

# InFlow-Line

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## *West Hartford Center Special Accelerated Water Main Replacement*

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Outdoor dining space along Farmington Avenue.

# West Hartford Center Special Accelerated Water Main Replacement

**F**armington Avenue is a well-known commercial thoroughfare in downtown West Hartford, CT. This area is a destination for shopping, dining, and entertainment. It also links other nearby towns to downtown Hartford. The Metropolitan District (MDC) owns and operates the water mains in this area and had previously replaced water mains along Farmington Avenue in downtown West Hartford. These prior projects included the areas west of the Walden Street intersection and east of the Trout Brook Drive intersection but excluded the busier West Hartford Center area. Between those two intersections, water service was still provided by two 20-inch unlined cast iron mains more than 140 years old.



The Metropolitan District installing a 24-inch water main.

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In 2019, the MDC began planning for replacement of these aging water mains with 3,000 feet of new 24-inch ductile iron main to connect to the newer existing 24-inch mains located at both intersections. This would complete the replacement of their aging water assets along Farmington Avenue and provide this urban center with reliable water service for years to come.

This project was planned prior to the start of the COVID-19 pandemic for a late 2020 design completion with a traditional bid and construction phase in summer 2021. During summer 2020, West Hartford implemented a successful outdoor dining program in response to the pandemic. Barricades were placed in the road, reducing traffic lanes to create room for outdoor dining space. It was determined early on that extensive excavation for the installation of a 24-inch water main would not be practical with a continued outdoor dining program into the summer of 2021. Therefore, MDC expedited the schedule of design and construction to complete construction prior the next outdoor dining season (approximately April 2021). This was months ahead of the originally anticipated completion date for both design and construction.

MDC modified its customary Design-Bid-Build procedures to meet the need for the accelerated schedule. The project was bid in October 2020 on approximately 30% milestone design documents and followed a unique design approach as construction progressed. Ludlow Construction was awarded the construction contract, and immediately began winter season nighttime construction on the phases of the project that were the furthest



along in design development. CDM Smith, the design engineer, continued to develop the rest of the design as construction activities progressed. CDM Smith and Snyder Civil Engineering also provided support during the construction phase to facilitate the project's completion. The project benefitted from a strong partnership with West Hartford's Engineering Department, who assisted with outreach, plan review, and establishing technical standards.

Apart from the expedited schedule, this project faced many additional challenges complicating the water main design and construction. These challenges included extensive underground utilities along the corridor including existing water mains, sewer, drain, high pressure gas, low pressure gas, telecom, fiber optic, and underground electric service. The water main route also contained concrete road subbase (6" to 10" thick) and rock, which further complicated excavation and installation. Additionally, project phasing and prioritization was critical as water services needed to be transferred from one existing water main to the other to facilitate installation and certain areas were prioritized to expedite a return to outdoor dining.

The project was broken into four phases that could be constructed, disinfected, and put into service individually. Phase 1 between Dale Street and the north and south main streets was phased in a way that it could be "looped" and put into service prior to completion of subsequent phases. Phase 1 contained most of the outdoor dining locations and was the primary driver of the expedited schedule. This phased approach was not the original construction phasing strategy, but it was necessary to rethink phasing due to the expedited project schedule.



*The Metropolitan District installing a 24-inch water main.*

Construction was completed through the winter season of 2020/2021 to meet the targeted Phase 1 construction completion of April 2021. The portion of the new 24-inch water main directly adjacent to the outdoor dining areas was successfully installed and put into service prior to the start of the 2021 outdoor dining season. Construction of the remaining phases without restaurant direct impacts continued beyond the outdoor dining deadline but the main was primarily constructed at night to alleviate traffic impacts. The entire water main was substantially completed in August 2021. The final construction cost for the project was approximately 12% below the original contract value. The entire water main is currently in service and will provide the town's business center reliable drinking water for decades to come. 💧

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