



FUSS & O'NEILL
Disciplines to Deliver

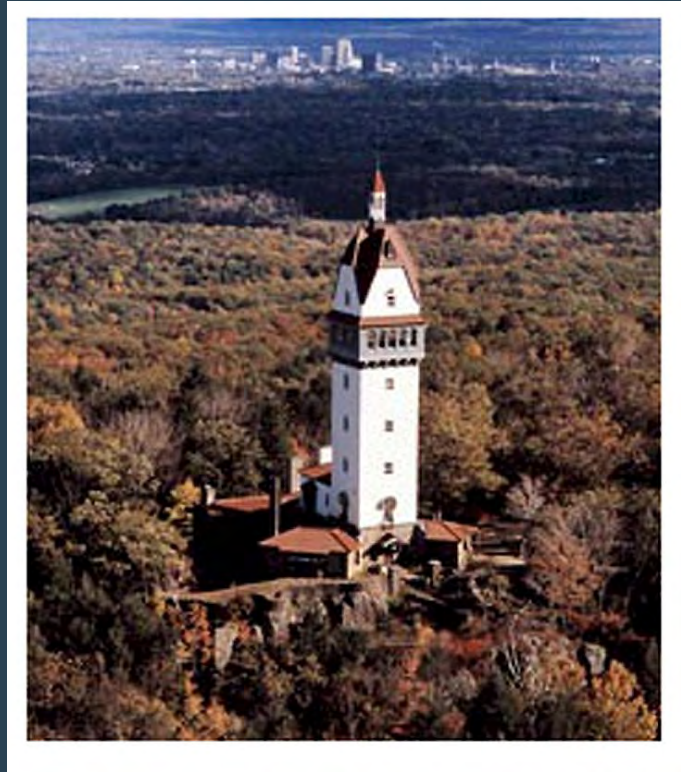
North Branch Park River Watershed Management Plan

Public Presentation

July 13, 2010

Tonight's Agenda

- Opening Remarks: CT DEP MaryAnn Nusom-Haverstock
- A Quick Brief: Why Water Matters – FRWA/Park Watershed
- Watershed Management Plan – Fuss & O'Neill
- Next Steps – What Can You Do?



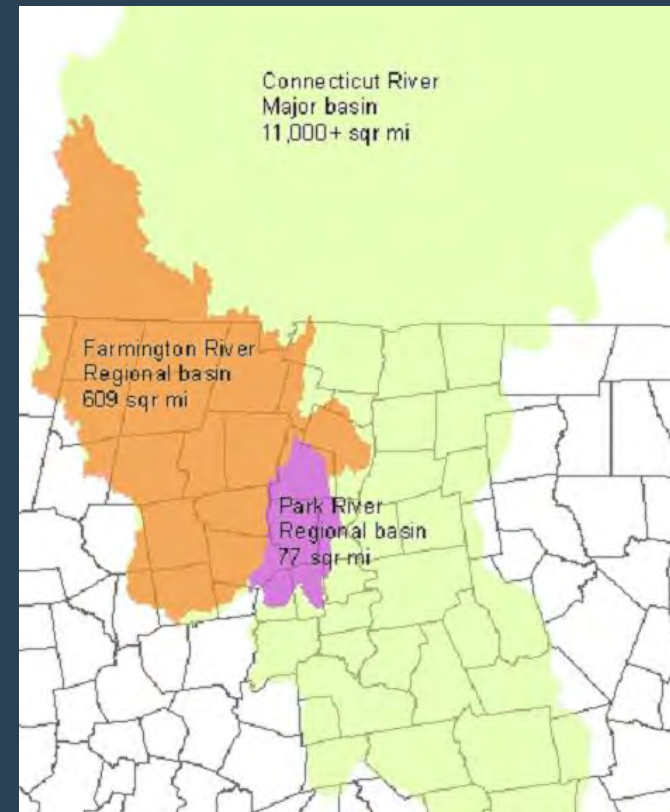
Thanks To

- Steering Committee Members
- Municipal Staff
- Event Hosts

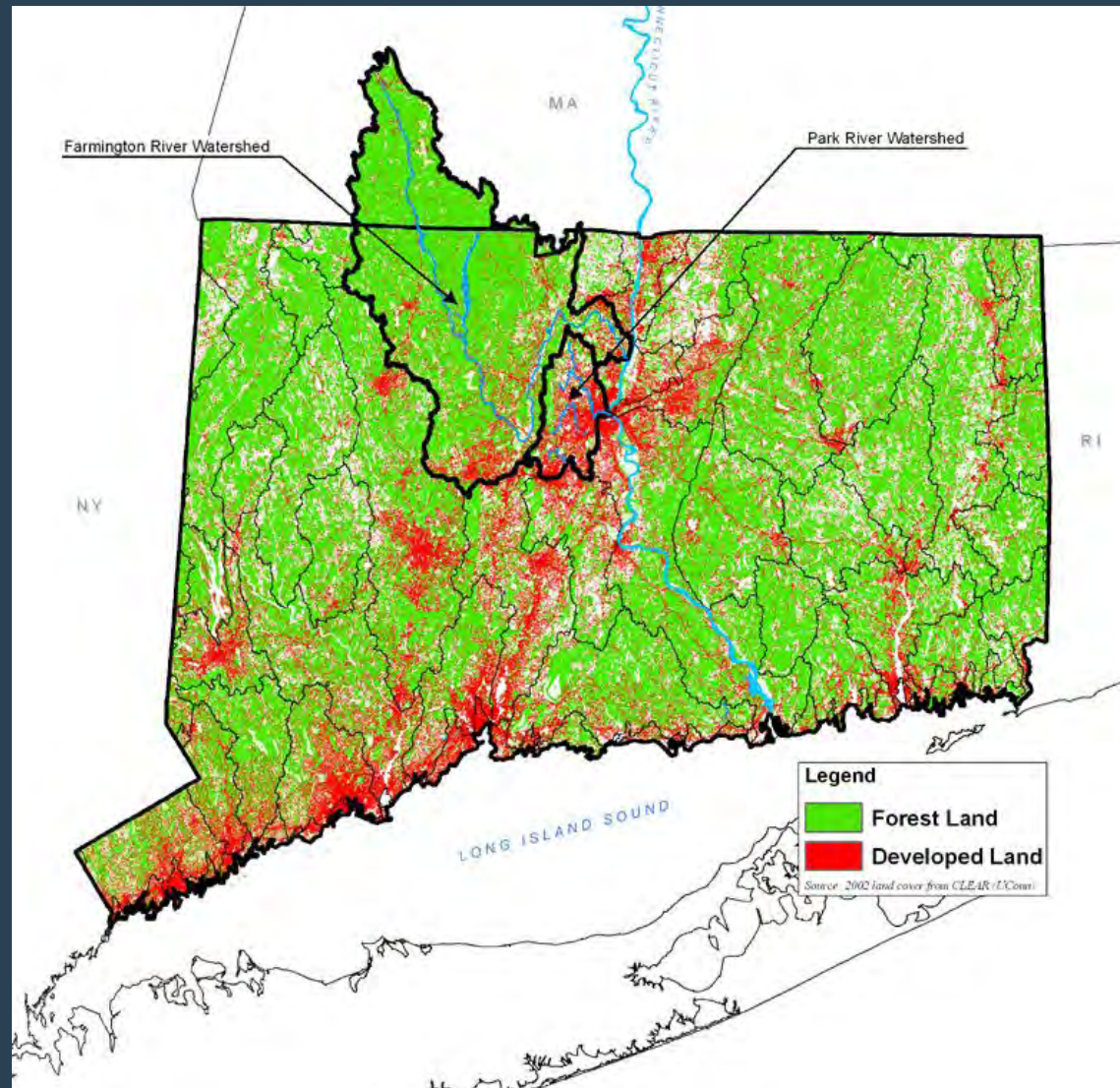


Why Local Water Quality Matters

- Clean Water Naturally Nurtures and Attracts Life
- Human Life and Healthy Communities Need Clean Water
- Great Communities Develop Sustainable Water Resources



Why Urban-Suburban Water Quality Matters



Why Urban-Suburban Water Quality Matters



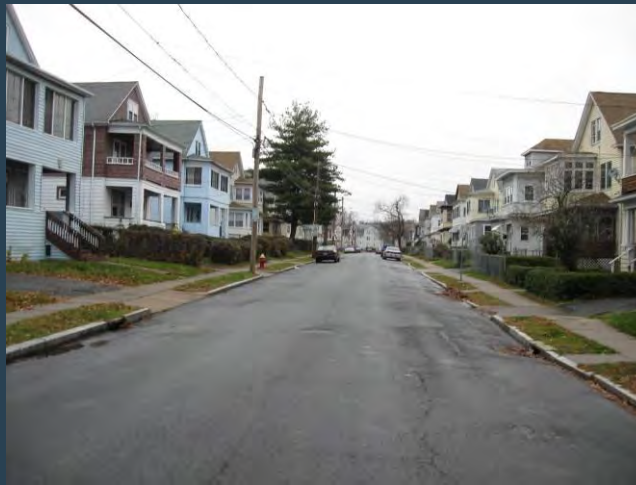
The North Branch Park River

- An Impaired Urban River
 - Stormwater Runoff
 - Combined Sewer Overflows
 - Channelization



The North Branch Park River

- Persistent flooding
- River “disconnected” from the City
- Development along lower portion of river
- Development potential in upper watershed
 - *Bloomfield, West Hartford*



The North Branch Park River

- Envision the North Branch Park River as an Asset
 - *Focal point for urban/suburban community collaboration*
 - *Neighborhood Quality of Life and Real Estate Feature*
 - *A Recreational Greenway that ALSO Protects Urban Wilds*



Post Comments Online

www.NorthParkPlan.net

Participate

- Educational Watershed Knowledge Network
 - *Green infrastructure demonstration projects*
 - *Nature trail invasive species removal and restoration*
 - *Integrate plan into campus planning and facilities management*
- Residents and Land Owners
 - *Backyard stewardship: downspout disconnect into rain garden*
 - *Reduce pesticides and fertilizers*
 - *Additional field assessments and stream surveys*
 - *Neighborhood stewardship projects*
 - *Local land use commissions*

Participate

Park Urban Watershed Stewardship Organization

- Scientific and Green Infrastructure Design Research
- Cultivate Community Awareness and Action
 - *Green infrastructure demonstration projects*
 - *Nature trail invasive species removal and restoration*
 - *Integrate plan into campus planning and facilities management*
- Align funding resources with projects

Project Purpose

- Develop a watershed-based plan
 - *Protect and restore water resources*
 - *Enable sustainable development*
 - *Strong science and outreach*
 - *Model plan for other urban areas*
 - *Stakeholder coordination*
 - *EPA and CTDEP watershed approach*



Nine Elements Watershed Planning

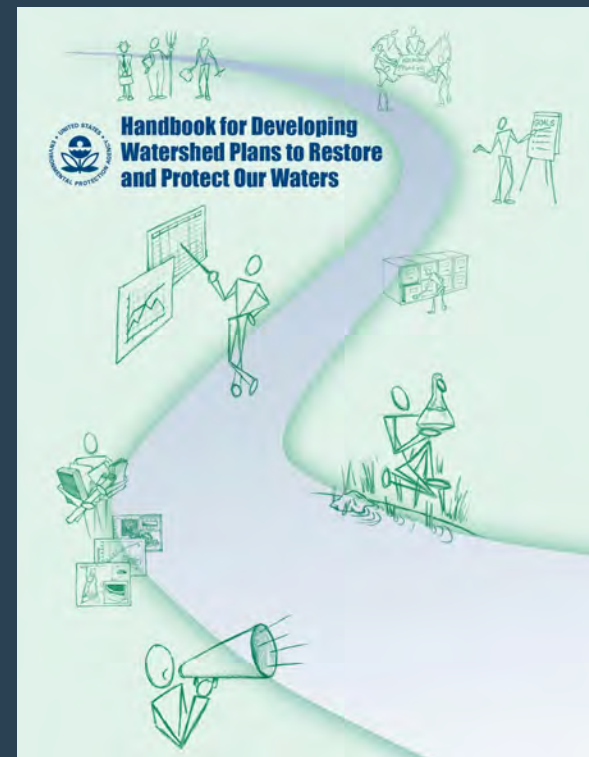
- a. **IMPAIRMENT** Identification of the causes and sources of pollution
- b. **LOAD REDUCTION** Estimate of the load reductions expected for the management measures described
- c. **MANAGEMENT MEASURES** Description of the NPS management measures to be implemented
- d. **TECHNICAL & FINANCIAL ASSISTANCE** Estimate of the amounts of technical and financial assistance needed
- e. **PUBLIC INFORMATION & EDUCATION** Information/education component
- f. **SCHEDULE** Expedited schedule for implementing NPS management measures identified
- g. **MILESTONES** Description of interim, measurable milestones
- h. **PERFORMANCE** Criteria to determine whether loading reductions are being achieved over time
- i. **MONITORING** Monitoring component to evaluate the effectiveness of the implementation efforts over time

Watershed Plan Development Process

- Project Steering Committee
- Baseline Assessment
- Field Inventories
- Land Use Regulatory Review
- Management Plan Recommendations
- Public Outreach



Improves chances of funding and
successful plan implementation



Primary Findings

- Need for an integrative approach to site-specific design and regional planning



Low Impact Development



Smart Growth



Land Conservation

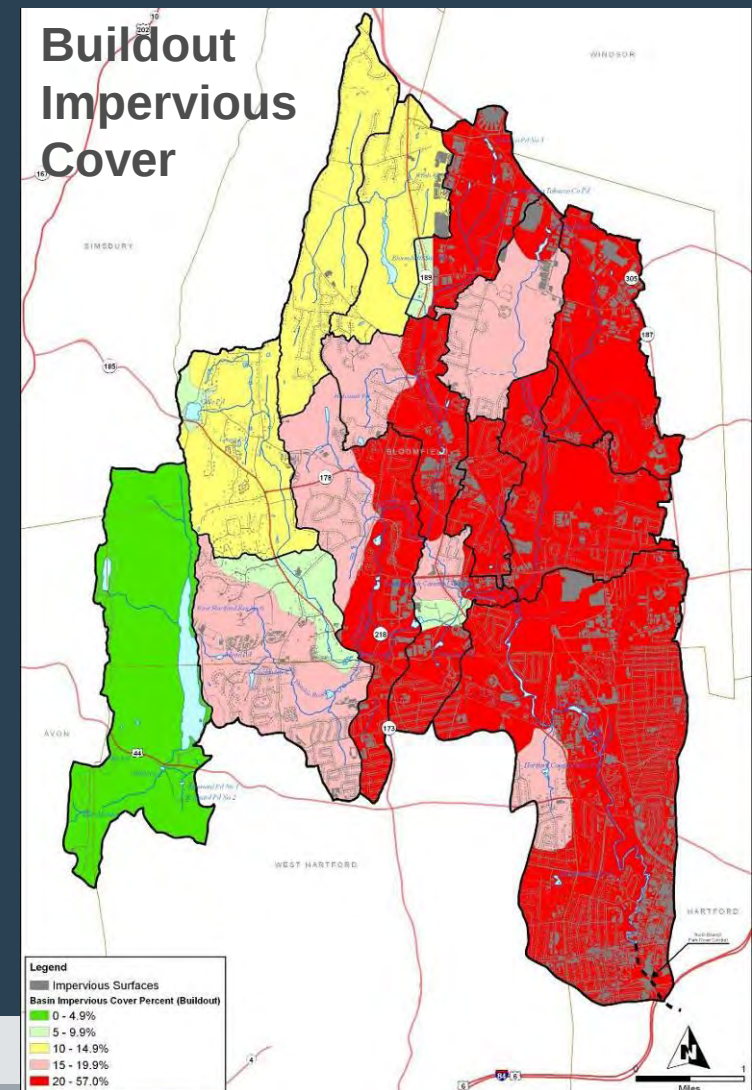
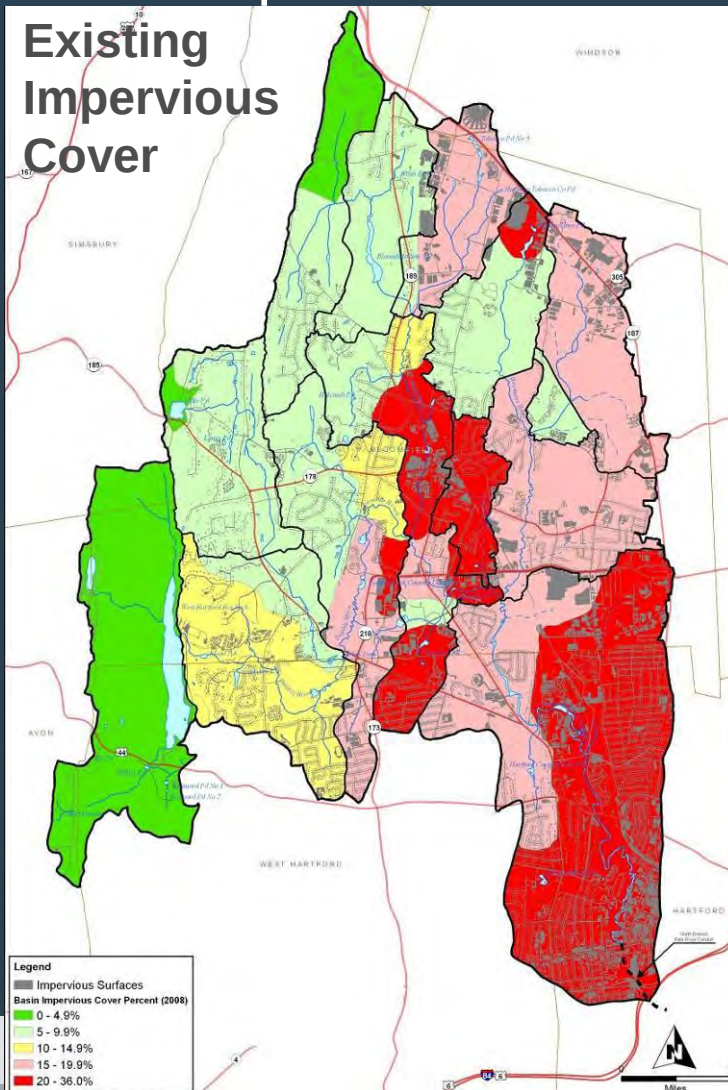
Primary Findings

- Need for increased citizen stewardship and educational programs



Primary Findings

- Need for modified regulatory approaches to strengthen resource protection

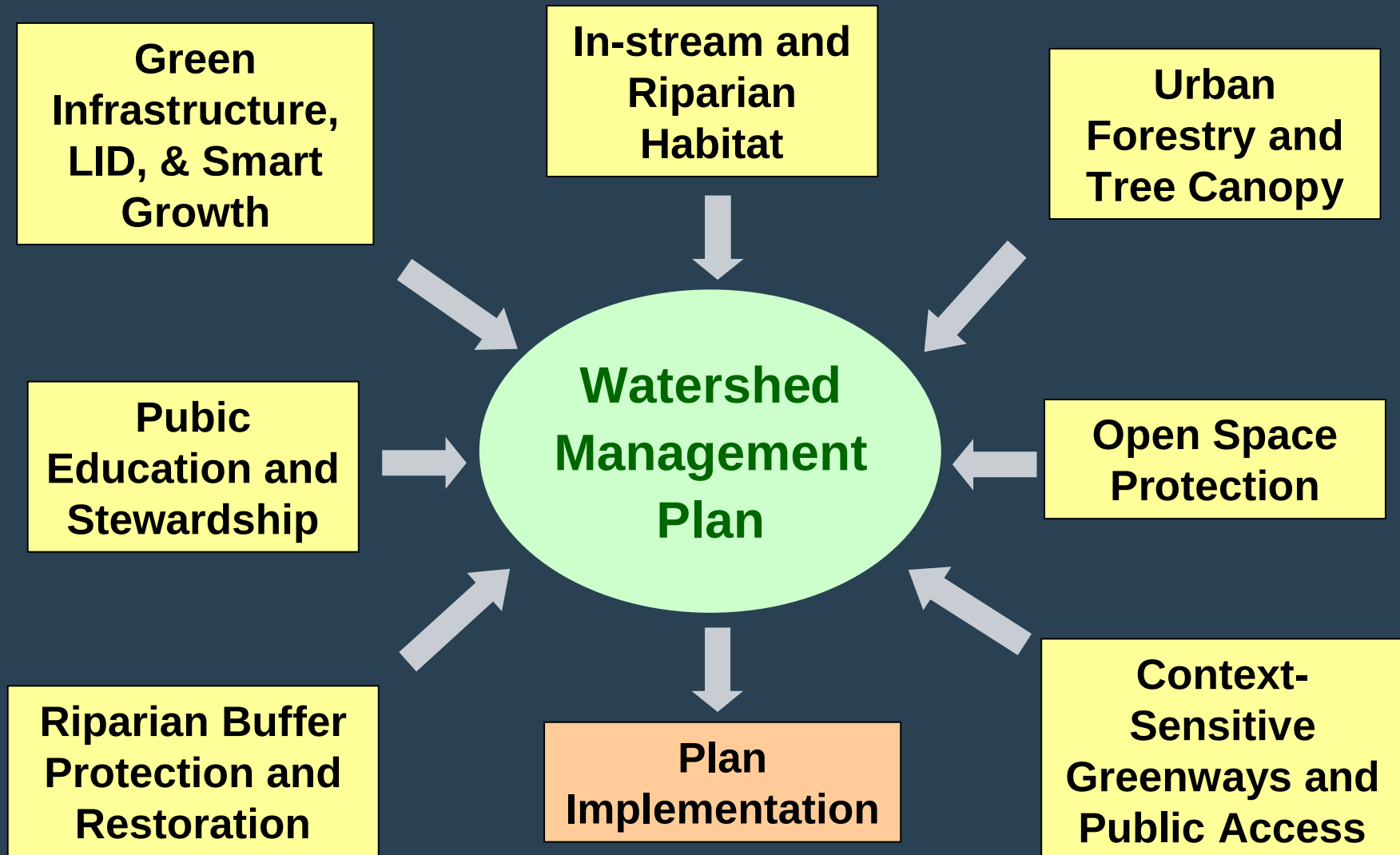


Primary Findings

- Need for site-specific watershed restoration projects

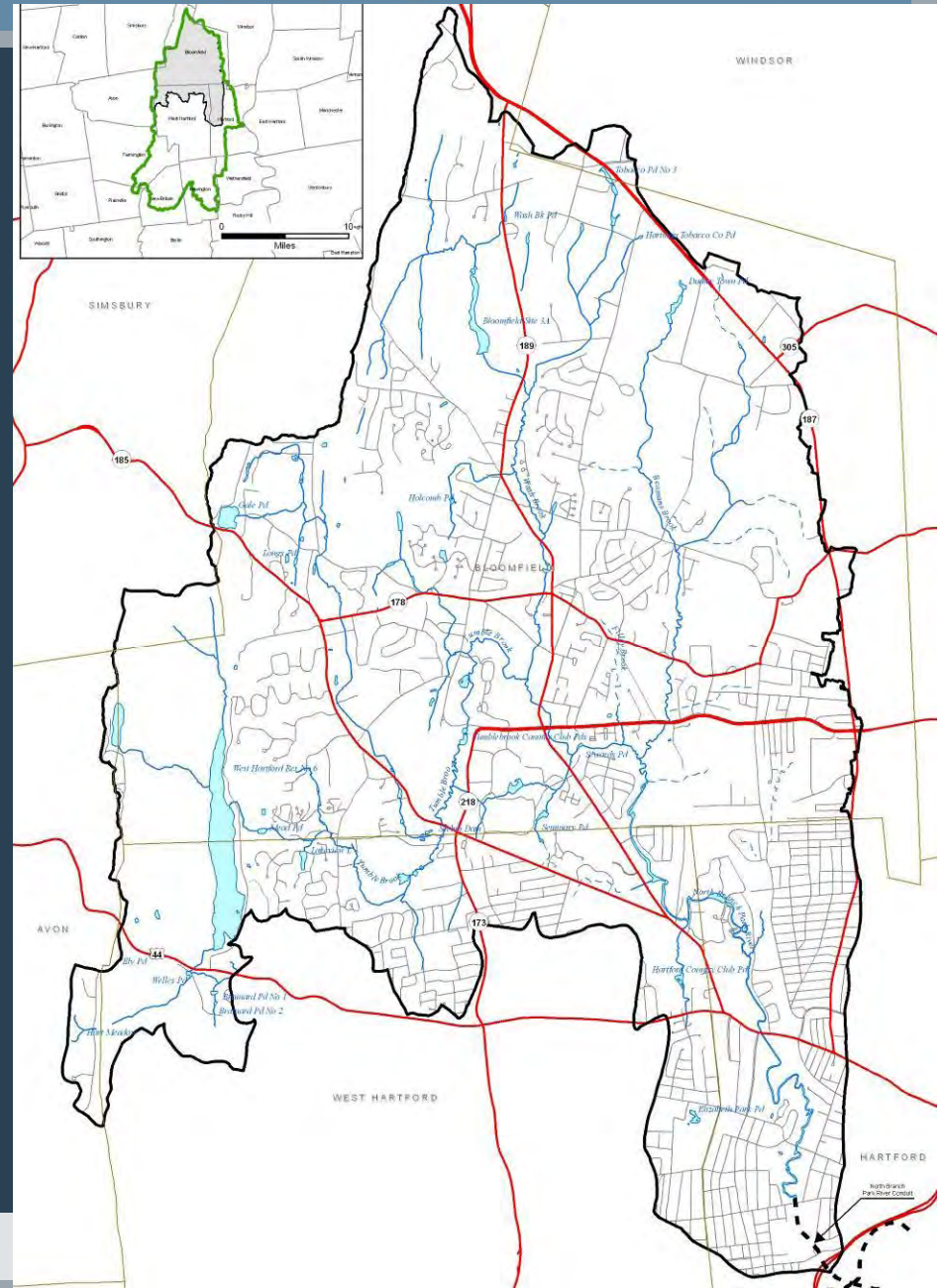
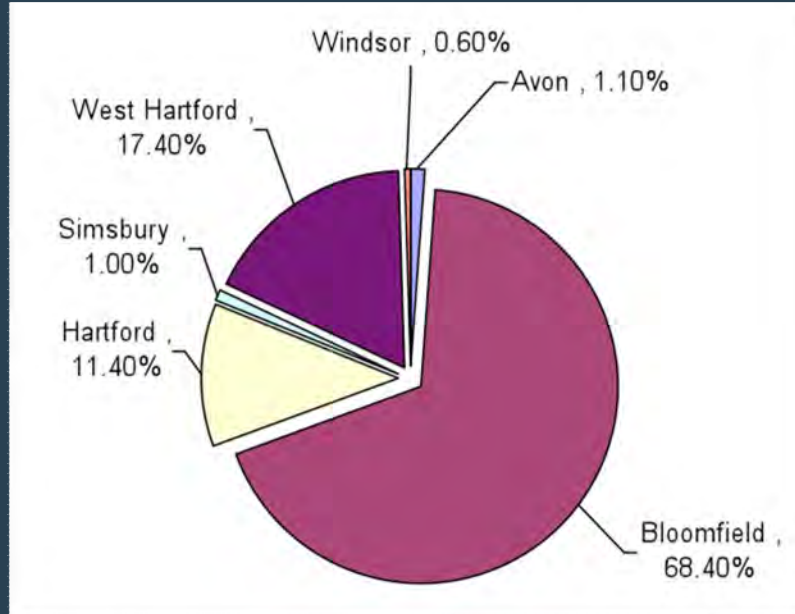


Major Plan Goals & Objectives



Plan Recommendations

- Focus on Bloomfield, West Hartford, and Hartford (97% of watershed area)

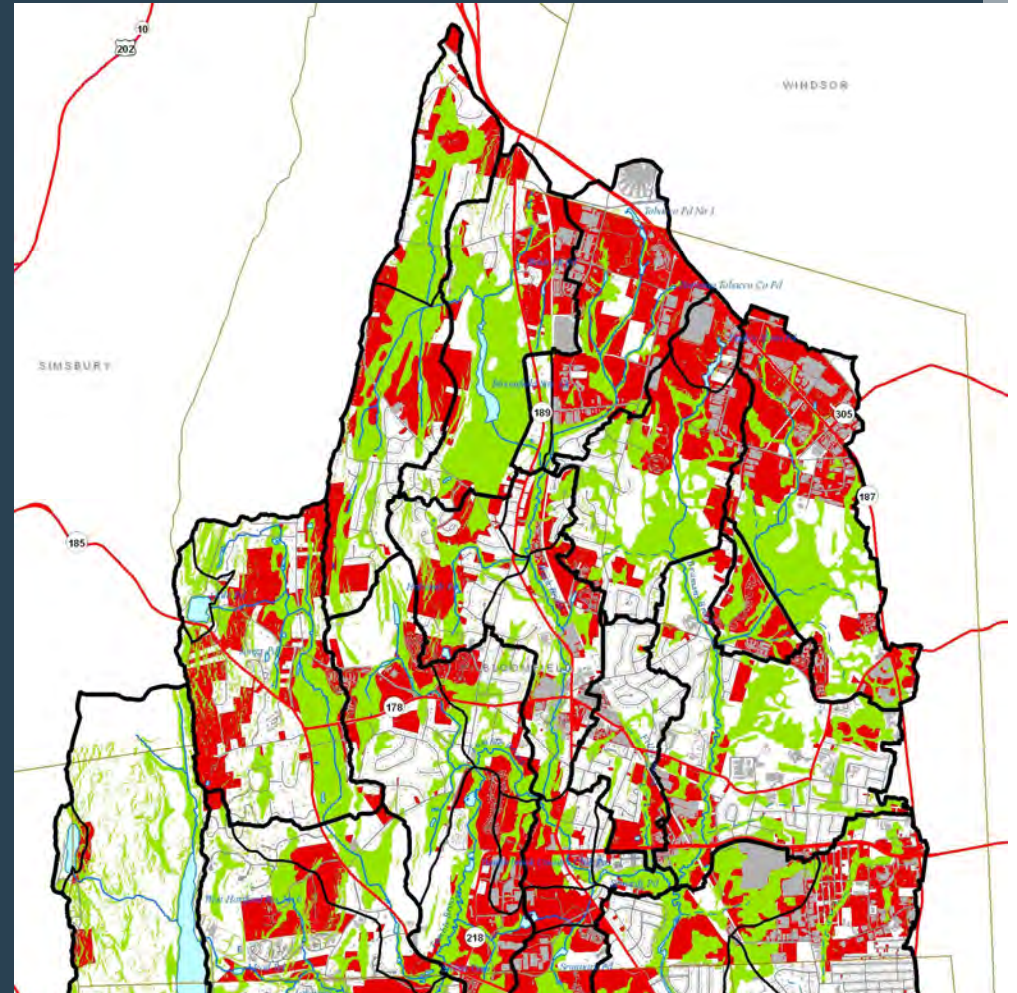


Bloomfield - Observations

- Significant development potential
- Strong wetland regulations
- Recently revised zoning regulations
- PCD revision underway

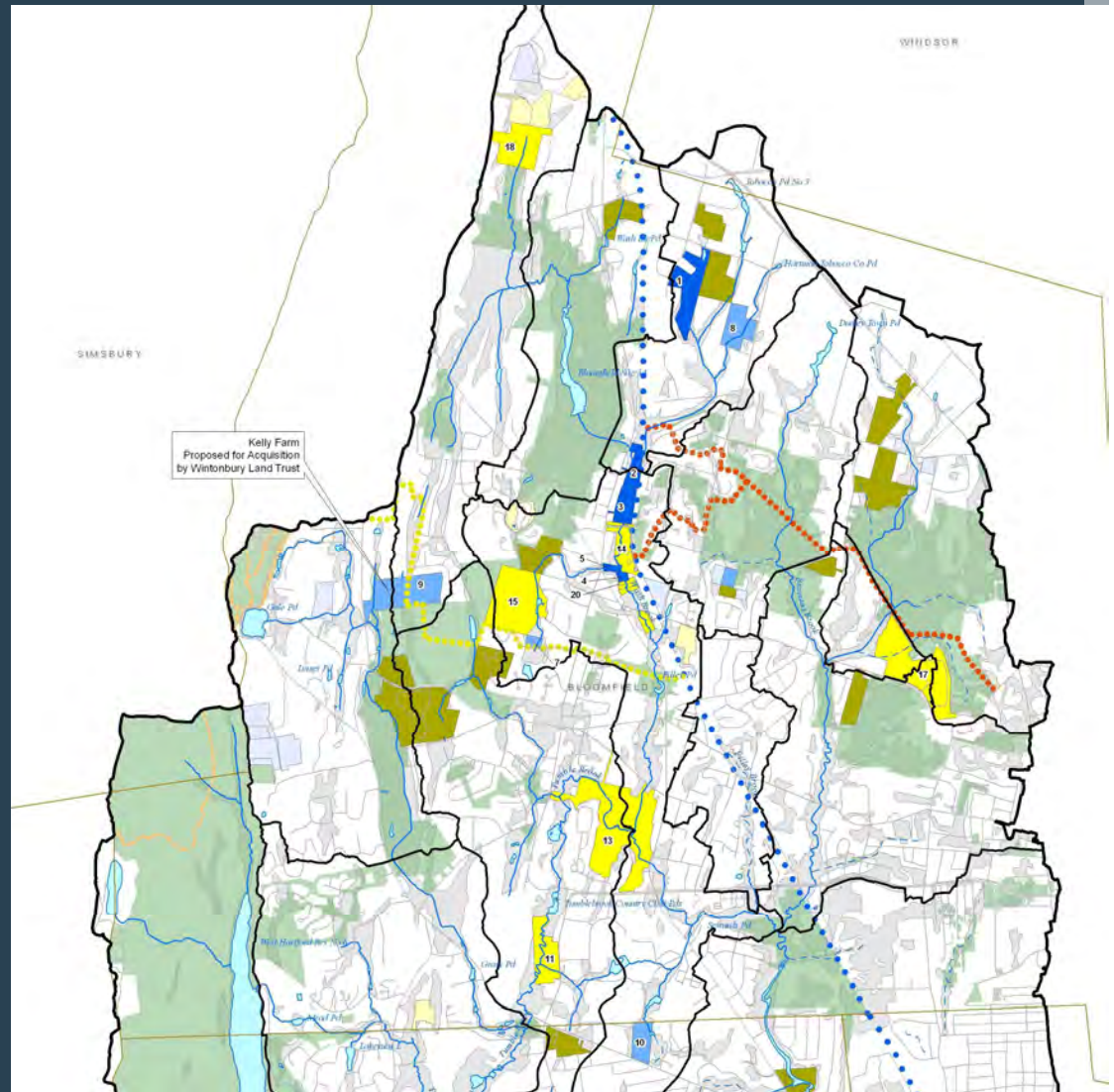
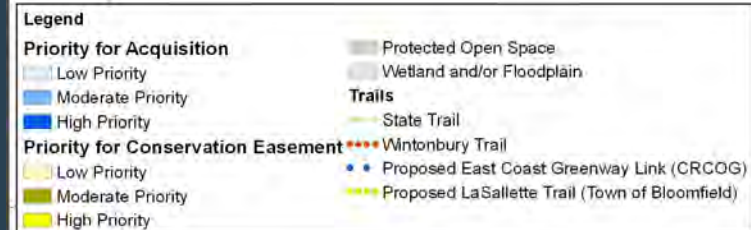
Legend

-  Subbasins Boundaries
-  Basin Boundaries
-  Impervious Surfaces
-  Wetlands / 100-YR Floodplains / Slopes >25%
-  Future Developable Parcels



Bloomfield - Recommendations

- Open space protection
 - Support ongoing efforts
 - Bloomfield CEEC
 - Wintonbury Land Trust
 - Protect priority farmland



Bloomfield - Recommendations

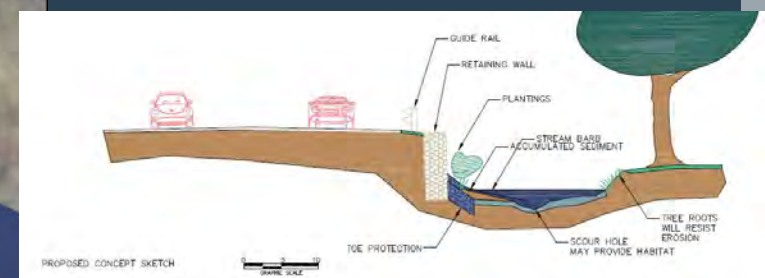
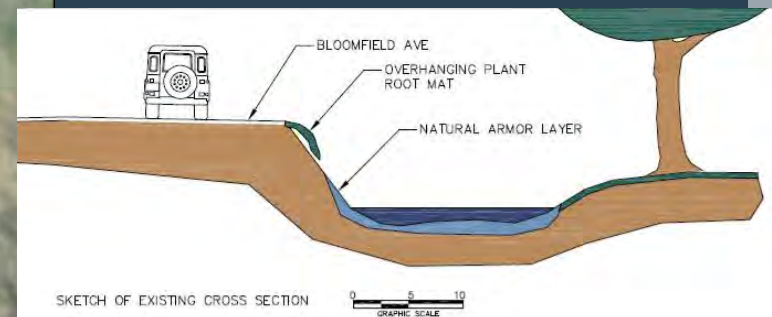
- Promote smart growth
 - *Incorporate smart growth principles in revised PCD*
- Promote green infrastructure and LID
 - *Develop stronger LID standards in Zoning Regulations*
 - *Regulate runoff volume in addition to peak flow rate*
 - *Revise Zoning Regulations to promote reduced impervious cover*
- Site-specific restoration projects

Bloomfield - Recommendations

- Town Hall LID Stormwater Retrofit (\$200,000 to \$300,000)



Bloomfield - Recommendations

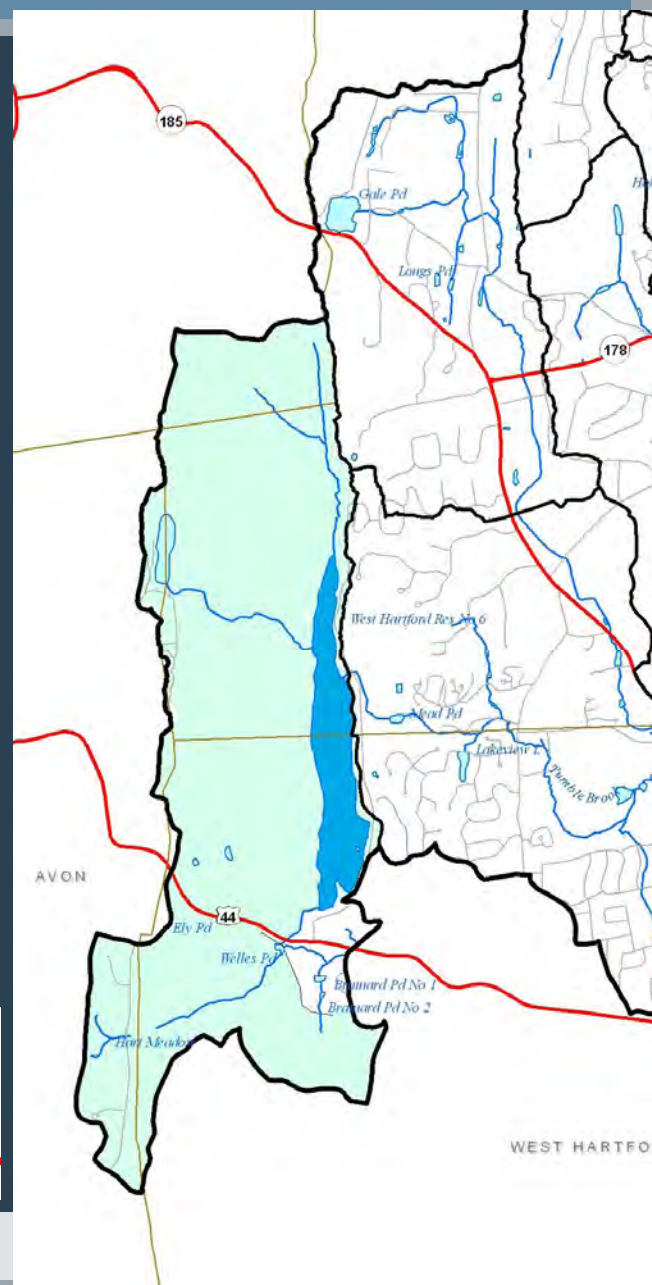


West Hartford - Observations

- 2008 PCD emphasis on sustainability and smart growth
- Somewhat outdated (2001) inland wetland regulations
- Future development potential along Metacomet Ridge
 - *Water supply*
- Lawn management impacts
 - *Residential*
 - *Large property owners, golf courses*

Legend

-  Public Water Reservoirs
-  Public Water Supply Watersheds

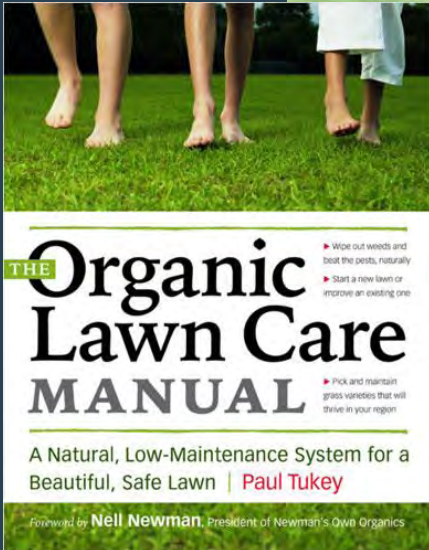


West Hartford - Recommendations

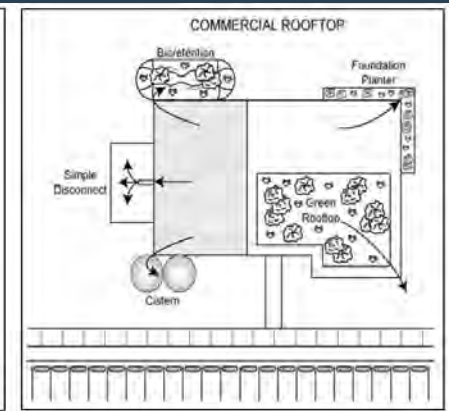
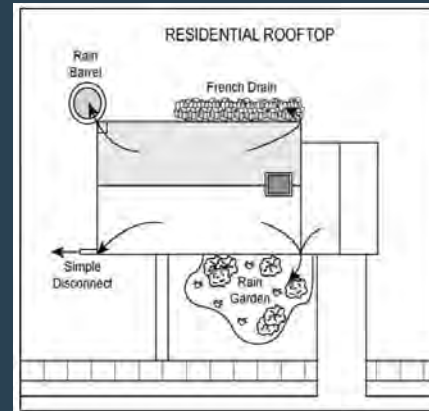
- Open space protection (Metacomet Ridge)
- Promote smart growth
- Revise regulations
 - *Strengthen landscape provisions*
 - *Review and amend parking & street standards*
 - *Strengthen stormwater management and promote LID*
 - *Explicit protection of steep slopes*
 - *Improve riparian buffer protection*

West Hartford - Recommendations

- Public awareness and education for homeowners and large property owners



Low Impact Lawn Care Practices



Downspout Disconnection

Hartford - Observations

- Recently updated PCD (“One City, One Plan” – 2010)
 - *Recommends major revisions to zoning regulations*
- CTDEP model inland wetlands regulations
- Historical and ongoing development of river corridor
- Ongoing MDC Clean Water Project
- Growing awareness of potential to improve stream corridor
- Competing interests



Hartford - Recommendations

- Green Infrastructure
- Regulation Revisions
- Integrated Stream Corridor Improvements
 - *Neighborhood greenway that protects water quality*
 - *Riparian reforestation*
 - *Invasive species removal and native planting plans*
 - *Stormwater retrofits*
 - *Enhanced public access*
 - *Improved fish passage*

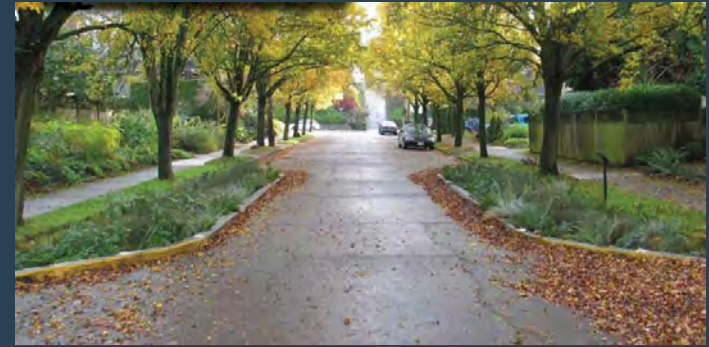
Green Infrastructure



Vegetated Swales



Parking Lot Bioretention



Green Streets



Permeable Pavement



Stormwater Planters



Stormwater Planters



Rain Harvesting



Urban Forestry



Green Roofs

Green Infrastructure – Plan Recommendations

- Consider green infrastructure to augment CSO LTCP
- Comprehensive Study (MDC and City of Hartford)
 - *Green infrastructure feasibility and benefits*
 - *CSO Control and MS4 Stormwater Management*
 - *Build upon ongoing efforts*
 - *Inventory, modeling, costs, financing*
- Demonstration project (“Green Capitols”)
- Retrofits for new separated stormwater discharges
 - *Granby Street and Albany Avenue projects*

Separated Stormwater Outfall Retrofit

- Woodland Drive (\$500,000 - \$1,000,000)



Green Infrastructure – Plan Recommendations

- Other Priority Stormwater Retrofits
 - *Athletic fields at parks and educational institutions*
 - *Parking lot upgrades*
 - *Road repair/upgrades*

Athletic Field Retrofit

- Existing Conditions



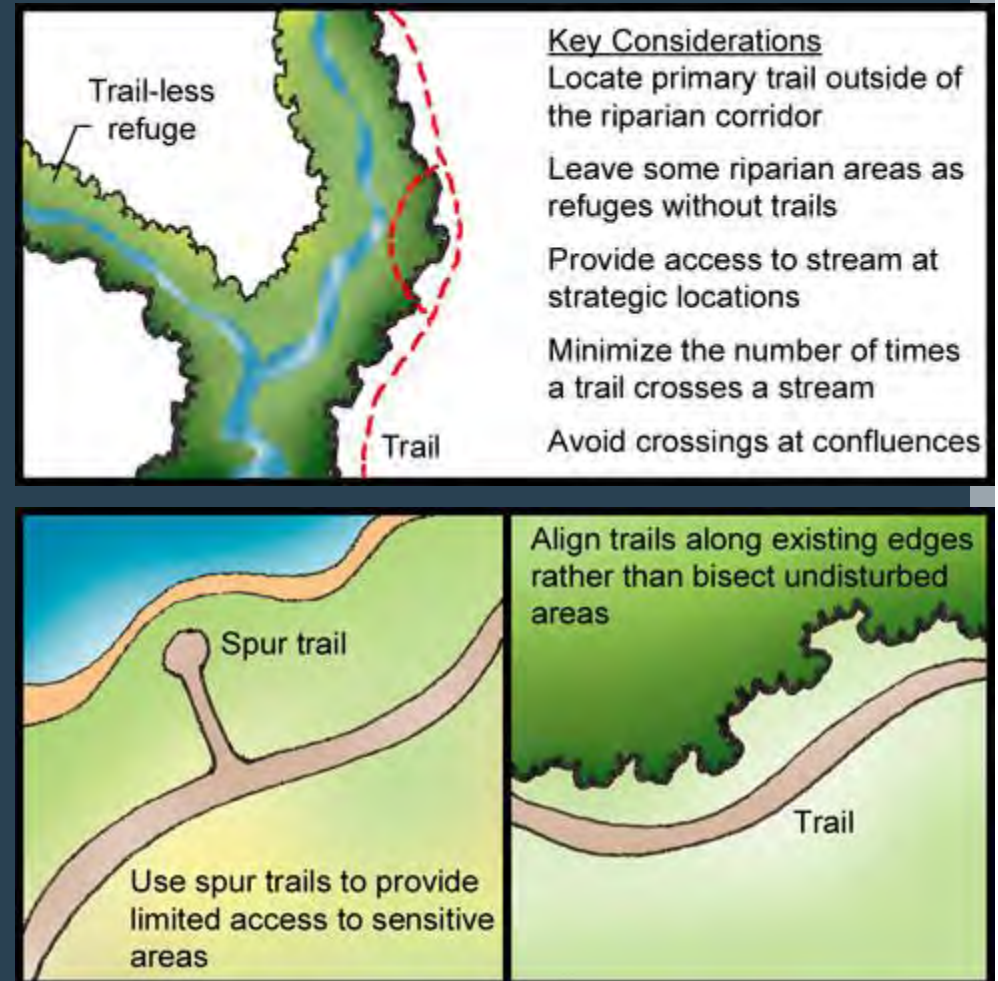
Athletic Field Retrofit

- Proposed Concept (\$450,000)



Greenways and Public Access

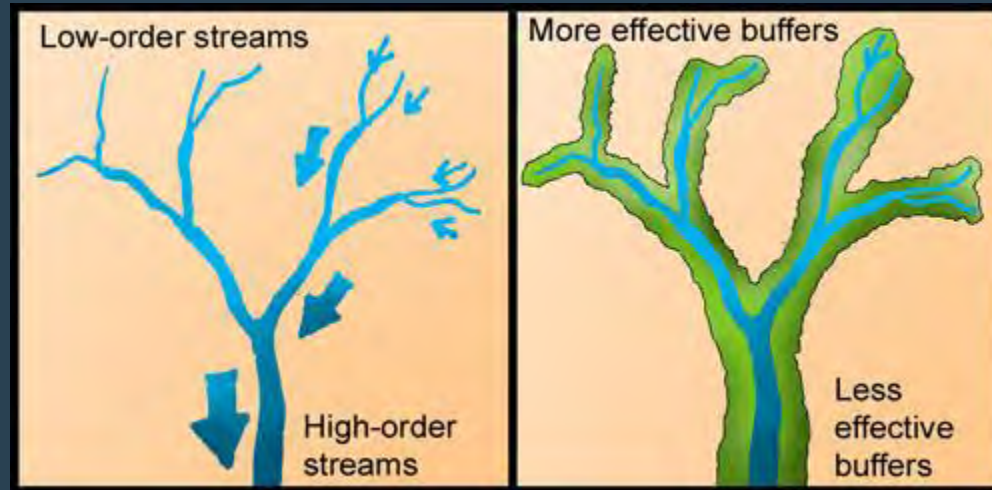
- Complete East Coast Greenway links
 - *Context-sensitive*
 - *Balance needs of residents, regional recreation and water quality/habitat values*
 - *LID and conservation design*
- Increase public access to river



Source: USDA, 2008

Riparian Buffer Protection & Restoration

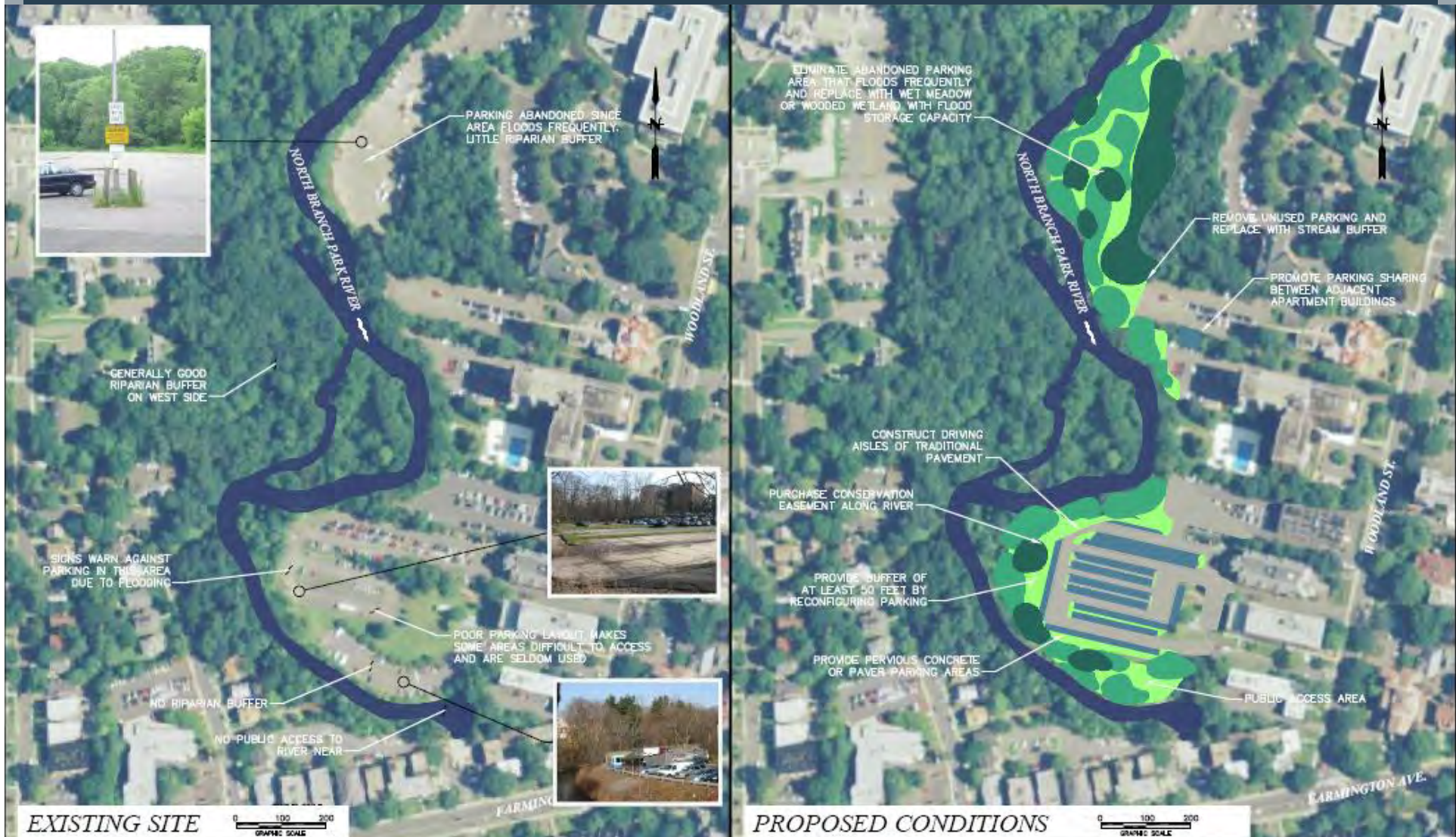
- Priority riparian buffer restoration projects
- Revise regulations to promote the preservation and restoration of vegetative buffers
 - *Municipal Inland Wetlands & Watercourses Regulations*
 - *Greater Hartford Flood Commission*



Source: USDA, 2008

Lower NBPR Riparian Buffer Project

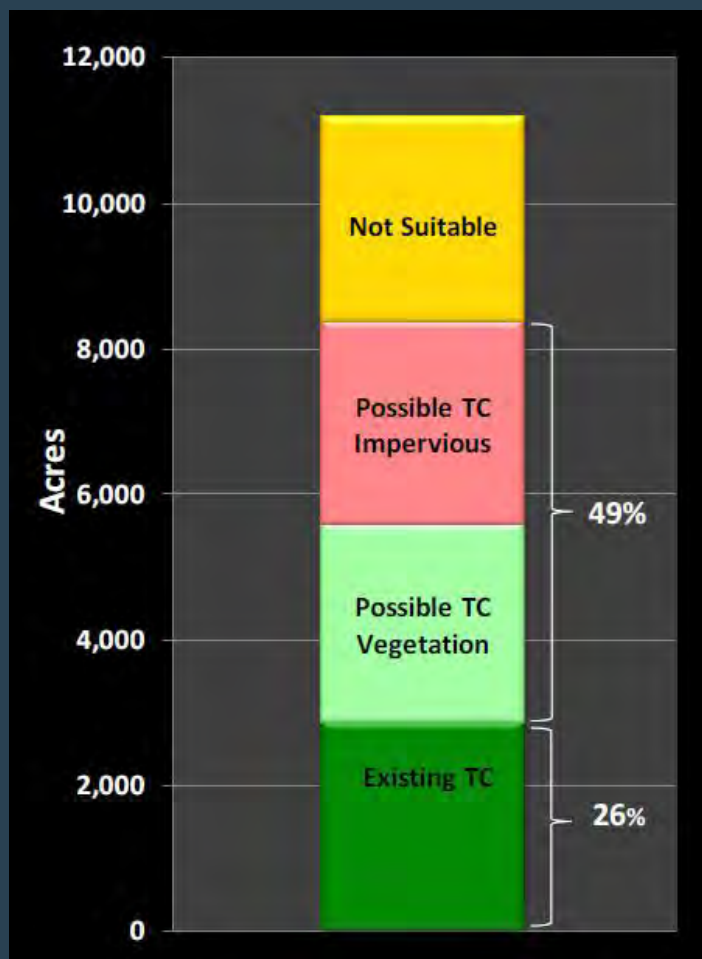
- Estimated Cost \$900,000 to \$1,900,000



Tree Canopy Assessment – City of Hartford



Source: University of Vermont and City of Hartford



NBPR Subwatershed (within Hartford)

- Existing = 25-35%
- Potential = 40-50%

Urban Forestry – Plan Recommendations

- Conduct watershed-wide UTC assessment
- Develop town-based UTC goals
- Adopt proposed Hartford Tree Ordinance and city-wide urban forestry master plan
- Implement priority reforestation projects
- Engage tree wardens
- Landowner education/incentive programs
- Promote urban agriculture



Source: USDA Forest Service Website

In-stream and Riparian Habitat

- Conduct watershed-wide fish passage assessment
- University of Hartford Dam feasibility assessment
 - *Passage of resident fish and migratory eel*
- Stream daylighting



University of Hartford Dam

- First obstruction on NBPR upstream of conduit
- Blocks fish passage
 - *Migrating eel*
 - *Resident species, incl. trout*
- Large sediment island accumulated within river
- Narrow to no riparian buffer
- Dam in need of repair
- Roadway on dam crest



University of Hartford Dam – Concept



- Estimated Cost \$2-4 Million

Next Steps

- Through Project Completion (July 30)
 - Draft plan available on project website www.northparkplan.net
 - Comments accepted through July 23
- Form Park River watershed organization
- Municipalities and the MDC
 - Adopt plan and implement recommendations
- Educational Institutions
 - Integrate recommendations into campus planning and management
- Residents and Land Owners
 - Neighborhood involvement
 - Backyard stewardship
 - Local land use commissions
 - K-12 education
 - Additional field assessments

Questions and Comments

