Chapter 10

CAPITAL IMPROVEMENT PROJECT DETAIL SUMMARY SHEETS

This chapter presents detail summary sheets for 79 of the 88 projects described in Chapter 9. The project summary sheet includes capital improvement costs, project location and details, and a detailed map. Table 10.1 lists the page number of each project's summary sheet.

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Project ID: LS # 19 - Hahn
Description: Area 1, West Trunk
Type: Lift Station
Project Type: Existing Deficiency

Project Benefit
Existing Customers: 86%
Future Customers: 14%

Implementation Phase
Phase 1 (2013 - 2015) X
Phase 2 (2016 - 2020)
Phase 3 (2021 - 2025)
Phase 4 (2026 - 2030)

Project Location
Honey Creek Road and Nightingale Drive

Project Details
The lift station includes two 450 gallons per minute (gpm) pumps. The proposed improvements would increase the firm capacity from 0.65 mgd to 1.3 mgd to meet future PWWF.

Project Justification
This project is under design and includes replacing the two existing pumps with two 900 gpm pumps. Currently, the Hahn Lift Station resides on the southwest corner of Nightingale Drive and Honey Creek Road with the wet well at the intersection. The preferred alternative will relocate the lift station and wet well to the southeast corner.

Project Detail Map

Capital Improvement Costs
Baseline Construction Cost $1,102,000
Construction Contingency $275,500
Estimated Construction Cost $1,377,500
Engineering Services, Construction Management and Project $413,500
Total Capital Improvement Cost $1,791,000
ENR CCI = 10,037 20-City Average, July 2015
Project ID: LS # 30 - Rumble
Description: Area 1, Rumble Trunk
Type: Lift Station

Project Type: Existing Deficiency

Project Benefit
Existing Customers: 72%
Future Customers: 28%

Implementation Phase
Phase 1 (2013 - 2015)
Phase 2 (2016 - 2020) X
Phase 3 (2021 - 2025)
Phase 4 (2026 - 2030)

Project Location
Rumble Road near Bay Lane

Project Details
the lift station includes two 950 gpm pumps. The proposed improvement would increase the firm capacity from 1.37 mgd to 2.33 mgd to meet existing and future PWWFs.

Project Justification
The existing Rumble Lift Station will require an increase in its firm capacity to convey existing PWWF.

Capital Improvement Costs
Baseline Construction Cost $ 1,403,000
Construction Contingency $ 350,750
Estimated Construction Cost $ 1,753,750
Engineering Services, Construction Management and Project $ 526,250
Total Capital Improvement Cost $ 2,280,000
ENR CCI = 10,037 20-City Average, July 2015
Project ID: S-4a and C-2/S-4b
Description: Area 3, Sutter Trunk
Type: Pipe
Project Type: Existing Deficiency

Project Benefit
Existing Customers: 100%
Future Customers: 0%

Implementation Phase
Phase 1 (2013 - 2015) X
Phase 2 (2016 - 2020)
Phase 3 (2021 - 2025)
Phase 4 (2026 - 2030)

Project Location
Jefferson Avenue, under Highway 99

Project Details
This project will increase the reliability of the Sutter Trunk under Highway 99, near Jefferson Street, by constructing a parallel pipeline. The parallel sewer line will consist of 400 feet of 16-inch diameter pipeline and serve as a bypass for rehabilitation of the existing pipeline and provide a redundant pipeline under Highway 99.

Project Justification
If the existing pipeline were to fail, the collection system would not be able to convey flows across Highway 99 and any pipeline improvements for this area would be extensive.

Project Detail Map
Project ID: RT-1  
Description: Area 3, River Trunk  
Type: Pipe  
Project Type: Existing Deficiency

**Project Benefit**

Existing Customers: 59%  
Future Customers: 41%

**Implementation Phase**

Phase 1 (2013 - 2015)  
Phase 2 (2016 - 2020) X  
Phase 3 (2021 - 2025)  
Phase 4 (2026 - 2030)

**Project Location**

Tuolumne Avenue

**Capital Improvement Costs**

Baseline Construction Cost $2,569,000  
Construction Contingency -  
Estimated Construction Cost -  
Engineering Services, Construction Management and Project -  
Total Capital Improvement Cost $3,211,000

ENR CCI = 10,037 20-City Average, July 2015

**Project Details**

This project constructs 2,300 feet of 48-inch diameter gravity sewer in Tuolumne Boulevard between Neece Drive and Colorado Avenue. This segment will convey flow from the River Trunk Pump Station force mains to a new 54-inch gravity diameter sewer along Colorado Avenue.

**Project Justification**

Based on the Condition Assessment, the River Trunk has a likelihood of failure within the next 5 to 10 years if degradation continues.
**Project ID:** RT-2  
**Description:** Area 3, River Trunk  
**Type:** Pipe  
**Project Type:** Existing Deficiency

**Project Benefit**
- **Existing Customers:** 59%
- **Future Customers:** 41%

**Implementation Phase**
- **Phase 1 (2013 - 2015)**
- **Phase 2 (2016 - 2020)**: X
- **Phase 3 (2021 - 2025)**
- **Phase 4 (2026 - 2030)**

**Project Location**
- Colorado Avenue

**Capital Improvement Costs**
- **Baseline Construction Cost** $6,918,000
- **Construction Contingency** -
- **Estimated Construction Cost** -
- **Engineering Services, Construction Management and Project** -
- **Total Capital Improvement Cost** $8,648,000

**ENR CCI = 10,037 20-City Average, July 2015**

**Project Details**
This project constructs a 4,000-foot gravity sewer with a 54-inch diameter in Colorado Boulevard between Tuolumne Boulevard and Pelton Avenue. Flows from the River Trunk and Sutter Trunk will combine at the intersection of Tuolumne and Colorado and continue south to the Sutter Plant. This pipeline’s reach will be over 30 feet deep.

**Project Justification**
Based on the Condition Assessment, the River Trunk has a likelihood of failure within the next 5 to 10 years if degradation continues.

**Project Detail Map**
Project ID: RT-3  
Description: Area 3, River Trunk  
Type: Pipe  
Project Type: Existing Deficiency

**Project Benefit**
Existing Customers: 59%  
Future Customers: 41%

**Implementation Phase**
Phase 1 (2013 - 2015)  
Phase 2 (2016 - 2020)  
Phase 3 (2021 - 2025)  
Phase 4 (2026 - 2030)

**Project Location**
Colorado Avenue

**Capital Improvement Costs**
Baseline Construction Cost $5,953,000
Construction Contingency -
Estimated Construction Cost -
Engineering Services, Construction Management and Project -
Total Capital Improvement Cost $7,442,000

ENR CCI = 10,037 20-City Average, July 2015

**Project Details**
This project constructs a gravity sewer with a diameter between 60 inches to 84 inches. The sewer will extend 3,300 feet south along Colorado Avenue and will terminate at the Sutter Plant. Furthermore, it will convey flows from the River Trunk, Sutter Trunk, and Shakelford Pump Station.

**Project Justification**
Based on the Condition Assessment, the River Trunk has a likelihood of failure within the next 5 to 10 years if degradation continues.

**Project Detail Map**
[Map showing project details]
Project ID: RT-4  
Description: Area 3, River Trunk  
Type: Pipe  

Project Type: Existing Deficiency

Project Benefit
Existing Customers: 59%  
Future Customers: 41%

Implementation Phase
Phase 1 (2013 - 2015)  
Phase 2 (2016 - 2020) X  
Phase 3 (2021 - 2025)  
Phase 4 (2026 - 2030)

Project Location
Tuolumne Boulevard

Project Details
This project will convey a portion of PWWF from the Sutter Trunk to the River Trunk and is therefore considered a PWWF relief sewer. This segment consists of 1,300 feet of 21-inch diameter pipeline in Tuolumne Boulevard and will connect to the new River Trunk at Colorado Boulevard.

Project Justification
Based on the Condition Assessment, the River Trunk has a likelihood of failure within the next 5 to 10 years if degradation continues.

Project Detail Map

Capital Improvement Costs
Baseline Construction Cost $ 910,000  
Construction Contingency -  
Estimated Construction Cost -  
Engineering Services, Construction Management and Project -  
Total Capital Improvement Cost $ 1,137,000

ENR CCI = 10,037 20-City Average, July 2015
Project ID: RT-5  
Description: Area 3, River Trunk  
Type: Force Main  
Project Type: Existing Deficiency  

**Project Benefit**  
Existing Customers: 59%  
Future Customers: 41%  

**Implementation Phase**  
Phase 1 (2013 - 2015)  
Phase 2 (2016 - 2020) X  
Phase 3 (2021 - 2025)  
Phase 4 (2026 - 2030)  

**Project Location**  
Tuolumne Boulevard  

**Project Details**  
This project constructs parallel 30-inch and 42-inch outside diameter force mains from the new River Trunk Pump Station. The force mains will run 2,600 feet from the River Trunk Pump station to a discharge structure in Tuolumne Boulevard.

**Project Justification**  
Based on the Condition Assessment, the River Trunk has a likelihood of failure within the next 5 to 10 years if degradation continues.

**Capital Improvement Costs**  
Baseline Construction Cost $4,654,000  
Construction Contingency -  
Estimated Construction Cost $ -  
Engineering Services, Construction Management and Project -  

**Total Capital Improvement Cost** $5,818,000  
ENR CCI = 10,037 20-City Average, July 2015  

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**Project Vicinity Map**  

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Project ID: RT-6
Description: Area 3, River Trunk
Type: Pipe
Project Type: Existing Deficiency

Project Benefit
Existing Customers: 59%
Future Customers: 41%

Implementation Phase
Phase 1 (2013 - 2015) X
Phase 2 (2016 - 2020)
Phase 3 (2021 - 2025)
Phase 4 (2026 - 2030)

Project Location
Near Dry Creek

Project Details
This project will replace the existing Beard Brook Siphon with a 48-inch diameter gravity pipeline. The pipeline will run from west of Beard Brook Park to the River Trunk Pump Station over a distance of 3,900 feet. This will eliminate the need for an inverted siphon under Dry Creek and address maintenance and odor issues associated with the siphon.

Project Justification
Based on the Condition Assessment, the River Trunk has a likelihood of failure within the next 5 to 10 years if degradation continues.

Capital Improvement Costs
Baseline Construction Cost $13,573,000
Construction Contingency -
Estimated Construction Cost -
Engineering Services, Construction Management and Project -
Total Capital Improvement Cost $16,967,000
ENR CCI = 10,037 20-City Average, July 2015
Project ID: RT-7
Description: Area 3, River Trunk
Type: Pipe
Project Type: Existing Deficiency

**Project Benefit**
Existing Customers: 56%
Future Customers: 44%

**Implementation Phase**
- Phase 1 (2013 - 2015)
- Phase 2 (2016 - 2020)
- Phase 3 (2021 - 2025)
- Phase 4 (2026 - 2030)

**Project Location**
B Street

**Capital Improvement Costs**
- Baseline Construction Cost: $1,657,000
- Construction Contingency: -
- Estimated Construction Cost: -
- Engineering Services, Construction Management and Project:
- Total Capital Improvement Cost: $2,071,000

ENR CCI = 10,037 20-City Average, July 2015

**Project Details**
This project constructs 36-inch and 48-inch gravity sewers that will run from Calaveras Street to the inlet of the River Trunk Pump Station. The sewers will cover a distance of 1,500 feet.

**Project Justification**
Based on the Condition Assessment, the River Trunk has a likelihood of failure within the next 5 to 10 years if degradation continues.

**Project Detail Map**
Project ID: RT-8
Description: Force Main/ Gravity, River Trunk
Type: Pipe

Project Type: Existing Deficiency

Project Benefit
Existing Customers: 59%
Future Customers: 41%

Implementation Phase
Phase 1 (2013 - 2015)
Phase 2 (2016 - 2020) X
Phase 3 (2021 - 2025)
Phase 4 (2026 - 2030)

Project Location
Open Space

Project Details
This project constructs a 14-inch diameter force main that will convey flows from the new Shakelford pump station beneath the Tuolumne River. The new force main will be inserted into a recently completed inverted siphon under Tuolumne River. Beyond the crossing, the force main will continue north through the Dryden Park Golf Course and terminate at an 18-inch diameter gravity pipeline in Roselawn Avenue. Flows will be conveyed to the River Trunk at Colorado and Pelton.

Project Justification
Based on the Condition Assessment, the River Trunk has a likelihood of failure within the next 5 to 10 years if degradation continues.

Project Vicinity Map

Capital Improvement Costs
Baseline Construction Cost $1,555,000
Construction Contingency -
Estimated Construction Cost -
Engineering Services, Construction Management and Project -

Total Capital Improvement Cost $1,944,000
ENR CCI = 10,037 20-City Average, July 2015
**Project ID:** RT-9  
**Description:** Sutter Trunk  
**Type:** Pipe  
**Project Type:** Existing Deficiency

**Project Benefit**
- **Existing Customers:** 59%
- **Future Customers:** 41%

**Implementation Phase**
- Phase 1 (2013 - 2015)  
- Phase 2 (2016 - 2020)  
- Phase 3 (2021 - 2025)  
- Phase 4 (2026 - 2030)

**Project Location**  
Sutter Avenue

**Capital Improvement Costs**
- **Baseline Construction Cost** $427,000
- **Construction Contingency** -
- **Estimated Construction Cost** -
- **Engineering Services, Construction Management and Project** -
- **Total Capital Improvement Cost** $533,000
- **ENR CCI** = 10,037 20-City Average, July 2015

**Project Details**
Based on the results of the condition assessment, a portion of the lower Sutter Trunk shows signs of heavy corrosion with limited pipeline life remaining. This segment of pipeline will require rehabilitation. The recommended approach is cured-in-place pipe lining. Much of the interior of the pipeline is inaccessible for a condition assessment. Therefore, it was assumed that half of the length of the pipeline would be lined.

**Project Justification**
This segment of the Sutter Trunk shows signs of heavy corrosion with limited pipeline life remaining.

**Project Detail Map**

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**Project Vicinity Map**

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Project ID: RT-10  
Description: Area 3, River Trunk  
Type: Pipe  
Project Type: Existing Deficiency

**Project Benefit**
- Existing Customers: 59%
- Future customers: 41%

**Implementation Phase**
- Phase 1 (2013 - 2015) X
- Phase 2 (2016 - 2020)
- Phase 3 (2021 - 2025)
- Phase 4 (2026 - 2030)

**Project Location**
Parallel to Tuolumne River

**Capital Improvement Costs**
- Baseline Construction Cost $11,255,000
- Construction Contingency -
- Estimated Construction Cost -
- Engineering Services, Construction Management and Project -
- Total Capital Improvement Cost $14,069,000

ENR CCI = 10,037 20-City Average, July 2015

**Project Details**
The condition assessment on the River Trunk concluded that excessive corrosion is present in the entire reach of the Trunk from Beard Brook to the Sutter Plant. There are isolated segments that have recently failed or near failure. A segment of the River trunk in the Gallo Property recently failed and created a sinkhole. Another segment is severely corroded, with exposed concrete reinforcement bars which indicate another possible failure. Rehabilitation is recommended within the next five years.

**Project Justification**
Based on the Condition Assessment, the River Trunk has a likelihood of failure within the next 5 to 10 years if degradation continues.

**Project Detail Map**
Project ID: RT-12
Description: Area 3, CSL Trunk
Type: Pipe

Project Type: Existing Deficiency

Project Benefit
Existing Customers: 56%
Future Customers: 44%

Implementation Phase
Phase 1 (2013 - 2015) X
Phase 2 (2016 - 2020)
Phase 3 (2021 - 2025)
Phase 4 (2026 - 2030)

Project Location
North of Sutter Plant

Capital Improvement Costs
Baseline Construction Cost $448,000
Construction Contingency -
Estimated Construction Cost -
Engineering Services, Construction Management and Project -
Total Capital Improvement Cost $560,000

ENR CCI = 10,037 20-City Average, July 2015

Project Details
This project is carried forward from the PDR. West Yost Associates (West Yost) prepared the CSL and River Trunk Plan Diversion Plan Study, which identified a contingency to divert flows between the CSL and River Trunk. The diversion structure will allow the City to increase the capacity of the CSL under extreme flow events and divert 100-percent of flow in the event of a pipeline failure of either trunk.

Project Justification
Based on the Condition Assessment, the River Trunk has a likelihood of failure within the next 5 to 10 years if degradation continues.
Project ID: LS-Shackelford  
Description: Area 8, North Ceres  
Type: Lift Station  
Project Type: Existing Deficiency  

**Project Benefit**  
Existing Customers: 59%  
Future Customers: 41%  

**Implementation Phase**  
Phase 1 (2013 - 2015)  
Phase 2 (2016 - 2020) X  
Phase 3 (2021 - 2025)  
Phase 4 (2026 - 2030)  

**Project Location**  
East of Crows Landing  

**Capital Improvement Costs**  
Baseline Construction Cost $ 2,391,000  
Construction Contingency -  
Estimated Construction Cost -  
Engineering Services, Construction Management and Project -  
**Total Capital Improvement Cost** $ 2,989,000  
ENR CCI = 10,037 20-City Average, July 2015  

**Project Details**  
This pump station will pump flows through a new force main under the Tuolumne River and discharge into the River Trunk. To convey PWWFs, the pump station will require a firm capacity of 4.2 mgd.  

**Project Justification**  
To convey increased peak wet weather flow and eliminate the need for an inverted siphon.  

**Project Detail Map**  
\[Image\]  

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Project Vicinity Map  

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CAPITAL IMPROVEMENT PLAN PROJECT LS-Shackelford  
WASTEWATER COLLECTION SYSTEM MASTER PLAN  
CITY OF MODESTO, CALIFORNIA  

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10-19
**Project ID:** LS-River Trunk  
**Description:** Area 3, River Trunk  
**Type:** Lift Station  
**Project Type:** Existing Deficiency

**Project Benefit**  
Existing Customers: 100%  
Future Customers: 0%

**Implementation Phase**  
- Phase 1 (2013 - 2015)  
- Phase 2 (2016 - 2020)  
- Phase 3 (2021 - 2025)  
- Phase 4 (2026 - 2030)

**Project Location**  
Morton Boulevard

**Capital Improvement Costs**  
- Baseline Construction Cost $26,787,000  
- Construction Contingency $-  
- Estimated Construction Cost $-  
- Engineering Services, Construction Management and Project $-  
**Total Capital Improvement Cost** $33,483,000  
ENR CCI = 10,037  
20-City Average, July 2015

**Project Details**  
This pump station will allow the River Trunk to be removed from the Tuolumne River bank to mitigate vulnerability to washout. To convey PWWFs, the pump station will require a firm capacity of 54.5 mgd. With the new alignment, the existing River Trunk will be utilized as a redundant system for the CSL and will still require rehabilitation and river bank armament to prevent washout.

**Project Justification**  
Based on the Condition Assessment, the River Trunk has a likelihood of failure within the next 5 to 10 years if degradation continues.

**Project Detail Map**

![Project Vicinity Map](image-url)
Project ID: DT-1
Description: Area 4, Downtown Trunks
Type: Pipe

Project Type: Existing Deficiency

Project Benefit
Existing Customers: 96%
Future Customers: 4%

Implementation Phase
Phase 1 (2013 - 2015) X
Phase 2 (2016 - 2020)
Phase 3 (2021 - 2025)
Phase 4 (2026 - 2030)

Project Location
J Street, from Grant Street to 12th Street

Project Details
The flow level in the trunk sewer in J Street causes the 12-inch pipeline to surcharge. Therefore, the existing pipeline will be replaced with a 15-inch diameter pipeline that extends approximately 2,400 feet from McHenry Avenue to 12th Street.

Project Justification
The trunk in J Street exceeds the maximum d/D criteria under PWWF and causes the existing 12-inch pipeline to surcharge.

Project Detail Map

Capital Improvement Costs
Baseline Construction Cost $ 492,000
Construction Contingency $ 123,000
Estimated Construction Cost $ 615,000
Engineering Services, Construction Management and Project $ 185,000
Total Capital Improvement Cost $ 800,000

ENR CCI = 10,037 20-City Average, July 2015
**Project ID:** DT-2  
**Description:** Area 4, Downtown Trunks  
**Type:** Pipe  
**Project Type:** Existing Deficiency

### Project Benefit
- **Existing Customers:** 96%
- **Future Customers:** 4%

### Implementation Phase
- **Phase 1 (2013 - 2015)**
- **Phase 2 (2016 - 2020)**
- **Phase 3 (2021 - 2025)**
- **Phase 4 (2026 - 2030)**

### Project Location
Kimble Street and Floto Street, from Ceder Street to Johnson Street

### Project Details
In the existing 10-inch diameter pipelines at Kimble Street and Floto Street, the modeled PWWFs result in a d/D of 0.90, which exceeds the maximum d/D criteria of 0.85. Therefore, these pipelines will be replaced with approximately 1,000 feet of 12-inch diameter pipeline.

### Project Justification
The existing 10-inch diameter pipelines in Kimberly Street and Floto Street exceed the maximum d/D criteria under PWWF at approximately 90-percent capacity.

### Capital Improvement Costs
- **Baseline Construction Cost** $163,000
- **Construction Contingency** $40,750
- **Estimated Construction Cost** $203,750
- **Engineering Services, Construction Management and Project** $61,250
- **Total Capital Improvement Cost** $265,000

**ENR CCI = 10,037 20-City Average, July 2015**

### Project Vicinity Map
![Project Vicinity Map](image-url)

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**Project Detail Map**

![Project Detail Map](image-url)
Project ID: SR-4
Description: Area 5, Santa Rosa Trunk
Type: Pipe
Project Type: Existing Deficiency

**Project Benefit**
Existing Customers: 100%
Future Customers: 0%

**Implementation Phase**
- Phase 1 (2013 - 2015)
- Phase 2 (2016 - 2020)
- Phase 3 (2021 - 2025)
- Phase 4 (2026 - 2030)

**Project Location**
Coffee Road, from Chehalem Drive to Lucern Avenue

**Capital Improvement Costs**
- Baseline Construction Cost $328,000
- Construction Contingency $82,000
- Estimated Construction Cost $410,000
- Engineering Services, Construction Management and Project $123,000
- **Total Capital Improvement Cost** $533,000

ENR CCI = 10,037 20-City Average, July 2015

**Project Details**
To increase capacity within this segment of pipeline it is recommended to replace the existing 10-inch diameter sewer with 1,600 feet of new 15-inch diameter pipeline.

**Project Justification**
The existing 10-inch diameter pipelines in Coffee Road, between Fairmont Avenue and Lucern Avenue, exceed the maximum d/D criteria under PWWF and cause the existing 10-inch pipelines to surcharge.

**Project Detail Map**

[Map showing proposed improvements and stations]
Project ID: SR-6
Description: Area 5, Santa Rosa Trunk
Type: Pipe

Project Type: Existing Deficiency

**Project Benefit**
Existing Customers: 100%
Future Customers: 0%

**Implementation Phase**
Phase 1 (2013 - 2015)
Phase 2 (2016 - 2020)  X
Phase 3 (2021 - 2025)
Phase 4 (2026 - 2030)

**Project Location**
Miller Avenue, East of Conejo Avenue to Phoenix Avenue

**Project Details**
This project will rehabilitate 1,000 feet of 18-inch diameter pipeline along in Miller Road, between Conejo Avenue and Phoenix Avenue.

**Project Justification**
This reach is over 50 years old and has significant deterioration to a point where the structural integrity of the pipe is compromised.

**Total Capital Improvement Cost**
$358,000

ENR CCI = 10,037  20-City Average, July 2015
Project ID: LS # 29 - Rose & Celeste  
Description: Area 5, Rose and Celeste Trunk  
Type: Lift Station  
Project Type: Existing Deficiency  

**Project Benefit**  
Existing Customers: 100%  
Future Customers: 0%  

**Implementation Phase**  
Phase 1 (2013 - 2015)  
Phase 2 (2016 - 2020) X  
Phase 3 (2021 - 2025)  
Phase 4 (2026 - 2030)  

**Project Location**  
Rose Avenue and Celeste Drive  

**Project Details**  
The proposed improvement would increase the firm capacity from 0.86 mgd to 1.3 mgd to meet existing PWWFs.  

**Project Justification**  
The existing Rose and Celeste Lift Station will require an increase in its firm capacity to convey existing PWWF.  

**Capital Improvement Costs**  
Baseline Construction Cost $1,102,000  
Construction Contingency $275,500  
Estimated Construction Cost $1,377,500  
Engineering Services, Construction Management and Project $413,500  
**Total Capital Improvement Cost** $1,791,000  
ENR CCI = 10,037 20-City Average, July 2015  

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**Project Vicinity Map**  

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**Project Detail Map**  

---
Project ID: EM-1 and EM-2  
Description: Area 6, Empire Trunk  
Type: Pipe  
Project Type: Existing Deficiency  

**Project Benefit**  
Existing Customers: 100%  
Future Customers: 0%  

**Implementation Phase**  
Phase 1 (2013 - 2015)  
Phase 2 (2016 - 2020)  
Phase 3 (2021 - 2025)  
Phase 4 (2026 - 2030)  

**Project Location**  
Yosemite and Garner Road.

**Project Details**  
Proposed improvements recommend replacing approximately 200 feet of 10-inch diameter pipeline with 15-inch diameter pipeline between Yosemite Meadows Drive and Garner Road. At Garner Road the new 18-inch diameter pipeline would extend south 3,300 feet and connect to an existing 39-inch diameter pipeline. Costs for this project are not included because it is currently in progress.

**Project Justification**  
The existing 10-inch diameter pipelines in Yosemite Boulevard and McClure Road exceed the maximum d/D criteria under PWWF and cause the 10-inch pipelines to surcharge.

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**Capital Improvement Costs**  
Baseline Construction Cost $-  
Construction Contingency $-  
Estimated Construction Cost $-  
Engineering Services, Construction Management and Project $-  
**Total Capital Improvement Cost** $-  
ENR CCI = 10,037 20-City Average, July 2015
**Project ID:** EM-3  
**Description:** Area 6, Empire Trunk  
**Type:** Pipe  
**Project Type:** Existing Deficiency

**Project Benefit**  
Existing Customers: 86%  
Future Customers: 14%

**Implementation Phase**  
- **Phase 1 (2013 - 2015)**
- **Phase 2 (2016 - 2020)**  X  
- **Phase 3 (2021 - 2025)**  
- **Phase 4 (2026 - 2030)**  

**Project Location**  
Hoover Avenue, from Mitchell Road to Doherty Avenue

**Project Details**  
The proposed improvement requires replacing and upsizing the existing 10-inch diameter in Hover Avenue and Doherty Avenue with approximately 1,800 feet of 12-inch diameter pipeline.

**Project Justification**  
This improvement is necessary as the existing pipeline exceeds the maximum d/D at approximately 95-percent capacity.

**Capital Improvement Costs**  
- **Baseline Construction Cost** $293,000  
- **Construction Contingency** $73,250  
- **Estimated Construction Cost** $366,250  
- **Engineering Services, Construction Management and Project** $109,750  
- **Total Capital Improvement Cost** $476,000  

<table>
<thead>
<tr>
<th>Phase</th>
<th>Construction Cost</th>
<th>Description</th>
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<tbody>
<tr>
<td>Phase 1</td>
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<td>Phase 4</td>
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<td>Engineering Services, Construction Management and Project</td>
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</table>

ENR CCI = 10,037 20-City Average, July 2015

**Project Vicinity Map**
Project ID: EM-4
Description: Area 6, Empire Trunk
Type: Pipe

Project Type: Existing Deficiency

**Project Benefit**
Existing Customers: 97%
Future Customers: 3%

**Implementation Phase**
Phase 1 (2013 - 2015)
Phase 2 (2016 - 2020)  X
Phase 3 (2021 - 2025)
Phase 4 (2026 - 2030)

**Project Location**
Benson Avenue, from Monterey Avenue to Oregon Drive

**Project Details**
Improvement recommendations consist of replacing the 15-inch diameter pipeline with 1,400 feet of 18-inch diameter sewer.

**Capital Improvement Costs**
Baseline Construction Cost $ 312,000
Construction Contingency $ 78,000
Estimated Construction Cost $ 390,000
Engineering Services, Construction Management and Project $ 117,000

**Total Capital Improvement Cost** $ 507,000

ENR CCI = 10,037 20-City Average, July 2015

**Project Justification**
The 15-inch diameter trunk in Benson Avenue, between Monterey Avenue and Oregon Drive, exceeds the d/D criteria under PWWF at approximately 93 percent capacity.
Project ID: LS # 03 - Benson  
Description: Area 6, Empire Trunk  
Type: Lift Station  
Project Type: Existing Deficiency

Project Benefit
Existing Customers: 100%
Future Customers: 0%

Implementation Phase
Phase 1 (2013 - 2015)
Phase 2 (2016 - 2020) X
Phase 3 (2021 - 2025)
Phase 4 (2026 - 2030)

Project Location
Benson Avenue

Project Details
The lift station includes two pumps rated at 150 and 500 gpm. The proposed improvement would increase the firm capacity from 0.22 mgd to 1.3 mgd.

Project Justification
The existing Benson Lift Station will require an increase in its firm capacity to convey existing PWWF.

Project Detail Map

Capital Improvement Costs
Baseline Construction Cost $1,102,000
Construction Contingency $275,500
Estimated Construction Cost $1,377,500
Engineering Services, Construction Management and Project $413,500
Total Capital Improvement Cost $1,791,000

ENR CCI = 10,037 20-City Average, July 2015
Project ID: LS # 31 - Scenic
Description: Area 6, Empire Trunk
Type: Lift Station
Project Type: Existing Deficiency

Project Benefit
Existing Customers: 48%
Future Customers: 52%

Implementation Phase
Phase 1 (2013 - 2015) X
Phase 2 (2016 - 2020)
Phase 3 (2021 - 2025)
Phase 4 (2026 - 2030)

Project Location
Scenic Drive

Project Details
The proposed project will increase the lift stations firm capacity from 1,600 gpm to 12,800 gpm, and the total capacity up from 9,000 gpm to 17,800 gpm. Costs for this project are not included in the CIP because it is currently in progress.

Project Justification
Improvements to the Scenic Drive Lift Station are currently on the City’s CIP. Upgrades include replacing the three existing pumps with three, 5,000 gpm capacity pumps and installing an additional 2,800 gpm pumps.
Project ID: CT-1, C-2a, and C-2b
Description: Area 8, Ceres Trunk
Type: Pipe
Project Type: Existing Deficiency

Project Benefit
Existing Customers: 100%
Future Customers: 0%

Implementation Phase
Phase 1 (2013 - 2015) X
Phase 2 (2016 - 2020)
Phase 3 (2021 - 2025)
Phase 4 (2026 - 2030)

Project Location
Highway 99 crossing and parallel to Zeff Road.

Project Details
This project will serve a dual purpose by providing a 24-inch diameter bypass pipeline while the existing sewer undergoes rehabilitation. In addition, the proposed 24-inch diameter will provide a redundant pipeline under Highway 99 and increase reliability. Costs for these projects are not included in the CIP because they are currently in progress.

Project Justification
If the existing pipeline were to fail, the collection system would not be able to convey flows across Highway 99 and any pipeline improvements for this area would be extensive.

Capital Improvement Costs
Baseline Construction Cost $ -
Construction Contingency $ -
Estimated Construction Cost $ -
Engineering Services, Construction Management and Project $ -

Total Capital Improvement Cost $ -
ENR CCI = 10,037 20-City Average, July 2015
Project ID: W-1
Description: Area 1, West Trunk
Type: Pipe

Project Type: Future Deficiency

Project Benefit
Existing Customers: 66%
Future Customers: 34%

Implementation Phase
Phase 1 (2013 - 2015)
Phase 2 (2016 - 2020)
Phase 3 (2021 - 2025)
Phase 4 (2026 - 2030) X

Project Location
Carpenter Road to Sutter Plant

Project Details
The deficient pipelines extend 5,300 feet and have diameters ranging from 54 inches to 60 inches. To increase capacity within this reach of the West Trunk, a parallel 48-inch diameter pipeline is recommended. This parallel pipeline will extend 5,200 feet from Carpenter Road to Sutter Plant. This is a long-term project that will depend on growth in Area 1.

Project Justification
At build-out of Area 1, the increased PWWF from new growth and infill causes the lower reach of the West Trunk to exceed the maximum depth criteria at approximately 90 percent capacity.

Project Detail Map

ENR CCI = 10,037 20-City Average, July 2015

Capital Improvement Costs
Baseline Construction Cost $ 2,870,000
Construction Contingency $ 717,500
Estimated Construction Cost $ 3,587,500
Engineering Services, Construction Management and Project $ 1,076,500
Total Capital Improvement Cost $ 4,664,000
Project ID: W-3, W-4 and LS # 64
Description: Area 1, West Trunk
Type: Pipe/Lift Station
Project Type: New Service

Project Benefit
Existing Customers: 0%
Future Customers: 100%

Implementation Phase
Phase 1 (2013 - 2015)
Phase 2 (2016 - 2020)
Phase 3 (2021 - 2025)
Phase 4 (2026 - 2030) X

Project Location
Dakota Avenue to Undeveloped Area

Capital Improvement Costs
Baseline Construction Cost $ 2,645,000
Construction Contingency $ 661,250
Estimated Construction Cost $ 3,306,250
Engineering Services, Construction Management and Project $ 992,750
Total Capital Improvement Cost $ 4,299,000
ENR CCI = 10,037 20-City Average, July 2015

Project Details
W-3 consists of 4,000 feet of 15-inch diameter pipeline from North Avenue to McDonald Avenue. The 15-inch diameter sewer will connect to the West Trunk at an existing 51-inch diameter sewer. W-4 extends 8,300 feet from Beckwith Road to Brink Avenue. A 6-inch diameter force main is recommended to connect the proposed lift station to project W-3. LS # 64 is a proposed lift station with a firm capacity of 0.5 mgd and will convey future flows from Beckwith-Dakota CPD.

Project Justification
This group of improvements is recommended to service future growth within the Beckwith-Dakota and College West CPDs. Alignment for these Improvements extend to the south in an effort to avoid tunneling under Highway 99 and requires a force main and lift station.

Project Detail Map
Project ID: W-6 and LS # 63
Description: Area 1, West Trunk
Type: Pipe/Lift Station

Existing Customers: 0%
Future Customers: 100%

Project Type: New Service

Project Benefit

Implementation Phase
Phase 1 (2013 - 2015)
Phase 2 (2016 - 2020)
Phase 3 (2021 - 2025)
Phase 4 (2026 - 2030) X

Project Location
Kansas Avenue, from Dakota Avenue to Grimes Avenue

Project Details
These improvements will service future growth within the Highway 132 CPD. Project W-6 consists of 4,300 feet of 15-inch diameter pipeline that will connect to the West Trunk. Lift Station 63 will have a firm capacity of 1.0 mgd and will convey future flows.

Project Justification
These improvements are recommended to service future growth within the Highway 132 CPD.

Capital Improvement Costs
Baseline Construction Cost $1,791,000
Construction Contingency $447,750
Estimated Construction Cost $2,238,750
Engineering Services, Construction Management and Project $671,250

Total Capital Improvement Cost $2,910,000

ENR CCI = 10,037 20-City Average, July 2015
**Project ID:** W-7  
**Description:** Area 1, West Trunk  
**Type:** Pipe  
**Project Type:** New Service

### Project Benefit
- **Existing Customers:** 0%
- **Future Customers:** 100%

### Implementation Phase
- **Phase 1 (2013 - 2015)**
- **Phase 2 (2016 - 2020)**
- **Phase 3 (2021 - 2025) X**
- **Phase 4 (2026 - 2030)**

### Project Location
Carpenter Road and Paradise Road

### Capital Improvement Costs

<table>
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<th>Description</th>
<th>Cost</th>
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<td>Engineering Services, Construction Management and Project</td>
<td>$148,750</td>
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</table>

**Total Capital Improvement Cost** $645,000

**ENR CCI =** 10,037 20-City Average, July 2015

### Project Details
This project constructs 2,900 feet of 10-inch diameter pipeline in Carpenter Road and Paradise Road. This will extend the area served by the West Trunk to include existing county islands in the City’s southwest section.

### Project Justification
This improvement is recommended to service infill as the sewer service area extends to include county islands.

### Project Detail Map

- **Proposed Lift Station Improvements**
- **Proposed New Lift Station**
- **Lift Station**
- **Proposed Pipeline Improvements**
- **New Service**
- **Modeled Pipelines**
Project ID: LS # 39  
Description: Area 1, West Trunk  
Type: Lift Station  
Project Type: Future Deficiency

Project Benefit
Existing Customers: 61%  
Future Customers: 39%

Implementation Phase
Phase 1 (2013 - 2015)  
Phase 2 (2016 - 2020)  
Phase 3 (2021 - 2025)  X  
Phase 4 (2026 - 2030)

Project Location
Woodland Avenue and Poust Road

Project Details
The existing firm capacity of the Woodland Lift Station, located near the Woodland Avenue and Poust Road intersection, lacks sufficient capacity to convey build-out PWWF. For this reason, firm capacity will be increased from 20.9 mgd to 25.9 mgd. This project was carried forward from the 2007 Master Plan and will require replacing the 2,000 gpm and 3,500 gpm pumps with two 4,500 gpm submersible pumps.

Project Justification
The existing firm capacity of the Woodland Lift Station lacks sufficient capacity to convey build-out PWWF.

Project Vicinity Map

Capital Improvement Costs
Baseline Construction Cost $ -  
Construction Contingency $ -  
Estimated Construction Cost $ -  
Engineering Services, Construction Management and Project $ 1,293,000  
Total Capital Improvement Cost $ 1,293,000

ENR CCI = 10,037 20-City Average, July 2015
Project ID: R-1
Description: Area 1, Rumble Trunk
Type: Pipe
Project Type: Future Deficiency

Project Benefit
Existing Customers: 81%
Future Customers: 19%

Implementation Phase
Phase 1 (2013 - 2015)
Phase 2 (2016 - 2020) X
Phase 3 (2021 - 2025)
Phase 4 (2026 - 2030)

Project Location
Clairmount Avenue and Maud Kumpt Terrace, from Rumble Road to Worthington Road

Project Details
The project will require 5,100 feet of 24-inch diameter pipeline to replace 4,200 feet of existing 21-inch diameter pipeline from Claremont Avenue to Don Caster Lane. A portion of the existing pipeline alignment is in an alley and will be abandoned. The new alignment will require an additional 900 feet of 24-inch diameter pipeline to continue along Barringham Lane and connect to the existing system in Don Caster Lane. Currently, this project is in the design phase.

Project Justification
Under future PWWF conditions this reach of the Rumble Trunk experiences flow depths in excess of the maximum d/D at approximately 89-percent capacity.

Capital Improvement Costs
Baseline Construction Cost $1,520,000
Construction Contingency $380,000
Estimated Construction Cost $1,900,000
Engineering Services, Construction Management and Project $570,000
Total Capital Improvement Cost $2,470,000

ENR CCI = 10,037 20-City Average, July 2015

Project Vicinity Map

The project will require 5,100 feet of 24-inch diameter pipeline to replace 4,200 feet of existing 21-inch diameter pipeline from Claremont Avenue to Don Caster Lane. A portion of the existing pipeline alignment is in an alley and will be abandoned. The new alignment will require an additional 900 feet of 24-inch diameter pipeline to continue along Barringham Lane and connect to the existing system in Don Caster Lane. Currently, this project is in the design phase.

Project Justification
Under future PWWF conditions this reach of the Rumble Trunk experiences flow depths in excess of the maximum d/D at approximately 89-percent capacity.

Project Detail Map
Project ID: R-2  
Description: Area 1, Rumble Trunk  
Type: Pipe  
Project Type: New Service

**Project Benefit**

Existing Customers: 0%
Future Customers: 100%

**Implementation Phase**

Phase 1 (2013 - 2015)
Phase 2 (2016 - 2020) X
Phase 3 (2021 - 2025)
Phase 4 (2026 - 2030)

**Project Location**

McHhenry Avenue, from Grecian Avenue to Coralwood Road

**Project Details**

The proposed project extends from Grecian Avenue to the exiting 10-inch diameter sewer at the intersection of McHenry and Coralwood Road. Improvements include extending the sub trunk on McHenry Avenue 900 feet with an 8-inch diameter pipeline.

**Project Justification**

This sewer trunk extension will provide service to future development in the Pelandale/McHenry CPD.

**Capital Improvement Costs**

Baseline Construction Cost $123,000
Construction Contingency $30,750
Estimated Construction Cost $153,750
Engineer Services, Construction Management and Project $46,250

**Total Capital Improvement Cost** $200,000

ENR CCI = 10,037 20-City Average, July 2015
Project ID: D-1 through D-5 and LS # 60
Description: Area 1, Dale Trunk
Type: Pipe/Lift Station
Project Type: New Service

Project Benefit
Existing Customers: 0%
Future Customers: 100%

Implementation Phase
Phase 1 (2013 - 2015)
Phase 2 (2016 - 2020)
Phase 3 (2021 - 2025) X
Phase 4 (2026 - 2030)

Project Location
Undeveloped Area

Project Details
This project is separated into 5 reaches and extends approximately 9,200 feet. D-1 consists of 1,200 feet of 15-inch diameter pipeline located in undeveloped land west of Kaiser Permanente. This pipeline extends from the proposed force main and connects to an existing 27-inch diameter pipeline. D-2 consists of 2,600 feet of 6-inch diameter force main. D-3 consists of 1,700 feet of 12-inch diameter pipeline in Chapman Road. D-4 consists of 2,200 feet of 10-inch diameter pipeline in Chapman Road. D-5 will consist of 1,500 feet of 8-inch diameter pipeline. The Chapman Road Lift Station (LS 60) will have a firm capacity of 0.80 mgd.

Project Justification
These projects will service future growth within the Kiernan-Carver and Kiernan-Carver North CPDs and are located north of the Modesto Irrigation District (MID) Lateral 6 Canal. In the 2007 Master Plan, this area was discussed as a separate study (Kaiser Hospital Special Study, August 2004) and incorporated into the Plan as an improvement. In this Master Plan, the improvements follow a similar alignment, except the pipeline diameters have been decreased due to a reduction in estimated future flows.

Project Detail Map

Capital Improvement Costs
Baseline Construction Cost $2,155,000
Construction Contingency $538,750
Estimated Construction Cost $2,693,750
Engineering Services, Construction Management and Project $809,250
Total Capital Improvement Cost $3,503,000
ENR CCI = 10,037 20-City Average, July 2015
Project ID: N-1 through N-5  
Description: Area 1, North Trunk Extension  
Type: Pipe/Lift Station  

Project Type: New Service  

Project Benefit  
Existing Customers: 0%  
Future Customers: 100%  

Implementation Phase  
Phase 1 (2013 - 2015)  
Phase 2 (2016 - 2020) X  
Phase 3 (2021 - 2025) X  
Phase 4 (2026 - 2030)  

Project Location  
Bangs Avenue  

Capital Improvement Costs  
Baseline Construction Cost $4,355,000  
Construction Contingency $1,088,750  
Estimated Construction Cost $5,443,750  
Engineering Services, Construction Management and Project $1,633,250  
Total Capital Improvement Cost $7,077,000  

ENR CCI = 10,037 20-City Average, July 2015  

Project Details  
This project is separated into 5 reaches and extends approximately 16,000 feet. N-1 will consist of 2,800 feet of 27-inch diameter pipeline. Segment N-2 will require 6,100 feet of 24-inch diameter pipeline. Segment N-3 will consist of 1,600 feet of 21-inch diameter pipeline. Segment N-4 will consist of 3,100 feet of 18-inch diameter pipeline. Segment N-5 will consist of 2,400 feet of 15-inch diameter pipeline.  

Project Justification  
Future development within the Kiernan/Carver, Kiernan/McHenry, and Hetch Hetchy CPDs will require the construction of several trunk sewers to serve customers in the northern portion of the study area.  

Project Detail Map  

Proposed Lift Station Improvements  
Proposed New Lift Station  
Lift Station  
Proposed Pipeline Improvements  
New Service  
Modeled Pipelines  

Project Vicinity Map
Project ID: N-6 and LS # 59  
Description: Area 1, North Trunk Extension  
Type: Pipe/Lift Station  

Project Type: New Service

Project Benefit
Existing Customers: 0%  
Future Customers: 100%

Implementation Phase
Phase 1 (2013 - 2015)  
Phase 2 (2016 - 2020)  
Phase 3 (2021 - 2025)  
Phase 4 (2026 - 2030)

Project Location
Tully Road and Palendale Avenue

Project Justification
This project was recommended in the Pelandale/McHenry Specific Plan (June 2006) and includes the addition of a lift station and a 10-inch trunk sewer located in Pelandale Avenue and Tully Road. Approximately 3,500 feet of 10-inch sewer has already been installed in Pelandale Avenue. An additional 800 feet in Tully Road is required to connect to project N-2 along Bangs Avenue.

Project Details Map

Project Vicinity Map

Capital Improvement Costs
Baseline Construction Cost $ 507,000  
Construction Contingency $ 126,750  
Estimated Construction Cost $ 633,750  
Engineering Services, Construction Management and Project $ 190,250  
Total Capital Improvement Cost $ 824,000

ENR CCI = 10,037 20-City Average, July 2015
Project ID: N-7 through N-9 and LS # 65
Description: Area 1, North Trunk Extension
Type: Pipe/Lift Station

Project Type: New Service

Project Benefit
Existing Customers: 0%
Future Customers: 100%

Implementation Phase
Phase 1 (2013 - 2015)
Phase 2 (2016 - 2020)
Phase 3 (2021 - 2025)
Phase 4 (2026 - 2030) X

Project Location
Kiernan Avenue and American Avenue

Capital Improvement Costs
Baseline Construction Cost $ 2,544,000
Construction Contingency $ 636,000
Estimated Construction Cost $ 3,180,000
Engineering Services, Construction Management and Project $ 954,000
Total Capital Improvement Cost $ 4,134,000

Project Details
This project is separated into 3 reaches and extends approximately 14,500 feet. Segment N-7 will consist of 3,100 feet of 15-inch diameter pipeline. Segment N-8 consists 5,600 feet of 10-inch diameter pipeline. Segment N-9 will consist of 6,300 feet of 8-inch diameter pipeline. The Kiernan Avenue Lift Station (LS#65) should have a firm capacity of 0.24 mgd to convey PWWF from the Kiernan/Carver North CPD.

Project Justification
Future development within the Kiernan/Carver North CPD will require the construction of several trunk sewers and a lift station to serve future users.

Project Detail Map

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ENR CCI = 10,037 20-City Average, July 2015

CITY OF MODESTO, CALIFORNIA
Project Details
This project will replace the existing pipeline with 760 feet of 18-inch diameter pipeline. Since the upstream and downstream pipelines have steeper slopes, they were not identified as capacity deficient.

Project Justification
The existing 16-inch diameter trunk in Jefferson Avenue between Maze Boulevard and Oak Street exceeds the d/D criteria at approximately 89 percent capacity.

Project Detail Map
Project ID: SO-1 through SO-4 and LS # 61
Description: Area 6, Sonoma Trunk Extension
Type: Pipe/Lift Station
Project Type: New Service

Project Benefit
Existing Customers: 0%
Future Customers: 100%

Implementation Phase
Phase 1 (2013 - 2015)
Phase 2 (2016 - 2020) X
Phase 3 (2021 - 2025)
Phase 4 (2026 - 2030)

Project Location
Undeveloped Area

Capital Improvement Costs
Baseline Construction Cost $ 2,833,000
Construction Contingency $ 708,250
Estimated Construction Cost $ 3,541,250
Engineering Services, Construction Management and Project $ 1,062,750
Total Capital Improvement Cost $ 4,604,000
ENR CCI = 10,037 20-City Average, July 2015

Project Details
The Sonoma Trunk extension extend 11,800 feet, and connect to an existing sewer on Wood Sorrel Drive. SO-1 consists of 3,300 feet of 24-inch diameter pipeline in an unimproved road and extends south to Wood Sorrel Drive. Segment SO-2 is an 18-inch diameter pipeline and extends 2,600 feet. Segment SO-3 consists of 2,800 feet of 15-inch diameter pipeline. SO-4 consists of 3,100 feet of 8-inch diameter pipeline and will require a lift station to connect to the existing collection System.

Project Justification
This project is separated into 4 reaches and will extend the Sonoma Trunk to provide service for future growth into the Roselle-Claribel CPD.

Project Detail Map

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[Map of project locations and details]
CAPITAL IMPROVEMENT PLAN PROJECT L-1 through L-4 and LS # 67
WASTEWATER COLLECTION SYSTEM MASTER PLAN
CITY OF MODESTO, CALIFORNIA

Project ID: L-1 through L-4 and LS # 67
Description: Area 6, Lakewood Trunk Extension
Type: Pipe/Lift Station

Project Type: New Service

Project Benefit
Existing Customers: 0%
Future Customers: 100%

Implementation Phase
Phase 1 (2013 - 2015)
Phase 2 (2016 - 2020)
Phase 3 (2021 - 2025) X
Phase 4 (2026 - 2030)

Project Location
Litt Road and Plainview Road

Capital Improvement Costs
Baseline Construction Cost $1,779,000
Construction Contingency $444,750
Estimated Construction Cost $2,223,750
Engineering Services, Construction Management and Project $667,250
Total Capital Improvement Cost $2,891,000
ENR CCI = 10,037 20-City Average, July 2015

Project Details
The proposed improvements are separated into 4 reaches and will extent the Trunk 6,400 feet north and require a lift station. Segment L-1 will consist of 900 feet of 18-inch diameter pipeline. Segment L-2 will consist of 1,700 feet of 15-inch diameter pipeline. Segment L-3 will consist of 800 feet of 12-inch diameter pipeline. Segment L-4 is a 10-inch diameter pipeline and extends 3,000. The Litt Road Lift Station (Ls # 67) will require a firm capacity of 0.64 mgd to convey PWWF from the Roselle-Claribel CPD.

Project Justification
The Lakewood Trunk extension will service the eastern half of the Roselle-Claribel CPD.

Project Detail Map

10-45
Project ID: L-5
Description: Area 6, Lakewood Trunk Extension
Type: Pipe
Project Type: New Service

**Project Benefit**
Existing Customers: 0%
Future Customers: 100%

**Implementation Phase**
Phase 1 (2013 - 2015)
Phase 2 (2016 - 2020) X
Phase 3 (2021 - 2025)
Phase 4 (2026 - 2030)

**Project Location**
Claus Road and Milnes Road, from South of Claus Road and Milnes Road

**Project Details**
Project L-5 will extend an existing 15-inch diameter pipeline within the Falling Leaf Subdivision. The existing 15-inch diameter pipeline, located at the intersection of Ruffed Goose Lane and Crested Bobwhite Street, extends east beyond the development and is stubbed in an undeveloped area. A proposed 8-inch diameter pipeline will extend 300 feet and terminate in Claus Road.

**Project Justification**
This sewer trunk extension will provide service to future development in the Village One CPD.

**Capital Improvement Costs**
Baseline Construction Cost $33,000
Construction Contingency $8,250
Estimated Construction Cost $41,250
Engineering Services, Construction Management and Project $12,750
Total Capital Improvement Cost $54,000
ENR CCI = 10,037 20-City Average, July 2015

**Project Detail Map**
Project ID: L-6  
Description: Area 6, Lakewood Trunk Extension  
Type: Pipe  
Project Type: New Service

**Project Benefit**
- Existing Customers: 0%
- Future Customers: 100%

**Implementation Phase**
- Phase 1 (2013 - 2015)
- Phase 2 (2016 - 2020)
- Phase 3 (2021 - 2025)
- Phase 4 (2026 - 2030) X

**Project Location**
Merle Ave, from Claus Road to South of Turnbridge Way

**Project Details**
Project L-6 is a 10-inch diameter pipeline that will extend the existing sub-trunk in Merle Avenue to serve future growth.

**Project Justification**
This sewer trunk extension will provide service to future development in the Village One CPD.

**Capital Improvement Costs**
- Baseline Construction Cost $ 55,000
- Construction Contingency $ 13,750
- Estimated Construction Cost $ 68,750
- Engineering Services, Construction Management and Project $ 20,250

**Total Capital Improvement Cost** $ 89,000
ENR CCI = 10,037 20-City Average, July 2015

**Project Detail Map**

**Project Vicinity Map**
Project ID: U-1
Description: Area 10, Ustick Trunk
Type: Pipe
Project Type: Future Deficiency

Project Benefit
Existing Customers: 44%
Future Customers: 56%

Implementation Phase
Phase 1 (2013 - 2015)
Phase 2 (2016 - 2020)
Phase 3 (2021 - 2025)
Phase 4 (2026 - 2030) X

Implementation Phase
Phase 1 (2013 - 2015)
Phase 2 (2016 - 2020)
Phase 3 (2021 - 2025)
Phase 4 (2026 - 2030) X

Project Location
Ustick Road, from Whitmore Avenue to Imperial Avenue

Project Justification
At build-out of Area 10, the hydraulic model indicated that an increase of PWWF from new growth will cause the Ustick Trunk to surcharge.

Project Detail Map
The deficient 12-inch diameter pipeline extends from Whitmore Avenue to Imperial Avenue. To mitigate capacity constraints with this reach of pipeline, it is recommended that the 12-inch diameter pipeline be replaced with a 15-inch diameter sewer. An approximate length of 2,100 feet is recommended for this project.

Capital Improvement Costs
Baseline Construction Cost $431,000
Construction Contingency $107,750
Estimated Construction Cost $538,750
Engineering Services, Construction Management and Project $161,250
Total Capital Improvement Cost $700,000
ENR CCI = 10,037 20-City Average, July 2015
Project ID: U-2 through U-4 and LS # 62
Description: Area 10, Ustick Trunk
Type: Pipe/Lift Station

Project Benefit
Existing Customers: 0%
Future Customers: 100%

Implementation Phase
Phase 1 (2013 - 2015)
Phase 2 (2016 - 2020)
Phase 3 (2021 - 2025)
Phase 4 (2026 - 2030) X

Project Location
Whitmore Avenue

Project Details
Improvements along this area extend 4,800 feet in Whitmore Avenue and utilize a lift station and force main. This project is separated into three reaches and a lift station. Segment U-2 consist of 1,000 feet of 10-inch diameter pipeline. Segment U-3 is a 4-inch force main and extends 400. The force main will allow the proposed 10-inch diameter sewer (U-2) to connect with the existing pipeline in Ustick Road. Segment U-4 consists of 3,400 feet of 10-inch diameter pipeline. The lift station at Whitmore and Carpenter Lift Station (LS 62) will have a firm capacity of 0.4 mgd to convey future PWWF.

Project Justification
This group of improvements will service commercial and residential growth to the southwest within the Fairview CPD.

Project Vicinity Map

Capital Improvement Costs
Baseline Construction Cost $1,210,000
Construction Contingency $302,500
Estimated Construction Cost $1,512,500
Engineering Services, Construction Management and Project $453,500
Total Capital Improvement Cost $1,966,000
ENR CCI = 10,037 20-City Average, July 2015

Project Detail Map