

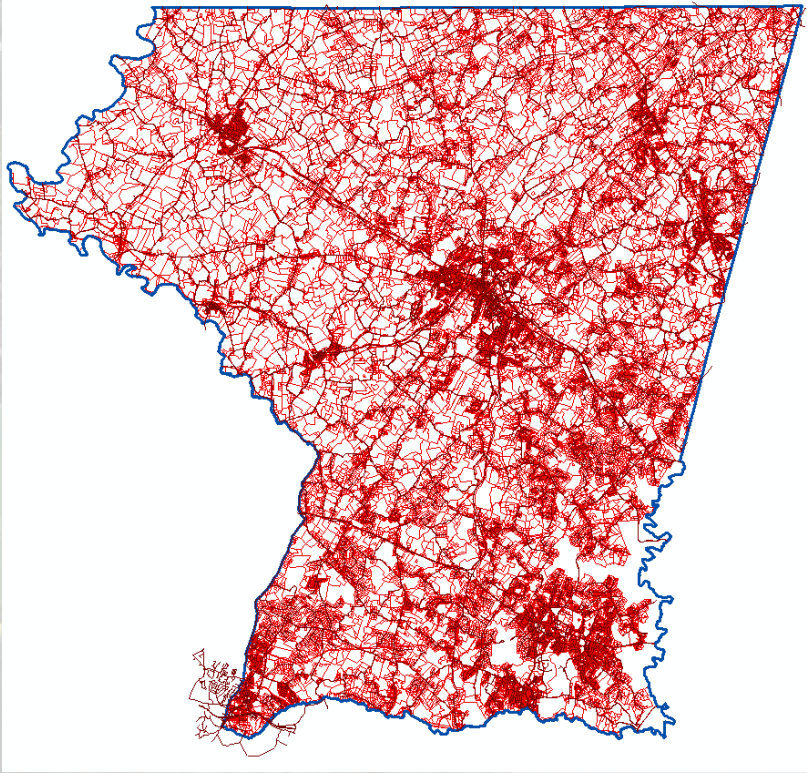


LANGDON STORMWATER MANAGEMENT FACILITY



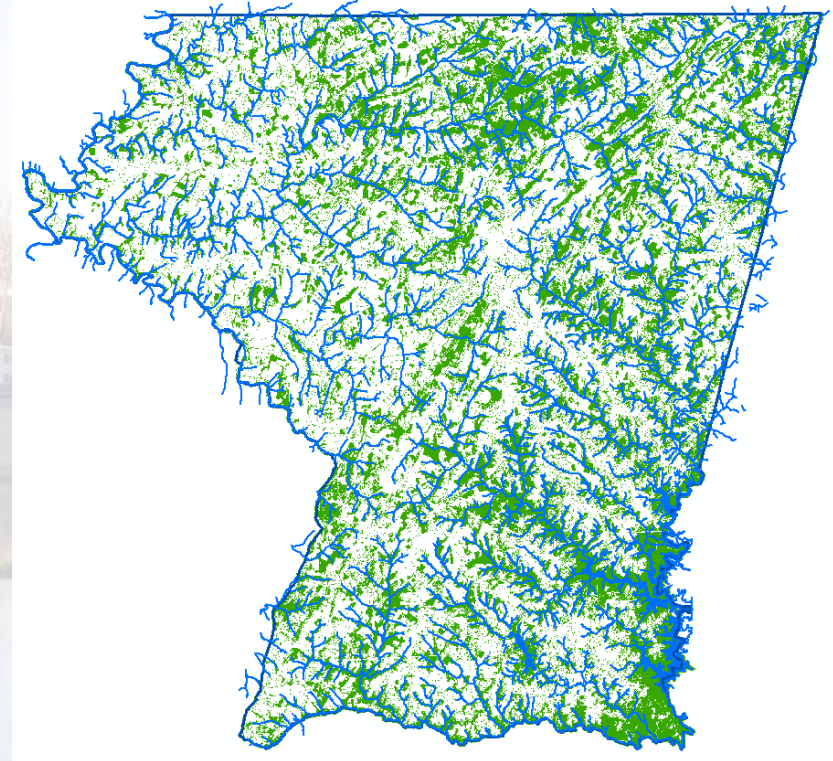
Carroll County Department of Land
and Resource Management

Carroll County Department of Land and Resource Management



Land Management

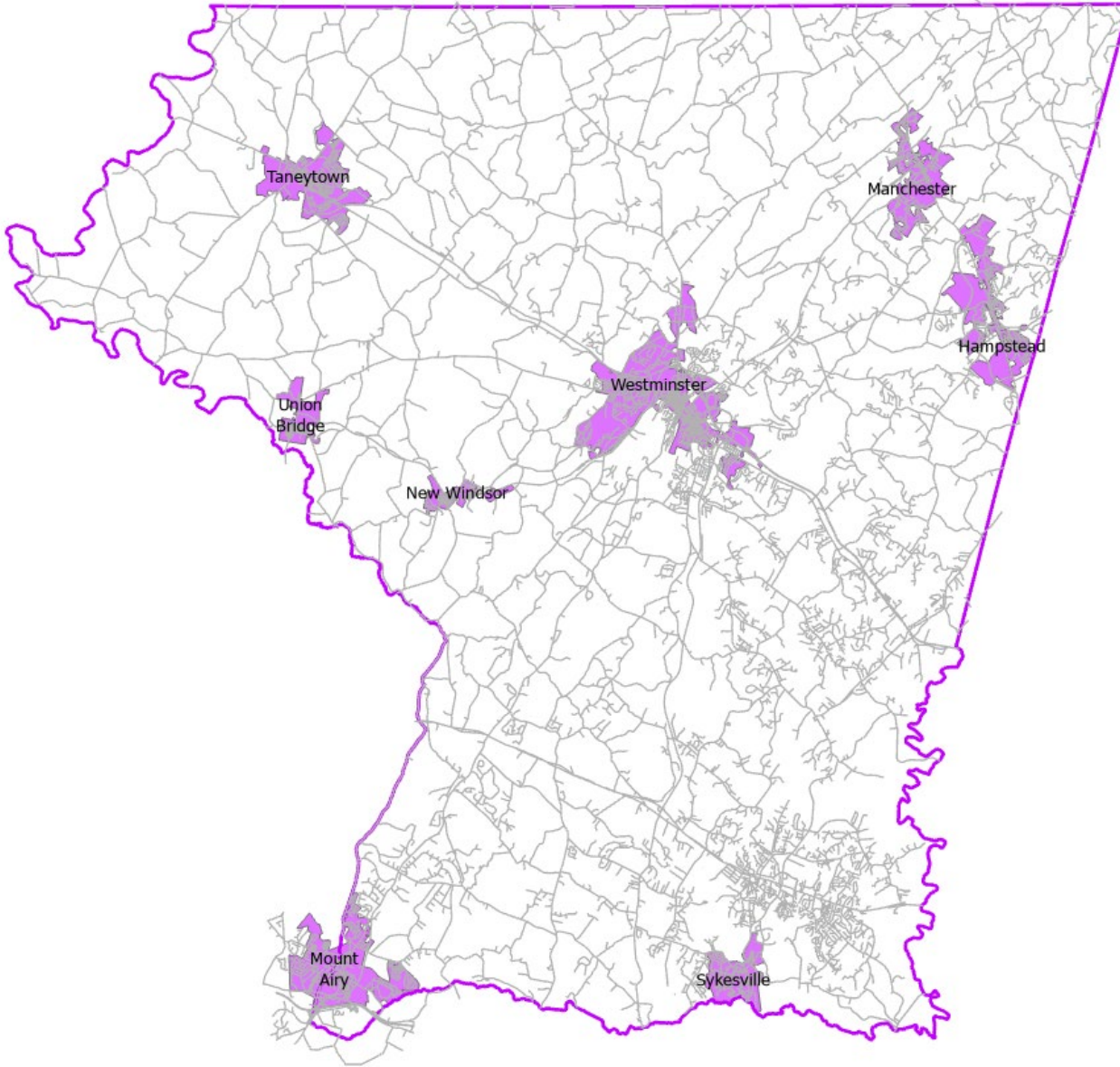
- Agricultural Preservation
- Development Review
- Geographic Information Systems
- Zoning Administration



Resource Management

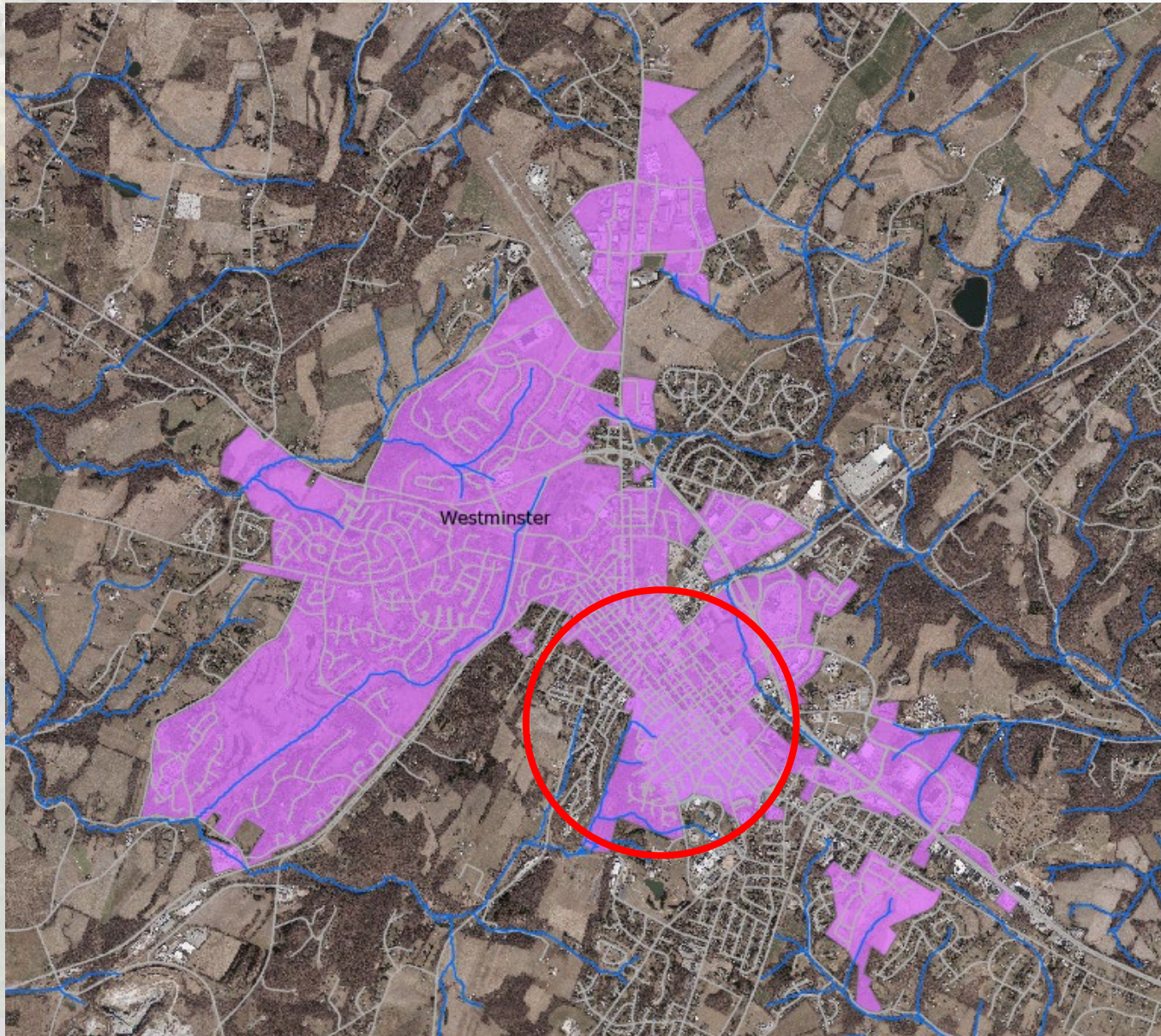
- Environmental Compliance
- Environmental Review
- Watershed Management
- Water Resources

Carroll County NPDES Program



- Clean Water Act
- Administered by MDE
- Improve Water Quality
 - Outfall inspections/sampling
 - BMP Inspections
 - Public education
 - Treatment of impervious area
- MOA with municipalities
 - Combined resources
 - Impervious is concentrated in urban areas

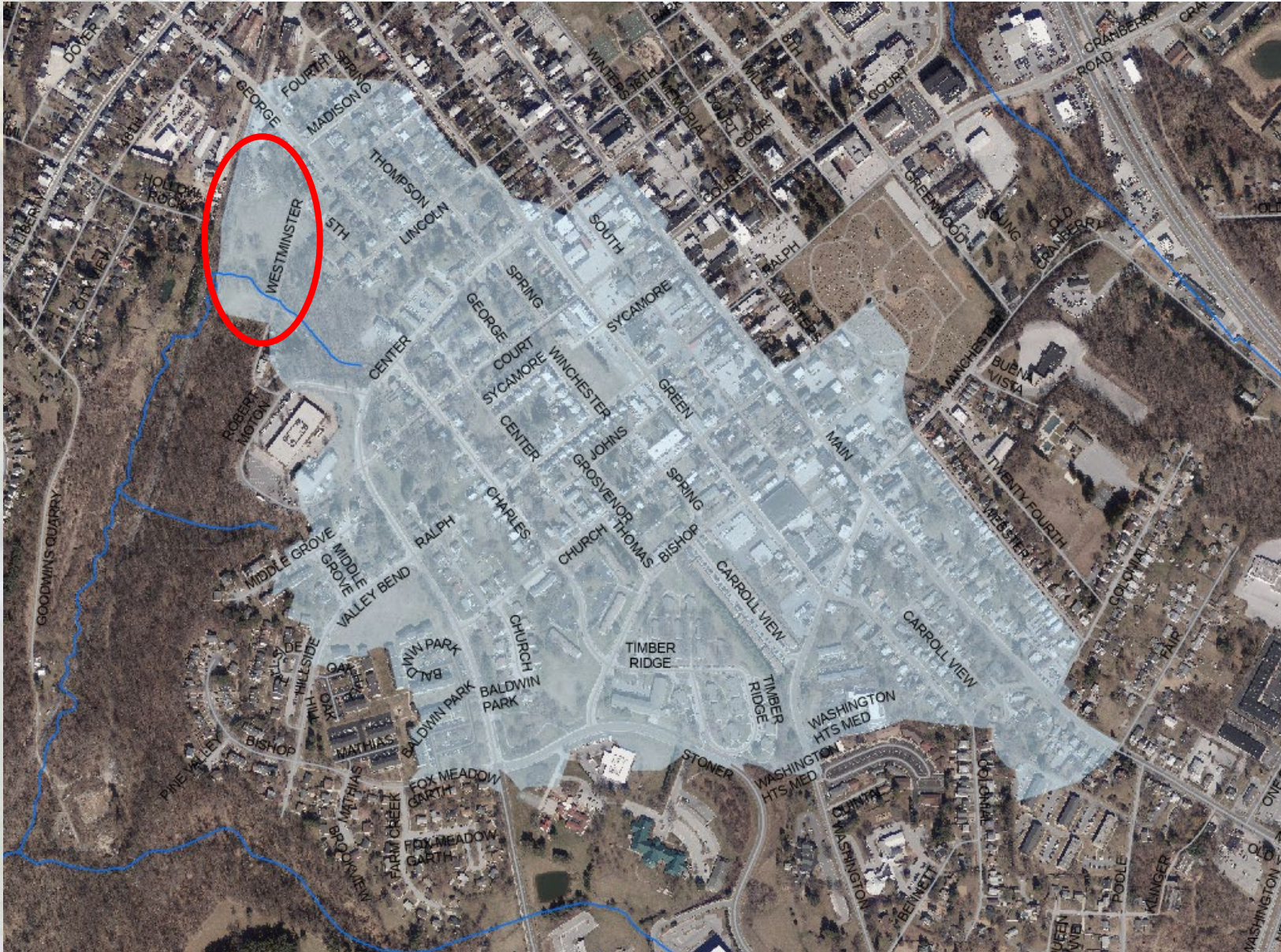
Carroll County NPDES Program



City of Westminster

- Founded 1764
- Incorporated 1818
- Population ~19,000
- Area ~6.7 square miles

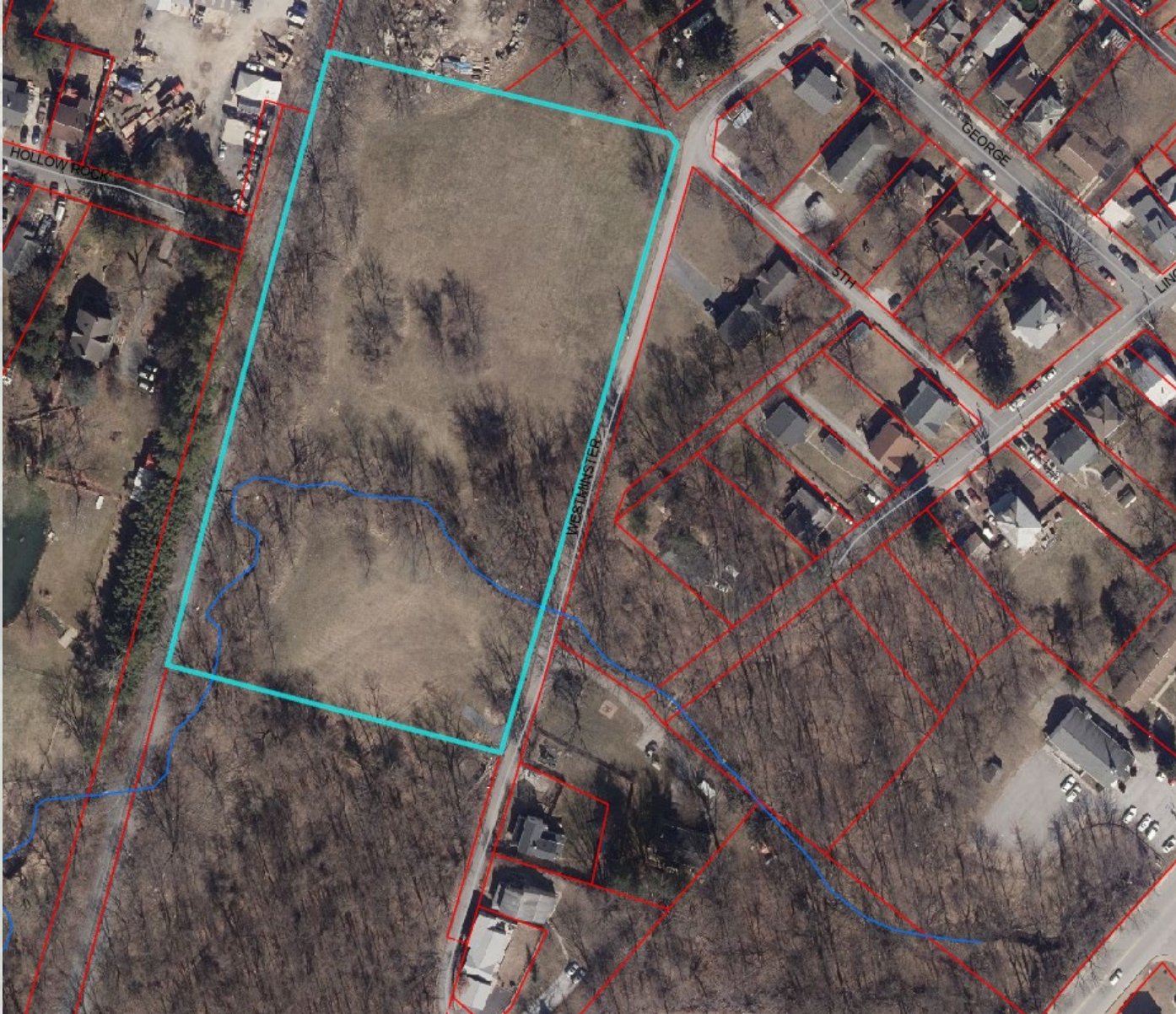
Langdon Stormwater Facility



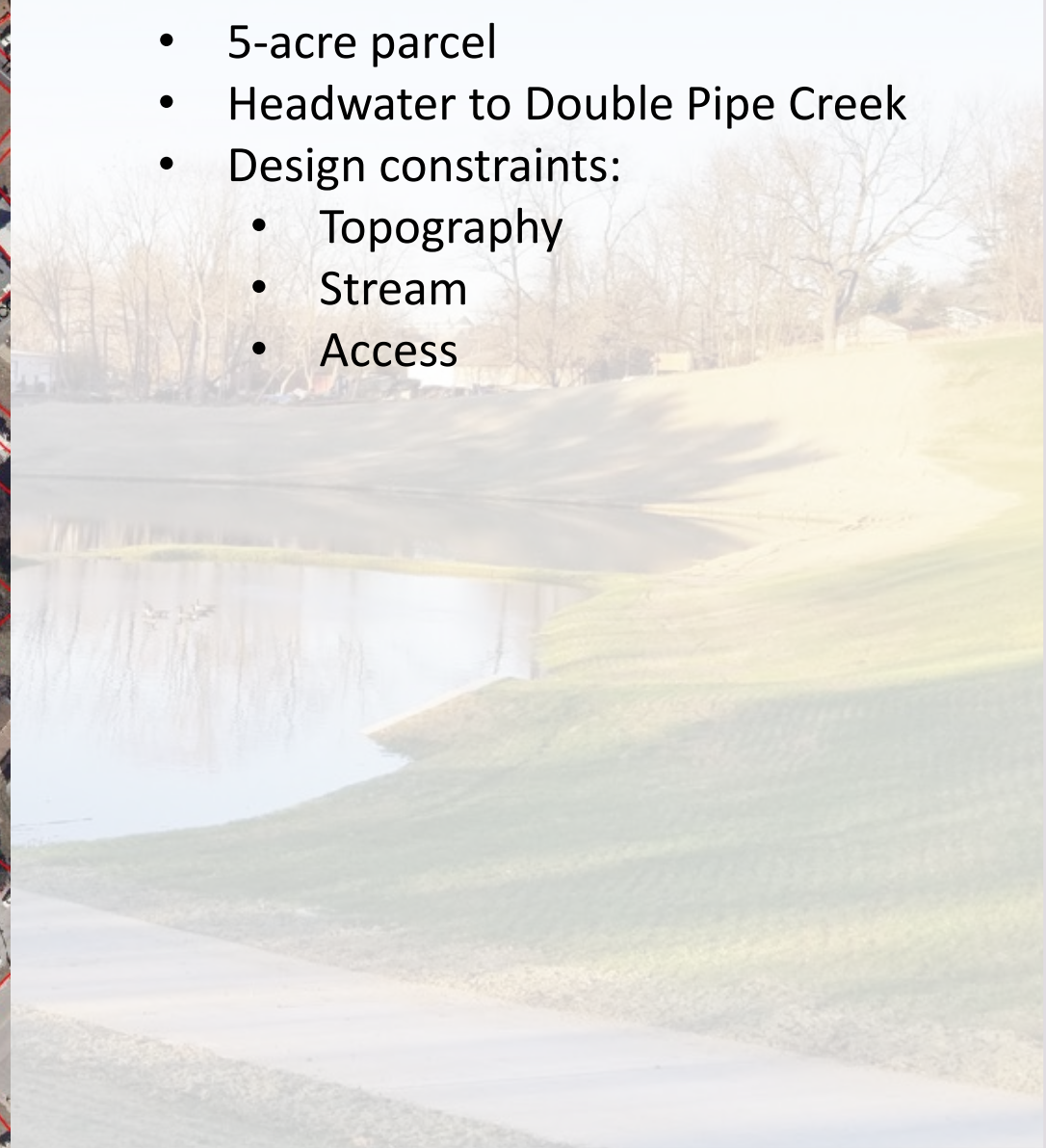
Langdon Property

- Drainage area – 203 Acres
- Impervious area – 96 Acres
- 47% Impervious

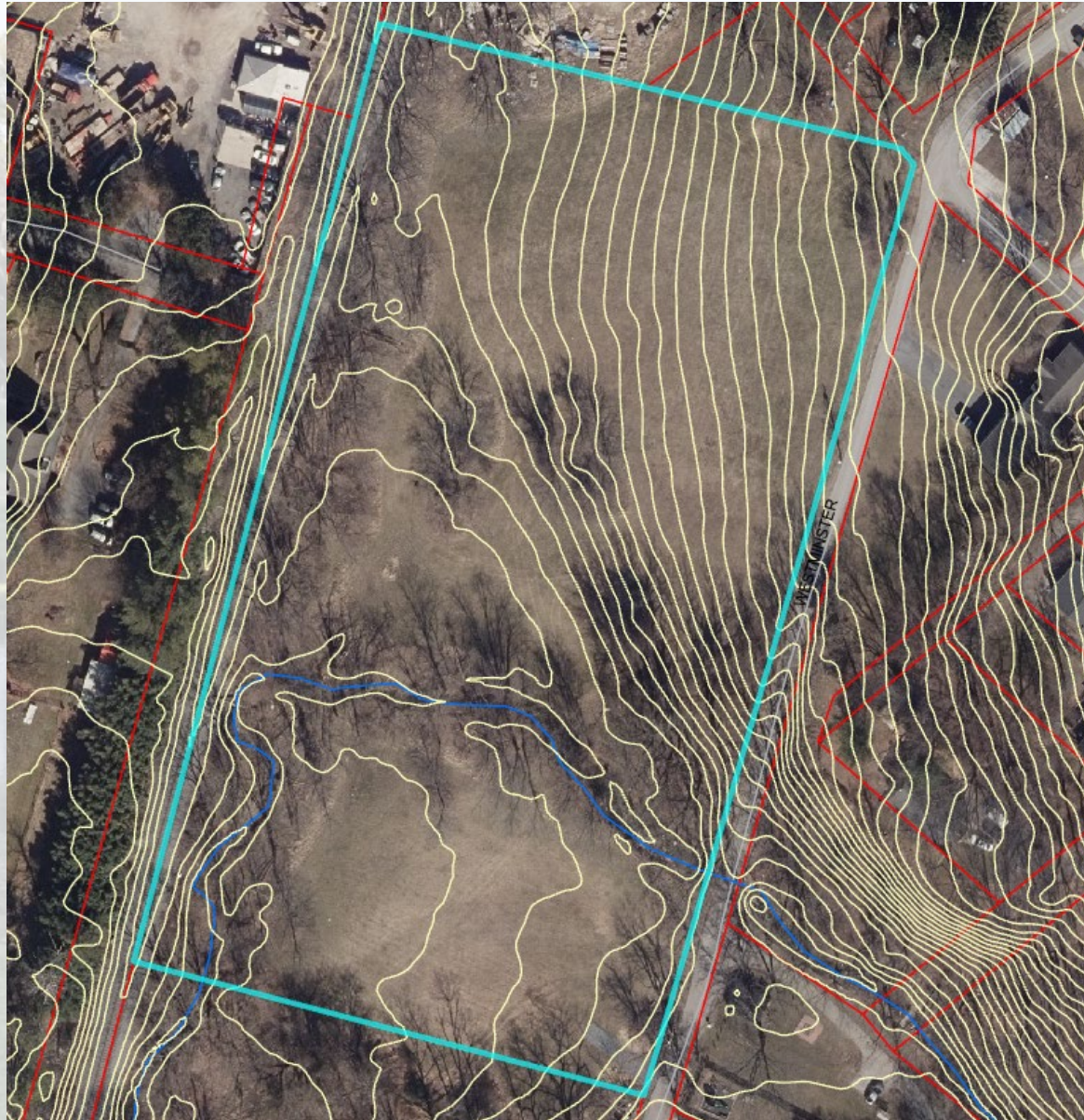
Langdon Stormwater Facility



- 5-acre parcel
- Headwater to Double Pipe Creek
- Design constraints:
 - Topography
 - Stream
 - Access



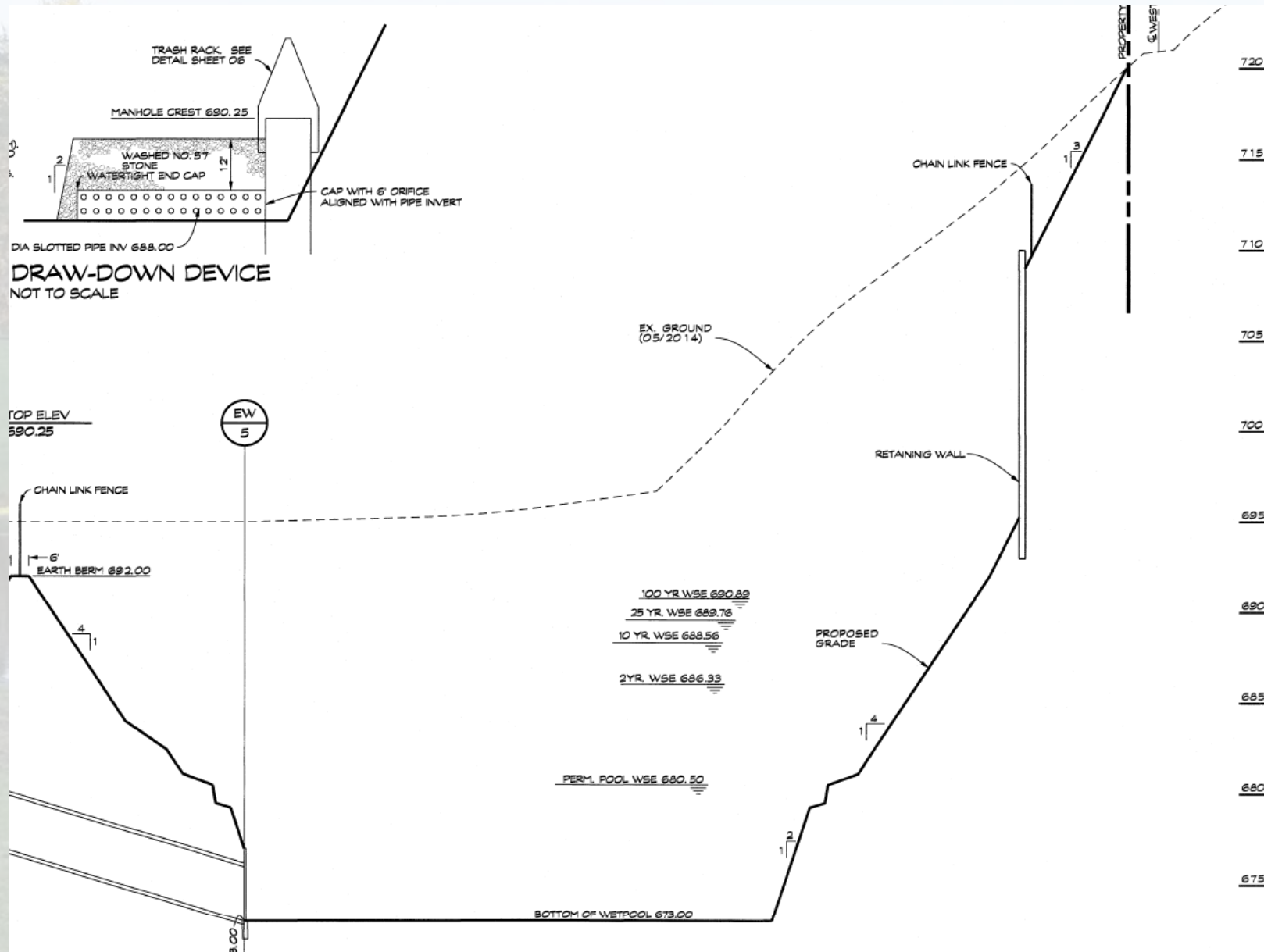
Langdon Stormwater Facility - Topography



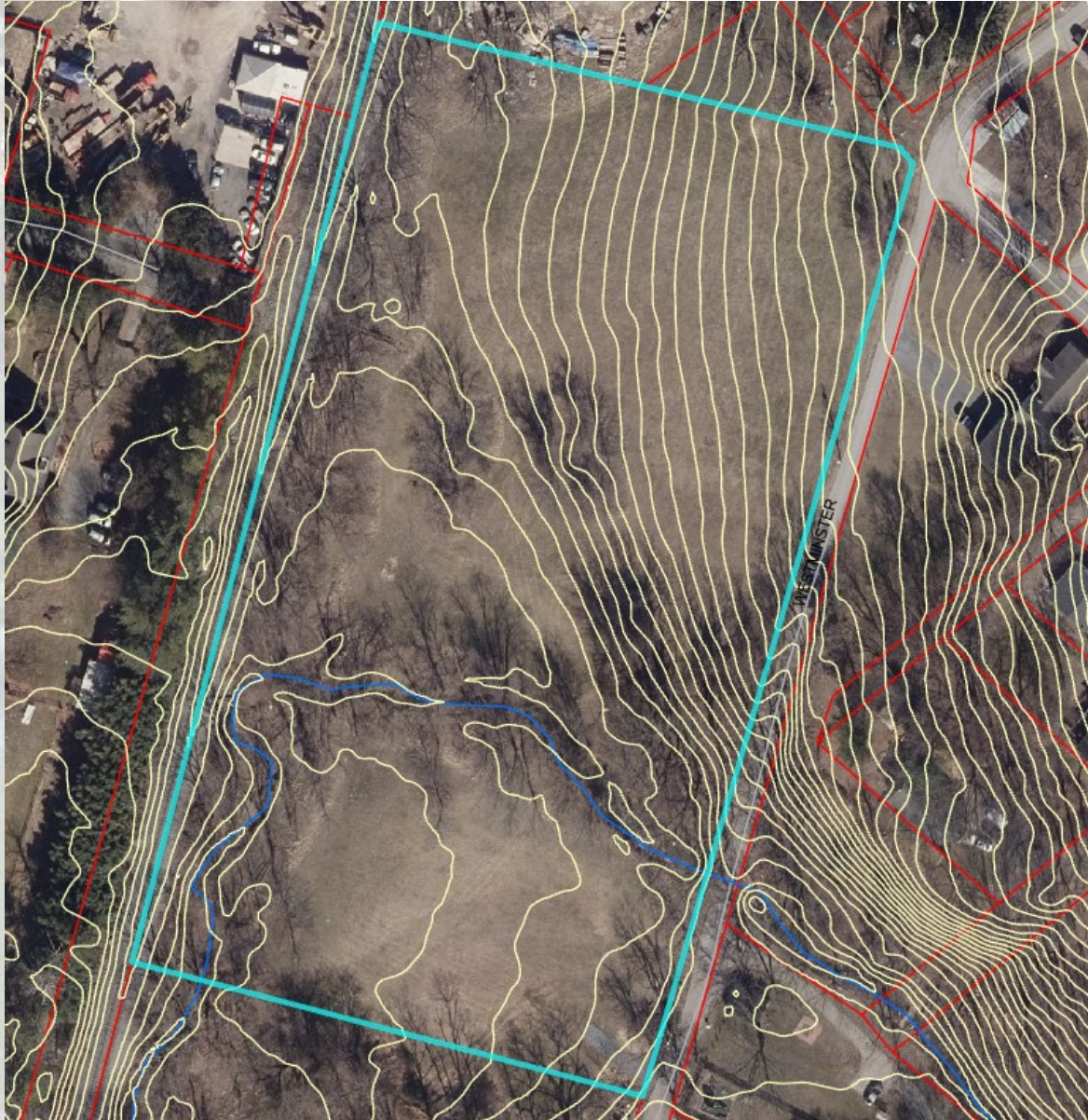
Langdon Stormwater Facility - Topography



Langdon Stormwater Facility - Topography



Langdon Stormwater Facility - Topography



Langdon Stormwater Facility - Topography

Network: Aug 7, 2020 at 2:16:14 PM EDT
Local: Aug 7, 2020 at 2:16:14 PM EDT
N 39° 34' 13.047", W 76° 59' 49.412"
18 E George St
Westminster MD 21157
United States



Langdon Stormwater Facility - Topography

Network: Aug 27, 2020 at 2:09:03 PM EDT

Local: Aug 27, 2020 at 2:09:03 PM EDT

N 39° 34' 13.051", W 76° 59' 49.385"

18 E George St

Westminster MD 21157

United States



Langdon Stormwater Facility - Topography



Langdon Stormwater Facility - Topography

Network: Sep 16, 2020 at 2:13:41 PM EDT

Local: Sep 16, 2020 at 2:13:41 PM EDT

N 39° 34' 9.311", W 76° 59' 53.186"

166–198 Westminster Ave

Westminster MD 21157

United States



Langdon Stormwater Facility - Topography



Langdon Stormwater Facility - Topography



Langdon Stormwater Facility – Stream Flow



Langdon Stormwater Facility – Stream Flow



Langdon Stormwater Facility – Stream Flow



Langdon Stormwater Facility – Stream Flow



Langdon Stormwater Facility - Access

- 75,000 CY Material to Remove
- ~7,500 Dump Trucks



Langdon Stormwater Facility – Train Hauling



© Jeremy Hill

Langdon Stormwater Facility – Train Hauling



Langdon Stormwater Facility – Train Hauling



Langdon Stormwater Facility – Train Hauling



Langdon Stormwater Facility – Train Hauling



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Langdon Stormwater Facility – Train Hauling



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Langdon Stormwater Facility – Train Hauling

Truck Hauling:

- 75,000 CY Hauled 8 Miles
- Assume \$8/CY
 - \$600,000
- Repair Westminster Ave
 - \$85,000
- Community Impact

Train Hauling:

- Crew/Train Use
 - \$400/hour
 - Estimated 750 hours
 - \$300,000
- Gondolas
 - Mobilization – \$28,000
 - \$500/month/gondola
 - Estimated 8 months
 - \$32,000
- Herzog – Unloading
 - Mobilization/Demobilization – \$8,800
 - Standby time – Estimated \$32,500
 - \$172.50/hour – Estimated \$131,100
- Track Restoration – \$30,000
- Total Contract – \$562,400



Langdon Stormwater Facility – Production

- Daily coordination on hauling based on weather
- Train preparation begins 6:00 AM
- Train leaves Union Bridge 7:00 AM
- Train arrives Westminster 7:30 AM
- HTI loads train in under an hour
 - Optimized to 8 cars – 520 CY
- Train travels to New Windsor by 9:00 AM
- Herzog unloads in 3 hours
- Train returns to Westminster by 12:30 PM
- HTI loads train by 1:30 PM
 - Optimized to 8 cars – 520 CY
- Train travels to New Windsor by 2:00 PM
- Train unloaded by 5:00 PM
- Train returns to Union Bridge and shut down by 6:00 PM

Typical hauling rate 1040 CY per day



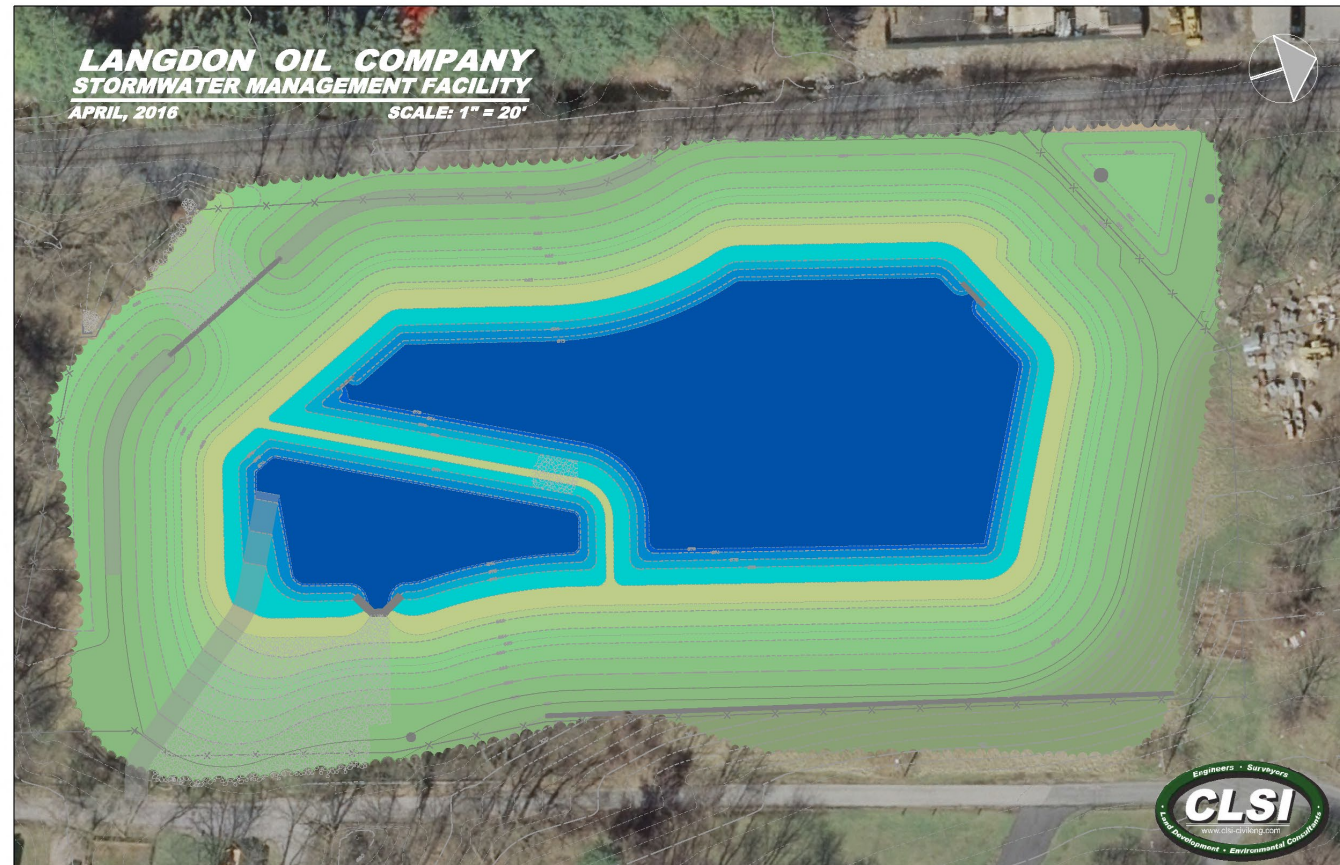
Langdon Stormwater Facility – Construction Coordination

- Carroll County Bureau of Resource Management
- City of Westminster
- Design Engineer – Carroll Land Services, Incorporated
- Pond Construction – Highland Turf Incorporated
- Rail owner/operator – Maryland Midland Railway, Inc.
- Specialized Equipment – Herzog Services, Inc.
- Fill site Contractor – Stambaugh's Inc.
- Geotechnical Engineer/Inspection – Hillis-Carnes Engineering Associates
- Construction Inspection – A. Morton Thomas and Associates



Langdon Stormwater Facility – Schedule

- Concept initiated – 2013
- Design RFP – 2014
- DNR Grant Application – 2016
- TAP Grant Application – 2016
- Property Purchase – 2016
- Approvals & Agreements – Early 2019
- Construction Bid – November 2019
- Construction Start – April 2020
- Construction completion
 - Substantially – December 2020
 - Punch list/Closeout – Spring 2021



Langdon Stormwater Facility – Budget

Project Costs

- Property Acquisition – \$300,000
- Engineering Design/Geotechnical Testing/Inspection – \$150,000
- Pond Construction – \$1,655,000
- Fill site Construction – \$513,000
- Train Hauling/Unloading – \$522,000
- **Total Project Cost – \$3,150,000**

Project Funding:

- Federal Highway – Transportation Alternatives Program Grant – \$979,941
- Maryland Department of Natural Resources Grant – \$900,000
- County Funds – \$1,270,000

Impervious Area Treated – 96 Acres

Total Cost/Impervious Area = \$32,812

Cost to Carroll County citizens = \$13,229

**Baltimore Regional
Transportation Board (BRTB)
Transportation Alternatives Application**



Langdon Stormwater Facility

THANK YOU
&
QUESTIONS?

