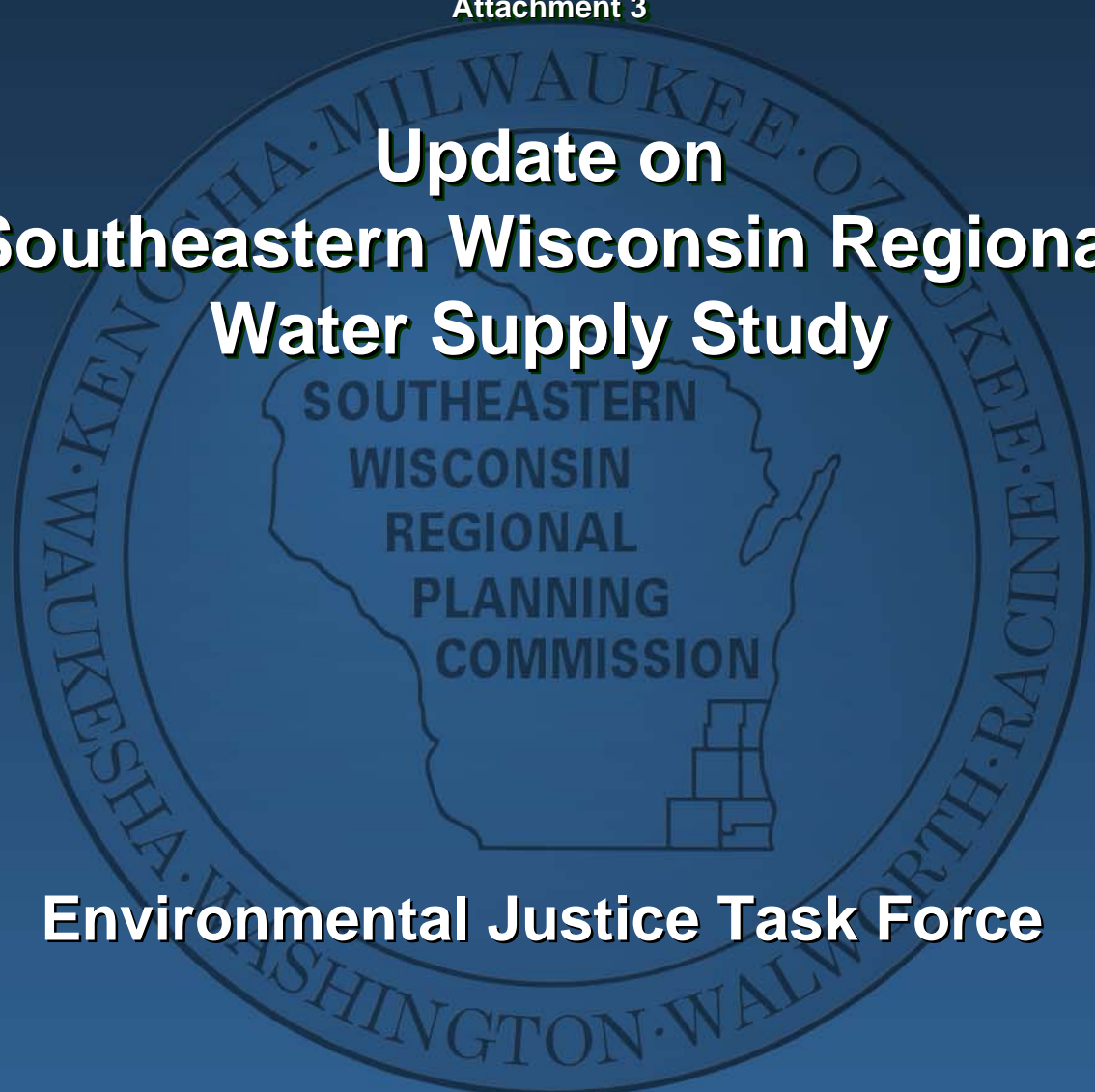




Attachment 3

# Update on Southeastern Wisconsin Regional Water Supply Study



**Environmental Justice Task Force**

**July 29, 2008**



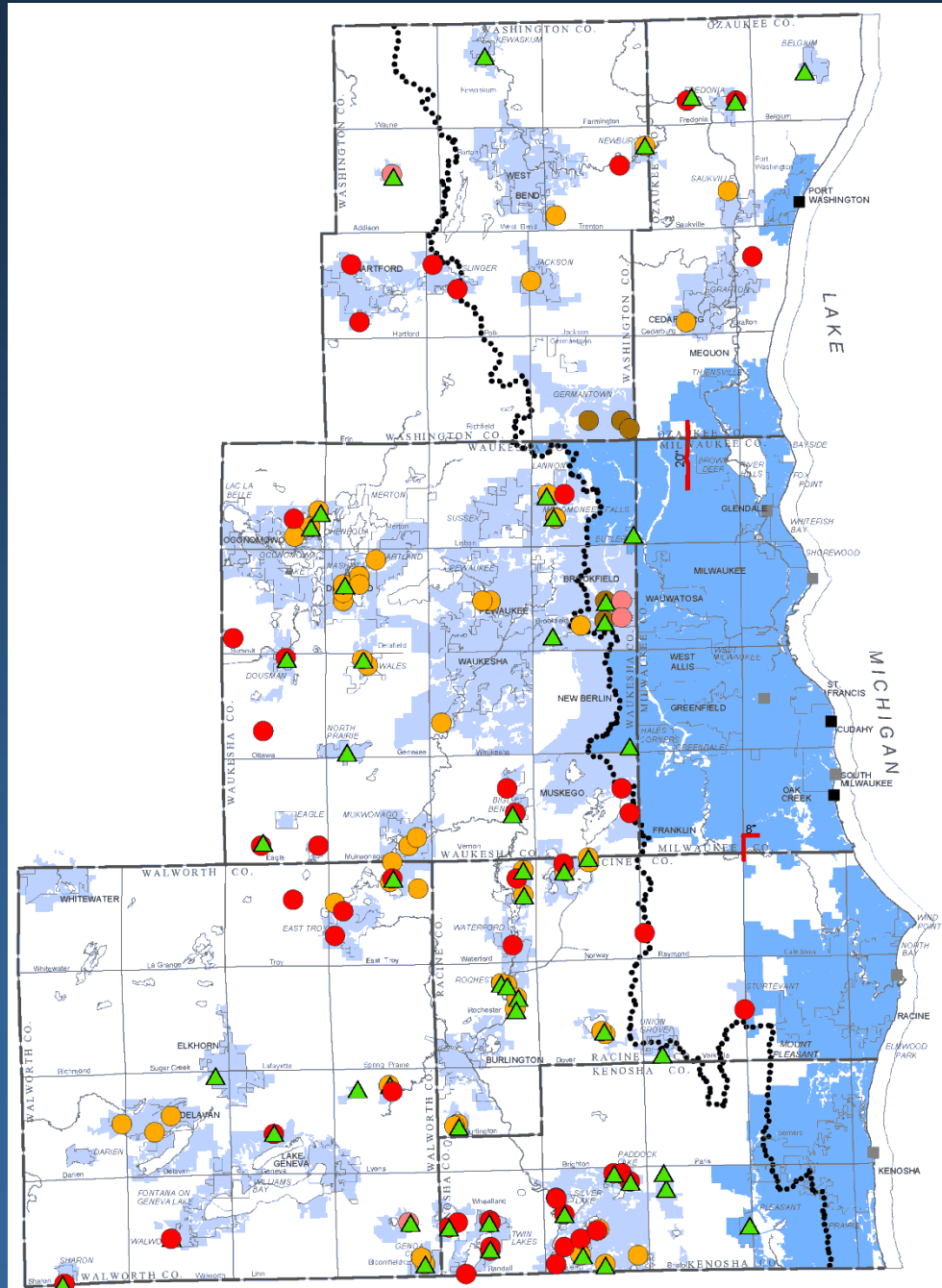
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## Update

- Review of 4 Alternative Plans
- Results of Test and Evaluation of 4 Alternative Plans
- Potential Composite Plan
- Environmental Justice Considerations

# Regional Water Supply Plan

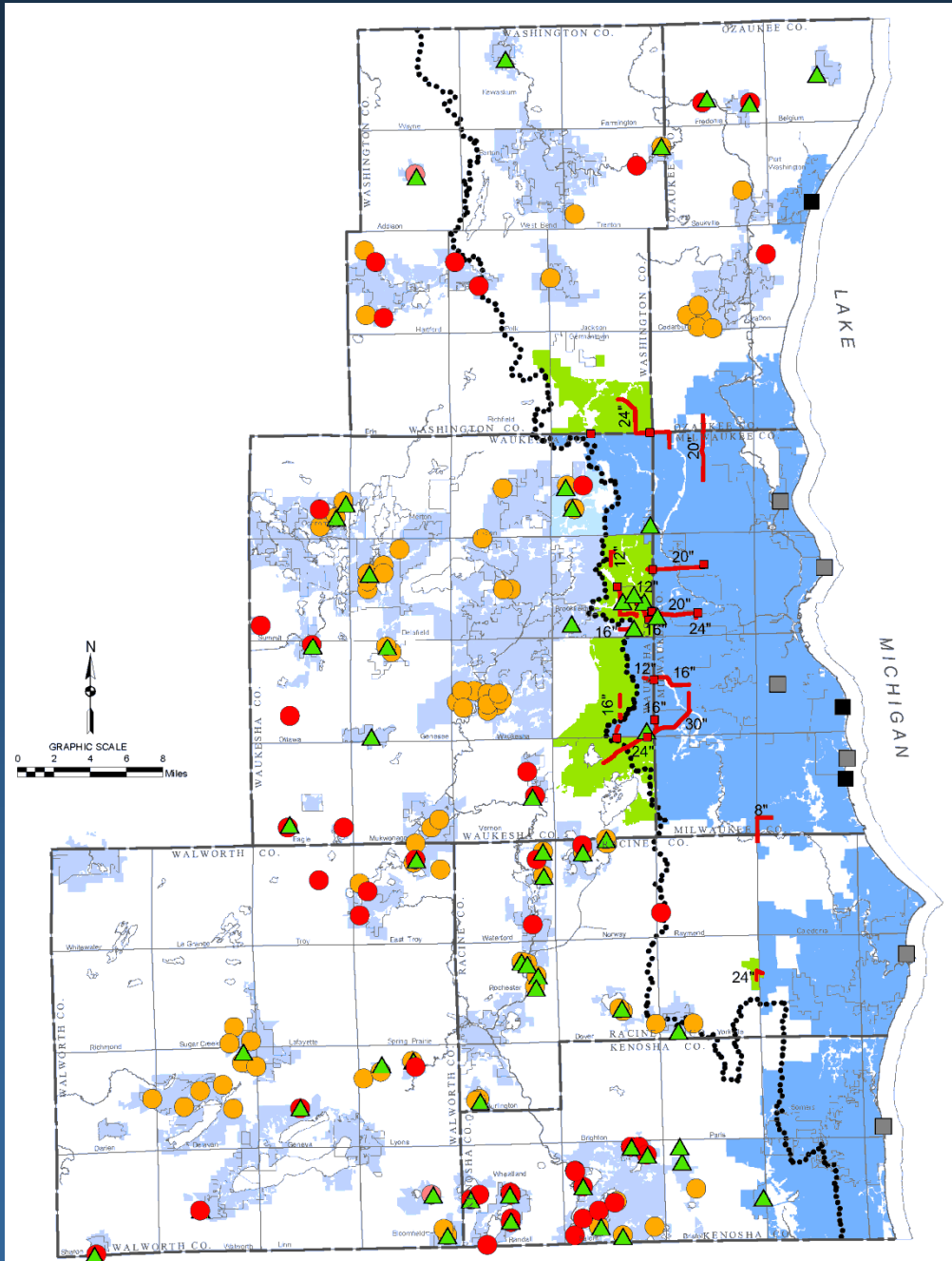
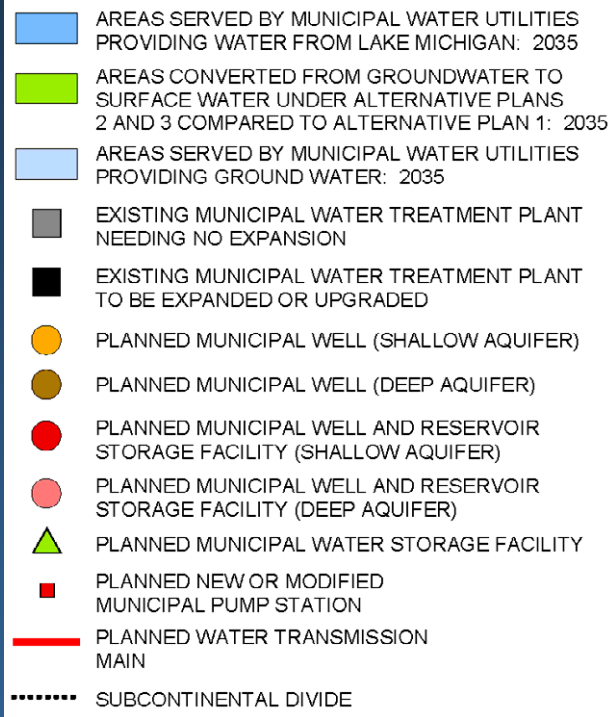
## Alternative Plan 1 – Design Year 2035 Forecast Conditions Under Existing Trends and Committed Actions



- Existing 2007 water supply facilities
- Enhanced local water conservation programs
- Continued reliance on groundwater sources to meet 2035 demand (light blue)
- Continued reliance on Lake Michigan water sources for all areas now served, meeting 2035 demand (dark blue)
- Recharge of groundwater at new construction sites to the extent required by State law
- Continued reliance on private wells for residential areas (about 180,000 persons) plus selected agricultural, irrigation, and industrial uses

# Regional Water Supply Plan

## Alternative Plan 2 – Limited Expansion of Lake Michigan Supply

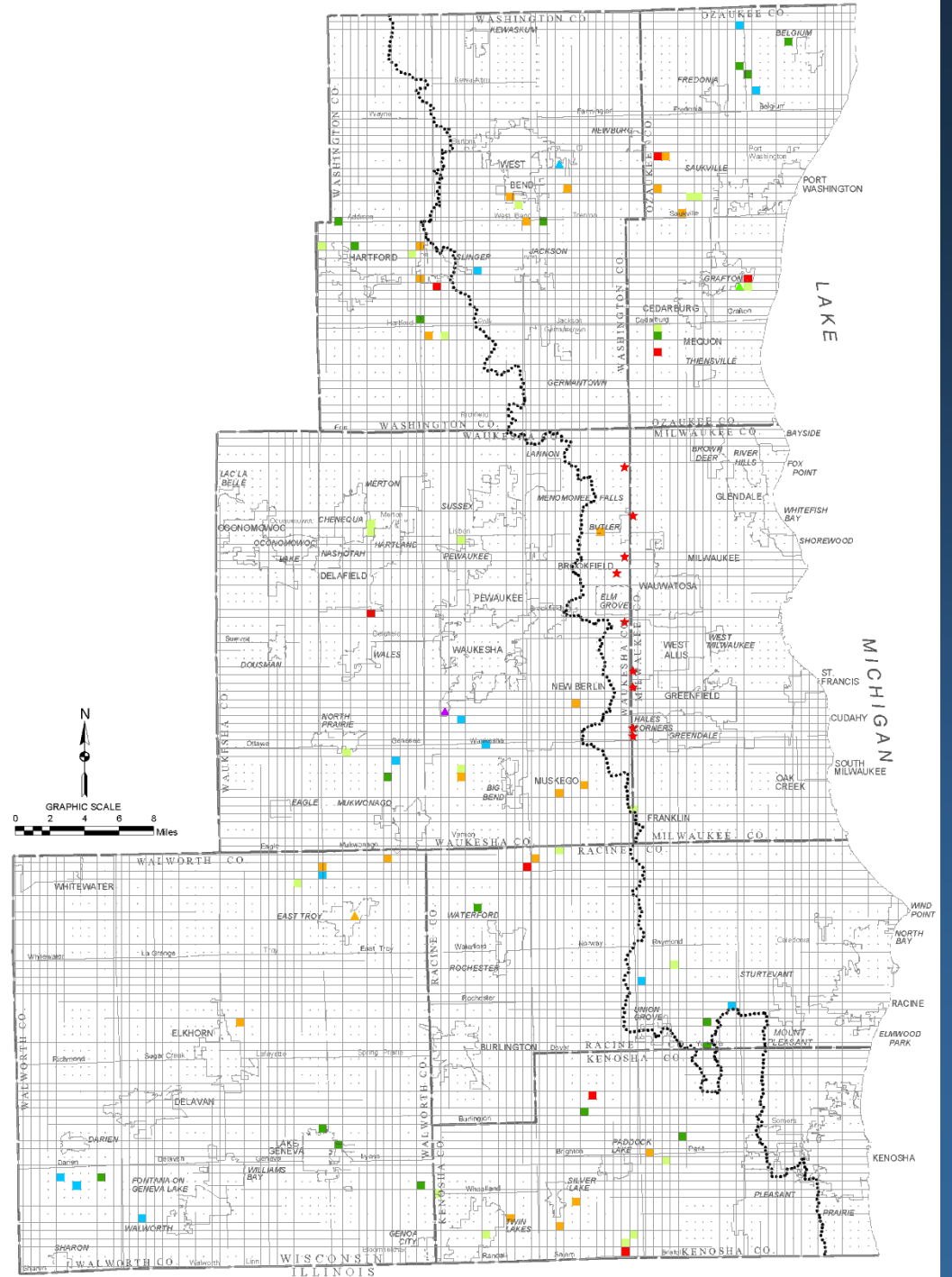
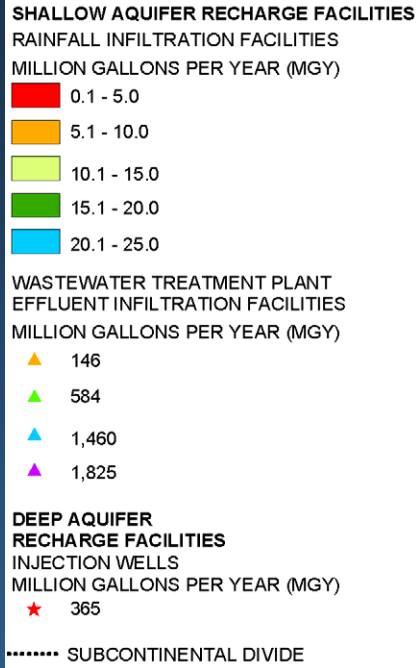


- Includes most aspects of Alternative Plan 1, but converts certain areas to Lake Michigan supply
  - 4 areas east of the subcontinental divide (Germantown, Elm Grove, Brookfield-east, and Yorkville) all with existing return flow (green)
  - 2 areas west of the divide (New Berlin-central, Muskego) both with existing return flow (green)
  - Includes conversion of selected treated deep aquifer sources to shallow aquifer sources



# Regional Water Supply Plan

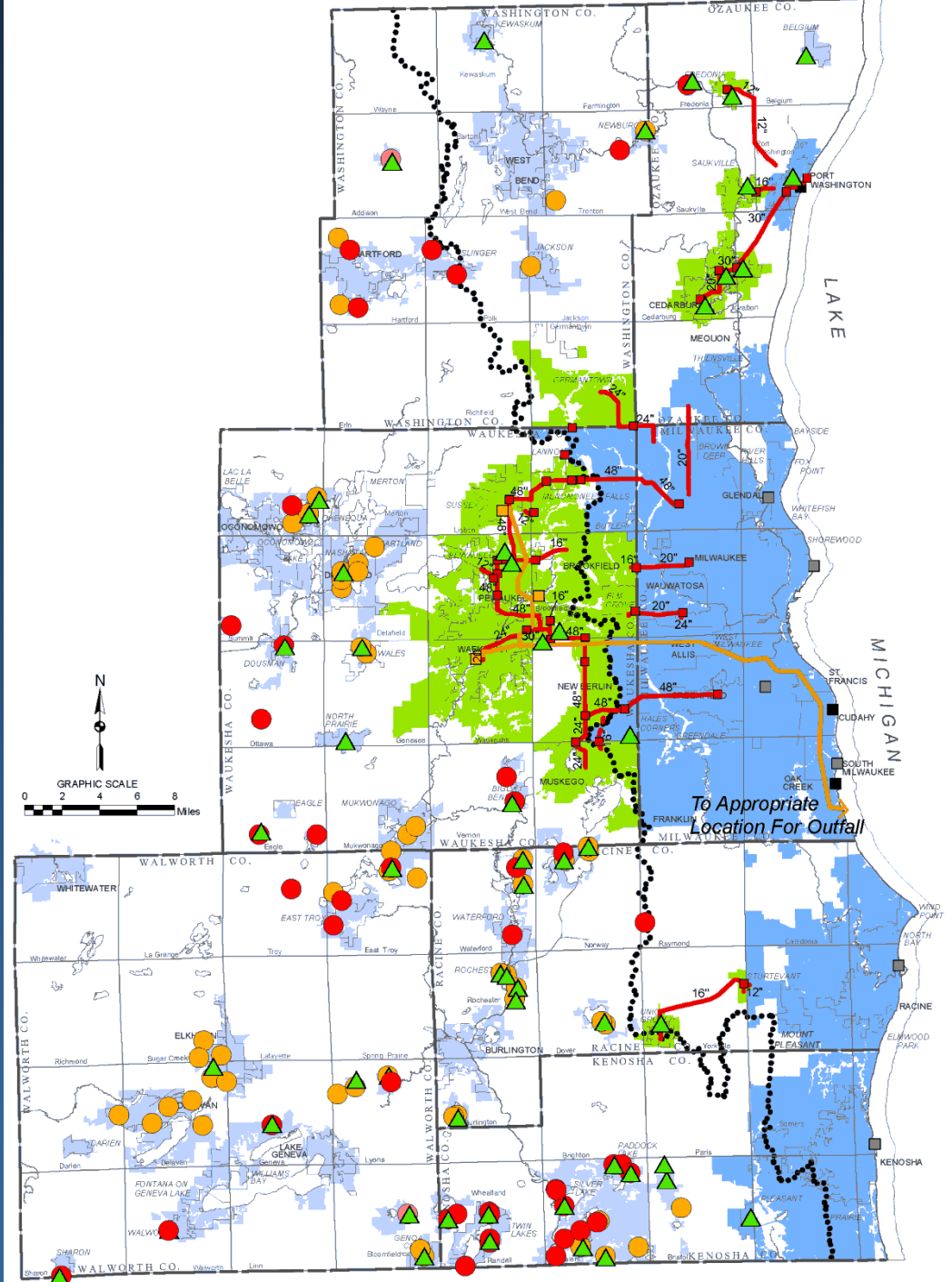
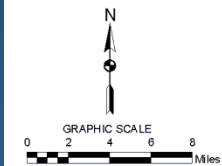
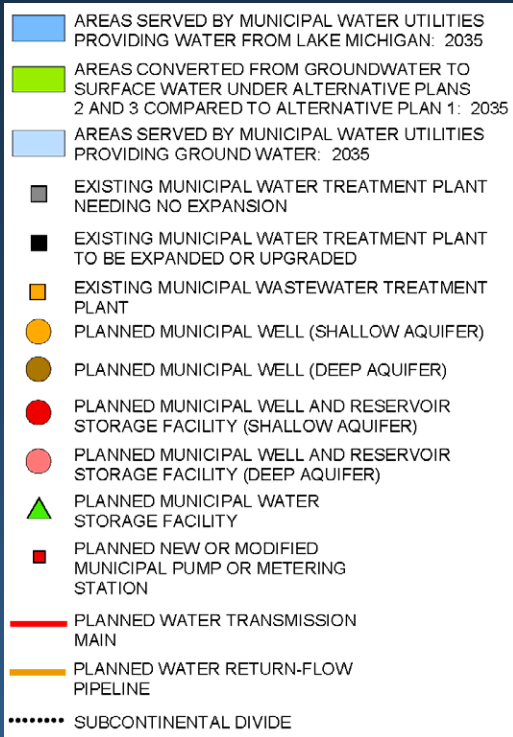
## Alternative Plan 3 – Groundwater Recharge



- Includes all aspects of Alternative Plan 2
- Enhancement of rainfall infiltration over 4.0 square miles of open space through bioengineering; sites to be selected
- Protection of most significant groundwater recharge areas through public purchase if necessary
- Recharge of groundwater at new construction sites beyond the extent required in State law
- Redirection of wastewater treatment plant effluent to shallow aquifer after enhanced treatment at 3-4 demonstration locations
- Recharge deep aquifer with treated Lake Michigan water

# Regional Water Supply Plan

## Alternative Plan 4 – Further Expansion of Lake Michigan Supply
















- Includes all aspects of Alternative Plan 2 but with conversion of selected additional areas to Lake Michigan supply all with return flow components
  - 4 areas east of the subcontinental divide (Cedarburg, Grafton, Fredonia, Saukville) (green)
  - 4 areas in communities which straddle the divide (Brookfield-west, Menomonee Falls-west, Brookfield-Town, Union Grove) (green)
  - 9 areas which are in communities west of the divide within a straddling county (Pewaukee-City, Pewaukee-Village, Sussex, portion of the Town of Lisbon, Lannon, Waukesha-City, portions of the Towns of Waukesha, Genessee, and Delafield) (green)

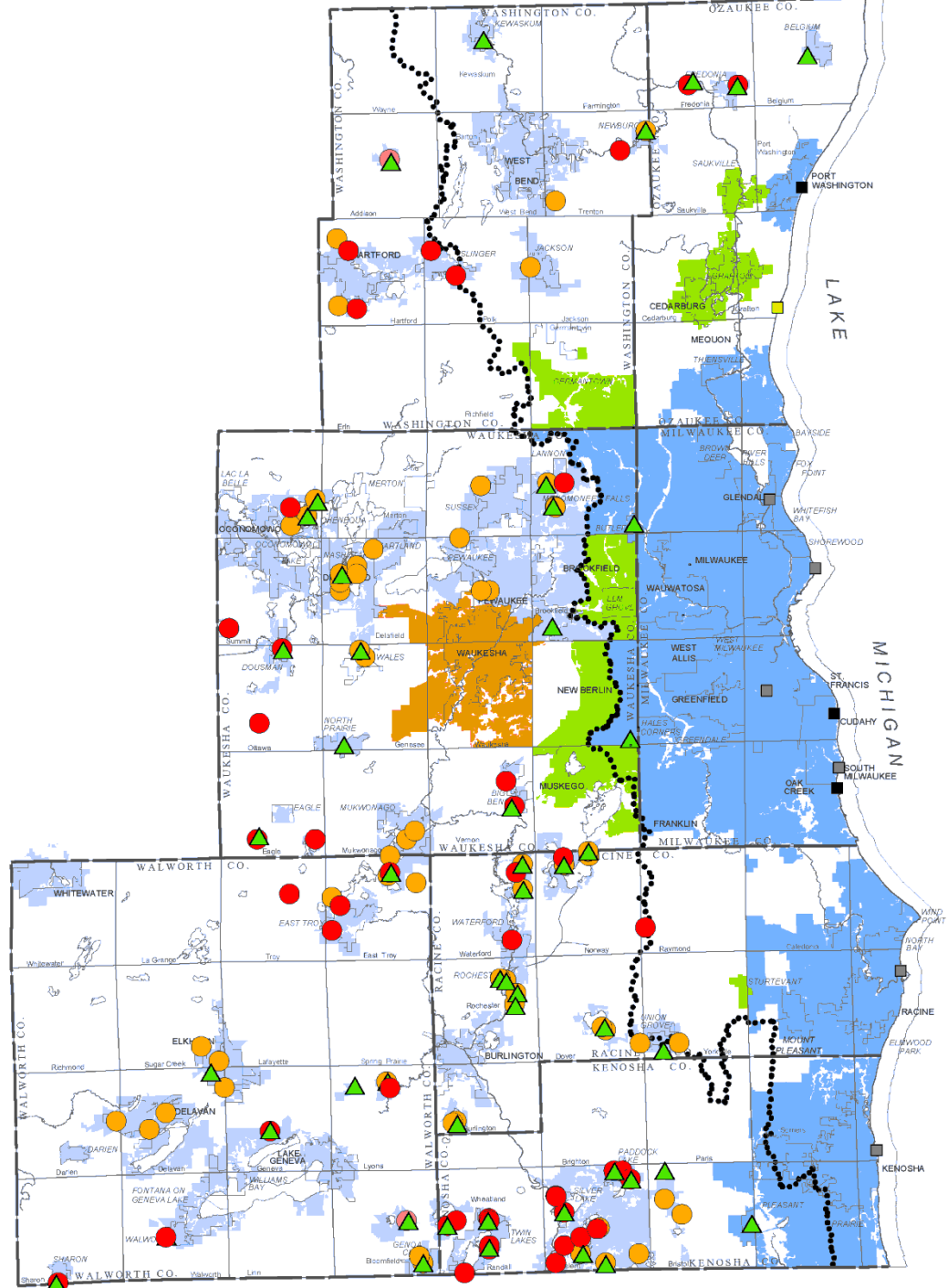


# Test and Evaluation Results-Summary

	<b>Capital Costs</b>	<b>Annual Operating and Maintenance Cost</b>	<b>Deep Aquifer Impact</b>	<b>Shallow Aquifer Impact</b>	<b>Surface Water Impact</b>
Alternative Plan 1	\$172 million	\$5.1 million	Significant slowdown in the drawdown of the deep aquifer	Localized impact around community wells	4.5% reduction in groundwater derived baseflow
Alternative Plan 2	\$222 million	\$-3.3 million	Drawup in the deep aquifer	Localized impact around community wells	5.3% reduction in groundwater derived baseflow
Alternative Plan 3	\$370 million	\$2.1 million	Drawup in the deep aquifer	Localized impact around community wells	1.7% reduction in groundwater derived baseflow
Alternative Plan 4	\$478 million	\$11.9 million	Drawup in the deep aquifer	Localized impact around community wells	0.7% reduction in groundwater derived baseflow

# Components and Subalternatives Being Considered in the Design of a Composite Regional Water Supply Plan

-  AREAS SERVED BY MUNICIPAL WATER UTILITIES PROVIDING WATER FROM LAKE MICHIGAN: 2035
-  AREAS CONVERTED FROM GROUNDWATER TO SURFACE WATER
-  AREAS SERVED BY MUNICIPAL WATER UTILITIES PROVIDING GROUND WATER: 2035
-  SUBALTERNATIVES ARE BEING CONSIDERED FOR THE CITY OF WAUKESHA. (1) RELIES UPON A MIXTURE OF WELLS IN THE SHALLOW AND DEEP AQUIFERS, (2) RELIES UPON A LAKE MICHIGAN SUPPLY CONNECTION
-  EXISTING MUNICIPAL WATER TREATMENT PLANT NEEDING NO EXPANSION
-  EXISTING MUNICIPAL WATER TREATMENT PLANT TO BE EXPANDED OR UPGRADED
-  PLANNED NEW MUNICIPAL WATER TREATMENT PLANT
-  PLANNED MUNICIPAL WELL (SHALLOW AQUIFER)
-  PLANNED MUNICIPAL WELL (DEEP AQUIFER)
-  PLANNED MUNICIPAL WELL AND RESERVOIR STORAGE FACILITY (SHALLOW AQUIFER)
-  PLANNED MUNICIPAL WELL AND RESERVOIR STORAGE FACILITY (DEEP AQUIFER)
-  PLANNED MUNICIPAL WATER STORAGE FACILITY
-  SUBCONTINENTAL DIVIDE



- Enhancement of rainfall infiltration in selected areas through bioengineering – sites to be selected
- Protection of most significant recharge areas
- Consideration of two subalternatives for the City of Waukesha Water Utility. One subalternative relying on groundwater supplies and one relying on a Lake Michigan connection



# Environmental Justice Considerations

## ➤ What we have heard

- Communities which receive Lake Michigan water from the City of Milwaukee in accord with implementation of a regional water supply plan should in turn fully implement other elements of regional plans
  - Transportation (Public Transit)
  - Land Use
  - Housing