



BACWA Group Annual Report

BACWA Permits Committee
EBMUD
9 September 2015



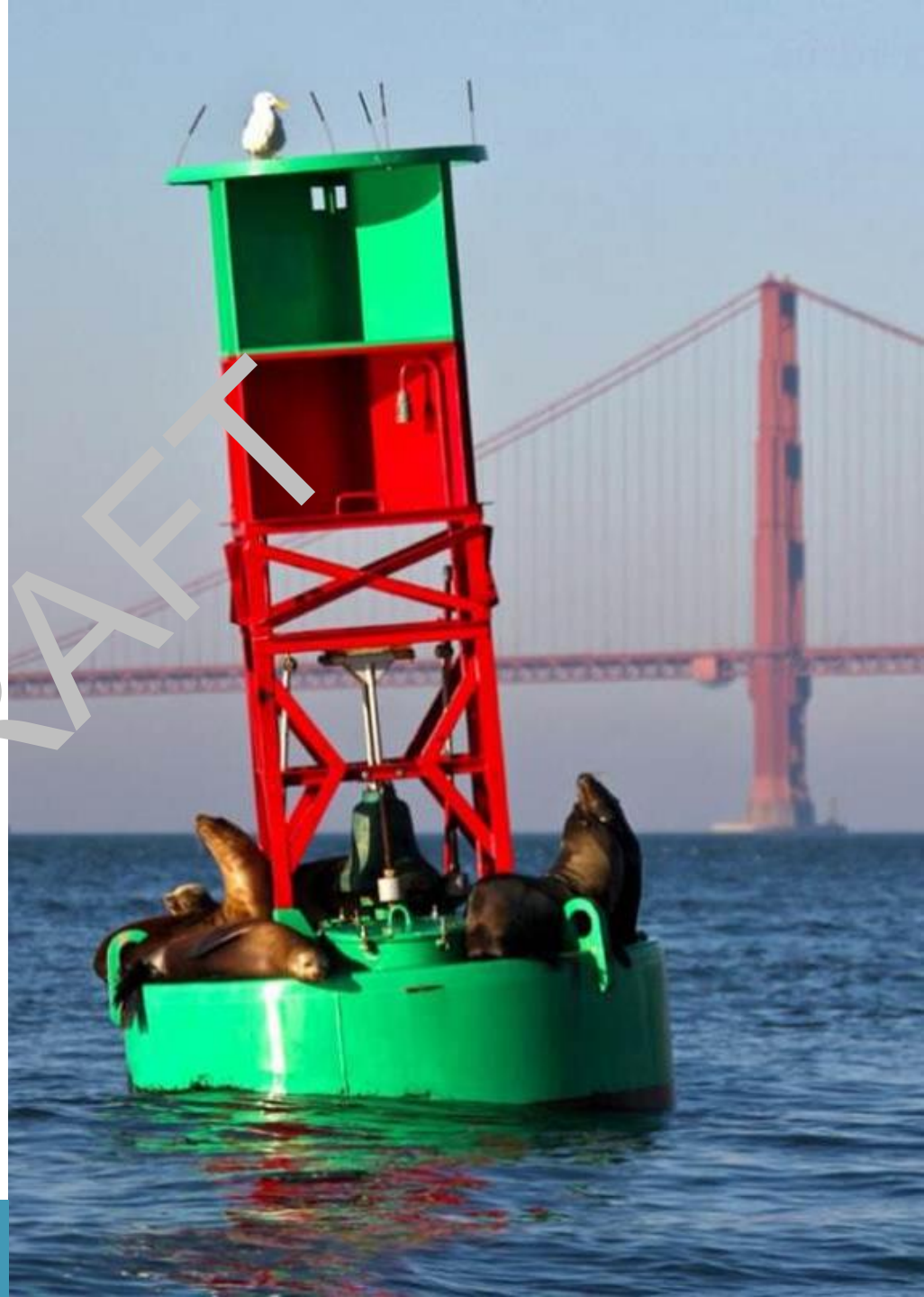
Brown AND Caldwell



BACWA
BAY AREA
CLEAN WATER
AGENCIES

Outline

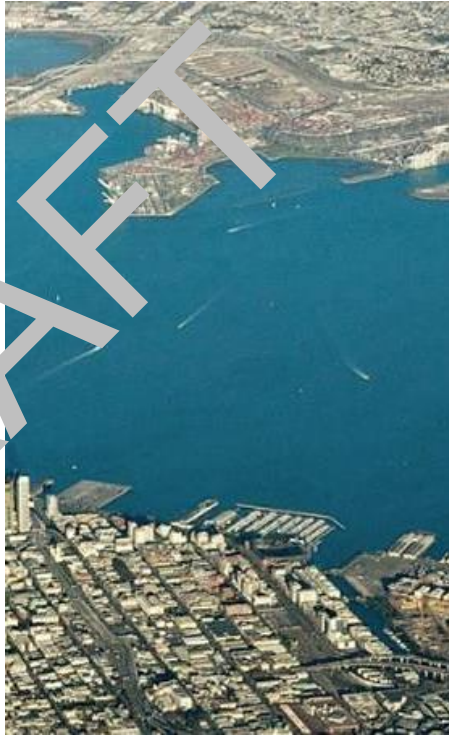
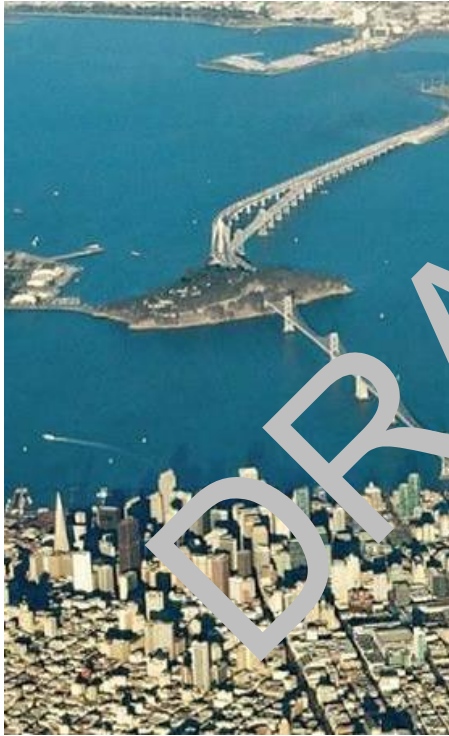
- Upcoming Milestones
- Group Annual Report Update
 - Data gaps
 - Compiled data/trends
 - Statistical approach
 - Sample dataset
- Next Steps



Upcoming Key Milestones

- Sept 8 - 11, 2015: Send Compiled Data to Plants for Review
- Sept 14 - 16, 2015: Receive BACWA Plant Input
- Oct 1, 2015: Submit Participants Support Letter to Regional Board
- Mid Oct, 2015: Submit Draft Group Annual Report for Review
- Nov 12, 2015: Submit Group Annual Report to Regional Board

Background

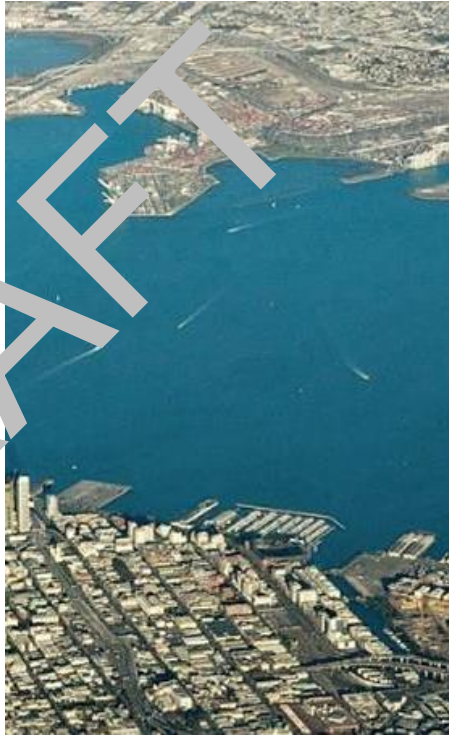
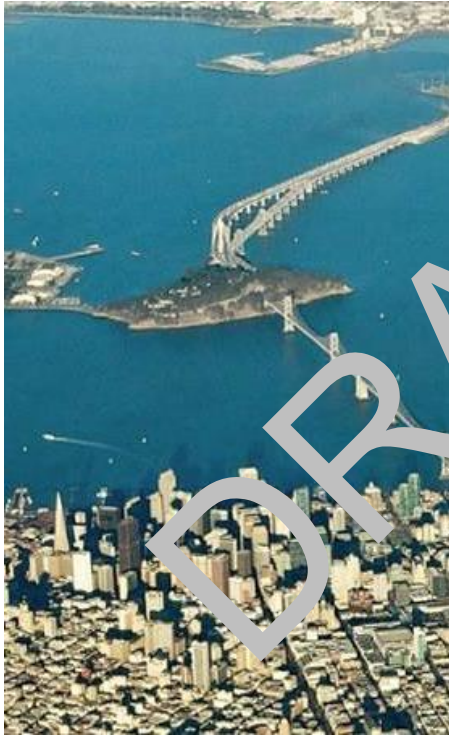


37 Participating Plants

- **SUI** – Suisun Bay
- **SPB** – San Pablo Bay
- **CEN** – Central Bay
- **SOU** – South Bay
- **LSB** – Lower South Bay



Group Annual Report



Group Annual Report – Due November XX, 2015

- Data Collection/Review
 - 13267 Letter Data (2011-2014)
 - CIWQS (2014-2015)
- Data Analysis and Reporting
 - Data trending by plant type and sub-embayment



Table 2-4. Annual Nutrient Loads Discharged from WRRFs – Total Phosphorus

Facility Name	Sub-embayment	2012/13	2013/14	2014/15	Trend
American Canyon, City of					
Benicia, City of					
Burlingame, City of					
Central Contra Costa Sanitary District					
Central Marin Sanitation Agency					
Delta District					
American Canyon, City of					
Benicia, City of					
Burlingame, City of					
...					

Table 2-5. Annual Flows Discharged to Subembayments

Facility Name	2012/13	2013/14	2014/15	Trend
Central Bay				
Lower South Bay				
San Pablo Bay				
South Bay				
Suisun Bay				
Total				

Table 2-6. Annual Nutrient Loads Discharged to Subembayments – Ammonia

Facility Name	2012/13	2013/14	2014/15	Trend
Central Bay				
Lower South Bay				
San Pablo Bay				
South Bay				
Suisun Bay				
Total				

Incomplete Dataset

	American Canyon WWTP	Benicia WWTP	Burlingame WWTF	Central Contra Costa SD WWTP	Central Marin Sanitation Agency	Delta Diablo Sanitation District	East Bay Municipal Utility District	EBDA Common Outfall	Fairfield Suisun Sewer District	Las Gallinas Valley Sanitary District	Millbrae WPCP	Mt. View Sanitary District WWTP	Napa Sanitation District	Novato Sanitary District	Palo Alto RWQCP	Petaluma	Pinole-Hercules WPCP	RODEO Sanitary District WWTP	San Francisco International Airport - MLTP	San Jose/Santa Clara WPCP	San Mateo WWTP	Sausalito Marin City STP	Sewerage Agency of Southern Marin	SF-SE Water Pollution Control Plant	Silicon Valley Clean Water	Sonoma Valley County Sanitation District	South San Francisco San Bruno WQCP	Sunnyvale WPCP	Treasure Island WWTP/DOD	Vallejo Sanitation & Flood Control District	West County/Richmond		
Jul-12						Yellow																											
Aug-12																																	
Sep-12																																	
Oct-12																																	
Nov-12																																	
Dec-12																																	
Jan-13																																	
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Feb-14																																	
Mar-14																																	
Apr-14																																	
May-14																																	
Jun-14																																	
Jul-14													Yellow																				
Aug-14																	Red																
Sep-14																																	
Oct-14																																	
Nov-14																																	
Dec-14																																	
Jan-15																																	
Feb-15																																	
Mar-15																																	
Apr-15																																	
May-15	Red																																
Jun-15																																	

DRAFT

Green = Complete Dataset
 Red = Missing Data
 Yellow Data = Incomplete Dataset

Data Issues

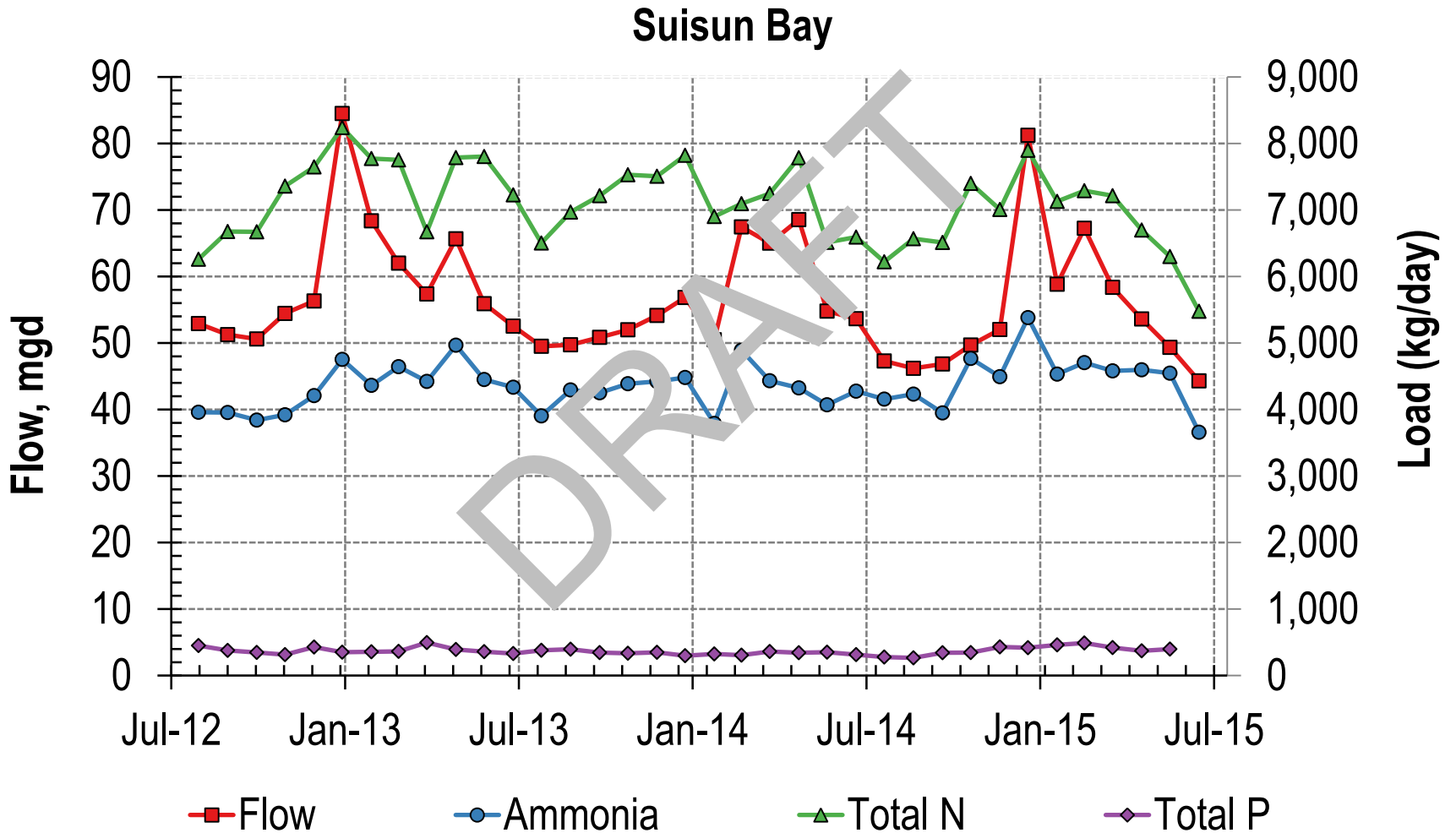
- Data cleaned up since 8/14 BACWA meeting (CIWQS training)
- 13267 Letter data gaps are attributed to no discharge
- Ortho-P issue
 - Different forms (dissolved P, ortho-P, dissolved ortho-P, etc.)
 - Inconsistencies
 - Resolving with a few plants
- July 2014 – June 2015 data gaps/issues.
 - Multiple outfalls
 - Recycled water (0 discharge)
 - Emailed plants with missing data gaps



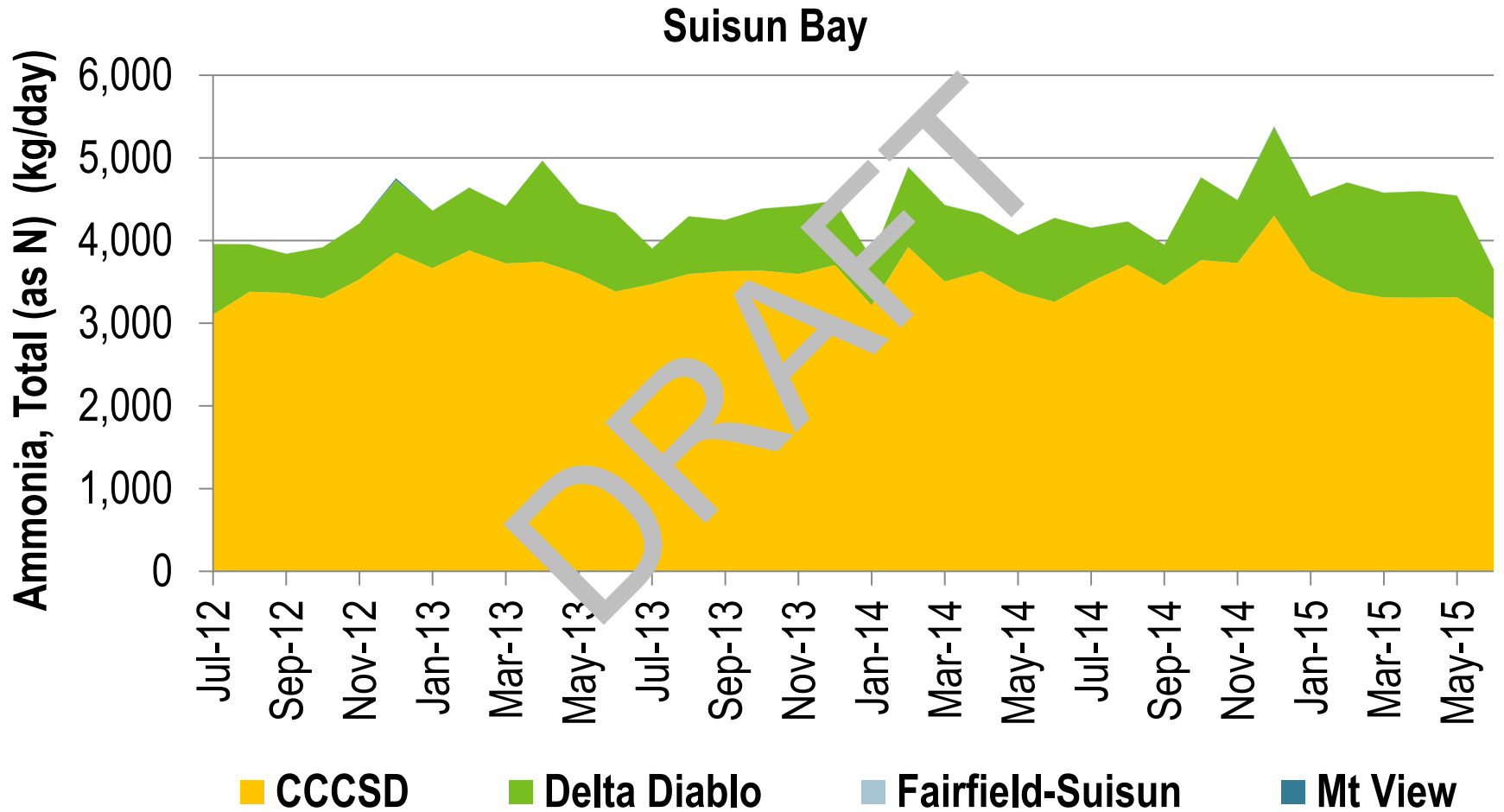
Preliminary Analysis by Subembayment (Suisun Bay)

Year	Flow	Ammonia (kg N/d)	TKN (kg N/d)	NO5 (kg N/d)	Total N (kg N/d)	Ortho-P (kg P/d)	Total P (kg P/d)
2012 – 2013	59.3	4,300	4,800	2,600	7,300	310	390
2013 – 2014	56.1	4,300	4,600	2,600	7,100	300	340
2014 – 2015	54.6	4,500	4,700	2,200	6,800	280	380
% Decrease per Year	4.2%	-2.3%	1.1%	8.1%	3.5%	5.1%	1.4%
Trend	↓	↑	↓	↓	↓	↓	↓

Preliminary Suisun Bay Results



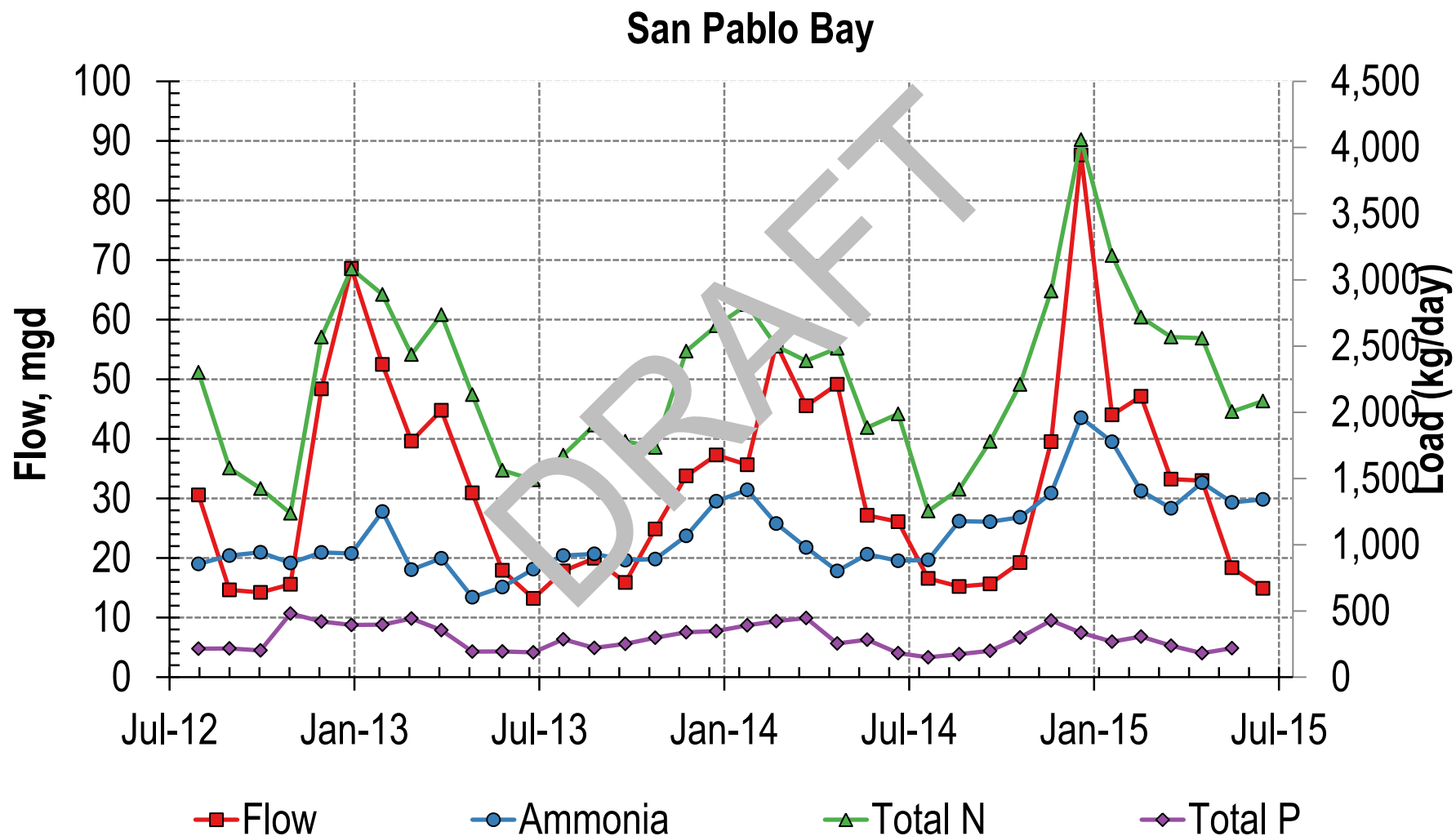
Preliminary Suisun Bay Results



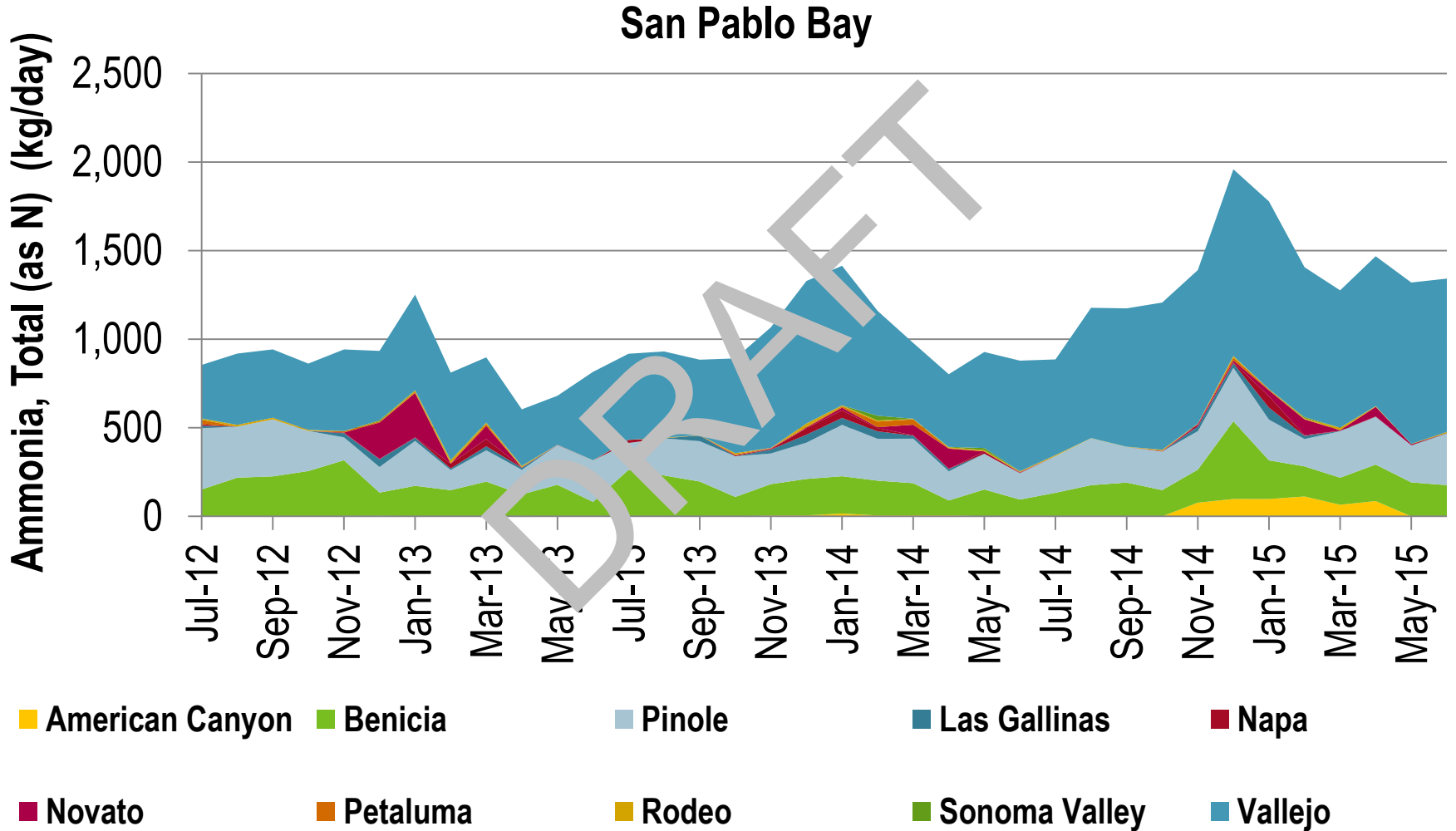
Preliminary Analysis by Subembayment (San Pablo Bay)

Year	Flow	Ammonia (kg N/d)	TKN (kg N/d)	NO5 (kg N/d)	Total N (kg N/d)	Ortho-P (kg P/d)	Total P (kg P/d)
2012 – 2013	32.6	900	1,100	1,000	2,100	310	320
2013 – 2014	32.4	1,000	1,200	1,000	2,200	280	310
2014 – 2015	32.1	1,400	1,300	800	2,500	230	250
% Decrease per Year	0.7%	-22.7%	-19.2%	10.7%	-8.8%	14.6%	11.9%
Trend	↓	↑	↑	↓	↑	↓	↓

Preliminary San Pablo Bay Results



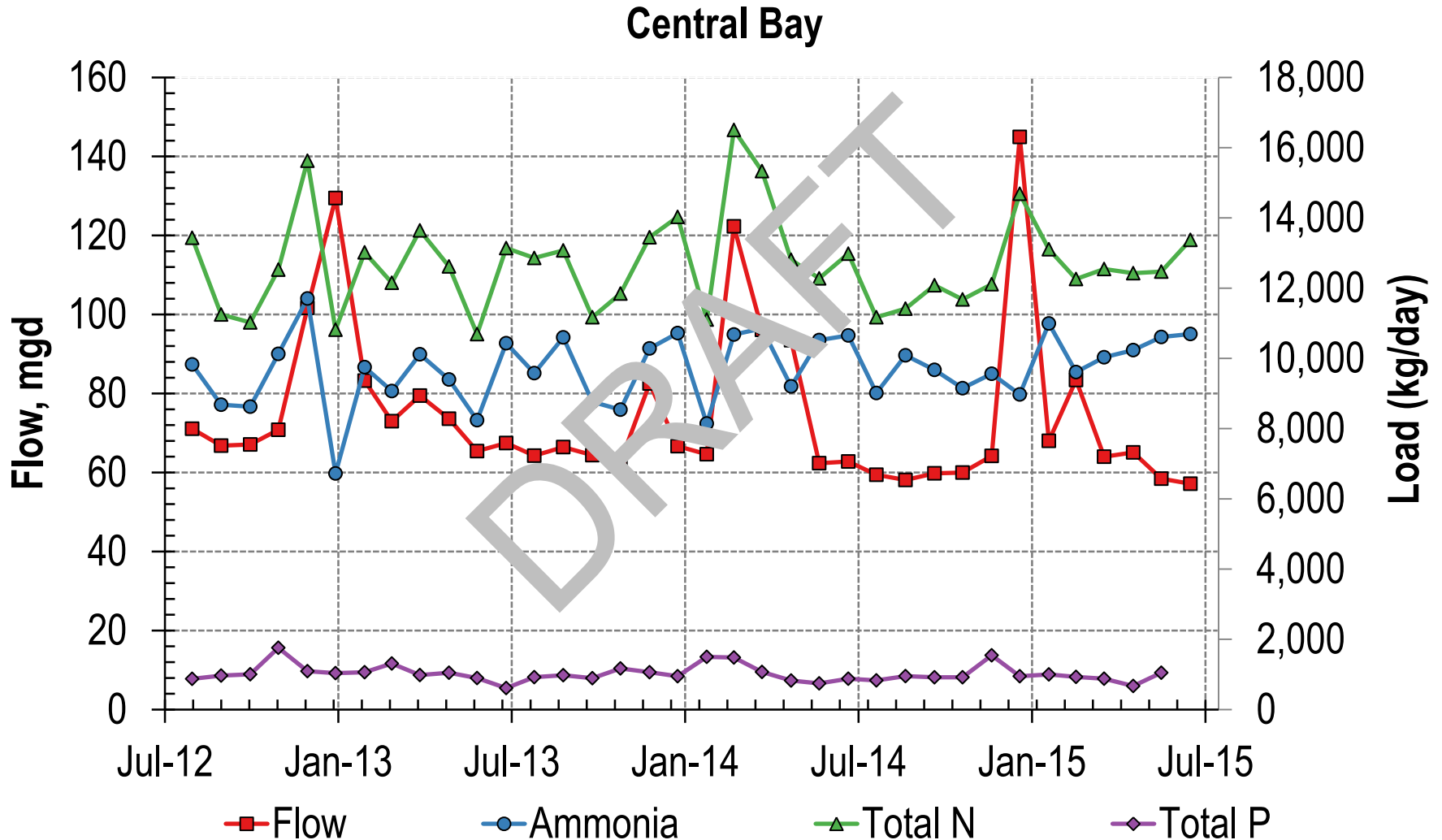
Preliminary San Pablo Bay Results



Preliminary Analysis by Subembayment (Central Bay)

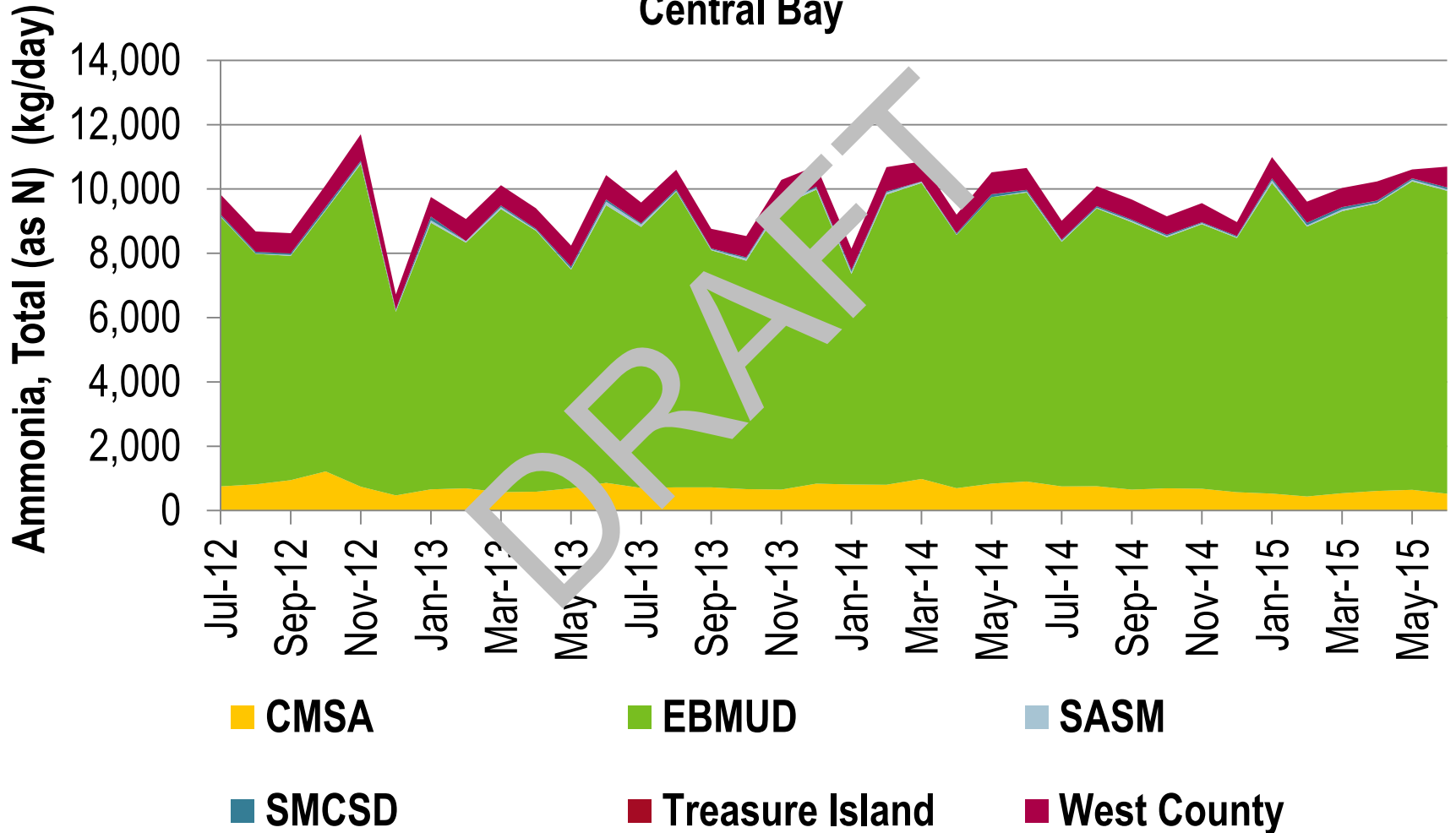
Year	Flow	Ammonia (kg N/d)	TKN (kg N/d)	NO5 (kg N/d)	Total N (kg N/d)	Ortho-P (kg P/d)	Total P (kg P/d)
2012 – 2013	79.1	9,400	10,800	1,700	12,500	1,030	1,140
2013 – 2014	75.7	9,900	11,500	1,600	13,100	840	1,020
2014 – 2015	70.4	9,900	11,300	1,200	12,500	670	960
% Decrease per Year	5.8%	-2.6%	-2.2%	16.7%	0.0%	21.3%	8.7%
Trend	↓	↑	↑	↓	→	↓	↓

Preliminary Central Bay Results



Preliminary Central Bay Results

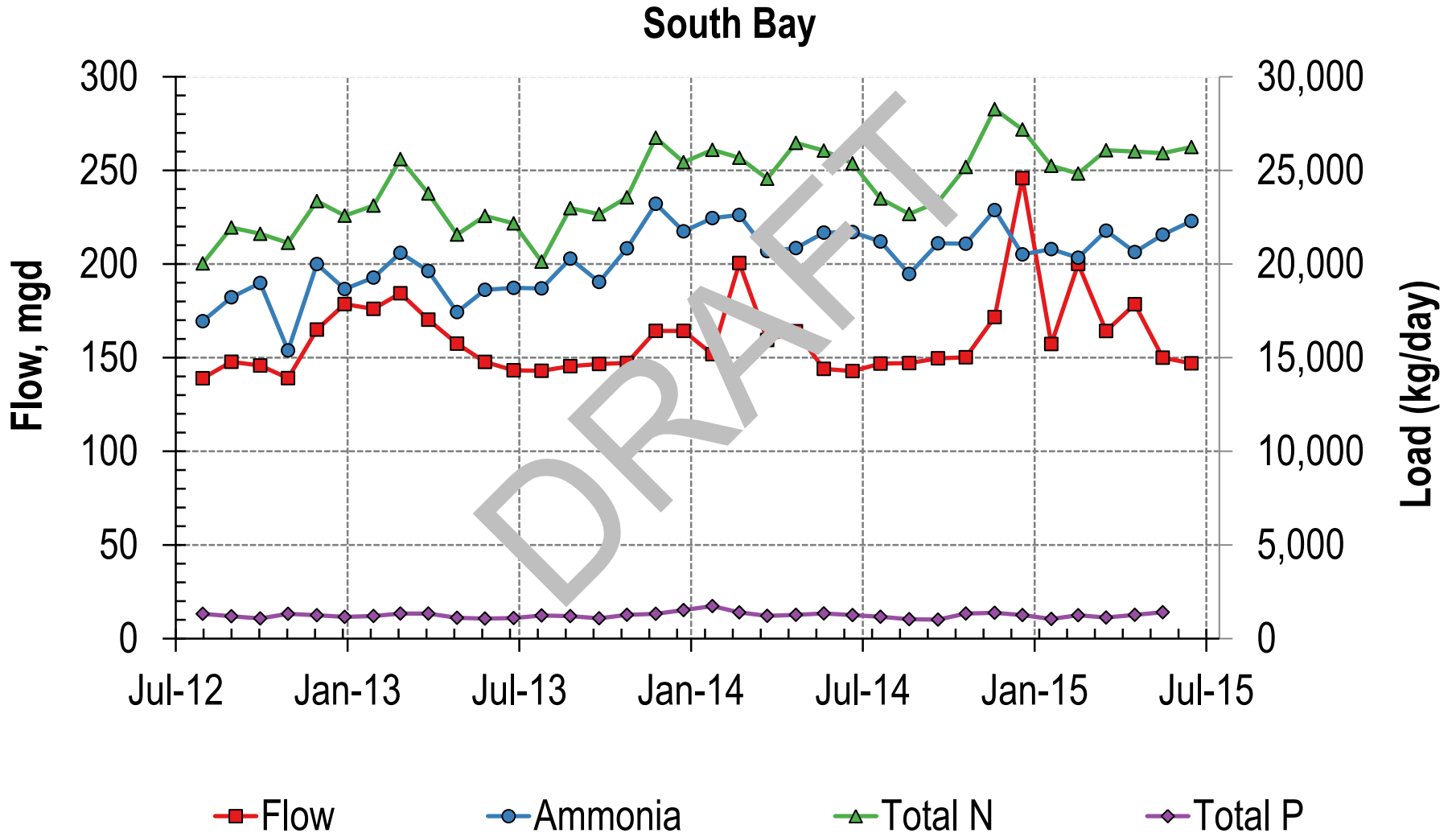
Central Bay



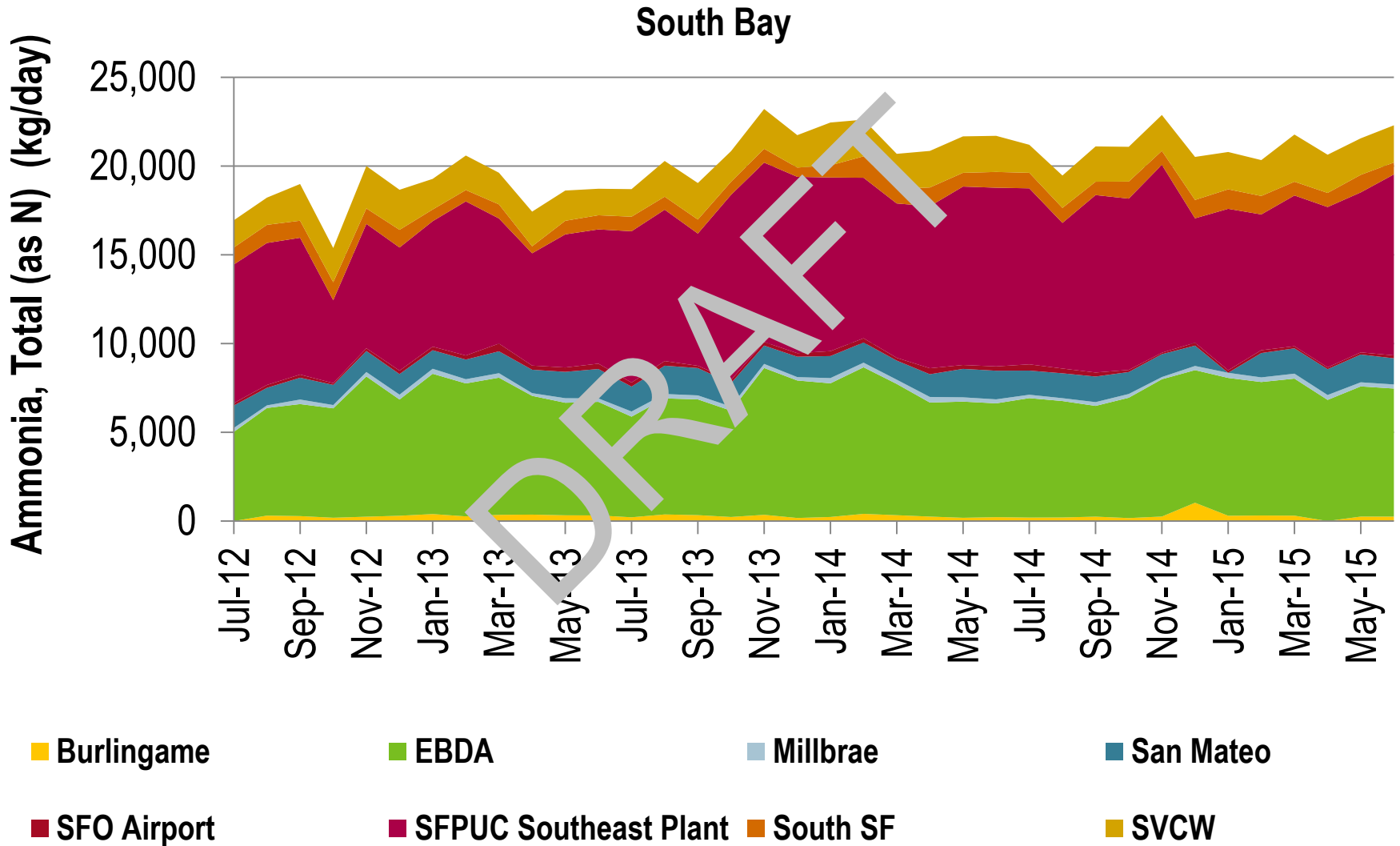
Preliminary Analysis by Subembayment (South Bay)

Year	Flow	Ammonia (kg N/d)	TKN (kg N/d)	NO5 (kg N/d)	Total N (kg N/d)	Ortho-P (kg P/d)	Total P (kg P/d)
2012 – 2013	157.8	18,500	20,400	2,100	22,500	1,020	1,200
2013 – 2014	156.1	21,100	22,500	2,200	24,600	1,090	1,310
2014 – 2015	168.2	21,300	23,200	2,200	25,500	1,610	1,220
% Decrease per Year	-3.2%	-6.9%	-6.4%	-2.3%	-6.2%	-23.8%	-0.8%
Trend	↑	↑	↑	↑	↑	↑	↑

Preliminary South Bay Results



Preliminary South Bay Results

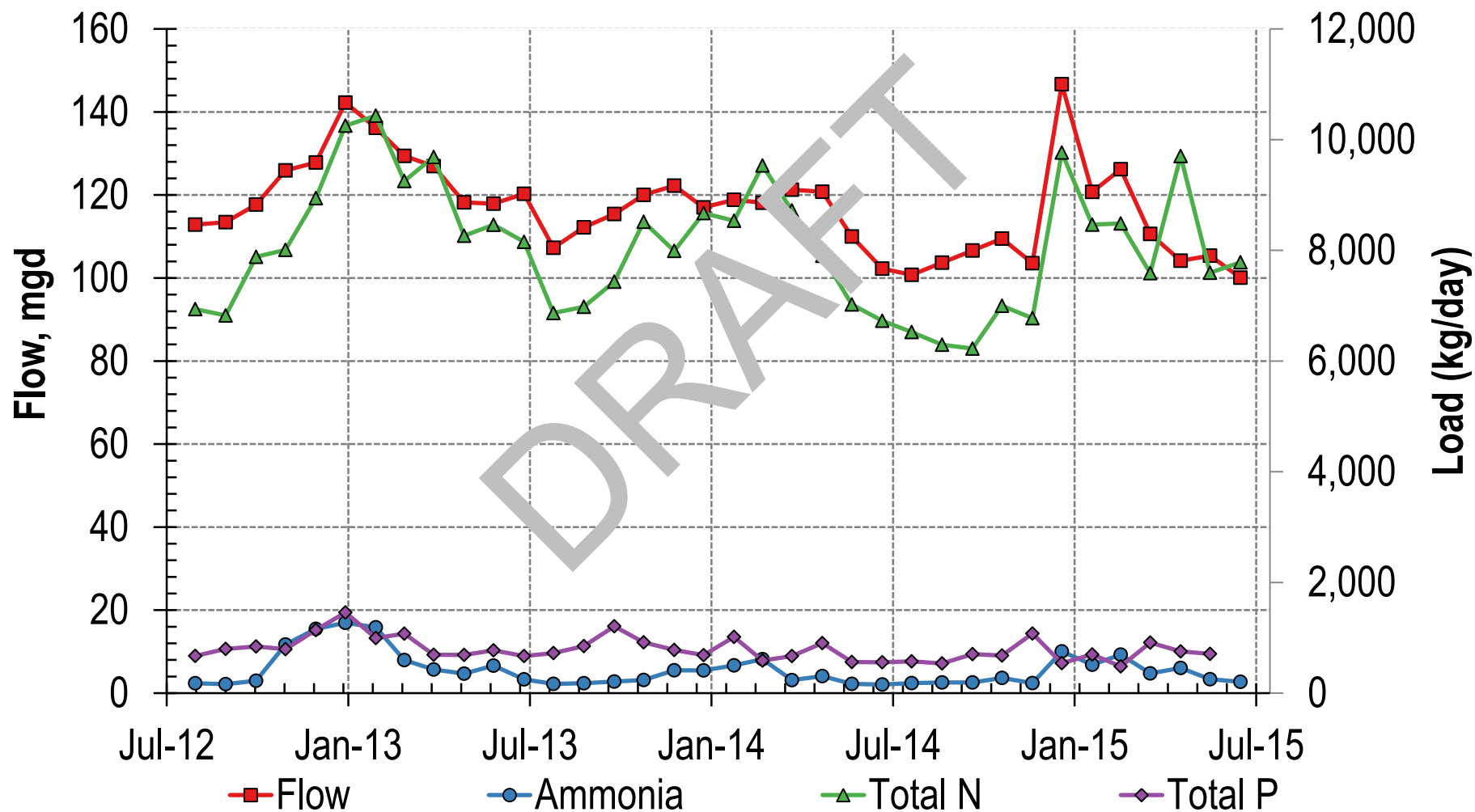


Preliminary Analysis by Subembayment (Lower South Bay)

Year	Flow	Ammonia (kg N/d)	TKN (kg N/d)	NO5 (kg N/d)	Total N (kg N/d)	Ortho-P (kg P/d)	Total P (kg P/d)
2012 – 2013	124.1	600	1,100	7,500	8,600	850	880
2013 – 2014	115.5	300	700	7,200	7,900	760	800
2014 – 2015	112.4	400	300	6,900	7,800	660	700
% Decrease per Year	5.0%	23.1%	17.3%	4.2%	4.9%	12.6%	11.3%
Trend	↓	↓	↓	↓	↓	↓	↓

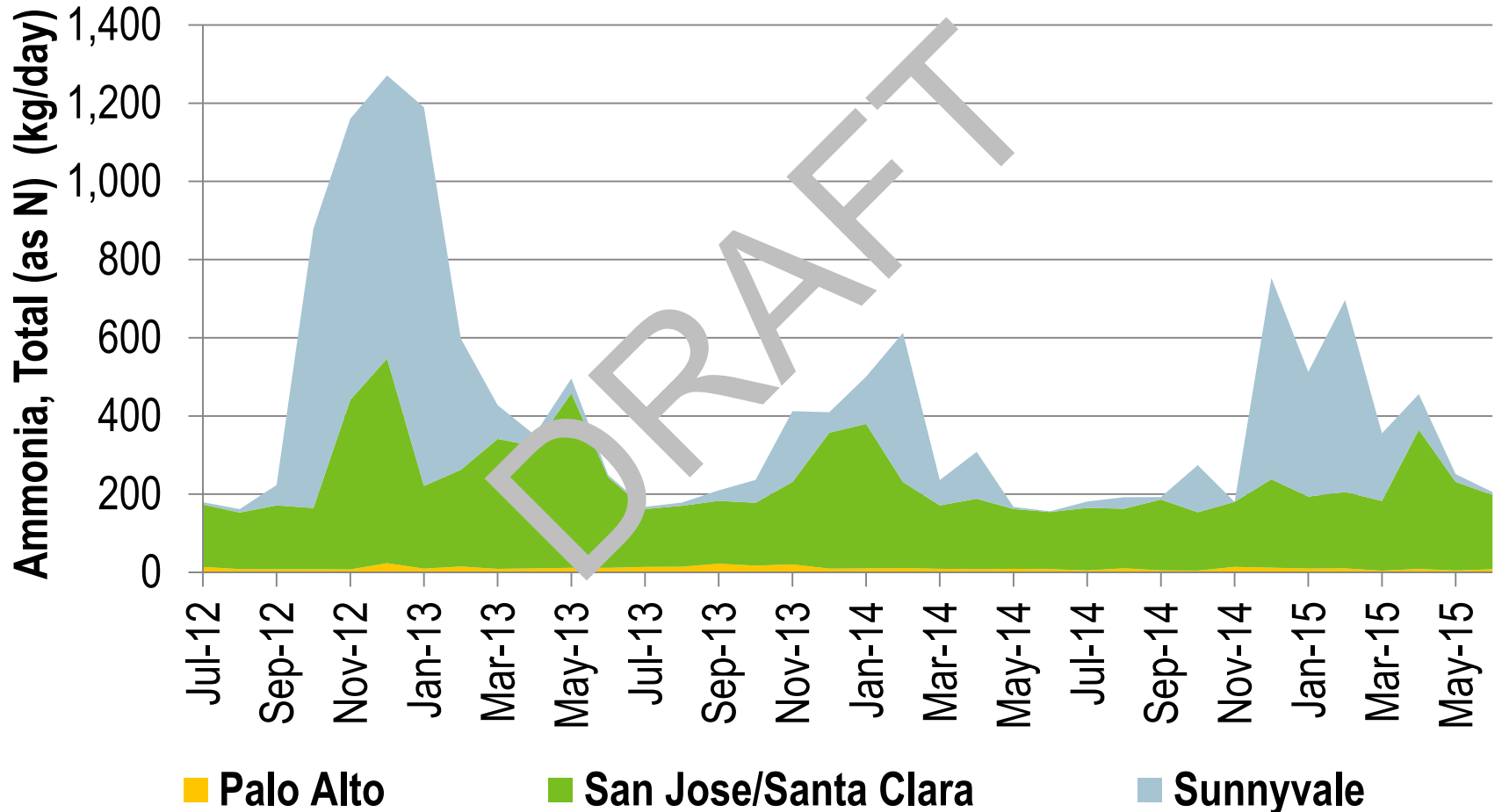
Preliminary Lower South Bay Results

Lower South Bay



Preliminary Lower South Bay Results

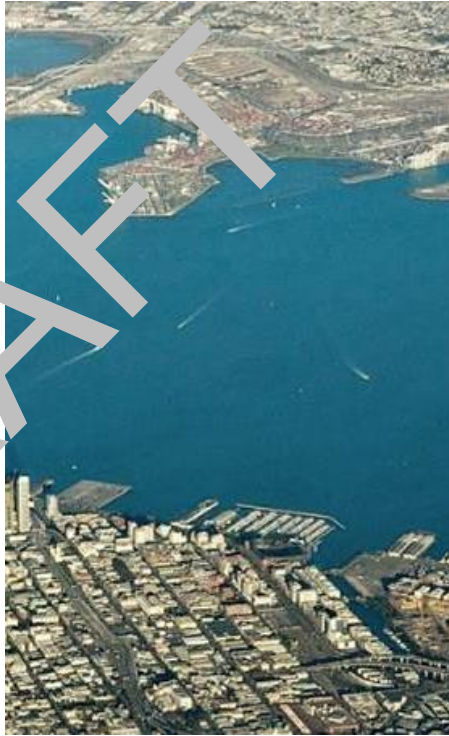
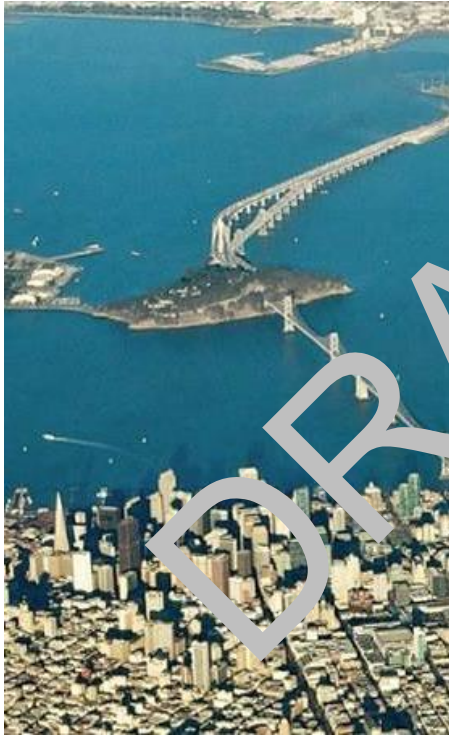
Lower South Bay



Preliminary Analysis (Total)

Year	Flow	Ammonia (kg N/d)	TKN (kg N/d)	NO5 (kg N/d)	Total N (kg N/d)	Ortho-P (kg P/d)	Total P (kg P/d)
2012 – 2013	452.9	33,700	38,200	14,900	53,000	3,520	3,930
2013 – 2014	435.8	36,600	40,500	14,500	55,000	3,260	3,780
2014 – 2015	437.7	37,300	41,500	13,200	55,000	3,450	3,520
	-7.6	1,000	1,650	-850	1000	-35	-205
% Decrease per Year	1.7%	-5.0%	-4.1%	6.0%	-1.8%	1.0%	5.5%
Trend	↓	↑	↑	↓	↑	↓	↓

Next Steps



Next Steps

- Sept 8 - 11, 2015: Send Compiled Data to Plants for Review
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