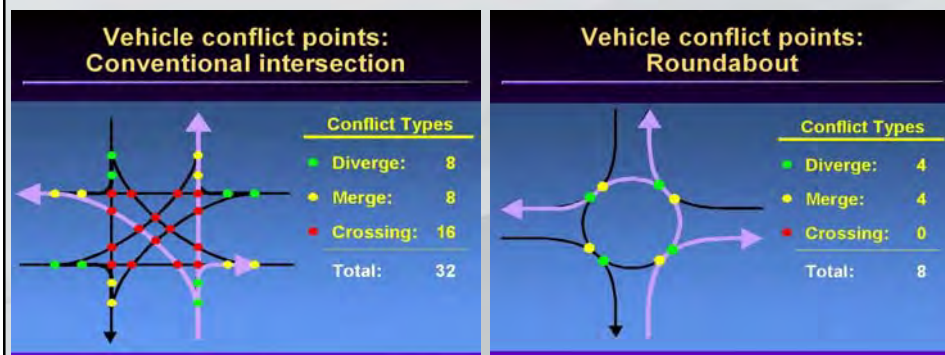


Roundabout benefits

- Safest type of at-grade intersection
 - Angle of conflict
 - Slower speeds
- Simplified decision making
- Very high capacity
- Suitable for intersections with high contrasts in volumes



Safety comparison – two-way stop vs. roundabout

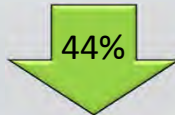


- Crashes of this type are more severe

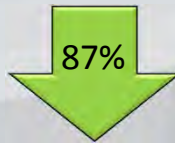


Study Results

Convert two-way stop intersection to roundabout



All crashes



Fatal/injury crashes in rural area



Yield Control – aided by entry speed control



Often need to stop at the entry and wait for a gap in the traffic



Yield Control



Vehicles yield upon entry to freeways but often merge with traffic rather than waiting for a gap

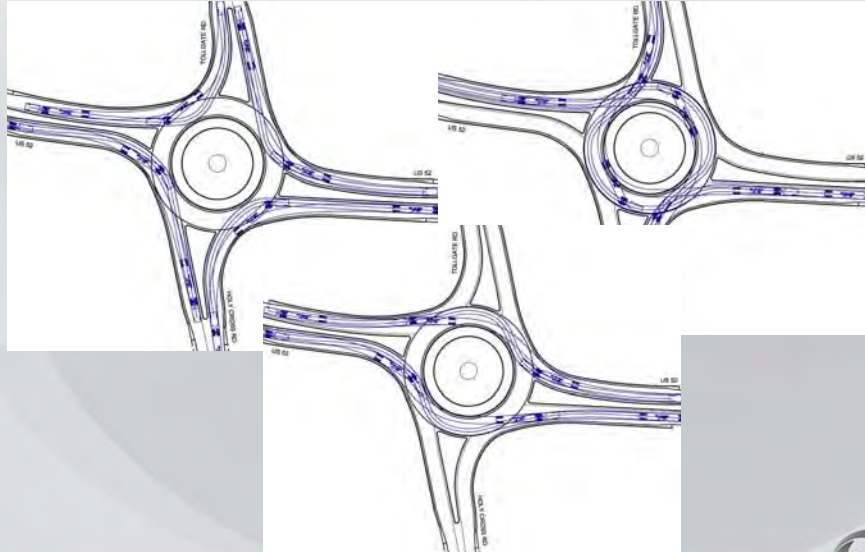


Truck apron

- Where trucks are common, a properly designed apron may be necessary.



Truck Accommodations



Comparable Sites Elsewhere



IA 3 and IA 187

Comparable Sites Elsewhere



Comparable Sites Elsewhere



Comparable Sites Elsewhere



Proposed Schedule

- Public Informational Meeting - Today
- Construction – 2018



Questions?

