

The background of the entire page is a complex technical drawing or blueprint. It features various mechanical components, including gears, bolts, nuts, and structural frames, all rendered in a light blue color. The drawing is overlaid on a textured, light green background that resembles aged paper or parchment. The overall aesthetic is industrial and technical.

LONG BEACH WATER DEPARTMENT  
CAPITAL IMPROVEMENT PROGRAM  
FISCAL YEAR 2011-12 TO 2015-16

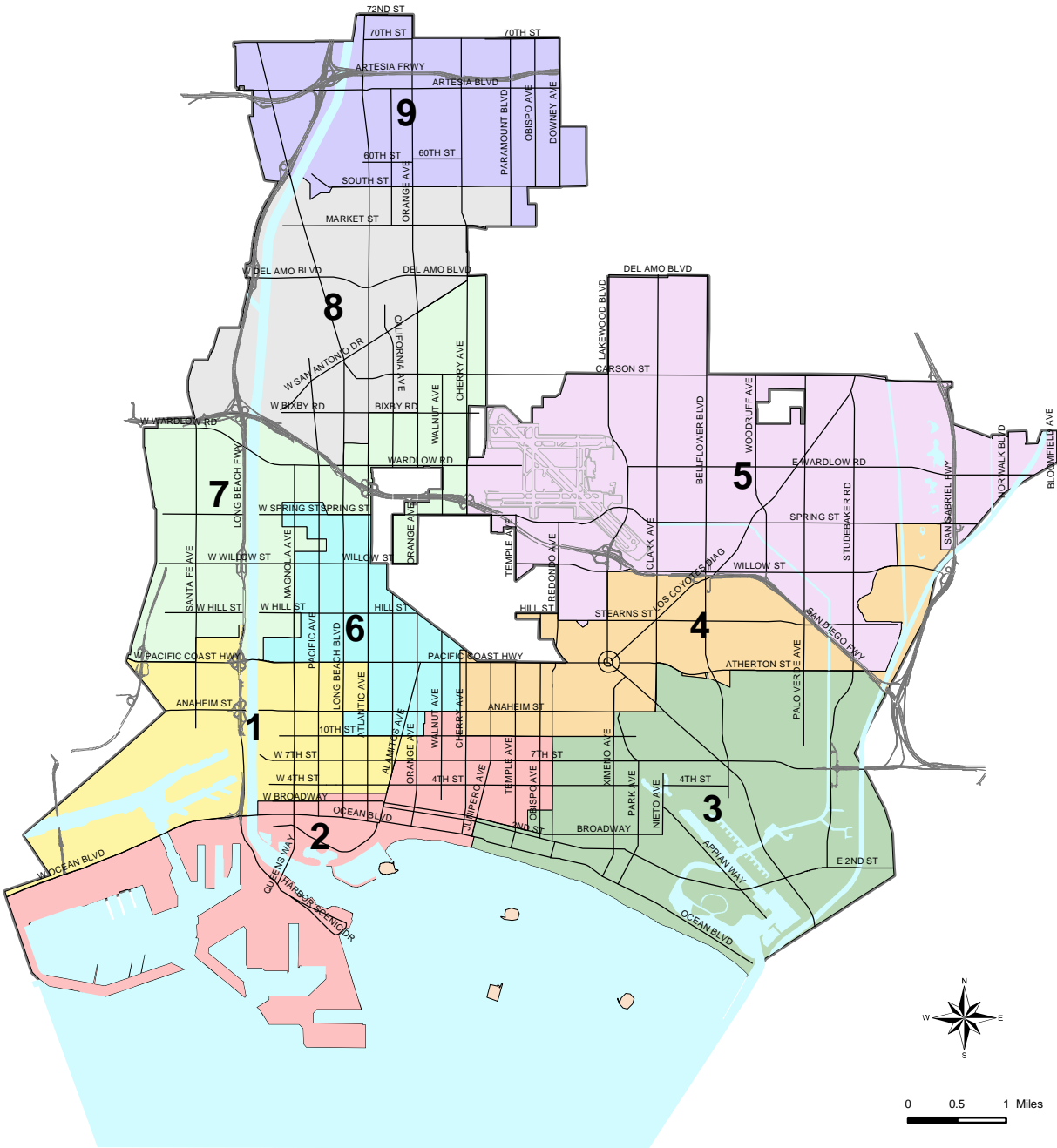
**CAPITAL IMPROVEMENT**  
**PROGRAM**

**FY 2011/12 to FY 2015/16**

# CAPITAL IMPROVEMENT PROGRAM

FY 2011/12 to FY 2015/16

October 2011



**Long Beach Water Department**

The Standard In Environmental Stewardship & Water Conservation

**Long Beach Water Department FY 2011/12 to FY 2015/16  
Capital Improvement Program**

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**LONG BEACH WATER DEPARTMENT  
FY 2011/2012 - FY2015/2016 CAPITAL IMPROVEMENT PROGRAM**

	Project Description	FY 11/12	FY 12/13	FY13/14	FY14/15	FY15/16
(a)	<b>Cast Iron Main Replacement</b>					
	1 Main Replacement by In-house Work Force	\$ 3,000,000	\$ 3,090,000	\$ 3,183,000	\$ 3,278,000	\$ 3,376,000
	2 Alley Water Main Rehabilitation	\$ 925,000	\$ 880,000	\$ 150,000	\$ 910,000	\$ 155,000
	3 Water Main Replacement by Contractor	\$ 1,890,000	\$ 200,000	\$ 1,700,000	\$ 206,000	\$ 1,750,000
	<b>Total</b>	<b>\$ 5,815,000</b>	<b>\$ 4,170,000</b>	<b>\$ 5,033,000</b>	<b>\$ 4,394,000</b>	<b>\$ 5,281,000</b>
(a)	<b>Preventive Maintenance</b>					
	1 Meter Replacement	\$ 464,000	\$ 478,000	\$ 492,000	\$ 507,000	\$ 522,000
(a)	2 Small Valve Replacement	\$ 31,000	\$ 32,000	\$ 33,000	\$ 34,000	\$ 35,000
	<b>Total</b>	<b>\$ 495,000</b>	<b>\$ 510,000</b>	<b>\$ 525,000</b>	<b>\$ 541,000</b>	<b>\$ 557,000</b>
	<b>Water Distribution System Improvements</b>					
	1 Developer - Water Project	\$ 57,000	\$ 59,000	\$ 61,000	\$ 63,000	\$ 65,000
	2 Water Main Relocation	\$ 200,000	\$ 206,000	\$ 212,000	\$ 218,000	\$ 225,000
	3 Cathodic Protection (Pipelines)	\$ 180,000	\$ 80,000	\$ 400,000	\$ -	\$ -
	4 Bridge Crossings Repair/Maintenance	\$ 237,000	\$ 400,000	\$ 412,000	\$ 424,000	\$ 437,000
	5 Large Valve Replacement	\$ 528,000	\$ 545,000	\$ 560,000	\$ 515,000	\$ 525,000
	<b>Total</b>	<b>\$ 1,202,000</b>	<b>\$ 1,290,000</b>	<b>\$ 1,645,000</b>	<b>\$ 1,220,000</b>	<b>\$ 1,252,000</b>
	<b>Water Resources Facility Improvements</b>					
	1 Alamitos Reservoir Site Electrical Upgrade	\$ -	\$ 200,000	\$ 1,600,000	\$ -	\$ -
	2 Annual Alamitos Tank Rehabilitation	\$ 900,000	\$ 927,000	\$ 955,000	\$ 984,000	\$ 1,016,000
	3 Annual J. Will Johnson Tank Rehabilitation	\$ -	\$ 800,000	\$ 824,000	\$ 849,000	\$ 875,000
	4 J. Will Johnson Reservoir Site Improvements	\$ 1,500,000	\$ -	\$ -	\$ -	\$ -
	5 Treatment Plant Citizens 12 and 13 Pump Replacement	\$ -	\$ -	\$ 100,000	\$ -	\$ -
	6 MWD No. 1 Feeder Inter-tie to the Boosted Zone	\$ 150,000	\$ 2,350,000	\$ -	\$ -	\$ -
	7 32nd Street Booster Station Pumps Upgrade	\$ 315,000	\$ -	\$ -	\$ -	\$ -
	8 Water Well	\$ 2,600,000	\$ 400,000	\$ 2,500,000	\$ 2,500,000	\$ 2,100,000
	9 Well Treatment/Well 2	\$ 2,150,000	\$ 4,450,000	\$ -	\$ -	\$ -
	10 Well Collection Main	\$ 300,000	\$ 2,300,000	\$ -	\$ -	\$ -
	11 Paramount Contribution	\$ (2,500,000)				
	12 Annual Water Well Rehabilitation	\$ 600,000	\$ 620,000	\$ 640,000	\$ 658,000	\$ 678,000
	13 Treatment Plant Cistern 3 Vaults Repair	\$ 780,000	\$ -	\$ -	\$ -	\$ -
	14 Desalination - Subocean Floor Research and Development	\$ 1,600,000	\$ -	\$ -	\$ -	\$ -
	<b>Total</b>	<b>\$ 8,395,000</b>	<b>\$ 12,047,000</b>	<b>\$ 6,619,000</b>	<b>\$ 4,991,000</b>	<b>\$ 4,669,000</b>
	<b>Total Water Projects</b>	<b>\$ 15,907,000</b>	<b>\$ 18,017,000</b>	<b>\$ 13,822,000</b>	<b>\$ 11,146,000</b>	<b>\$ 11,759,000</b>

\*

**LONG BEACH WATER DEPARTMENT  
FY 2011/2012 - FY2015/2016 CAPITAL IMPROVEMENT PROGRAM**

Project Description	FY 11/12	FY 12/13	FY 13/14	FY 14/15	FY 15/16
<b>Recycled Water Facility Improvements</b>					
1 Recycled Water System Expansion Phase 2	\$ 1,750,000	\$ 1,750,000	\$ 1,500,000	\$ -	\$ -
2 Service Connections	\$ 100,000	\$ 103,000	\$ 106,000	\$ 109,000	\$ 112,000
3 Recycled Water System Expansion Phases 3 and 4	\$ -	\$ -	\$ -	\$ 750,000	\$ -
4 Automated Meter Reading (AMR)	\$ 270,000	\$ -	\$ -	\$ -	\$ -
<b>Total Recycled Water Projects</b>	<b>\$ 2,120,000</b>	<b>\$ 1,853,000</b>	<b>\$ 1,606,000</b>	<b>\$ 859,000</b>	<b>\$ 112,000</b>
<b>Grand Total All Water Projects:</b>	<b>\$ 18,027,000</b>	<b>\$ 19,870,000</b>	<b>\$ 15,428,000</b>	<b>\$ 12,005,000</b>	<b>\$ 11,871,000</b>
<b>Sewer System Improvements</b>					
1 Orange Avenue/7th Street Sewer Improvements	\$ 1,750,000	\$ -	\$ -	\$ -	\$ -
2 W 28th Street, Eucalyptus and Pine Avenues	\$ 472,000	\$ -	\$ -	\$ -	\$ -
3 Walnut Avenue, Orange Avenue, and Del Amo Boulevard	\$ 480,000	\$ 2,125,000	\$ 2,635,000	\$ -	\$ -
4 PCH, Tribune Court, Solana Court	\$ -	\$ -	\$ 425,000	\$ 3,070,000	\$ 468,000
5 15th Street, Cherry Avenue	\$ 72,000	\$ 604,000	\$ -	\$ -	\$ -
6 Broadway, Phase 4 (24-inch Rehabilitation)	\$ -	\$ -	\$ -	\$ 230,000	\$ 1,918,000
7 Siphon Improvements	\$ -	\$ 60,000	\$ 400,000	\$ -	\$ -
8 Annual Sewer Relocation	\$ 124,000	\$ 128,000	\$ 132,000	\$ 136,000	\$ 140,000
9 Annual Developer Sewer Projects	\$ 124,000	\$ 128,000	\$ 132,000	\$ 136,000	\$ 140,000
10 Cement Pipe Rehabilitation	\$ 2,400,000	\$ 1,545,000	\$ 1,591,000	\$ 1,639,000	\$ 1,688,000
11 Cement Pipe Replacement	\$ 970,000	\$ 999,000	\$ 1,029,000	\$ 1,060,000	\$ 1,092,000
12 Manhole Rehabilitation	\$ 125,000	\$ 129,000	\$ 133,000	\$ 137,000	\$ 141,000
13 Clay Pipe Replacement and Rehabilitation	\$ 70,000	\$ 500,000	\$ 74,000	\$ 530,000	\$ 79,000
<b>Total Sewer System Projects</b>	<b>\$ 6,587,000</b>	<b>\$ 6,218,000</b>	<b>\$ 6,551,000</b>	<b>\$ 6,938,000</b>	<b>\$ 5,666,000</b>
<b>Facility Improvements</b>					
1 Garage Door Replacements	\$ 120,000	\$ -	\$ -	\$ -	\$ -
2 Warehouse/Administration Building Roof Repair	\$ 500,000	\$ -	\$ -	\$ -	\$ -
3 OSC Asphalt Replacement	\$ 210,000	\$ -	\$ -	\$ -	\$ -
4 Server Room	\$ 600,000	\$ -	\$ -	\$ -	\$ -
5 Future Projects	\$ -	\$ 500,000	\$ 515,000	\$ 530,000	\$ 546,000
<b>Total Facility Improvements</b>	<b>\$ 1,430,000</b>	<b>\$ 500,000</b>	<b>\$ 515,000</b>	<b>\$ 530,000</b>	<b>\$ 546,000</b>
<b>Grand Total, All CIP Projects:</b>	<b>\$ 26,044,000</b>	<b>\$ 26,588,000</b>	<b>\$ 22,494,000</b>	<b>\$ 19,473,000</b>	<b>\$ 18,063,000</b>

\* Grant funded

(a) Budget provided by Accounting / Finance

## Cast Iron Main Replacement

The Long Beach Water Department (LBWD) will continue its aggressive program of replacing 24,000 linear feet of aging cast iron mains with ductile iron pipe. This replacement work will be performed by the department's own workforce. Approximately 5,200 linear feet of water mains in high traffic areas will be replaced by an outside contractor. As part of a pilot project, another 600 linear feet of water mains located in an alley will be lined to extend its lifespan. The criteria for replacing and rehabilitating water mains are based upon their age, flow, pressure, and main break history.



Long Beach Water Department  
FY 2011/12

Capital Improvement Program

Cast Iron Main Replacement - Project List

PROJECT	LOCATION		LF	COUNCIL DISTRICT	COST ESTIMATE
	FROM	TO			
<b>Main Replacement by In-house Work Force</b>					
Los Coyotes Diagonal and Hackett Avenue	Harco Street	Keynote Street	6,000	5	\$ 759,000
Clark Avenue	Conant Street	E Wardlow Road	2,700	5	\$ 342,000
Atlantic Avenue	E 70th Street	E Artesia Boulevard	2,700	9	\$ 342,000
W 25th Street	Santa Fe Avenue	Webster Avenue	3,700	7	\$ 468,000
Lois Lane (Livingston Drive Alley)	Quincy Avenue	Prospect Avenue	400	3	\$ 51,000
E 15th Street and New York Street	Alamitos Avenue	Martin Luther King, Jr. Avenue	3,700	6	\$ 468,000
Dawson Avenue and Molino Avenue	E 7th Street	E 4th Street	4,500	2	\$ 570,000
		<b>Subtotal</b>	<b>23,700</b>		<b>\$ 3,000,000</b>
<b>Alley Water Main Rehabilitation</b>					
Alley East of Magnolia Avenue	W 21st Street	W 20th Street	600	7	\$ 187,000
<b>Alley Water Main Conversion</b>					
Pine Avenue and Locust Avenue	Pacific Coast Highway	21st Street	4,400	6	\$ 738,000
<b>Water Main Replacement by Contractor</b>					
Long Beach Boulevard	E Willow Street	E Spring Street	5,200	6, 7	\$ 1,890,000
	<b>Total</b>	<b>Total</b>	<b>33,900</b>		<b>\$ 5,815,000</b>

# LBWD CAPITAL IMPROVEMENT PROJECTS - FY 11/12

## CAST IRON MAIN REPLACEMENT

Project: Los Coyotes Diagonal and Hackett Avenue - Construct 6,000 linear feet of 6- and 12-inch water mains

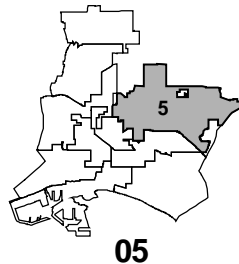
Location: Harco Street to Keynote Street

Purpose: To improve fire flow protection and preserve water quality to the area

FY 11/12 Estimate: \$ 759,000



Council District(s)



# LBWD CAPITAL IMPROVEMENT PROJECTS - FY 11/12

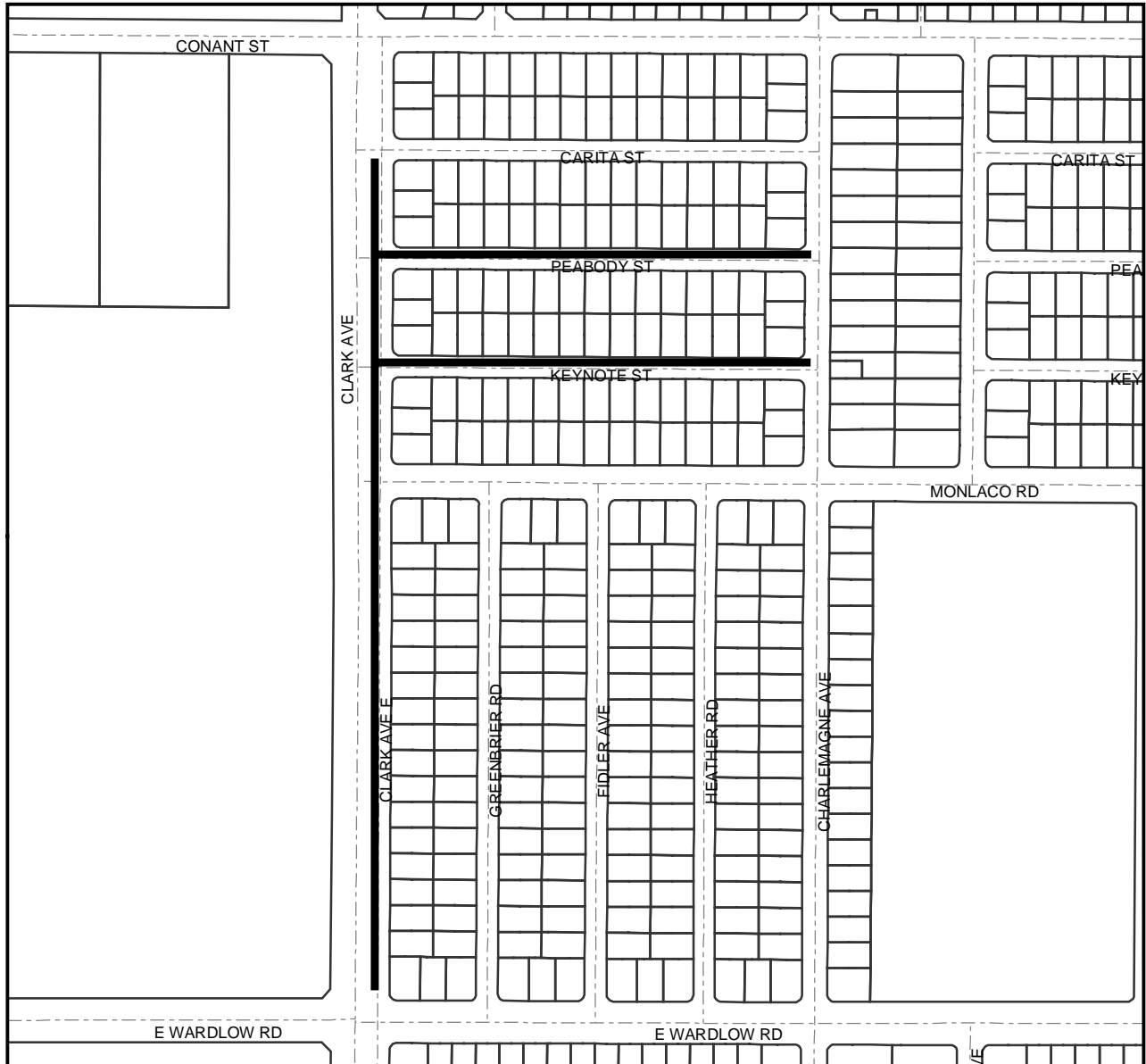
## CAST IRON MAIN REPLACEMENT

Project: Clark Avenue - Construct 2,700 linear feet of 6-inch and 8-inch water mains

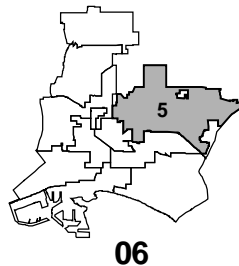
Location: Wardlow Road to Conant Street

Purpose: To improve fire flow protection and preserve water quality to the area

FY 11/12 Estimate: \$342,000



Council District(s)



# LBWD CAPITAL IMPROVEMENT PROJECTS - FY 11/12

## CAST IRON MAIN REPLACEMENT

Project: Atlantic Avenue - Construct 2,700 linear feet of 8-inch water main

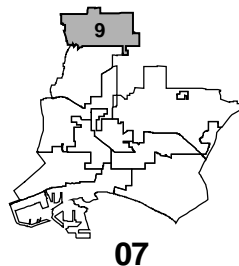
Location: Artesia Boulevard to 70th Street

Purpose: To improve fire flow protection and preserve water quality to the area

FY 11/12 Estimate: \$342,000



Council District(s)



# LBWD CAPITAL IMPROVEMENT PROJECTS - FY 11/12

## CAST IRON MAIN REPLACEMENT

Project: W 25th Street - Construct 3,700 linear feet of 6-inch and 8-inch water mains

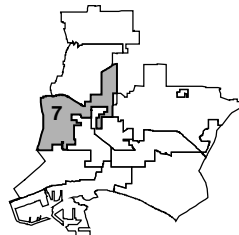
Location: Webster Avenue to Santa Fe Avenue

Purpose: To improve fire flow protection and preserve water quality to the area

FY 11/12 Estimate: \$468,000



Council District(s)



# LBWD CAPITAL IMPROVEMENT PROJECTS - FY 11/12

## CAST IRON MAIN REPLACEMENT

Project: Lois Lane (Livingston Drive Alley) - Construct 350 linear feet of 8-inch water main

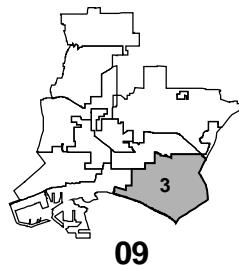
Location: Prospect Avenue to Quincy Ave

Purpose: To improve fire flow protection and preserve water quality to the area

FY 11/12 Estimate: \$51,000



Council District(s)



# LBWD CAPITAL IMPROVEMENT PROJECTS - FY 11/12

## CAST IRON MAIN REPLACEMENT

Project: E 15th Street and New York Street - Construct 3,700 linear feet of 8-inch water mains

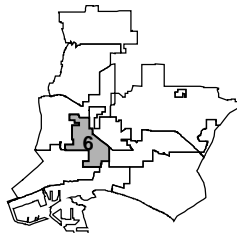
Location: Martin Luther King, Jr. Avenue to Alamitos Avenue

Purpose: To improve fire flow protection and preserve water quality to the area

FY 11/12 Estimate: \$468,000



Council District(s)



# LBWD CAPITAL IMPROVEMENT PROJECTS - FY 11/12

## CAST IRON MAIN REPLACEMENT

Project: Dawson Avenue and Molino Avenue - Construct 4,500 linear feet of 6-inch and 8-inch water mains

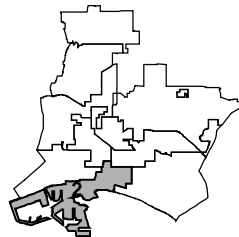
Location: E 4th Street to E 7th Street

Purpose: To improve fire flow protection and preserve water quality to the area

FY 11/12 Estimate: \$570,000



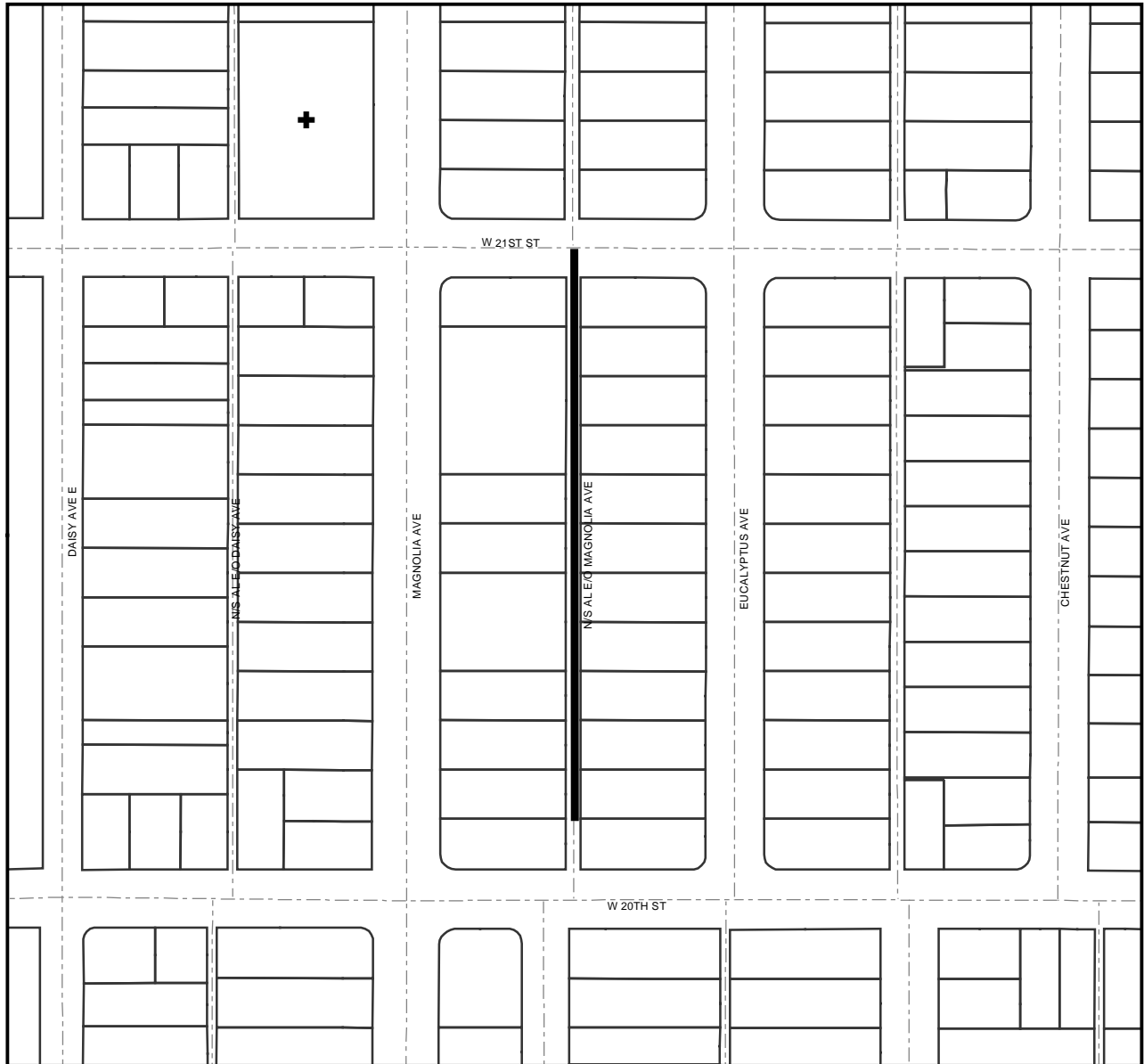
Council District(s)



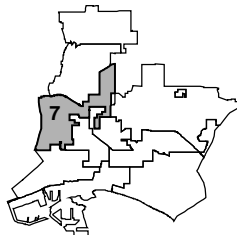
# LBWD CAPITAL IMPROVEMENT PROJECTS - FY 11/12

## CAST IRON MAIN REPLACEMENT

Project: Alley Water Main Rehabilitation  
Location: Alley east of Magnolia Avenue, between 20th and 21st Streets  
Purpose: To improve fire flow protection and preserve water quality to the area  
FY 11/12 Estimate: \$187,000



Council District(s)



# LBWD CAPITAL IMPROVEMENT PROJECTS - FY 11/12

## CAST IRON MAIN REPLACEMENT

Project: Alley Water Main Conversion - Pacific Avenue and Locust Avenue,  
Phase I: Construct 4,400 linear feet of 6- and 8-inch water mains

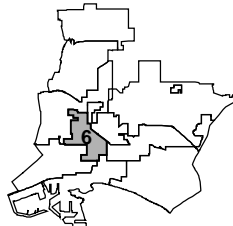
Location: Pacific Coast Highway to 21st Street

Purpose: To improve water distribution by removing water main out of alleys

FY 11/12 Estimate: \$738,000



Council District(s)



# LBWD CAPITAL IMPROVEMENT PROJECTS - FY 11/12

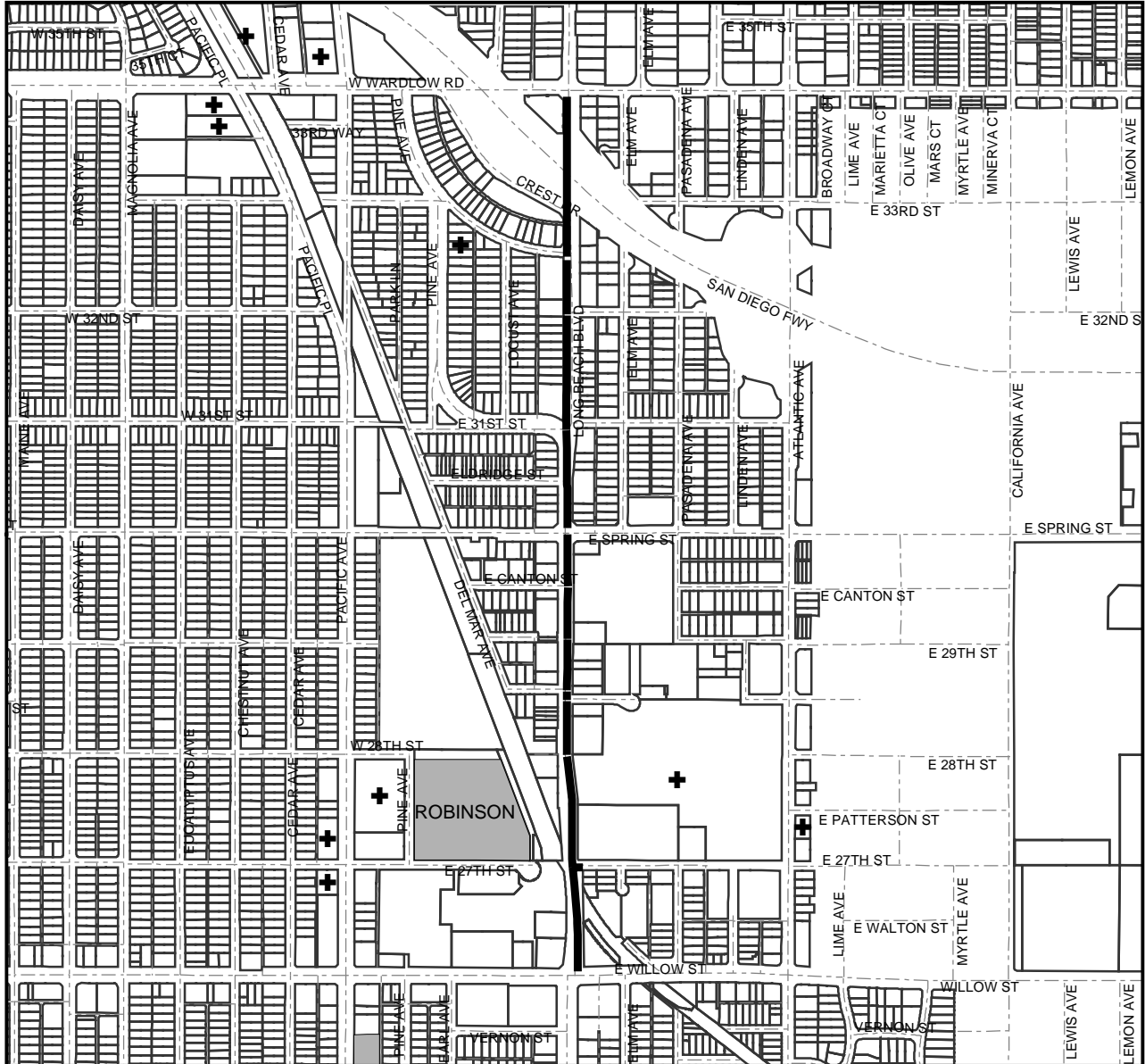
## CAST IRON MAIN REPLACEMENT

Project: Long Beach Boulevard - Construct 5,200 linear feet of 8-inch water main

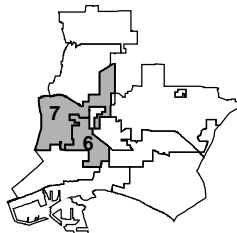
Location: Wardlow Road to Willow Street

Purpose: To improve fire flow protection and preserve water quality to the area

FY 11/12 Estimate: \$1,890,000



Council District(s)



## Preventative Maintenance

Preventative maintenance projects maintain the quality and integrity of the water distribution system. Old and malfunctioning valves (smaller than 12-inch) and meters are replaced on a regular cycle by LBWD's field personnel.



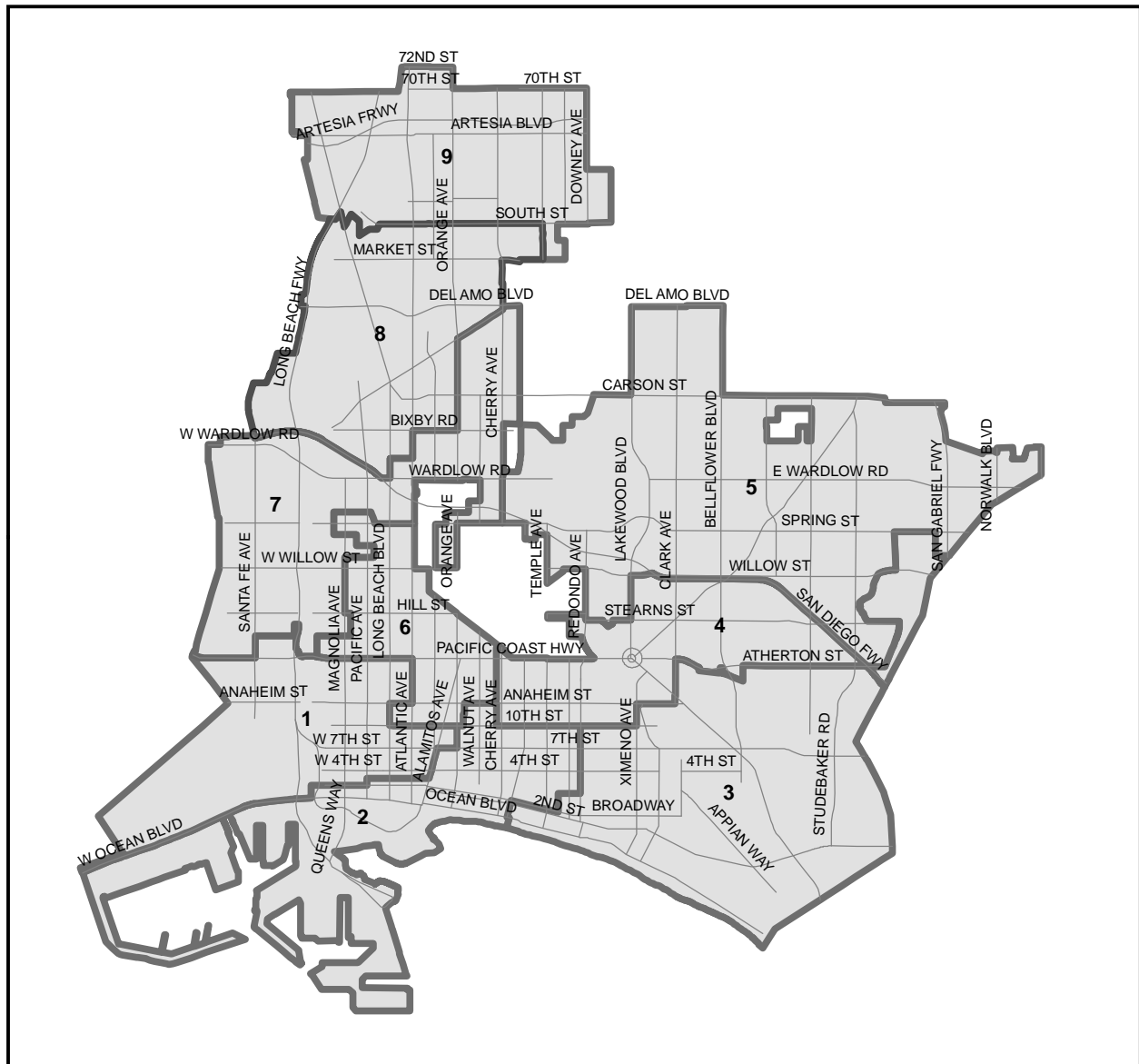
Long Beach Water Department  
 FY 2011/12

Capital Improvement Program  
 Preventative Maintenance - Project List

PROJECT	LOCATION	COUNCIL DISTRICT	COST ESTIMATE
Meter Replacement	Various	Various	\$ 464,000
Small Valve Replacement	Various	Various	\$ 31,000
		<b>Total</b>	<b>\$ 495,000</b>

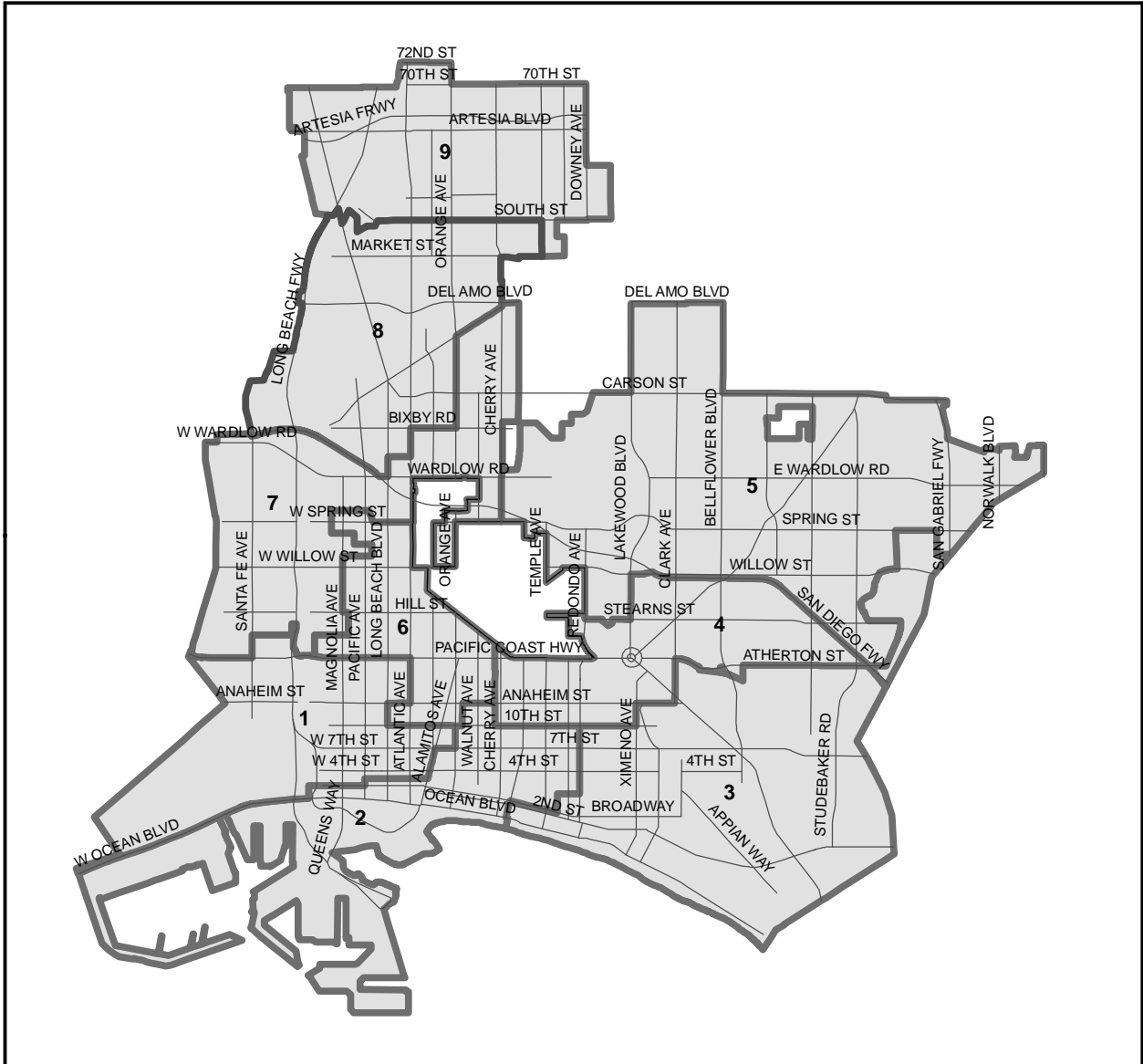
# LBWD CAPITAL IMPROVEMENT PROJECTS - FY 11/12 PREVENTATIVE MAINTENANCE

Project: Meter Replacement  
Location: Various  
Purpose: Replace outdated meters  
FY 11/12 Estimate: \$464,000



# LBWD CAPITAL IMPROVEMENT PROJECTS - FY 11/12 PREVENTATIVE MAINTENANCE

Project: Small Valve Replacement  
Location: Various  
Purpose: Replace outdated and malfunctioning valves  
FY 11/12 Estimate: \$31,000



## Water Distribution System Improvements

Distribution system improvements include miscellaneous water system expansions and relocations that support the development and economic growth of the community. Water main bridge crossings are repaired and additional inspections are conducted to plan for future repair and maintenance. The cathodic protection program protects water mains and tanks from corrosion to extend their lifespan. The large valve replacement program will preserve the quality and integrity of critical areas of the water distribution system.



**Long Beach Water Department  
FY 2011/12**

**Capital Improvement Program**

Water Distribution System Improvements - Project List

<b>PROJECT</b>	<b>LOCATION</b>	<b>COUNCIL DISTRICT</b>	<b>COST ESTIMATE</b>
Developer - Water Projects	Various	Various	\$ 57,000
Water Main Relocations	Various	Various	\$ 200,000
Cathodic Protection (Pipelines)	Various	Various	\$ 180,000
Bridge Crossings Repair/Maintenance	Various	Various	\$ 237,000
Large Valve Replacement	Various	Various	\$ 528,000
	<b>Total</b>	<b>Total</b>	<b>\$ 1,202,000</b>

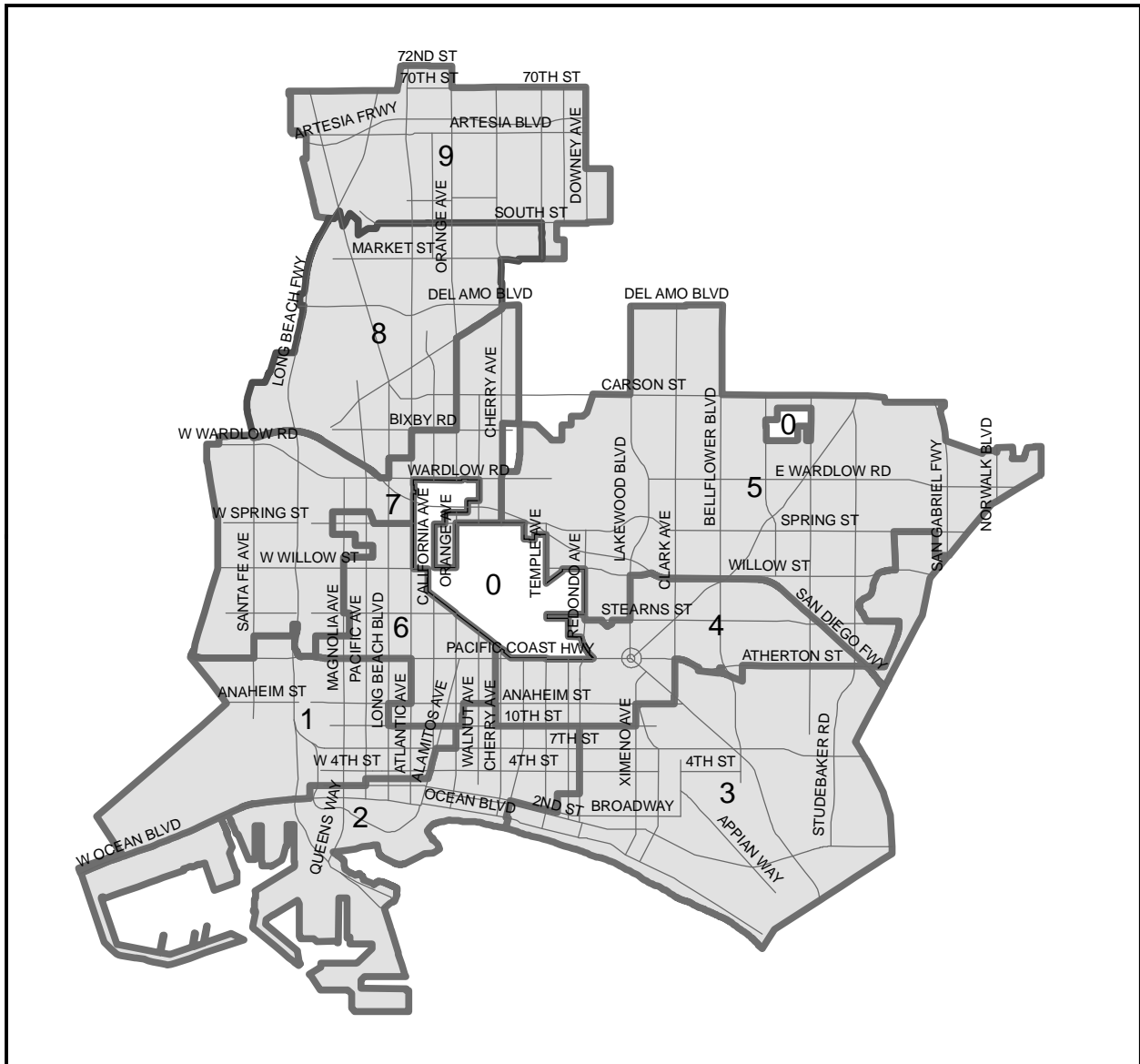
# LBWD CAPITAL IMPROVEMENT PROJECTS - FY 11/12 WATER DISTRIBUTION SYSTEM IMPROVEMENTS

Project: Developer - Water Projects

Location: Various

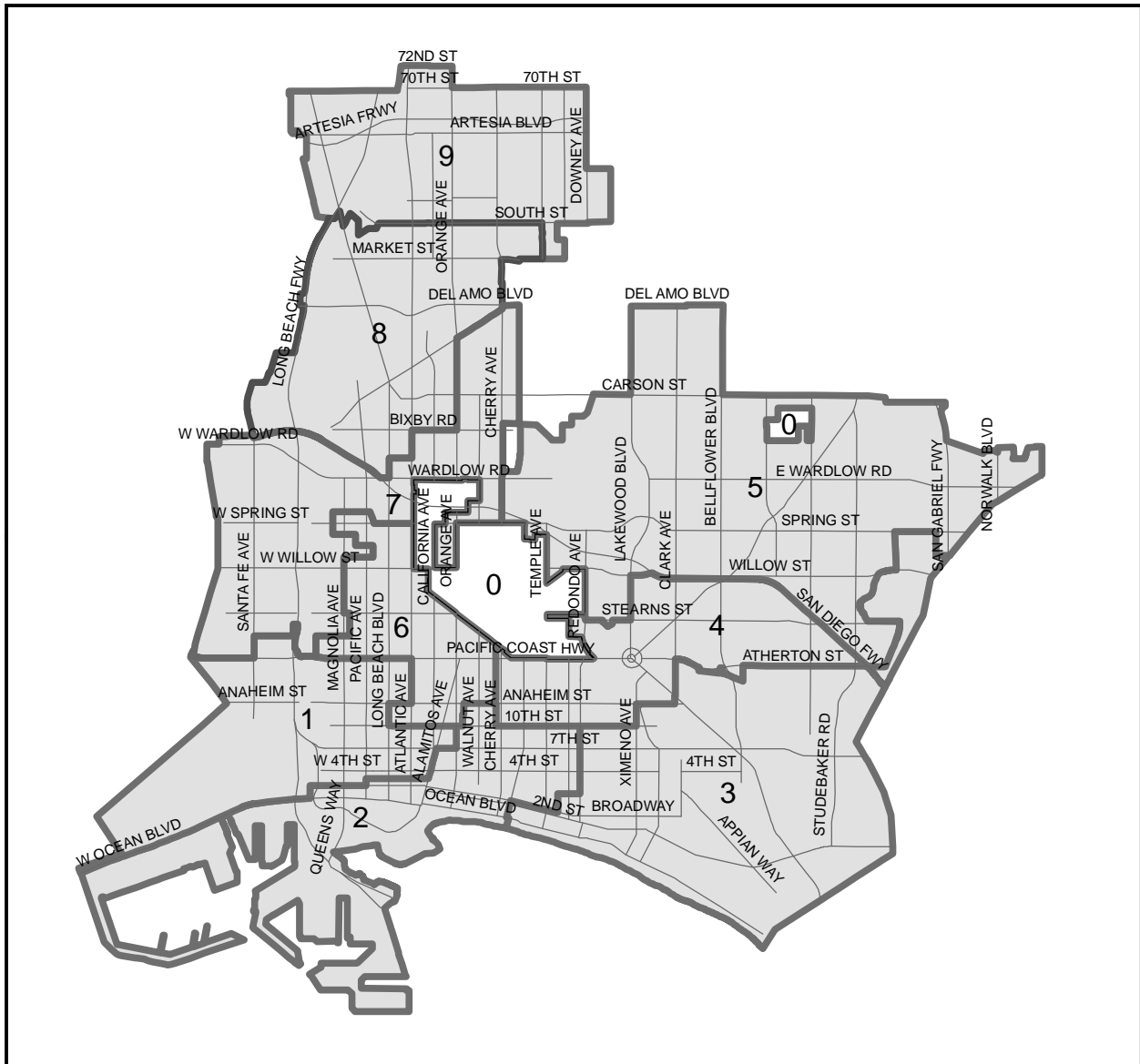
Purpose: Relocate and upgrade water mains as part of developer water projects

FY 11/12 Estimate: \$57,000



# LBWD CAPITAL IMPROVEMENT PROJECTS - FY 11/12 WATER DISTRIBUTION SYSTEM IMPROVEMENTS

Project: Water Main Relocations  
 Location: Various  
 Purpose: Relocate and upgrade water mains with other utility relocations  
 FY 11/12 Estimate: \$200,000



# LBWD CAPITAL IMPROVEMENT PROJECTS - FY 11/12

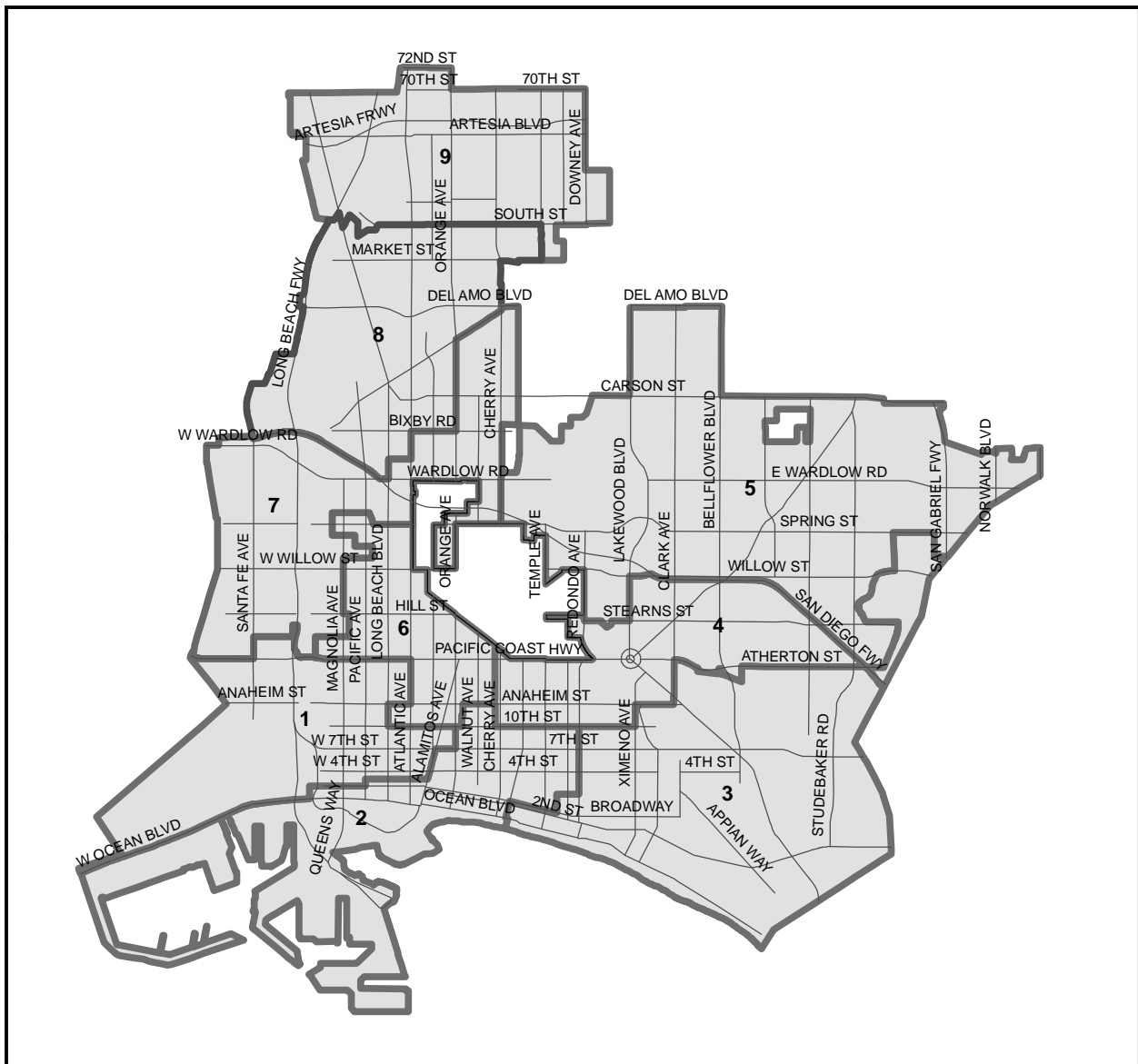
## WATER DISTRIBUTION SYSTEM IMPROVEMENTS

Project: Cathodic Protection (Pipelines)

Location: Various

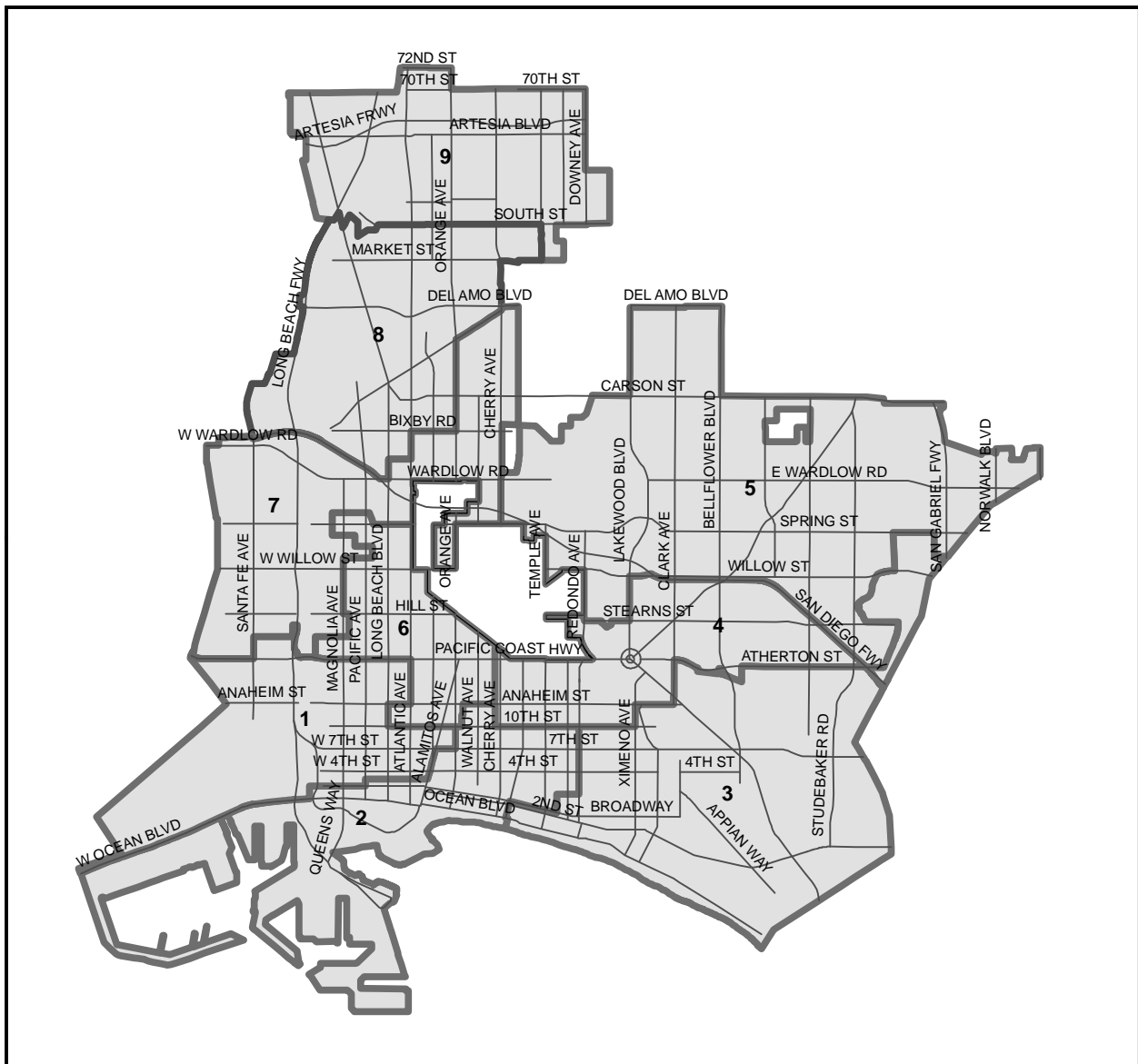
Purpose: Install cathodic protection test stations

FY 11/12 Estimate: \$180,000



# LBWD CAPITAL IMPROVEMENT PROJECTS - FY 11/12 WATER DISTRIBUTION SYSTEM IMPROVEMENTS

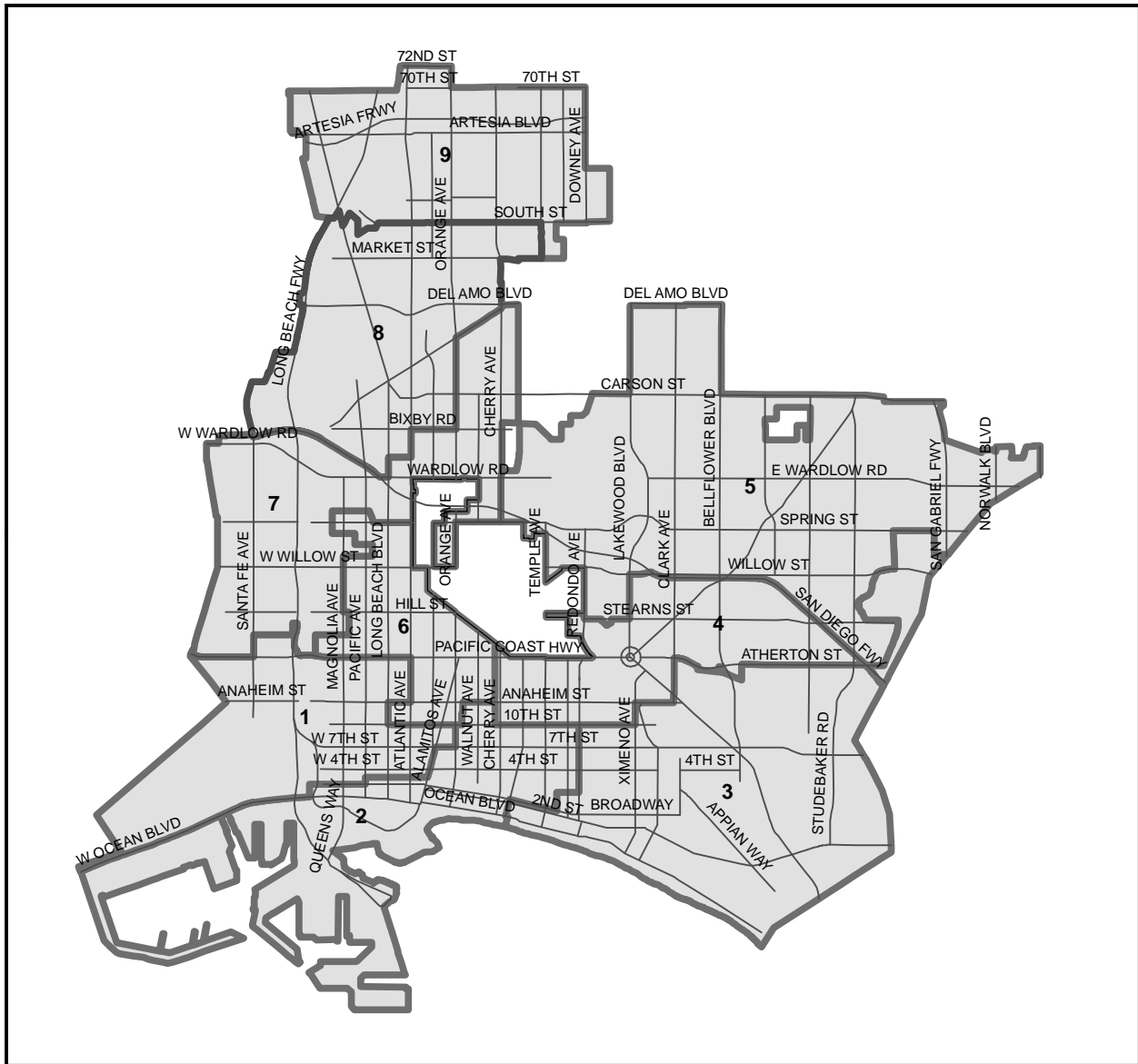
Project: Bridge Crossings Repair/Maintenance  
 Location: Various  
 Purpose: Repair/recoat existing water main bridge crossings  
 FY 11/12 Estimate: \$237,000



# LBWD CAPITAL IMPROVEMENT PROJECTS - FY 11/12

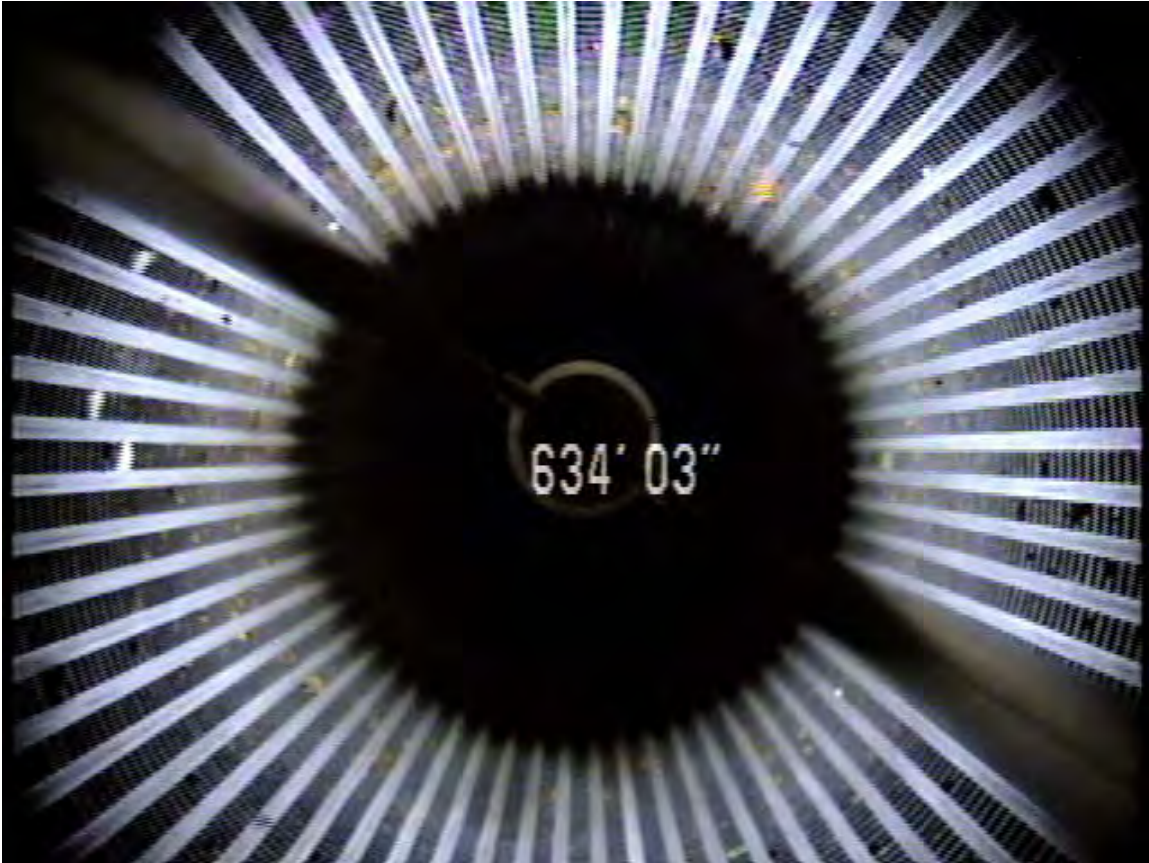
## WATER DISTRIBUTION SYSTEM IMPROVEMENTS

Project: Large Valve Replacements  
Location: Various  
Purpose: Replace broken and inoperable valves in the water transmission system  
FY 11/12 Estimate: \$528,000



## Water Resources Facility Improvements

Water resources facilities are those which pump, collect, treat, and store water and include water wells and collection system, the ground water treatment plant, pump stations, and reservoirs. Projects in the upcoming year include the annual tank rehabilitation at the Alamos Reservoir, the annual well rehabilitations, vault repair at LBWD's groundwater treatment plant, and the drilling and development of a water well.



Long Beach Water Department  
 FY 2011/12

Capital Improvement Program

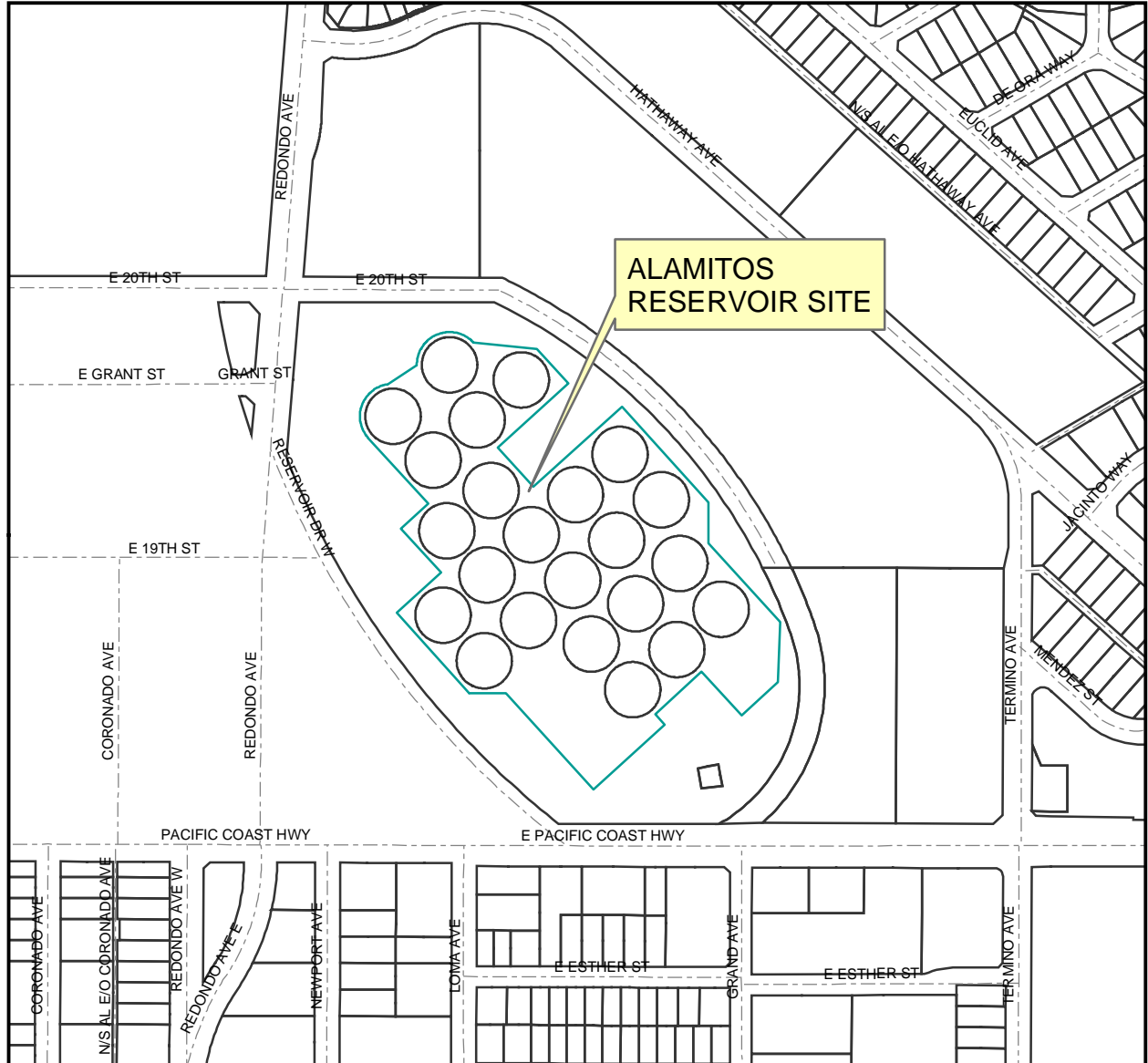
Water Resources Facility Improvements - Project List

PROJECT	LOCATION	COUNCIL DISTRICT	COST ESTIMATE
Annual Alamitos Tank Rehabilitation	Alamitos Reservoir	4	\$ 900,000
J. Will Johnson Reservoir Site Improvements	J. Will Johnson Reservoir Site	n/a	\$ 1,500,000
MWD No. 1 Feeder Inter-tie to the Boosted Zone	E Wardlow Road at the West City Boundary	7	\$ 150,000
32nd Street Booster Station Pumps Upgrade	E 32nd Street, east of Orange Avenue	7	\$ 315,000
Water Well	City of Paramount	n/a	\$ 2,600,000
Well Treatment/Water Well 2	City of Paramount/City of Long Beach	n/a, 9	\$ 2,150,000
Well Collection Main	To be determined		\$ 300,000
City of Paramount Contribution to Water Well		n/a	\$ (2,500,000)
Annual Water Well Rehabilitation	Various	Various	\$ 600,000
Treatment Plant Cistern 3 Vaults Repair	LBWD Groundwater Treatment Plant	5	\$ 780,000
Desalination - Subocean Floor Research and Development	Studebaker Road and E 2nd Street	3	\$ 1,600,000
	<b>Total</b>		<b>\$ 8,395,000</b>

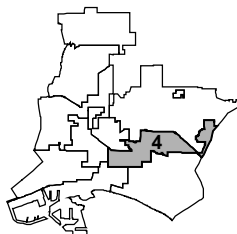
# LBWD CAPITAL IMPROVEMENT PROJECTS - FY 11/12

## WATER RESOURCES FACILITY IMPROVEMENTS

Project: Annual Alamitos Tank Rehabilitation  
 Location: Alamitos Reservoir Site  
 Purpose: Recoat tank and construct seismic/structural improvements  
 FY 11/12 Estimate: \$900,000



Council District(s)



# LBWD CAPITAL IMPROVEMENT PROJECTS - FY 11/12

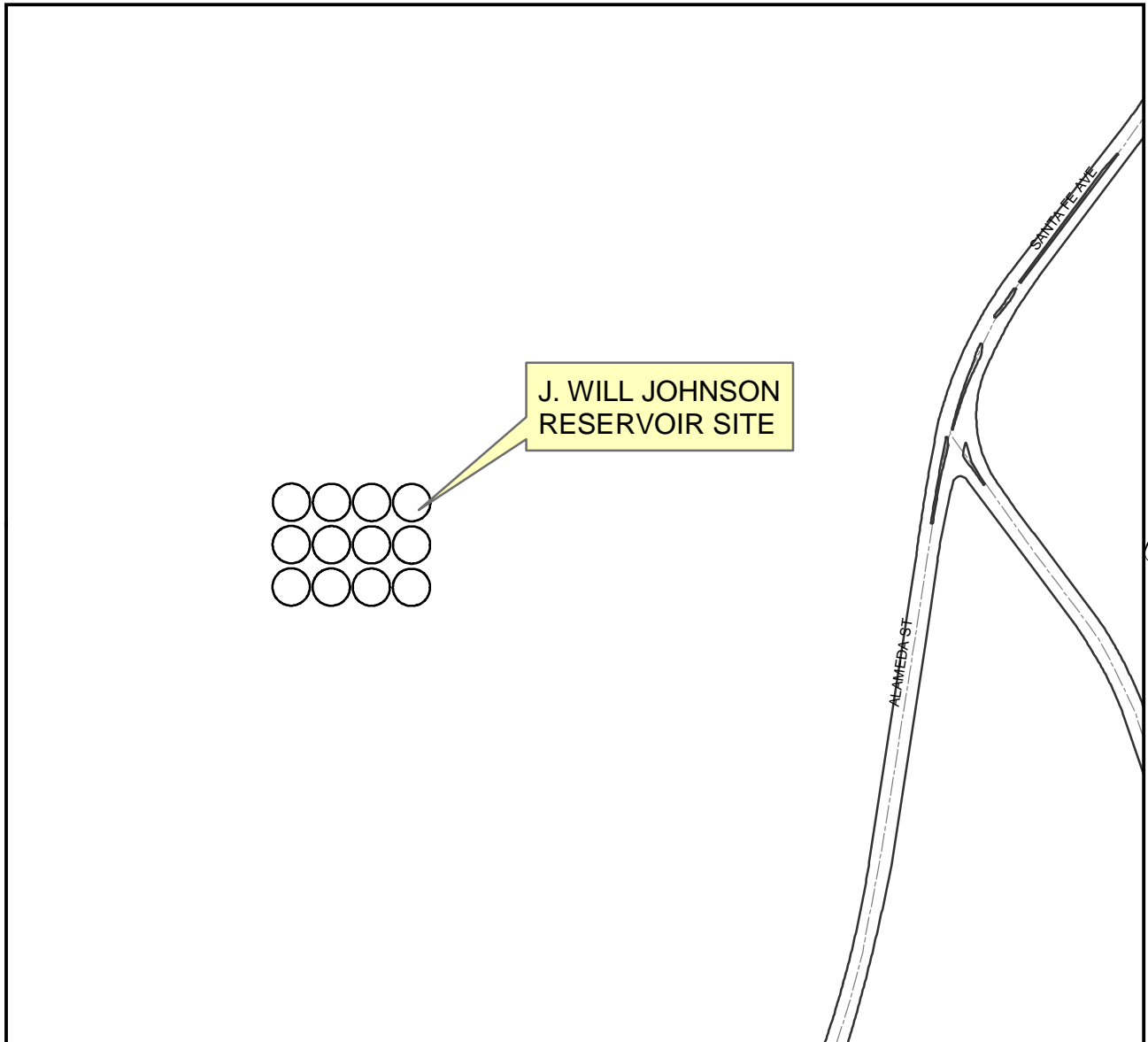
## WATER RESOURCES FACILITY IMPROVEMENTS

Project: J. Will Johnson Reservoir Site Improvements

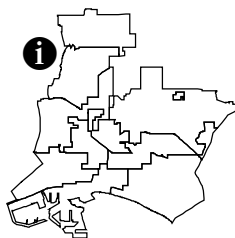
Location: J. Will Johnson Reservoir Site

Purpose: Improve site drainage and pavement

FY 11/12 Estimate: \$1,500,000



Council District(s)



# LBWD CAPITAL IMPROVEMENT PROJECTS - FY 11/12

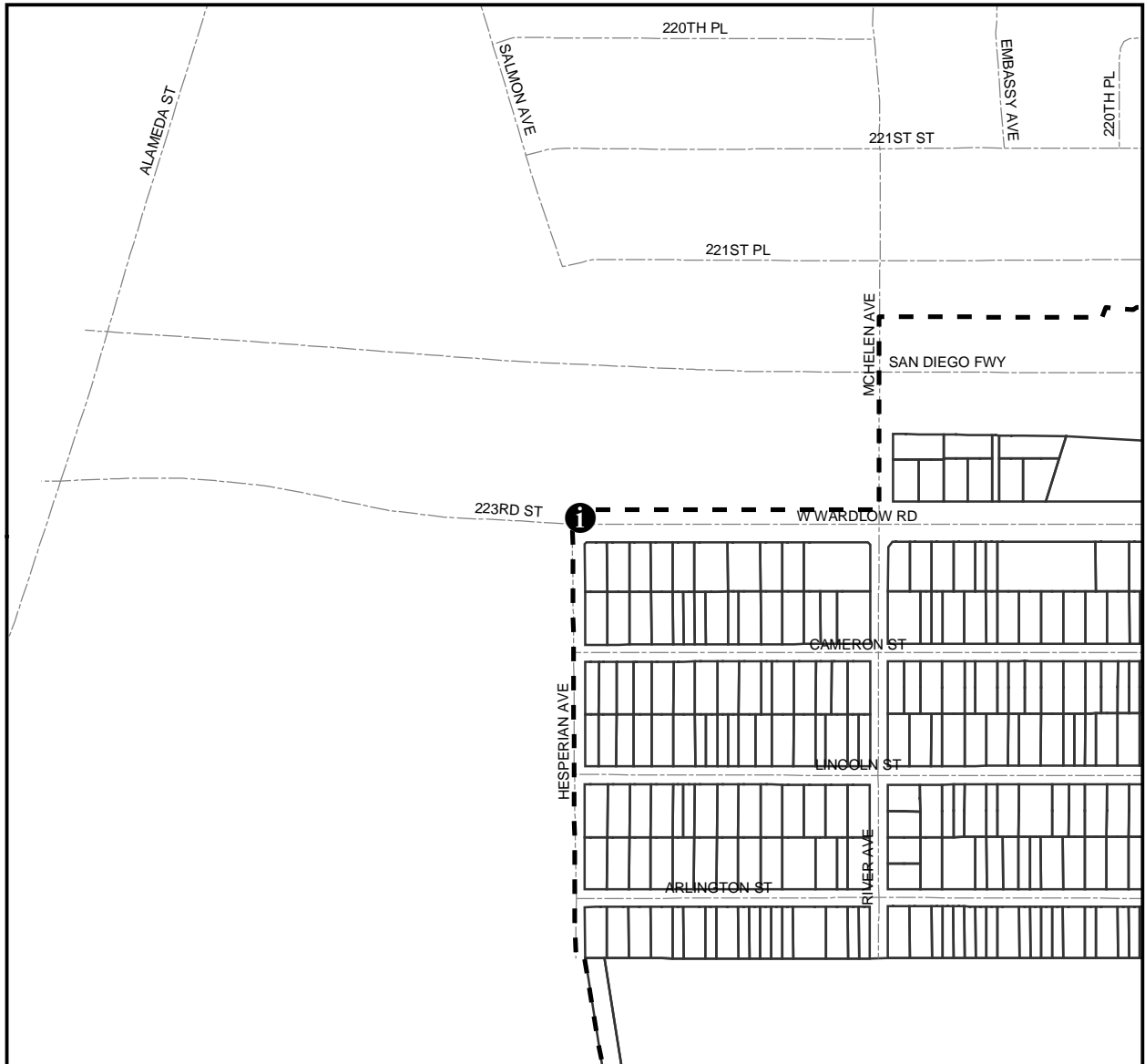
## WATER RESOURCES FACILITY IMPROVEMENTS

Project: MWD No. 1 Feeder Inter-Tie to the Boosted Zone

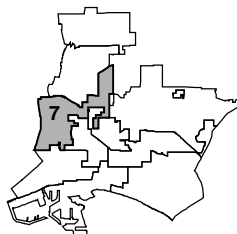
Location: E Wardlow Road at the West City Boundary

Purpose: Study to determine the feasibility of MWD Turnout No. 1 as a primary water supply source to the Boosted Zone

FY 11/12 Estimate: \$150,000



Council District(s)



# LBWD CAPITAL IMPROVEMENT PROJECTS - FY 11/12

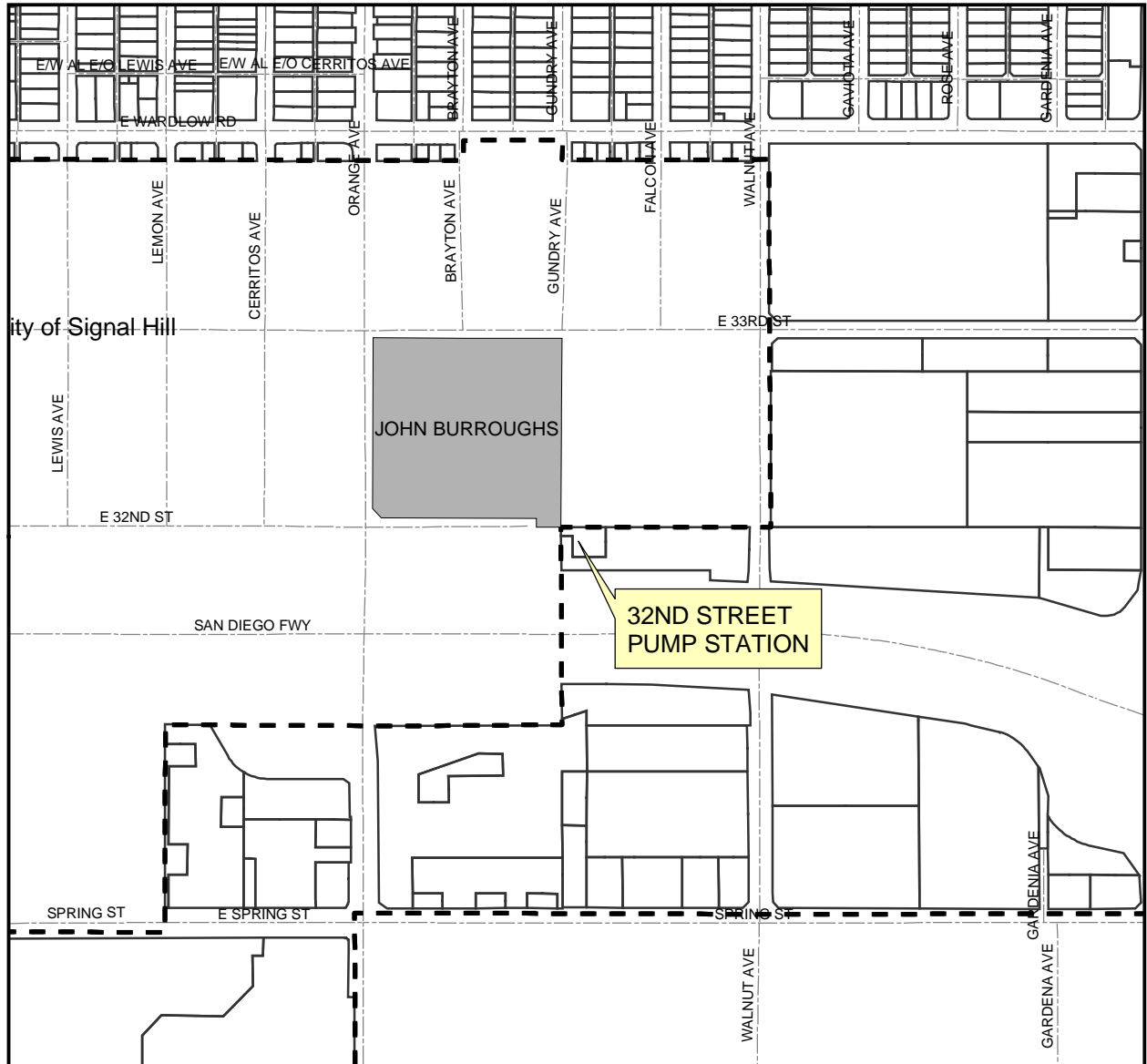
## WATER RESOURCES FACILITY IMPROVEMENTS

Project: 32nd Street Booster Pumps Upgrade

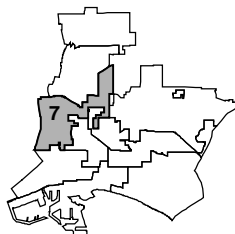
Location: E 32nd Street, East of Orange Avenue

Purpose: Upgrade inlet piping and replace pumps to improve reliability

FY 11/12 Estimate: \$315,000

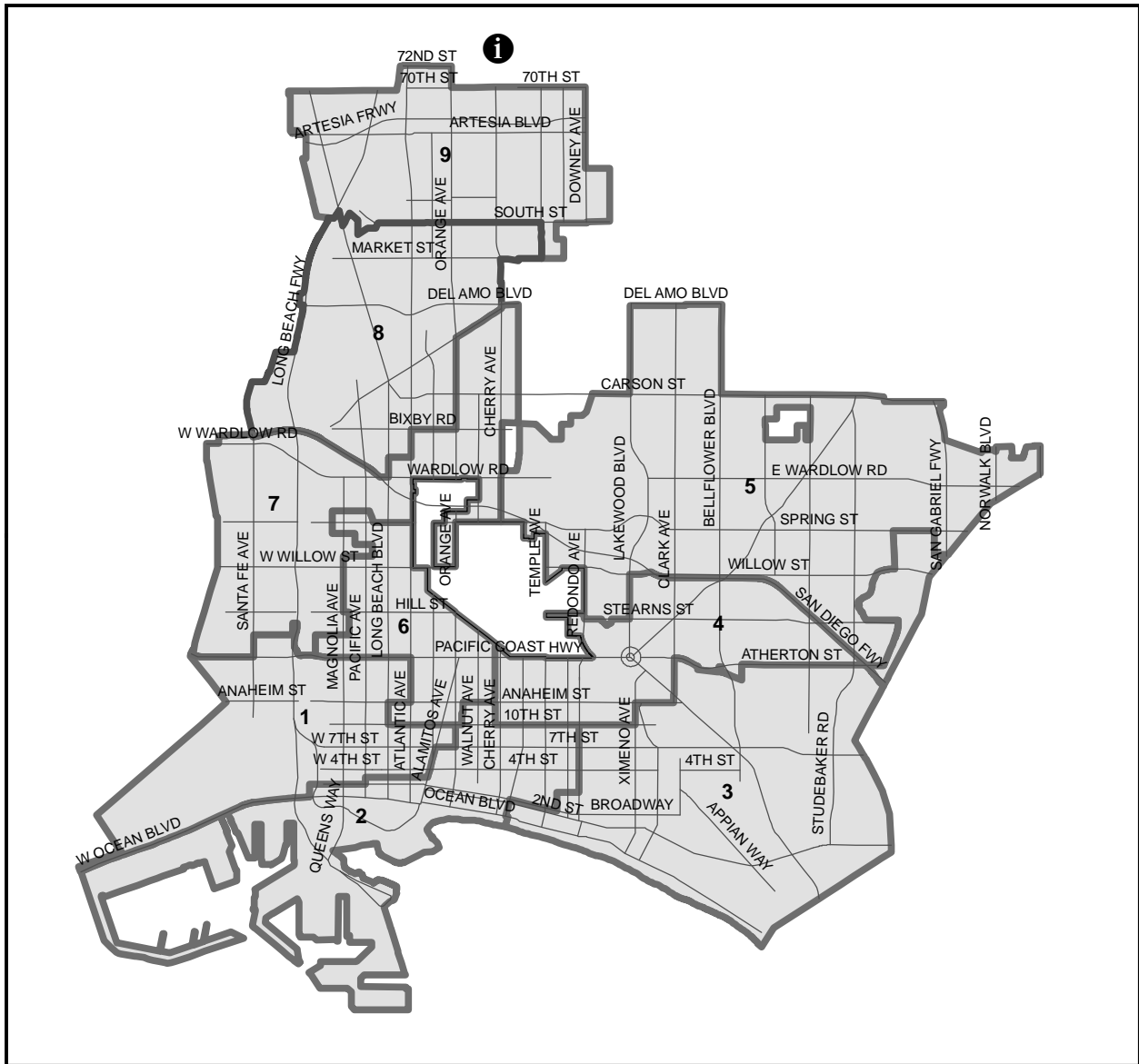


Council District(s)



# LBWD CAPITAL IMPROVEMENT PROJECTS - FY 11/12 WATER DISTRIBUTION SYSTEM IMPROVEMENTS

Project: Water Well  
 Location: City of Paramount  
 Purpose: Construct new water well to enhance future ground water production  
 FY 11/12 Estimate: \$2,600,000



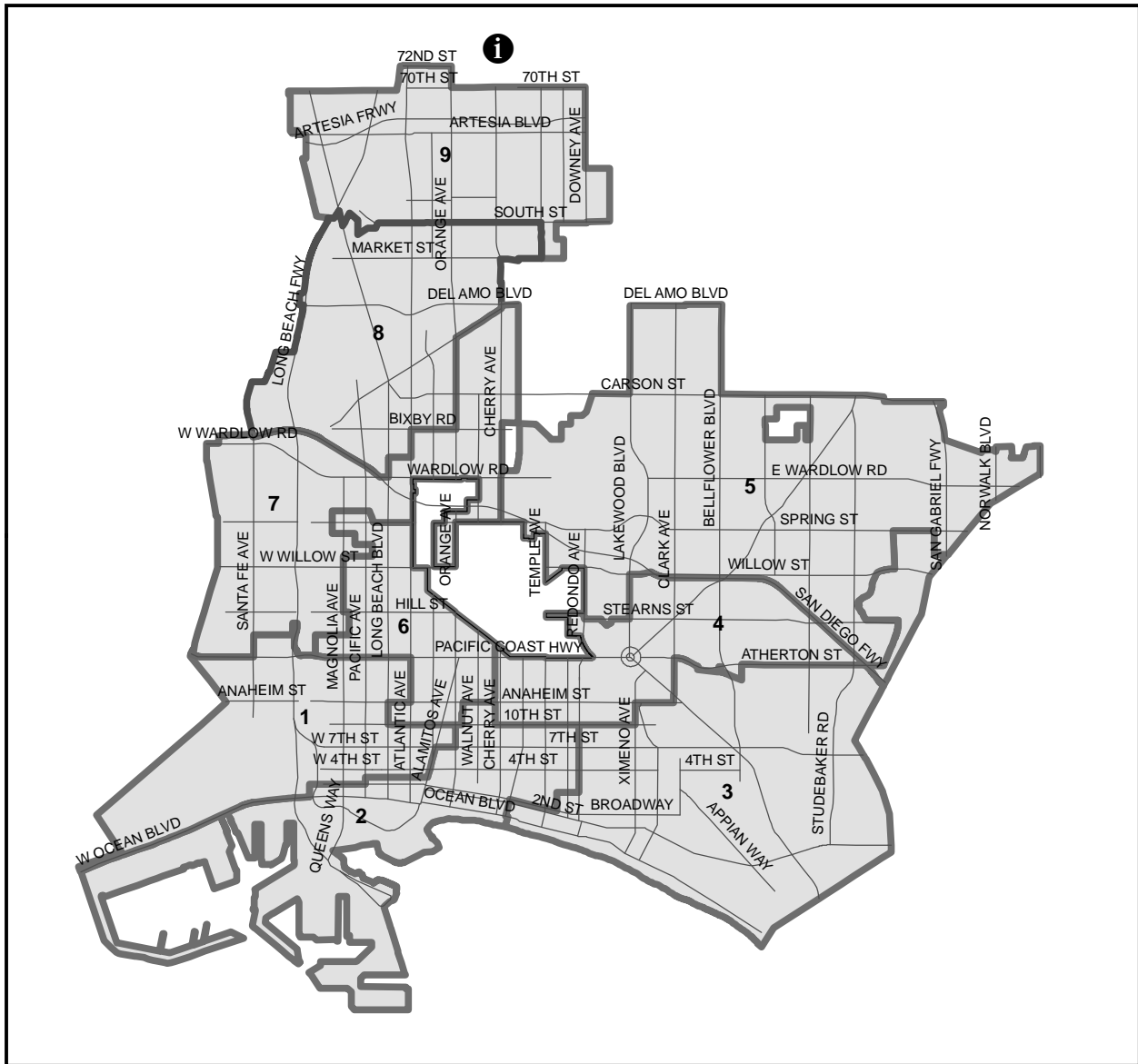
# LBWD CAPITAL IMPROVEMENT PROJECTS - FY 11/12 WATER DISTRIBUTION SYSTEM IMPROVEMENTS

Project: Water Well Treatment Facility or Water Well

Location: City of Paramount

Purpose: Construct new treatment facility for new water well as necessary or construct new water well to enhance future ground water production

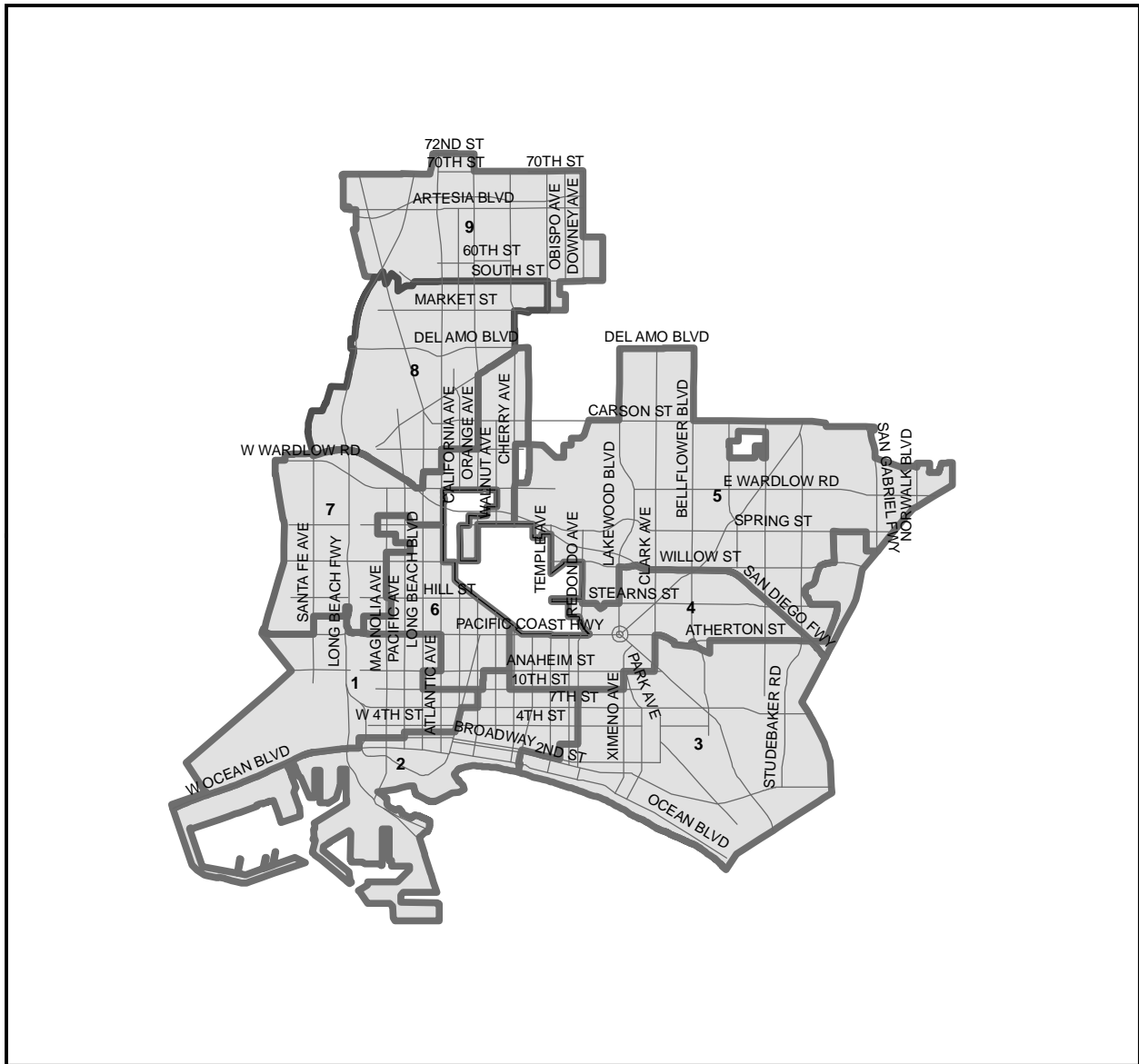
FY 11/12 Estimate: \$2,150,000



# LBWD CAPITAL IMPROVEMENT PROJECTS - FY 11/12

## WATER DISTRIBUTION SYSTEM IMPROVEMENTS

Project: Well Collection Main  
Location: To be determined  
Purpose: Construct well collection main for future ground water production from new water well  
FY 11/12 Estimate: \$300,000



# LBWD CAPITAL IMPROVEMENT PROJECTS - FY 11/12

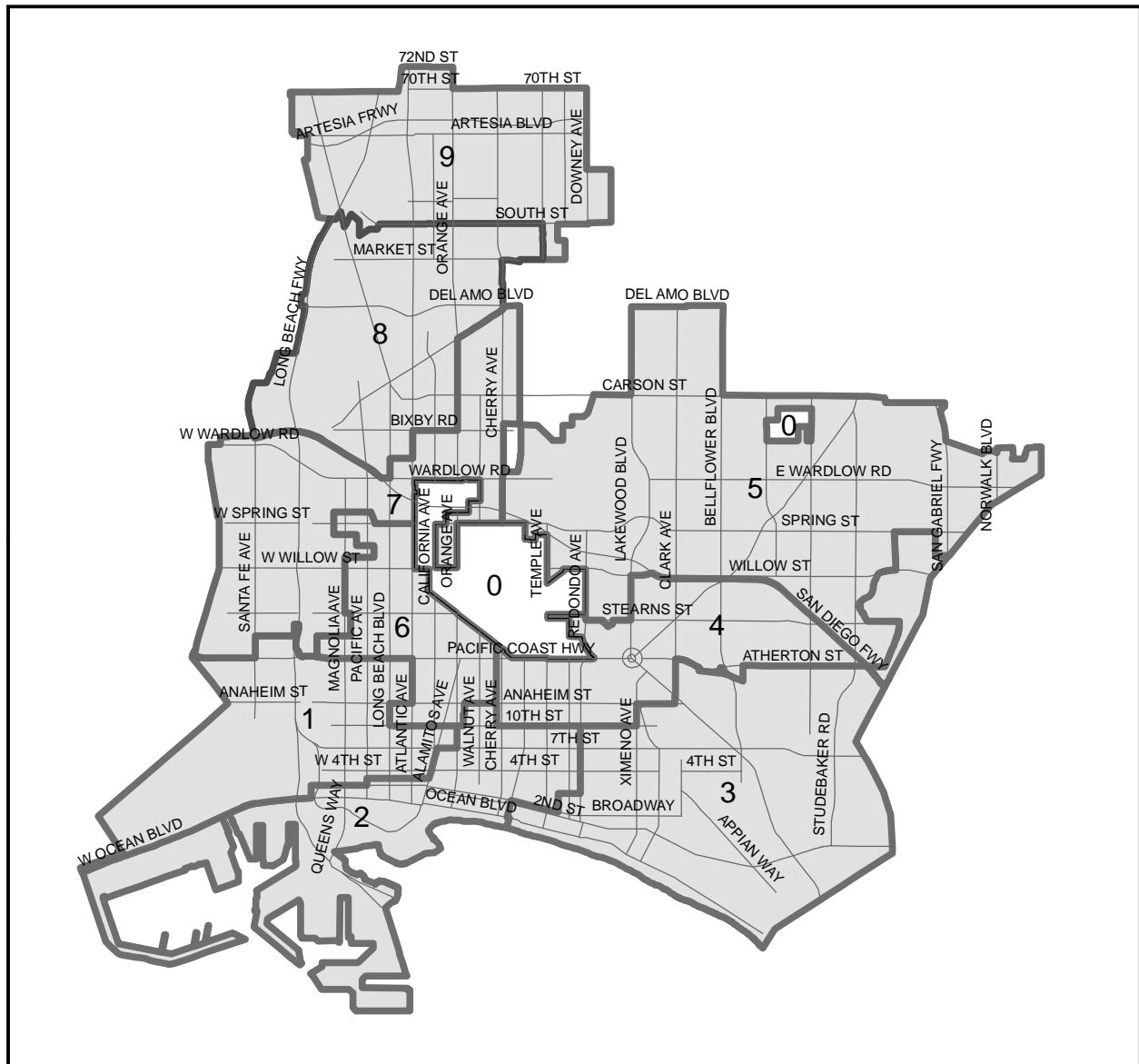
## WATER RESOURCES FACILITY IMPROVEMENTS

Project: Annual Water Well Rehabilitation

Location: Various

Purpose: Rehabilitate water wells to improve efficiency

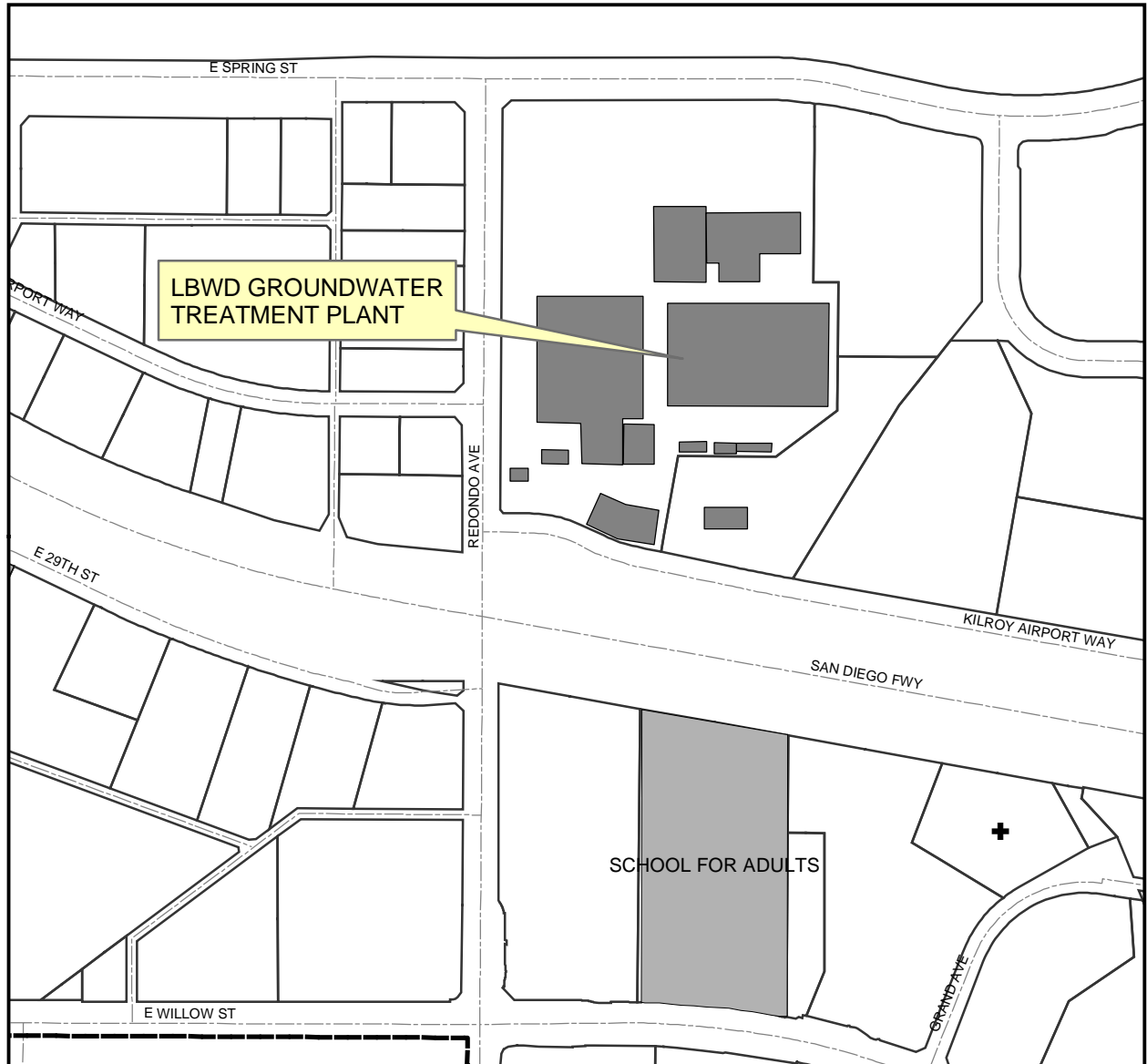
FY 11/12 Estimate: \$600,000



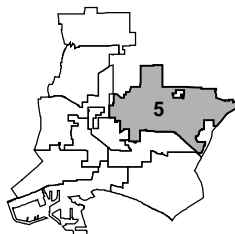
# LBWD CAPITAL IMPROVEMENT PROJECTS - FY 11/12

## WATER RESOURCES FACILITY IMPROVEMENTS

Project: Treatment Plant Cistern 3 Vaults Repair  
Location: LBWD Groundwater Treatment Plant  
Purpose: Repair and upgrade LBWD Groundwater Treatment Plant Cistern 3 vaults and piping  
FY 11/12 Estimate: \$780,000



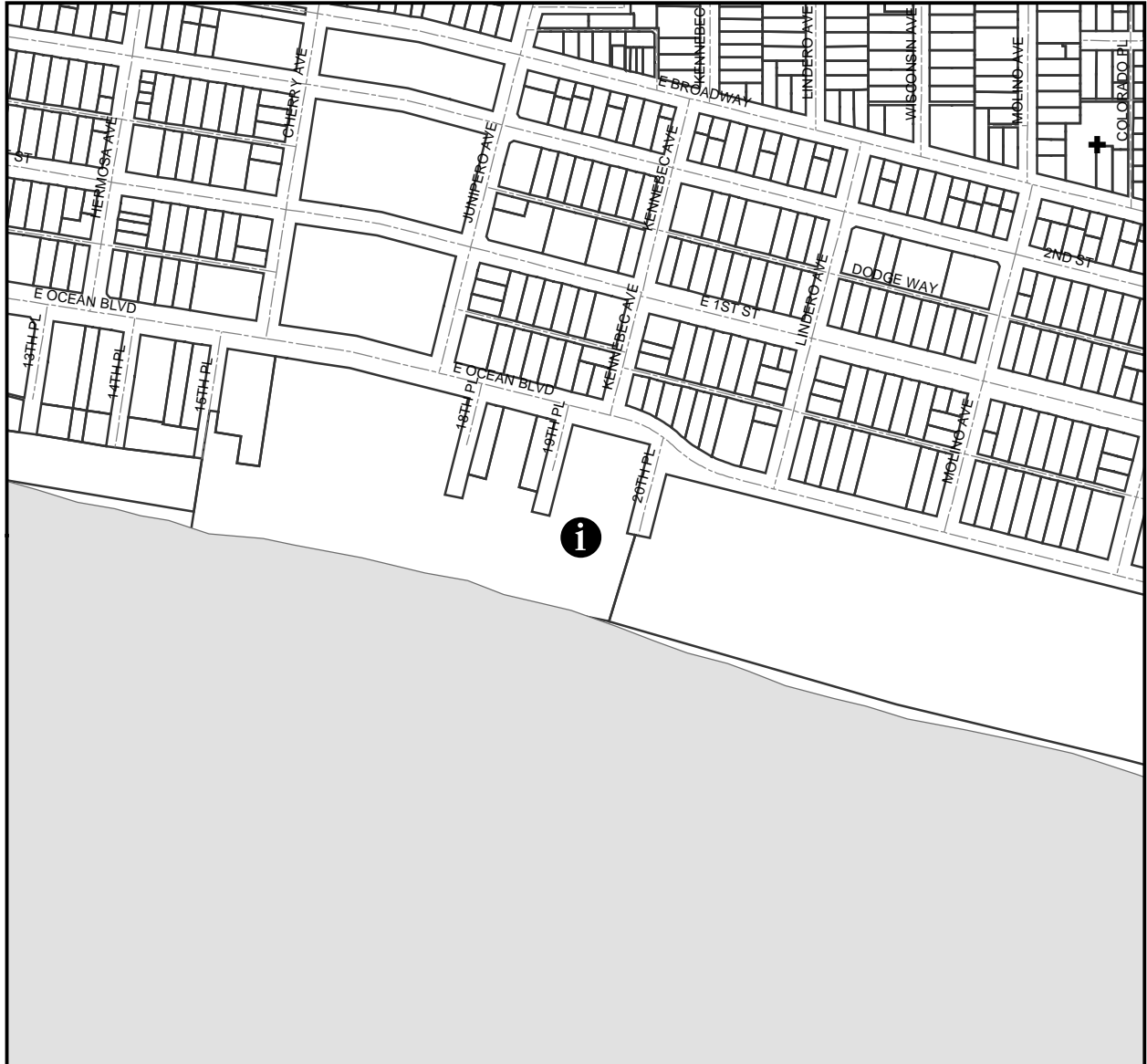
Council District(s)



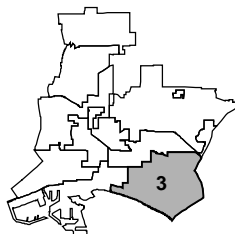
# LBWD CAPITAL IMPROVEMENT PROJECTS - FY 11/12

## WATER RESOURCES FACILITY IMPROVEMENTS

Project: Desalination - Subocean Floor Site Restoration  
Location: South of Bluff Park  
Purpose: Provide alternative water resources for the City of Long Beach  
FY 11/12 Estimate: \$1,600,000



Council District(s)



## Recycled Water Facility Improvements

LBWD will continue its leadership role in using recycled water for irrigation, industrial use, and mitigating ground subsidence in oil fields to conserve precious potable water. Projects in FY 11/12 will continue to expand the availability of recycled water to new customers as the need arises.



Long Beach Water Department  
 FY 2011/12

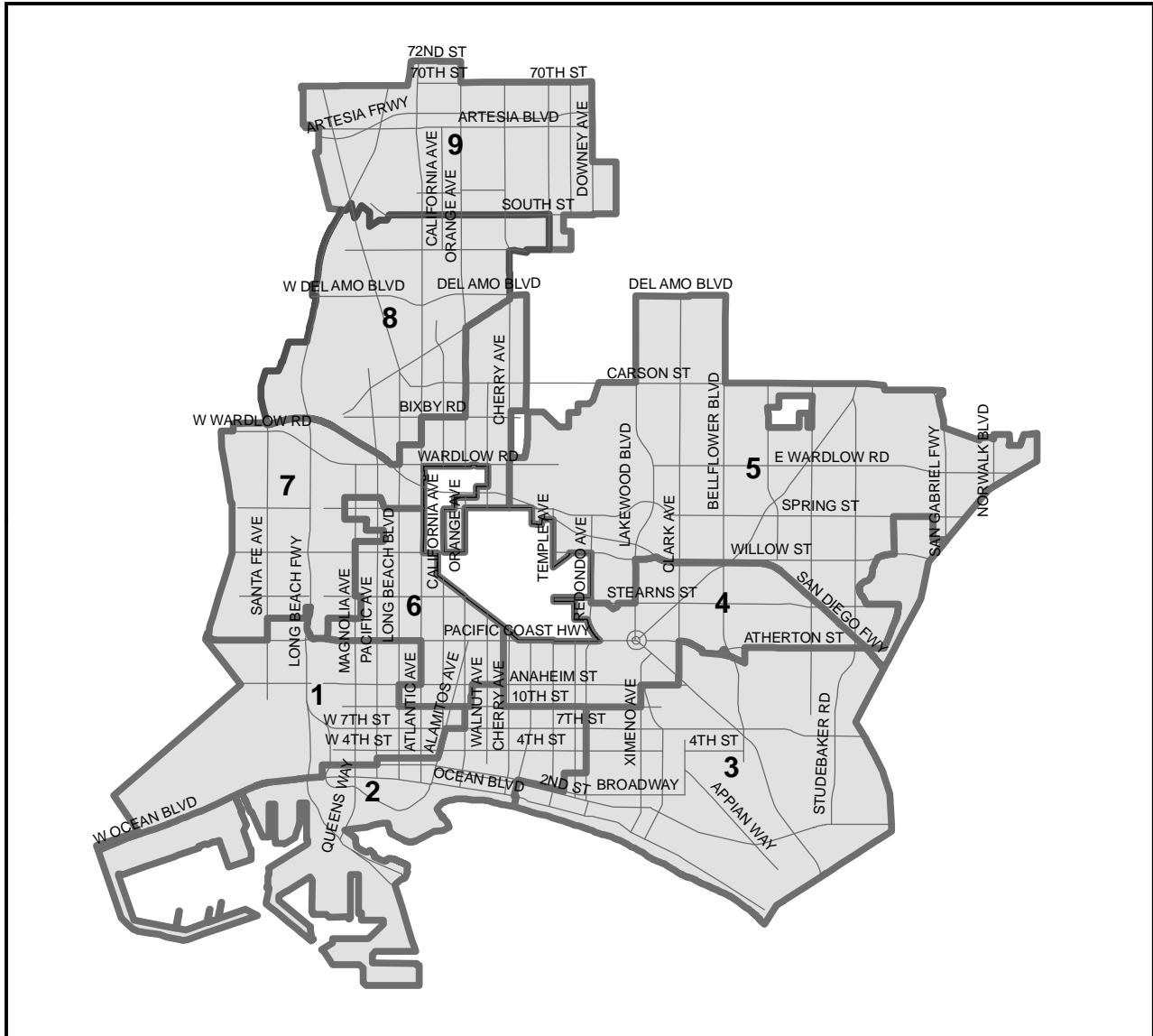
Capital Improvement Program

Recycled Water Facility Improvements - Project List

PROJECT	LOCATION	COUNCIL DISTRICT	COST ESTIMATE
Recycled Water System Expansion Phase 2	Various	Various	\$ 1,750,000
Service Connections	Various	Various	\$ 100,000
Automated Meter Reading (AMR)	Various	Various	\$ 270,000
		<b>Total</b>	<b>\$ 2,120,000</b>

# LBWD CAPITAL IMPROVEMENT PROJECTS - FY 11/12 RECYCLED WATER FACILITY IMPROVEMENTS

Project: Recycled Water System Expansion Phase 2  
 Location: Various  
 Purpose: Expand recycled water distribution system  
 FY 11/12 Estimate: \$1,750,000



# LBWD CAPITAL IMPROVEMENT PROJECTS - FY 11/12

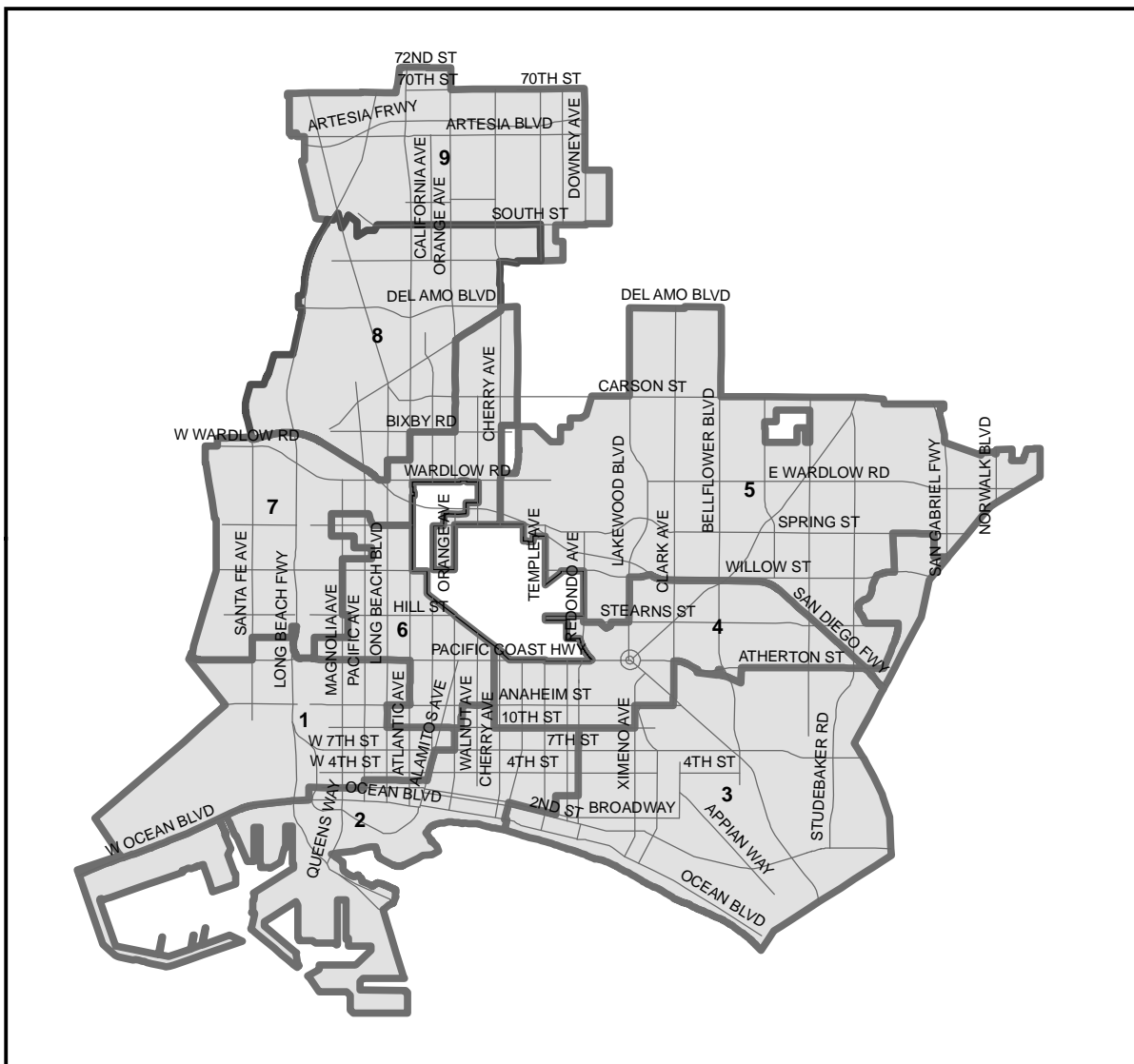
## RECYCLED WATER FACILITY IMPROVEMENTS

Project: Service Connections

Location: Various

Purpose: Convert existing potable water landscape irrigation systems to recycled water

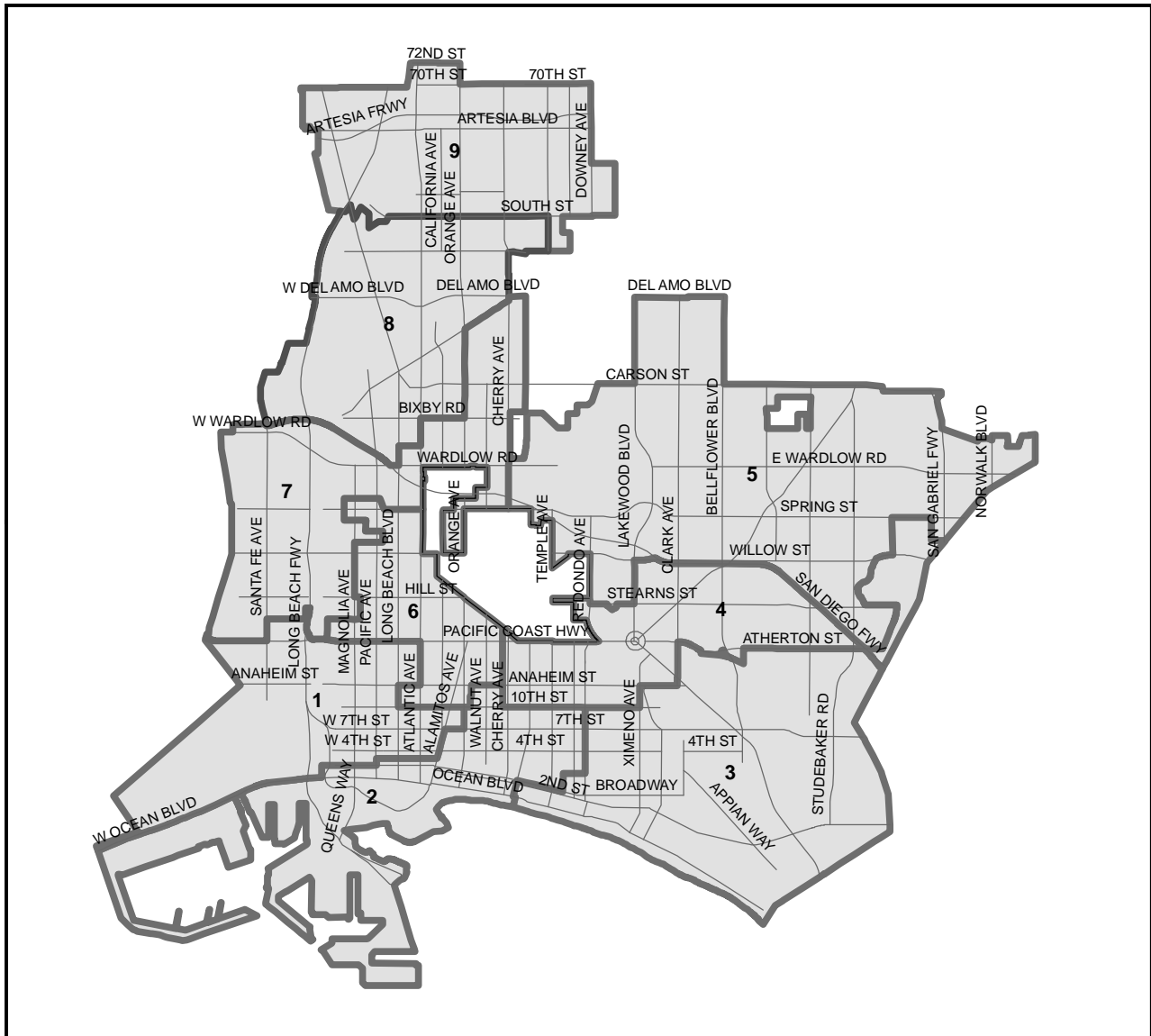
FY 11/12 Estimate: \$100,000



# LBWD CAPITAL IMPROVEMENT PROJECTS - FY 11/12

## RECYCLED WATER FACILITY IMPROVEMENTS

Project: Automated Meter Reading (AMR)  
Location: Various  
Purpose: Install automated data collectors for recycled water meters  
FY 11/12 Estimate: \$270,000



## Sewer System Improvements

In order to maintain sanitary sewer system reliability and capacity, and be in compliance with the State of California's Waste Discharge Requirements, it is LBWD's priority to overhaul deficient and aging sewer infrastructure. Projects in the forthcoming year include the upsizing of sewer mains at Orange Avenue and 7<sup>th</sup> Street, and a number of sewer main rehabilitation and replacement projects throughout the City.



**Long Beach Water Department**  
**FY 2011/12**  
**Capital Improvement Program**  
 Sewer System Improvements - Project List

PROJECT	LOCATION	COUNCIL DISTRICT	COST ESTIMATE
Orange Avenue/7th Street Sewer Improvements	Orange Avenue and 7th Street	1, 2, 6	\$ 1,750,000
W 28th Street Sewer Improvements	Eucalyptus Avenue to Pine Avenue	6, 7	\$ 472,000
Walnut Avenue/Orange Avenue/Del Amo Boulevard Sewer Improvements	Orange Avenue and Del Amo Boulevard	8	\$ 480,000
15th Street/Cherry Avenue Sewer Improvements	15th Street and Cherry Avenue	4	\$ 72,000
Annual Sewer Relocations	Various	Various	\$ 124,000
Annual Developer Sewer Projects	Various	Various	\$ 124,000
Annual Cement Pipe Rehabilitation	Various	Various	\$ 2,400,000
Annual Cement Pipe Replacement	Various	Various	\$ 970,000
Manhole Rehabilitation	Various	Various	\$ 125,000
Clay Pipe Replacement and Rehabilitation	Various	Various	\$ 70,000
	<b>Total</b>		<b>\$ 6,587,000</b>

# LBWD CAPITAL IMPROVEMENT PROJECTS - FY 11/12

## SEWER SYSTEM IMPROVEMENTS

Project: Orange Avenue/7th Street Sewer Improvements

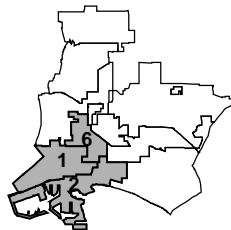
Location: Orange Avenue and 7th Street

Purpose: Upsize sewer mains from 24-inch to 30-inch and from 8-inch to 12-inch to improve the reliability and capacity of the existing sanitary sewer system

FY 11/12 Estimate: \$1,750,000



Council District(s)



# LBWD CAPITAL IMPROVEMENT PROJECTS - FY 11/12 SEWER SYSTEM IMPROVEMENTS

Project: 28th Street Sewer Improvements

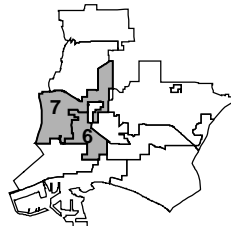
Location: W 28th Street from Eucalyptus Avenue to Pine Avenue

Purpose: Upsize sewer main from 12-inch to 15-inch to improve reliability and capacity of the existing sanitary sewer system

FY 11/12 Estimate: \$472,000



Council District(s)



# LBWD CAPITAL IMPROVEMENT PROJECTS - FY 11/12

## SEWER SYSTEM IMPROVEMENTS

**Project:** Orange Avenue/Del Amo Boulevard/Walnut Avenue Sewer Improvements

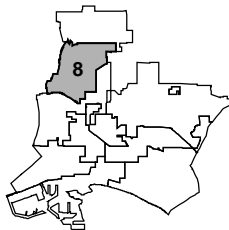
**Location:** Orange Avenue, Del Amo Boulevard and Walnut Avenue

**Purpose:** Add new 12-inch relief line and upsize sewer main from 8-inch to 12-inch to improve the reliability and capacity of the existing sanitary sewer system

**FY 11/12 Estimate:** \$ 480,000



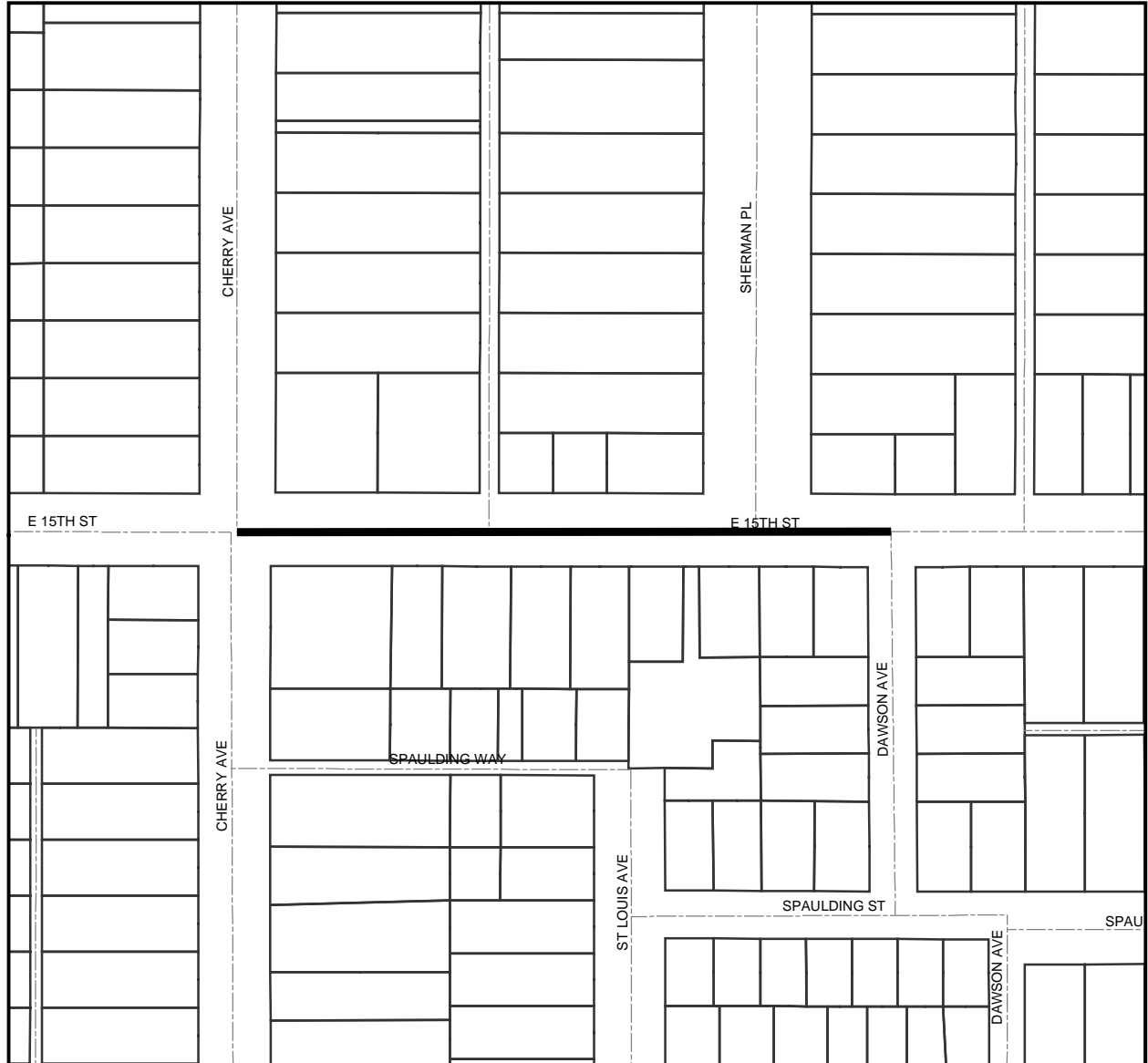
**Council District(s)**



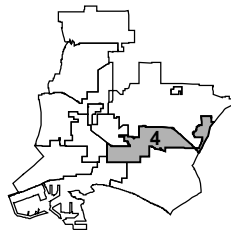
# LBWD CAPITAL IMPROVEMENT PROJECTS - FY 11/12

## SEWER SYSTEM IMPROVEMENTS

Project: 15th Street/Cherry Avenue Sewer Improvements  
Location: 15th Street/Cherry Avenue  
Purpose: Upsize sewer mains from 8-inch to 12-inch to improve the reliability and capacity of the existing sanitary sewer system  
FY 11/12 Estimate: \$72,000



Council District(s)



# LBWD CAPITAL IMPROVEMENT PROJECTS - FY 11/12

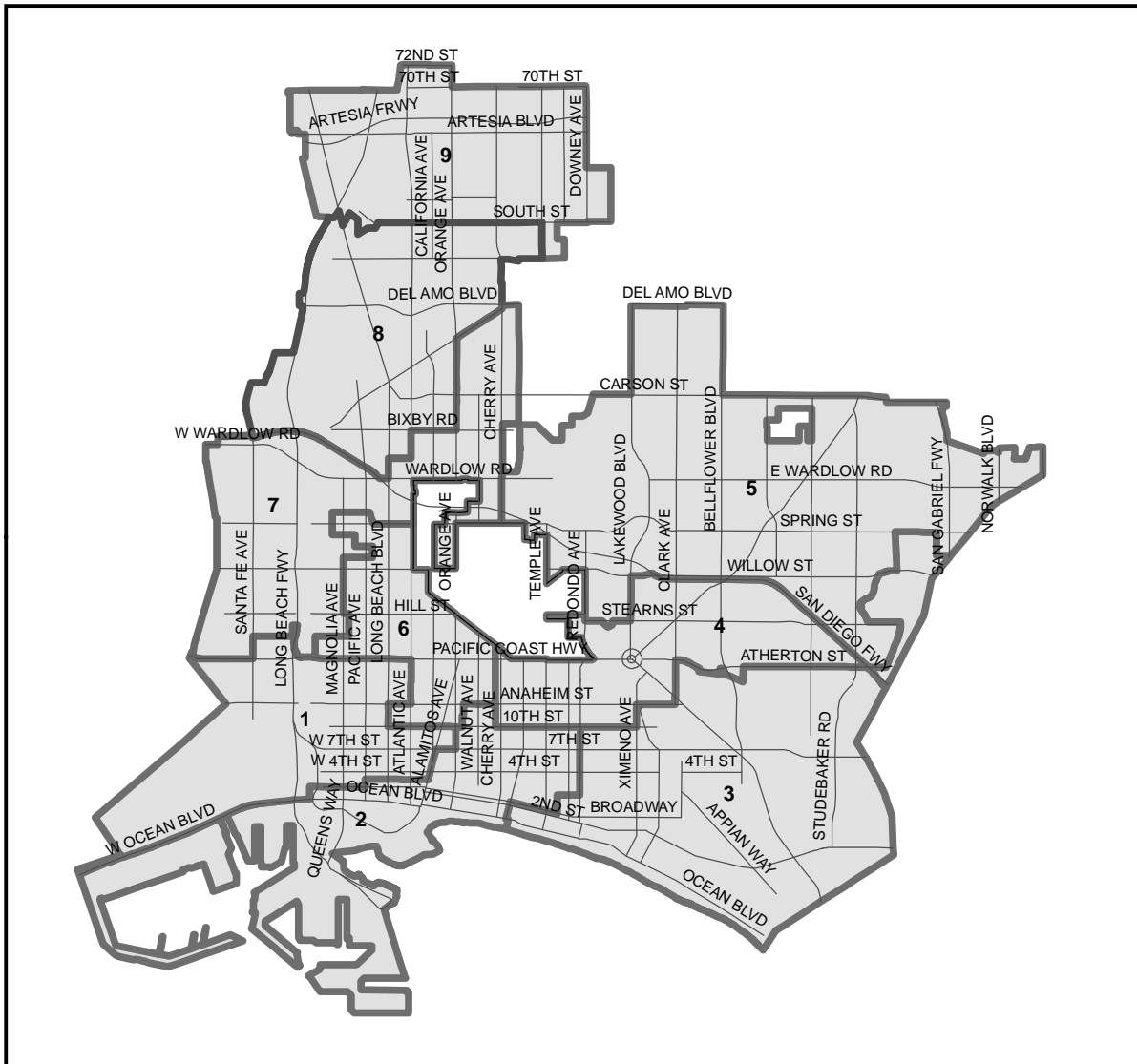
## SEWER SYSTEM IMPROVEMENTS

Project: Annual Cement Pipe Rehabilitation

Location: Various

Purpose: Point repair and/or rehabilitate by lining of existing cement pipes

FY 11/12 Estimate: \$2,400,000



# LBWD CAPITAL IMPROVEMENT PROJECTS - FY 11/12

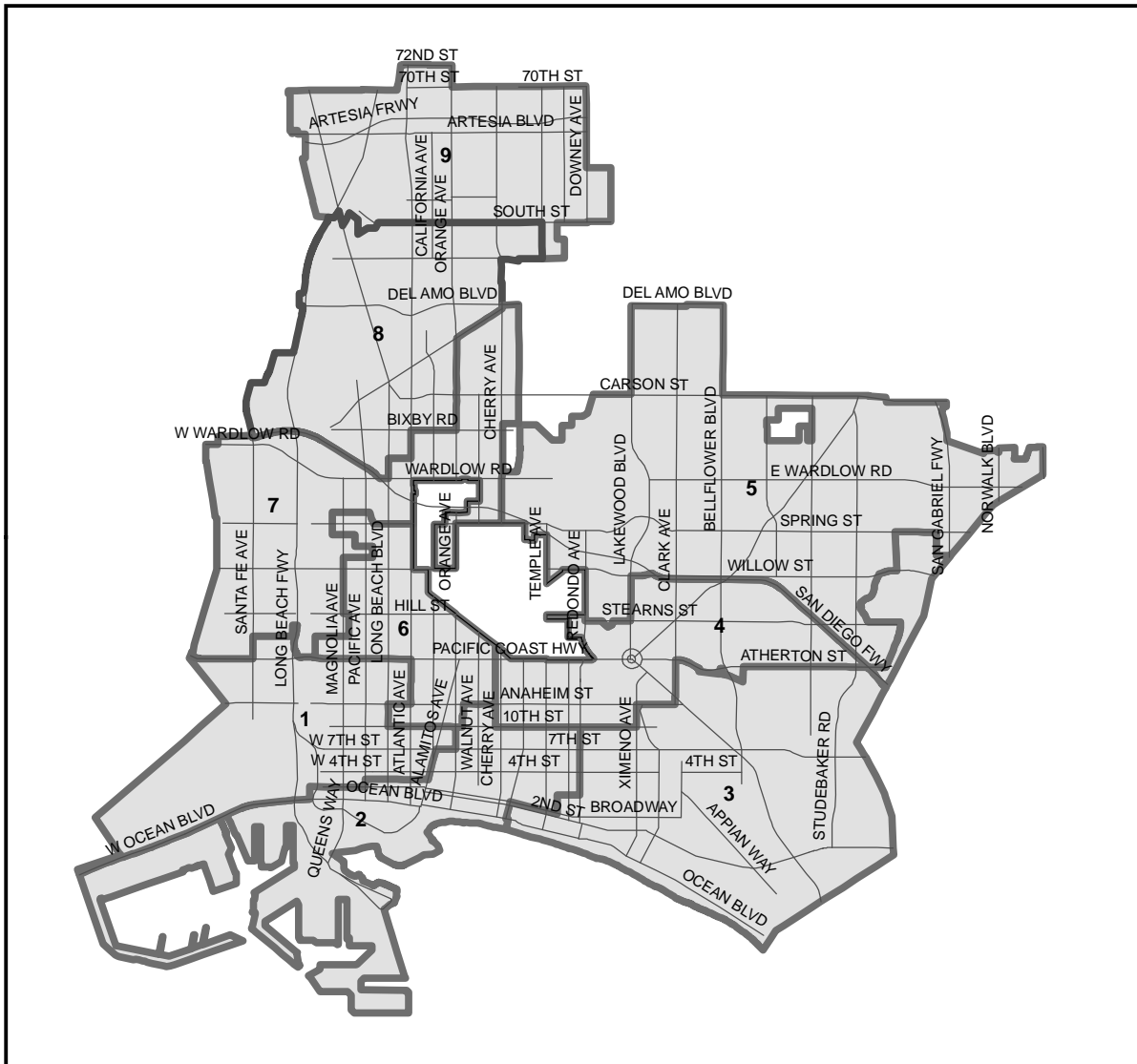
## SEWER SYSTEM IMPROVEMENTS

Project: Annual Cement Pipe Replacement

Location: Various

Purpose: Replace existing cement pipes that cannot be rehabilitated

FY 11/12 Estimate: \$970,000



## Facility Improvements

Facility improvements are associated with upgrades and repairs of existing operations and support facility infrastructure. These improvements will include roof repairs for LBWD facilities, server room, and Operations Service Center (OSC) asphalt replacement.



Long Beach Water Department  
 FY 2011/12

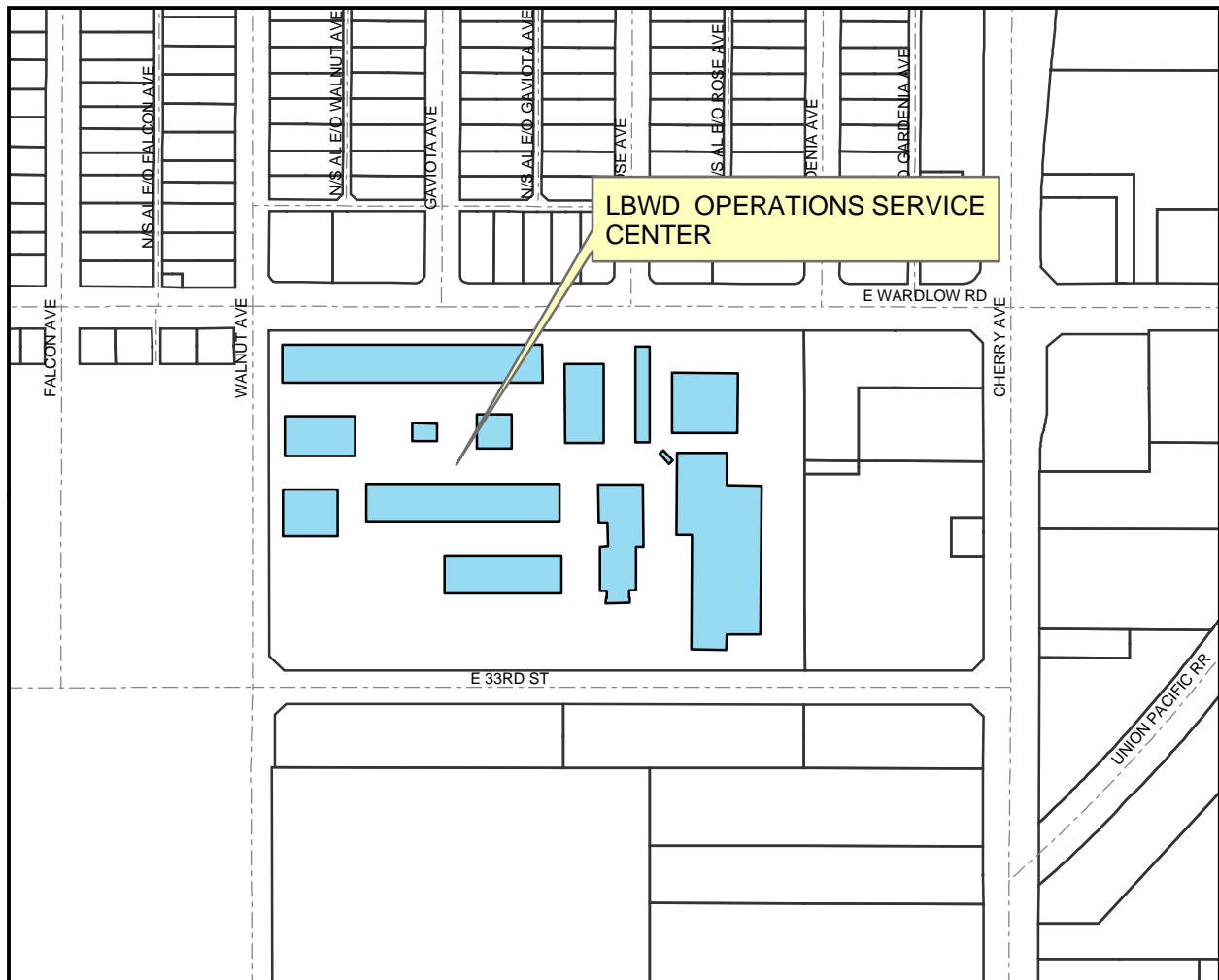
Capital Improvement Program  
 Facility Improvements - Project List

PROJECT	LOCATION	COUNCIL DISTRICT	COST ESTIMATE
Garage Door Replacements	LBWD Operations Service Center	7	\$ 120,000
Warehouse/Administration Building Roof Repair	LBWD Administration Building and Operations Service Center	7	\$ 500,000
OSC Asphalt Replacement	LBWD Operations Service Center	7	\$ 210,000
MIS Server Room	LBWD Operations Service Center	7	\$ 600,000
	<b>Total</b>		<b>\$ 1,430,000</b>

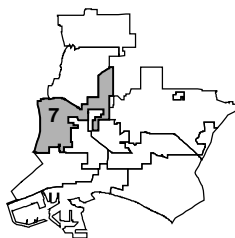
# LBWD CAPITAL IMPROVEMENT PROJECTS - FY 11/12

## FACILITY IMPROVEMENTS

Project: Garage Door Replacement  
Location: LBWD Operations Service Center  
Purpose: Repair/Upgrade existing facilities  
FY 11/12 Estimate: \$120,000



Council District(s)



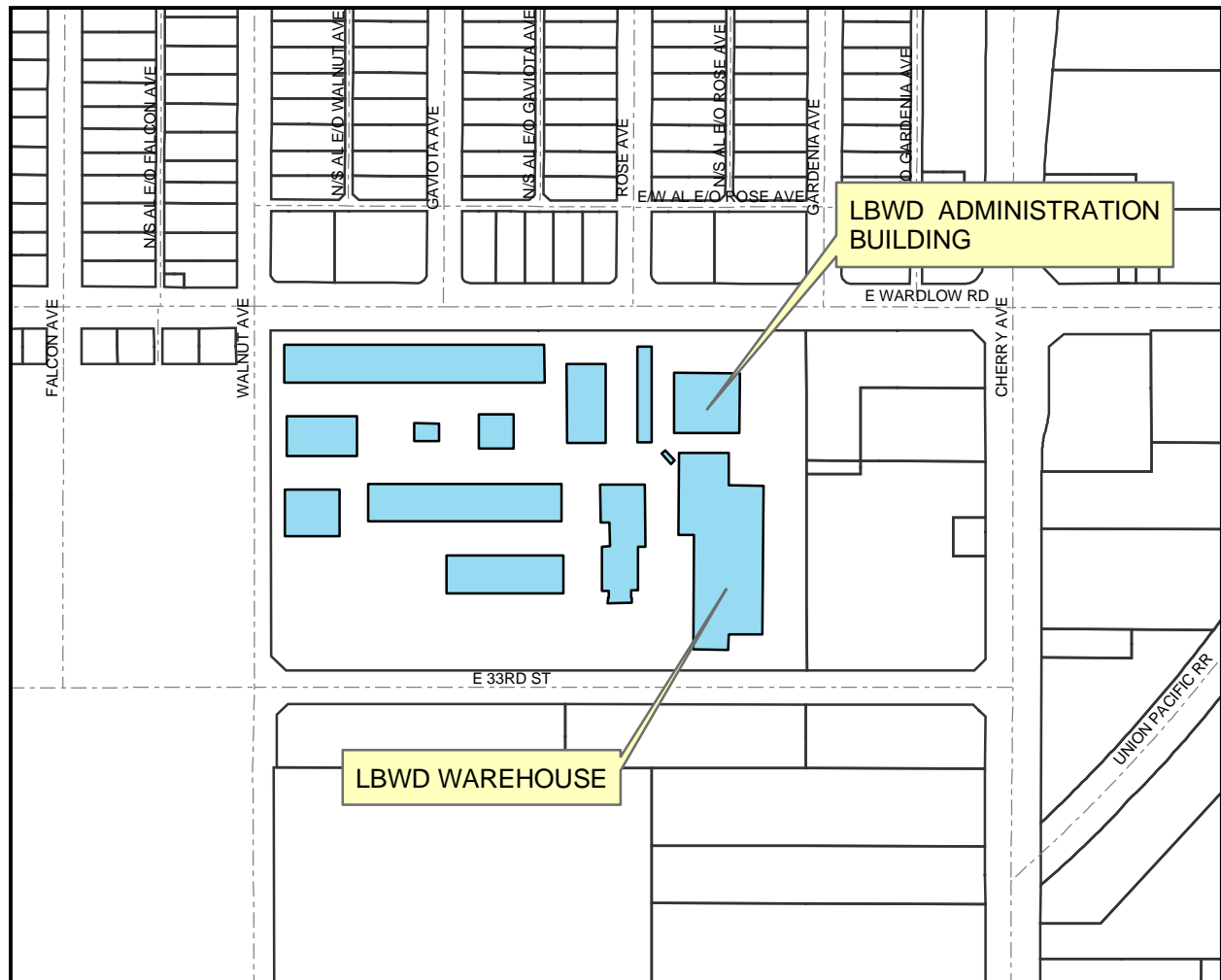
# LBWD CAPITAL IMPROVEMENT PROJECTS - FY 11/12 FACILITY IMPROVEMENTS

Project: Warehouse / Administration Building Roof Repair

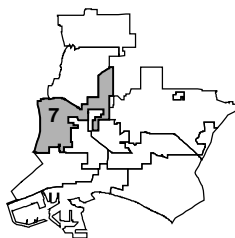
Location: LBWD Administration Building and Warehouse

Purpose: Repair/Upgrade existing facilities

FY 11/12 Estimate: \$500,000



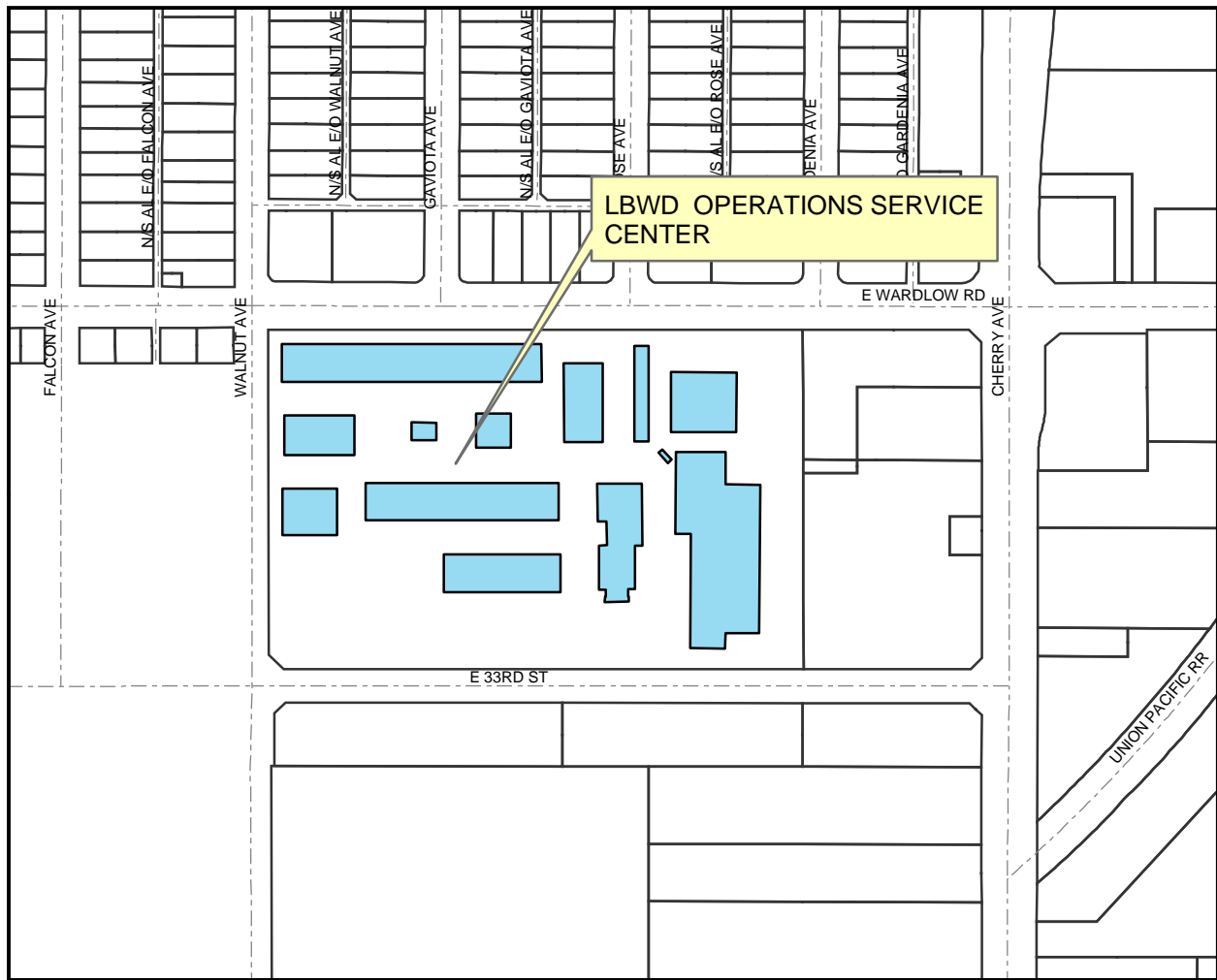
Council District(s)



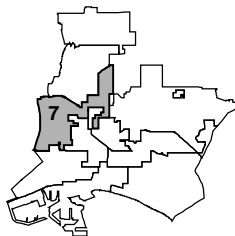
# LBWD CAPITAL IMPROVEMENT PROJECTS - FY 11/12

## FACILITY IMPROVEMENTS

Project: OSC Asphalt Replacement  
Location: LBWD Operations Service Center  
Purpose: Repair/Upgrade existing facilities  
FY 11/12 Estimate: \$210,000



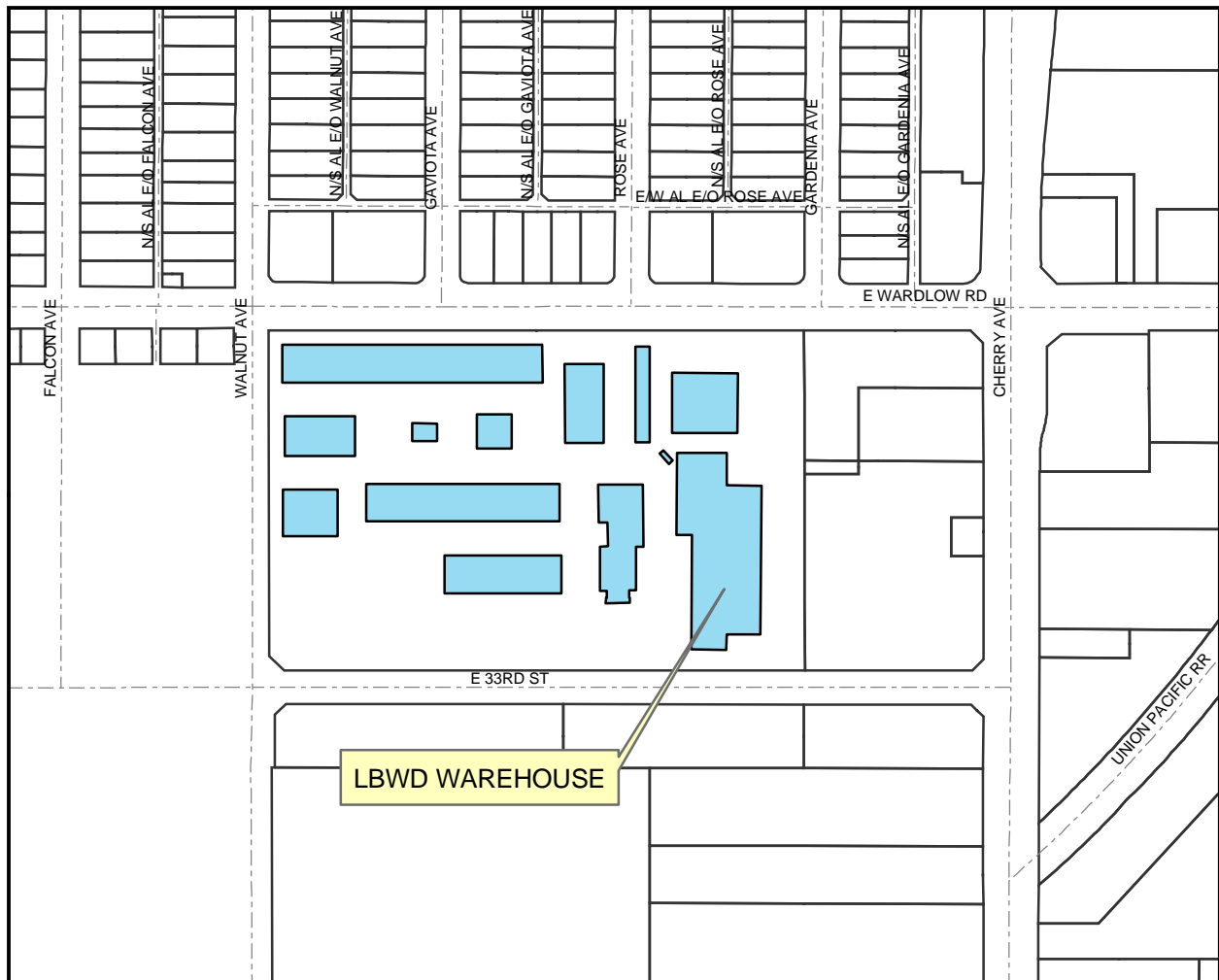
Council District(s)



# LBWD CAPITAL IMPROVEMENT PROJECTS - FY 11/12

## FACILITY IMPROVEMENTS

Project: Server Room  
Location: LBWD Warehouse  
Purpose: Repair/Upgrade existing facilities  
FY 11/12 Estimate: \$600,000



Council District(s)

