

**LEGISLATIVE BRIEFING
1987**

WATER RESOURCES



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**SURFACE WATER
MANAGEMENT**

FUNCTIONS

Permits

- Protected waters: 1,099 processed
- Appropriations: 220 processed
- Contested Case Hearings: 12
- Water Bank: 6,000 acres
(121 landowners)
- Corrective Actions: 200

Shoreland/Floodplain/Wild and Scenic Rivers

- 542 local ordinances adopted
- Floodplain delineation
- Floodproofing assistance
- Lake and river classifications

Dam Safety/Grants-in-Aid/Flood Control

- Construction/Reconstruction/Repair
 - 14 projects listed for biennium
 - Small flood control project grants: \$3,040,000
 - Dam Safety projects: \$2,100,000
 - 58 dam repairs received state assistance since 1978
- Inspections/Maintenance/Operation
 - 1,000 dams in Minnesota require periodic inspection
 - 460 inspected during biennium
- Reports and Inventories
 - Maintain data base and inventory of dams
 - Reports to legislature for dam ownership transfers

**GROUND WATER
MANAGEMENT**

Permits

- Applications processed: 816
- Well interference complaints: 9
- Unpermitted appropriators contacted: 520

Ground Water Protection

- Aquifer management plans (LCMR funded Swift County)
- Promote ground water development
- Quantify availability
- Resolve conflicts over use
- Develop management policies
- Protect supplies from overdevelopment or degradation

**WATER POLICY
AND PLANNING**

Provide State Water Policy Leadership

- Balance resource protection/opportunities for utilization
- Evaluate local, state and national trends
- Determine state water policy issues
 - short and long range
- Evaluate management options
 - new technology
 - research needs
- Recommend actions

Interstate/National/International Policy Coordination

- Represent Minnesota's interests
- Resolve disputes over boundary waters
- Maximize funding opportunities

TECHNICAL SERVICES

Climatology

- Rain gage network: 1,000 reporting stations
- Trends analysis -- historic extrapolation

Hydrologic/Hydraulic Studies/Modeling

- Regional aquifer studies: 2
- Applications of geophysics: 220 sites evaluated for resource potential/environmental degradation

Basic Data

- 22 continuous record stream gages
- 49 SWCD contracts for observation well measurement
- 582 observation wells statewide (includes USGS cooperative agreement)

Data Systems

- Automated data base development
- Data dissemination
- Local information service
- Policy guidance
- Graphic support
- Trends analysis

Field Survey Activities

- 150 Hydrographic surveys annually (topographic, profiles, cross-sections)
- 100 Ordinary high water investigations annually
- Establish and maintain 120 gaging stations
- Floodplain delineation
- Protective maintenance and minor repair of 315 state-owned dams

Training Assistance

- Ordinance administration
- Workshop/conference/seminar presentations
- Technical information and assistance for local water planning efforts

LAKE MANAGEMENT

ISSUES

- Lakes are the economic and social hub for much of rural Minnesota
 - minimal effort exerted to maintain value
- Lake changes in use, quality, fluctuation can dramatically impact local economy and social environment
- Development trends have changed significantly in past 10 years
 - timeshare buildings
 - condominiums
 - buildings and campgrounds
 - resort conversions
 - seasonal vs. permanent residency
- Recent development trends have outstripped management strategies
 - lake development capacities are being exceeded
 - higher density shore development
 - surface use conflicts
 - poor fishing
 - more algae growth
 - destruction of lakes' natural character
 - reduction in tourism
- Lake management demands an intergrated and focused strategy
 - focus government leadership
 - state/local team approach
 - lake-by-lake management options
 - technical and financial support
 - enhanced data dissemination
- Lake associations and local governments increasing demands
 - technical assistance in lake issue resolution

FLOODING

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- 17,000 structures at risk
 - Approaching \$70 million in average annual damages
 - Over 50 lakes have identified concerns due to water level fluctuation
 - Floodprone agricultural land area highest in the nation - 4.5 million acres
 - Total area of floodprone land second highest in the nation - 10.5 million acres
 - Local governments need assistance
 - Federal guidelines demand increased local contributions up to 30% of total cost
 - 45 communities rely on emergency levees

DRAINAGE

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- Process lacks participation equity for landowners
 - Assessment methodology is inconsistent and inequitable
 - General policies conflict with RIM, new Federal policies on agriculture
 - Does not adequately promote multi-resource concerns
 - erosion control
 - flood control
 - wetland management
 - water quality
 - Major conflict between upstream and downstream interests
 - Ditch authorities have frequently ignored responsibilities
 - Benefit vs. cost for projects frequently pits landowner against landowner

WATER SUPPLY

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- 70% of population relies on ground water for drinking water supply
 - 93% of public water supply systems draw from ground water
 - Economic development depends upon plentiful supplies of water
 - environmental, social, economic tradeoffs
 - Ground water exploration and investigation essential to management
 - define supply
 - assess contamination
 - cost of clean-up or alternative source

- Water allocation strategies
 - recurrent floods/drought response
 - interbasin transfers
 - balance useage versus protection; recreation versus water users
 - water need for instream flow and potential demand for water exportation

**COMPREHENSIVE
LOCAL WATER
PLANNING**

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- 54 county water plans targeted for 1987-1988
 - Mandated water planning for 7 county metro area
 - Identification of problems/causes
 - Correction alternatives evaluated
 - cost effectiveness
 - social, political acceptance
 - Consistency with state policy
 - Availability of information/data
 - Technical guidance and assistance

CHANGE LEVELS

GROUND WATER EXPLORATION AND DATA AUTOMATION CONVERSION

Geophysics a success

- \$100,000 of equipment acquired
- staff expertise developed
- interagency applications/value
- efficient and effective method

WELLS data base developed

- 100,000 well logs automated and accessible
- data available to local interests for local water planning
- valuable support/source of accurate data
- data accessible to field staff

ACCELERATED GROUND WATER INVESTIGATIONS

Provides essential funding for:

- basic data collection and interpretation
- water resources assessment and quantification
- ground water system modeling
- provides essential information: document water supplies and correct past mistakes

Specific components of the program include:

- sand plain study updates/models
- buried drift aquifer studies
- expansion of data network in problem areas
- better distribution of monitoring sites to identify water quality and supply problems/concerns
- data and studies developed to support local water planning effort
- sealing of abandoned wells on DNR lands
- provides understanding of ground water flow essential to remedial actions at contamination sites

FLOOD DAMAGE REDUCTION PROGRAM

Provide technical and financial support to local units

Reduce economic and social stress on communities and create a framework for economic stability and growth

Leverage over \$9,000,000 in federal construction grants

Establish local/state partnership

**STREAM
MAINTENANCE**

Fund an existing program for stream cleanup and maintenance

Promote water quality improvement

Enhance fish and wildlife habitat

Reduce stream bank erosion

Increase water carrying capacity and reduce overbank flooding

Reduce bridge and road repair costs

Promote innovative approaches to enhancing the stream environment

**LOCAL WATER
PLANNING
TECHNICAL
ASSISTANCE**

State/Local partnership to highlight water issues

Staff are necessary to facilitate cooperation with local entities

- make state data bases useable locally
- concentrate on local issues/perspectives

Facilitate documentation of statewide problems/issues

- monitor for consistency with state water policy

**GROUND WATER
MANAGEMENT
(LCMR)**

Cooperative effort with USGS and University of Minnesota

ground water - surface water connection in three geologic settings:

- The Straight River (glacial deposits)
 - ground water use: irrigation and agricultural processing
 - surface water use: recreation
 - land use: primarily agricultural with rural residential
 - Impacts of each on water quality/quantity of the others

- The Twin Cities (glacial deposits over bedrock)
 - ground water use: public supply, commercial and industrial
 - surface water use: public supply, recreation, navigation, water quality
 - land use: urban
 - Impacts of ground water pumpage on streamflow

- SE Minnesota (Karst area)
 - ground water use: public supply and rural domestic
 - surface water use: recreation
 - land use: some urban, mostly agricultural
 - Relationship of land use to ground water and surface water quality

**MISSISSIPPI
RIVER
MANAGEMENT
(LCMR)**

Funding to be utilized to improve the management of the natural resources of the Mississippi River System

- interdisciplinary team with expertise in fish and wildlife management, river hydrology, recreational site development and governmental operations
- coordinate the State's participation in the emerging issues of resource preservation; in concert with use and development
- secure a potential \$20 to \$50 million in federal funds for Mississippi River projects over the next 10 years
- promote greater cooperation with US Army Corps of Engineers, US Fish and Wildlife Service and the State of Wisconsin
- provide assistance to local government units and the public

