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# Mud Creek Watershed Aquatic Ecosystem Restoration Feasibility Study

## Tasks 2 & 3: Final Study Area Boundary and Base Map

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**Suffolk County Executive  
Hon. Steven Bellone**

Suffolk County Department of Economic Development and Planning  
100 Veterans Memorial Highway  
P.O. Box 6100  
Hauppauge, NY 11788-0099

*Joanne Minieri  
Deputy County Executive and Commissioner*

Division of Planning and Environment  
*Sarah Lansdale, AICP  
Director*

Prepared by:

Land Use Ecological Services, Inc.  
570 Expressway Drive South, Ste. 2F  
Medford, NY 11763  
(T) 631-727-2400

H2M, Inc.  
570 Broad Hollow Road  
Melville, NY 11747  
(T) 631-756-8000

Inter-Fluve, Inc.  
301 S. Livingston Street, Suite 200  
Madison, WI 53703  
(T) 608-271-6355

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## 1 Introduction

This report provides final maps to fulfill Task 2 (Determine Final Study Area Boundary) and Task 3 (Base Map). The purpose of the Final Focus Study Area Boundary maps prepared for Task 2 is to identify areas that must be investigated in more detail to develop alternative restoration actions for the former Gallo Duck Farm property. The purpose of Task 3 base maps is to provide a standard layout for all GIS maps and construction plans that will be created for this project.

## 2 Task 2: Final Study Area Boundary

Figures 2.1 through 2.5 identify areas that must be investigated in more detail to develop alternative restoration actions for the former Gallo Duck Farm property. These study areas are necessary to complete all of the Feasibility Study's component tasks including developing final construction plans and specifications for ecological restoration at Mud Creek County Park; developing plans and specifications for recreational, aesthetic, and educational amenities at Mud Creek County Park; fulfilling Suffolk County SEQRA requirements and obtaining regulatory permits for construction activities; and evaluating the success of ecological restoration actions. These maps build upon the draft Mud Creek County Park and Preliminary Focus Study Area map (Appendix A) prepared by Suffolk County Department of Economic Development and Planning and the Literature Review and Data Search report (Task 1). Figures 2.1 through 2.5 show all public lands controlled by Suffolk County and the Town of Brookhaven, 2012 tax parcel boundaries obtained from the Suffolk County Real Property Tax Service Agency, and the general location of the site's freshwater wetlands based on the New York State Freshwater Wetland Inventory map and obtained from the NYSDEC. These figures have been prepared in both GIS (ESRI ArcMap) and PDF formats.

Figure 2.1 depicts areas where active restoration actions will likely be recommended to remove or correct adverse ecological, environmental, or aesthetic conditions resulting from historical duck farming activities. Accordingly, all areas included within the boundary shown in Figure 2.1 were part of the original Gallo Duck Farm. Recommended restoration actions may include, but not be limited to, demolition of dilapidated duck farm buildings; removal of remnant equipment and debris; remediation of impacted soils; excavation and grading; invasive plant control; removal of duck swimwater areas, stagnant ponds, earthen berms, and settling basins; restoration of a natural stream channel; and restoration of native riparian, wetland, and upland habitats. Suffolk County currently owns nearly all properties within the Potential Gallo Duck Farm Restoration Area. There is one 0.12 acre out-parcel (SCTM#: 200-975.7-1-9) within the restoration area located to the west of Gazzola Drive and to the north of the freshwater wetland area. Unopened streets adjacent to or within the Gallo Duck Farm property, including the extension of Atlantic Avenue to the west of Gazzola Drive, have been identified within the restoration area.

Figure 2.2 depicts areas outside of the former Gallo Duck Farm where investigations of stream morphology and ecological conditions are necessary to support restoration design. Wetland and upland habitats upstream of the Gallo Duck Farm property and in the West Branch of Mud Creek represent somewhat more natural and less disturbed conditions and will likely be utilized as reference locations. Reference locations serve as models for the design and planning of ecological restoration project. However, the West Branch has also been impacted by road construction, historical clearing, and channel manipulation. As a result, other reference locations outside of the Mud Creek watershed, such as Swan River nearby, shall also be utilized to inform stream channel and riparian restoration. Pre- and post-project monitoring in both restored habitats and reference locations shall be used to evaluate the success of restoration actions in improving aquatic and ecological conditions. The restoration study areas depicted on Figure 2.2 are largely found on

public lands controlled by Suffolk County; however, private lands are included on the lower East Branch where evaluation of conditions immediately downstream or adjacent to the Gallo Duck Farm property is necessary for the design of restoration actions.

Figure 2.3 depicts areas outside of the former Gallo Duck Farm where stormwater from roads and paved surfaces may potentially impact Mud Creek and hamper long-term restoration objectives. Stormwater flows will be investigated in these areas and recommendations shall be developed for stormwater management to be implemented in conjunction with restoration actions. Potential stormwater impacts to Mud Creek from Gazzola Drive and Montauk Highway shall be investigated. Stormwater impacts from County Route 101 (Patchogue-Yaphank Road) shall not be investigated as Suffolk County Department of Public Works has recently designed a stormwater detention pond and bioswale with check dams to reduce discharge of contaminants and sediments to Mud Creek.

Figure 2.4 depicts areas outside of former Gallo Duck Farm where in-stream improvements may be necessary to provide suitable habitat in Mud Creek for brook trout and other target aquatic species. The stream channel and adjacent riparian and wetland habitats in the lower East Branch of Mud Creek and the West Branch have various existing and historical anthropogenic impacts including impoundments, earthen berms, channel modifications, clearing of adjacent forested wetlands and uplands, stormwater discharge from roadways and paved surfaces, and residential septic systems. These areas of the lower East Branch and West Branch shall be investigated to determine if any of these anthropogenic impacts hamper long-term restoration objectives and recommendations shall be developed for essential in-stream improvements to be implemented in conjunction with restoration actions. The extent of in-stream improvement areas follows the 6m NGVD elevation contour from the 1:24,000 Raster Profile Digital Elevation Model obtained from USGS Earth Resources Observation and Science (EROS) Center.

Figure 2.5 compiles the aforementioned potential restoration and study areas for the Mud Creek Watershed Aquatic Ecosystem Restoration Feasibility Study. The total Study Area, denoted by the thick dashed line in Figure 2.5 (*Study Area to Support Restoration Design*), is 120 acres in size and contains both the East and West Branches of Mud Creek. This Study Area is necessary to complete all phases of the Feasibility Study including developing final construction plans and specifications for ecological restoration at Mud Creek County Park; developing plans and specifications for recreational, aesthetic, and educational amenities at Mud Creek County Park; fulfilling Suffolk County SEQRA requirements and obtaining regulatory permits for construction activities; and evaluating the success of ecological restoration actions.

### **3 Task 3: Base Map**

Figures 3.1 through 3.3 depict the standard layout that shall be utilized for all GIS-based maps, concept plans, construction plans and specifications, and other graphic representations necessary for completion of this project. These map and plan layouts standardize the location of all appropriate plan information and cartographic data, such as funding agency and contract information, Suffolk County seal, title, preparer's contact information, professional certification and/or seal, preparation and revision dates, north arrow, scale, legend, data source(s), and preparation information.

Figure 3.1 provides the base map and layout for all GIS-based maps that will be prepared for the Mud Creek Watershed Aquatic Ecosystem Restoration Feasibility Study. It is anticipated that this base map and layout shall be used for maps of existing ecological and physical conditions, conceptual design plans, and other maps prepared using GIS data. Both color and black and white versions of Figure 3.1 have been provided.

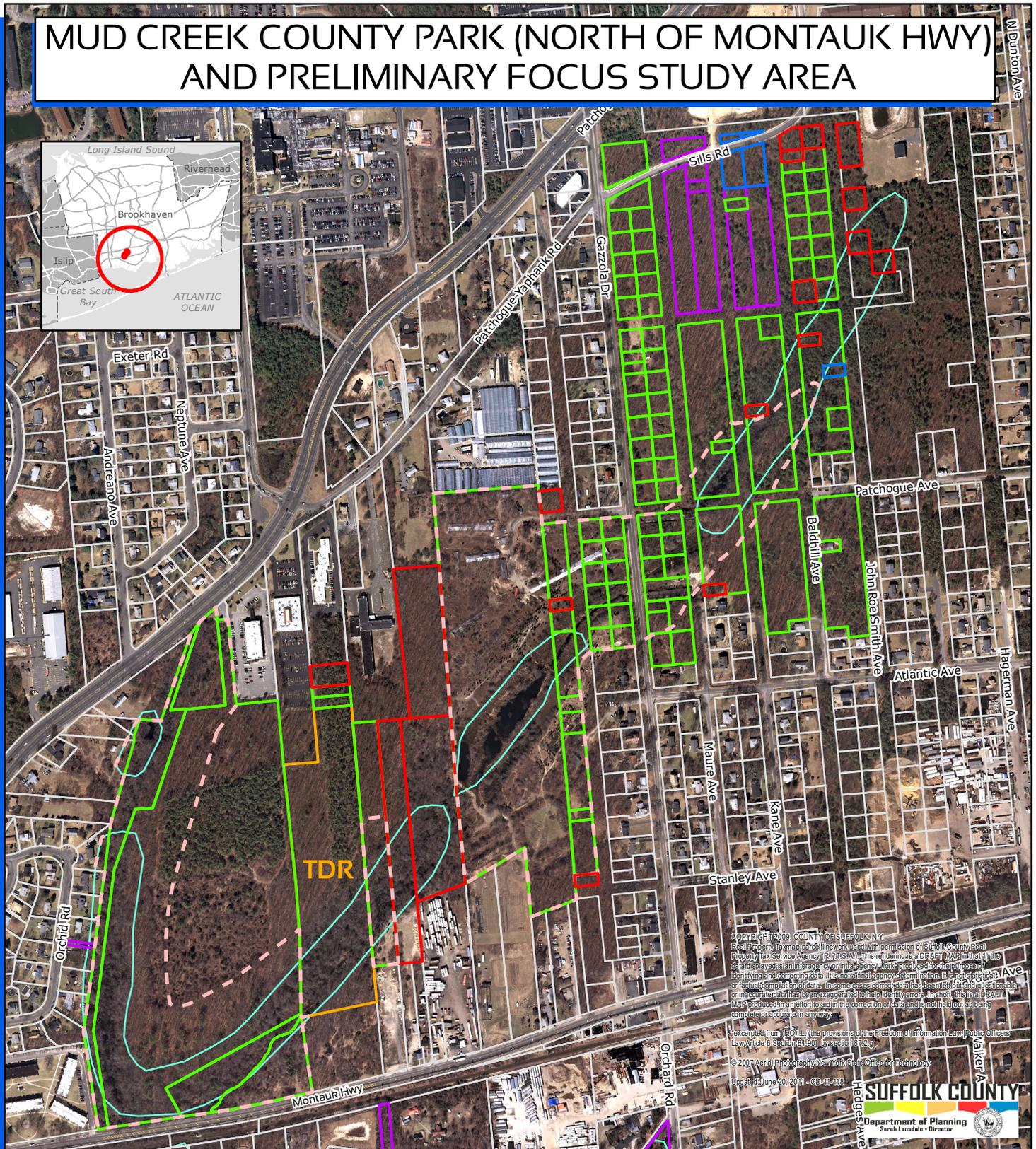
All maps using the base map and layout shown in Figure 3.1 will be prepared in both GIS (ESRI ArcMap) and PDF formats.

Figures 3.2 and 3.3 provide the layout for all construction plans and specifications that will be prepared for the Mud Creek Watershed Aquatic Ecosystem Restoration Feasibility Study. Both cover sheet (Figure 3.2) and drawing sheet (Figure 3.3) layouts are provided. All plans and specifications maps prepared using the cover sheet and drawing sheet layouts shown in Figures 3.2 and 3.3 will be prepared in both CAD and PDF formats.

## **Appendix A**

## Appendix A

# MUD CREEK COUNTY PARK (NORTH OF MONTAUK HWY) AND PRELIMINARY FOCUS STUDY AREA



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Real Property Taxman parcel line work used with permission of Suffolk County Real Property Tax Service Agency (RPTSIA). This rendering is a DRAFT MAP in that the data displayed is an interagency or inter-agency work product for the purpose of identifying and correcting data. It is not an official agency determination. Plans are subject to future completion of data. In some cases corrected data has been identified and questions or inaccuracies do exist as a result of the data being used. It is not intended to be a 100% accurate map and is for informational purposes only. No warranty is made as to the accuracy or completeness of the data and is not held out as being complete or accurate in any way.

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### Legend

- |                                  |  |
|----------------------------------|--|
| County of Suffolk (~100.0 A)     | Proposed Acquisitions (~13.3 A)                  |
| TDR Donation in Process (~9.5 A) | Consideration for Future Planning Steps (~1.0 A) |
| Town of Brookhaven (~6.6 A)      | Preliminary Focus Area (~51.9 A)                 |
| SCRP Tax Map Base, 2009          |  |
| NYSDEC Freshwater Wetlands       |  |

## TOWN OF BROOKHAVEN

East Patchogue  
Suffolk County, New York

1 inch = 620 feet



**DRAFT**

