CAMPUS PARK PROJECT

APPENDIX I

UTILITIES AND SERVICE SYSTEMS/PUBLIC SERVICES

SPA 03-008, GPA 03-004, R03-014, VTM 5338 RPL7,
S 07-030, S 07-031, LOG No. 03-02-059
State Clearinghouse No. 2005011092

for the

DRAFT FINAL SUBSEQUENT
ENVIRONMENTAL IMPACT REPORT

DECEMBER 3, 2010

FINAL ENVIRONMENTAL IMPACT REPORT
WATER SYSTEM ANALYSIS
SEWER SERVICE ANALYSIS
TEN PERCENT DESIGN REPORT FOR LIFT STATION
PROJECT FACILITY AVAILABILITY FORMS
INFORMATION FOR THE READER

Within this appendix, additional information was provided for the following three reports: Water System Analysis, Sewer Service Analysis, and Ten Percent Design Report for the Campus Park Sewer Lift Station for the Campus Park Project (Proposed Project or Project). This document analyzes of the water and sewer services for the Project and recommended required on-site facilities to accommodate Project water demands and sewage flows, as well as the preliminary design information and criteria related to the construction and operation of the proposed sewer system improvement within the Project site. Since circulation of the Project Draft Environmental Impact Report (EIR) and associated technical reports, refinements in Project description have been implemented in response to comments received. The attached reports have all been revised to reflect the Project layout discussed below.

The majority of Project refinements occur west of future Horse Ranch Creek Road and all of them would be south of proposed Harvest Glen Lane. The majority of the developed uses and their construction footprints (residential, office professional, recreational and commercial) remain the same as previously analyzed.

South of future Harvest Glen Lane and west of future Horse Ranch Creek Road, the Proposed Project has been refined to: (1) eliminate some development areas, (2) modify specifics of development detail in some areas, and (3) eliminate the potential for connection to an off-site future wastewater treatment plant (WTP) to be constructed by others. Specifics of road design improvements also vary.

Overall, primary design changes result in 325 fewer multi-family homes (a reduction of 41 percent), and an increase in the biological open space preserve of 20.7 acres (or 11 percent). See Figure A for a comparison of the Project evaluated in the Draft EIR with the current plan.

Project refinements relevant to this technical report are addressed below.

Relevant Refinements to Project Description

In the Draft EIR, two wastewater treatment options were proposed. Under Wastewater Management Option 1, all Project sewage would have flowed to infrastructure owned and operated by Rainbow Municipal Water District (RMWD), and then to the San Luis Rey WTP in Oceanside. Under Wastewater Management Option 2, sewage from 850 equivalent dwelling units (EDUs) would have been sent to RMWD (the Oceanside WTP) for treatment, with the remainder to be treated at a new WTP proposed by the adjacent Meadowood Project). Under Option 2, a storage pond was required within the Project site. At this point, refinements to the

proposed development have resulted in elimination of need for sewage treatment of approximately 328 EDUs. This has resulted in the following changes: (1) any reference to Wastewater Management Option 1 is now simply a reference to the Project wastewater management, and no additional service commitment is required beyond that already obtained by the Applicant from RMWD; and (2) all references to Wastewater Management 2 have been deleted.

The Draft EIR included two multi-family residential areas (MF-1 and MF-4) west of future Horse Ranch Creek Road and north of SR 76. These areas were proposed to contain a total of 300 residential units sited on a total of 21.1 acres. Both have been eliminated and now would largely be in open space. Within the MF area east of future Horse Ranch Creek Road and south of future Harvest Glen Lane, Draft EIR MF-3 has been renamed MF-1, and the style of housing in MF-2 has been changed to match that of new MF-1. The density of the multi-family housing in MF-1 has been lessened; this area previously assumed 12.5 dwelling units (DU) per gross acre, and now it is proposed to contain 9.9 DU per gross acre. Together, these changes result in 325 fewer MF residential uses than previously assumed.

A 2.4-acre detention basin was previously located south of MF-1. With the elimination of MF-1, this basin has been relocated to the north, and the basin size and shape have been modified to encompass a surface area of approximately 5.2 acres (although the detention capacity has not changed as the current basin is shallower). Similarly, a 2.6-acre potential wet weather storage pond associated with old Wastewater Management Option 2 would be eliminated (along with any associated impacts) as would any utility lines required to tie into the proposed Meadowood WTP.

The sewer lift or pump station and trail staging area would be moved from an isolated small Project parcel west of future Pankey Road and north of SR 76 to east of future Pankey Road, in the old area of MF-4.

Changes have been made to specific design of an off-site portion of future Pala Mesa Drive, Pankey Road and on-site Pankey Place. With regard to Pala Mesa Drive/Pankey Road, modifications resulted from a request by the abutting Campus Park West Project to shift a portion of the alignment, and this shift has been worked out in coordination with the Department of Public Works. For on-site Pankey Place, the shift is related to deletion of MF-4, resulting in the ability to route the planned road away from sensitive biological habitat.

Technical Analysis Modifications Based on Project Description Refinements

Water System Assessment

The elimination of 325 multi-family residential units would result in an overall reduction in average water demand for the Project, reduced from 568,900 gallons per day (gpd) to 441,500 gpd, as analyzed in the updated November 2010 Water System Analysis. The required alignment of the 16-inch water main extending from the existing Pala Mesa Drive to future Pankey Road then south to future Pankey Place, as described in the Water System Analysis, reflects the shifts in right-of-way locations. For this focused issue, the change in conditions

resulted in preparation of a new water system analysis (2010). No change to significance conclusions reached in conformance with the California Environmental Quality Act have occurred.

Sewer Service Assessment

Changes to the proposed concept development plan for the Project, including the elimination of 325 multi-family residential units, would result in an overall reduction in average sewer flows for the Project. For this focused issue, the change in conditions resulted in preparation of a new water system analysis (2010). Based on the described Project changes, the average sewer flows would be reduced from 294,520 gallons per day (gpd) to 212,525 gpd, as analyzed in the updated November 2010 Sewer Service Analysis. The required alignment of the 12-inch sewer main along Pala Mesa Drive/Pankey Road, as described in the Water System Analysis, reflects the shifts in right-of-way locations. The recommended sewer main sizes for the Project assume that no wastewater generated by the Project enters into the existing 12-inch Plant B Collector sewer system, which is revised from previous assumptions. The new sewer lift station proposed to be constructed to provide pumping capacity for the Project would be designed to accommodate all wastewater conveyance for the Project (850.1 EDU). Previously, the Project would have relied on both the new sewer lift station and systems to the west of Interstate 15 as the wastewater conveyance for the Project would have been greater (1,178.1 EDU). Based on Project refinement, the Project's existing agreement and service commitments from the Rainbow Municipal Water District Project provides adequate wastewater conveyance, treatment, and disposal capacity. Alternative wastewater treatment and disposal options have been eliminated from the analysis. No change to significance conclusions reached in conformance with the California Environmental Quality Act would occur.

Water Supply Assessment and Verification Report

The Water Supply Assessment and Verification Report was prepared in April 2005. An October 1, 2010 memorandum concludes that the report remains valid. The memorandum is attached immediately following this Information for the Reader.

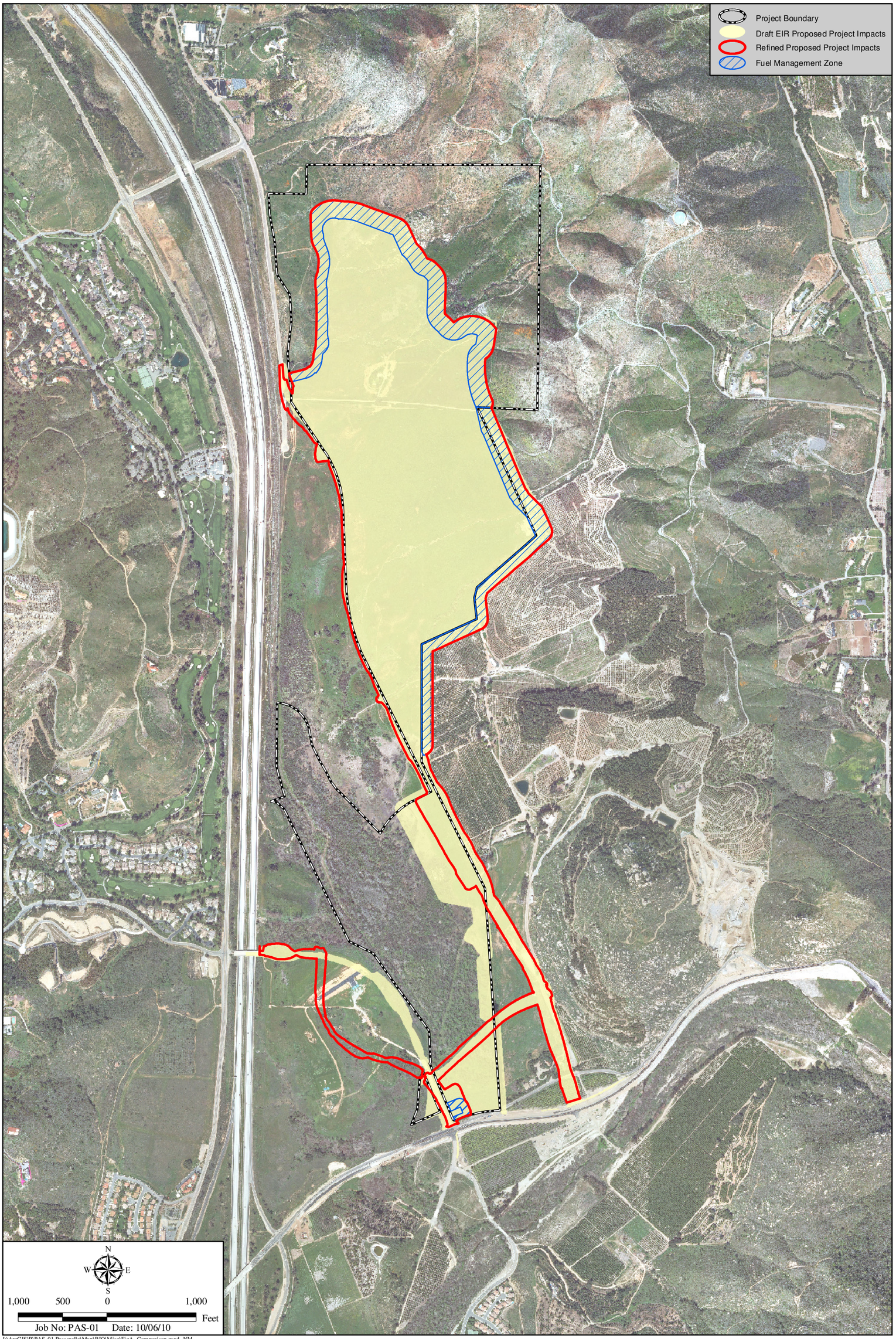
Sewer Lift Station Assessment

The sewer lift station location and configuration is included in the revised assessment (November 2010) within this appendix for the new site east of Pankey Road (Figure 4-1). The delivery of sewage flows and sewer lift station pumping capacity would remain essentially the same, and Project Environmental Design Considerations committed to as part of the Proposed Project would be implemented. Accordingly, the associated conclusions regarding impacts related to the sewer lift station are still accurate. No change to significance conclusions reached in conformance with the California Environmental Quality Act would occur and no change is required to the attached technical analysis.

Project Facility Availability Forms

In October 2010, updated Project Facility Availability Forms were obtained from Rainbow Municipal Water District (water and sewer), Fallbrook Union High School, Fallbrook Union Elementary School District, and the North County Fire Protection District. These updated forms have replaced the 2008 forms included in the circulated Draft EIR.

Each of the above-cited and additional specific revisions are now included as part of the public record and will be before the Board of Supervisors during their consideration of the Project.



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Impact Comparison

CAMPUS PARK

HELIX

Figure A

DEXTER WILSON ENGINEERING, INC.

DEXTER S. WILSON, P.E.
ANDREW M. OVEN, P.E.
STEPHEN M. NIELSEN, P.E.
DIANE H. SHAUGHNESSY, P.E.

MEMORANDUM **669-009**

TO: **David Davis, Passerelle, LLC, Land Development Manager**

FROM: **Andrew Oven, Dexter Wilson Engineering, Inc.**

DATE: **October 1, 2010**

SUBJECT: **Technical Memorandum Regarding the Water Supply Assessment and Verification Report for the Campus Park (Passerelle) Development Project in the County of San Diego**

The purpose of this technical memorandum is to examine the conclusions of the current Water Supply Assessment and Verification (WSA&V) document for the Campus Park project in light of recent changes in the water supply situation in southern California. The current WSA&V was prepared by the Rainbow Municipal Water District in April 2005. The document was approved by the Rainbow Municipal Water District Board of Directors on May 11, 2005.

The current WSA&V document was prepared using the following source documents:

- Urban Water Management Plan, Rainbow Municipal Water District, 2000.
- Annual Water Supply Report, San Diego County Water Authority, 2004.
- Integrated Water Resources Plan 2003 Update, Metropolitan Water District, 2004.
- SANDAG Series 9 Population Forecasts for Rainbow Municipal Water District.
- Report on Metropolitan's Water Supplies, A Blueprint for Water Reliability, Metropolitan Water District, March 2003.
- Rainbow Municipal Water District Water Master Plan, Dudek & Associates, Inc., September 2001.

Since the preparation of the WSA&V for the Campus Park development project, several additional reports have been prepared which have a bearing on the conclusions of the current WSA&V. These additional reports include the following:

- 2005 Urban Water Management Plan, Rainbow Municipal Water District, 2005.
- Rainbow Municipal Water District Water Master Plan Update, Final Report, Dudek, May 2006.
- Updated Urban Water Management Plan, San Diego County Water Authority, April 2007.
- Five-Year Supply Plan, Metropolitan Water District, April 2008.
- Appendix A Attached to Official Statement dated January 15, 2009, for $200,000,000 The Metropolitan Water District of Southern California Water Revenue Bonds, 2008 Authorization, Series A.

The conclusion of the current WSA&V document is that it "...demonstrates and verifies that, with development of the resources identified, there will be sufficient water supplies over a 20-year planning horizon to meet the projected demand of the proposed Project and the existing and other planned development projects within Rainbow." This conclusion can be maintained as valid today even in light of the current circumstances regarding water supply to southern California. There are several reasons this conclusion can be supported.

1. The WSA&V is based on a water demand for the Campus Park development project which is greater than the current estimate of water demand for the proposed project because the current project proposes fewer dwelling units.

2. Water conservation measures will be implemented by the Campus Park project which will further decrease the water demand of the project significantly below the demand levels included in the Rainbow Municipal Water District Water Master Plan Update, May 2006.

3. Population projections for the Rainbow Municipal Water District are lower today than they were at the time the WSA&V document was first prepared.

4. The Campus Park development project has been specifically identified in the Rainbow Municipal Water District Water Master Plan Update, May 2006, and the estimated demands included in the Water Master Plan Update are greater than the estimated demands for the current project.

5. Even with the current water supply challenges precipitated by the litigation surrounding the northern California delta region, water deliveries by Metropolitan Water District and the San Diego County Water Authority are meeting the current demand.

The following paragraphs address in more detail the reasons presented above for why the conclusions of the current WSA&V document are still valid.

1. Water Demand Reduction

The water demand for the Campus Park project presented in Section 3 of the WSA&V (page 9 of 22) is 1,060 acre-feet per year (AFY). This is based on residential, commercial, office, and park land uses which are summarized in Table 3 of the WSA&V (page 8 of 22). Table 3 presents the land uses which were proposed at the time the WSA&V was prepared.

Currently, the Campus Park project proposes similar land uses as were proposed prior to the April 2005 date of the WSA&V. However, there have been some significant changes to the proposed Campus Park project. The total number of residential dwelling units has decreased from 1,501 dwelling units in the WSA&V document to 751 dwelling units in the current development plan for Campus Park. The commercial, office, and park areas have also been adjusted since the preparation of the current WSA&V document.

The result is that the current water demand estimate for the Campus Park project is 495 AFY. This is 53 percent less than the estimate upon which the WSA&V document is based. This reduction is based on using standard water demand factors for the current Campus Park development project; the use of water conservation measures is not factored into the water demand estimate. Thus, the reduction in total water demand is a net reduction for this development compared to the water demand figure used in the WSA&V.

It is difficult to compare in a direct and simple way the reduction of water demand for the Campus Park project between April 2005 and the present to the reduction in regional supply in recent years. The reduced state water project water supply due to legal issues in the Delta Area, and the impact to regional water supply from drought is complex. An effective way to present the recent impacts of these occurrences on the water supply to the San Diego County area is to review the water deliveries made by the San Diego County Water Authority over the last several years. The data below is excerpted from the annual reports compiled by the San Diego County Water Authority (references provided in Attachment A).

Table 1
Water Use in SDCWA Service Area

Year	SDCWA Supply, acre-feet	Total Use, acre-feet
2005	573,048	644,845
2006	576,620	687,253
2007	661,309	741,893
2008	608,903	691,931
2009	Not Available	643,900

SDCWA supply refers to the quantity of water which was imported into the SDCWA service area either from MWDSC or from other SDCWA sources. The Total Use is equal to the SDCWA imported water plus local water supplies.

Table 1 shows that the total water use within the San Diego County Water Authority service area has declined from Year 2007 to Year 2009 by about 13 percent. The water supply imported by the SDCWA decreased by 8 percent from 2007 to 2008. These figures are less than what some may expect when the facts are that the State Water Project delivered to Metropolitan Water District of Southern California only 40 percent of its allocation in Year 2009 (Attachment B).

The reality is that there are diversified water resources upon which MWDSC and SDCWA have relied to bridge the short-term gap between water demand and water availability. More of this concept will be discussed in Part 5 below.

In summary, the discussion above confirms that the reduction in water demand for the Campus Park project to less than half of what it was in 2005 is particularly significant. Less than half of the amount of water demand that was planned for the Campus Park project in 2005 will need to be used for the proposed project as it is currently envisioned.

2. Water Conservation Measures

The water demand calculated in the April 2005 WSA&V as well as the current water demand estimate for the Campus Park project are based on standard water demand factors used by the Rainbow Water District. These water demand factors do not account for the use of water saving fixtures or the use of recycled water where it is available. The purpose of the water demand factors is to estimate the expected water use for planning water supply and distribution systems. These factors must be sufficiently conservative to provide an acceptable margin of safety. Therefore, the water demand estimates for the Campus Park project do not consider specifically the potential reduction in water demand due to water conservation.

The Campus Park project will be implementing water conservation measures as part of its development program. The County of San Diego enforces several state and local ordinances requiring water conservation. California Plumbing Code Section 402 requires the installation of water conserving fixtures in new construction. Section 67.101 of the County's Code of Regulatory Ordinances prohibits water waste. The County is required to enforce California's Model Water Efficient Landscape Ordinance on developer installed residential landscapes (Section 6717c.1 of the County's Zoning Ordinance). The County's Water Conservation and Landscape Design Manual implements Zoning Ordinance Section 6712(d) which requires efficient irrigation uses (including rain sensors), transitional zones, use of native plantings, restriction on turf, use of mulch, the preservation of existing vegetation and natural features, and the use of recycled water when available.

The result of incorporating water conservation features in the Campus Park project will be an additional reduction in the water demand. It is estimated that the water conservation program will reduce water demand by at least 15 percent. This means that the expected water demand for the Campus Park project will be reduced to 421 AFY which is 60 percent of the total demand used in the 2005 WSA&V document.

The reduction in water demand discussed above does not include water conservation measures which the Campus Park project is willing to implement such as the use of recycled water for irrigation of landscaped areas, provided that a source of recycled water is available. The specific water conservation features incorporated into the Campus Park project will be based on the most effective measures available to the project. Examples of the types of water conservation measures which will be implemented in the Campus Park project include:

Interior water conservation features:

- High efficiency clothes washers
- High efficiency dishwashers
- Low flush toilets
- Low flow water faucets and showerheads
- Tankless water heaters

Exterior water conservation features:

- Weather-based irrigation controllers
- Low water use landscaping (xeriscape)
- Restrictions limiting turf use and encouraging artificial turf
- Use of recycled water where available

Additional conservation features:

- Installation of "smart" meters with leak detection capability
- Individually metered multi-family units

3. Population Projections

The expected population growth within the Rainbow Municipal Water District is estimated by SANDAG to be less than what was anticipated in the WSA&V document. A smaller future population means less water demand. Thus, with the water supply systems expanding in the early 2000s to keep pace with the expected population growth, the water supply agencies are in a better position to accommodate a reduction in water supply from northern California. In other words, having planned water supply for a greater population growth, a reduction in population growth means that the water agencies are ahead of the curve for obtaining additional water supply. Thus, when any one supply source is reduced, the other water supply sources can more effectively compensate for the shortfall.

In the current WSA&V report, population projections are based on the Rainbow Municipal Water District 2000 Urban Water Management Plan. The Rainbow Municipal Water District 2005 Urban Water Management Plan relied on SANDAG population estimates dated February 3, 2004. Between these two dates there is already a decrease in the expected population in the Rainbow Municipal Water District. The WSA&V lists the year 2025 population as 30,004; the 2005 Urban Water Management Plan projects the District population in year 2025 to be 24,301.

The most current population data from SANDAG is dated February 2010. This data projects the year 2025 population in the Rainbow Municipal Water District to be 22,380. This data trend suggests that the Rainbow Municipal Water District has been overestimating its water supply needs; therefore, the water supply agencies such as Metropolitan Water District and the San Diego County Water Authority to which it provided this data should be in a position of having planned for delivery of more water than will be needed. Thus, when water supplies are reduced such as with the case of the northern California delta water, the agencies are not stretched to the limit of their water supply capabilities.

Since the WSA&V for the Campus Park project was based on the Rainbow MWD 2000 UWMP, the UWMP prepared by the San Diego County Water Authority would have incorporated the Rainbow MWD numbers into its demand projections. Thus, a higher water demand for the Campus Park project than now expected has been incorporated into

the water supply planning documents since Year 2000. A reduction in the projected population for the Rainbow MWD service area means there will be a lower water demand in a service area that has been planned to provide for a higher demand.

It is not possible to quantify the reduced water demand and relate it to reduced regional water supply. The demand/supply relationship is dynamic and depends on many factors; it cannot be simplified by comparing population projections only in Rainbow MWD to the regional water supply reductions. Refer to the discussion in Part 5 for a broader perspective of the water demand and supply relationship.

4. Water Master Planning

In addition to being incorporated into the water master planning effort of the Rainbow Municipal Water District in September 2001, the Campus Park project was individually listed in the May 2006 Water Master Plan Update. The water demand included in the Water Master Plan Update for the Campus Park project is 1,203 AFY (page 6-3, Table 6-1, Map ID No. 22, Dudek, May 2006). This estimated demand is greater than that included in the WSA&V document. It would be expected that this water demand estimate would be provided to the San Diego County Water Authority for use in their preparation of the April 2007 Urban Water Management Plan Update, as well as being used for the 2010 Urban Water Management Plan document which is still in the process of being prepared.

5. Meeting Current Demands

Within the last two years the water supply conditions have changed significantly when considering the reductions in available water supply from the State Water Project (northern California). These changes in water supply have not been reflected in the Urban Water Management Plans because those plans are not due to be completed until the end of 2010. However, the San Diego County Water Authority and Metropolitan Water District have responded to the circumstances by employing multiple approaches to ensure that water deliveries are made to their customers.

To manage the current short-term supply condition, the San Diego County Water Authority is implementing its May 2006 Drought Management Plan. Metropolitan Water District is also implementing its Water Surplus and Drought Management Plan (WSDM), Five-Year Supply Plan, and Water Supply Allocation Plan (WSAP). In addition, the San Diego County Water Authority will participate in the update of Metropolitan Water District's Integrated Resource Plan and update its own Urban Water Management Plan this year to reflect changed supply conditions.

To plan for long-term supply reliability, the San Diego County Water Authority continues to implement its diversification strategy. This is evidenced in the SDCWA 2009 Annual Report, page 16, (Attachment C) which presents a summary of the SDCWA's Water Supply Portfolio. In 1991, the SDCWA received 95 percent of its water from MWDSC. In 2009, that reliance decreased to 62 percent. The goal for 2020 is to further reduce MWDSC's share of the water supply for SDCWA to 29 percent of SDCWA's total needs. Thus, the goal of the SDCWA is to diversify its water supply portfolio so that changes in any one supply source will not have a significant detrimental impact on its ability to deliver water to its customers.

With these changed water supply conditions and implementation of strategies such as the San Diego County Water Authority's Water Supply Allocation Plan to combat the short-term changed conditions, the San Diego County Water Authority and Metropolitan Water District have continued to meet water demands. Attachment D presents a report presented to the SDCWA Board during their May 2010 meeting which addresses short term management actions to be taken by the SDCWA in response to water supply cutbacks from the MWDSC. This recent report demonstrates that water supply is a dynamic activity requiring constant monitoring and the SDCWA is up to the task.

The MWDSC is closer than the SDCWA to the source of the water supply activity. Attachment E includes several monthly Water Surplus and Drought Management Plan reports provided to the MWDSC Board. The reports for the four most recent months available are provided; this report was no longer provided after April 2010. These reports show how the projected annual water delivery to MWDSC's customers will be fulfilled by using a combination of all water resources available to MWDSC. These reports show the results of bringing into play many water resource options which MWDSC has been

developing in the past, and which it will continue to expand as the need for water supply diversification is made evident by the current conditions.

What is most telling is that neither agency has indicated that they will be unable to meet near-term and long-term demands outlined in their respective Urban Water Management Plans. Also important to note is that if either agency became concerned about their ability to meet the water demands of its customers, they have the authority to increase the Drought Alert Level from the current Level 2 Condition to a Level 3 Condition or higher. Yet, this option is not currently being considered because of the ability of MWDSC and SDCWA to meet their customers' water demands with the resources that they have developed over the past several years and which they continue to expand in order to be prepared to meet future water demands.

By addressing the current water supply challenges using all available opportunities, by maximizing their resourcefulness, and by maintaining flexibility in their approach, the water supply agencies have been satisfying the current demand for water in southern California. Using these same techniques as well as developing new water sources and innovative strategies, the San Diego County Water Authority and Metropolitan Water District will continue to meet the water demand objectives defined by their member agencies' water master planning and urban water management planning documents.

AO:ps

ATTACHMENT A

SDCWA ANNUAL REPORT EXCERPTS
2005-2009

In fiscal 2005, Water Authority member agencies' combined imported and local water use totaled over 644,800 acre-feet. Imported supplies accounted for 89 percent of the total water used, excluding estimated water savings from conservation programs. Of this amount, approximately 500,470 acre-feet of imported water was used for municipal and industrial needs, with the balance going to meet agricultural demands.

	Source of Water (acre-feet)			Type of Water Authority Supply Water Use (acre-feet)			
	Local Supply	Water Authority Supply (Imported Use)	Total	Agricultural Use	M & I Use	Gross Area (Acres)	Estimated Populations
Carlsbad M.W.D.	1,342	20,155	21,497	771	19,384	20,640	76,730
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Escondido, City Of	4,240	25,103	29,344	3,650	21,453	21,569	128,000
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Helix W.D.	6,726	32,060	38,785	0	32,060	31,350	251,879
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Oceanside, City Of	2,337	31,181	33,518	1,639	29,543	26,812	175,085
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Otay W.D.	1,038	37,787	38,825	96	37,691	63,155	182,000
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Camp Pendleton	8,411	834	9,245	0	834	134,625	50,000
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Rainbow M.W.D.	0	25,252	25,252	17,602	7,650	47,260	18,000
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Rincon Del Diablo M.W.D.	52	7,732	7,784	619	7,113	10,596	27,100
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
San Dieguito W.D.	2,298	5,605	7,904	0	5,605	5,653	38,000
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
South Bay I.D.	7,852	8,965	16,817	0	8,965	20,411	120,200
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Valley Center M.W.D.	355	38,105	38,459	28,771	9,333	64,253	24,802
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Yuima M.W.D.[7]	923	2,984	3,907	2,914	70	12,792	1,870
TOTALS	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Compilation of data furnished by member agencies.

1 Includes surface, recycled and groundwater supplies; does not reflect conserved water.
2 Water use in a given year may differ from Water Authority water sales due to storage.
3 Includes only amounts certified through the Interim Agricultural Water Program (IAWP).
4 Includes Water Authority deliveries via South Coast Water District system.
5 Excludes City of San Diego local surface water use outside of Water Authority Service Area.
6 Excludes land outside the Water Authority Service Area.
7 Excludes local supplies developed beyond Yuima's master meters.
8 Numbers may not total due to rounding.

WATER SOURCE AND USE *(Fiscal 2006)*

In fiscal 2006, Water Authority member agencies' combined imported and local water use totaled close to 687,300 acre-feet. Imported supplies accounted for 84 percent of the total water used, excluding estimated water savings from conservation programs. Of this amount, approximately 491,000 acre-feet of imported water was used for municipal and industrial needs, with the balance going to meet agricultural demands.

	Source of Water			Type of Water Authority Supply Water Use			
	Local Supply[1] Acre-feet	Water Authority Supply (Imported Use)[2] Acre-feet	Total Acre-feet	Agricultural Use[3] Acre-feet	M & I Use Acre-feet	Gross Area (Acres)	Estimated Population
Carlsbad M.W.D.	1,612.6	21,205.8	22,818.4	826.6	20,379.2	20,640.2	80,874
City of Del Mar	80.7	1,312.2	1,392.9	0.0	1,312.2	1,159.0	4,555
City of Escondido	9,869.5	23,129.4	32,998.9	4,322.3	18,807.1	21,569.0	141,000
Fallbrook P.U.D.	582.3	18,011.6	18,593.9	8,347.1	9,664.5	27,988.0	32,000
Helix W.D.	10,905.7	29,283.9	40,189.6	0.0	29,283.9	31,350.0	260,158
City of National City	5,076.5	1,597.7	6,674.2	0.0	1,597.7	5,837.8	54,420
City of Oceanside	2,170.8	30,972.2	33,143.0	2,095.9	28,876.3	26,982.5	175,805
Olivenhain M.W.D.	944.2	22,560.7	23,504.9	1,290.8	21,269.9	30,942.1	56,000
Otay W.D.	1,121.9	41,426.6	42,548.5	91.6	41,335.0	80,320.0	189,623
Padre Dam M.W.D.	781.7	20,396.9	21,178.6	1,161.8	19,235.1	54,402.2	134,600
Camp Pendleton[4]	9,179.0	810.3	9,989.3	0.0	810.3	134,625.0	50,000
City of Poway	343.0	15,524.9	15,867.9	691.2	14,833.7	25,088.0	50,675
Rainbow M.W.D.	0.0	30,458.8	30,458.8	20,263.6	10,195.2	47,260.4	18,000
Ramona M.W.D.	950.0	11,725.6	12,675.6	4,050.1	7,675.5	46,523.7	40,000
Rincon Del Diablo M.W.D.	1,079.8	8,369.3	9,449.1	715.2	7,654.1	10,596.1	28,200
City of San Diego[5]	35,958.5	196,939.7	232,898.2	481.8	196,457.9	210,726.2	1,305,736
San Dieguito W.D.	3,386.9	5,093.6	8,480.5	0.0	5,093.6	5,652.7	38,295
Santa Fe I.D.	4,849.0	9,877.6	14,726.6	144.4	9,733.2	10,359.0	21,004
South Bay I.D.	10,519.0	6,756.2	17,275.2	0.0	6,756.2	20,410.7	120,200
Vallecitos W.D.	0.0	19,572.9	19,572.9	2,489.9	17,083.0	28,986.0	86,500
Valley Center M.W.D.	386.5	44,766.9	45,153.4	34,398.6	10,368.3	64,252.7	25,441
Vista I.D.[6]	9,855.8	13,493.2	23,349.0	367.4	13,125.8	21,209.0	120,902
Yuima M.W.D.[7]	980.0	3,333.8	4,313.8	3,272.2	61.6	12,791.9	1,870
TOTALS[8]	110,633.4	576,619.8	687,253.2	85,010.5	491,609.3	939,672.2	3,035,858

[1] Includes surface, recycled, and groundwater supplies; does not reflect conserved water.
[2] Water use in a given year may differ from Water Authority water sales due to storage.
[3] Includes only amounts certified through the Interim Agricultural Water Program.
[4] Includes Water Authority deliveries via South Coast Water District System.
[5] Excludes city of San Diego local surface water use outside of Water Authority service area.
[6] Excludes land outside of Water Authority service area.
[7] Excludes local supplies developed beyond Yuima's master meters.
[8] Numbers may not total due to rounding.

WATER SOURCE AND USE FISCAL YEAR ENDED JUNE 30, 2007

In fiscal year 2007, Water Authority member agencies' combined imported and local water use totaled close to 741,893 acre-feet. Imported supplies accounted for 89 percent of the total water used, excluding estimated water savings from conservation programs. Of this amount, approximately 562,500 acre-feet of imported water was used for municipal and industrial needs, with the balance going to meet agricultural demands.

	Source of Water			Type of Water Authority Supply Water Use			
	Local Supply[1] Acre-feet	Authority Supply (Imported Use)[2] Acre-feet	Total Acre-feet	Agricultural Use[3] Acre-feet	M & I Use Acre-feet	Gross Area (Acres)	Estimated Populations
Carlsbad M.W.D.	2,554.0	22,098.7	24,652.7	878.2	21,220.5	20,640.2	80,800.0
City of Del Mar	79.9	1,442.6	1,522.5	0.0	1,442.6	1,159.0	4,555.0
City of Escondido	6,049.4	30,251.5	36,300.9	5,480.5	24,771.0	21,569.0	141,788.0
Fallbrook P.U.D.	680.8	21,916.5	22,597.3	10,540.1	11,376.4	27,988.0	32,000.0
Helix W.D.	4,262.6	37,825.6	42,088.2	0.0	37,825.6	31,350.0	260,158.0
Lakeside W.D.	542.8	1,994.9	2,537.7	11.9	1,983.0	11,488.0	35,500.0
City of National City	4,502.7	2,575.2	7,077.9	0.0	2,575.2	5,837.8	54,420.0
City of Oceanside	2,619.8	34,236.3	36,856.1	2,737.2	31,499.1	26,982.5	176,644.0
Olivenhain M.W.D.	1,296.0	24,613.3	25,909.3	1,097.1	23,516.2	30,942.1	56,000.0
Otay W.D.	1,783.3	41,946.4	43,729.7	90.6	41,855.8	80,320.0	191,026.0
Padre Dam M.W.D.	850.0	19,232.2	20,082.2	1,289.2	17,943.0	54,402.2	99,100.0
Camp Pendleton[4]	11,255.0	837.2	12,092.2	0.0	837.2	134,625.0	50,000.0
City of Poway	326.9	15,958.7	16,285.6	671.2	15,287.5	25,088.0	50,830.0
Rainbow M.W.D.	0.0	33,304.9	33,304.9	23,113.3	10,191.6	47,260.4	18,000.0
Ramona M.W.D.	894.1	20,359.0	21,253.1	5,331.7	15,027.3	46,523.7	40,000.0
Rincon Del Diablo M.W.D.	3,093.7	8,609.9	11,703.6	728.9	7,881.0	10,596.1	28,649.0
City of San Diego[5]	17,769.6	222,496.2	240,265.8	632.3	221,863.9	210,726.2	1,316,837.0
San Dieguito W.D.	3,522.5	5,740.0	9,262.5	0.0	5,740.0	5,652.7	38,295.0
Santa Fe I.D.	4,953.1	11,531.5	16,484.6	245.3	11,286.2	10,359.0	21,004.0
South Bay I.D.	6,842.7	9,410.5	16,253.2	0.0	9,410.5	20,410.7	120,200.0
Vallecitos W.D.	0.0	21,824.5	21,824.5	2,596.4	19,228.1	28,986.0	86,500.0
Valley Center M.W.D.	381.0	50,511.4	50,892.4	39,241.4	11,270.0	64,253.0	25,665.0
Vista I.D.[6]	5,062.3	18,967.3	24,029.6	572.1	18,395.2	21,190.2	121,888.0
Yuima M.W.D.[7]	1,262.1	3,624.6	4,886.7	3,578.1	46.5	12,791.9	1,870.0
TOTALS[8]	80,584.3	661,308.9	741,893.2	98,835.5	562,473.4	951,141.7	3,051,729.0

[1] Includes surface, recycled, and groundwater supplies; does not reflect conserved water.
[2] Water use in a given year may differ from Water Authority water sales due to storage.
[3] Includes only amounts certified through the Interim Agricultural Water Program.
[4] Includes Water Authority deliveries via South Coast Water District System.
[5] Excludes city of San Diego local surface water use outside of Water Authority service area.
[6] Excludes land outside of Water Authority service area.
[7] Excludes local supplies developed beyond Yuima's master meters.
[8] Numbers may not total due to rounding.

WATER SOURCE AND USE BY MEMBER AGENCY

FISCAL YEAR ENDED JUNE 30, 2008

In fiscal year 2008, the Water Authority member agencies' combined imported and local water use totaled close to 691,931 acre-feet. Imported supplies accounted for 88 percent of the total water used. Demands reflect estimated conservation savings. Of this amount, approximately 536,980 acre-feet of imported water was used for municipal and industrial needs, with the balance going to meet agricultural demands.

	Source of Water			Type of Authority Supply Water Use			
	Local Supply Acre-feet	Authority Supply (Imported Use)[2] Acre-feet	Total Acre-feet	Agricultural Use[3] Acre-feet	M & I Use Acre-feet	Gross Area (Acres)	Estimated Populations
Carlsbad M.W.D.	3,320.5	21,470.9	24,791.4	617.9	20,853.0	20,640.0	80,800
City of Del Mar	186.1	1,233.6	1,319.7	0.0	1,233.6	1,443.0	4,555
City of Escondido	3,656.8	26,735.9	30,392.7	4,244.4	22,491.5	21,569.0	141,788
Fallbrook P.U.D.	599.5	17,316.2	17,915.7	7,718.3	9,597.9	27,988.0	32,000
Helix W.D.	3,256.9	37,186.1	40,443.0	0.0	37,186.1	31,350.0	260,158
Lakeside W.D.	937.2	4,360.7	5,297.9	32.8	4,327.9	11,488.0	35,500
City of National City	4,014.8	2,380.6	6,395.4	0.0	2,380.6	5,837.8	54,420
City of Oceanside	1,964.8	32,573.1	34,537.9	2,266.2	30,306.9	26,982.5	176,644
Olivenhain M.W.D.	1,320.8	24,890.5	26,211.3	894.6	23,995.9	30,942.1	56,000
Otay W.D.	4,593.4	38,044.7	42,638.1	92.0	37,952.7	80,320.0	191,500
Padre Dam M.W.D.	1,830.9	16,162.0	16,992.9	1,067.1	15,094.9	54,402.2	99,100
Camp Pendleton[4]	10,486.1	930.8	11,418.9	0.0	930.8	134,625.0	50,000
City of Poway	355.2	14,933.9	15,289.1	396.0	14,537.9	25,088.0	51,103
Rainbow M.W.D.	0.0	27,045.1	27,045.1	16,365.8	10,679.3	47,260.4	16,000
Ramona M.W.D.	847.6	10,141.4	10,989.0	1,988.2	8,153.2	46,523.7	40,000
Rincon Del Diablo M.W.D.	3,073.6	8,116.0	11,189.6	531.1	7,584.9	10,596.1	29,098
City of San Diego[5]	24,155.1	215,791.2	239,946.3	476.2	215,315.0	210,726.2	1,316,837
San Dieguito W.D.	1,433.4	4,002.7	5,436.1	0.0	4,002.7	5,652.7	38,500
Santa Fe I.D.	6,103.9	9,115.6	15,219.5	217.5	8,898.1	10,359.0	21,004
South Bay I.D.	5,565.9	11,547.3	17,113.2	0.0	11,547.3	20,410.7	120,200
Vallecitos W.D.	0.0	20,467.9	20,467.9	1,932.8	18,535.1	29,100.0	86,500
Valley Center M.W.D.	419.0	39,499.8	39,918.8	28,832.8	10,667.0	64,253.0	25,679
Vista I.D.[6]	2,244.8	21,280.4	23,525.2	634.0	20,646.4	21,190.2	123,563
Yuima M.W.D.[7]	760.4	3,676.2	4,436.6	3,616.8	59.4	13,460.0	1,870
TOTAL	83,028.7	608,902.6	691,931.3	71,924.5	536,978.1	952,207.6	3,054,849

Notes

1 Includes surface, recycled, and groundwater supplies; does not reflect conserved water.

2 Water use in a given year may differ from Water Authority water sales due to storage.

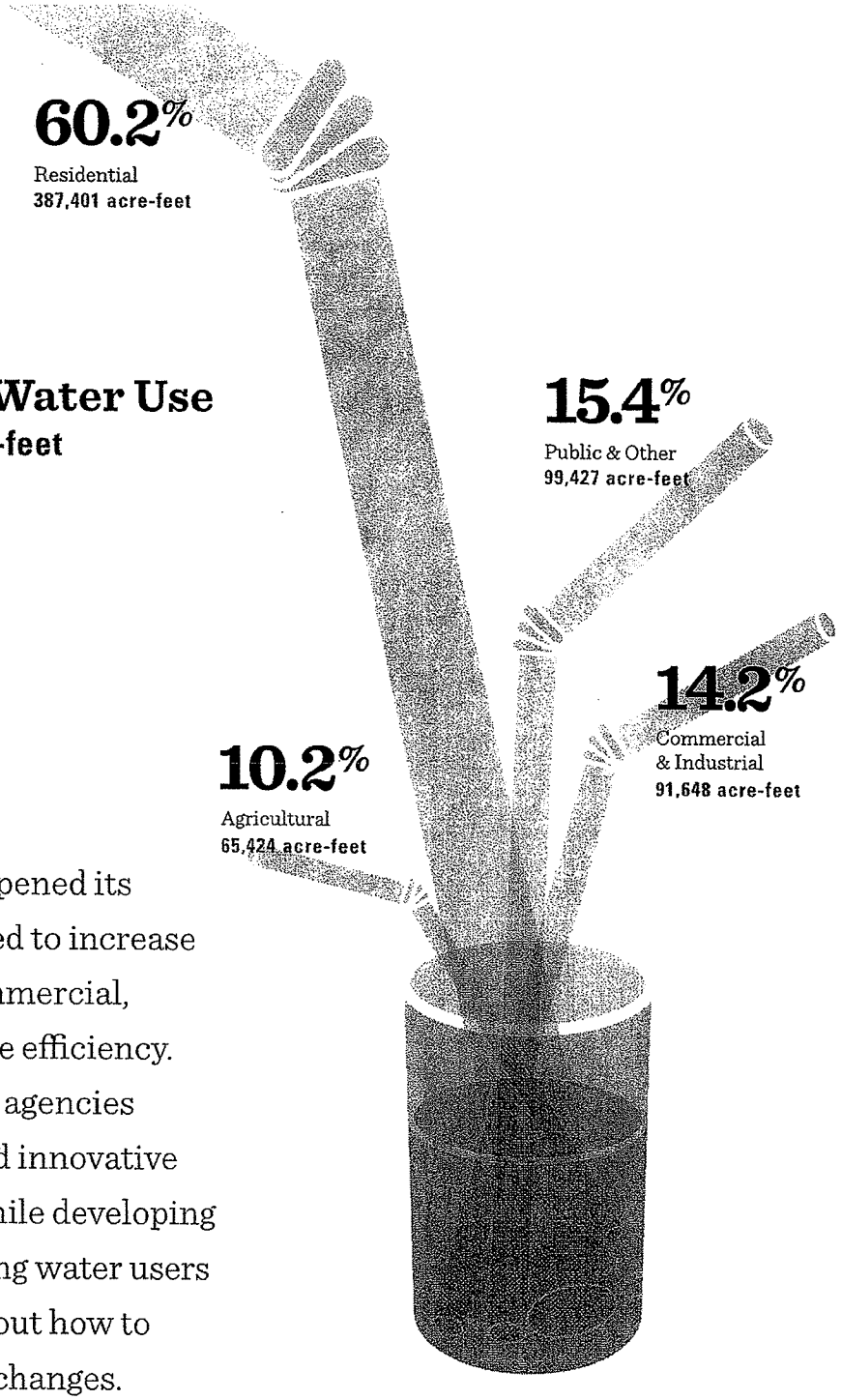
3 Includes only amounts certified through the Interim Agricultural Water Program.

4 Includes Water Authority Deliveries via South Coast Water District System.

5 Excludes City of San Diego local surface water use outside of Water Authority service area.

6 Excludes land outside of Water Authority service area.

7 Excludes local supplies developed beyond Yuima's master meters.



Fiscal Year 2009

Type of Water Use

643,900 acre-feet

The Water Authority sharpened its focus on programs designed to increase long-term residential, commercial, and public sector water use efficiency. It partnered with member agencies and businesses on new and innovative water-saving programs while developing engaging methods for giving water users important information about how to make lasting, sustainable changes.

NSERVE

ATTACHMENT B

STATE DEPARTMENT OF WATER RESOURCES
YEAR 2009 FINAL ALLOCATION

NOTICE TO STATE WATER PROJECT CONTRACTORS

Number: 09-07 **Date:** MAY 2 0 2009

Subject: 2009 State Water Project Allocation Increase to 40 Percent

From: Raphael A. Torres
Deputy Director, DEPARTMENT OF WATER RESOURCES

The Department of Water Resources (DWR) is increasing the allocation of 2009 State Water Project (SWP) water for long-term contractors from 1,249,913 acre-feet to 1,666,550 acre-feet. Based on recent precipitation and current water supply conditions, SWP supplies are projected to meet 40 percent of most SWP Contractors' 2009 requested Table A amounts, which total 4,166,376 acre-feet. Attached is the revised 2009 SWP allocation table.

DWR's new approval considered several factors, including existing storage in SWP conservation reservoirs, SWP operational constraints, including the conditions of the recent Biological Opinion for Delta smelt, and 2009 contractor demands. DWR may revise allocations if warranted by the year's developing hydrologic and water supply conditions.

If you have any questions or need additional information, please contact Robert Cooke, Chief of DWR's State Water Project Analysis Office, at (916) 653-4313.

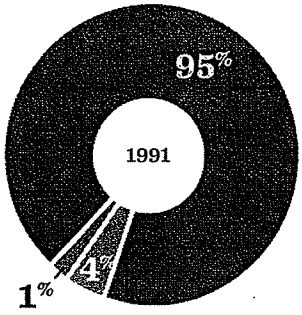
Attachment

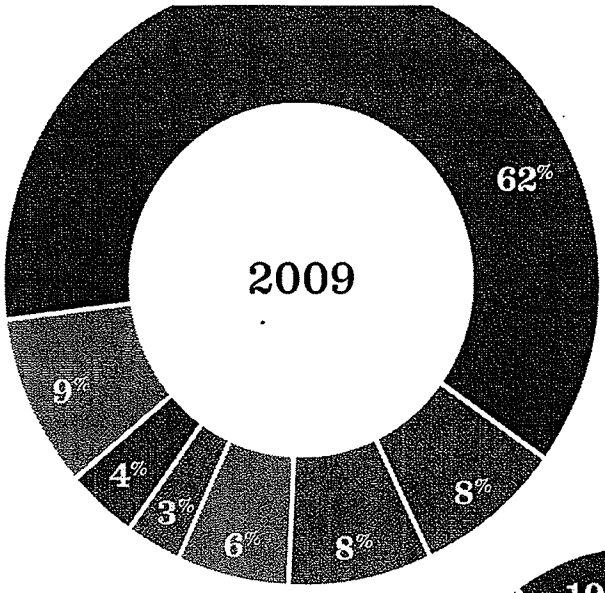
2009 STATE WATER PROJECT ALLOCATION
(ACRE-FEET)

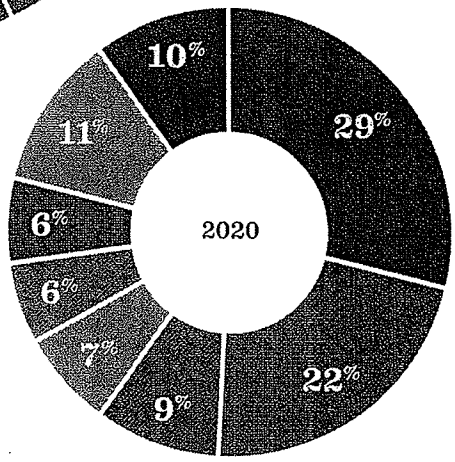
SWP CONTRACTORS	TABLE A (1)	INITIAL REQUEST (2)	APPROVED ALLOCATION (3)	PERCENT INITIAL REQUEST APPROVED (3)/(2) (4)
FEATHER RIVER				
County of Butte	27,500	27,500	11,000	40%
Plumas County FC&WCD	2,090	2,090	836	40%
City of Yuba City	9,600	9,600	3,840	40%
Subtotal	**39,190**	**39,190**	**15,676**	
NORTH BAY				
Napa County FC&WCD	23,525	23,525	9,410	40%
Solano County WA	47,456	47,456	18,982	40%
Subtotal	**70,981**	**70,981**	**28,392**	
SOUTH BAY				
Alameda County FC&WCD, Zone 7	80,619	80,619	32,248	40%
Alameda County WD	42,000	42,000	16,800	40%
Santa Clara Valley WD	100,000	100,000	40,000	40%
Subtotal	**222,619**	**222,619**	**89,048**	
SAN JOAQUIN VALLEY				
Oak Flat WD	5,700	5,700	2,280	40%
County of Kings	9,305	9,305	3,722	40%
Dudley Ridge WD	57,343	57,343	22,937	40%
Empire West Side ID	3,000	3,000	1,200	40%
Kern County WA	998,730	998,730	399,492	40%
Tulare Lake Basin WSD	95,922	95,922	38,369	40%
Subtotal	**1,170,000**	**1,170,000**	**468,000**	
CENTRAL COASTAL				
San Luis Obispo County FC&WCD	25,000	25,000	10,000	40%
Santa Barbara County FC&WCD	45,486	45,486	18,194	40%
Subtotal	**70,486**	**70,486**	**28,194**	
SOUTHERN CALIFORNIA				
Antelope Valley-East Kern WA	141,400	141,400	56,560	40%
Castaic Lake WA	95,200	95,200	38,080	40%
Coachella Valley WD	121,100	121,100	48,440	40%
Crestline-Lake Arrowhead WA	5,800	5,800	2,320	40%
Desert WA	50,000	50,000	20,000	40%
Littlerock Creek ID	2,300	2,300	920	40%
Mojave WA	75,800	75,800	30,320	40%
Metropolitan WDSC	1,911,500	1,911,500	764,600	40%
Palmdale WD	21,300	21,300	8,520	40%
San Bernardino Valley MWD	102,600	102,600	41,040	40%
San Gabriel Valley MWD	28,800	28,800	11,520	40%
San Gorgonio Pass WA	17,300	17,300	6,920	40%
Ventura County FCD	20,000	20,000	8,000	40%
Subtotal	**2,593,100**	**2,593,100**	**1,037,240**	
TOTAL	**4,166,376**	**4,166,376**	**1,666,550**	

ATTACHMENT C

SDCWA ANNUAL REPORT EXCERPT
YEAR 2009 - WATER SUPPLY PORTFOLIO







San Diego County's

Water Supply Portfolio

Water Sources	1991	2009	2020
MWD Supply	95%	62%	29%
IID Transfer	n/a	8%	22%
Canal Lining Transfers	n/a	8%	9%
Surface Water	4%	6%	7%
Groundwater	1%	3%	6%
Recycled Water	n/a	4%	6%
Conservation	n/a	9%	11%
Seawater Desalination	n/a	n/a	10%

Note: Represents Fiscal Years

HEEDING THE URGENT CALL

Throughout the year, the Water Authority executed one of the most high-profile and comprehensive community outreach efforts in its history. Working with its member agencies and many community partners, the Water Authority used varied and innovative tactics to ensure the public not only knew about escalating water supply challenges that could lead to urban water shortages, but understood how to take action to quickly spur greater voluntary water savings.

The region responded impressively. Traffic to www.20gallonchallenge.com, the Water Authority's conservation website, rose from an average of nearly 5,800 unique visits a month the previous year to more than 13,600 a month during fiscal year 2009.

More importantly, urban water use declined, dropping from 178 gallons per person per day in fiscal year 2008 to 164 gallons per person per day during fiscal year 2009. The pace of water savings also accelerated going into the summer months of 2009, with water use from January through June 2009 down 9 percent compared to the same time period in 2008. This gave the region a running start at achieving the 8 percent mandatory savings target for fiscal year 2010.

ATTACHMENT D

SDCWA MAY 2010 BOARD REPORT
MAY 19, 2010 – APPROVAL OF SHORTAGE MANAGEMENT ACTIONS

San Diego County Water Authority

May 19, 2010

Attention: Water Planning Committee

Approval of Shortage Management Actions for Fiscal Year 2011 in Response to Supply Cutbacks from Metropolitan Water District. (Action)

Staff recommendation

In response to Metropolitan Water District's April 2010 action to remain at Water Supply Allocation Plan Level 2 in fiscal year 2011 and the need to manage dry-year supplies for future years, staff is recommending that the Water Authority:

1. Continue to allocate supplies to member agencies in accordance with the Drought Management Plan;
2. Remain at Level 2, "Drought Alert" condition, consistent with the Water Authority's Drought Response Conservation Program Ordinance; and
3. Do not withdraw dry-year supplies from carryover storage or utilize additional dry-year transfers.

Alternative

1. Continue to allocate supplies to member agencies, do not withdraw dry-year supplies from carryover storage, and declare Level 1, "Drought Watch".

Fiscal Impact

If the Water Authority exceeds its allocation from MWD in fiscal year 2011, there will be a fiscal impact associated with paying a penalty fee, which would be $1,304 per acre-foot (100%<use ≤ 115%) or $2,608 per acre-foot (use >115%). Any penalties the Water Authority incurrs will be passed through to member agencies that have exceeded their individual allocations.

Background

For the first time since 1992, MWD allocated supplies to its member agencies in fiscal year 2010, due to drought conditions and pumping restrictions on the State Water Project. In response to the supply cutbacks from MWD and recognition of the need to manage available dry-year supplies with an eye to the future, the Water Authority Board, in April 2009, took certain actions to manage the shortage. Consistent with the orderly, progressive approach to shortage outlined in the Water Authority's 2006 Drought Management Plan, the Board took the following actions: 1) Utilize 15,500 acre-feet (after losses) of dry-year transfers; 2) Do not use dry-year supplies from carryover storage; 3) Declare Level 2, "Drought Alert" condition; and 4) Allocate supplies to member agencies in fiscal year 2010.

As reported monthly to the Board, municipal and industrial (M&I) water deliveries along with the agricultural water deliveries under the Interim Agricultural Water Program (IAWP) and Transitional Special Agricultural Water Rate (TSAWR) are well below current allocation targets. As of the end of March, M&I deliveries are 20 percent or 86,000 acre-feet below the Water Authority's allocation from Metropolitan while IAWP deliveries are down 66 percent and TSAWR deliveries are down 23 percent.

Hydrologic conditions improved this past winter, with snowpack statewide, including the northern Sierra, well above average. Another below average snowpack condition could have resulted in higher cutback levels and potentially more severe water-use restrictions during fiscal year 2011. Even with the above normal snowpack, the region continues to experience unprecedented water supply challenges. Due to the prior three years being dry statewide, storage levels in Lake Oroville began the water year well below capacity. In addition, the California Department of Water Resources (DWR) forecasts that even with high snowpack, runoff into Lake Oroville will be below average. Runoff is a major factor DWR considers when determining the State Water Project allocation for the year. On May 4, 2010, DWR increased the 2010 State Water Project allocation to 40 percent. DWR will issue the final SWP allocation at the end of May, which could increase again to above 40 percent.

MWD's supplies from the State Water Project also continue to be curtailed due to pumping restrictions that are necessary to protect endangered species in the Delta. DWR estimated at the beginning of May that fishery restrictions have impacted State Water Project deliveries for 2010 by 560,000 acre-feet. This translates into approximately a 280,000 acre-feet loss to MWD this year.

In response to DWR State Water Project 2010 allocation levels being similar to last year and need to continue managing storage supplies for future years, MWD, in April 2010, took action to continue at Water Supply Allocation Plan (WSAP) Level 2 in fiscal year 2011. At the May 2010 Board meeting, MWD staff restated the position of staying at Level 2, but could potentially present a revised WSAP Level recommendation at the June 2010 meeting, based in part on the final State Water Project allocation.

Since the Water Authority continues to face the same basic supply challenges as last year, with regard to supply cutbacks from MWD, coupled with the need to manage storage reserves to alleviate potentially more severe cutbacks in the future, staff is not recommending significant changes in shortage management from fiscal year 2010 for fiscal year 2011.

Discussion

In order to provide adequate time for the Water Authority and member agencies to respond to continued cutbacks from MWD starting July 1, 2010, staff is recommending the following shortage actions based on the MWD Board April 2010 action to remain at Level 2.

Dry-year Supplies

Dry-Year Transfers

In March 2010, the Board took two actions regarding dry-year transfer supplies for fiscal year 2011. The first action involved approval of a short-term pilot project with the Santa Clara Valley Water District and San Juan Water District that will yield approximately 960 acre-feet after losses. This one-year pilot transfer could lead to larger, and potentially longer-term, dry-year transfer arrangements in the future. The other action taken by the Board was to not exercise the call rights to the dry-year transfer with the South Feather Water and Power Agency. The Board determined that the transfer was not cost-effective at this time, due to the higher cost of the supply and lower demands due to conservation efforts. Staff is currently not actively pursuing additional dry-year transfers for use in fiscal year 2011, beyond the pilot project, but will continue to monitor for opportunities that could be implemented in fiscal year 2012 or beyond.

Dry-Year Carryover Storage Supplies
The Water Authority has carryover storage accounts in local member agencies reservoirs to provide dry-year supplies in shortage periods. There is currently approximately 41,000 acre-feet of dry-year, carryover supplies stored in Lower Otay, Sweetwater, El Capitan, and San Vicente reservoirs. Evaporation of the stored supplies is approximately 10 percent per year. In addition to supplies stored in local reservoirs, approximately 16,000 acre-feet of transfer supply has been stored in the Water Authority's storage account in Semitropic Water Storage District's groundwater basin in Kern County. These stored supplies, combined with supplies stored in local surface reservoirs, result in a total of approximately 57,000 acre-feet of dry-year carryover storage supplies.

Because of the multi-year nature of the water supply situation, the Water Authority may experience significant shortages in the next few years. This risk of shortage will not lessen until QSA supplies more fully ramp up, additional local supplies come on-line, and a Bay Delta solution is implemented. With the region's success in reducing demands this fiscal year expected to continue into next fiscal year, carryover supplies are not anticipated to be needed to ensure the Water Authority does not exceed its allocation from MWD. Based primarily on these factors, staff is recommending that dry-year carryover supplies not be withdrawn from storage in fiscal year 2011.

Continue to Allocate Supplies to Member Agencies
The Water Authority's Drought Management Plan contains an allocation methodology to equitably allocate supplies to member agencies, which was first implemented in fiscal year 2010. Staff is recommending the Water Authority continue to allocate supplies to member agencies during fiscal year 2011 for the following reasons:

- MWD Board took action in April 2010, to allocate supplies to its member agencies, including the Water Authority in fiscal year 2011;
- The Water Authority will be financially penalized if deliveries exceed the allocation target from Metropolitan and requires a means to equitably pass through the penalty to member agencies; and
- Continued allocations to member agencies will assist in ensuring savings are obtained in order to maintain storage levels for subsequent years.

If the Board approves continuing to allocate supplies to member agencies in fiscal year 2011, staff will return to the Board next month with recommended fiscal year 2011 allocation targets for each of the member agencies.

Remain at Drought Response Level 2 "Drought Alert"
With the Water Authority facing similar challenges to those experienced in 2009, with regard to cutbacks from MWD and need to manage storage supplies, staff is recommending remaining at Drought Response Level 2, "Drought Alert". Remaining at Level 2 will provide continued consistency in implementation of water-use restrictions and conservation rates. This will help ensure the Water Authority remains below its allocation from MWD through continued efficient use of supplies. Remaining at Level 2 could also help mitigate potential increases in demands in fiscal year 2011 due to potential improvements in the economy and below average rainfall. In addition, remaining at Level 2 helps manage potential multi-year cutbacks by minimizing the potential for more drastic cutbacks in later years.

Taking into account MWD WSAP Level 2 deliveries, anticipated increase in local supply use this coming fiscal year, and staff- recommended shortage management actions, staff anticipates the same regional cutback level as fiscal year 2010 of approximately eight percent. This cutback level will vary by member agency depending on their local supply usage.

Should the MWD Board revise the fiscal year 2011 WSAP Level in June, staff will return to the Board in June with a discussion on potential modifications, if any, to the recommendations contained in this memo.

Prepared by: Dana L. Friehauf, Principal Water Resources Specialist
Reviewed by: Ken Weinberg, Director of Water Resources
Approved by: Sandra L. Kerl, Deputy General Manager

ATTACHMENT E

MWDSC BOARD REPORTS
JAN 2010 - APRIL 2010
WATER SURPLUS AND DROUGHT
MANAGEMENT PLAN REPORTS

THE METROPOLITAN WATER DISTRICT
OF SOUTHERN CALIFORNIA

Report

Water Resource Management

• Water Surplus and Drought Management Plan on water supply and demand as of April 23, 2010

Summary

This is a monthly report on developing demand and supply conditions for calendar year (CY) 2010. Demand and supply projections include potential actions under the Water Surplus and Drought Management Plan (WSDM) and the Five-Year Supply Plan. These actions provide a strategy for managing Metropolitan's resources to meet the range of estimated demands for the CY, and for adjusting to changing resource conditions throughout the year. The following are report highlights for this month, current as of April 23, 2010:

CY 2010 Projections:

- Current Estimated Total Demand including Obligations and Losses: 2.094 MAF
- Total Colorado River Aqueduct (CRA) Related Supplies including Five-Year Supply Plan and WSDM Actions: 1.146 MAF
- Total State Water Project (SWP) Related Supplies including Five-Year Supply Plan and WSDM Actions: 1.178 TAF
- Total In-Region WSDM Supplies and Actions: 299 TAF

Attachments

Attachment 1: Five-Year Supply Plan Resource Options

Attachment 2: WSDM Supply Options for 2010 by Delivery System

Detailed Report

This report is a continuation of monthly WSDM Plan updates on the developing water supply and demand conditions for CY 2010. These reports apprise the Board of conditions that may impact water supply reliability for CY 2010, and identify potential WSDM actions that may be required.

CY 2010 Demands and Losses

The allocated demand estimate for CY 2010 is 153 TAF lower than last month, for a total water demand of 2.094 MAF. This change is due to member agency demands in January through March that were lower than the estimated Water Supply Allocation Plan (WSAP) Level 2, a WSAP Level 2 for July through December 2010, based on the Board's April 2010 decision to continue the WSAP for fiscal year (FY) 2010/11, and increased exchange obligations to Desert Water Agency/Coachella Valley Water District (DWCV) resulting from the increased State Water Project (SWP) Table A allocation. This demand estimate assumes member agencies purchase up to their prorated monthly allocation estimates in future months. Recent water sales show member agencies, as a group, are purchasing less than their monthly allocation estimates.

Total water demand consists of member agency demands, exchange agreements with San Diego County Water Authority (IID Transfer and All-American and Coachella Canal Lining Project), agreements to deliver water to DWCV and Tijuana, and system losses. The projections of member agency demands contain actual deliveries to date and assume a continuation of a Level 2 WSAP implementation through the rest of the year. Member agency demands also assume a 25 percent reduction of the remaining demands under the Interim Agricultural Water Program (IAWP), and account for the former IAWP demands that have opted-out of the program effective January 1, 2010. Conservation is implicit in this calculation of demand because agencies have implemented prohibited-use ordinances and pricing measures in response to the WSAP. The table below shows the current estimate of demand for CY 2010. Actual demands for the year will vary based on actual local supply production by the member agencies, weather conditions and conservation measures during the calendar year.

Date of Report: 5/11/2010

CY 2010 Current Demand Estimate		Change from Previous Month
Member Agency Demand	1,814,000	-182,000
Wheeling Obligations to Member Agencies	148,000	0
Delivery Obligations to Non-Member Agencies	75,000	29,000
Payback Obligations Due in 2010	0	0
System Losses	57,000	0
Total Current Demand Estimate	2,094,000	-153,000

CY 2010 Supplies and Storage

Colorado River Aqueduct System Deliveries

The current estimate of total CRA system deliveries to Metropolitan's service area for CY 2010 is 1.146 MAF, decreased due to lower Five Year Action estimates. The table below outlines the programs and agreements that are included in the estimate, including Metropolitan's Basic Apportionment (550 TAF), related WSDM and FiveYear Supply Plan actions, and all other Colorado River supplies developed to date, including water transfers that are diverted at Metropolitan's intake at Lake Havasu. For more detail, **Attachment 1** outlines yield from each of the Five-Year Supply Plan actions and **Attachment 2** shows WSDM storage balances and actions.

CY 2010 Colorado River Aqueduct Delivery System	Available 2010	Change from Previous Month
CRA Base	**883,000**	**0**
Basic Apportionment	550,000	0
IID/MWD Conservation Program	85,000	0
Water Exchanged with SDCWA (IID Transfer and Canal Lining)	148,000	0
Canal Lining Water to MWD	16,000	0
Lower Colorado Water Supply Project	3,000	0
PVID Land Fallowing	115,000	0
Deliveries for Tijuana	1,000	0
MWD Water Budget Agricultural Adjustment	0	0
Exchange with CVWD	-35,000	0
CRA WSDM Actions	**118,000**	**0**
CRA Five Year Actions	**145,000**	**-5,000**
Total CRA Diversions	1,146,000	-5,000

State Water Project System Deliveries

The current estimate of SWP system deliveries to Metropolitan's service area for CY 2010 is 1.178 TAF, increased by 310 TAF from last month due to increased Table A allocations to 30 percent. The California Department of Water Resources' (DWR) April 23, 2010, announcement of an updated SWP allocation at 30 percent of Table A contract amount, is an increase from the initial November 2009 SWP allocation of 5 percent. Metropolitan's Table A contract amount is 1.911 MAF, such that with a Table A allocation of 30 percent, Metropolitan would receive Table A supplies of 573 TAF. The table below shows Metropolitan's Table A supplies as well as estimated withdrawals from various WSDM storage programs and Five-Year Plan actions. Details of Five-Year Supply Plan and WSDM actions can be found in **Attachment 1** and **Attachment 2**. It is important to note that DWR bases its allocation estimate on Sierra mountain runoff, which continues to be lower than average, despite above normal precipitation conditions, and that these allocations are based on a 9 in 10 probability that the allocation will increase further, much as it did in CY 2009 from an initial 15 percent to a final 40 percent.

CY 2010 State Water Project Delivery System	Anticipated 2010	Change from Previous Month
SWP Base	**668,000**	**315,000**
Table A (30 percent allocation)	573,000	286,000
Turnback Pool	1,000	0
Port Hueneme Agreement	0	0
Table A (DWCV)	58,000	29,000
Drought Water Bank (DWCV)	0	0
Yuba Transfer (DWCV)	3,000	0
SDCWA Transfer	0	0
Yuba Component 2, 3, 4 Water (MWD)	33,000	0
SWP WSDM Actions	**430,000**	**0**
SWP Five Year Actions	**80,000**	**-5,000**
Total SWP to Service Area	**1,178,000**	**310,000**

In-Region Storage and Actions

In addition to the total supplies and storage actions delivered through the CRA and SWP systems, Metropolitan can also use WSDM storage programs within its service area. At the current trend estimate of demand and allocated supplies from the CRA and SWP, approximately 299 TAF of in-region storage is available for use in CY 2010 to aid in balancing supply and demand. For details on WSDM storage program estimates, see **Attachment 2.**

In-Region WSDM Storage	Available 2010	Change from Previous Month
Diamond Valley Lake (Dry-Year Storage)	204,000	0
Lake Mathews & Lake Skinner (Dry-Year Storage)	49,000	0
Conjunctive Use Programs	46,000	0
Supplemental Storage Programs	0	0
Total In-Region WSDM Storage Available	**299,000**	**0**

Demand and Supply Balance and WSDM Implications

Under the current demand estimate and the projected base supplies from the SWP and CRA, demands could be met with existing supplies and storage while retaining 529 TAF for use in the future. This is a net increase in the water balance of 458 TAF from last month.

Demand and Supply Balance		Change from Previous Month
Current Estimate Demand and System Losses	**2,094,000**	**-153,000**
Total Supplies	**2,623,000**	**305,000**
CRA Supplies	1,146,000	-5,000
SWP Supplies	1,178,000	310,000
In-Region Supplies	299,000	0
Water Balance	529,000	458,000

Conclusion

The Board approved implementing Metropolitan's WSAP at a Level 2 at its April 13, 2010 meeting. This action was taken in order to manage demands through the period of July 1, 2010, through June 30, 2011, given the limited supplies available in CY 2010, including limiting withdrawals of storage in order to maintain reasonable reserve levels.

Under WSAP Level 2 demands for the entire calendar year and with the most recent April 23, 2010 SWP allocation of 30 percent of Table A, Metropolitan can meet demands by implementing WSDM and Five-Year Supply Plan actions, including drawing about one third from its storage reserves. However, based on DWR's conservative allocation procedures and precipitation that has occurred after the last allocation analysis, the current 30 percent SWP allocation is likely to increase. In addition, demands on Metropolitan are currently tracking lower than the WSAP Level 2 allocation. If this demand trend continues and the SWP supply increases as expected, the draw on storage reserves will be less than one third, with a potential for a net gain in storage this year.

Five-Year Supply Plan Resource Options

Staff is continuing to identify and develop supply resources under the Five-Year Supply Plan. As shown in the following table, implementing all of the options identified would conservatively yield approximately 509 TAF of additional supply in 2010. However, a maximum of 469 TAF can be used in 2010, if needed, due to aqueduct capacity limitations from low demands and CRA outages. These capacity limitations do not limit how much is available from any specific CRA project, but how much can be taken in 2010 on the aqueduct as a whole. As previously noted, 225 TAF of related actions from the Five-Year Supply Plan are being included under either the SWP or CRA total delivery estimates. Also, the conservation measures associated with the Five-Year Supply Plan coincide with actions that agencies have taken to meet supply allocations under the current Level 2 WSAP allocation. For this reason, the 235 TAF of conservation savings identified from actions under the Five-Year Supply Plan are already incorporated in the demand forecast discussed in this letter.

Five Year Plan Resource Options	2010 Supplies Available	2010 Use	Changes from Previous Month
Conservation	**235,000**	**235,000**	**0**
Ordinances/Tiered Pricing	235,000	235,000	0
Colorado River Transactions	**185,000**	**145,000**	**-5,000**
Additional PVID Transfers (Crop Stressing/Fallowing)	35,000	35,000	0
Yuma Desalter	10,000	10,000	0
Expand SNWA Agreement	90,000	50,000	-5,000
ICS Exchange	25,000	25,000	0
Agreements with CVWD	25,000	25,000	0
Arizona Programs -- CAP	0	0	0
SWP Transactions	**80,000**	**80,000**	**-5,000**
SWP Contractors Buyers Group/NOD Transfers	80,000	80,000	0
In-Delta Transfers – Delta Wetlands	0	0	-5,000
Groundwater Recovery	**9,000**	**9,000**	**0**
LA DWP GW Demonstration	9,000	9,000	0
Total	**509,000**	**469,000**	**-10,000**

WSDM Supply Options for 2010 by Delivery System

2010 WSDM Storage	1/1/2010 Storage Levels	Take under 30% SWP Allocation	Take Change from Previous Month
Colorado River Aqueduct Delivery System	**150,000**	**118,000**	**0**
Lake Mead ICS Account	142,000	110,000	0
Central Arizona Storage Demonstration Project	8,000	8,000	0
State Water Project System	**463,000**	**430,000**	**0**
MWD SWP Carryover	67,000	67,000	0
DWCV SWP Carryover	11,000	11,000	0
SWP Non-Project Carryover	52,000	52,000	0
Castaic Lake (DWR Flex Storage)	154,000	154,000	0
Lake Perris (DWR Flex Storage)	21,000	21,000	0
Arvin Edison Storage Program	100,000	70,000	0
Semitropic Storage Program	45,000	45,000	0
Kern Delta Storage Program	10,000	10,000	0
Mojave Storage Program	3,000	0	0
In-Region Supplies and WSDM Actions	**630,000**	**299,000**	**0**
Diamond Valley Lake	384,000	204,000	0
Lake Mathews	125,000	46,000	0
Lake Skinner	36,000	3,000	0
IEUA/TVMWD (Chino Basin)	19,000	19,000	0
Long Beach (Cent. Basin)	6,000	0	0
Long Beach (Lakewood)	2,000	2,000	0
Foothill (Raymond and Monkhill)	1,000	1,000	0
Calleguas (N. Las Posas)	44,000	15,000	0
MWDOC (Orange County Basin)	9,000	9,000	0
Three Valleys (Live Oak)	3,000	0	0
Three Valleys (Upper Claremont)	1,000	0	0
Compton	0	0	0
Western	0	0	0
Cyclic - USG	0	0	0
Cyclic - PM (Three Valleys)	0	0	0
Cyclic - IEUA (Chino Basin)	0	0	0
Supplemental Storage Program (Los Angeles)	0	0	0
Other Programs	**379,000**	**45,000**	**2,000**
Other Emergency Storage	334,000	0	0
Advance Delivery Account (DWCV)	45,000	45,000	2,000
Total	**1,622,000**	**892,000**	**2,000**
Emergency	626,000	0	0
Total WSDM Storage	**996,000**	**892,000**	**2,000**

THE METROPOLITAN WATER DISTRICT
OF SOUTHERN CALIFORNIA

Report

Water Resource Management

• Water Surplus and Drought Management Plan on water supply and demand as of March 25, 2010

Summary

This is a monthly report on developing demand and supply conditions for **calendar** year (CY) 2010, including storage considerations and Water Supply Allocation Plan (WSAP) considerations for fiscal year (FY) 2010-2011. Demand and supply projections include potential actions under the Water Surplus and Drought Management Plan (WSDM) and the Five-Year Supply Plan. These actions provide a strategy for managing Metropolitan's resources to meet the range of estimated demands for the CY, and for adjusting to changing resource conditions throughout the year. These conditions and the preferred level of storage going into CY 2011 may affect the Board decision to implement the WSAP and allocate limited water supplies to the member agencies for the period of July 1, 2010, through June 30, 2011. The following are report highlights for this month, current as of March 25, 2010:

CY 2010 Projections:

- Current Estimated Total Demand including Obligations and Losses: 2.247 MAF
- Total Colorado River Aqueduct (CRA) Related Supplies including Five-Year Supply Plan and WSDM Actions: 1.151 MAF
- Total State Water Project (SWP) Related Supplies including Five-Year Supply Plan and WSDM Actions: 868 TAF (Based on a 15% SWP Allocation issued by DWR in March.)
- Total In-Region WSDM Supplies and Actions: 299 TAF

Attachments

Attachment 1: Five-Year Supply Plan Resource Options

Attachment 2: WSDM Supply Options for 2010 by Delivery System

Detailed Report

This report is a continuation of monthly WSDM Plan updates on the developing water supply and demand conditions for CY 2010. Also included is a discussion of Metropolitan's storage reserves and WSAP implementation considerations. These reports apprise the Board of conditions that may impact water supply reliability for CY 2010, and identify potential WSDM actions that may be required.

CY 2010 Demands and Losses

The current trend demand estimate for CY 2010 is 2 TAF lower than last month, for a total water demand of 2.247 MAF. This change is due to member agency demands in January through March that were lower than the estimated WSAP Level 2 and increased exchange obligations to Desert Water Agency/Coachella Valley Water District (DWCV) resulting from the State Water Project (SWP) Table A allocation.

Total water demand consists of member agency demands, exchange obligations with San Diego County Water Authority (IID Transfer and All American and Coachella Canal Lining Project), obligations to deliver water to DWCV and Tijuana, and system losses. The projections of member agency demands contain actual deliveries to date and assume a continuation of a Level 2 WSAP implementation through June 2010, and an estimate of demand without an allocation for July through December. Member agency demands also assume a 25 percent reduction of the remaining demands under the Interim Agricultural Water Program (IAWP), and account for the former IAWP demands that have opted-out of the program effective January 1, 2010. Conservation is implicit in this calculation of demand because agencies have implemented prohibited-use ordinances and pricing measures in response to the WSAP and that may continue throughout the year. The table below shows the current estimate of demand for CY 2010. Actual demands for the year will vary based on actual local supply production by the member agencies, weather conditions and conservation measures during the calendar year.

Date of Report: 4/13/2010

CY 2010 Current Demand Estimate		Change from Previous Month
Member Agency Demand	1,996,000	-43,000
Wheeling Obligations to Member Agencies	148,000	0
Delivery Obligations to Non-Member Agencies	46,000	41,000
Payback Obligations Due in 2010	0	0
System Losses	57,000	0
Total Current Demand Estimate	2,247,000	-2,000

CY 2010 Supplies and Storage

Colorado River Aqueduct System Deliveries

The current estimate of total CRA system deliveries to Metropolitan's service area for CY 2010 decreased by 23 TAF to 1.151 MAF due to a low demand-induced, temporary decrease in CRA pumping. The table below outlines the programs and obligations that are included in the estimate, including Metropolitan's Basic Apportionment (550 TAF), related WSDM and Five-Year Supply Plan actions, and all other Colorado River supplies developed to date, including water transfers that are diverted at Metropolitan's intake at Lake Havasu. For more detail, **Attachment 1** outlines yield from each of the Five-Year Supply Plan actions and **Attachment 2** shows WSDM storage balances and actions.

CY 2010 Colorado River Aqueduct Delivery System	Available 2010	Change from Previous Month
CRA Base	**883,000**	**-3,000**
Basic Apportionment	550,000	0
IID/MWD Conservation Program	85,000	0
Water Exchanged with SDCWA (IID Transfer and Canal Lining)	148,000	0
Canal Lining Water to MWD	16,000	0
Lower Colorado Water Supply Project	3,000	-1,000
PVID Land Fallowing	115,000	0
Deliveries for Tijuana	1,000	-2,000
MWD Water Budget Agricultural Adjustment	0	0
Exchange with CVWD	-35,000	0
CRA WSDM Actions	**118,000**	**-8,000**
CRA Five Year Actions	**150,000**	**-12,000**
Total CRA Diversions	1,151,000	-23,000

State Water Project System Deliveries

The current estimate of SWP system deliveries to Metropolitan's service area for CY 2010 is 868 TAF, increased by 42 TAF from last month due to increased take capacity from the Arvin Edison Storage program, Turnback Pool availability and higher Yuba transfer estimates. The California Department of Water Resources' (DWR) March 22, 2010, announcement of an updated SWP allocation remained at 15 percent of Table A contract amount, which is unchanged from February, but up from the initial November 2009 estimate of 5 percent. Metropolitan's Table A contract amount is 1.911 MAF, such that with a Table A allocation of 15 percent, Metropolitan would receive Table A supplies of 287 TAF. The table below shows Metropolitan's Table A supplies as well as estimated withdrawals from various WSDM storage programs and Five-Year Plan actions. Details of Five-Year Supply Plan and WSDM actions can be found in **Attachment 1** and **Attachment 2**. It is important to note that DWR bases its allocation estimate on Sierra mountain runoff, which

continues to be lower than average, despite above normal precipitation conditions, and that these allocations are based on a 9 in 10 probability that the allocation will increase further, much as it did in CY 2009 from an initial 15 percent to a final 40 percent.

CY 2010 State Water Project Delivery System	Anticipated 2010	Change from Previous Month
SWP Base	**353,000**	**12,000**
Table A (15 percent allocation)	287,000	0
Turnback Pool	1,000	1,000
Port Hueneme Agreement	0	0
Table A (DWCV)	29,000	0
Drought Water Bank (DWCV)	0	0
Yuba Transfer (DWCV)	3,000	1,000
SDCWA Transfer	0	0
Yuba Component 2, 3, 4 Water (MWD)	33,000	10,000
SWP WSDM Actions	**430,000**	**30,000**
SWP Five Year Actions	**85,000**	**0**
Total SWP to Service Area	**868,000**	**42,000**

In-Region Storage and Actions

In addition to the total supplies and storage actions delivered through the CRA and SWP systems, Metropolitan can also use WSDM storage programs within its service area. At the current trend estimate of demand and allocated supplies from the CRA and SWP, approximately 299 TAF of in-region storage is available for use in CY 2010 to aid in balancing supply and demand. For details on WSDM storage program estimates, see **Attachment 2.**

In-Region WSDM Storage	Available 2010	Change from Previous Month
Diamond Valley Lake (Dry-Year Storage)	204,000	0
Lake Mathews & Lake Skinner (Dry-Year Storage)	49,000	0
Conjunctive Use Programs	46,000	0
Supplemental Storage Programs	0	0
Total In-Region WSDM Storage Available	**299,000**	**0**

Demand and Supply Balance and WSDM Implications

Under the current demand estimate and the projected base supplies from the SWP and CRA, all but 71 TAF of available storage can be used to meet the remaining supply gap. This is a net increase in the water balance of 21 TAF from last month.

Demand and Supply Balance		Change from Previous Month
Current Estimate Demand and System Losses	**2,247,000**	**-2,000**
Total Supplies	**2,318,000**	**19,000**
CRA Supplies	1,151,000	-23,000
SWP Supplies	868,000	42,000
In-Region Supplies	299,000	0
Water Balance	71,000	21,000

Conclusion

Under the most recent March 2010 SWP allocation of 15 percent of Table A, Metropolitan could implement WSDM and Five-Year Supply Plan actions to meet demands by drawing nearly everything from its storage programs. Based on DWR's conservative allocation procedures, the current fifteen percent SWP allocation is likely to increase. However, without a SWP Table A allocation increase or additional supply augmentation, Metropolitan would need to use nearly all of its available storage or continue the implementation level of the WSAP through June 2011 at the current Level 2 or higher.

It is important to note that DWR updates the Table A allocation as the snowpack and storage conditions develop through the winter, and that allocations are based on a 9 in 10 probability that the allocation will increase, as it did in CY 2009 from the initial 15 percent to the final 40 percent. The Table A allocation is also based on SWP yields under pumping restrictions due to the Biological Opinions on Delta smelt and Chinook salmon. Depending on the actual level of these restrictions the SWP Table A allocation could be increased or decreased.

The Board approved implementing Metropolitan's WSAP at a Level 2 at its April 14, 2009 meeting. This action was taken in order to manage demands through the period of July 1, 2009, through June 30, 2010, given the limited supplies available in CY 2009, including limiting withdrawals of storage in order to maintain reasonable reserve levels. Metropolitan staff will make a recommendation of WSAP implementation levels at the April meeting, giving the Board the option of implementing a WSAP for July 1, 2010, through June 2011, should it find this necessary to manage demands and preserve storage.

Five-Year Supply Plan Resource Options

Staff is continuing to identify and develop supply resources under the Five-Year Supply Plan. As shown in the following table, implementing all of the options identified would conservatively yield approximately 514 TAF of additional supply in 2010, only 479 TAF of which can be used in 2010 due to aqueduct capacity limitations from low demands and CRA outages. These capacity limitations do not limit how much is available from any specific CRA project, but how much can be taken in 2010 on the aqueduct as a whole. As previously noted, 235 TAF of related actions from the Five-Year Supply Plan are being included under either the SWP or CRA total delivery estimates. Also, the conservation measures associated with the Five-Year Supply Plan coincide with actions that agencies have taken to meet supply allocations under the current Level 2 WSAP allocation. Savings from these prohibited-use measures and pricing impacts may also continue through the year even if the WSAP is not implemented in FY 2010/11. For this reason, the 235 TAF of conservation savings identified from actions under the Five-Year Supply Plan are already incorporated in the demand forecast discussed in this letter.

Five Year Plan Resource Options	2010 Supplies Available	2010 Use	Changes from Previous Month
Conservation	**235,000**	**235,000**	**0**
Ordinances/Tiered Pricing	235,000	235,000	0
Colorado River Transactions	**185,000**	**150,000**	**-12,000**
Additional PVID Transfers (Crop Stressing/Fallowing)	35,000	35,000	0
Yuma Desalter	10,000	10,000	0
Expand SNWA Agreement	90,000	55,000	-12,000
ICS Exchange	25,000	25,000	0
Agreements with CVWD	25,000	25,000	0
Arizona Programs -- CAP	0	0	0
SWP Transactions	**85,000**	**85,000**	**0**
SWP Contractors Buyers Group/NOD Transfers	80,000	80,000	0
In-Delta Transfers – Delta Wetlands	5,000	5,000	0
Groundwater Recovery	**9,000**	**9,000**	**0**
LA DWP GW Demonstration	9,000	9,000	0
Total	**514,000**	**479,000**	**-12,000**

WSDM Supply Options for 2010 by Delivery System

2010 WSDM Storage	1/1/2010 Storage Levels	Take under 20% SWP Allocation	Take Change from Previous Month
Colorado River Aqueduct Delivery System	**150,000**	**118,000**	**0**
Lake Mead ICS Account	142,000	110,000	0
Central Arizona Storage Demonstration Project	8,000	8,000	0
State Water Project System	**463,000**	**430,000**	**0**
MWD SWP Carryover	67,000	67,000	0
DWCV SWP Carryover	11,000	11,000	0
SWP Non-Project Carryover	52,000	52,000	0
Castaic Lake (DWR Flex Storage)	154,000	154,000	0
Lake Perris (DWR Flex Storage)	21,000	21,000	0
Arvin Edison Storage Program	100,000	70,000	0
Semitropic Storage Program	45,000	45,000	0
Kern Delta Storage Program	10,000	10,000	0
Mojave Storage Program	3,000	0	0
In-Region Supplies and WSDM Actions	**630,000**	**299,000**	**0**
Diamond Valley Lake	384,000	204,000	0
Lake Mathews	125,000	46,000	0
Lake Skinner	36,000	3,000	0
IEUA/TVMWD (Chino Basin)	19,000	19,000	0
Long Beach (Cent. Basin)	6,000	0	0
Long Beach (Lakewood)	2,000	2,000	0
Foothill (Raymond and Monkhill)	1,000	1,000	0
Calleguas (N. Las Posas)	44,000	15,000	0
MWDOC (Orange County Basin)	9,000	9,000	0
Three Valleys (Live Oak)	3,000	0	0
Three Valleys (Upper Claremont)	1,000	0	0
Compton	0	0	0
Western	0	0	0
Cyclic - USG	0	0	0
Cyclic - PM (Three Valleys)	0	0	0
Cyclic - IEUA (Chino Basin)	0	0	0
Supplemental Storage Program (Los Angeles)	0	0	0
Other Programs	**379,000**	**45,000**	**2,000**
Other Emergency Storage	334,000	0	0
Advance Delivery Account (DWCV)	45,000	45,000	2,000
Total	**1,622,000**	**892,000**	**2,000**
Emergency	626,000	0	0
Total WSDM Storage	**996,000**	**892,000**	**2,000**

THE METROPOLITAN WATER DISTRICT
OF SOUTHERN CALIFORNIA

Report

Water Resource Management Group

• Water Surplus and Drought Management Plan on water supply and demand as of March 2, 2010

Summary

This is a monthly report on developing demand and supply conditions for calendar year (CY) 2010, including storage considerations and Water Supply Allocation Plan (WSAP) considerations for fiscal year (FY) 2010-2011. Demand and supply projections include potential actions under the Water Surplus and Drought Management Plan (WSDM) and the Five-Year Supply Plan. These actions provide a strategy for managing Metropolitan's resources to meet the range of estimated demands for the CY, and for adjusting to changing resource conditions throughout the year. These conditions and the preferred level of storage going into CY 2011 may affect the Board decision to implement the WSAP in April and allocate limited water supplies to the member agencies for the period of July 1, 2010, through June 30, 2011. The following are report highlights for this month, current as of March 2, 2010:

CY 2010 Projections:

- Current Estimated Total Demand including Obligations and Losses: 2.249 MAF
- Total Colorado River Aqueduct (CRA) Related Supplies including Five-Year Supply Plan and WSDM Actions: 1.174 MAF
- Total State Water Project (SWP) Related Supplies including Five-Year Supply Plan and WSDM Actions: 826 TAF
- Total In-Region WSDM Supplies and Actions: 299 TAF

Attachments

Attachment 1: Five-Year Supply Plan Resource Options

Attachment 2: WSDM Supply Options for 2010 by Delivery System

Detailed Report

This report is a continuation of monthly WSDM Plan updates on the developing water supply and demand conditions for CY 2010. Also included is a discussion of Metropolitan's storage reserves and WSAP implementation considerations. These reports apprise the Board of conditions that may impact water supply reliability for CY 2010, and identify potential WSDM actions that may be required.

CY 2010 Demands and Losses

The current trend estimate for CY 2010 is 49 TAF lower than last month, for a total water demand of 2.249 MAF. This change is due to member agency demands in January and February that were lower than the estimated WSAP Level 2.

Total water demand consists of member agency demands, exchange obligations with San Diego County Water Authority (IID Transfer and All American and Coachella Canal Lining Project), obligations to deliver water to Desert Water Coachella Valley and Tijuana, and system losses. The projections of member agency demands contain actual deliveries to date and assume a continuation of a Level 2 WSAP implementation through June 2010, and an estimate of demand without an allocation for July through December. Member agency demands also assume a 25 percent reduction of the remaining demands under the Interim Agricultural Water Program (IAWP), and account for the former IAWP demands that have opted-out of the program effective January 1, 2010. Conservation is implicit in this calculation of demand because agencies have implemented prohibited-use ordinances and pricing measures in response to the WSAP and that may continue throughout the year. The table below shows the current estimate of demand for CY 2010. Actual demands for the year will vary

based on actual local supply production by the member agencies, weather conditions and conservation measures during the calendar year.

CY 2010 Current Demand Estimate		Change from Previous Month
Member Agency Demand	2,039,000	-49,000
Wheeling Obligations to Member Agencies	148,000	0
Delivery Obligations to Non-Member Agencies	5,000	0
Payback Obligations Due in 2010	0	0
System Losses	57,000	0
Total Current Demand Estimate	2,249,000	-49,000

CY 2010 Supplies and Storage

Colorado River Aqueduct System Deliveries

The current estimate of total CRA system deliveries to Metropolitan's service area for CY 2010 is 1.174 MAF. The table below outlines the programs and obligations that are included in the estimate, including Metropolitan's Basic Apportionment (550 TAF), related WSDM and Five-Year Supply Plan actions, and all other Colorado River supplies developed to date, including water transfers that are diverted at Metropolitan's intake at Lake Havasu. This figure is adjusted from last month due to lower estimated use of Five-Year Supply Plan water due to aqueduct capacity limitations from low demands and CRA outages. For more detail, **Attachment 1** outlines yield from each of the Five-Year Supply Plan actions and **Attachment 2** shows WSDM storage balances and actions.

CY 2010 Colorado River Aqueduct Delivery System	Available 2010	Change from Previous Month
CRA Base	**886,000**	**0**
Basic Apportionment	550,000	0
IID/MWD Conservation Program	85,000	0
Water Exchanged with SDCWA (IID Transfer and Canal Lining)	148,000	0
Canal Lining Water to MWD	16,000	0
Lower Colorado Water Supply Project	4,000	0
PVID Land Fallowing	115,000	0
Deliveries for Tijuana	3,000	0
MWD Water Budget Agricultural Adjustment	0	0
Exchange with CVWD	-35,000	0
CRA WSDM Actions	**126,000**	**0**
CRA Five Year Actions	**162,000**	**-23,000**
Total CRA Diversions	1,174,000	-23,000

State Water Project System Deliveries

The current estimate of SWP system deliveries to Metropolitan's service area for CY 2010 is 826 TAF. This has increased by 210 TAF from last month due to California Department of Water Resources' (DWR) February 2010 announcement of an updated SWP allocation of 15 percent of Table A contract amount, up from the initial November 2009 estimate of 5 percent. Metropolitan's Table A contract amount is 1.911 MAF, such that with the most recent Table A allocation, Metropolitan would receive Table A supplies of 287 TAF. The table below shows Metropolitan's Table A supplies as well as estimated withdrawals from various WSDM storage programs

and Five-Year Plan actions. Details of Five-Year Supply Plan and WSDM actions can be found in **Attachments 1** and **2.** It is important to note that DWR continues to update the Table A allocation as the rainfall and snowpack develops through the winter, and that allocations are based on a 9 in 10 probability that the allocation will increase further, much as it did in CY 2009 from an initial 15 percent to a final 40 percent.

CY 2010 State Water Project Delivery System	Anticipated 2010	Change from Previous Month
SWP Base	**341,000**	**210,000**
Table A (5 percent allocation)	287,000	191,000
Turnback Pool	0	0
Port Hueneme Agreement	0	0
Table A (DWCV)	29,000	19,000
Drought Water Bank (DWCV)	0	0
Yuba Transfer (DWCV)	2,000	0
SDCWA Transfer	0	0
Yuba Component 2, 3, 4 Water (MWD)	23,000	0
SWP WSDM Actions	**400,000**	**0**
SWP Five Year Actions	**85,000**	**0**
Total SWP to Service Area	826,000	210,000

In-Region Storage and Actions

In addition to the total supplies and storage actions delivered through the CRA and SWP systems, Metropolitan can also use WSDM storage programs within its service area. At the current trend estimate of demand and allocated supplies from the CRA and SWP, approximately 299 TAF of in-region storage is available for use in CY 2010 to aid in balancing supply and demand. This is lower than last month due to updated Conjunctive Use Program production certifications and increased emergency storage needs from Diamond Valley Lake. For details on WSDM storage program estimates, see **Attachment 2.**

In-Region WSDM Storage	Available 2010	Change from Previous Month
Diamond Valley Lake (Dry-Year Storage)	204,000	-13,000
Lake Mathews & Lake Skinner (Dry-Year Storage)	49,000	0
Conjunctive Use Programs	46,000	-1,000
Supplemental Storage Programs	0	0
Total In-Region WSDM Storage Available	299,000	-14,000

Demand and Supply Balance and WSDM Implications

Under the current demand estimate and the projected supplies from the SWP, CRA and all available storage, there would be a supply surplus of 50 TAF, a net increase in supplies of 222 TAF from last month. This surplus would reduce the amount of water Metropolitan would need to draw from storage.

Demand and Supply Balance		Change from Previous Month
Current Estimate Demand and System Losses	2,249,000	-49,000
Total Supplies	2,299,000	173,000
CRA Supplies	1,174,000	-23,000
SWP Supplies	826,000	210,000
In-Region Supplies	299,000	-14,000
Water Balance	50,000	222,000

WSAP and Storage Considerations

A key consideration in setting a WSAP Allocation Level is the maintenance of storage reserves for future conditions. Under the current demand and supply conditions shown in this report, Metropolitan would have to use 820 TAF of WSDM storage to meet demands without implementing the WSAP. This is most of the WSDM storage that is available in 2010 under a 15 percent SWP allocation, or nearly 80 percent of the total WSDM storage shown in **Attachment 2.**

Recommendations for WSAP Allocation Levels are set in recognition that use of storage reserves for the current year comes at the expense of the future. For the purposes of recommending WSAP levels, staff calculates a storage reserve that allows for use in the current year while maintaining storage to augment reasonably poor conditions next year. As a reference, approximately 100 TAF of water represents about one WSAP Level. This would mean that in selecting an appropriate WSAP Levels, every 100 TAF of storage held for future use could offset one WSAP Level for FY 2011/12. Alternatively, setting aside more storage for future use could lead to a deeper WSAP Level for the upcoming FY 2010/11. The use of storage reserves depends on the depth of allocation Metropolitan implements in FY 2010/11, balanced against the risk of potentially needing a deeper allocation in the future, should future demand and supply conditions be unfavorable.

Metropolitan staff will provide an updated allocation recommendation, including storage considerations, to the Water Planning and Stewardship Committee in April. This recommendation will be based on the expected final Table A deliveries from DWR and the latest storage conditions.

Conclusion

Under the updated February 2010 SWP allocation of 15 percent of Table A, Metropolitan could implement WSDM and Five-Year Supply Plan actions meet demands by drawing nearly everything from its storage programs. However, based on DWR's conservative allocation procedures, the current fifteen percent SWP allocation is likely to increase; without a SWP Table A allocation increase or additional supply augmentation, Metropolitan would need to use nearly all of its storage or increase the implementation level of the WSAP through June 2011 beyond the current Level 2.

It is important to note that DWR updates the Table A allocation as the snowpack and storage conditions develop through the winter, and that allocations are based on a nine in 10 probability that the allocation will increase, as it did in CY 2009 from the initial 15 percent to the final 40 percent. The Table A allocation is also based on SWP yields under the most restrictive pumping restrictions due to the Biological Opinions on Delta smelt and Chinook salmon. If these high restrictions are not needed to meet the conditions of the Biological Opinions, additional water for allocation may also be available.

Metropolitan's message and outreach over the coming months will emphasize that, at current water supply conditions, continuation of a WSAP implementation is likely for this year. Outreach actions include ongoing communication to customers regarding the water supply conditions and continuing to implement water conservation ordinances enforceable at the local level to prevent wasteful uses of water and encourage reasonable outdoor landscape irrigation practices.

Board Report (Water Surplus an Drought Management Plan on water supply and demand as of March 2, 2010)

The Board approved implementing Metropolitan's WSAP at a Level 2 at its April 14, 2009 meeting. This action was taken in order to manage demands through the period of July 1, 2009, through June 30, 2010, given the limited supplies available in CY 2009, including limiting withdrawals of storage in order to maintain reasonable reserve levels. Metropolitan also has the option of implementing a WSAP for July 1, 2010, through June 2011, should it find this necessary to manage demands and preserve storage.

Five-Year Supply Plan Resource Options

Staff is continuing to identify and develop supply resources under the Five-Year Supply Plan. As shown in the following table, implementing all of the options identified would conservatively yield approximately 514 TAF of additional supply in 2010, only 491 TAF of which can be used in 2010 due to aqueduct capacity limitations from low demands and CRA outages. These capacity limitations do not limit how much is available from any specific CRA project, but how much can be taken in 2010 on the aqueduct as a whole. As previously noted, 270 TAF of related actions from the Five-Year Supply Plan are being included under either the SWP or CRA total delivery estimates. Also, the conservation measures associated with the Five-Year Supply Plan coincide with actions that agencies have taken to meet supply allocations under the current Level 2 WSAP allocation. Savings from these prohibited-use measures and pricing impacts may also continue through the year even if the WSAP is not implemented in FY 2010/11. For this reason, the 235 TAF of conservation savings identified from actions under the Five-Year Supply Plan are already incorporated in the demand forecast discussed in this letter.

Five Year Plan Resource Options	2010 Supplies Available	2010 Use	Changes from Previous Month
Conservation	**235,000**	**235,000**	**0**
Ordinances/Tiered Pricing	235,000	235,000	0
Colorado River Transactions	**185,000**	**162,000**	**-23,000**
Additional PVID Transfers (Crop Stressing/Fallowing)	35,000		
Yuma Desalter	10,000		
Expand SNWA Agreement	90,000		
ICS Exchange	25,000		
Agreements with CVWD	25,000		
Arizona Programs -- CAP	0		
SWP Transactions	**85,000**	**85,000**	**0**
Drought Water Bank/NOD Transfers	80,000	80,000	0
In-Delta Transfers – Delta Wetlands	5,000	5,000	0
Groundwater Recovery	**9,000**	**9,000**	**0**
LA DWP GW Demonstration	9,000	9,000	0
Total	**514,000**	**491,000**	**-23,000**

WSDM Supply Options for 2010 by Delivery System

2010 WSDM Storage	1/1/2010 Storage Levels	Take under 5% SWP Allocation	Take Change from Previous Month
Colorado River Aqueduct Delivery System	**192,000**	**126,000**	**0**
Lake Mead ICS Account	184,000	118,000	0
Central Arizona Storage Demonstration Project	8,000	8,000	0
State Water Project System	**459,000**	**400,000**	**0**
MWD SWP Carryover	67,000	67,000	0
DWCV SWP Carryover	11,000	11,000	0
SWP Non-Project Carryover	52,000	52,000	0
Castaic Lake (DWR Flex Storage)	154,000	154,000	0
Lake Perris (DWR Flex Storage)	21,000	21,000	0
Arvin Edison Storage Program	96,000	40,000	0
Semitropic Storage Program	45,000	45,000	0
Kern Delta Storage Program	10,000	10,000	0
Mojave Storage Program	3,000	0	0
In-Region Supplies and WSDM Actions	**630,000**	**299,000**	**-14,000**
Diamond Valley Lake	384,000	204,000	-13,000
Lake Mathews	125,000	46,000	0
Lake Skinner	36,000	3,000	0
IEUA/TVMWD (Chino Basin)	19,000	19,000	-7,000
Long Beach (Cent. Basin)	6,000	0	0
Long Beach (Lakewood)	2,000	2,000	0
Foothill (Raymond and Monkhill)	1,000	1,000	1,000
Calleguas (N. Las Posas)	44,000	15,000	5,000
MWDOC (Orange County Basin)	9,000	9,000	0
Three Valleys (Live Oak)	3,000	0	0
Three Valleys (Upper Claremont)	1,000	0	0
Compton	0	0	0
Western	0	0	0
Cyclic - USG	0	0	0
Cyclic - PM (Three Valleys)	0	0	0
Cyclic - IEUA (Chino Basin)	0	0	0
Supplemental Storage Program (Los Angeles)	0	0	0
Other Programs	**379,000**	**45,000**	**0**
Other Emergency Storage	334,000	0	0
Advance Delivery Account (DWCV)	45,000	45,000	0
Total	**1,660,000**	**870,000**	**-14,000**
Emergency	626,000	0	-13,000
Total WSDM Storage	**1,034,000**	**870,000**	**-1,000**

THE METROPOLITAN WATER DISTRICT
OF SOUTHERN CALIFORNIA

Report

Water Resource Management

• Water Surplus and Drought Management Plan on water supply and demand as of January 26, 2010

Summary

This is a monthly report on developing demand and supply conditions for calendar year 2010. Included in these projections is an overview of potential actions under the Water Surplus and Drought Management Plan (WSDM) and the Five-Year Supply Plan. These actions provide a strategy for managing Metropolitan's resources to meet the range of estimated demands for the calendar year, and for adjusting to changing resource conditions throughout the year. The following are report highlights for this month, current as of January 26, 2010:

CY 2010 Projections:

- Current Trend Total Demand including Obligations and Losses: 2.298 MAF
- Total Colorado River Aqueduct (CRA) Related Supplies including Five-Year Supply Plan and WSDM Actions: 1.197 MAF
- Total State Water Project (SWP) Related Supplies including Five-Year Supply Plan and WSDM Actions: 616 TAF
- Total In-Region WSDM Supplies and Actions: 313 TAF
- Remaining Supply Need under Current Demand and Supply conditions: 172 TAF

Attachments

Attachment 1: Five-Year Supply Plan Resource Options

Attachment 2: WSDM Supply Options for 2010 by Delivery System

Detailed Report

This report is a continuation of monthly WSDM Plan updates on the developing water supply and demand conditions for CY 2010. These reports apprise the Board of conditions that may impact water supply reliability for CY 2010, and identify potential WSDM actions that may be required.

CY 2010 Demands and Losses

The current trend estimate for CY 2010 is 23 TAF lower than last month, for a total water demand of 2.298 MAF. This change is due to member agency demands in January trending lower than the estimated WSAP Level 2, and reduced estimates of wheeling obligations and deliveries to Tijuana and Desert Water Agency and Coachella Valley Water District (DWCV).

Total water demand consists of member agency demands, exchange obligations with San Diego County Water Authority (IID Transfer and All American and Coachella Canal Lining Project), obligations to deliver water to DWCV and Tijuana, and system losses. The projections of member agency demands assume a continuation of a Level 2 WSAP implementation through June 2010, and an estimate of demand without a Level 2 WSAP in effect for July through December. Member agency demands also assume a 25 percent reduction of the remaining demands under the Interim Agricultural Water Program (IAWP), and account for the former IAWP demands that have opted-out of the program effective January 1. Conservation is implicit in this calculation of demand due to prohibited-use measures and pricing impacts agencies implemented in response to the WSAP that may also continue through the year even if the WSAP is not continued through 2010/11. The table below shows the current trend estimate of demand for CY 2010. Actual demands for the year will vary based on actual local supply production by the member agencies, weather conditions and conservation measures during the calendar year.

Date of Report: 1/26/2010

CY 2010 Current Trend Demand		Change from Previous Month
Member Agency Demand	2,088,000	-9,000
Wheeling Obligations to Member Agencies	148,000	-4,000
Delivery Obligations to Non-Member Agencies	5,000	-10,000
Payback Obligations Due in 2010	0	0
System Losses	57,000	0
Total Current Trend Demand	2,298,000	-23,000

CY 2010 Supplies and Storage

Colorado River Aqueduct System Deliveries

The current estimate of total CRA system deliveries to Metropolitan's service area for CY 2010 is 1.197 MAF. The table below outlines the programs and obligations that are included in the estimate, including Metropolitan's Basic Apportionment (550 TAF), related WSDM and Five-Year Supply Plan actions, and all other Colorado River supplies developed to date, including water transfers that are diverted at Metropolitan's intake at Lake Havasu. This figure is adjusted slightly from last month due to decreased anticipated supplies from the IID/MWD Conservation Program, SDCWA Exchange and Tijuana deliveries and increased supplies available for the Canal Lining and Lower Colorado Water Supply Project. For more detail, **Attachment 1** outlines yield from each of the Five-Year Supply Plan actions and **Attachment 2** shows WSDM storage balances and actions.

CY 2010 Colorado River Aqueduct Delivery System	Available 2010	Change from Last Month
CRA Base	**886,000**	**-20,000**
Basic Apportionment	550,000	0
IID/MWD Conservation Program	85,000	-20,000
Water Exchanged with SDCWA (IID Transfer and Canal Lining)	148,000	-4,000
Canal Lining Water to MWD	16,000	4,000
Lower Colorado Water Supply Project	4,000	2,000
PVID Land Fallowing	115,000	0
Deliveries for Tijuana	3,000	-2,000
MWD Water Budget Agricultural Adjustment	0	0
Exchange with CVWD	-35,000	0
CRA WSDM Actions	**126,000**	**3,000**
CRA Five Year Actions	**185,000**	**9,000**
Total CRA Diversions	1,197,000	-8,000

State Water Project System Deliveries

The current estimate of SWP system deliveries to Metropolitan's service area for CY 2010 is 616 TAF, increased 15 TAF from last month due to projected Yuba transfer water. This estimate is based on the November 2009 California Department of Water Resources (DWR) announcement of an initial SWP allocation of 5 percent of Table A contract amount. Metropolitan's Table A contract amount is 1.911 MAF, such that with the initial Table A allocation, Metropolitan would receive Table A supplies of 96 TAF. The table below shows Metropolitan's Table A supplies as well as estimated withdrawals from various WSDM storage programs and Five-Year Plan actions. Details of Five-Year Supply Plan and WSDM actions can be found in **Attachments 1** and **2**. It is important to note that DWR updates the Table A allocation as the rainfall and snowpack develops through the winter, and that allocations are based on a 9 in 10 probability that the allocation will increase, much as it did in CY 2009 from 15 percent to 40 percent. Also, at this time, staff is projecting 80 TAF (after losses) of

supplies from Central Valley drought transfers. This projection will be refined as the transfer market develops and hydrological conditions change.

CY 2010 State Water Project Delivery System	Anticipated 2010	Change from Last Month
SWP Base	**131,000**	**15,000**
Table A (5 percent allocation)	96,000	0
Turnback Pool	0	0
Port Hueneme Agreement	0	0
Table A (DWCV)	10,000	0
Drought Water Bank (DWCV)	0	0
Yuba Transfer (DWCV)	2,000	0
SDCWA Transfer	0	0
Yuba Component 2, 3, 4 Water (MWD)	23,000	15,000
SWP WSDM Actions	**400,000**	**0**
SWP Five Year Actions	**85,000**	**0**
Total SWP to Service Area	**616,000**	**15,000**

In-Region Storage and Actions

In addition to the total supplies and storage actions delivered through the CRA and SWP systems, Metropolitan can also use WSDM storage programs within its service area. At the current trend estimate of demand and allocated supplies from the CRA and SWP, approximately 313 TAF of in-region storage is available for use in CY 2010 to aid in balancing supply and demand. The amount of water needed in emergency storage[1] for Metropolitan's service area decreased, allowing 41 TAF in Diamond Valley Lake to now be available for WSDM use. In addition, the other storage program projections were adjusted based on updated CY 2009 storage balances. For details on WSDM storage program estimates, see **Attachment 2.**

In-Region WSDM Storage	Available 2010	Change from Last Month
Diamond Valley Lake (Dry-Year Storage)	217,000	41,000
Lake Mathews & Lake Skinner (Dry-Year Storage)	49,000	2,000
Conjunctive Use Programs	47,000	10,000
Supplemental Storage Programs	0	-5,000
Total In-Region WSDM Storage Available	**313,000**	**48,000**

Demand and Supply Balance and WSDM Implications

Under the current trend demand estimate and the projected supplies from the SWP and CRA, Metropolitan would have to use 884 TAF or nearly 90 percent of its total available WSDM storage (total WSDM storage use is the sum of WSDM actions from the CRA, SWP, and In-Region less emergency storage). See **Attachment 2** for breakdown of projected WSDM storage takes under current demand and supply conditions for 2010. Even with this level of WSDM storage use, there would be a remaining supply need of 172 TAF, a reduction of 78 TAF

[1] Emergency storage is calculated as 75% of Metropolitan's demand for six months using projected average year demand and supply estimates from Metropolitan's models. Note that the demands and supplies used in this calculation differ somewhat from WSDM estimates because WSDM considers specific hydrologic and demand conditions for CY 2010 in place of averages.

from last month. Without a SWP Table A allocation increase, Metropolitan would have to either augment its supplies through additional water purchases or continue implementation of the WSAP through June 2011.

Demand and Supply Balance		Change from Last Month
Current Trend Demand and System Losses	**2,298,000**	**-23,000**
Total Supplies	**2,126,000**	**55,000**
CRA Supplies	1,197,000	-8,000
SWP Supplies	616,000	15,000
In-Region Supplies	313,000	48,000
Water Balance	**-172,000**	**78,000**

Conclusion

Under the current SWP allocation of 5 percent of Table A, Metropolitan could draw from its storage programs, implement WSDM and Five-Year Supply Plan actions and still have a remaining supply need of 172 TAF. However, based on DWR's conservative allocation procedures, the initial 5 percent SWP allocation is likely to increase (9 years out of 10, conditions will get better).

The Board approved implementing Metropolitan's WSAP at a Level 2 at its April 14, 2009 meeting. This action was taken in order to manage demands through the period of July 1, 2009, through June 30, 2010, given the limited supplies available in CY 2009, including limiting withdrawals of storage in order to maintain reasonable reserve levels. Metropolitan also has the option of implementing a WSAP for July 1, 2010, through June 2011, should it find this necessary to manage demands and preserve storage.

For 2010, staff continues to pursue resource options focusing on six initiatives: extraordinary conservation, Colorado River transactions, SWP transactions, groundwater recovery, near-term Delta actions and local resources. These supplies and conservation measures will enhance water supply reliability in Metropolitan's service area given continued dry conditions and restrictions on the SWP deliveries from the Delta.

Five-Year Supply Plan Resource Options

Staff is continuing to identify and develop supply resources under the Five-Year Supply Plan. As shown in the following table, implementing all of the options identified would conservatively yield approximately 514 TAF of additional supply in 2010, up a net 3 TAF from last month due to updated end of year estimates for CY 2009. As previously noted, 279 TAF of related actions from the Five-Year Supply Plan are being included under either the SWP or CRA total delivery estimates. Also, the conservation measures associated with the Five-Year Supply Plan coincide with actions that agencies have taken to meet supply allocations under the current Level 2 WSAP allocation. Savings from these prohibited-use measures and pricing impacts may also continue through the year even if the WSAP is not implemented in FY 2010/11. For this reason, the 235 TAF of conservation savings identified from actions under the Five-Year Supply Plan are already incorporated in the demand forecast discussed in this letter.

Five Year Plan Resource Options	2010 Annual Yield	Changes from Last Month
Conservation	**235,000**	**0**
Ordinances/Tiered Pricing	235,000	0
Colorado River Transactions	**185,000**	**9,000**
Additional PVID Transfers (Crop Stressing/Fallowing)	35,000	0
Yuma Desalter	10,000	-5,000
Expand SNWA Agreement	90,000	4,000
ICS Exchange	25,000	0
Agreements with CVWD	25,000	10,000
Arizona Programs -- CAP	0	0
SWP Transactions	**85,000**	**0**
Drought Water Bank/NOD Transfers	80,000	0
In-Delta Transfers – Delta Wetlands	5,000	0
Groundwater Recovery	**9,000**	**-6,000**
LA DWP GW Demonstration	9,000	-6,000
Total	**514,000**	**3,000**

WSDM Supply Options for 2010 by Delivery System

Note that 1/1/2010 estimated storage balances and takes have been updated based on more recent CY 2009 accounting.

2010 WSDM Storage	1/1/2010 Storage Levels	Take under 5% SWP Allocation	Take Change from Last Month
Colorado River Aqueduct Delivery System	158,000	126,000	3,000
Lake Mead ICS Account	150,000	118,000	3,000
Central Arizona Storage Demonstration Project	8,000	8,000	0
State Water Project System	459,000	400,000	0
MWD SWP Carryover	67,000	67,000	3,000
DWCV SWP Carryover	11,000	11,000	0
SWP Non-Project Carryover	52,000	52,000	-2,000
Castaic Lake (DWR Flex Storage)	154,000	154,000	0
Lake Perris (DWR Flex Storage)	21,000	21,000	0
Arvin Edison Storage Program	96,000	40,000	0
Semitropic Storage Program	45,000	45,000	-1,000
Kern Delta Storage Program	10,000	10,000	0
Mojave Storage Program	3,000	0	0
In-Region Supplies and WSDM Actions	636,000	313,000	48,000
Diamond Valley Lake	384,000	217,000	41,000
Lake Mathews	125,000	46,000	2,000
Lake Skinner	36,000	3,000	0
IEUA/TVMWD (Chino Basin)	26,000	26,000	10,000
Long Beach (Cent. Basin)	6,000	0	0
Long Beach (Lakewood)	2,000	2,000	0
Foothill (Raymond and Monkhill)	0	0	0
Calleguas (N. Las Posas)	44,000	10,000	0
MWDOC (Orange County Basin)	9,000	9,000	0
Three Valleys (Live Oak)	3,000	0	0
Three Valleys (Upper Claremont)	1,000	0	0
Compton	0	0	0
Western	0	0	0
Cyclic - USG	0	0	0
Cyclic - PM (Three Valleys)	0	0	0
Cyclic - IEUA (Chino Basin)	0	0	0
Supplemental Storage Program (Los Angeles)	0	0	-5,000
Other Programs	357,000	45,000	22,000
Other Emergency Storage	334,000	0	0
Advance Delivery Account (DWCV)	23,000	45,000	22,000
Total	1,610,000	884,000	73,000
Emergency	615,000	0	43,000
Total WSDM Storage	995,000	884,000	30,000

WATER SYSTEM ANALYSIS

WATER SYSTEM ANALYSIS
FOR THE
CAMPUS PARK PROJECT
IN THE COUNTY OF SAN DIEGO

November 5, 2010

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Job No: 669-009

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CHAPTER 1

INTRODUCTION

This report provides an overview of water service for the Campus Park project in the County of San Diego. This report will develop water demands for the project, recommend required onsite facilities to accommodate the projected demands, and recommend offsite facility improvements needed to accommodate the project's water demands. This report recommends water facilities specific to the needs of the Campus Park project.

PROJECT LOCATION

The Campus Park project site is located in the unincorporated portion of San Diego County (County) in the community of Fallbrook, approximately 6 miles southeast of downtown Fallbrook and 46 miles north of downtown San Diego. State Route (SR) 76 borders the southern Project boundary of the site and Interstate 15 (I-15) borders the property along the northern and central western edge. The I-15/SR 76 interchange, a gas station, a "take-out" restaurant, and a California Department of Transportation Park and Ride facility are located southwest of the Project site.

Development to the west of I-15 includes the Pala Mesa Resort, residential developments, and single-family homes. Uses to the north include single-family residences, nursery facilities and open space. The Meadowood Specific Plan Area (currently containing cultivated citrus and an avocado grove) is located to the east. Other uses to the east include undeveloped land and residences, with scattered avocado groves. A small rocky hill, Rosemary's Mountain, lies east of the southern portion of the Campus Park project site. Lancaster Mountain, an undeveloped lot, the San Luis Rey River, and a housing development are located south of the Project site. Figure 1-1 presents a vicinity map showing the subject property.

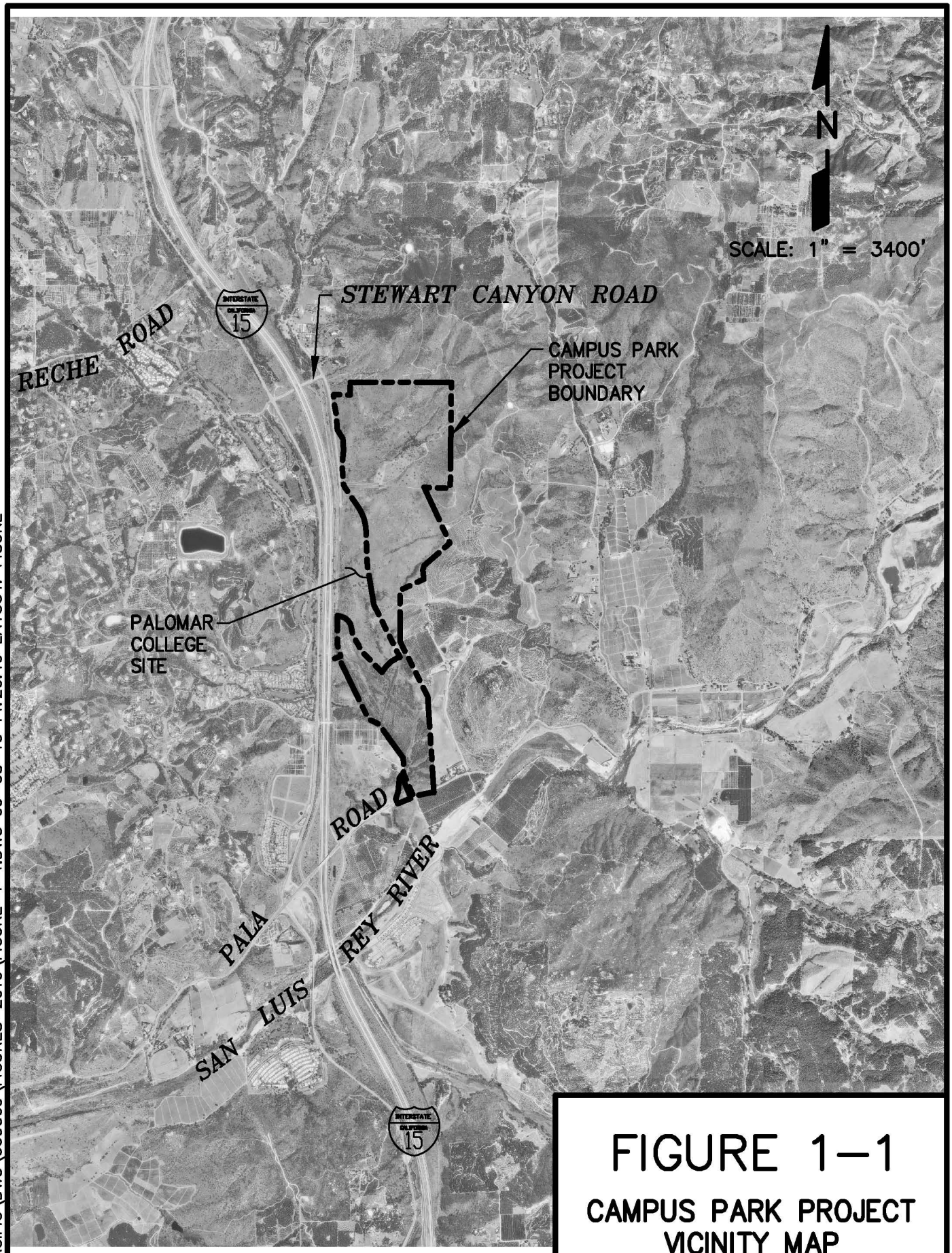


FIGURE 1–1

CAMPUS PARK PROJECT VICINITY MAP

The Campus Park project site is about 3,000 feet across (east-west), at its widest point and approximately 11,000 feet (two miles) from the northern to southern boundary. The site is divided by Pala Mesa Heights Drive, an east/west-trending unpaved road. The northern approximately 176-acre portion of the site has a generally square shape and is currently accessed by the north extension of Pankey Road via Stewart Canyon Road, which travels under I-15 and connects to Old Highway 395 on the west side of I-15. The southern 240-acre segment of the site is an irregularly shaped area that is currently accessed by the south extension of Pankey Road via SR 76.

PROJECT DESCRIPTION

The Campus Park project proposes on-site construction of a mixed-use community. The development would include a total of 751 single- and multi-family homes, professional office uses, as well as community parks, a sports complex, a Town Center (with retail and support services), and designated open space and biological open space preserves. Table 1-1 presents the proposed development summary for the Campus Park project.

TABLE 1-1
CAMPUS PARK PROPOSED
DEVELOPMENT PLAN

Land Use	Quantity
Residential Development	
Single Family Residential	521 dwelling units
Multi-Family Residential	230 dwelling units
Commercial Development	
Town Center Commercial	6.7 acres 61,200 square feet
Professional Office	157,000 square feet
Parks and Open Space	
Sports Complex	8.5 acres
Homeowners Facility - HOA	8 parks = 4.8 acres

The Campus Park project would include 521 single-family dwelling units and 230 multi-family dwelling units. Single-family residential units would be located in the northern portion of the site, and multi-family housing would be located in the south central area on the east side of Horse Ranch Creek Road. Professional office buildings, an active sports complex, and a Town Center would be aligned (north to south) along the western edge of the development area adjacent to Horse Ranch Creek Road. Preserved coastal sage scrub habitat would abut most of the northern portion of the Proposed Project to the west, north, and east. The southern portion of the Project would include mostly preserved riparian habitat.

The Town Center would be constructed in the central portion of the Campus Park project site on the east side of Horse Ranch Creek Road. A total building square footage of 61,200 would be allowed in the planning area. The Town Center would include numerous structures, as well as a parking area. Community-serving uses in Campus Park would be concentrated in the Town Center core area, which would function as the social, commercial and activity center for the community. The Town Center would include a variety of social, civic and commercial uses within the Campus Park project, such as community-serving commercial retail shops and restaurants.

Four office professional lots are proposed for the development and would be located on the east side on Horse Ranch Creek Road on either side of Baltimore Oriole Road. In addition to administrative and professional services, office uses could include financial and real estate services, medical offices, schools, civic uses, day care and eating establishments. A total building square footage of approximately 157,000 would be allowed on these lots. Office professional uses would not exceed two stories.

A trail staging area is proposed immediately east of Pankey Road, north of SR 76. This staging area would provide parking for recreational users intending to utilize the region's existing and/or future trail network. It would include an asphalt parking area and landscaping.

PROJECT PHASING

Campus Park would be developed over an approximate five- to six-year period to ensure a logical and orderly expansion of roadways, public utilities, and infrastructure. Market conditions, funding for public facilities, and similar conditions beyond the control of the developer may extend implementation of the entire plan beyond that period.

TOPOGRAPHY

The existing topography on the property ranges in elevation from a low of approximately 270 feet to a high of approximately 850 feet. The topography generally increases from south to north and from west to east. Natural drainage from the property flows south under Highway 76 and discharges into the San Luis Rey River on the east side of the Interstate 15 Freeway. The higher elevations of the property which are located at the north and eastern ends of the project are not planned to be developed because of the steepness of the existing terrain.

WATER SERVICE

Water service for the Campus Park project will be provided by the Rainbow Municipal Water District. The Rainbow Municipal Water District has existing water facilities in the vicinity of the Campus Park project; these facilities have sufficient capacity to serve the project. In addition, Section 7.1 of the Water Master Plan Update Final Report, May 2006, paragraph six states that "...supply capacity of the existing CWA and MWD aqueduct connections is projected to be adequate for ultimate demands." This report will provide information on the proposed onsite and offsite water facilities that are needed to provide adequate water service to the proposed project.

CHAPTER 2

DESIGN CRITERIA

This chapter presents the design criteria used in master planning water facilities for the Campus Park project. Unless otherwise noted, the criteria utilized in this report are established in accordance with the standards of the Rainbow Municipal Water District Domestic Water and Sanitary Sewer Construction Standards Manual, August 2006 Edition. The design criteria are used for analysis of the existing water system as well as for design and sizing of proposed improvements and expansions to the system to accommodate the projected water demands for the proposed development project.

Water Demands

The water demand factors used to project average water use for the Campus Park project are based on equivalent dwelling units and are summarized in Table 2-1.

TABLE 2-1
WATER USE FACTORS

Land Use	Average Daily Demand
Single Family Residential	500 gpd/DU
Multi-Family Residential	400 gpd/DU
Town Center Commercial	3,000 gpd/acre
Professional Office	100 gpd/1,000 SF
Developed Parks	4,000 gpd/acre

Peaking Factors

To convert average daily water demand to maximum day demands, a peaking factor of 2.0 is used. The peaking factor for average day demand to maximum (peak) hour demand is 4.5 (Section 2.02.A of the Rainbow Municipal Water District Domestic Water and Sanitary Sewer Construction Standards Manual, August 2006 Edition).

Fire Flows

The fire flow requirements vary by the type of land use and are established by the local fire protection agency. Generally, residential development requires a fire flow of 1,500 gpm at 20 psi residual. For commercial development, fire flows become dependent upon the size of the buildings and the type of construction that is used. For planning purposes, a fire flow requirement of 3,500 gpm is appropriate for commercial land uses; actual fire hydrant flow requirements may be reduced based on having fire sprinkler systems installed as part of building construction. Under most circumstances, the commercial fire flow requirement is greater than the peak hour demand; therefore, the maximum day demand plus fire flow requirement will govern the water system sizing. A pressure residual of 20 psi at the fire flow location is standard for commercial land uses as well.

System Pressures

Generally, the potable water distribution system is designed to maintain static pressures between 60 psi and 200 psi. The potable water distribution system has been designed to yield a minimum of 40 psi residual pressure at any location under peak hour demand flows, and a minimum residual pressure of 20 psi during maximum day demand plus fire flow conditions. Potable water mains are sized to maintain a maximum velocity of 10 feet per second under a maximum day plus fire flow scenario and a maximum velocity of 5 feet per second under peak hour flow conditions.

CHAPTER 3

PROJECTED WATER DEMANDS

Based on the water use factors presented in Chapter 2 and the proposed development plan for the Campus Park project, Table 3-1 provides the projected water use for the project. The total projected average water demand is 0.44 mgd (495 acre-feet per year).

TABLE 3-1
CAMPUS PARK PROJECT
WATER DEMAND PROJECTIONS

Land Use	Quantity	Demand Factor	Average Water Use, gpd
Single Family Residential	521 units	500 gpd/DU	260,500
Multi-Family Residential	230 units	400 gpd/DU	92,000
Town Center Commercial	6.7 acres	3,000 gpd/acre	20,100
Professional Office	157,000 SF	100 gpd/1,000 SF	15,700
Sports Complex	8.5 acres	4,000 gpd/acre	34,000
Homeowners Facility-HOA	4.8 acres	4,000 gpd/acre	19,200
TOTAL			**441,500 = 307 gpm = 883.0 EDUs**

The total water demand for the Campus Park project is equivalent to 883.0 EDUs of water demand based on one EDU equaling one single family residence (500 gpd).

Using the peaking factors discussed in Chapter 2 of this report, the maximum day demand (peaking factor is 2.0) for the Campus Park project is 883,000 gpd, or 613 gpm. The peak hour peaking factor is 4.5. This results in a peak hour demand for the Campus Park project of 1,986,750 gpd, or 1,380 gpm.

CHAPTER 4

EXISTING WATER FACILITIES

This chapter describes the existing water system facilities in the vicinity of the Campus Park project. Existing water facilities are located offsite from the project and will need to be extended to and within the Campus Park project. These facilities will be discussed in more detail.

Existing Pressure Zones

There are two existing water service pressure zones in the vicinity of the Campus Park project. These two zones are recommended to be extended to the project to provide water service and fire protection to the proposed development.

Canonita Zone. To the north of the Campus Park project there are existing water facilities which are within the Canonita Zone System. This pressure zone operates at an hydraulic grade line of 1019 feet. The nearest facility to the Campus Park project is a 16-inch water main in Stewart Canyon Road. From the Interstate 15 Freeway crossing, this water main extends north and connects to the 6.0 million gallon Canonita Tank.

Beck Zone. To the west and southwest of the Campus Park project there are existing water lines which are within the Beck Zone System. This pressure zone operates at an hydraulic grade line of 897 feet. The nearest water line to the Campus Park project is an 18-inch water main located in the Pala Mesa Drive overcrossing of the Interstate 15 Freeway. The Beck Zone System includes a storage reservoir which has 203.7 million gallons of storage capacity; it is called Beck Reservoir.

CHAPTER 5

EVALUATION OF EXISTING FACILITIES AND RECOMMENDED WATER FACILITIES

The purpose of this chapter is to summarize the analyses that we have performed to determine the required onsite water system improvements for the Campus Park project. This chapter will also discuss the offsite improvements needed to supply adequate water service and fire protection to the proposed development.

PROPOSED WATER SERVICE ZONES

As discussed in the previous chapter, the water service pressure zones in the near vicinity of the Campus Park project are the Canonita 1019 Zone and the Beck 897 Zone. Based upon the proposed range of pad elevations on the project of 270 feet to 511 feet, both of the available existing pressure zones have too great an hydraulic grade line to provide service pressures in an acceptable range.

We are recommending that the Campus Park project be served by a new water service pressure zone. The new zone is recommended to be set at an hydraulic grade line of 660 feet. This will result in the water service pressures to be a minimum of 64 psi at the high end of the service area, and maximum service pressure to be 169 psi at the lower ends of the proposed development. Only a small segment of the proposed project is located at elevations where the static pressure will be above 150 psi.

The recommended new water pressure zone for the Campus Park project is intended to be connected to existing water lines in the vicinity of the proposed project. The new pressure zone will be created using pressure reducing stations which will be constructed as part of the Campus Park project water system improvements. These onsite improvements will be discussed later in this report.

OFFSITE WATER SYSTEM

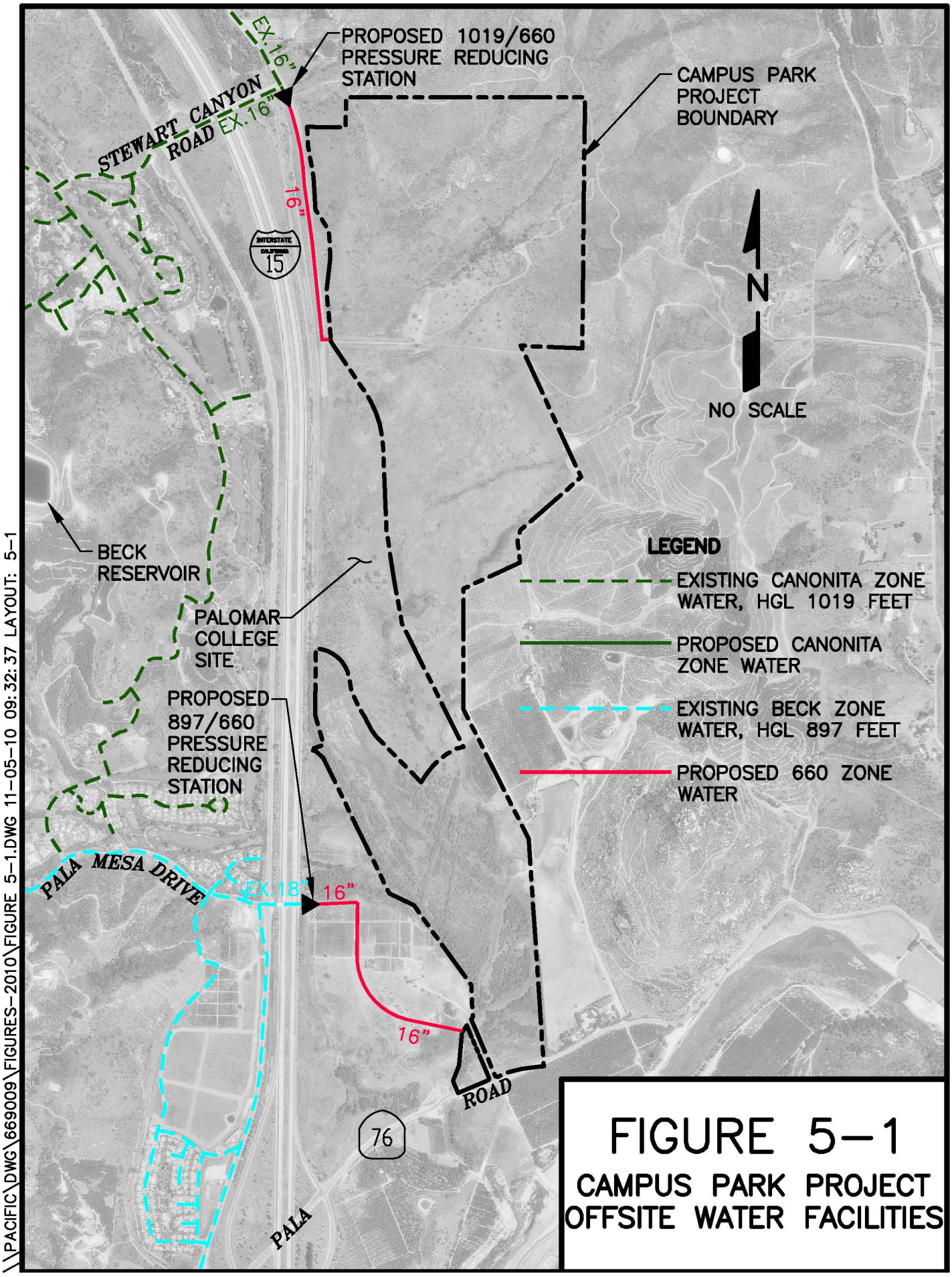
The offsite requirements for the Campus Park project water system are recommended to be extensions of the existing water mains to the subdivision boundary. Figure 5-1 shows the two offsite water extensions proposed for the Campus Park project.

At the southwestern end of the Campus Park project, an offsite water line extension consists of extending the existing 897 Zone 18-inch water line which currently ends on the east side of the Pala Mesa Drive overcrossing at the Interstate 15 Freeway. The water main extension is recommended to be a 16-inch water line. This water system connection will be the primary feed to the proposed 660 Zone pressure system which will provide service to the entire Campus Park development project.

The alignment of the water main extension is proposed to follow the extension of Pala Mesa Drive from the Interstate 15 Freeway east to future Pankey Road then south to future Pankey Place. Within Pankey Place, the new water line will extend to future Horse Ranch Creek Road, the backbone street for the Campus Park project. Since the existing 897 Zone has too high an hydraulic grade line for service in the Campus Park project, a proposed pressure reducing station is recommended to be located just east of the connection to the existing 18-inch water main. This is shown schematically on Exhibit A, Sheet 2 of 2, at the back of this report.

A secondary or redundant water system connection to the Campus Park development is proposed from the Canonita 1019 Zone system. The existing 1019 Zone 16-inch water main in Stewart Canyon Road to the north of the Campus Park project is recommended to be extended south in future Horse Ranch Creek Road. This water main extension will provide redundant service to the proposed 660 Zone water system within the Campus Park project.

The recommendation is to construct a pressure reducing station at Stewart Canyon Road off of the existing 1019 Zone water line and extend a 660 Zone water line south to the Campus Park project. The offsite extension of the 660 Zone water line in future Horse Ranch Creek Road is recommended to be a 16-inch main as shown in Figure 5-1.



\\PACIFIC\DWG\669009\FIGURES-2010\FIGURE 5-1.DWG 11-05-10 09:32:37 LAYOUT: 5-1

FIGURE 5-1

CAMPUS PARK PROJECT OFFSITE WATER FACILITIES

ONSITE WATER SYSTEM

The onsite water system for the Campus Park project will consist of distribution piping for the new 660 Pressure Zone. Service pressures will range between 64 psi and 169 psi. The primary point of connection for the proposed 660 Pressure Zone will be to the existing 18-inch 897 Zone water line in the Pala Mesa Drive Interstate 15 Freeway overcrossing. This water connection will include a pressure reducing station to reduce system pressure from the 897 Zone to the proposed 660 Zone. Thus, the main supply of water to the Campus Park project will be from the Beck Zone System.

For the purpose of redundancy, the 660 Pressure Zone at the north end of the Campus Park project will be connected to the existing 1019 Zone 16-inch water main in Stewart Canyon Road by means of a pressure reducing station. A 16-inch 660 Zone water main will be constructed in future Horse Ranch Creek Road.

Exhibit A at the back of this report presents the recommended water system configuration and preliminary pipe sizes for the Campus Park project. This exhibit is also color coded to enable the reader to distinguish between the proposed 660 Pressure Zone system within the Campus Park development and the higher pressure systems which are providing the primary connections to the project.

The majority of the new water line sizes are 8-inch diameter. A 16-inch diameter water line is proposed for Horse Ranch Creek Road through the central portion of the proposed project in order to deliver the required fire flows to the Town Center Commercial land uses, the Sports Complex, and Professional Office land uses proposed for this project.

On the south end of the Campus Park project, a 12" water main is proposed to be stubbed south of Pankey Place in Pankey Road to provide service to the southernmost end of the Campus Park project (see Exhibit A, Sheet 2 of 2). In addition, this stubbed pipeline will allow future extension of the 660 Pressure Zone water system for use by other properties if necessary.

PRESSURE REDUCING STATIONS

For water service to the Campus Park project, the recommended water system includes two pressure reducing stations. These two pressure reducing stations will provide the recommended 660 Pressure Zone water service to the development project. A description of the two pressure reducing stations follows.

1. The Pala Mesa Drive Pressure Reducing Station. This proposed pressure reducing station will provide the primary feed to the Campus Park development project. It will connect to the existing 897 Zone water main in Pala Mesa Drive and reduce the pressure to the 660 Pressure Zone system within the proposed development.

   It is anticipated that this pressure reducing station will be installed on a concrete slab above grade and include two pressure reducing valves: a 10" diameter main valve capable of delivering up to 4,900 gpm continuous flow to meet the required fire flow capacity; and a 4" valve having a flow range between 50 and 800 gpm to supply the domestic demands of the project.

2. The Horse Ranch Creek Road Pressure Reducing Station. This regulating station is proposed to be located near the north end of the project where future Horse Ranch Creek Road intersects with existing Stewart Canyon Road. It will reduce the water from the existing 1019 Zone to the proposed 660 Pressure Zone system. The function of this pressure reducing station will be to provide backup water delivery to the Campus Park development in the event of a large onsite demand such as a fire flow event. This pressure reducing station will also provide backup water service to the project in the event that the Pala Mesa Drive Pressure Reducing Station is out of service.

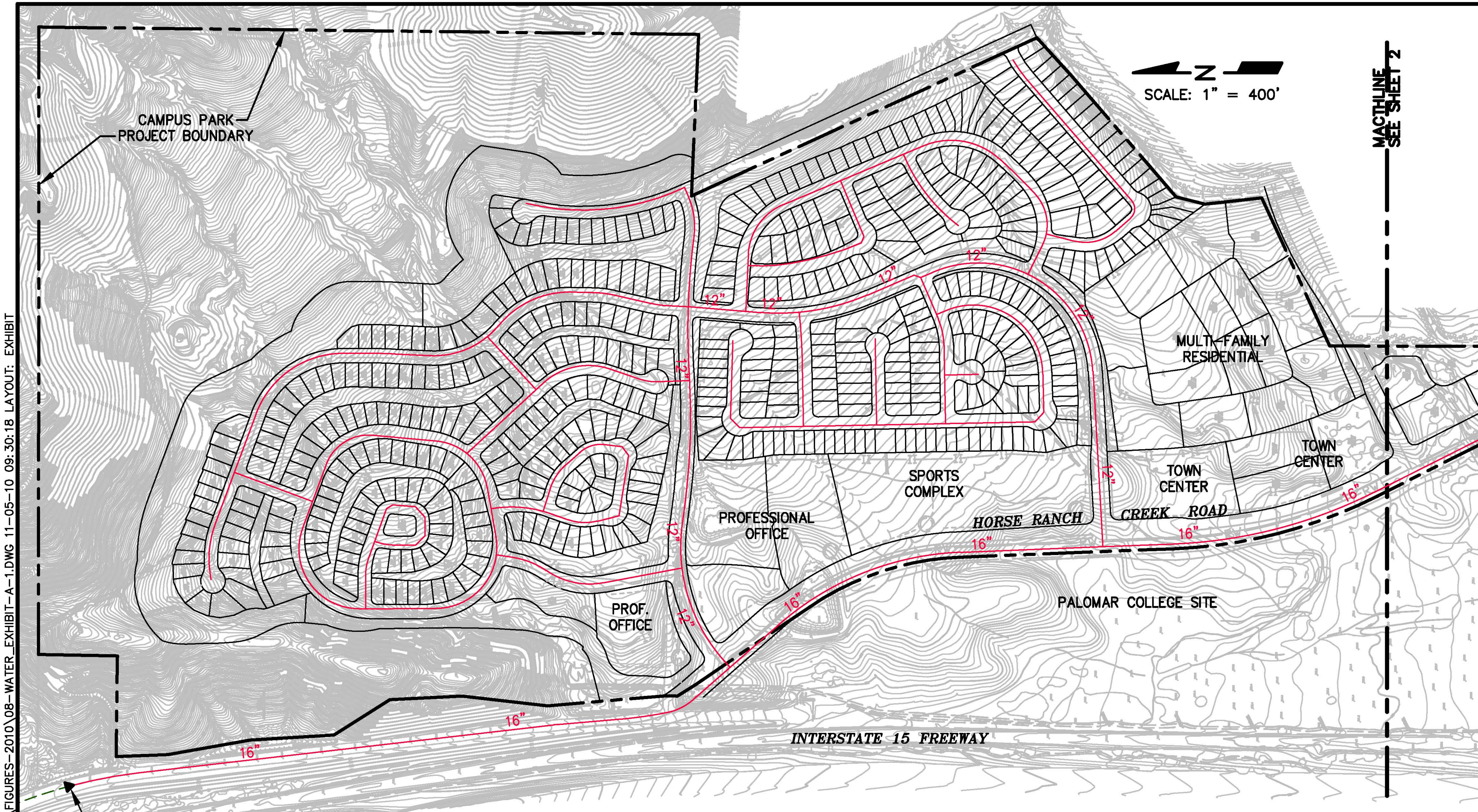
   Similar to the Pala Mesa Drive Pressure Reducing Station, it is anticipated that the Horse Ranch Creek Road Pressure Reducing Station will be installed on a concrete slab above grade. It is proposed to include a 10" diameter pressure reducing valve capable of delivering up to 4,900 gpm continuous flow, and a 4" bypass valve having a flow range between 50 and 800 gpm.

WATER SYSTEM STORAGE

The Rainbow Municipal Water District Water Master Plan Update, May 2006, identifies an ultimate surplus of reservoir storage in the Beck 897 Zone (Section 6.6, Table 6-4 of the Water Master Plan Update, May 2006). The Beck Zone is being used as the primary water supply for the Campus Park project.

Since the Canonita 1019 Zone system is being used only as a redundant system, there is no expectation of daily water use from the Canonita 1019 Zone system. Therefore, the Campus Park development will not create additional storage demand on the Canonita 1019 Zone system.

EXHIBIT A
CAMPUS PARK PROJECT
PROPOSED ONSITE WATER SYSTEM



LEGEND

- 1019 PRESSURE ZONE
- 660 PRESSURE ZONE
- PRESSURE REDUCING STATION

NOTE: ALL WATER SIZES 8" UNLESS NOTED OTHERWISE

EXHIBIT A

CAMPUS PARK PROJECT PROPOSED ONSITE WATER SYSTEM

SHEET 1 of 2

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SCALE: 1" = 400'

MATCHLINE SEE SHEET 1

LEGEND

660 PRESSURE ZONE

897 PRESSURE ZONE

PRESSURE REDUCING STATION

PALA ROAD

(HWY 76)

PANKEY PLACE

16"

12"

OPEN SPACE

CAMPUS PARK PROJECT BOUNDARY

HORSE RANCH CREEK ROAD

MULTI-FAMILY RESIDENTIAL

MULTI-FAMILY RESIDENTIAL

PALOMAR COLLEGE SITE

OPEN SPACE

PANKEY ROAD

PALA MESA DR. (EXTENSION)

EX. 18"

INTERSTATE 15 FREEWAY

897/660 PRESSURE REDUCING STATION

EXHIBIT A

CAMPUS PARK PROJECT PROPOSED ONSITE WATER SYSTEM

SHEET 2 of 2

\\PACIFIC\DWG\669009\FIGURES-2010\08-WATER_EXHIBIT-A-2.DWG 11-05-10 09:31:10 LAYOUT: EXHIBIT

SEWER SERVICE ANALYSIS

SEWER SERVICE ANALYSIS
FOR THE
CAMPUS PARK PROJECT
IN THE COUNTY OF SAN DIEGO

November 5, 2010

Dexter Wilson Engineering, Inc.
Consulting Engineers
2234 Faraday Avenue
Carlsbad, CA 92008
(760) 438-4422

Job No: 669-009

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CHAPTER 1

INTRODUCTION

This report provides an overview of sewer service for the Campus Park project in the County of San Diego. This report will develop sewage flows from the project, recommend required onsite facilities to accommodate project flows, and present offsite facility improvements needed to accommodate Campus Park sewage flows. This report recommends sewerage facilities specific to the needs of the Campus Park project.

PROJECT LOCATION

The Campus Park project site is located in the unincorporated portion of San Diego County (County) in the community of Fallbrook, approximately 6 miles southeast of downtown Fallbrook and 46 miles north of downtown San Diego. State Route (SR) 76 borders the southern Project boundary of the site and Interstate 15 (I-15) borders the property along the northern and central western edge. The I-15/SR 76 interchange, a gas station, a "take-out" restaurant, and a California Department of Transportation Park and Ride facility are located southwest of the Project site.

Development to the west of I-15 includes the Pala Mesa Resort, residential developments, and single-family homes. Uses to the north include single-family residences, nursery facilities and open space. The Meadowood Specific Plan Area (currently containing cultivated citrus and an avocado grove) is located to the east. Other uses to the east include undeveloped land and residences, with scattered avocado groves. A small rocky hill, Rosemary's Mountain, lies east of the southern portion of the Campus Park project site. Lancaster Mountain, an undeveloped lot, the San Luis Rey River, and a housing development are located south of the Project site. Figure 1-1 presents a vicinity map showing the subject property.

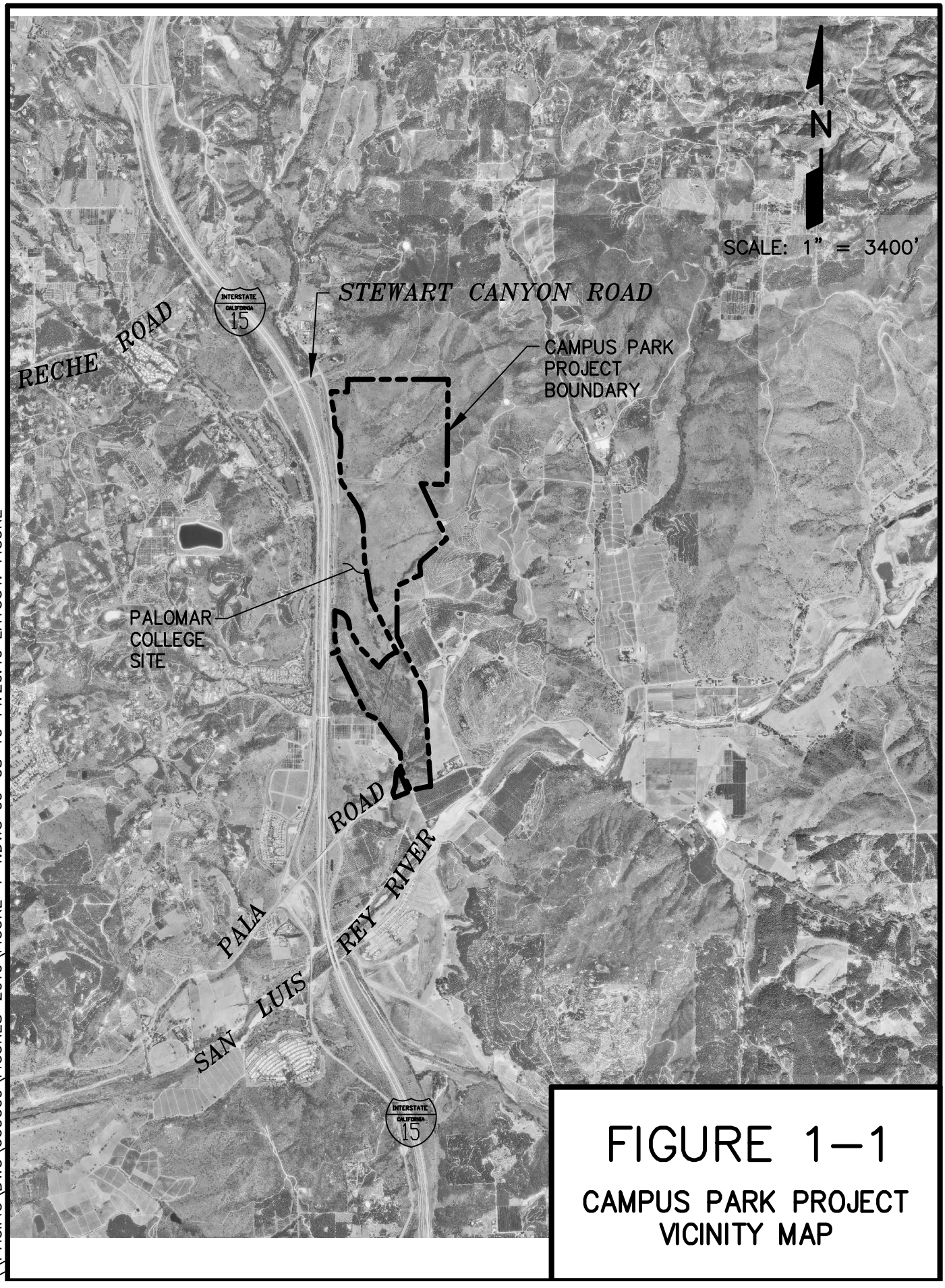

FIGURE 1–1

CAMPUS PARK PROJECT VICINITY MAP

\\PACIFIC\DWG\669009\FIGURES–2010\FIGURE–1–1.DWG 09–08–10 14:20:19 LAYOUT: FIGURE

The Campus Park project site is about 3,000 feet across (east-west), at its widest point and approximately 11,000 feet (two miles) from the northern to southern boundary. The site is divided by Pala Mesa Heights Drive, an east/west-trending unpaved road. The northern approximately 176-acre portion of the site has a generally square shape and is currently accessed by the north extension of Pankey Road via Stewart Canyon Road, which travels under I-15 and connects to Old Highway 395 on the west side of I-15. The southern 240-acre segment of the site is an irregularly shaped area that is currently accessed by the south extension of Pankey Road via SR 76.

PROJECT DESCRIPTION

The Campus Park project proposes on-site construction of a mixed-use community. The development would include a total of 751 single- and multi-family homes, professional office uses, as well as community parks, a sports complex, a Town Center (with retail and support services), and designated open space and biological open space preserves. Table 1-1 presents the proposed development summary for the Campus Park project.

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Sports Complex	8.5 acres
Homeowners Facility - HOA	8 parks = 4.8 acres

The Campus Park project will include 521 single-family dwelling units and 230 multi-family dwelling units. Single-family residential units would be located in the northern portion of the site, and multi-family housing would be located in the south central area on the east side of Horse Ranch Creek Road. Professional office buildings, an active sports complex, and a Town Center would be aligned (north to south) along the western edge of the development area adjacent to Horse Ranch Creek Road. Preserved coastal sage scrub habitat would abut most of the northern portion of the Proposed Project to the west, north, and east. The southern portion of the Project would include mostly preserved riparian habitat.

The Town Center would be constructed in the central portion of the Campus Park project site on the east side of Horse Ranch Creek Road. A total building square footage of 61,200 would be allowed in the planning area. The Town Center would include numerous structures, as well as a parking area. Community-serving uses in Campus Park would be concentrated in the Town Center core area, which would function as the social, commercial and activity center for the community. The Town Center would include a variety of social, civic and commercial uses within the Campus Park project, such as community-serving commercial retail shops and restaurants.

Professional office lots are proposed for the development and would be located on the east side on Horse Ranch Creek Road on either side of Baltimore Oriole Road. In addition to administrative and professional services, office uses could include financial and real estate services, medical offices, schools, civic uses, day care and eating establishments. A total building square footage of approximately 157,000 square feet would be allowed on these lots. Office professional uses would not exceed two stories.

A trail staging area is proposed immediately east of Pankey Road, north of SR 76. This staging area would provide parking for recreational users intending to utilize the region's existing and/or future trail network. It would include an asphalt parking area and landscaping.

PROJECT PHASING

Campus Park would be developed over an approximate five- to six-year period to ensure a logical and orderly expansion of roadways, public utilities, and infrastructure. Market conditions, funding for public facilities, and similar conditions beyond the control of the developer may extend implementation of the entire plan beyond that period.

TOPOGRAPHY

The existing topography on the property ranges in elevation from a low of approximately 270 feet to a high of approximately 850 feet. The topography generally increases from south to north and from west to east. Natural drainage from the property flows south under Highway 76 and discharges into the San Luis Rey River on the east side of the Interstate 15 Freeway. The higher elevations of the property which are located at the north and eastern ends of the project are not planned to be developed because of the steepness of the existing terrain.

SEWER SERVICE

Sewer service for the Campus Park project will be provided by the Rainbow Municipal Water District. The Rainbow Municipal Water District has existing sewer facilities in the vicinity of the Campus Park project; these facilities have capacity to serve the portion of the project which has purchased sewer capacity rights for 850.57 EDUs in Rainbow Municipal Water District.

This report will provide information on the proposed onsite and offsite facilities that will provide sewer service to the Campus Park project from the Rainbow Municipal Water District.

CHAPTER 2

DESIGN CRITERIA

This chapter presents the design criteria used in master planning sewer facilities for the Campus Park project. Unless otherwise noted, the criteria utilized in this report are established in accordance with the standards of the Rainbow Municipal Water District Domestic Water and Sanitary Sewer Construction Standards Manual, August 2006 Edition. The design criteria are used for analysis of the existing sewer system as well as for design and sizing of proposed improvements and expansions to the system to accommodate the projected flows from the proposed development project.

Sewage Flows

The sewage generation factors used to project average flows from the project are summarized in Table 2-1. These factors are in accordance with the Domestic Water and Sanitary Sewer Construction Standards Manual, August 2006, Section 2.03.A with one exception. The exception is that one EDU is equivalent to 250 gpd of sewage flow.

Peaking Factor

To convert average daily flow to peak flow, the peaking factor equation in the Domestic Water and Sanitary Sewer Construction Standards Manual shall be used because the population for the Campus Park project is expected to be less than 5,000 people. The peaking factor equation has the following form:

$$Qpeak / Qaverage = [18 + (P^{0.5})] / [4 + (P^{0.5})]$$

Population, P, is in thousands. Population is calculated as 2.5 persons per EDU.

TABLE 2-1 SEWAGE GENERATION FACTORS	
Land Use	**EDU FACTOR**
Single-Family Residential	1.0
Multi-Family Residential	1.0
Professional Office	3.4 for first 5,000 ft.^{2} 0.4/1,000 ft.^{2} for balance
Commercial	3.4 for first 5,000 ft.^{2} 0.4/1,000 ft.^{2} for balance
Developed Park	1.0
Sports Complex	7.0

Gravity Sewers

All gravity sewers have been designed to convey peak flow. For pipes with a diameter of 12 inches and smaller, the sewers have been designed to convey this flow when flowing half full. For pipes with a diameter of larger than 12 inches, the sewers have been designed to convey peak flow when flowing two-thirds full by depth. Manning's equation with $n = 0.013$ is used to size all gravity sewers. All new sewers were designed to maintain a minimum velocity of three feet per second at design capacity to prevent the deposition of solids.

CHAPTER 3

PROJECTED SEWAGE FLOWS

Based on the sewage generation factors presented in Chapter 2 and the proposed concept development plan for the Campus Park project, Table 3-1 provides the projected wastewater flows for the project. The total projected average sewage flow is 0.21 mgd.

TABLE 3-1
CAMPUS PARK PROJECT
SEWER FLOW PROJECTIONS

Land Use	Quantity	EDUs	Demand Factor	Average Sewage Flow, gpd
Single Family Residential	521 units	521	250 gpd/EDU	130,250
Multi-Family Residential	230 units	230	250 gpd/EDU	57,500
Town Center Commercial	61,200 SF	25.9	250 gpd/EDU	6,475
Professional Office	157,000 SF	64.2	250 gpd/EDU	16,050
Sports Complex	1	7.0	250 gpd/EDU	1,750
Homeowners Facility-HOA	1	2.0	250 gpd/EDU	500
TOTAL		**850.1**		**212,525 = 148 gpm**

Peak sewage flow from the Campus Park project is based upon a population from 850.1 EDUs. At 2.5 persons per EDU, this equates to a population of 2,125.3 people. Then using the peak equation, the peak factor is 3.57. Thus the Campus Park project peak sewage flow is expected to be 758,714 gpd, or 527 gpm.

CHAPTER 4

EXISTING SEWER FACILITIES

This chapter describes the existing sewer facilities in the vicinity of the Campus Park project. The existing sewer facilities in the area of the Campus Park project consist of gravity sewer lines, a pump station, and a force main. These facilities will be discussed in more detail.

Gravity Sewers

The existing gravity sewers in the vicinity of the Campus Park project are located in the east central portion of the Rainbow Municipal Water District. These sewer lines are currently providing gravity sewer service to this part of the Rainbow Municipal Water District.

One of the two gravity sewer lines to be described is a 12" diameter gravity line and is called the Plant B Collector Sewer. This name is given to it because it collects sewage and routes it to the Plant B Pump Station. The Plant B Collector begins at Reche Road and extends south and east along Tecalote Drive. It crosses the Interstate 15 Freeway south of Tecalote Lane and north of where the creek crosses the freeway. Once on the east side of the freeway, the 12-inch collector sewer continues to follow along Horse Ranch Creek south to Pala Road (Highway 76). As it approaches the San Luis Rey River it begins to turn west, crosses under the freeway, and connects to the Plant B Pump Station which is located just south and west of the Rainbow Municipal Water District offices on Old Highway 395.

A portion of the alignment of this 12" collector sewer on the east side of the Interstate 15 Freeway abuts the Campus Park property. Because this section of gravity sewer line is along the southern portion of the property, it is feasible to connect the entire Campus Park project to this existing collector sewer by gravity. However, available capacity in the Plant B Collector will continue to diminish as additional projects upstream of Campus Park come on line. This will be further discussed later in this study.

A second gravity sewer line in the vicinity of the Campus Park project is the 21" and 24" gravity sewer line in Pala Road (Highway 76) beginning on the west side of the Interstate 15 Freeway. This section of gravity sewer main was built as part of the Hewlett-Packard Campus Park improvements in 1988; the 24" gravity sewer improvement continues west in Pala Road (Highway 76) to Gird Road. This gravity sewer line is currently being used as part of the Rainbow Municipal Water District's sewage conveyance system to deliver sewage to the City of Oceanside for treatment and disposal.

Sewer Lift Station and Force Mains

An existing sewer lift station is currently operating downstream of the Campus Park project. It is the Plant B Pump Station. This lift station is located near the Rainbow Municipal Water District offices which are located on Old Highway 395. All the gravity flows which are conveyed in the Plant B Collector Sewer flow to this lift station. The lift station currently has a firm design capacity of 320 gpm and the May 2006 Wastewater Master Plan Update identifies the existing peak dry weather flow to this station to be 242 gpm. The existing force main from this pump station is 6-inch diameter and extends north from the lift station and discharges into the 24" gravity sewer in Pala Road (Highway 76).

A force main also was constructed as part of the Hewlett-Packard Campus Park improvements mentioned above. This force main is a 10" and 12" diameter ductile iron pipe which extends through the Pala Road (Highway 76) bridge over the Interstate 15 Freeway. The 12" force main begins approximately 2,200 feet east of the east side of the Pala Road bridge over the Interstate 15 Freeway. Through the bridge over the freeway the force main is a 10" ductile iron pipe inside a 16" steel casing. The force main continues as a 10" pipe for approximately 200 feet on the west side of the bridge where it connects to the 21" gravity sewer line in Pala Road (Highway 76). Figure 4-1 shows the location of the existing sewer force main relative to the Campus Park project. The lift station which was intended to use the force main was not constructed by the Hewlett-Packard project but is intended to be built by the Campus Park project.

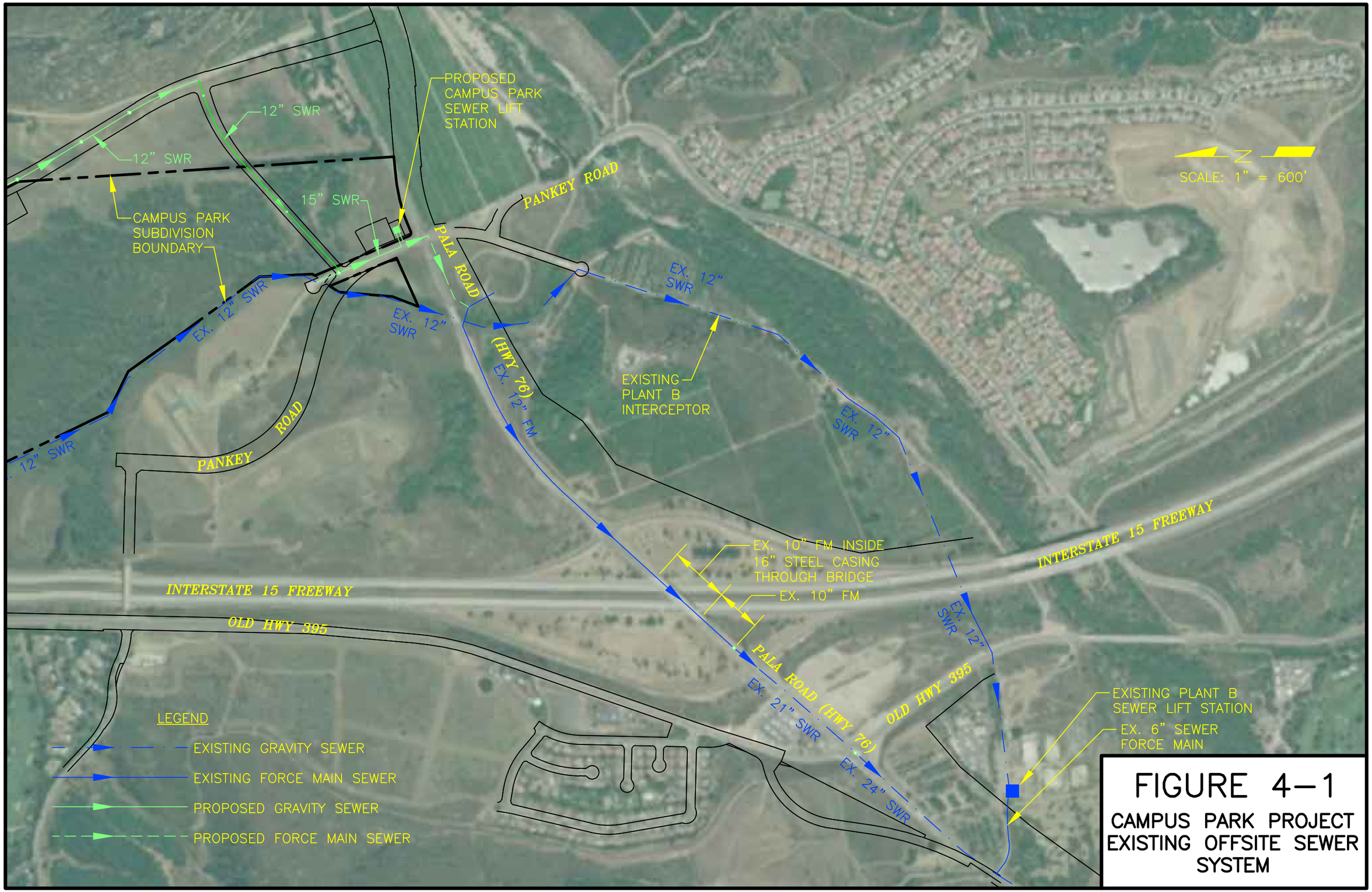

FIGURE 4-1

CAMPUS PARK PROJECT EXISTING OFFSITE SEWER SYSTEM

\\PACIFIC\DWG\669009\FIGURES-2010\FIGURE-4-1.DWG 11-04-10 16:35:43 LAYOUT: FIGURE

Wastewater Treatment and Disposal

The gravity sewer in Pala Road (Highway 76) is part of the backbone sewerage system for the Rainbow Municipal Water District. This gravity sewer extends west and south and includes Lift Station No. 1 and Lift Station No. 2 and their respective force mains as it conveys raw sewage to the City of Oceanside sewer system in North River Road at Stallion Drive.

The Rainbow Municipal Water District owns treatment and disposal capacity in the City of Oceanside's San Luis Rey Wastewater Treatment Plant. The May 2006 Wastewater Master Plan Update discusses the existing capacity ownership to be 1.5 million gallons per day.

Existing Sewer System Capacity

The Campus Park project has sewer capacity rights for 850.57 EDUs of sewer system connections to the Rainbow Municipal Water District. This capacity includes conveyance, treatment, and disposal of sewage; the conveyance of sewage is within the backbone sewer system operated by Rainbow Municipal Water District. Treatment and disposal is provided by the City of Oceanside's wastewater treatment plant. The sewage conveyance system begins on the west side of the Interstate 15 Freeway and extends through the City of Oceanside to the San Luis Rey Wastewater Treatment Plant.

CHAPTER 5

EVALUATION OF EXISTING FACILITIES AND RECOMMENDED SEWERAGE FACILITIES

The purpose of this chapter is to summarize the analyses that we have performed to determine the required onsite improvements for the Campus Park project. This chapter will also discuss the offsite improvements needed to convey sewage generated on the project to the backbone sewerage system for the Rainbow Municipal Water District.

ONSITE SEWER SYSTEM

The onsite sewer system proposed for the Campus Park project will consist of new gravity sewer mains generally flowing south and west, and a new sewer lift station which will pump sewage flows west across the Interstate 15 Freeway through the Pala Road bridge. These facilities are discussed in greater detail in the following paragraphs.

Onsite Gravity Sewer System

The onsite gravity sewer system for the Campus Park project will consist of primarily 8" diameter collector gravity sewers. Exhibit A at the back of this report presents a layout of the proposed sewer system within the project. In Horse Ranch Creek Road, a 10" and 12" sewer line will be necessary because of the flatter grade of the proposed road and greater flows in this pipe since it is a collector sewer for the project.

Our preliminary sizing indicates that 10" and 12" sewer mains are needed in Horse Ranch Creek Road and Pankey Place. These recommended sewer main sizes assume that no sewage generated by the Campus Park project enters into the existing 12-inch Plant B Collector sewer system. A 15-inch sewer main is needed in Pankey Road to the new sewer lift station in order to accommodate ultimate sewage flows from the relocated Plant B Interceptor in combination with the flows from the Campus Park project. This recommended gravity sewer main size for the Plant B Interceptor will accommodate the flows from the Palomar College site which has 100 EDUs of sewer capacity.

New Onsite Sewer Lift Station

A new sewer lift station is proposed to be constructed within the Campus Park project to provide pumping capacity for the build-out of the Campus Park project. For all sewer service scenarios, all the sewage generated by the build-out of the Campus Park project will be pumped by this station. All sewage generated by the Campus Park project will flow by gravity to this onsite sewage lift station.

The onsite sewage lift station will be designed to accommodate all 850.1 EDUs generated by the Campus Park project. The lift station will pump all the collected flows through the existing 12" force main in Pala Road which was installed by the Hewlett-Packard Campus Park project in 1988 (see Figure 4-1). This existing force main will convey the pumped sewage across the Interstate 15 Freeway and connect to the existing gravity sewer in Pala Road which flows to the City of Oceanside.

Pumping Capacity for Entire Campus Park Project. All flows generated by the Campus Park project will flow to the proposed sewer lift station which will be owned and operated by the Rainbow Municipal Water District. Pumping capacity for the new lift station will be based upon the peak wastewater flow generated by the Campus Park project times the 1.3 peak pumping safety factor. From Chapter 3, the peak sewage flow from the Campus Park project is 527 gpm. Thus, the firm pumping capacity at the new onsite sewage lift station for the Campus Park project will be 685 gpm.

Two additional flow components may be added to the Campus Park firm pumping capacity requirement. One component is flow from the Palomar College campus which is located between the Campus Park project boundary and the Interstate 15 Freeway. The current estimate of sewage flow from the Palomar College is 100 EDUs of capacity. This equates to 25,000 gpd of flow, or 17.4 gpm. Using the peaking equation from the District's design criteria presented in Chapter 2, the peaking factor for the Palomar College flow is 4.1. Thus the peak sewage flow from the Palomar College site is 72 gpm; the required pumping capacity is then 94 gpm.

The second flow component involves the concept of diverting the gravity sewage flow in the existing Plant B Interceptor to the new Campus Park sewer lift station. This approach would address the Wastewater Master Plan Update deficiency in the capacity of the Plant B Interceptor as well as eliminate the need for an upgrade or re-build of the existing Plant B Sewer Lift Station. Combining flows into the proposed Campus Park sewer lift station would reduce capital costs for sewer system improvements as well as reduce long-term operation and maintenance costs to the District because of consolidating pumping facilities at one location.

The capacity required for ultimate flow in the Plant B Interceptor is estimated at this time based upon the ultimate system evaluation provided in the Wastewater Master Plan Update, May 2006. Table 5-2 of the Wastewater Master Plan Update indicates a peak wet weather flow of 560 gpm. The corresponding pumping capacity would be 1.3 times that or 728 gpm.

When combining several service areas into a single lift station, the lift station pumping capacity is not the combined pumping capacity of each service area. This is because of the effect of the peaking factor which decreases as the total flowrate increases. Thus, we need to add the average sewage flow from each of the service areas and then peak that total flow to obtain the lift station pumping capacity.

The average flow for the Campus Park and Palomar College projects is readily available (850.1 EDUs for Campus Park and 100 EDUs for Palomar College). For the Plant B Interceptor flows, the average flow must be backed out of the peak flow by trial and error. The peak flow of 560 gpm for the Plant B Interceptor is equivalent to an average flow of 160 gpm and a peaking factor of 3.5.

Thus the average sewage flows from the three service areas influent to the Campus Park Sewer Lift Station are the following:

Campus Park project	148.0 gpm	850.1 EDUs
Palomar College project	17.4 gpm	100 EDUs
Plant B Interceptor	160 gpm	921.6 EDUs
TOTAL	**325.4 gpm**	**1,871.7 EDUs**

The total number of EDUs results in a total population of 4,679.3. Using the peaking factor equation, the calculated peaking factor is 3.27. Then the total peak flow is 1,064.1 gpm. Multiplying by 1.3 calculates the required pumping capacity of 1,383 gpm.

As a minimum, the proposed Campus Park sewer lift station could be designed for a firm pumping capacity of 685 gpm to accommodate only the Campus Park project. The proposed scenario is that the lift station be designed for a maximum firm pumping capacity of 1,383 gpm in order to accommodate all of the Campus Park project, the Palomar College site, and the ultimate Plant B Interceptor flows.

Lift Station Design Parameters. The lift station is proposed to be a submersible wet well installation in conformance with the Rainbow Municipal Water District design requirements as outlined in the District's Domestic Water & Sanitary Sewer Construction Manual, August 2006, Section 2.03.C. Pump Station Design. The Campus Park project will submit a pre-design report outlining all the components of the proposed sewer lift station and addressing pumping capacity and future expansion potential.

PLANT B COLLECTOR SEWER

The Rainbow Municipal Water District Wastewater Master Plan Update, May 2006, identifies the existing 12-inch Plant B Collector sewer as requiring to be upgraded based on future flow projections. The ultimate gravity sewer size recommended by the District Master Plan is 15-inch diameter. This size sewer line will accommodate the Campus Park project build out flows; however, the Campus Park project is not proposing to use this gravity sewer system to convey its sewage to the existing gravity sewer line in Pala Road. The reason is that the Plant B Sewer Lift Station would need to be upgraded to handle the Campus Park sewage flows.

The Campus Park project is proposing to construct a new sewer lift station and pump across the Interstate 15 Freeway in the existing 10" and 12" force main which is a more direct route to the existing gravity sewer line in Pala Road. This approach will avoid the need to construct a costly upgrade to the Plant B Interceptor. It will also provide the District with an opportunity to participate in the construction of a new lift station by providing pumping capacity to handle all the existing and future flows in the Plant B Interceptor. By diverting flows from the Plant B Interceptor to the new Campus Park lift station, the District would eliminate the need for upgrading the Plant B Interceptor sewer and the Plant B Pump Station.

SEWAGE TREATMENT AND DISPOSAL

By agreement between the Rainbow Municipal Water District and the Campus Park project, the Campus Park project currently has 850.57 EDUs of sewage conveyance, treatment, and disposal capacity within the Rainbow Municipal Water District. This capacity is included in the conveyance, treatment, and disposal capacity for which the District has contracted with the City of Oceanside. These existing 850.57 EDUs of capacity account for all of the sewer capacity needed by the proposed Campus Park project based on the proposed land use plan.

EXHIBIT A

CAMPUS PARK PROJECT
PROPOSED ONSITE SEWER SYSTEM

N

SCALE: 1" = 400'

CAMPUS PARK
PROJECT BOUNDARY

MATCHLINE
SEE SHEET 2

MULTI-FAMILY
RESIDENTIAL

TOWN
CENTER

TOWN
CENTER

SPORTS
COMPLEX

PROFESSIONAL
OFFICE

PROF.
OFFICE

HORSE RANCH
CREEK ROAD

10" SWR

12" SWR

10" SWR

PALOMAR COLLEGE SITE

EXISTING PLANT B INTERCEPTOR

INTERSTATE 15 FREEWAY

EX. 10" SWR

LEGEND

EXISTING GRAVITY SEWER

EXISTING FORCE MAIN SEWER

PROPOSED GRAVITY SEWER

PROPOSED FORCE MAIN SEWER

NOTE: ALL SEWER SIZES 8" UNLESS NOTED OTHERWISE

EXHIBIT A

CAMPUS PARK PROJECT PROPOSED ONSITE SEWER SYSTEM

SHEET 1 of 2

\\PACIFIC\DWG\669009\FIGURES-2010\07-SEWER_EXHIBIT-A-1.DWG 11-04-10 16:44:04 LAYOUT: EXHIBIT

LEGEND

- EXISTING GRAVITY SEWER
- EXISTING FORCE MAIN SEWER
- PROPOSED GRAVITY SEWER
- PROPOSED FORCE MAIN SEWER

N

SCALE: 1" = 400'

MATCHLINE SEE SHEET 1

PALA ROAD

HORSE RANCH CREEK ROAD

12" SWR

PANKEY PLACE

12" SWR

15" SWR

(HWY 76)

PROPOSED CAMPUS PARK SEWER LIFT STATION

PROPOSED 12" SEWER FORCE MAIN

CONNECT NEW FORCE MAIN TO EXISTING 12" FORCE MAIN

OPEN SPACE

CAMPUS PARK PROJECT BOUNDARY

MULTI-FAMILY RESIDENTIAL

12" SWR

EX. 12" SWR

EX. 12" SWR

PANKEY ROAD

CONNECT PLANT B INTERCEPTOR FLOWS TO THE CAMPUS PARK LIFT STATION WITH 12" GRAVITY SEWER

EXISTING 12" GRAVITY SEWER TO BE ABANDONED

EX. 12" SWR

PALOMAR COLLEGE SITE

OPEN SPACE

EXISTING PLANT B INTERCEPTOR

EX. 12" SWR

PALA MESA DR. (EXTENSION)

EX. 10" SWR

EX. 12" SWR

INTERSTATE 15 FREEWAY

EXHIBIT A

CAMPUS PARK PROJECT PROPOSED ONSITE SEWER SYSTEM

SHEET 2 of 2

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WATER SUPPLY ASSESSMENT AND VERIFICATION REPORT

RAINBOW
MUNICIPAL WATER DISTRICT
Committed to Excellence

June 20, 2005

Passerelle
402 West Broadway, Suite 2175
San Diego, CA 92101

RE: Campus Park SB610 and SB221 Compliance

To Whom It May Concern:

Enclosed please find a copy of the above-referenced information sent to the County of San Diego Department of Planning and Land Use for your records.

If you have any questions, please feel free to contact us at (760) 728-1178.

Sincerely,

Dawn Washburn
Executive Secretary

/dmw

3707 Old Highway 395 • P.O. Box 2500 • Fallbrook, CA 92088-2500
(760) 728-1178 • Fax (760) 728-2575 • www.rainbowmwd.com

File Copy

RAINBOW
MUNICIPAL WATER DISTRICT
Committed to Excellence

June 1, 2005

County of San Diego
Department of Planning and Land Use
5201 Ruffin Road, Suite B
San Diego, CA 92123

RE: Campus Park SB610 and SB221 Compliance

Dear Mr. Sibbet:

The Rainbow Municipal Water District is hereby transmitting the Water Supply Assessment and Verification Report and a copy of Resolution 05-18 as requested in your letter dated January 18, 2005.

If you have any questions, or comments concerning this matter, please contact Chris Trees at (760) 728-1178.

Sincerely,
RAINBOW MUNICIPAL WATER DISTRICT

Greg L. Ensminger
General Manager

cc: File

RESOLUTION NO. 05-18

RESOLUTION OF THE BOARD OF DIRECTORS OF THE RAINBOW MUNICIPAL WATER DISTRICT ADOPTING THE CAMPUS PARK PROJECT WATER SUPPLY ASSESSMENT AND VERIFICATION REPORT

WHEREAS the California Water Code Section 10915 and 10631 requires a water supplier to prepare and adopt a water supply assessment and verification report for new developments over 499 units; and

WHEREAS The County of San Diego has identified the Rainbow Municipal Water District as the proposed purveyor of a public water system for the Campus Park Project; and

WHEREAS the District has prepared the report, made the report available for public inspection, and discussed the report at a public meeting thereon; and

WHEREAS it is in the interest of the District to adopt the Water Supply Assessment and Verification Report for the Campus Park Project;

NOW THEREFORE BE IT RESOLVED DETERMINED AND ORDERED by the Board of Directors of the Rainbow Municipal Water District as follows:

1. That the WATER SUPPLY ASSESSMENT AND VERIFICATION REPORT, a copy of which is on file with the District be and it is approved and adopted as required by the California Water Code.

2. That the Secretary of the District be and she is authorized and directed to file with the County of San Diego of the State of California a copy of the District's report by May 18, 2005.

MOTION PASSED at an adjourned regular meeting of the Board of Directors of the Rainbow Municipal Water District held on May 11, 2005 by the following votes, to wit:

AYES:	Directors Sundram, Hatfield, Bopf
NOES:	Director Griffiths
ABSENT:	Director Glick
ABSTAIN:	None

Lawrence J. Sundram, Board President

ATTEST:

Dawn Washburn, Board Secretary

Rainbow Municipal Water District

WATER SUPPLY ASSESSMENT AND VERIFICATION REPORT

Campus Park Specific Plan and General Plan Amendment

April 2005

Approved: May 11, 2005

Greg L. Ensminger
General Manager
Rainbow Municipal Water District

Rainbow Municipal Water District
SB 610 & SB 221
Water Supply Assessment and Verification
April 2005

Campus Park Specific Plan and General Plan Amendment

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Rainbow Municipal Water District
SB 610 & SB 221 Compliance
Water Supply Assessment and Verification Report
April 2005

Campus Park Specific Plan and General Plan Amendment

Executive Summary

The Department of Planning and Land Use of the County of San Diego has recognized Rainbow Municipal Water District (District) as the logical Public Water System (PWS) for the proposed Campus Park Specific Plan and General Plan Amendment (Project). The County is performing the environmental review of the proposed development as the "Lead Agency". The County in a letter dated January 18, 2005 has requested that the District prepare a Water Supply Assessment and Verification Report that complies with the laws generally known as SB610 and SB221. These laws require that the PWS review the development to assess and verify the availability of adequate water supplies for the proposed development, existing customers and other planned developments.

The proposed development is currently located in the District. In 2001, the District prepared a Water Master Plan and performed water distribution impact analysis to determine the distribution system improvements required to assure that the District facilities would improve service to its' existing customers and provide adequate service levels for the additional customers. This study identified improvements that are now being implemented through the Capital Improvements Program (CIP).

Currently the District relies solely on "imported water" provided by the San Diego County Water Authority (CWA) or the Metropolitan Water District of Southern California (MWD). To comply with the requirements of SB610 and SB221, the water supply planning for the District, the County Water Authority and the Metropolitan Water District will be discussed. The respective service areas are shown in Figures 1 and 2 that follow.

Figure 1 - Metropolitan Water District of Southern California Service Area

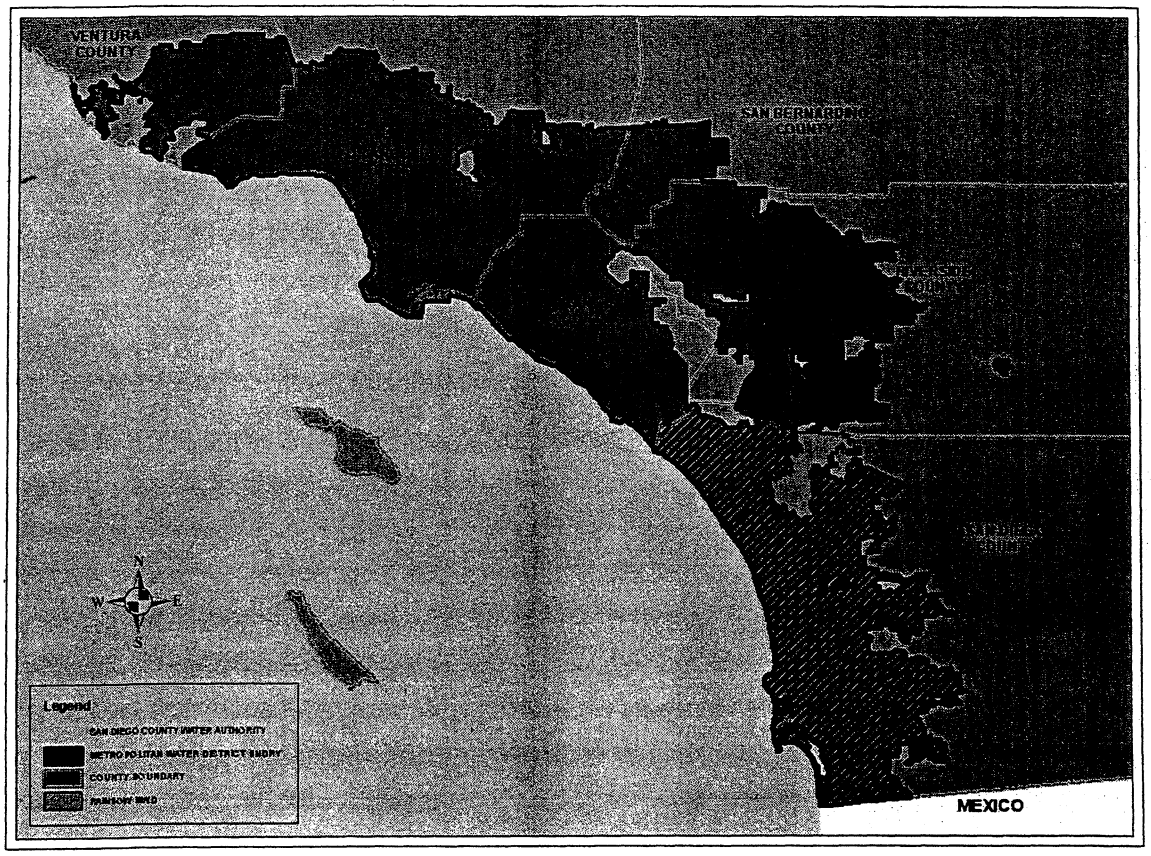
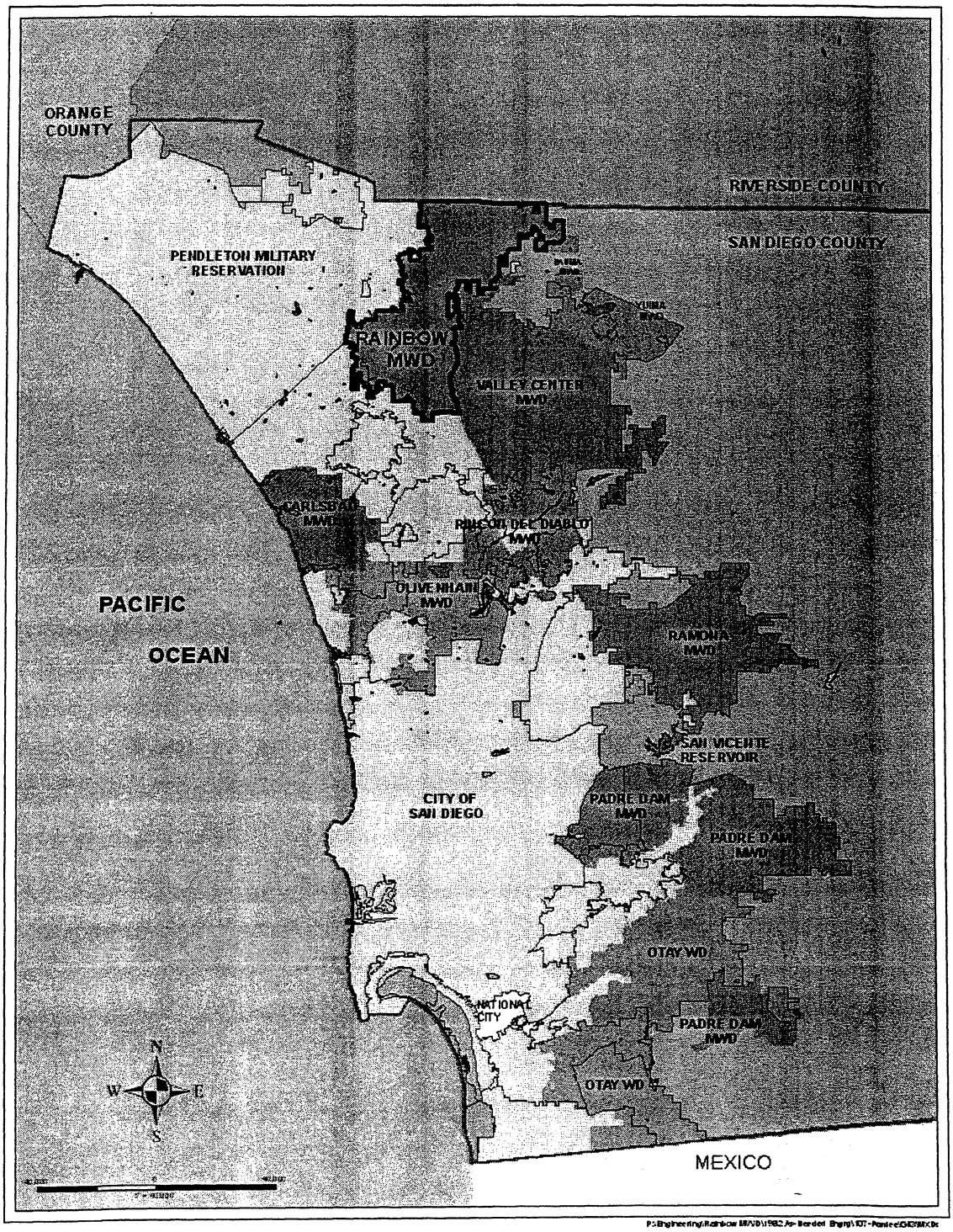


Figure 2 - SDCWA and Rainbow Municipal Water District



The District finds that adequate supplies of water will be made available to the proposed development upon completion of all water system improvements that are conditions of the approval of the proposed Project.

The source of the water supply is the MWD, SDCWA and the District. Planning for water supply purposes for each of these three agencies rely on the population and land use projections provided by the San Diego Association of Governments (SANDAG) which encompasses San Diego County. As such, the proposed development has been included in county-wide population and land use projections. The District has included the water demands from the proposed development in its water planning processes.

The following tables compare the service areas and the water supply/demand projections for the MWD, SDCWA, District and proposed development.

Table 1 shows that the proposed development increases the served area (acres) of the District by approximately 1.0%

Table 1 - Area Comparisons

Entity	Sq.Mi.	Acres	% of Met	% of CWA	% of RMWD
Metropolitan Water District	52,000	33,280,000	100.0%	N/A	N/A
County Water Authority	1,457	932,480	2.8%	100.0%	N/A
Rainbow MWD	78	49,920	0.2%	5.4%	100.0%
Proposed Campus Park	0.8	500	0.0%	0.1%	1.0%

Table 2 presents the impacts of the development on the water supply plans for the future planning horizon. (2025). As shown, the proposed development represents approximately 2.8% of Rainbow's projected 2025 water demands. The proposed development water demands represent approximately 0.1% of the County Water Authority projected demands and a negligible percent of the Metropolitan Water District projected demands.

Given the uncertainty and risks associated in long range water resource planning, the Metropolitan Water District has included in its future demands 500,000 Acre Feet per Year (AFY) of "Planning Buffer". This is to allow for unforeseen developments and changes in land use and population changes that may occur and provide a high degree of reliability.

Table 2 - Demand Comparisons

Entity	2025 Demand	% of Met	% of CWA	% of RMWD
Metropolitan Water District*.	6,904,508	100%	N/A	N/A
County Water Authority**	843,123	12%	100%	N/A
Rainbow MWD***	38,496	1%	5%	100%
Project****	1,060	0.0%	0.1%	2.8%

* From Table 5-2 Integrated Water Resources Plan Updated, Supply
** From Table 1, SDCWA 2004 Annual Water Supply Report
*** From Rainbow MWD (Extrapolated from UWMP 2000)
**** Total build out of project by 2025

To determine the adequacy of planning for water supplies for proposed development, the remainder of this report focuses on the separate, but interdependent planning activities of the water supply agencies that serve the proposed Project.

In conclusion, the District affirms that sufficient water supply for the demands proposed by the Campus Park Specific Plan and General Plan Amendment will be made available, through the District, the County Water Authority and the Metropolitan Water District.

The information and conclusions presented in this report are based upon sources (MWD and SDCWA) outside the control of RMWD; therefore, there is no affirmation regarding the validity of the projections or availability of future water supplies and RMWD takes no responsibility.

Section 1 - Purpose

This Water Supply Assessment and Verification Report (WSAV Report) has been prepared by the Rainbow Municipal Water District (Rainbow) in consultation with the San Diego County Water (Water Authority) and the County of San Diego pursuant to Public Resources Code Section 21151.9, and California Water Code Sections 10631, 10657, 10910, 10911, 10912, and 10915 referred to as SB 610 and Business and Professions Code Section 11010, and Government Code Sections 65867.5, 66455.3, and 66473.7 referred to as SB 221. SB 610 and SB 221 amended state law, effective January 1, 2002, to improve the link between information on water supply availability and certain land use decisions made by cities and counties. SB 610 requires that the water purveyor of the public water system prepare a water supply assessment to be included in the environmental documentation of certain proposed projects. SB 221 requires affirmative written verification from the water purveyor of the public water system that sufficient water supplies are available for certain residential subdivisions of property prior to action on a tentative map.

The County of San Diego requested the WSAV Report as part of the environmental review of the Campus Park Specific Plan and General Plan Amendment (Project). The Project description is provided in Section 3 of this WSAV Report. The County of San Diego also requested that since the SB 610 and SB 221 requirements are substantially similar, that Rainbow prepare both the Water Supply Assessment and Water Verification concurrently. This WSAV Report is intended for use by the County of San Diego in its evaluation of the Project under the California Environmental Quality Act process. This WSAV Report evaluates water supplies that are or will be available during normal, single-dry year, and multiple-dry water years during a 20-year projection to meet existing demands, expected demands of the Project, and reasonably foreseeable planned future water demands served by Rainbow.

Section 2 - Findings

This WSAV Report finds that the water demand projections for the proposed Project were included in the water demand forecasts within the Urban Water Management Plans and other water resources planning documents of the Rainbow MWD, the Water Authority, and the Metropolitan Water District of Southern California (Metropolitan). The proposed development is located within the service area boundary of the District, the County Water Authority and the Metropolitan Water District. Each of these agencies relies on the SANDAG population and land use projections for the entire county and as such the proposed development has been incorporated into future population and water demand projections. Additionally the District has concluded that the water supplies identified in these water planning documents, contain significant supply buffers.

Specifically, the MWD Updated Integrated Resources Plan (2004) provides a buffer of 500,000 AFY for its customers. The buffer is provided to provide extra levels of reliability through contingency planning to address the "additional uncertainty in regional growth and water demand projections..."[1]. The proposed project would require approximately 1,060 AFY of water supplies necessary to serve the demands of the proposed Project. This WSAV Report demonstrates and verifies that there are sufficient water supplies over a 20-year planning horizon to meet the projected demand of the proposed Project and the existing and other planned development projects within the District.

Based on a normal water supply year, the five-year increments for a 20-year projection indicate projected water supply will meet the estimated water demand (31,117 acre-feet (ac-ft) in 2005 to 38,496 ac-ft in 2025). Based on dry year forecasts using a 2010 estimate, the estimated water supply will also meet the projected water demand, during single- and multiple-dry years scenarios. For a single dry year (demand 7% higher than normal year), a supply of 33,714 ac-ft (2010) within the Rainbow MWD service area is necessary, and for multiple-dry years, a supply of 34,130 ac-ft, 34,547 ac-ft, and 34,964 ac-ft, respectively, is necessary to meet demand[2].

Together, these findings verify that there is a sufficient water supply to serve the proposed Project and the existing and other planned projects of Rainbow MWD in both normal and dry year forecasts. This supply is further confirmed by the March 2003, Metropolitan produced document entitled, Report on Metropolitan's Water Supplies, A Blueprint for Water Reliability (March 2003 Report), which states that Metropolitan will have adequate supplies to meet dry-year and multiple dry-year demands within its service area over the next 20 years. The supplies have an additional 500,000 AFY supply buffer for contingencies.

1 Integrated Water Resources Plan 2003 Update, May 2004 Page 60, Risk and the Supply Buffer
2 Rainbow MWD Revised Calculations from UWMP plus project demands

Section 3 - Project Description

Passerelle, LLC has submitted an application to the County of San Diego for development of the Campus Park Specific Plan and General Plan Amendment. The Project encompasses approximately 500 acres and contains various land uses as proposed by Passerelle, LLC. The area includes approximately 216 acres of open space, 187 acres of residential land use, 72 acres of office/commercial, and 11 acres for a school site.

The County of San Diego has publicly announced its intent to initiate the preparation of an Environmental Impact Report for the Project in conformance with the California Environmental Quality Act and as set forth in Public Resources Code 21065. The Project is located in the County of San Diego and in the Fallbrook Community Planning Area.

The proposed project is composed of the following land uses.

Table 3 - Campus Park Specific Plan and General Plan Amendment Planning Areas

Planning Area	Acres	% of Area	Dwellings	% of Dwellings	DU/Acre
Single Residential R-1	12.9	2.7%	140	9.3%	10.9
Single Residential R-2	9.3	1.9%	50	3.3%	5.4
Single Residential R-3	12.1	2.5%	117	7.8%	9.7
Single Residential R-4	10.5	2.2%	52	3.5%	5.0
Single Residential R-5	8.3	1.7%	47	3.1%	5.7
Single Residential R-6	12.5	2.6%	61	4.1%	4.9
Single Residential R-7	13.7	2.8%	68	4.5%	5.0
Single Residential R-8	26.0	5.3%	107	7.1%	4.1
Single Residential R-9	42.0	8.6%	160	10.7%	3.8
Single Residential R-10	13.3	2.7%	157	10.5%	11.8
Multi-family R-11	5.3	1.1%	64	4.3%	12.1
Multi-family R-12	5.2	1.1%	94	6.3%	18.1
Multi-family R-13(A)	2.5	0.5%	60	4.0%	24.0
Multi-family R-13(B)	6.1	1.3%	146	9.7%	23.9
Multi-family C-2	5.0	1.0%	120	8.0%	24.0
Multi-family C-3	2.4	0.5%	58	3.9%	24.2
Elementary School S-1	11.3	2.3%			
Commercial C-1	3.9	0.8%			
Commercial C-2	5.0	1.0%			
Commercial C-3	2.4	0.5%			
Office/Professional OP-1	9.1	1.9%			
Office/Professional OP-2	21.1	4.3%			
Office/Professional OP-3	15.1	3.1%			
Office/Professional OP-4	15.4	3.2%			
Local Park	10.3	2.1%			
Open Space OS-1	17.2	3.5%			
Open Space OS-2*	97.7	20.1%			
Open Space OS-3	91.1	18.7%			
Total Acres	486.7	**Total EDU**	1501		

* Combined entries on County Table for OS-2

The proposed Project site is located along I-15, just north of the intersection of SR-76 within the Fallbrook Community Planning Area. The proposal is for a General Plan Amendment and a Special Plan Amendment for development of residential, civic, agricultural and open space land uses.

The estimated water demand for the Project is 1,060 acre feet per year (AFY).

The projected potable and recycled water demands associated with the Project have considered all of the above land uses and are incorporated into and used in this WSAV Report. The water demands for the proposed Project are included in the projected water demand estimates provided in Section 5 – Historical and Projected Water Demands.

The information and conclusions presented in this report are based upon sources (MWD and SDCWA) outside the control of RMWD; therefore, there is no affirmation regarding the validity of the projections or availability of future water supplies and RMWD takes no responsibility.

Section 4 – Rainbow Municipal Water District

The Rainbow Municipal Water District (District) was formed in 1953 under the Municipal Water District Act of 1911 (Section 7100 et. seq. of the California Water Code). The District joined the San Diego County Water Authority (Authority) and the Metropolitan Water District of Southern California (MWD) that same year to acquire the right to purchase and distribute imported water throughout its service area.

The District has primarily agricultural water demand. Within the agricultural development is a growing rural residential demand on large lots and potential for greater residential demand in the future. The District has an area of approximately 49,800 acres (as shown on Figure 1) of which only 17,000 acres are served with water. Present demand is about 32,000 acre-feet per year of which 22,000 acre-feet are for agricultural irrigation. In a dry year, the irrigation demand would increase by about 7%. The District is responsible for the operation and maintenance of all water supply and distribution facilities, maintains all water meters, and bills all customers on a monthly basis.

The 2000 population within the District's boundaries was approximately 17,800. Based on projections by the San Diego Association of Governments (see Appendix) the population will increase to 21,800 in 2010, and is projected to reach 27,200 by the year 2020.

The District has seen dramatic agricultural expansion during the 47 years of its existence. Approximately 75-80% of the water supplied by the District is for agricultural purposes. Agricultural use is mainly for avocado and citrus groves, with some development in kiwis and other exotic plantings. The cost of water is the major determining factor in the choice of irrigation method. Basically, high water prices dictate irrigation methods with high application efficiency.

Agricultural use is predominantly for avocado and citrus groves. Over half of these plantings have occurred in the last 25 years and are irrigated with highly efficient irrigation systems. It is not likely that significant water reductions can be made in irrigation use by conservation awareness programs. Where an older or poorly managed system might provide an opportunity for savings, the rapidly increasing cost of water and pumping tends to produce the change. The District should continue to monitor agricultural water use but conservation efforts are unlikely to result in additional reduction in use.

The District also offers wastewater collection services. The District currently serves approximately 7,625 customers, or 3,200 equivalent dwelling units, resulting in approximately 0.85 million gallons per day of wastewater generated. Wastewater is collected and transported to the San Luis Rey Wastewater Treatment Plant in Oceanside for ultimate ocean disposal.

4.1 Urban Water Management Plan

In accordance with the California Urban Water Management Planning Act, the Rainbow MWD Board of Directors adopted an Urban Water Management Plan (UWMP) in September 2000 and it was subsequently submitted to the California Department of Water Resources (DWR). As required by law, Rainbow MWD's UWMP includes projected water supplies required to meet future demands through 2020. In accordance with Water Code Section 10910 (c)(2) and Government Code Section 66473.7 (c)(3), information from Rainbow MWD's UWMP along with updated supplemental information has been utilized to prepare this WSAV Report.

Section 5 – Historical and Projected Water Demands

The projected demands for the Rainbow service area are based on the SANDAG's most recent growth forecast data, and include figures on future population, housing, and employment. This land use information is used in the preparation of Rainbow's UWMP to develop the forecasted demands. The Water Authority and Metropolitan also use SANDAG's most recent regional growth forecast to calculate future demands within their respective service areas. This provides for consistency between the retail and wholesale agencies water demand projections, thereby ensuring that adequate supplies are being planned for Rainbow's existing and future water users. In addition, SANDAG's growth forecasts are based on the land use policies of the cities and county within the San Diego County region, so planned growth is included in the water demand forecasts of Rainbow. The projected potable water demands for Rainbow MWD service area are shown in Table 4.

Table 4 - Projected Potable Water Demands

Customer Type	2000	2005	2010	2015	2020	2025**
Population	17,767	20,106	21,793	24,308	27,156	30,004
Residential Demand* (AFY)	7,708	9,002	9,982	11,521	13,698	15,875
Agricultural	21,015	22,115	21,526	21,935	22,278	22,621
Total (AFY)	28,723	31,117	31,508	33,456	35,976	38,496

** From UWMP 2000*

*** Extrapolated from UWMP 2000*

5.1 Demand Management (Water Conservation)

Demand management, or water conservation, is frequently the lowest-cost resource available to any water agency. Water conservation is addressed in Rainbow's UWMP as an element of the long-term strategy for meeting present and future water needs. The goals of the Rainbow water conservation programs are to: 1) reduce the demand for imported water; 2) to contribute to a more reliable water supply; and, 3) demonstrate continued commitment to the *Best Management Practices* (BMP).

In 1991, the County Water Authority on behalf of its 23 member agencies, signed a landmark document, the "Memorandum of Understanding Regarding Urban Water Conservation in California.", which created the California Urban Water Conservation Council (CUWCC) in an effort to reduce California's long-term water demands.

Water conservation programs are developed and implemented on the premise that water conservation increases water supply by reducing the demand on available supply, which is vital to the optimal use of the region's supply resources. Rainbow participates in many water conservation programs designed and typically operated on a shared-cost participation program basis among the Water Authority, Metropolitan, and their member agencies

As a requirement for development projects within the unincorporated areas of the county, water conservation measures will be incorporated into the Project including the State mandated 14-Best Management Practices for water conservation such as installation of ultra low-flow toilets (ULFT), development of a water conversation plan for all landscape improvements, and the use of recycled water (if available), all of which are typical requirements of development projects.

Rainbow has consistently implemented elements of the BMP for water conservation in its water resource management strategy. As a member of the Water Authority, Rainbow also benefits from regional programs performed on behalf of its member agencies.

The BMP programs implemented by Rainbow and/or regional BMP programs implemented by the Water Authority that benefit all member agencies include the following:

- **BMP 1 - Water Survey Programs for Single-Family and Multi-Family Residential Customers** – The Residential Survey Program is free to residential customers and has been available since 1991. The survey includes a review of indoor water use, help with identifying indoor leaks and an informational packet that includes information about other water conservation programs. Since FY 2000, 10 residential surveys have been performed.

- **BMP 2 - Residential Plumbing Retrofit** – The District has traditionally been dominated by agricultural water demands and has not strongly focused on retrofitting low density residential areas. Instead the District has relied on encouraging water efficient plumbing in new residential areas.

- **BMP 3 - System Water Audits, Leak Detection, and Repair** - Rainbow maintains an active distribution system auditing program. This program evaluates the system's "unaccounted for water loss" with a goal to stay under ten percent. Rainbow regularly conducts ongoing internal distribution system leak detection surveys the most recent being completed in 2004.

  The industry standard, based on the American Water Works Association for unaccounted for water loss, is no more than 9 to 10%. Over the last five years, Rainbow's unaccounted for water loss averaged 3.75% of the total supply, which is well below the industry standard thresholds.

  Rainbow has adopted and is currently using a wide range of operational and financial policies and practices to insure the efficient use of the available water supply.

- **BMP 4 - Metering with Commodity Rates for All New Connections and Retrofit of Existing Connections -** Rainbow requires the installation of water meters on all services throughout its distribution system. Generally Rainbow's meters are classified as Agricultural or Residential depending on the tax status and type of water supply provided.

- **BMP 5 – Large Landscape Conservation Programs and Incentives -** From 1991 to 2004, large landscape (currently defined as landscape with one acre or more) irrigation surveys were available to customers at no charge through the *Professional Assistance for Landscape Management (PALM)* program, sponsored by the Water Authority. During the survey, the survey team examined the irrigation system for distribution uniformity, matched irrigation components, and controller scheduling. The team would then calculate and recommend a water budget for the site based on the size of the landscape, the plant material, and the climate.

  Since Fiscal Year 2000-2001, 7 large landscape irrigation surveys have been performed within the District.

- **BMP 6 – High-Efficiency Washing Machine Voucher Program -** New technology in washing machine design provides for more efficient water use and savings. Over the past few years, an increasing number of residential customers have taken advantage of the $100 voucher offer. HEWs installed in multi-family laundry rooms, Laundromats, and commercial sites are eligible to receive a $300 voucher through the commercial HEW program. Vouchers are offered for residential, commercial, institutional, and industrial customers.

  Since Fiscal Year 2000-2001, Rainbow has distributed over 170 high-efficiency washer (HEW) vouchers to its customers.

- **BMP 7 – Public Information Programs -** Rainbow promotes water conservation in coordination with the Water Authority and Metropolitan. Rainbow independently distributes public information through its website, bill inserts, annual Consumer Confidence Report, newsletters, brochures, and participation in year-round special events.

- **BMP 8 – School Education Programs -** Rainbow is supported by the County Water Authority and the Metropolitan Water District in providing water conservation instruction to elementary school-aged children. Also, in conjunction with Water Awareness Month, Rainbow supports a North Country regional poster contest. The water-related theme changes from year-to-year and is open to any 4thgrade student living or attending school within Rainbow's service area.

A variety of youth programs and educator training are available for grades K-12 though the Water Authority. Available programs include: School Theater Program, Mini-Grant Program, Xeriscape Gardening Teacher Workshop, Youth Merit Patch Program, 4th Grade Presentations, and various kits and teaching guides. Additional programs may also be available through the Metropolitan Water District and other Conservation organizations.

- **BMP 9 – Conservation Programs for Commercial, Industrial, and Institutional Accounts** - Rainbow provides vouchers for water efficient devices to its commercial, industrial, and institutional accounts through shared-funding programs with the Water Authority and Metropolitan. Vouchers are available for low-flow and waterless urinals ($95), $300 for commercial clothes washers installed in Laundromats and multi-family common areas, $95 for commercial ULFTs, and $500 for cooling tower conductivity controllers. Incentives are now also available for multi-load commercial clothes washers, pre-rinse sprayers, water brooms, and x-ray photo processing machines.

- **BMP 10 – Wholesale Agency Assistance Program** - This BMP applies only to wholesale agencies. The Water Authority provides conservation-related technical support and information to its member agencies, including ULFT and High Efficiency Clothes Washer Program vouchers, residential surveys; partial funding for water efficient devices in commercial, institutional, and industrial properties; large-turf irrigation; and conservation-related rates and pricing. The Water Authority typically manages the programs on behalf of its member agencies and contributes one-quarter of the cost for the incentive or survey. Rainbow contributes another one-quarter of the cost, while Metropolitan typically provides one-half of the incentive.

- **BMP 11- Conservation Pricing** - Rainbow is currently evaluating an increasing block (or tiered rate), conservation-motivated pricing. Although rates are the same for all water users, the movement between tiered pricing is specific for each water-use classification. The rates for all water-use classifications are based on accelerated block structures; as more units are consumed, a higher unit rate is charged.

- **BMP 12 – Conservation Coordination** -Rainbow uses contracted consultants through the Water Authority to implement residential, multifamily, and commercial audits; to conduct agricultural surveys; and, to monitor the high efficiency washer and ultra low-flush toilet voucher programs.

- **BMP 13 – Water Waste Prohibition** - Rainbow's Board of Directors adopted Ordinances 90-1, 91-5 and 91-8 to provide specific recourse for preventing the waste of water and to improve conservation methods.

- **BMP 14 – Residential ULFT Replacement Program -** Rainbow has established an ultra low-flush toilet (ULFT) replacement program in 1991 in cooperation with the County Water Authority. Residential customers are eligible to receive $75 off the cost of a ULFT toilet. In addition, a $95 voucher is available toward the purchase of a dual-flush toilet, which has been found to use 30% less water than a standard ULFT.

  Since Fiscal Year 200-2001, the District has provided funding for over 650 ULF Toilets.

  Additional conservation or water use efficiency measures or programs practiced by Rainbow include the following:

- **Agricultural Water Conservation** - According to a study conducted by Mission Resource Conservation District, of the agricultural surveys conducted in North San Diego County in FY 2003-2004, 38% of the irrigation systems functioned below industry standards. In an effort to provide conservation assistance for its agricultural water users, Rainbow has offered irrigation system efficiency audits for agricultural properties consisting of two or more acres since 1991.

- **Supervisory Control and Data Acquisition System -** In 1998, Rainbow implemented a *Supervisor Control and Data Acquisition* (SCADA) system to control, monitor, and collect data regarding the operation of the water system. The major facilities that have SCADA capabilities are the water supply sources, pumping stations, and water storage reservoirs. The SCADA system allows for many and varied useful functions. Some of these functions allow operating personnel to better monitor the water supply source flow rates, reservoir levels, turn on or off pumping units, etc. The SCADA system aids in the prevention of water reservoir overflows and increases energy efficiency.

- **Water Conservation Ordinance -** California Water Code Sections 375 et seq. permit public entities that supply water at retail to adopt and enforce a water conservation program. The purpose of this code is to reduce the quantity of water used by the people therein for the purpose of conserving water supplies of such public entity. Rainbow's Board of Directors established a comprehensive water conservation program pursuant to California Water Code Sections 375 et seq., based upon the need to conserve water supplies and to avoid or minimize the effects of any future shortage. A water shortage could exist based upon the occurrence of one or more of the following conditions:

  1. A general water supply shortage due to increased demand or limited supplies (whether caused by drought, natural disaster, or other emergency).

2. Distribution or storage facilities of the Water Authority or other agencies becoming inadequate.

3. A major failure of the supply storage and/or distribution facilities of Metropolitan, the Water Authority, or of Rainbow occurs.

4. Rainbow finds and determines that the conditions prevailing in the San Diego County area requires available water resources be put to maximum beneficial use to the extent to which they are capable. The waste, unreasonable use or unreasonable method of use of water shall be prevented. Conservation of such water shall be encouraged with a view towards the maximum, reasonable, and beneficial use in the interest of the people of Rainbow and for the public welfare.

- **Water Conservation Program** The water conservation program is codified in Ordinance 91-5, as amended, and sets the authority for recognizing an emergency or water shortage conditions and provides for staged, mandatory water conservation implementation.

Section 6 - Existing and Projected Supplies

Rainbow's primary source of potable water is imported through the Water Authority. Rainbow is a member agency of the Water Authority. The Water Authority is a member agency of Metropolitan.

The statutory relationships between the Water Authority and its member agencies, and Metropolitan and its member agencies, respectively, establish the scope of the Rainbow Municipal Water District's entitlements to water from these two agencies.

Rainbow imports 100% percent of its potable water through seven turnouts located on the MWD/Water Authority aqueducts. The Water Authority in turn, currently purchases most of its water from Metropolitan. Due to Rainbow's dependency on these two agencies, this WSAV Report includes information on the existing and projected supplies, supply programs, and related projects of the Water Authority and Metropolitan along with the demands and supplies within Rainbow's service area.

The information and conclusions presented in this report are based upon sources (MWD and SDCWA) outside the control of RMWD; therefore, there is no affirmation regarding the validity of the projections or availability of future water supplies and RMWD takes no responsibility.

6.1 March 2003 Report on Metropolitan's Water Supplies, A Blueprint for Water Reliability

In March 2003, Metropolitan produced a document entitled, *Report on Metropolitan's Water Supplies, A Blueprint for Water Reliability* (March 2003 Report). The objective of the March 2003 Report was to provide the member agencies, retail water utilities, cities, and counties within its service area with water supply information for purposes of developing water supply assessments and written verifications. The March 2003 Report states that the approach to evaluating water supplies and demands is consistent with Metropolitan's 2000 Regional UWMP. As part of this process, Metropolitan also uses SANDAG's regional growth forecast in calculating regional water demands for the Water Authority.

Metropolitan has not yet updated the March 2003 Report and pertinent actions and activities have occurred over the past year that should be documented. To ensure a thorough analysis of the water supplies available to serve the proposed project along with existing and future water demands, supplemental information to the March 2003 Report is included in the Water Authority's 2004 Annual Water Supply Report. (Refer to Section 6.2)

6.2 Water Authority's 2004 Annual Water Supply Report

In June 2004, the Water Authority Board of Directors approved the Water Authority's *2004 Annual Water Supply Report* (Supply Report) for distribution to member agencies, the County of San Diego, and cities within the County. The purpose of the Report is to provide an annual statement regarding the Water Authority's supplies and implementation of Water Authority plans and programs to meet the future water supply requirements of its member agencies. The Supply Report contains documentation on the Water Authority/Imperial Irrigation District Water Conservation and Transfer Agreement, All American Canal and Coachella Canal Lining Projects, and planned seawater desalination facility at the Encina Power Station. In addition, the Supply Report provides documentation on Colorado River supply activities that were not included in Metropolitan's March 2003 Report. The documentation included in the Supply Report was prepared for use by the Water Authority's member agencies in preparation of the water supply assessments and written verifications required under state law. A copy of the report is included in the Appendix.

6.3 Rainbow Municipal Water District

Rainbow's UWMP contains a comparison of projected supply and demands within its existing boundaries through the year 2020. Projected potable water resources to meet demands as planned are primarily supplied with imported water purchased from the Water Authority. Rainbow currently has no local supply of potable water or groundwater resources. Rainbow is currently assessing the possibility of developing groundwater and recycled water supplies through Master Planning

6.3.1 Demonstrating the Availability of Sufficient Supplies and Plans for Acquiring Additional Supplies

Section 5 subdivision 11 of the County Water Authority Act states that the Water Authority "as far as practicable, shall provide each of its member agencies with adequate supplies of water to meet their expanding and increasing needs." The Water Authority provides between 75 to 95 percent of the total supplies used by its 23 member agencies, depending on local weather and supply conditions. Historic imported water deliveries from the Water Authority to Rainbow are shown in the following table.

Table 5 - Historic Imported Water Deliveries

Fiscal Year	Imported Water (AF)
1980-81	34,111
1985-86	29,887
1990-91	30,500
1995-96	22,169
2000-01	26,787

The availability of sufficient imported and regional water supplies to serve existing and planned uses within Rainbow service area is demonstrated in the above discussion on Metropolitan and the Water Authority's water supply reliability. Rainbow currently (2004) takes delivery of over 32,000 AFY of supplies from the Water Authority. This is expected to increase to 39,256 AFY by 2025.

Section 7 – Recycled Water Supplies

Existing Recycled Water Activity - In an ongoing effort to diversify the water demand within its service area, Rainbow is currently proposing the preparation of a Recycled Water Master Plan. This Master Plan will identify potential customers, quantify most likely supply quantities, provide a planning level lay-out of the required facilities and determine planning level cost estimates for the Recycled Water System.

Rainbow's Capital Improvement Program - Rainbow plans, designs, and constructs water system facilities to meet projected ultimate demands placed upon the potable and recycled water systems. In addition, Rainbow forecasts needs and plans for water supply requirements to meet projected demands at ultimate build out. The necessary water facilities are constructed when development activities proceed and require service to achieve adequate cost effective water service.

New water facilities that are required to accommodate the forecasted growth within the entire Rainbow service area are defined and described within Rainbow *Capital Improvement Program* (CIP). As major development plans are formulated and proceed through the land use jurisdictional agency approval processes, Rainbow prepares water system requirements specifically for the proposed development projects. These requirements document, define, and describe all the water system facilities to be constructed to provide an acceptable and adequate level of service to the proposed land uses, as well as the financial responsibility of the facilities required for service.

Project Specific Analysis –The District Water Capital Improvement Program is based on land use simulations that create future demand scenarios on a complete water supply, storage, pumping and distribution model. The model provides a logical basis for determining the sufficiency of the water system to deliver water to existing and future customers. The Project has been analyzed using the model and water can be supplied to the Project with the inclusion of developer funded system improvements.

Potential On-Site and Off-Site improvements to provide water service to the Project have been prepared and presented to the District for review.

Section 8 – Conclusion: Availability of Sufficient Supplies

Rainbow, Metropolitan, and the Water Authority have all developed plans and are implementing projects and programs to ensure that the existing and planned water users within Rainbow's Service Area have an adequate supply. The forecasted water demands are compared with projected supplies within Rainbow's service area and shown in the following table. This demonstrates that with, implementation of the projects discussed in the three agencies planning documents, there will be adequate water supplies to serve the proposed Project development along with existing and other future planned uses.

Table 6 - Rainbow Projected Water Supply and Demand during Normal Year for Period 2005 to 2025 (AFY)

Supply Source	2005	2010	2015	2020	2025
Imported Water	31,117	31,508	33,456	35,976	38,496
Local Groundwater*	0	0	0	0	0
Local Recycled**	0	0	0	0	0
Total Supply	31,117	31,508	33,456	35,976	38,496
Total Demand	31,117	31,508	33,456	35,976	38,496

* Rainbow Valley Groundwater Management Plan is currently being prepared
** Staff has recommended preparation of Recycled Water Master Plan

The normal, single, and multiple dry-year scenarios are based on historical performance of the system and are shown in Table 6. No extraordinary conservation measures, beyond Best Management Practices implementation, are reflected in the demand projections. An adequate supply is further confirmed within Metropolitan's March 2003 Report, within which it states that they will have adequate supplies to meet dry year demands within its service area over the next 20 years.

Table 7 - Rainbow Projected Water Supply and Demand during Normal, Single and Multiple Dry Years (AFY)

	Water Year Type		Multiple Dry Water Years		
Supply Source	Normal 2010	Single Dry 2010	Year 1 2011	Year 2 2012	Year 3 2013
Imported Water	31,508	33,714	34,130	34,547	34,964
Local Groundwater*	0				
Local Recycled**	0				
Total Supply	31,508	33,714	34,130	34,547	34,964
Total Demand	31,508	33,714	34,130	34,547	34,964
Dry increase over normal		7%			
Annual Increase in Demand		389.6 AFY			

This WSAV Report demonstrates and verifies that, with development of the resources identified, there will be sufficient water supplies over a 20-year planning horizon to meet the projected demand of the proposed Project and the existing and other planned development projects within Rainbow.

The information and conclusions presented in this report are based upon sources (MWD and SDCWA) outside the control of RMWD; therefore, there is no affirmation regarding the validity of the projections or availability of future water supplies and RMWD takes no responsibility.

Source Documents

Rainbow Municipal Water District. 2000. Urban Water Management Plan.

San Diego County Water Authority. 2004 Annual Water Supply Report

SANDAG Series 9 Population Forecasts for Rainbow Municipal Water District

Metropolitan Water District. 2004. Integrated Water Resources Plan 2003 Update

TEN PERCENT DESIGN REPORT FOR LIFT STATION

TEN PERCENT DESIGN REPORT
FOR THE
CAMPUS PARK SEWER LIFT STATION

November 5, 2010

Prepared by:
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Job No. 669-011

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CHAPTER 1

INTRODUCTION

The Campus Park Sewer Lift Station is a proposed sewer system improvement within the Campus Park development project. The lift station and force main are part of the infrastructure needed to provide sewer service to this development project. The Campus Park Sewer Lift Station is intended to be a public facility to be owned and operated by the Rainbow Municipal Water District. This report will provide pre-design data for the lift station to ensure that the final design of this facility will provide the necessary sewer service to the development project and conform to the requirements and the design criteria of the Rainbow Municipal Water District.

Project Location and Description

The Campus Park project is located in the County of San Diego, north of Pala Road (Highway 76) and south of Stewart Canyon Road. The project's western boundary follows the Interstate 15 Freeway. Figure 1-1 presents a vicinity map of the development project and the proposed location of the Campus Park Sewer Lift Station within the Campus Park property.

The Campus Park project proposes on-site construction of a mixed-use community. The development would include a total of 751 single- and multi-family homes, professional office uses, as well as community parks, a sports complex, a Town Center (with retail and support services), and designated open space and biological open space preserves. Table 1-1 presents the proposed development summary for the Campus Park project.

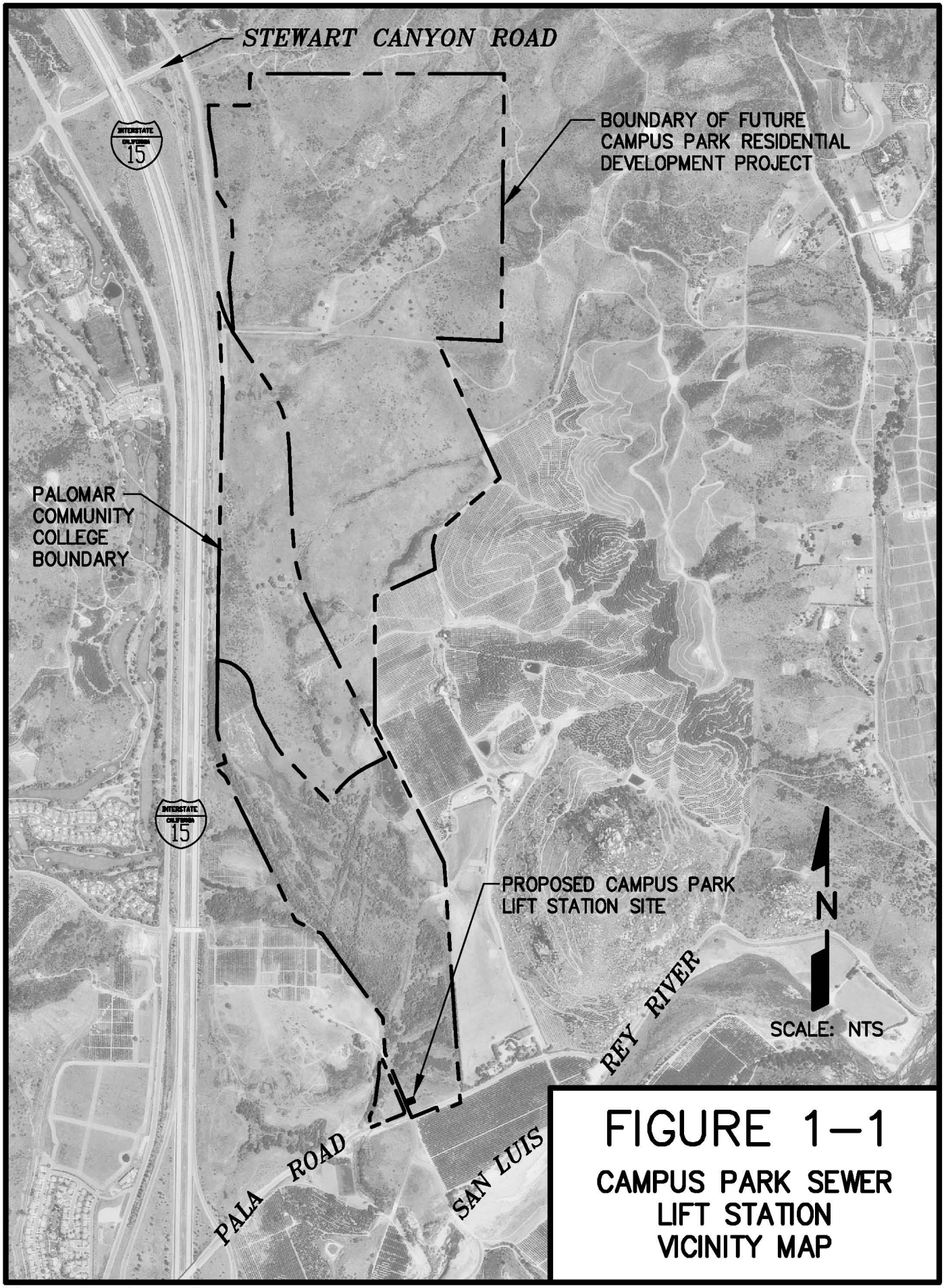


FIGURE 1–1

CAMPUS PARK SEWER LIFT STATION VICINITY MAP

\\PACIFIC\DWG\669011\FIGURE-1-1.DWG 11-05-10 10:13:43 LAYOUT: VICINITY

TABLE 1-1 CAMPUS PARK PROPOSED DEVELOPMENT PLAN	
Land Use	**Quantity**
Residential Development	
Single Family Residential	521 dwelling units
Multi-Family Residential	230 dwelling units
Commercial Development	
Town Center Commercial	6.7 acres 61,200 square feet
Professional Office	157,000 square feet
Parks and Open Space	
Sports Complex	8.5 acres
Homeowners Facility - HOA	8 parks = 4.8 acres

Adjoining Project

Between the Campus Park project and the Interstate 15 Freeway is the Palomar Community College site which is currently processing site development permits. The Palomar Community College project plans to develop a community college campus including administrative and academic buildings and sports and recreation fields on approximately 80 acres. The project's ultimate college population is projected to be 2,833 full time equivalent students and 100 full time equivalent staff.

Purpose of Study

The most recent analysis of the sewerage needs for the Campus Park development was completed by Dexter Wilson Engineering, Inc. on November 5, 2010 and is titled, "Sewer Service Analysis for the Campus Park Project in the County of San Diego." The contents of the report recommended the construction of an onsite lift station to serve the Campus Park project as well as the Palomar Community College project and the existing Plant B Sewer Collector, owned by the Rainbow Municipal Water District. The Plant B sewer collector presently discharges to the Plant B lift station southwest of the Campus Park and Palomar Community College sites. Figure 1-2 illustrates the location of these existing facilities relative to the two development projects.

This report serves as a ten percent design report to establish design criteria and preliminary design information for the proposed Campus Park Sewer Lift Station. The capacity of the lift station will be based on providing sewer pumping capacity for the entire Campus Park project, the Palomar Community College project, and the ultimate projected flows in the Plant B Interceptor.

The scope of this report is limited to the facilities within the pump station site. This report will provide a preliminary site layout and equipment layout. The report will include preliminary hydraulic calculations for sizing the pumping equipment and the force main from the pump station. The basic components of the pump station will be discussed to ensure that the design of the station will meet the requirements of the Rainbow Municipal Water District.

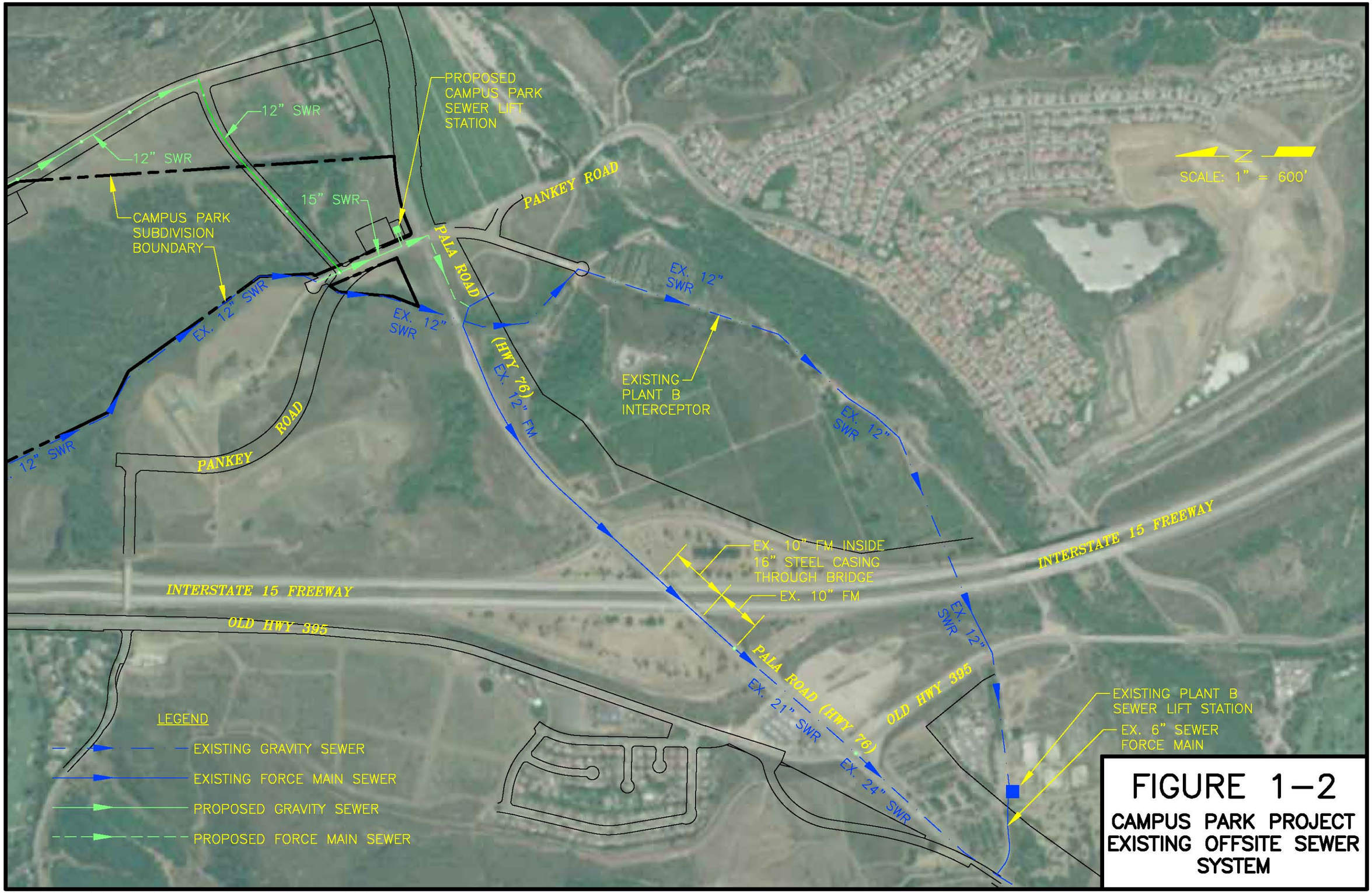


FIGURE 1–2

CAMPUS PARK PROJECT EXISTING OFFSITE SEWER SYSTEM

\\PACIFIC\DWG\669011\FIGURE-1-2.DWG 11-05-10 10:21:16 LAYOUT: FIGURE

CHAPTER 2

DESIGN BASIS

This chapter will present the basis upon which the sizing and layout of the proposed sewer lift station is designed.

Design Criteria

The Campus Park Lift Station design will be based on the Rainbow Municipal Water District's *Domestic Water and Sanitary Sewer Construction Manual, August 2006*, Section 2.03.C, Pump Station Design. A copy of this section can be found in Appendix A of this report for reference.

Pump Station Capacity

The Campus Park Sewer Lift Station will be designed to accommodate sewage flows generated by the Campus Park and Palomar Community College projects, as well as flows in the Plant B Interceptor. The average and peak sewage generation flows for the development projects were determined in the previously referenced November 5, 2010 Dexter Wilson Engineering, Inc. report. These calculations are provided in Tables 2-1 and 2-2 below. Note that firm pumping capacity is calculated to be 1.3 times the peak sewer flow to account for wet weather surcharges.

The pumping capacity required for the ultimate flows in the Plant B Interceptor is obtained from Chapter 5 of the *Wastewater Master Plan Update*, May 2006 which addresses ultimate flow projections for Rainbow Municipal Water District. Table 5-2 of the *Wastewater Master Plan Update* indicates a peak wet weather flow pumping capacity requirement of 560 gpm for the Plant B Lift Station. Since all of the Plant B Interceptor flows to the Plant B Lift Station, it is appropriate to use the ultimate pumping capacity projection for sizing the Campus Park Lift Station. To convert this flow to average flow, we estimated the peaking factor to be 3.5 and checked the estimate based on the peaking factor equation per the District Guidelines. Thus, by back-calculating, we determined the average flow equivalent for the Plant B Interceptor's ultimate peak flow to be 160 gpm average.

The following table presents the lift station pumping capacity based on the estimated ultimate sewage flows from the three expected sources: the Campus Park development project, the Palomar College site, and the Plant B Interceptor.

TABLE 2-1
CAMPUS PARK LIFT STATION
PUMPING CAPACITY

Service Area	EDUs	Average Flow
Campus Park	850.1	212,525 gpd
		147.6 gpm
Palomar College	100.0	25,000 gpd
		17.4 gpm
Plant B Interceptor	921.6	230,400
		160 gpm
TOTAL	**1,871.7**	**325.0 gpm**
Population	4,679.3	
Peak Factor	3.27	
Total Peak Flow	1,062.8 gpm	
TOTAL FIRM PUMPING CAPACITY	**1,382 gpm Use 1,390 gpm**	

CHAPTER 3

PUMP STATION HYDRAULICS

The total dynamic head which the pumps for the Campus Park Sewer Lift Station will have to develop will be based upon the static head conditions for the lift station as well as the friction and minor losses in the force main and the pump header system. Preliminary calculations to determine the total dynamic head for the station are included in Appendix B. A more detailed discussion of the calculations follows in the balance of this chapter.

Lift Station Pumping Capacity

Table 2-1 summarized the calculations used to determine the lift station pumping capacity for the proposed Campus Park Sewer Lift Station. The calculated pumping capacity incorporates all of the proposed Campus Park development project plus the Palomar College site and the ultimate flows from the Plant B Interceptor. Total pumping capacity is 1,390 gpm.

Operation of Multiple Pumps. For a lift station of this pumping capacity, it is recommended that multiple pumps be employed to deliver the total lift station capacity. For the Campus Park Sewer Lift Station, we propose that two duty pumps of the same size operating simultaneously will provide the total lift station pumping capacity. Thus, there will be occasions during times of low sewage flow when a single pump will be operating by itself.

The preliminary sewer lift station hydraulic calculations in Appendix B provide an estimate of the pumping capacity of a single pump operating by itself based on sizing the pump to deliver half of the total lift station pumping capacity when two pumps are operating together. The summary of pumping capacities is presented below:

Two Pumps: 1,390 gpm One Pump: 1,000 gpm

Force Main Sizing and Discharge Conditions

The Campus Park Sewer Lift Station force main will discharge through the existing 12-inch sewer force main in Pala Road (Highway 76). Approximately 800 feet of new force main will be constructed in Pankey Road from the Campus Park Lift Station to the existing force main in Pala Road. It is recommended that the new length of force main be 12-inch diameter to accommodate flows from the Campus Park, Palomar Community College, and Plant B Interceptor service areas.

The existing force main was constructed in 1988 and has never been used because the originally conceived development project on the Campus Park property was never constructed. The force main begins as a 12-inch pipe approximately 2,200 feet east of the east side of the Pala Road bridge over the Interstate 15 Freeway. Through the bridge over the freeway the force main is a 10-inch pipe; the 10-inch pipe extends approximately 200 feet beyond the bridge on the west side where it connects to the existing 21-inch gravity sewer line in Pala Road (Highway 76). The discharge elevation for the force main is 295.2 feet with its highest point at 300.0 feet. Figure 1-2 provides the locations of the existing and proposed force main sections.

Force main velocities are critical to maintaining movement of sewage solids through the force main. Table 3-1 below presents the expected force main velocities through the existing 10-inch pipe as well as the proposed and existing 12-inch piping. The velocities are calculated for single and dual pump operation. Minimum expected force main velocity will be 2.8 fps when a single pump is running.

TABLE 3-1
FORCE MAIN VELOCITIES

Lift Station Capacity	10" Force Main	12" Force Main
Two Pumps Operating 1,390 gpm	5.7 fps	3.9 fps
One Pump Operating 1,000 gpm	4.1 fps	2.8 fps

Pumping Head Condition

The Campus Park Sewer Lift Station is proposed to be located within the Campus Park development in the southwest corner of the property. The finish grade elevation at the pump station is expected to be approximately 277 feet. The influent gravity sewer from the Campus Park project to the lift station will have an estimated invert elevation of 256 feet. The diverted 12-inch Plant B Interceptor will be lower and is estimated to have an invert elevation at the wet well of 250 feet. Thus, the low water level in the wet well will be approximately 245 feet. With the high point of the force main at an elevation of 300.0 feet, the maximum static head for the pumps is about 55 feet.

Appendix B contains preliminary hydraulic calculations using a new 12-inch force main from the lift station to the existing 12-inch and 10-inch force main piping in Pala Road and across the Interstate 15 Freeway bridge. Calculations are prepared using a Hazen-Williams 'C' value of 120 for the maximum head condition and 150 for the minimum head condition.

The preliminary rating point for the sewage pumps is based on having three pumps in the station; two pumps are duty and a third pump functions as a standby. The preliminary rating points are presented below.

Pump rating point: 700 gpm at 83 feet TDH; Motor horsepower: 30 hp

CHAPTER 4

PUMP STATION CONFIGURATION AND FEATURES

This chapter will provide a discussion of the equipment and features proposed for the Campus Park Sewage Lift Station. Included within this chapter is a preliminary site layout showing the proposed configuration of the pump station's components and a mechanical section of the pumps and piping.

Submersible Pump Station

This project proposes to build a triplex submersible lift station to accommodate the Campus Park, Palomar Community College, and Plant B Interceptor service areas. Three submersible pumping units will be installed, with any two pumps together capable of handling the design pumping capacity of the lift station. The lift station will consist of a pre-cast concrete rectangular wet well sized to accommodate all three pumping units. The submersible pumps will discharge through a below-grade valve vault and discharge header system connected to the new section of 12-inch force main.

Pump Selection

The preliminary hydraulic calculations presented in Appendix B provide a pump curve for a candidate pump selection. We propose to use a Yeomans (Chicago Pump), Fairbanks Morse, or equivalent, 2-vane impeller, 3-inch solids handling, centrifugal pump with a submersible, explosion-proof, 1,750 rpm motor. Preliminary calculations result in a required pump motor horsepower of 30 hp per pump for the proposed sewer lift station.

Submersible pumps are proposed to be installed in the wet well with a stainless steel guide rail system for installation and removal of the pumps.

Campus Park Lift Station Site

The Campus Park Sewage Lift Station site is located within the Campus Park development project near the intersection of Pankey Road and Pala Road (Highway 76). Figure 1-2 shows the proposed location of the sewer lift station relative to the Campus Park project boundary and other sewage facilities in the area. Figure 4-1 presents a more detailed preliminary site plan for the proposed sewage lift station.

Access to the lift station site will be from Pankey Road by way of a driveway which will serve the horse trailer parking area. The current site plan, shown in Figure 4-1, allows for a 20-foot wide access driveway into the fenced pump station site. Finish grade of the pump station site will be approximately 277 feet elevation.

There are three below-grade structures proposed for the lift station: 1) the lift station wet well for influent sewage and the three submersible pumping units; 2) emergency storage to accommodate 6 hours of average daily sewage flow; and 3) the valve and flow meter vaults. The emergency power generator, the chemical feed/odor control system, and the motor control center are not planned to be enclosed in a building. The emergency power generator will be provided with a weather-proof, sound attenuated enclosure. The motor control center will be housed within a weatherproof, concrete pad mounted enclosure.

Wet Well. The pump station wet well is proposed to be a 10-foot by 14-foot pre-cast concrete structure. It is anticipated to be 34 feet deep with the top of the wet well set slightly above finish grade. An aluminum double-leaf hatch in the wet well top slab will provide access into the wet well. No ladder or stairs will be built in the wet well. The interior of the wet well will be PVC T-Lock lined or polyurethane lined. The exterior walls of the wet well will be coated with a waterproofing material to reduce ground water infiltration as well as deterioration of the concrete walls. Figure 4-2 shows the general layout of the wet well.

Emergency Storage. Emergency storage will be provided on-site to accommodate 6 hours of average daily flow. For the Campus Park, Palomar Community College, and Plant B Interceptor service area flows, approximately 116,982 gallons (15,640 ft^3) of storage is required. It is proposed to supply this storage in an arrangement of 8-foot x 14-foot (LxW) pre-cast concrete vaults below grade. To achieve the required storage volume, a total of nine vaults each would have a liquid holding depth of 15.5 feet.

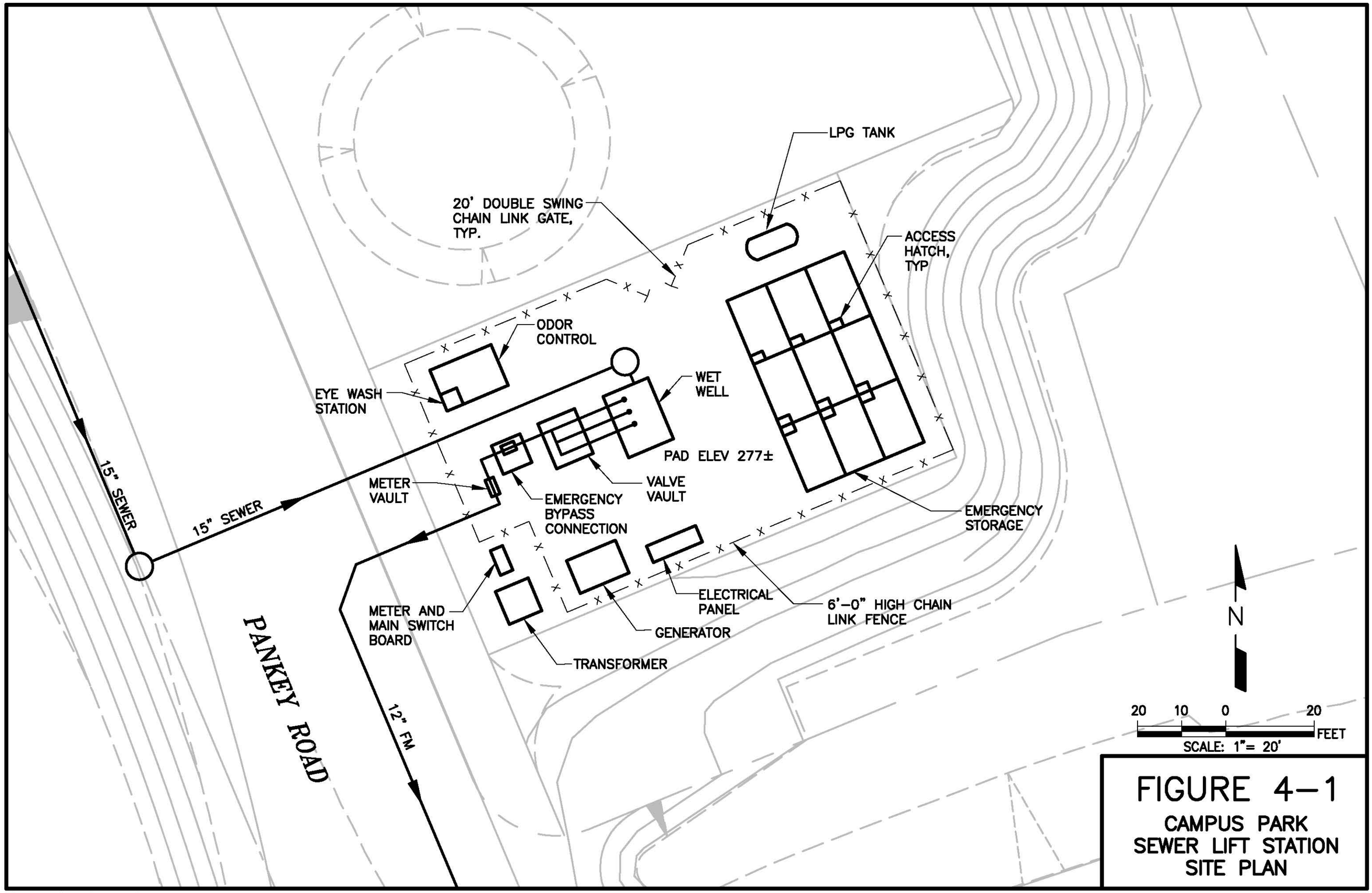
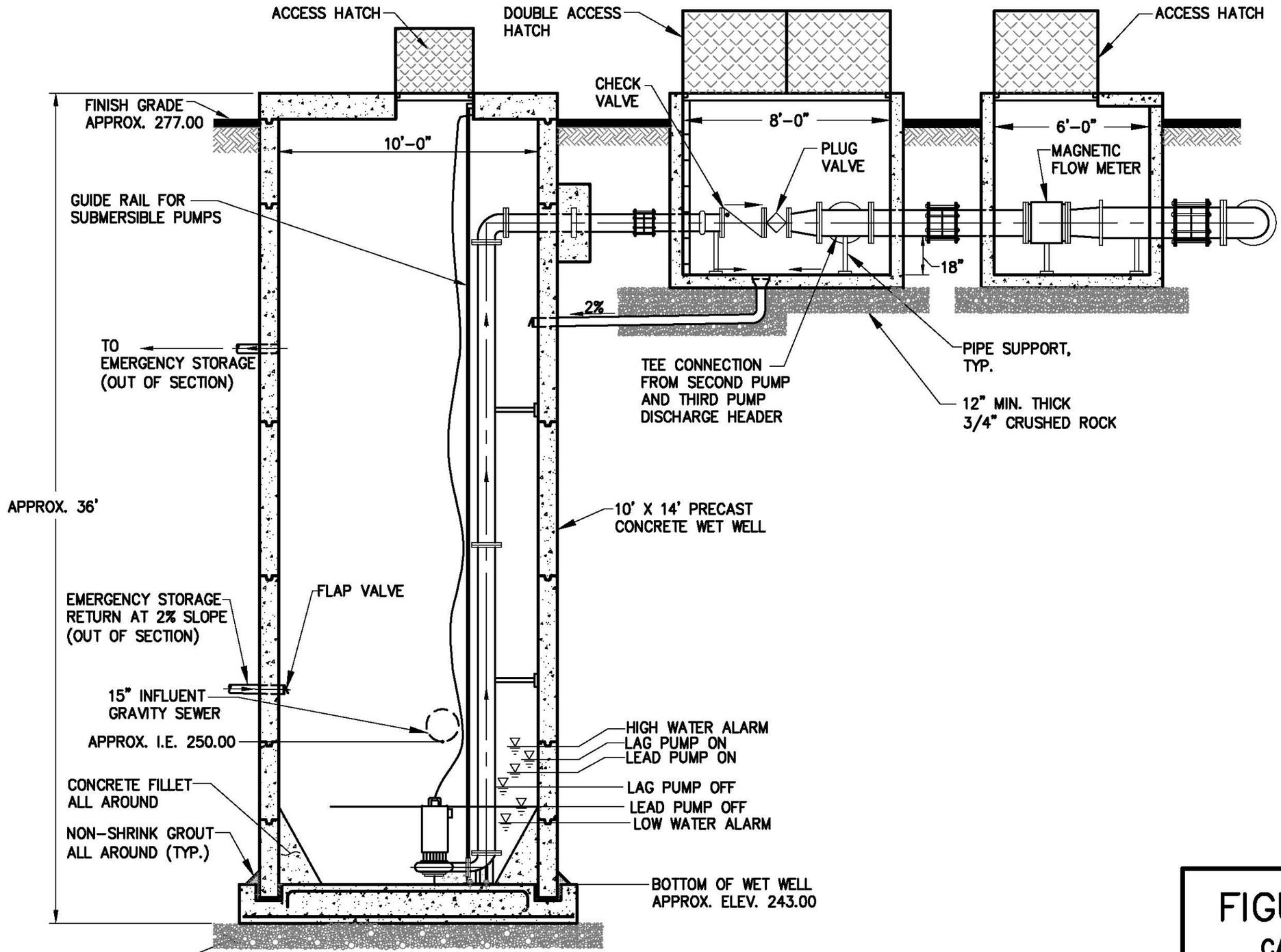


FIGURE 4-1

CAMPUS PARK SEWER LIFT STATION SITE PLAN

\\PACIFIC\DWG\669011\FIGURE-4-1_2010.DWG 11-05-10 10:25:01 LAYOUT: FIGURE



WET WELL AND VALVE VAULT SECTION

SCALE: NO SCALE

FIGURE 4-2

CAMPUS PARK
SEWER LIFT STATION
MECHANICAL SECTION

The emergency storage vaults are proposed to be buried three feet below grade so that only the access shafts would be at grade. The access shafts for the vaults would be equipped with traffic rated hatches. The emergency storage volume will be connected by piping to the wet well at the high water alarm invert elevation. Emergency storage will fill from and empty into the wet well by gravity as the liquid level in the wet well rises and falls above the high water alarm elevation.

Valve Vault. The valve vault is proposed to be an 8-foot x 10-foot x 6-foot (LxWxH) pre-cast concrete structure. An aluminum double-leaf hatch in the top slab will allow access to the vault; this hatch would be located a few inches above finish grade. The valve vault will contain a pump discharge check valve and pump shutoff plug valve for each pump.

Meter Vault. Outside the Valve Vault, the discharge pipe will pass through the Meter Vault which will include a magnetic flow meter. The magnetic meter is expected to be 8-inch diameter. Shutoff valves for the flow meter will be located in the Valve Vault and as part of the emergency force main bypass connection downstream of the Meter Vault.

Emergency Force Main Connection. As shown in Figure 4-1, an above grade emergency bypass connection is proposed to be included at the sewer lift station downstream of the Meter Vault. This bypass riser will have a shutoff valve on each side of it. This will provide the flexibility to use the bypass piping in a number of ways. First, if the force main is out of service, the sewage pumps in the station could pump through temporary force main piping. Second, if the sewage pumps are out of service, temporary pumps could be connected to the force main to continue pumping sewage while the permanent pumps are being repaired.

Standby Engine/Generator

A liquefied petroleum gas (LPG) engine driven emergency power generator is proposed in the design of the Campus Park Sewage Lift Station to provide a backup power source. The engine/generator will be sized to run two pumps in addition to all auxiliary electrical and mechanical systems. The preliminary size of the engine/generator unit is 80 kW.

The LPG engine/generator will be coupled with an LPG tank on the lift station site sized to provide for operating the engine/generator at full load for a minimum of 12 hours. An automatic transfer switch will allow automatic starting of the engine/generator set upon loss of

commercial power. Upon restoration of commercial power, the generator set will automatically be disconnected and the sewer lift station will revert back to commercial power supply. The automatic transfer switch will be a part of the Motor Control Center.

Electrical Systems

Electrical power for the pump station will be provided by means of an onsite transformer tied to the backbone SDG&E power system for the Campus Park project. The transformer power will be 480 volt, three phase, 4 wire, 60 hertz. The lift station site plan shows the proposed location of the transformer near the driveway entrance off of Pankey Road.

The electrical panel will include the meter and main switchboard, the main control panel, the motor control center, the subpanel for single phase power distribution, a telemetry equipment cabinet, the automatic transfer switch, and the telephone service backboard. Hour meters for each pump will be located in the Motor Control Center lineup. The electrical equipment will be in a NEMA 4X lockable outdoor enclosure with panel doors for access to the individual equipment components.

Site Lighting. The lift station compound will be designed with adequate lighting. Exterior lights will be pole mounted and located on the site to provide sufficient visibility of all equipment and facilities. Unless the District would like some type of security lighting, it is intended that the exterior lights would be controlled by a switch near the gate to the lift station.

Pump Control. Pumps will be controlled using a PLC with wet well level inputs from an ultrasonic level sensor or submersible transducer. The PLC will control pump lead/lag starts, alternation, and will also generate alarm signals. Backup float switches will be included for high-high level and low-low level in the wet well to provide backup control of the pumps in the event of a failure of the PLC level system.

Telemetry

Telemetry to be provided at the lift station will be a radio system compatible with the current system being used by the Rainbow Municipal Water District. Lift station status and alarm conditions will be telemetered back to the District's Operations Center and will be compatible

with the District's Supervisory Control And Data Acquisition (SCADA) system. A detailed list of status and alarm contacts will be provided to the District for review during the final design of the instrumentation system for the lift station. Among the alarms will be site intrusion, power failure, high and low wet well levels, and pump fail.

Piping and Valving

Pipe and fittings within the lift station wet well and through the valve vault will be ductile iron minimum Class 250. Ductile iron pipe and fitting will be liquid epoxy coated and lined. Buried force main piping will be minimum AWWA C-900 PVC, DR18, Class 150.

Shut-off valves on any sewage piping including the force main shall be the eccentric plug type. All pumps shall have a discharge shutoff valve and a discharge swing-type check valve with external-spring loaded arm.

Pressure gauges will be provided on the discharge piping of each pump. The pressure gauges will be located in the Valve Vault.

A minimum 1-inch water service will be provided at the sewer lift station with hose bib wash-down stations located as preferred by the operators.

Odor Control System

To control odors at the lift station and at the discharge end of the force main, we are recommending that a chemical addition system be included in the design of the pump station. It is proposed that Bioxide or another such chemical be added to the wet well to control odors. The required chemical dosage rate will vary based on the amount of influent flow to the station, but our initial sizing indicates that a 1,000 gallon chemical storage tank will be adequate. A chemical storage tank of this size would have to be refilled approximately every two to three months under ultimate projected flows to the station. The proposed location of the chemical storage tank is shown on Figure 4-1. The chemical storage tank will be installed on a concrete pad with a low perimeter wall for containment of the stored fluid in the event the tank ruptures.

Surge Control

A detailed surge control analysis will be performed on this lift station force main system during the final design of the facility. The recommendations of the analysis will be incorporated into the project design. The recommendations may include such components as a surge relief tank (pressure vessel), check valve closure speed controls, or a surge relief valve which would discharge into the wet well.

Once the surge analysis is completed, we will review with the District the results of the analysis and the proposed mitigation measures that we recommend to include in the design of the lift station.

APPENDIX A

RAINBOW MUNICIPAL WATER DISTRICT'S DOMESTIC WATER AND SANITARY SEWER CONSTRUCTION MANUAL, AUGUST 2006

Section 2.03.C - Pump Station Design

B. SEWER FORCE MAINS

1. Force mains may not be constructed in the same trench as sewers. Minimum separations from waterlines shall be those specified for sewers. Insofar as practicable, force mains shall be laid at continuously ascending grades without intermediate high points or low points.

2. Minimum cover for force mains shall be 4 feet from finish grade to top of pipe, plus additional vertical clearance to locate sewage-type (long-body) combination air release and air and vacuum release valves and appurtenances below ground. Top of pipe profile shall be shown on the profile.

3. Size of force mains must be considered in conjunction with characteristics of the pumping equipment to be provided. In general, the design rates of flow shall be not less than 3 feet per second nor higher than 8 feet per second. Every attempt should be made to limit the maximum retention time in force mains to six (6) hours.

4. Unless otherwise approved or specified, force mains shall be minimum Class 200, PVC C-900 or C-905. Other materials shall only be as approved by the District Engineer.

5. Low points in force mains shall be fitted with approved blow-offs (drains). High points shall have approved appurtenances for air release and air and vacuum release.

6. Thrust restraint calculation shall be submitted to the District Engineer for review and approval. Restraint may be provided either by restrained joint pipe or by thrust blocks.

7. Show all minimum clearances of other underground utilities in both plan and profile per State Department of Health Services "Criteria For The Separation Of Water Mains And Sanitary Sewers."

C. PUMP STATION DESIGN

Public and private wastewater pump stations shall be avoided whenever possible. Specific written agreement from the District Engineer for the use of a pump station is required prior to approval of grading or improvement plans. If a pump station is approved, the design engineer shall submit a pump station basis of design report to the District Engineer for review and approval. The design report shall address, but not be limited to, the following items. After approval of the basis of design report, subsequent plan and specification packages shall be submitted to the District Engineer for review and approval.

Pump station plans shall include pump curves, specifications, details, pump head, pump horsepower, pump capacity, electrical layout, control system layout-out, and schematics.

Sewer pump stations should be designed based on the projected peak wet weather influent flow.

Each pump station shall be provided with two (2) independent sources of power. This could be accomplished by providing an on-site generator with an on-site fuel source in addition to

the electrical supply. The generator shall be located in a building or under cover and shall meet all city and environmental noise limitation requirements.

Every sewer pump station shall be designed in accordance with the following criteria:

1. Pumps

   a. The minimum pump cycle time shall be in accordance with the pump and motor manufacturers' requirements. Note that larger motors require longer times between starts. Also, see other wet well sizing requirements related to minimum pump cycle time.

   b. The minimum number of pumps per station shall be one (1) duty pump and one (1) standby pump of the same size.

   c. The minimum non-clog sewage pump size shall be 4-inches with the capability to pass a 3-inch sphere. Where smaller pumps (capacity) are required, grinder type pumps shall be used.

   d. Pump/system curve data shall include the following: system curve, design operating point, required net positive suction head (NPSH), hydraulic efficiency, Hp requirements, RPM, and other operating conditions required for each pump.

   e. The most efficient pump performance shall be at the design Total Dynamic Head (TDH). Avoid pumps with "flat" pump curves where a small change in TDH will result in a large change in pump flow.

   f. A factory certified pump test curve for the actual pump units to be installed at the station shall be required.

   g. The specified operating point shall be near the maximum efficiency point on the pump curve and within the manufacturer's recommended limits for radial thrust and vibration. Select a pump curve where the operating point will near the center of the pump recommended operating range. Pump equipment shall be dynamically balanced to prevent vibration. No surge cavitation or vibration shall be allowed within the limits of the stable operating range indicated on the pump curve.

   h. If pumps have a water lubricated packing system, it shall be constant pressure type, and shall exceed the pressure of the pump. Water shall be supplied to the packing water system through an air gap tank and repressurization system installed in a location that is unconfined and above grade.

   i. Edges on pump bases shall be chamfered.

   j. For suction lift type pumps, TDH calculation must include the static suction lift elevation.

   k. Self priming pumps may be allowed for above ground stations with a maximum suction lift of 10 feet.

   l. Dry pit submersible pumps shall be used in a wet well/dry well configuration to avoid extended shafting and to protect the pumps from accidental flooding of the dry pit.

m. Submersible pumps/motors, with stainless steel rail system, may be considered for direct installation in a wet well at the discretion and approval of the District Engineer.

2. Piping and Appurtenances

a. Pump isolation valves (suction and discharge) shall be plug valves with suitable operators per manufacturer's recommendations.

b. Check valves shall be between pump and discharge plug valve, with external spring-loaded arm.

c. Discharge line and manifold shall be supported and braced. Install sleeve couplings and/or flange coupling adaptors restrained by tie rods on the discharge piping for ease of removal of piping. These fittings will also prevent uneven tightening of flange faces.

d. Sleeves shall be used for wall penetrations for pump suction lines and manifold discharge line.

e. In manifolds, "Wyes" are required and shall be the same size as the manifold. Wyes shall be installed for horizontal side entry. Vertical entry shall not be allowed.

f. Potable water services (for wash-down) shall not be smaller than 1-inch, and shall have an approved backflow prevention device. Wash down hose bibbs shall not be located in confined or below grade locations.

g. On suction and discharge piping connected to each pump and on the discharge manifold horizontal and vertical runs, install a flexible coupling adaptor with tie rod thrust restraint to absorb vibrations and prevent stress in the pipe, and to allow minor adjustments in piping installations during construction between fixed well flanges. Piping supports under the suction and discharge lines shall be provided.

h. Pipe joints must be restrained. The following types of joints are acceptable: flanged, dresser type coupling restrained by tie rods, mechanical joint with set bolt retainer gland.

3. Controls

a. Each pump shall have a hour-meter, capable of reading 1/10th hour.

b. Pumps shall operate in a duty/standby mode, with alternators to switch pump starts after each pumping cycle.

c. Where practical, provide variable frequency drives (VFD) with system by-pass and controls.

d. All pump stations shall be equipped with District approved instrumentation and telemetry, which shall be compatible with the District's Supervisory Control And Data Acquisition (SCADA) System.

e. All electrical wiring, fixtures and equipment shall conform to all safety codes.

f. Pump control shall be via a Miltronics ultrasonic level sensing and pump control system with float back-up/for emergency pump start and stop.

4. Alarms

a. Dry well shall have a "flooded" alarm.

b. Wet well shall have a high level and low level alarms independent from the pump controls.

c. Instrumentation and alarms shall be telemetered to District offices.

5. Ventilation

a. Ventilation requirements shall conform to current Cal-OSHA (confined space regulations) and NFPA 820.

6. Drywell

a. All interior concrete surfaces shall be coated with a District approved sealer. All exterior buried walls and roof shall be waterproofed.

b. Provide sump and sump pumps to convey nuisance water out of dry well.

c. All exposed welds shall be coated with non-corrosive coatings.

d. All equipment shall have adequate clearance to perform maintenance and repair work.

e. Guards shall be installed around all moving parts of equipment as required by safety codes.

f. Station shall have guard railings around floor openings which comply with required safety codes and are made of non-corrosive materials.

g. Guard rails shall have toeboards with ¼ inch floor clearance made of non-corrosive materials.

h. Openings in guard rails shall have two chains with snap hooks and eyes made of non-corrosive materials.

i. Floor gratings shall be made of non-corrosive materials.

j. Safety warning signs shall be installed on all hazardous equipment.

k. Lifting eyes (non-corrosive materials) shall be installed above equipment and openings.

l. All concrete floors shall be treated with an approved sealant.

m. All outside doors and frames shall be corrosion and vandal resistant.

7. Wetwell

a. Every pump station shall be provided with emergency storage. The minimum storage volume shall be equal to six (6) hours of average daily flow, unless otherwise approved by District Engineer. The volume of

emergency storage may be adjusted based on site specific conditions and proximity of sensitive receiving areas.

b. The distance between the wet well floor and the turned down bell mouth suction inlet of diameter "D" shall be a maximum of D/2 and a minimum of D/3.

c. Wet well level shall readout in "inches of water."

d. Wet well walls and ceiling shall be PVC lined with T-lock, as manufactured by Ameron Pipe.

e. Wet well floor shall be sloped toward the suction piping at 1/8 inch per foot.

f. Inlet into the wet well shall be above the high water operating level in order to allow for the free flow of the gases into the wet well.

g. Pump stations receiving flow from trunk sewers (18-inches or larger) shall have barscreens.

h. Wet wells shall be designed to allow for the maintenance of wet well.

i. The wet well shall be as small as possible to prevent septic action from taking place during periods of very low flow. However, the wet well must be large enough to provide at least 5 minutes pump running time at low flow to prevent overheating of the electric motor and controls. Designer shall provide written minimum running time confirmation and recommendation from the specified pump manufacturer for the specific application. Provide at least one (1) 36-inch diameter access manhole cover over wet well. See Standard Drawing S-7. Do not provide steps or ladder for access into the wet well.

j. Wet well volume to be calculated as follow:

$Q_{peak} = (Q_{avg}$ X peak factor)

$Q_{design} = Q_{peak}$

Q_{low} = average flow/peak factor

Min Wet well operating volume = $(Q_{design}-Q_{low})$ X 5 Minutes

Depth of wet well = wet well volume/wet well area = (high level - low level)

Wet well operating volume = volume between pump start and pump stop levels

k. The exterior surface of wet wells and dry wells shall be adequately water proofed to prevent intrusion of ground water.

l. Provide facilities for odor control. The odor control facilities shall be approved by the District Engineer.

8. Other Items

Prior to finalizing design, the Applicant's Engineer shall provide one (1) Operations and Maintenance manual to the District Engineer for review and approval. Three (3) copies of Operations and Maintenance manuals shall be provided with the final design.

APPENDIX B

PRELIMINARY HYDRAULIC CALCULATIONS

Campus Park Sewer Lift Station

WET WELL VOLUME CALCULATION

Q(design) = 1,390 gpm

WET WELL OPERATING VOLUME DETERMINATION

$$t = \frac{4V}{Q}$$

V = Wet well operational volume
t = Pump cycle time
Q = Q(design)=Q(peak)

Approximate motor hp is 30, so use 6 starts per hour
Therefore, cycle time, t, = 10 min

and V = 3475.0 gal
= 464.6 ft^3

Estimate wet well to be 10' x 14', therefore

Operational depth in wet well = 3.32 feet

WET WELL SET POINT DETERMINATION

Lift Station pad elevation = 277.00 ft

Invert elevation = 250.00 ft

HWL alarm = 6 inches below sewer invert
= 249.50 ft

Pump "on" elevation = 6 inches below HWL alarm
= 249.00 ft

Operational depth = 3.32 ft
Pump "off" = Pump "on" - operational volume
= 245.68 ft

LWL alarm = 6 inches below Pump "off"
= 245.18 ft

Minimum pump submergence
= 2.50 ft

Wet well invert = LWL - minimum submergence
= 242.68 ft

Overall wet well depth = 34.32 ft

DESIGN FLOWRATE

Lift Station Capacity

Q(design) = 1,390 gpm

Force Main Velocity Comparison			
D, in	8	10	12
v, fps	8.9	5.7	3.9

*** Use 12" Force Main where new pipe must be constructed.

HYDRAULIC CALCULATIONS

STATIC HEAD - H(stat)

Minimum Static Head = Force Main High Point - Pump "on" elevation
H(stat,min) = 300 - 249.00 ft
H(stat,min) = 51.00 ft

Maximum Static Head = Force Main High Point - Pump "off" elevation
H(stat,max) = 300 - 245.68 ft
H(stat,max) = 54.32 ft

FRICTION LOSSES IN FORCE MAIN - Hf

Hazen-Williams Formula

$$H_f = \frac{10.44 * \left(\frac{Q}{C}\right)^{1.852} * L}{D^{4.8655}}$$

Proposed Force Main

H(f) = friction losses in ft
Q = 1,390 gpm
C = 120 for design
L = 800 ft
D = 12.00 in
Hf = 4.38 ft

Existing 12-inch Force Main

H(f) = friction losses in ft
Q = 1,390 gpm
C = 120 for design
L = 2233 ft
D = 12.00 in
Hf = 12.22 ft

Existing 10-inch Force Main

H(f) = friction losses in ft
Q = 1,390 gpm
C = 120 for design
L = 641.82 ft
D = 10.00 in
Hf = 8.53 ft

Total, Hf = 25.12 ft

MINOR LOSSES IN FORCE MAIN- Hm

$$H_m = \sum K \frac{V^2}{2g}$$

H(m) = minor losses, ft
$\sum K$ = sum of minor loss coefficients
g = gravitational constant
= 32.17 fps^2

Proposed Force Main v, fps = 3.9

12 in

Minor loss coefficients

Description	Quantity	K-value	K-value,total
90 degree bend	6	0.3	1.8
45 degree bend	1	0.2	0.2
Tee-thru, flanged	2	0.3	0.6
Plug valve	1	1.0	1.0
Tee-branch,flanged	1	0.8	0.8
Wye	1	0.5	0.5
Check valve	1	2.5	2.5
Meter	1	1.5	1.5
Exit Loss	0	1.0	0.0

$\sum K$ = 8.9
Hm= 2.14 ft

Existing 12-inch Force Main v, fps = 3.9

Minor loss coefficients

Description	Quantity	K-value	K-value,total
90 degree bend	0	0.3	0.0
45 degree bend	3	0.2	0.6
Tee-thru, flanged	0	0.3	0.0
Plug valve	0	1.0	0.0
Tee-branch,flanged	0	0.8	0.0
Wye	0	0.5	0.0
Check valve	0	2.5	0.0
Meter	0	1.5	0.0
Exit Loss	0	1.0	0.0

$\sum K$ = 0.6
Hm= 0.15 ft

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Existing 10-inch Force Main v, fps = 5.7

Minor loss coefficients

Description	Quantity	K-value	K-value,total
90 degree bend	0	0.3	0.0
45 degree bend	0	0.2	0.0
Tee-thru, flanged	0	0.3	0.0
Plug valve	0	1.0	0.0
Tee-branch,flanged	0	0.8	0.0
Wye	0	0.5	0.0
Check valve	0	2.5	0.0
Meter	0	1.5	0.0
Exit Loss	1	1.0	1.0

$\sum K$ = 1.0

Hm= 0.50 ft

Total, Hm = 2.79

DESIGN TOTAL DYNAMIC HEAD, TDH

TDH = SUM OF ALL LOSSES
= H(stat, max) + Hf + Hm
= 82.23 ft

PUMP DESIGN PARAMETERS

Q = 1,390 gpm
TDH = 83 ft

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HYDRAULIC CALCULATIONS

MAXIMUM CONDITION

STATIC HEAD = 54.32

12" PVC NEW DISCHARGE PIPING

DIAMETER, INCHES	12
DIAMETER, FEET	1.00
LENGTH, FEET	800
HW C-VALUE	120
MINOR LOSS K	8.90

FLOW GPM	VELOC. FPS	MINOR LOSSES	FRICTION LOSSES	TOTAL DYNAMIC LOSSES
0	0.00	0.00	0.00	0.00
100	0.28	0.01	0.03	0.04
200	0.57	0.04	0.12	0.17
300	0.85	0.10	0.26	0.36
400	1.13	0.18	0.43	0.61
500	1.42	0.28	0.66	0.94
600	1.70	0.40	0.92	1.32
700	1.99	0.55	1.22	1.77
800	2.27	0.71	1.57	2.28
900	2.55	0.90	1.95	2.85
1000	2.84	1.11	2.37	3.48
1100	3.12	1.35	2.83	4.17
1200	3.40	1.60	3.32	4.92
1300	3.69	1.88	3.85	5.73
1400	3.97	2.18	4.41	6.60
1500	4.26	2.50	5.02	7.52
1600	4.54	2.85	5.65	8.50
1700	4.82	3.22	6.32	9.54
1800	5.11	3.61	7.03	10.63
1900	5.39	4.02	7.77	11.79
2000	5.67	4.45	8.54	12.99
2100	5.96	4.91	9.35	14.26
2200	6.24	5.39	10.19	15.58
2300	6.53	5.89	11.06	16.95
2400	6.81	6.41	11.97	18.38
2500	7.09	6.96	12.90	19.86
2600	7.38	7.53	13.88	21.40

12" PVC EXISTING FORCE MAIN PIPING

DIAMETER, INCHES	12
DIAMETER, FEET	1.00
LENGTH, FEET	2233
HW C-VALUE	120
MINOR LOSS K	0.60

FLOW GPM	VELOC. FPS	MINOR LOSSES	FRICTION LOSSES	TOTAL DYNAMIC LOSSES
0	0.00	0.00	0.00	0.00
100	0.28	0.00	0.09	0.09
200	0.57	0.00	0.34	0.34
300	0.85	0.01	0.71	0.72
400	1.13	0.01	1.21	1.23
500	1.42	0.02	1.83	1.85
600	1.70	0.03	2.57	2.60
700	1.99	0.04	3.42	3.45
800	2.27	0.05	4.38	4.42
900	2.55	0.06	5.44	5.50
1000	2.84	0.08	6.61	6.69
1100	3.12	0.09	7.89	7.98
1200	3.40	0.11	9.26	9.37
1300	3.69	0.13	10.74	10.87
1400	3.97	0.15	12.32	12.47
1500	4.26	0.17	14.00	14.17
1600	4.54	0.19	15.78	15.97
1700	4.82	0.22	17.65	17.86
1800	5.11	0.24	19.62	19.86
1900	5.39	0.27	21.68	21.95
2000	5.67	0.30	23.84	24.14
2100	5.96	0.33	26.09	26.42
2200	6.24	0.36	28.43	28.80
2300	6.53	0.40	30.87	31.27
2400	6.81	0.43	33.40	33.83
2500	7.09	0.47	36.02	36.49
2600	7.38	0.51	38.73	39.24

10" EXISTING FORCE MAIN PIPING

DIAMETER, INCHES	10
DIAMETER, FEET	0.83
LENGTH, FEET	642
HW C-VALUE	120
MINOR LOSS K	1.00

FLOW GPM	VELOC. FPS	MINOR LOSSES	FRICTION LOSSES	TOTAL DYNAMIC LOSSES	TOTAL DYNAMIC HEAD
0	0.00	0.00	0.00	0.00	54.32
100	0.41	0.00	0.07	0.07	54.53
200	0.82	0.01	0.24	0.25	55.07
300	1.23	0.02	0.50	0.52	55.92
400	1.63	0.04	0.85	0.89	57.05
500	2.04	0.06	1.28	1.35	58.45
600	2.45	0.09	1.79	1.89	60.13
700	2.86	0.13	2.39	2.51	62.06
800	3.27	0.17	3.05	3.22	64.24
900	3.68	0.21	3.80	4.01	66.68
1000	4.09	0.26	4.62	4.88	69.36
1100	4.49	0.31	5.51	5.82	72.29
1200	4.90	0.37	6.47	6.84	75.46
1300	5.31	0.44	7.50	7.94	78.86
1400	5.72	0.51	8.60	9.11	82.50
1500	6.13	0.58	9.77	10.36	86.37
1600	6.54	0.66	11.01	11.68	90.47
1700	6.94	0.75	12.32	13.07	94.79
1800	7.35	0.84	13.69	14.53	99.35
1900	7.76	0.94	15.13	16.07	104.13
2000	8.17	1.04	16.64	17.68	109.13
2100	8.58	1.14	18.21	19.36	114.35
2200	8.99	1.26	19.85	21.10	119.80
2300	9.40	1.37	21.55	22.92	125.46
2400	9.80	1.49	23.32	24.81	131.34
2500	10.21	1.62	25.14	26.77	137.44
2600	10.62	1.75	27.04	28.79	143.75

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HYDRAULIC CALCULATIONS

MINIMUM CONDITION

STATIC HEAD = 51.00

12" PVC NEW DISCHARGE PIPING

DIAMETER, INCHES	12
DIAMETER, FEET	1.00
LENGTH, FEET	800
HW C-VALUE	150
MINOR LOSS K	8.90

FLOW GPM	VELOC FPS	MINOR LOSSES	FRICTION LOSSES	TOTAL DYNAMIC LOSSES
0	0.00	0.00	0.00	0.00
100	0.28	0.01	0.02	0.03
200	0.57	0.04	0.08	0.12
300	0.85	0.10	0.17	0.27
400	1.13	0.18	0.29	0.47
500	1.42	0.28	0.43	0.71
600	1.70	0.40	0.61	1.01
700	1.99	0.55	0.81	1.36
800	2.27	0.71	1.04	1.75
900	2.55	0.90	1.29	2.19
1000	2.84	1.11	1.57	2.68
1100	3.12	1.35	1.87	3.22
1200	3.40	1.60	2.20	3.80
1300	3.69	1.88	2.55	4.43
1400	3.97	2.18	2.92	5.10
1500	4.26	2.50	3.32	5.82
1600	4.54	2.85	3.74	6.59
1700	4.82	3.22	4.18	7.40
1800	5.11	3.61	4.65	8.26
1900	5.39	4.02	5.14	9.16
2000	5.67	4.45	5.65	10.10
2100	5.96	4.91	6.19	11.10
2200	6.24	5.39	6.74	12.13
2300	6.53	5.89	7.32	13.21
2400	6.81	6.41	7.92	14.33
2500	7.09	6.96	8.54	15.50
2600	7.38	7.53	9.18	16.71

Ex. 12" PVC DISCHARGE FORCE MAIN

DIAMETER, INCHES	12
DIAMETER, FEET	1.00
LENGTH, FEET	2233
HW C-VALUE	150
MINOR LOSS K	0.60

FLOW GPM	VELOC FPS	MINOR LOSSES	FRICTION LOSSES	TOTAL DYNAMIC LOSSES
0	0.00	0.00	0.00	0.00
100	0.28	0.00	0.06	0.06
200	0.57	0.00	0.22	0.23
300	0.85	0.01	0.47	0.48
400	1.13	0.01	0.80	0.82
500	1.42	0.02	1.21	1.23
600	1.70	0.03	1.70	1.73
700	1.99	0.04	2.26	2.30
800	2.27	0.05	2.90	2.94
900	2.55	0.06	3.60	3.66
1000	2.84	0.08	4.38	4.45
1100	3.12	0.09	5.22	5.31
1200	3.40	0.11	6.13	6.24
1300	3.69	0.13	7.11	7.24
1400	3.97	0.15	8.15	8.30
1500	4.26	0.17	9.26	9.43
1600	4.54	0.19	10.44	10.63
1700	4.82	0.22	11.68	11.90
1800	5.11	0.24	12.98	13.22
1900	5.39	0.27	14.35	14.62
2000	5.67	0.30	15.78	16.08
2100	5.96	0.33	17.27	17.60
2200	6.24	0.36	18.82	19.18
2300	6.53	0.40	20.43	20.83
2400	6.81	0.43	22.10	22.54
2500	7.09	0.47	23.84	24.31
2600	7.38	0.51	25.63	26.14

10" EXISTING FORCE MAIN PIPING

DIAMETER, INCHES	10
DIAMETER, FEET	0.83
LENGTH, FEET	642
HW C-VALUE	150
MINOR LOSS K	1.00

FLOW GPM	VELOC FPS	MINOR LOSSES	FRICTION LOSSES	TOTAL DYNAMIC LOSSES	TOTAL DYNAMIC HEAD
0	0.00	0.00	0.00	0.00	51.00
100	0.41	0.00	0.04	0.05	51.14
200	0.82	0.01	0.16	0.17	51.52
300	1.23	0.02	0.33	0.35	52.10
400	1.63	0.04	0.56	0.60	52.88
500	2.04	0.06	0.85	0.91	53.86
600	2.45	0.09	1.19	1.28	55.02
700	2.86	0.13	1.58	1.71	56.36
800	3.27	0.17	2.02	2.19	57.88
900	3.68	0.21	2.51	2.72	59.58
1000	4.09	0.26	3.05	3.31	61.45
1100	4.49	0.31	3.64	3.96	63.49
1200	4.90	0.37	4.28	4.65	65.69
1300	5.31	0.44	4.96	5.40	68.07
1400	5.72	0.51	5.69	6.20	70.61
1500	6.13	0.58	6.47	7.05	73.31
1600	6.54	0.66	7.29	7.95	76.17
1700	6.94	0.75	8.15	8.90	79.20
1800	7.35	0.84	9.06	9.90	82.38
1900	7.76	0.94	10.02	10.95	85.73
2000	8.17	1.04	11.01	12.05	89.23
2100	8.58	1.14	12.05	13.20	92.89
2200	8.99	1.26	13.14	14.39	96.70
2300	9.40	1.37	14.26	15.63	100.67
2400	9.80	1.49	15.43	16.92	104.79
2500	10.21	1.62	16.64	18.26	109.07
2600	10.62	1.75	17.89	19.65	113.49

Sht. 6 of 9

Campus Park Sewer Lift Station
Candidate Pump Curve

YEOMANS

1999 NORTH RUBY STREET
MELROSE PARK, ILLINOIS 60160

Series 9100

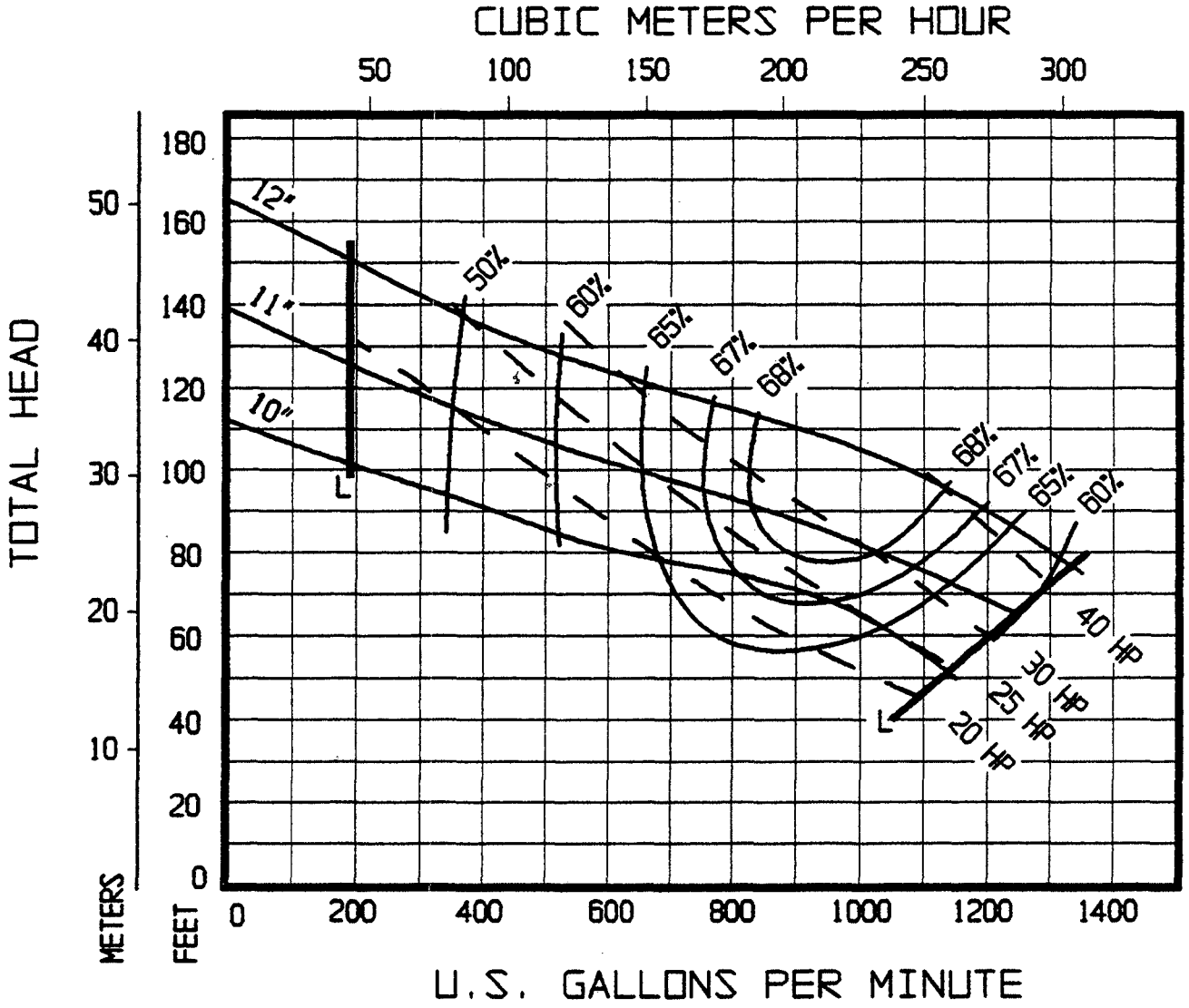
NON-CLOG SUBMERSIBLE PUMP CURVES

1750 R.P.M.

Model **4123**

Curve No.	**3503A**
Inpeller No.	**Y-4575**
Number of Vanes	**2**
Max. Sphere	**3"**
Discharge Size	**4"**
Inlet Area	**12.57 sq. in.**

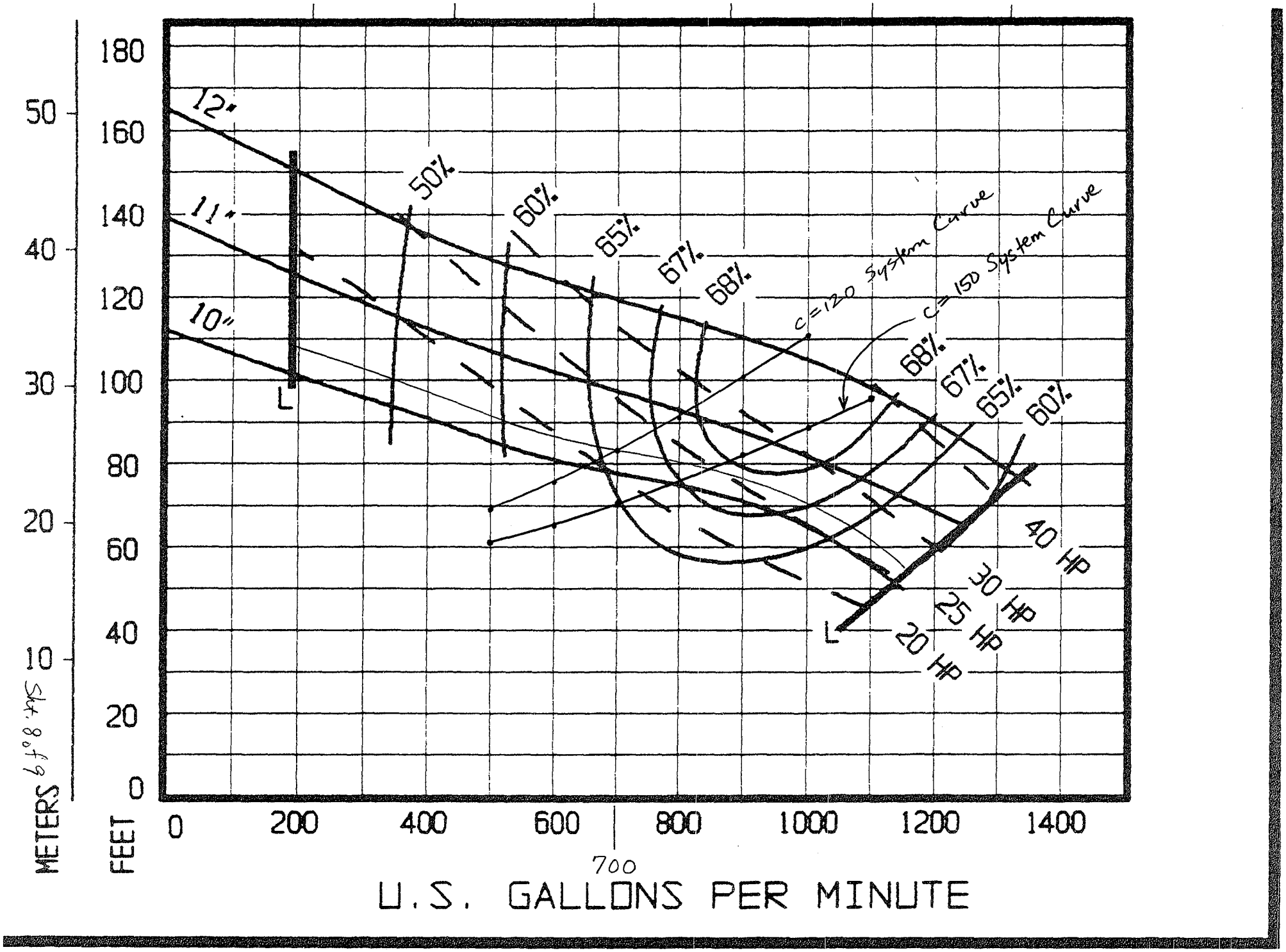
L=LIMIT LINE



Sht. 7 of 9

Submersible Wastewater Pump Association
SWPA

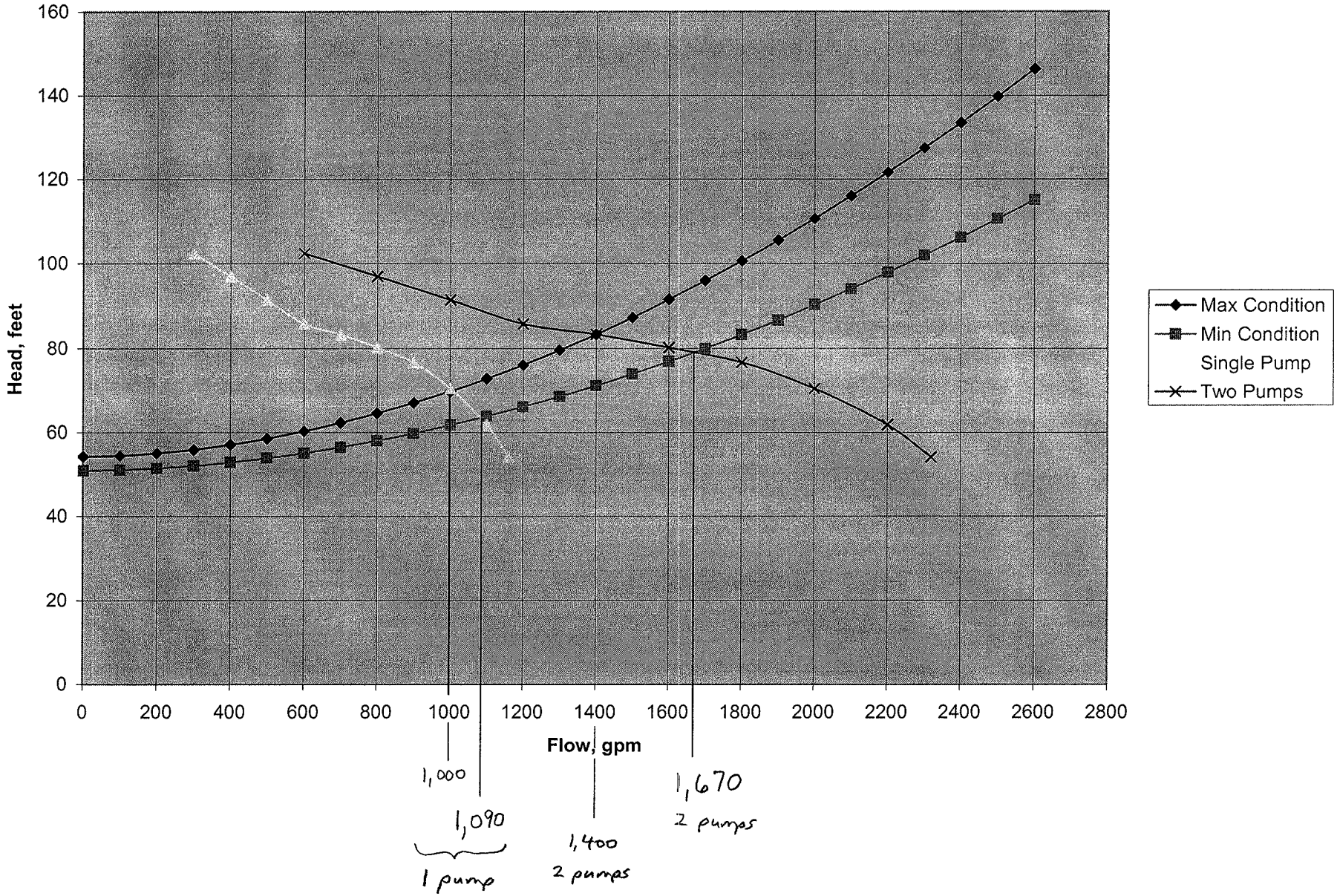
"SWPA Data Categories Presented — Data on this sheet supply design information as the minimum recommended by the Submersible Wastewater Pump Association (SWPA) and is defined in accordance with SWPA's Standardized Definitions for Pump and Motor



Sht. 8 of 9

— Data on this sheet supply design information

Campus Park Lift Station - System Curves



PROJECT FACILITY AVAILABLITY FORMS

COUNTY OF SAN DIEGO
DEPARTMENT OF PLANNING AND LAND USE: Zoning
PROJECT FACILITY AVAILABILITY FORM, Water

Please type or use pen

PASSERELLE — 619-696-7355
Owner's Name — Phone

402 WEST BROADWAY, STE 1320
Owner's Mailing Address — Street

SAN DIEGO — CA — 92009
City — State — Zip

ORG _____
ACCT _____
ACT _____
TASK _____
DATE 10/13/10 AMT $ 30
DISTRICT CASHIER'S USE ONLY

W

SECTION 1. PROJECT DESCRIPTION — TO BE COMPLETED BY APPLICANT

A. ☒ Major Subdivision (TM) ☒ Specific Plan or Specific Plan Amendment
☐ Minor Subdivision (TPM) ☐ Certificate of Compliance: _____
☐ Boundary Adjustment
☒ Rezone (Reclassification) from EDA to SPA zone.
☐ Major Use Permit (MUP), purpose: _____
☐ Time Extension...Case No. _____
☐ Expired Map...Case No. _____
☐ Other _____

B. ☒ Residential . . . . . Total number of dwelling units 751
☒ Commercial. . . . . Gross floor area 61,200 SF
☐ Industrial . . . . . Gross floor area _____
☒ ~~Other~~ Office. Gross floor area 117,000

C. ☒ Total Project acreage 416.1 Total number of lots Ø

D. Is the project proposing the use of groundwater? Yes ☒ No
Is the project proposing the use of reclaimed water? ☐ Yes ☒ No

Assessor's Parcel Number(s)
(Add extra if necessary)

108-421-03	108-120-57
108-421-04	108-121-17
108-120-58	108-121-13
108-120-56	125-061-03
108-120-59	125-061-02

Thomas Bros. Page _____ Grid _____

NORTH of SR-76 / EAST of I-15
Project address — Street

FALLBROOK — 92028
Community Planning Area/Subregion — Zip

Owner/Applicant agrees to pay all necessary construction costs, dedicate all district required easements to extend service to the project and COMPLETE ALL CONDITIONS REQUIRED BY THE DISTRICT.

Applicant's Signature: _____ Date: 10-12-10

Address: See Above Phone: 619 987-7780

(On completion of above, present to the district that provides water protection to complete Section 2 below.)

SECTION 2: FACILITY AVAILABILITY — TO BE COMPLETED BY DISTRICT

District Name: RAINBOW MUNICIPAL WATER DIST Service area FALLBROOK

A. ☒ Project is in the district.
☐ Project is not in the district but is within its Sphere of Influence boundary, owner must apply for annexation.
☐ Project is not in the district and is not within its Sphere of Influence boundary.
☐ The project is not located entirely within the district and a potential boundary issue exists with the _____ District.

B. ☒ Facilities to serve the project ☒ ARE ☐ ARE NOT reasonably expected to be available within the next 5 years based on the capital facility plans of the district. Explain in space below or on attached _____. (Number of sheets)
☐ Project will not be served for the following reason(s): _____

C. ☒ **District conditions are attached. Number of sheets attached:** 14
☐ **District has specific water reclamation conditions which are attached. Number of sheets attached:** _____
☐ **District will submit conditions at a later date.**

D. ☐ **How far will the pipeline(s) have to be extended to serve the project?** _____

This Project Facility Availability Form is valid until final discretionary action is taken pursuant to the application for the proposed project or until it is withdrawn, unless a shorter expiration date is otherwise noted.

Authorized signature: _____ Print name BRIAN C. LEE

Print title DISTRICT ENGINEER Phone 760 728-1178 Date OCTOBER 13, 2010

NOTE: THIS DOCUMENT IS NOT A COMMITMENT OF SERVICE OR FACILITIES BY THE DISTRICT
On completion of Section 2 by the district, applicant is to submit this form with application to:
Zoning Counter, Department of Planning and Land Use, 5201 Ruffin Road, San Diego, CA 92123

RAINBOW
MUNICIPAL WATER DISTRICT
Committed to Excellence

CONDITIONS

October 13, 2010 TM 5338

Project Processing Control Center
County of San Diego DPLU
5201 Ruffin Road, Suite B
San Diego, CA 92123

RE: Assessor's Parcel Number 108-421-03, 04, 108-120-56 thru 108-120-59, 108-121-13, 17, 125-061-02, 03 DPLU 399W

DPLU 399W

To Whom It May Concern:

Rainbow Municipal Water District (RMWD) conditions regarding the parcels referenced above are as follows:

1) All work to conform to the most current edition of RMWD Standards and Specifications.

2) Each parcel must be served by its own meter and installed within 45 days of the purchase date.

RMWD is currently in a Level 2 Drought Condition, declared at the April 2009 Board Meeting. The developer shall comply with all Level 2 Conditions. RMWD will not sign the Project Facility Commitment Form (DPLU 400W) until the following conditions are met:

1) Drought Response Level 2 Conditions are met by:

   a. RMWD Board of Directors decrease the Drought Response Level 2 to a Drought Response Level 1 condition or lower; or

   b. The Developer provides substantial evidence of an enforceable binding commitment that water demands for the project will be offset prior to the provision of new water meters to the satisfaction of RMWD. Please refer to the attached Ordinance 08-01 for details.

If you have any questions please contact me at (760) 728-1178.

Sincerely,

Brian C. Lee
District Engineer

3707 Old Highway 395 • Fallbrook, CA 92028
Phone: (760) 728-1178 • Fax: (760) 728-2575 • www.rainbowmwd.com

ORDINANCE NO. 08-01

AN ORDINANCE OF RAINBOW MUNICIPAL WATER DISTRICT ADOPTING A DROUGHT RESPONSE CONSERVATION PROGRAM

WHEREAS, article 10, section 2 of the California Constitution declares that waters of the State are to be put to beneficial use, that waste, unreasonable use, or unreasonable method of use of water be prevented, and that water be conserved for the public welfare; and

WHEREAS, conservation of current water supplies and minimization of the effects of water supply shortages that are the result of drought are essential to the public health, safety and welfare; and

WHEREAS, regulation of the time of certain water use, manner of certain water use, design of rates, method of application of water for certain uses, installation and use of water-saving devices, provide an effective and immediately available means of conserving water; and

WHEREAS, California Water Code sections 375 et seq. authorize water suppliers to adopt and enforce a comprehensive water conservation program; and

WHEREAS, adoption and enforcement of a comprehensive water conservation program will allow the Rainbow Municipal Water District to delay or avoid implementing measures such as water rationing or more restrictive water use regulations pursuant to a declared water shortage emergency as authorized by California Water Code sections 350 et seq.; and

WHEREAS, San Diego County is a semi-arid region and local water resources are scarce. The region is dependent upon imported water supplies provided by the San Diego County Water Authority, which obtains a substantial portion of its supplies from the Metropolitan Water District of Southern California. Because the region is dependent upon imported water supplies, weather and other conditions in other portions of this State and of the Southwestern United States affect the availability of water for use in San Diego County; and

WHEREAS, the San Diego County Water Authority has adopted an Urban Water Management Plan that includes water conservation as a necessary and effective component of the Water Authority's programs to provide a reliable supply of water to meet the needs of the Water Authority's 24 member public agencies, including the Rainbow Municipal Water District. The Water Authority's Urban Water Management Plan also includes a contingency analysis of actions to be taken in response to water supply shortages. This ordinance is consistent with the Water Authority's Urban Water Management Plan; and

WHEREAS, as anticipated by its Urban Water Management Plan, the San Diego County Water Authority, in cooperation and consultation with its member public agencies, has adopted a Drought Management Plan, which establishes a progressive program for responding to water supply limitations resulting from drought conditions. This ordinance is intended to be consistent with and to implement the Water Authority's Drought Management Plan; and

WHEREAS, the Water Authority's Drought Management Plan contains three stages containing regional actions to be taken to lessen or avoid supply shortages. This ordinance contains drought response levels that correspond with the Drought Management Plan stages; and

WHEREAS, the Rainbow Municipal Water District, due to the geographic and climatic conditions within its territory and its dependence upon water imported and provided by the San Diego County Water Authority, may experience shortages due to drought conditions, regulatory restrictions enacted upon imported supplies and other factors. The Rainbow Municipal Water District has adopted an Urban Water Management Plan that includes water conservation as a necessary and effective component of its programs to provide a reliable supply of water to meet the needs of the public within its service territory. The Rainbow Municipal Water District Urban Water Management Plan also includes a contingency analysis of actions to be taken in response to water supply shortages. This ordinance is consistent with the Urban Water Management Plan adopted by the Rainbow Municipal Water District; and

WHEREAS the water conservation measures and progressive restrictions on water use and method of use identified by this ordinance provide certainty to water users and enable Rainbow Municipal Water District to control water use, provide water supplies, and plan and implement water management measures in a fair and orderly manner for the benefit of the public.

NOW, THEREFORE, the Board of Directors of Rainbow Municipal Water District does ordain as follows:

SECTION 1.0 DECLARATION OF NECESSITY AND INTENT

(a) This ordinance establishes water management requirements necessary to conserve water, enable effective water supply planning, assure reasonable and beneficial use of water, prevent waste of water, prevent unreasonable use of water, prevent unreasonable method of use of water within the Rainbow Municipal Water District (RMWD) in order to assure adequate supplies of water to meet the needs of the public, and further the public health, safety, and welfare, recognizing that water is a scarce natural resource that requires careful management not only in times of drought, but at all times.

(b) This ordinance establishes regulations to be implemented during times of declared water shortages, or declared water shortage emergencies. It establishes four levels of drought response actions to be implemented in times of shortage, with increasing restrictions on water use in response to worsening drought conditions and decreasing available supplies.

(c) Level 1 condition drought response measures are voluntary and will be reinforced through local and regional public education and awareness measures that may be funded in part by RMWD. During drought response condition Levels 2 through 4, all conservation measures and water-use restrictions are mandatory and become increasingly restrictive in order to attain escalating conservation goals.

(d) During a Drought Response Level 2 condition or higher, the water conservation measures and water use restrictions established by this ordinance are mandatory and violations are subject to criminal, civil, and administrative penalties and remedies specified in this ordinance and as provided in RMWD Administrative or Municipal Code.

SECTION 2.0 DEFINITIONS

(a) The following words and phrases whenever used in this chapter shall have the meaning defined in this section:

1. "Grower" refers to those engaged in the growing or raising, in conformity with recognized practices of husbandry, for the purpose of commerce, trade, or industry, or for use by public educational or correctional institutions, of agricultural, horticultural or floricultural products, and produced: (1) for human consumption or for the market, or (2) for the feeding of fowl or livestock produced for human consumption or for the market, or (3) for the feeding of fowl or livestock for the purpose of obtaining their products for human consumption or for the market. "Grower" does not refer to customers who purchase water subject to the Metropolitan Interim Agricultural Water Program or the Water Authority Special Agricultural Rate programs.

2. "Water Authority" means the San Diego County Water Authority.

3. "DMP" means the Water Authority's Drought Management Plan in existence on the effective date of this ordinance and as readopted or amended from time to time, or an equivalent plan of the Water Authority to manage or allocate supplies during shortages.

4. "Metropolitan" means the Metropolitan Water District of Southern California.

5. "Person" means any natural person, corporation, public or private entity, public or private association, public or private agency, government agency or institution, school district, college, university, or any other user of water provided by the RMWD.

SECTION 3.0 APPLICATION

(a) The provisions of this ordinance apply to any person in the use of any water provided by the RMWD.

(b) This ordinance is intended solely to further the conservation of water. It is not intended to implement any provision of federal, State, or local statutes, ordinances, or regulations relating to protection of water quality or control of drainage or runoff. Refer to the local jurisdiction or Regional Water Quality Control Board for information on any stormwater ordinances and stormwater management plans.

(c) Nothing in this ordinance is intended to affect or limit the ability of the RMWD to declare and respond to an emergency, including an emergency that affects the ability of the RMWD to supply water.

(d) Notwithstanding any other section of this ordinance, the restrictions imposed upon the use of water herein do not apply to use of water from private wells or to recycled water.

(e) Nothing in this ordinance shall apply to use of water that is subject to a special supply program, such as the Metropolitan Interim Agricultural Water Program ("IAWP") or the Water Authority Special Agricultural Rate programs, except as may be specified in those programs. For instance, the water reductions contained in this ordinance shall not be in addition to any mandatory reductions which may apply to a participant in the IAWP, unless expressly stated in the IAWP. Violations of the conditions of special supply programs are subject to the penalties established under the applicable program. A person using water subject to a special supply program and other water provided by the RMWD is subject to this ordinance in the use of the other water.

SECTION 4.0 DROUGHT RESPONSE LEVEL 1 – DROUGHT WATCH CONDITION

(a) A Drought Response Level 1 condition is also referred to as a "Drought Watch" condition. A Level 1 condition applies when the Water Authority notifies its member agencies that due to drought or other supply reductions, there is a reasonable probability there will be supply shortages and that a consumer demand reduction of up to 10 percent is required in order to ensure that sufficient supplies will be available to meet anticipated demands. The General Manager shall declare the existence of a Drought Response Level 1 and take action to implement the Level 1 conservation practices identified in this ordinance.

(b) During a Level 1 Drought Watch condition, RMWD will increase its public education and outreach efforts to emphasize increased public awareness of the need to implement the following water conservation practices. [The same water conservation practices become mandatory if RMWD declares a Level 2 Drought Alert condition]:

1. Stop washing down paved surfaces, including but not limited to sidewalks, driveways, parking lots, tennis courts, or patios, except when it is necessary to alleviate safety or sanitation hazards.

2. Stop water waste resulting from inefficient landscape irrigation, such as runoff, low head drainage, or overspray, etc. Similarly, stop water flows onto non-targeted areas, such as adjacent property, non-irrigated areas, hardscapes, roadways, or structures.

3. Irrigate residential and commercial landscape before 10 a.m. and after 6 p.m. only.

4. Use a hand-held hose equipped with a positive shut-off nozzle or bucket to water landscaped areas, including trees and shrubs located on residential and commercial properties that are not irrigated by a landscape irrigation system.

5. Irrigate nursery and commercial grower's products before 10 a.m. and after 6 p.m. only. Watering is permitted at any time with a hand-held hose equipped with a positive shut-off nozzle, a bucket or watering can. Irrigation of nursery propagation beds is permitted at any time. Watering of livestock is permitted at any time.

6. Use re-circulated water to operate ornamental fountains.

7. Wash vehicles using a bucket and a hand-held hose with positive shut-off nozzle, mobile high pressure/low volume wash system, or at a commercial site that re-circulates (reclaims) water on-site. Avoid washing during hot conditions when additional water is required due to evaporation.

8. Serve and refill water in restaurants and other food service establishments only upon request.

9. Offer guests in hotels, motels, and other commercial lodging establishments the option of not laundering towels and linens daily.

10. Repair all water leaks within five (5) days of notification by the RMWD unless other arrangements are made with the General Manager.

11. Use recycled or non-potable water for construction purposes when available.

(c) During a Drought Response Level 2 condition or higher, all persons shall be required to implement the conservation practices established in a Drought Response Level 1 condition.

SECTION 5.0 DROUGHT RESPONSE LEVEL 2 – DROUGHT ALERT CONDITION

(a) A Drought Response Level 2 condition is also referred to as a "Drought Alert" condition. A Level 2 condition applies when the Water Authority notifies its member agencies that due to cutbacks caused by drought or other reduction in supplies, a consumer[1] demand reduction of up to 20 percent is required in order to have sufficient supplies available to meet anticipated demands. The RMWD Board of Directors shall declare the existence of a Drought Response Level 2 condition and implement the mandatory Level 2 conservation measures identified in this ordinance.

(b) All persons using RMWD water shall comply with Level 1 Drought Watch water conservation practices during a Level 2 Drought Alert, and shall also comply with the following additional conservation measures:

1. Limit residential and commercial landscape irrigation to no more than three (3) assigned days per week on a schedule established by the General Manager and posted by the RMWD. During the months of November through May, landscape irrigation is limited to no more than once per week on a schedule established by the General Manager and posted by the RMWD. This section shall not apply to commercial growers or nurseries.

2. Limit lawn watering and landscape irrigation using sprinklers to no more than ten (10) minutes per watering station per assigned day. This provision does not apply to landscape irrigation systems using water efficient devices, including but not limited to: weather based controllers, drip/micro-irrigation systems and stream rotor sprinklers.

3. Water landscaped areas, including trees and shrubs located on residential and commercial properties, and not irrigated by a landscape irrigation system governed by section 5 (b) (1), on the same schedule set forth in section 5 (b) (1) by using a bucket, hand-held hose with positive shut-off nozzle, or low-volume non-spray irrigation.

4. Repair all leaks within seventy-two (72) hours of notification by the RMWD unless other arrangements are made with the General Manager.

[1] Also referred to as Municipal or Industrial (M&I) water user.

(c) Upon the declaration of a Drought Response Level 2 condition, no new potable water service shall be provided, no new temporary meters or permanent meters shall be provided, and no statements of immediate ability to serve or provide potable water service (such as, will serve letters, certificates, or letters of availability) shall be issued, except under the following circumstances:

1. A valid, unexpired building permit has already been issued for the project; or

2. In the opinion of the RMWD Board of Directors the project is necessary to protect the public's health, safety, and welfare; or

3. The applicant provides substantial evidence of an enforceable binding commitment that water demands for the project will be offset prior to the provision of a new water meter(s) to the satisfaction of RMWD.

This provision shall not be construed to preclude the resetting or turn-on of meters to provide continuation of water service or to restore service that has been interrupted **for a period of one year or less, provided that such period shall in no event commence before the effective date of this ordinance.**

(d) Upon the declaration of a Drought Response Level 2 condition, RMWD will suspend consideration of annexations to its service area until such time that the Drought Response Level 2 is decreased to a Drought Response Level 1 condition or lower.

(e) The RMWD may establish a water allocation for any property served by the RMWD using a method that does not penalize persons for previous implementation of conservation methods or the installation of water saving devices. The decision to establish a water allocation and the method utilized to determine the amount of the allocation shall be at the sole discretion of RMWD.

SECTION 6.0 DROUGHT RESPONSE LEVEL 3 – DROUGHT CRITICAL CONDITION

(a) A Drought Response Level 3 condition is also referred to as a "Drought Critical" condition. A Level 3 condition applies when the Water Authority notifies its member agencies that due to increasing cutbacks caused by drought or other reduction of supplies, a consumer demand reduction of up to 40 percent is required in order to have sufficient supplies available to meet anticipated demands. The RMWD Board of Directors shall declare the existence of a Drought Response Level 3 condition and implement the Level 3 conservation measures identified in this ordinance.

(b) All persons using RMWD water shall comply with Level 1 Drought Watch and Level 2 Drought Alert water conservation practices during a Level 3 Drought Critical condition and shall also comply with the following additional mandatory conservation measures:

1. Limit residential and commercial landscape irrigation to no more than two (2) assigned days per week on a schedule established by the General Manager and posted by the RMWD. During the months of November through May, landscape irrigation is limited to no more than once per week on a schedule established by the General Manager and posted by the RMWD. This section shall not apply to commercial growers or nurseries.

2. Water landscaped areas, including trees and shrubs located on residential and commercial properties, and not irrigated by a landscape irrigation system governed by section 6 (b) (1), on the same schedule set forth in section 6 (b) (1) by using a bucket, hand-held hose with a positive shut-off nozzle, or low-volume non-spray irrigation.

3. Stop filling or re-filling swimming pools, spas, ornamental fountains, lakes ponds or other water features, except to the extent needed to sustain aquatic life, provided that such animals are of significant value and have been actively managed within the water feature prior to declaration of a drought response level under this ordinance.

4. Stop washing vehicles except at commercial carwashes that re-circulate water, or by high pressure/low volume wash systems.

5. Repair all leaks within forty-eight (48) hours of notification by the RMWD unless other arrangements are made with the General Manager.

SECTION 7.0 DROUGHT RESPONSE LEVEL 4 – DROUGHT EMERGENCY CONDITION

(a) A Drought Response Level 4 condition is also referred to as a "Drought Emergency" condition. A Level 4 condition applies when the Water Authority Board of Directors declares a water shortage emergency pursuant to California Water Code section 350 and notifies its member agencies that Level 4 requires a demand reduction of more than 40 percent in order for the RMWD to have maximum supplies available to meet anticipated demands. The RMWD Board of Directors shall declare a Drought Emergency in the manner and on the grounds provided in California Water Code section 350.

(b) All persons using RMWD water shall comply with conservation measures required during Level 1 Drought Watch, Level 2 Drought Alert, and Level 3 Drought Critical conditions and shall also comply with the following additional mandatory conservation measures:

1. Stop all landscape irrigation, except crops and landscape products of commercial growers and nurseries. This restriction shall not apply to the following categories of use unless the RMWD has determined that recycled water is available and may be lawfully applied to the use:

A. Maintenance of trees and shrubs that are watered on the same schedule set forth in section 6 (b) (1) by using a bucket, hand-held hose with a positive shut-off nozzle, or low-volume non-spray irrigation;

B. Maintenance of existing landscaping necessary for fire protection as specified by the Fire Marshal of the local fire protection agency having jurisdiction over the property to be irrigated;

C. Maintenance of existing landscaping for erosion control;

D. Maintenance of plant materials identified to be rare or essential to the well being of rare animals;

E. Maintenance of landscaping within active public facilities, including parks and playing fields, day care centers, school grounds, cemeteries, and golf course greens, provided that such irrigation does not exceed two (2) days per week according to the schedule established under section 6 (b) (1);

F. Watering of livestock; and

G. Public works projects and actively irrigated environmental mitigation projects.

2. Repair all water leaks within twenty-four (24) hours of notification by the RMWD unless other arrangements are made with the General Manager.

(c) The RMWD may establish a water allocation for any property served by the RMWD using a method that does not penalize persons for previous implementation of conservation methods or the installation of water saving devices. The decision to establish a water allocation and the method utilized to determine the amount of the allocation shall be at the sole discretion of RMWD.

SECTION 8.0 CORRELATION BETWEEN DROUGHT MANAGEMENT PLAN AND DROUGHT RESPONSE LEVELS

(a) The correlation between the Water Authority's DMP stages and the RMWD's drought response levels identified in this ordinance is described herein. Under DMP Stage 1, the RMWD would implement Drought Response Level 1 actions. Under DMP Stage 2, the RMWD would implement Drought Response Level 1 or Level 2 actions. Under DMP Stage 3, the RMWD would implement Drought Response Level 2, Level 3, or Level 4 actions.

(b) The drought response levels identified in this ordinance correspond with the Water Authority DMP as identified in the following table:

Drought Response Levels	Use Restrictions	Conservation Target	DMP Stage
1 - Drought Watch	Voluntary	Up to 10%	Stage 1 or 2
2 - Drought Alert	Mandatory	Up to 20%	Stage 2 or 3
3 - Drought Critical	Mandatory	>20 to 40%	Stage 3
4 - Drought Emergency	Mandatory	Above 40%	Stage 3

SECTION 9.0 PROCEDURES FOR DETERMINATION AND NOTICATION OF DROUGHT RESPONSE LEVEL

(a) The existence of a Drought Response Level 1 condition may be declared by the General Manager upon a written determination of the existence of the facts and circumstances supporting the determination. A copy of the written determination shall be filed with the Clerk or Secretary of the RMWD and provided to the RMWD Board of Directors. The General Manager may publish a notice of the determination of existence of Drought Response Level 1 condition in one or more newspapers, including a newspaper of general circulation within the RMWD. The RMWD may also post notice of the condition on their website.

(b) The existence of Drought Response Level 2 or Level 3 conditions may be declared by resolution of the RMWD Board of Directors adopted at a regular or special public meeting held in accordance with State law. The mandatory conservation measures applicable to Drought Response Level 2 or Level 3 conditions shall take effect on the tenth (10) day after the date the response level is declared. Within five (5) days following the declaration of the response level, the RMWD shall publish a copy of the resolution in a newspaper used for publication of official notices.

(c) The existence of a Drought Response Level 4 condition may be declared in accordance with the procedures specified in California Water Code sections 351 and 352. The mandatory conservation measures applicable to Drought Response Level 4 conditions shall take effect on the tenth (10) day after the date the response level is declared. Within five (5) days following the declaration of the response level, the RMWD shall publish a copy of the resolution in a newspaper used for publication of

official notices. If the RMWD establishes a water allocation, it shall provide notice of the allocation by including it in the regular billing statement for the fee or charge or by any other mailing to the address to which the RMWD customarily mails the billing statement for fees or charges for on-going water service. Water allocation shall be effective on the fifth (5) day following the date of mailing or at such later date as specified in the notice.

(d) The RMWD Board of Directors may declare an end to a Drought Response Level by the adoption of a resolution at any regular or special meeting held in accordance with State law.

SECTION 10.0 HARDSHIP VARIANCE

(a) If, due to unique circumstances, a specific requirement of this ordinance would result in undue hardship to a person using agency water or to property upon which agency water is used, that is disproportionate to the impacts to RMWD water users generally or to similar property or classes of water uses, then the person may apply for a variance to the requirements as provided in this section.

(b) The variance may be granted or conditionally granted, only upon a written finding of the existence of facts demonstrating an undue hardship to a person using agency water or to property upon with agency water is used, that is disproportionate to the impacts to RMWD water users generally or to similar property or classes of water use due to specific and unique circumstances of the user or the user's property.

1. Application. Application for a variance shall be a form prescribed by RMWD and shall be accompanied by a non-refundable processing fee in an amount set by resolution of the RMWD Board of Directors.

2. Supporting Documentation. The application shall be accompanied by photographs, maps, drawings, and other information, including a written statement of the applicant.

3. Required Findings for Variance. An application for a variance shall be denied unless the approving authority finds, based on the information provided in the application, supporting documents, or such additional information as may be requested, and on water use information for the property as shown by the records of the RMWD, all of the following:

A. That the variance does not constitute a grant of special privilege inconsistent with the limitations upon other RMWD customers.

B. That because of special circumstances applicable to the property or its use, the strict application of this ordinance would have a disproportionate impact on the property or use that exceeds the impacts to customers generally.

C. That the authorizing of such variance will not be of substantial detriment to adjacent properties, and will not materially affect the ability of the RMWD to effectuate the purpose of this chapter and will not be detrimental to the public interest.

D. That the condition or situation of the subject property or the intended use of the property for which the variance is sought is not common, recurrent or general in nature.

4. Approval Authority. The General Manager shall exercise approval authority and act upon any completed application no later than 30 days after submittal and may approve, conditionally approve, or deny the variance. The applicant requesting the variance shall be promptly notified in writing of any action taken. Unless specified otherwise at the time a variance is approved, the variance applies to the subject property during the term of the mandatory drought response.

5. Appeals to RMWD Board of Directors. An applicant may appeal a decision or condition of the General Manager on a variance application to the being mailed to the applicant. The appeal must be in the form of a written request for a hearing, and shall state the grounds for the appeal. At a public meeting, the RMWD Board of Directors shall act as the approval authority and review the appeal de novo by following the regular variance procedure. The decision of the RMWD Board of Directors is final.

SECTION 11.0 VIOLATIONS AND PENALTIES

(a) Any person, who uses, causes to be used, or permits the use of water in violation of this ordinance is guilty of an offense punishable as provided herein.

(b) Each day that a violation of this ordinance occurs is a separate offense.

(c) Administrative fines may be levied for each violation of a provision of this ordinance as follows:

1. One hundred dollars for a first violation.
2. Two hundred dollars for a second violation of any provision of this ordinance within one year from occurrence of the first violation.
3. Five hundred dollars for each additional violation of this ordinance within one year of the first violation.

(d) Violation of a provision of this ordinance is subject to enforcement through installation of a flow-restricting device in the meter.

(e) Each violation of this ordinance may be prosecuted as a misdemeanor punishable by imprisonment in the county jail for not more than thirty (30) days or by a fine not exceeding $1,000, or by both as provided in Water Code section 377.

(f) Willful violations of the mandatory conservation measures and water use restrictions as set forth in Section 7.0 and applicable during a Level 4 Drought Emergency condition may be enforced by discontinuing service to the property at which the violation occurs as provided by Water Code section 356.

(g) All remedies provided for herein shall be cumulative and not exclusive.

SECTION 12.0 EFFECTIVE DATE

This ordinance is effective immediately upon adoption or as otherwise established by State law for RMWD.

PASSED, APPROVED AND ADOPTED this 24th day of June, 2008, by the following vote:

AYES: Directors Griffiths, Lucy, McManigle, Petty, and Walson
NOES: None
ABSTAIN: None
ABSENT: None

_____
Rua Petty, Board President

ATTEST:

_____
Dawn Washburn, Board Secretary

COUNTY OF SAN DIEGO
DEPARTMENT OF PLANNING AND LAND USE: Zoning
PROJECT FACILITY AVAILABILITY FORM, Sewer

Please type or use pen

PASSERELLE — 619-696-7355
Owner's Name — Phone

402 West Broadway STE 1320
Owner's Mailing Address — Street

San Diego — CA — 92009
City — State — Zip

ORG _____
ACCT _____
ACT _____
TASK _____
DATE 10/13/10 AMT $ 75
DISTRICT CASHIER'S USE ONLY

S

SECTION 1. PROJECT DESCRIPTION — TO BE COMPLETED BY APPLICANT

A. ☑ Major Subdivision (TM) ☐ Certificate of Compliance: _____
☐ Minor Subdivision (TPM) ☐ Boundary Adjustment
☑ Specific Plan or Specific Plan Amendment
☐ Rezone (Reclassification) from _____ to _____ zone
☐ Major Use Permit (MUP), purpose: _____
☐ Time Extension...Case No. _____
☐ Expired Map...Case No. _____
☐ Other _____

B. ☑ Residential . . . . . Total number of dwelling units 751
☑ Commercial. . . . . Gross floor area 61,200 SF
☐ Industrial . . . . . Gross floor area _____
☑ ~~Other~~ OFFICE Gross floor area 117,600 SF

C. Total Project acreage 416.1 Total lots 6 Smallest proposed lot 4,000

D. Is the project proposing its own wastewater treatment plant? Yes ☐ No ☒
Is the project proposing the use of reclaimed water? ☐ ☒

Assessor's Parcel Number(s)
(Add extra if necessary)

108-421-03	108-120-57
108-421-04	108-121-17
108-120-58	108-121-13
108-120-56	125-061-03
108-120-59	125-061-02

Thomas Bros. Page _____ Grid _____

North of 76 / East of I-15
Project address — Street

Fallbrook — 92028
Community Planning Area/Subregion — Zip

Owner/Applicant agrees to pay all necessary construction costs and dedicate all district required easements to extend service to the project.
OWNER/APPLICANT MUST COMPLETE ALL CONDITIONS REQUIRED BY THE DISTRICT.

Applicant's Signature: _____ Date: 10-12-10

Address: See Above Phone: 619-987-7780

(On completion of above, present to the district that provides sewer protection to complete Section 2 below.)

SECTION 2: FACILITY AVAILABILITY — TO BE COMPLETED BY DISTRICT

District name RAINBOW MUNICIPAL WATER DIST Service area FALLBROOK

A. ☒ Project is in the District.
☐ Project is not in the District but is within its Sphere of Influence boundary, owner must apply for annexation.
☐ Project is not in the District and is **not** within its Sphere of Influence boundary.
☐ Project is not located entirely within the District and a potential boundary issue exists with the _____ District.

B. ☒ Facilities to serve the project ☒ ARE ☐ ARE NOT reasonably expected to be available within the next 5 years based on the capital facility plans of the district. Explain in space below or on attached. Number of sheets attached: _____
☐ Project will not be served for the following reason(s):

C. ☒ **District conditions are attached. Number of sheets attached:** 1
☐ **District has specific water reclamation conditions which are attached. Number of sheets attached:** _____
☐ **District will submit conditions at a later date.**

D. ☐ **How far will the pipeline(s) have to be extended to serve the project?** _____

This Project Facility Availability Form is valid until final discretionary action is taken pursuant to the application for the proposed project or until it is withdrawn, unless a shorter expiration date is otherwise noted.

_____ BRIAN C. LEE
Authorized signature — *Print name*

DISTRICT ENGINEER — 760 728-1178 — OCTOBER 13, 2010
Print title — *Phone* — *Date*

NOTE: THIS DOCUMENT IS NOT A COMMITMENT OF FACILITIES OR SERVICE BY THE DISTRICT. On completion of Section 2 by the district, applicant is to submit this form with application to: Zoning Counter, Department of Planning and Land Use, 5201 Ruffin Road, San Diego, CA 92123

RAINBOW
MUNICIPAL WATER DISTRICT
Committed to Excellence

CONDITIONS

October 13, 2010 TM 5338

Project Processing Control Center
County of San Diego DPLU
5201 Ruffin Road, Suite B
San Diego, CA 92123

RE: Assessor's Parcel Number 108-421-03, 04, 108-120-56 thru 108-120-59, 108-121-13, 17, 125-061-02, 03 DPLU 399S

To Whom It May Concern:

Rainbow Municipal Water District (RMWD) conditions regarding the parcels referenced above are as follows:

1) All work to conform to the most current edition of RMWD Standards and Specifications.

2) A separate sewer lateral shall be provided for each building. Sewer Connection Fees must be paid in full.

Sincerely,

Brian C. Lee
District Engineer

3707 Old Highway 395 • Fallbrook, CA 92028
Phone: (760) 728-1178 • Fax: (760) 728-2575 • www.rainbowmwd.com

COUNTY OF SAN DIEGO
DEPARTMENT OF PLANNING AND LAND USE: Zoning
PROJECT FACILITY AVAILABILITY FORM, School

Sc

Please type or use pen
(Two forms are needed if project is to be served by separate school districts)

PASSERELLE — 619-696-7355
Owner's Name — Phone

402 WEST BROADWAY, STE 1320
Owner's Mailing Address — Street

SAN DIEGO — CA — 92009
City — State — Zip

ORG_____
ACCT_____
ACT_____
TASK_____
DATE_____

ELEMENTARY_____
HIGH SCHOOL_____
UNIFIED_____

DISTRICT CASHIER'S USE ONLY

SECTION 1. PROJECT DESCRIPTION — TO BE COMPLETED BY APPLICANT

A. **LEGISLATIVE ACT**
- [x] Rezones changing Use Regulations or Development Regulations
- [x] General Plan Amendment
- [ ] Specific Plan
- [x] Specific Plan Amendment

B. **DEVELOPMENT PROJECT**
- [x] Rezones changing Special Area or Neighborhood Regulations
- [ ] Major Subdivision (TM)
- [ ] Minor Subdivision (TPM)
- [ ] Boundary Adjustment
- [ ] Major Use Permit (MUP), purpose:_____
- [ ] Time Extension...Case No._____
- [ ] Expired Map...Case No._____
- [ ] Other_____

C.
- [x] Residential . . . . . Total number of dwelling units 751
- [x] Commercial . . . . . Gross floor area 61,200 SF
- [ ] Industrial . . . . . Gross floor area_____
- [x] ~~Other~~ OFFICE . Gross floor area 117,000 SF

D. [x] Total Project acreage 416.1 Total number lots 9

Assessor's Parcel Number(s)
(Add extra if necessary)

108-421-03	108-120-57
108-421-04	108-121-17
108-120-58	108-121-13
108-120-56	125-061-03
108-120-59	125-061-02

Thomas Bros. Page _____ Grid _____

NORTH of SR-76 / EAST of I-15
Project address — Street

FALLBROOK — 92028
Community Planning Area/Subregion — Zip

Applicant's Signature:_____ Date: 10-12-10

Address: SAN DIEGO Phone: 619-987-7720

(On completion of above, present to the district that provides school protection to complete Section 2 below.)

SECTION 2: FACILITY AVAILABILITY — TO BE COMPLETED BY DISTRICT

District Name: Fallbrook Union High School

If not in a unified district, which elementary or high school district must also fill out a form? BONSALL UNION

Indicate the location and distance of proposed schools of attendance. Elementary:_____ miles_____

Junior/Middle:_____ miles:_____ High school: Fallbrook miles_____

- [ ] This project will result in the overcrowding of the [ ] elementary [ ] junior/school [ ] high school. *(Check)*
- [x] Fees will be levied or land will be dedicated in accordance with Education Code Section 17620 prior to the issuance of building permits.
- [x] Project is located entirely within the district and is eligible for service.
- [ ] The project is not located entirely within the district and a potential boundary issue may exist with the _____ school district.

Wilson H. Hatcher
Authorized signature

WILSON H. HATCHER, CBO
Print name

Chief Business Officer
Print title

760-723-6332 x 6195
Phone

On completion of Section 2 by the district, applicant is to submit this form with application to:
Zoning Counter, Department of Planning and Land Use, 5201 Ruffin Road, San Diego, CA 92123

ELEM. 12-8

COUNTY OF SAN DIEGO
DEPARTMENT OF PLANNING AND LAND USE: Zoning
PROJECT FACILITY AVAILABILITY FORM, School

Please type or use pen
(Two forms are needed if project is to be served by separate school districts)

PASSERELLE — 619-696-7355
Owner's Name — Phone

402 WEST BROADWAY, STE 1320
Owner's Mailing Address — Street

SAN DIEGO — CA — 92009
City — State — Zip

ORG_____
ACCT_____
ACT_____
TASK_____
DATE_____

Sc

ELEMENTARY_____
HIGH SCHOOL_____
UNIFIED_____

DISTRICT CASHIER'S USE ONLY

SECTION 1. PROJECT DESCRIPTION — TO BE COMPLETED BY APPLICANT

A. **LEGISLATIVE ACT**
- [x] Rezones changing Use Regulations or Development Regulations
- [x] General Plan Amendment
- [ ] Specific Plan
- [x] Specific Plan Amendment

B. **DEVELOPMENT PROJECT**
- [x] Rezones changing Special Area or Neighborhood Regulations
- [x] Major Subdivision (TM)
- [ ] Minor Subdivision (TPM)
- [ ] Boundary Adjustment
- [ ] Major Use Permit (MUP), purpose:_____
- [ ] Time Extension...Case No._____
- [ ] Expired Map...Case No._____
- [ ] Other_____

C.
- [x] Residential . . . . . Total number of dwelling units 751
- [x] Commercial . . . . . Gross floor area 61,200 SF
- [ ] Industrial . . . . . Gross floor area_____
- [x] Other OFFICE . Gross floor area 117,600 SF

D. [ ] Total Project acreage 41 Gross Total number lots 0

Assessor's Parcel Number(s)
(Add extra if necessary)

108-421-03	108-120-57
108-421-04	108-121-17
108-120-58	108-121-13
108-120-56	125-061-03
108-120-59	125-061-02

Thomas Bros. Page_____ Grid_____

NORTH OF SR-76 / EAST OF I-15
Project address — Street

FALLBROOK — 92028
Community Planning Area/Subregion — Zip

Applicant's Signature: _____ Date: 10-12-10

Address: See Above Phone: 619-987-7780

(On completion of above, present to the district that provides school protection to complete Section 2 below.)

SECTION 2: FACILITY AVAILABILITY — TO BE COMPLETED BY DISTRICT

If not in a unified district, which elementary or high school district must also fill out a form?

District Name: Fallbrook Union Elementary School District

Indicate the location and distance of proposed schools of attendance. Elementary: Live Oak School miles 3.5

Junior/Middle: Potter Jr. High School miles: 3.8 High school:_____ miles_____

- [x] This project will result in the overcrowding of the [x] elementary [x] junior/school [ ] high school. *(Check)*
- [ ] Fees will be levied or land will be dedicated in accordance with Education Code Section 17620 prior to the issuance of building permits.
- [ ] Project is located entirely within the district and is eligible for service.
- [x] The project is not located entirely within the district and a potential boundary issue may exist with the _____ school district.

_____ Raymond N. Proctor
Authorized signature — *Print name*

Assistant Superintendent of Business Services — (760) 731-5445
Print title — *Phone* 10-12-10

On completion of Section 2 by the district, applicant is to submit this form with application to:
Zoning Counter, Department of Planning and Land Use, 5201 Ruffin Road, San Diego, CA 92123

DPLU-399Sc (12/09)

COUNTY OF SAN DIEGO
DEPARTMENT OF PLANNING AND LAND USE: Zoning
PROJECT FACILITY AVAILABILITY FORM, Fire

F

Please type or use pen

Owner's Name: PASSERELLE Phone: 619 686 7355

Owner's Mailing Address: 402 WEST BROADWAY, STE 1320 Street

City: SAN DIEGO State: CA Zip: 92009

ORG_____
ACCT_____
ACT_____
TASK_____
DATE_____ AMT $_____

DISTRICT CASHIER'S USE ONLY

SECTION 1. PROJECT DESCRIPTION — TO BE COMPLETED BY APPLICANT

A.
- [x] Major Subdivision (TM)
- [ ] Minor Subdivision (TPM)
- [ ] Boundary Adjustment
- [x] Rezone (Reclassification) from Ed to SR-A zone.
- [ ] Major Use Permit (MUP), purpose:
- [ ] Time Extension...Case No.
- [ ] Expired Map...Case No.
- [ ] Other
- [ ] Specific Plan or Specific Plan Amendment
- [ ] Certificate of Compliance:

B.
- [x] Residential ..... Total number of dwelling units 751
- [ ] Commercial ..... Gross floor area
- [ ] Industrial ..... Gross floor area 61,200 SF
- [x] Other OFFICE ..... Gross floor area 117,000 SF

C. Total Project acreage 446.1 Total lots 6 Smallest proposed lot

Assessor's Parcel Number(s) (Add extra if necessary)

108-421-03	108-120-57
108-421-04	108-121-17
108-120-58	108-121-13
108-120-56	125-061-03
108-120-59	125-061-02

Thomas Bros. Page _____ Grid _____

Project address: NORTH OF SR-76 / EAST OF I-15 Street

Community Planning Area/Subregion: FALLBROOK Zip: 92028

OWNER/APPLICANT AGREES TO COMPLETE ALL CONDITIONS REQUIRED BY THE DISTRICT.

Applicant's Signature: _____ Date: 10-12-10

Address: See Above Phone: 619-987-7780

(On completion of above, present to the district that provides fire protection to complete Section 2 and 3 below.)

SECTION 2: FACILITY AVAILABILITY — TO BE COMPLETED BY DISTRICT

District name: North County Fire Protection District

Indicate the location and distance of the primary fire station that will serve the proposed project: #4 @ 4375 Rancho Mesa Drive, Distance seems to be a moving target

A.
- [x] Project is in the District and eligible for service.
- [ ] Project is not in the District but is within its Sphere of Influence boundary, owner must apply for annexation.
- [ ] Project is not in the District and not within its Sphere of Influence boundary.
- [ ] Project is not located entirely within the District and a potential boundary issue exists with the _____ District.

B. [ ] Based on the capacity and capability of the District's existing and planned facilities, fire protection facilities are currently adequate or will be adequate to serve the proposed project. The expected emergency travel time to the proposed project is _____ minutes.
- [x] Fire protection facilities are not expected to be adequate to serve the proposed development within the next five years.

C.
- [x] District conditions are attached. Number of sheets attached: 2
- [ ] District will submit conditions at a later date.

SECTION 3. FUELBREAK REQUIREMENTS

Note: The fuelbreak requirements prescribed by the fire district for the proposed project do not authorize any clearing prior to project approval by the Department of Planning and Land Use.

- [x] Within the proposed project 100 feet of clearing will be required around all structures.
- [ ] The proposed project is located in a hazardous wildland fire area, and additional fuelbreak requirements may apply. Environmental mitigation requirements should be coordinated with the fire district to ensure that these requirements will not pose fire hazards.

This Project Facility Availability Form is valid until final discretionary action is taken pursuant to the application for the proposed project or until it is withdrawn, unless a shorter expiration date is otherwise noted.

Authorized signature	*Print name and title*	*Phone*	*Date*
_____	Sid Morel / Fire Marshal	760 723-2015	10/19/10

On completion of Section 2 and 3 by the District, applicant is to submit this form with application to: Zoning Counter, Department of Planning and Land Use, 5201 Ruffin Road, Suite B, San Diego, CA 92123

Expires 10/12

NORTH COUNTY FIRE PROTECTION DISTRICT

330 S. Main Avenue • Fallbrook, California 92028-2938 • (760) 723-2005 • Fax (760) 723-2072 • www.ncfireprotectiondistrict.org

October 19, 2010

County of San Diego
Dept. of Planning & Land Use
5201 Ruffin Rd., Suite B
San Diego, CA 92123-1666

RE: TM 5338 Campus Park,

Please review the following comments pertaining to fire protection for this proposed development:

The project was proposing a 55 foot professional office building and a third story option for the Cantebury Collection. The fire district does not have an Aerial ladder that can adequately access these types of buildings. The district would require the project to mitigate for the height of the buildings by providing an appropriate apparatus. The project now states they have removed the excessive height of the buildings; however, we do not have plans showing the changes.

Access:

- These access roads appear to be over the allowed 800 feet for lots less than 1 acre. Phalarope Street and the section between Grey Goose Lane and Whistling Swan Way.
- Improvement of Pala Mesa Dr. from Hwy 395 to Pankey Rd has been changed and now proceeds south after crossing the I-15. This change was proposed without fire department input. The developer shall ensure fire apparatus response time within 5 minutes to all portions of this development and the accompanying development. Therefore, it is necessary to improve Stewart Canyon from Canonita to Horse Ranch Creek Road, to the standard of Horse Ranch Creek Road.
- The technical report performed by Jim Hunt regarding excessive response time mitigation is not approved. The report states that a full assignment would arrive within 15 minutes travel time and that the full assignment includes a ladder truck. Currently our district does not have a ladder truck and would be relying on mutual aid for laddering capabilities. The ladder truck response would be in excess of 20 minutes. The technical report is not accepted.
- The response time allows for a 45 mph road speed along Old 395 but this agency feels the response will certainly slow to less than 35 mph if Stewart Canyon is allowed to stay in its current configuration. Palomar College has expressed that they will be pursuing students from the Riverside area and the closest route would be to exit I-15 south at Mission, proceed down Old 395 to Canonita accessing the college via Stewart Canyon. Certain times of the day would result in extended travel times due to the amount of vehicles on Stewart Canyon trying to access Palomar College. Proper mitigation needs to include widening of Stewart Canyon to the Horse Ranch Creek standard so that vehicles have room to move over and allow the responding vehicles room to respond. There also needs to be some kind of off ramp on ramp configuration that allows vehicle to exit I-15 at Stewart Canyon to access Palomar College.
- Fire Protection: The existing Tax Rate Area for this subdivision is inadequate to support fire protection for this proposed development. This will require negotiation of tax exchange rates for the entire project, inasmuch as the existing TRA is inadequate to support services to be provided.

CONTACT INFORMATION

CONTACT REPORT FORM

7578 El Cajon Boulevard, Suite 200, La Mesa, CA 91941
PHONE: (619) 462-1515 FAX: (619) 462-0552 EMAIL: DavidD@helixepi.com

Individual Contacted: Mr. Brian Lee
Title: District Engineer
Agency/Organization: Rainbow Municipal Water District
Date: 07/24/08
Phone: (760) 728-1178

Job Number: PAS-01
Contacted By: David Durham

Subject of Contact: Regarding RMWD usage of San Luis Rey WTP

Items Discussed:

Mr. Lee informed me that RMWD currently uses about 2/3, or about 1 mgd, of the 1.5 mgd capacity that they hold at the San Luis Rey WTP. Also, they do not have any plans to contract out the remaining portion of their capacity because they plan to utilize full capacity.

Melissa Whittemore

From: Melissa Whittemore
Sent: Thursday, June 19, 2008 10:22 AM
To: 'rproctor@fuesd.k12.ca.us'
Cc: 'David Davis'
Subject: Campus Park Development

Dear Mr. Proctor:

HELIX Environmental Planning, Inc. is currently preparing the 2nd Screencheck of the Draft Environmental Impact Report (EIR) for the proposed Campus Park project in the community of Fallbrook. In September 2005, you provided some very helpful information. Because three years have passed since we last contacted you, we would like to update responses.

The following provides a brief summary of the project. The Proposed Project is a mixed-use community, located just northeast of the intersection of I-15 and SR 76. The development would include a total of 533 single-family and 555 multi-family homes, as well as a public active sports park, two neighborhood parks, homeowner's association (HOA) recreational facilities, office professional use, Town Center, common area open space (fuel modification zones and manufactured slopes), and biological open space preserves.

It would be very helpful if you were to answer the following questions:

1. It is our understanding that the portion of the Project that lies within the Fallbrook Union Elementary School District would be served by Fallbrook Street School, Live Oak Elementary School and Potter Junior High School. What were the 2007/2008 student enrollments and what are the current capacities at each of these schools?

2. The student generation rate in 2005 was 0.425 student per single-family residence, and 0.394 student per multi-family residence when we last contacted you. Is this generation rate still correct?

3. Is the District in the process of or planning to build new school facilities or increase capacity at existing facilities?

A response by email, letter or phone (619-462-1515) within the next 10 days would be appreciated. Please let me know if you need additional information to assist in your responses. Thank you for your time and efforts.

Sincerely,

Melissa J. Whittemore
Project Manager

HELIX Environmental Planning, Inc.
7578 El Cajon Blvd., Suite 200
La Mesa, CA 91941
619.462.1515 (ph.), 619.462.0552 (fax)

CONTACT REPORT FORM

7578 El Cajon Boulevard, Suite 200, La Mesa, CA 91941
PHONE: (619) 462-1515 FAX: (619) 462-0552 EMAIL: *DavidD@helixepi.com*

Individual Contacted:	Mr. Proctor	**Job Number:**	PAS-01
Title:	Assistant Superintendent	**Contacted By:**	David Durham
Agency/Organization:	Fallbrook Union Elementary School District		
Date:	07/28/08		
Phone:	(760) 723-7025		

Subject of Contact: Regarding the Campus Park Development

Items Discussed:

Mr. Proctor informed me that he does not have enrollment/capacity information broken down by school; all he has is the information provided in the developer fees report, provided by him. Also, he is not aware of any current plans to build new facilities or increase capacities of existing schools, but he did put in a request that a school be built in the Pardee project.

Melissa Whittemore

From: Chester Gannett [cgannett@fuhsd.net]
Sent: Thursday, June 26, 2008 2:49 PM
To: Melissa Whittemore
Subject: RE: Campus Park Development

Melissa In response to you email of June 19, please be advised that the 2007-08 enrollment at Fallbrook High was 2905, and the capacity at the school is approximately 3300. The most recent fee justification study calculated Grade 9-12 generation rates of 0.152 for single family units and 0.199 for multi-family units. And lastly, the district is no further along on the process of identifying a site for a new high school. I hope this helps. Chet Gannett

Chester E. Gannett
Assistant Superintendent/Business Services
Fallbrook Union High School District
760-723-6332 x6195

From: Melissa J. Whittemore [mailto:automailer@educationalnetworks.net]
Sent: Thursday, June 19, 2008 10:24 AM
To: Chester Gannett
Subject: Campus Park Development

This email is automatically sent from http://www.fuhsd.net/apps/staff/?rn=1589956 by IP address 66.120.125.2 (computer id: 0.557405142143367 7) on Thursday, June 19, 2008 at 10:24 AM US/Pacific timezone.

From: Melissa J. Whittemore <melissaw@helixepi.com>
Subject: Campus Park Development

Dear Mr. Gannett:

HELIX Environmental Planning, Inc. is currently preparing the 2nd Screencheck of the Draft Environmental Impact Report (EIR) for the proposed Campus Park project in the community of Fallbrook. In September 2005, you provided some very helpful information. Because three years have passed since we last contacted you, we would like to update responses.

The following provides a brief summary of the project. The Proposed Project is a mixed-use community, located just northeast of the intersection of I-15 and SR 76. The development would include a total of 533 single-family and 555 multi-family homes, as well as a public active sports park, two neighborhood parks, homeowner's association (HOA) recreational facilities, office professional use, Town Center, common area open space (fuel modification zones and manufactured slopes), and biological open space preserves.

It would be very helpful if you were to answer the following questions:

1. It is our understanding that the portion of the Project that lies within the Fallbrook Union High School District would be served by Fallbrook High School. What was the 2007/2008 student enrollment and what is the current capacity at this school?

2. The student generation rate in 2005 was 0.161 student per single-family residence and 0.109 student per multi-family residence. Is this generation rate still correct?

3. In 2005, the District was in the process of selecting a site for a new high school. What is the status of this new high school? Are there any plans to increase capacity at the existing high school?

A response by email, letter or phone (619-462-1515) within the next 10 days would be appreciated. Please let me know if you need additional information to assist in your responses. Thank you for your time and efforts.

Sincerely,

Melissa J. Whittemore
Project Manager

HELIX Environmental Planning, Inc.
7578 El Cajon Blvd., Suite 200
La Mesa, CA 91941
619.462.1515 (ph.), 619.462.0552 (fax)

Melissa Whittemore

From: Melissa Whittemore
Sent: Thursday, June 19, 2008 10:18 AM
To: 'wjones@sdcoe.net'
Cc: 'David Davis'
Subject: Campus Park Development

Dear Mr. Jones:

HELIX Environmental Planning, Inc. is currently preparing the 2nd Screencheck of the Draft Environmental Impact Report (EIR) for the proposed Campus Park project in the community of Fallbrook. In September 2005, you provided some very helpful information. Because three years have passed since we last contacted you, we would like to update responses.

The following provides a brief summary of the project. The Proposed Project is a mixed-use community, located just northeast of the intersection of I-15 and SR 76. The development would include a total of 533 single-family and 555 multi-family homes, as well as a public active sports park, two neighborhood parks, homeowner's association (HOA) recreational facilities, office professional use, Town Center, common area open space (fuel modification zones and manufactured slopes), and biological open space preserves.

It would be very helpful if you were to answer the following questions:

1. It is our understanding that the portion of the Project that lies within the Bonsall Union School District would be served by Bonsall Elementary School and Norman Sullivan Middle School. What were the 2007/2008 student enrollments and what are the current capacities at each of these schools?

2. The student generation rate in 2005 was 0.4 student per dwelling unit (both single and multi-family homes) when we last contacted you. Is this generation rate still correct?

3. In 2005, the District was seeking to pass a bond initiative to rebuild or replace existing aging schools. Was it passed and if so, is the money being used to update grade either school that would serve the Project?

4. Is the District in the process of or planning to build new school facilities or increase capacity at existing facilities?

A response by email, letter or phone (619-462-1515) within the next 10 days would be appreciated. Please let me know if you need additional information to assist in your responses. Thank you for your time and efforts.

Sincerely,

Melissa J. Whittemore
Project Manager

HELIX Environmental Planning, Inc.
7578 El Cajon Blvd., Suite 200
La Mesa, CA 91941
619.462.1515 (ph.), 619.462.0552 (fax)

CONTACT REPORT FORM

7578 El Cajon Boulevard, Suite 200, La Mesa, CA 91941
PHONE: (619) 462-1515 FAX: (619) 462-0552 EMAIL: DavidD@helixepi.com

Individual Contacted:	Mr. Wayne Jones	**Job Number:**	PAS-01
Title:	Assistant Superintendent	**Contacted By:**	David Durham
Agency/Organization:	Bonsall Union School District		
Date:	07/21/08		
Phone:	(760) 631-5200 x 105		

Subject of Contact: Regarding the Campus Park Development

Items Discussed:

No updated information is available, including enrollment and capacity figures. However, he did say that the 2005 bond initiative to rebuild/replace existing schools was passed and the funds are being used to rebuild Bonsall Elementary School.

Melissa Whittemore

From: Melissa Whittemore
Sent: Thursday, June 19, 2008 10:20 AM
To: 'dgoldberg@ncfire.org'
Cc: 'David Davis'
Subject: Campus Park Development

Dear Chief Goldberg:

HELIX Environmental Planning, Inc. is currently preparing the 2nd Screencheck of the Draft Environmental Impact Report (EIR) for the proposed Campus Park project in the community of Fallbrook. In September 2005, you provided some very helpful information. Because three years have passed since we last contacted you, we would like to update responses.

The following provides a brief summary of the project. The Proposed Project is a mixed-use community, located just northeast of the intersection of I-15 and SR 76. The development would include a total of 533 single-family and 555 multi-family homes, as well as a public active sports park, two neighborhood parks, homeowner's association (HOA) recreational facilities, office professional use, Town Center, common area open space (fuel modification zones and manufactured slopes), and biological open space preserves.

It would be very helpful if you were to answer the following questions:

1. Your website states that Station No. 4 is staffed by one captain, one engineer, two firefighters/paramedics and one reserved firefighter, and includes one medic engine, one brush engine and one medic ambulance. Is this currently accurate?

2. How many calls were received by the District and how many calls did Station No. 4 respond to during the last fiscal year?

3. In 2005, we were informed that Station No. 4 mostly responds to traffic accidents on I-15. Is this still accurate?

A response by email, letter or phone (619-462-1515) within the next 10 days would be appreciated. Please let me know if you need additional information to assist in your responses. Thank you for your time and efforts.

Sincerely,

Melissa J. Whittemore
Project Manager

HELIX Environmental Planning, Inc.
7578 El Cajon Blvd., Suite 200
La Mesa, CA 91941
619.462.1515 (ph.), 619.462.0552 (fax)

Melissa Whittemore

From: Morel, Sidney [SMorel@ncfire.org]
Sent: Monday, July 14, 2008 8:57 AM
To: Melissa Whittemore
Subject: RE: Campus Park Development
Attachments: TM 5338 RPL 4 8-07.doc

Melissa, you are correct about the staffing at station 4. Station 4 responds mostly to medical aids. I will need some time to pull the stats regarding station 4 and there is no way to determine how many more calls they can respond to a day. As you know emergency incidents are very dynamic. Without specific details about your project our comments are general in nature. I have included a copy of our last response regarding the project and I look forward to reviewing the EIR.

Sid Morel
Division Chief/Fire Marshal
North County Fire Protection District
315 E. Ivy Street
Fallbrook, CA 92028
Phone: (760) 723-2015
Fax: (760) 723-2045
Email: smorel@ncfire.org

From: Goldberg, Daniel
Sent: Wednesday, July 09, 2008 3:56 PM
To: Melissa Whittemore
Cc: Morel, Sidney
Subject: RE: Campus Park Development

Melissa,

This correspondence should be directed to our Fire Marshall, Division Chief Sid Morel. I have asked that Mr. Morel contact you directly to ensure the information you requested concerning the Campus Park Development is provided.

Fire Marshall Sid Morel
(760) 644-1103 - Cell
(760) 723-2010 - Office

Daniel A. Goldberg
Division Chief, Operations
North County Fire Protection District
315 East Ivy Street
Fallbrook, California 92028
Office: 760-723-2031
Cell: 760-644-1103
E-Mail dgoldberg@ncfire.org

From: Melissa Whittemore [mailto:MelissaW@helixepi.com]

Sent: Wednesday, July 09, 2008 11:52 AM
To: Goldberg, Daniel
Subject: RE: Campus Park Development

Hi Chief Goldberg -

I am just checking in to see if you have gotten the opportunity to obtain the information requested below. Please let me know if additional information from me is required. Thank you for your help.

Sincerely,
Melissa J. Whittemore

From: Melissa Whittemore
Sent: Thursday, June 19, 2008 10:20 AM
To: 'dgoldberg@ncfire.org'
Cc: 'David Davis'
Subject: Campus Park Development

Dear Chief Goldberg:

HELIX Environmental Planning, Inc. is currently preparing the 2nd Screencheck of the Draft Environmental Impact Report (EIR) for the proposed Campus Park project in the community of Fallbrook. In September 2005, you provided some very helpful information. Because three years have passed since we last contacted you, we would like to update responses.

The following provides a brief summary of the project. The Proposed Project is a mixed-use community, located just northeast of the intersection of I-15 and SR 76. The development would include a total of 533 single-family and 555 multi-family homes, as well as a public active sports park, two neighborhood parks, homeowner's association (HOA) recreational facilities, office professional use, Town Center, common area open space (fuel modification zones and manufactured slopes), and biological open space preserves.

It would be very helpful if you were to answer the following questions:

1. Your website states that Station No. 4 is staffed by one captain, one engineer, two firefighters/paramedics and one reserved firefighter, and includes one medic engine, one brush engine and one medic ambulance. Is this currently accurate?

2. How many calls were received by the District and how many calls did Station No. 4 respond to during the last fiscal year? How many more calls per day do you think the station could handle?

3. In 2005, we were informed that Station No. 4 mostly responds to traffic accidents on I-15. Is this still accurate?

A response by email, letter or phone (619-462-1515) within the next 10 days would be appreciated. Please let me know if you need additional information to assist in your responses. Thank you for your time and efforts.

Sincerely,

Melissa J. Whittemore
Project Manager

HELIX Environmental Planning, Inc.
7578 El Cajon Blvd., Suite 200
La Mesa, CA 91941
619.462.1515 (ph.), 619.462.0552 (fax)

NORTH COUNTY FIRE PROTECTION DISTRICT

315 East Ivy Street · Fallbrook, California 92028-2138 · (760) 723-2005 · Fax (760) 723-2004 · www.ncfire.org

June 6, 2008

County of San Diego
Dept. of Planning & Land Use
5201 Ruffin Rd. Ste. B
San Diego, CA 92123-1666

RE: TM 5338 RPL 4 Campus Park (formerly Passerelle Project)

Please review the following comments pertaining to fire protection for this proposed development:

Access: Interior access roads to conform to S.D. Co. Standards for Private/Public Roads, to include on-street parking when so indicated by parcel sizing & use. Based upon density provided, on-street parking on both sides of streets is indicated, thereby requiring 36' AC surface roads.
In multi-family areas, "private driveways" are proposed for garage access. These are required to be designated "fire lanes" or fire access roadways. Our concern is that parking proposed is distant from the majority of the residences, and does not appear to be adequate in count. Guest parking and disabled parking is not clearly defined. Driveways directly in front of garages typically would not accommodate even a compact car. Similar existing projects have demonstrated that people will violate posted "fire lane" signs if reasonable parking accommodation is not provided. Obstructed fire lanes result in delayed emergency responses, and can create life-threatening situations. Increased enforcement is not feasible and not a substitute for adequate design.

The following roads must be constructed prior to phases:

- Pala Mesa Drive west of I-15 prior to any construction north of the intersection of Pala Mesa Drive and Horse Ranch Creek Road.
- Horse Ranch Creek Road: Hwy 76 to Stewart Canyon road prior to any construction north of Harvest Glen Lane.
- Baltimore Oriole Road: (appears to be the same as Pala Mesa Heights Road) connected to Pala Mesa Heights Road to Meadowood project "Street D" prior to construction in the vicinity of Song Sparrow Drive.
- Pankey Road connected to Horse Ranch Creek Rad prior to construction east of Horse Ranch Creek Road.
- Provide 42' AC radius cul-de-sacs all access roads greater than 150'.
- Improvement of Pala Mesa Dr., from Hwy 395 to Pankey Rd., will ensure fire apparatus response time within 5 minutes to all portions of this development. *Therefore, it is necessary to improve Pala Mesa Dr. from the existing Fire Station #4 to the project as a circulation element road*

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- Provide approved fire dept. turnarounds for all driveways greater than 150'.
- Grades of all access roads/driveways not to exceed 20%.
- Provide an irrevocable offer of dedication for reciprocal secondary ingress/egress in the vicinity of the northern project boundary on Pankey Rd.
- Gates, if installed across access roads, must conform to NCFPD standards for electric gates, to include opticom sensors, knox key switch, and exit loop detectors.
- Provide road signs in accordance with S.D. Co. DS #13.
- Provide access to Southern development through "Song Sparrow Road". Connect to street "D" of TM 5354.

Water Supply:

- Install sufficient residential and commercial type fire hydrants to maintain sufficient spacing, as per S.D. Co. Fire Code, based upon parcel size.

- The Fire Prevention Bureau is required to set a minimum fire flow for commercial land division per CFC Appendix III – A, Table A- III – A- 1. The applicant shall provide at time of plan review a copy of the original conditions of approval showing the originally required fire flow, and a current fire flow test meeting those standards. If the applicant is unable to provide the original conditions of approval this project will be required to provide for this project, a water system capable of delivering 4000 GPM at 20 psi. residual operating pressure with a 4 hour duration. The required fire flow may be adjusted during the approval process to reflect changes in design, construction type, or automatic fire protection measures as approved by the Fire Prevention Bureau.

Basic requirements for all structures in development:

- Fire hydrants shall be of a type that meets the approval of the North County Fire Protection District and should have one 4" outlet and one 2.5" inch outlet. Hydrants shall be located no more than 500 feet apart on roads throughout the development. Hydrants shall be located at all intersections, and in between where needed to provide the 500 feet spacing. Hydrants shall also be located at the entrance to all cul-de-sacs, but not in the bulb. Hydrants shall be located on the right (response) side of the street, based on the assumed fire engine driving route from the closest tract entrance.
- Final location of all hydrants is subject to approval of the Fire Marshal.

Multi- family occupancies:

- Any multi family residential buildings (5 or more units, 3 story buildings, or attached condominiums) shall be equipped with Fire Sprinkler systems, in order to

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minimize the fire problem and to confine a fire to the room of origin. Fire department pumper connection shall be at street in front of buildings (address side of buildings) and have a fire hydrant within 25 feet.

- Fire Hydrants shall be located at 300 foot intervals in front of lots, and on any on site roads when driving distance exceeds 150 feet form hydrant on a public road.

Commercial, office and industrial

- On site fire hydrants are required when distance exceeds 150 feet driving distance from an approved public hydrant on the street. Hydrants at industrial buildings to have two 4" outlets and one 2.5" outlet. On site hydrants to be spaced at 300' intervals on the on site access road. Hydrants shall not be closer than 40 feet from the structure, or be protected by a 2 hour rated wall.
- Fire department pumper connections to be at street curb in front of address side of building at least 40 feet from the building. FDC to be within 25 feet of a public fire hydrant on the same side of the street.

Fire Protection:

- The existing Tax Rate Area for this subdivision is inadequate to support fire protection for this proposed development. *This will require negotiation of tax exchange rates for the entire project, inasmuch as the existing TRA is inadequate to support services to be provided.*
- Provide/upgrade fire suppression facilities/equipment for the North County Fire Protection District to address additional infrastructure/response demands placed upon District.
- All R-3 occupancies to be protected with automatic fire sprinkler systems in accordance with NFPA 13-D, and R-1 dwelling will require automatic fire sprinkler systems in accordance with NFPA 13-R.
- Fire protection installations for all other commercial or industrial occupancies as per fire protection plan reviewed and approved by this agency on 10-6-05.

Fire Protection Plan: The plans proposed now show some detail in terms of building locations and elevations. **Revise the Fire Protection Plan to address the following issues:**

- This agency will require one minor modification pertaining to vegetation clearance within "zone '3'". Specifically, where a 100' or greater fire buffer easement is required, the first 100' of clearing from structures includes complete clearing of native species, excluding isolated single specimens (as opposed to allowing 25% to remain, as noted in the plan on page 8).

NORTH COUNTY FIRE PROTECTION DISTRICT

315 East Ivy Street · Fallbrook, California 92028-2138 · (760) 723-2005 · Fax (760) 723-2004 · www.ncfire.org

- These comments remain valid only insofar as this plan is accepted by the County of San Diego as an element of the EIR. Should modifications to this plan be necessitated, any and/or all of these changes may be revoked at the discretion of the fire dept.
- Numerous commercial and residential buildings appear to be taller than what our agency can adequately ladder. This agency can only ladder buildings to 30 feet. The revised Fire Protection Plan needs to address the acceptable heights of the building.

Should you have any questions, please contact me at (760) 723-2015

Sincerely,

Sid Morel
Fire Marshal

Melissa Whittemore

From: Kettner, Susan [SKettner@ncfire.org]
Sent: Monday, July 14, 2008 11:00 AM
To: Melissa Whittemore
Cc: Morel, Sidney
Subject: Campus Park Development

Hi Melissa,

I am responding to an email from you and forwarded to Chief Morel.

Question 2 asked:

How many calls were received by the District in FY 07/08? 4309

How many calls did Station No. 4 respond to during the last fiscal year? 1263

Susan

Susan Kettner
Administrative Specialist
North County Fire Protection District
(760) 723-2010 Direct Line
(760) 723-2045 Fax
skettner@ncfire.org

HELIX environmental planning, inc.

7578 El Cajon Boulevard, Suite 200
La Mesa, CA 91941
fax (619) 462-0552
phone (619) 462-1515

Inland Empire Office
phone (951) 328-1700

June 19, 2008

PAS-01

Lieutenant Alex Dominguez
San Diego County Sheriff's Department
Fallbrook Substation
388 East Alvarado St
Fallbrook, CA 92028

Subject: Campus Park Development

Dear Lieutenant Dominguez:

HELIX Environmental Planning, Inc. (HELIX) is currently preparing the 2nd Screencheck of the Draft Environmental Impact Report (EIR) for the proposed Campus Park project in the community of Fallbrook. In September 2005, you provided some very helpful information. Because three years have passed since we last contacted you, we would like to update responses.

The following provides a brief summary of the project. The Proposed Project is a mixed-use community, located just northeast of the intersection of I-15 and SR 76. The development would include a total of 533 single-family and 555 multi-family homes, as well as a public active sports park, two neighborhood parks, homeowner's association (HOA) recreational facilities, office professional use, Town Center, common area open space (fuel modification zones and manufactured slopes), and biological open space preserves.

It would be very helpful if you were to answer the following questions:

1. What are the current average response times for the entire Fallbrook command?

2. What are the current average response times for Beat 388, which includes the Project site?

3. Are there any current plans to build new sheriff facilities or increase the capacity of existing facilities?

A response by email (melissaw@helixepi.com), letter or phone (619-462-1515) within the next 10 days would be appreciated. Please let me know if you need additional information to assist in your responses. Thank you for your time and efforts.

Sincerely,

Melissa J. Whittemore

Melissa Whittemore

From: Melissa Whittemore
Sent: Thursday, June 19, 2008 10:26 AM
To: 'brian.sampson@sdsheriff.org'
Cc: 'David Davis'
Subject: Campus Park Development

Dear Mr. Sampson:

HELIX Environmental Planning, Inc. is currently preparing the 2nd Screencheck of the Draft Environmental Impact Report (EIR) for the proposed Campus Park project in the community of Fallbrook. In September 2005, you provided some very helpful information. Because three years have passed since we last contacted you, we would like to update responses.

The following provides a brief summary of the project. The Proposed Project is a mixed-use community, located just northeast of the intersection of I-15 and SR 76. The development would include a total of 533 single-family and 555 multi-family homes, as well as a public active sports park, two neighborhood parks, homeowner's association (HOA) recreational facilities, office professional use, Town Center, common area open space (fuel modification zones and manufactured slopes), and biological open space preserves.

In 2005, our understanding was that a Law Enforcement Master Plan was being prepared that would identify the Project area as a future expansion area that would not be easily served from current facilities. Is this statement still accurate, and has the Master Plan been completed—if so, can you please direct me to where I can view the plan?

A response by email, letter or phone (619-462-1515) within the next 10 days would be appreciated. Please let me know if you need additional information to assist in your responses. Thank you for your time and efforts.

Sincerely,

Melissa J. Whittemore
Project Manager

HELIX Environmental Planning, Inc.
7578 El Cajon Blvd., Suite 200
La Mesa, CA 91941
619.462.1515 (ph.), 619.462.0552 (fax)

Melissa Whittemore

From: Mays, Jody [Jody.Mays@sdsheriff.org]
Sent: Monday, June 30, 2008 7:01 AM
To: Melissa Whittemore
Subject: FW: Campus Park Development

From: Mays, Jody
Sent: Thursday, June 26, 2008 3:47 PM
To: melissaW@helixpi.com
Cc: Sampson, Brian
Subject: RE: Campus Park Development

Ms. Whittemore:
Mr. Sampson forwarded your email to me for a response. The Department's Law Enforcement Facilities Master Plan was completed in late 2005. It is really an internal document and is unfortunately not published online anywhere that you might be able to access it. Mr. Sampson's assessment of the law enforcement services situation in that part of the County is still accurate. A new facility was identified in the MP to serve this region and we are presently in the process of confirming the need, size and preferred location for that Station/Substation. We have some data gathering and analysis to do and we are cooperating with our partner agencies to be sure we are providing a reasonable response to applicants and DPLU.

Thanks,

Jody Mays

Jody L. Mays
Project Manager - Facilities & Special Projects
San Diego Sheriff's Department - Mgmt. Services Bureau
(858) 974-2237
jody.mays@sdsheriff.org
MISSION STATEMENT
"The Management Services Bureau provides quality business related support and expertise to our customers: law enforcement and the public."

From: Melissa Whittemore [mailto:MelissaW@helixepi.com]
Sent: Thursday, June 19, 2008 10:26 AM
To: Sampson, Brian
Cc: David Davis
Subject: Campus Park Development

Dear Mr. Sampson:

HELIX Environmental Planning, Inc. is currently preparing the 2nd Screencheck of the Draft Environmental

Impact Report (EIR) for the proposed Campus Park project in the community of Fallbrook. In September 2005, you provided some very helpful information. Because three years have passed since we last contacted you, we would like to update responses.

The following provides a brief summary of the project. The Proposed Project is a mixed-use community, located just northeast of the intersection of I-15 and SR 76. The development would include a total of 533 single-family and 555 multi-family homes, as well as a public active sports park, two neighborhood parks, homeowner's association (HOA) recreational facilities, office professional use, Town Center, common area open space (fuel modification zones and manufactured slopes), and biological open space preserves.

In 2005, our understanding was that a Law Enforcement Master Plan was being prepared that would identify the Project area as a future expansion area that would not be easily served from current facilities. Is this statement still accurate, and has the Master Plan been completed—if so, can you please direct me to where I can view the plan?

A response by email, letter or phone (619-462-1515) within the next 10 days would be appreciated. Please let me know if you need additional information to assist in your responses. Thank you for your time and efforts.

Sincerely,

Melissa J. Whittemore
Project Manager

HELIX Environmental Planning, Inc.
7578 El Cajon Blvd., Suite 200
La Mesa, CA 91941
619.462.1515 (ph.), 619.462.0552 (fax)

Melissa Whittemore

Subject: RE: Campus Park from HELIX

-----Original Message-----
From: David Durham
Sent: Tuesday, August 19, 2008 1:49 PM
To: Melissa Whittemore
Subject: FW: Campus Park from HELIX

Melissa,

Attached is the response times run that Darcie Brown performed. As you can see, the dates for the calls are the first 6 months of this year. Darcie informed me that the order of priority is 1 (highest) to 4 (lowest). My understanding is that priorities 3 and 4 are our version of non-priority calls and priorities 1 and 2 are our version of priority calls. However, Darcie is looking to see if there is an updated explanation/legend of this scale. I will forward it to you when she sends it to me.

David

-----Original Message-----
From: Brown, Darcie [mailto:Darcie.Brown@sdsheriff.org]
Sent: Tuesday, August 19, 2008 1:33 PM
To: David Durham
Subject: RE: Campus Park from HELIX

I actually had not sent it yet. I was double checking with our communications center to see if they had a more up to date explanation of the priorities of calls. My version is a bit older and I wanted to make sure it hadn't been updated. I will send you the data right now, and when I hear back about the explanation, I will send that then. I hope that works.

Darcie Brown
Crime Analyst
760-940-4925

Melissa Whittemore

Subject: RE: explanation

-----Original Message-----
From: Brown, Darcie [mailto:Darcie.Brown@sdsheriff.org]
Sent: Wednesday, August 20, 2008 10:38 AM
To: David Durham
Subject: explanation

David-

This is about as close as I can get in sending you a document that represents an explanation of the breakdown of priorities. This list will not include EVERY single call type, but will give you a pretty good picture overall. Basically, I am sending you a list of call types that are broken down 1-7, 1 being the highest priority. How this translates to the report I provided yesterday is as follows:

Priority 1 (on the report) is a priority call and from the list I am giving you now represents priority 0 & 1.
Priority 2 (on the report) is also a priority call and from the list I am giving you now represents priority 2 & 3.
Priority 3 (on the report) is not a "priority" call and from the list represents priority 4 & 5.
Priority 4 (on the report) is also not a "priority" call and from the list represents 6 & 7.

Although this attachment does not list the "0's", I will give you a few examples of what call types those are: Foot Pursuit, Officer needs assistance, traffic pursuit, Unit emergency.

I hope this all makes sense. Let me know.

Darcie Brown
Crime Analyst
Vista & Fallbrook Sheriff's Stations
760-940-4925

CAD MIS BEAT REPORT

1/1/2008 - 6/30/2008 Command: Fallbrook

Beat	Pri	Total	Average Times: Response Time	Enroute-Cleared	Received-Dispatch	Dispatch - Enroute	Enroute-Arrive	Dispatch-Arrive	Arrive-Cleared
381	1	0							
	2	181	11.7	85.3	3.8	2.1	6.6	8.6	78.4
	1+2	181							
	3	354	15.9	68.5	5.3	2.9	7.1	10.9	61.4
	4	282	39.4	51.2	16.2	17.9	10.3	23.3	37.2
	3+4	636	25.7	62.6	10.2	8.0	8.2	16.1	51.3
Beat Total		817							
382	1	0							
	2	147	10.5	53.7	2.2	1.5	6.9	8.3	47.7
	1+2	147							
	3	422	14.1	42.1	4.9	3.0	6.5	9.7	36.2
	4	213	33.0	42.5	12.6	15.8	4.6	21.7	73.7
	3+4	635	20.0	42.2	7.5	5.9	6.1	13.4	47.8
Beat Total		782							
383	1	0							
	2	36	10.2	35.1	0.7	1.8	7.6	9.4	27.5
	1+2	36							
	3	82	17.1	35.5	4.1	2.8	10.4	12.6	25.7
	4	54	47.6	74.7	20.4	14.0	15.3	25.5	47.9
	3+4	136	28.5	46.1	10.5	5.8	11.8	17.4	34.0
Beat Total		172							
384	1	0							
	2	118	10.4	67.6	2.4	1.8	5.1	7.9	59.8
	1+2	118							
	3	341	15.2	35.3	5.5	3.1	6.7	9.8	30.5
	4	647	35.6	105.6	18.5	14.4	5.9	19.2	71.7
	3+4	988	26.8	66.7	13.9	8.1	6.4	15.2	54.0
Beat Total		1,106							
385	1	0							
	2	115	7.7	69.6	1.7	1.3	5.0	6.1	63.3
	1+2	115							
	3	331	14.1	41.9	5.0	3.7	4.8	9.1	36.9
	4	245	38.0	51.9	16.7	16.9	5.6	22.4	51.2
	3+4	576	23.3	44.8	9.9	7.6	5.0	14.2	42.4
Beat Total		691							

Average Times

Beat	Pri	Total	Response Time	Enroute-Cleared	Received-Dispatch	Dispatch - Enroute	Enroute-Arrive	Dispatch-Arrive	Arrive-Cleared
386	*1*	1	1.1	222.2	0.9	0.1	0.2	0.2	222.0
	2	20	10.0	45.8	0.9	0.8	8.2	9.0	41.2
	1+2	***21***	***9.2***	***60.5***	***0.9***	***0.7***	***7.5***	***8.2***	***57.7***
	3	90	17.4	41.3	4.9	6.3	7.3	12.9	34.7
	4	64	39.3	41.3	13.8	14.5	8.9	21.9	38.2
	3+4	***154***	***24.5***	***41.3***	***8.6***	***8.2***	***7.6***	***15.8***	***35.8***
Beat Total		**175**							
387	*1*	0							
	2	29	15.5	79.7	1.4	0.8	14.6	14.0	66.3
	1+2	***29***							
	3	74	20.6	46.1	5.5	2.2	13.2	14.9	32.1
	4	64	40.0	48.0	18.2	16.6	12.3	28.0	34.2
	3+4	***138***	***29.2***	***46.8***	***11.3***	***7.4***	***12.9***	***20.7***	***33.0***
Beat Total		**167**							
388	*1*	0							
	2	63	29.2	85.7	4.8	4.7	19.0	24.2	68.0
	1+2	***63***							
	3	197	29.2	54.2	7.3	4.0	18.2	22.7	42.4
	4	149	45.1	60.0	14.6	16.2	18.6	32.5	38.8
	3+4	***346***	***35.8***	***56.1***	***10.4***	***8.1***	***18.3***	***26.8***	***40.9***
Beat Total		**409**							
389	*1*	1	4.8	481.4	0.4	0.5	3.9	4.4	477.5
	2	66	26.8	82.7	4.0	3.1	19.3	22.7	62.6
	1+2	***67***	***26.4***	***90.7***	***4.0***	***3.0***	***19.0***	***22.4***	***70.6***
	3	141	25.2	69.0	5.1	3.3	16.5	19.8	56.9
	4	113	40.0	143.7	12.0	19.6	9.3	29.2	109.8
	3+4	***254***	***31.5***	***94.0***	***8.2***	***8.7***	***14.0***	***23.8***	***79.6***
Beat Total		**321**							
390	*1*	0							
	2	39	15.0	61.6	2.3	2.4	10.1	12.6	53.8
	1+2	***39***							
	3	111	22.8	45.7	6.4	2.6	13.5	16.9	34.2
	4	74	40.0	51.2	14.4	13.9	15.2	27.0	35.3
	3+4	***185***	***28.9***	***47.3***	***9.6***	***5.8***	***14.0***	***20.5***	***34.6***
Beat Total		**224**							

Average Times

Beat	Pri	Total	Response Time	Enroute-Cleared	Received-Dispatch	Dispatch - Enroute	Enroute-Arrive	Dispatch-Arrive	Arrive-Cleared
391	*1*	0							
	2	33	12.3	91.1	1.7	1.2	10.1	10.7	74.9
	1+2	*33*							
	3	130	20.8	51.3	5.9	5.5	9.2	15.2	42.1
	4	107	42.5	59.2	21.5	11.6	9.9	22.5	42.5
	3+4	*237*	*29.4*	*53.8*	*12.9*	*7.4*	*9.4*	*18.1*	*42.3*
Beat Total		**270**							
392	*1*	0							
	2	49	14.0	57.0	1.0	0.7	12.6	13.0	45.6
	1+2	*49*							
	3	217	20.6	33.2	3.9	2.7	12.8	16.1	24.8
	4	122	47.0	50.9	17.4	24.1	5.5	30.1	48.0
	3+4	*339*	*29.3*	*37.7*	*8.8*	*8.2*	*10.9*	*20.7*	*32.5*
Beat Total		**388**							
393	*1*	0							
	2	35	21.8	80.2	3.2	3.3	14.7	18.3	66.2
	1+2	*35*							
	3	119	22.7	41.3	3.6	3.1	15.9	19.0	30.2
	4	99	45.4	93.0	19.0	24.7	3.1	29.1	76.5
	3+4	*218*	*33.2*	*58.8*	*10.6*	*10.4*	*10.9*	*23.7*	*51.7*
Beat Total		**253**							
394	*1*	0							
	2	3	11.1	40.9	0.8	1.3	9.1	10.4	31.8
	1+2	*3*							
	3	32	21.1	57.2	4.1	0.8	15.9	16.7	40.7
	4	13	39.6	66.5	12.7	28.1	-2.4	25.8	62.2
	3+4	*45*	*26.7*	*59.0*	*6.6*	*6.1*	*12.0*	*19.5*	*47.2*
Beat Total		**48**							
395	*1*	0							
	2	1							
	1+2	*1*							
	3	8	16.0	100.1	1.8	0.8	18.7	13.9	68.0
	4	8	93.2	37.0	46.1	28.0	-3.2	50.6	42.8
	3+4	*16*	*48.2*	*68.5*	*24.0*	*14.4*	*10.5*	*29.2*	*57.5*
Beat Total		**17**							

Average Times

Beat	Pri	Total	Response Time	Enroute-Cleared	Received-Dispatch	Dispatch - Enroute	Enroute-Arrive	Dispatch-Arrive	Arrive-Cleared
396	*1*	0							
	2	81	22.2	105.7	2.9	1.4	17.4	19.1	89.4
	1+2	*81*							
	3	195	25.1	45.5	4.8	2.2	17.3	20.5	35.5
	4	174	54.9	73.6	21.1	16.5	18.2	33.0	63.5
	3+4	*369*	*38.6*	*56.1*	*12.5*	*7.6*	*17.6*	*26.1*	*48.1*
Beat Total		450							
397	*1*	0							
	2	4	17.5	144.2	2.0	0.5	17.0	15.5	93.4
	1+2	*4*							
	3	19	22.3	56.2	3.2	2.2	16.2	18.6	45.8
	4	12	87.7	49.9	32.6	34.6	20.7	51.0	46.3
	3+4	*31*	*42.2*	*54.5*	*14.5*	*11.3*	*17.3*	*28.5*	*45.9*
Beat Total		35							
Grand totals		**6,325**	**25.8**	**58.2**	**9.6**	**6.7**	**9.9**	**17.3**	**49.8**

**** Response Time is the time from when the dispatcher receives a call until a Deputy arrives onscene.***
Blank values in the average time columns indicate appropriate times were not available for computation.