Wetland Study
Fernald Center, Waltham. MA

Presented To:

Community Preservation Committee

Presented by:

Sam Bade

SSV ENGINEERING INC.

Craig Wood

ess group

Presentation Outline

- **Major Objectives**
- **Timeline of Development (1900-Current)**
- **Study Results**
- **Wetland/Stream Restoration Concept**
- **Input from the CPC/City**
- **Recommendations**

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Major Objectives

1. Hydrologic/Hydrologic Analysis

- Existing Conditions
- Pre-Existing Conditions (1947)
- Anticipated Future Conditions (Build-Out)

2. Evaluate Stream and Wetland Restoration Benefits

- Primary
  - Recreational Use
  - Establish Wildlife Corridor
- Secondary
  - Flood Mitigation Downstream

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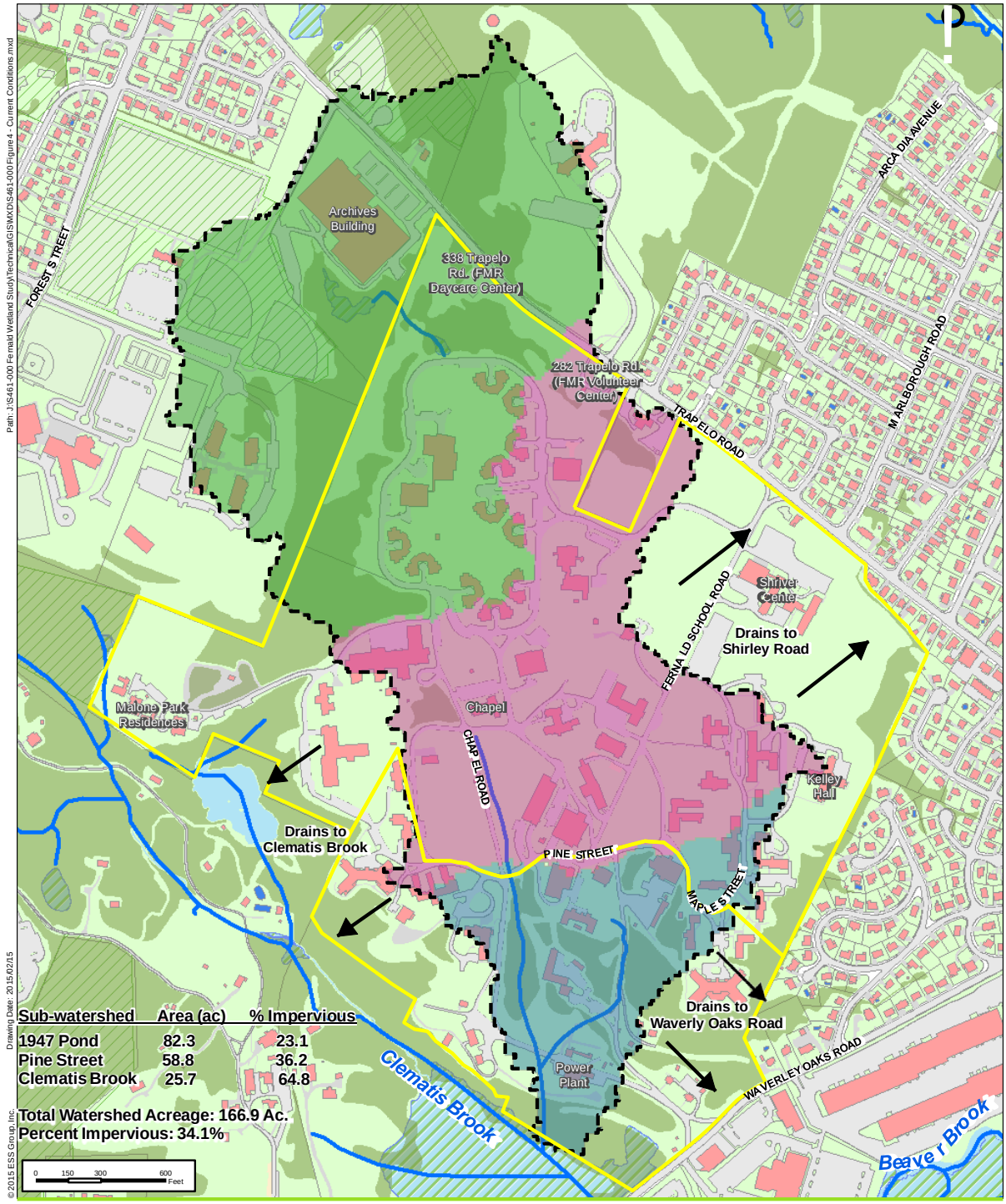
Fernald School – Year 2015



Fernald School Wetland Study
Waltham, Massachusetts

1 inch = 600 feet

Source: 1) City of Waltham - Base Layer Data, 2011
2) Watersheds, ESS Group, 2015

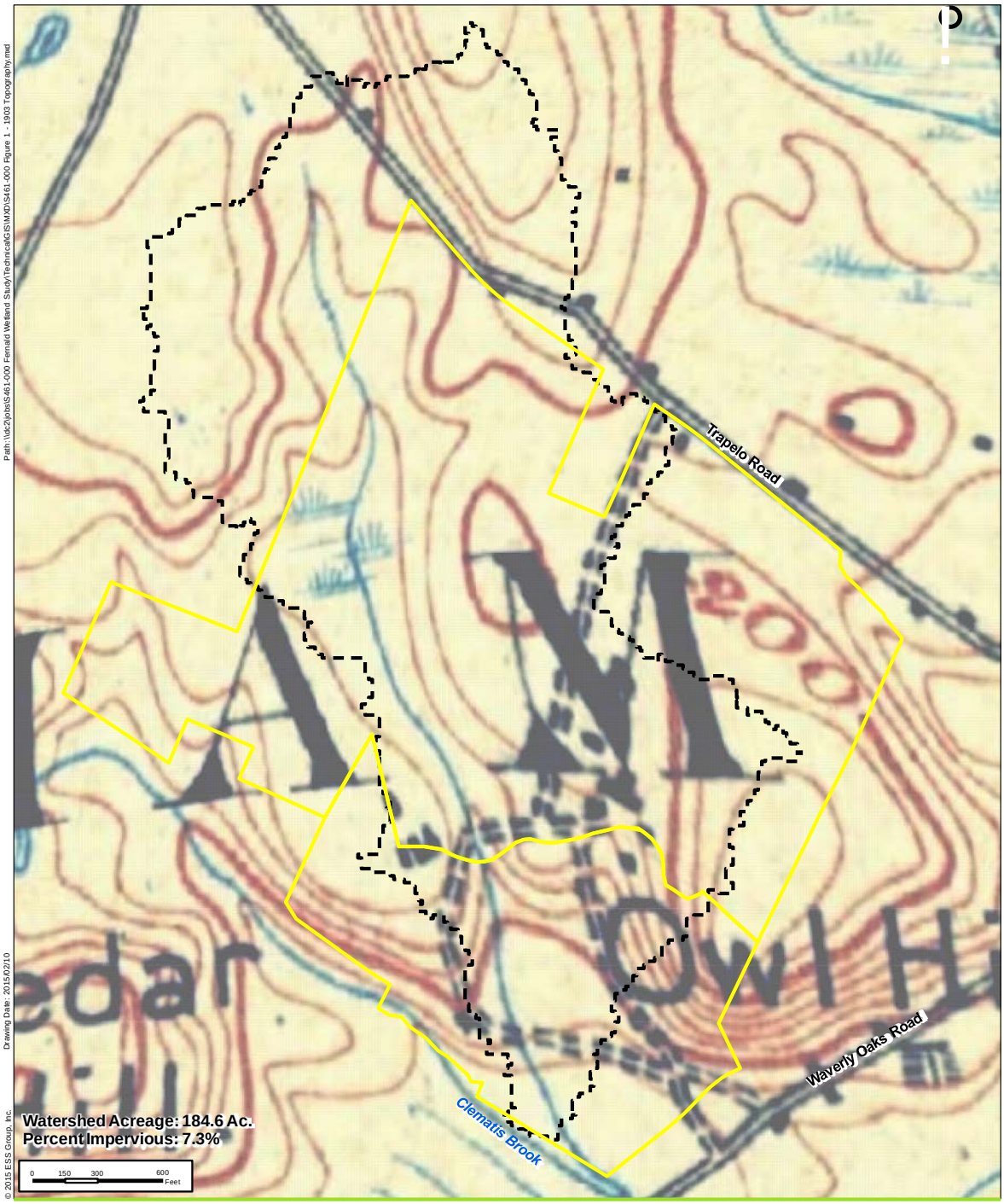
Legend

- Parcel Boundary Delineation (140/50 ac)
- Watershed Area to Existing Discharge Location
- Existing Stream
- Sub-Watershed to 1947 Pond Sub-
- Watershed to Pine Street Sub-
- Watershed to Clematis Brook

Current Conditions

Figure 4
Preliminary

Fernald School – Year 1903



Path: \\dc2\Jobs\S461-000 Fernald Wetland Study\Technical\GIS\MXD\S461-000 Figure 1 - 1903 Topography.mxd

Drawing Date: 2015/02/10

Fernald School Wetland Study
Waltham, Massachusetts

1 inch = 600 feet

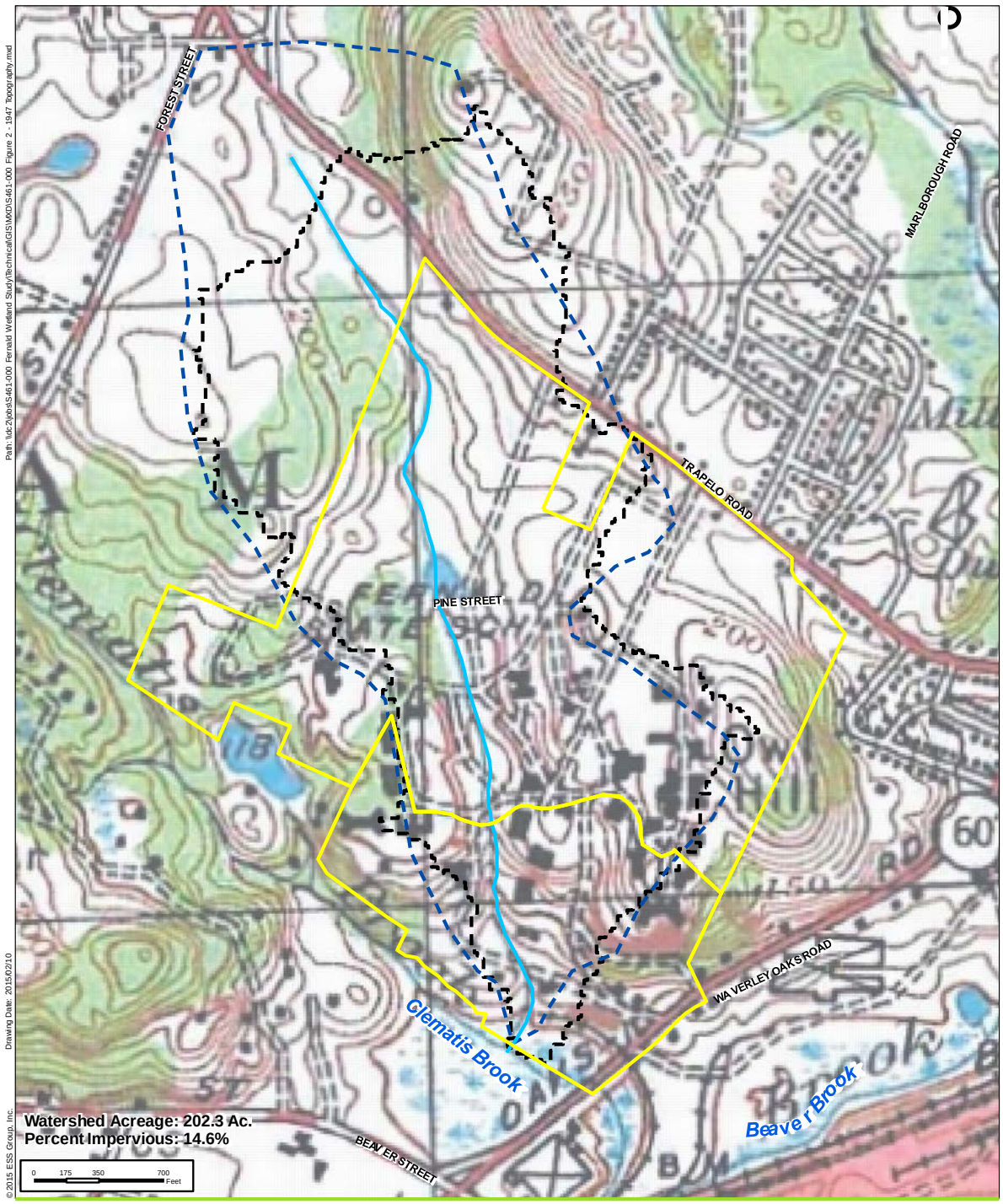
Source: 1) City of Waltham - MassGIS, Tax Parcels Data, 2011
2) USGS, Historic Topographic Maps, 1903
3) Existing Watershed, ESS Group, 2014

Legend
- Parcel Boundary Delineation (140/50 ac)
- Watershed Area to Existing Discharge Location

Historic Topography - 1903

Figure 1
Preliminary

Fernald School – Year 1947



Fernald School Wetland Study
Waltham, Massachusetts

1 inch = 700 feet

Source: 1) City of Waltham - MassGIS, Tax Parcels Data, 2011
2) USGS, Historic Topographic Maps, 1947
3) Existing Watershed, ESS Group, 2014

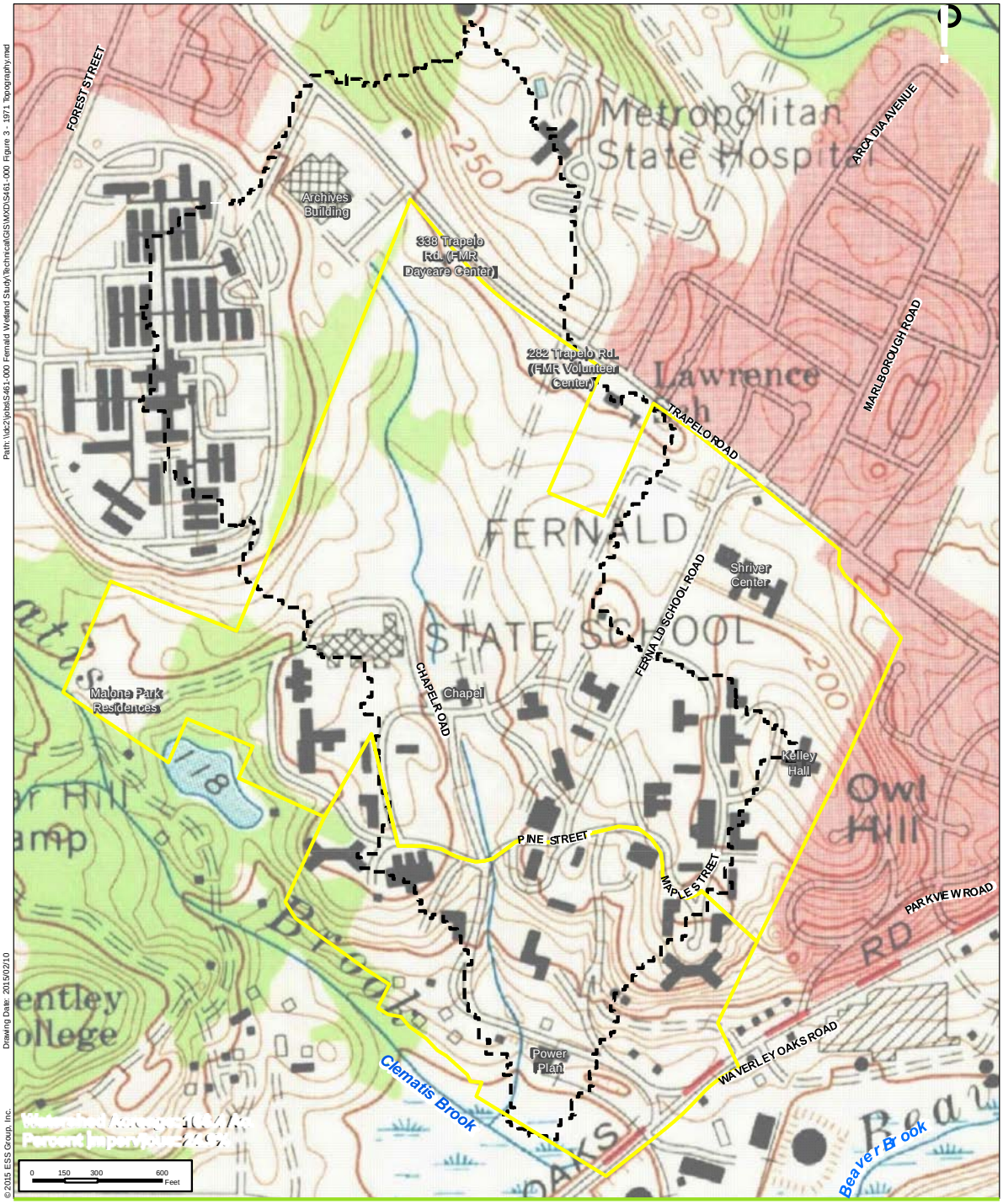
*Based on 1947 Topography

Legend
- Parcel Boundary Delineation (140/50 ac)
- Watershed to Clematis Brook*
- Watershed Area to Existing Discharge Location

Historic Topography - 1947

Figure 2
Preliminary

Fernald School – Year 1971



Path: \\dc2\jobs\5461-000 Fernald Wetland Study\Technical\GIS\MXD\5461-000 Figure 3 - 1971 Topography.mxd

Drawing Date: 2015/02/10

Fernald School Wetland Study
Waltham, Massachusetts

1 inch = 600 feet

Source: 1) City of Waltham - MassGIS, Tax Parcels Data, 2011
2) USGS, Historic Topographic Maps, 1971
3) Existing Watershed, ESS Group, 2014

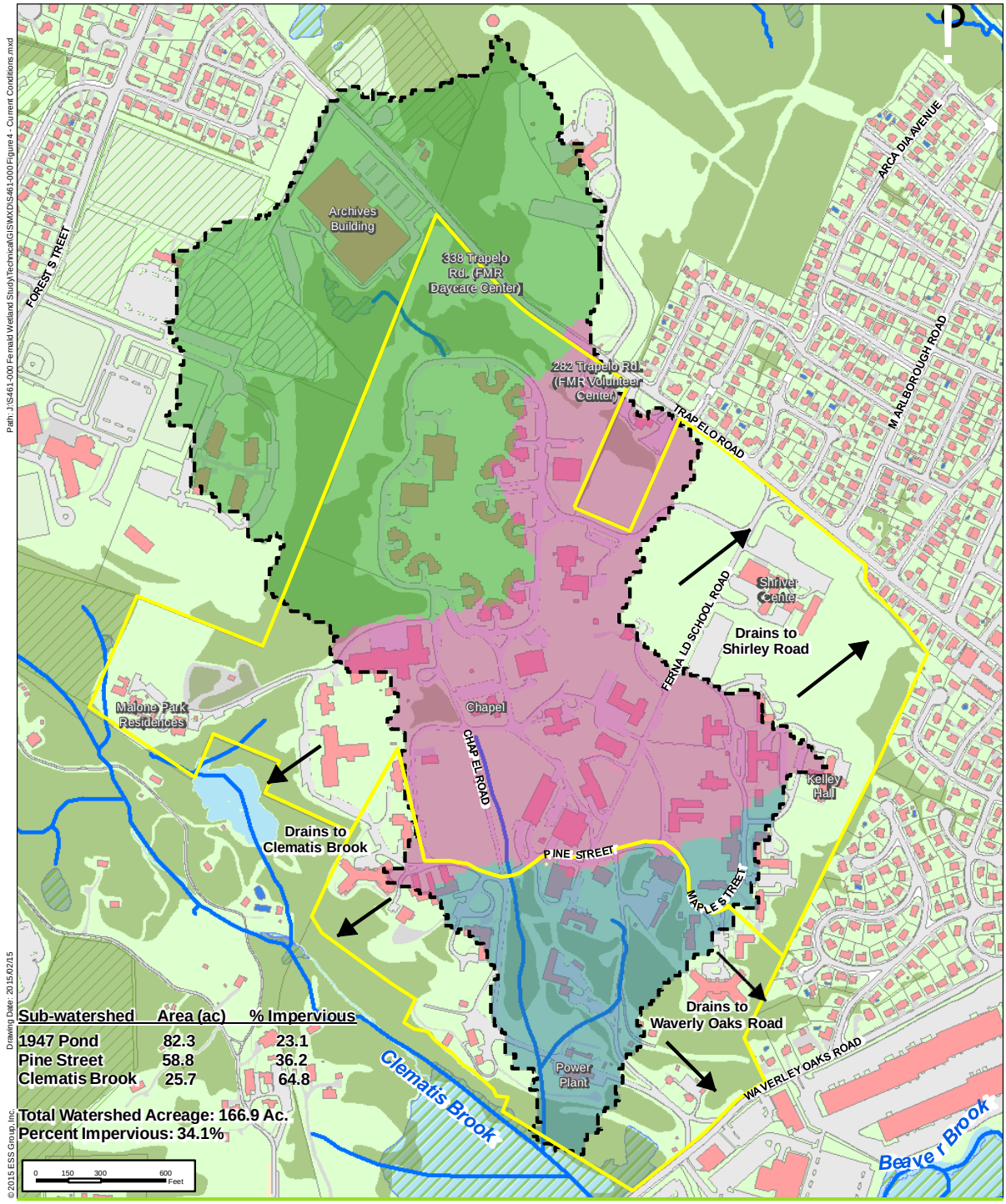
*Based on 1947 Topography

Legend
- Parcel Boundary Delineation (140/50 ac)
- Watershed Area to Existing Discharge Location

Historic Topography - 1971

Figure 3
Preliminary

Fernald School – Year 2015



Fernald School Wetland Study
Waltham, Massachusetts

1 inch = 600 feet

Source: 1) City of Waltham - Base Layer Data, 2011
2) Watersheds, ESS Group, 2015

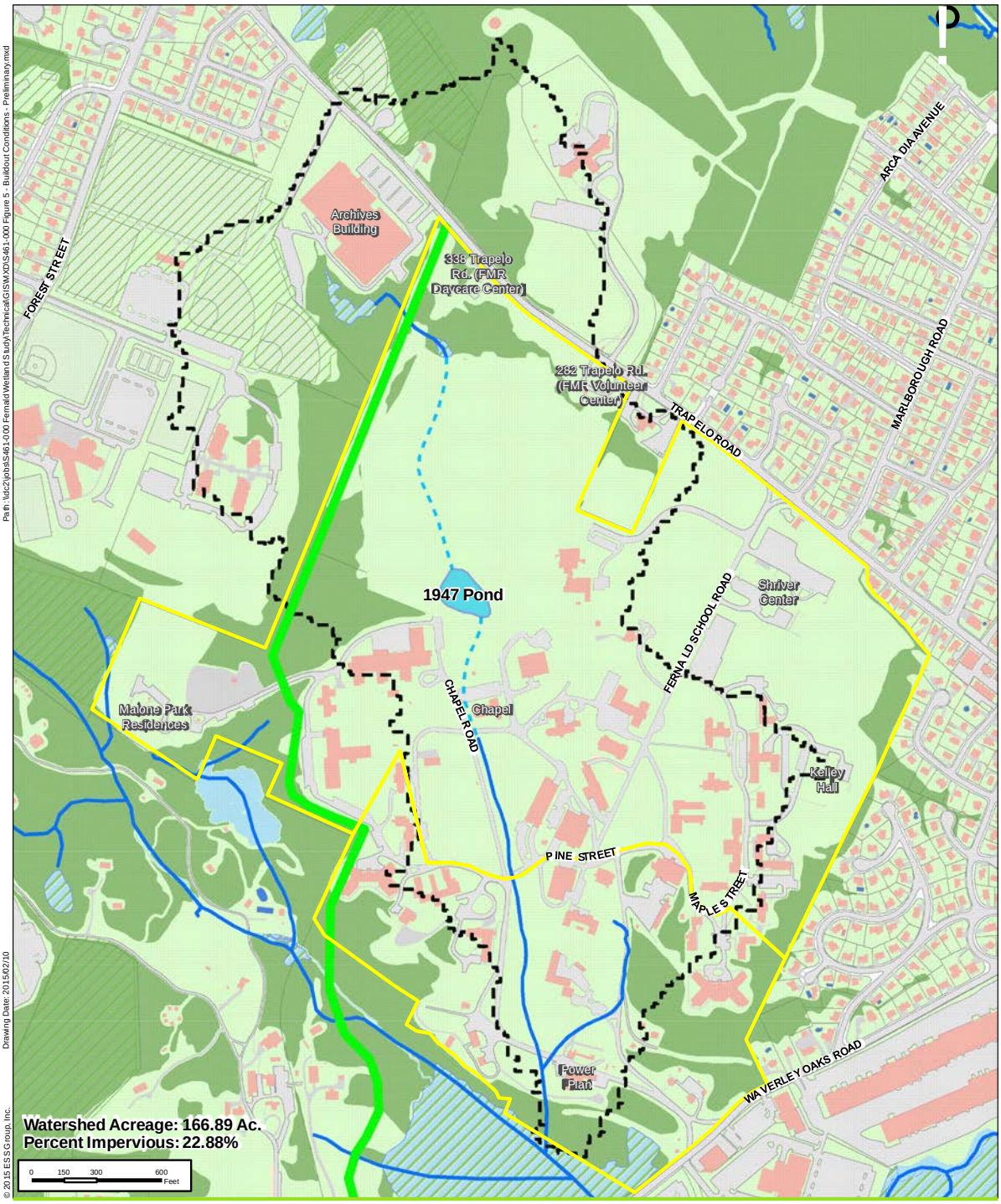
Legend

- Parcel Boundary Delineation (140/50 ac)
- Watershed Area to Existing Discharge Location
- Existing Stream
- Sub-Watershed to 1947 Pond Sub-
- Watershed to Pine Street Sub-
- Watershed to Clematis Brook

Current Conditions

Figure 4
Preliminary

Fernald School – Build-Out



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Fernald School Wetland Study
Waltham, Massachusetts

1 inch = 600 feet

Source: 1) City of Waltham - Base Layer Data, 2011
2) USGS, Historic Topographic Maps, 1903-1947
3) Existing Watershed, ESS Group, 2014

Buildout Conditions - Preliminary

Legend

- Parcel Boundary Delineation (140/50 ac)
- Watershed Area to Existing Discharge Location
- Existing Stream
- Restored Stream
- Future Segment of Western Greenway

Figure 5
Preliminary

Preliminary Results

Wetland Restoration Benefits

Description	Reduction of Peak Flow Discharges Over Existing (%)		
	10-year Storm	25-year Storm	100-year Storm
Wetland Restoration and Stream Day-lighting	20	15	10
Additional Pond South of Chapel	32	27	21
Additional Detention East of Powerplant	60	50	48

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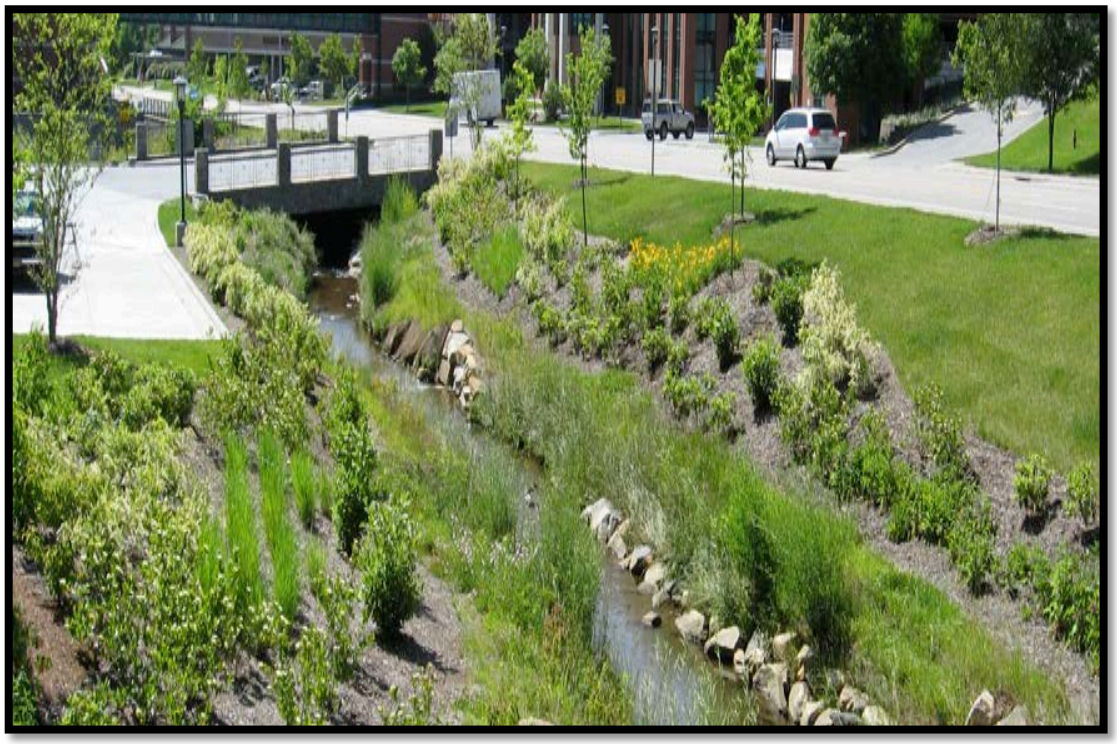
Wetland/Stream Restoration

CPC/City Input

- **Daylight Culvert – Archives Building**
- **Daylight Stream West of Chapel**
- **Other**



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Recommendations

- **Visioning/Masterplan**
- **Passive Recreation Goals**
- **Detailed Mapping - Sub-Surface Utilities**
- **Soil Investigation Program – Wetland / Stream Restoration**
- **Stream Flow and Ground Water Monitoring**
- **Wetland /Stream Restoration Design**

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