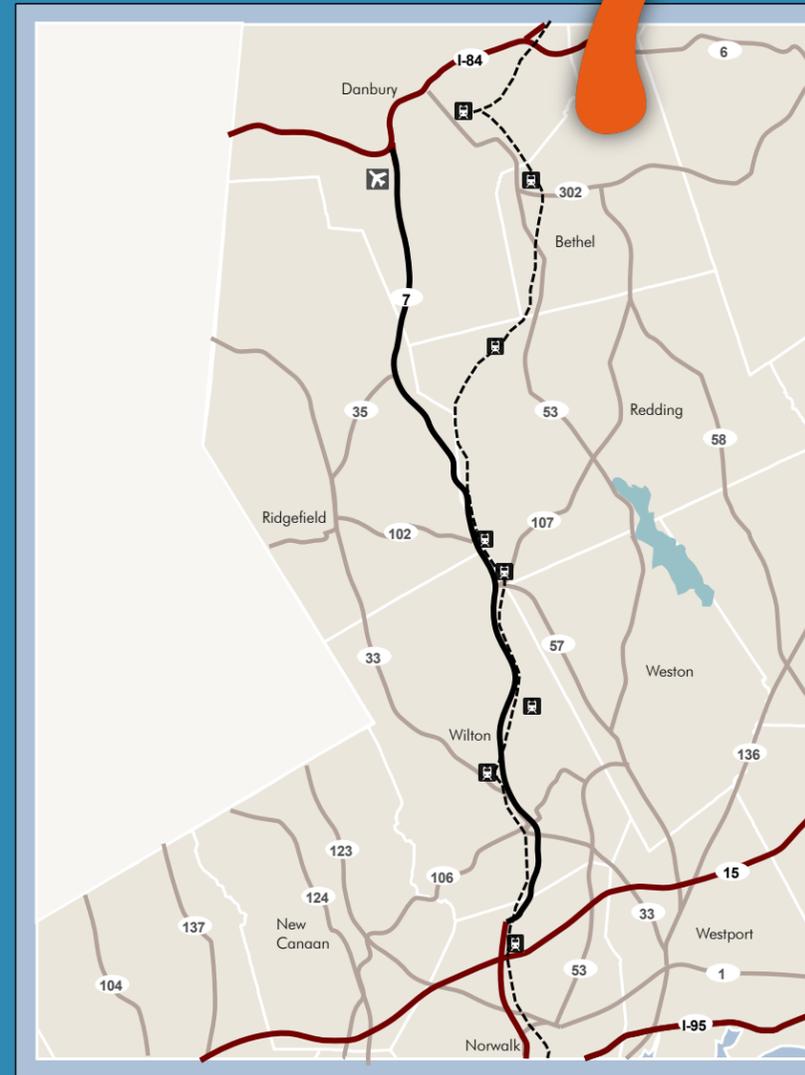
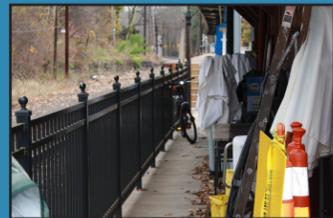


ROUTE

Transportation and
Land Use Study



Access Management Study - DANBURY, CT

Prepared for SWRPA and HVCEO



Fitzgerald & Halliday, Inc.
July 2011

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INTRODUCTION

Overview

An access management plan for Route 7 from Danbury to Wilton has been developed to offer access management tools that can help preserve and enhance the character, capacity, and safety of travel along this major travel corridor. This Route 7-Danbury Curb-Cut and Access Management Plan provides recommendations specific to the portion of Route 7 falling within the City of Danbury. A map of the overall study area addressed in this plan is shown below.

The study process that led to this plan was comprised of four general components including:

- Evaluation and analysis of existing and potential future access, roadway operations, and land use conditions along the study corridor
- Analysis of existing zoning regulations in each of the four communities along the corridor
- Recommendations for access design criteria and zoning modifications to strengthen access management in each municipality
- Curb-cut improvement recommendations
- Public involvement including work with a Technical Advisory Committee, and presentations at a community workshop

The outcome of this study process, this access management plan, has two basic components:

- A set of recommended modifications to local zoning to enhance access on Route 7
- A Curb-Cut Plan with recommendations for enhancements to access locations and design when land use change takes place

What is Access Management?

Access management is the process of overseeing access to land development while simultaneously preserving the flow of

traffic on the surrounding roadway system in terms of safety and capacity. Its focus is on safety of travel and minimizing conflict points (locations where vehicles can cross paths) which in turn helps to maintain the smooth flow of traffic along a roadway. Maintaining smooth traffic flow can, in turn, reduce the need for roadway widening induced by growing congestion. Access design characteristics of a roadway that directly impact traffic flow and safety include the location, spacing, and design of access drives entering the roadway as well as location of signals, medians, and turn lanes. Planning and regulatory tools that can manage access to local roads include the plan of conservation and development, any transportation plans, zoning regulations, subdivision regulations, and specific local ordinances adopted to control driveway construction.

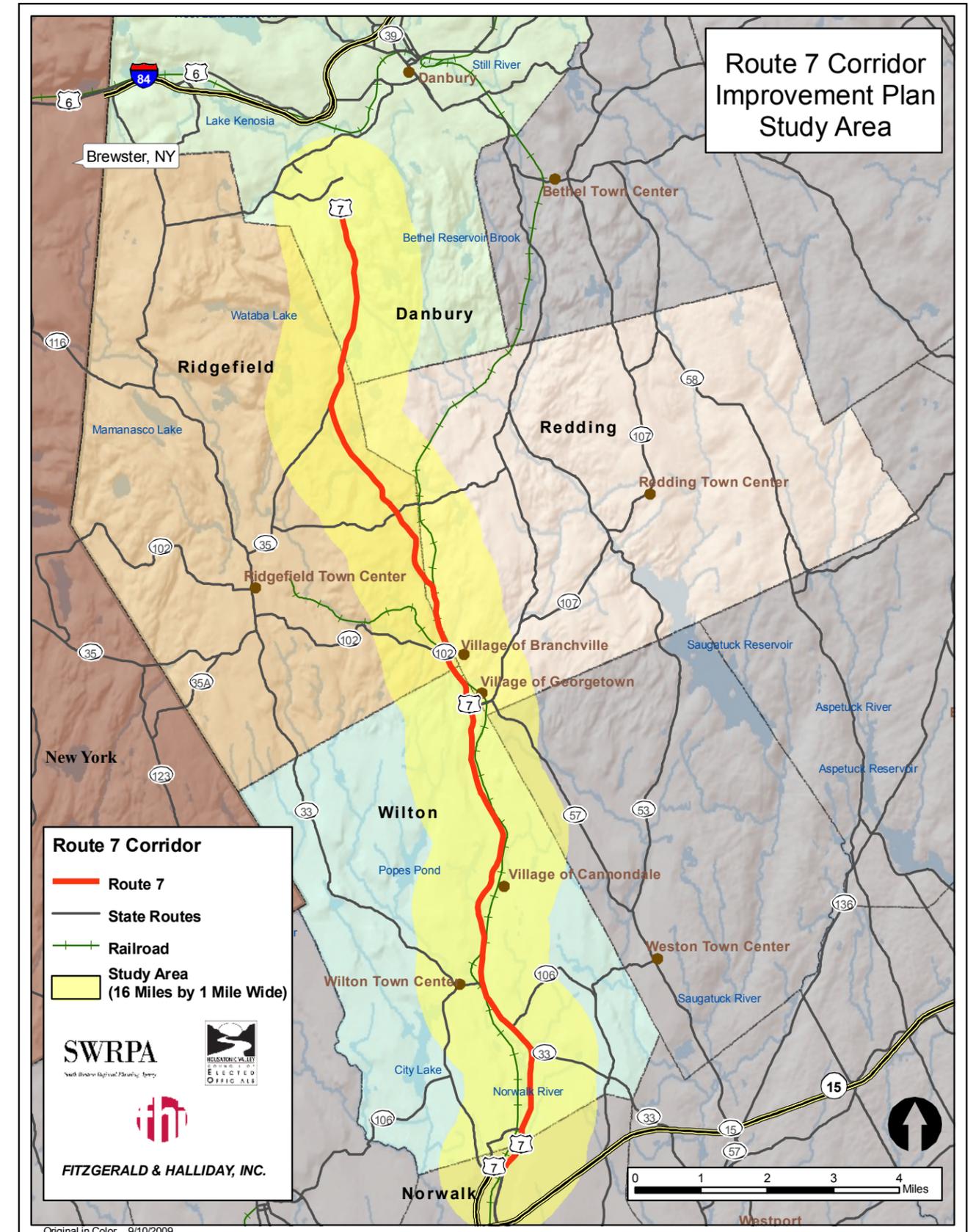
The benefits of utilizing access management in preserving and enhancing a roadway system are threefold. First, access management supports a safe and effective relationship between the local transportation system and land use. It can ensure that traffic can reach local development smoothly and safely and that traffic generated by local development will not create congestion or induce accidents. Second, access management promotes the goals and objectives of the plan of development for the future of a community. Third, access management can maintain the safety and capacity of roadways relative to the functions they are expected to serve. The Plan of Development future roadway circulation plan can be supported and promoted by effective access management.

The combination of physical design for access management (in the form of a curb-cut plan as defined below) coupled with planning policy and regulatory approaches for controlling access constitutes a local access management plan.

What is Good Access Design?

The general guiding principles of good access design are to:

- Minimize conflict points or opportunities for vehicles to cross paths



- Provide safe, adequate spacing between driveways, between intersections, and between driveways and intersections;
- Maintain good sight-lines for all drivers

Performance Criteria

Technical design criteria used to develop the curb-cut recommendations for Danbury along the Route 7 Corridor study area as shown on the attached curb-cut plan are listed below. The “City of Danbury Zoning Regulations” (Revised December 7, 2009 – Section 8.B)^A in addition to design guidance from the national Transportation Research Board (TRB) 2005 “Access Management Manual”^B were both utilized to establish these criteria.

- One-way driveways should intersect public streets at an angle greater than or equal to 60 degrees.
- Two-way driveways should intersect public streets at an angle greater than or equal to 75 degrees.
- In all commercial and industrial districts, driveways entering a public street should be at least 100 ft from an intersection
- Where a driveway distance of 100 ft from an intersection on a corner lot cannot be achieved, driveways should be located as far from the intersection of the street lines as is practical; regardless, access drives should not be, to the extent feasible, located within the functional area of an intersection.^A
- Driveways serving the same lot should be at least 150 ft apart (measured centerline to centerline), unless they are one-way driveways, which should be no less than 75 ft apart.
- Sight Distance must be 310 ft or greater (assuming speed limit greater than or equal to 45 mph)
- Maximum Driveway Widths: 30 ft^B
- Minimum Driveway Widths:
 - 20 ft is the minimum width for two-way non-residential driveways.
 - 9 ft is the minimum width of driveways serving two and three-family dwellings.
- Maximum grade is 12%, except for first 20 feet back from edge of travel way, which cannot be steeper than 5%.

- All curb cuts and/or roadway intersections on opposite sides of the roadway should be aligned directly opposite one another.^A
- Internal circulation and driveway consolidation among adjoining properties should be provided where possible.
- Access drives should be provided to lower classification roads where possible; where a lot fronts on two streets, access should be from the street having lesser traffic volume.
- Any recommended driveway closures shall not interfere with internal circulation.^A
- A property should not have redundant access drives.

What is a Curb-Cut Plan?

A Curb-Cut Plan is a specific concept for a roadway or roadway segment indicating the community’s idea of the ideal layout for access points along that roadway. It is presented in a similar fashion to a site plan for future development. Generally, a Curb-Cut Plan is created for a roadway segment that has need for improved access design and/or is in an area where future development pressures are likely to increase. However, a Curb-Cut Plan also recognizes that opportunities to improve existing hazardous access arrangements will only occur at the time that a change in use or change in intensity of use is proposed for a currently developed parcel or parcels.

By specifying the preferred access locations and design for a roadway segment, a Curb-Cut Plan can help:

- Ensure that access remains safe and efficient as land uses change
- Prevent future unsafe access arrangements to and from land that is not yet developed.
- Ensure future opportunities to improve hazardous access arrangements are considered and implemented as land use proposals are brought before the Planning Commission.
- Serve as a guide that can be shared with development applicants for use in site plan development.

RECOMMENDATIONS – LOCAL ZONING REGULATIONS

Access Management Framework

Regulatory approaches to access management can include language in the zoning regulations, subdivision regulations, and driveway related ordinances. Such regulations should be linked to clear statements of policy for managing the character of development in a City as articulated in the municipal Plan of Conservation and Development.

Zoning approaches to access management can be grouped in two categories. The zoning regulations can establish a specific roadway corridor where particular access design criteria exclusively apply, and define it with a special zoning district or access management overlay zone, or they can include a section of the regulations with language for access management applicable to all proposed development on all roads anywhere in the community. In other words, there are three options for including access management language in local zoning regulations. Such language can be included as design criteria that are specific to a particular zoning district (applicable to an existing use district) or as a new overlay zone covering a corridor with numerous use districts or such language can be included as design criteria in the general

requirements section of the regulations that are applicable to all roads throughout the community.

The City of Danbury has already adopted a set of zoning requirements for access management for the Mill Plain roadway corridor. It is recommended that a similar set of requirements be adopted specifically for the Route 7 corridor in Danbury. Those requirements would be consistent with and complement the Curb-Cut plan which follows. Route 7 in Danbury is a somewhat unique roadway segment. It is a critical gateway into the City and, in this locale, connects directly with Interstate 84. The roadway was recently upgraded to four lanes and speeds have increased, placing added importance on establishing safe access patterns. In addition, the widened roadway enhances regional access to developable land along Route 7 in Danbury. The attraction for new development with new curb cuts is very likely greater than under previous roadway conditions although much of the land is constrained by environmental conditions which present challenges for development. The Limited Roadside Commercial Industrial District (LCI-40) zone which encompasses the Route 7 corridor area serves to manage the scale, intensity, and traffic generation characteristics of future land use along the roadway.

As such, a set of access design requirements similar to that in use on the Mill Plain roadway corridor could support those land use directives.

In addition, some enhancements to the general language in the City zoning regulations for access management would benefit Danbury. During the development application process such enhanced requirements could more directly guide applicants in designing their access onto any community roadway.

General Recommendations

- Adopt the attached Curb-Cut Plan as an amendment to the Zoning Regulations in Danbury and use as a guidance/reference tool
- Adopt a set of access design requirements for the Route 7 corridor similar to that in use for the Mill Plain Road Curb Cut Control Plan
- Update the language in the Plan of Conservation and Development to call for implementing this Curb-cut Plan developed as part of the Route 7 Corridor Land use and Transportation Plan.

- Consider some enhancements to the general language (Section 8.B) for access management in the Danbury regulations to further address access design on other community roadways. For example, the design criteria in Section 8.B could include limits on the number of driveways permitted for a single parcel or development. These general enhancements are noted in the table below.
- Continue to encourage the voluntary pre-application review process specifically to assess proposed number of driveways along with access spacing and design for new development as well as redevelopment

Detailed Recommendations

Relevant sections of the zoning regulations for Danbury are summarized below followed by recommendations for amendments to provide for enhanced access management. The intent of the recommendations is to ensure that the Planning Commission, City planning professionals, and/or City Engineer (and/or Traffic Engineer) each has an opportunity to review and comment on all proposed new or substantially altered access drives onto community roadways. In addition, it is the intent of these recommendations, to suggest ways to strengthen the ability of the Planning Commission to control the design and location of new or substantially altered access drives along other community roadways in addition to Route 7 and Mill Plain Road.

Recommendations for Zoning Text for Access Management in Danbury, Connecticut

City of Danbury Zoning Regulations; Section...	RELEVANT TEXT (paraphrased)	COMMENTS
3.E Special Exception Uses	High traffic generators are Special Exception uses (500 trips/day) (Section 10.C) ; they are subject to Section 10.D (see below)	Special exception uses call for a public hearing on an application – offers neighbors an opportunity to weigh in on driveway design; focus on high traffic generators makes regulations less of a burden for small businesses.
8.B Motor Vehicle Access	Access and parking is considered an accessory use and regulated as such. In addition, all driveways are subject to requirements for; minimum separation distances from a driveway to an intersection or other driveway; Where a lot contains frontage on more than one public street, access may be required to the street having the lesser traffic volume; Applicant may be required to facilitate future joint access; corner clearances; driveway design	Distances required between driveways range from 50 feet (residential) to 150 feet; may be inadequate for access to major arterial such as Route 7. Consider limiting each development or property to one general vehicle driveway unless there is adequate frontage (300 feet or more) or the site design operates safely with two driveways. (Consider referring applicants to the current TRB Access Management Design Manual for optimum design configuration when preparing access design as part of a site plan). Acknowledges need for CTDOT approval for driveway on State roadway
10.C.4 Requirements for Approval- Special Exception	(3) Use must not create conditions adversely affecting traffic safety or which will cause undue traffic congestion;	Beneficial policy language. This could be cross-referenced with more specific language elsewhere in the regulations.
10.D. Site Plan Review	A pre-application conference with the Planning Director/staff may be requested by the Applicant; Site plan must show all existing and proposed points of motor vehicle access to the property and clear sight triangles for corner lots, sight lines for proposed driveways; State Highway Correspondence: When CTDOT approval is required for construction of the project, documentation indicating the submission of plans must be included with the submitted Application.	Distances between driveways and intersections should also be shown on the site plan and discussed as part of the voluntary pre-application review
10.D.11 Traffic Generation and Impact Analysis	All proposed uses for which a site plan is required must provide for ingress and egress which does not adversely impact the normal flow of traffic or normal safe conditions of the roadways. Site plans are referred to the Superintendent of Highways, Traffic Engineer and the Traffic Authority for review and recommendations; All proposed uses which will generate over five hundred (500) vehicle trips per day, either individually or in combination with other uses on a lot, are required to submit a Traffic Impact Analysis, prepared by a traffic engineer	Beneficial policy language. Referral to City staff with expertise for review is beneficial. Expand this to describe what information the traffic analysis should provide, including an evaluation of access design impacts.

PLAN IMPLEMENTATION

Implementation of the actions recommended as part of this access management plan should be accomplished through a cooperative effort among the City officials and ConnDOT. The following steps are recommended for each component of this plan.

Regulatory Modifications

- The Danbury Department of Planning and Zoning should follow existing practices for drafting zoning amendments to enhance the regulations for access design management

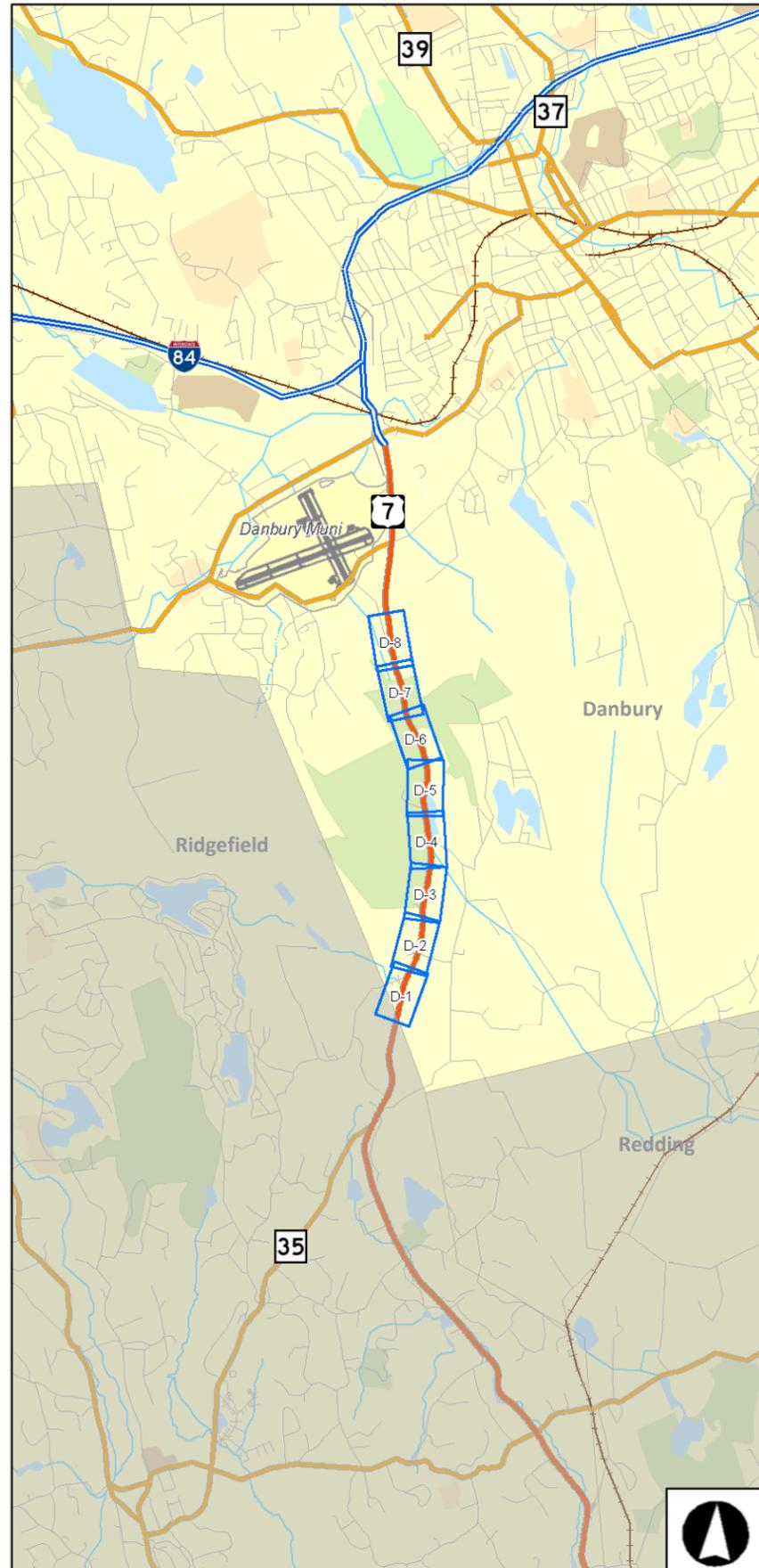
Curb-Cut Plan

- The Curb-cut Plan is intended as guidance document to supplement the zoning regulations. The Danbury Department of Planning and Zoning would follow existing practices for processing amendments to the zoning regulations for this plan
- Once formally adopted, copies of the Curb-Cut Plan should be placed on file and made available in the Town Clerk's office, the Planning and Zoning Office and City Engineer's Office

DANBURY ROUTE 7 ACCESS MANAGEMENT AND CURB CUT PLAN

FINAL: July, 2011

INDEX PLAN



RECOMMENDATIONS KEY

Symbol	Recommendation
	Improve Sight Lines: Maximize the distance that exiting motorists can see down the road to better perceive and enter oncoming traffic. If sight line improvements are impossible or impractical due to roadway geometry at the existing location, consider relocating driveway within parcel or creating shared access with adjacent parcel.
	Narrow Existing Driveway: Narrow the existing driveway to standard width through installation of curbing or removal of existing pavement. Clarify for all drivers where to anticipate turns to and from a property.
	Convert Two-Way to One-Way Entrance: Convert existing two-way driveway to one-way entrance through installation of signing and pavement markings.
	Convert Two-Way to One-Way Exit: Convert existing two-way driveway to one-way exit through installation of signing and pavement markings.
	Close Existing Driveway: Close existing driveway to reduce the number of driveways for a single parcel or for two or more interconnected parcels, particularly where there are redundant driveways or a high concentration of driveways in an area.
	Create or Improve Interconnection: Provide a vehicular connection between parcels to facilitate the sharing of a single driveway by multiple locations, allowing for the closure of redundant driveways, particularly where there is a high concentration of driveways close to one another.
	Convert to Right-Turn Entrance-Only: Convert existing driveway to right-turn entrance only through signing, pavement markings, and driveway geometry changes. These geometry changes should realign the driveway to make it intuitive to the user what the function of the driveway is.
	Convert to Right-Turn Exit-Only: Convert existing driveway to right-turn exit only through signing, pavement markings, and driveway geometry changes. These geometry changes should realign the driveway to make it intuitive to the user what the function of the driveway is.
	Create Shared Driveway: Create a single shared driveway at or near the property line to serve two (or more) abutting properties, especially where lots have narrow frontages or adjacent parking areas to minimize the number of driveways in close proximity to one another.
	Improve Signing and Pavement Markings for Existing One-Way Driveway: Install signing and pavement markings to clarify directionality and function of existing one-way driveway.
	Define Driveway: Define driveway location, replacing a generally undefined, excessively large access by installing curbing or removing pavement and replacing with a grassed or landscaped area. Clarify for all drivers where to anticipate turns to and from a property.
	Potential New Driveway Location: Provide new driveway at suggested location as future development needs dictate.

NOTES

1. Curb-cut Plan Use: The driveway recommendations included herein are conceptual in nature only and are intended to be a guide for the design, spacing, and location of access. Engineering design which reflects these recommendations, is consistent with all of the requirements contained in the zoning regulations, and is specific to each site will be needed at the time of proposed development, redevelopment, change in use, or intensification of use.
2. New driveway locations are shown for vacant parcels that are considered developable. It is assumed that vacant parcels noted as constrained are not developable.

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Route 7 Access Management and Curb Cut Plan

Danbury, CT

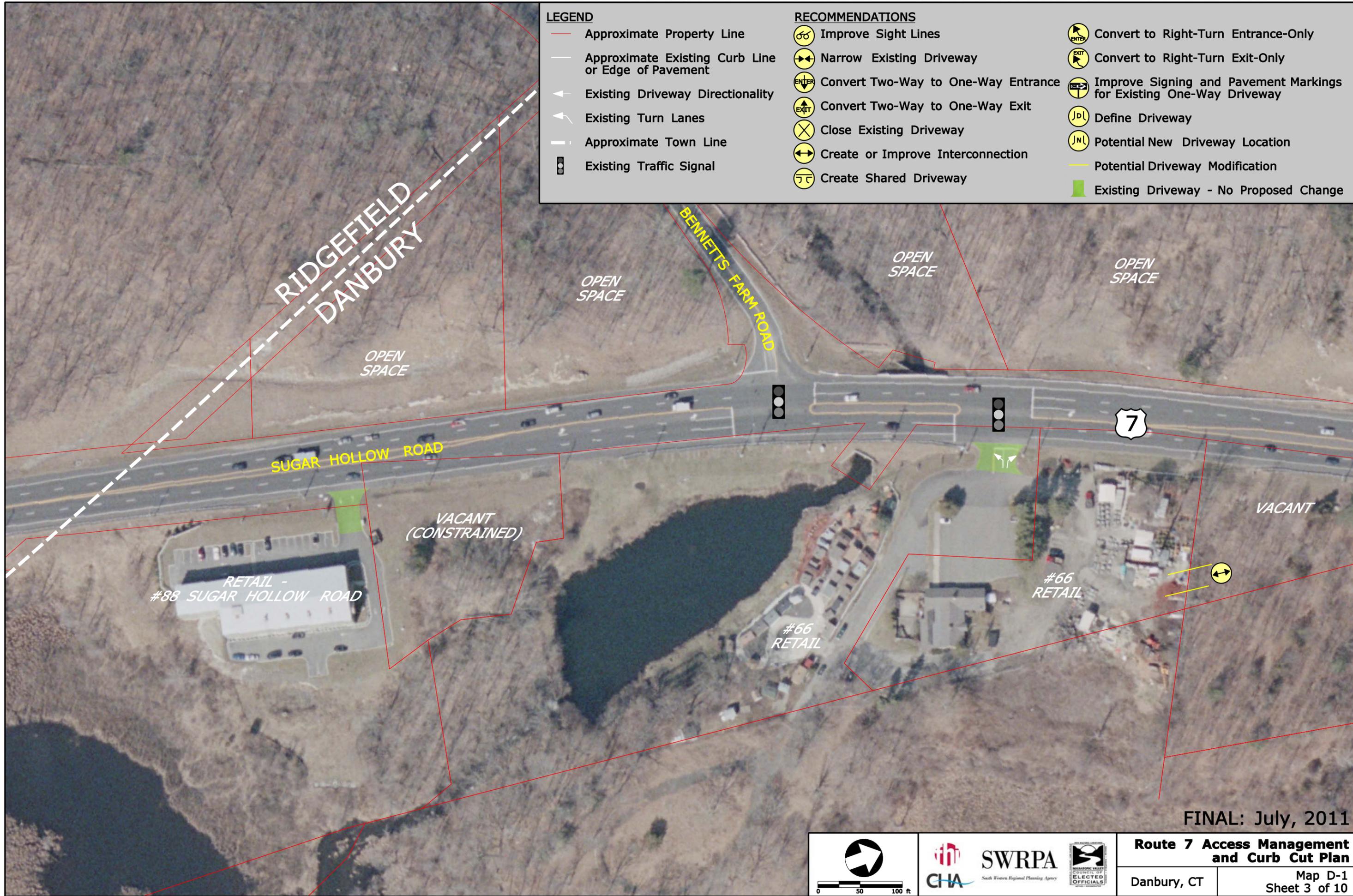
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Sheet 2 of 10

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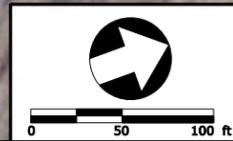
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-  Approximate Existing Curb Line or Edge of Pavement
-  Existing Driveway Directionality
-  Existing Turn Lanes
-  Approximate Town Line
-  Existing Traffic Signal

RECOMMENDATIONS

-  Improve Sight Lines
-  Narrow Existing Driveway
-  Convert Two-Way to One-Way Entrance
-  Convert Two-Way to One-Way Exit
-  Close Existing Driveway
-  Create or Improve Interconnection
-  Create Shared Driveway
-  Convert to Right-Turn Entrance-Only
-  Convert to Right-Turn Exit-Only
-  Improve Signing and Pavement Markings for Existing One-Way Driveway
-  Define Driveway
-  Potential New Driveway Location
-  Potential Driveway Modification
-  Existing Driveway - No Proposed Change



FINAL: July, 2011



Route 7 Access Management and Curb Cut Plan

Danbury, CT Map D-1
Sheet 3 of 10

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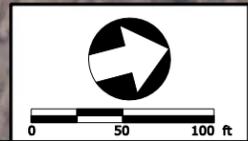
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Route 7 Access Management and Curb Cut Plan

Danbury, CT

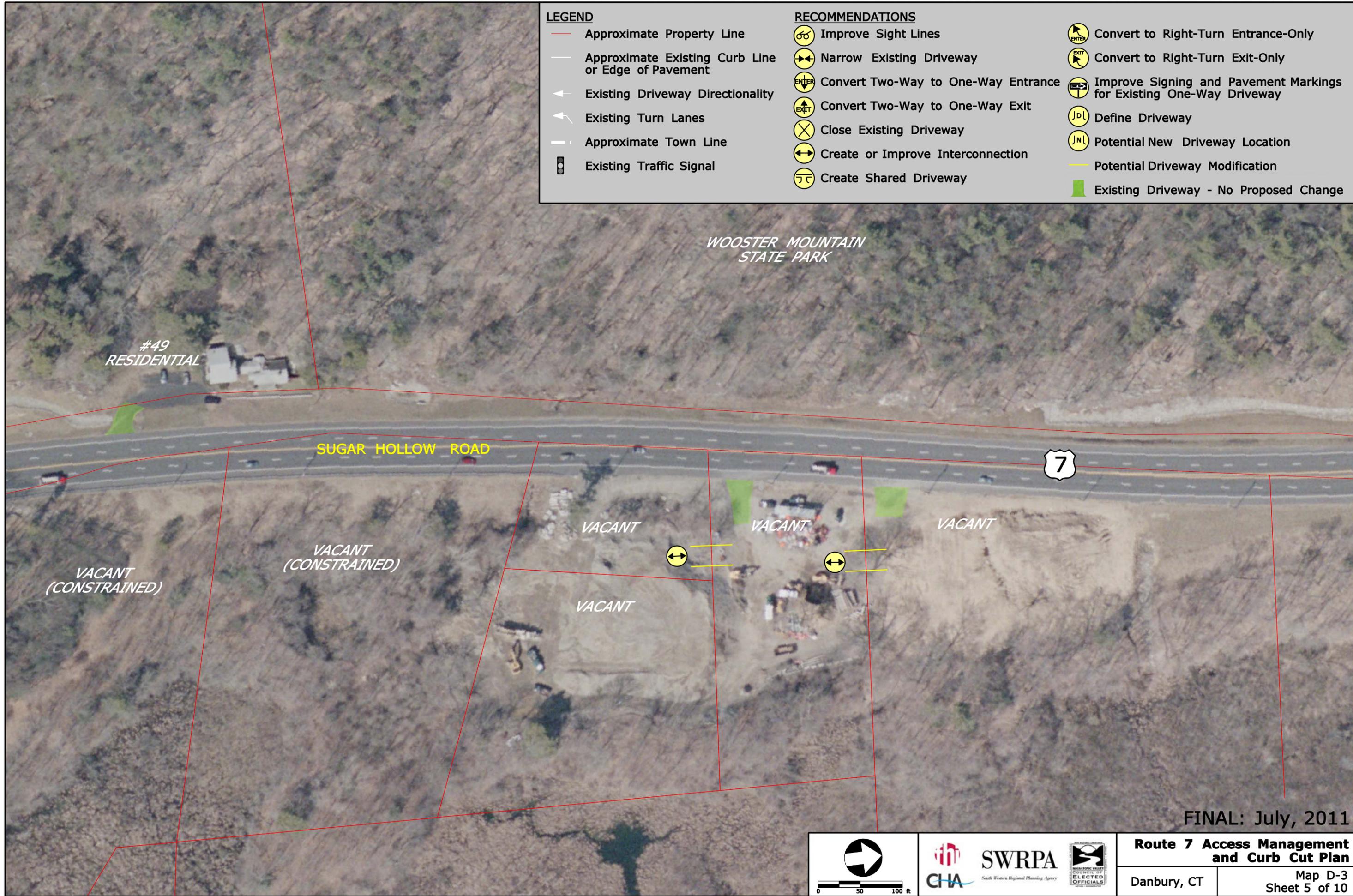
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Sheet 4 of 10

LEGEND

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-  Existing Turn Lanes
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 				<p>Route 7 Access Management and Curb Cut Plan</p> <p>Danbury, CT</p>	<p>Map D-3 Sheet 5 of 10</p>
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LEGEND

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WOOSTER MOUNTAIN STATE PARK

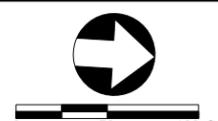
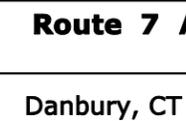


VACANT (CONSTRAINED)

#36 INDIAN TRADING POST

SUGAR HOLLOW POND

FINAL: July, 2011

			<p>Route 7 Access Management and Curb Cut Plan</p> <p>Danbury, CT</p>	<p>Map D-4 Sheet 6 of 10</p>
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LEGEND

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 				<p>Route 7 Access Management and Curb Cut Plan</p> <p>Danbury, CT</p>	<p>Map D-5 Sheet 7 of 10</p>
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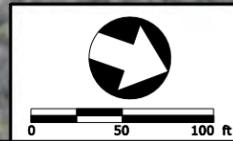
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Route 7 Access Management and Curb Cut Plan

Danbury, CT

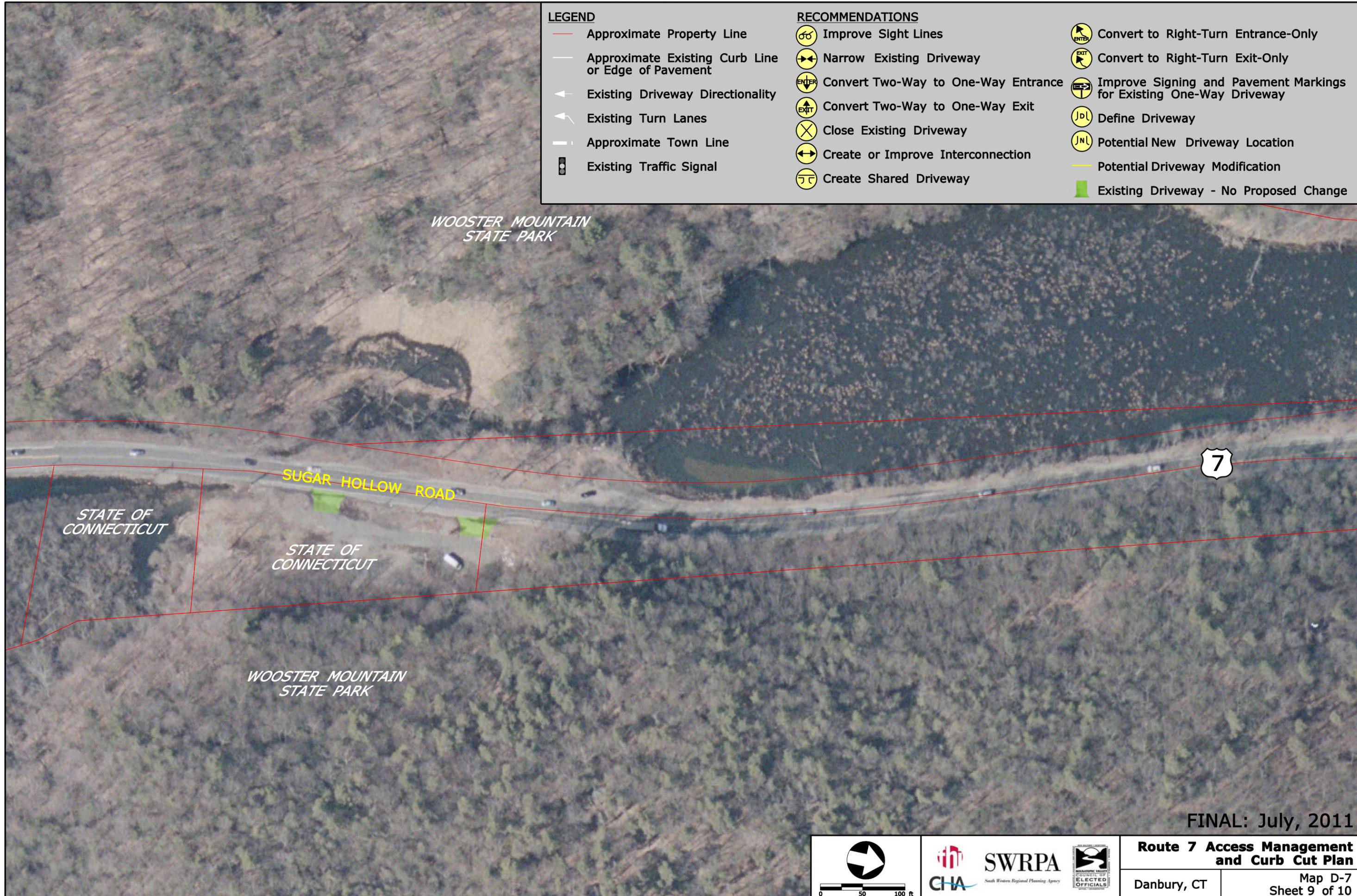
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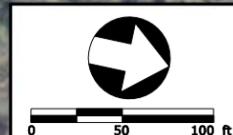
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Route 7 Access Management and Curb Cut Plan

Danbury, CT

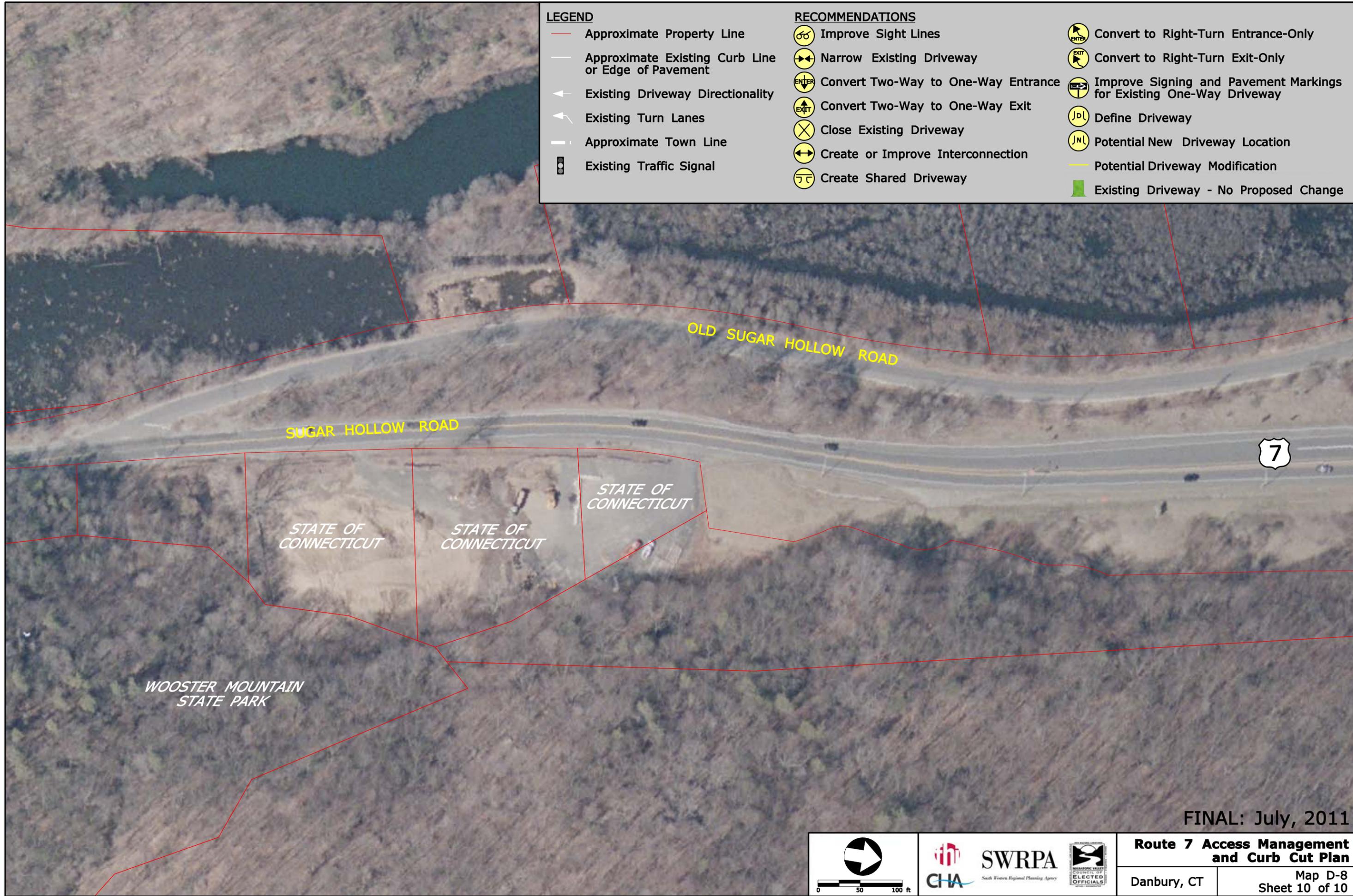
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Sheet 9 of 10

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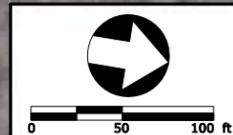
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Route 7 Access Management and Curb Cut Plan

Danbury, CT

Map D-8
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