

# Innovative NPDES Permit Clauses and Approaches: A Delaware Perspective

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# A change in approach and organization

- The Division of Water is undergoing a significant reorganization
  - Traditionally permitting was performed by four major sections

## Surface Water Discharges Section

- NPDES Program: Permitting
  - **Three Permit Writers**
- NPDES Program: Compliance & Enforcement
  - **Four Inspectors**

## Groundwater Discharges Section

- Small Systems: < 2,500 gpd
- Large Systems: > 2,500 gpd
  - **Three Permit Writers**
  - **Two Inspectors**

## Water Supply Section

- Permitting Group
  - Domestic/Residential Wells
  - Public/Municipal Wells
  - Industrial Wells/Irrigation Wells

## Wetlands Section

### Issues:

- **Siloing Effect**
- **No Redundancy**
- **Hard to Prioritize**



# A change in approach and organization

## Commercial and Government Services Section

- Wastewater, Stormwater, and Biosolids Management (6 Permit Writers)
  - NPDES Program: Permitting
    - Individual, MS4, CAFO, ISW Programs
  - Large Systems: > 2,500 gpd
    - UIC and Reuse Programs
- Water Supply Assessment and Protection
  - Permitting Group
    - Public/Municipal Wells
    - Industrial Wells/Irrigation Wells

## Wetlands and Waterways Section

## Resource Protection Section

- NPDES Program: Compliance & Enforcement (6 Inspectors)
  - Inspectors cross-trained in Individual, ISW, UIC, and Reuse Programs
- Resource Evaluation Group
  - State-wide Initiatives

## Residential Services Section

- Small Systems: < 2,500 gpd
- Domestic/Residential Wells

The Division's reorganization is a targeted business process change intended to provide better resource management, better customer service, more support and opportunities for staff, increases efficiency, redundancy, and prioritization capacity.



# A Technological Revolution

- The Department, Division, and NPDES Program is all-in on increasing the use of technology to increase permitting efficiency, data accuracy, and transparency via ePermitting, GIS, EQulS, and electronic content management



[DNREC Digital home](#)

Non-Hazardous Liquid Waste Transporters  
Permit applications are made through [the Digital DNREC ePermitting system](#).



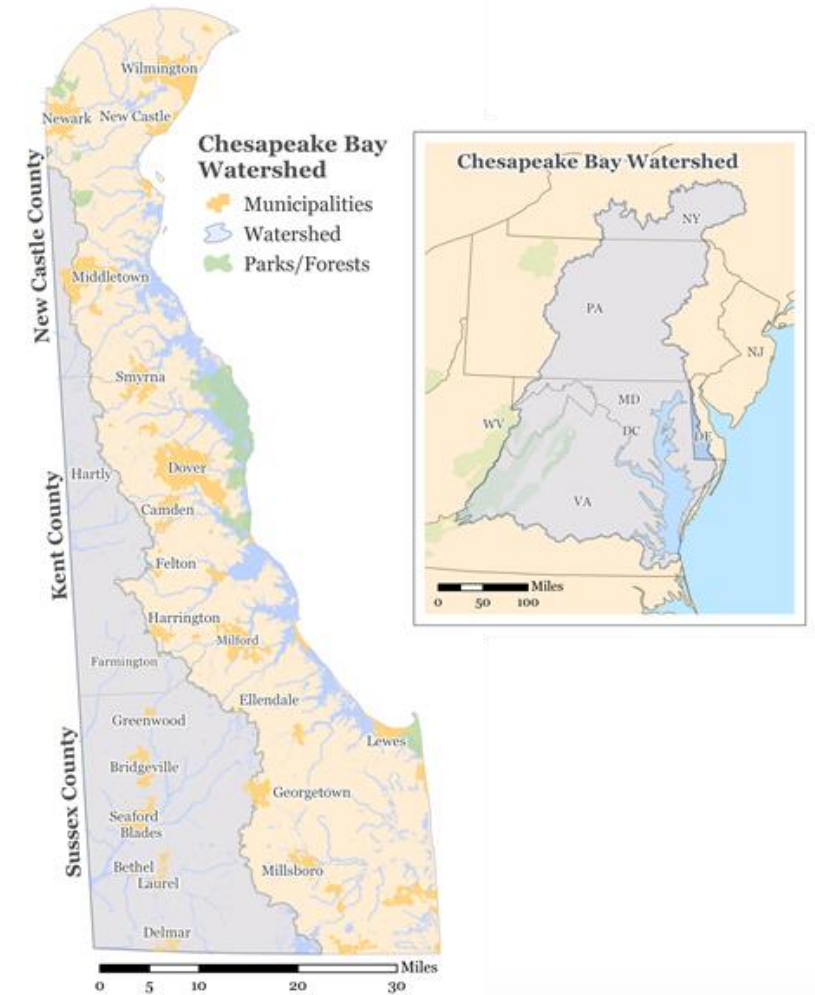
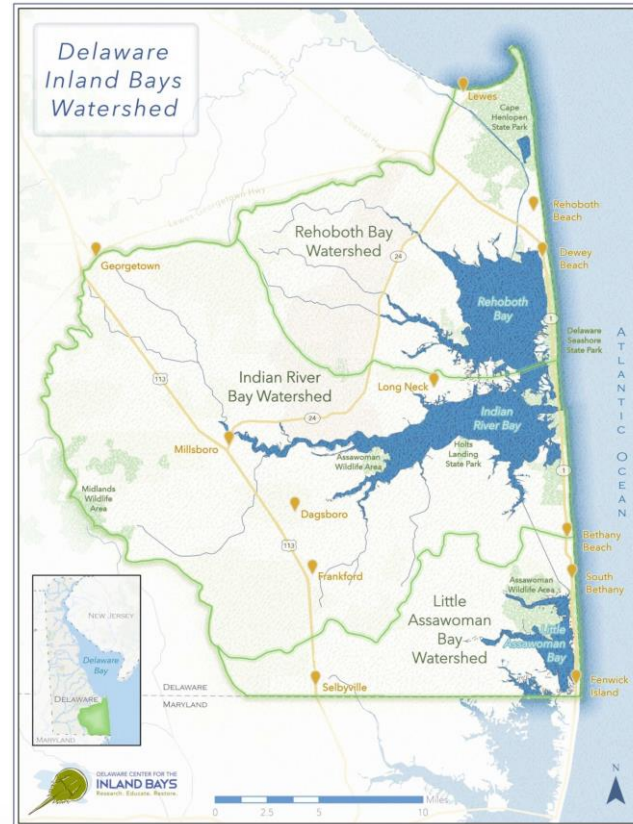
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# Delaware's NPDES Universe

- 45 Individual Facilities (14 Major and 31 Minor)
- 325 Industrial Stormwater Facilities
- 1 Phase I MS4
- 8 Phase II MS4s

## Individual Facility Statistics

- 4 Dischargers in the Chesapeake Bay Watershed
- 3 Dischargers in the Inland Bays Watershed
- 2 Ocean Outfalls
- 2 316b Facilities
- 1 Combined Sewer System





# Innovative Permitting Conditions: Offsets

## City of Lewes Wastewater Treatment Plant (NPDES Permit No. 0021512)

- Discharges to a segment of the Lewes and Rehoboth Canal (Inland Bays Watershed)
- The Inland Bays TMDL requires that point source discharges to the Inland Bays be systematically eliminated
- Modeling indicates that approximately 2.5% of the City's discharge reaches the Inland Bays
- In 2009 Lewes instituted a Nutrient Offset Program
- The program relocates chicken manure from the Lewes-Rehoboth Canal sub-watershed





# Innovative Permitting Conditions: Offsets

## City of Lewes Wastewater Treatment Plant (NPDES Permit No. 0021512)

- In accordance with the Inland Bays Pollution Control Strategy and EPA Water Quality Trading Policy 2:1 offsets are required (i.e., 2 lb. reduction: 1 lb. credit) for non-point source reductions in nutrients in the watershed
- Therefore, Lewes is required to achieve 5% a 5% offset for the 2.5% of its total discharge for the actual amount of TN and TP that reaches the Inland Bays
- Current Permit authorizes the Lewes WWTP to continue discharging in accordance with their Offset Program





# Innovative Permitting Conditions: Offsets

## City of Lewes Wastewater Treatment Plant (NPDES Permit No. 0021512)

- Special Condition 9 states (in part):
- The Permittee shall continue to implement and maintain a Nutrient Offset Program/Plan to offset the amount of nutrients (nitrogen and phosphorus that modeling indicates is discharged to the Inland Bays
- The offset shall be 5% of the actual amounts of TN and TP discharged
- The Permittee shall monitor TN and TP concentrations in the effluent monthly and using the total volume of effluent discharged shall calculate the pounds of TN and TP discharged that month
- Manure shall be removed from the Lewes-Rehoboth Canal sub-watershed
- Offset credits available only in the year generated





# Innovative Permitting Conditions: Alternate Disposal Options

Discharges to an unnamed tributary of the Nanticoke River (Chesapeake Bay Watershed)

Time of Year Restrictions

- May through September
  - TN Daily AVG Load 6.6 lbs./day
  - TN Daily MAX Load 9.9 lbs./day
  - TP Daily AVG Load 0.88 lbs./day
  - TP Daily MAX Load 1.3 lbs./day

Mobile Gardens Wastewater Treatment Plant (NPDES Permit No. 0050725)

- 60,000 gpd activated sludge treatment plant servicing 3 mobile home parks



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# Innovative Permitting Conditions: Alternate Disposal Options

- The Groundwater Discharge Permit authorizes the discharge of treated effluent to five Rapid Infiltration Basins (RIBs)
- RIBs are Class V UIC wells designed to infiltrate treated effluent with 72-hours
- RIBs require TN effluent quality to be 10 mg/L or less and are monitored by a network on monitoring wells
- This scenario can be modified to resolve fish migration issues

Mobile Gardens Wastewater Treatment Plant (NPDES Permit No. 0050725)

- The Permittee also holds a Groundwater Discharge Permit





# Innovative Permitting Conditions: Monitoring

Delaware City Refining Company, LLC (NPDES Permit No. DE0000256)

- The refinery operates a cooling water intake structure with Cedar Creek which connects to the Delaware River Estuary
- The Delaware River Estuary is a critical habitat for the federally endangered Atlantic Sturgeon (*Acipenser oxyrinchus*)
- During the 2018 renewal of the Permit, DNREC negotiated NOAA's National Marine Fisheries Service to acoustic monitoring for Atlantic Sturgeon in Cedar Creek





# Innovative Permitting Conditions: Monitoring

Condition Part I.C states (in part)

- The Permittee shall provide access to and work cooperatively with DNREC to allow DNREC and/or DNREC's agent/contractor to install two acoustic monitoring stations at mutually agreeable locations capable of identifying the presence within Cedar Creek of fish that have been tagged by DNREC.
- The Permittee shall also provide access to DNREC and/or DNREC's agent/contractor to range test, collect data from, and maintain the acoustic monitoring stations.
- The Permittee shall reimburse DNREC for the costs of installing, operating, and maintaining the acoustic monitoring stations.

