Framework for Sustainable Watershed Management Using Science-based Decision Making

I. TECHNICAL PHASE

TECHNICAL STUDIES

IMPACTS OF DEVELOPMENT ON FLOW

CHARACTERIZE HYDROLOGIC RELATIONSHIPS
BETWEEN BASEFLOWS and WITHDRAWALS
Forested – Pre Development
2000 Land Use
2020 Build-out

TROUT USED AS INDICATOR SPECIES

- Distributed Hydrology Model
- 3-D Groundwater Model
- Hydro-ecological Integrity Process

RESULTS:
Classification: PERENNIAL FLASHY/RUNOFF
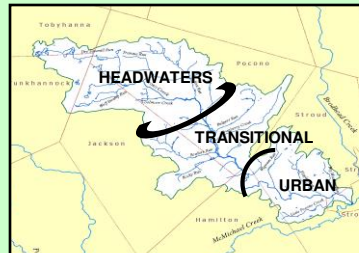
Recharge reduced in majority of recharge areas
Daily Base Flow	<	31%
Low Flow 7Q10	<	11%,
Monthly Median Daily Flow	<	10%

Monthly Peak Daily Flows	>	21%
Annual Max. Daily Flow	>	19%

Watershed-Averaged Groundwater Recharge	<	31%

II. PLANNING PHASE

PLANNING PRINCIPLES
- SCIENCE- BASED MANAGEMENT
- PRECAUTIONARY PRINCIPLE
- WATERSHED INTERCONNECTEDNESS
- HEADWATERS PRIMACY

IMPLEMENT REGIONAL WATERSHED MANAGEMENT - LOCALLY

A Watershed Plan implemented locally within regional context. Each of the three regions in the watershed have distinct characteristics. Each region requires a specific suite of Best Management Practices. Watershed Hydrology can be managed through Stormwater and Land Use Planning.
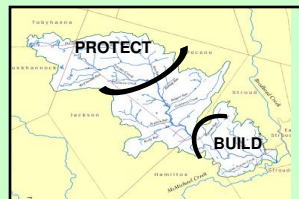
Municipalities focus on just their own WMA's BMPs to maximize multi-municipal funding opportunities and minimize implementation and project responsibilities.

HEADWATERS
TRANSITIONAL
URBAN

Watershed-wide Stormwater Authority

WMA	BMP Function
Headwaters	Conservation
Transitional	Buffers/Retrofits
Urban	Retrofits

INSTITUTIONAL CHANGES

PROTECT
BUILD

- Integrated Water Management
- Utility & Land Use Plans Comply
- Single Point of Contact @ DEP
- Regulatory Consistency
- 21st Century Regulatory Processes
- Conserve & Protect Headwaters
- Transfer of Development Benefits
- Sustainable Economic Development

III. EDUCATION & OUTREACH

NEW PARADIGM REQUIRES AWARENESS

INNOVATIVE WATERSHED COMMUNITY OUTREACH EVENT
for
PUBLIC OFFICIALS, DEVELOPERS
&
RESIDENTS

"Sustain Development – Save a Trout"

Groundwork for Social Marketing Effort

Trout Trails & Tales

AWARENESS TO ACTION
Community Expectations, Officials Engaged