# Review of 2nd Administrative Draft of the 2nd Nutrient Watershed Permit

February 5, 2019

# BACWA Members Appreciate the SF Water Board

- Desire to have science provide the foundation for regulatory actions
- Interested in input from all stakeholders
- Open to considering all options that will achieve the desired outcomes
- Willing to eliminate repetitive low value requirements in favor of using limited public resources to pursue higher priorities
- Using regulatory discretion wisely
- Wkdqnv$

# Agenda

- Recognition of Early Actions
- Comparison of 95% UCL vs. Highest Year
- Calculation of Load Targets
  - Selection of Baseline for Current Performance
  - Case Studies demonstrating variability of TIN loadings
  - Rationale for using a slightly higher buffer
- Option for Commitment on Regional Study
- BACWA comments on 2nd AD
- Next Steps

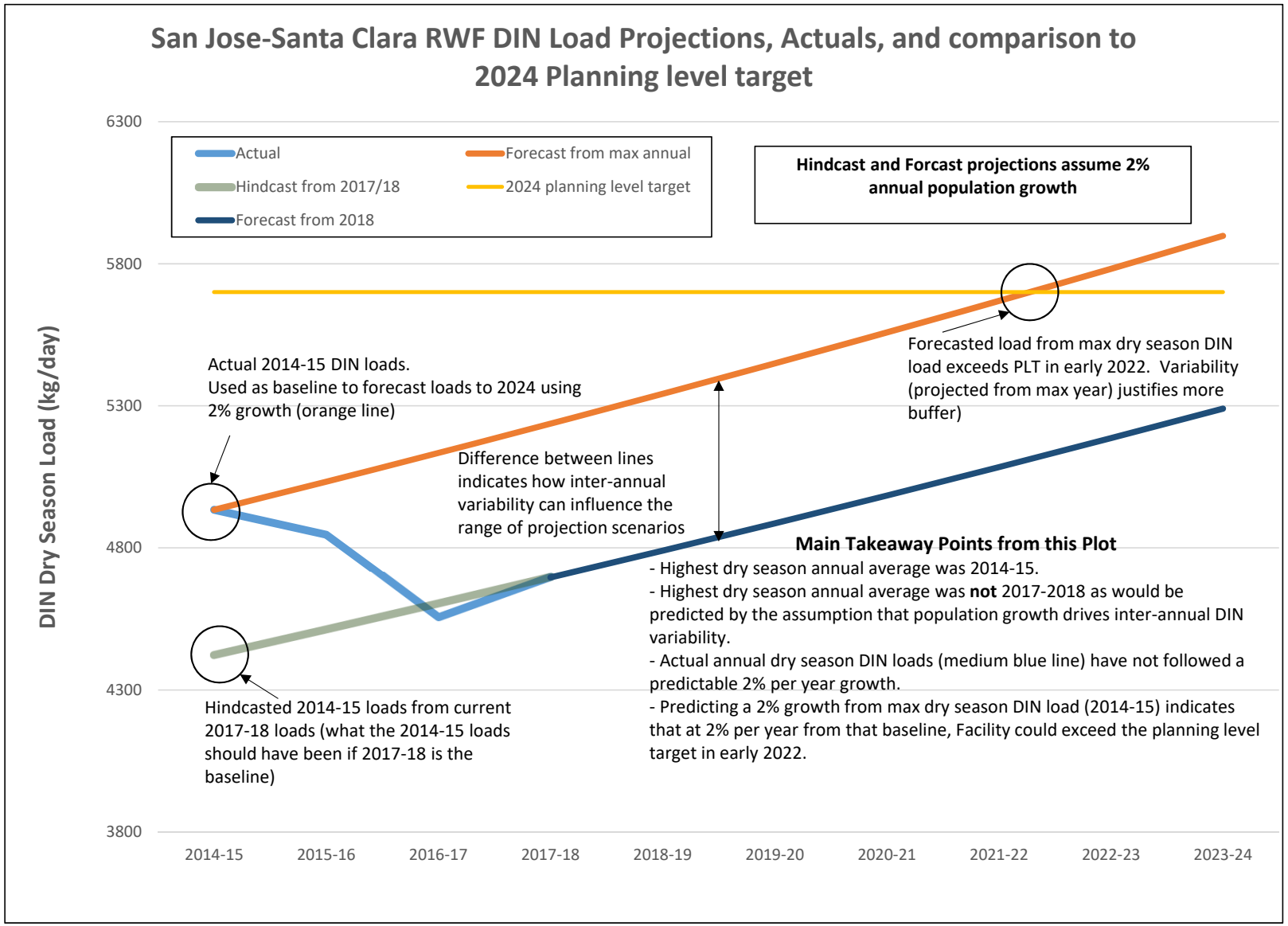
# Recognition of Early Actions

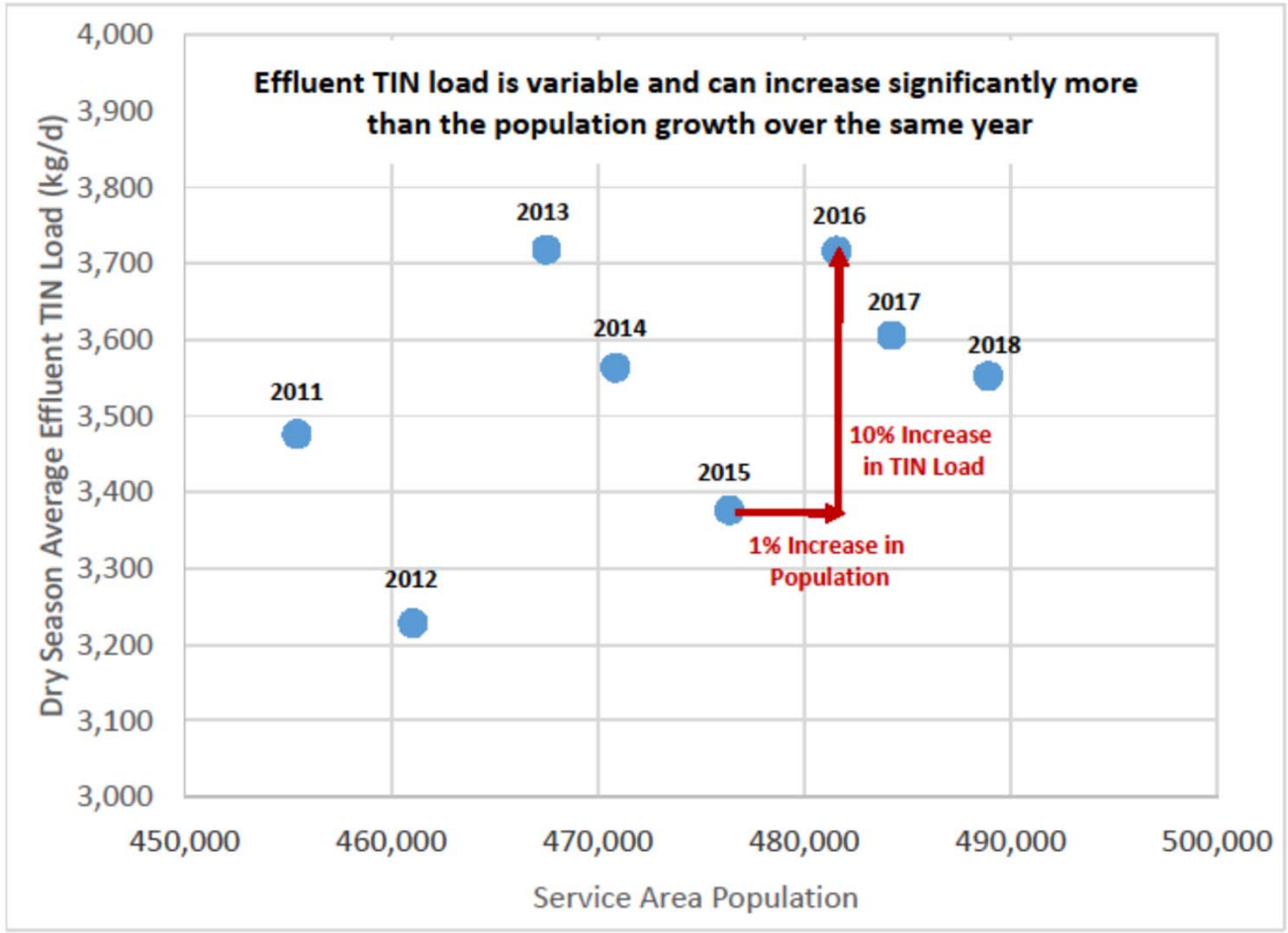
- 2nd AD identifies (Table F-6) dischargers that are committing to take early action
- Other dischargers may have plans to significantly reduce TIN by 2024 but the details of the plans are in the process of being finalized
- Add wording to AD to the effect that any POTW that significantly reduces TIN by 2024 will be deemed an early actor, not just the seven listed in Table F-6

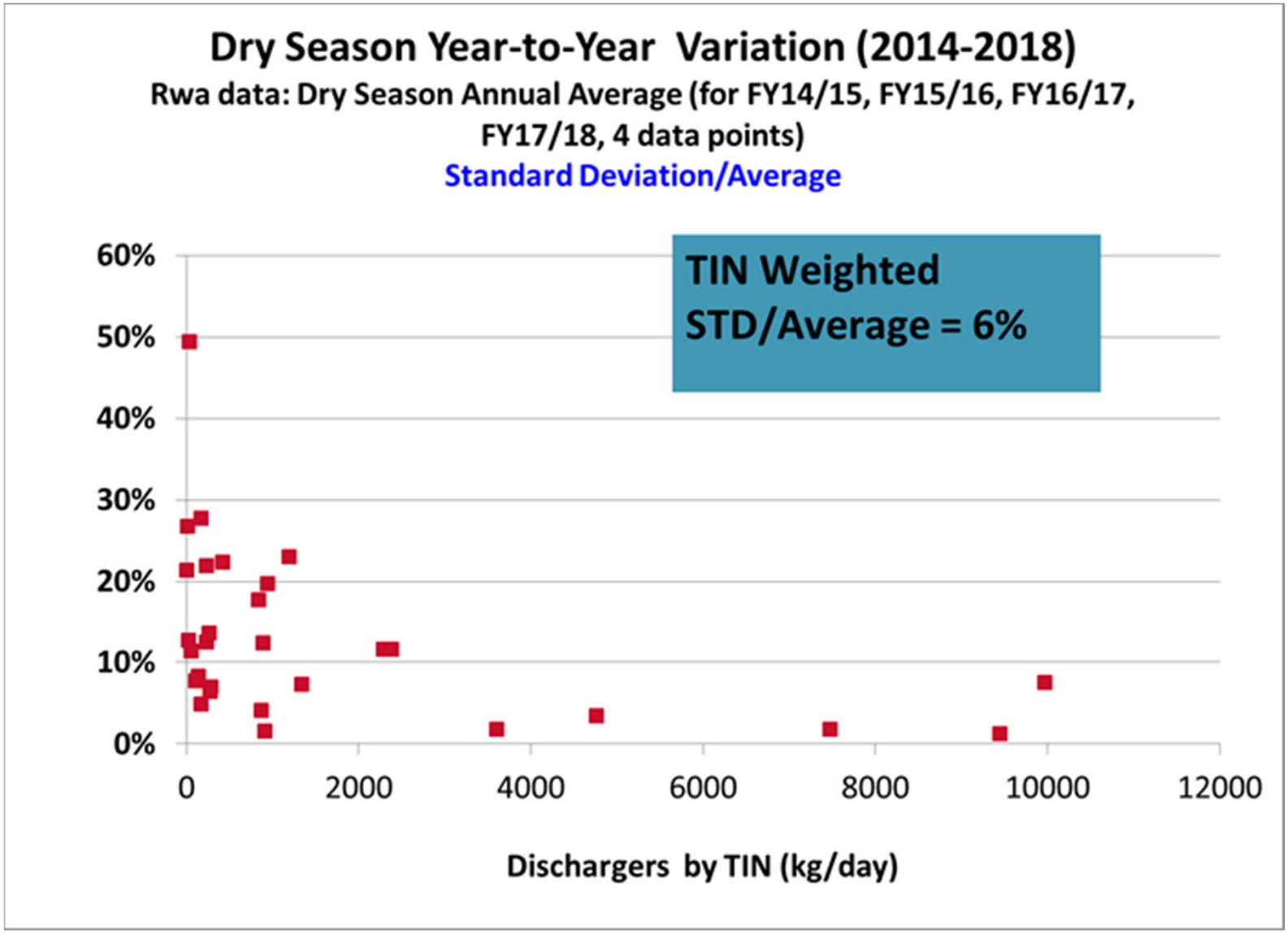
# Comparison of 95% UCL vs. Highest Year

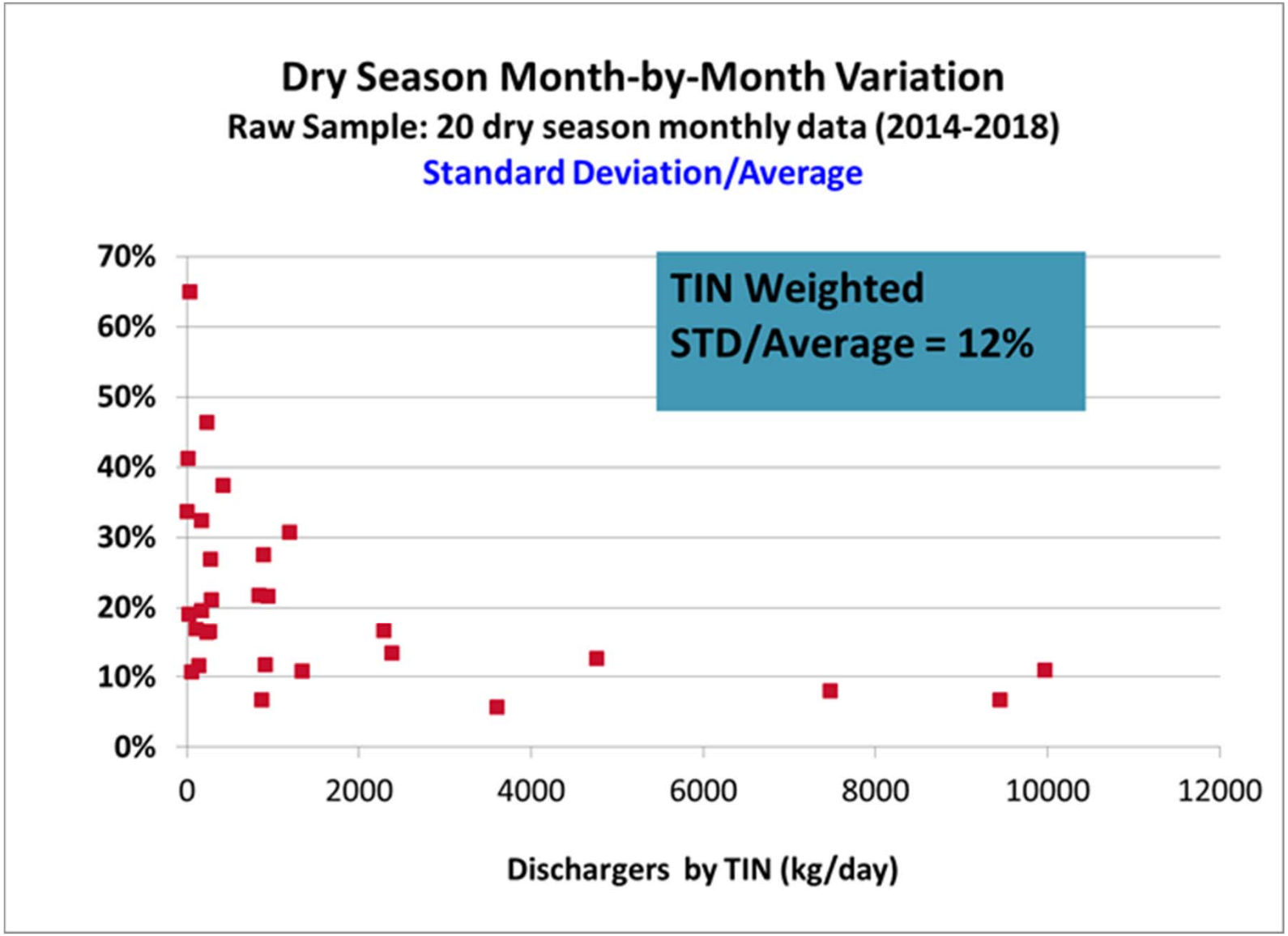
- Depending on the variability of dry season TIN during baseline years, a POTW could have a lower Current Performance than even their most recent loadings by use of mean UCL
- BACWA appreciates the WB switching to the highest baseline year for Current Performance
- Unintended consequences: a few POTWs were penalized by the switch which we don't believe was the intent
- BACWA understands the optics of limits to 2 significant figures for load caps, however rounding down had some significant impacts in some cases (see spreadsheet)
- Request use of the higher of mean UCL or Highest Year as Current Performance and only rounding up or no rounding

| Delta Diablo Historical Loads vs Population Growth | | | | | |
|---|---|---|---|---|---|
| Column1 | 2013/14 | 2014/15 | 2015/16 | 2016/17 | 2017/18 |
| Annual Avg TIN | | 1,473 | 1,310 | 1,340 | 1,555 |
| | | | -11.04% | 2.25% | 16.11% |
| Dry Season TIN | | 1,365 | 972 | 1,261 | 1,588 |
| | | | -28.79% | 29.74% | 25.88% |
| Population | 202,696 | 205,983 | 209,272 | 211,951 | 213,449 |
| % Growth | | 1.62% | 1.60% | 1.28% | 0.71% |


San Jose-Santa Clara RWF DIN Load Projections, Actuals, and comparison to 2024 Planning level target
DIN Dry Season Load (kg/day)
6300
5800
5300
4800
4300
3800
2014-15
2015-16
2016-17
2017-18
2018-19
2019-20
2020-21
2021-22
2022-23
2023-24
Actual
Forecast from max annual
Hindcast from 2017/18
2024 planning level target
Forecast from 2018
Hindcast and Forcast projections assume 2% annual population growth
Actual 2014-15 DIN loads.
Used as baseline to forecast loads to 2024 using 2% growth (orange line)
Forecasted load from max dry season DIN load exceeds PLT in early 2022. Variability (projected from max year) justifies more buffer)
Difference between lines indicates how inter-annual variability can influence the range of projection scenarios
Main Takeaway Points from this Plot
- Highest dry season annual average was 2014-15.
- Highest dry season annual average was not 2017-2018 as would be predicted by the assumption that population growth drives inter-annual DIN variability.
- Actual annual dry season DIN loads (medium blue line) have not followed a predictable 2% per year growth.
- Predicting a 2% growth from max dry season DIN load (2014-15) indicates that at 2% per year from that baseline, Facility could exceed the planning level target in early 2022.
Hindcasted 2014-15 loads from current 2017-18 loads (what the 2014-15 loads should have been if 2017-18 is the baseline)


Effluent TIN load is variable and can increase significantly more than the population growth over the same year
Dry Season Average Effluent TIN Load (kg/d)
4,000
3,900
3,800
3,700
3,600
3,500
3,400
3,300
3,200
3,100
3,000
450,000
460,000
470,000
480,000
490,000
500,000
Service Area Population
2011
2012
2013
2014
2015
2016
2017
2018
10% Increase in TIN Load
1% Increase in Population


Dry Season Year-to-Year Variation (2014-2018)
Rwa data: Dry Season Annual Average (for FY14/15, FY15/16, FY16/17, FY17/18, 4 data points)
Standard Deviation/Average
TIN Weighted STD/Average = 6%
60%
50%
40%
30%
20%
10%
0%
0
2000
4000
6000
8000
10000
12000
Dischargers by TIN (kg/day)


Dry Season Month-by-Month Variation
Raw Sample: 20 dry season monthly data (2014-2018)
Standard Deviation/Average
TIN Weighted
STD/Average = 12%
70%
60%
50%
40%
30%
20%
10%
0%
0
2000
4000
6000
8000
10000
12000
Dischargers by TIN (kg/day)

# Conclusion from Case Studies

- On a regional, long term basis (e.g. 20 years) you would expect strong correlation between increasing nitrogen loads and Bay Area population

- On a shorter term, individual plant basis, there is demonstrated poor correlation between nitrogen loads and population growth within the service area

# Options for Addressing Variability Not tied to Growth

- Adjust baseline to reflect variability
- Increase the buffer

# Rationale for Use of Larger Buffer

- Variation in dry weather loads can be significant and not tied to population, makes it difficult for planning
- With many demands for limited resources and no major plant renovation on the horizon, POTWs will plan prudently but shouldn't be blind-sided by unexpected variability independent of growth
- A higher buffer would serve to provide a bit more cushion to avoid compliance jeopardy without materially impacting prudent planning
- From a mass balance perspective, Regional San's load reductions (~15%) coupled with early actor load reductions (~7%, see attachment) could provide a rationale for a 20% buffer while still maintaining the status quo by 2024 (i.e. no imminent danger of impairment, no toxin outbreaks, no eutrophication) but with **significant advancement across the region** on the plans to implement reductions

# Regional Study

- AD sets forth the same approach as used for Optimization/Upgrade Study
- Problematic for BACWA as it forces a very narrowly scoped effort w/o the benefit of synergies gained by participating in the broader and better funded SFEI Operational Landscape Units
- Understand the WB's need for a well thought out scope of work and on-going commitment from BACWA
- BACWA could commit to $500k funding, convening stakeholders to develop and produce a Scope of Work with desired schedule and budget (by end of 2019), and on-going participation in the governance of the effort to help ensure completion of Scope and deliverables

# Next Steps

- Some agencies may be contacting WB with specific issues to clarify that pertain only to their plant
- BACWA has set up another Google doc for member input/redlines
- BACWA will provide additional comments (few expected) to the WB by middle of next week