APPENDIX D
Capital Improvement Project Sheets
**PROJECT:** Redwood Road Trunk Sewer

**Priority/Fiscal Year:** Priority A: FY 2016/17

**Risk Level:** High Risk

**Project Purpose:** Upsize gravity sewer to accommodate PWWF and relieve wet weather surcharging on Redwood Road and points upstream

**Project Location:** Redwood Road between Seven Hills Road and Heyer Avenue

**Existing Conditions:**
- 6-inch and 8-inch VCP
- Existing capacity = 0.93 mgd
- 2006 ADWF: 0.23 mgd
- 2015 ADWF: 0.20 mgd

**Design PWWF:** 1.73 mgd (10-year, 24-hour design storm)

**Model Reference:** MH 27-66 to MH 19-110

**Recommendations:**
- Upsize 1,058 LF of sanitary sewer to 10-inch VCP by open-cut replacement
- Upsize 675 LF of sanitary sewer to 12-inch VCP by open-cut replacement

### Estimated Project Costs

<table>
<thead>
<tr>
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**PROJECT PHOTO**

*Redwood Road at Heyer Avenue looking North*

**PROJECT TRIGGERS**

**EXISTING CAPACITY DEFICIENCY:**
Pipe is currently undersized for PWWF conditions, and overflows at multiple locations during wet weather.
PROJECT: Marshall Street Trunk Sewer

Priority/Fiscal Year: Priority B: FY 2017/18
Risk Level: High Risk
Project Purpose: Upsize gravity sewer to accommodate PWWF and relieve wet weather surcharging on Marshall Street and points upstream
Project Location: Marshall Street between Normandy Court and Greenacre Road
Existing Conditions:
- 10-inch VCP
- Existing capacity = 1.05 mgd
- 2006 ADWF: 0.19 mgd
- 2015 ADWF: 0.17 mgd
Model Reference: MH 30-18 to MH 30-40
Design PWWF: 1.67 mgd (10-year, 24-hour design storm)
Recommendations:
- Upsize 1328 LF of sanitary sewer to 12-inch VCP by open-cut replacement

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EXISTING CAPACITY DEFICIENCY:
Pipe is currently undersized for existing PWWF conditions, and surcharges more than two feet at multiple locations during wet weather.

WASTEWATER COLLECTION SYSTEM MASTER PLAN UPDATE
MARSHAL STREET TRUNK SEWER PROJECT SHEET
**PROJECT:** Sandy Road Trunk Sewer

**Priority/Fiscal Year:** Priority B: FY 2017/18

**Risk Level:** Medium Risk

**Project Purpose:** Upsize gravity sewer to accommodate PWWF and relieve wet weather surcharging on Sandy Road and points upstream

**Project Location:** Sandy Road south of Seven Hills Road

**Existing Conditions:**
- 8-inch VCP
- Existing capacity = 0.88 mgd
- 2006 ADWF: 0.14 mgd
- 2015 ADWF: 0.17 mgd

**Model Reference:** MH 28-9 to MH 28-94

**Ultimate PWWF:** 1.50 mgd (10-year, 24-hour design storm)

**Recommendations:**
- Upsize 848 LF of sanitary sewer to 10-inch VCP by open-cut replacement

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### Estimated Project Costs

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<tr>
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<th>Unit</th>
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**PROJECT PHOTO**

[Sandy Road at Seven Hills Road looking South]

**PROJECT TRIGGERS**

**EXISTING CAPACITY DEFICIENCY:**

Pipe is currently undersized for existing PWWF conditions, and surcharges more than 2 feet at multiple locations during wet weather.

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WASTEWATER COLLECTION
SYSTEM MASTER PLAN UPDATE
SANDY ROAD TRUNK SEWER PROJECT SHEET
**PROJECT:** Aspen and Pine Trunk Sewer

**Priority/Fiscal Year:** Priority B: FY 2017/18

**Risk Level:** Medium Risk

**Project Purpose:** Upsize gravity sewer to accommodate PWWF and relieve wet weather surcharging

**Project Location:** Aspen Avenue and Pine Street between Castro Valley Boulevard and Elm Street

**Existing Conditions:**
- 10-inch, 12-inch and 15-inch VCP
- Existing capacity = 1.17 mgd
- 2006 ADWF: 0.79 mgd
- 2015 ADWF: 0.70 mgd

**Design PWWF:** 2.51 mgd (10-year, 24-hour design storm)

**Model Reference:** MH 30-46 to MH 31-4

**Recommendations:**
- Upsize 809 LF of sanitary sewer to 18-inch VCP by open-cut replacement
- Upsize 626 LF of sanitary sewer to 21-inch VCP by open-cut replacement

### Estimated Project Costs

<table>
<thead>
<tr>
<th>Item</th>
<th>Unit</th>
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**Project Subtotal** $748,000

30% Contingency $224,000

**Construction Cost Subtotal** $972,000

Engineering, Legal, Admin., etc. @ 30% $292,000

**Total Capital Cost** $1,264,000

**PROJECT TRIGGERS**

**EXISTING CAPACITY DEFICIENCY:**

Trunk sewers are currently undersized for existing PWWF conditions and surcharges more than two feet at multiple locations during wet weather.
Project: South of I-580 Relief Sewer

Priority/Fiscal Year: Priority C: FY 2018/19

Risk Level: High Risk

Project Purpose: New relief sewer to relieve surcharging in Orange Avenue and several locations along the proposed parallel relief sewer alignment.

Project Location: South of Interstate-580 from Redwood Road to North Third Street.

Existing Conditions: Inadequate capacity in multiple trunk sewers.

Design PWWF: 4.17 mgd (10-year, 24-hour design storm).


Recommendations:
- Construct 3,874 LF of 21-inch VCP and 1,110 LF of 24-inch VCP by open-cut.

<table>
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<th>Estimated Project Costs</th>
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**Project Subtotal** $3,276,000

30% Contingency $983,000

**Construction Cost Subtotal** $4,259,000

Engineering, Legal, Admin., etc. @ 30% $198,000

**Total Capital Cost** $4,457,000

Existing Capacity Deficiency:

Existing mains are currently undersized for PWWF conditions, and surcharge at multiple locations during wet weather.
Figure E-1

Existing HGL Profile at Redwood Road Trunk Sewer

Castro Valley Sanitary District
WWCS Master Plan Update
Figure E-2

Existing HGL Profile at Sandy Road Trunk Sewer

Castro Valley Sanitary District
WWCS Master Plan Update
Figure E-3
Existing HGL Profile at Marshal Street Trunk Sewer

Castro Valley Sanitary District
WWCS Master Plan Update
Figure E-4
Existing HGL Profile at Aspen and Pine Trunk Sewer
Castro Valley Sanitary District
WWCS Master Plan Update
Figure E-5
Existing HGL Profile at Orange Avenue Trunk Sewer
Castro Valley Sanitary District
WWCS Master Plan Update
Figure E-6
Future Hydraulic Profile at Redwood Road Trunk Sewer
Castro Valley Sanitary District
WWCS Master Plan Update
Figure E-7

Future Hydraulic Profile at Sandy Road Trunk Sewer

Castro Valley Sanitary District
WWCS Master Plan Update
Figure E-8
Future Hydraulic Profile at Marshal Street Trunk Sewer
Castro Valley Sanitary District
WWCS Master Plan Update
Figure E-9
Future Hydraulic Profile at Aspen and Pine Street Trunk Sewer
Castro Valley Sanitary District
WWCS Master Plan Update
Figure E-10
Future Hydraulic Profile at Orange Avenue Trunk Sewer
Castro Valley Sanitary District
WWCS Master Plan Update