

# Development of Water Quality Standards for Willard Spur

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## 2011 Sampling/Monitoring Program

Willard Spur Steering  
Committee

April 28, 2011





# 2011 Sampling Plan

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## Drivers





# Objectives

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- **Overall Program Objective**
  - Develop and provide recommendations for changes to water quality standards, if needed, that are protective of the beneficial uses of Willard Spur
- **Study Objectives**
  - Capture pre-discharge condition
  - Provide background data for Science Panel to use in defining required studies





# Key Questions

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- **Overall Question for Program**
  - *What water quality standards are appropriately protective of beneficial uses of Willard Spur waters as they relate to the proposed POTW discharge?*
- **Question for this Study**
  - *What is the current condition of Willard Spur?*



# Results

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- **If adverse effect**
- **If no adverse effect**
- **If data is unclear**

Seek Science  
Panel input and  
recommendations





# Key Result

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- **We will look to the Science Panel to make recommendations as to how to proceed.**
- **Steering Committee will make a recommendation to DWQ.**
- **DWQ will make a recommendation to the Water Quality Board.**





# 2011 Sampling Plan

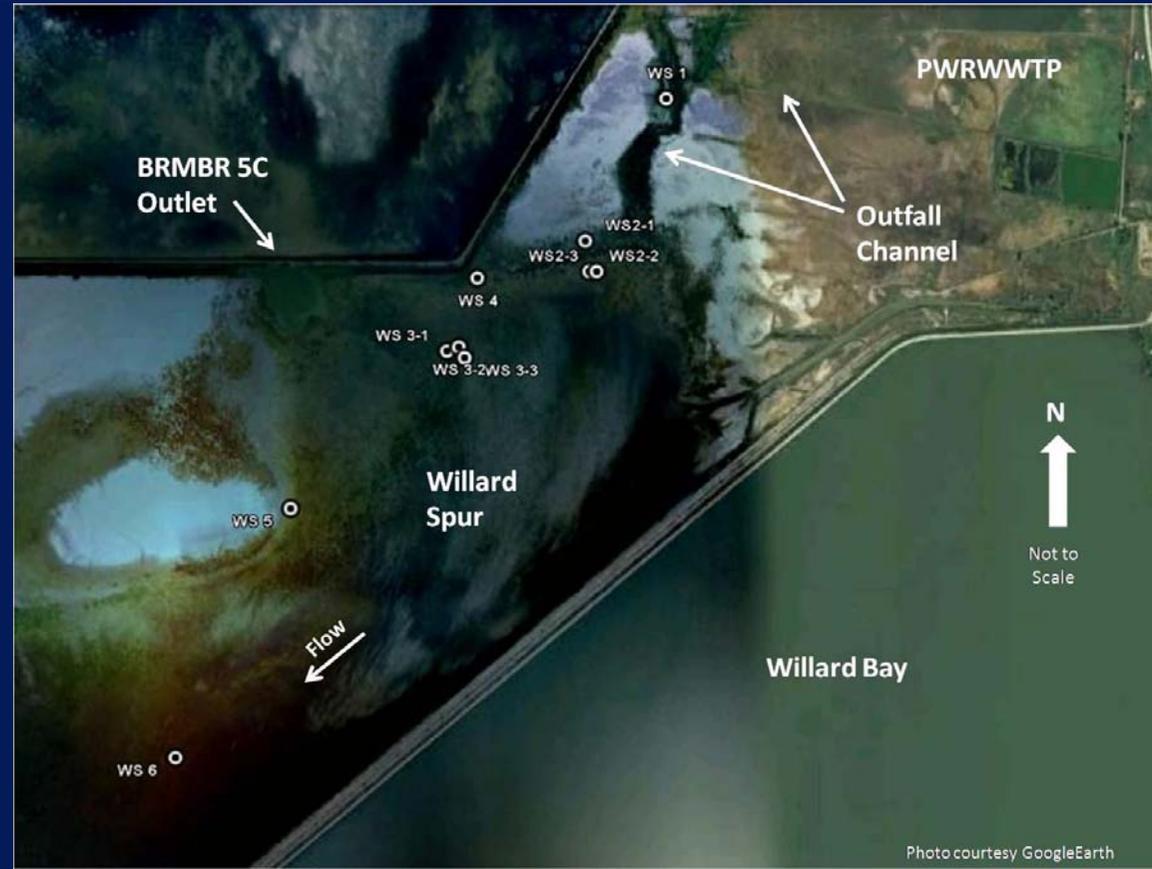
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## Methods



# Pre-Discharge Condition

- DWQ sampled the outfall area on March 2, 2011
  - Water and sediment at 10 sites
  - Limited by winter conditions (i.e., ice)





# 2011 Workplan

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## 1. Environmental Sampling

- High Priority

## 2. Special Studies

- High Priority

## 3. Supplemental Studies

- If resources (i.e., time) are available



# 2011 Workplan



# Sampling Sites - East



# Sampling Sites – Harold Crane WMA



# Environmental Sampling

- **Water samples**
  - Bi-weekly during spring runoff at 8 inflow sites
  - Monthly basis at 46 sites (34 inflow, 11 open water)
  - One time sampling event at 22 additional sites
  - Composite samples at 2 sites (storm events)
- **Sediment samples**
  - Summer (diatoms)
    - 15 sites
  - Fall (chemistry)
    - 9 sites



# DWQ will collect:

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- **Macroinvertebrate samples**
  - Summer – 12 sites
  - Fall – 12 sites
- **Phytoplankton/Zooplankton samples**
  - Summer/Fall – 6 sites
- **Vegetation Monitoring**
  - Monthly – 11 sites
- **Fish Sampling**
  - Summer – 6 sites



# Special Studies

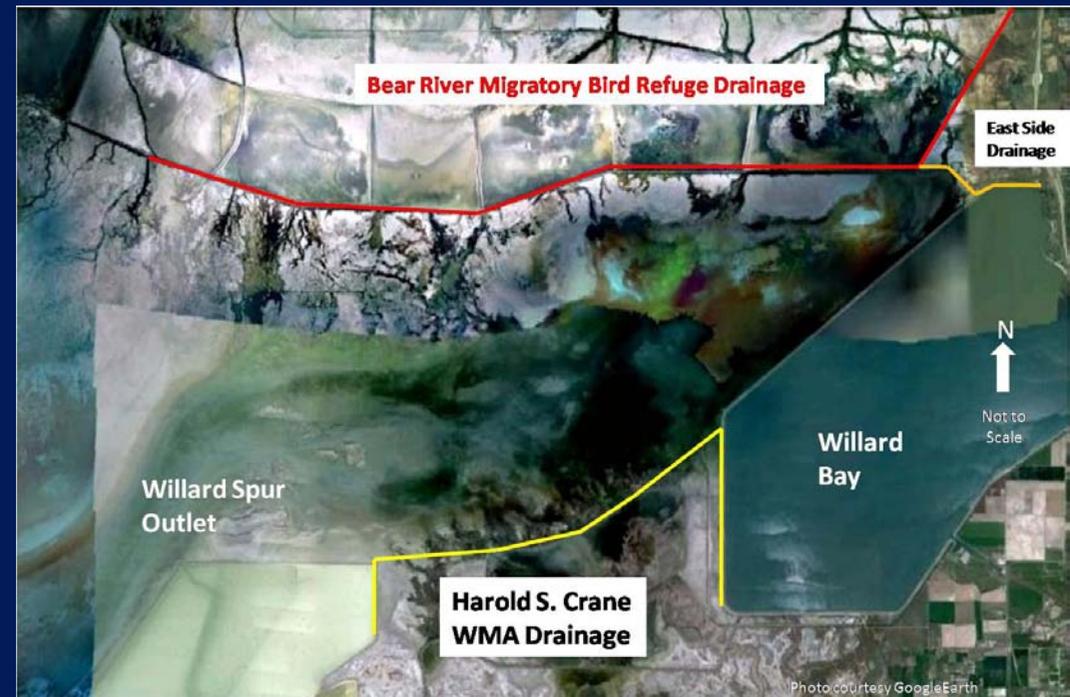
- **Hydrology Study**
  - Inflows
  - Outflow
  - Water level fluctuation
  - Meteorological Influences
- **Sediment Accretion Study**
- **Coordination with satellite imagery**



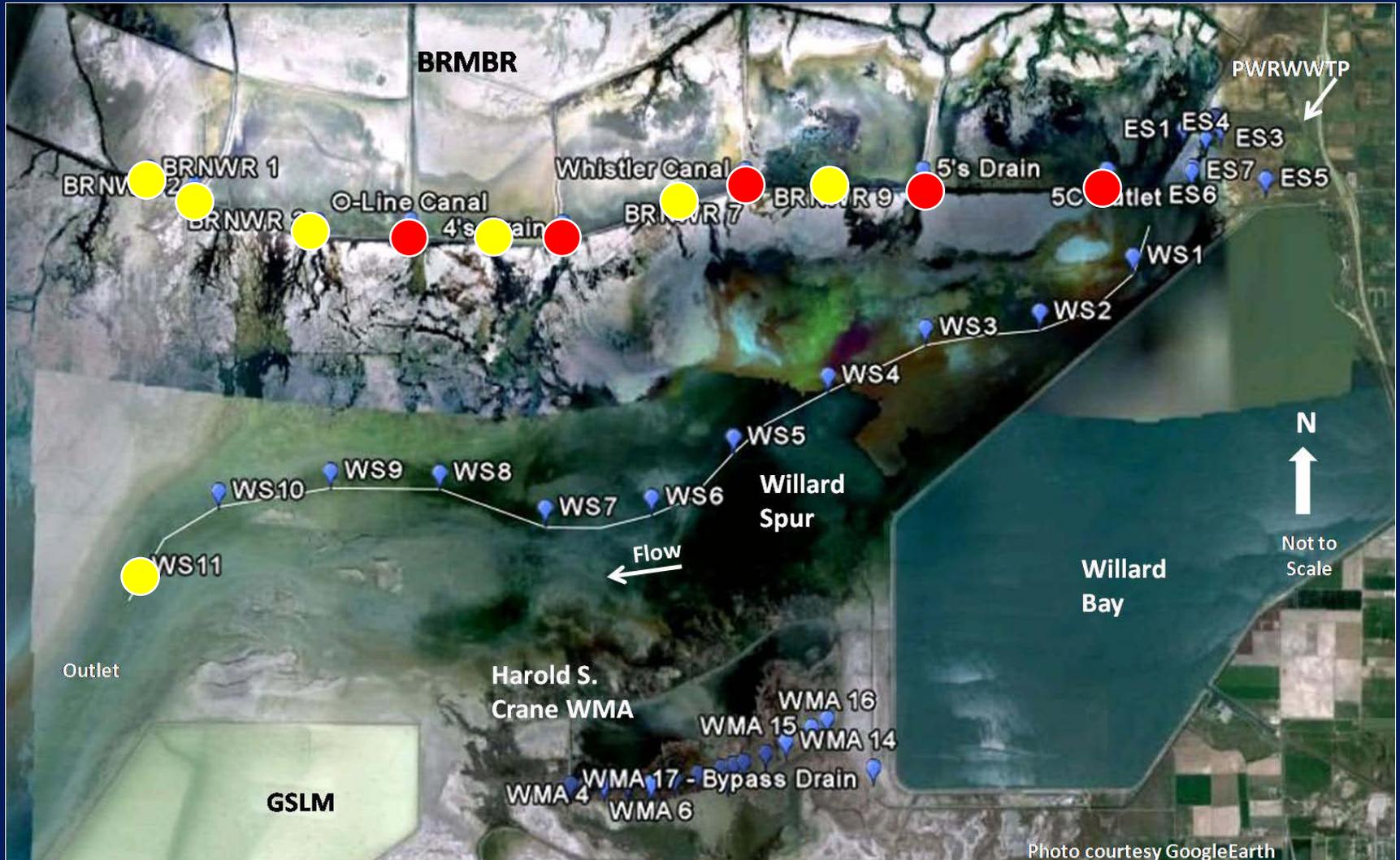
# Hydrology

- **USGS**
  - 5 inflow sites @ BRMBR
  - 1 lake stage/MET
- **DWQ**
  - 6 inflow sites @ BRMBR
  - 3 inflow sites @ east side
  - 17 inflow sites @ HC WMA
  - Outflow (3Xs)

<http://waterdata.usgs.gov/ut/nwis/current/?type=flow>



# Flow Measurement Sites - BRMBR



# Flow Measurement Sites - East



# Flow Measurement Sites - WMA



# Supplemental Studies

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- **Residence Time Experiment**
  - How long does water stay in Willard Spur?
- **Existing Distribution of Phragmites**
  - What is the current extent?
- **Bird Surveys**
  - How is bird use linked to water quality?



# Supplemental Studies

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- **Evaluation of Outfall's Mixing Zone**
  - What areas are impacted directly by the outfall?
- **Sediment Cores**
  - What are the historical rates of contaminant deposition?





# Progress To Date

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- **Monthly samples were collected on March 31 and again April 27 & 28**
- **DWQ is in process of acquiring a boat to sample open water**
- **USGS has installed gages**
- **DWQ will install gages May 5 & 6**





# Development of Water Quality Standards for Willard Spur

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## Schedule & Plan Forward

Willard Spur Steering  
Committee

April 28, 2011

# Next Steps

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- **May 2011**
  - Ongoing sampling
  - Establishing all flow measurement stations
  - Finalizing SOPs and QAPP
    - *DWQ obtaining external academic review*
    - *Utilize same Willard Spur review team?*



# Next Steps

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- **Steering Committee Mtg – June 23**
  - Approve SOPs and QAPP
  - Final decision on proceeding with Science Panel
  - Identify nominees for Science Panel
- **Summer 2011**
  - Sampling, Groundwork on historical data and literature review (data, conceptual models, indicators)





# Next Steps

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- **Steering Committee Mtg – August 4**
  - Update on progress
  - Finalize composition of Science Panel
- **August 2011**
  - Bring SP members onboard
  - Send background information to SP for review





# Next Steps

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- **Science Panel workshop (Sept 13-14)**
  - Background
  - Discuss path forward
- **Steering Committee Mtg to confirm path forward**
- **Science Panel Mtg (October 6)**
  - Discuss objectives, projects, SOPs





# Next Steps

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- **Science Panel Mtg (Nov 3)**
  - Confirm studies and objectives
- **Steering Committee Mtg (Nov 3)**
  - Discuss/approve studies and objectives
- **November**
  - DWQ to discuss with PIs, develop workplans





# Next Steps

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- **Workplans Submitted for Review (December 8)**
- **Science Panel Mtg (Jan 5)**
  - Discuss workplans
  - Make recommendations to Stg Com

