

# Delaware County Regional Sewer District

*“The Fastest Growing Sewer District in Ohio”*

Southeast OWEA Section Meeting

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October 20, 2016



# DELAWARE COUNTY

- Fastest Growing County in Ohio
- Healthiest County in Ohio
- Wealthiest County in Ohio (MHI)
- Highly Educated (>60% Bachelors Degree)
- 2<sup>nd</sup> Happiest County in U.S.
- AAA bond rating; first Ohio since 1990s



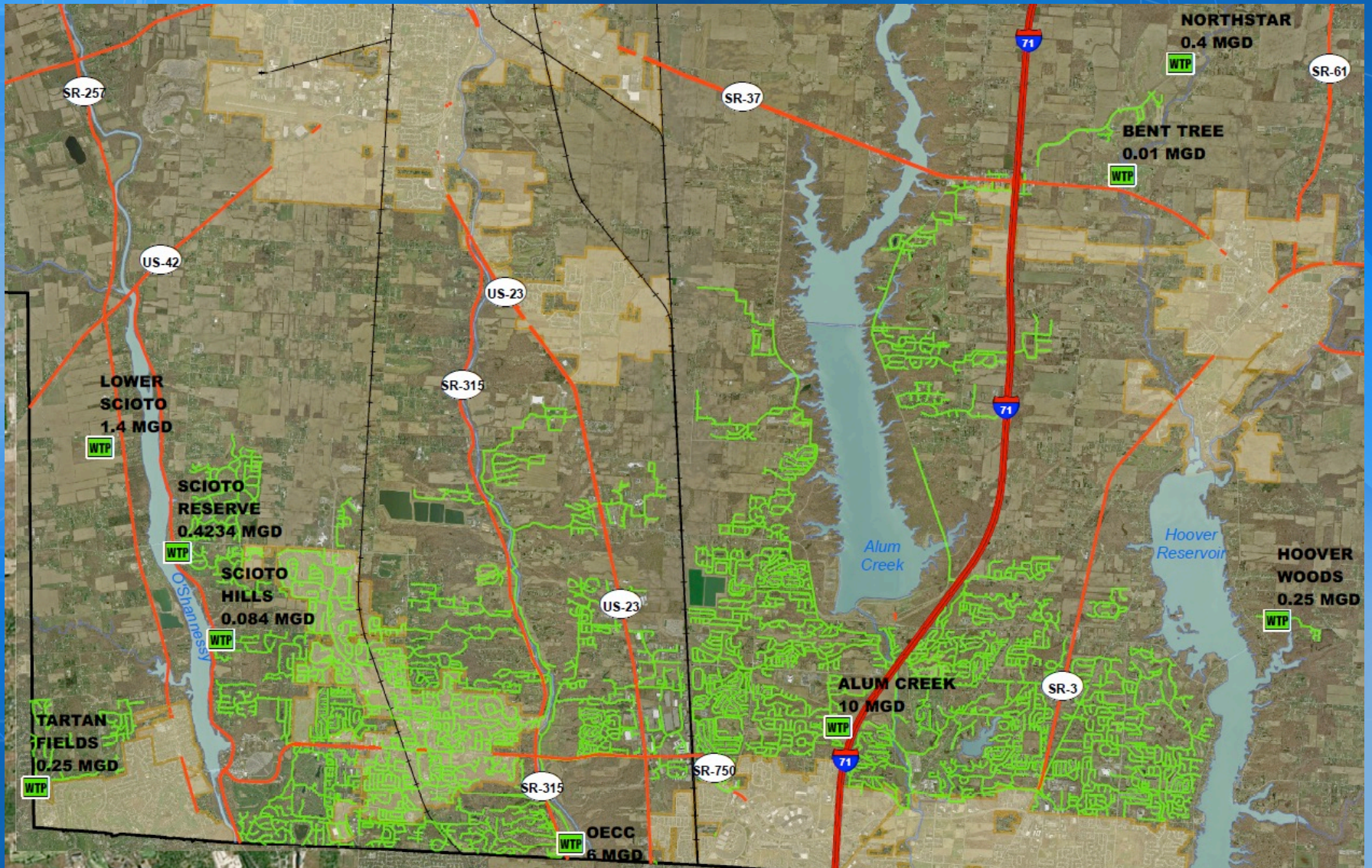
**Great Place to Live, Work, and Play**

**.....And Build New Houses and Condos!**

# Our System

- Discharge to 4 watersheds that include drinking water supply sources, scenic rivers and recreational lakes.
  - Alum Creek, O'Shaughnessy Reservoir, Hoover Reservoir, and Olentangy River
- 3 Major Water Reclamation Facilities
  - Alum Creek, OECC, Lower Scioto
- 3 land application/beneficial reuse facilities
  - Tartan Fields, Scioto Reserve, NorthStar
- 3 Small Package Plants
- Over 500 Miles of Sewers, 24 Pump Stations, and 10,000 Manholes

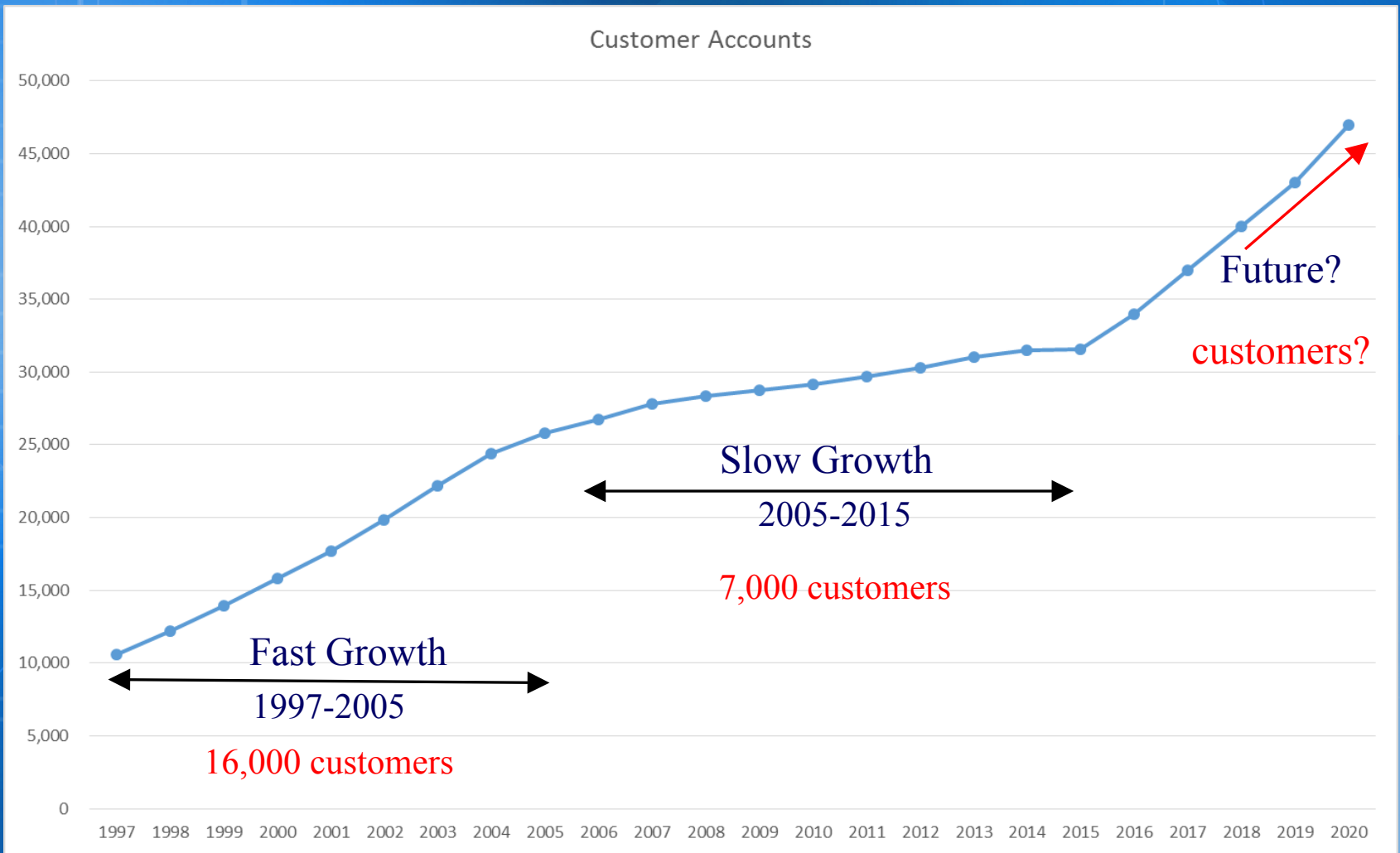
# Regional Sewer District



# Fun Facts

- Treat over 5 Billion Gallons of Wastewater Annually
- Annual Budget of Over \$22 Million
- 60 Operators, 10 Engineers, 5 Inspectors and 4 Administrative
- Generate 12,000 Wet Tons of Sludge Annually
- 0 overflows last year
- 32,785 Customers on the System
- Sewer Rates = \$32/Month Flat Fee

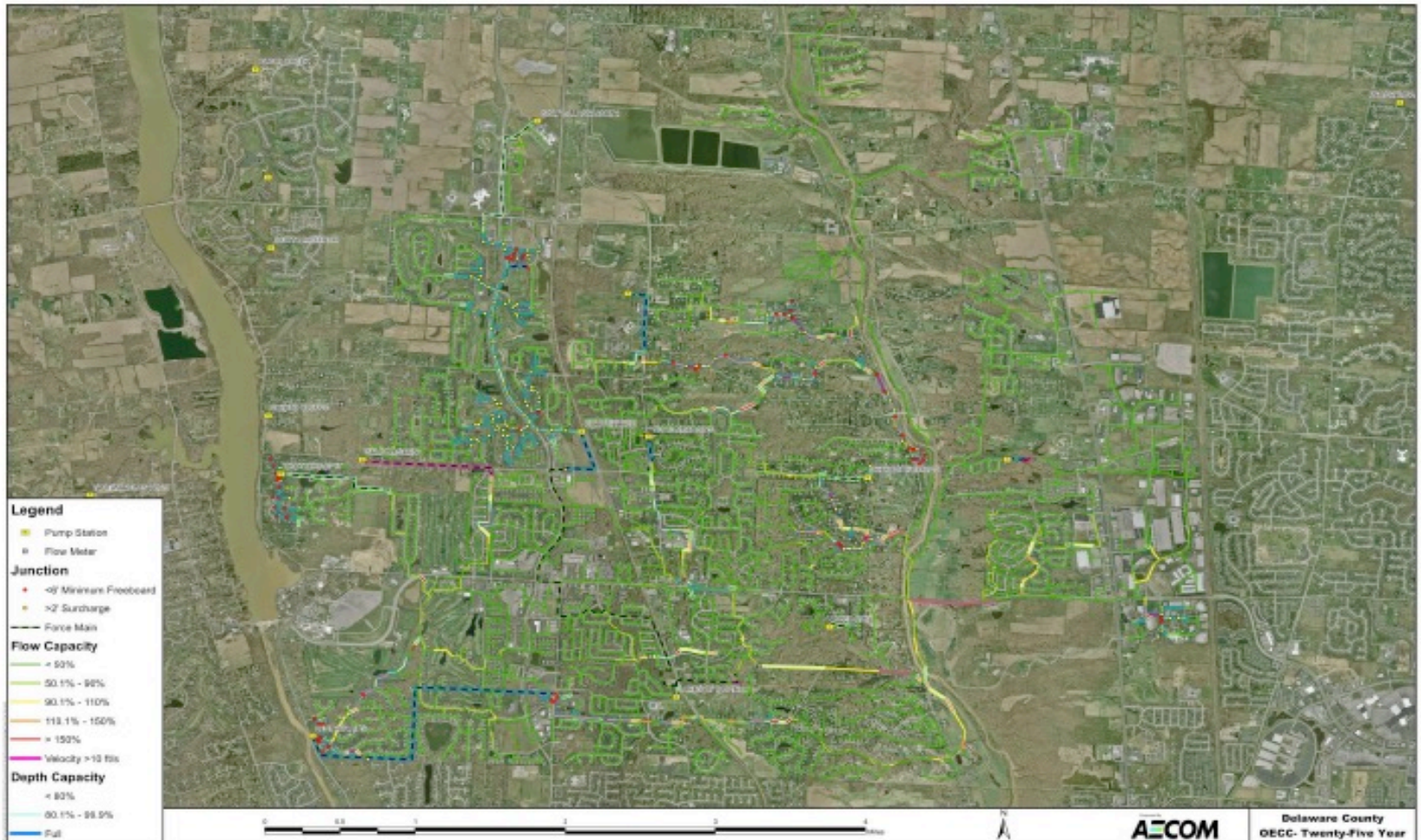
# System Growth – Future



# Master Plan Strategy

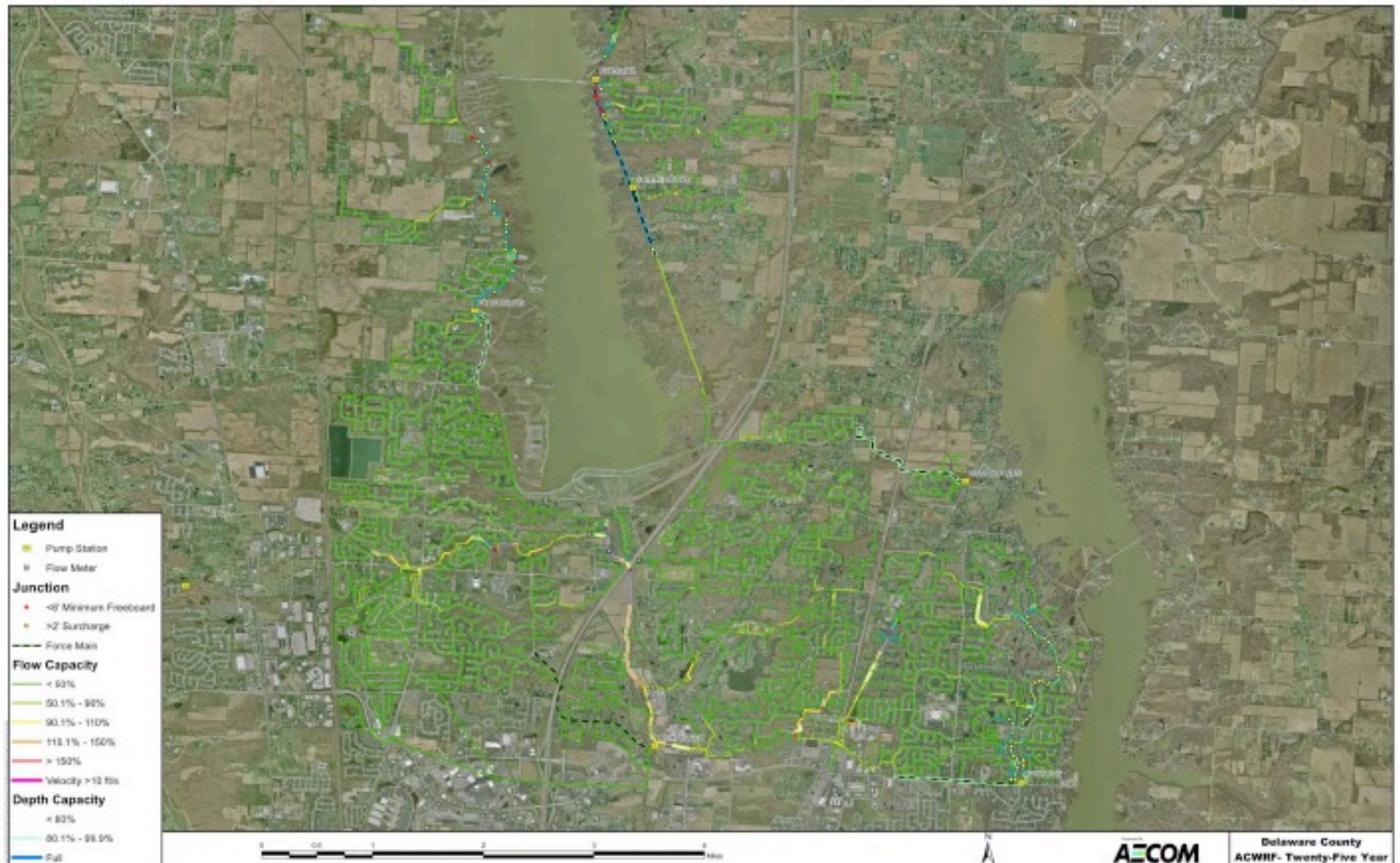
- Progressive Infrastructure Development Strategy – meet current needs, accommodate 25 years of growth, and sustainable ultimate system operation.
- Maintenance of our current and really good assets
- Focus on innovation and technology
  - Hydraulic Modeling, CMOM, I&C Programming
- Focus on operational excellence and sustainability
  - Energy reduction, chemical treatment reduction
- Culture of Safety – Arc Flash, Confined Space, Cranes

# OECC System Model





# Alum Creek System Model



# Pump Station Evaluation

Pump Station	Average DWF	Modeled Station Capacity (MGD)	Peak WWF (MGD)			25-Year Conditions	
			5-Year	10-Year	25-Year	Upstream Minimum Freeboard (ft)	Surcharge (ft)
MAXTOWN	0.3045	2.380	● 2.623	● 2.812	● 2.779	● 8.3	● 14.1
EAST ALUM CREEK	0.05114	0.551	● 0.357	● 0.419	● 0.480	● 10.4	● 0.0
CHESHIRE	0.5377	1.116	● 0.975	● 1.195	● 1.187	● 0.0	● 9.3
SUMMERWOOD	0.1121	0.612	● 0.521	● 0.590	● 0.672	● 9.5	● 0.0
VINMAR FARMS	0.0342	0.428	● 0.153	● 0.166	● 0.193	● 19.2	● 0.0
PEACHBLOW	0.1842	0.864	● 0.989	● 0.925	● 1.041	● 2.6	● 15.1
TROTTERS GAIT	0.0616	0.423	● 0.462	● 0.512	● 0.577	● 3.9	● 13.2
SELDOM SEEN	0.0163	0.706	● 0.330	● 0.382	● 0.460	● 6.0	● 0.0
LEATHERLIPS	0.8751	2.993	● 4.404	● 4.762	● 5.185	● 0.0	● 11.7
GOLF VILLAGE NORTH	0.0104	0.474	● 0.235	● 0.300	● 0.350	● 16.2	● 0.0
WOODCUTTER	0.0074	0.186	● 0.102	● 0.122	● 0.145	● 22.5	● 0.0
GOLF VILLAGE	0.1698	1.795	● 2.156	● 1.888	● 2.199	● 5.1	● 12.1
LAKES OF POWELL	0.2649	0.860	● 0.603	● 0.732	● 0.913	● 13.9	● 0.0
DEERRUN	0.022	0.230	● 0.066	● 0.072	● 0.080	● 7.9	● 0.0
SHERBORNE MEWS	0.0088	0.154	● 0.165	● 0.234	● 0.177	● 7.5	● 6.4
QUAIL MEADOWS	0.0292	0.551	● 0.372	● 0.442	● 0.529	● 17.1	● 0.0

# OECC Condition Assessment

- No Screening/Headworks (Increased Plant O&M)
- North Plant Offline (Capacity)
- Aeration Issues (Electrical \$\$)
- Mixing Issues (Chemical \$\$)



# Alum Creek Condition Assessment

- Aeration System Modification (Electrical Savings)
- New Mixers (Nutrient Removal)
- Outdated Electrical and I&C
- No Grit Removal (Increased O&M)



# Package Plants

- Tartan Fields WRF:
  - Designed and Constructed by Developer
  - No EQ Basin
  - Hydraulic Limitations
- Scioto Reserve WRF
  - Influent Screens Obsolete
  - Very High Influent TKN
  - Effluent Pumps Limiting Factor
  - Electrical Equipment Rating

# O&M Plant & PS Improvements

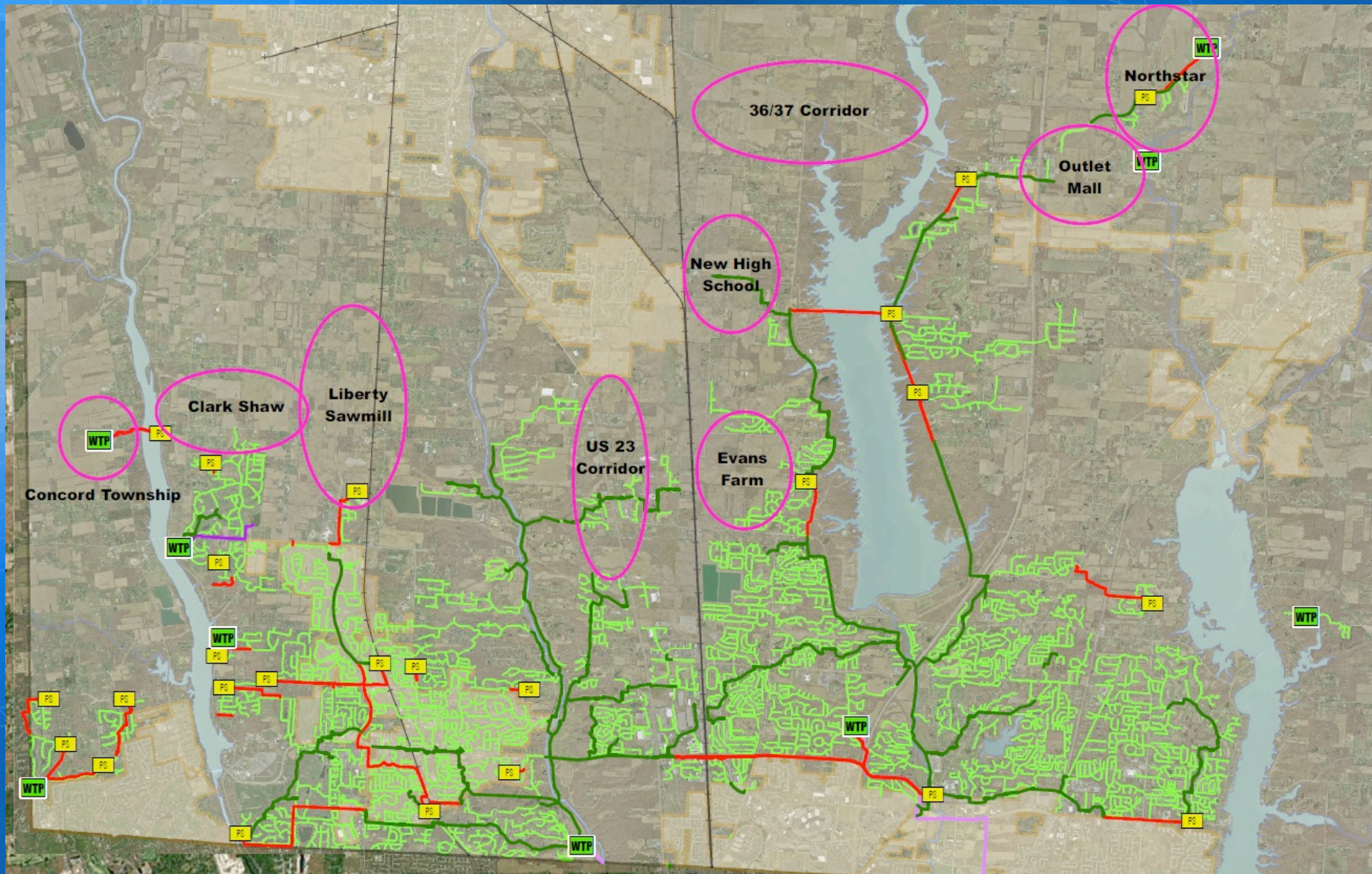
- OECC Upgrades - \$30M
- ACWRF Upgrades - \$12.5M
- Tartan Fields - \$1M
- Scioto Reserve - \$1.5M
- Lower Scioto WRF Upgrades - \$1.5M
- Leather Lips Pump Station Upgrades \$0.3M

# Development

- Concord Township
- Clark Shaw Area
- Liberty Sawmill Parkway Extension
- U.S. 23 Corridor
- Evans Farm
- New Olentangy High School
- Tanger Outlet Mall
- 36/37 Corridor
- NorthStar



# Growth Areas

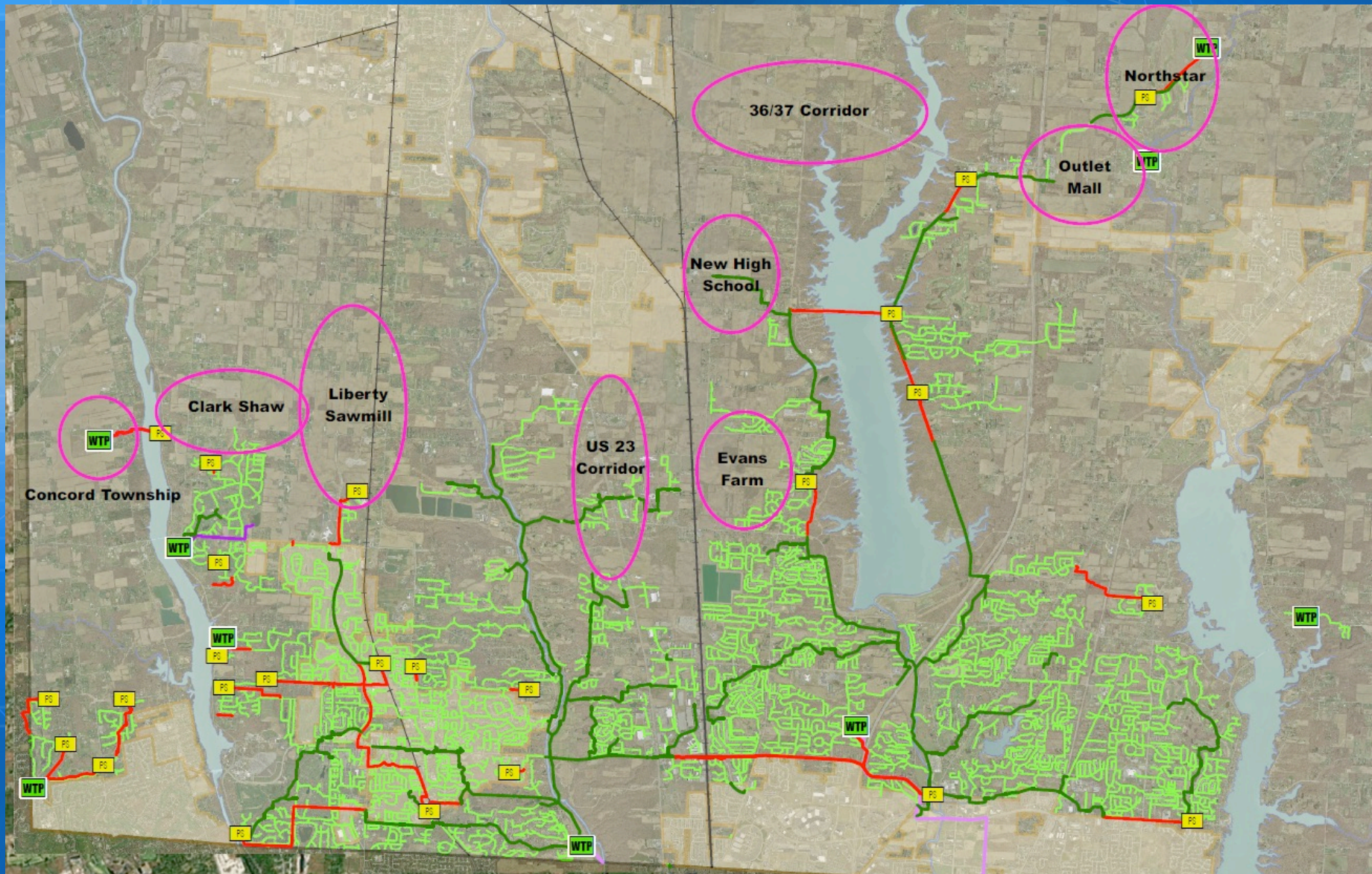




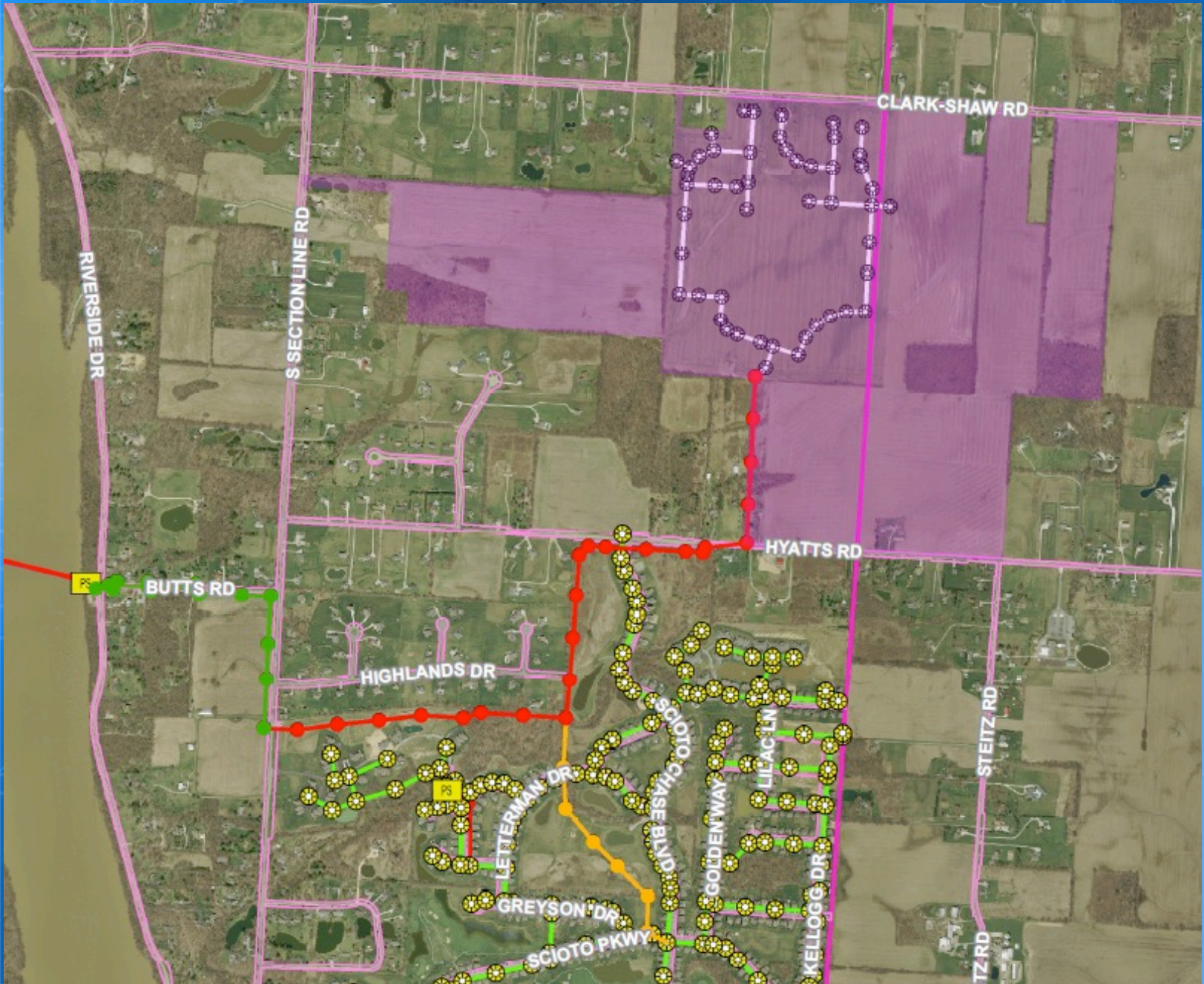
# Concord Township



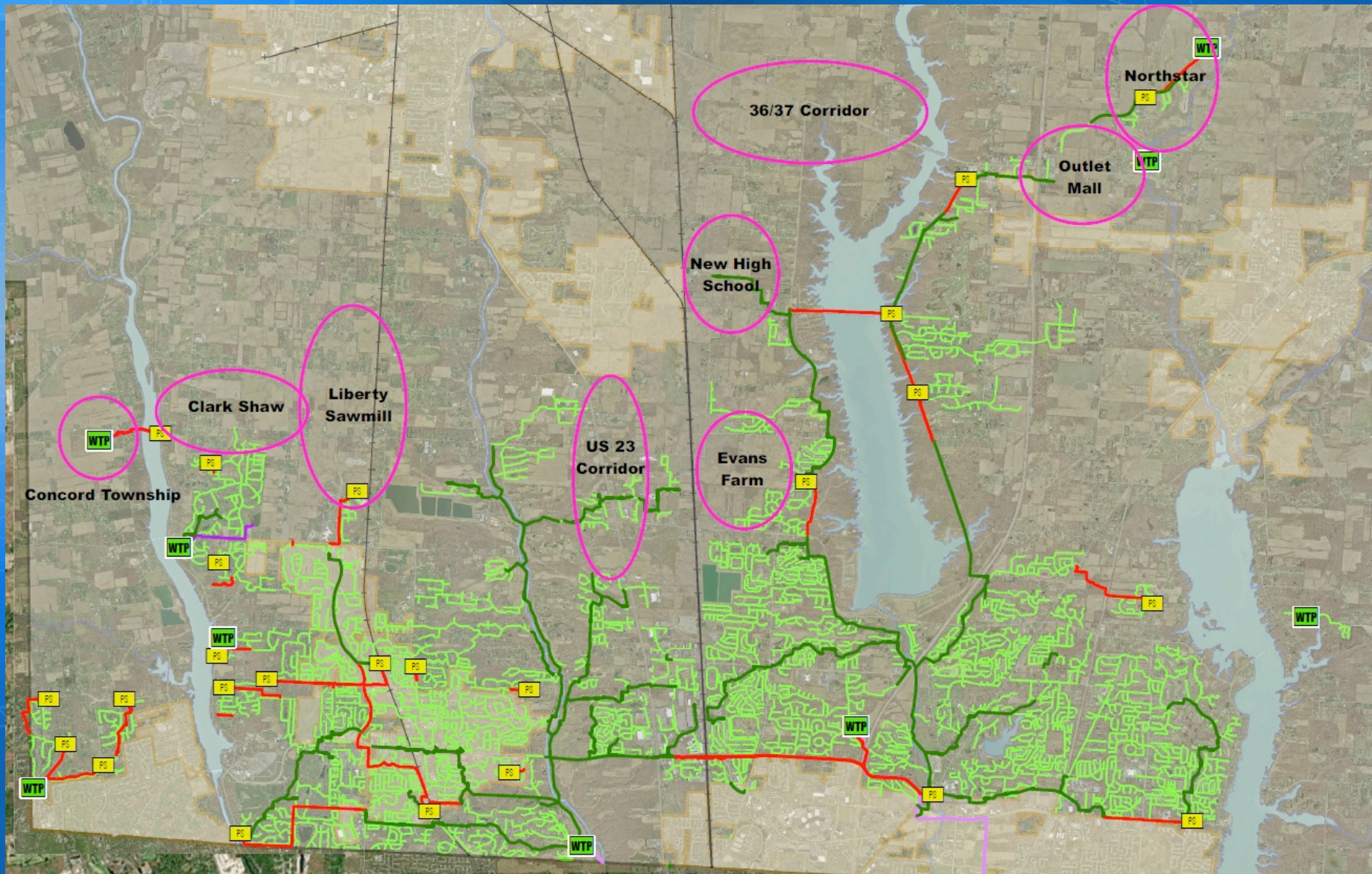
# Growth Areas



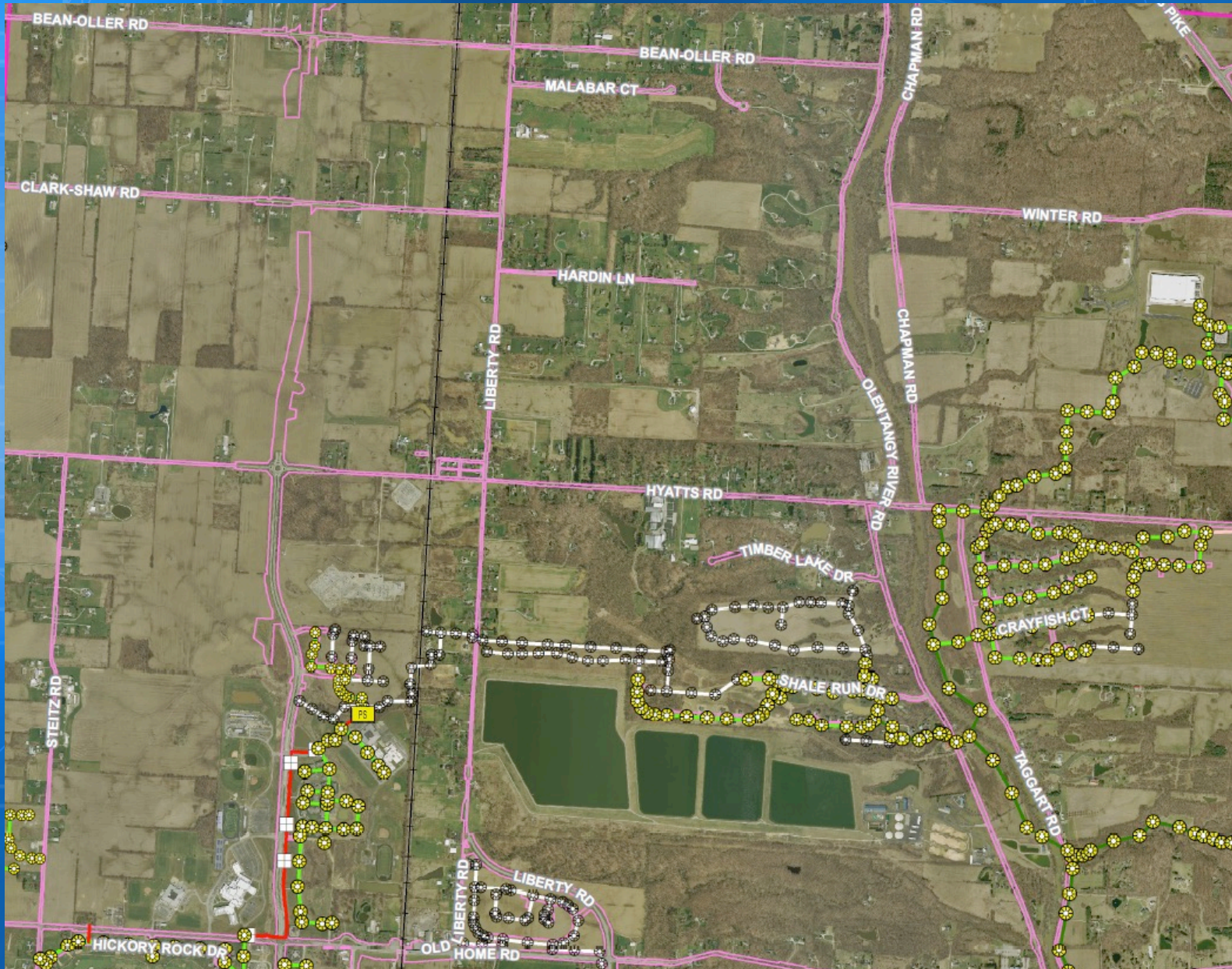
# Clark Shaw



# Growth Areas



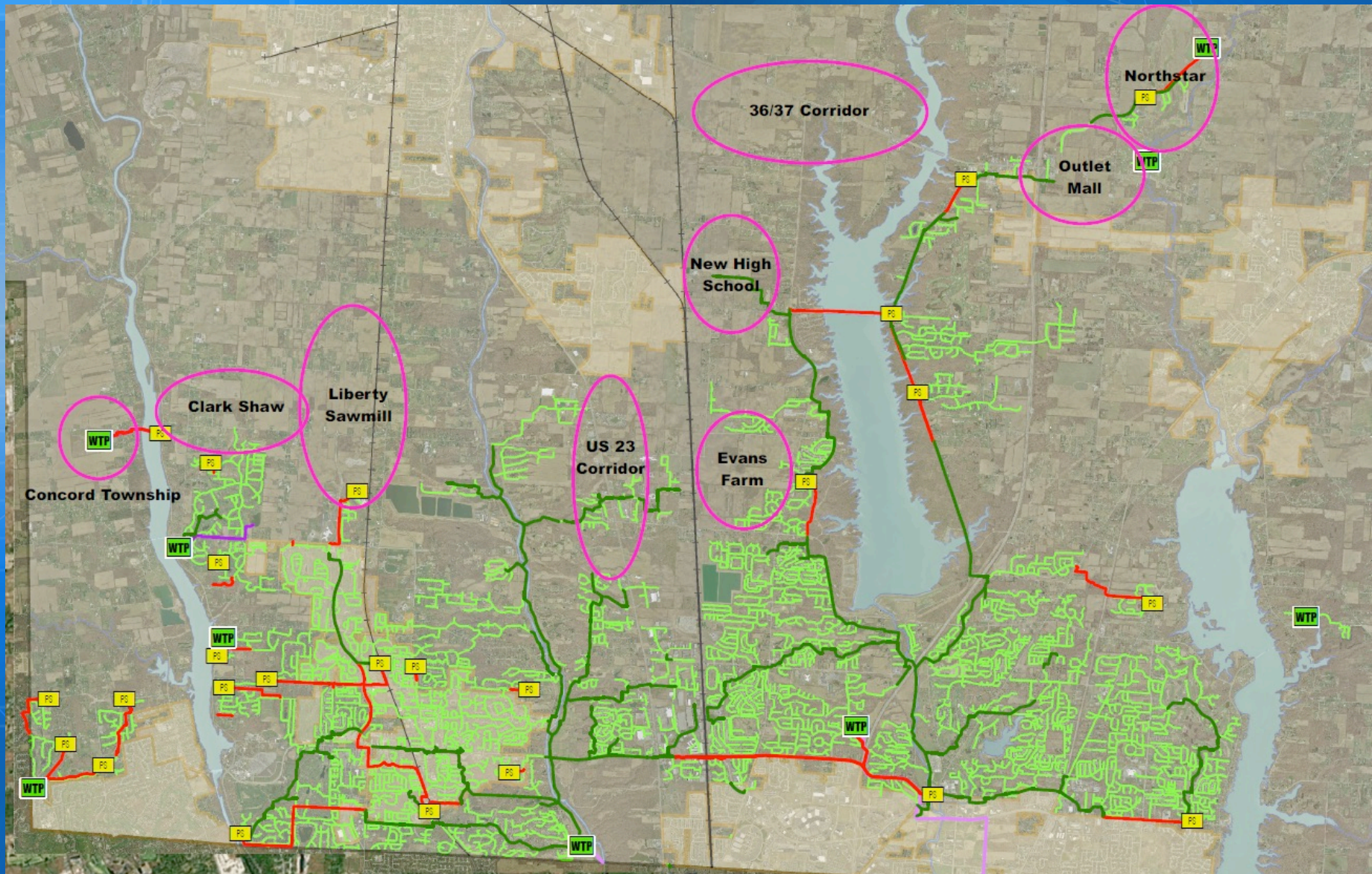
# Liberty Sawmill



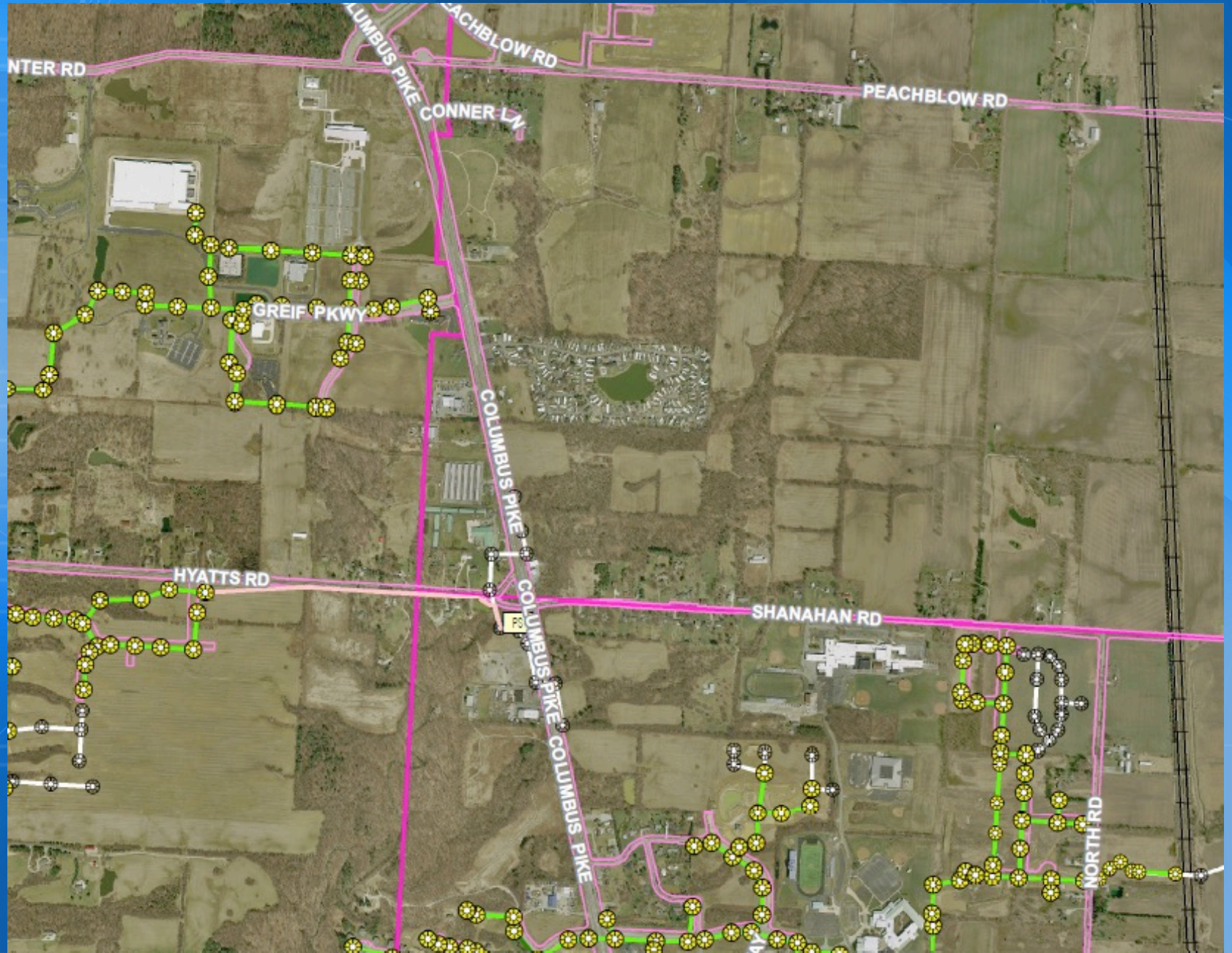
# Sawmill Parkway Extension



# Growth Areas

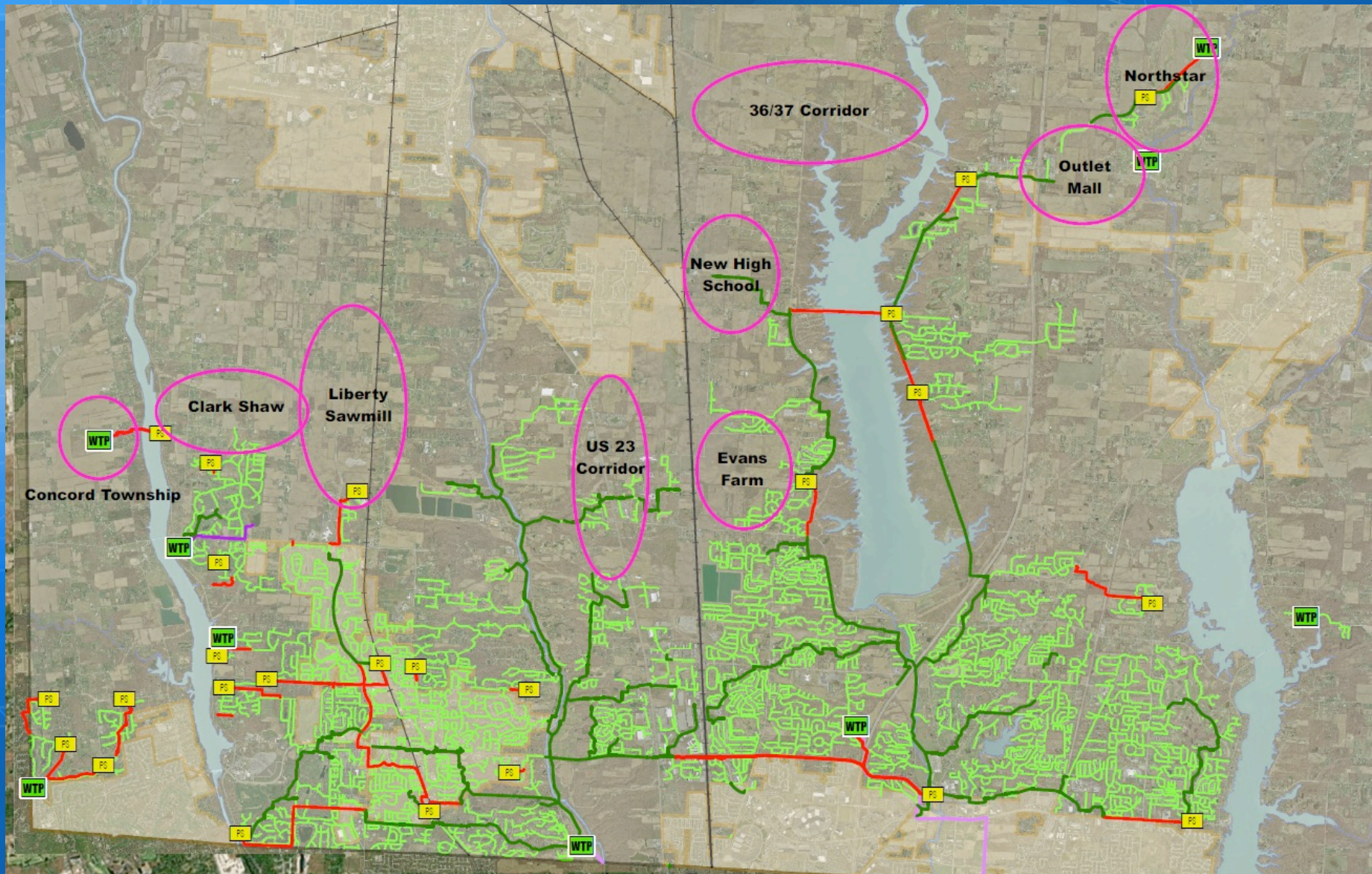


# US 23 Corridor





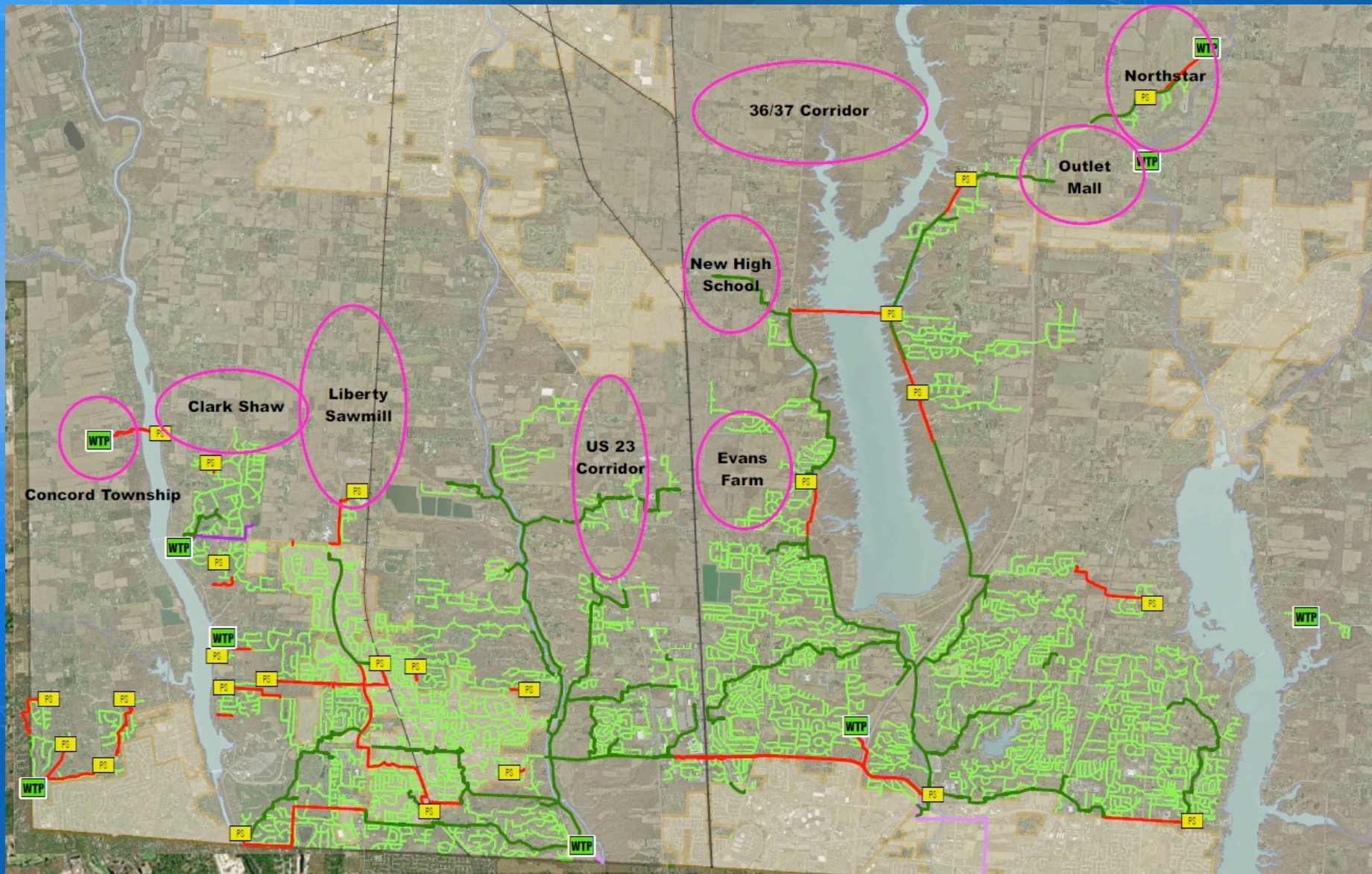
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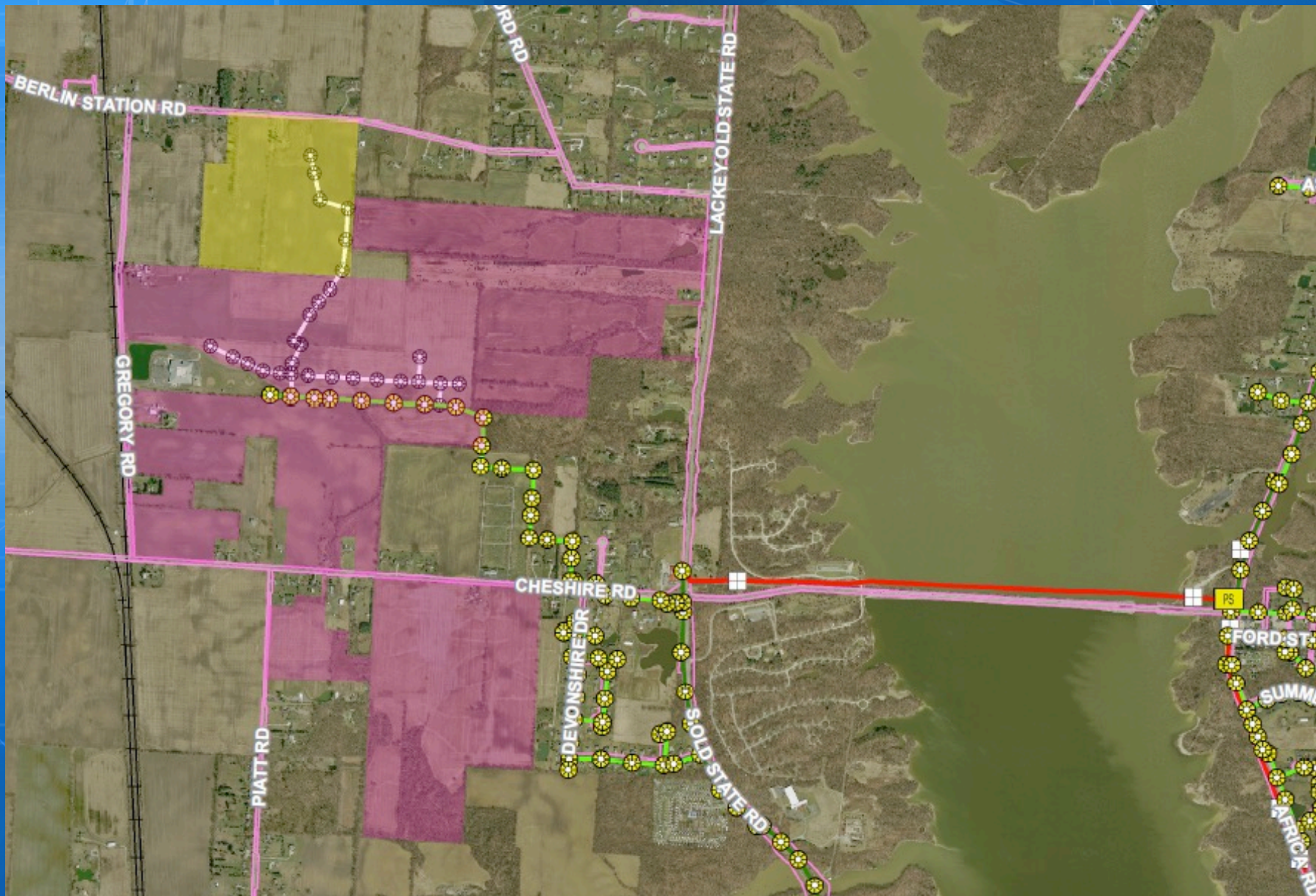
# Evans Farm



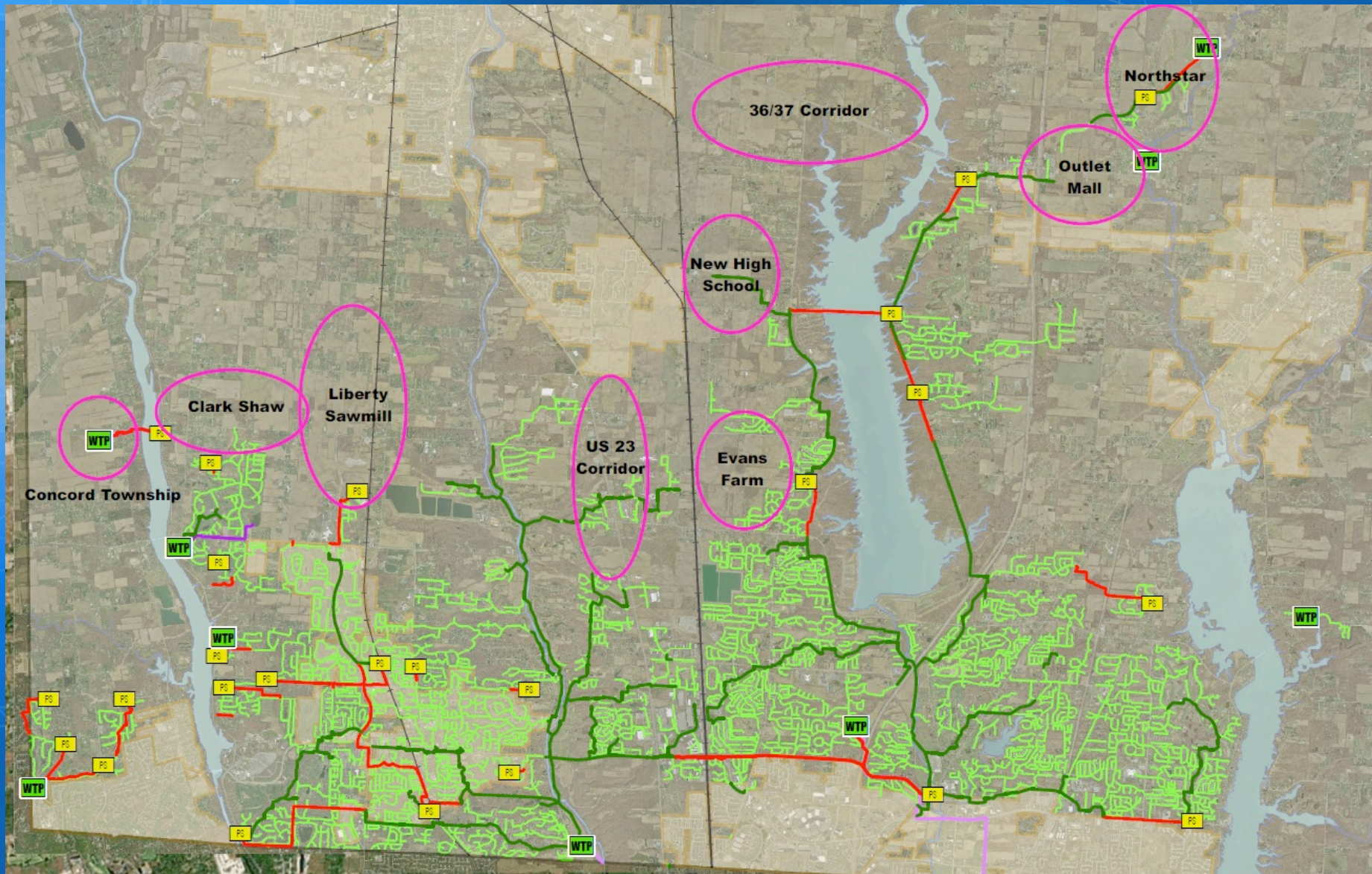
# Growth Areas



# New High School



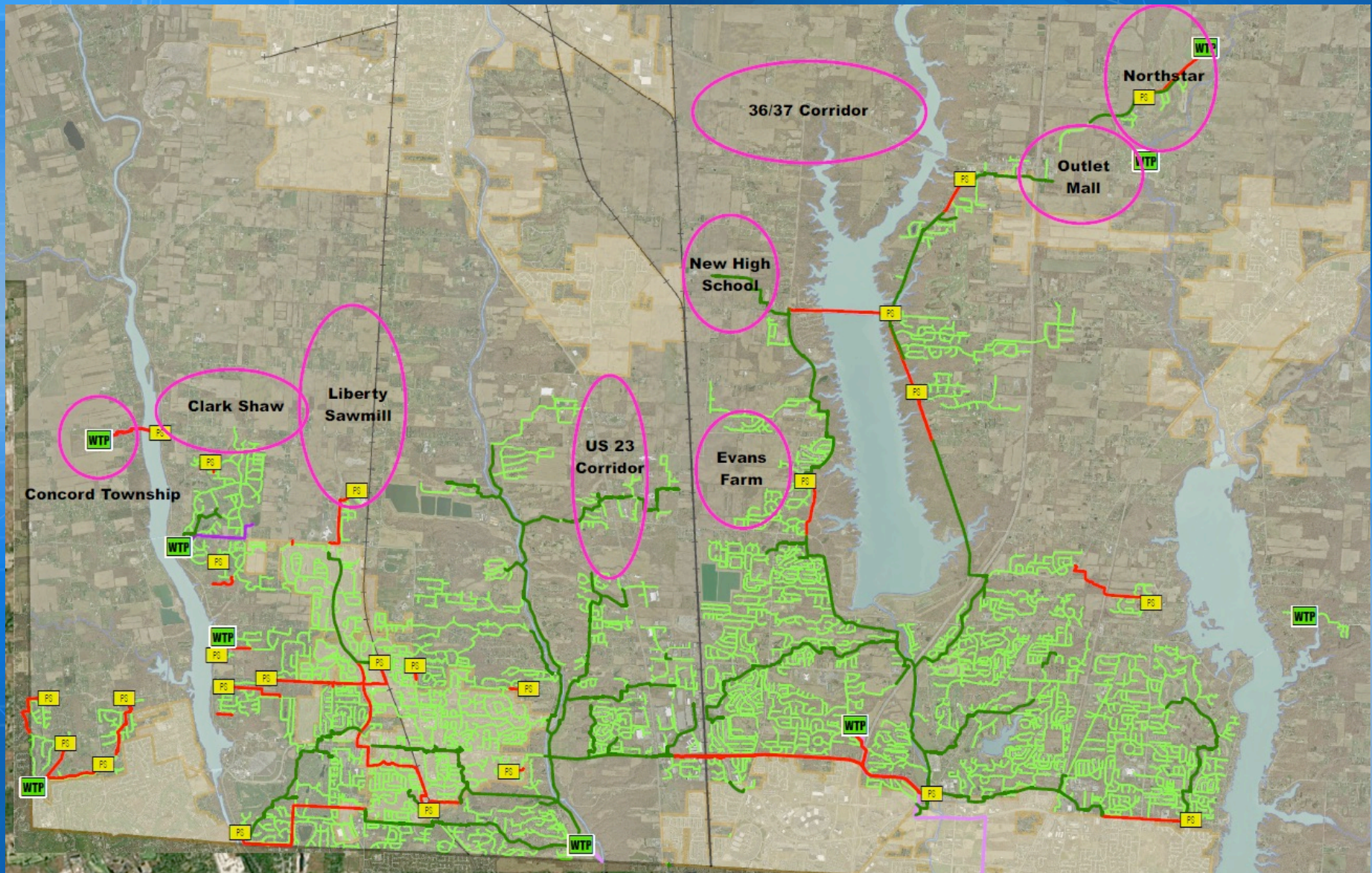
# Growth Areas



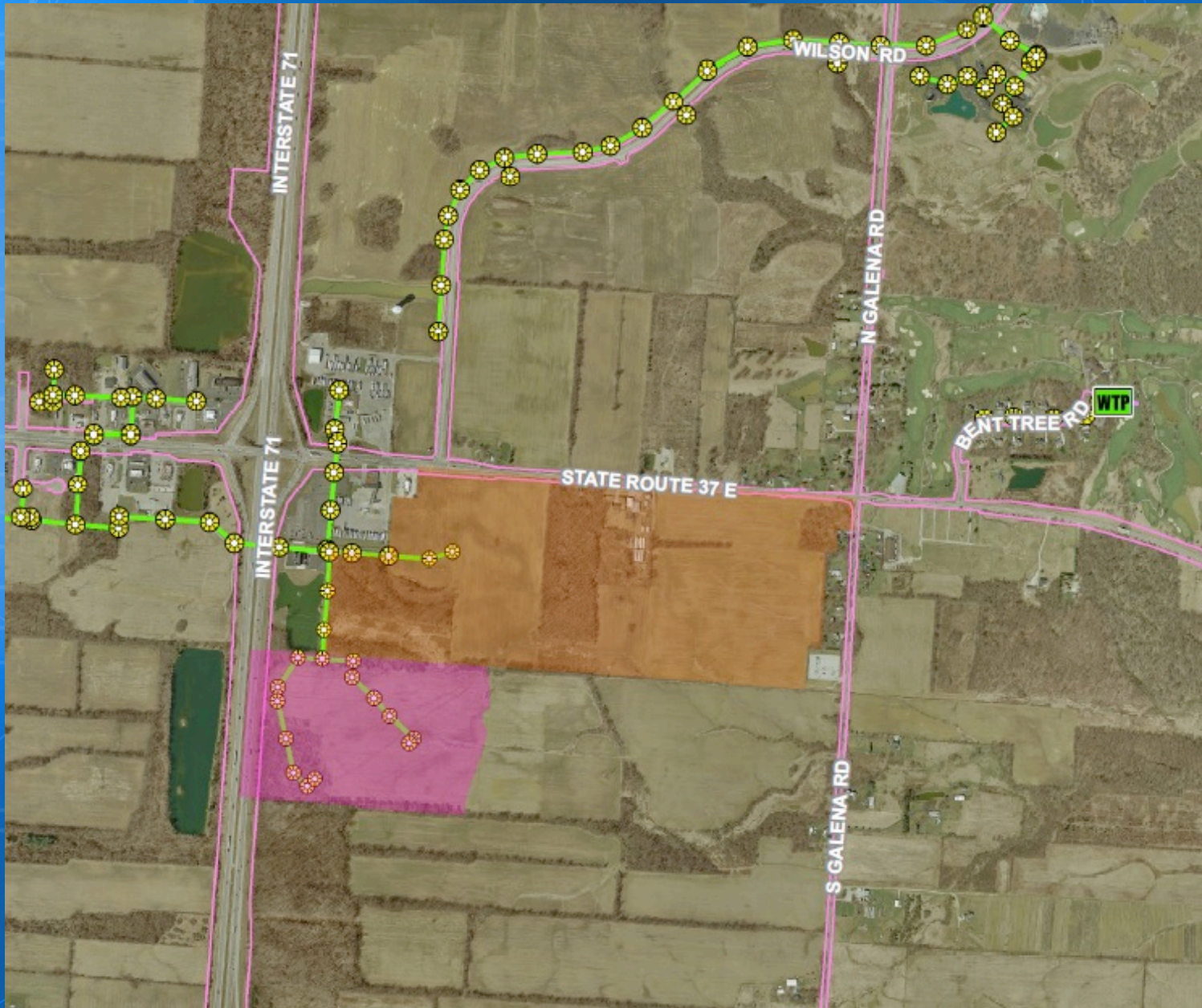
# 36/37 Corridor



# Growth Areas

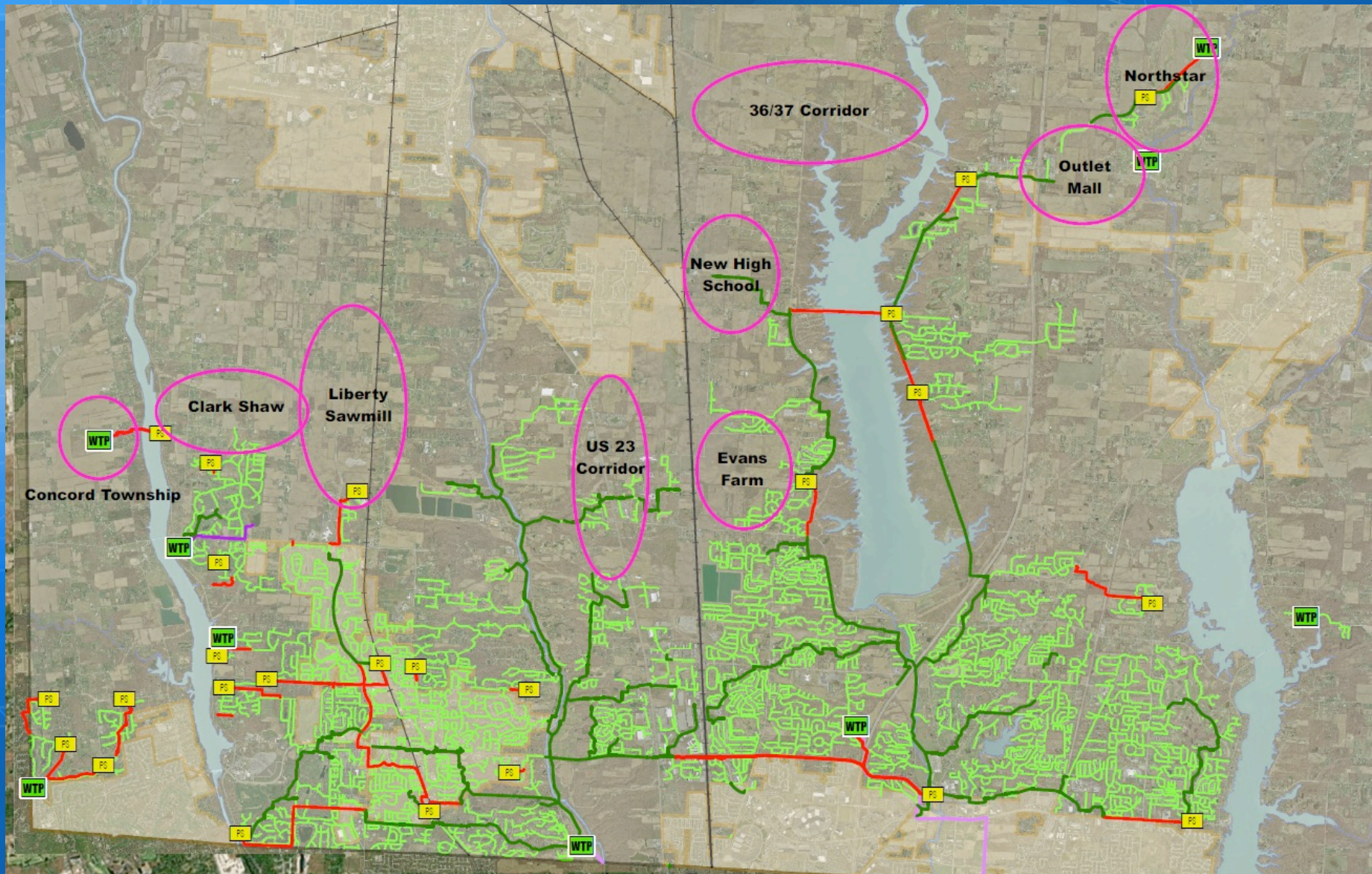


# Outlet Mall

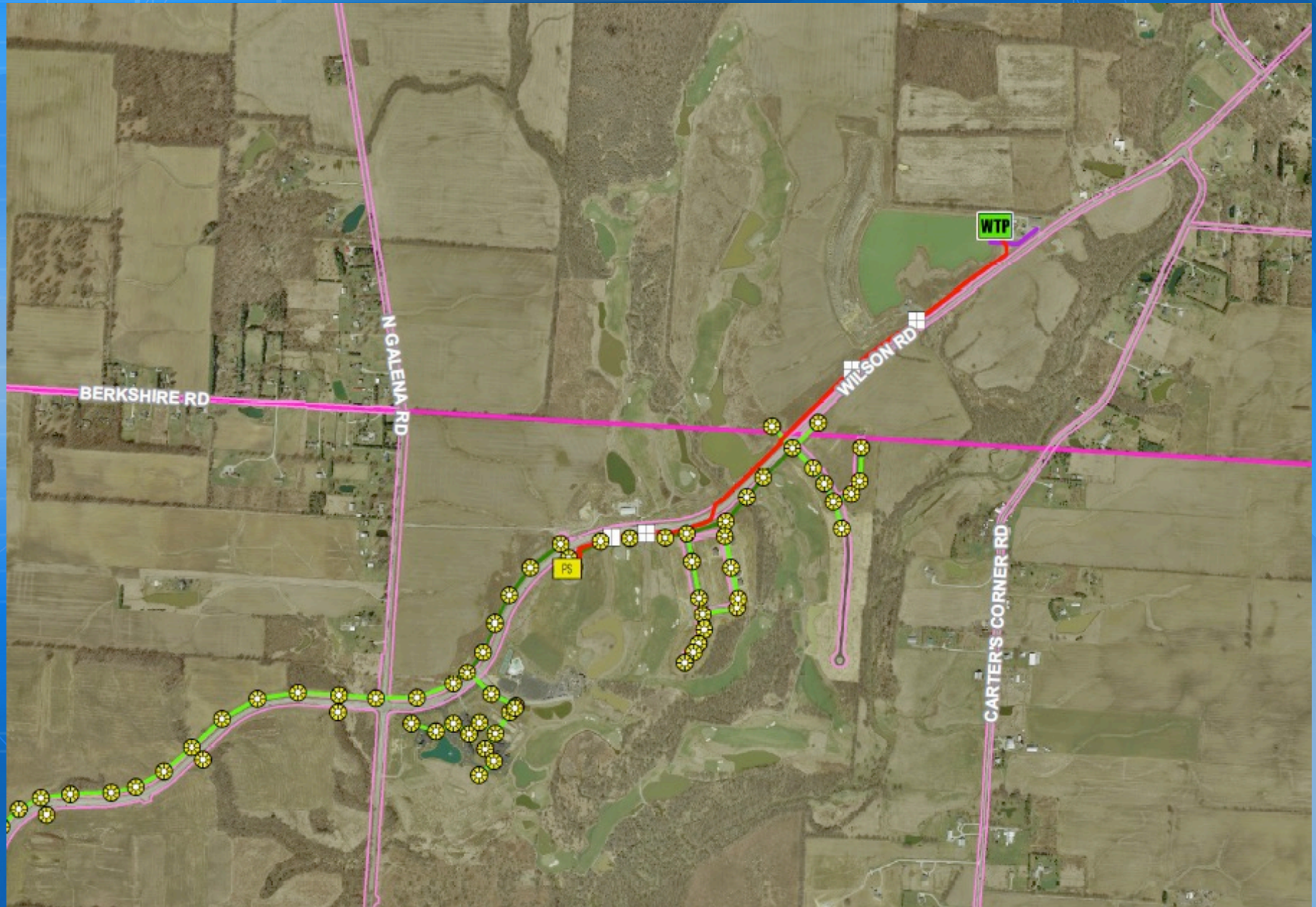




# Growth Areas



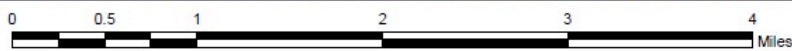
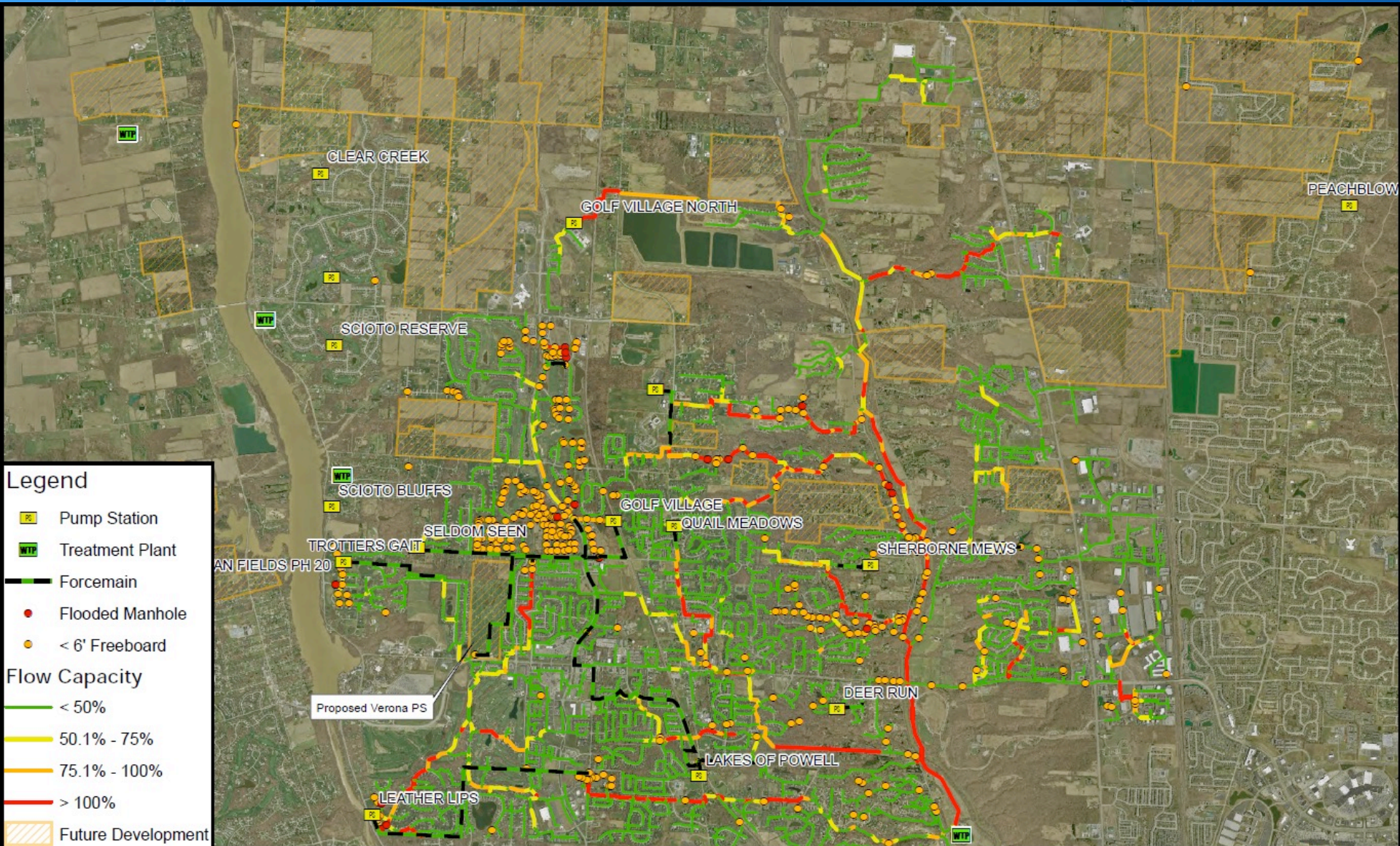
# Northstar



# Hydraulic Modeling of Growth Areas

- Immediate Projects
- Short Term Service
- Long-Term Solutions

# OECC Basin



# Alum Creek Basin

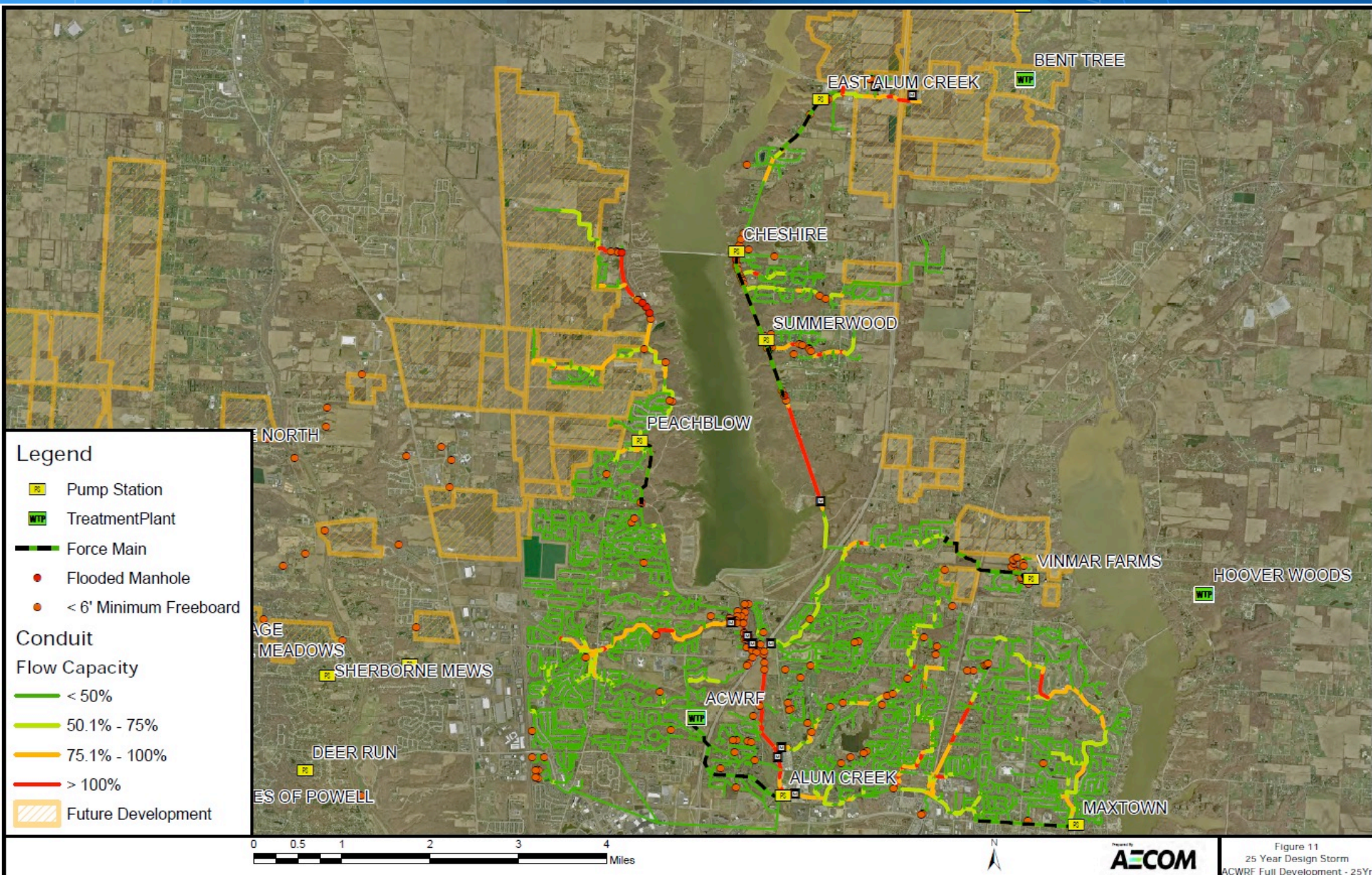


Figure 11  
25 Year Design Storm  
ACWRF Full Development - 25Y



# Improvements

Peachblow Pump Station and Sewers - \$8M

Lower Alum Creek Pump Station - \$5M

Liberty Sawmill Sewer - \$5M

Clarkshaw Project 1, 2, and 3 - \$4M

Central Alum Creek WRF and Sewers - \$30M

Cheshire Pump Station and Forcemain - \$3M

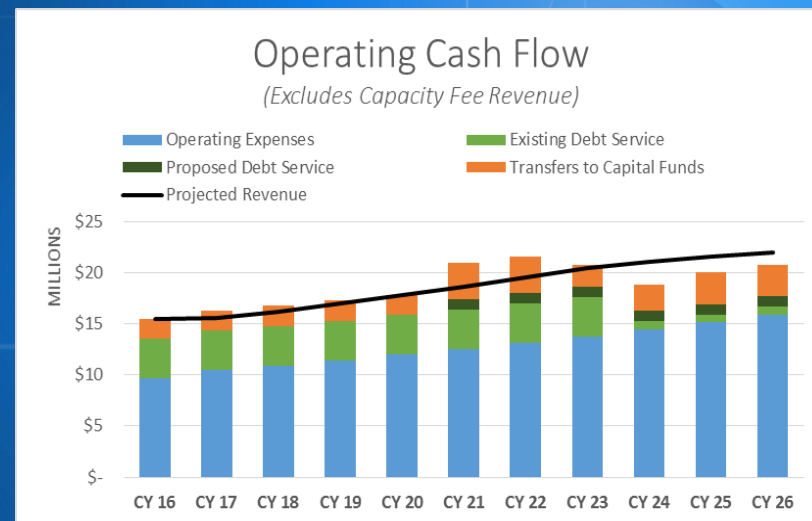
Golf Village Relief Sewer - \$10M

Olentangy River Trunk Sewer - \$9M

Miscellaneous Improvements - \$6M

# Creative Financing Strategies

- No Grants Available!
- Community Authority Project Financing
- Separate O&M and Development Funding
  - 65% funded with Cash; 35% bonds
- 30% of revenue is from connection fees
- TIF Financing
- Developer Recoupment





# Questions?

## Regional Sewer District

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