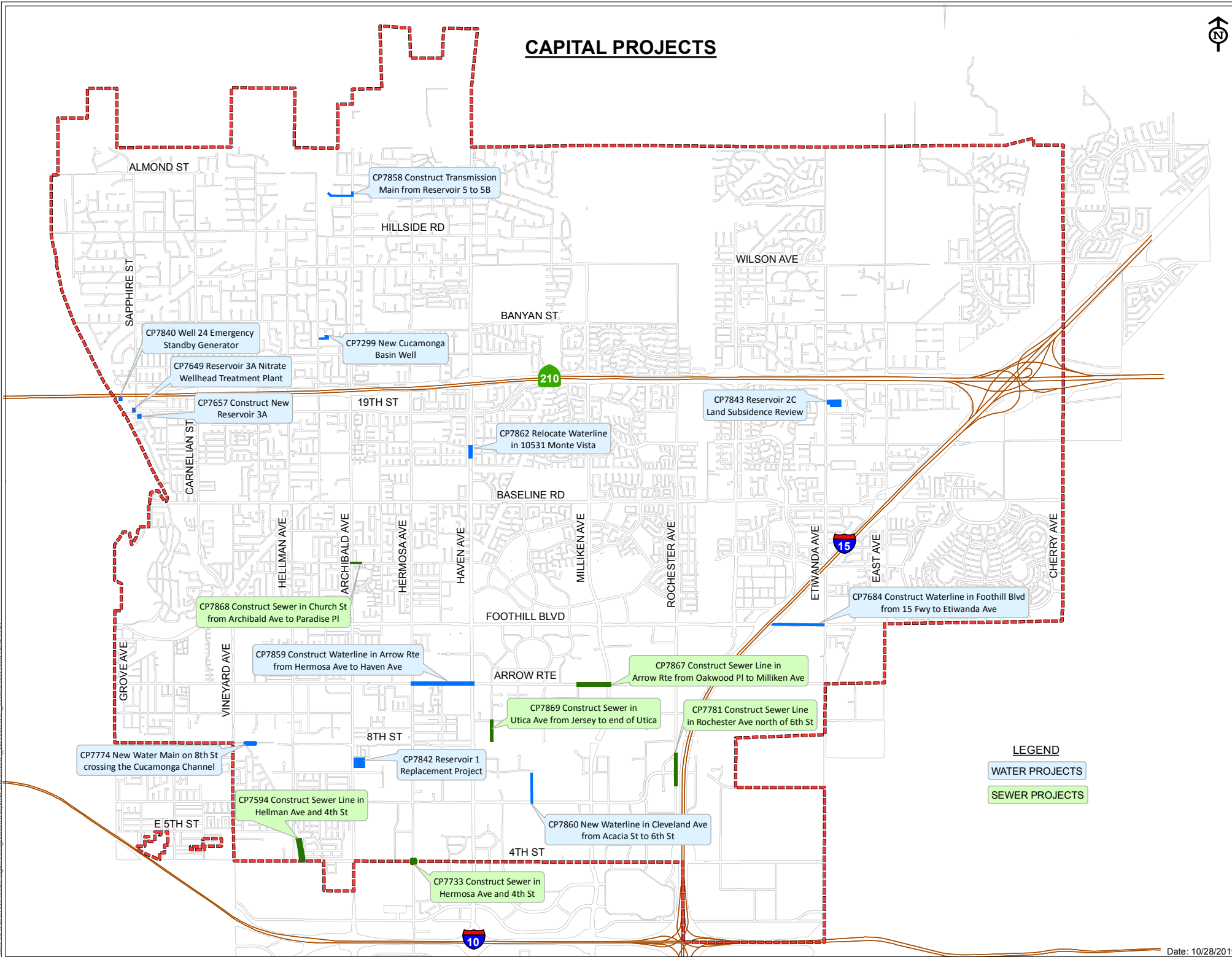


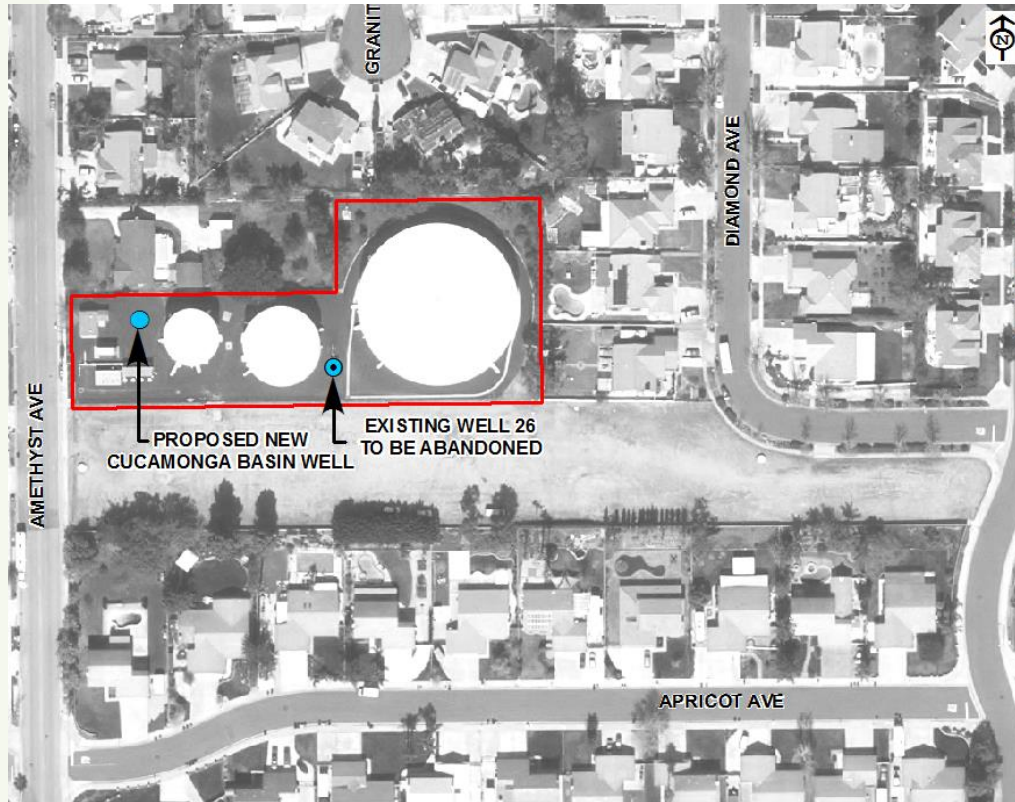
# CAPITAL PROJECTS



**LEGEND**

- WATER PROJECTS
- SEWER PROJECTS

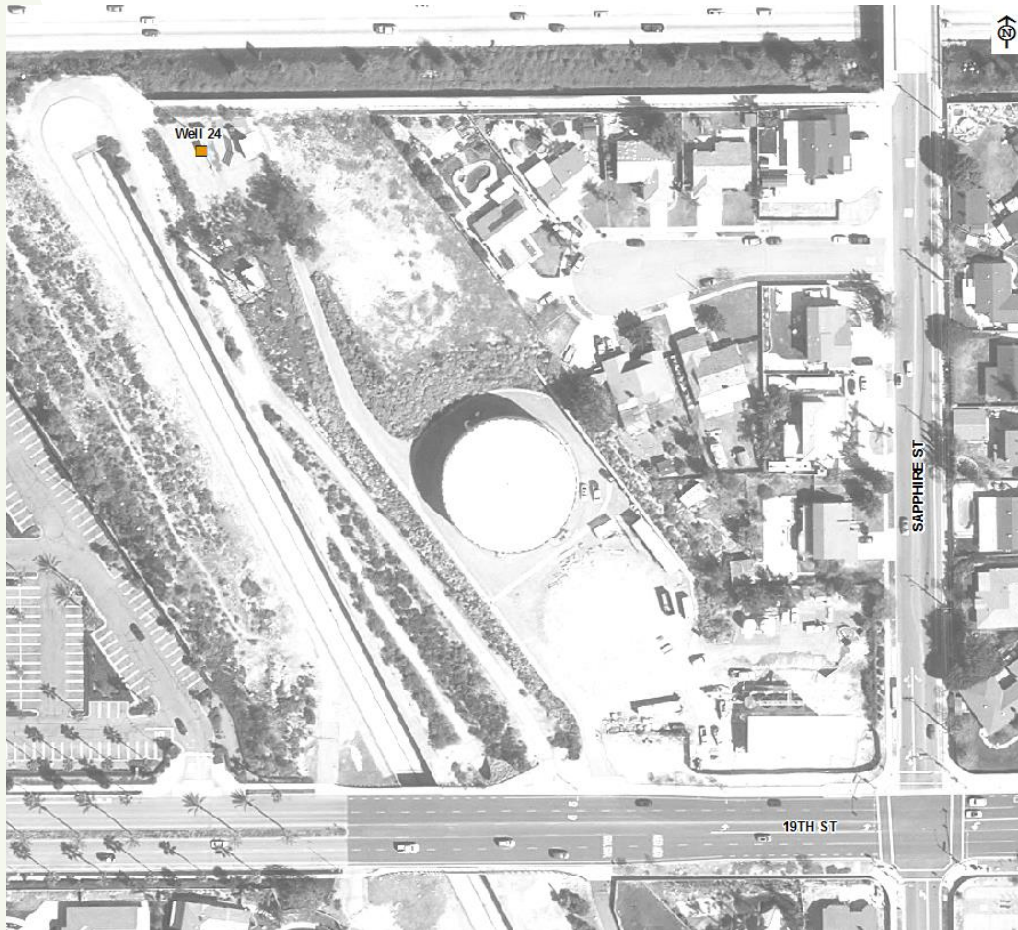
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### New Cucamonga Basin Well

This multi-year project will improve water supply reliability and much needed production capacity in Cucamonga Basin. Phase 1 of the work, which is ongoing, is developing CEQA for the project and bid documents for drilling. Phase 2, which is scheduled for FY 2020, will drill and develop the well. Finally, Phase 3 will design and equip the well. The well is expected to be online in FY 2021.





### **Well 24 Emergency Standby Generator**

The back-up power generators are required to provide uninterrupted water supply during electric supply disruption. Permanent back-up power generators are recommended for our booster and well pumps, which currently do not have the backup power source. Redundancy of supply or backup generating capacity reduces risk. Most of the booster pump sites are already equipped with back-up power supply. Pump stations boost water through the District's distribution zones and supply water to the reservoirs. These sites are given high priority followed by the well sites. The well sites have been identified and prioritized based on the supply reliability or/and production capacity (5-Year Average). This is a two year project with two goals. The first year the project will include purchasing and installing a generator for Well 24. A concrete pad for Well 24 generator was constructed in FY 2016. Well 24 is the highest priority well listed in our master plan. This project will also include design of a concrete pad for Pump Station 1. The second year request includes the purchase of a generator for Pump Station 1. Pump station 1 is the next highest production site listed in the master plan.





### **Reservoir 1 Replacement Project**

The existing concrete formed in Reservoir 1 is near the end of its service life (built in 1957) and will require replacement. This project will construct a new 2 MG reservoir at the Reservoir 1 location. The new reservoir is the first of two proposed reservoirs that would add capacity and redundancy at this location.





### **Construct New Reservoir 3A**

This project will improve water supply and distribution reliability in Zone 3A by replacing the existing reservoir that is nearing the end of its serviceable life. It will also increase storage in the zone by constructing storage with a greater volume than the previous reservoir. The project is being delivered by CDM Constructors as a multi-year project entering its second phase in FY 2019. With the design (Phase 1) completed by CDM Constructors in FY 2018. The construction (Phase 2) will be under way after the acceptance of the Phase 2 amendment. The contract with CDM also includes CP7649 Reservoir 3A Nitrate Wellhead Treatment Plant to also enter its second phase. This project will improve water supply reliability and increase storage within the system.





### **Reservoir 3A Nitrate Wellhead Treatment Plant**

This project will design and construct a nitrate treatment plant for the Well Field 3A using a progressive design-build delivery method. Elevated levels of nitrate in Cucamonga Basin limit the available production from this valuable groundwater source. Through wellhead treatment and blending the production from of the basin can increase and the associated wells can operate at their full capacities. This project is being delivered by District staff with support of consultants, equipment vendors, and contractors. This multi-year project has already completed its first phase and its second phase is nearly complete. The first phase of the project, process selection and preliminary design, was completed in Fiscal Year 2018 by CDM Constructors Inc. The second phase of the project, final design and construction, is led by District staff with support from WesTech Engineering Inc. (WesTech). WesTech is the process design engineer and largest general contractor on the project. The construction of the facility is near completion and facility start-up and commissioning expected to begin in late October of 2019.





### **Reservoir 2C Land Subsidence Review**

The pavement around Reservoir 2C, constructed in 1990, shows signs of potential subsidence. The 2017 Water System Master Plan (WSMP) identified this could be due to subsidence or could have occurred due to settling soils. The WSMP recommends monitoring of the site on an annual to semi-annual basis for further subsidence of the area surrounding the reservoir. This project will fund a study to be performed by a geotechnical and structural engineer to investigate and confirm the cause and recommend appropriate action.





### **Construct Waterline in Foothill Blvd from 15 Fwy to Etiwanda Ave**

The waterline on Foothill Boulevard from the I-15 Fwy to Etiwanda Avenue was built in 1988, and it was constructed using asbestos-cement (AC) pipe. Although this material is safe when in service, this material poses a potential health risk to District staff when the pipe is disturbed during maintenance. The new pipeline will install a cement mortar lined and coated steel pipe (the current District standard). Staff analyzed this pipeline and plan to upsize the eight (8) inch line to 12 inch in order to meet future demands and build transmission flexibility. The project will construct approximately 1,500 linear feet of new waterline. The project has been designed and will be ready for construction in FY 2020.





### **New Water Main in 8<sup>th</sup> St crossing the Cucamonga Channel**

Existing fire flow systems were evaluated to verify that a minimum pressure of 20 psi was met while maintaining a flow ranging from 1,000 gpm to 4,000 gpm. The fire flow analysis identified that a new water main on 8th Street crossing the Cucamonga Channel were required to maintain pressure. This project, identified in the 2017 Water System Master Plan, includes design and construction of 300 feet of a new 12 inch water main that would connect an existing 16 inch water main to the east with a 10 inch main to the west of the Cucamonga Channel. Scope of work will include a channel crossing.





### **Construct Transmission Main from Reservoir 5 to 5B**

This project will connect the existing 12-in zone 5 transmission main, located on Archibald and Carrari, to the 16-in reservoir 5 zone transmission main. This project will allow reservoirs 5 and 5b to share the zone 5 demand thereby operational flexibility and redundancy. Currently reservoir 5b is the primary source of supply for the 5 zone between Hermosa and Milliken. This project includes design and construction of 1,400 linear feet of 12-in transmission main.

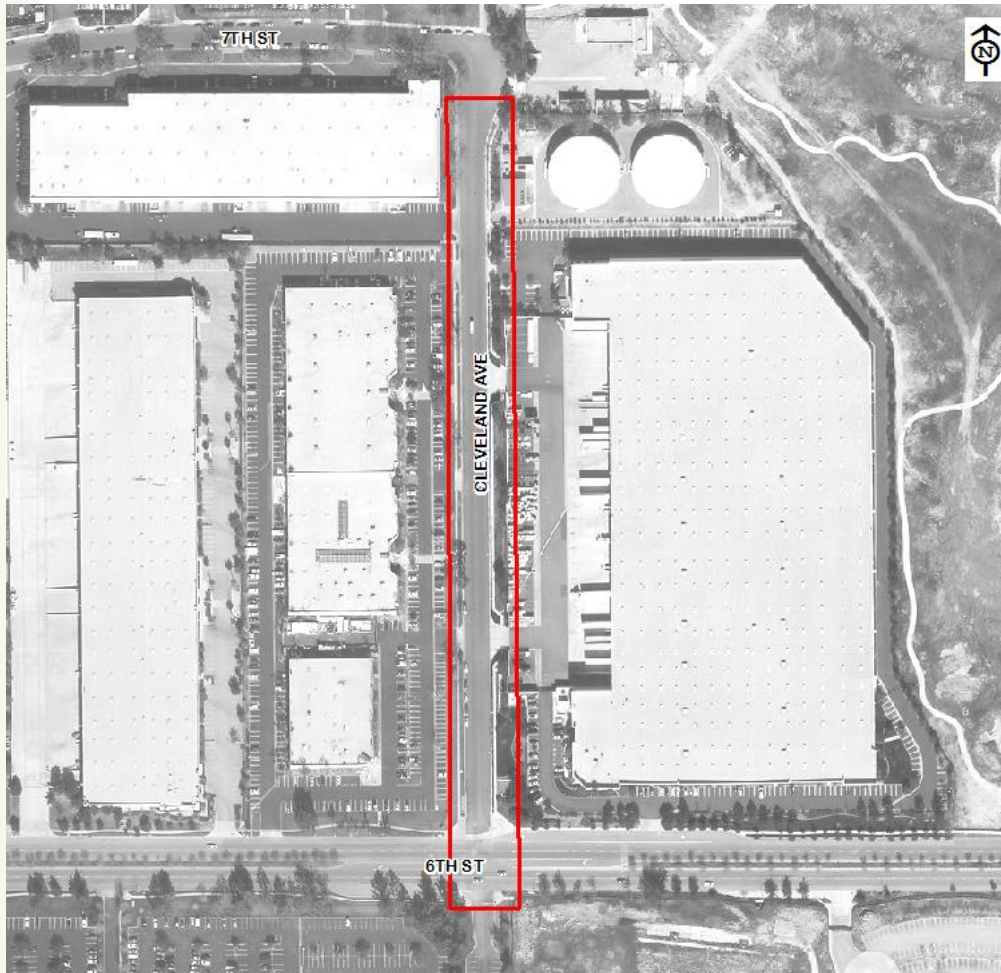




### **Construct Waterline in Arrow Rte from Hermosa Ave to Haven Ave**

The waterline on Arrow Route from Hermosa Avenue to Haven Avenue was built in 1968, and has reached the end of its service life. It requires frequent maintenance to repair leaks. The portion of Arrow Route West of Hermosa Avenue was replaced in 2012 and this project will extend the replacement to Haven Avenue. This request will fund the design and construction of approximately 2,660 linear feet of a new 16 inch waterline. A portion of this line will have to cross the Deer Creek Channel, which will require an extensive permitting process with San Bernardino Flood Control District and Army Corps of Engineers.

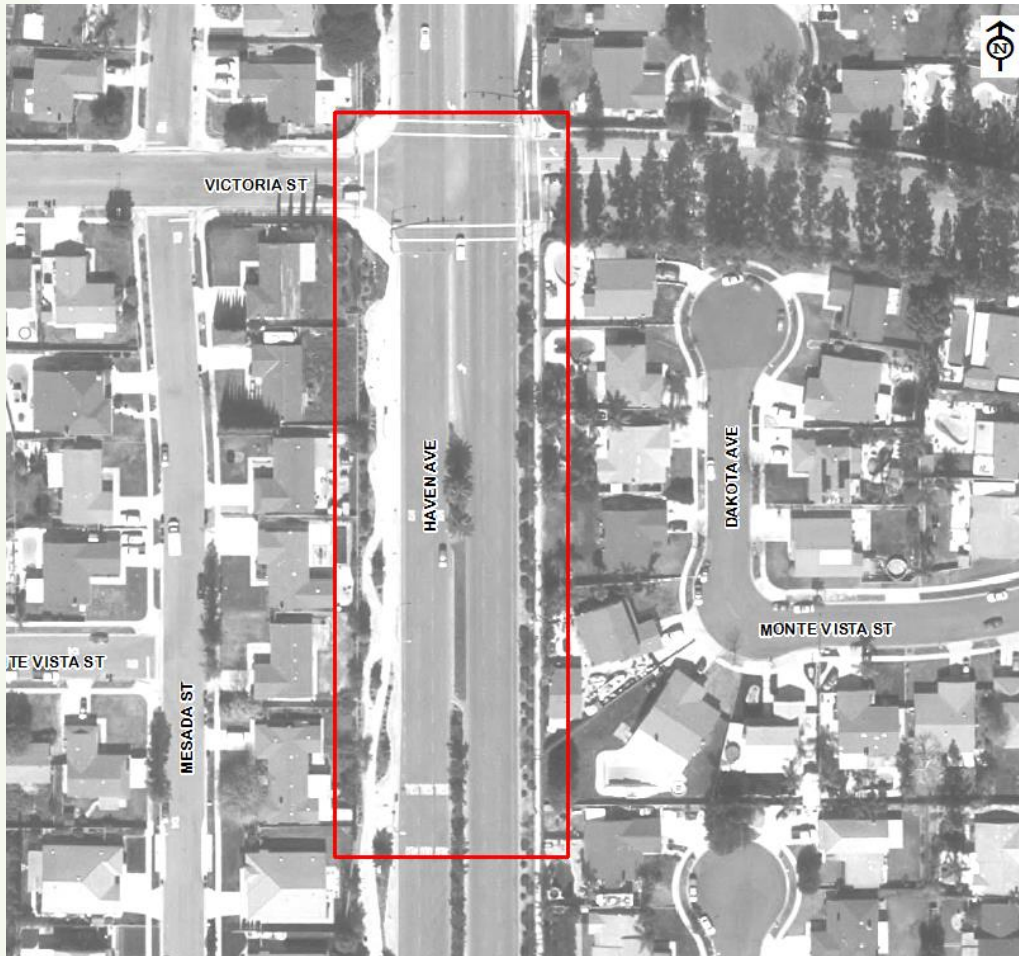




### **New Waterline in Cleveland Ave from Acacia St to 6<sup>th</sup> St**

Due to the increased demands of the proposed Empire Lakes development, the 2017 Water System Master Plan recommended Zone 1 Transmission Main Improvements. The improvements include an additional 16 inch transmission main on Cleveland Avenue from PS 1B to 6th Street. This pipeline would tie into the discharge of PS 1B (TMC-3). This is necessary due to the increase in flows from PS 1B to serve Zone 1. This project includes design and construction of approximately 1,200 linear feet of 24 inch CML&C on Cleveland Avenue from PS 1B to 6th Street.





### **Relocate Waterline at 10531 Monte Vista**

The existing 12 inch water main is located in a customer's backyard. The maintenance crew has limited access to the customer's backyard for leak repairs. This project is to design and construct 450 linear feet of a 12 inch water main that would relocate old 12 inch water main in the customer's backyard to a public street on Haven Avenue.

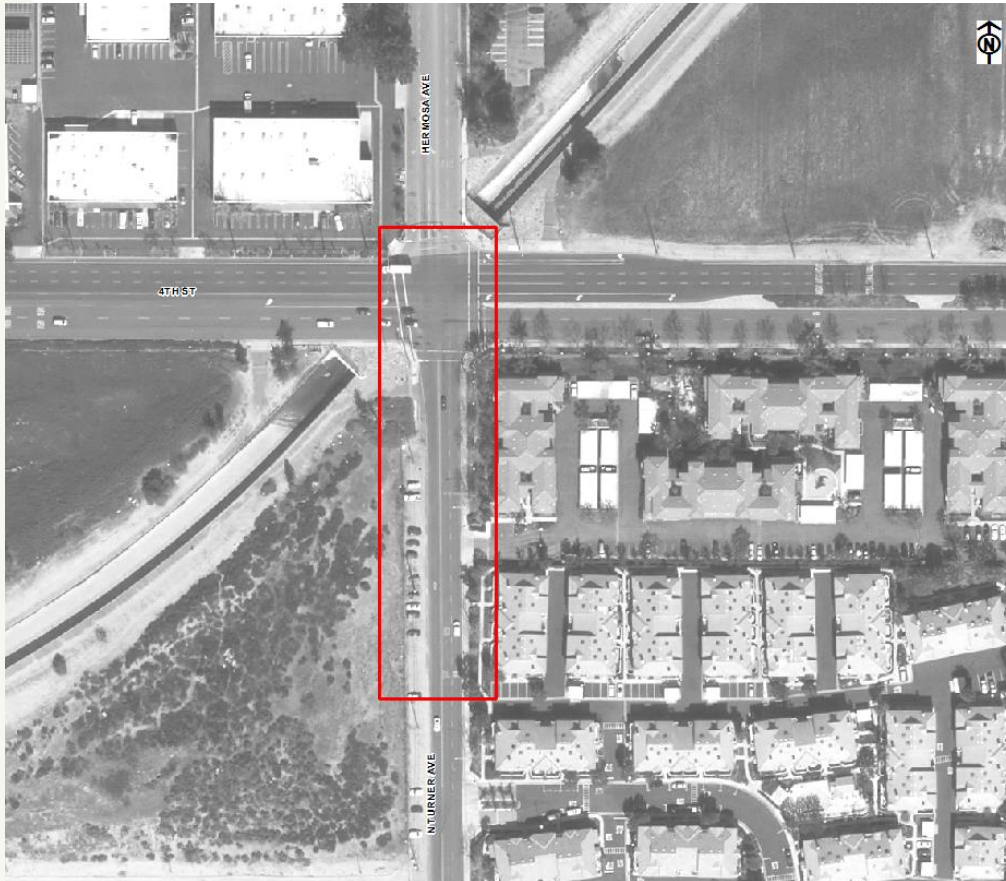




### **Construct Sewer Line on Hellman Ave and 4<sup>th</sup> St**

Siphons require extensive maintenance and have added risk of overflow. The District has identified several siphons that can be reasonably replaced with a gravity system. These siphon replacements will provide greater reliability and lower maintenance costs. The sewer siphon on Hellman Avenue and 4th Street was built in 1970 to cross the Cucamonga Channel. This project will construct approximately 1,290 linear feet of 24 inch VCP and 890 linear feet of 12 inch VCP gravity sewer main to eliminate the existing siphon. A portion of new 12 inch VCP will cross beneath the Cucamonga Channel. The project was designed in FY 2016; however, because the project is crossing under a channel there is a lengthy permitting process with the San Bernardino County Flood Control District, and the Army Corps of Engineers that has delayed the project. The project will carry over into FY 2019.

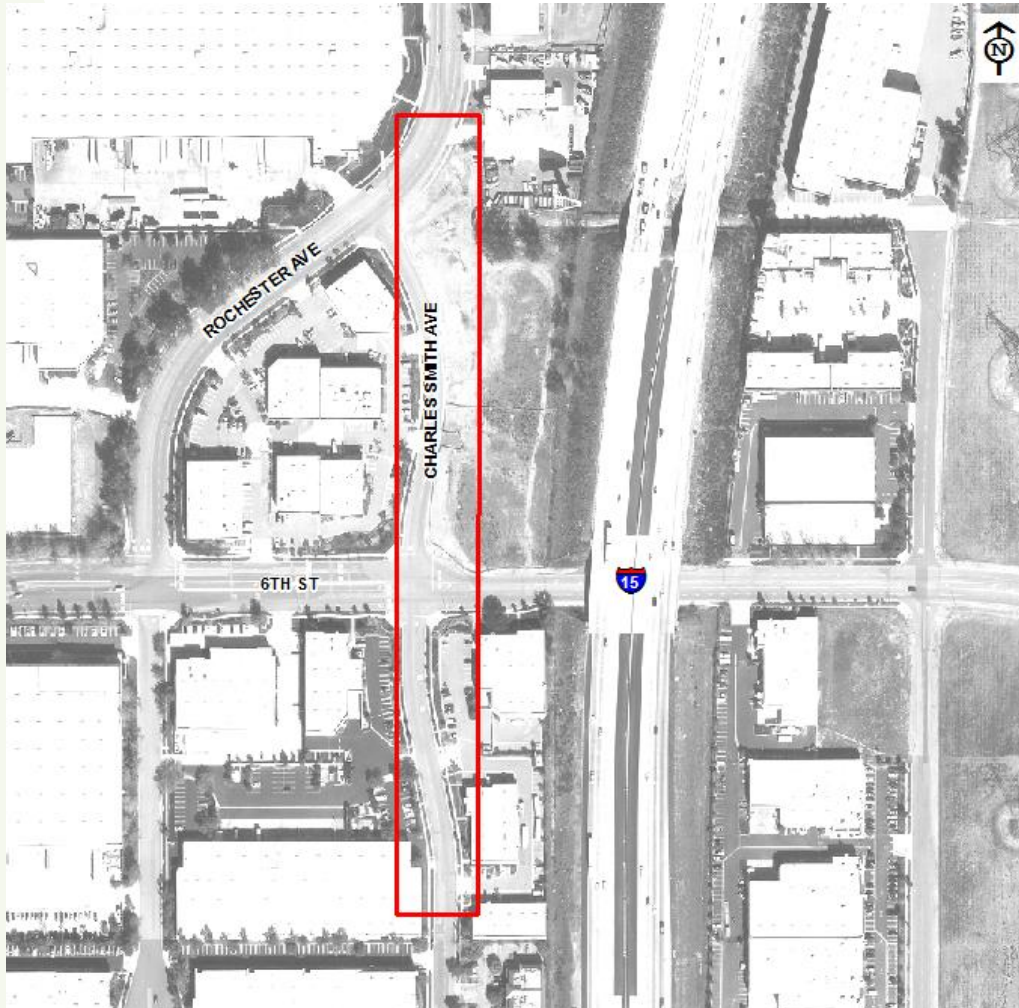




### **Construct Sewer in Hermosa Ave and 4<sup>th</sup> St**

Siphons require extensive maintenance and has added risk of overflow. The District has identified several siphons that can be reasonably replaced with a gravity system. These siphon replacements will provide greater reliability and lower maintenance costs. The existing sewer siphon on Hermosa Avenue and 4th Street was built in 1980 to cross the Deer Creek Channel. This project will construct a gravity sewer line across the channel to eliminate the existing siphon. This project will also replace a segment of RPM sewer pipe on Hermosa Avenue built in 1971. The design was completed in the last fiscal year and is currently in the process of permitting through the San Bernardino County Flood Control District and the Army Corps of Engineers.

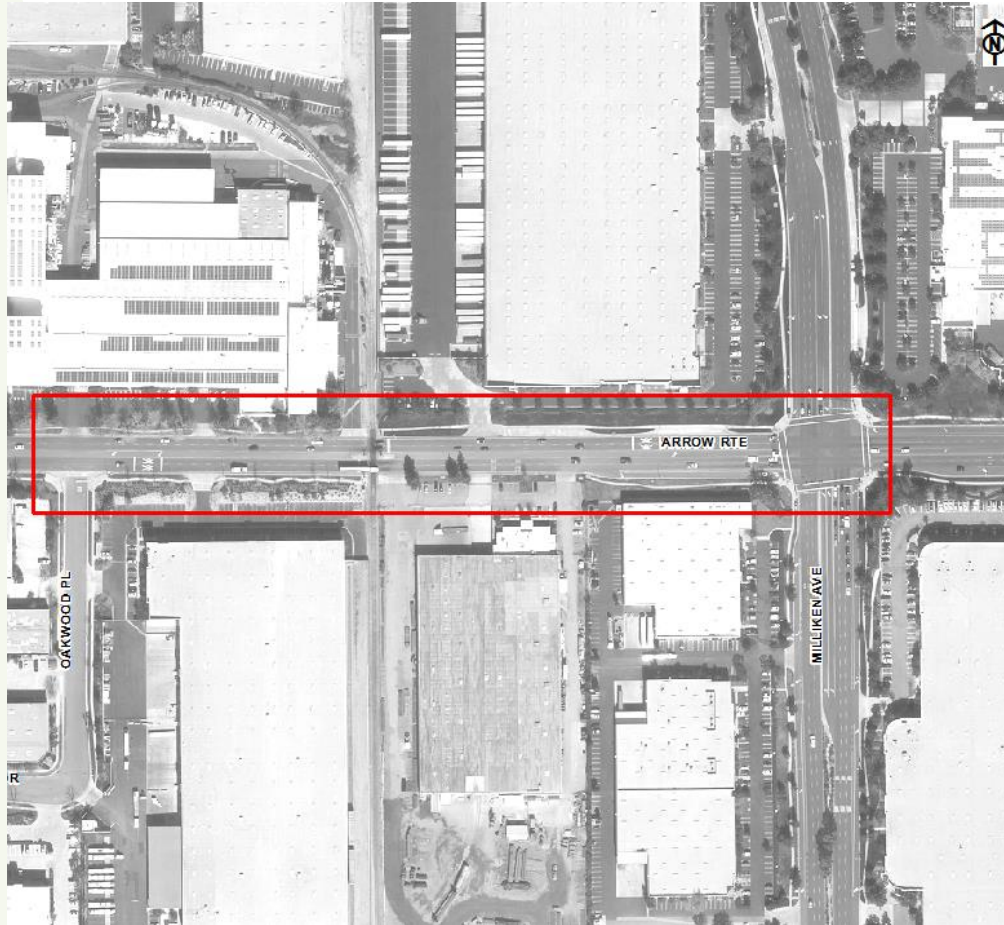




### **Construct Sewer Line in Rochester north of 6<sup>th</sup> St**

Siphons require extensive maintenance and have added risk of overflow. The District has identified several siphons that can be reasonably replaced with a gravity system. These siphon replacements will provide greater reliability and lower maintenance costs. The sewer siphon on Rochester north of 6th Street was built in 1970 to cross an MWD transmission line. This project will construct approximately 1,390 linear feet of 15 VCP gravity sewer main and six (6) manholes to eliminate the existing siphon.





### **Construct Sewer Line in Arrow Rte from Oakwood Pl to Milliken Ave**

The existing 14 inch sewer line located on Arrow Route between Oakwood Place and Milliken Avenue is a reinforced mortar pipe built in 1969 and has reached the end of its service life. This project was identified in the 2017 Sewer Master Plan. The project includes design and construction of approximately 850 feet of sewer main, modifying two (2) manholes, construction of three (3) new manholes, and a casing (for a railroad crossing). This project will be designed and permitted in FY 2019 and constructed in FY 2020.

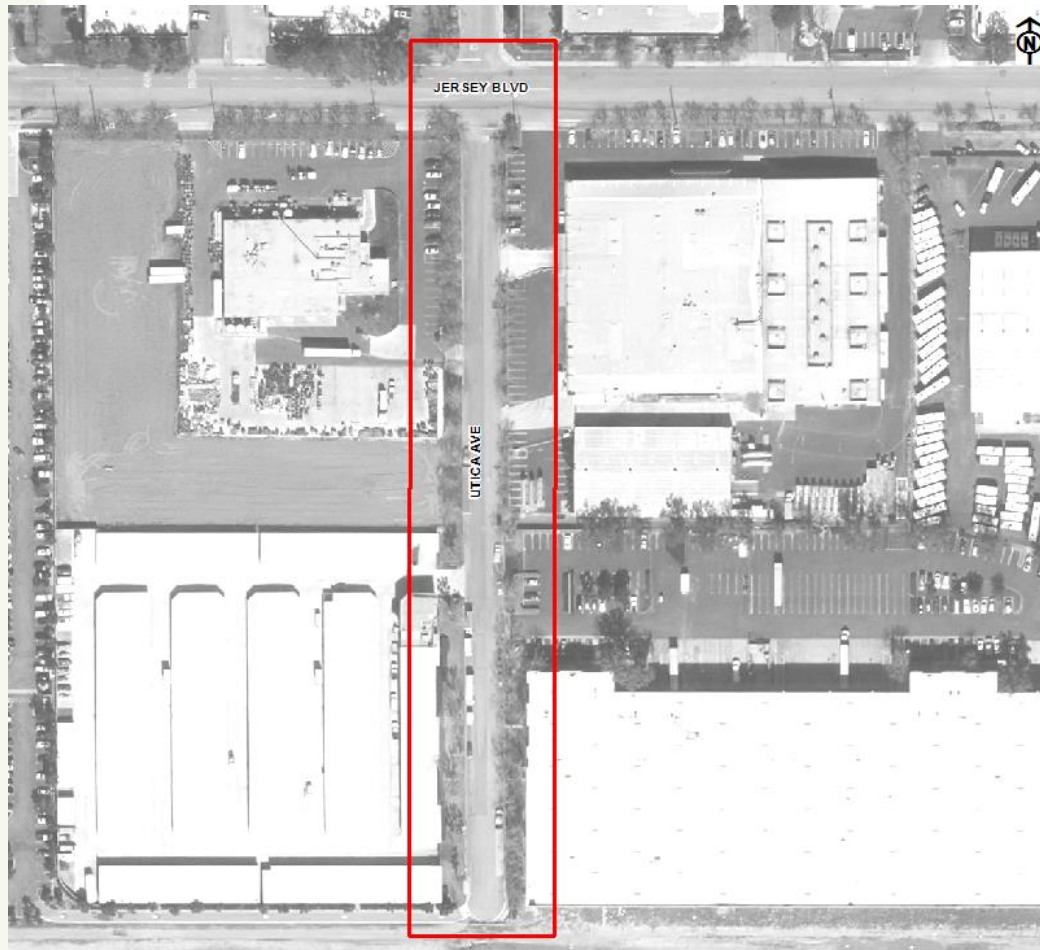




### **Construct Sewer Line in Church St from Archibald Ave to Paradise**

The existing eight (8) inch sewer line located on Church Street east of Archibald Avenue is an AC Pipe built in 1966 and has reached the end of its service life. This project was identified in the 2017 Sewer Master Plan and was scheduled to be replaced in FY 2019. The project includes design and construction of approximately 200 feet of sewer main, modifying a manhole, and construction of two (2) new manholes. This project will be designed and constructed in FY 2020.





### **Construct Sewer Line in Utica Ave from Jersey Blvd to end of Utica**

The existing eight (8) inch sewer line located on Utica Avenue south of Jersey Boulevard is AC pipe built in 1967 and has reached the end of its service life. This project was identified in the 2017 Sewer Master Plan. The project includes design and construction of approximately 700 feet of sewer main and three (3) new manholes. This project will be designed and permitted in FY 2019 and constructed in FY 2020.

