



State Board Desalination Workshop
Moss Landing, CA
January 30, 2013

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Topics for the Expert Panel



1. Intake Entrainment
2. Diffuser Entrainment
3. Mitigation Fee Assessment
4. Brine Discharge Considerations

1. Intake Entrainment



- Continue to endorse the “Adult Equivalent Life” approach for Entrainment Mortality
- Safeguard marine populations by protecting adults, juveniles and mature larvae

2. Diffuser Entrainment



- Assess the mortality due to diffuser entrainment
- Evaluate the diffuser entrainment mortality using the “Adult Equivalent Life” approach



3. Mitigation Fee Assessment

- Standardized approach to the mitigation fee structure
- Seek consensus from regulatory bodies
- Fee should be based on the Area of Production Foregone
- Mitigation fee should have a direct nexus for a specific project



4. Brine Discharge Considerations

- All projects should be assessed from a site specific perspective
- Impact assessments should be placed on benthic organisms while organisms in the water-column are unaffected by the hyper-saline plume



West Basin's Intake Effects Assessment Study

Intake Effects Assessment Study

Timeline



January 2011	Sampling and implementation plan finalized
March 2011	Start of biweekly intake and monthly source water sampling
March 2011	Final monthly source water survey
July 2012	Attempt at special study – postponed due to low larvae abundance
August - September 2012	Tracking larvae abundances for the special study
December 2012 - Present	Tracking larvae abundances
Present – March 2013	High larvae abundance sampling to occur
June 2013	Final Report

Intak



Pointer 33°50'53.8

Google™
e all 4383 ft

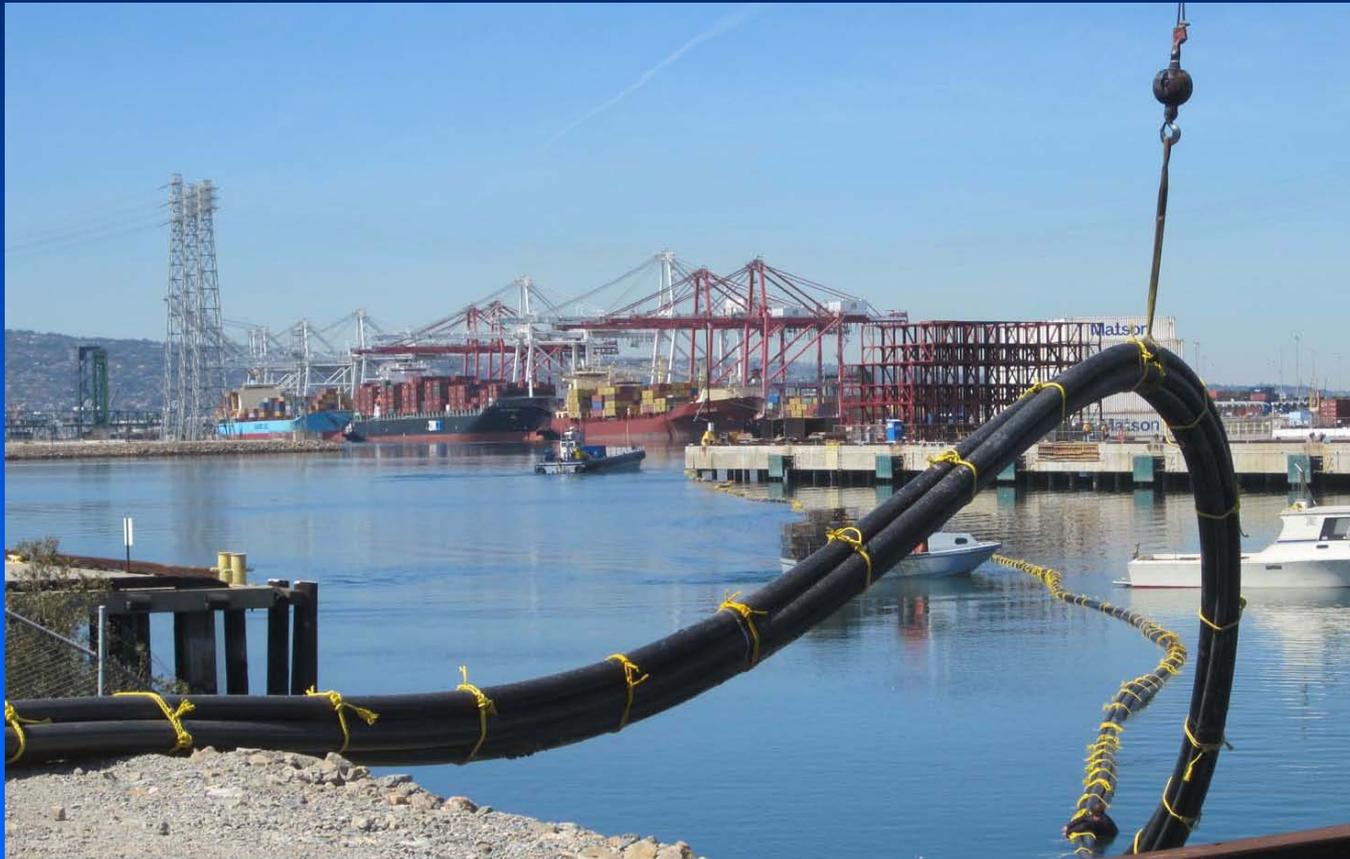
Intake Piping Installation



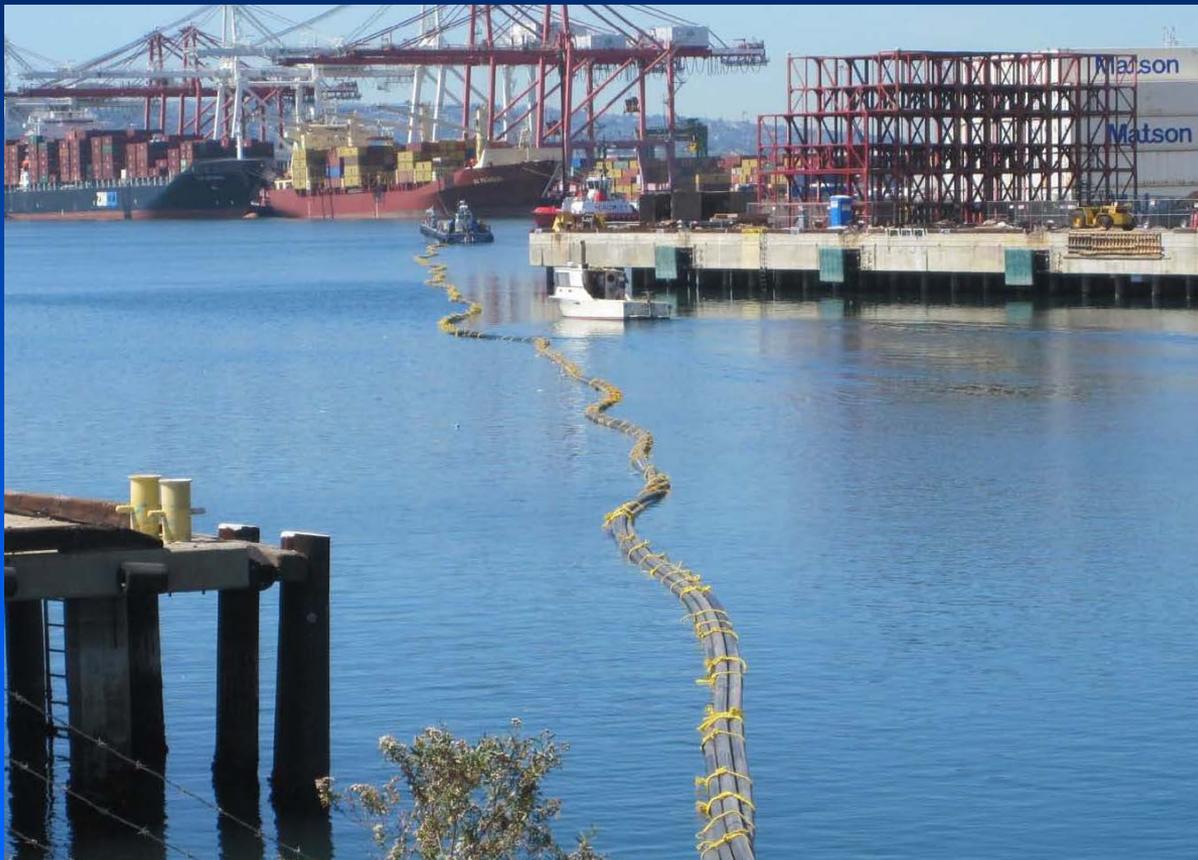
Intake Piping Installation



Intake Piping Installation



Intake Piping Installation



Intake Piping Installation



Intake Piping Installation



Intake Effects Assessment Study



Lessons Learned to Date

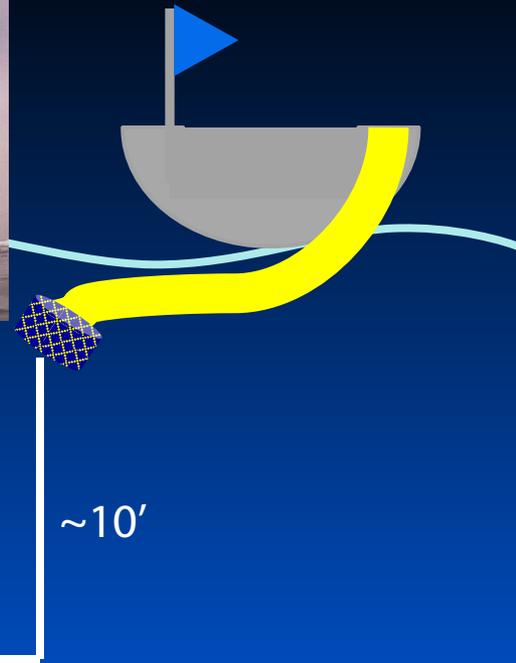
1. No impingement
2. Life stages of larvae dictate entrainment efficiency
3. Be scientific with metallurgy
4. Consider unique marine environment in structural design
5. Wedge wire does NOT foul



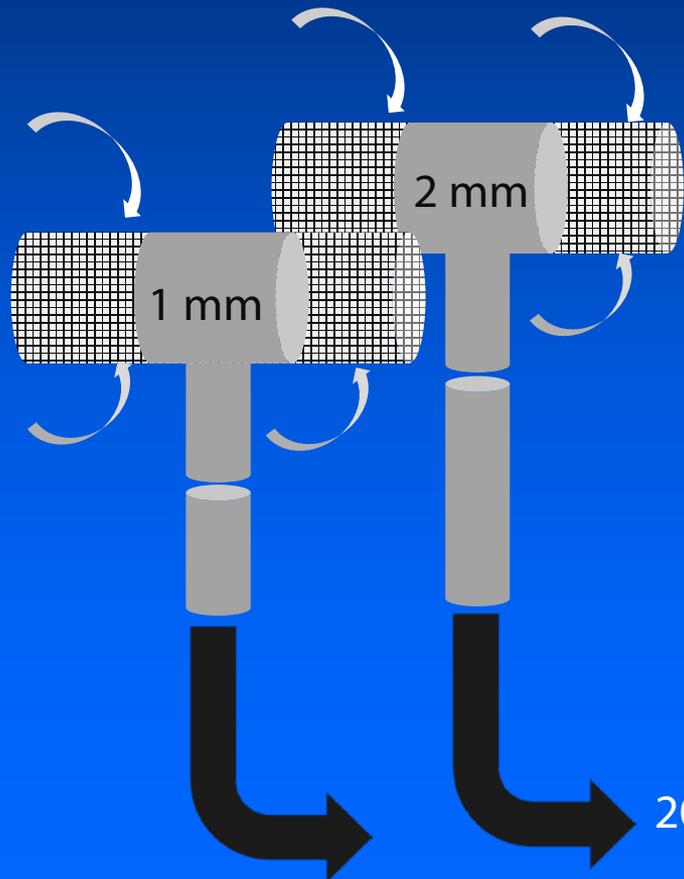
Initial Sampling Procedures

- Reasons to Modify Procedure
 - Verify clean intake lines for no predation
 - Sampling height in the water column
 - Drifting “open intake”
 - Lack of larvae abundance

West Basin's Initial Sampling Procedures



~10'



~30'

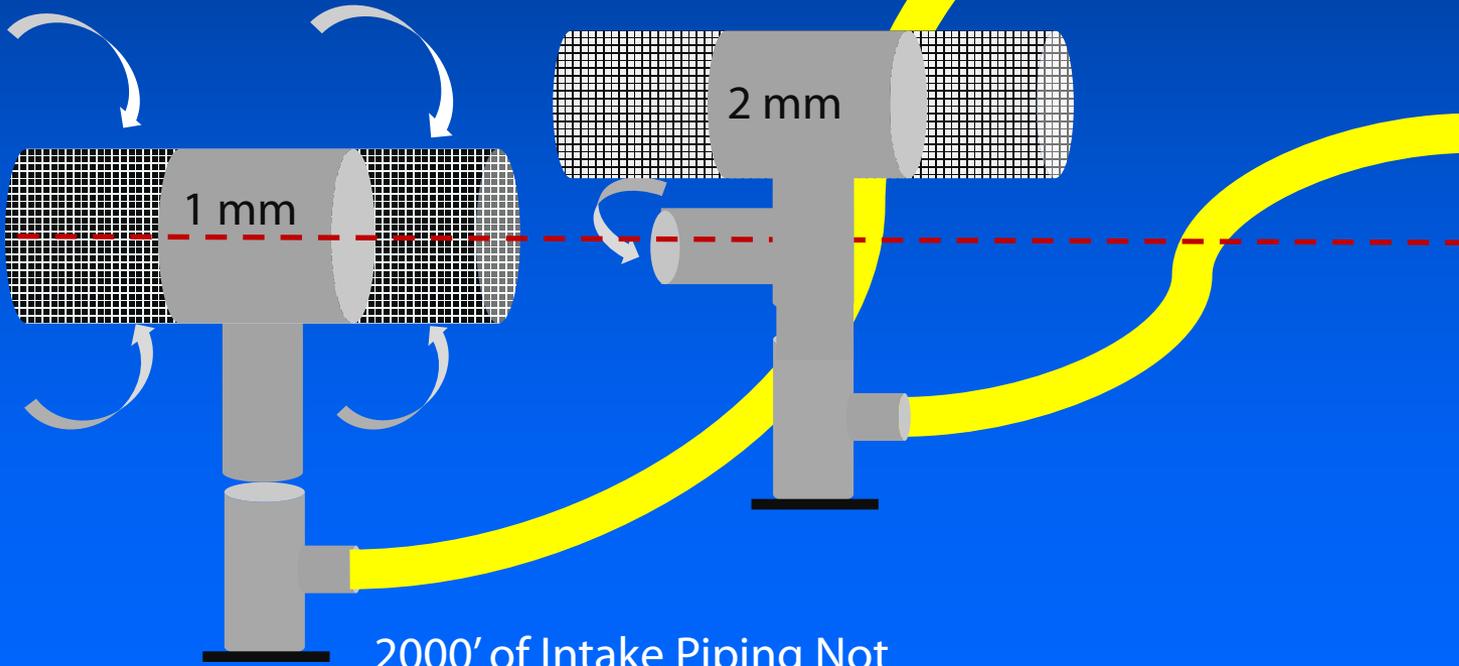
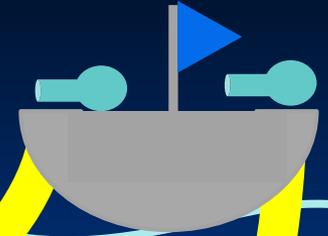


2000' of Pipe to On-Shore Sampling Nets

West Basin's Modified Sampling Procedures



~240 GPM



2000' of Intake Piping Not Being Utilized

Modified Sampling Procedures



- No predation
- Same depth
- Same intake location
- All samples will be processed on the boat
- Weekly larvae abundance sampling
- 72 hour sampling event
 - Drawing samples every 2 hours
 - Sampling throughout the night



Conclusions



Thank You

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