

ROUTE ALTERNATIVE M1

The narrative for the Water Supply Pipeline alignment of Route Alternative M1 is presented below following the flow path, beginning at the anticipated connection to the Milwaukee Water Works (MWW) distribution system in the City of Milwaukee (Milwaukee) and ending at the connection to Waukesha Water Utility (WWU)'s distribution system in the City of Waukesha (Waukesha). Segments that are either in multiple routes or within the Common Corridor on a singular route are only described once at the segment or panel that first occurs per the direction of flow. The discussions provide the rationale for the preliminary horizontal alignments, potential traffic control strategies, and trenchless crossing methods. The photos provided for visual reference are numbered from east to west, south to north, and by time of year taken, starting at the anticipated connection to the MWW distribution system in Milwaukee.

Howard Avenue Segment (City of Milwaukee)

Panel 1 in Route Description Panels displays the beginning of Route Alternative M1. Howard Avenue is a four-lane, two-way road for the first 1,590 feet. West of the intersection of Howard Avenue and Forest Home Avenue, Howard Avenue transitions into a two-lane, two-way road, and 68th Street is a four-lane, two-way road. The land use around the route alternative in Panel 1 is primarily residential, with light commercial areas. Approximately 150 feet east of the intersection of Howard Avenue and Forest Home Avenue, a trenchless construction method of horizontal directional drilling (HDD) is being considered to install approximately 590 feet of the pipeline. The trenchless crossing is being considered to minimize environmental impacts to Honey Creek and traffic disruption to Forest Home Avenue. The total length of the Water Supply Pipeline within Panel 1 is approximately 3,800 feet. See photos 1 through 4 for visual reference.



Photo 1
Looking east at the intersection of Howard Avenue and 60th Street

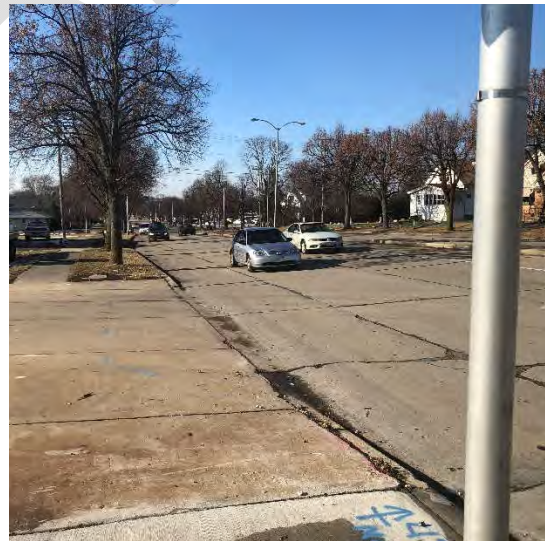


Photo 2
Looking west at the intersection of Howard Avenue and 60th Street



Photo 3

Looking west at the intersection of Forest Home Avenue and Howard Avenue



Photo 4

Looking northeast at the intersection of Forest Home Avenue and Howard Avenue

Honey Creek Drive Segment

Panel 2 in Route Description Panels continues from the north end of Panel 1. As shown in Panel 2, 68th Street is a four-lane, two-way road and Honey Creek Drive is a four-lane, two-way road with a center median. The land use around the route alternative in Panel 2 is primarily residential. Approximately 85 feet southeast from the intersection of 68th Street and Honey Creek Drive, a jack and bore method is being considered to install approximately 70 feet of pipe casing. This construction method is being considered to minimize traffic disruption on 68th Street. Approximately 45 feet south of the intersection of Honey Creek Drive and Morgan Avenue, a jack and bore method is being considered to install approximately 170 feet of pipe casing. This construction method is being considered to minimize traffic Cold Spring on Morgan Avenue. The total length of the Water Supply Pipeline within Panel 2 is approximately 2,700 feet. See photos 5 and 8 for visual reference.



Photo 5

Looking southeast at the intersection of 68th Street and Honey Creek Drive



Photo 8

Looking south at the intersection of Honey Creek Drive and Morgan Avenue

Oklahoma Avenue Segment

Panel 3 in Route Description Panels continues from the north end of Panel 2. As shown in Panel 3, Honey Creek Drive is a four-lane, two-way road with a center median, 76th Street is a six-lane, two-way road with a center median, and Oklahoma Avenue is four-lane, two-way road with a center median. The land use around the route alternative in Panel 3 is primarily residential, with light commercial areas. Approximately 40 feet east of the intersection of Honey Creek Drive and 76th Street, a jack and bore method is being considered to install approximately 130 feet of pipe casing. This construction method is being considered to minimize traffic disruption on 76th Street. Approximately 30 feet south of the intersection of 76th Street and Oklahoma Avenue, a jack and bore method is being considered to install approximately 130 feet of pipe casing. This construction method is being considered to minimize traffic disruption on Oklahoma Avenue. The total length of the Water Supply Pipeline within Panel 3 is approximately 4,300 feet. See photos 11 through 13 for visual reference.



Photo 11

Looking north at the intersection of 76th Street and Oklahoma Avenue



Photo 12

Looking northwest at intersection of 76th Street and Oklahoma Avenue



Photo 13

Looking east at the intersection of Honey Creek Drive and 76th Street

Panel 4 in Route Description Panels continues from the west end of Panel 3. As shown in Panel 4, Oklahoma Avenue is four-lane, two-way road with a median. The land use in Panel 4 is residential, with light commercial areas. Approximately 20 feet east of the intersection of Oklahoma Avenue and 84th Street, a jack and bore method is being considered to install approximately 110 feet of pipe casing. This construction method is being considered to minimize traffic disruption on 84th Street. Approximately 120 feet east off the intersection of Oklahoma Avenue and Beloit Road, a jack and bore method is being considered to install approximately 350 feet of pipe casing. This construction method is being considered to minimize traffic disruption on Beloit Road. The total length of the Water Supply Pipeline within Panel 4 is approximately 3,400 feet. See photos 15, 16, 19, and 20 for visual reference.



Photo 15
Looking east at the intersection of Oklahoma Avenue and 84th Street



Photo 16
Looking west along Oklahoma Avenue at the intersection with 84th Street



Photo 19
Looking west at the intersection of Oklahoma Avenue and Beloit Road



Photo 20
Looking east at the intersection of Oklahoma Avenue and Beloit Road

Panel 5 in Route Description Panels continues from the west end of Panel 4. As shown in Panel 5, Oklahoma Avenue is a four-lane, two-way road with a center median. The land use around the route alternative in Panel 5 is primarily residential and commercial areas. Approximately 70 feet east of the intersection of Oklahoma Avenue and 92nd Street, a jack and bore method is being considered to install approximately 230 linear feet of pipe casing. This construction method is being considered to minimize traffic disruption on 92nd Street. Beginning 180 feet east of the Interstate 41 underpass, a trenchless construction method of HDD is being considered to install approximately 440 feet of the pipeline. This construction method is being considered to avoid construction underneath the bridge of Interstate 41 over Oklahoma Avenue. The total length of the Water Supply Pipeline within Panel 5 is approximately 3,400 feet. See photos 21 through 23, 26, and 27 for visual reference.



Photo 21

Looking west at the intersection of Oklahoma Avenue and 92nd Street



Photo 22

Looking east at the intersection of Oklahoma Avenue and South 92nd Street

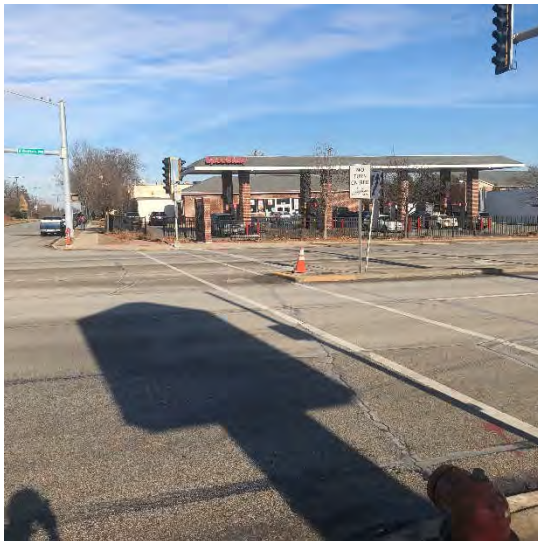


Photo 23

Looking north at the intersection of Oklahoma Avenue and 92nd Street



Photo 26

Looking east at the intersection of Oklahoma Avenue and 100th Street



Photo 27

Looking west along Oklahoma Avenue to the Interstate 41 highway underpass

Panel 6 in Route Description Panels continues from the west end of Panel 5. As shown in Panel 6, Oklahoma Avenue is a four-lane, two-way road with a center median. The land use along the route alternative in Panel 6 is primarily comprised of residential and commercial areas. Approximately 30 feet east of the intersection of Oklahoma Avenue and 108th Street, a jack and bore method is being considered to install approximately 190 feet of pipe casing. This construction method is being considered to minimize traffic disruption on 108th Street. The total length of the Water Supply Pipeline within Panel 6 is approximately 3,400 feet. See photos 31 and 32 for visual reference.



Photo 31

Looking west along Oklahoma Avenue at the intersection with 108th Street



Photo 32

Looking east at the intersection of Oklahoma Avenue and 108th Street

Panel 7 in Route Description Panels continues from the west end of Panel 6. As shown in Panel 7, Oklahoma Avenue is a four-lane, two-way road with a center median. East of the intersection of Oklahoma Avenue and National Avenue, the road transitions to a six-lane, two-way road with a center median. Oklahoma Avenue transitions back to a four-lane, two-way road with bike lanes west of the Root River crossing. The land use around the route alternative in Panel 7 is primarily residential, with light commercial areas. Approximately 30 feet east of the intersection of Oklahoma Avenue and Wollmer Road, a jack and bore method is being considered to install approximately 140 feet of pipe casing. This construction method is being considered to minimize traffic disruption on Wollmer Road. Approximately 160 feet southeast of the intersection of Oklahoma Drive and National Avenue, a jack and bore method is being considered to install approximately 100 feet of pipe casing. This construction method is being considered to minimize traffic disruption on Oklahoma Avenue. Approximately 340 feet to the east of the intersection of Oklahoma Avenue and Root River Parkway, a trenchless construction method of HDD is being considered to install approximately 1,120 linear feet of the pipeline. This construction method is being considered to bypass the Root River. The total length of the Water Supply Pipeline within Panel 7 is approximately 3,500 feet. See photos 35 through 37 for visual reference.



Photo 35

Looking east at the intersection of Oklahoma Avenue and Wollmer Road



Photo 36

Looking northeast across Oklahoma Avenue, immediately south of the intersection of Oklahoma Avenue and National Avenue



Photo 37

Looking west to the Root River near the intersection of Oklahoma Avenue and National Avenue

National Avenue Segment

Panel 8 in Route Description Panels continues from the west end of Panel 7. As shown in Panel 8, Oklahoma Avenue is a four-lane, two-way road with a center median and bike lanes, while National Avenue is a four-lane, two-way road with a center turning lane. The land use around the route alternative in Panel 8 is primarily commercial, with residential areas. Approximately 40 feet east of the intersection of Oklahoma Avenue and 124th Street, a jack and bore method is being considered to install approximately 150 feet of pipe casing. This construction method is being considered to minimize traffic disruption on 124th Street. Approximately 70 feet east of the intersection of National Avenue and Highpointe Drive, a trenchless construction method of HDD is being considered to install approximately 390 linear feet of the pipeline. This construction method is being considered to minimize impacts to the creek and traffic disruption on Highpointe Drive. The total length of the Water Supply Pipeline within Panel 8 is approximately 3,400 feet. See photos 40, 41, 45, and 46 for visual reference.



Photo 40

Looking east at the intersection of Oklahoma Avenue and 124th Street



Photo 41

Looking west at the intersection of Oklahoma Avenue and 124th Street



Photo 45

Looking west at the intersection of National Avenue and Highpointe Drive



Photo 46

Looking northwest at the intersection of National Avenue and Highpointe Drive

Panel 9 in Route Description Panels continues from the west end of Panel 8. As shown in Panel 9, National Avenue is a four-lane, two-way road with a center turning lane. The land use around the route alternative in Panel 9 is primarily comprised of residential and commercial areas. Approximately 60 feet east of the intersection of National Avenue and Sunny Slope Road, a jack and bore method is being considered to install approximately 170 feet of pipe casing. This construction method is being considered to minimize traffic disruption on Sunny Slope Road. The total length of the Water Supply Pipeline within Panel 9 is approximately 3,700 feet. See photos 49 and 50 for visual reference.



Photo 49

Looking southwest at the intersection of National Avenue and Sunny Slope Road



Photo 50

Looking northeast at the intersection of National Avenue and Sunny Slope Road

Panel 10 in Route Description Panels continues from the west end of Panel 9. As shown in Panel 10, National Avenue is a four-lane, two-way road with a center-turning lane. The land use around the route alternative in Panel 10 is primarily residential and commercial. Approximately 40 feet east of the intersection of National Avenue and Acredale Drive, a trenchless construction method of HDD is being considered to install approximately 300 linear feet of the pipeline. This construction method is being considered to minimize impacts to the creek and traffic disruption on Acredale Drive. The total length of the Water Supply Pipeline within Panel 10 is approximately 3,900 feet. See Photos 53 through 56 for visual reference.



Photo 53

Looking southwest at the intersection of National Avenue and Acredale Drive



Photo 54

Looking northeast at the intersection of National Avenue and Acredale Drive



Photo 55

Looking north at the intersection of National Avenue and Coffee Road



Photo 56

Looking northeast at the intersection of National Avenue and Coffee Road

Coffee Road Segment

Panel 11 in Route Description Panels continues from the west end of Panel 10. As shown in Panel 11, Coffee Road is a two-lane, two-way road with bike lanes. The land use around the route alternative in Panel 11 is primarily residential, with light commercial areas. Approximately 50 feet east of the intersection of Coffee Road and Moorland Road, a jack and bore method is being considered to install approximately 180 feet of pipe. This construction method is being considered to minimize traffic disruption on Moorland Road. The total length of the Water Supply Pipeline within Panel 11 is approximately 3,400 feet. See photos 58 and 59 for visual reference.



Photo 58

Looking west at the intersection of Coffee Road and Moorland Road



Photo 59

Looking east near intersection of Coffee Road and Moorland Road

Panel 12 in Route Description Panels continues from the west end of Panel 11. As shown in Panel 12, Coffee Road is a two-lane, two-way road with bike lanes. The land use around the route alternative in Panel 12 is primarily agricultural, with residential areas. Approximately 80 feet east of the intersection of Coffee Road and Calhoun Road, a jack and bore method is being considered to install approximately 220 feet of pipe casing. This construction method is being considered to minimize traffic disruption on Calhoun Road. The total length of the Water Supply Pipeline within Panel 12 is approximately 3,400 feet. See photo 68 for visual reference.



Photo 68

Looking east at the intersection of Coffee Road and Calhoun Road

Panel 13 in Route Description Panels continues from the west end of Panel 12. As shown in Panel 13, Coffee Road is a two-lane, two-way road. The land use around the route alternative in Panel 13 is primarily agricultural, with residential areas. Approximately 2,040 feet east of the intersection of Coffee Road and Woelfel Road, a trenchless construction method of HDD is being considered to install approximately 380 linear feet of the pipeline. This construction method is being considered to minimize impacts to the creek and culvert crossing Coffee Road. The total length of the Water Supply Pipeline within Panel 13 is approximately 3,400 feet. See photo 69 for visual reference.



Photo 69

Looking east along Coffee Road at the waterway 540 feet west of Calhoun Road of Coffee Road and Calhoun Road

Panel 14 in Route Description Panels continues from the west end of Panel 13. As shown in Panel 14, Coffee Road is a two-lane, two-way road. The land use around the route alternative in Panel 14 is primarily agricultural and residential. The total length of the Water Supply Pipeline within Panel 14 is approximately 3,400 feet.

Panel 15 in Route Description Panels continues from the west end of Panel 14. As shown in Panel 15, Coffee Road is a two-lane, two-way road. The land use around the route alternative in Panel 15 is primarily residential, with agricultural areas. The total length of the Water Supply Pipeline within Panel 15 is approximately 3,400 feet.

Panel 16 in Route Description Panels continues from the west end of Panel 15. As shown in Panel 16, Coffee Road is a two-lane, two-way road and Swartz Road is a two-lane, two-way road. The land use around the route alternative in Panel 16 is primarily agricultural with residential areas. The total length of the Water Supply Pipeline within Panel 16 is approximately 2,000 feet.

Racine Avenue Segment

Panel 17 in Route Description Panels continues from the south end of Panel 16. As shown in Panel 17, Swartz Road and Racine Avenue are two-lane, two-way roads. The land use around the route alternative in Panel 17 is primarily agricultural, with residential areas. Approximately 30 feet northeast of the intersection of Swartz Road and Racine Avenue, a jack and bore method is being considered to install approximately 90 feet of pipe casing. This construction method is being considered to minimize traffic disruption on Racine Avenue. The total length of the Water Supply Pipeline within Panel 17 is approximately 3,700 feet. See photos 80 through 83 for visual reference.



Photo 80

Looking north along at the intersection of Swartz Road and Racine Avenue



Photo 81

Looking southeast at the intersection of Swartz Road and Racine Avenue



Photo 82

Looking southwest at the intersection of Swartz Road and Racine Avenue



Photo 83

Looking northwest at the intersection of Swartz Road and Racine Avenue

Panel 18 in Route Description Panels continues from the west end of Panel 17. As shown in Panel 18, Racine Avenue is a two-lane, two-way road. The land use around the route alternative in Panel 18 is residential. The total length of the Water Supply Pipeline within Panel 18 is approximately 3,500 feet.

Sunset Drive Segment

Panel 19 in Route Description Panels continues from the north end of Panel 18. As shown in Panel 19, Racine Avenue and Sunset Drive are two-lane, two-way roads. The land use around the route alternative in Panel 19 is primarily residential. At the intersection of Sunset Drive and Guthrie Road, a spur of the Water Supply Pipeline turns south to the anticipated connection to WWU's distribution system to Hunter Tower with an existing 16-inch water main. The total length of the Water Supply Pipeline within Panel 19 is approximately 4,200 feet. See photo 84 for visual reference.



Photo 84

Looking southwest at the intersection of Sunset Drive and Guthrie Road

Panel 20 in Route Description Panels continues from the west end of Panel 19. As shown in Panel 19, Sunset Drive is a two-lane, two-way road and Les Paul Parkway is a six-lane, two-way road with a center median. The land use around the route alternative in Panel 20 is primarily residential. A jack and bore method is being considered to install approximately 350 linear feet of pipe casing to cross both Sunset Drive and Les Paul Parkway in a single trenchless crossing. This construction method is being considered to minimize traffic disruption to Sunset Drive and Les Paul Parkway. The total length of the Water Supply Pipeline within Panel 20 is approximately 2,200 feet. See photos 85 through 87 for visual reference.



Photo 85

Looking west at the intersection of Les Paul Parkway and Sunset Drive



Photo 86

Looking northwest at the intersection of Les Paul Parkway and Sunset Drive

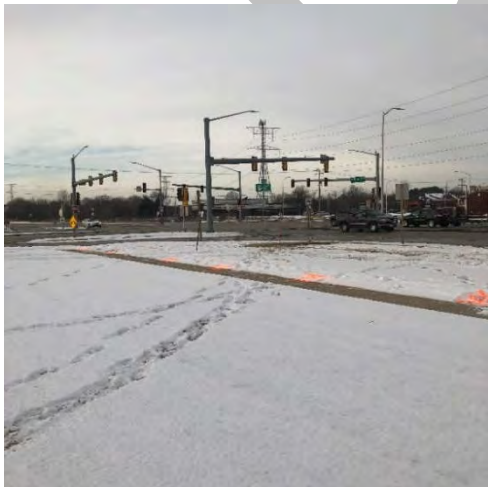


Photo 87

Looking southwest at the intersection of Les Paul Parkway and Sunset Drive

ROUTE ALTERNATIVE M2

The narrative for the Water Supply Pipeline alignment of Route Alternative M2 is presented below following the flow path, beginning at the anticipated connection to the MWW distribution system in Milwaukee and ending at the connection to WWU's distribution system in Waukesha. Segments that are either in multiple routes or within the Common Corridor on a singular route are only described once at the segment or panel that first occurs per the direction of flow. The discussion provides the rationale for the preliminary horizontal alignment, traffic control strategies, and trenchless crossing methods. The photos provided for visual reference are numbered from east to west, south to north, and by time of year taken, starting at the anticipated connection to the water supplier in Milwaukee.

Howard Avenue Segment

Panel 1 in Route Description Panels displays the beginning of the Route Alternative M2 Water Supply Pipeline. As shown in Panel 1, Howard Avenue is a four-lane, two-way road. Forest Home Avenue is a four-lane, two-way road, with bike lanes and a center median. The land use around the route alternative in Panel 1 is primarily residential and commercial. Beginning at the southeast corner of the intersection of Howard Avenue and Forest Home Avenue, a trenchless construction method is being considered to install approximately 290 linear feet of the pipeline. This construction method is being considered to minimize impacts to a creek and culvert. The total length of the Water Supply Pipeline within Panel 1 is approximately 3,000 feet. See photos 1 through 4 for visual reference.



Photo 1

Looking east at the intersection of Howard Avenue and 60th Street

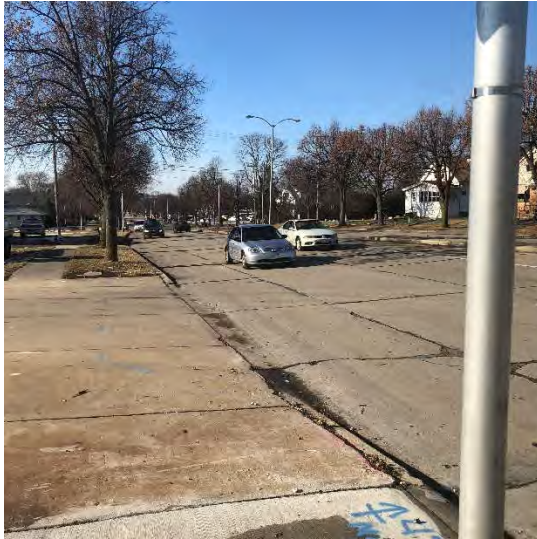


Photo 2

Looking west at the intersection of Howard Avenue and 60th Street



Photo 3

Looking northeast at the intersection of Forest Home Avenue and Howard Avenue



Photo 4

Looking east at the intersection of Forest Home Avenue and Howard Avenue

Forest Home Avenue Segment

Panel 2 in Route Description Panels continues from the southwest end of Panel 1. As shown in Panel 2, Forest Home Avenue is a four-lane, two-way road, with bike lanes and a center median. Cold Spring Road is a four-lane, two-way road. The land use around the route alternative in Panel 2 is primarily residential and commercial areas. Approximately 80 feet northeast of the intersection of Forest Home Avenue and 68th Street, a jack and bore method is being considered to install approximately 240 feet of pipe casing. Approximately 50 feet east of the intersection of Cold Spring Road and 76th Street, a jack and bore method is being considered to install approximately 220 feet of pipe casing. This construction method is being considered to minimize traffic disruption on 68th and 76th Streets. The total length of the Water Supply Pipeline within Panel 2 is approximately 3,600 feet. See photos 6, 7, 9, 10, and 14 for visual reference.



Photo 6

Looking southwest at the intersection of
Forest Home Avenue and 68th Street



Photo 7

Looking northeast at the intersection of Forest
Home Avenue and 68th Street



Photo 9

Looking northeast at the intersection of Forest
Home Avenue and Cold Spring Road



Photo 10

Looking southeast at the intersection of Forest Home Avenue and Cold Spring Road



Photo 14

Looking east at the intersection of Cold Spring Road and 76th Street

Cold Spring Road Segment

Panel 3 in Route Description Panels continues from the west end of Panel 2. As shown in Panel 3, Cold Spring Road is a two-lane, two-way road with parking lanes on each side. The land use around the route alternative in Panel 3 is primarily residential areas. The total length of the Water Supply Pipeline within Panel 3 is approximately 3,400 feet. See photos 17 and 18 for visual reference.



Photo 17

Looking east at the intersection of Cold Spring Road and 84th Street



Photo 18

Looking west at the intersection of Cold Spring Road and 84th Street

Panel 4 in Route Description Panels continues from the west end of Panel 3. As shown in Panel 4, Cold Spring Road is a two-lane, two-way road with parking lanes on each side until the intersection of Cold Spring Road and 92nd Street. At this point, Cold Spring Road transition into a two-lane, two-way road. The land use around the route alternative in Panel 4 is primarily residential areas. At the intersection of Cold Spring Road and 92nd Street, a jack and bore method is being considered to install approximately 150 feet of pipe casing. This construction method is being considered to minimize traffic disruption on 92nd Street. The total length of the Water Supply Pipeline within Panel 4 is approximately 3,400 feet. See photos 24 and 25 for visual reference.



Photo 24

Looking west at the intersection of Cold Spring Road and 92nd Street



Photo 25

Looking east at the intersection of Cold Spring Road and 92nd Street

Panel 5 in Route Description Panels continues from the west end of Panel 4. As shown in Panel 5, Cold Spring Road is a two-lane, two-way road east of 400 feet east of the intersection of Cold Spring Road and 104th Street. At this point Cold Spring Road transitions into a two-lane, two-way road with bike lanes on both sides. The land use around the route alternative in Panel 5 is primarily residential and commercial areas. Approximately 350 feet west of the intersection of Cold Spring Road and 99th Street, a jack and bore method is being considered to install approximately 270 feet of pipe casing. This construction method is being considered to avoid open cut construction underneath the bridge of Interstate 41 over Cold Spring Road. At the intersection of Cold Spring Road and 104th Street, a jack and bore method is being considered to install approximately 90 feet of pipe casing. This construction method is being considered to minimize traffic disruption on 104th Street. Approximately 300 feet west of the intersection of Cold Spring Road and 104th Street, a trenchless construction method of HDD is being considered to install approximately 800 feet of the pipeline. This construction method is being considered to avoid impacts to the Root River and a tributary to the Root River. At the intersection of Cold Spring Road and 108th Street, a trenchless construction method of HDD is being considered to install approximately 460 feet of the pipeline. This construction method is being considered to minimize traffic disruption on 108th Street and avoid impacts to a creek and culvert (continued on Panel 6). The total length of the Water Supply Pipeline within Panel 5 is approximately 3,400 feet. See photos 28 through 30, 33, and 34 for visual reference.



Photo 28

Looking west along Cold Spring Road to the Interstate 41 highway underpass



Photo 29

Looking west at the intersection of Cold Spring Road and 104th Street



Photo 30

Looking west along Cold Spring Road at the Root River waterway crossing on Cold Spring Road



Photo 33

Looking west at the intersection of Cold Spring Road and 108th Street



Photo 34

Looking east at the intersection of Cold Spring Road and 108th Street

Panel 6 in Route Description Panels continues from the west end of Panel 5 at the intersection of Cold Spring Road and 108th Street. As shown in Panel 6, Cold Spring Road is a two-lane, two-way road. The land use around the route alternative in Panel 6 is primarily residential and commercial areas. As described and shown in Panel 5, the remaining length of the pipe being considered to be installed via HDD at the intersection of Cold Spring Road and 108th Street is shown. Approximately 400 feet west of the intersection of Cold Spring Road and 116th Street, a trenchless construction method of HDD is being considered to install approximately 450 linear feet of the pipeline. This construction method is being considered to avoid impacts to a creek and culvert. The total length of the Water Supply Pipeline within Panel 6 is approximately 3,400 feet. See photo 38 for visual reference.



Photo 38

Looking west along Cold Spring Road at the waterway west of the intersection of Cold Spring Road and 118th Street

Panel 7 in Route Description Panels continues from the west end of Panel 6. As shown in Panel 7, Cold Spring Road is a two-lane, two-way road. The land use around the route alternative in Panel 7 is primarily residential areas. At the intersection of Cold Spring and Beloit Roads, a jack and bore method is being considered to install approximately 300 feet of pipe casing. This construction method is being considered to minimize traffic disruption on Beloit Road. At the intersection of Cold Spring Road and 124th Street, a jack and bore method is being considered to install approximately 120 feet of pipe casing. This construction method is being considered to minimize traffic disruption on

124th Street. The total length of the Water Supply Pipeline within Panel 7 is approximately 3,400 feet. See photos 39, 42, and 43 for visual reference.



Photo 39

Looking west at the intersection of Cold Spring Road and Beloit Road



Photo 42

Looking west at the intersection of Cold Spring Road and 124th Street



Photo 43

Looking east at the intersection of Cold Spring Road and 124th Street

Panel 8 in Route Description Panels continues from the west end of Panel 7 at the intersection of Cold Spring Road and 127th Street. As shown in Panel 8, Cold Spring Road is a two-lane, two-way road. The land use around the route alternative in Panel 8 is primarily residential with agricultural areas. The total length of the Water Supply Pipeline within Panel 8 is approximately 3,400 feet.

Panel 9 in Route Description Panels continues from the west end of Panel 8. As shown in Panel 9, Cold Spring Road and Fenway Drive are two-lane, two-way roads. The land use around the route alternative in Panel 9 is primarily residential, with public use areas. Within this panel, the pipeline enters Parcel NBC 1241994 (owned by the New Berlin Public Schools) near the northern boundary of the property. At the intersection of Cold Spring and Sunny

Slope Roads, a jack and bore method is being considered to install approximately 100 feet of pipe casing. This construction method is being considered to minimize traffic disruption on Sunny Slope Road. In Parcel NBC 1241994, 130 feet west of the intersection of Cold Spring Road and Sunny Slope Road, a trenchless construction method of HDD is being considered to install approximately 350 linear feet of the pipeline. This construction method is being considered to avoid impacts to a waterway. The total length of the Water Supply Pipeline within Panel 9 is approximately 3,700 feet. See photo 51 for visual reference.



Photo 51

Looking west at the intersection of Cold Spring Road and Sunny Slope Road

Fenway Drive Segment

Panel 10 in Route Description Panels continues from the west end of Panel 9. As shown in Panel 10, Fenway, Regal, and Mayflower Drives are two-lane, two-way roads. The land use around the route alternative in Panel 10 is primarily residential areas. At the intersection of Mayflower Drive and Moorland Road, a jack and bore method is being considered to install approximately 170 feet of pipe casing. This construction method is being considered to minimize traffic disruption on Moorland Road. The total length of the Water Supply Pipeline within Panel 10 is approximately 3,700 feet. See photo 60 for visual reference.



Photo 60

*Looking east at the intersection of Mayflower
Drive and Moorland Road*

National Avenue Segment

Panel 11 in Route Description Panels continues from the west end of Panel 10. As shown in Panel 11, Mayflower and Church Drives are two-lane, two-way roads. National Avenue is a four-lane, two-way road, while Observatory Road is a two-lane, two-way road. The land use around the route alternative in Panel 11 is primarily residential and commercial areas. Approximately 1,000 feet northeast of the intersection of National Avenue and Observatory Road, a jack and bore method is being considered to install approximately 120 feet of pipe casing. This construction method is being considered to cross National Avenue and minimize traffic disruption. The total length of the Water Supply Pipeline within Panel 11 is approximately 5,600 feet. See photos 64 through 67 for visual reference.



Photo 64

Looking northwest at the intersection of Church Drive and National Avenue



Photo 65

Looking southwest at the intersection of Church Drive and National Avenue



Photo 66

Looking west across National Avenue 2,850 feet southwest of the intersection of National Avenue and Church Drive



Photo 67

Looking northwest at the intersection of Observatory Road and National Avenue

Observatory Road Segment

Panel 12 in Route Description Panels continues from the west end of Panel 11. As shown in Panel 12, Observatory Road is a two-lane, two-way road. The land use around the route alternative in Panel 12 is primarily residential and agricultural areas. At the intersection of Observatory Road and Calhoun Road, a jack and bore method is being considered to install approximately 100 feet of pipe casing. This construction method is being considered to minimize traffic disruption on Calhoun Road. Approximately 30 feet east of the intersection of Observatory Road and Johns

Drive, a trenchless construction method of HDD is being considered to install approximately 260 feet of the pipeline. This construction method is being considered to avoid impacts to a creek and culvert. The total length of the Water Supply Pipeline within Panel 12 is approximately 3,500 feet. See photos 70 and 71 for visual reference.



Photo 70
Looking east at the intersection of
Observatory Road and Calhoun Road



Photo 71
Looking west along Observatory Road at the
waterway 1,000 feet west of Calhoun Road

Panel 13 in Route Description Panels continues from the west end of Panel 12. As shown in Panel 13, Observatory Road is a two-lane, two-way road. The land use around the route alternative in Panel 13 is primarily residential and agricultural areas. At a point 1,500 feet west of the intersection of Observatory Road and Woelfel Road, a trenchless construction method of HDD is being considered to install approximately 350 feet of the pipeline. This construction method is being considered to avoid impacts to a creek and culvert. The total length of the Water Supply Pipeline within Panel 13 is approximately 3,800 feet. See photo 75 for visual reference.



Photo 75
Looking east along Observatory Road at the
waterway 1,800 feet west of the intersection of
Observatory Road and Woelfel Road

Panel 14 in Route Description Panels continues from the southwest end of Panel 13. As shown in Panel 14, Observatory Road is a two-lane, two-way road, while Racine Avenue is a two-lane, two-way road. The land use around the route alternative in Panel 14 is primarily residential and agricultural areas. At the intersection of Observatory Road and Racine Avenue, a jack and bore method is being considered to install approximately 80 feet of pipe casing. This construction method is being considered to minimize traffic disruption on Racine Avenue. The total length of the Water Supply Pipeline within Panel 14 is approximately 3,900 feet. See photo 79 for visual reference.



Photo 79

Looking northwest along Racine Avenue 200 feet southeast of the intersection of Observatory Road and Racine Avenue

Racine Avenue Segment

Panel 15 in Route Description Panels continues from the west end of Panel 14. As shown in Panel 15, Racine Avenue is a two-lane, two-way roadway. The land use around the route alternative in Panel 15 is primarily residential and agricultural areas. The total length of the Water Supply Pipeline within Panel 15 is approximately 3,300 feet.

Panel 16 in Route Description Panels continues from the west end of Panel 15. As shown in panel 16, Racine Avenue is a two-lane, two-way roadway. The land use around the route alternative in Panel 16 is primarily residential and agricultural areas. The total length of the Water Supply Pipeline within Panel 16 is approximately 3,500 feet.

Panel 17 in Route Description Panels, refer to Panel 18 in Route Alternative M1 for description.

Sunset Drive Segment

Panel 18 in Route Description Panels, refer to Panel 19 in Route Alternative M1 for description.

Panel 19 in Route Description Panels, refer to Panel 20 in Route Alternative M1 for description.

ROUTE ALTERNATIVE M3

The narrative for the Water Supply Pipeline alignment of Route Alternative M3 is presented below following the flow path, beginning at the anticipated connection to the MWW distribution system and ending at the connection to WWU's distribution system in Waukesha. Segments that are either in multiple routes or within the Common Corridor on a singular route are only described once at the segment or panel that first occurs per the direction of flow. The discussion provides the rationale for the preliminary horizontal alignment, traffic control strategies, and trenchless crossing methods. The photos provided for visual reference are numbered from east to west, south to north, and by time of year taken, starting at the anticipated connection to the water supplier in Milwaukee.

Howard Avenue Segment

Panel 1 in Route Description Panels, refer to Panel 1 in Route Alternative M2 for description.

Forest Home Avenue Segment

Panel 2 in Route Description Panels, refer to Panel 2 in Route Alternative M2 for description.

Cold Spring Road Segment

Panel 3 in Route Description Panels, refer to Panel 3 in Route Alternative M2 for description.

Panel 4 in Route Description Panels, refer to Panel 4 in Route Alternative M2 for description.

Panel 5 in Route Description Panels, refer to Panel 5 in Route Alternative M2 for description.

Panel 6 in Route Description Panels, refer to Panel 6 in Route Alternative M2 for description.

Beloit Avenue Segment

Panel 7 in Route Description Panels continues from the west end of Panel 6. As shown in Panel 7, Cold Spring and Beloit Roads are two-lane, two-way roads. The land use around the route alternative in Panel 7 is primarily residential areas. Approximately 60 feet northeast of the intersection of Beloit Road and 124th Street, a jack and bore method is being considered to install approximately 160 feet of pipe casing. This construction method is being considered to minimize traffic disruption on 124th Street. The total length of the Water Supply Pipeline within Panel 7 is approximately 3,100 feet. See photos 39 and 44 for visual reference.



Photo 39

Looking west at the intersection of Cold Spring Road and Beloit Road



Photo 44

Looking southwest at the intersection of Beloit Road and 124th Street

Panel 8 in Route Description Panels continues from the west end of Panel 7. As shown in Panel 8, Beloit Road is a two-lane, two-way road. The land use around the route alternative in Panel 8 is primarily residential areas. Approximately 15 feet northeast of the intersection of Beloit Road and Armour Avenue, a jack and bore method is being considered to install approximately 90 feet of pipe casing. This construction method is being considered to minimize traffic disruption on Armour Avenue. About 50 feet northeast of the Interstate 43 underpass, a trenchless construction method of HDD is being considered to install approximately 790 linear feet of the pipeline. The total length of the Water Supply Pipeline within Panel 8 is approximately 4,100 feet. See photos 47 and 48 for visual reference.



Photo 47

Looking southwest at the intersection of Beloit Road and Armour Avenue



Photo 48

Looking southwest along Beloit Road to the Interstate 43 highway underpass

Panel 9 in Route Description Panels continues from the west end of Panel 8. As shown in Panel 9, Beloit Road is a two-lane, two-way road. The land use around the route alternative in Panel 9 is primarily residential areas. Approximately 20 feet east of the intersection of Beloit Road and Sunny Slope Road, a jack and bore method is being considered to install approximately 140 feet of pipe casing. The total length of the Water Supply Pipeline within Panel 9 is approximately 3,600 feet. See photo 52 for visual reference.

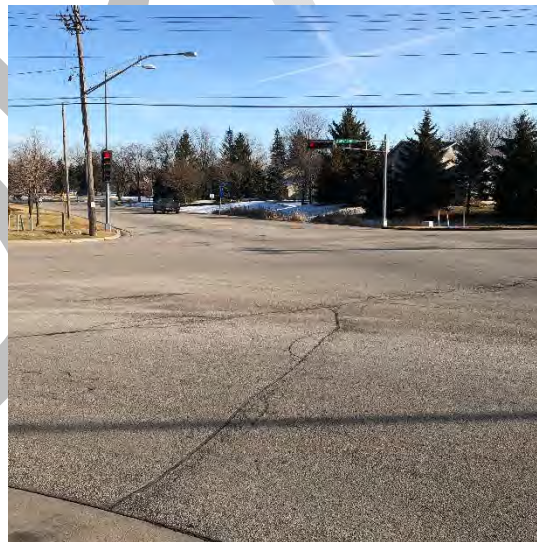


Photo 52

Looking west at the intersection of Beloit Road and Sunny Slope Road

Panel 10 in Route Description Panels continues from the west end of Panel 9. As shown in Panel 10, Beloit Road is a two-lane, two-way road. Beloit Road turns into a four-lane, two-way divided road west of the Interstate 43 underpass. The land use around the route alternative in Panel 10 is primarily commercial with residential areas. About 50 feet east of the Interstate 43 underpass, a jack and bore method is being considered to install approximately 290 feet of pipe casing. This construction method is being considered to minimize traffic disruption on Beloit Road. Approximately 50 feet east of the intersection of Beloit Road and Moorland Road, a jack and bore method is being considered to install approximately 200 feet of pipe casing. This construction method is being considered to minimize traffic disruption on Moorland Road. The total length of the Water Supply Pipeline within Panel 10 is approximately 3,500 feet. See photos 57 and 61 for visual reference.



Photo 57

Looking west along Beloit Road to the Interstate 43 highway underpass



Photo 61

Looking southwest at the intersection of Beloit Road and Moorland Road

Panel 11 in Route Description Panels continues from the west end of Panel 10. At the beginning of this panel, 30 linear feet of pipe casing has been discussed in Panel 10. Starting southwest of this point on Panel 11, Beloit Road is a four-lane, two-way divided road. Approximately 300 feet east of Towne Road, Beloit Road transitions to a two-lane, two-way road. The land use around the route alternative in Panel 11 is primarily industrial with light commercial and residential areas. Approximately 550 feet west of the intersection of Beloit Road and Moorland Road, a trenchless construction method of HDD is being considered to install approximately 410 linear feet of the pipeline. This construction method is being considered to minimize impacts to the creek. The total length of the Water Supply Pipeline within Panel 11 is approximately 3,800 feet. See photos 62 and 63 for visual reference.



Photo 62

Looking southwest along Beloit Road to the waterway 600 feet west of the intersection of Beloit Road and Moorland Road



Photo 63

Looking southwest along Beloit Road to the waterway 600 feet west of the intersection of Beloit Road and Moorland Road

Panel 12 in Route Description Panels continues from the west end of Panel 11. As shown in Panel 12, Beloit Road is a two-lane, two-way road. The land use around the route alternative in Panel 12 is primarily residential with agricultural areas. Approximately 960 feet east of the intersection of Beloit Road and Calhoun Road, a trenchless construction method of HDD is being considered to install approximately 370 feet of the pipeline. This construction method is being considered to minimize impacts to the creek. Approximately 40 feet east of the intersection of Beloit Road and Calhoun Road, a jack and bore method is being considered to install approximately 130 linear feet of pipe casing. This construction method is being considered to minimize traffic disruption on Calhoun Road. About 430 feet west of the intersection of Beloit Road and Calhoun Road, a trenchless construction method of HDD is being considered to install approximately 350 linear feet of the pipeline. This construction method is being considered to minimize impacts to the creek and culvert. The total length of the Water Supply Pipeline within Panel 12 is approximately 3,500 feet. See photos 72 through 74 for visual reference.



Photo 72

Looking west at the waterway 1,000 feet east of the intersection of Beloit Road and Calhoun Road



Photo 73

Looking west at the intersection of Beloit Road and Calhoun Road



Photo 74

Looking west at the waterway 450 feet west of the intersection of Beloit Road and Calhoun Road

Panel 13 in Route Description Panels continues from the west end of Panel 12. As shown in Panel 13, Beloit Road and National Avenue are both two-lane, two-way roads. The land use around the route alternative in Panel 13 is primarily residential. The total length of the Water Supply Pipeline within Panel 13 is approximately 3,600 feet.

National Avenue Segment

Panel 14 in Route Description Panels continues from the west end of Panel 13. As shown in Panel 14, National Avenue is a two-lane, two-way road and Racine Avenue is a four-lane, two-way road with a center median. The land use around the route alternative in Panel 14 is primarily residential and agricultural. Approximately 810 feet southwest of the intersection of National Avenue and Egofske Road, the pipeline lies within Parcel NBC 1268960. A minimum 50 foot permanent easement spanning across the identified parcel will be required. Approximately 810 feet southwest of the intersection of National Avenue and Egofske Road, a jack and bore method is being considered to install approximately 100 feet of pipe casing. This construction method is being considered to avoid traffic disruption on National Avenue while crossing National Avenue to Parcel NBC 1268960. At the Racine Avenue crossing from Parcel NBC 1268960, a jack and bore method is being considered to install approximately linear feet of pipe casing. This construction method is being considered to minimize traffic disruption on Racine Avenue. The total length of the Water Supply Pipeline within Panel 14 is approximately 4,500 feet. See photos 76 through 78 for visual reference.



Photo 76

Looking east across National Avenue 1,350 feet northeast of the crossing of National Avenue and Racine Avenue



Photo 77

Looking east across parcel NBC 1268960 800 feet north of the intersection of Racine Avenue and National Avenue



Photo 78

Looking north along Racine Avenue 800 feet north of the intersection of Racine Avenue and National Avenue

Racine Avenue Segment

Panel 15 in Route Description Panels continues from the north end of Panel 14. As shown in Panel 15, Racine Avenue is a two-lane, two-way road. The land use around the route alternative in Panel 15 is primarily residential with agricultural areas. The total length of the Water Supply Pipeline within Panel 15 is approximately 2,400 feet.

Panel 16 in Route Description Panels continues from the west end of Panel 15. As shown in Panel 16, Racine Avenue is a two-lane, two-way road. The land use around the route alternative in Panel 16 is primarily agricultural and residential areas. The total length of the Water Supply Pipeline within Panel 16 is approximately 2,500 feet.

Panel 17 in Route Description Panels continues from the north end of Panel 16. As shown in Panel 17, Racine Avenue is a two-lane, two-way road. The land use around the route alternative in Panel 17 is primarily agricultural, with residential areas. The total length of the Water Supply Pipeline within Panel 17 is approximately 2,800 feet.

Panel 18 in Route Description Panels, refer to Panel 15 in Route Alternative M2 for description.

Panel 19 in Route Description Panels, refer to Panel 16 in Route Alternative M2 for description.

Panel 20 in Route Description Panels, refer to Panel 17 in Route Alternative M1 for description.

Sunset Drive Segment

Panel 21 in Route Description Panels, refer to Panel 18 in Route Alternative M1 for description.

Panel 22 in Route Description Panels, refer to Panel 19 in Route Alternative M1 for description.