

**TOWN OF DISCOVERY BAY COMMUNITY SERVICES DISTRICT  
WASTEWATER MASTER PLAN UPDATE  
FLOWS AND LOADS – KEY FINDINGS**

June 5, 2019

1. Plant historical data from January 2013 through September 2018 analyzed.
  - a. Annual Average Flow = 1.32 Mgal/d (as of March 31, 2018). Was 1.8 Mgal/d in 2010.
  - b. Questionable data for BOD, TSS, ammonia. Need to do special monitoring studies.
2. Special Influent Monitoring Study 1 believed compromised due to non-representative sampling due to ragging of sampler intakes.
3. Special Influent Monitoring Study 2:
  - a. Portable sampler intake located after influent screen and protected from ragging.
  - b. Screen channel narrowed temporarily to provide turbulent mixing at sample location for portable sampler.
  - c. Averaged results of three laboratories showed:
    - i. BOD and COD about 40% higher than for the fixed (historical) sampler.
    - ii. TSS about 100% higher than for the fixed (historical) sampler.
  - d. Plant historical data believed to be inaccurate due to nonrepresentative sampling.
  - e. Inconsistent results between three laboratories believed to be due lack of adequate mixing during sample splitting.
4. Based on Special Influent Monitoring Study 2 and consideration of typical per capita BOD loads, average BOD concentration estimated to be 275 mg/L (compare to 163 mg/L from plant records).
5. Influent sampling modifications recommended for immediate implementation:
  - a. Modify screen channel downstream from screen to create turbulent zone for new sample intake.
  - b. Relocate sampler to new location.
  - c. Mechanically mix sampler jug before and while filling sample bottles for transport to lab.
6. Future development analyzed to project incremental increased flows through buildout. See attached tables and Table 5-11 in report.
7. Future flows and loads determined for two scenarios (See Table 5-12 of report):
  - a. Per capita flows at 83.5 gpd, consistent with current values (Baseline Future).
  - b. Per capita flows at 50 gpd, representing extreme water conservation (Alternate Future).
8. Plant capacity can be expressed in terms of population that can be served. This will not change substantially with variations in water conservation. Plant capacity expressed in terms of flow will decrease with water conservation.
9. Master plan based on current level of water use (Baseline Future) will yield facilities that will have capacities equal or greater than those required for extreme water conservation (Alternate Future).

## Residential Units and Population Projections

	2010 (a)	Added Through 3/31/2018	Total 3/31/2018	Additional Through Buildout	Total Through Buildout
Population, Primary Residences	13,352	1,661	15,013	3,866	18,879
Households, Primary Residences (b)	4,742	590	5,332	712	6,044
Vacation Homes Converted to Primary Residences	0	0	0	661	661
Total Primary Residences	4,742	590	5,332	1,373	6,705
Vacation Homes	661	0	661	-661	0
Vacation Homes as Equivalent Primary Residences (c)	165	0	165	-165	0
Total Households	5,403	590	5,993	712	6,705
Total Primary Equivalent Households	4,907	590	5,497	1,208	6,705
Persons Per Primary Residence	2.816	2.816	2.816	2.816	2.816
Total Effective Population Served	13,817	1,661	15,479	3,401	18,879

(a) Population and households from 2010 census.

(b) Includes single family residences and condominiums.

(c) One vacation home assumed to be equivalent to 0.25 primary residences.

### Additional Households Through Buildout Includes:

Base number developed by District, 7/31/18	576
Add for Evans subdivision	18
Add for 5 acres condos in DB/Willow Lake	80
Units added 3/31/18 through 7/31/18	38
<b>Total</b>	<b>712</b>

### Projected Growth within TDBCSD After 3/31/2018

Development	Number
<b>Homes and Condominiums to be Added After 7/31/2018</b>	
Approved, But Not Yet Built	67
Undeveloped Lots (Discovery Bay Proper)	44
Pantages	300
Newport Point	70
Villages (Hoffman)	76
Golf Course	13
5-Acre Lots	5
Evans	19
Discovery Bay / Willow Lake Condominiums	80
<b>Total</b>	<b>674</b>
Homes and Condominiums Added 3/31/2018 through 7/31/2018	38
Equivalent for Conversion of 661 Vacation Homes to Primary Res.	496
<b>Homes and Condominiums to be Added After 3/31/2018</b>	<b>1,208</b>
<b>Office and Business Park, Acres</b>	
Bixler Business Park	7
Marsh Creek Office	1.2
<b>Total</b>	<b>8.2</b>
<b>Commercial, Acres</b>	
Highway 4	5