



## Water Management Plan Update: Oil and Gas Workshop, 02/06/2013



Presented by:  
Jason Harmon



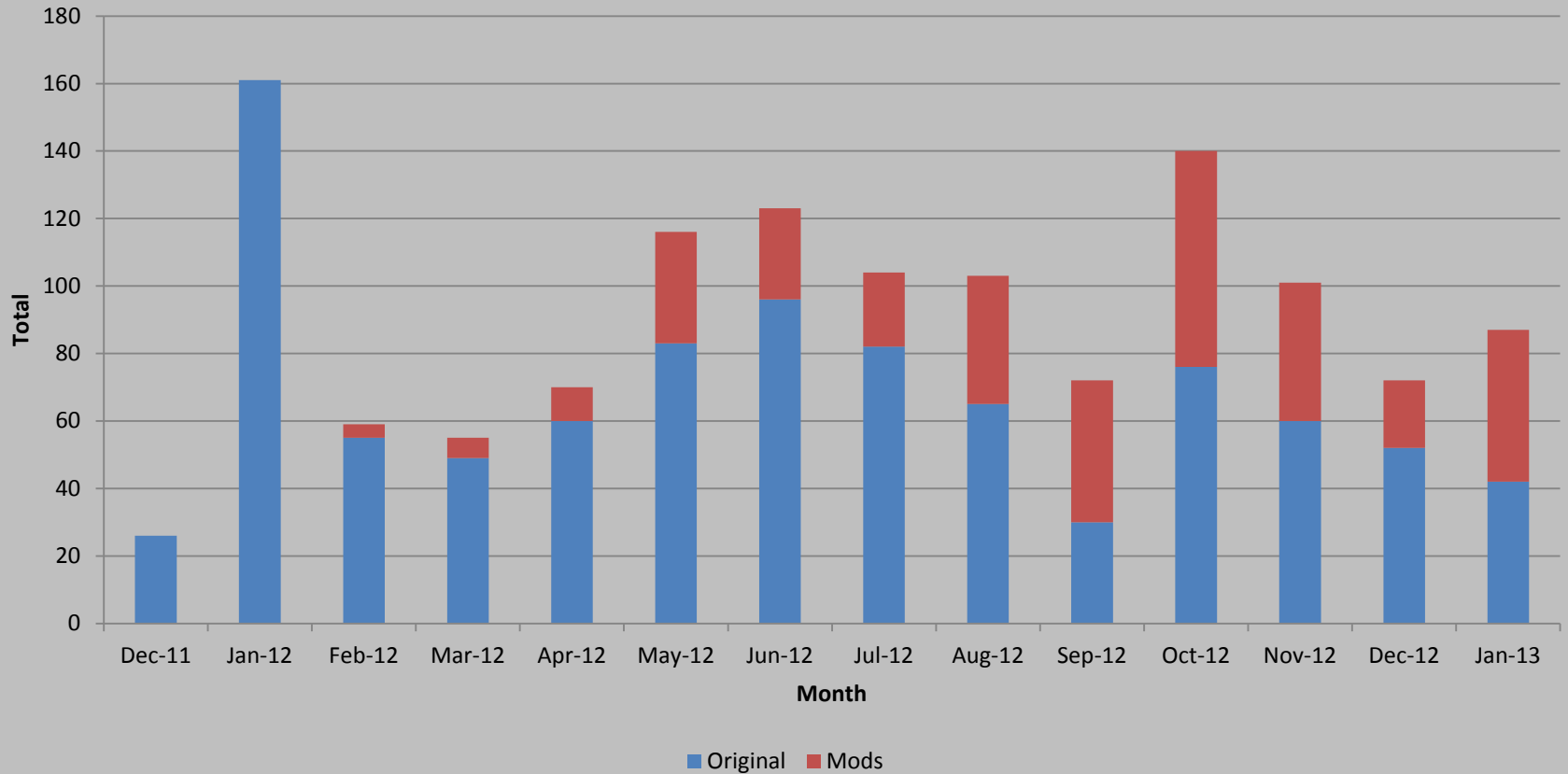
west virginia department of environmental protection

# Agenda

- WMP Program Status
- WMP Improvements on the horizon
  - Partial Record Stations
  - Entrainment and Impingement BMPs
  - New WMP portal in development
- Q&A

# WMP Program Status

## WMP Approvals by Month



# Ongoing/Future Projects



Partial Record  
Stations



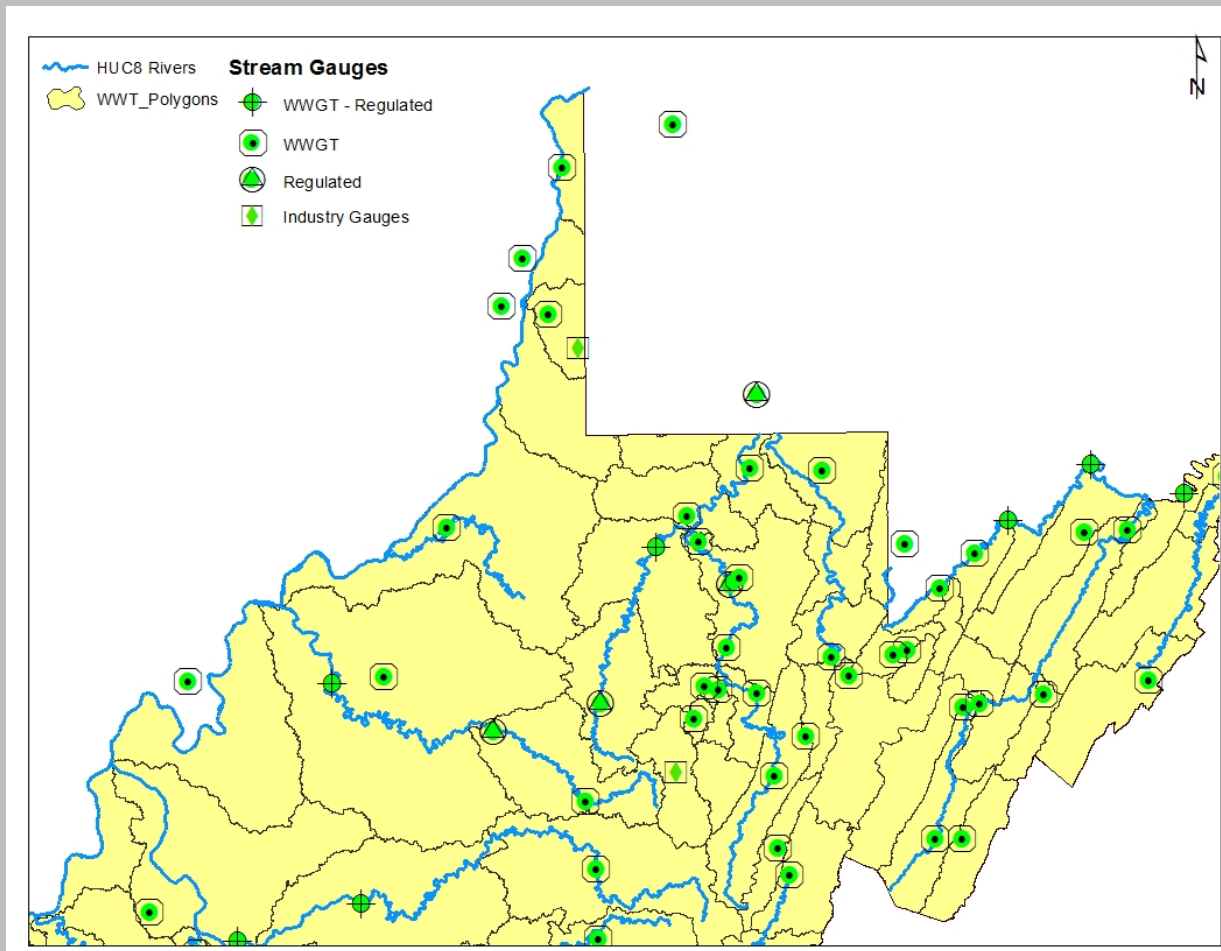
Entrainment &  
Impingement  
BMPs



Web Portal

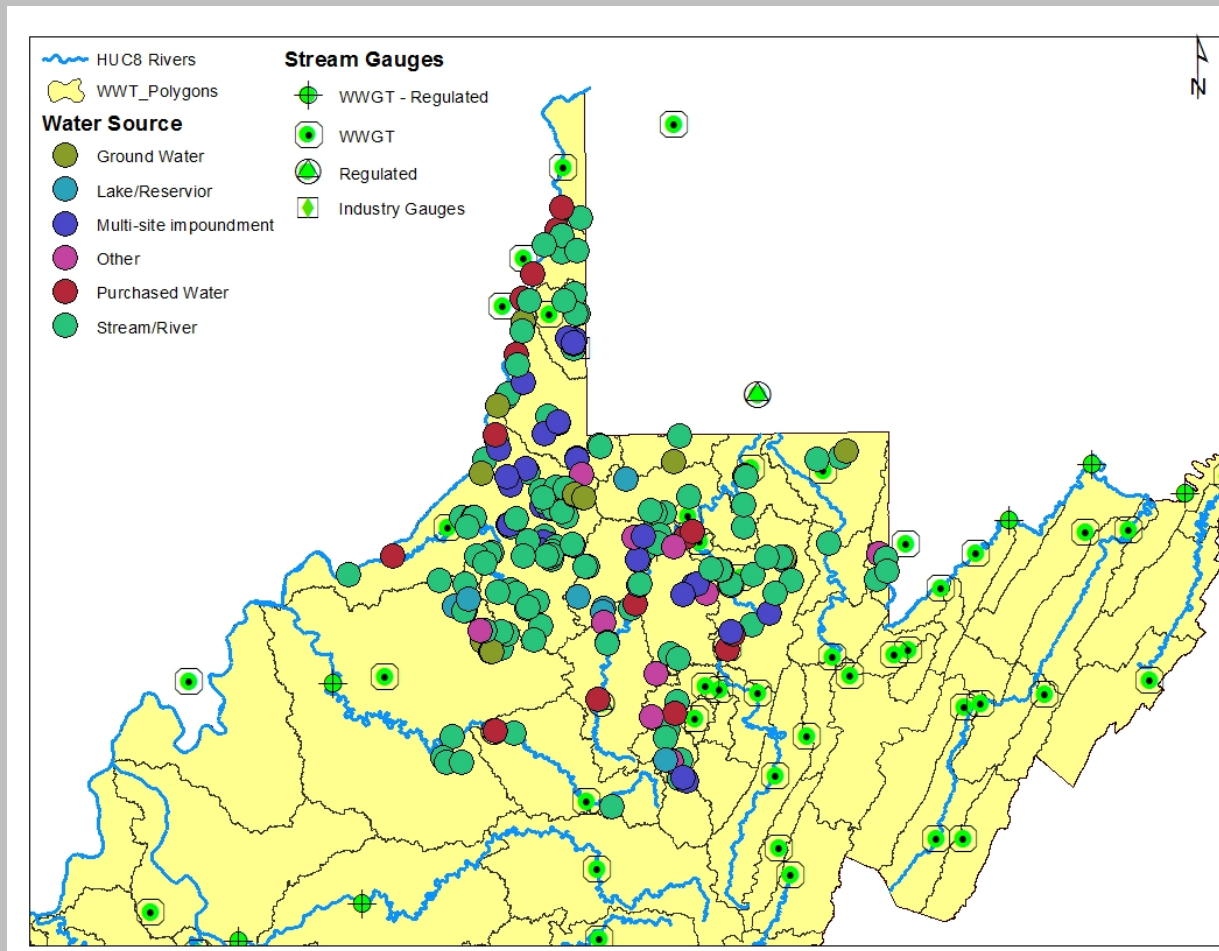


# Partial Record Station Overview

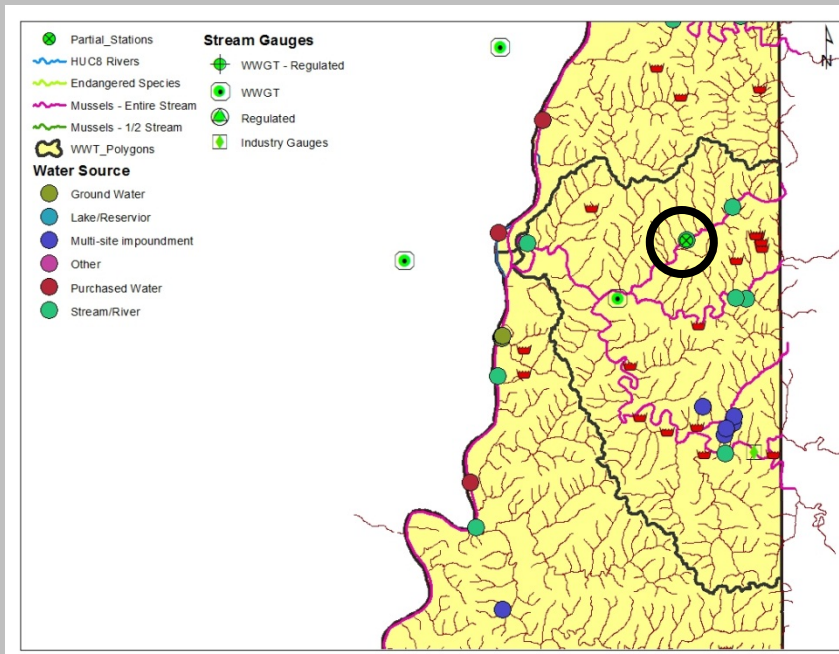




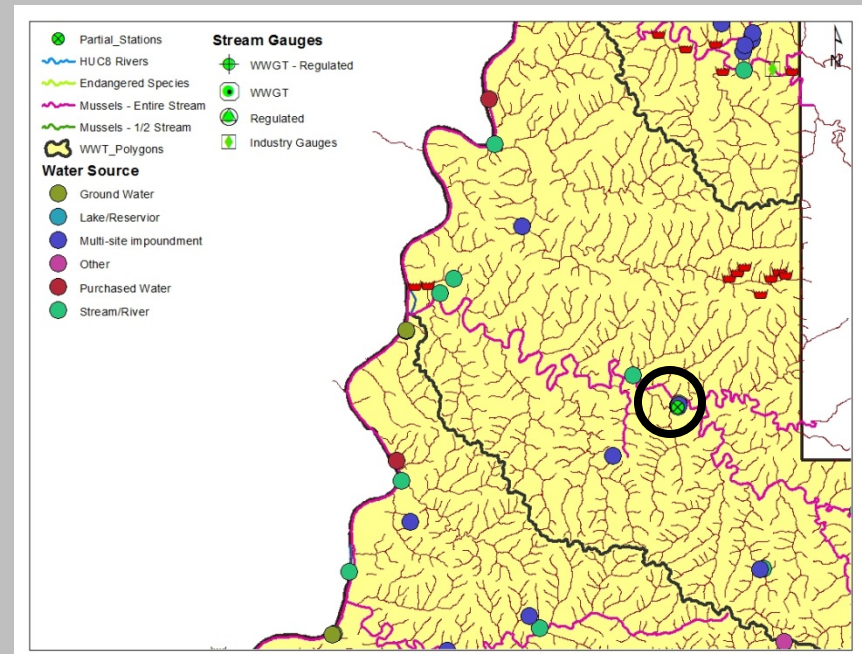
# Partial Record Station Overview



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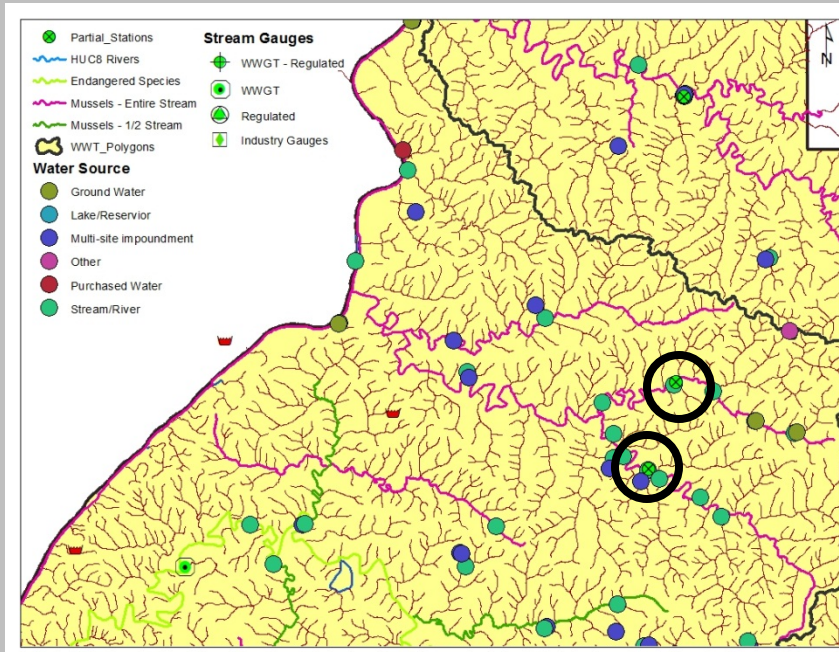


Little Wheeling Creek,  
Ohio County

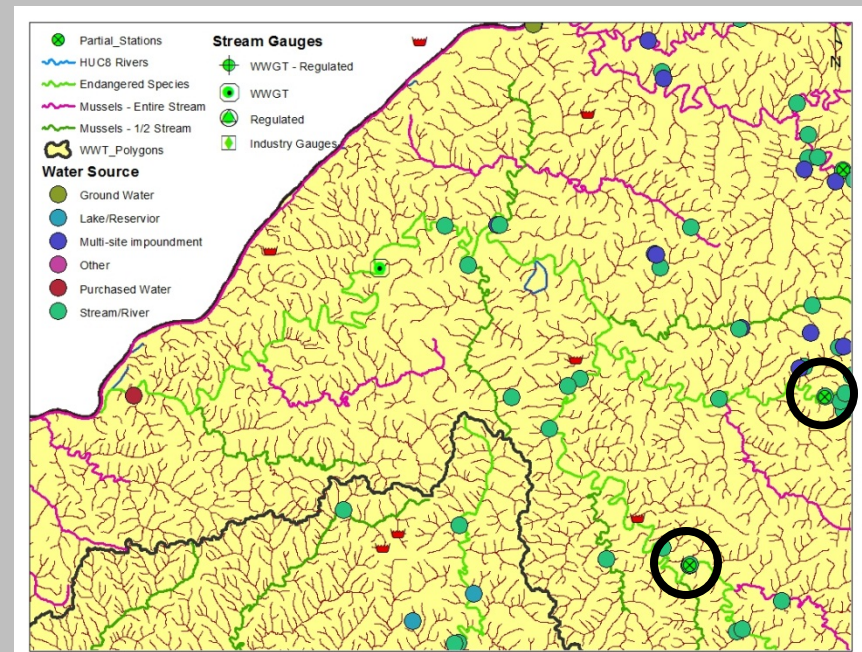


Fish Creek,  
Marshall County

# Partial Record Station Overview



N. and S. Fk. Fishing Creek,  
Wetzel County



McElroy Creek and Middle Island Creek,  
Doddridge County



# Partial Record Station Overview

- What the PRS Project means for you:
  - Withdrawal limits will be set on real-world data rather than by purely theoretical method
  - More field presence at withdrawal sites
- More locations will be added strategically
  - West Fork / Tygart Watersheds

# Entrainment & Impingement Prevention

§22-6A-7

(6) For all surface water withdrawals, a water management plan that includes ... the following:

(A) Identification of the current designated and existing water uses, including any public water intakes within one mile downstream of the withdrawal location;



(B) For surface waters, a demonstration, using methods acceptable to the secretary, that sufficient in-stream flow will be available immediately downstream of the point of withdrawal...; and



(C) Methods to be used for surface water withdrawal to minimize adverse impact to aquatic life

# Impacts to aquatic life

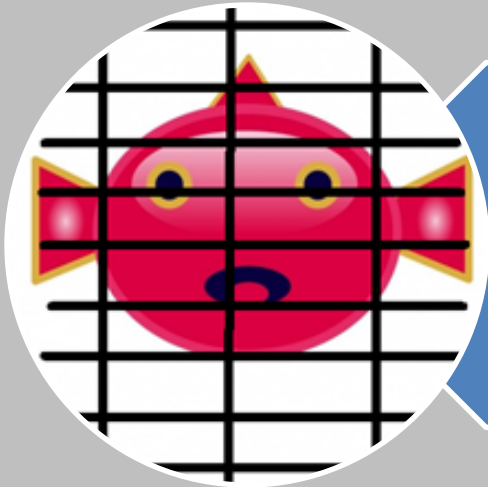


## Entrainment

- The unwanted passage of fish through a water diversion

Caused by:

- Large pore or missing intake screen
- High intake velocity



## Impingement

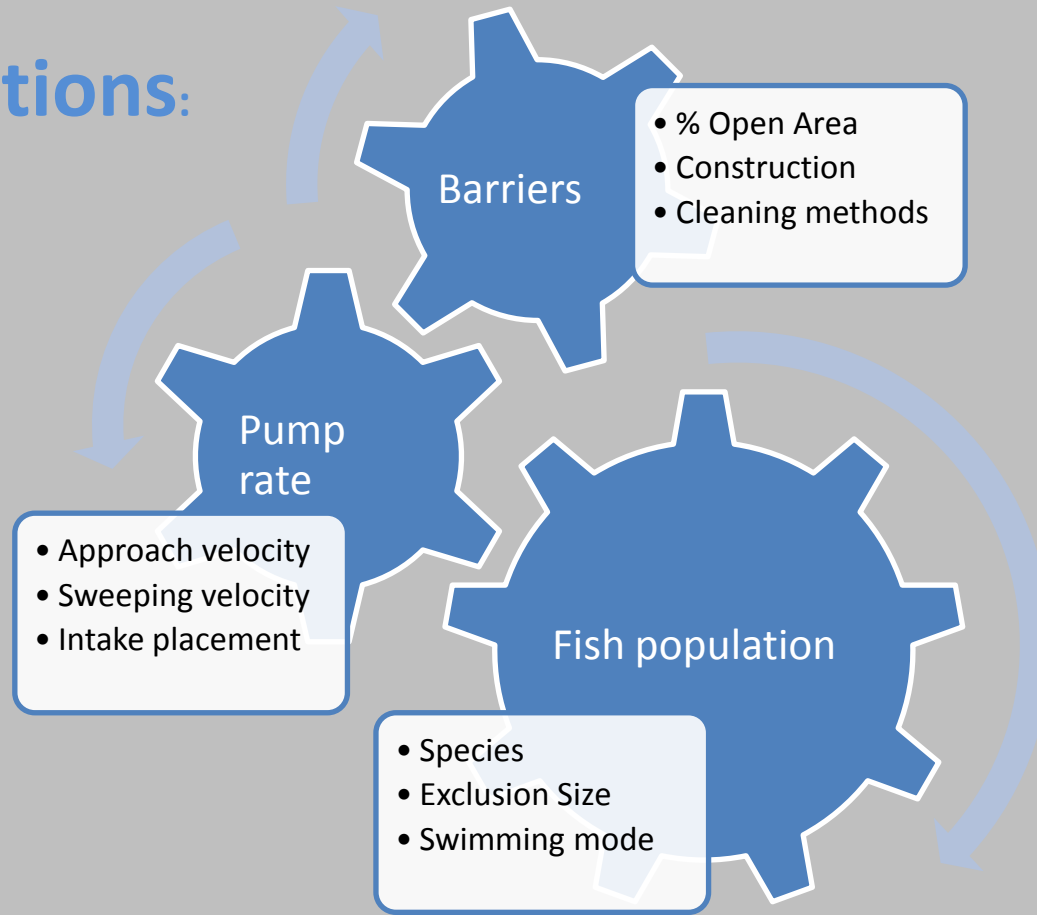
- Physical contact of fish with a structure which occurs when the fish is not able to avoid contact with a screen surface, trashrack or debris at an intake

Caused by:

- High intake velocity

# Entrainment and Impingement Prevention

## Considerations:





# Entrainment and Impingement Prevention

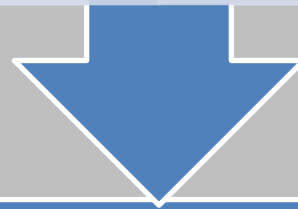
- What the new E&I BMPs mean for you:
  - Suggestions will be made for:
    - Minimum screen pore size
    - Maximum approach velocity for water into the intake
    - Intake placement
    - Routine maintenance

# WMP Web Portal

## Phase 1 (prototype complete)

Online WMP builder (print only)

Full integration with Frac Water Reporting database



## Phase 2

Online WMP Management (modification, activation)

## WMP Web Portal

- What the WMP Web Portal will mean for you:
  - Simplification of both WMP application submission and Frac Water Use reporting
  - Simplification of the WMP modification process
  - Simplification of WMP activation requirements

# Questions?

- Contact

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