Public Utilities

NPDES Permit Reissuance and Decision for a Variance from Secondary Treatment Requirements

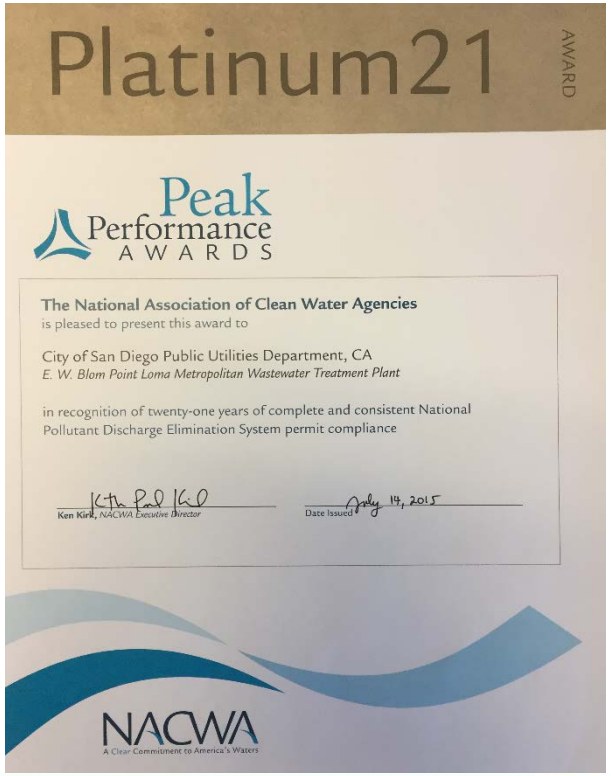
The City of SAN DIEGO

City of San Diego Presenters

- Halla Razak, Director of Public Utilities
  - Compliance
  - Modified Permit
  - Pure Water San Diego
- Timothy D. Stebbins, Ph.D., Sr. Marine Biologist
  - Ocean Monitoring Program

Protecting our Environment through Compliance

- Recognized for high-level of consistent NPDES permit compliance
- Discharge meets all water quality requirements
- Warrants approval of the tentative order and decision


Platinum21 AWARD

Peak Performance AWARDS

The National Association of Clean Water Agencies
is pleased to present this award to

City of San Diego Public Utilities Department, CA
E. W. Blom Point Loma Metropolitan Wastewater Treatment Plant

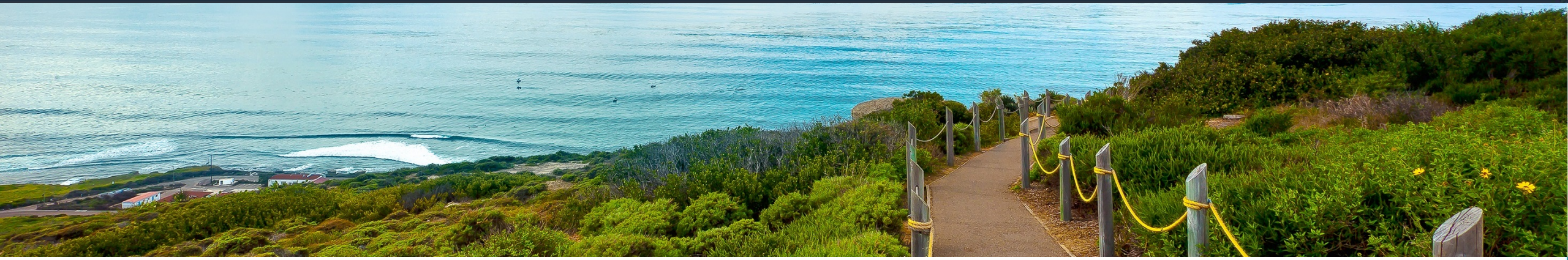
in recognition of twenty-one years of complete and consistent National Pollutant Discharge Elimination System permit compliance

Ken Kirk, NACWA Executive Director

Date Issued: April 14, 2015

NACWA
A Clear Commitment to America's Waters

Ocean Discharges



Ocean Discharge Reduction

2016

~23%

Due to Water Conservation & Recycled Water

2035

~68%

Due to Pure Water, Water Conservation & Recycled Water

Wastewater Planning

- Issuance of modified permit is central to wastewater planning
- Allows investments in treatment improvements and new technologies
- Pure Water San Diego is major advancement for the region

Pure Water San Diego will Provide a:

- Safe
- Reliable
- Cost-effective

Water Supply through Potable Reuse

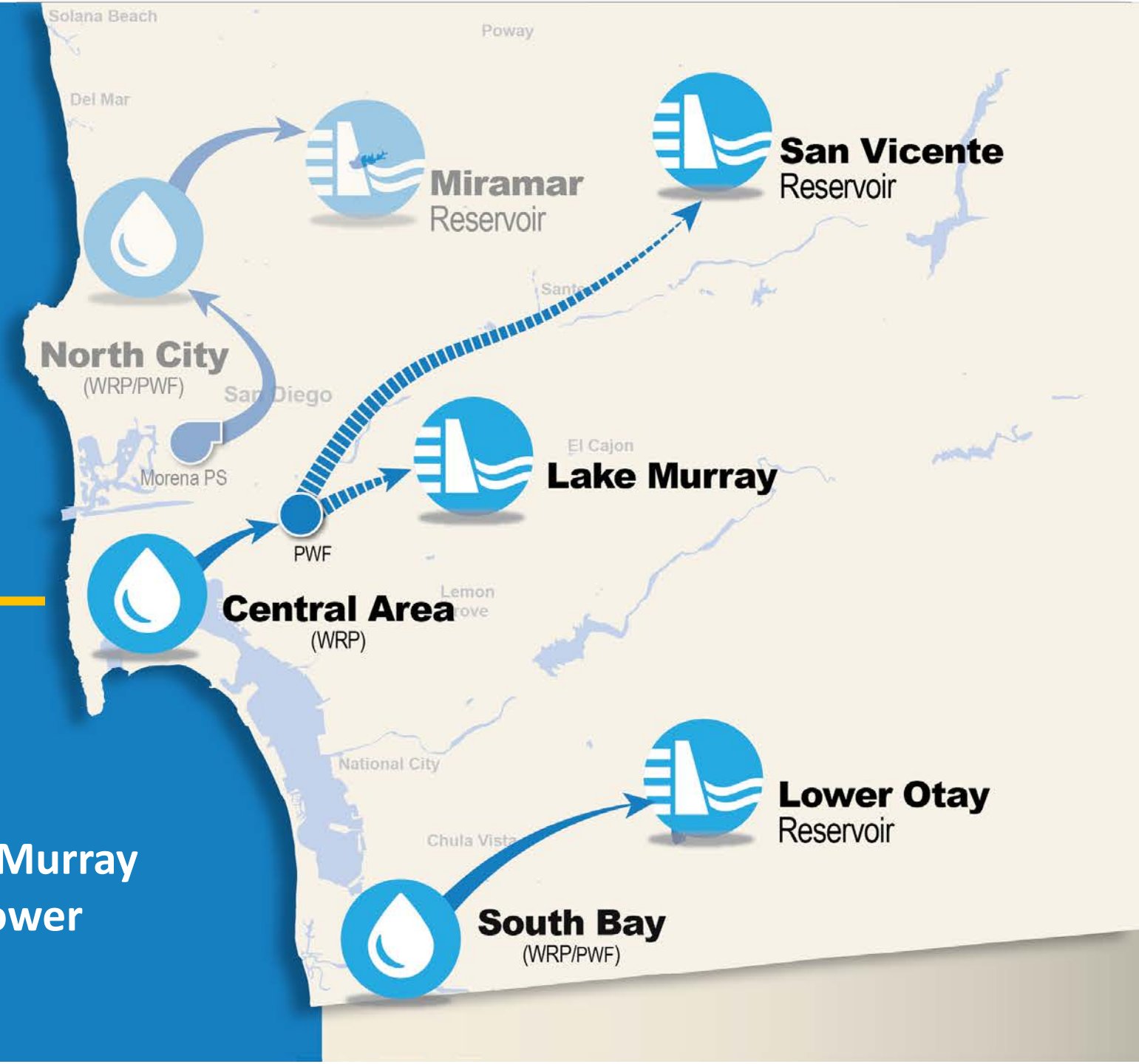
Pure Water
will produce

1/3

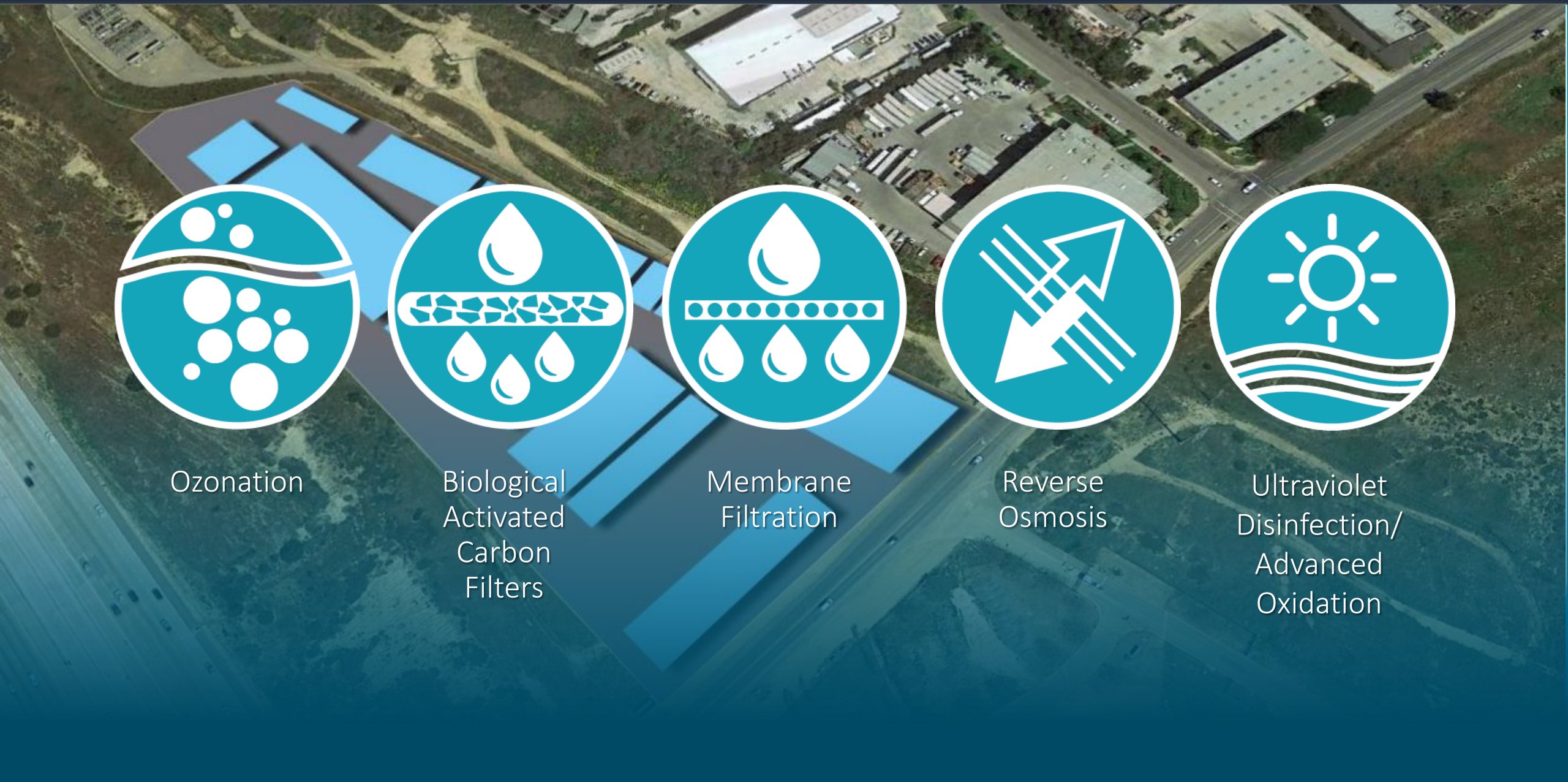
of your water
locally

Phases 2 & 3

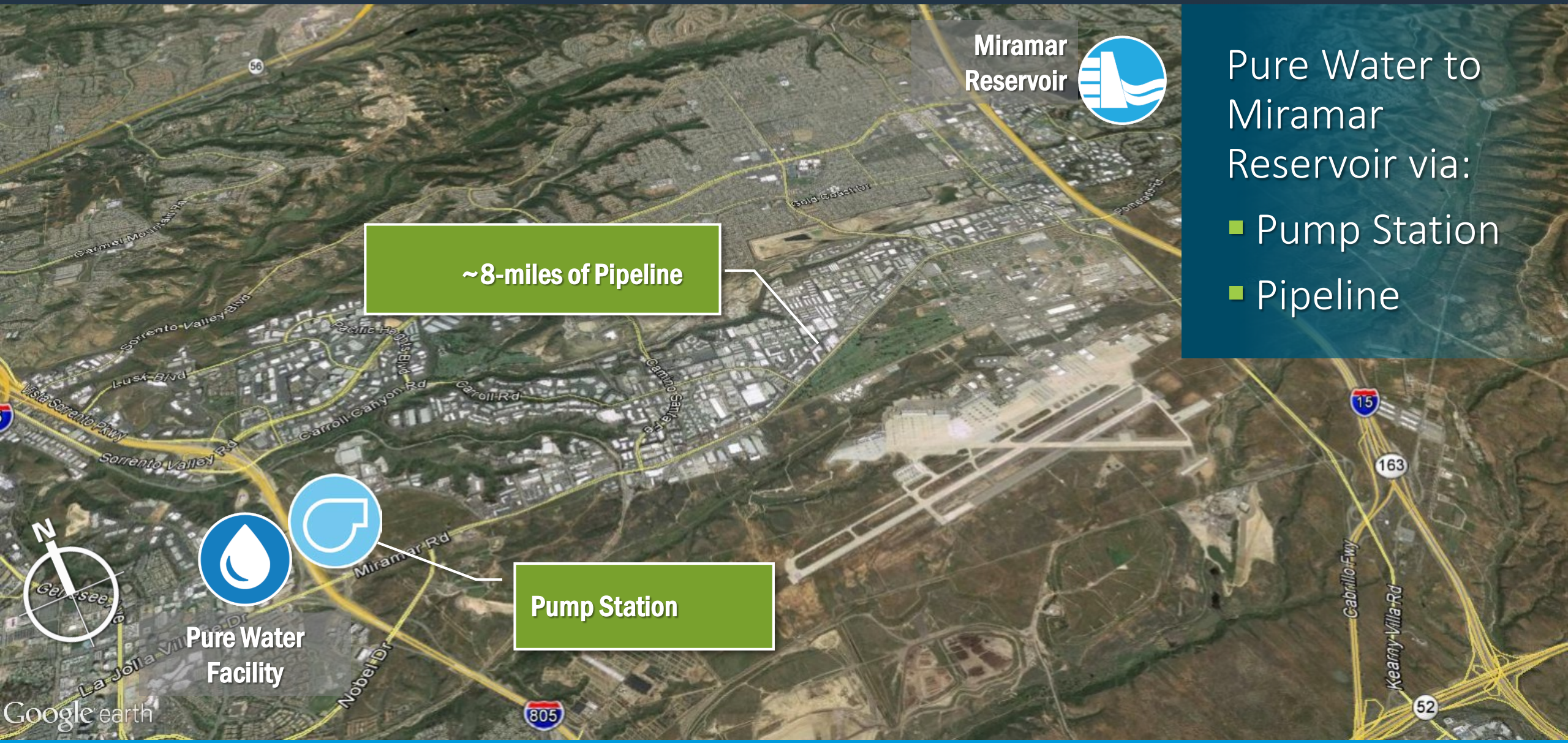
- **2035 Completion**
- **53 mgd**
- **Central Area PWF to San Vicente or Lake Murray**
- **South Bay PWF to Lower Otay Reservoir**



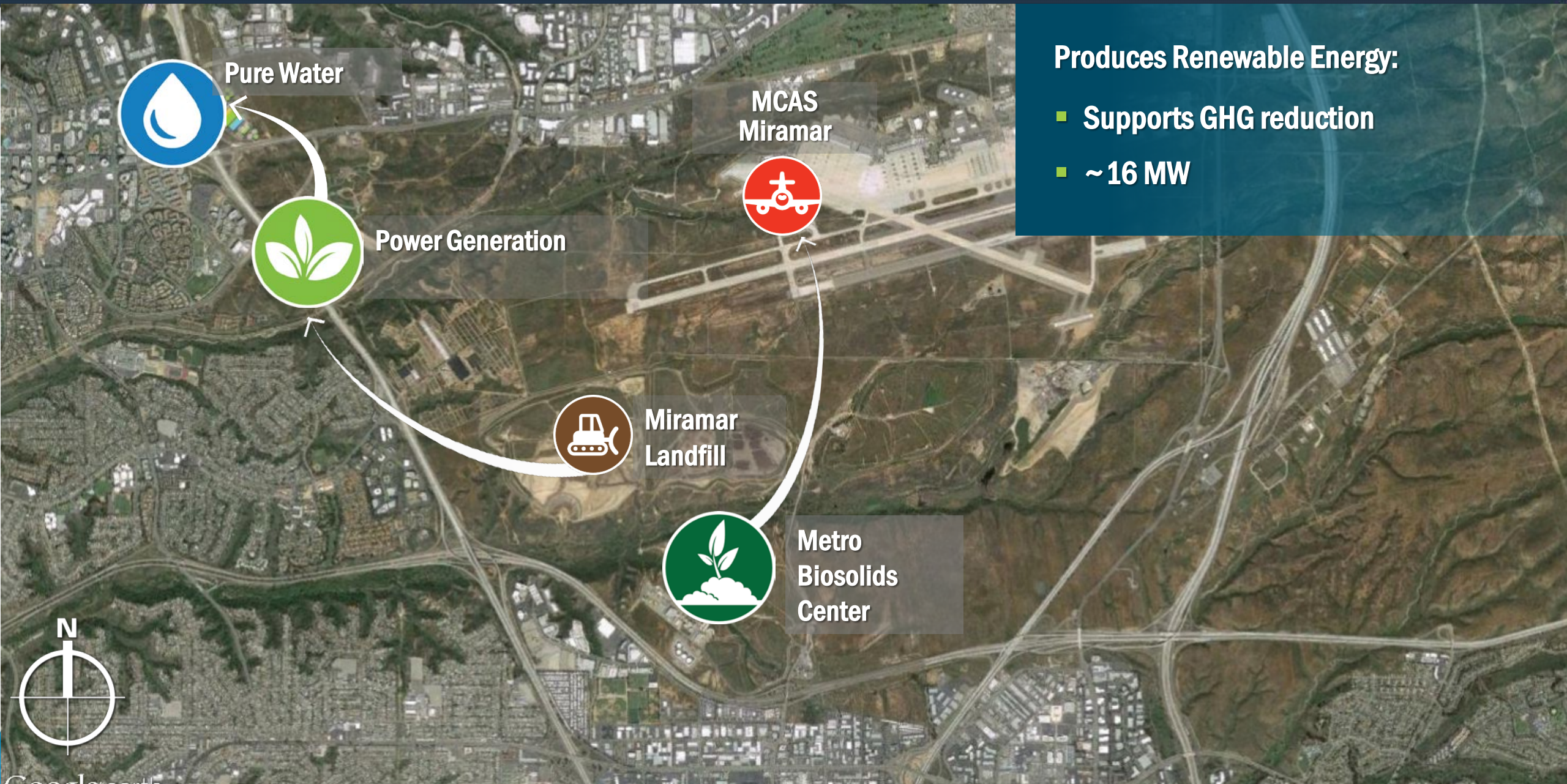
North City Pure Water Facility



Pure Water San Diego - Phase 1



North City Power Generation Facilities Expansion



Produces Renewable Energy:

- Supports GHG reduction
- ~16 MW

Point Loma NPDES Permit

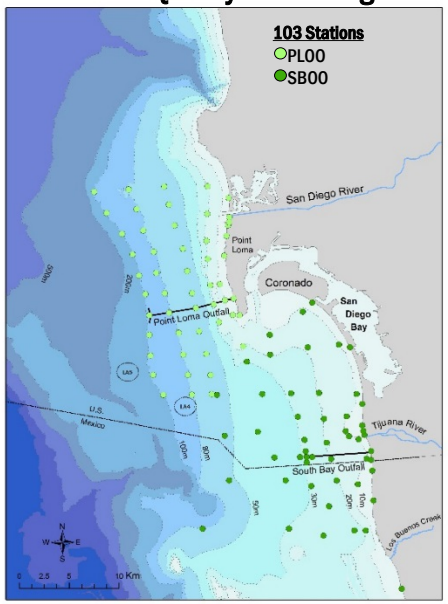
- Today's action pertains only to Pt. Loma permit
  - Recognizes Pure Water San Diego is vital and necessary
  - Relies upon comprehensive ocean monitoring program to ensure permit compliance
    - No significant impacts to ocean environment
    - Independent verification from prestigious scientists

SCRIPPS INSTITUTION OF OCEANOGRAPHY UCSD

Ocean Monitoring

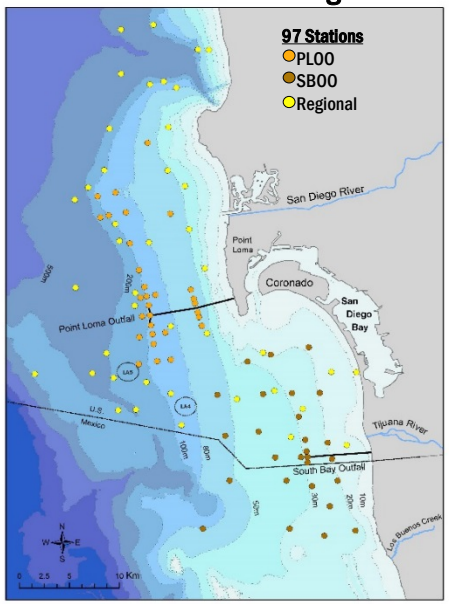
- **Two separate programs governed by three NPDES permits**
  - Point Loma and South Bay outfall programs (PLWTP, SBWRP, and SBIWTP permits)
  - Combined = one of largest, most comprehensive programs of its kind
  - San Diego to northern Baja California, beaches to offshore depths ≥ 500 m

Water Quality Monitoring



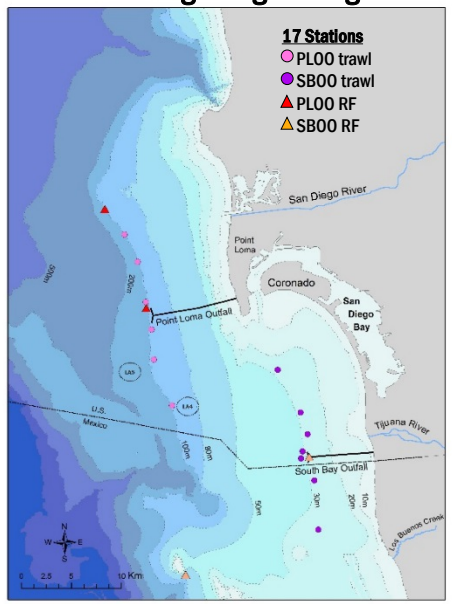
Fecal Indicator Bacteria
Oceanographic Conditions

Benthic Monitoring



Sediment Quality
Benthic Infaunal Communities

Trawling & Rig Fishing



Fish & Invertebrate Communities
Contaminant Bioaccumulation in Fishes

Total area ~340 mi²

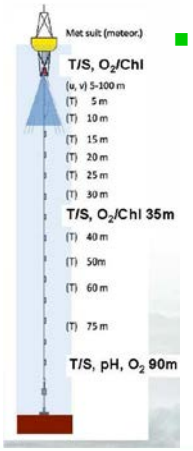
Sampling >200 days/year

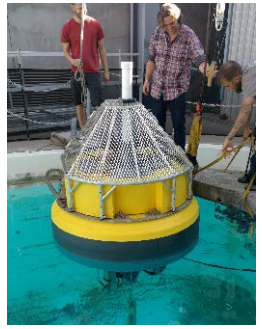
Key Changes and Enhancements

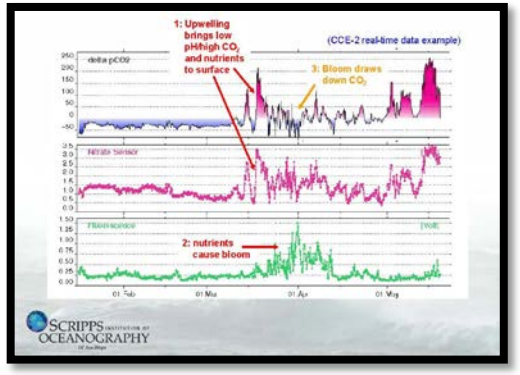
- **Improved Regional Perspective**
  - New permit completes ~15 year process aligning PLOO and SBOO programs, consistent with San Diego Water Board's framework for monitoring and assessment
  - Development of Integrated Monitoring & Assessment Reports
- **Improved Water Quality Monitoring**
  - Development & implementation of advanced Plume Tracking Monitoring Plan
  - Real-time Ocean Observing System / Remotely Operated Towed Vehicle
- **Improved Sediment Quality Monitoring**
  - New sediment toxicity testing requirement
  - Inclusion of random "regional" benthic sampling (linked to SBOO program)
- **Continued Long-term Enhanced Monitoring**
  - San Diego Kelp Forest Ecosystem Monitoring Project
  - Coastal Remote Sensing of the San Diego/Tijuana Region

Real-Time Ocean Observing System

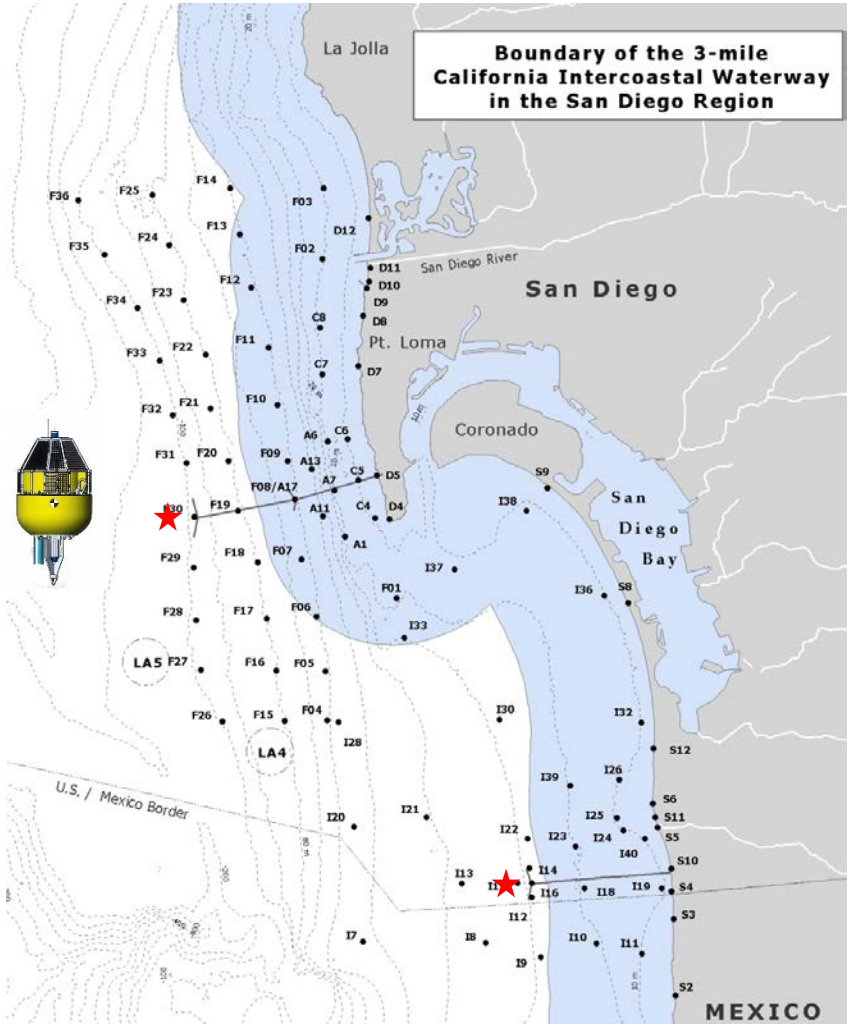
- **New real-time moorings**
  - Collaboration underway with Scripps Institution of Oceanography
  - New PLOO & SBOO moorings ★
  - Augment SIO's existing Del Mar system ✦
- **Improved monitoring**
  - Plume dispersion & behavior
  - Ocean current patterns
  - Climate change effects
  - Other emerging issues





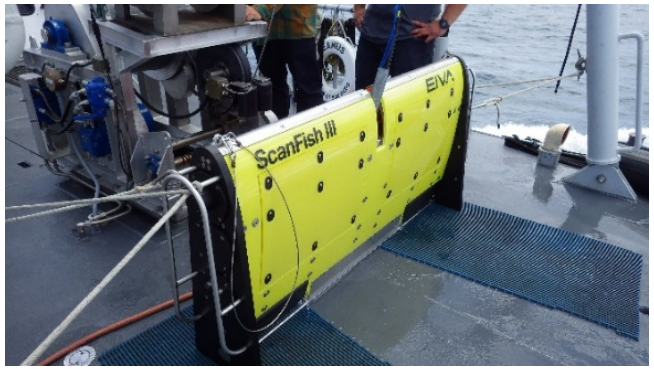


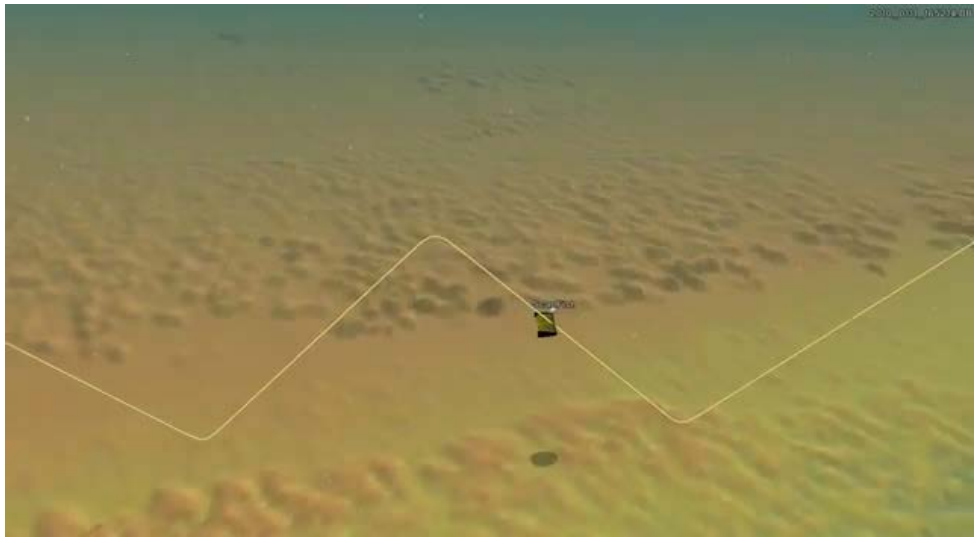
✦ Del Mar Buoy

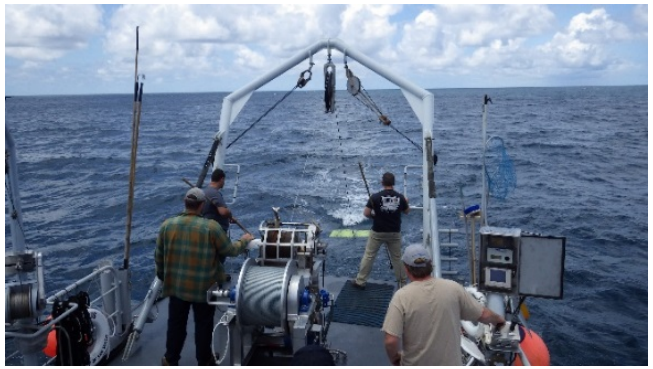


Remotely Operated Towed Vehicle

- **New ROTV for improved water quality monitoring**
  - Computer controlled “wing” that can be programmed to undulate through the water column while being towed
  - Transmits continuous streams of data to augment real-time moorings
  - Provides higher resolution data for improved plume modeling
  - Allows more adaptive plume tracking & dispersion
  - Can capture events often missed during traditional sampling







ScanFish ROTV training and testing for City of San Diego Ocean Monitoring Program scientists.

Kelp Forest Ecosystem Monitoring

- **Long-term studies of San Diego's kelp forests**
  - Enhanced monitoring of critical nearshore habitats
  - Core program conducted by SIO since ~1971, and linked to earlier studies from the 1950s
  - Funded by the City since early 1990s
- **Study areas**
  - Large Pt Loma and La Jolla kelp forests
  - Smaller kelp beds of San Diego County
- **Main components**
  - Kelp habitat & Sea urchin monitoring
  - Kelp forest fish and invertebrate populations
  - Physical oceanographic measurements

Remote Sensing of San Diego Coastal Region

- Detecting “plume” sources and dispersion
  - Enhanced monitoring of the South Bay and Pt Loma outfall regions
  - Funded by City and USIBWC, and conducted by Ocean Imaging, Inc. since 2002
  - Satellite and aerial imagery (~2-500 m resolution)

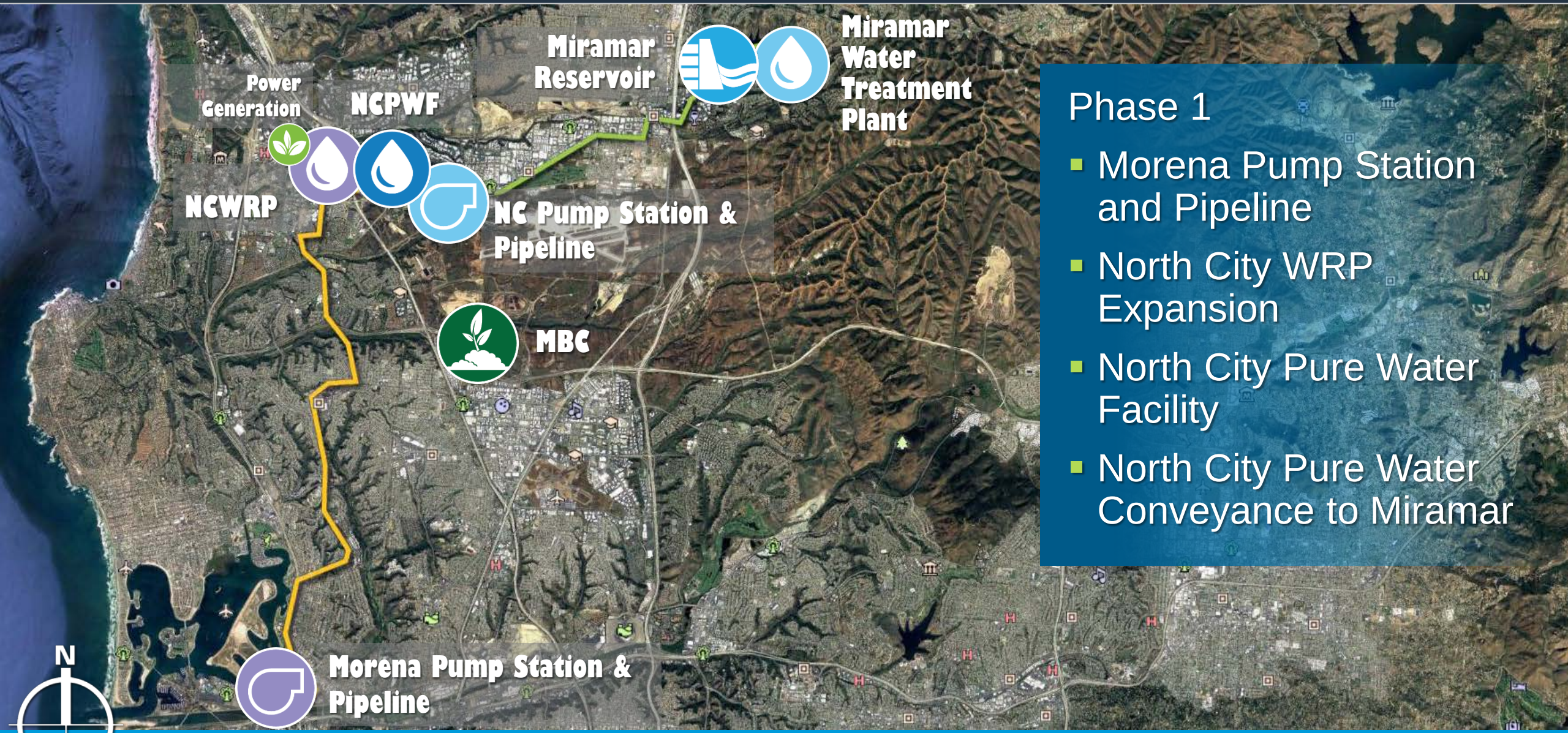
Who Supports Pure Water?

Questions

Halla Razak
Director of Public Utilities

Tim Stebbins
Senior Marine Biologist

Pure Water San Diego - Phase 1 Projects



Phase 1

- Morena Pump Station and Pipeline
- North City WRP Expansion
- North City Pure Water Facility
- North City Pure Water Conveyance to Miramar