



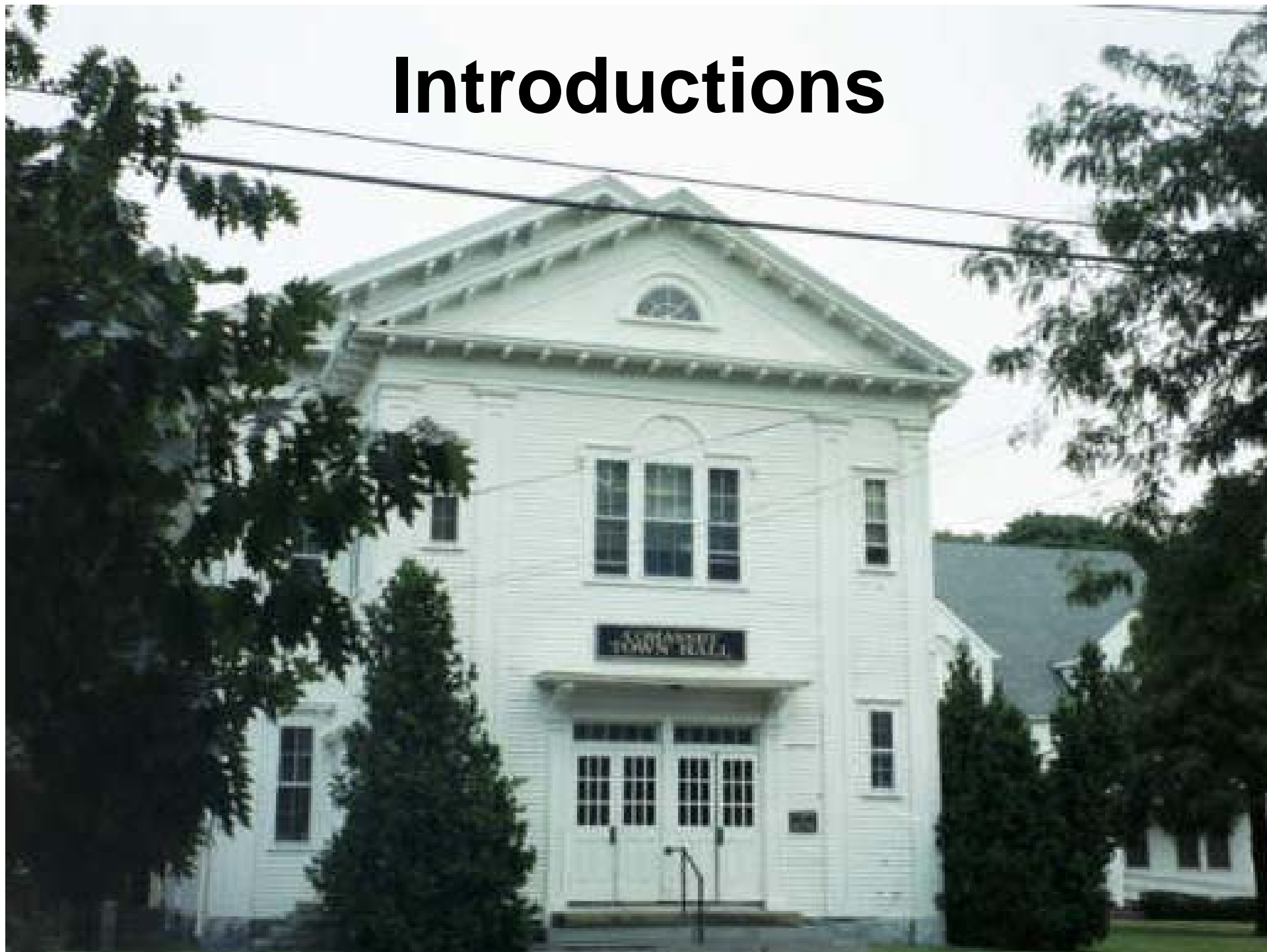
Town of Cohasset
Flood Control Master Plan
James Brook Watershed

Prepared by



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Introductions



JAMES BROOK AND JACOBS MEADOW FLOODING

**WELL DOCUMENTED FOR OVER
75 YEARS AND VARIOUS
UPGRADES AND IMPROVEMENTS
HAVE HISTORICALLY BEEN
SHORT LIVED DUE TO
WATERSHED DEVELOPMENT**

FLOODING OF ADJACENT LANDS AND TRAFFIC IMPACTS





INTERRUPTION OF COMMERCE



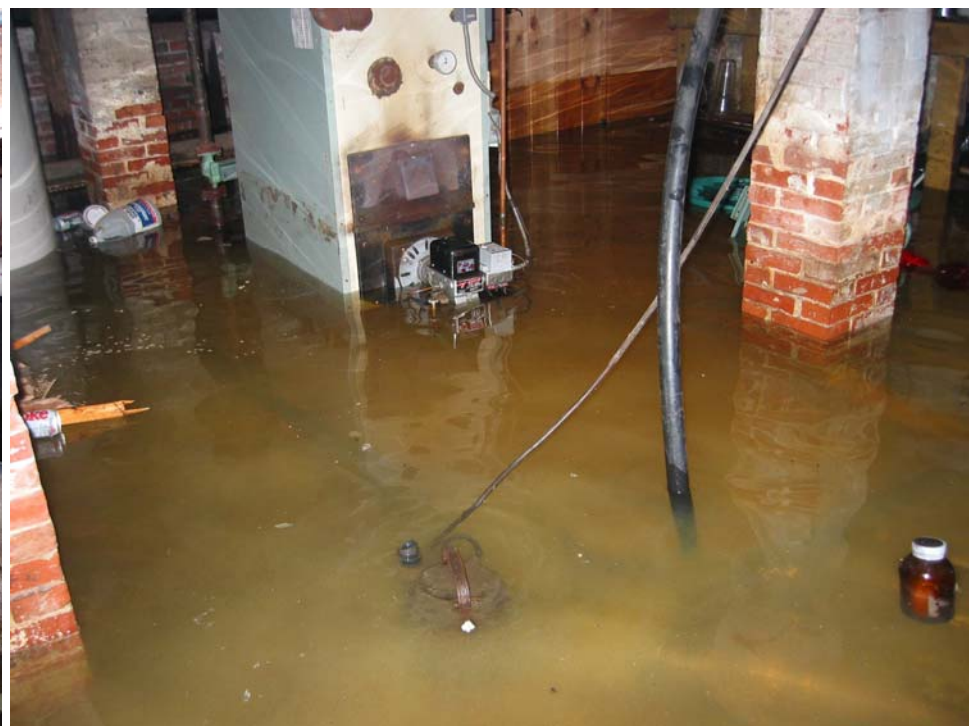


**COMMERCIAL AND
RESIDENTIAL LOSSES**





PROPERTY LOSSES & PUBLIC HEALTH AND SAFETY CONCERNS



STUDY GOALS

- Conduct comprehensive “watershed” based evaluations of local flooding.
- Identify conditions “promoting” local flooding
- Devise remediation strategies to “help” abate flooding
- Develop a prioritized implementation plan for the Town to reduce flooding

STUDY SCOPE

- **Compile drainage system mapping and data**
- **Utilize existing GIS mapping as available**
- **Analyze and Evaluate Drainage System**
- **Conduct hydrologic and hydraulic evaluations**
- **Evaluate drainage system under various conditions**
- **Identify system deficiencies**
- **Evaluate remediation measures**
- **Solicit Public input**
- **Conduct cost benefit analyses**
- **Develop final recommendations**
- **Develop a phase implementation plan**

Compile drainage system mapping and data (James Brook Watershed)

- More recent drainage construction (past decade)
- Past utility work (water, sewer, Town Center)
- MBTA Greenbush drainage work
- Previous Stormwater and Grant related mapping
- Supplemental survey and key structure logging
- Field GPS location surveys (remote systems)
- Archived Plans and DPW general knowledge

Utilize existing GIS mapping (As available)

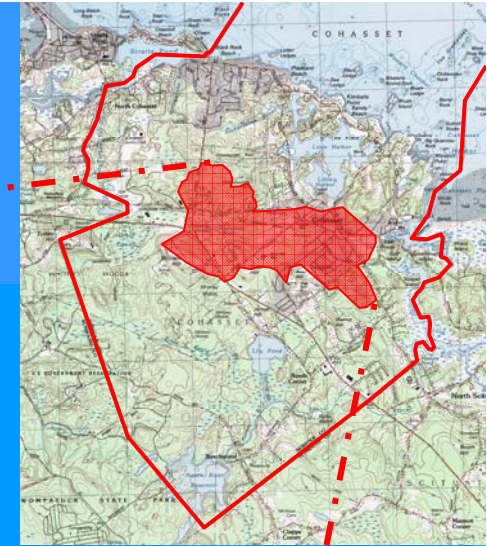
- 1986 Town Aerial Mapping
- Aerial and field mapping for utility projects (Sewer, Water, MBTA, Town Center)(1995-2002) (Only portion of Town)
- Board of Health storm drain outfall and CB mapping (Utilized previous aerial maps)
- Recent Water Department GIS mapping (Utilized previous aerial maps)
- Low Altitude Photogrametry (MassGIS, Internet based applications)

Conduct hydrologic and hydraulic evaluations to assess existing conditions, identify deficiencies and evaluate potential remediation measures

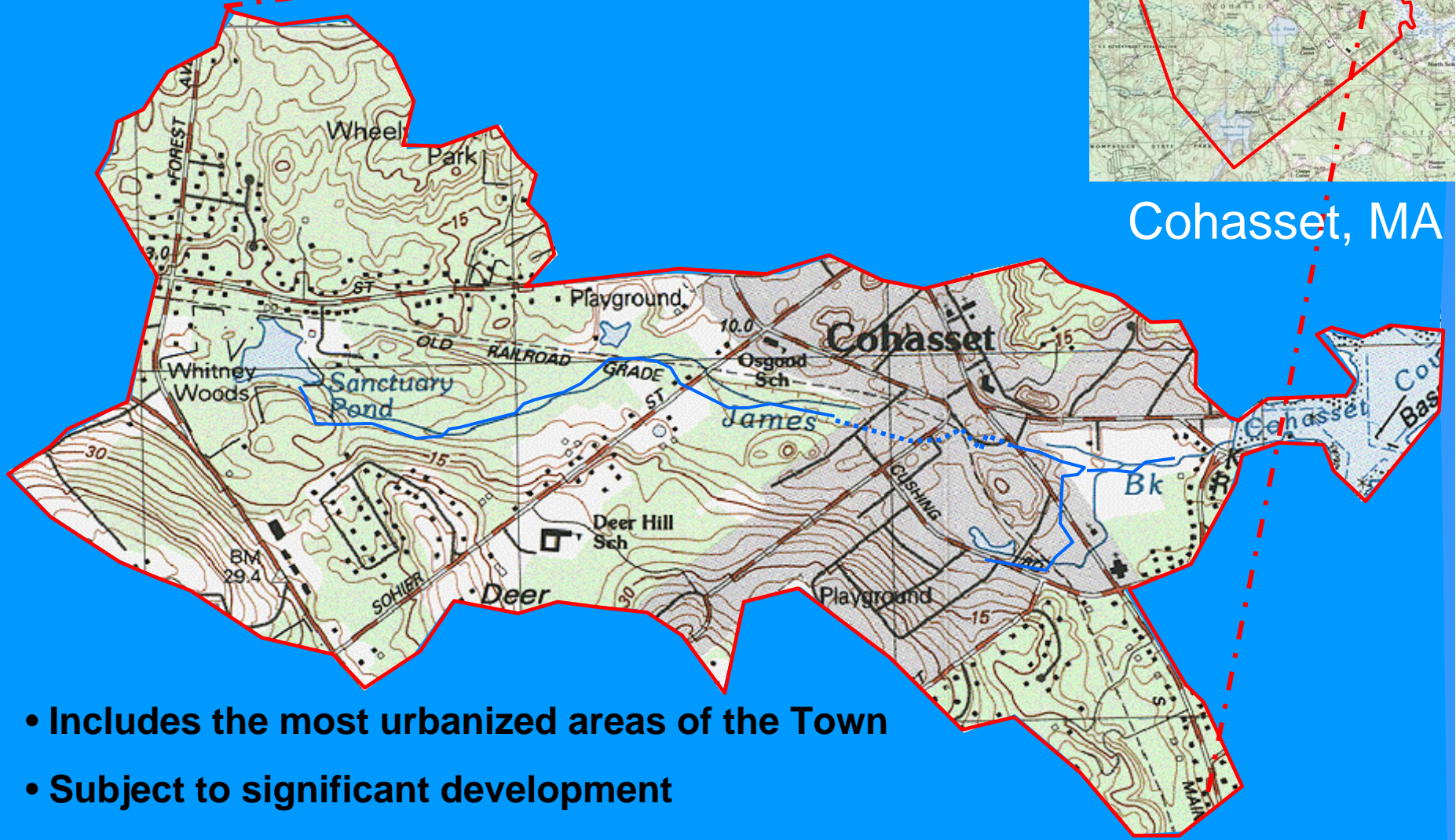
TOOLS UTILIZED:

- **Culvert analysis FHWA (HY8 and HDS5)**
- **Hydraflow Hydrographs by Intelisolve**
- **AutoCAD LDT TR-55**
- **WinTR-20 from Natural Resource Conservation Service (NRCS)**
- **CivilStorm Watershed Software by Bentley**

Tonight's focus: James Brook Watershed Area

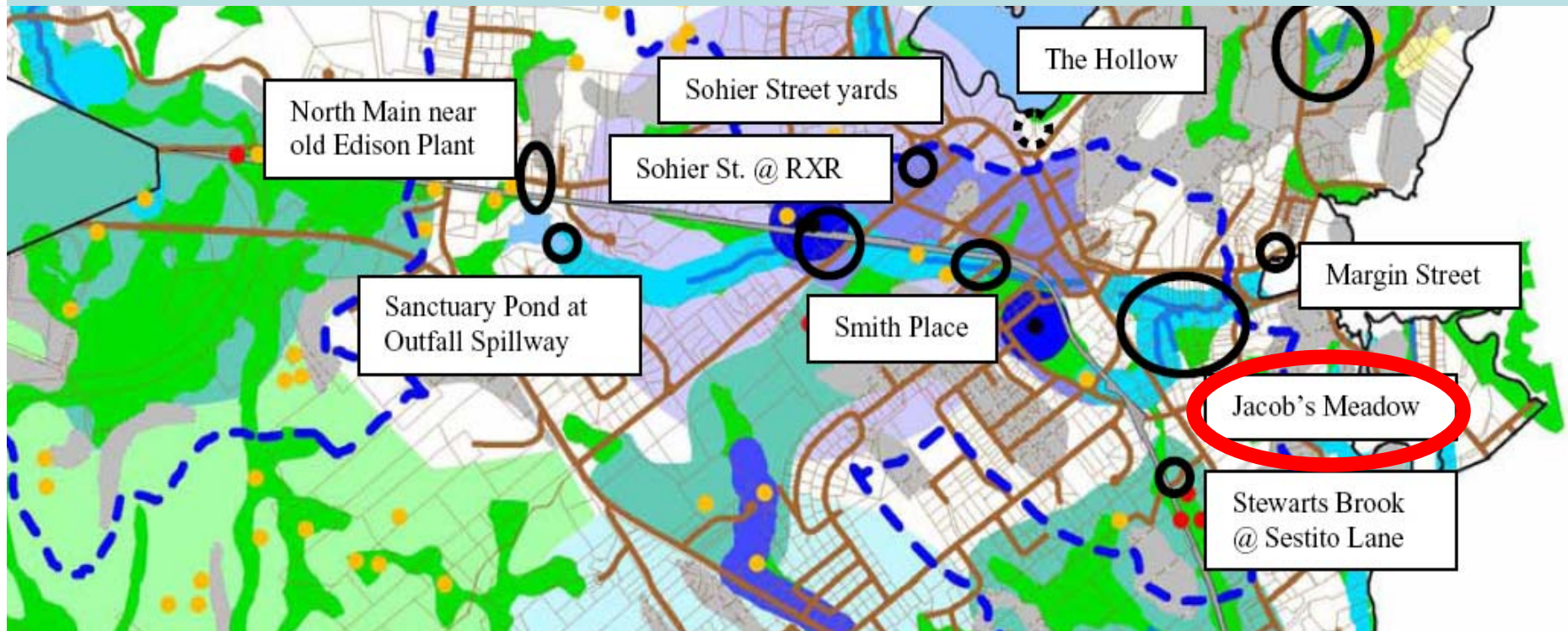


Cohasset, MA



- Includes the most urbanized areas of the Town
- Subject to significant development
- Watershed is severely Tidally Restricted

Preliminary Problem Areas

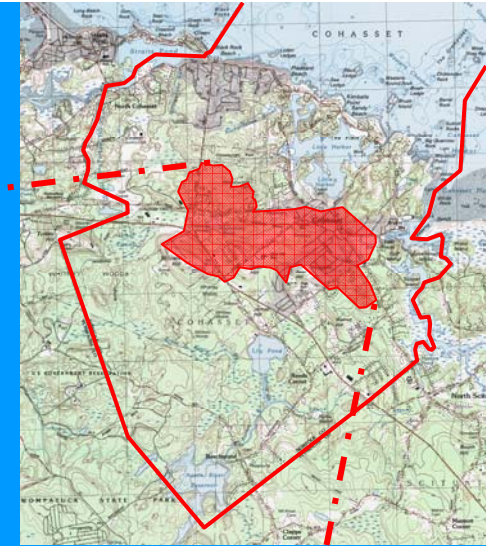
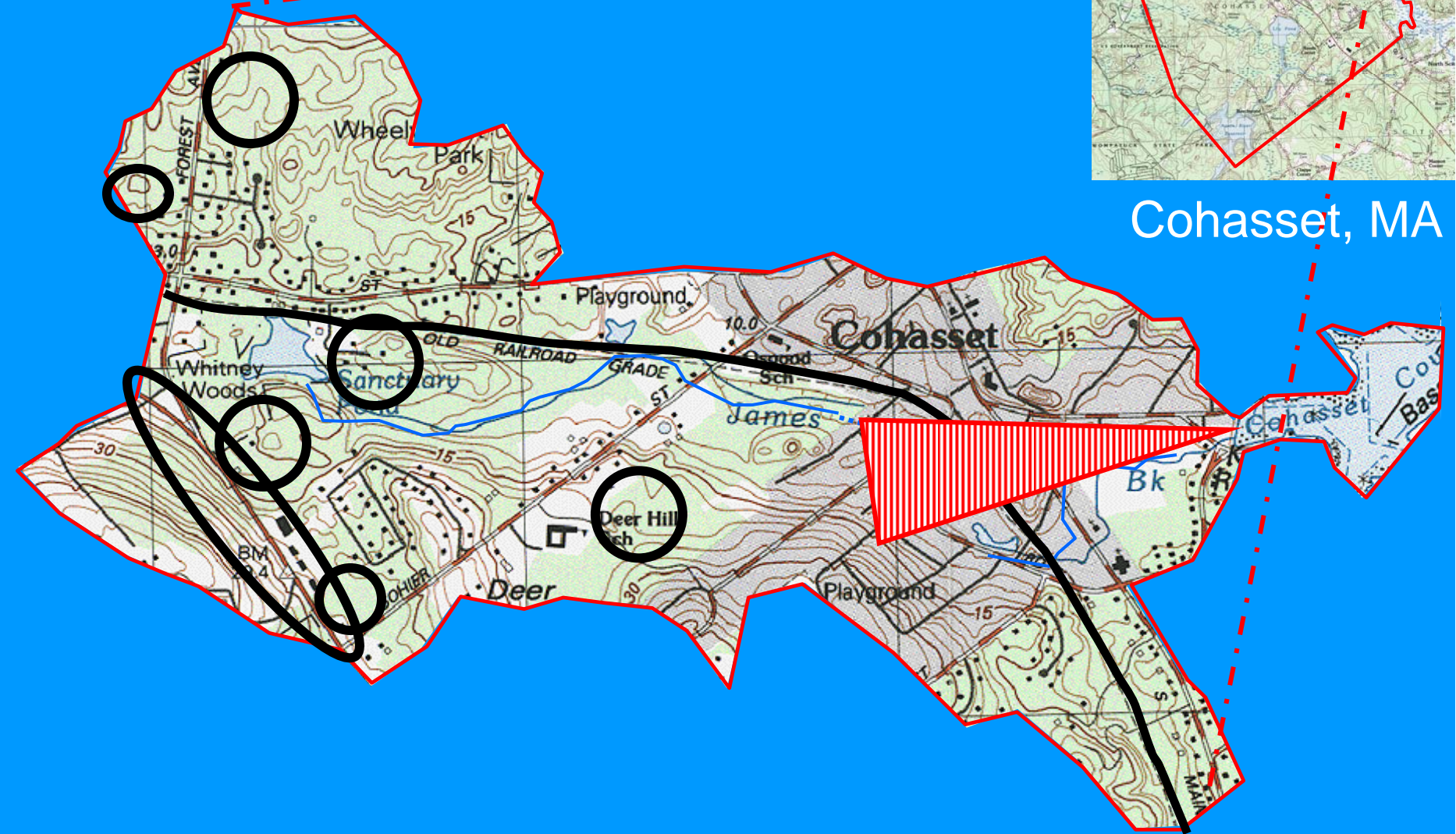


Other Environmental Issues Central to the James Brook Watershed and Future System Improvements

- **Non-point Pollution (Impacting the Harbor)**
- **Excess fresh water flow hindering any salt marsh reclamation efforts in Jacobs Meadow and influencing Harbor health**
- **Reduced aquifer recharge creating decreased base line flows in area streams and channels**

BACKGROUND AND BASIS OF ANALYSES

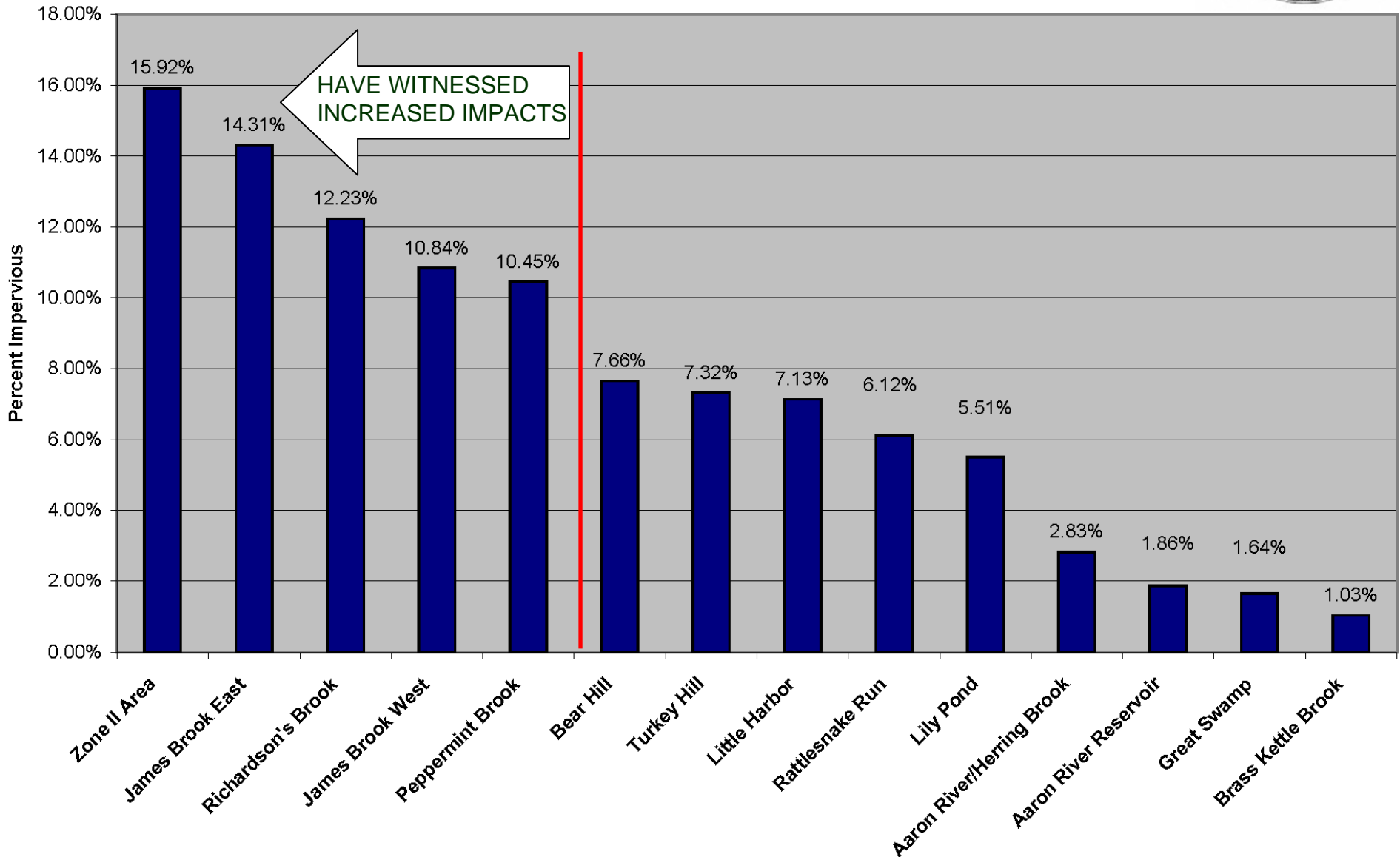
James Brook Watershed Area



Cohasset, MA

Cohasset Local Percent Impervious

Greater Imperviousness = Increased Impact on Surface Waters

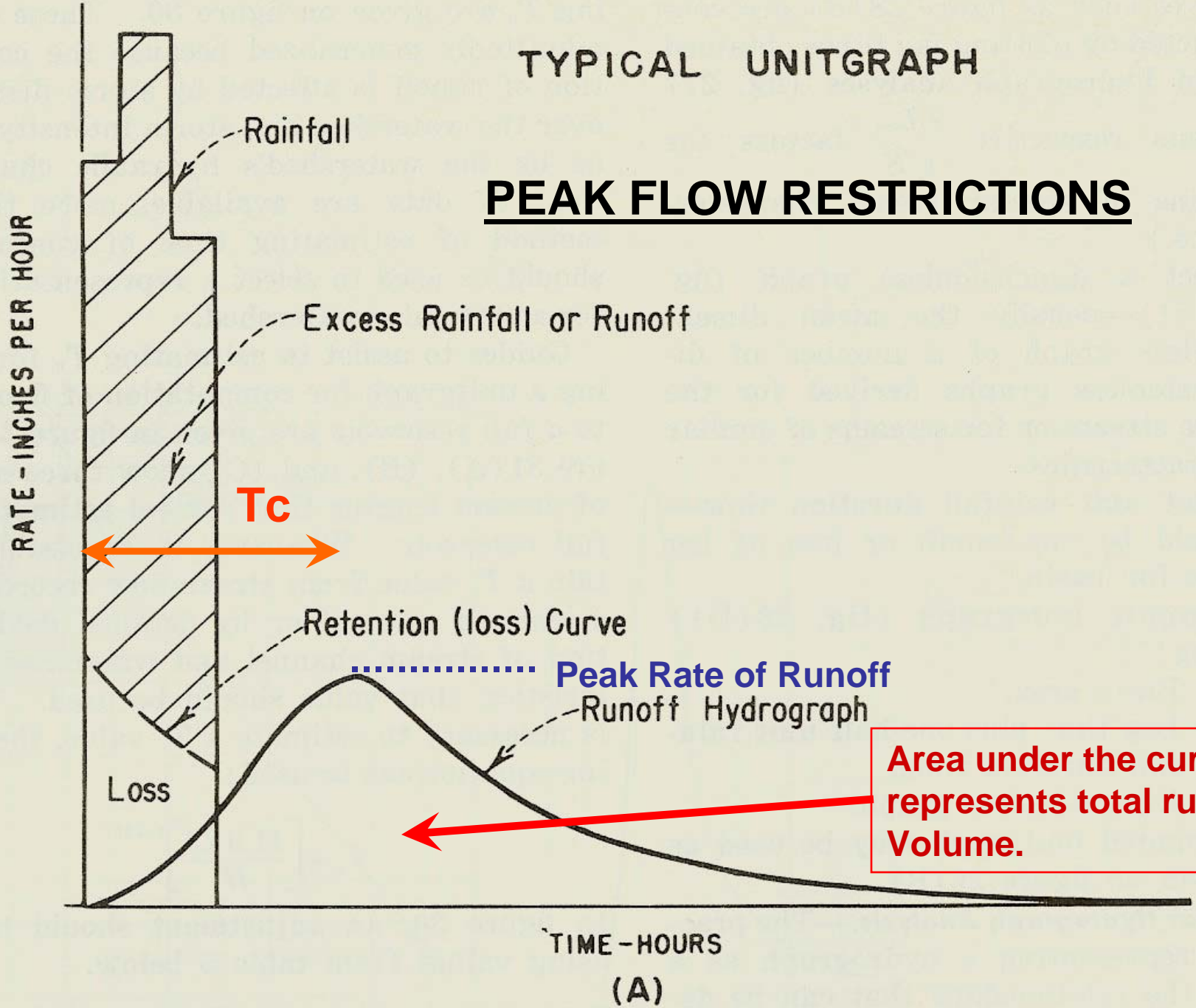


REGULATORY CONTROLS on New Development

- Clean Water Act (NPDES Permitting)
- **Massachusetts Wetland Protection Act**
 1. Wildlife
 2. Riverfront (Rivers Protection Act)
- Local Conservation Commission Regs.
- ACOE Wetland Permitting
- **MA Stormwater Management Policy**
- EPA Stormwater Program (Phases 1 & 2)
- Water Management Act (Limit Interbasin Transfers)
- Various CZM, MADEP and MEPA Policies
- **Local Stormwater Bylaws (New)**
- **Local Land use Regulations**

TYPICAL UNITGRAPH

PEAK FLOW RESTRICTIONS



TYPICAL UNITGRAPH

PEAK FLOW RESTRICTIONS

