Appendix N-2

MARB Water Master Plan

MARB Water Master Plan

Prepared for:

WESTERN MUNICIPAL WATER DISTRICT
14205 Meridian Parkway.
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SECTION 1 - EXECUTIVE SUMMARY

ULTIMATE DEMAND

Ultimate water demand for the MARB Water Master Plan area based on existing best available land use projections is estimated at 3,303 ac-ft/yr for 4,129 EDU's on 1,354.5 acres.

PROJECT COST

The total project cost of facilities improvements for the ultimate system is estimated at $14,890,000 excluding any applicable charges for water supply.

SECTION 2 - SCOPE OF WORK

The objective of this report is to develop a water Master Plan for the MARB service area within Western Municipal Water District's service area. The study boundaries include all areas east of the I-215 freeway on the former March Air Force Base served by Western. Data developed for required facilities cost will be used to develop connection fees needed to fund construction of the water supply, transmission and storage facilities outlined in this report.

Develop a data base of land use and water demand within the study area.
Determine Ultimate Water Demand (average day, maximum day and peak hour)
Determine Pumping, storage and Pipeline Requirements
Evaluate emergency / redundant facilities and pressure zone interconnections.
Prepare Cost Estimates for facilities proposed.
Calculate Connection Fee estimates on a per acre basis.

SECTION 3 - STUDY AREA AND BACKGROUND

The study area is given in **Figure 1**. The study area includes the March Air Reserve Base (MARB) and lands within March Joint Powers Authority (MJPA) jurisdictional east of the I-215 freeway served by Western Municipal Water District. The area is generally bordered by Cactus Ave on the north, Heacock Ave on the east, Oleander Ave on the south and the I-215 Freeway on the west. The area is approximately 2,938 acres total. A portion of this property (1,548 acres) is allocated to runway/aircraft operations with virtually no daily water demand, except for water system extensions onto the air field for fire protection only. The net area used to determine anticipated water demand is 1,390 acres.

After MAFB was re-aligned by the Department of Defense to an air reserve base, the water and wastewater systems were transferred to Western's ownership. The focus of this study is a water master plan to serve all areas east of the I-215 freeway that were formerly part of MAFB as given in Figure 1.

Historically, March Air Force Base (MAFB) owned and operated a water distribution system for the entire base, including land west of the I-215 freeway. Facilities were first constructed more than fifty years ago when development of the base first began on the east side of the air field. As the base expanded and water demand increased, MAFB expanded its distribution system and constructed its own water treatment plant and an accompanying raw water supply pipeline from MWD's Lake Mathews. This water treatment plant was later shut down when MAFB obtained treated potable water from local water purveyors. MAFB acquired a 10 cfs water conveyance right through EMWD's 54-inch pipeline from MWD's Mills Water Treatment Plant. Several connections were developed with EMWD (Westgate and Eastgate) to convey up to 10 cfs into the MAFB system. Western has acquired this 10 cfs conveyance capacity right as part of the transfer agreement.

MAFB operated three separate pressure zones; 1695' for a majority of the base, and two higher zones for the SAC Headquarters and Weapons Storage Area, both on the far west side of the system. The SAC Headquarters area has been transferred to local jurisdiction and is now the Ben

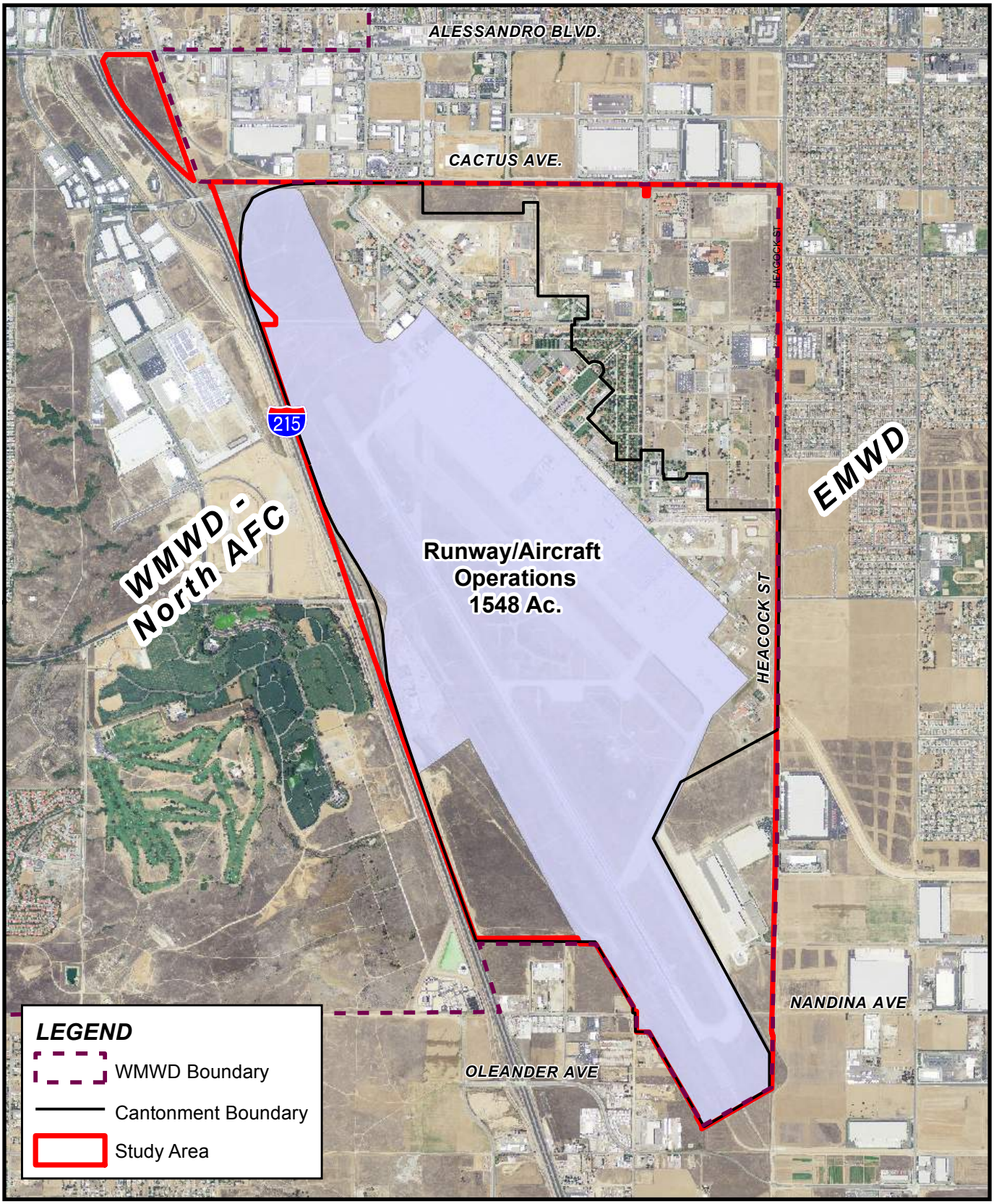
Clark Training Center (BCTC). The Weapons Storage Area has been transferred to MJPA and currently receives no water service.

Essentially, all land west of the I-215 freeway has been transferred to local agency control or retained by Veterans Administration for the Riverside National Cemetery. It is anticipated that as any developable land will be re-developed for civilian uses, all of the former MAFB water facilities will be either abandoned, replaced or incorporated into Western's 1837' or 1900' pressure zones. Detailed assessment and master planning of this west area is beyond the scope of this report. A brief summary follows.

As Western expanded its 1900' pressure zone facilities to AFVW, the higher pressure zone for SAC Headquarters was integrated into Western's 1900' pressure zone via master metered connections. Western has recently supported the expansion of BCTC and integration of the accompanying water facilities into its 1900' pressure zone facilities. The former 3411 pump station was converted into a PRV station, supplying water to the 1695' pressure zone from the 1900' pressure zone. Western has converted the 1695' pressure zone to the 1700' pressure zone.

MJPA and LNR are redeveloping approximately 1,250 acres into commercial and industrial uses. As part of the Meridian project, essentially all of the existing water facilities are being abandoned and new pipelines are being constructed with the 1837' and 1900' pressure zones. A new PRV station has been constructed on Opportunity Way, serving the 1700' pressure zone from the 1837' pressure zone.

The Weapons Storage Area has been since shut down and its water supply system has been abandoned. There are no current development plans for this area. If the former Weapons Storage Area is redeveloped in the future, any new water system will have to be incorporated into Western's 1900' and 1837' pressure zones.



Sources: WMWD, 2008; MARB, 2007; NAIP, 2012.

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Figure 1

MARB Water Master Plan Study Area

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SECTION 4 - PRESSURE ZONE

The majority of MARB area will be served by one pressure zone at an approximate hydraulic grade of 1700'. Historically, the area was served at a hydraulic grade of 1695' when the Air Force operated its elevated storage tank located near the intersection of Graeber and Meyer at the Water Department site in the main part of the base. Since Western has removed the elevated storage tank from service due to its poor condition, the system has been operated at a hydraulic grade at approximately 1700' HGL with water supplied now from the 1837' pressure zone through a pressure reducing valve at Opportunity Way. Supplemental water is supplied from MWD through EMWD's transmission pipeline at the existing Westgate connection. When the MARB system pressures drop below EMWD's system pressures because of high demand, water flows through a meter and check valve assembly.

A significant portion of the existing MARB distribution system contains old small diameter cast iron pipelines. A number of other pipeline materials have been found; including AC pipe, PVC, and galvanized. Many of these pipelines are beyond their typical life expectancy. Numerous leaks have been repaired on these failing pipelines. Increasing the hydraulic grade of the pressure zone by either adjusting the PRV's downstream pressure or boosting system pressures by some other means is not recommended to avoid additional pipeline failures of these old pipelines. Therefore, it is recommended that the hydraulic grade of this pressure zone remain at 1700' until such time as all of the existing pipelines are replaced.

Based on available pipeline infrastructure, the parcel north of Cactus (MJPA D-3, 35.5 acres) will be best served from the existing 1837' pressure zone or EMWD's 1764' pressure zone. The developer of the MJPA D-3 parcel will be required to construct two connections as determined appropriate at the time of construction. Therefore, this parcel has been excluded from the detailed calculations for the 1700' pressure zone and MARB fee calculations. An appropriate connection fee for Parcel D-3 can be based on similar assumptions used for the Meridian project.

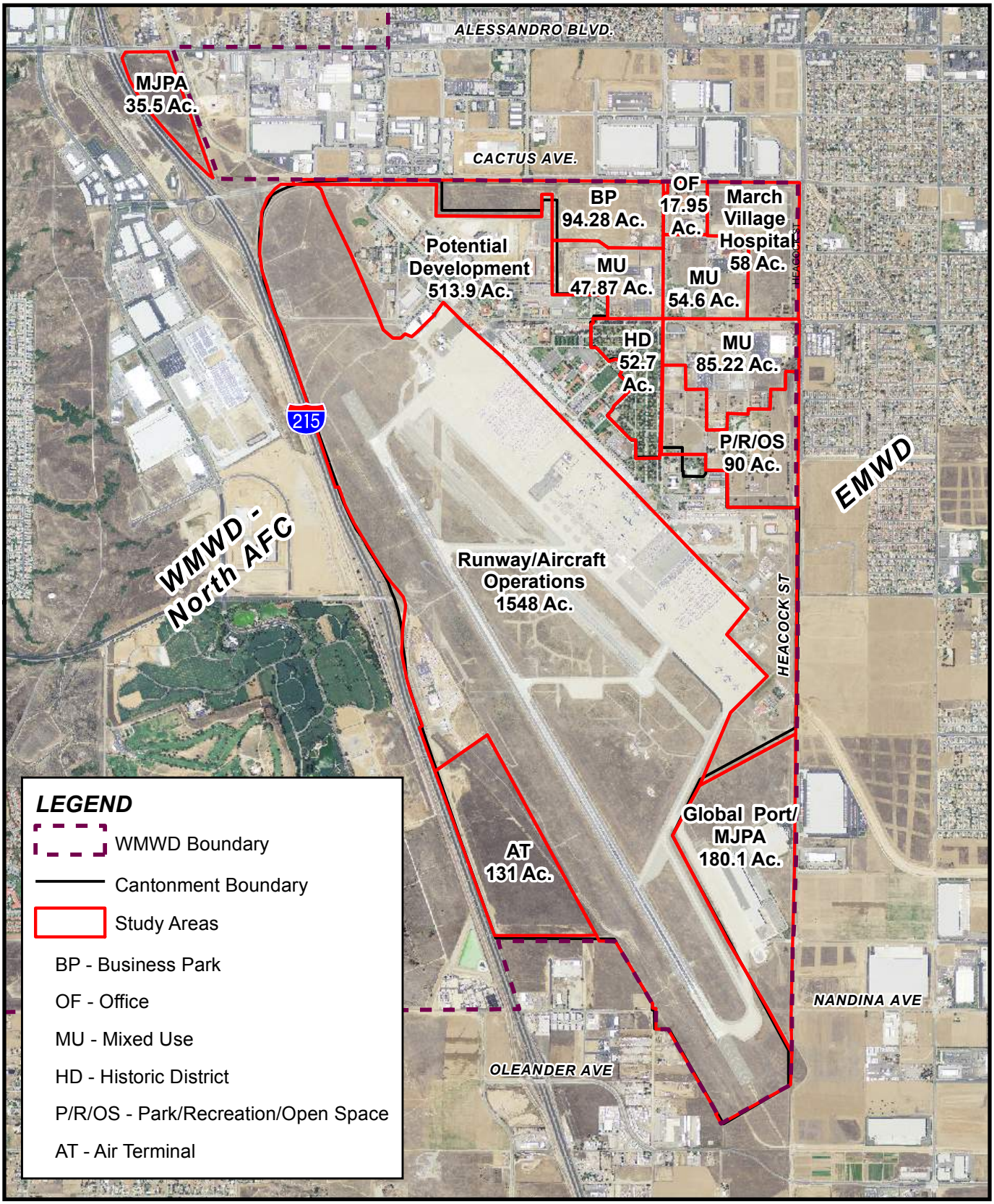
SECTION 5 - EDU DEFINITION AND UNIT WATER DEMAND

The Equivalent Dwelling Unit (EDU) used for this report matches the EDU used for the North Added Facilities Area Master Plan report, dated June 2014. An EDU has an annual unit water demand of 0.80 ac-ft/yr/EDU. As with the North Added Facilities Master Plan report, the EDU is defined as a 7,000 sq-ft residential lot. This unit water demand was determined using the average water demand of over 1,800 active Western water service customers within Sections 21 and 22 of Township 3 South, Range 4 West for the water year 2000.

SECTION 6 - PROJECTED ULTIMATE WATER DEMAND

Land use acreages have been determined using the applicable MJPA planning documents summarized in **Figure 2**. More recent analysis including specific calculations for the March Lifecare project and MARB demand have been factored into the calculations. The more recent development plans have been overlaid onto the original MJPA planning maps. Net Land Area of developable gross acreage was reduced by fifteen percent to account for right-of-way, drainage channels and undevelopable land. Specific data for ultimate development within the existing MARB (Cantonment Area) is not available, but base Civil Engineer office has indicated water demand is not projected to increase. Water demand within the Cantonment boundary is now estimated based on current billing data replacing the 2,000 gpd/acre estimate used previously. Land allocated for aircraft operations is assumed to have zero water demand except for existing fire flow requirements. The projected number of EDU's has been calculated for each land use designation. Additional demand has been added based on a per bed water demand for the hospital facilities.

Table 1 contains a summary of projected land use, annual, maximum day, and peak hour water demands for each pressure zone. Western has allocated 0.396 MGD average flow or 13.16% for existing MARB and MJPA water demand when the water system was transferred from MJPA to Western.



Sources: WMWD, 2008; MARB, 2007; NAIP, 2012.

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Figure 2

MARB Water Master Plan
Land Use

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TABLE 1
WESTERN MUNICIPAL WATER DISTRICT
MARB MASTER PLAN AREA
WATER DEMAND
LAND USE, AVERAGE DAY DEMAND, MAXIMUM DAY DEMAND, PEAK HOUR DEMAND

Land Use [2]	Total Gross Area (ac)	Adjusted Net Area[5] (ac)	Total EDU's[1]	Average Day Unit Demand Rate (gpd/acre)	Average Day Demand (gpd)	Average Day Demand (gpm)	Maximum Day Demand[3] (gpm)	Peak Hour Demand[4] (gpm)	Peak Hour Demand (cfs)
MHD	191.28	177.44	682	N/A	487,000	338	926	1389	3.09
BP [8]	81.64	69.39	194	2000	138,788	96	264	396	0.88
OF [8]	12.95	11.01	31	2000	22,015	15	42	63	0.14
MU	47.87	40.69	114	2000	81,379	57	155	232	0.52
MU [8]	18.75	15.94	45	2000	31,875	22	61	91	0.20
MU [8]	37.02	31.47	88	2000	62,934	44	120	179	0.40
HD	52.70	44.80	204	3250	145,584	101	277	415	0.92
P/R/OS	90.00	76.50	214	2000	153,000	106	291	436	0.97
MJPA/Global Port	180.10	153.09	429	2000	306,170	213	582	873	1.95
AT	131.00	55.68	156	2000	111,350	77	212	318	0.71
MARB - Potential Development [7]	511.20	434.52	1,972	N/A	1,408,320	978	1253	2257	5.03
Total 1700' Zone	1,354.51		4,129		2,948,415	2,048	4,181	6,648	**14.8**
MJPA (D-3) 1837 Zone	35.50	30.18	85	2000	60,350	42	115	172	0.38
Total	1,390.01		4,214		3,008,765	2,089	4,296	6,820	**15.2**

Maximum Day in 1700' pressure zone	4,181 gpm
Fireflow Demand in 1700' pressure zone	4,000 gpm
Maximum Day plus Fire Flow in 1700' pressure zone	8,181 gpm
Maximum Day plus Fire Flow in 1700' pressure zone	**18.2 cfs**
Annual Water Demand for 1700' pressure zone	3,303 ac-ft/yr
Annual Water Demand for MARB Area	3,370 ac-ft/yr

(1) EDU; Equavilent Dwelling Unit = 1 Residental Unit with annual demand of 0.8 AC-FT/YR with a 3/4" meter.
(2) Land Use Data provided by MJPA, MARB Potential Development estimated by photoanalysis
(3) Maximum Day is 150% of Average Day of Maximum Month, Maximum Month based on 15% of annual demand
(4) Peak Hour is 150% of Maximum Day
(5) 85% of gross acreage to account for ROW and undevelopable land.
(6) Estimated Demand for MHD based on Syska Hennessey Report dated Nov. 18, 2010.
(7) Demands from Table 2, MARB Segregation Report, May 2012, Excludes 1548 acres for runway/aircraft operations
(8) Acreage reduced to account for MHD acreage within this area.

SECTION 7 - WATER SUPPLY

Water supply is assumed to come entirely from Metropolitan Water District of Southern California's (MWD) Henry J. Mills Treatment Plant. Water ultimately supplied to MARB will be conveyed through a combination of Western's existing water transmission and distribution system and capacity rights owned or to be acquired by Western in EMWD's water transmission and distribution system. Based on maximum day demand for the ultimate system, the MARB water Master Plan area will require 9.3 cfs of total supply. It is anticipated that peak hour and fire flow will be supplied by proposed storage facilities within EMWD's system. Maximum Day Demand plus fire flow will require 18.2 cfs capacity and Peak Hour will require 14.8 cfs capacity. Ultimately, supply will be sourced from three connection points as show on **Figure 3**.

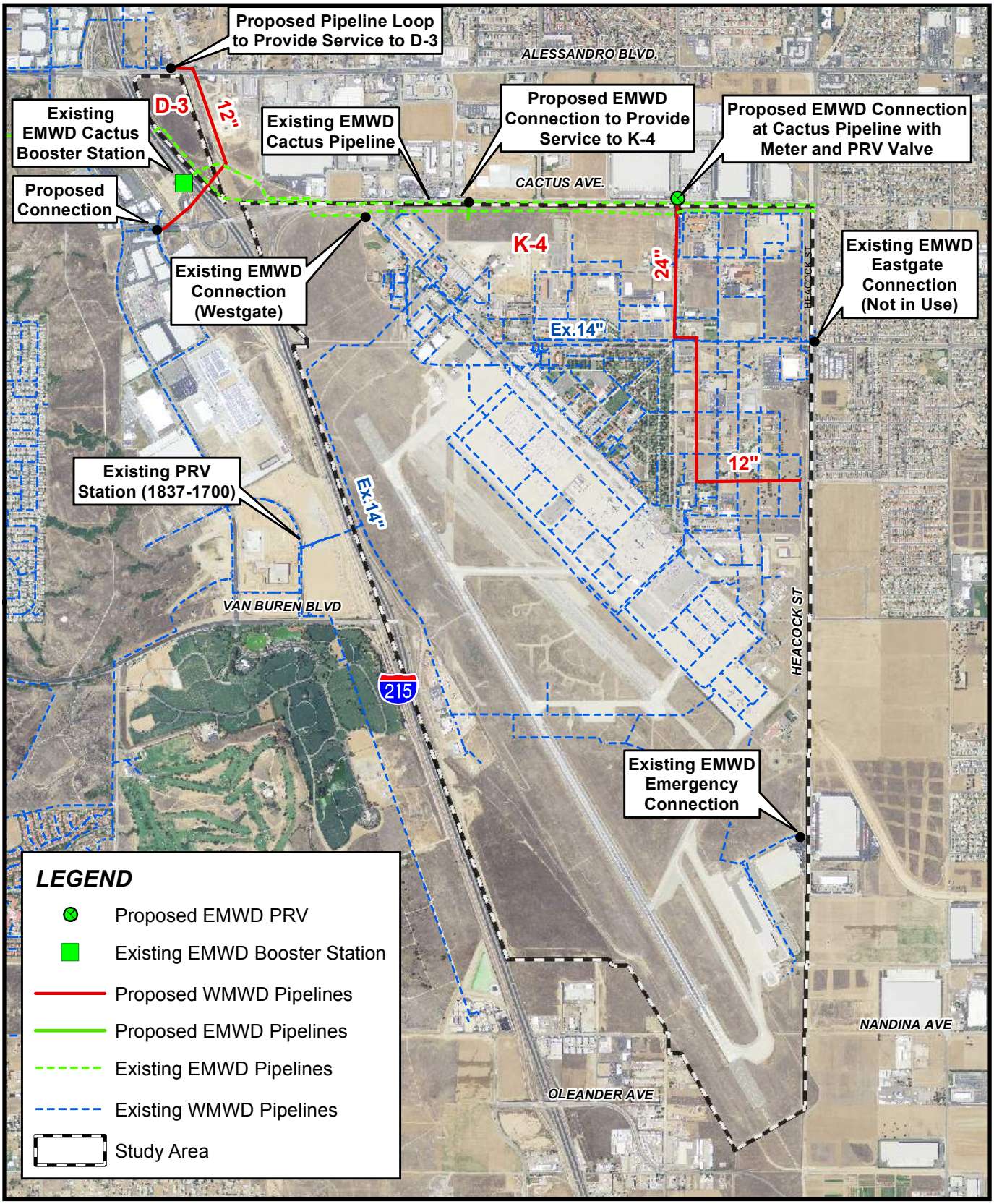
Western currently owns a 10 cfs capacity in EMWD's existing conveyance facilities from the Mills Treatment Plant to MARB. The conveyance facilities include a pump station at the Mills Treatment Plant, a 52-inch diameter pipeline from the Mills Treatment Plant to the intersection of Cactus and Heacock, a water storage reservoir to balance pumping demand, and connection facilities. This water supply was acquired by Western when the MARB water system was transferred to Western in September, 2002. The hydraulic grade of this supply varies from a maximum of 1680' depending on operational conditions of EMWD's system. Because of this variation, Western is proposing to transfer this capacity to a new 48-inch diameter pipeline in Cactus Blvd at a hydraulic grade of 1764. Water will be conveyed from MWD's Mills Treatment Plant via the Perris Valley Pipeline to Cactus Blvd and then pumped by EMWD's Cactus Booster Station. It is anticipated that Western will use this supply to meet maximum day demand, maximum day demand plus fire flow, and peak hour requirements. The proposed connection is located near the intersection of Riverside Drive and Cactus Blvd.

Western will retain the existing 5.0 cfs water supply currently conveyed through the 1837' pressure zone. This water supply enters the 1700' pressure zone from the 1837' pressure zone, avoiding the additional pumping cost previously incurred to lift the water to the 1900' pressure zone. It is anticipated that Western will use this supply as the primary interim supply. The supply from the

1900' pressure zone at the 3411 PRV station, located on Village West Drive just north of AFVW will remain in place as a back-up supply to the 1837' pressure zone until the PRV station is replaced by Meridian. Based on development conditions for the Meridian project, the 3411 PRV station will ultimately be reconstructed at a new location consistent with Meridian's ultimate development plans.

No water supply is anticipated from EMWD's 1627' pressure zone via the future Western Way Booster Station and Oleander Pipeline. This option was previously considered but has now been eliminated due to the unknown timing for the completion of MWD's Perris Valley Pipeline.

There is an existing EMWD emergency Connection on Heacock between Iris and San Michelle, providing up to 4,000 gpm fire flow for the Global Port area (**Figure 3**). Currently, Western supplies maximum day demand to the Global Port area through its distribution system and conveys approximately 50 gpm continuously to EMWD at this location for water quality purposes. In the future, a direct water supply connection of 1 cfs may be required from EMWD's system for future development with the Global Port area. Currently, no costs are included for this future water supply because no direct need has been identified to justify this additional supply.



Sources: WMWD, 2013; NAIP, 2012.

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Figure 3

MARB Water Master Plan

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SECTION 8 - PIPELINE REQUIREMENTS FOR ULTIMATE SYSTEM

The design criteria used to size the transmission pipeline network is consistent with criteria used in Western's North AFC Master Plans as well as the District's current design criteria contained in the District's "Developer Handbook and Standard Drawings" manual. The transmission network will serve as the backbone of the water distribution system with additional pipelines constructed to provide service to individual parcels or tracts. The following is a summary of the design criteria used:

- Maximum velocity of 6-ft/sec in transmission pipelines under replenishment conditions.
- Maximum friction loss of 3.5-ft/1000-ft of transmission line under replenishment conditions.
- Maximum velocity of 7.5-ft/sec in any water pipelines during peak hour or maximum day demand plus emergency fire flow conditions.
- Transmission pipelines shall be no smaller than 12-inch diameter.

As part of the Master Plan, a computer model was developed to simulate the existing and ultimate waster system. The computer model used is H2ONET® Version 3.1 developed by MW Soft, Inc. Conditions analyzed include the current conditions, ultimate system at peak hour, ultimate system at maximum day demand plus fire flow and ultimate system at replenishment conditions. The results of these runs and the accompanying nodal map are contained in the Appendices under separate cover.

The proposed transmission pipelines for the ultimate system are shown in **Figure 3**. The proposed system requires approximately 1.5 miles of new master planned pipeline as follows:

2,550 l.f. of 24-inch diameter pipeline

5,280 l.f. of 12-inch diameter pipeline

Additional pipelines to serve specific developments will be required to convey water from the master planned facilities to individual service connections. These facilities will be funded by the individual project proponent directly and not through the master plan development fees.

SECTION 9 - PIPELINE REPLACEMENT PROGRAM

The current status of a majority of the existing pipeline network is that the pipelines are either undersized for new development or in poor condition due to age and corrosion. The existing pipeline system includes approximately 40.8 miles of pipeline, 14.9 miles within the Non-Cantonment area and 25.9 miles within the Cantonment area. Based on current re-development plans in the Non-Cantonment area of the system, it is anticipated that 8.6 miles of pipeline will be abandoned when new development constructs pipelines sized from its project. The remaining 6.3 miles of pipeline in the Non-Cantonment area are generally 8-inch diameter pipelines east of the Cantonment area or serving the MARB WWTP. It is anticipated that as individual projects are developed, Western will condition the project to replace the appropriate pipeline sections based on the current pipe condition and the development's water supply requirements. Of the 25.9 miles of pipeline within the Cantonment area, 11.5 miles is dedicated to fire protection for the runway/aircraft operations. The remaining 14.4 miles of pipeline serve the existing MARB facilities. A total of 20.7 miles of pipeline will need to be replaced in the near future. Replacement of these existing pipelines are not included in the master planned facilities. A more detailed report of the potential pipeline replacement requirements for the MARB has been submitted under separate cover.

SECTION 10 - STORAGE REQUIREMENTS FOR THE ULTIMATE SYSTEM

EXISTING STORAGE

At this time, the 1700' pressure zone has no active potable water storage facilities. All former MAFB water storage facilities obtained by Western as part of the acquisition are not in service due to poor condition. Excess storage capacity in Western's 1837' and 1900' pressure zones currently provides the required storage capacity for the MARB area.

STORAGE DESIGN CRITERIA

The proposed ultimate storage facilities are required to meet the peak hour demand, maximum day demand, fire flow, and other emergency conditions and are equivalent to seventy-five percent of maximum day demand plus worst case fire flow storage requirements. The following criteria have been used to determine storage volume:

Equalizing Storage: Pumping facilities have been sized to meet maximum day demand flows. Any peak demands, e.g. peak hour, greater than maximum day must be supplied from storage. Equalizing storage provides the storage to meet these short term peak demands. Twenty-five percent of the estimated maximum day demand is used as the criteria needed to meet the daily demand fluctuations within each pressure zone.

Fire Flow Storage: Fire flow requirements for each pressure zone must be met through storage and have been estimated based on the fire flow criteria for this pressure zone. Fire flows and durations used in the analysis are assumed to be 4,000 gpm at four hour duration requiring a total storage volume for fire flow of 960,000 gallons.

Emergency Storage: Emergency storage capacity would be needed to sustain the water needs during periods of total or partial shutdown of the water supply facilities. One-half of the estimated maximum day demand is used to calculate emergency storage by pressure zone.

Required storage for the ultimate condition is 5.71 MG for the MARB Water Master Plan. It is anticipated that Western will incrementally purchase additional storage capacity in EMWD's system to provide the required ultimate storage capacity for each phase of development. The storage capacity will become active when the proposed connection at Cactus/Riverside is operational. In the meantime, Western will provide the required storage capacity from its existing system, limited by the capacity of the existing 14-inch pipeline.

SECTION 11 - PUMPING REQUIREMENTS FOR THE ULTIMATE SYSTEM

There are no existing pumping facilities currently in service. All water is currently supplied to the MARB area from a higher pressure zone through existing pump stations within those zones.

Pumping requirements for the proposed ultimate system have been calculated based on maximum day demand. It is assumed that all water must be supplied from MWD's Mills Filtration Plant located on Alessandro Boulevard and through the supply connections listed in Section 7. Total pumping requirement to meet maximum day demand is 9.8 cfs. This pumping requirement will be split between the Western's Holcomb Pump Station and capacity within EMWD's system.

Water Department Pump Station

The existing pumps located at the Water Department site are currently not in service and not in operational condition. The existing pumping equipment can ultimately be removed from service when the proposed EMWD connection is operational.

Westgate Pump Station

All pumps at an existing pump station at the Westgate Connection have been removed and replaced with bypass spools to convey water directly from EMWD's system to WMWD's system via a meter and simple check valve. It is anticipated that this connection will be replaced by a new EMWD connection near the intersection of Riverside Drive and Cactus Ave. While the existing equipment can ultimately be removed from service when the proposed EMWD connection is operational, it is recommended that this connection be retained for emergencies.

3411 Pump Station

The existing pumping equipment located at Bldg 3411 is not currently in service. Future plans do not include using this site for pumping equipment. The existing PRV located at this

point will be relocated in the future. This site can be abandoned following the relocation of the existing PRV.

Holcomb Pump Station

Western's existing Holcomb Pump Station located at MWD's Mills Treatment Plant lifts water into Western's 1837' pressure zone. Capacity allocation for this booster station and associated conveyance facilities may be required to supply water to the PRV station. Excess capacity is currently available to provide emergency supplies the 1700' pressure zone via the PRV station from the 1837' pressure zone system. Cost calculations assume no capacity allocation for the Holcomb Pump Station because this system only provides emergency supplies.

EMWD's Cactus Booster Station

Capacity will be purchased in EMWD's Cactus Booster Station located at Cactus Ave and the I-215 freeway. This pump station will lift water from MWD's Perris Valley Pipeline into EMWD's 1764' pressure zone and through the Cactus Avenue pipeline to the Cactus/Riverside Connection point.

SECTION 12 - CONSTRUCTION AND PROJECT COST ESTIMATES

Cost estimates have been developed for the facilities proposed to serve the MARB service area at ultimate development. The cost estimates are based on unit costs for water pipelines ($/lf) and lump sum estimates for pump stations, meter & PRV station and participation in EMWD's facilities. The total project cost for the master plan facilities is **$14,940,000**; see **Table 2** on the following page.

The construction and project cost shown were obtained from manufacturers, construction firms and recorded data from bid results for similar water facilities. The estimated project costs are based on the February, 2012 ENR-Los Angeles Construction Cost Index of 10,091.80. Estimated project costs include construction cost and project overhead. Project overhead is estimated at forty percent of construction costs and is itemized as follows:

1. Contingencies - 10% of construction cost.
2. Technical Services – 15% of construction cost which includes preparation of a non-controversial environmental assessment, processing of necessary approvals and permits, engineering survey and photogrammetry, and preparation of the design and specifications.
3. Field Engineering – 10% of construction costs which includes contract administration, coordination with other agencies, administration of geotechnical and other necessary outside services, construction surveying, construction inspection and preparation of as-built drawings.
4. District Contract Administration – 5% of construction cost.
5. Escalation, financing, interest during construction, legal, EIR/EIS, land acquisition and right of way agent costs are not included.

Table 2

Western Municipal Water District
Construction and Project Cost for
Proposed MARB Water Facilities
Including participation in EMWD Facilities

DESCRIPTION	QUANTITY	UNIT	UNIT COST	CONSTRUCTION COST
1700 Pressure Zone				
24-inch Dia. Waterline	2,550	L.F.	$260	$663,000
12-inch Dia. Waterline	5,280	L.F.	$121	$638,880
Pavement Repair	7,130	L.F.	$32	$228,160
Metering/Pressure Reducing Station (EMWD 1764PZ - 1695PZ)	1	EA.	$755,440	$755,440
Construction Cost				$2,285,480
Project overhead (40% of construction cost) [1]				$914,192
Total Project Cost within 1700 PZ				**$3,199,672**
Participation in 1764 Storage Capacity (5.6MG @ $1.52M/MG)				**$8,512,000**
Participation in EMWD's Cactus BS (9.52 cfs @ $181,000/cfs)				**$1,723,120**
Participation in EMWD's storage conveyance(4,000gpm@$363/gpm)				**$1,452,000**
Transfer to WMWD's Cactus Pipeline @ 9.52 cfs				**$0**
Transfer to EMWD Ex. Capacity in 54" Pipeline @ 10 cfs [2]				**$0**
Participation in WMWD's NAFC for Emergency 5 cfs Connection				**$0**
Total Project Cost				**$14,886,792**
Total Project Cost			**Use**	**$14,890,000**
Costs to Serve Parcel D-3 from 1837 Pressure Zone				
12-inch Dia. Waterline	2,720	L.F.	$121	$329,120
36" Steel Casing	800	L.F.	$1,200	$960,000
Construction Cost				$1,289,120
Project overhead (40% of construction cost) [1]				$515,648
Total Project Cost for D-3				**$1,804,768**

[1] Project Cost is 1.4 times construction cost. Project cost includes: construction costs, construction contingencies, design engineering including plans and specifications; design and construction surveying and mapping; geotechnical evaluation and report; engineering contract administration; field inspection and nominal environmental documentation. Costs are based on Engineering News Record (ENR) Construction Cost Index Los Angeles, January, 2014 (ENR = 10,736.18). Escalation, financing, interest during construction, legal, EIR/EIS, land acquisition, except where explicitly noted and R-O-W agent costs are not included.

[2] WMWD owns 10 cfs capacity in existing EMWD 1680 pipeline. WMWD would transfer this capacity at 0.95 to 1.0 for Cactus Pipeline Capacity. EMWD would provide 9.8 cfs MDD and 4,000 gpm at proposed connection at Riverside/Cactus.

SECTION 13 - FUTURE DEVELOPMENT

Future development must fund the facilities proposed to serve the MARB service area at ultimate development. Per Section 3, the area used for water demand within the MARB Master Plan area is a total of 1,354.5 acres. Based on our analysis of existing development and potential redevelopment area requiring future water service, there are approximately **493.6 acres** available to use as a basis for a connection fee.

The total cost estimate of **$14,890,000** is for all water supply and proposed master planned facilities as given in Section 12. Western has allocated 0.396 MGD average flow or 13.16% for existing MARB and MJPA water demand when the water system was transferred from MJPA to Western. Any proposed connection fee will, therefore, fund the remaining 86.84% of the proposed master planned facilities.