

Waukesha County Land & Water Resource Management Plan

2012 Update

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*Waukesha County Department of Parks and Land Use
Land Resources Division*

Presentation Outline

- LWRM planning background
- County background
- Plan & Program highlights
- Impediments to plan implementation

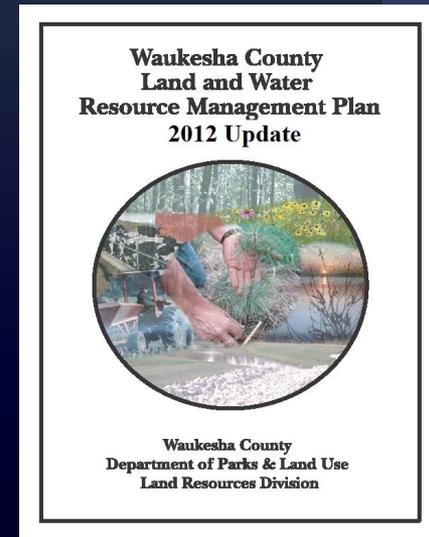
**Waukesha County
Land and Water
Resource Management Plan
2012 Update**



**Waukesha County
Department of Parks & Land Use
Land Resources Division**

Land & Water Resource Mgt. Plans

- Nonpoint program “redesign”
 - 1997 WI Act 27 and 1999 Act 9
 - ATCP 50 WI Administrative Code
- Long-range (10 year) plan to:
 - Implement state nonpoint perf. standards (ag & urban)
 - Address local land & water issues
- 3rd generation for Waukesha Co.:
 - 1998 prototype & 2005 update

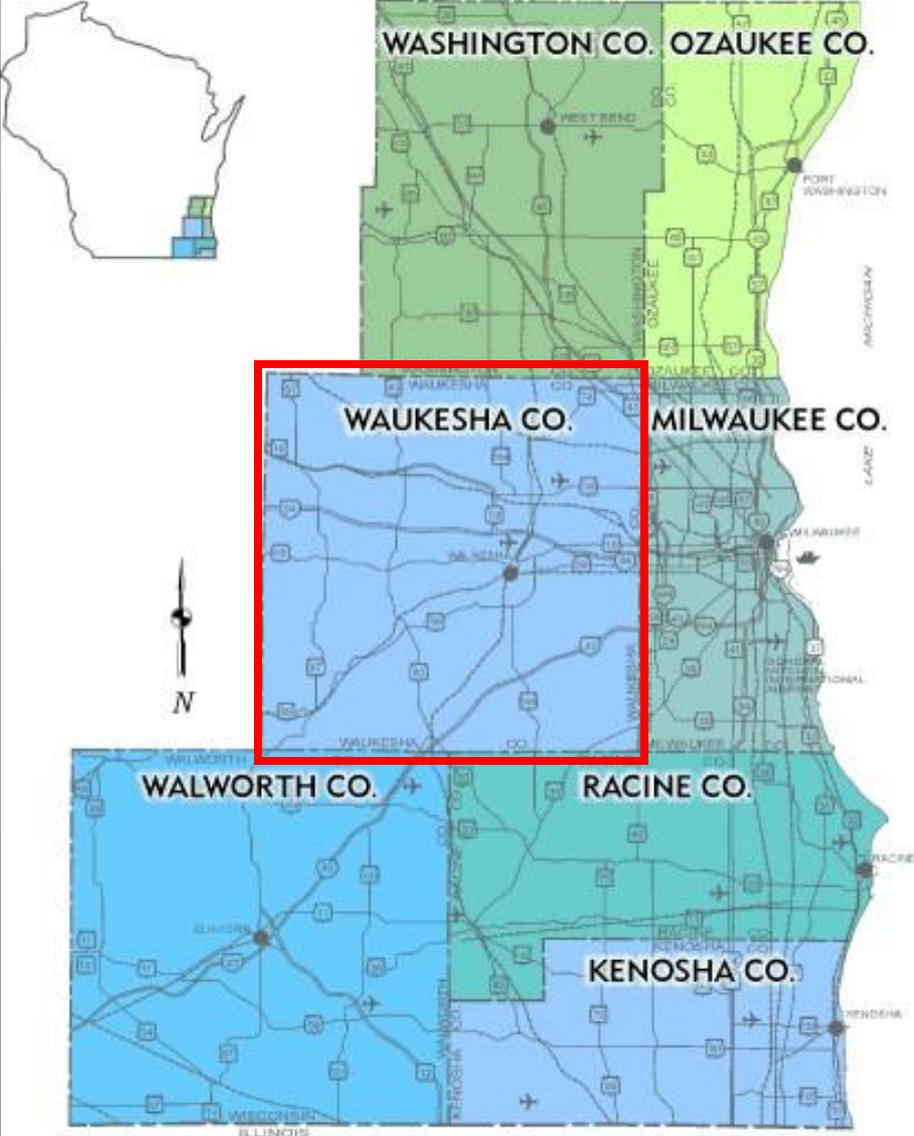


2012 LWRM Planning Process

- Fall 2011 – begin (1-year extension)
 - After FP Plan was approved by DATCP
- Reconvened 2005 advisory committee
 - Urban & rural combined (19 members)
 - Met Feb. 23 – approved 10-yr activity plan
- April 30 – final draft to DATCP
- May 31 – public hearing
- June 5 – WI Land & Water Cons. Board



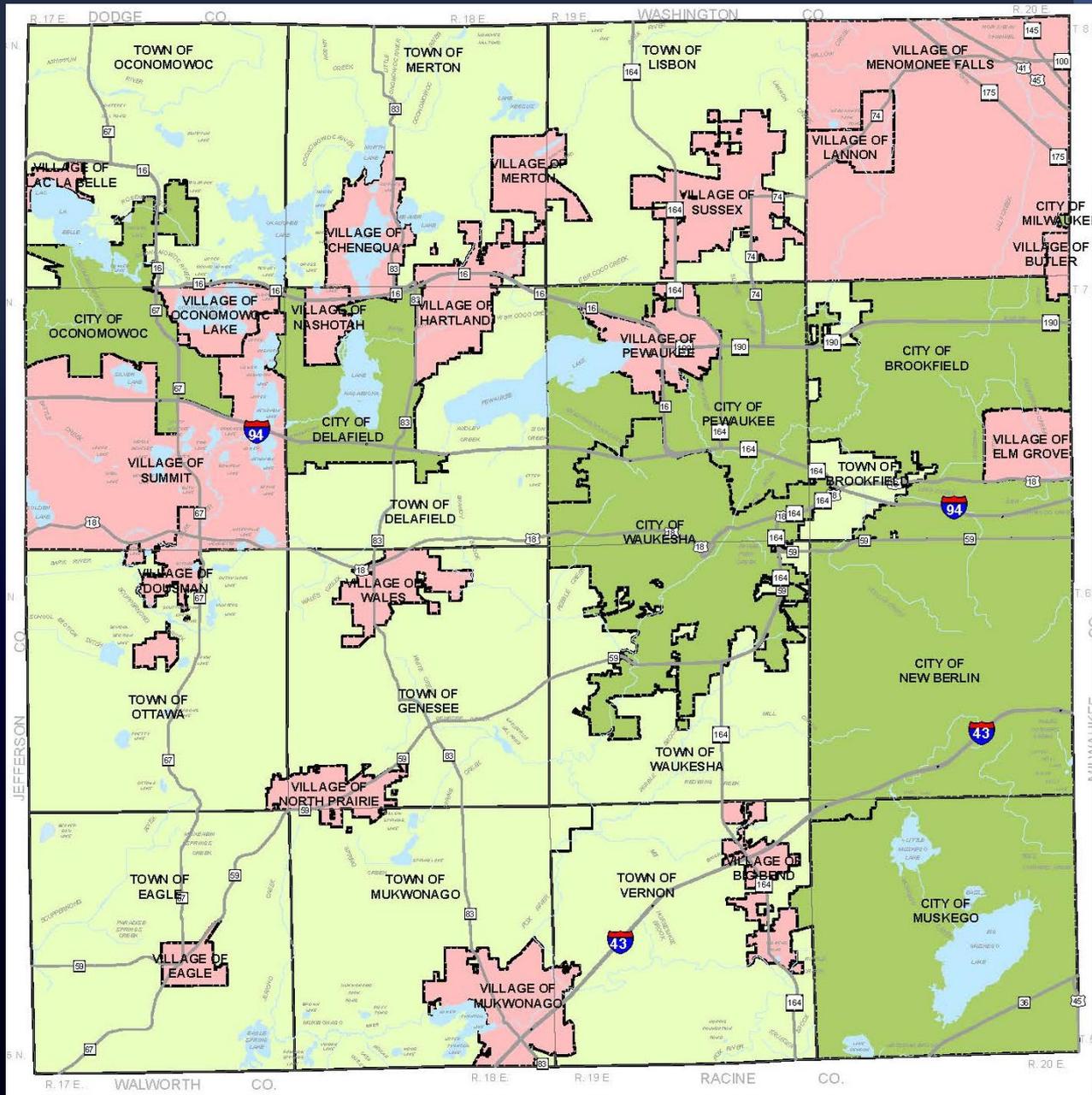
Location of Waukesha County



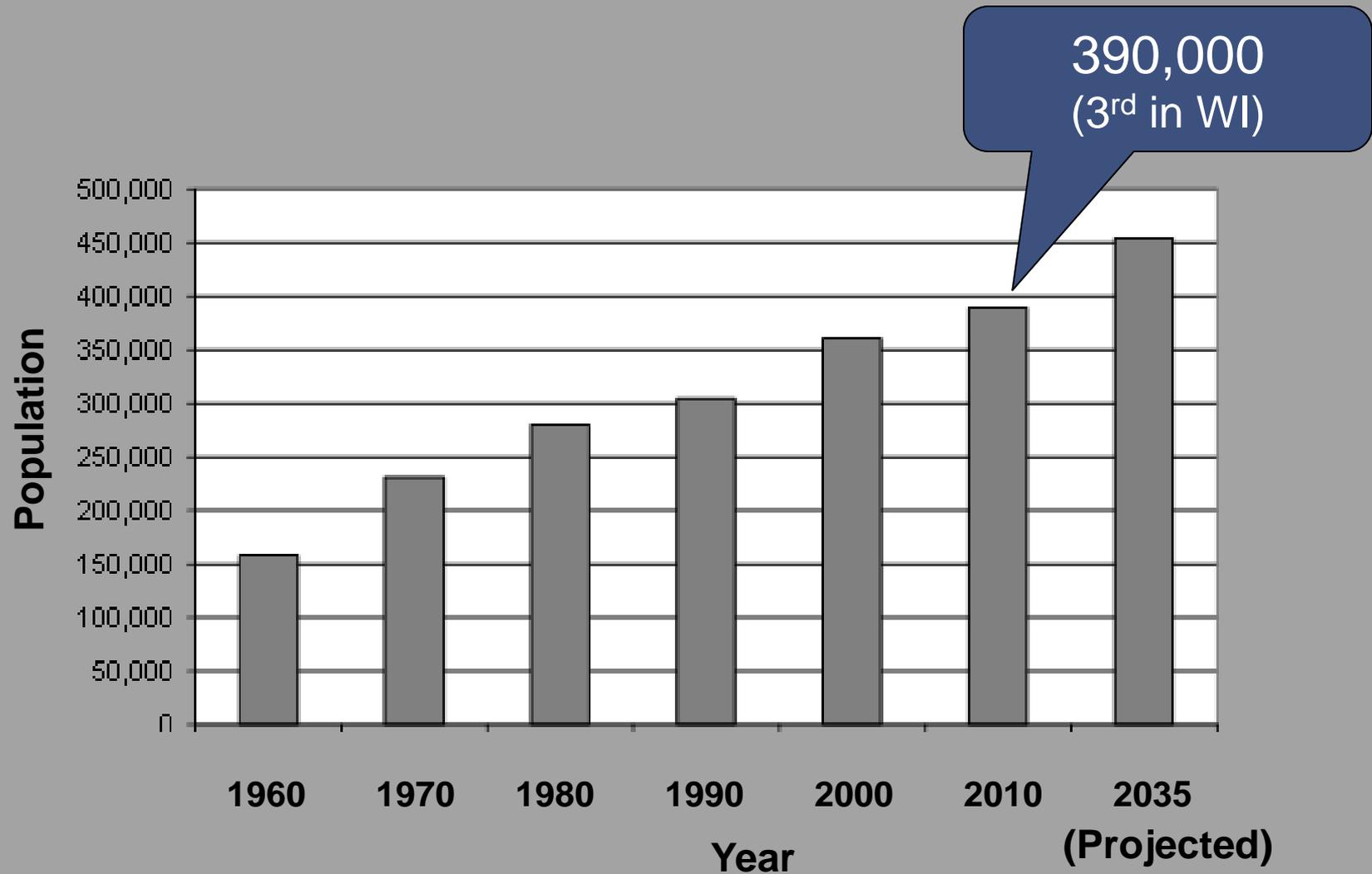
Waukesha County Municipalities (37)

Legend

- Towns (11)
- Villages (18)
- Cities (8)



County Population (1960-2035)



Topography & Physiography

Waukesha County

Legend

Elevation (in feet)



< 700



700-799



800-899



900-999



1000-1099



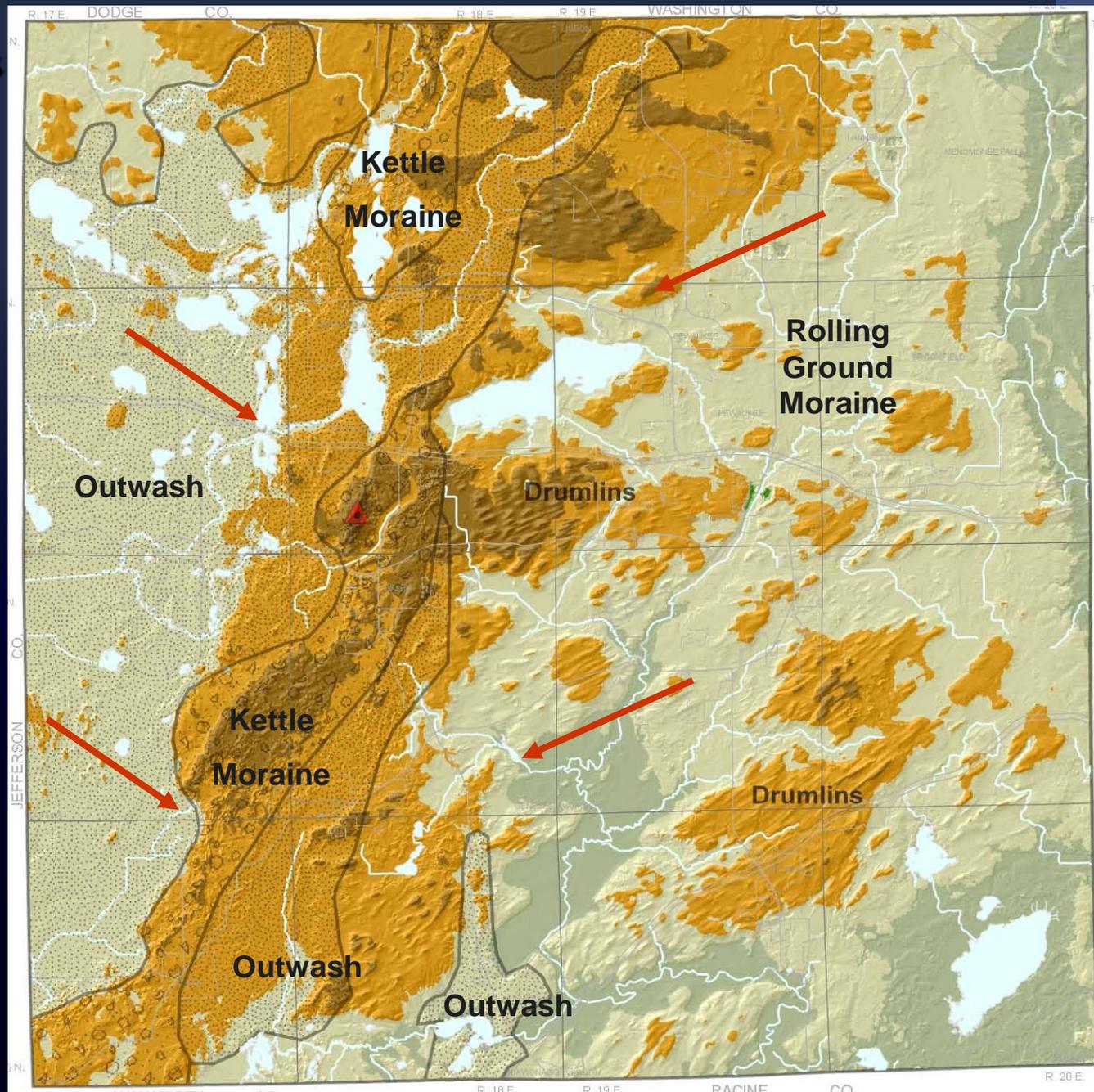
1100-1199



1200-1299



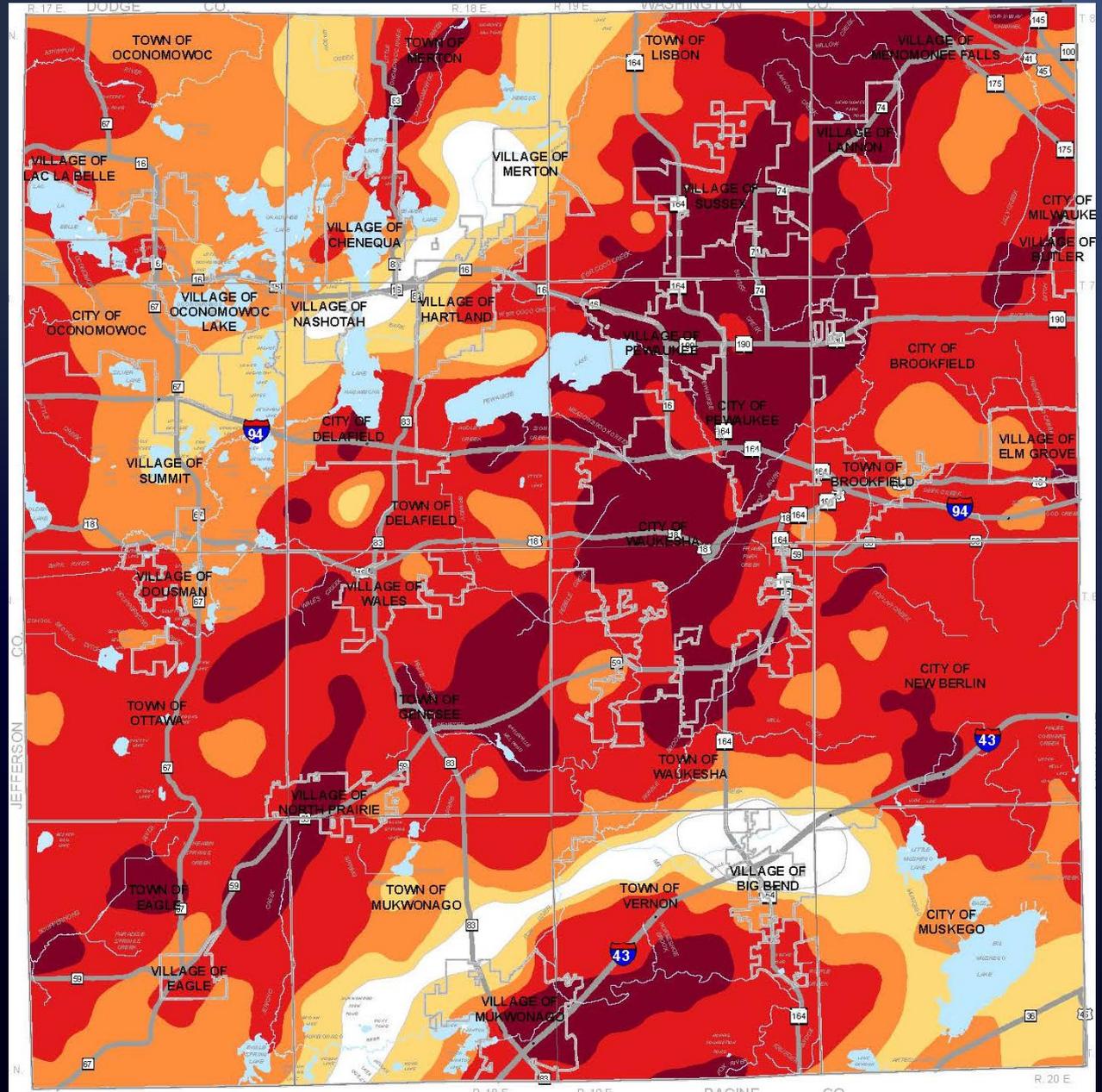
Lapham Peak



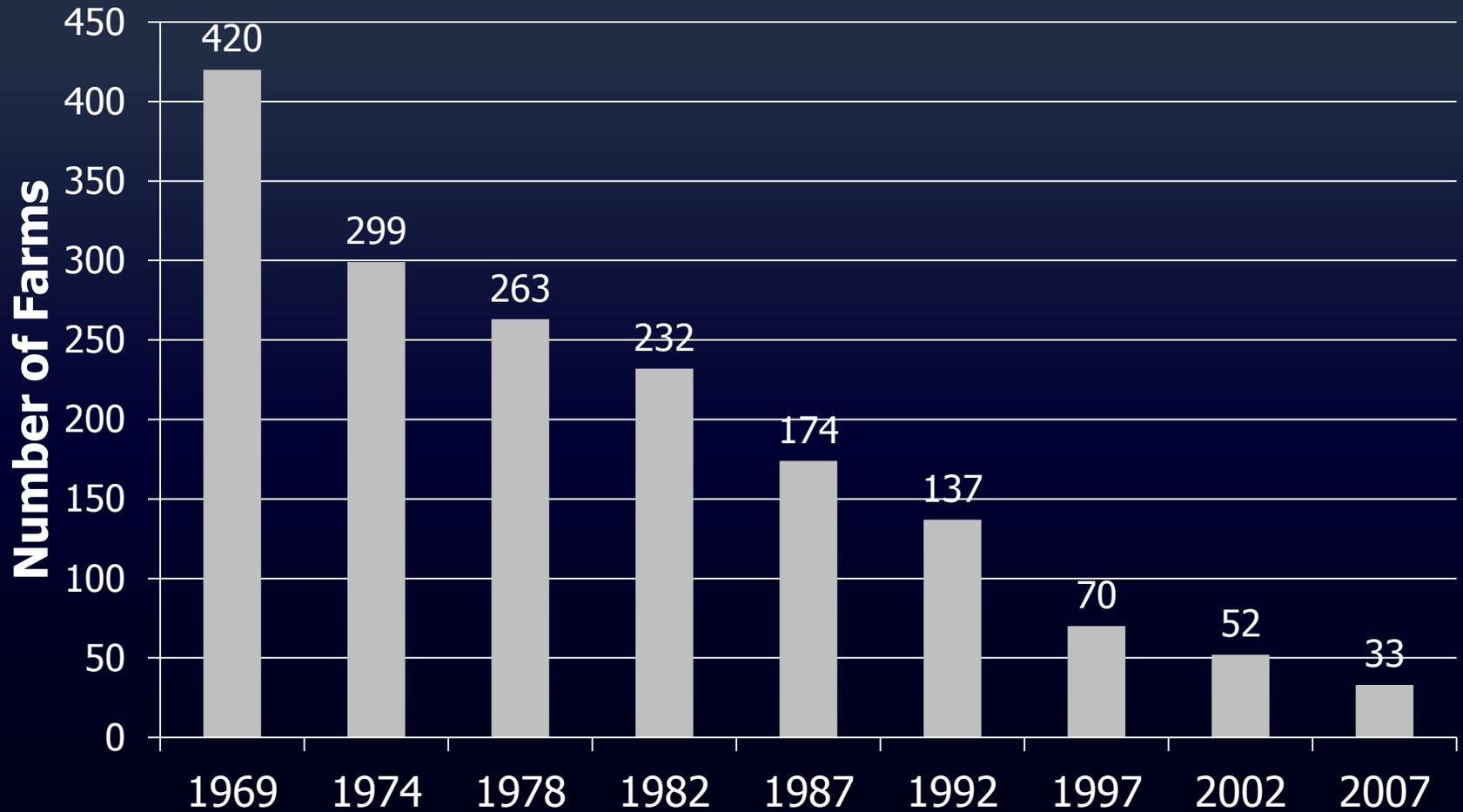
Depth to Bedrock

Waukesha County

Legend

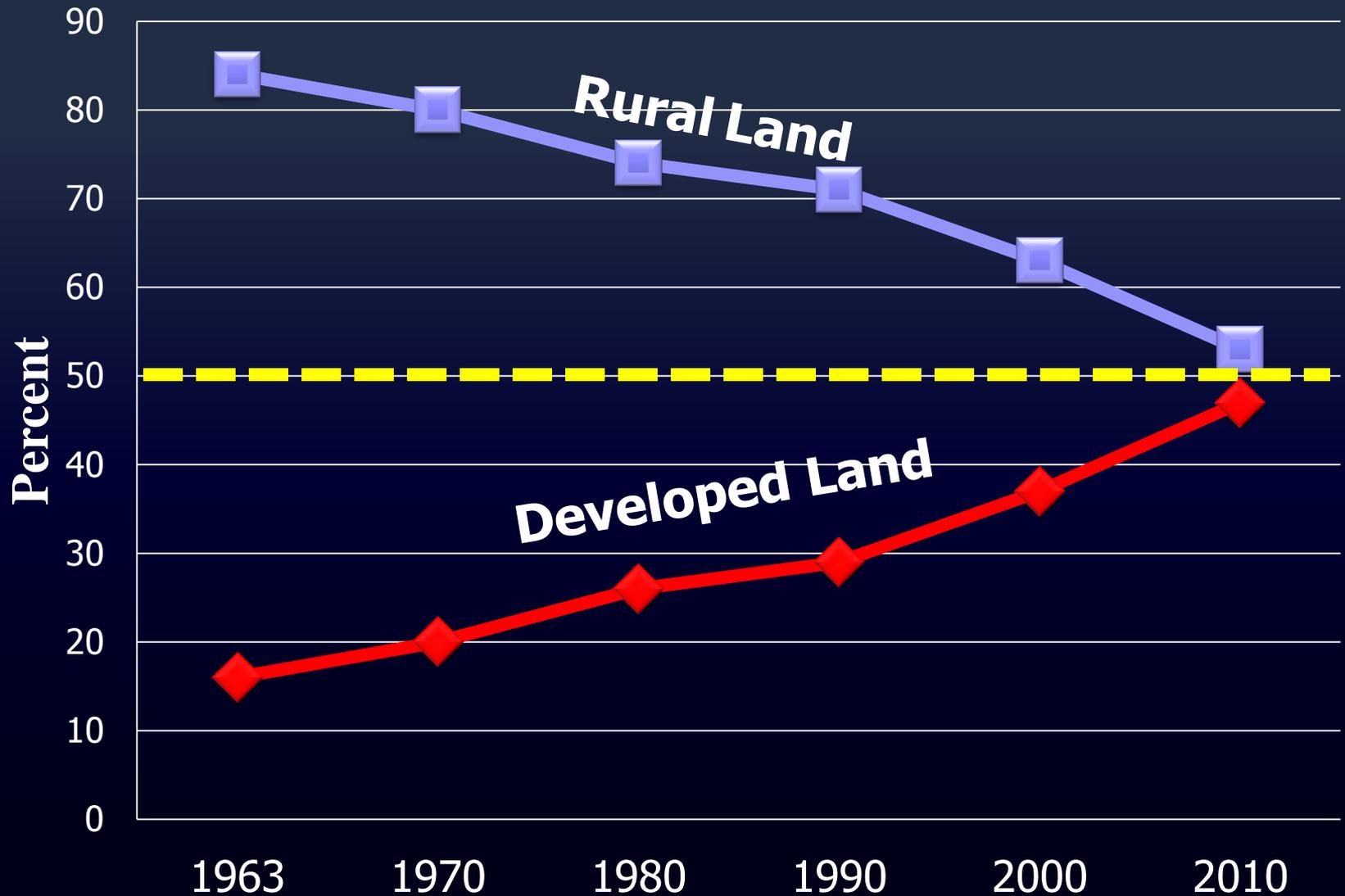


Dairy Farms in Waukesha County: 1969 - 2007



Source: USDA

Land Use Trends: 1963-2010



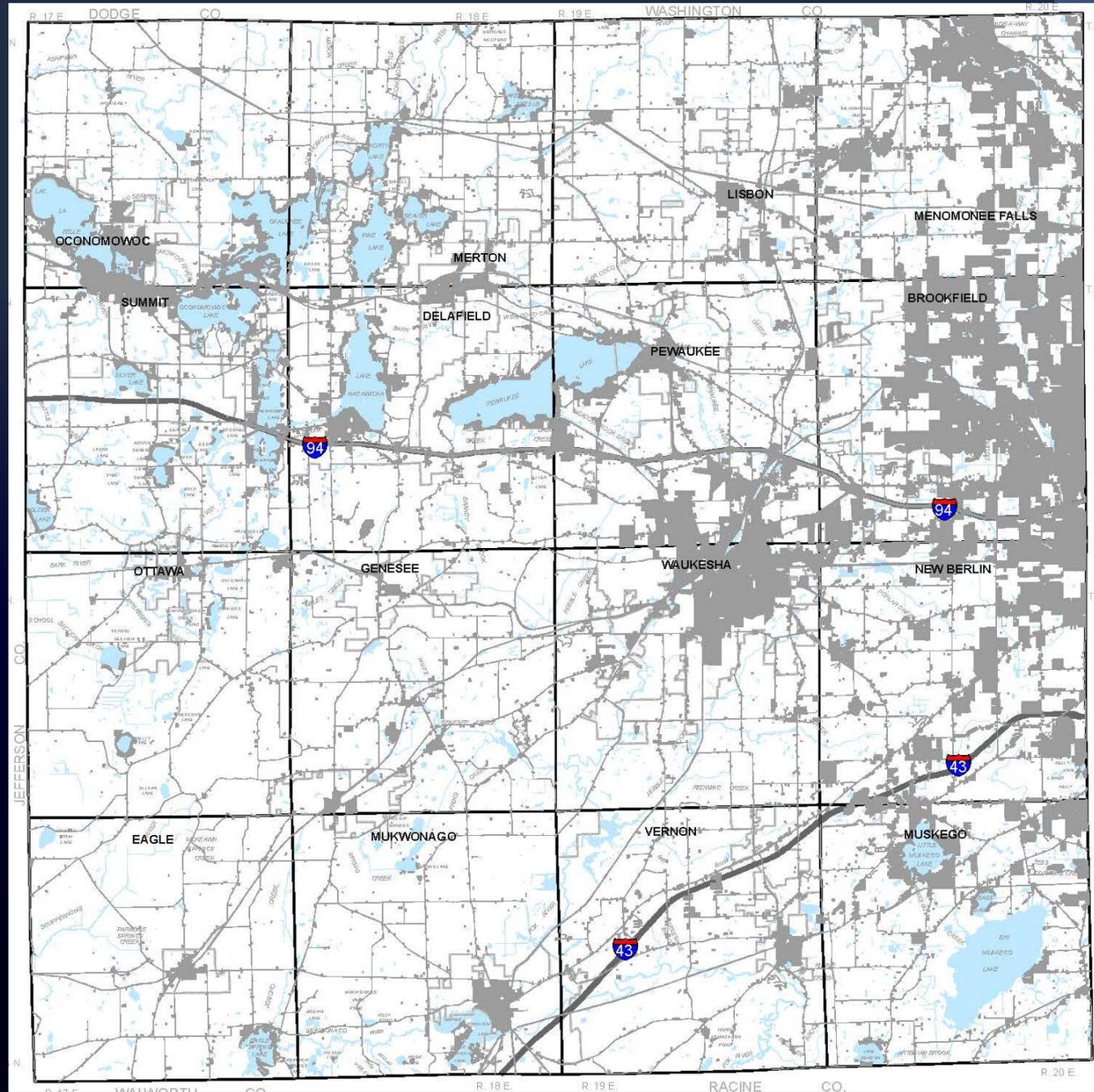
Developed Land: 1963

Waukesha County

Legend



Developed Land
(16%)



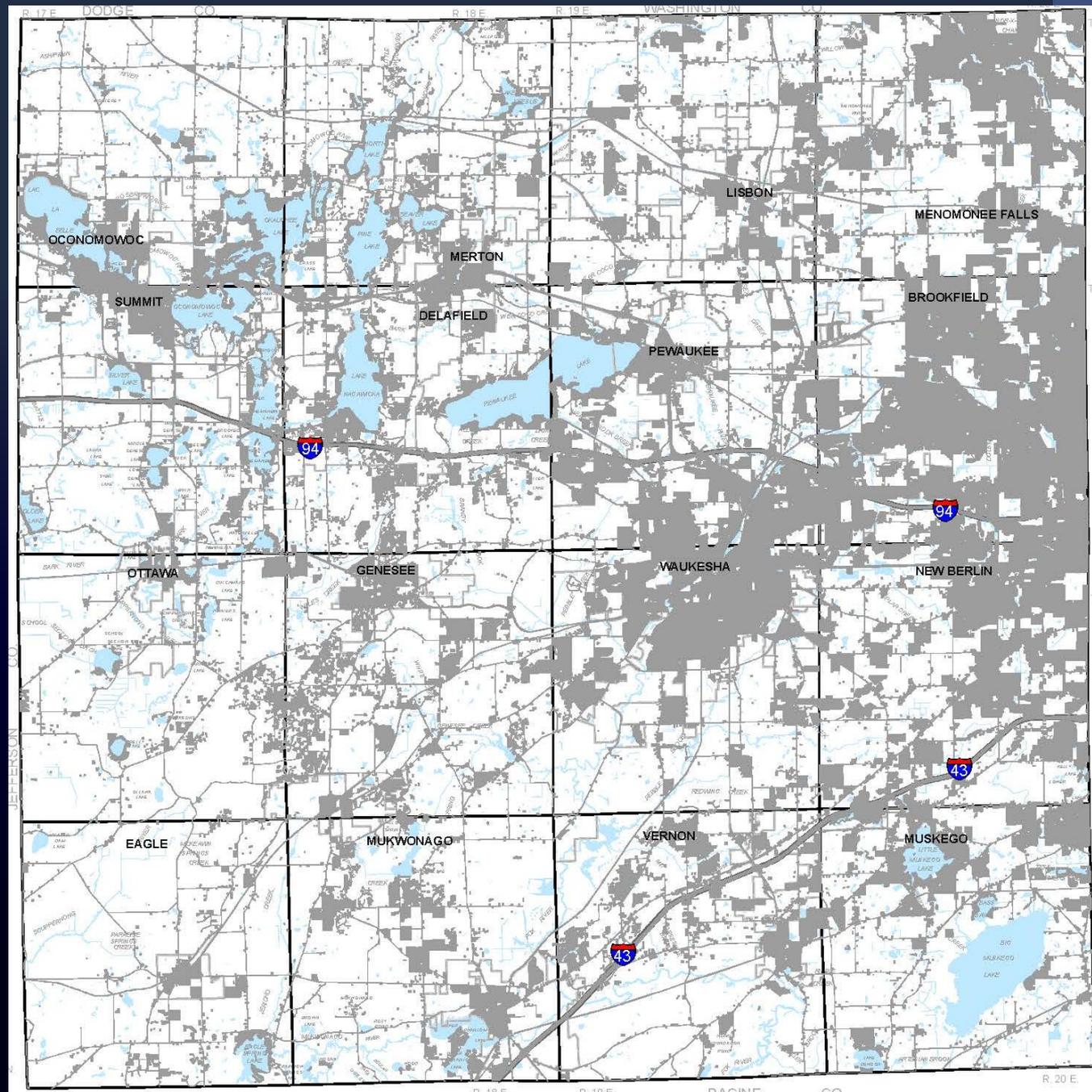
Developed Land: 1985

Waukesha County

Legend



Developed Land
(26%)



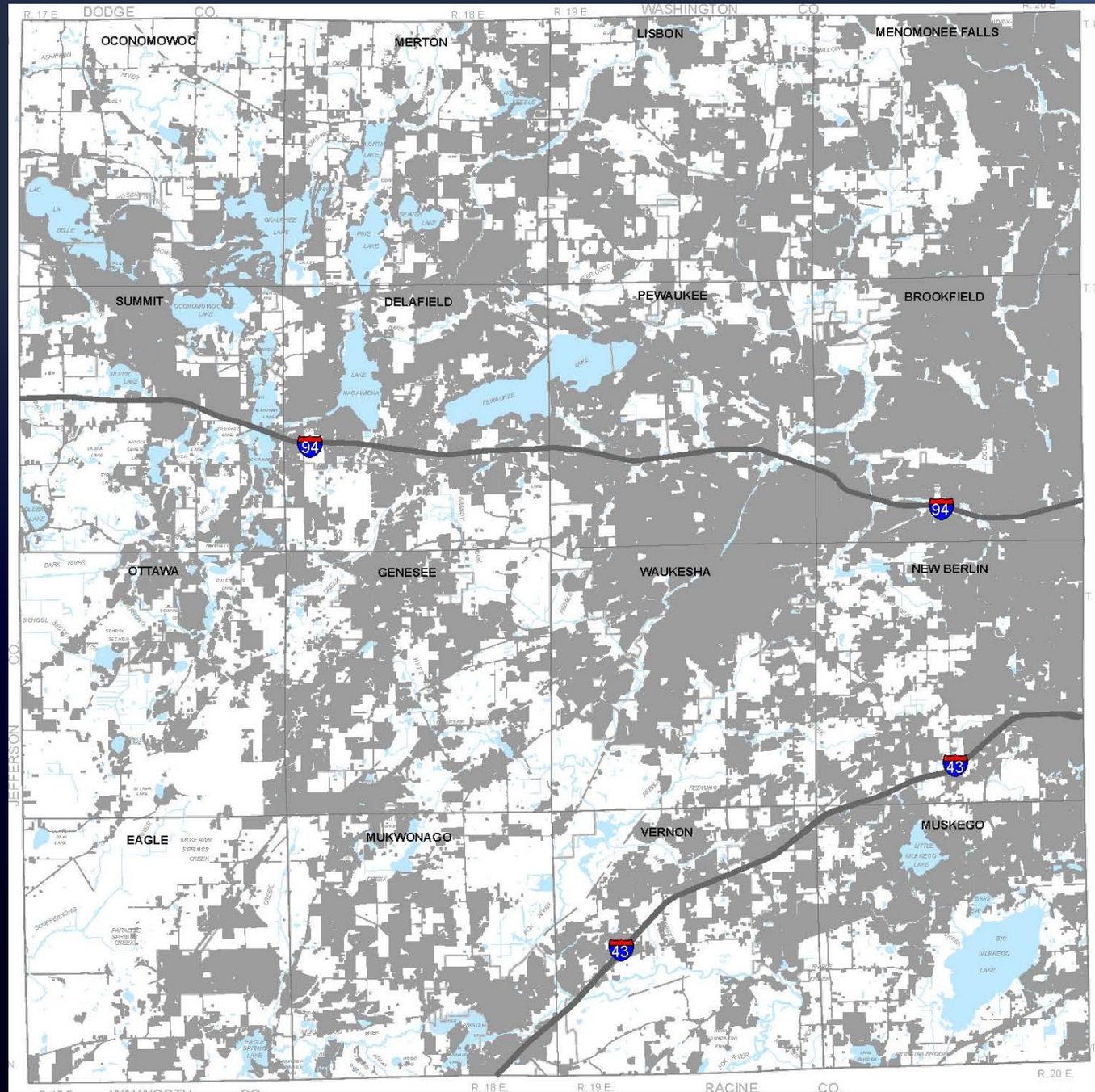
Developed Land: 2010

Waukesha County

Legend

 Developed Land (47%)

5 square miles converted each year since 1990

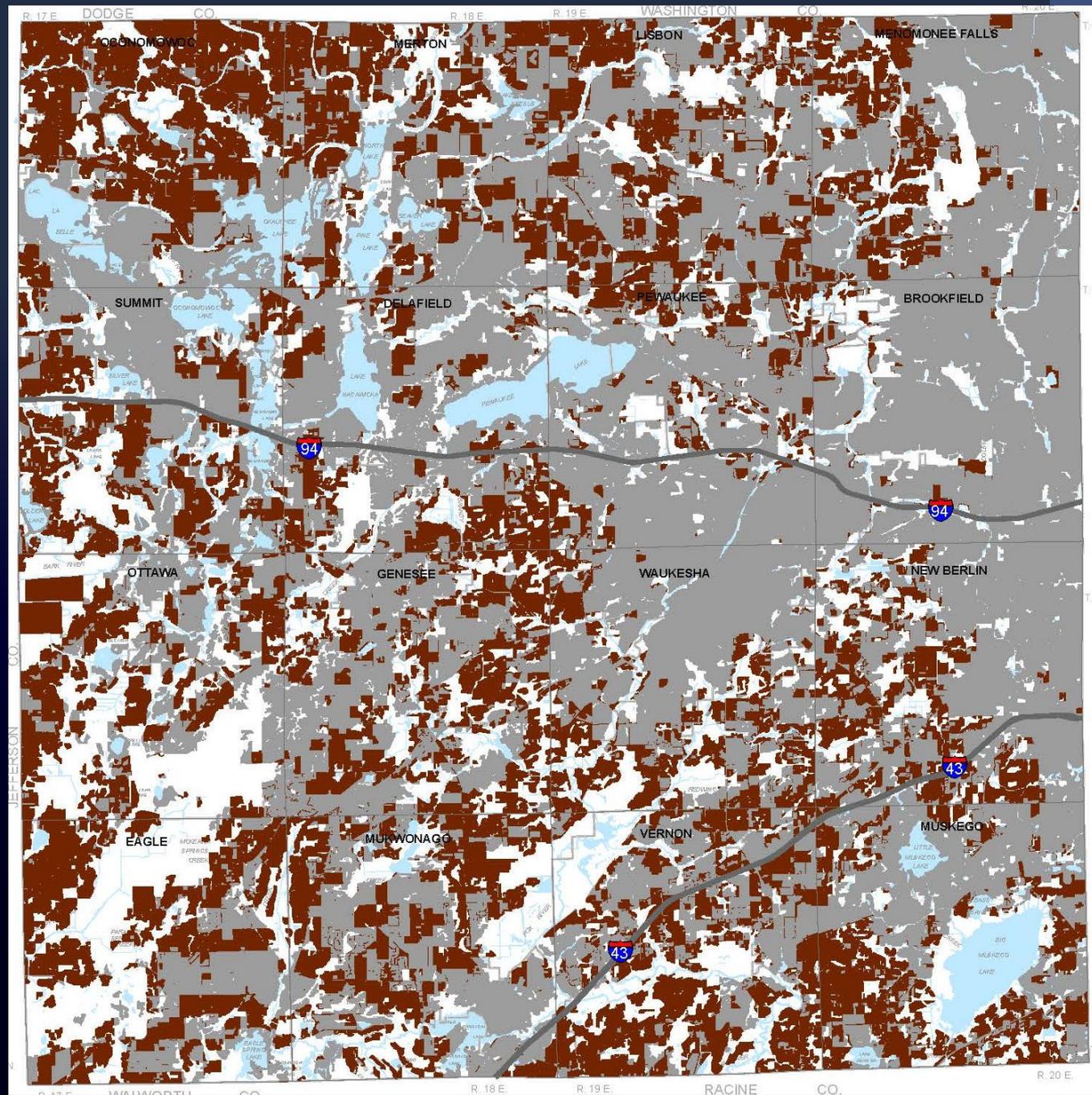


Land Use: 2010

Waukesha County

Legend

-  Developed Land (47%)
-  Agricultural Land (25%)

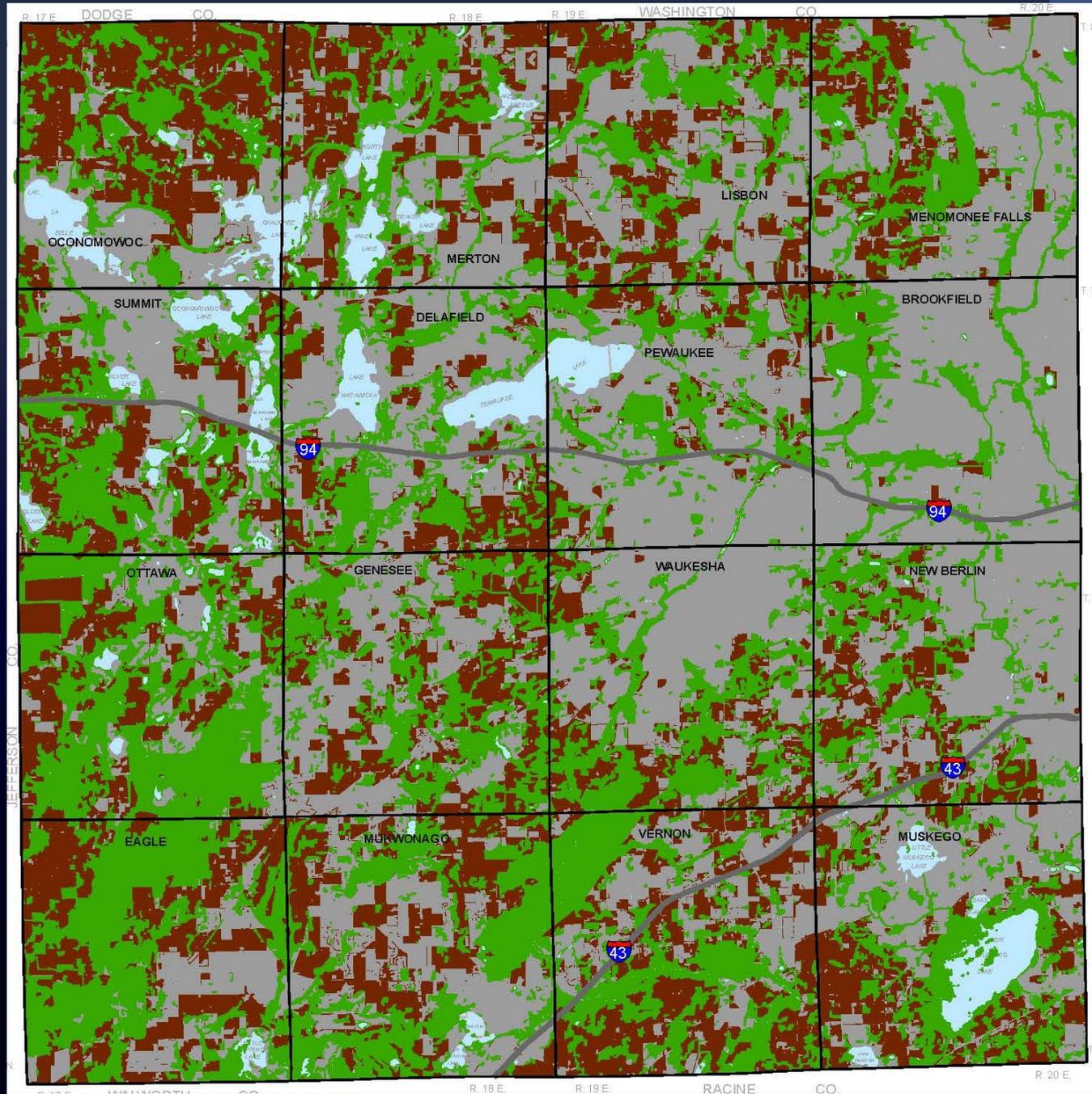


Land Use: 2010

Waukesha County

Legend

-  Developed Land (47%)
-  Agricultural Land (23%)
-  Natural Areas (27%)

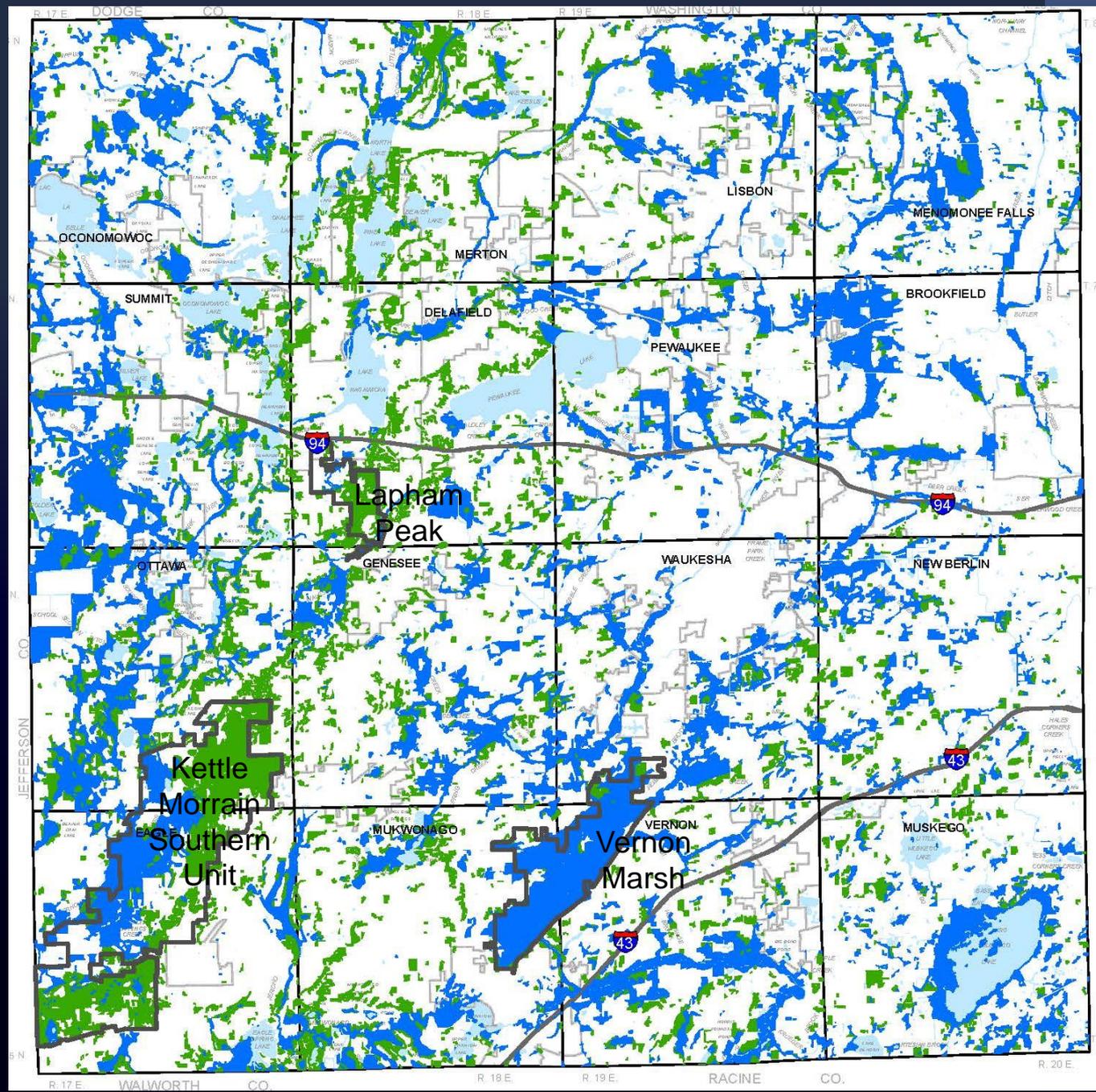


Woodlands & Wetlands

Waukesha County

Legend

-  Woodlands
-  Wetlands



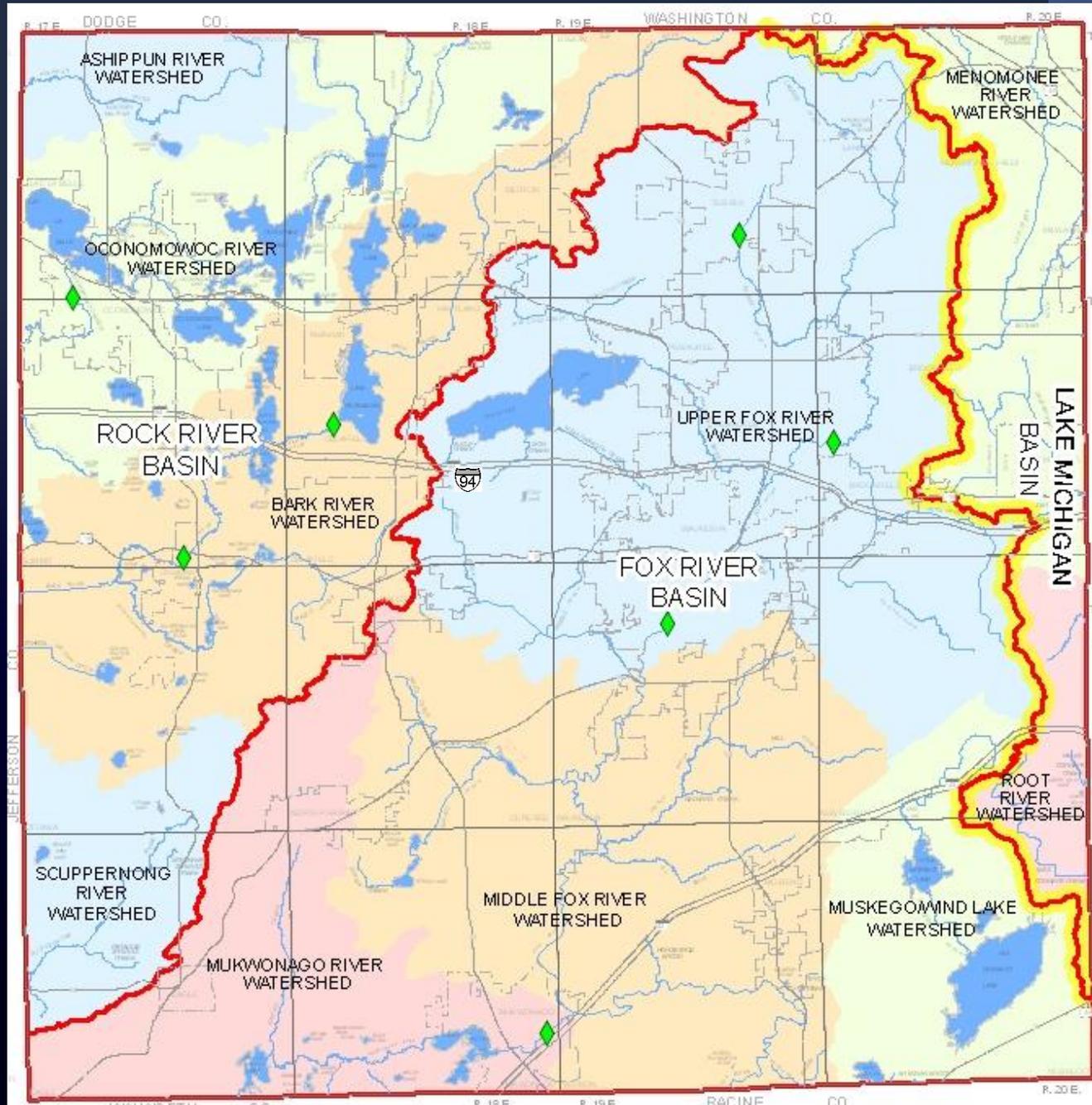
Watersheds

Waukesha County

Legend

-  Subcontinental Divide
-  River Basin Boundaries
-  Sewage Treatment Plants (7)

**Urban runoff =
85% Sediment
load in Upper Fox
Watershed**



Water Resource Classifications

Waukesha County

Legend

● Lake Supports Cold Water Species (7)

● Lake Supports Fish and Aquatic Life (73)

● Outstanding Resource Water (1-Spring Lake)

— Warm Water Streams (40)

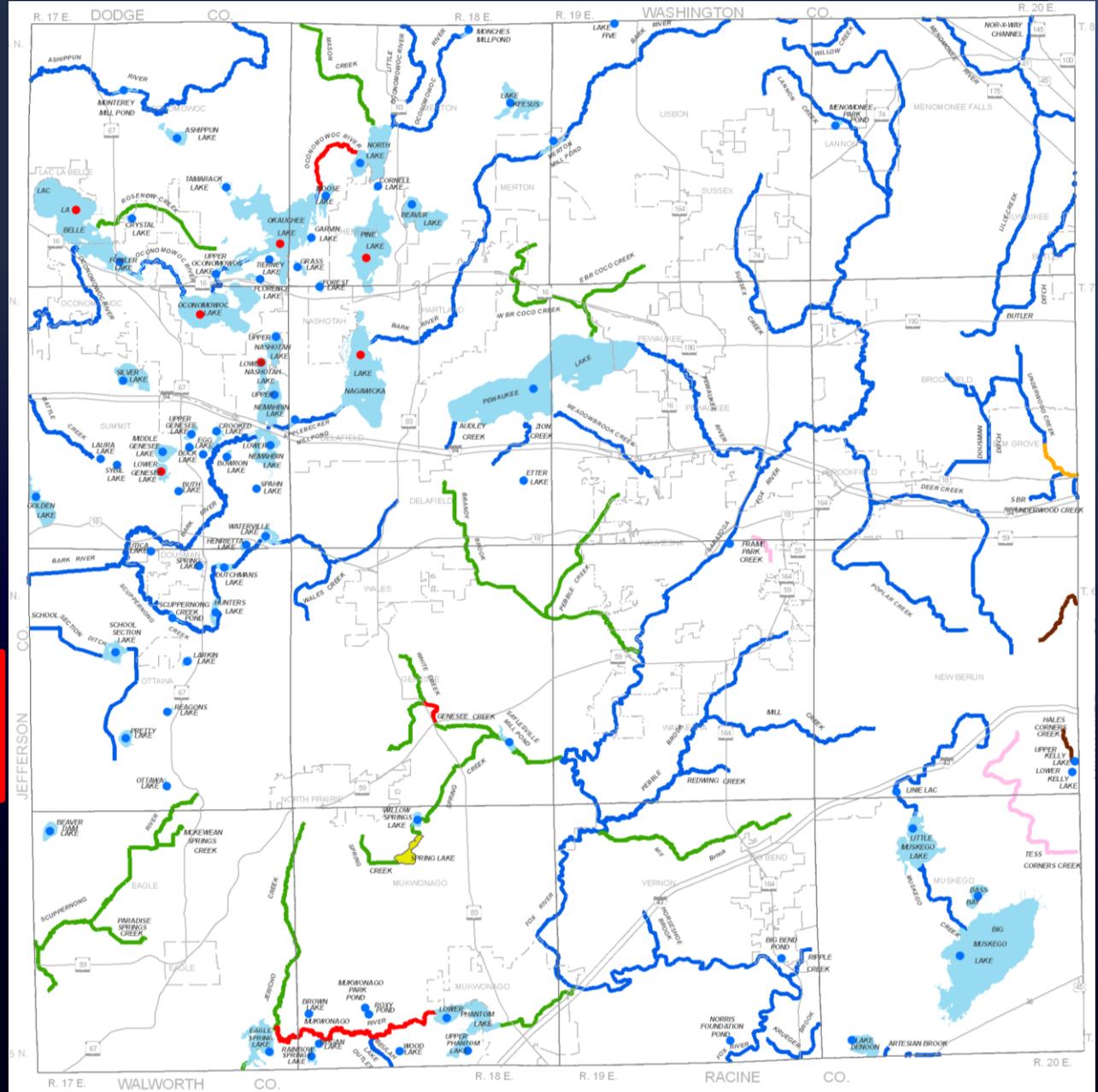
— Cold Water Streams (10)

— Exceptional Resource Waters (3)

— Limited Forage Fish (1)

— Limited Aquatic Life (2)

— Special Variance Waters (1)



33% stream miles = "Impaired"

Highlights

2012 LWRM Plan Update

Urban Nonpoint Performance Standards (NR 151):

- Construction site erosion control
 - Sediment (80% reduction)
- Post-construction runoff controls
 - Total suspended solids (40-80%)
 - Runoff volumes (infiltration)
 - Bank erosion (peak flows)
 - Buffers (50-75 feet)
 - Petroleum runoff (vehicle fueling)
- Mandatory ordinances
 - Priority watershed/NR 216



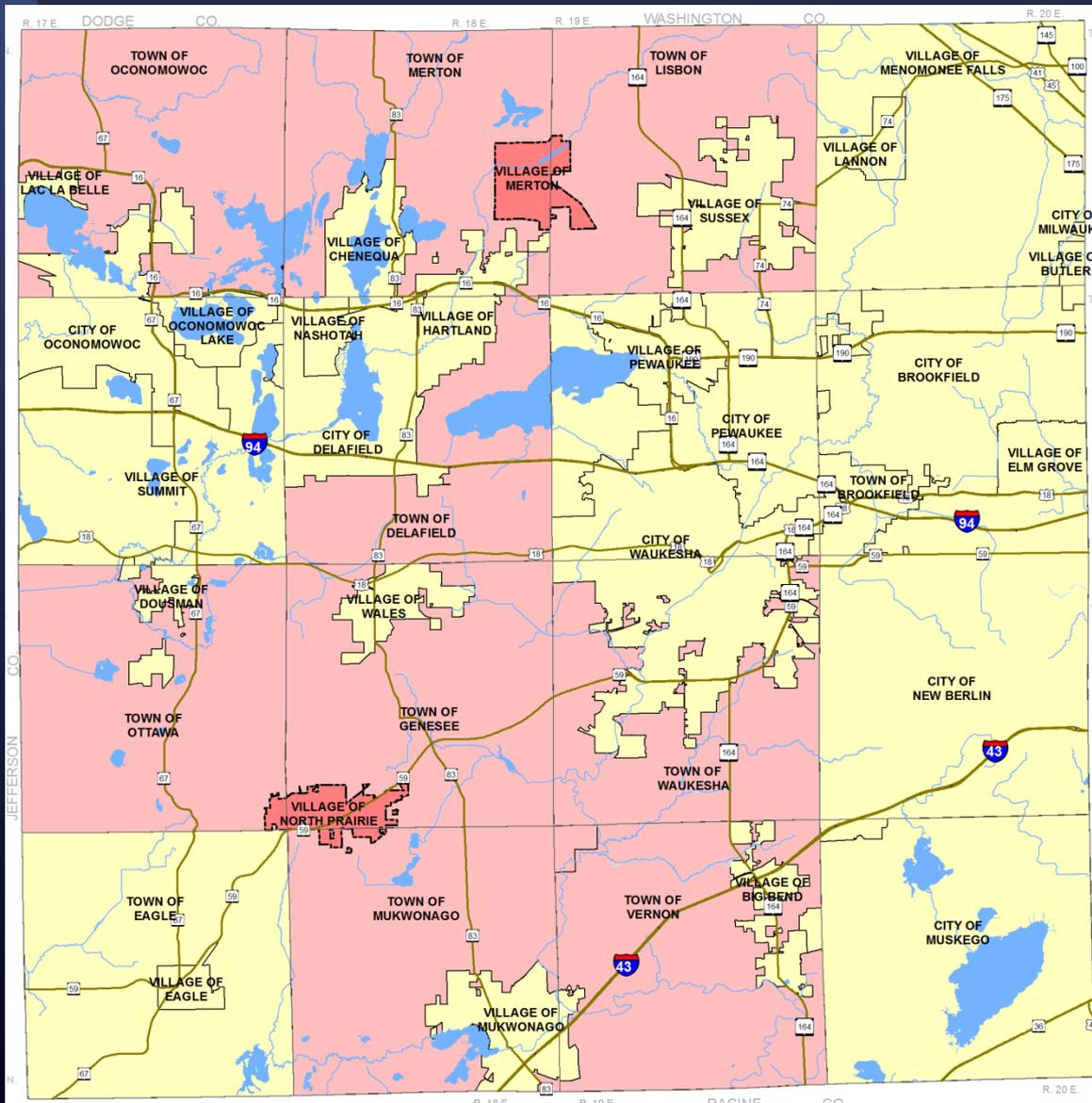
Goal #1 - (41% - 2.4 FTE)

Control Urban Runoff & Flooding

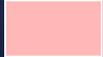
- Since 2006:
 - 338 Storm Water Permits
 - >4000 field inspections
 - 11 intergov. agreements
- Update 2005 County Storm Water & Erosion Control Ordinance
 - NR 151 revisions/local implementation issues
 - Storm Water Advisory Committee



Waukesha Co. SW & EC Ordinance



Jurisdiction:

-  9 of 11 towns
-  2 villages by agreement

- Areas annexed after 1992 must meet Co. stds.

Maintain Authorized Local Program Status (NR 216)



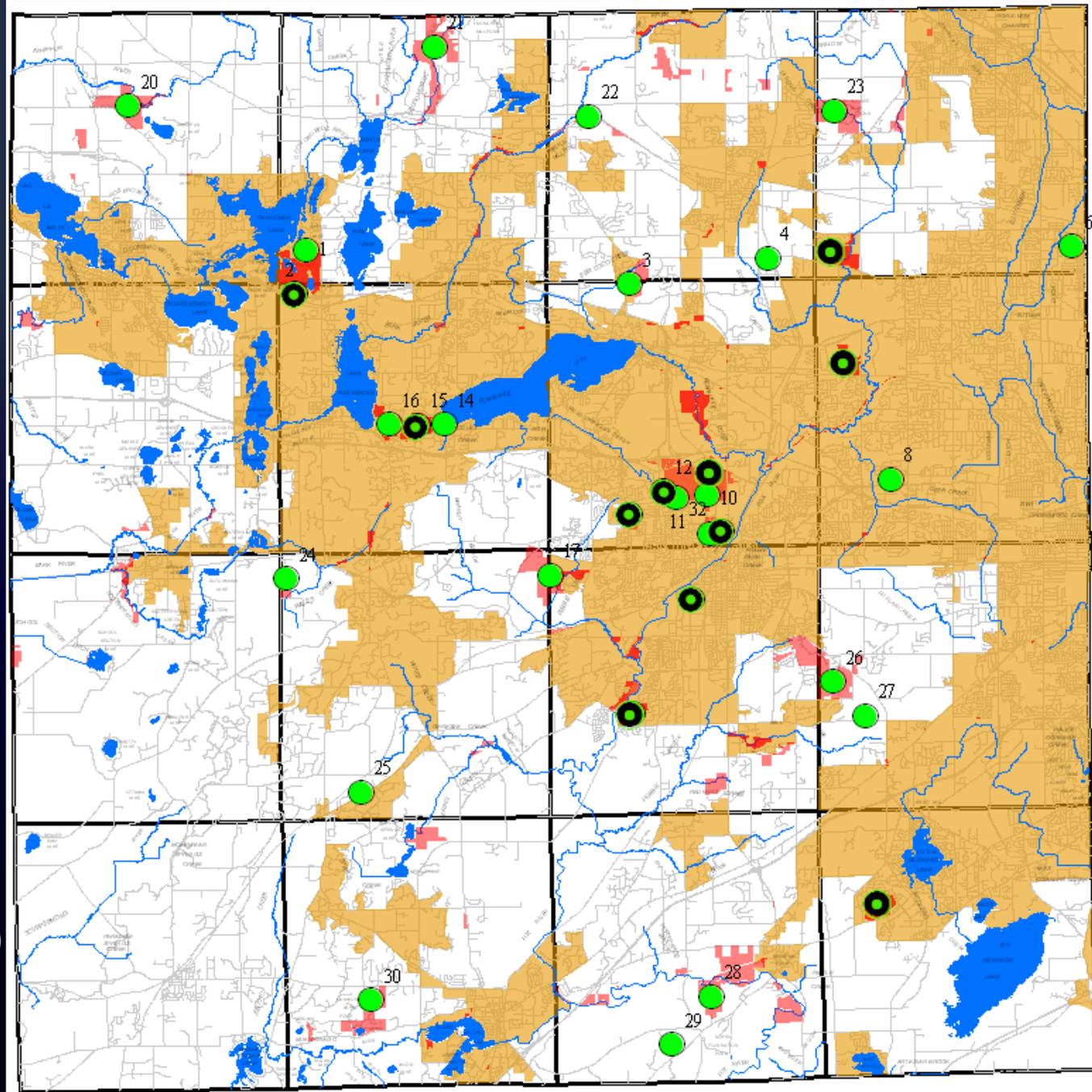
- Allows county Storm Water permit to also serve as DNR permit (1-stop shop)
- Wauk. Co. ALP status began Jan. 2011
 - First and only community in WI
 - Applies to >1 acre non-commercial sites
 - Requires county screening for wetlands, endangered resources and historical sites

County Facilities Affected by MS4 Permit

Waukesha County

Legend

-  "Urbanized land" (>1000 pop./sq.mi.)
-  County land (in)
-  County land (out)
-  County facilities
-  SWPPP needed (13)



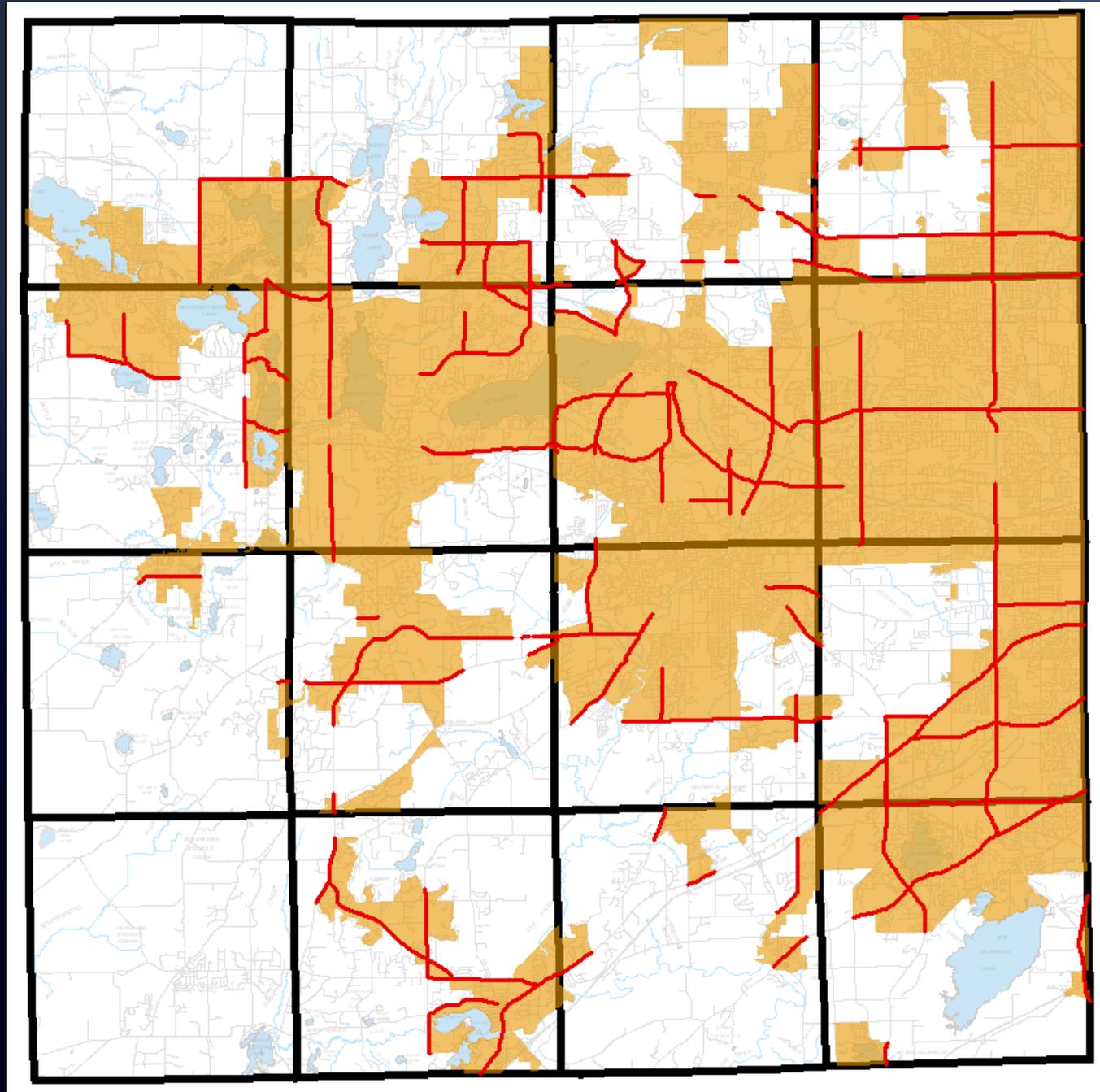
County Roads

Affected
by MS4 Permit

(230 lineal miles)

Legend

-  "Urbanized land"
(>1000 pop./mi.²)
-  County roads
affected



Comply with DNR MS4 Permit

- Enforce Storm Water/EC Ordinance
 - PW/PLU Agreement (10-15 sites/yr)
- Illicit discharge detection (14 SS outfalls)
- Inspect County-owned BMPs (14+)
- Pollution prevention plans (13 sites)
- SLAMM Model updates/Annual reports
- SW Education program (county-wide)

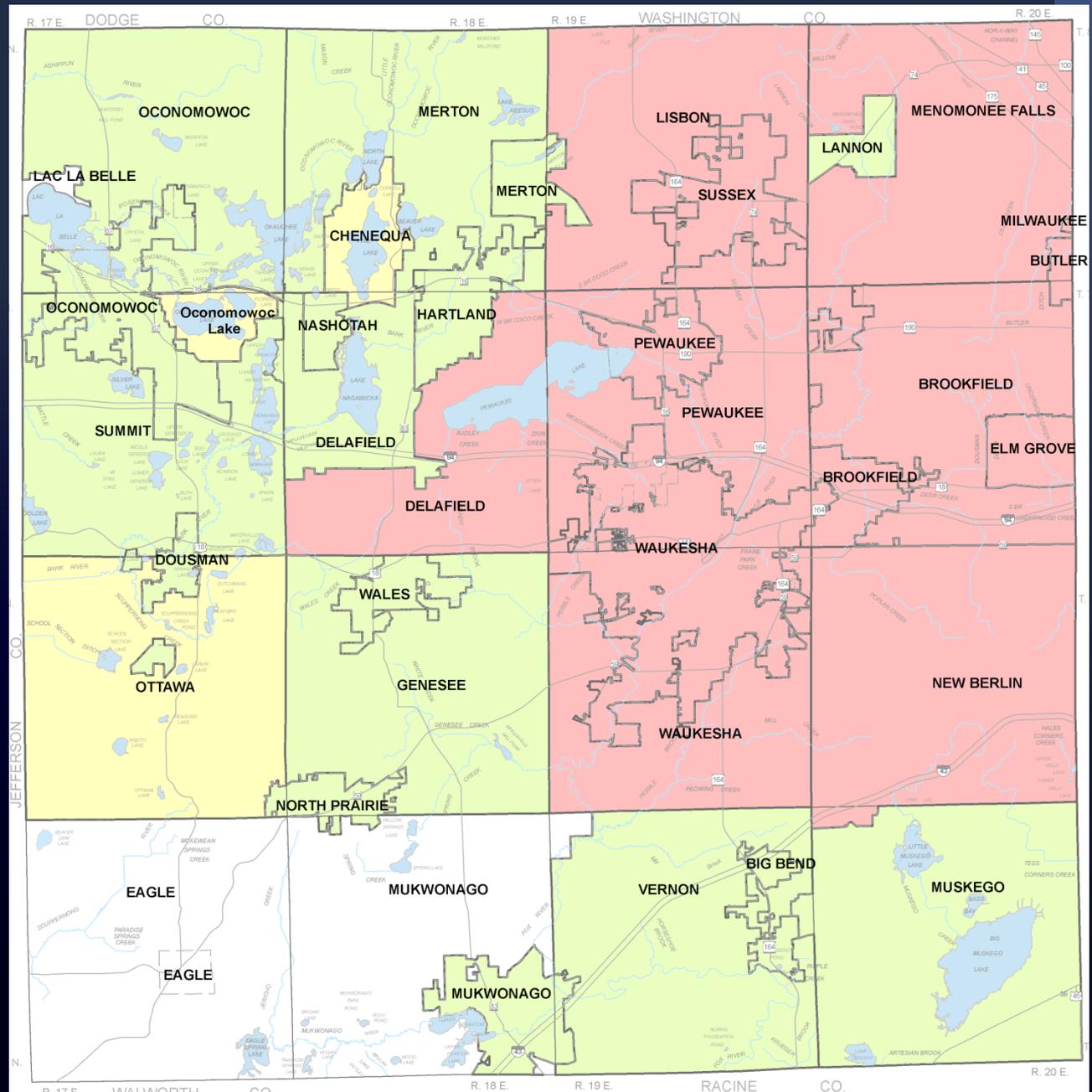
Community MS4 Permits

Waukesha Co.

Legend

- Phase I (13)
- Phase II (18)*
- Exempted (3)
- Not required (4)

* Includes Waukesha Co.
(31 out of 38 communities)



Storm Water Education Program

- 25 Intergovern. Agreements

- Since 2006:

- 8 annual workshops/100 att. each
- 221 teachers trained/nonpoint poll.
- Presentations to 8000 students
- Ave. 25 volunteer stream monitoring teams each year



Facilitate BMP Maintenance

- SW Permit closure process/ROD
- Model BMP maint. ordinance (web site)
- Education program/fact sheets
- BMP Database/web-GIS/inspections



Prevent Basement Flooding



- Enforce ordinance setbacks from surface and groundwater (majority)
 - Early soils investigations
- Web soil maps
- Use EAP grants for remediation/rehab & prevention when available
 - 2011-2012 \$1.7 million/32 LMI homeowners



Rain on Frozen Ground



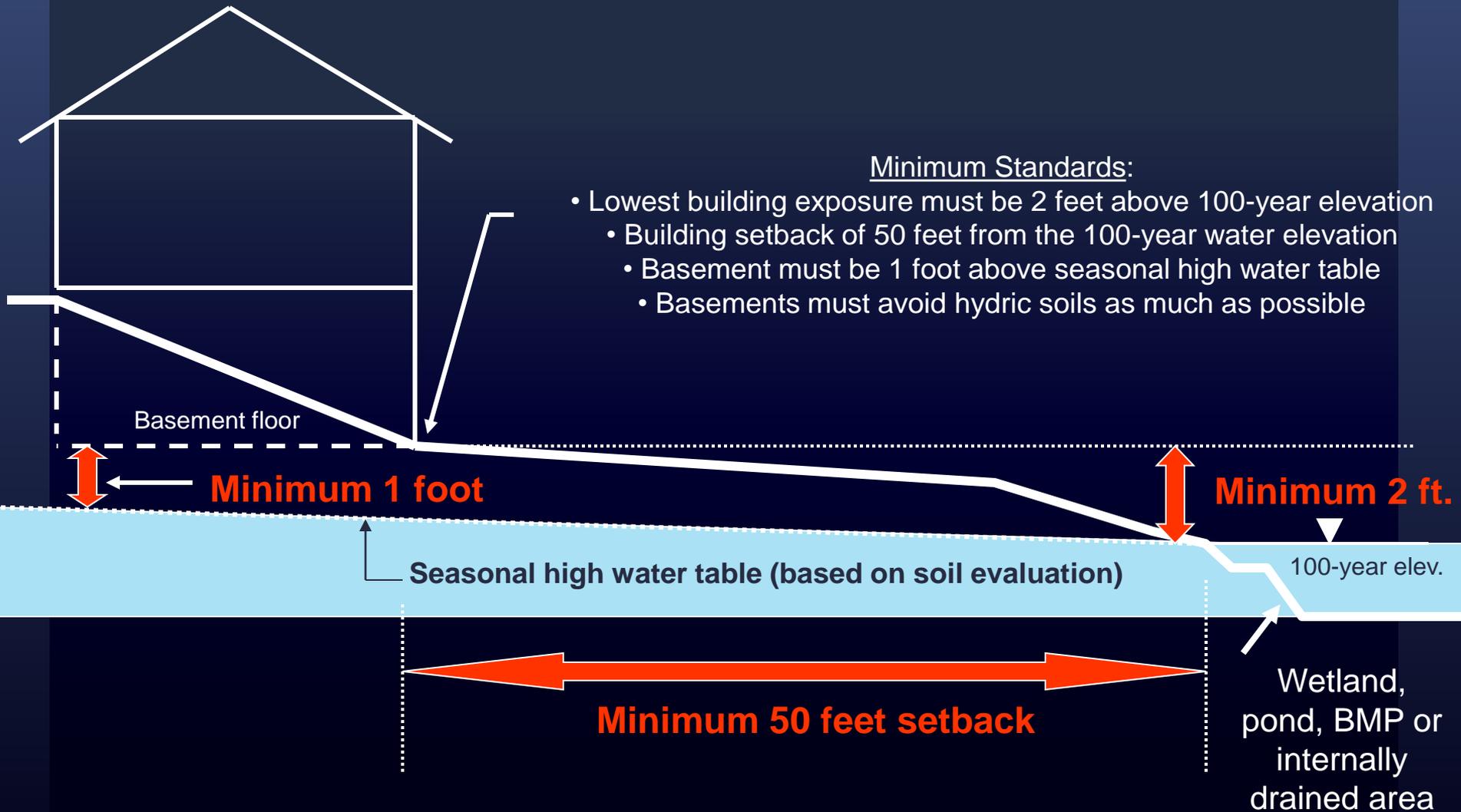
Internally drained areas

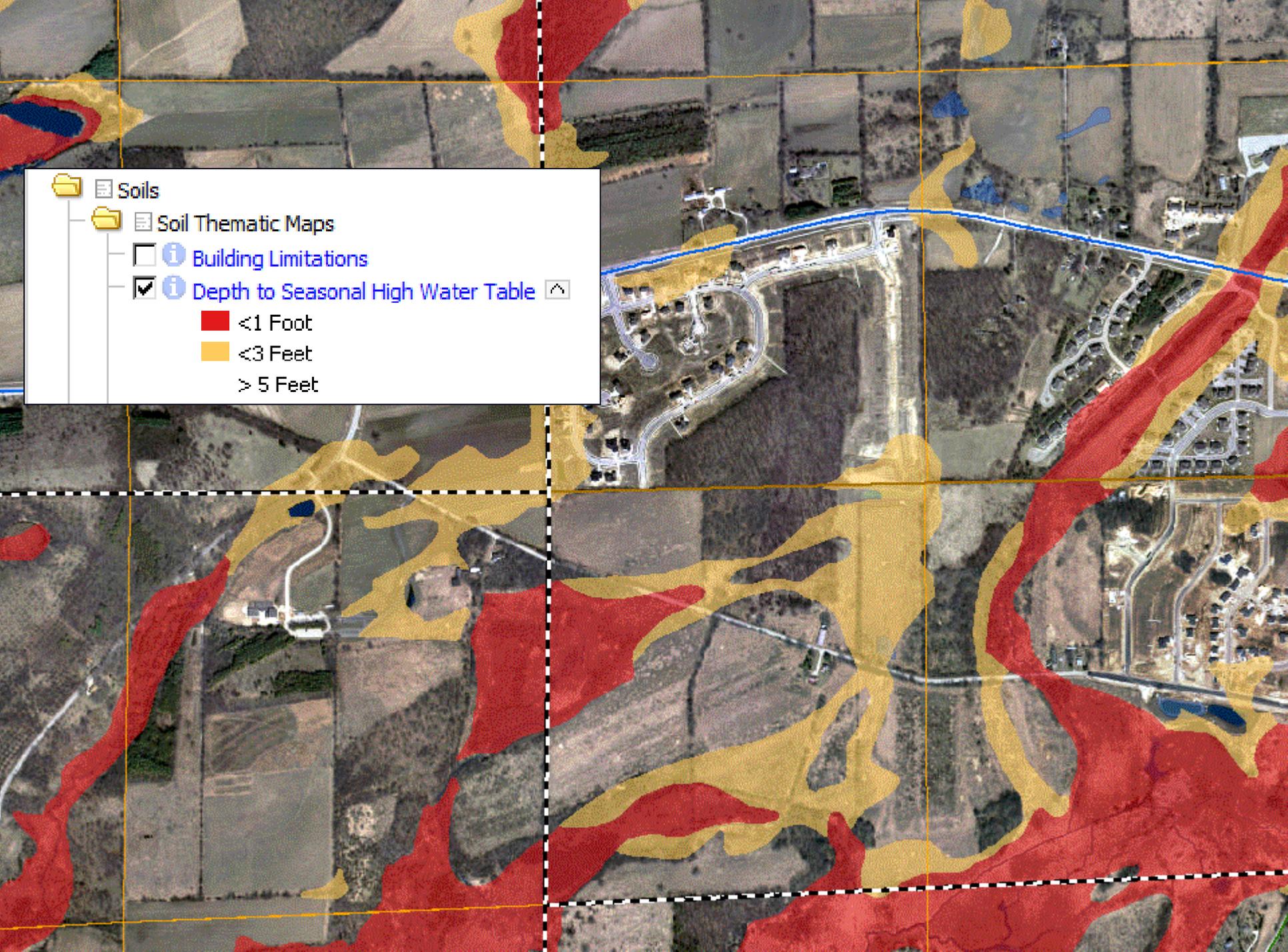
Flooding from Surface Runoff



Minimum Site Drainage Standards

Waukesha County Storm Water Ordinance

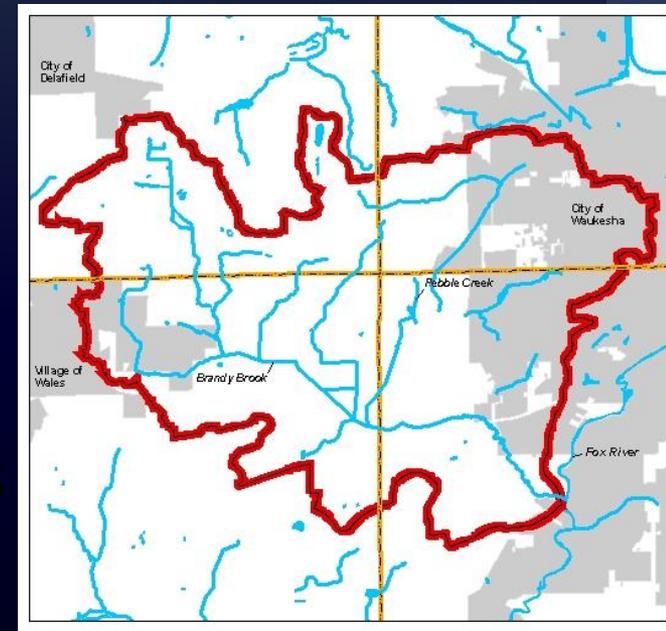




- Soils
 - Soil Thematic Maps
 - Building Limitations
 - Depth to Seasonal High Water Table
 - <1 Foot
 - <3 Feet
 - > 5 Feet

Watershed Protection Plans/LID

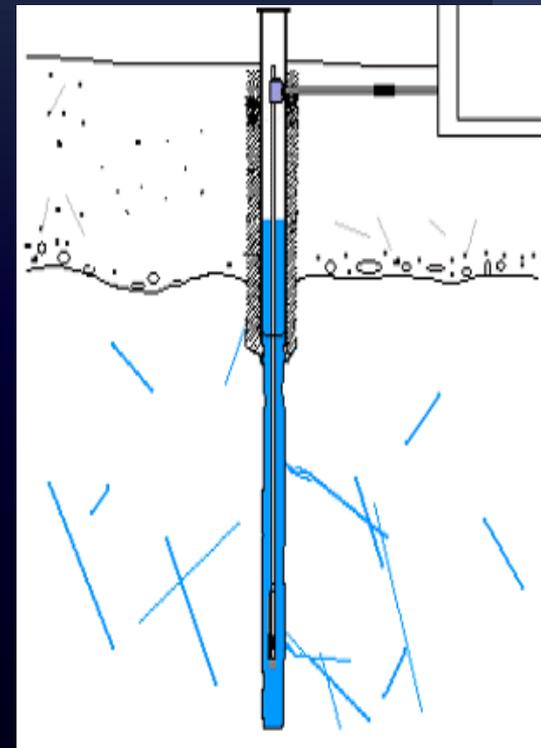
- Completed for Pebble Creek and Mukwonago River watersheds
- Pewaukee River in progress
- Wetland banking program under development – Pebble Creek/West Waukesha Bypass
- Demo LID on county projects (green roof, rain gardens, infiltration basins)



Goal #2 — (6% - 0.4 FTE)

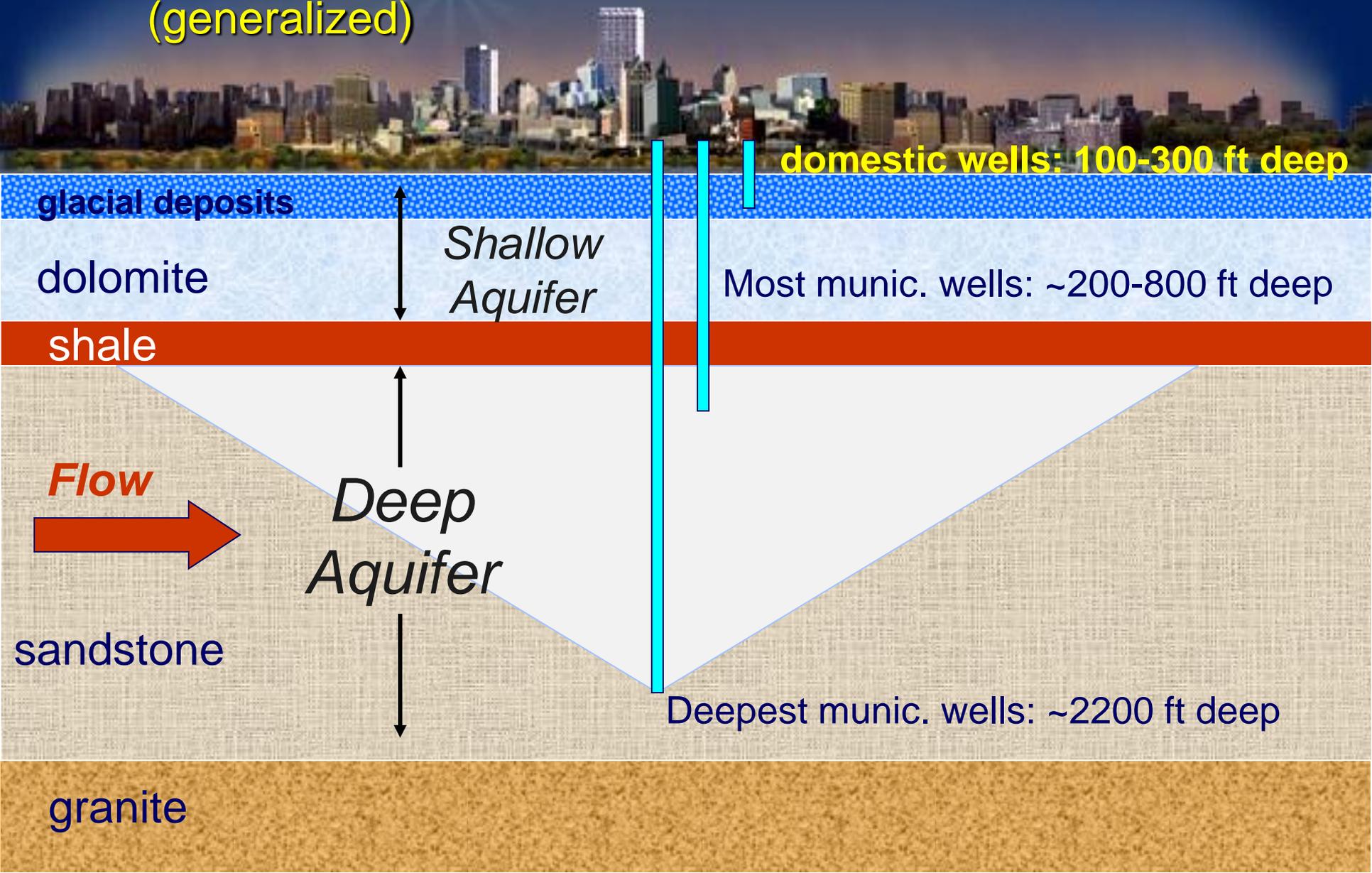
Protect Groundwater Quality/Quantity

- WI Water Conserv. Coalition
- Protect groundwater recharge areas (SW permits)
- Target SWRM grants to well abandonment
 - 37 wells since 2006
- Support Waukesha water application



Groundwater

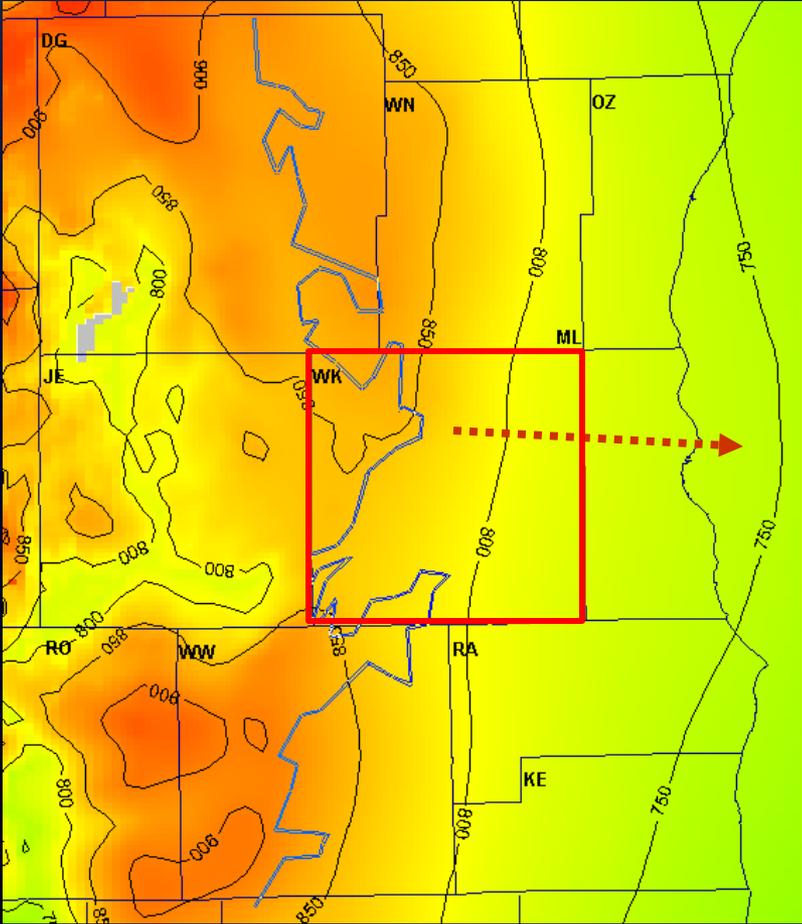
(generalized)



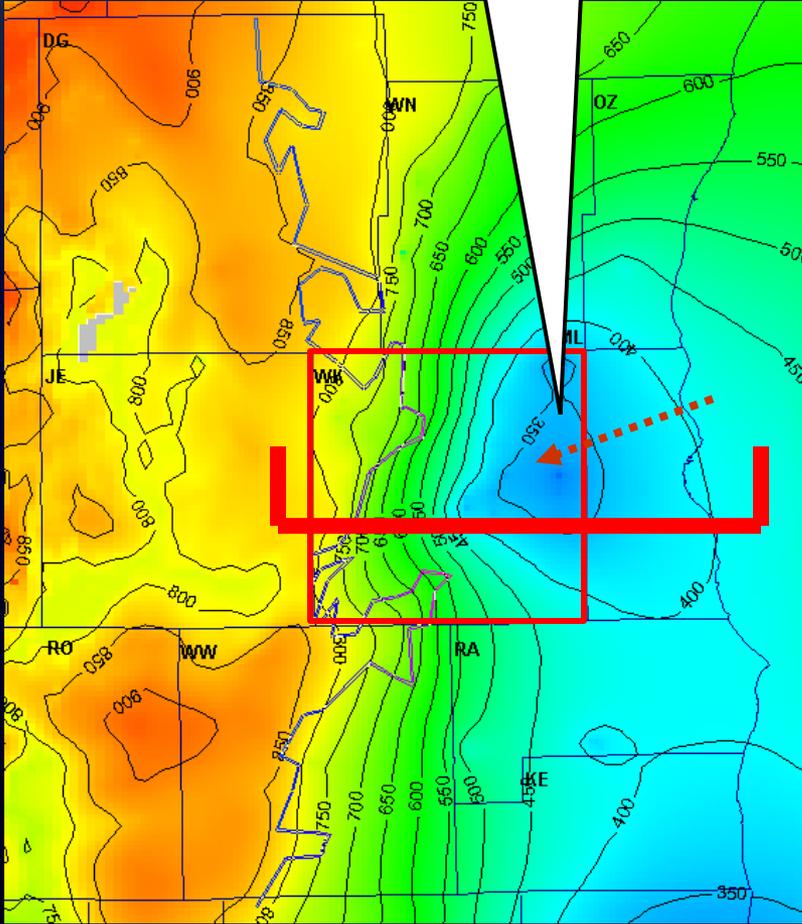
Groundwater Drawdown (deep aquifer)

500 foot drop!
(10 ft./yr.)

1800's

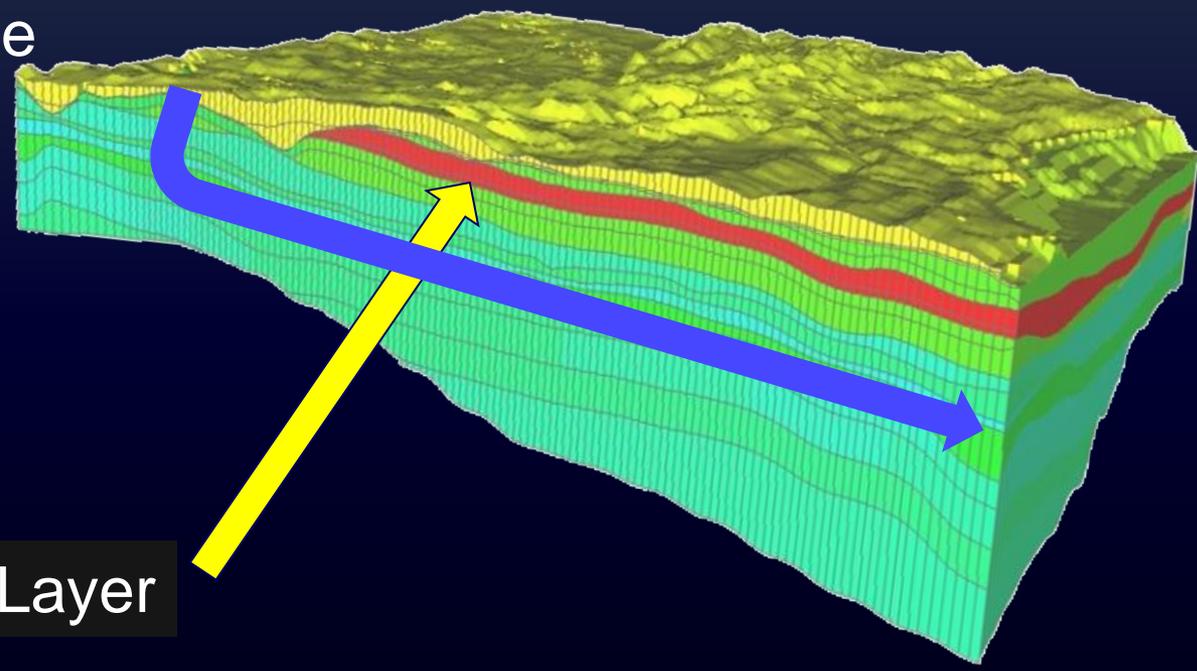


2000



Natural Groundwater Flow in the Deep Aquifer: Waukesha/Milwaukee Counties

West
Waukesha
County Line



Lake
Michigan

Shale Layer

Agricultural Nonpoint Performance Standards: (NR 151)



- Soil erosion at or below "T" values (90% compl.)
- Nutrient management plans (phased to 1/1/08)
- Control barnyard runoff
- Ensure manure storage facilities meet standards
- No manure piles in shoreland areas
- Control livestock in streams & prevent bank erosion

Goal #3 — (13% - 0.8 FTE)

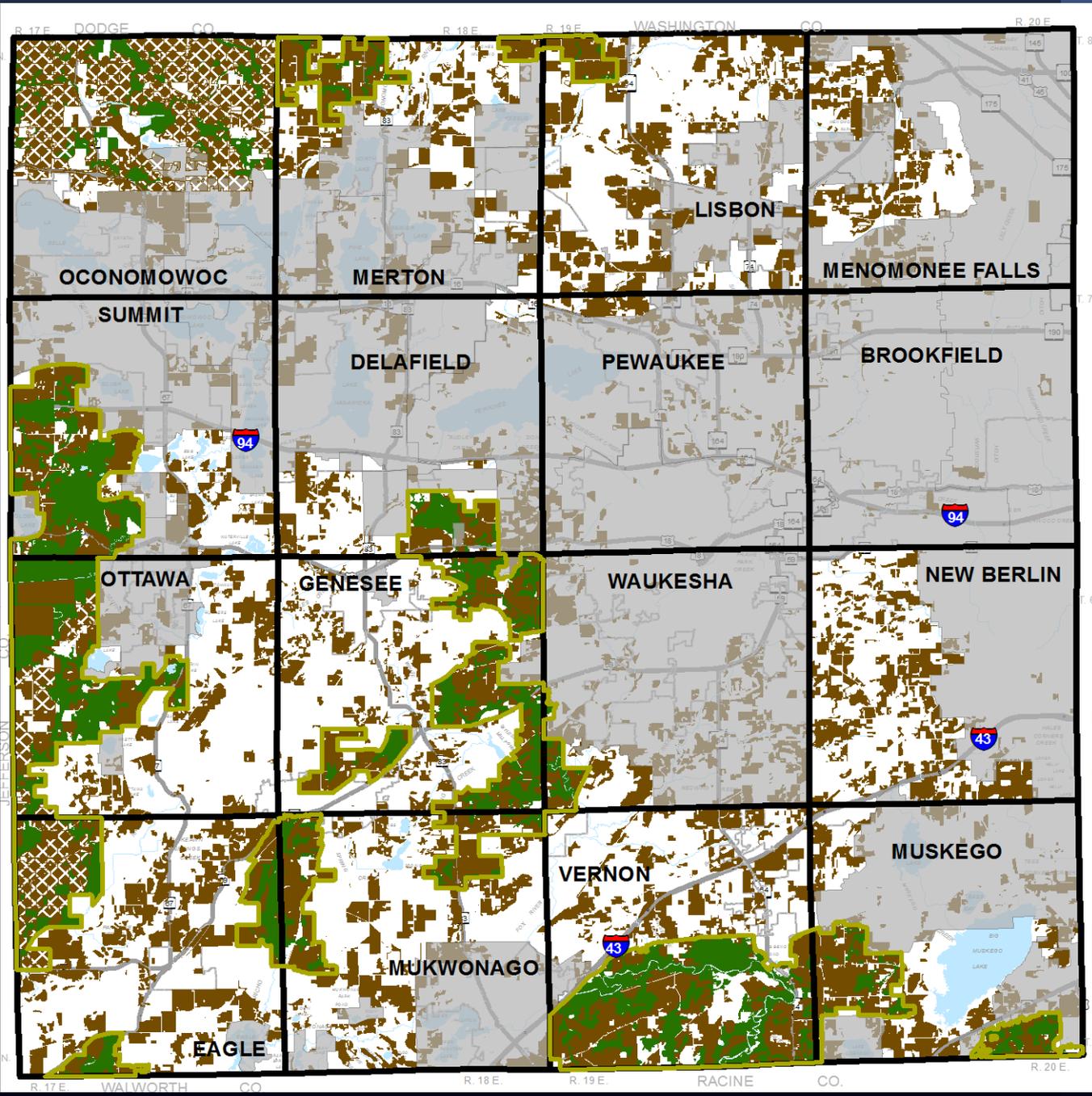
Control Agricultural Nonpoint Pollution

- Update data tracking system to geodatabase
- Target Farmland Preservation (12/31/15)
 - County-owned cropland/WQMA
- DNR working agreement (?)
- Rock River TMDL implementation
- Target wetland restoration



Farmland Preservation Plan: 2011

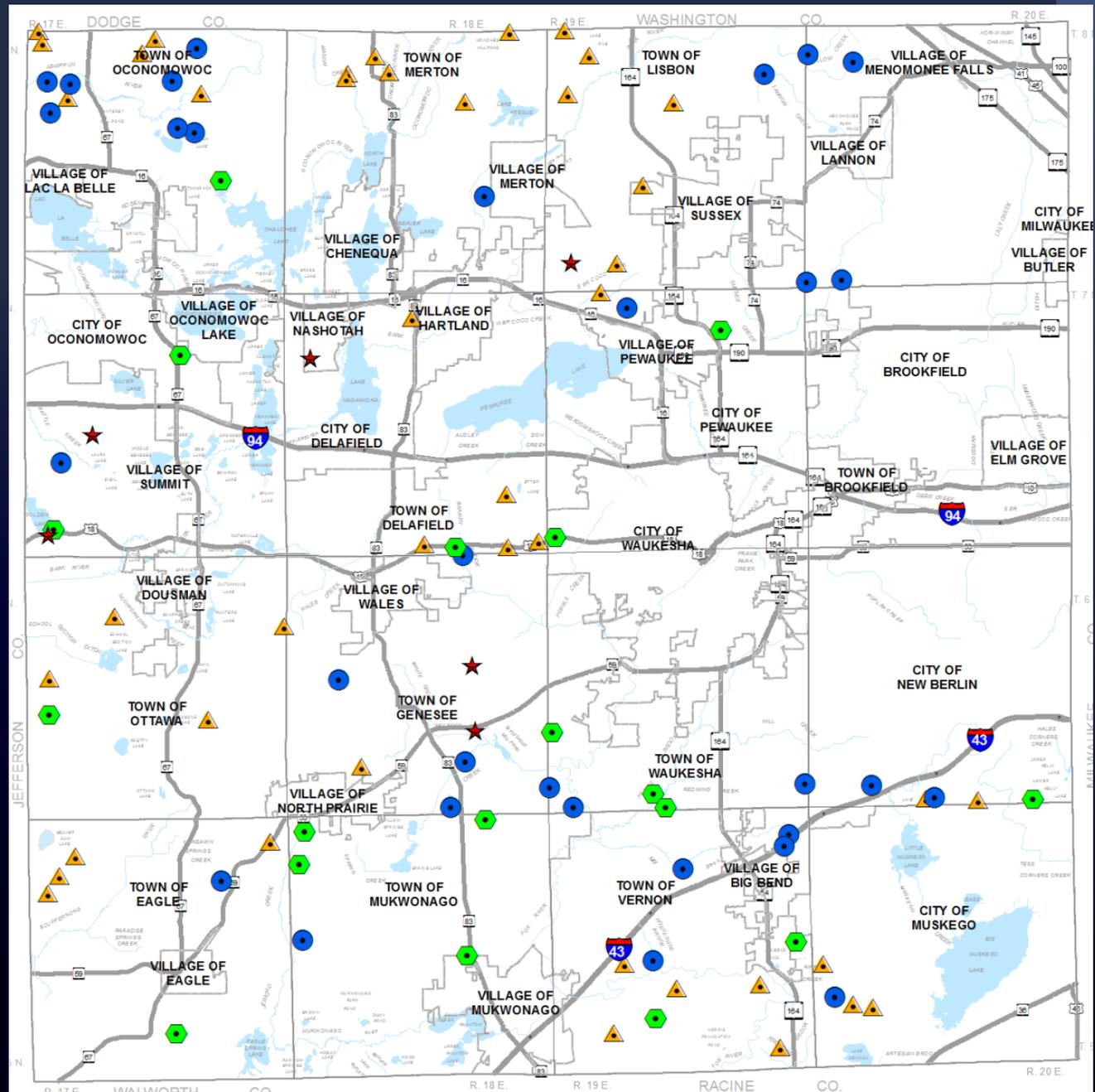
- Legend**
-  Farmland Preservation
 -  Future AEA



Livestock Facilities >40 Animal Units

Livestock Type

- Beef (18)
- Dairy (43)
- Horses (31)
- Other (6)



Goal #4 — (19% - 1.1 FTE) Conservation Education



- Target audiences:
 - Developers, engineers, local officials
 - General public
 - Rural landowners & farmers
 - Teachers, students, youth groups
- Annual community work planning
- Educational activities:
 - Web sites, workshops, presentations, tours, field events, newsletters, etc.

Goal #5 — (4% - 0.2 FTE)

Preserve Targeted Farmland & Natural Areas

- Update county FP zoning ordinance (2012)
- Minimize negative impacts from develop.
 - Ordinance enforcement & BMP location
 - Acquisitions/dedications (greenways)
- Control invasive species (grading/BMPs)



Goal #6 — (14% - 0.8 FTE)

Support Water Monitoring & Improve Public Access to Data



- Water Resource Database
 - Link web-GIS water maps to DNR data
 - Update watershed maps to 2' contours
 - Links to watershed plans & data
 - Add monitoring and stream gauge sites
 - Improve/link floodplain maps/profiles

Goal #7 — (3% - 0.2 FTE)

Reclaim Active Mining Sites

- Ordinance: July 2001
- Issued 17 Co. permits
 - 10 sand & gravel
 - 7 limestone quarries
- Annual reporting & site inspections
- 13 local permits

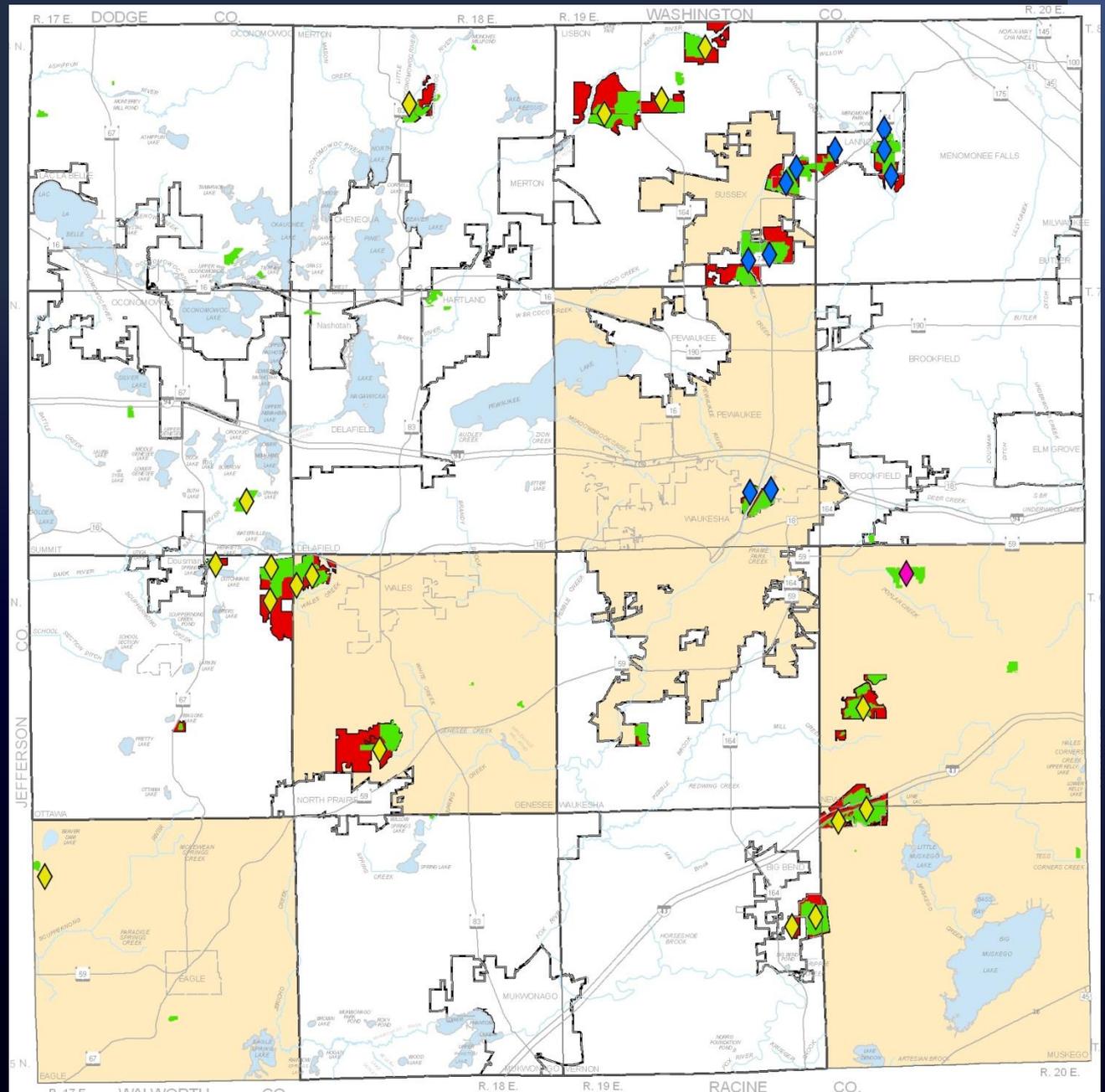


Nonmetallic Mines

Waukesha County

Legend

-  Limestone Quarries (10)
-  Sand & Gravel (17)
-  Peat Mine (1)
-  Extractive Areas
-  Future Extractive Areas
-  Regulatory Authority - County
-  Regulatory Authority - Local



County Mine Reclamation & Yard Waste Composting

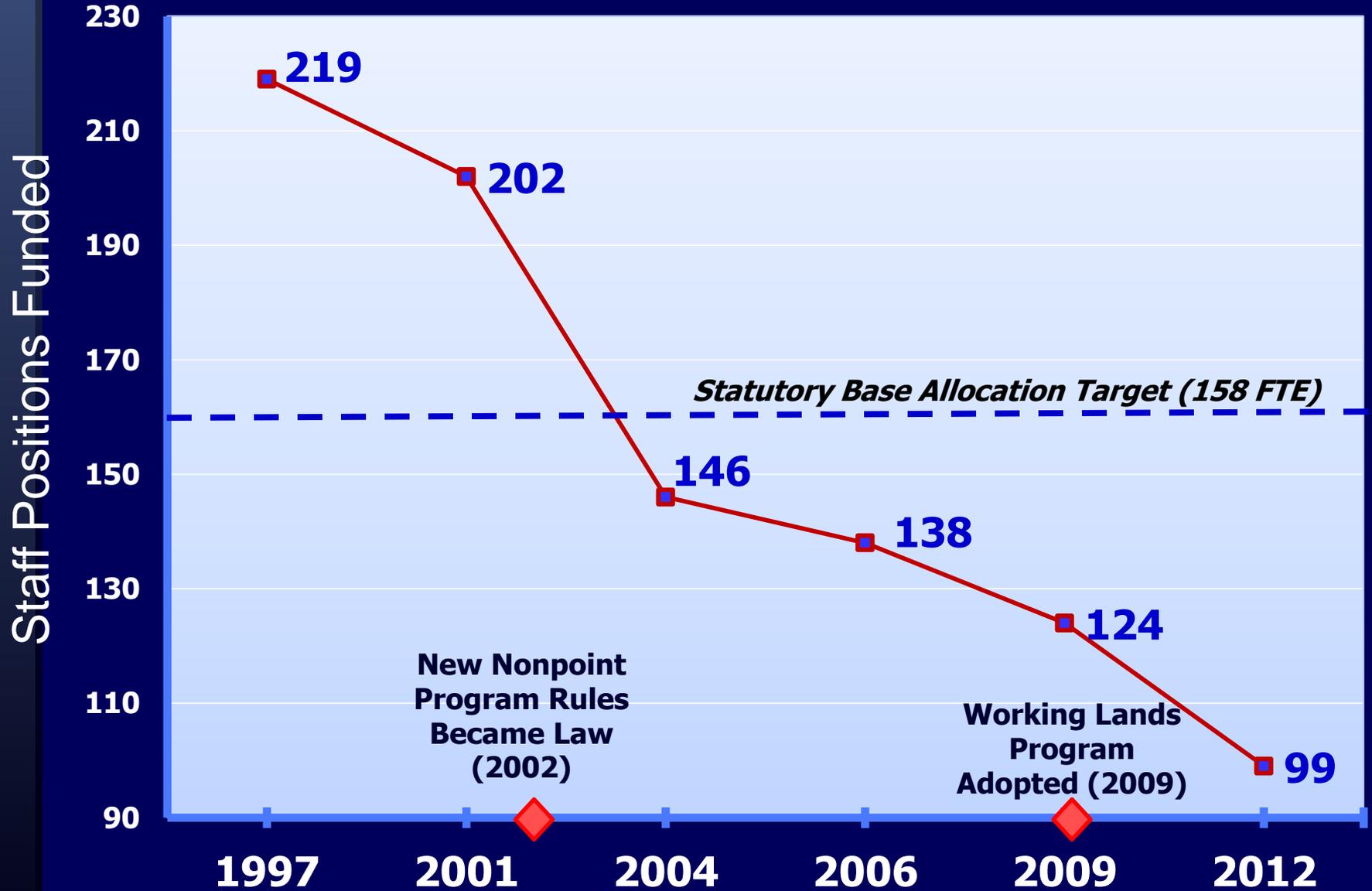
- 10-year contract (2004 Start)
- End land use: industrial park
- Compost as topsoil substitute for mine reclamation
- Boundary/water agreement
- Landfill exhumation
- Regional storm water plan
- Groundwater monitoring wells
- 52,000 tons composted
- 600,000 tons gravel mined
- 10-year extension in progress



Impediments to Plan Implementation

- Excessive agric. cost-sharing mandates
 - Example: Nutrient Management
 - $\$28/\text{acre} \times 10,000,000 \text{ acres} = \$280,000,000$
 - 2012 statewide allocation: \$1 million
- Cannot require compliance without cost-sharing
- Cost-sharing \$ compete with staffing \$

Co. LCD Staff Supported by State Grants 1997 - 2012*



Monitoring & Evaluation

- 10-year LWRM plan
- 3-year strategic plan
- Annual budget/staff goals
- Annual performance evaluations
- Water quality monitoring (limited)
- GIS/Database tracking systems
- Plan activity tracking & reporting



LWRM Plan Summary

- Diverse/challenging/urban focus
- Limited resources (5.8 FTE)
- Lays the foundation for more detailed annual planning
- Concerned about future funding & program sustainability

Questions?

