



# **The WQCD Permitting Perspective**

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# Overview

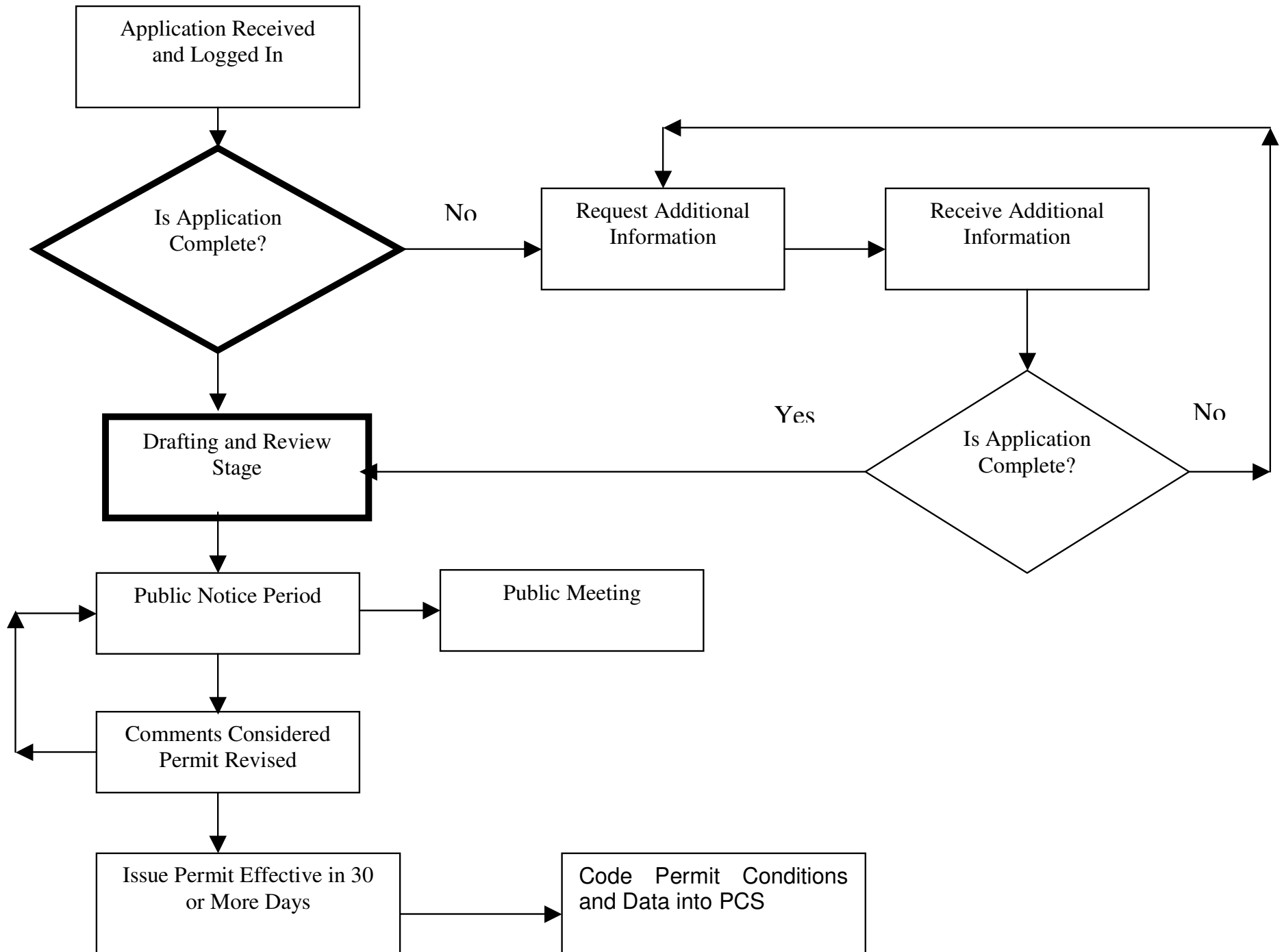
- ◆ **The Permits Section**
- ◆ **Elements of Permitting**
- ◆ **The Complete Application**
- ◆ **The Water Quality Assessment**
- ◆ **The Permit and Rationale**
- ◆ **Compliance and Enforcement**

# Permits Contacts

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- ◆ **Eric Oppelt, Professional Engineer**  
**Preliminary Effluent Limits (PELs)**  
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# Elements of Permitting

- ◆ **Process**
- ◆ **Application**
- ◆ **Water Quality Assessment**
- ◆ **Permit**
- ◆ **Rationale**



# The Complete Application

- ◆ Facility Map
- ◆ Service Area Map
- ◆ Original Signatures
- ◆ Facility Upgrade Plans
- ◆ Surface Water Quality Assessment
  - ◆ Low flow
  - ◆ Ambient data
- ◆ Groundwater Quality Assessment
  - ◆ Site Conditions

# Water Quality Assessment

- ◆ Low Flows
- ◆ In-stream water quality
- ◆ Pollutants of Concern
- ◆ WQBELs: water quality based effluent limits
- ◆ ADABCs: antidegradation based average concentrations

# Low Flows

- ◆ In-stream dilution
  - ◆ High low flows, small design flow = greater dilution
  - ◆ Low low flows, large design flow = lesser dilution



# **In-Stream Water Quality**

- ◆ **Upstream water quality concentrations**
  - ◆ **High upstream concentrations = less stringent limits**
  - ◆ **Lower upstream concentration = more stringent limits**

# Pollutants of Concern

- ◆ In-stream uses and standards
- ◆ Downstream uses and standards



# Waterbody Uses and Standards

- ◆ Water Supply
  - ◆ Arsenic
- ◆ Agriculture
- ◆ Aquatic Life
  - ◆ NH<sub>3</sub>
  - ◆ WET

# Water Quality-Based Effluent Limits (WQBELs)

$$M_2 = \frac{M_3 Q_3 - M_1 Q_1}{Q_2}$$

- ◆  $Q_1$  = Upstream Low Flow (1E3 or 30E3)
- ◆  $Q_2$  = Average daily effluent flow (design capacity)
- ◆  $Q_3$  = Downstream flow ( $Q_1 + Q_2$ )
- ◆  $M_1$  = In-stream background pollutant concentration
- ◆  $M_2$  = Calculated WQBEL
- ◆  $M_3$  = Maximum allowable in-stream pollutant concentration (water quality standard)

# Antidegradation

- ◆ Reviewable (undesignated) waters
- ◆ Baseline water quality as of September 30, 2000
- ◆ Facility contributions and permitted allocations considered *if* prior to September 30, 2000
- ◆ otherwise, a non-impact limit (NIL) of zero is used as permitted allocation

## **Antidegradation (cont.)**

- ◆ **ADBACs calculated by allowing a 15% increase between baseline water quality and the standard**
- ◆ **Facility may choose**
  - ◆ **NIL**
  - ◆ **ADBAC**
  - ◆ **complete an alternatives analysis**

# Antidegradation-Based Average Concentrations (ADBACs)

$$ADBAC = \frac{[0.15(WQS - BWQ) + BWQ]Q_3 - M_1Q_1}{Q_2}$$

- ◆  $Q_1$  = Upstream low flow (1E3 or 30E3)
- ◆  $Q_2$  = Average daily effluent flow (design capacity)
- ◆  $Q_3$  = Downstream flow ( $Q_1 + Q_2$ )
- ◆  $M_1$  = In-stream background pollutant concentration
- ◆  $BWQ$  = Baseline Water Quality concentration
- ◆  $WQS$  = Water Quality Standard concentration
- ◆  $ADBAC$  = Antidegradation-based average concentration

# The Permit

- ◆ **Pollutant Based Limits**
  - ◆ **WQBELs**
  - ◆ **ADABCs**
  - ◆ **Technology Based Effluent Limits**
- ◆ **Capacity Based Limits**
- ◆ **Compliance Schedules**
  - ◆ **Studies**
  - ◆ **Funding**
  - ◆ **Design**
  - ◆ **Construction**

# The Rationale

- ◆ Water Quality Assessment
- ◆ Basis for Limits
- ◆ Responses to Comments

# Compliance and Enforcement

- ◆ **DMR data**
  - ◆ **PCS: WQBELs**
  - ◆ **Capacity based limits**
- ◆ **Compliance Schedules**
- ◆ **Inspections**
  - ◆ **Routine**
  - ◆ **Complaint-driven**