
Project No. 03-100

EVALUATING THE PERFORMANCE OF CORRIDORS WITH ROUNDABOUTS

FINAL REPORT – Appendix K

Prepared for:
National Cooperative Highway Research Program
Transportation Research Board
National Research Council

TRANSPORTATION RESEARCH BOARD
NAS-NRC
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By:
Kittelson & Associates, Inc.

In association with:
Institute for Transportation Research and Education
Texas Transportation Institute
Write Rhetoric

December 2013

NCHRP
Project 03-100

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Acknowledgment of Sponsorship

This work was co-sponsored by the American Association of State Highway and Transportation Officials, in cooperation with the Federal Highway Administration, and was conducted in the National Cooperative Highway Research Program, which is administered by the Transportation Research Board of the National Academies.

Disclaimer

This is an uncorrected draft as submitted by the Contractor. The opinions and conclusions expressed or implied in the report are those of the Contractor. They are not necessarily those of the Transportation Research Board, the National Academies, or the program sponsors.

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Site Photos

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The following series of figures provides a walk-through of the Avon Road roundabout corridor. The approximate location of each photo is noted on the Google Earth image below.



Westbound



82. Looking east along the westbound lanes near the eastern end of the US-29 bridge. The solid white line extends well beyond the merge from the southbound slip ramp of roundabout 4.



83. Looking west along the US-29 bridge.



2. Looking east toward the westbound exit from roundabout 3.



4. Looking south across the crosswalk west of roundabout 3.



1. Looking west from roundabout 3.



6. Warning sign approaching roundabout 2.



8. Lane designation sign approaching roundabout 2.



9. Guide signs approaching roundabout 2.



11. Yield markings and signs at westbound entrance to roundabout 2.



12. Looking southbound across the crosswalk east of roundabout 2.



16. Looking south at the northbound exit from roundabout 2.



17. Crosswalk and sidewalk ramp west of roundabout 2.



20. Guide sign approaching roundabout 1.



21. Light pole and sidewalk ramp without crosswalk between roundabouts 1 and 2.



28. Yield bar and sign approaching roundabout 1.



30. Looking south across circulating lanes from roundabout 1.



31. Looking north from roundabout 1.



35. Southbound sign approaching roundabout 1.



36. Incorrect roundabout lane assignment arrows on the southbound approach to roundabout 1. The southbound approach has only one circulating lane painted inside the roundabout.



39. Merge west of roundabout

Eastbound



41. Guide sign approaching roundabout 1.



45. Pedestrian crossing near roundabout 1.



47. Yield bar and sign at roundabout 1.



49. Northbound approach to roundabout 1.



55. Approaching roundabout 2.



56. Signs at entry of roundabout 2.



59. Yield bar and signs at roundabout 2.



67. Looking west at circulating traffic in roundabout 2.



70. Pedestrian crossing east of roundabout 2.



71. Approaching roundabout 3.



72. Slip ramp at roundabout 3.



79. Yield bar and sign at roundabout 3.



91. Eastbound pedestrian crossing at roundabout 4.



89. Looking north at traffic exiting roundabout

La Jolla Boulevard – Before Roundabouts

The following photos of the La Jolla Boulevard corridor were taken in April 2006. At that time the two southernmost roundabouts had been constructed but the northern three had not. Photos were taken by Phil Demosthenes and are used here with his permission.



Signal at Bird Rock Avenue prior to roundabout installation



AWSC at Forward Street prior to roundabout installation

La Jolla Boulevard – With Roundabouts

This aerial view from Google Earth shows a residential neighborhood with a grid-like street pattern. Red numbers 1 through 136 are placed throughout the area, likely identifying specific houses or points of interest. A yellow arrow points to a location in the upper right, and a yellow 'N' indicates North is towards the top right. The Google Earth logo is visible in the bottom right corner.

NCHRP 03-100 La Jolla Boulevard Site Photos



006 – Intersection with Camino De La Costa, looking north



012 – Eastbound approach to intersection with Camino De La Costa, looking east

NCHRP 03-100 La Jolla Boulevard Site Photos



014 – Intersection with Camino De La Costa, looking southeast



016 – Crosswalk on Southbound Approach of Intersection with Camino De La Costa, looking northeast

NCHRP 03-100 La Jolla Boulevard Site Photos



021 –Intersection with Camino De La Costa, looking Southbound



027 –Intersection with Camino De La Costa, looking northeast

NCHRP 03-100 La Jolla Boulevard Site Photos



031 – Crosswalk on Northbound Approach of intersection with Camino De La Costa, looking north (Note the ped crossing sign with embedded LEDs)



034 – Midblock between Camino De La Costa and Bird Rock Avenue, looking north (Note the bicycle lane and buffer area between travel lane and parking lane)

NCHRP 03-100 La Jolla Boulevard Site Photos



040 – Northbound departure from Bird Rock Avenue, looking south



042 – Intersection with Bird Rock Avenue, looking southwest

NCHRP 03-100 La Jolla Boulevard Site Photos



049 – Westbound approach to intersection with Bird Rock Avenue, looking west



056 – Northbound departure from Forward Street, looking south

NCHRP 03-100 La Jolla Boulevard Site Photos



061 – Westbound approach to intersection with Forward Street, looking west



068 – Crosswalk on Northbound approach to intersection with Forward Street, looking northwest (note the activated LED in the crossing sign)

NCHRP 03-100 La Jolla Boulevard Site Photos



083 – Northbound departure from Midway Street, looking south



085 – Crosswalk on Northbound departure from intersection with Midway Street, looking west (note the broken in-pavement flashing lights)

NCHRP 03-100 La Jolla Boulevard Site Photos



088 – Intersection with Midway Street, looking southwest



097 – Westbound approach to intersection with Midway Street, looking west (Note the lack of raised median refuge island at crosswalk)

NCHRP 03-100 La Jolla Boulevard Site Photos



098 – Pedestrian fencing and buffer area on southeast quadrant of intersection with Midway Street, looking northwest



100 – Northbound approach to intersection with Midway Street, looking northwest

NCHRP 03-100 La Jolla Boulevard Site Photos



102 – Northbound departure from intersection with Colima Street, looking south



103 – Intersection with Colima Street, looking southwest

NCHRP 03-100 La Jolla Boulevard Site Photos



104 – Intersection with Colima Street, looking south



106 – Intersection with Colima Street, looking southwest

NCHRP 03-100 La Jolla Boulevard Site Photos



107 – Westbound approach to intersection with Colima Street, looking west



116 – Southbound departure from intersection with Colima Street, looking north



122 – Pedestrian crossing sign on southbound approach to intersection with Colima Street, looking south (Note activated LEDs in sign and on plaque above pushbutton)

NCHRP 03-100 La Jolla Boulevard Site Photos



125 – Approach to pedestrian crossing sign on southbound departure from intersection with Midway Street, looking northeast

Old Meridian Street

The following series of figures provides a walk-through of the Old Meridian Street roundabout corridor. The approximate location of each photo is noted on the Google Earth image on the following page.

NCHRP 03-100 Old Meridian Street Site Photos



NCHRP 03-100 Old Meridian Street Site Photos



003 – Near southern end of Old Meridian St., looking northeast



007 – Northbound approach to intersection with Pennsylvania, looking north



016 – Northbound approach to intersection with Pennsylvania (note the worn pavement markings)



025 – Within the circle at the intersection with Pennsylvania, looking north (NB Old Meridian to the right) (note the worn pavement markings caused by/causing poor lanekeeping)

NCHRP 03-100 Old Meridian Street Site Photos



026 – Same as 025, showing a car straddling the dashed lane line



036 – Old Meridian St. between Pennsylvania and Carmel, looking northeast

NCHRP 03-100 Old Meridian Street Site Photos



039 – Approach to signal at Carmel Dr., looking northeast



048 – Midblock between Carmel and Grand, looking northeast (note on-street parking on northbound side)



053 – Northbound approach to intersection with Grand Blvd., looking northeast



059 – Northbound approach to intersection with Grand Blvd., looking northeast



065 – Circulatory roadway at Grand, looking north (note lack of pavement markings, though pavement joint helps with lane delineation)



068– Westbound approach on Grand, looking west



076 – Midblock between Grand and Main, looking northeast



078 – Northbound approach to intersection at Main, looking northeast

NCHRP 03-100 Old Meridian Street Site Photos



085 – Northbound approach to intersection at Main, looking northeast



090 – Circulatory roadway at Main Street, looking north (note the worn/absent pavement markings)



097 – Northbound departure from intersection with Main Street, looking northeast



099 – Midblock between Main and Guilford, looking northeast



104 – Northbound approach to intersection with Guilford Rd, looking northeast



108 – Northbound approach to intersection with Guilford Rd, looking north



113 – Westbound approach on Guilford Rd, looking northwest



115 – Circulatory roadway between Guilford and Old Meridian, looking northwest

NCHRP 03-100 Old Meridian Street Site Photos



117 – Northbound departure on Old Meridian at Guilford, looking north



121 – Northbound departure on Old Meridian at Guilford, looking southwest



124 – Southbound approach on Old Meridian at Guilford, looking southwest



125 – Circulatory roadway between Old Meridian and hospital entrance, looking west



128 – Hospital exit to roundabout at Old Meridian, looking southeast



131 – Car approaching southbound departure on Old Meridian at Guilford, looking northeast
(note car is straddling lane line)



132 – Southbound departure on Old Meridian at Guilford, looking southwest



134 – Midblock on Old Meridian between Guilford and Main, looking southwest



136 – Southbound approach to intersection at Main, looking southwest



142 – Southbound approach to intersection at Main, looking southwest



146 – Circulatory roadway between Old Meridian and Main, looking south



148 – Eastbound approach on Main, looking east



150 – Circulatory roadway between Old Meridian and Main, looking south



151 – Southbound departure on Old Meridian, looking southwest



153 – Midblock between Main and Grand, looking southwest (note the on-street parking on the right)



156 – Southbound approach to Grand, looking southwest



157 – Southbound approach to Grand, looking southwest



161 – Southbound circulatory roadway at Grand, looking southwest



167 – Southbound circulatory roadway at Grand, looking south



170 – Southbound departure on Old Meridian at Grand, looking southwest



171 – Southbound Old Meridian at entrance to supermarket, looking southwest



175 – Southbound Old Meridian approaching signal at Carmel, looking southwest



177 – Southbound Old Meridian at Carmel signal, looking southwest



180 – Southbound midblock between Carmel and Pennsylvania, looking southwest



183 – Southbound approach to intersection at Pennsylvania, looking southwest



185 – Southbound approach to intersection at Pennsylvania, looking southwest



188 – Southbound approach to intersection at Pennsylvania, looking southwest



191 – Pedestrian route at intersection at Pennsylvania, looking west



195 – Southbound approach on Pennsylvania at Old Meridian, looking south



197 – Circulatory roadway between Pennsylvania and Old Meridian, looking southeast (note vehicle straddling lane line)



201 – Southbound departure on Old Meridian at Pennsylvania, looking southwest



203 – Northbound approach on Old Meridian at Pennsylvania, looking northeast

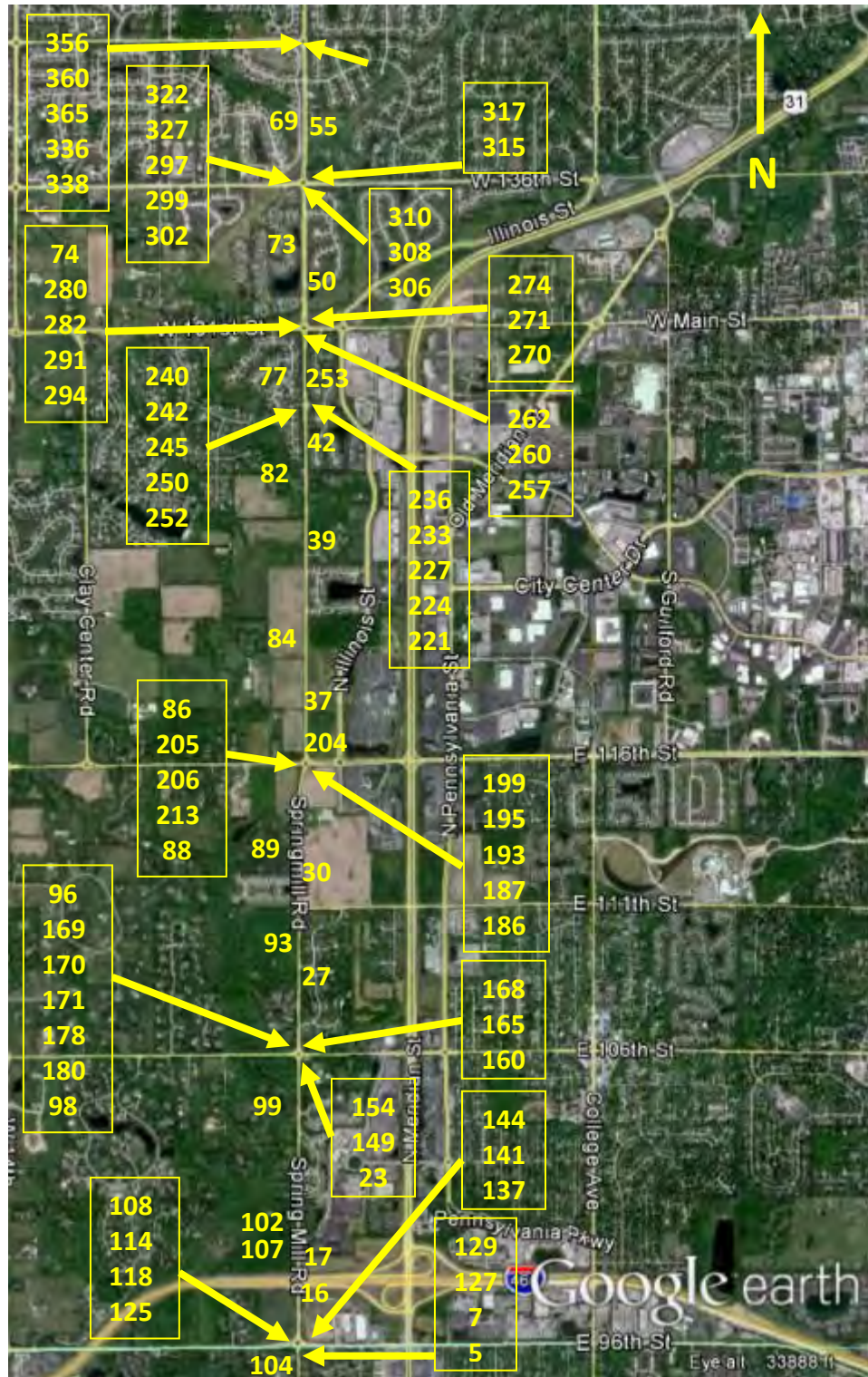
Spring Mill Road

The following series of figures provides a walk-through of the Spring Mill Road roundabout corridor. The approximate location of each photo is noted on the Google Earth image on the following page.

The following table describes the locations of the photos taken on Spring Mill Road. The photos listed on the succeeding pages are presented as one travels on a round trip from 96th Street north to 141st Street and back.

Photos	Description
1-7	Spring Mill northbound approach to 96 th St. walk-through
8-63	Spring Mill drive-through northbound from 96 th to 141 st
64-104	Spring Mill drive-through southbound from 141 st to 96 th
105-144	Spring Mill @ 96 th St. walk-through (counterclockwise beginning at southbound approach)
145-182	Spring Mill @ 106 th St. walk-through (counterclockwise beginning at northbound approach)
183-217	Spring Mill @ 116 th St. walk-through (counterclockwise beginning at northbound approach)
218-252	Spring Mill @ Dorset Blvd. walk-through (counterclockwise beginning at northbound approach)
253-294	Spring Mill @ Main St. walk-through (counterclockwise beginning at northbound approach)
295-331	Spring Mill @ 136 th St. walk-through (counterclockwise beginning at eastbound approach)
332-366	Spring Mill @ 141 st St. walk-through (counterclockwise beginning at eastbound approach)

NCHRP 03-100 Spring Mill Road Site Photos



NCHRP 03-100 Spring Mill Road Site Photos



005 – Spring Mill Rd. at Copley Dr., south of 96th St, looking north



007 – Spring Mill Rd. south of 96th St, looking north

NCHRP 03-100 Spring Mill Road Site Photos



127 – Northbound approach to intersection with 96th St, looking north



129 – Within the circle at the intersection with 96th St, looking north (EB 96th to the right) (note the worn pavement markings and the vehicles straddling the lane lines)

NCHRP 03-100 Spring Mill Road Site Photos



137 – Westbound 96th St. approach to Spring Mill Rd, looking west

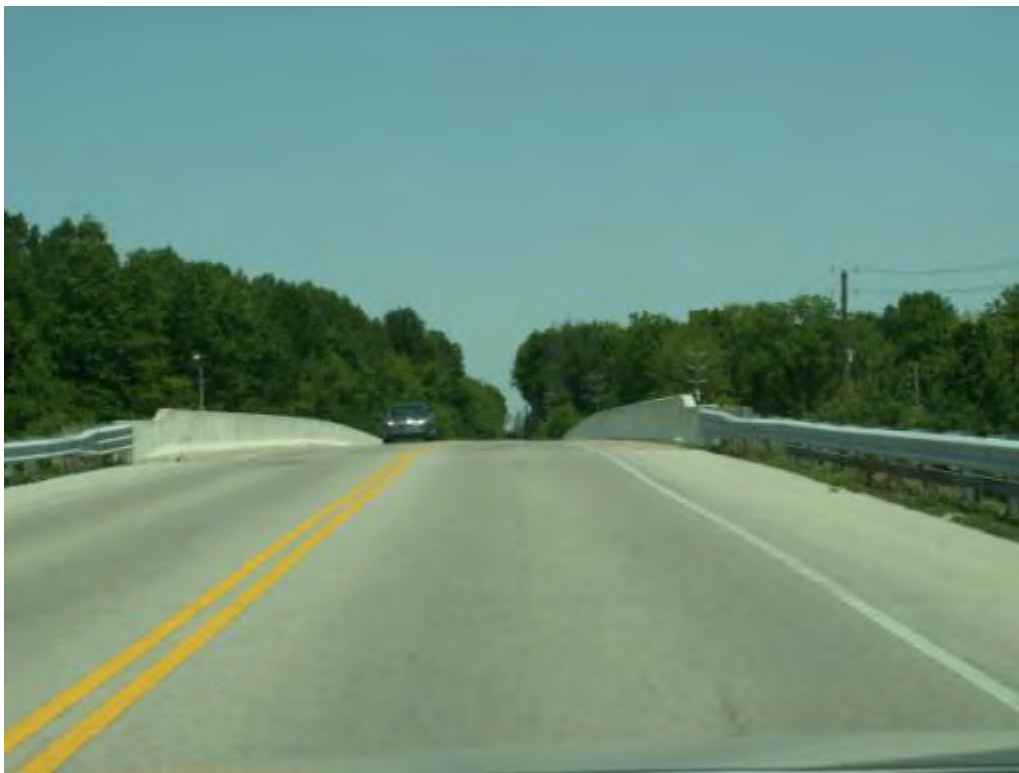


141 – Circulatory roadway between 96th St. and Spring Mill, looking west

NCHRP 03-100 Spring Mill Road Site Photos



144 – Northbound departure on Spring Mill from 96th St., looking north



016 – Spring Mill bridge over I-465, looking north

NCHRP 03-100 Spring Mill Road Site Photos



017 – Northbound Spring Mill between I-465 and 103rd St., looking north



023 – Northbound approach to intersection with 106th St., looking north

NCHRP 03-100 Spring Mill Road Site Photos



149 – Northbound approach to intersection with 106th St., looking north



154– Circulatory roadway at 106th St., looking north

NCHRP 03-100 Spring Mill Road Site Photos



160 – Westbound 106th St. approach, looking west



165 – Northbound Spring Mill Rd. departure, looking northwest

NCHRP 03-100 Spring Mill Road Site Photos



168 – Northbound departure from intersection at 106th St., looking north



027 – Northbound Spring Mill between 106th St. and 111th St., looking north

NCHRP 03-100 Spring Mill Road Site Photos



030 – Northbound Spring Mill between 111th St. and 116th St., looking north



186 – Northbound approach to intersection at 116th St., looking north

NCHRP 03-100 Spring Mill Road Site Photos



187 – Northbound approach to intersection at 116th St., looking north



193 – Westbound 116th St. approach to intersection at Spring Mill, looking west

NCHRP 03-100 Spring Mill Road Site Photos



195 – Westbound 116th St. approach showing separate right-turn lane, looking southwest



199 – Westbound 116th St. right-turn lane, looking northwest

NCHRP 03-100 Spring Mill Road Site Photos



204 – Vehicle in right-turn lane on northbound departure leg at intersection with 116th St., looking south



037 – Northbound Spring Mill between 116th St. and Pintail Ct., looking north

NCHRP 03-100 Spring Mill Road Site Photos



039 – Northbound Spring Mill between Pintail Ct. and Dorset Blvd., looking north



042 – Northbound approach at Dorset, looking north

NCHRP 03-100 Spring Mill Road Site Photos



221 – Northbound approach at Dorset, looking north



224 – Northbound approach at Dorset, looking north

NCHRP 03-100 Spring Mill Road Site Photos



227 – Circulatory roadway between Spring Mill and Dorset, looking northeast



233 – Westbound Dorset approach to Spring Mill, looking west

NCHRP 03-100 Spring Mill Road Site Photos



236 – Northbound departure from intersection with Dorset, looking northwest



253 – Northbound between Dorset and Main, looking north

NCHRP 03-100 Spring Mill Road Site Photos



257 – Northbound approach at Main, widening to two approach lanes, looking north



260 – Northbound approach at Main, looking northwest (note car straddling lane line)



262 – Circulatory roadway between Spring Mill and Main, looking north (note car driving in the middle of the two-lane section)



270 – Westbound Main approach to Spring Mill, looking west



271 – Westbound Main approach to Spring Mill, looking west



274 – Circulatory roadway between Main and Spring Mill, looking west (note the faded lane line between right-turn and through traffic)

NCHRP 03-100 Spring Mill Road Site Photos



050 – Northbound between Main and 136th St., looking north



306 – Northbound approach at 136th St., looking north

NCHRP 03-100 Spring Mill Road Site Photos



308 – Northbound approach at 136th St., looking north



310 – Northbound approach at 136th St., looking northeast

NCHRP 03-100 Spring Mill Road Site Photos



315 – Westbound 136th St. approach at Spring Mill, looking west



317 – Circulatory roadway between 136th St. and Spring Mill, looking northwest

NCHRP 03-100 Spring Mill Road Site Photos



055 – Northbound between 136th St. and 141st St., looking north



343 – Northbound approach at 141st St., looking north

NCHRP 03-100 Spring Mill Road Site Photos



345 – Northbound approach at 141st St., looking north



351 – Northbound circulatory roadway at the intersection at 141st St., looking north

NCHRP 03-100 Spring Mill Road Site Photos



354 – Westbound circulatory roadway at the intersection at 141st St., looking west



061 – Northbound departure from intersection at 141st St., looking north

NCHRP 03-100 Spring Mill Road Site Photos



356 – Southbound approach at 141st St., looking south



360 – Southbound approach at 141st St., looking southwest

NCHRP 03-100 Spring Mill Road Site Photos



365 – Circulatory roadway between Spring Mill and 141st St., looking southwest



336 – Eastbound 141st St. approach at Spring Mill, looking east

NCHRP 03-100 Spring Mill Road Site Photos



338 – Eastbound 141st St. approach at Spring Mill, looking southeast



069 – Southbound between 141st St. and 136th St., looking south

NCHRP 03-100 Spring Mill Road Site Photos



322 – Southbound approach at 136th St., looking south



327 – Southbound approach at 136th St., looking south

NCHRP 03-100 Spring Mill Road Site Photos



330 – Circulatory roadway between Spring Mill and 136th St., looking southwest



297 – Eastbound 136th St. approach at Spring Mill, looking east



299 – Eastbound 136th St. approach at Spring Mill, looking east



302 – Circulatory roadway between 136th St. and Spring Mill, looking southeast

NCHRP 03-100 Spring Mill Road Site Photos



073 – Southbound between 136th St. and Main, looking south



074 – Southbound approach at Main St., looking south

NCHRP 03-100 Spring Mill Road Site Photos



280 – Southbound approach at Main St., looking south



282 – Circulatory roadway between Spring Mill and Main, looking southwest

NCHRP 03-100 Spring Mill Road Site Photos



288 – Eastbound Main St. approach at Spring Mill, looking east



291 – Circulatory roadway between Main and Spring Mill, looking southeast

NCHRP 03-100 Spring Mill Road Site Photos



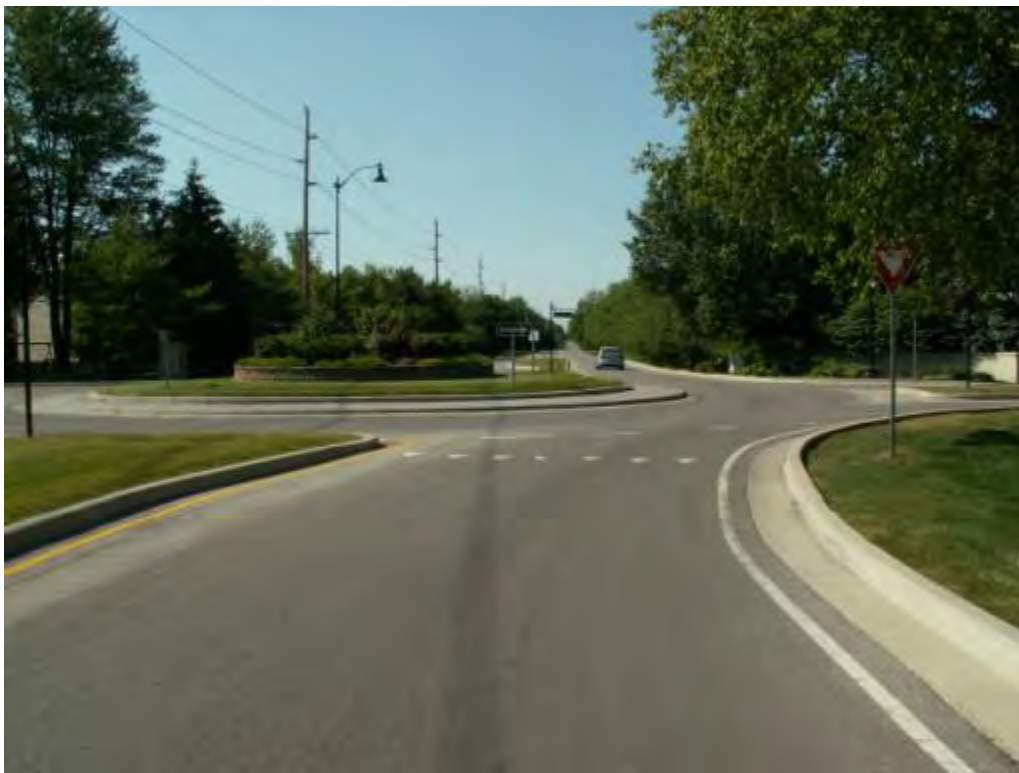
294 – Southbound departure from intersection at Main St., looking south



077 – Southbound between Main and Dorset, looking south



240 – Southbound approach at Dorset, looking south



242 – Southbound approach at Dorset, looking south



245 – Circulatory roadway between Spring Mill and Dorset, looking south



250 – Eastbound Dorset approach at Spring Mill, looking east

NCHRP 03-100 Spring Mill Road Site Photos



252 – Southbound departure from intersection at Dorset, looking south



082 – Southbound between Dorset and Pintail Ct., looking south

NCHRP 03-100 Spring Mill Road Site Photos



084 – Southbound between Pintail Ct. and 116th St., looking south



086 – Southbound approach at 116th St., looking south

NCHRP 03-100 Spring Mill Road Site Photos



205 – Southbound approach at 116th St., looking south



206 – Southbound approach at 116th St., looking south

NCHRP 03-100 Spring Mill Road Site Photos



213 – Eastbound 116th St. approach at Spring Mill, looking east



088 – Southbound departure from intersection at 116th St., looking south

NCHRP 03-100 Spring Mill Road Site Photos



089 – Southbound between 136th St. and 111th St., looking south



093 – Southbound between 111th St. and 106th St., looking south

NCHRP 03-100 Spring Mill Road Site Photos



096 – Southbound approach at 106th St., looking south



169 – Southbound approach at 106th St., looking southwest

NCHRP 03-100 Spring Mill Road Site Photos



170 – Southbound approach at 106th St., looking south



171 – Circulatory roadway between Spring Mill and 106th St., looking southeast

NCHRP 03-100 Spring Mill Road Site Photos



178 – Eastbound 106th St. approach at Spring Mill, looking east



180 – Circulatory roadway between Spring Mill and 106th St., looking northeast

NCHRP 03-100 Spring Mill Road Site Photos



098 – Southbound departure from intersection at 106th St., looking south



099 – Southbound between 106th St. and 103rd St., looking south

NCHRP 03-100 Spring Mill Road Site Photos



102 – Southbound approach at 96th St., looking south



107 – Southbound approach at 96th St., looking south

NCHRP 03-100 Spring Mill Road Site Photos



108 – Southbound approach at 96th St., looking south



114 – Circulatory roadway between Spring Mill and 96th St., looking south

NCHRP 03-100 Spring Mill Road Site Photos



118 – Eastbound 96th St. approach at Spring Mill, looking east



125 – Circulatory roadway between 96th St. and Spring Mill, looking northeast

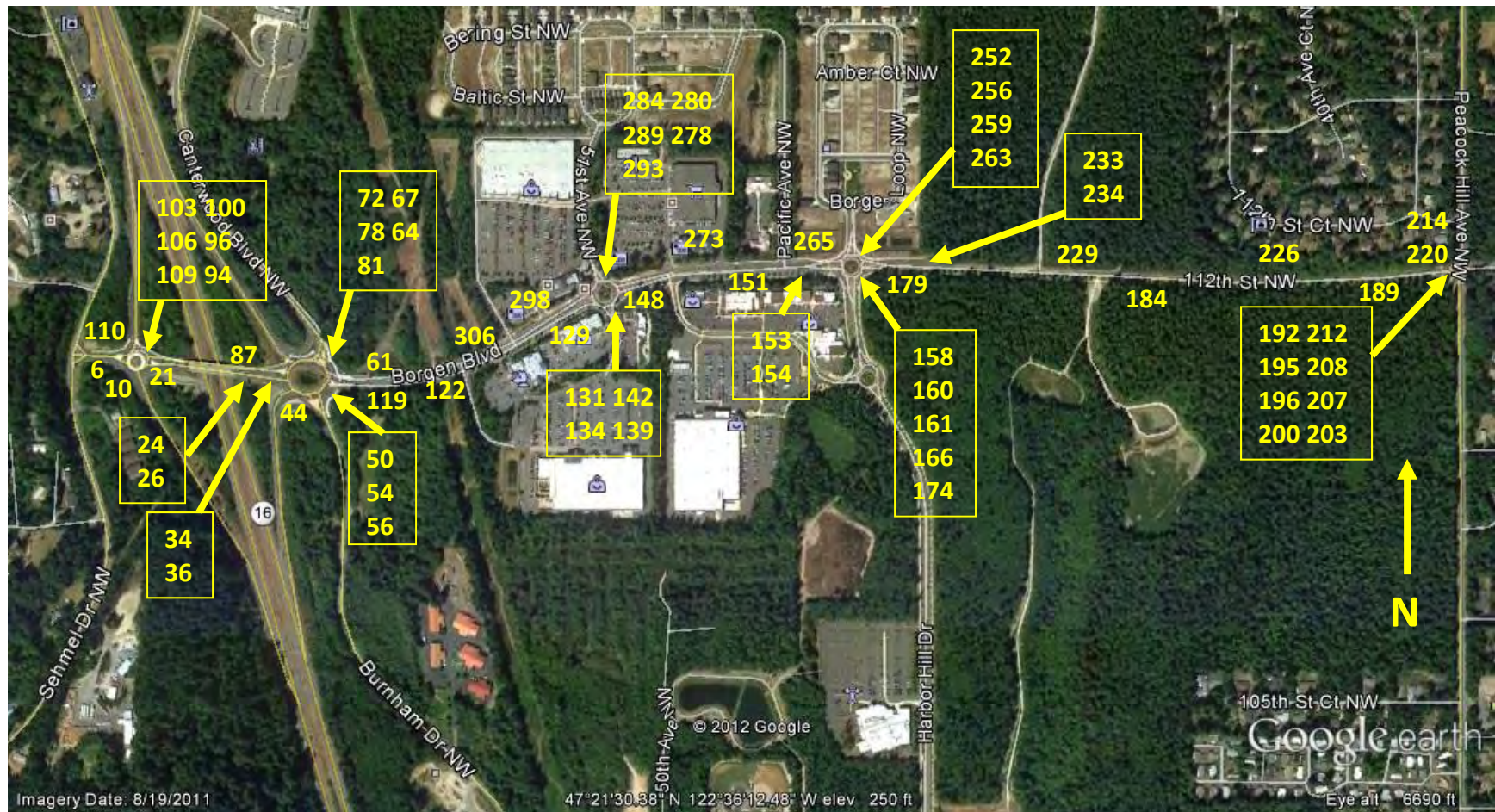


104 – Southbound departure from intersection at 96th St., looking south

Borgen Boulevard

The following series of figures provides a walk-through of the Borgen Boulevard roundabout corridor. The approximate location of each photo is noted on the Google Earth image below. Note that while SR 16 has a local alignment that resembles north-south travel, it is officially labeled as eastbound (to the south) and westbound (to the north), which is the terminology used in the photo descriptions.

NCHRP 03-100 Borgen Blvd Site Photos



NCHRP 03-100 Borgen Blvd Site Photos



006 – Eastbound approach to State Route 16 EB ramps, looking east



010 – Eastbound approach to State Route 16 EB ramps, looking north



021 – Eastbound Borgen/Burnham on overpass above SR 16, looking east



024 – Diagrammatic sign on eastbound Borgen/Burnham approaching SR 16 WB ramps

NCHRP 03-100 Borgen Blvd Site Photos



026 – Eastbound approach on Borgen Blvd. to State Route 16 WB ramps, Canterwood Blvd., and Burnham Dr., looking east



NCHRP 03-100 Borgen Blvd Site Photos

034 – Exit ramp from WB SR 16 to Borgen Blvd., looking south



036 – Circulating roadway in Roundabout #2, between eastbound approach from Borgen Blvd. and approach from State Route 16 WB ramps, looking southeast

NCHRP 03-100 Borgen Blvd Site Photos



044 – Merge point between roundabout departure to Burnham Dr. and right-turn bypass lane from State Route 16 WB ramps, looking southeast



050 – Approach to Roundabout #2 from Burnham Dr., looking north

NCHRP 03-100 Borgen Blvd Site Photos



054 – Yield line at approach to Roundabout #2 from Burnham Dr., looking west



NCHRP 03-100 Borgen Blvd Site Photos

056 – Circulating roadway in Roundabout #2, single-lane section adjacent to east leg of Borgen Blvd., looking north (note pickup truck traveling in “unmarked second lane”)



119 – Eastbound Borgen Blvd. between SR 16 and 51st Ave., looking east

NCHRP 03-100 Borgen Blvd Site Photos



122 – Eastbound Borgen Blvd. at Home Depot driveway, looking east



129 – Eastbound Borgen Blvd. approaching Roundabout #3, looking east



131 – Eastbound approach to intersection at 51st Ave., looking northeast



134 – Circulating roadway at Roundabout #3, looking east



139 – Northbound approach to Roundabout #3 from shopping center driveway, looking north



142 – Circulating roadway at Roundabout #3, looking north

NCHRP 03-100 Borgen Blvd Site Photos



148 – Eastbound Borgen Blvd. between 51st Ave. and Harbor Hill Dr. approaching left turn into Albertsons and right turn into Walgreens/Costco, looking east



151 – Eastbound Borgen Blvd. between 51st Ave. and Harbor Hill Dr, looking east



153 – Signage for eastbound approach to Roundabout #4, looking east (note the EXCEPT TRANSIT plaque above the right-turn only portion of the sign)

NCHRP 03-100 Borgen Blvd Site Photos



154 – Eastbound Borgen Blvd. approach to Roundabout #4, looking east



158 – Eastbound Borgen Blvd. approach at Harbor Hill Dr., looking east



160 – Single-lane circulating roadway at Roundabout #4, looking east (note van traveling through from right lane across pavement marking)



NCHRP 03-100 Borgen Blvd Site Photos

161 – Single-lane circulating roadway at Roundabout #4 adjacent to south leg, looking east



166 – Northbound approach on Harbor Hill Dr. at Borgen Blvd., looking north

NCHRP 03-100 Borgen Blvd Site Photos



174 – Eastbound departure from Roundabout #4 (and lane drop), looking east



179 – Eastbound Borgen Blvd. between Harbor Hill Dr. and Peacock Hill Ave., looking east



184 – Eastbound Borgen Blvd. between Harbor Hill Dr. and Peacock Hill Ave., looking east



189 – Eastbound Borgen Blvd. approach to Peacock Hill Ave., looking east

NCHRP 03-100 Borgen Blvd Site Photos



192 – Eastbound Borgen Blvd. approach to Peacock Hill Ave., looking east



195 – Circulating roadway and eastbound yield line at Roundabout #5, looking northeast



196 – Circulating roadway and southbound departure to Peacock Hill Rd., looking east



200 – Northbound approach to Roundabout #5, looking north



203 – Circulating roadway and eastbound departure to 112th St., looking north



207 – Eastbound departure to 112th St. from Roundabout #5, looking east



208 – Westbound approach from 112th St. to Roundabout #5, looking west



212 – Circulating roadway at Roundabout #5 between 112th St and Peacock Hill Rd., looking southwest

NCHRP 03-100 Borgen Blvd Site Photos



214 – Southbound Peacock Hill Rd. approach to Roundabout #5, looking south



220 – Westbound departure from Roundabout #5 to Borgen Blvd., looking southwest



226 – Westbound Borgen Blvd. between Peacock Hill and Harbor Hill, looking west



229 – Westbound Borgen Blvd. between Peacock Hill and Harbor Hill, looking west

NCHRP 03-100 Borgen Blvd Site Photos



233 – Westbound Borgen Blvd. approach to Roundabout #4 (and lane addition), looking west



234 – Westbound Borgen Blvd. approach to Roundabout #4 (and lane addition), looking west

NCHRP 03-100 Borgen Blvd Site Photos



252 – Westbound Borgen Blvd. approach to Roundabout #4, looking west



256 – Southbound Harbor Hill Dr. approach to Roundabout #4, looking southwest



259 – Circulating roadway at Roundabout #4 adjacent to the north leg, looking west



263 – Westbound Borgen Blvd. departure from Roundabout #4, looking west

NCHRP 03-100 Borgen Blvd Site Photos



265 – Westbound Borgen Blvd. approaching right-turn lane to Pacific Ave., looking west



273 – Westbound Borgen Blvd. at right turn into Albertson's driveway, looking west

NCHRP 03-100 Borgen Blvd Site Photos



278 – Westbound Borgen Blvd. approach to Roundabout #3, looking west



280 – Westbound Borgen Blvd. yield line at Roundabout #3, looking southwest

NCHRP 03-100 Borgen Blvd Site Photos



284 – Circulating roadway at Roundabout #3 adjacent to north leg, looking west



289 – Southbound approach on 51st Ave. at Roundabout #3, looking southeast



293 – Circulating roadway at Roundabout #3 adjacent to north leg, looking east



298 – Westbound Borgen Blvd between 51st Ave. and SR 16, looking west

NCHRP 03-100 Borgen Blvd Site Photos



306 – Westbound Borgen Blvd between 51st Ave. and SR 16, looking west



NCHRP 03-100 Borgen Blvd Site Photos

061 – Westbound approach on Borgen Blvd. to State Route 16 WB ramps, Canterwood Blvd., and Burnham Dr., looking west



064 – Pavement markings on westbound approach to Roundabout #2, looking southwest

NCHRP 03-100 Borgen Blvd Site Photos



067 – Circulating roadway on Roundabout #2 adjacent to Canterwood Blvd., looking northwest



072 – Southbound approach from Canterwood Blvd. to Roundabout #2, looking north

NCHRP 03-100 Borgen Blvd Site Photos



078 – Yield line at approach from Canterwood Blvd. to Roundabout #2, looking east



081 – Departure from Roundabout #2 to westbound SR 16 and Borgen/Burnham, looking southwest

NCHRP 03-100 Borgen Blvd Site Photos



087 – Westbound Borgen/Burnham over SR 16, looking west



094 – Westbound approach on Borgen/Burnham to Roundabout #1, looking west

NCHRP 03-100 Borgen Blvd Site Photos



096 – Westbound yield line and circulating roadway at Roundabout #1, looking west



NCHRP 03-100 Borgen Blvd Site Photos

100 – Approach from eastbound SR 16 ramp and departure to westbound Borgen/Burnham at Roundabout #1, looking west



103 – Approach from eastbound SR 16 ramp to Roundabout #1, looking south

NCHRP 03-100 Borgen Blvd Site Photos



106 – Yield line at approach from eastbound SR 16 ramp and circulating roadway at Roundabout #1, looking east



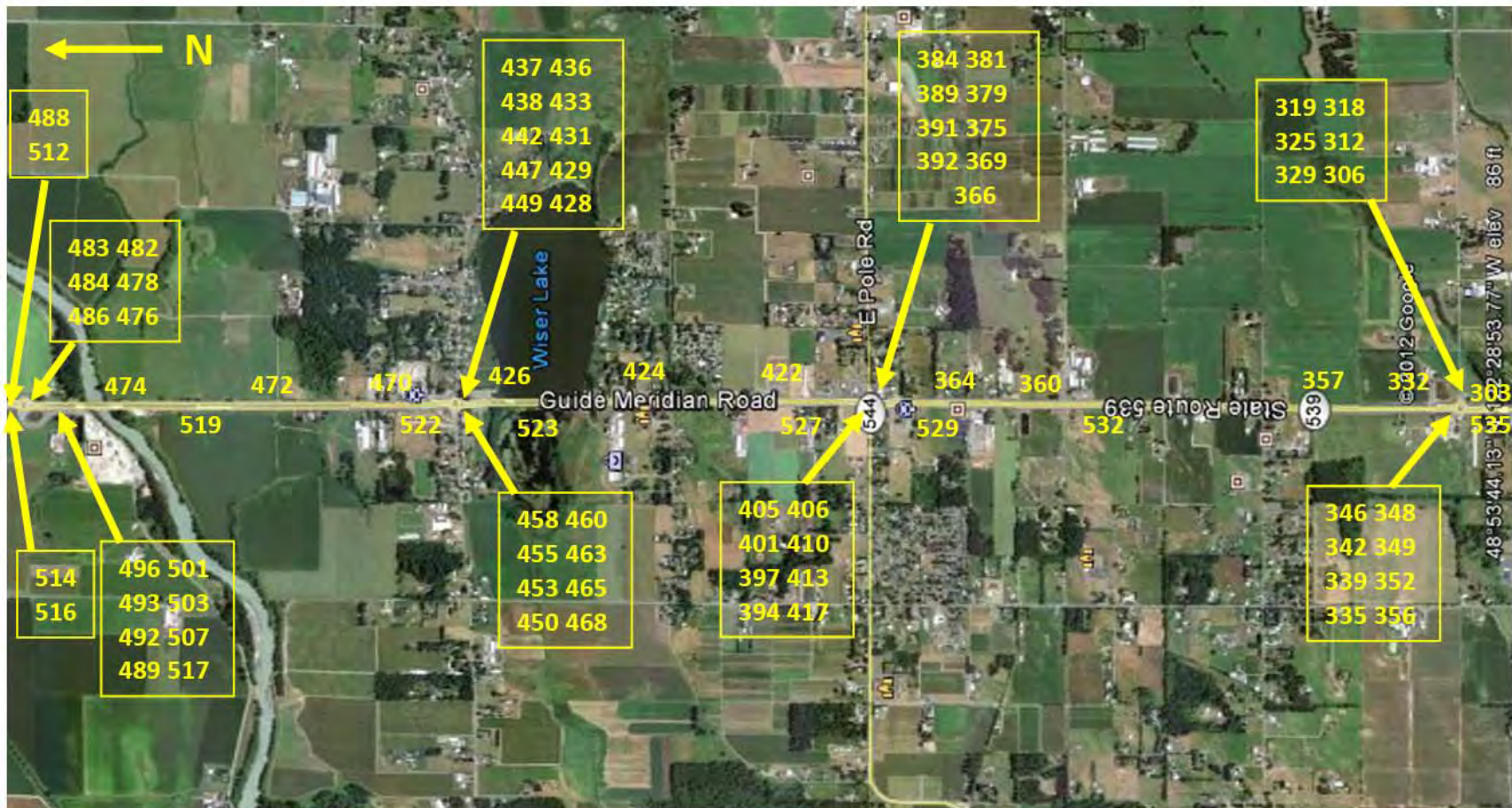
109 – Departure to westbound Borgen/Burnham at Roundabout #1, looking west



110 – Westbound approach on Borgen/Burnham to T-intersection at Sehmel Dr., looking west

SR 539

The following series of figures provides a walk-through of the SR 539 roundabout corridor. The approximate location of each photo is noted on the Google Earth image below.





303 – Northbound SR 539, looking north



306 – Northbound SR 539 approach to Roundabout #1 at Ten Mile Rd., looking north



312 – Northbound SR 539 approach to Roundabout #1 at Ten Mile Rd., looking north



318 – Yield line at northbound SR 539 approach to Roundabout #1, looking northeast



319 – Circulating roadway in Roundabout #1 adjacent to Ten Mile Rd., looking north



325 – Westbound Ten Mile Rd. approaching Roundabout #1, looking west



329 – Circulating roadway in Roundabout #1 adjacent to SR 539, looking west



332 – Northbound SR 539 departure from Roundabout #1, looking north



357 – Northbound SR 539 between Ten Mile Rd. and Pole Rd., looking north



360 – Northbound SR 539 between Ten Mile Rd. and Pole Rd., looking north



364 – Northbound SR 539 approach to Roundabout #2 at Pole Rd. (SR 544), looking north



366 – Northbound SR 539 approach to Roundabout #2 at Pole Rd., looking north



369 – Northbound SR 539 approach to Roundabout #2 at Pole Rd., looking north



375 – Yield line at Northbound SR 539 approach to Roundabout #2, looking north



379 – Circulating roadway at Roundabout #2 adjacent to eastbound Pole Rd., looking northwest



381 – Eastbound Pole Rd. departure from Roundabout #2, looking east



384 – Westbound Pole Rd. approach to Roundabout #2, looking west



389 – Northbound semi from SR 539 negotiating circulating roadway at Roundabout #2 , looking southeast



391 – Circulating roadway at Roundabout #2 adjacent to northbound SR 539, looking west



392 – Northbound SR 539 departure from Roundabout #2, looking north



422 – Northbound SR 539 between Pole Rd. and Bartlett Rd., looking north



424 – Northbound SR 539 between Bartlett Rd. and Wiser Lake Rd., looking north



426 – Northbound SR 539 approach to Roundabout #3 at Wiser Lake Rd., looking north



428 – Northbound SR 539 approach to Roundabout #3 at Wiser Lake Rd., looking north



429 – Northbound SR 539 approach to Roundabout #3 at Wiser Lake Rd., looking north



431 – Northbound SR 539 approach to Roundabout #3 at Wiser Lake Rd., looking north



433 – Yield line at northbound SR 539 approach to Roundabout #3, looking northeast



436 – Circulating roadway at Roundabout #3, adjacent to southbound SR 539, looking west



437 – Circulating roadway at Roundabout #3, adjacent to eastbound Wiser Lake Rd, looking north



438 – Eastbound Wiser Lake Rd. departure from Roundabout #3, looking northeast



442 – Westbound Wiser Lake Rd. approach to Roundabout #3, looking west



447 – Circulating roadway at Roundabout #3, adjacent to northbound SR 539, looking west



449 – Northbound SR 539 departure from Roundabout #3, looking north



470 – Northbound SR 539 between Wisner Lake Rd. and River Rd., looking north



472 – Northbound SR 539 between Wisner Lake Rd. and River Rd., looking north



474 – Northbound SR 539 approaching Nooksack River Bridge, looking north



476 – Northbound SR 539 approaching River Rd. at Roundabout #4, looking north



478 – Northbound SR 539 approaching River Rd. at Roundabout #4, looking north



482 – Yield line at northbound SR 539 approach to Roundabout #4, looking north



483 – Northbound circulating roadway at Roundabout #4, looking north (note worn lane line marking)



484 – Circulating roadway at Roundabout #4 approaching northbound SR 539 departure, looking north



486 – Northbound SR 539 departure from Roundabout #4, looking northwest



488 – Northbound SR 539 departure from Roundabout #4, looking northwest



512 – Northbound SR 539 between River Rd. and Birch Bay-Linden Rd., looking north



514 – Southbound SR 539 between Birch Bay-Linden Rd. and River Rd., looking south



516 – Southbound SR 539 approach to Roundabout #4, looking south



489 – Southbound SR 539 approach to Roundabout #4, looking south



492 – Southbound SR 539 approach to Roundabout #4, looking south



493 – Yield line at Southbound SR 539 approach to Roundabout #4, looking south



496 – Circulating roadway at Roundabout #4 adjacent to River Rd., looking south



501 – Westbound River Rd. approach to Roundabout #4, looking west



503 – Yield line at westbound River Rd. approach to Roundabout #4, looking west



507 – Southbound SR 539 departure from Roundabout #4, looking south



517 – Southbound SR 539 approach to Nooksack River Bridge, looking south



519 – Southbound SR 539 between River Rd. and Wiser Lake Rd., looking south



522 – Southbound SR 539 approach to Roundabout #3, looking south



450 – Southbound SR 539 approach to Roundabout #3, looking south



453 – Southbound SR 539 approach to Roundabout #3, looking south



455 – Circulating roadway at Roundabout #3 between north and west legs, looking southwest



458 – Westbound Wisner Lake Rd. departure from Roundabout #3, looking west



460 – Eastbound Wisner Lake Rd. approach to Roundabout #3, looking east



463 – Yield line at eastbound Wisner Lake Rd. approach to Roundabout #3, looking southeast



465 – Circulating roadway at Roundabout #3 adjacent to eastbound Wiser Lake Rd., looking northeast



468 – Southbound SR 539 departure from Roundabout #3, looking south



523 – Southbound SR 539 between Wisner Lake Rd. and Pole Rd., looking south



527 – Southbound SR 539 between Wisner Lake Rd. and Pole Rd., looking south



394 – Southbound approach from SR 539 to Roundabout #2, looking south



397 – Southbound approach from SR 539 to Roundabout #2, looking south



401 – Southbound approach from SR 539 to Roundabout #2, looking south



405 – Circulating roadway at Roundabout #2 adjacent to westbound Pole Rd., looking south



406 – Westbound departure to Pole Rd. from Roundabout #2, looking west



410 – Eastbound Pole Rd. approach to Roundabout #2, looking east



413 – Eastbound Pole Rd. approach to Roundabout #2, looking east



417 – Southbound SR 539 departure from Roundabout #2, looking south



529 – Southbound SR 539 between Pole Rd. and Ten Mile Rd., looking south



532 – Southbound SR 539 between Pole Rd. and Ten Mile Rd., looking south



335 – Southbound SR 539 approach to Roundabout #1 at Ten Mile Rd, looking south



339 – Southbound SR 539 approach to Roundabout #1 at Ten Mile Rd, looking south



342 – Southbound SR 539 approach to Roundabout #1, looking south



346 – Circulating roadway in Roundabout #1 adjacent to driveway on west side, looking south



348 – Departure to driveway at Roundabout #1, looking west



349 – Approach from driveway at Roundabout #1, looking east



352 – Circulating roadway in Roundabout #1 adjacent to driveway on west side, looking north



356 – Southbound SR 539 departure at Roundabout #1, looking south

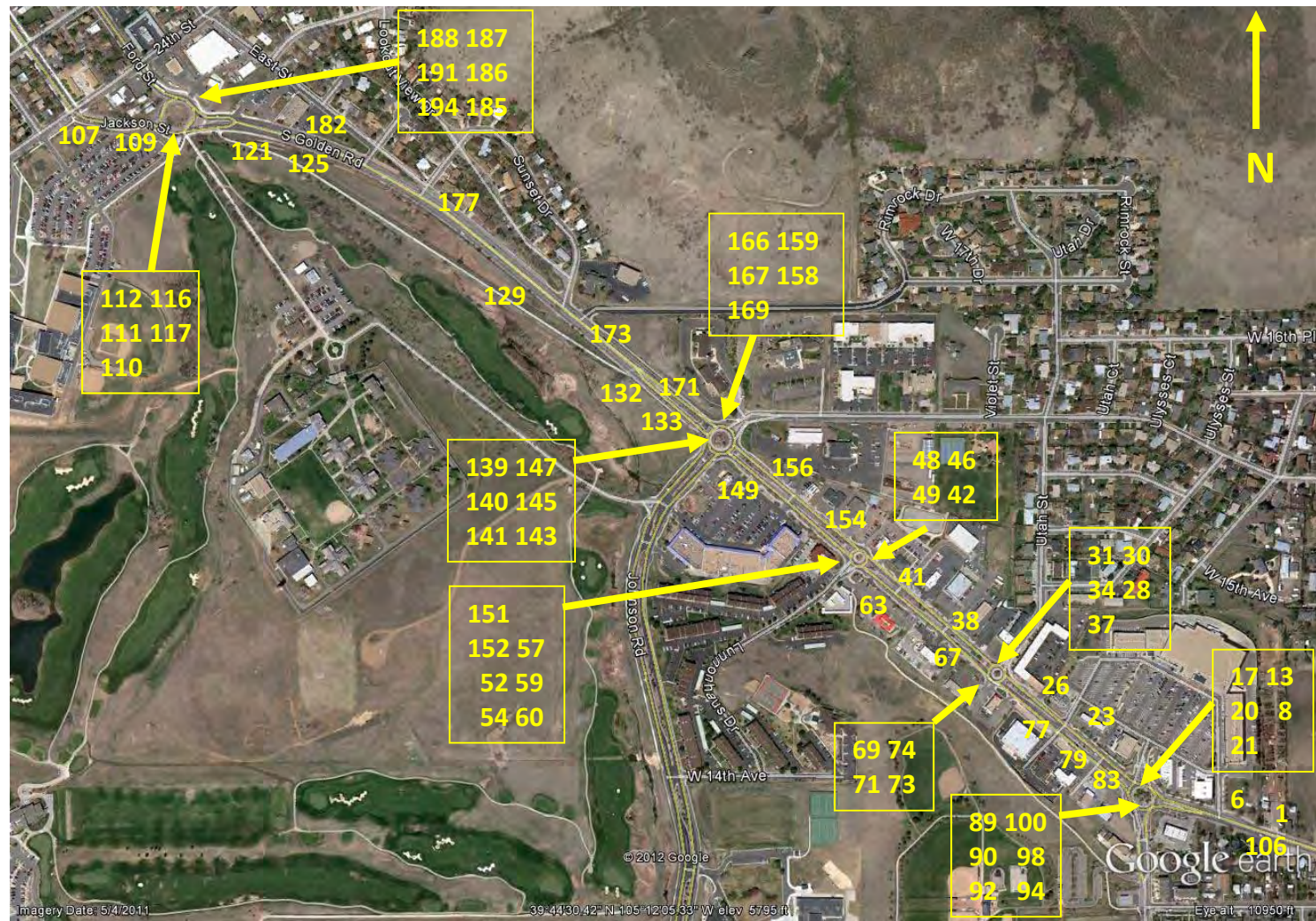


535 – Southbound SR 539 south of Ten Mile Rd., looking south

Golden Road

The following series of figures provides a walk-through of the Golden Road roundabout corridor. The approximate location of each photo is noted on the Google Earth image below. For purposes of this discussion, Golden Road is considered a north-south arterial.

NCHRP 03-100 Golden Road Site Photos



NCHRP 03-100 Golden Road Site Photos



001 – Northbound Golden Rd south of Roundabout #1, looking north



006 – Northbound Golden Rd. approach to Roundabout #1, looking north



008 – Northbound Golden Rd. approach to Roundabout #1, looking north



013 – Circulating roadway at Roundabout #1 between NB Golden Rd. and supermarket entrance, looking north (note width of single-lane CR; provides a nearly straight fastest path for NB traffic)



017 – Westbound approach from supermarket to Roundabout #1, looking west



020 – Circulating roadway at Roundabout #1 between supermarket entrance and SB Golden Rd. approach, looking west

NCHRP 03-100 Golden Road Site Photos



021 – Departure to northbound Golden Rd. from Roundabout #1, looking northwest



023 – Northbound Golden Rd. between Ulysses St and Utah St., looking north

NCHRP 03-100 Golden Road Site Photos



026 – Northbound Golden Rd. approach to intersection with Utah St., looking north



028 – Northbound Golden Rd. approach to Roundabout #2, looking north



030 – Northbound Golden Rd. at Roundabout #2, looking north (note the small diameter island; sharp turns around the circulating roadway, but a fastest path that is almost straight for the right-hand northbound lane)



031– Circulating roadway at Roundabout #2, looking north

NCHRP 03-100 Golden Road Site Photos



034 – Departure to eastbound Utah St. from Roundabout #2, looking west



037 – Departure to northbound Golden Rd. from Roundabout #2, looking south

NCHRP 03-100 Golden Road Site Photos



038 – Northbound Golden Rd. between Utah St. and Lunnonhaus Dr., looking north



041 – Northbound Golden Rd. between Utah St. and Lunnonhaus Dr., looking north

NCHRP 03-100 Golden Road Site Photos



042 – Northbound Golden Rd. approach to Roundabout #3, looking north



046 – Yield line at northbound approach to Roundabout #3, looking northwest

NCHRP 03-100 Golden Road Site Photos



048 – Circulating roadway at Roundabout #3 between northbound Golden Rd. and restaurant driveway, looking north



049 – Circulating roadway at Roundabout #3 between restaurant driveway and southbound Golden Rd., looking west

NCHRP 03-100 Golden Road Site Photos



154 – Northbound Golden Rd. between Lunnonhaus Dr. and Johnson Rd. looking north



156 – Northbound Golden Rd. approach to Roundabout #4, looking north



158 – Northbound Golden Rd. approach to Roundabout #4, looking north



159 – Circulating roadway at Roundabout #4 adjacent to 16th Ave., looking northeast



166 – Eastbound departure on 16th Ave. from Roundabout #4, looking east



167 – Westbound approach from 16th Ave. to Roundabout #4, looking west



169 – Northbound Golden Rd. departure from Roundabout #4, looking northwest



171 – Northbound Golden Rd. north of Roundabout #4, looking north

NCHRP 03-100 Golden Road Site Photos



173 – Northbound Golden Rd. north of Roundabout #4, looking north



177 – Northbound Golden Rd. at intersection with East St., looking north



182 – Northbound Golden Rd. north of Roundabout #4, looking northwest



185 – Northbound Golden Rd. approach to Roundabout #5, looking northwest



186 – Northbound Golden Rd. approach to Roundabout #5, looking northwest



187 – Northbound Golden Rd. approach to Roundabout #5, looking northwest (note raised crosswalk)



188 – Yield line at northbound Golden Rd. approach to Roundabout #5, looking northwest



191 – Circulating roadway at Roundabout #5 between northbound Golden Rd. and northbound Ford St., looking northwest

NCHRP 03-100 Golden Road Site Photos



194 – Northbound Ford. Rd. departure from Roundabout #5, looking north



107 – Southbound Jackson St. approach to Roundabout #5, looking south



109 – Southbound Jackson St. approach to Roundabout #5, looking south



110 – Yield line at southbound Jackson St. approach to Roundabout #5, looking south



111 – Circulating roadway at Roundabout #5 between Jackson St. and high school driveway, looking southeast



112 – Circulating roadway at Roundabout #5 between Ford St. and Jackson St., looking north



116 – Approach to Roundabout #5 from high school driveway, looking east



117 – Southbound Golden Rd. departure from Roundabout #5, looking southeast (note the raised crosswalk)

NCHRP 03-100 Golden Road Site Photos



121 – Southbound Golden Rd. south of Roundabout #5, looking southeast



125 – Southbound Golden Rd. south of Roundabout #5, looking southeast



129 – Southbound Golden Rd. south of Roundabout #5, looking southeast



132 – Diagrammatic sign at southbound approach to Roundabout #4



133 – Southbound Golden Rd. approach to Roundabout #4, looking south



139 – Southbound Golden Rd. approach to Roundabout #4, looking south



140 – Yield line at southbound Golden Rd. approach to Roundabout #4, looking south



141 – Circulating roadway at Roundabout #4 between southbound Golden Rd. and Johnson Rd., looking south



143 – Westbound Johnson Rd. departure from Roundabout #4, looking west



145 – Yield line at eastbound Johnson Rd. approach to Roundabout #4, looking east



147 – Southbound Golden Rd. departure from Roundabout #4, looking south



149 – Southbound Golden Rd. between Johnson Rd. and Lunnonhaus Dr., looking south



151 – Southbound Golden Rd. approach to Roundabout #3, looking south



152 – Yield line at southbound Golden Rd. approach to Roundabout #3, looking south



052 – Circulating roadway at Roundabout #3 between southbound Golden Rd. and Lunnonhaus Dr., looking south (note that there is little deflection for entering southbound traffic)



054 – Departure to westbound Lunnonhaus Dr. from Roundabout #3, looking east

NCHRP 03-100 Golden Road Site Photos



057 – Approach from eastbound Lunnonhaus Dr. to Roundabout #3, looking northeast



059 – Circulating roadway at Roundabout #3 adjacent to south leg, looking east



060 – Southbound Golden Rd. departure from Roundabout #3, looking northeast



063 – Southbound Golden Rd. between Lunnonhaus and Utah, looking south



067 – Southbound Golden Rd. between Lunnonhaus and Utah, looking south



069 – Southbound approach on Golden Rd. to Roundabout #2, looking south



071 – Circulating roadway at Roundabout #2 between Golden Rd. and restaurant driveway, looking south



073 – Yield line at southbound approach on Golden Rd. to Roundabout #2, looking southwest



074 – Circulating roadway at Roundabout #2 between restaurant driveway and Golden Rd., looking east



077 – Southbound Golden Rd. between Utah and Ulysses, looking south

NCHRP 03-100 Golden Road Site Photos



079 – Southbound Golden Rd. between Utah and Ulysses, looking south



083 – Southbound Golden Rd. between Utah and Ulysses, looking south



089 – Yield line at southbound Golden Rd. approach to Roundabout #1, looking southeast



090 – Circulating roadway at Roundabout #1 between Golden Rd. and Ulysses St., looking southwest



092 – Circulating roadway at Roundabout #1 adjacent to Ulysses St., looking southeast



094 – Eastbound Ulysses St. approach to Roundabout #1, looking east



098 – Circulating roadway at Roundabout #1 adjacent to Golden Rd., looking east



100 – Southbound Golden Rd. departure from Roundabout #1, looking south

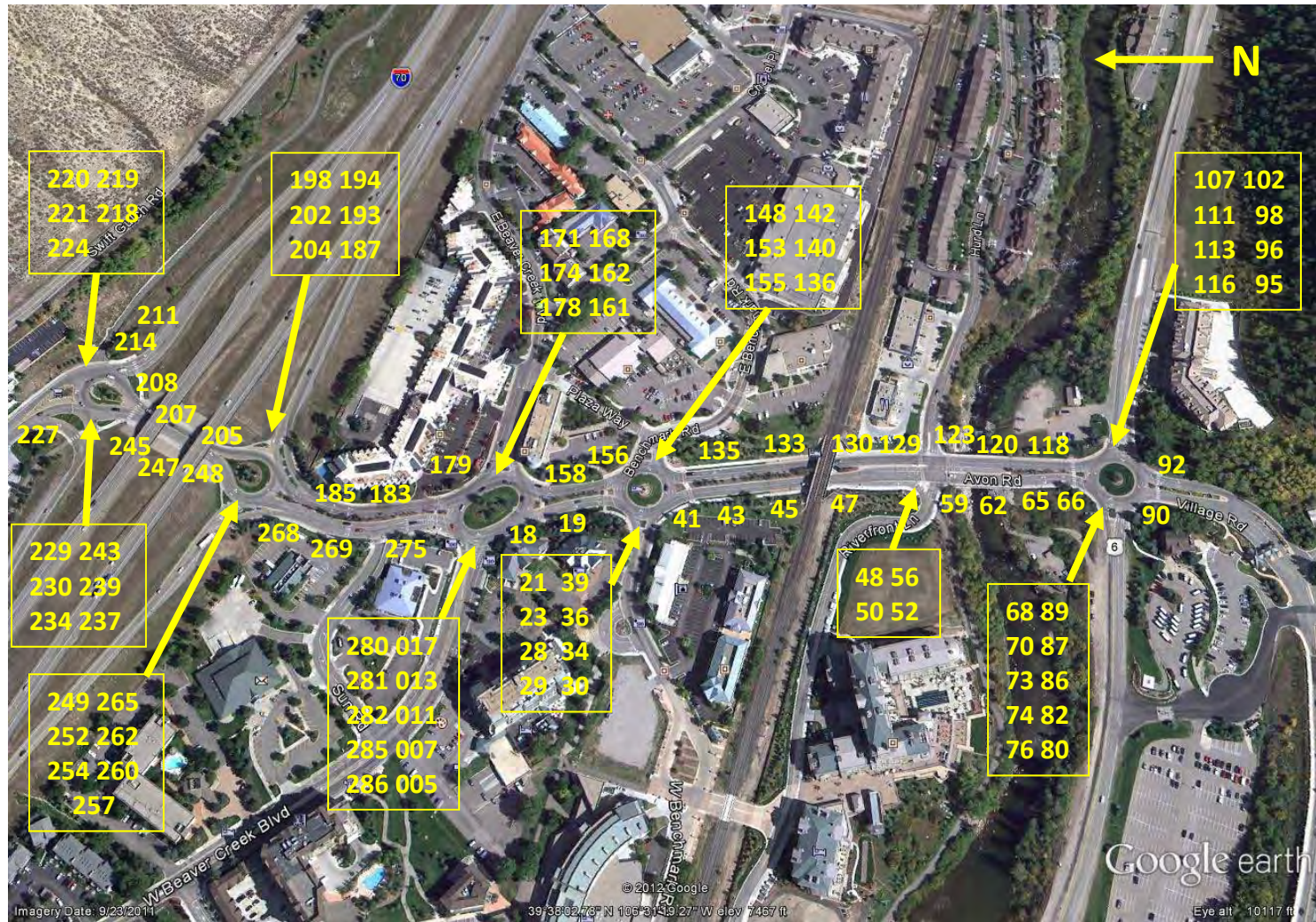


106 – Southbound Golden Rd. south of Roundabout #1, looking south

Avon Road

The following series of figures provides a walk-through of the Avon Road roundabout corridor. The approximate location of each photo is noted on the Google Earth image below.

NCHRP 03-100 Avon Road Site Photos



NCHRP 03-100 Avon Road Site Photos



211 – Westbound I-70 exit ramp approach to Roundabout #1, looking west



214 – Westbound I-70 exit ramp approach to Roundabout #1, looking west

NCHRP 03-100 Avon Road Site Photos



218 – Yield line at westbound I-70 exit ramp approach to Roundabout #1, looking west



219 – Northbound Avon Rd. approach to Roundabout #1, looking south

NCHRP 03-100 Avon Road Site Photos



220 – Circulating roadway at Roundabout #1 between the westbound I-70 exit ramp and westbound Nottingham Rd., looking west



221 – Westbound Nottingham Rd. departure from Roundabout #1, looking west

NCHRP 03-100 Avon Road Site Photos



224 – Circulating roadway at Roundabout #1 adjacent to Nottingham Rd., looking southwest (note westbound I-70 entrance ramp in the background)



227 – Eastbound Nottingham Rd. approach to Roundabout #1, looking east

NCHRP 03-100 Avon Road Site Photos



229 – Bypass right-turn lane at Roundabout #1 from eastbound Nottingham Rd. to westbound I-70 entrance ramp, looking south



230 – Eastbound Nottingham Rd. approach to Roundabout #1, looking southeast



234 – Yield line at eastbound Nottingham Rd. approach to Roundabout #1, looking south



237 – Yield line at eastbound Nottingham Rd. approach to Roundabout #1, looking south



239 – Circulating roadway at Roundabout #1 adjacent to Nottingham Rd., looking northeast



243 – Departure to southbound Avon Rd. from Roundabout #1, looking south

NCHRP 03-100 Avon Road Site Photos



245 – Southbound Avon Rd. under I-70 between Roundabouts #1 and #2, looking south



247 – Southbound Avon Rd. under I-70 between Roundabouts #1 and #2, looking south



248 – Southbound Avon Rd. approach to Roundabout #2, looking south



249 – Southbound Avon Rd. approach to Roundabout #2, looking southeast (only pavement markings for lane assignment, no signs)

NCHRP 03-100 Avon Road Site Photos



252 – Circulating roadway at Roundabout #2 near approach from eastbound I-70 exit ramp, looking south



254 – Eastbound I-70 exit ramp approach to Roundabout #2, looking east



257 – Eastbound I-70 exit ramp approach to Roundabout #2, looking east (note right-turn bypass lane separated from two-lane approach into circulating roadway)



260 – Eastbound I-70 exit ramp approach to Roundabout #2, looking east

NCHRP 03-100 Avon Road Site Photos



262 – Circulating roadway at Roundabout #2 adjacent to Avon Rd., looking east (note eastbound I-70 right-turn bypass lane in foreground)



265 – Southbound Avon Rd. meeting eastbound I-70 right-turn bypass lane south of Roundabout #2, looking south

NCHRP 03-100 Avon Road Site Photos



268 – Southbound Avon Rd. between I-70 and Sun Rd., looking south



269 – Southbound Avon Rd. between I-70 and Sun Rd., looking south

NCHRP 03-100 Avon Road Site Photos



275 – Southbound Avon Rd. approach to Roundabout #3, looking south



277 – Southbound Avon Rd. approach to Roundabout #3, looking south



280 – Circulating roadway at Roundabout #3 adjacent to north leg, looking east (yield line for southbound Avon Rd. in foreground)



281 – View of central island at Roundabout #3, from yield line for southbound Avon Rd., looking south



282 – Circulating roadway at Roundabout #3 adjacent to west leg, looking south



285 – Circulating roadway at Roundabout #3 adjacent to west leg, looking south

NCHRP 03-100 Avon Road Site Photos



286 – Westbound Beaver Creek Blvd. departure from Roundabout #3, looking east



005 – Eastbound Beaver Creek Blvd. approach to Roundabout #3, looking east

NCHRP 03-100 Avon Road Site Photos



007 – Eastbound Beaver Creek Blvd. approach to Roundabout #3, looking east



011 – Yield line at eastbound Beaver Creek Blvd. approach to Roundabout #3, looking northeast

NCHRP 03-100 Avon Road Site Photos



013 – Circulating roadway at Roundabout #3 adjacent to south leg, looking east



017 – Circulating roadway at Roundabout #3 between northbound Avon Rd. and eastbound Beaver Creek Blvd., looking northeast

NCHRP 03-100 Avon Road Site Photos



018 – Southbound Avon Rd. departure from Roundabout #3, looking south



019 – Southbound Avon Rd. approach to Roundabout #4, looking south



021 – Southbound Avon Rd. approach to Roundabout #4, looking south



023 – Yield line at southbound Avon Rd. approach to Roundabout #4, looking southeast

NCHRP 03-100 Avon Road Site Photos



028 – Circulating roadway at Roundabout #4 adjacent to north leg, looking east



029 – Circulating roadway at Roundabout #4 adjacent to west leg, looking south

NCHRP 03-100 Avon Road Site Photos



030 – Westbound Benchmark Rd. departure from Roundabout #4, looking southwest



034 – Circulating roadway at Roundabout #4 between southbound Avon Rd. and eastbound Benchmark Rd., looking northeast



036 – Eastbound Benchmark Rd. approach to Roundabout #4, looking east



039 – Circulating roadway at Roundabout #5 between southbound Avon Rd. and eastbound Benchmark Rd, looking east

NCHRP 03-100 Avon Road Site Photos



041 – Southbound Avon Rd. departure from Roundabout #4, looking southeast



043 – Southbound Avon Rd. between Benchmark Rd. and Riverfront Ln./Hurd Ln., looking south

NCHRP 03-100 Avon Road Site Photos



045 – Southbound Avon Rd. between Benchmark Rd. and Riverfront Ln./Hurd Ln., looking south



047 – Southbound Avon Rd. approaching Riverfront Ln./Hurd Ln., looking south

NCHRP 03-100 Avon Road Site Photos



048 – Southbound Avon Rd. at Riverfront Ln./Hurd Ln., looking south



050 – Southbound Avon Rd. at Riverfront Ln./Hurd Ln., looking southeast

NCHRP 03-100 Avon Road Site Photos



052 – Southbound Avon Rd. at Riverfront Ln./Hurd Ln., looking northeast



056 – Eastbound Hurd Ln. at Avon Rd., looking east



059 – Southbound Avon Rd. between Riverfront Ln./Hurd Ln. and US-6, looking south



062 – Southbound Avon Rd. over the Eagle River, looking south (note the permanently active speed display trailer)



065 – Southbound Avon Rd. over the Eagle River, looking south



066 – Diagrammatic sign on southbound Avon Rd. approach to Roundabout #5



068 – Southbound Avon Rd. approach to Roundabout #5, looking south



070 – Southbound Avon Rd. approach to Roundabout #5, looking south



073 – Yield line at southbound Avon Rd. approach to Roundabout #5, looking south



074 – Circulating roadway at Roundabout #5 adjacent to north leg, looking east



076 – Circulating roadway at Roundabout #5 adjacent to west leg, looking south



080 – Eastbound US-6 approach to Roundabout #5, looking east

NCHRP 03-100 Avon Road Site Photos



082 – Eastbound US-6 approach to Roundabout #5, looking east



086 – Circulating roadway at Roundabout #5 adjacent to west leg, looking north



087 – Circulating roadway at Roundabout #5 adjacent to south leg, looking east



089 – Southbound Village Rd. departure from Roundabout #5, looking southeast



090 – Southbound Village Rd. south of Roundabout #5, looking south



092 – Northbound Village Rd. south of Roundabout #5, looking south

NCHRP 03-100 Avon Road Site Photos



095 – Northbound Village Rd. approach to Roundabout #5, looking north



096 – Northbound Village Rd. approach to Roundabout #5, looking north

NCHRP 03-100 Avon Road Site Photos



098 – Circulating roadway at Roundabout #5 adjacent to east leg, looking north



102 – Circulating roadway at Roundabout #5 between eastbound US-6 and northbound Avon Rd., looking north



107 – Eastbound US-6 departure from Roundabout #5, looking east



111 – Westbound US-6 approach to Roundabout #5, looking west

NCHRP 03-100 Avon Road Site Photos



113 – Circulating roadway at Roundabout #5 adjacent to north leg, looking west



116 – Northbound Avon Rd. departure from Roundabout #5, looking north

NCHRP 03-100 Avon Road Site Photos



118 – Northbound Avon Rd. between US-6 and Riverfront Ln./Hurd Ln., looking north



120 – Northbound Avon Rd. over Eagle River, looking north

NCHRP 03-100 Avon Road Site Photos



123 – Northbound Avon Rd. at Riverfront Ln./Hurd Ln., looking north



129 – Northbound Avon Rd. between Riverfront Ln./Hurd Ln. and Benchmark Rd., looking north

NCHRP 03-100 Avon Road Site Photos



130 – Northbound Avon Rd. between Riverfront Ln./Hurd Ln. and Benchmark Rd., looking north



133 – Northbound Avon Rd. between Riverfront Ln./Hurd Ln. and Benchmark Rd., looking north



135 – Northbound Avon Rd. approach to Roundabout #4, looking north



136 – Northbound Avon Rd. approach to Roundabout #4, looking north

NCHRP 03-100 Avon Road Site Photos



140 – Circulating roadway at Roundabout #4 adjacent to south leg, looking west



142 – Circulating roadway at Roundabout #4 adjacent to west leg, looking north

NCHRP 03-100 Avon Road Site Photos



148 – Westbound Benchmark Rd. approach to Roundabout #4, looking west



153 – Westbound Benchmark Rd. approach to Roundabout #4, looking west

NCHRP 03-100 Avon Road Site Photos



155 – Circulating roadway at Roundabout #4 between westbound Benchmark Rd. and northbound Avon Rd., looking northwest



156 – Northbound Avon Rd. departure from Roundabout #4, looking north

NCHRP 03-100 Avon Road Site Photos



158 – Northbound Avon Rd. between Roundabouts #4 and #3, looking north



161 – Northbound Avon Rd. approach to Roundabout #3, looking northwest



162 – Yield line at northbound Avon Rd. approach to Roundabout #3, looking northwest



168 – Circulating roadway at Roundabout #3 adjacent to east leg, looking north

NCHRP 03-100 Avon Road Site Photos



171 – Westbound Beaver Creek Blvd. approach to Roundabout #3, looking east



174 – Circulating roadway at Roundabout #3 between westbound Beaver Creek Blvd. and northbound Avon Rd., looking west



178 – Circulating roadway at Roundabout #3 adjacent to north leg, looking southwest



179 – Northbound Avon Rd. departure from Roundabout #3, looking north



183 – Northbound Avon Rd. between Roundabouts #3 and #2, looking north



185 – Northbound Avon Rd. between Roundabouts #3 and #2, looking north

NCHRP 03-100 Avon Road Site Photos



187 – Northbound Avon Rd. approach to Roundabout #2, looking north



193 – Northbound Avon Rd. approach to Roundabout #2, looking north



194 – Circulating roadway between north and east legs at Roundabout #2, looking north (right-turn bypass lane from northbound Avon Rd. to eastbound I-70 entrance ramp in the foreground)



198 – Circulating roadway between north and east legs at Roundabout #2 (and departure to eastbound I-70 entrance ramp), looking west

NCHRP 03-100 Avon Road Site Photos



202 – Northbound Avon Rd. departure from Roundabout #2, looking north



204 – Northbound Avon Rd. under I-70 between Roundabouts #2 and #1, looking north

NCHRP 03-100 Avon Road Site Photos



205 – Northbound Avon Rd. under I-70 between Roundabouts #2 and #1, looking north



207 – Northbound Avon Rd. approach to Roundabout #1, looking north



208 – Northbound Avon Rd. approach to Roundabout #1, looking north

SR 67

The following series of figures provides a walk-through of the SR 67 roundabout corridor. The number of the roundabouts is noted on the Google Earth image below.



Eastbound



Figure 1 Signage approaching Roundabout 1



Figure 2 Yield ahead sign approaching Roundabout 1



Figure 3 Circular intersection sign approaching Roundabout 1



Figure 4 Turning movement sign approaching Roundabout 1



Figure 5 Pavement markings at Roundabout 1



Figure 6 Yield sign at Roundabout 1



Figure 7 Circulating lanes at Roundabout 1



Figure 8 Looking north at circulating lanes of Roundabout 1



Figure 9 Crosswalk at northbound approach of Roundabout 1



Figure 10 Yield sign at northbound approach of Roundabout 1



Figure 11 Looking south at northbound approach to Roundabout 1



Figure 12 Crosswalk leaving Roundabout 1



Figure 13 Posted speed leaving Roundabout 1



Figure 14 Signage approaching Roundabout 2



Figure 15 Bicycle lane and slip lane taper approaching Roundabout 2



Figure 16 Pavement markings at Roundabout 2



Figure 17 Slip lane at Roundabout 2



Figure 18 Crosswalk of I-87 onramp at Roundabout 2



Figure 19 I-87 onramp from Roundabout 2



Figure 20 Looking west at circulating lanes of Roundabout 2



Figure 21 Looking north at circulating lanes of Roundabout 2



Figure 22 Crosswalk leaving Roundabout 2



Figure 23 Signage approaching Roundabout 3



Figure 24 Pavement markings approaching Roundabout 3



Figure 25 Approaching Roundabout 3



Figure 26 Crosswalk at Roundabout 3



Figure 27 Yield sign at Roundabout 3



Figure 28 Circulating lanes of Roundabout 3



Figure 29 Crosswalk at northbound approach to Roundabout 3



Figure 30 Northbound approach to Roundabout 3



Figure 31 Northbound slip lane approaching Roundabout 3



Figure 32 Merge area leaving Roundabout 3



Figure 33 Signage approaching Roundabout 4



Figure 34 Posted speed approaching Roundabout 4



Figure 35 Turning movement sign at Roundabout 4



Figure 36 Crosswalk at Roundabout 4



Figure 37 Circulating lanes of Roundabout 4



Figure 38 Crosswalk at southbound exit of Roundabout 4



Figure 39 Looking north at circulating lane of Roundabout 4



Figure 40 Crosswalk of northbound approach to Roundabout 4



Figure 41 Northbound approach to Roundabout 4



Figure 42 Pavement markings at northbound approach to Roundabout 4



Figure 43 Leaving Roundabout 4



Figure 44 Median opening between Roundabout 4 and 5



Figure 45 Driveways between Roundabout 4 and 5



Figure 46 Signage approaching Roundabout 5



Figure 47 Posted speed approaching Roundabout 5



Figure 48 Driveways approaching Roundabout 5



Figure 49 Speed reduction markings approaching Roundabout 5



Figure 50 Side street near Roundabout 5



Figure 51 Bicycle ramp approaching Roundabout 5



Figure 52 Crosswalk at Roundabout 5



Figure 53 Turning movement sign at Roundabout 5



Figure 54 Circulating lanes of Roundabout 5



Figure 55 Looking south from Roundabout 5



Figure 56 Southbound circulating lanes of Roundabout 5



Figure 57 Looking north at crosswalk at Roundabout 5



Figure 58 Northbound approach at Roundabout 5



Figure 59 Northbound circulating lanes at Roundabout 5



Figure 60 Looking west at circulating lanes of Roundabout 5



Figure 61 Crosswalk leaving Roundabout 5



Figure 62 Leaving Roundabout 5



Figure 63 Restriped from dual lane exit leaving Roundabout 5



Figure 64 Circular intersection sign approaching Roundabout 6



Figure 65 Median approaching Roundabout 6



Figure 66 Driveway near Roundabout 6



Figure 67 Yield sign at Roundabout 6



Figure 68 Crosswalk at Roundabout 6



Figure 69 Southbound circulating lane at Roundabout 6



Figure 70 Circulating lane in Roundabout 6



Figure 71 Crosswalk leaving Roundabout 6



Figure 72 Trail near Roundabout 6



Figure 73 Crosswalk at the northbound approach to Roundabout 6



Figure 74 Bicycle ramp at southbound exit from Roundabout 6



Figure 75 Northbound approach to Roundabout 6



Figure 76 Bicycle ramp leaving Roundabout 6



Figure 77 Crosswalk leaving Roundabout 6



Figure 78 Looking west at circulating lane of Roundabout 6



Figure 79 Sign along trail leaving Roundabout 6



Figure 80 Trail rules posted leaving Roundabout 6



Figure 81 Trail between Roundabout 6 and 7



Figure 82 Midblock crosswalk between Roundabout 6 and 7



Figure 83 Pedestrian in midblock crosswalk



Figure Roundabout Approaching RB 7



Figure 85 Crosswalk at Roundabout 7



Figure 86 Looking west at approach to Roundabout 7



Figure 87 Bicycle ramp approaching Roundabout 7



Figure 88 Yield sign at Roundabout 7



Figure 89 Energy park sign at Roundabout 7



Figure 90 Leaving Roundabout 7



Figure 91 Street sign at Roundabout 7

Westbound



Figure 92 Yield sign at Roundabout 7



Figure 93 Crosswalk at Roundabout 7



Figure 94 Circulating lane of Roundabout 7



Figure 95 Crosswalk leaving Roundabout 7



Figure 96 Trail between Roundabout 6 and 7



Figure 97 Looking east at approach to Roundabout 6



Figure 98 Crosswalk approaching Roundabout 6



Figure 99 Sign near Roundabout 6



Figure 100 Leaving Roundabout 6



Figure 101 Speed reduction markings approaching Roundabout 5



Figure 102 Looking east at pavement markings approaching Roundabout 5



Figure 103 Circulating lanes of Roundabout 5



Figure 104 Crosswalk leaving Roundabout 5



Figure 105 Bicycle ramp and signage leaving Roundabout 5



Figure 106 Restriping from dual-lane exit leaving Roundabout 5



Figure 107 Posted speed leaving Roundabout 5



Figure 108 Side street past Roundabout 5



Figure 109 Close-up of side street crosswalk



Figure 110 Unmarked driveway crosswalk



Figure 111 Close-up of driveway



Figure 112 Median crossing between Roundabout 5 and 4



Figure 113 Storm drain on approach to Roundabout 4



Figure 114 Signage approaching Roundabout 4



Figure 115 Driveway near Roundabout 4



Figure 116 Turning movement signage at Roundabout 4



Figure 117 Pavement markings at Roundabout 4



Figure 118 Yield sign at Roundabout 4



Figure 119 Crosswalk entering Roundabout 4



Figure 120 Circulating lane of Roundabout 4



Figure 121 Crosswalk of southbound approach to Roundabout 4



Figure 122 Crosswalk approaching Roundabout 4 from the north



Figure 123 Crosswalk leaving Roundabout 4



Figure 124 Looking south at circulating lane of Roundabout 4



Figure 125 Signage approaching Roundabout 3



Figure 126 Driveway at approach to Roundabout 3



Figure 127 Bicycle lane at approach to Roundabout 3



Figure 128 Slip lane entrance at Roundabout 3



Figure 129 Crosswalk at slip lane of Roundabout 3



Figure 130 Northbound on-ramp to I-87 at Roundabout 3



Figure 131 Crosswalk at northbound exit of Roundabout 3



Figure 132 Circulating lanes of Roundabout 3



Figure 133 Looking south from northbound onramp to I-87



Figure 134 Looking south at circulating lane of Roundabout 3



Figure 135 Crosswalk leaving Roundabout 3



Figure 136 Bridge over I-87 between Roundabout 2 and 3



Figure 137 Pavement markings approaching Roundabout 2



Figure 138 Signage approaching Roundabout 2



Figure 139 Crosswalk at entry to Roundabout 2



Figure 140 Circulating lanes of Roundabout 2



Figure 141 Crosswalk at southbound approach to Roundabout 2



Figure 142 Pavement markings at SB approach to Roundabout 2



Figure 143 Southbound approaching Roundabout 2



Figure 144 Merge area leaving Roundabout 2



Figure 145 Looking south at circulating lane of Roundabout 2



Figure 146 Signage leaving Roundabout 2



Figure 147 Signage approaching Roundabout 1



Figure 148 Circular intersection sign approaching Roundabout 1



Figure 149 Pavement markings near Roundabout 1



Figure 150 Turning movement signs near Roundabout 1



Figure 151 Pedestrian crossing at Roundabout 1



Figure 152 Yield signs at Roundabout 1



Figure 153 Lighting at Roundabout 1



Figure 154 Close-up of pedestrian crossing at Roundabout 1



Figure 155 Circulating lanes of Roundabout 1



Figure 156 Pedestrian crossing at southbound approach to Roundabout 1



Figure 157 Detectable warning instructions at Roundabout 1



Figure 158 Southbound approach to Roundabout 1



Figure 159 Southbound circulating lanes of Roundabout 1



Figure 160 Crosswalk leaving Roundabout 1



Figure 161 Merge area past Roundabout 1

Side Streets



Figure 162 Looking south along US 9 toward Roundabout 5



Figure 163 Guide sign at the southbound approach to Roundabout 5



Figure 164 Circular intersection sign at southbound approach to Roundabout 5



Figure 166 Guide sign and speed hash markings at southbound approach to Roundabout 5



Figure 165 Pavement markings on southbound US 9 approaching Roundabout 5



Figure 167 Southbound approach to Roundabout 5



Figure 168 Turning movement arrows at southbound approach to Roundabout 5



Figure 169 Crosswalk at southbound approach to Roundabout 5



Figure 170 Close-up of crosswalk at southbound approach to Roundabout 5



Figure 171 Bicycle lane and storm drain at southbound approach to Roundabout 5



Figure 172 Bicycle ramp at southbound approach to Roundabout 5



Figure 173 Yield sign at southbound approach to Roundabout 5