

An Integrated, Municipal NPDES Permit The Clean Water Services Example

Charles Logue, PE
Director, Regulatory Affairs Department

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Wherever there's water, there's Clean Water..



Presentation Outline

- Who is Clean Water Services
- Why CWS was interested in Watershed-based approach and Permitting
- What were the enablers for us
- What was the process for developing the watershed approach

Clean Water Services

- Special Service District
 - Chartered in the 1970's as Unified Sewerage Agency
 - Consolidation of 26 “package” wastewater treatment facilities
- Serves nearly 500,000 customers in urban Washington County, Oregon
 - 12 Cities and unincorporated areas
- Responsibilities expanded to Stormwater Management in the early 1990's



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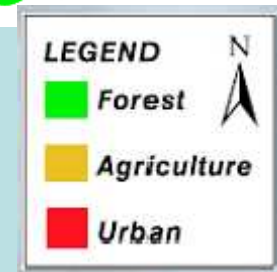
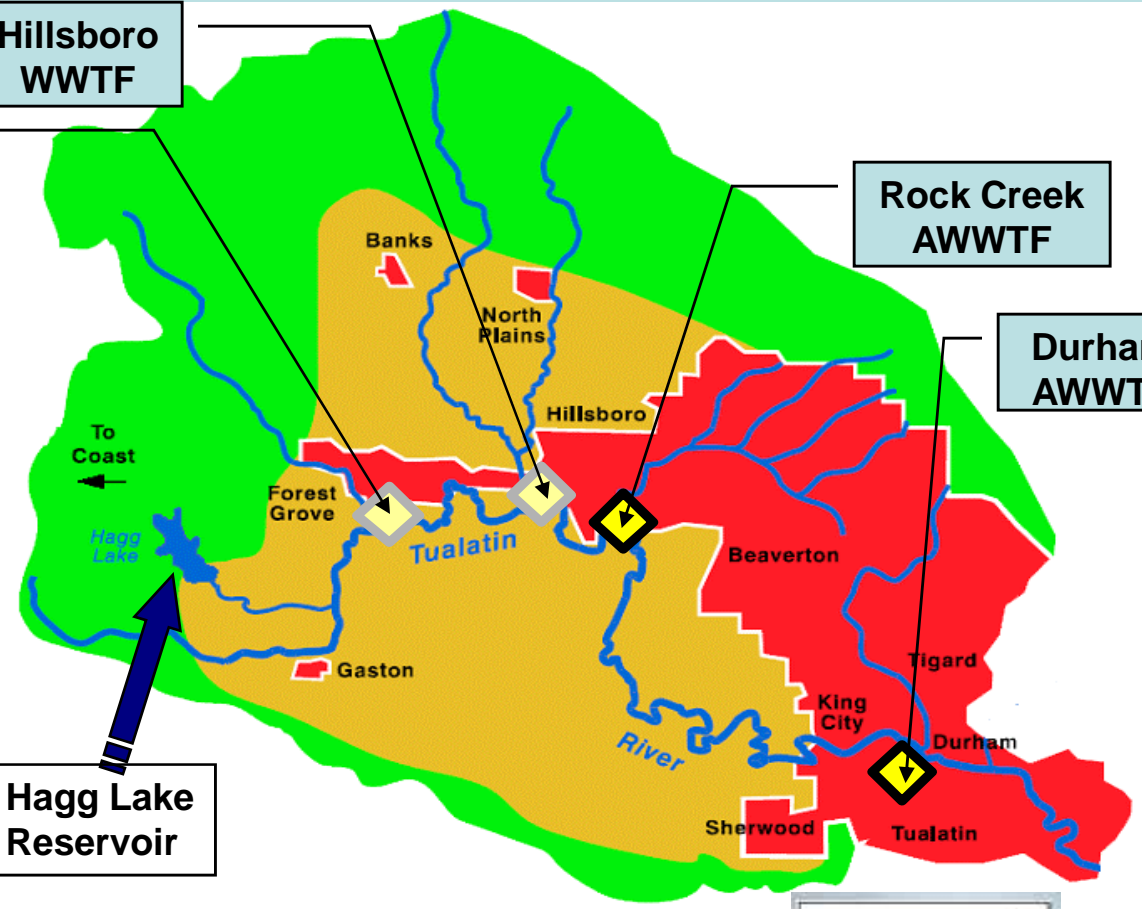
Forest Grove
WWTF

Hillsboro
WWTF

Rock Creek
AAWTF

Durham
AAWTF

Hagg Lake
Reservoir

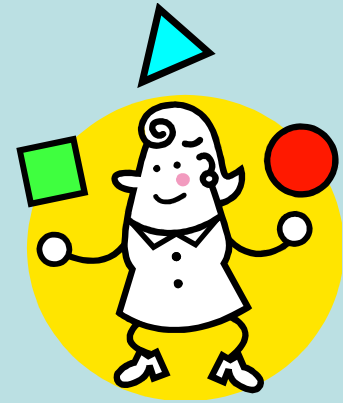


- 4 WWTPs: 71 MGD dry weather capacity, total
- Discharge can be 50% of receiving water (66% w/flow augmentation) during low flow months
- Own rights to ¼ stored water in Hagg Lake

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CleanWater Services

Where We Were in 2002....



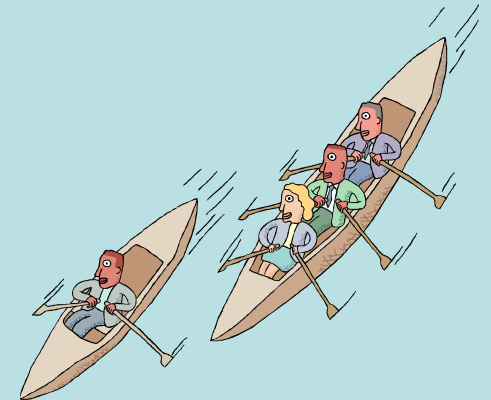
- 4 expired NPDES permits (Administratively Extended)
- 1 expired MS4 permit (Administratively Extended)
- 2nd TMDL approved
- ESA listing
- Water Supply Feasibility Study (just getting underway)

2001 Tualatin Basin TMDLs

- Total Phosphorus (Summer) – 0.1 mg/L
- Ammonia (Summer) – 0.51 mg/L (170 lbs/d)
- Temperature (Summer) – 58°F
 - Tualatin River and Tributaries
- Bacteria (Summer and Winter)
 - Applies at mouth of Tributaries
- Dissolved Oxygen (Summer)
 - Tributaries – 50% reduction in Settleable Volatile Solids

What We Wanted....

- Watershed-based, Integrated, Water Resources Management and Regulatory Framework
 - TMDL Implementation Mechanism
 - ESA Response Mechanism
 - Cost-effective, sustainable



Or said another way...

A Comprehensive, Integrated, Systems Approach

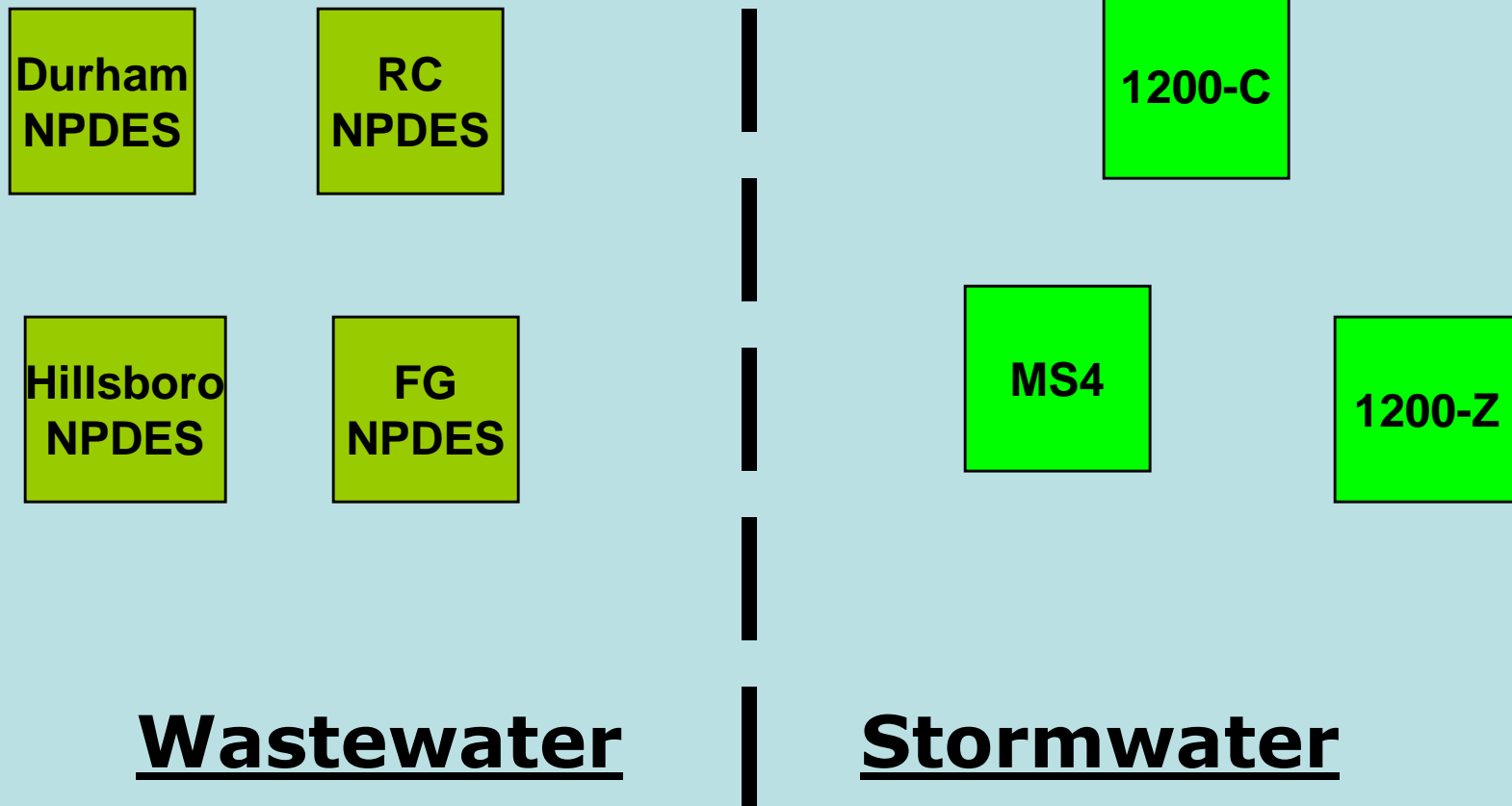
- Quality, Quantity, Habitat (Q₂H)
 - (from the resource viewpoint)



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Traditional Permit Approach



A Watershed-based Permit Approach was expected to . . .

- Streamline multiple permits, capture administrative & programmatic efficiencies
- Provide a mechanism for implementing more cost-effective technologies and management practices, **including water quality credit trading**
- Integrate watershed management across Federal statutes: CWA, SDWA, ESA
- Encourage early and meaningful collaboration and cooperation among key stakeholders

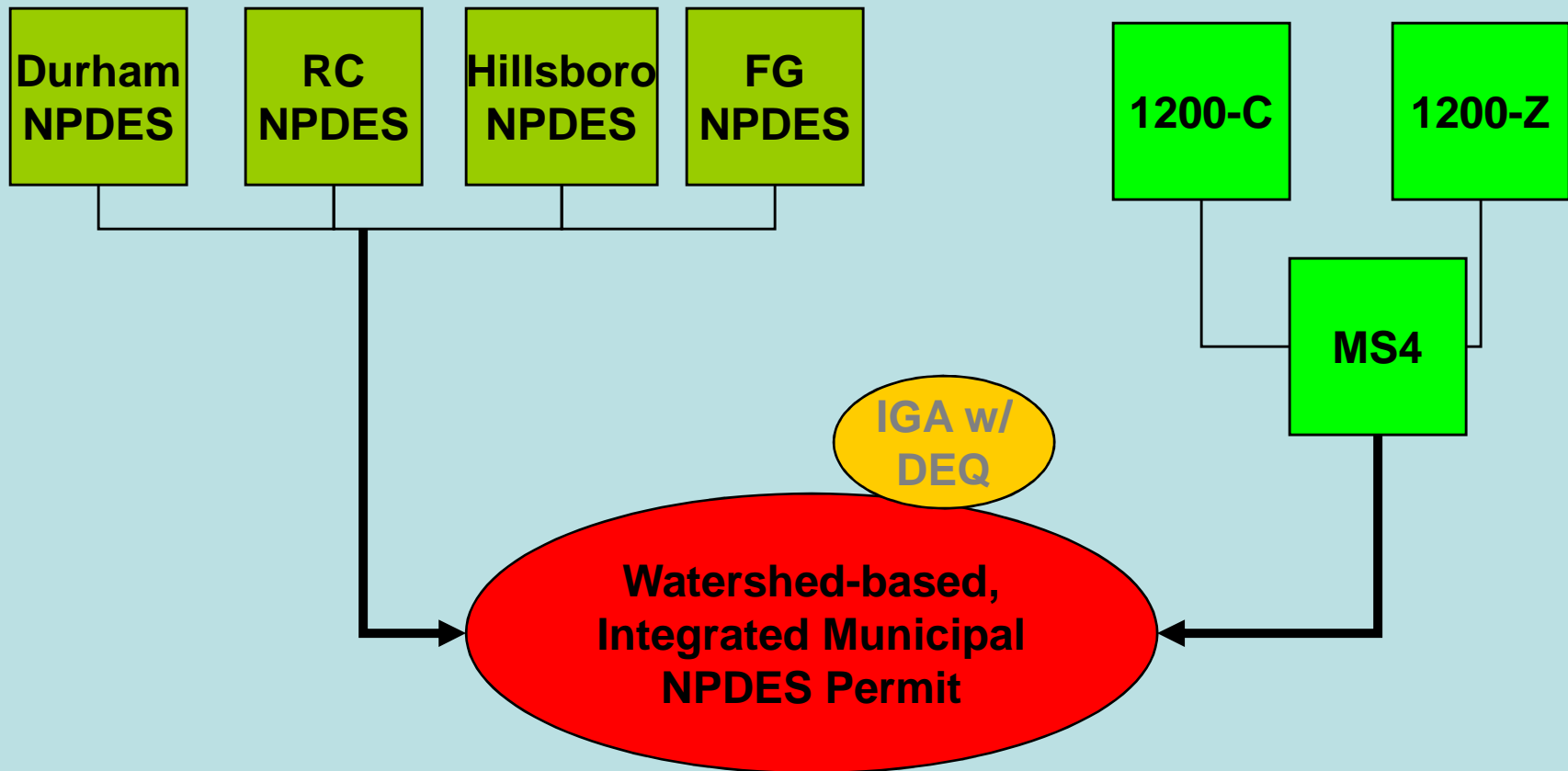


So What Enabled a Watershed Approach for Clean Water Services?

"The Planets and Stars were aligned !"

- All the NPDES permits expired - TMDL issued
 - Provided an window of opportunity
- Single Utility Entity & Highly Managed Stream
- Regulatory Agency willingness and motivation
 - EPA Grant (\$75,000)
- TMDL implementation difficult (temperature)
- Robust WQ database and modeling

Clean Water Services NPDES Permit



Issued February 26, 2004
(The 1st in the Nation !)

Wherever there's water, there's Clean Water..

CleanWater  Services

Expiration Date: 1/31/09
Permit Numbers: 101141,
101142, 101143, 101144 & MS4
Page 1 of 70 Pages

**NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
WATERSHED-BASED WASTE DISCHARGE PERMIT**

Department of Environmental Quality
Northwest Region – Portland Office
2020 SW 4th Ave., Suite 400, Portland, OR 97201
Telephone: (503) 229-5263

Issued pursuant to ORS 468B.050 and Section 402 of the Federal Clean Water Act

ISSUED TO:

Clean Water Services
2550 SW Hillsboro Highway
Hillsboro, OR 97123

Four individual permits for the operation of publicly owned sewage treatment works (POTWs), one municipal separate storm sewage system (MS4) permit and individual storm water permits for the Durham and Rock Creek Advanced Wastewater Treatment Facilities in the Tualatin River watershed have been integrated and consolidated into this document. This represents a change in the traditional approach to regulatory management of the watershed by integrating several program elements of the Clean Water Act into a single document along with water quality trading. This combination allows 1) greater coordination of watershed protection and enhancement programs, 2) greater coordination of watershed assessment and monitoring activities, and 3) greater public involvement.

FACILITY NAMES AND LOCATIONS:

Durham Advanced Wastewater Treatment Facility
16580 SW 85th
Tigard, Oregon 97224
EPA REFERENCE NO: OR-002811-8
File Number: 90735
GeoLoc: 45.4008 -122.7919
Treatment System Class: Level IV
Collection System Class: Level IV

Forest Grove Wastewater Treatment Facility
1345 Fernhill Road
Forest Grove, Oregon 97116
EPA REFERENCE NO: OR-002016-8
File Number: 90745
GeoLoc: 45.5112 -123.0907
Treatment System Class: Level IV
Collection System Class: Level IV

Hillsboro Wastewater Treatment Facility
770 South First Street
Hillsboro, Oregon 97120
File Number: 90752
GeoLoc: 45.5137 -122.9897
EPA REFERENCE NO: OR-002334-5
Treatment System Class: Level IV
Collection System Class: Level IV

Rock Creek Advanced Wastewater Treatment Facility
3235 SW River Road
Hillsboro, Oregon 97123
File Number: 90770
GeoLoc: 45.4952 -122.9452
EPA REFERENCE NO: OR-002977-7
Treatment System Class: Level IV
Collection System Class: Level IV

Municipal Separate Storm Sewer System
File Number: 108014
EPA REFERENCE NO.: ORS108014

RECEIVING STREAM INFORMATION:

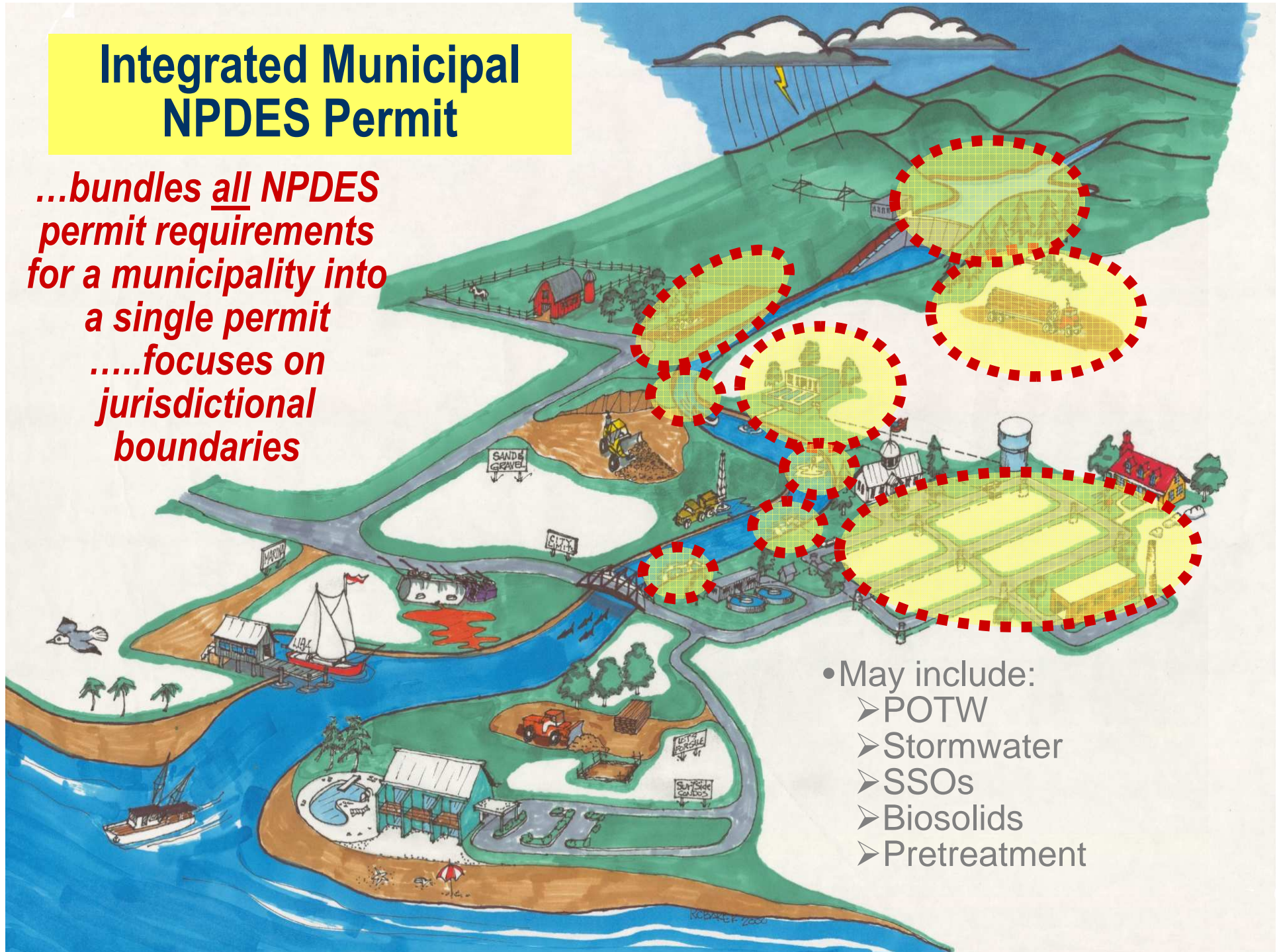
Basin: Willamette
Sub-Basin: Tualatin
Receiving Stream: Ash Creek#; Ball Creek#; Beaverton
Creek#; Bronson Creek#; Butternut Creek#; Cedar Creek#;
Cedar Mill Creek#; Chicken Creek#; Council Creek#; Dairy
Creek#; Dawson Creek#; Fanno Creek#; Gales Creek#; Hall
Creek#; Hedges Creek#; North and South Johnson Creek#;
Koll Wetland*; McKay Creek#; Nyberg Creek#; Red Rock
Creek#; North and South Rock Creek#; Summer Creek#;
Tualatin River#; Willow Creek#; Waible Gulch#.
County: Washington
LLID: 1226500453377

* This water body has been designated water quality limited.

Total Maximum Daily Loads (TMDLs), Wasteload
Allocations and Load Allocations have been established for
these water bodies and all water bodies in the sub-basin. The
TMDLs for the Tualatin sub-basin establish Wasteload
Allocations for urban storm water and wastewater treatment
facilities. See Tualatin sub-basin TMDL approved by EPA
on August 7, 2001. These allocations are addressed in
Schedules A and D

Integrated Municipal NPDES Permit

*...bundles all NPDES permit requirements for a municipality into a single permit
.....focuses on jurisdictional boundaries*



- May include:
 - POTW
 - Stormwater
 - SSOs
 - Biosolids
 - Pretreatment

A watershed-based NPDES
permit is more complicated
and may include greater risks..

Outfall Number	Parameter	Weekly Median Maximum Load, lbs/day	
D001, R001	Ammonia – N	<p>Weekly Median Maximum Ammonia Load = (Farmington Flow)(Concentration Variable) (5.39) lbs/day, where:</p> <p>Farmington Flow is the previous calendar weekly consecutive-day median of the daily mean flow at the Farmington gauge in cfs, and</p> <p>Concentration Variable is $\text{NH}_3\text{-N}$ in mg/L during the applicable period as follows:</p>	
Concentration Variable ($\text{NH}_3\text{-N}$, mg/L) (The applicable tier is based on the instream dissolved oxygen concentration as described below)		Applicable Time Period	
Tier 1		Tier 2	
1.4		1.4	
1.4		0.8	
1.4		0.3	
0.8		0.21	
		May and June	
		July	
		August	
		September through November 15	

(d) The Tier 1 concentration variable is in effect for any week when ammonia reduction is required unless the following conditions occur, in which case the Tier 2 concentration variable is in effect.

(i) **For Rock Creek AWTF: Either the weekly mean of the daily mean DO concentrations, with no credit for supersaturation, at RM 24.5 (Neals), for the previous week is less than 6.7 mg/L or the weekly mean of the daily mean DO concentrations, with no credit for supersaturation, at RM 3.4 (Oswego Dam), for the previous week is less than 6.7 mg/L. (See Note 2)**

(ii) For Durham AWTF: The weekly mean of the daily mean DO concentrations at RM 3.4 (Oswego Dam), with no credit for supersaturation, for the previous week is less than 6.7 mg/L. (See Note 2)

Other Permit Aspects

- Regulatory Agency resources
 - Receipts authority for DEQ Coordinator
 - DEQ/CWS IGA
- DEQ Administrative Systems
 - Still treated as separate Permit #'s/Fees
- Enforcement Response Matrix
 - Each facility treated individually

Links to CWS Permit and TMDL Information

<http://www.deq.state.or.us/WQ/TMDLs/WillametteBasin/Tualatin/TualatinTMDL.pdf>

[http://www.deq.state.or.us/wq/wqpermit/IndvPermits/CWS Watershed/CWSPermit.pdf](http://www.deq.state.or.us/wq/wqpermit/IndvPermits/CWSWatershed/CWSPermit.pdf)



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QUESTIONS ???

Charles Logue

503-681-3604

loguec@cleanwaterservices.org

www.cleanwaterservices.org