

## **Water Resources Goals & Objectives:**

### *Goals:*

1. Develop comprehensive water management policies for Dane County, considering the connections between land-use, urban growth, and surface water and groundwater issues.

### *Supporting objectives:*

- a. Encourage land use patterns and practices which preserve the integrity of the natural hydrologic system, including the balance between ground and surface waters.
  - b. Partner with and involve citizens businesses, and other units of government on soil and water conservation initiatives in rural and urban areas.
  - c. Support educational initiatives through public schools, the University of Wisconsin and UWEX relating to land and water conservation.
  - d. Require that short-term uses of the land for resource extraction or waste disposal are conducted in such a manner that public benefits are maximized, while detrimental effects of the environment are minimized.
  - e. New urban and rural development will be in areas that minimize potential adverse impacts on the quality of ground and surface waters.
2. Decrease flooding and flood-related problems within Dane County and in areas affected by Dane County drainage.

### *Supporting objectives:*

- a. Prevent development from increasing the potential for flood-related problems.
  - b. Mitigate or remove existing flood hazards.
  - c. Minimize runoff from existing and new developments.
3. Protect, improve and rehabilitate the quality and quantity of groundwater in Dane County. Provide a sustainable supply of drinking water while maintaining the natural hydrologic cycle and groundwater-dependent ecosystems.

### *Supporting objectives:*

- a. Determine an ideal level for the regional water table, develop a plan of immediate short-term and long-term actions to stabilize the water table at that level, and begin increasing groundwater level by 2045.
- b. Map areas of high infiltration, soils, known recharge areas & areas suitable for wetland restoration.
- c. Expand the range of tools available to protect groundwater quality, including municipal wellhead protection ordinances, improved monitoring of land-spreading septage and innovative technologies for private and public wastewater treatment.
- d. Promote public awareness of the need for water conservation.
- e. Implement water conservation and decrease per-capita water consumption through development of standards for new development and incentives for existing development.
- f. Recommend groundwater protection strategies to protect groundwater quality, improve existing management and prevent groundwater pollution.
- g. All major land use and siting decisions in Dane County should include evaluation of potential groundwater and hydrologic impacts.

- h. Incorporate stormwater management practices, such as detention and infiltration, in new urban development to maintain or improve groundwater recharge.
  - i. Implement a policy of no-net-loss of groundwater recharge, compared to presettlement ecosystems, for all new development.
4. Protect and rehabilitate the water quality and clarity of the surface water resources of Dane County to support: native fish and aquatic life populations, ecological functions, natural scenic beauty, public health and safety and water-based recreation. Surface water resources include rural and urban lakes, rivers, wetlands and watersheds.

Supporting objectives:

- a. Maintain or enhance the designation of all current Outstanding Resource Waters, Exceptional Resource Waters, Class I and Class II Trout Streams through 2045.
  - b. Improve at least 80% of 303(d) impaired water bodies to the point that they are no longer listed as impaired by 2045 at the rate of at least 20% per decade. Prevent any new water bodies from becoming impaired.
  - c. Implement effective regulations, education programs and cleaning procedures at public and private boat landings, starting by no later than 2008, to eliminate the spread of invasive aquatic plants and animal species in Dane County lakes and rivers.
  - d. Preserve the role of wetlands, woodlands and streambank buffers as essential components of the hydrologic system as well as valuable wildlife habitat. and to restore degraded wetland resources and streambank buffers where possible.
  - e. Increase vegetative cover within urban areas.
  - f. Manage nutrients in an economic and environmentally sound manner.
  - g. New urban and suburban development will incorporate utilization of natural drainage patterns and measures to minimize or entrap pollutants before they enter surface waters.
  - h. Protect shoreland and floodplain areas throughout the County, in both incorporated and unincorporated areas, and emphasize their value to the community as potential focal points of natural beauty and recreation.
  - i. Coordinate water quality monitoring.
  - j. Better manage, mitigate and encourage new technologies to improve quality and reduce quantity of urban stormwater runoff.
  - k. Better manage mitigate and encourage new technologies to improve quality and reduce quantity of rural stormwater runoff.
5. Develop and promote a county-wide system of open space corridors based on watersheds as a framework to protect the natural environment and scenic values, and provide outdoor recreation opportunities.
- a. Permanently protect key sensitive and critical environmental resources, including, but not limited to: infiltration areas, riparian habitat, in-stream habitat, wetland habitat, wetlands, groundwater recharge areas, open space corridors, spawning grounds, shore cover, and headwater areas.
  - b. Fully implement the *Dane County Parks & Open Space Plan*.
6. Enhance recreational opportunities associated with water resources.
- a. Provide access to lakes and streams and water-based recreation trails.
  - b. Encourage use of our lakes and parks as public gathering places.

- c. Add more and improve existing public accesses to water resources, including landings and shoreline parks.
  - d. Ensure quality access for a wide variety of water uses while minimizing competition and conflict.
  - e. Manage water levels and protect shorelines to preserve scenic beauty.
7. Use watershed boundaries to inform relevant land use and water resource planning and decision-making.
- a. Use watersheds as geographic units of analysis to evaluate the impacts to water bodies of both current land uses and proposed changes in land use.
  - b. Encourage integration and coordination of public agencies and local units of government within every watershed to achieve improvement to the quality of all water bodies in Dane County.
  - c. Foster partnerships with water resource-oriented citizen's groups to involve them in each stage of watershed planning and decision-making.
  - d. Educate local elected officials and members of local planning and zoning commissions about critical water resource issues within their watershed, by having watershed-based training workshops at regular intervals, and other educational efforts as appropriate.
  - e. Educate local residents, developers and elected officials about changes in Wisconsin DNR rules and regulations regarding surface water, ground water and conservation.
  - f. Direct planning staff to organize information about current land use and anticipated changes in land use by watershed.
  - g. By no later than 2008, Dane County staff, working with local units of government and local residents, will develop a schedule and a process to create a land use plan for each watershed in the county, focusing on issues of infiltration, wetland preservation, recommended development phasing and stream buffers over a 50 year timeline. These watershed plans, when completed, shall become a part of the water resources component of the Dane County Comprehensive Plan.

**Water Resources Policies & Programs:**

1. **Continue to implement and update the *Dane County Water Quality Plan*.**
  - a. Work with the Wisconsin DNR, cities, villages, towns and municipal sewer districts to re-establish a regional entity, representative of the Dane County area, to:
    - i. Approve public sewer and water extensions under NR 121, Wisconsin Administrative Code, and in a manner consistent with the *Dane County Water Quality Plan*;
    - ii. Provide information, mapping and protection for environmental and open space corridors;
    - iii. Approve public wastewater facilities and improvement planning in the context of comprehensive areawide and watershed plans for pollution control and resource protection. Make sure facility expansions meet other regional goals, such as capacity to accept septage;
    - iv. Coordinate water quality monitoring, and hydrological modelling;
    - v. Direct future updates of the *Dane County Water Quality Plan*.
  - b. Continue to support extension of public sewer service only within those areas designated as urban service areas or limited service areas in local, county and regional plans.
  - c. Fully fund and implement the county government action steps identified in the 2004 *Dane County Water Quality Plan*.
2. **Fully fund, implement and continue to update the *Dane County Land & Water Resources Plan*. (see Land Resources Policy 8).**
3. **Implement and enhance the *Dane County Parks & Open Space Plan* (see Land Resources Policies 4 & 5)**
4. **By no later than 2008, Dane County staff, working with local units of government and local residents, will develop a schedule and a process to create a land use plan for each watershed in the county, focusing on issues of infiltration, wetland preservation, recommended development phasing and stream buffers over a 50-year timeline. These watershed plans, when completed, shall become a part of the water resources component in a future update of the Dane County Comprehensive Plan. Components of these watershed plans should include:**
  - a. For each watershed, map:
    - i. key areas of water infiltration (those that if lost will cause negative impacts on the water body)
    - ii. known recharge areas, including 100-year recharge areas for all municipal wells
    - iii. areas suitable for wetland restoration
    - iv. all currently protected shorelines (public lands, DNR easements, NRCS buffers, etc)
    - v. public access points to each waterbody
    - vi. Develop clearinghouse of information re: groundwater recharge rates, well locations, draw down rates, etc in areas to aid planning.
  - b. Complete and implement the Dane County Waterbody Classification system (currently underway) to design programs that take into account the environmental sensitivity and existing development conditions for each water body. Program policies should treat all riparians (including public, private, in incorporated or in unincorporated areas) within a particular waterbody class in a uniform way. Specific programs could include:
    - i. Waterbody-sensitive shoreland zoning regulations, including standards for vegetative buffer protection and restoration, mitigation of nonconforming uses, slope protection and conservancy overlay districts.
    - ii. Cost-share funding, including wetland, lake shore and streambank restoration, in-water habitat.
    - iii. acquisition,

- iv. education and
  - v. other county programs
  - c. Educate local communities about where their key ground and surface water features are (once mapped) so they can incorporate in land use and comprehensive plans.
  - d. Analyze economic impacts of impaired waters, exceptional resource waters and outstanding resource waters.
  - e. Determine amount of pollutants contributed to waterbodies by each municipality in a watershed.
  - f. Commercial, industrial and residential development in watershed headwaters should if necessary, be restricted by zoning to minimize the impact of stormwater runoff caused by development.
  - g. Include funding for watershed land use plans in development fees; add some levy funds for "all-rural" watersheds.
  - h. Obtain grant money and hire county watershed coordinator to manage the watershed planning program.
- 5. Develop and implement an integrated flood prevention and mitigation program.**
- a. Fully implement the *Dane County Flood Mitigation Plan*
  - b. Revise county flood control and other facility design, maintenance and management policies to reduce flood hazards and better manage high water conditions. Specific issues to address include:
    - i. Evaluate methods such as modification of bridge constrictions, aquatic plant modification, dredging, channel modification, etc. to increase flow conveyance.
    - ii. Work with the WI DNR and other municipalities to manage water control structures from Lake Mendota to below the Stebbinsville Dam under a unified, coordinated and recordable management strategy based on a Yahara River System management plan. Use the calibrated USGS Yahara Lakes model currently under development to optimize management of Yahara Lake system
    - iii. Continue to work with the WI DNR to design water level orders to address all four seasons, not just summer maximum and winter minimum.
    - iv. Establish a structure and process for planning and funding capital improvement and maintenance of flood control and navigation structures on the Yahara River system (i.e. locks, dams, conveyance channels). Explore the use of user fees to finance operations and maintenance of boat launch facilities and locks.
    - v. Evaluate the need to renovate Tenney, Babcock and LaFollette lock and dams. The evaluation should include the possibility of automating the gates at one or all of the dams.
    - vi. Remove closed pipes/channels and establish natural waterways in their place where possible.
  - c. Provide sufficient resources to actively enforce and administer county floodplain zoning ordinances to strictly limit new development within floodplains. Evaluate county and municipal floodplain zoning standards to see if ordinances adequately protect floodplains and revise as necessary.
  - d. Develop an acquisition or purchase of development rights program specifically targeted at removing existing flood hazards. Invite low-lying riparians to voluntarily provide right-of-first-refusal to the county for future ownership of their property in order to revert it to public ownership.
- 6. Continue, enhance and update county erosion control and stormwater management programs.**
- a. Ensure there is adequate budget and staff for construction site erosion control and stormwater management to meet plan review and inspection targets as described in Chapter 14, Dane County Code.
  - b. Develop capacity and funding source to have county perform or contract for emergency stabilization work on sites where significant erosion or flood damage is occurring as a result of permit violations.

- c. Consider development of a county or regional stormwater utility to plan and construct regional stormwater facilities to serve watersheds with a high level of existing development and significant stormwater problems. Identify a permanent source of funding for project development, construction and ongoing maintenance.
  - d. Review county zoning and land division ordinances to see if there are opportunities to modify parking, street width and other standards to reduce impervious surface areas of new developments. Encourage or require permeable paving surfaces in parking lots, overflow parking areas and walkways.
  - e. Continue to evaluate new technologies and practices such as rain gardens, permeable pavements, enhanced infiltration techniques and other stormwater technologies for inclusion in the *Dane County Erosion Control & Stormwater Management Manual*. Promote the use and understanding of the manual to as wide an audience as possible.
  - f. Work with local municipalities to adopt minimum standards in L&WC Water Quality Implementation Plan for shoreland, floodplain and wetland zoning, road salt (or other ice or snow melt material) use, street cleaning, storm sewer maintenance, shoreline protection, and construction site erosion control ordinances. Continue to develop standards for stormwater management plans in conjunction with local and state management agencies.
  - g. Develop a schedule to monitor installed stormwater management practices to evaluate their maintenance and long-term effectiveness.
  - h. Work with towns, cities and villages to design incentives, such as density-bonuses, cost-share or tax breaks, for development designs and practices that go beyond minimum standards for water quality protection.
  - i. Encourage creation of and improvements to municipal stormwater utilities rate structures to provide incentives for practices such as permeable pavement, rain garden installation, etc.
  - j. Work with cities and villages to allow developers to meet infiltration requirements by cost-sharing infiltration practices in other locations, e.g., private homes, schools, churches – this could operate like a “infiltration mitigation bank”
  - k. Encourage Business certification processes, such as Green Built Homes, that include training for improved stormwater management.
- 7. Expand and enhance the tools available to the county and other communities to promote groundwater protection.**
- a. Develop a county-wide purchase of development rights or acquisition program dedicated to protecting areas of significant infiltration, municipal wellhead areas, and lands contributing to recharge of major aquifers. This could ultimately serve as an “infiltration mitigation bank” to assist in meeting state and county stormwater infiltration requirements on a watershed or regional basis. Develop a funding source that would allow for joint contributions from local, county, state and federal governments and private sources.
  - b. Identify high recharge areas in existing developments and promote demonstration / research projects there to mitigate the impacts of concentrated impervious areas .
  - c. Create a new zoning type for groundwater recharge areas for lands in the 100-year recharge area of all municipal wells. The ordinance would minimize development and impervious surfaces.
  - d. Amend county land division ordinance to prohibit development (buildings, streets, driveways) in groundwater recharge areas, including vegetated slopes.
  - e. Define parameters of “major land use” needing hydrological analysis. Develop a systematic methodology to examine hydrological impacts at the time a rezone request is made.
  - f. Require landowners to provide an assessment groundwater quality and quantity impacts of new developments as a permit condition.
  - g. Make hydrologic resources (facts, computer modeling, etc) widely available to county staff, towns, cities and villages. Provide training where appropriate to assist in the use of these resources.

- 8. Provide partial funding for a feasibility study and an environmental assessment to explore returning treated wastewater to groundwater in the upper portions of the Yahara River watershed. Such a study should:**
    - a. Build on current work by MMSD to return water to the Badger Mill Creek watershed, and include recommendations to expand similar programs to other watersheds.
    - b. Identify partners such as Madison Metropolitan Sewerage District, the Wisconsin DNR, the University of Wisconsin, Wisconsin Geological and Natural History Survey, the Cities of Madison, Middleton and others for potential supplemental funding and support.
    - c. Suggest amendments to state, county and local regulations, as well as regional water and sewer utility policies, to allow for such a practice while protecting groundwater and surface water quality.
    - d. Evaluate the current state of infiltration, effluent treatment, and water conservation technologies. Recommend ways (such as county, state and University –funded research) to stimulate development of any new technologies needed.
  
  - 9. Develop a county program to monitor land spreading of septage and enforce state requirements.**
    - a. Amend the county zoning ordinance, the county sanitary code, or other appropriate ordinances to allow county officials to regulate siting and to enforce requirements for landspreading of septage.
    - b. Establish a fee structure sufficient to add dedicated staff to conduct, monitoring, inspection and enforcement related to septage landspreading operations.
  
  - 10. Develop a set of educational materials and programs to promote water stewardship, infiltration, and water conservation.**
    - a. Hold regular workshops for developers and construction companies to educate them about best management practices, regulatory standards, and to encourage practices that go beyond minimum standards.
    - b. Hold annual county-wide or basin-wide watershed groups meeting.
    - c. Develop maps and other educational materials and audio-visual media materials that illustrate the “water cycle” for Dane County – where our water comes from, where it goes, how water flows from house to street to stream to land.
    - d. Encourage county and local parks and the University of Wisconsin to model state of the art practices that protect water quantity and quality (i.e., infiltration, less mowing, mulching, re-establishment of native vegetation, etc.).
    - e. Develop clearinghouse of information re: groundwater recharge rates, well locations, draw down rates, etc in areas to aid planning.
    - f. Develop educational programs to build public understanding and acceptance of new wastewater treatment, groundwater restoration and water conservation techniques.
    - g. Provide information and guidelines to promote a culture of respect among shoreline property owners, recreational users, and others.
    - h. Use street signs to educate public on watershed boundaries.
    - i. Educate landowners in mapped groundwater sensitive areas about ways to voluntarily protect groundwater (areas with shallow aquifers, karst topography, etc).
    - j. Develop and implement a media campaign to promote water conservation, rain barrels, cessation of lawn watering, leaf collection, native landscaping, mulching and acceptance of the occasional brown lawn.
    - k. Create “Welcome to the Watershed” packet for new homeowners (seek assistance from developers).
    - l. Coordinate with neighborhood associations, 4-H, and other community groups to implement educational programs.
    - m. Encourage farmers to not spread manure on frozen land and help them establish alternatives such as cooperative manure handling
    - n. Provide better public access to recommendations, decisions and information related to water issues through the internet, e-mail, brochures, newsletters and other outreach efforts.
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- o. Use public access points as opportunities for education, e.g., indicate what watershed you're in and its importance; current planning processes, management goals & projects; how-to information on rain gardens, permeable surfaces, etc.
- p. Educate municipal officials and general public about the costs of achieving goals in order to justify the investment of staff and resources for groundwater protection.

**11. Work with municipal water suppliers to adopt rate structures that encourage conservation.**

**12. Develop a wildlife management plan that addresses endangered, threatened, native, nuisance, and invasive species, including aquatic and near-shore plants and wildlife. (See Wildlife Resources Policy 1.)**

**13. Explore the feasibility and effectiveness of constructing a phosphorus-removal treatment plant in the Yahara chain of lakes, possibly at the Tenney Locks and Dam.**

**14. Work cooperatively with anglers, water recreation, conservation and watershed groups and build on the efforts of the Lakes & Watershed Commission's "Take a Stake in the Lakes" campaign to maintain an effective county-wide pool of water resources volunteers. Train and assist volunteers to:**

- a. Inspect boats for invasive species at boat landings;
- b. Perform basic water quality and control structure monitoring tasks for all lakes, streams and urban and rural drainageways;
- c. Work with schools and youth groups to involve youth in watershed clean-up and restoration projects;
- d. Participate in shoreland, wetland and floodplain restoration and demonstration projects
- e. Educate water users and riparian landowners about water quality, quantity and use issues.

**15. Include a watershed representative on Lakes and Watershed Commission.**