

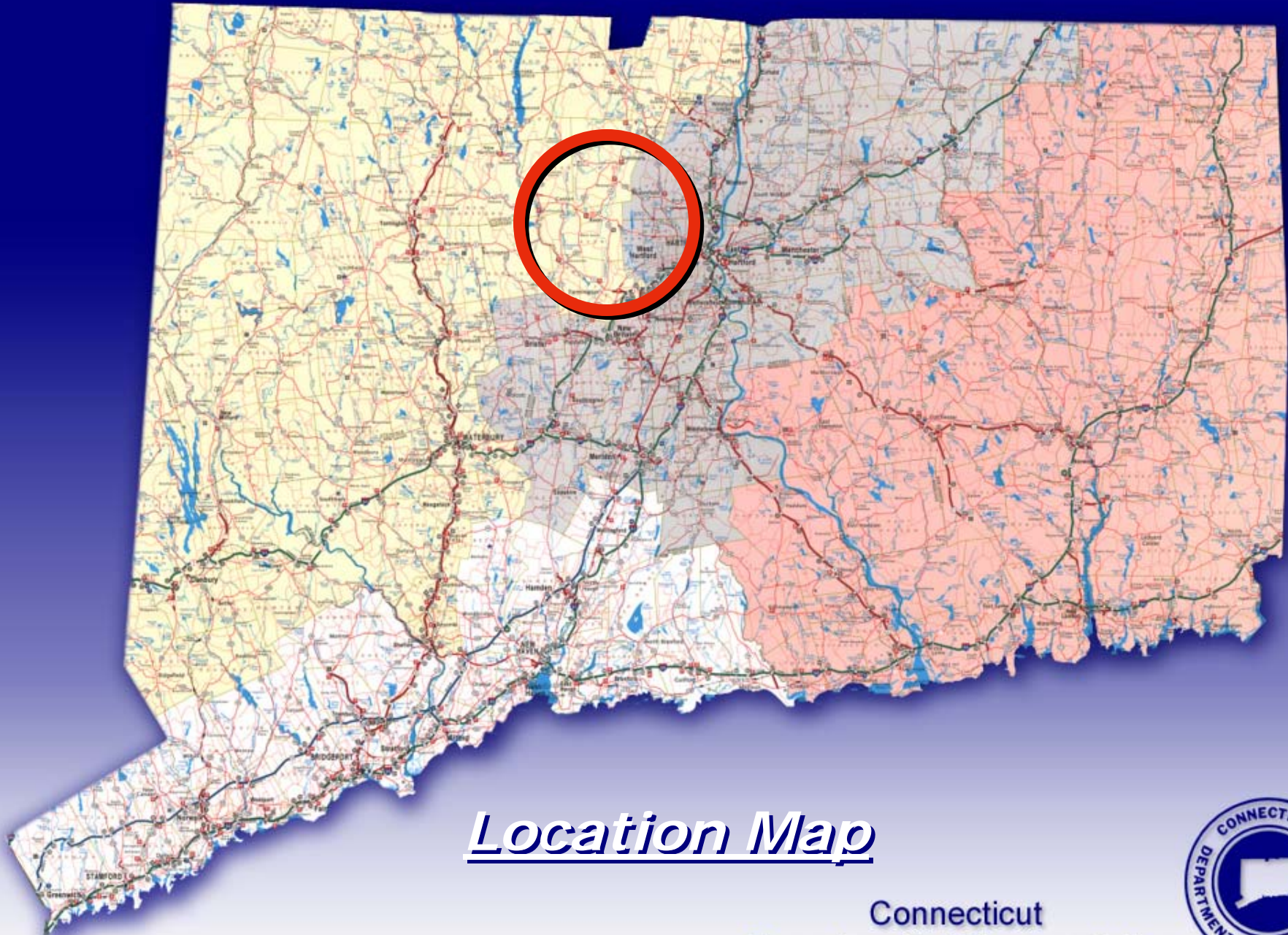
***Overview of Improvements  
On Route 44  
over Avon Mountain  
&  
Future Considerations  
To eliminate the at-grade  
intersection of  
Route 44/Route 10/Nod Road***



# Presentation Team

- James Norman - Engineering Administrator
- Daniel Foley – District Engineer, District IV
- Timothy Wilson – Principal Engineer
- Phil Cohen – Traffic Engineering
- Susan Libatique – Engineering - State Design
- Susan Fiedler – Landscape Architect
- Thomas Borden – Engineering – Project Dev.





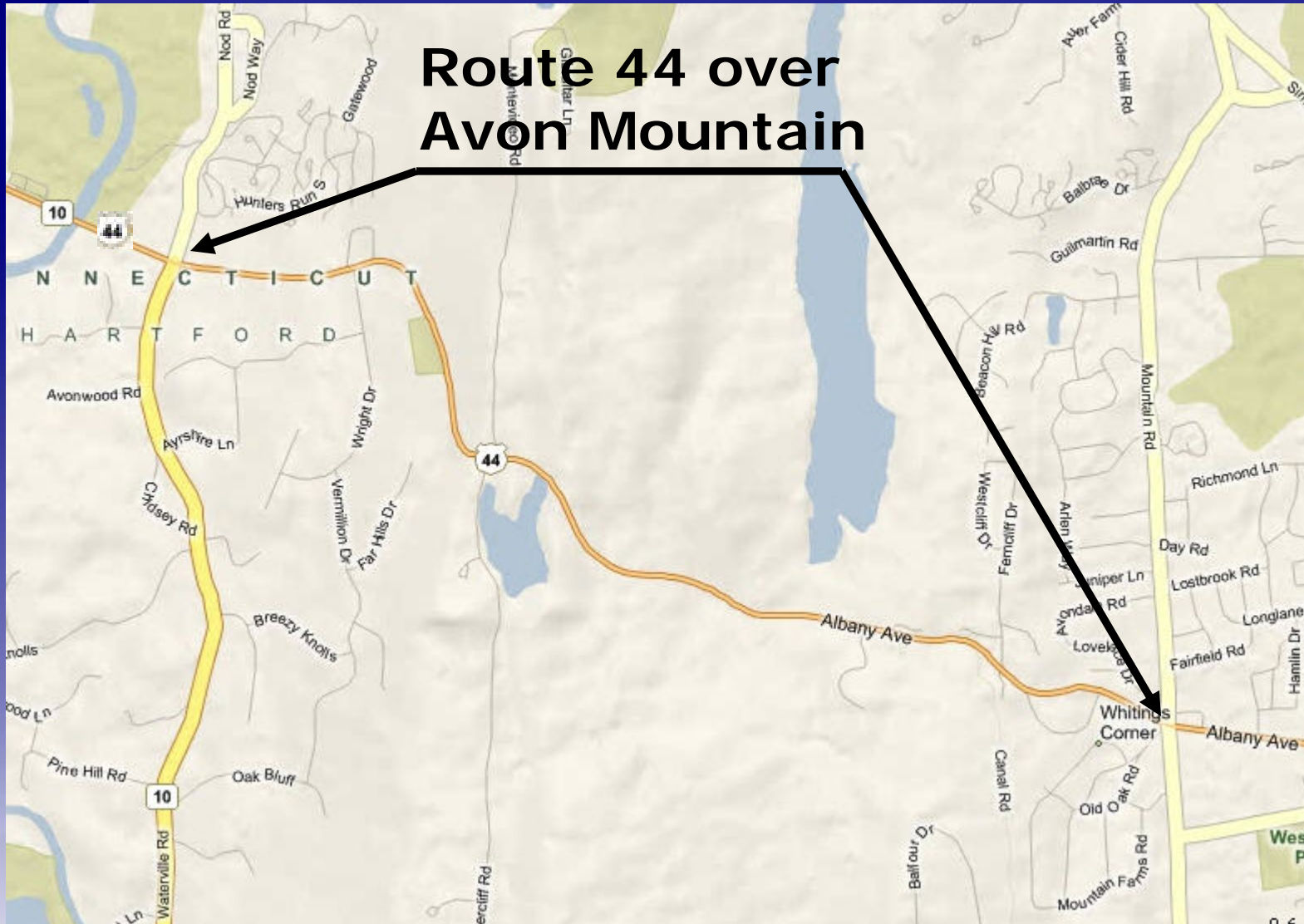
*Location Map*

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Department of Transportation





# Route 44 over Avon Mountain



# History

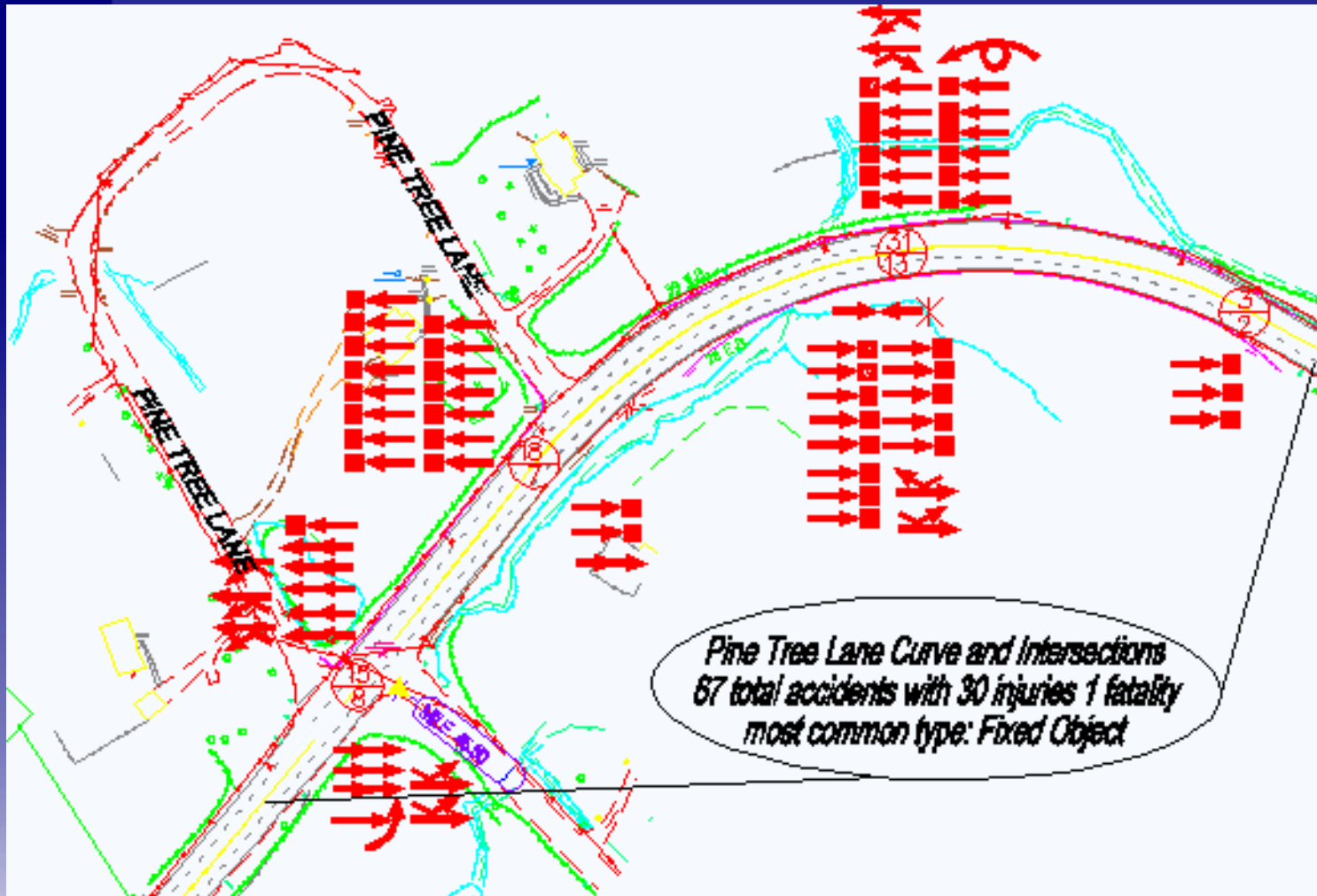
- The section of U.S. Route 44 from New Hartford to Hartford was known as Old Talcott Mountain Turnpike and was incorporated in 1798.
- Designated as U.S. Route 44 in 1935 and made part of the national highway system.
- This section of Route 44 over Avon Mountain has become a critical link in the regional secondary roadway network.
- Intersection is located in an area of historic significance and rural character



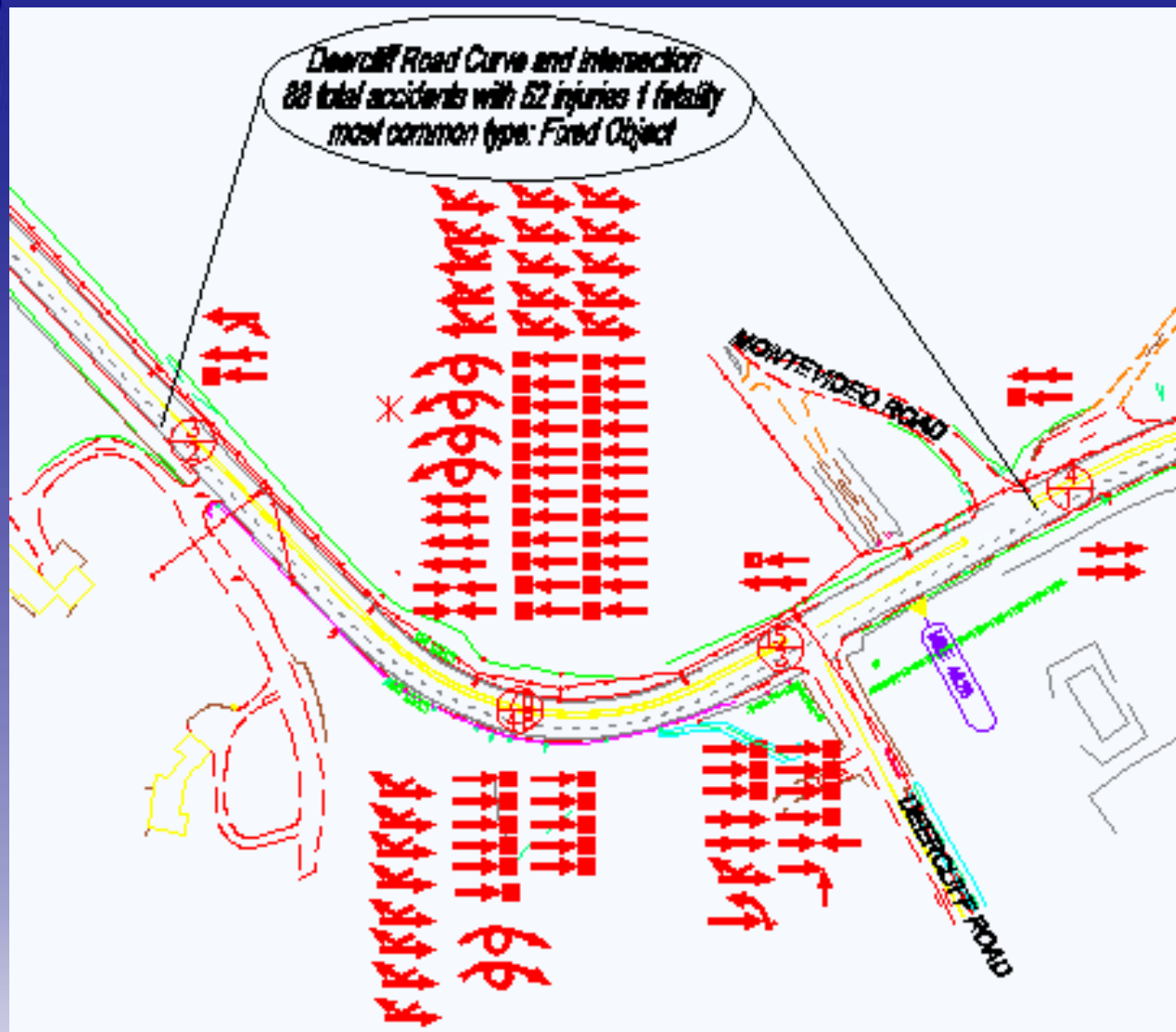
# Chronological Events

- Route 44 Corridor Study (CRCOG) – identified concerns & provides recommendations & guidelines for the integration of future highway improvements (included the towns of Canton, Simsbury, Avon and Hartford) – *completed in 2001.*
- The section of Rte 44 from Avon town line to Route 10/Nod Road was identified as CRCOG's highest priority - 2001











## Chronological Events cont.

- July 29, 2005 – horrific accident involving a truck (brake failure) and 19 other vehicles at the westerly base of Avon Mountain results in 4 fatalities, 19 injuries.
- Gov. Rell orders DMV and State Police to increase truck safety inspections.
- Gov. Rell orders DOT to establish a Task Force comprised of FHWA, CRCOG and Department officials to develop a comprehensive plan for improving safety on Route 44 over Avon Mountain – August 2005.



# Chronological Events cont.

Avon Mountain Task Force (AMTF) recommended the following - 11/2005:

- Immediate improvements –
  - Warning signs enlarged and additional signing added on Route 44 over Avon Mountain – *completed 9/2005.*
  - Police ticketing areas installed – *completed 12/2005*
- Preliminary short-term improvements –
  - The curved areas in the vicinity of Deercliff Road and near Pine Tree Lane were resurfaced with high friction pavement
  - Relocated the existing side-mounted electronic "Stop Ahead" signs on the eastbound approach to Mountain Road and the westbound approach to Route 10 to overhead
  - Provide temporary variable message warning signs (2 EB & 2 WB).
  - Provide one remote weather station (without cameras) near the top of the mountain.



## Chronological Events cont.

- **AMTF recommended the following long-term improvements – 11/2005**
  - Soften horizontal curves for a 45 mph design speed
  - Provide 4 to 8-foot shoulders
  - Provide left-turn lanes at all intersections
  - Provide a median treatment
  - Restrict left-turns in & out from Mountain Brook Road in West Hartford (easterly intersection).
  - Support camera speed enforcement legislation (pilot program)



## Chronological Events cont.

- **AMTF identified two concepts addressing brake failures & runaway trucks for future considerations— 11/2005**
  - Provide a vehicle arresting barrier to address a percentage of crashes due to brake failure
  - Eliminate the at-grade intersection of Route 44 and Route 10/Nod Road and replace with a grade separated crossing to provide a more comprehensive approach to brake failures and other crash patterns.





## Chronological Events cont.

- Department officials met with Avon's Town Council to present its findings and solicit input on the various recommendations – 12/12/2005
  - *Supported Project #4-123 and concerned with any delay of its schedule!*
  - *Supported proposed short-term improvements.*
  - *Requested rendering of vehicle arresting barrier and grade separated crossing of Routes 44 & 10 prior to receiving town support.*



# Chronological Events cont.

## Project #4-123

### ● Neighborhood meetings

- considered comments and concerns in regards to the proposed modifications of Route 44 – 1/31/2006 & 2/2/2006

### ● AMTF & Project designers refine the design Project 04-123

- Address cross-over type accidents
- Median treatments



## Chronological Events cont.

- Governor Rell has the State of Connecticut's web site modified to allow for public suggestions to address safety concerns on Avon Mountain – 2/2006
- DOT receives 338 suggestions from the public – 2/2006 thru 8/2006
  - **80% of input "address travel speed"**
  - **Install truck recovery system**
- DOT analyzed suggestions and responded to each.



## Chronological Events cont.

- **Traffic calming features in Project 4-123**
  - Uniform curvature (45 MPH)
  - Curves softened not straightened
  - Landscaping median and roadside
  - Additional westbound police ticketing area in the vicinity of MacDonald Park





## Chronological Events cont.

- Public Hearing held on 5/31/2006 – improvements supported by town officials and public.



## Chronological Events cont.

- Town adopted latest Plan of Conservation and Development, highlighting the importance of integrating open space, recreational trails, and the area's historic character into any future safety improvement (5/2006)
- Department initiates Project #04-127 to study safety improvements alternatives at the Route 44 and Route 10/Nod Road intersection - started 7/06



## Chronological Events cont.

**Westbound truck experiences brake failure and crashes into furniture store  
– 9/7/2007**



## Chronological Events cont.

- Special meeting of the State Traffic Commission held to address and take action on traffic safety issues on Route 44 in the Towns of Avon and West Hartford, **Truck Ban (over 13 tons) put in effect** - 9/12/2007
- Commissioner issues an emergency declaration to install a Truck Escape Ramp on Route 44 – 10/1/2007
- Construction of Truck Escape Ramp started – 11/16/2007
- Truck Escape Ramp operational & truck ban over Avon Mountain rescinded– 2/21/2008

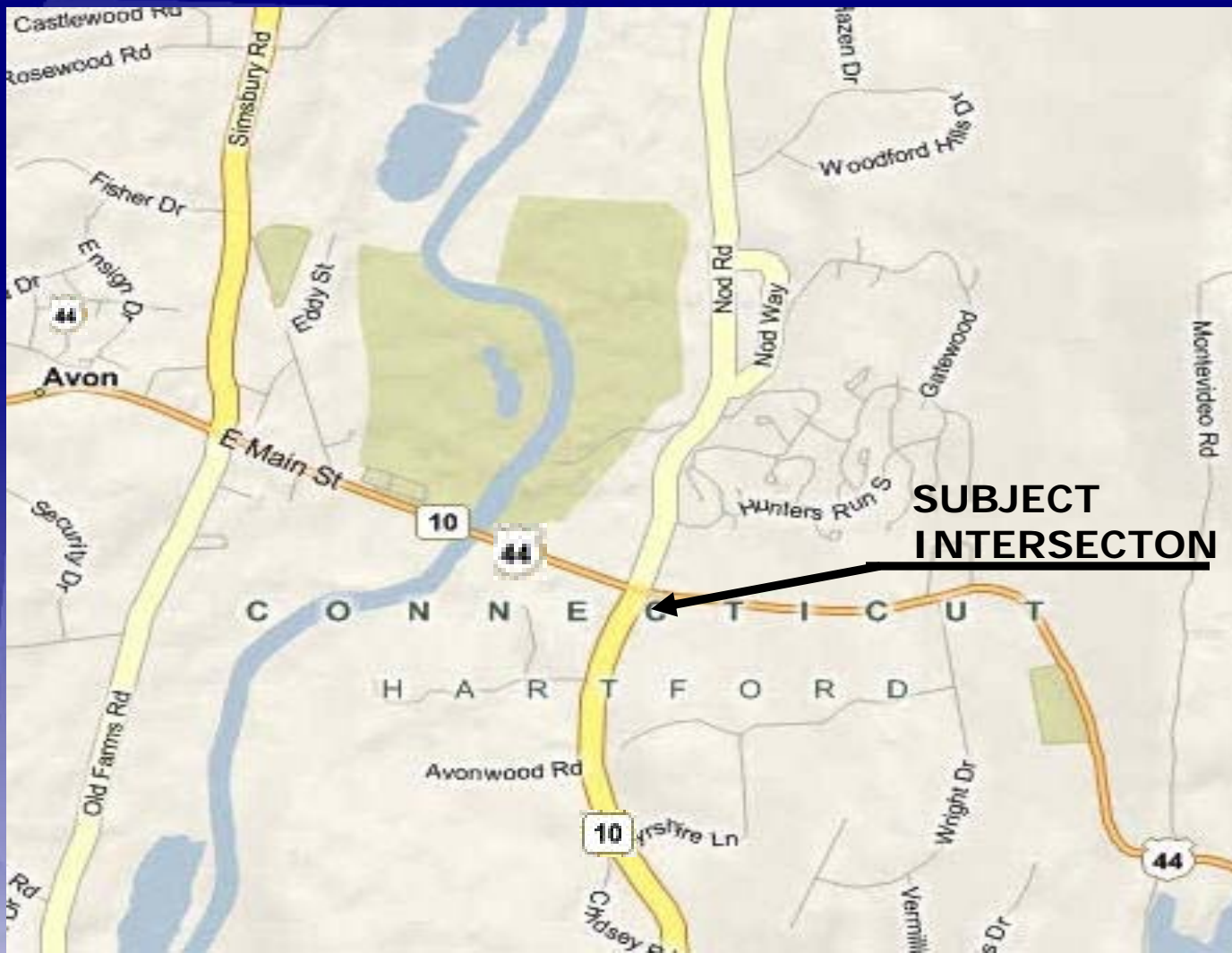




**Route 44 at**  
**Route 10 and Nod Road**

*Considerations*  
*to eliminate*  
*the major intersection*  
*at the base of Avon Mountain*





Location Map



# Historical Perspective

Connecticut  
Department of Transportation





**Rte. 44 Facing East, 1963**





**Rte. 44 Facing West, 1963**



Rte. 44 Facing West, 1963



**Rt. 44**

**Avon Old Farms Inn**

**Rt. 10**

**Aerial view  
Rte. 44 & Rte. 10 - 1969**





**Aerial view, Rte 44 & Rte 10, 2007**

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# Route 44 at Route 10 and Nod Road

## Existing Conditions

- Safety Concerns
- Accident history
- Truck Recovery Ramp
- Rural and historic area





# Safety Concerns

- **Steep vertical grade**

- Location of a major signalized intersection
- Lack of adequate landing area
- Length of traffic queues
- Brake failures
- Wet pavement conditions
- High running speeds on Route 44 thru intersection

- **Size of intersection**

- Intersection of two principal arterial roadways
- Duration of signal cycle
- High volume of traffic
- Longer exposure to turning vehicles due to larger turning radii



# Collision Data 2001-2005

## 111 Collisions

### - Types

 63% Rear End type

 7% turning-opposite direction

### - Contributing Factors

 56% Following too closely

 12% Failure to grant ROW

 7% Defective equipment (brake failures)  
25% of all WB collisions

### - Injuries

 4 Fatalities

 46 Injuries



**ACCIDENT EXPERIENCE  
INTERSECTION OF ROUTE 44 & ROUTE 10/MOD ROAD  
FROM JANUARY 1, 2001 TO DECEMBER 31, 2005**

*NUMBER OF ACCIDENTS - 111  
ACCIDENT TYPES - REAR-END 63%  
BRAKE FAILURES - 0  
INJURIES - 46, FATALITIES 4*

# Brake Failures

- **11 Collisions due to brake failure between 1996 and 2007**
  - 4 fatalities/29 injuries
  - 4 dump trucks
  - 3 cars
  - 2 tractor trailers
  - 1 school bus
  - 1 passenger van
- **Brake failures, not causing accidents, were not reported**





## Pedestrian safety concerns

- **2 accidents resulting in 3 fatalities**  
**Pedestrian** (8/24/1996 & 1/16/1998)
  - Crossing between Avon Old Farms Hotel and Avon Old Farms Restaurant





# Truck Recovery Ramp

- **Significantly addresses collisions due to brake failures**
  - Vehicles must be experiencing brake failures prior to the entrance to the Truck Recovery System (approximately 1,300 feet from the intersection).



# Eliminate intersection of Route 44/Route 10 & Nod Road

- **Comprehensive approach to address safety concerns and traffic operational difficulties**
  - Addresses most accident patterns
  - Eliminates a major intersection at the bottom of a long steep vertical grade.
  - Eliminates stopping on a steep grade
  - Eliminates traffic queues on a steep grade
  - Addresses brake failures – coupled with the Truck Recovery Ramp
  - Eliminates left-turn movements



# Grade Separation of Route 44 and Route 10/Nod Road

- Review of conceptual improvements
  - Various alternatives considered
  - Digital rendering
    - ✎ Digital design of roadway horizontal & vertical alignments
    - ✎ Roadside features (variable)
  - Operational changes
  - Impacts (property, environmental)
  - Community considerations
  - Estimated costs
  - Concept development









# Alternative concept

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**Alternative concept**





# Alternative concept







# Preferred Alternative

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Department of Transportation







**Intersection  
Reconstruction  
Existing  
Route 44 & 10  
Avon**





**Nod Road**

**Route 44**

**Route 10**

**Intersection  
Reconstruction  
Existing  
Route 44 & 10  
Avon**





**Blue Fox  
Run Golf  
Course**

**Hunter's Run  
Condominiums**

**Avon Old Farms  
Restaurant**

**Avon Old  
Farms Hotel**

**Nassau  
Furniture**

**Apple  
Health Care**

**Women's  
Health**

**River Mead  
Condominiums**

**Intersection  
Reconstruction  
Existing  
Route 44 & 10  
Avon**



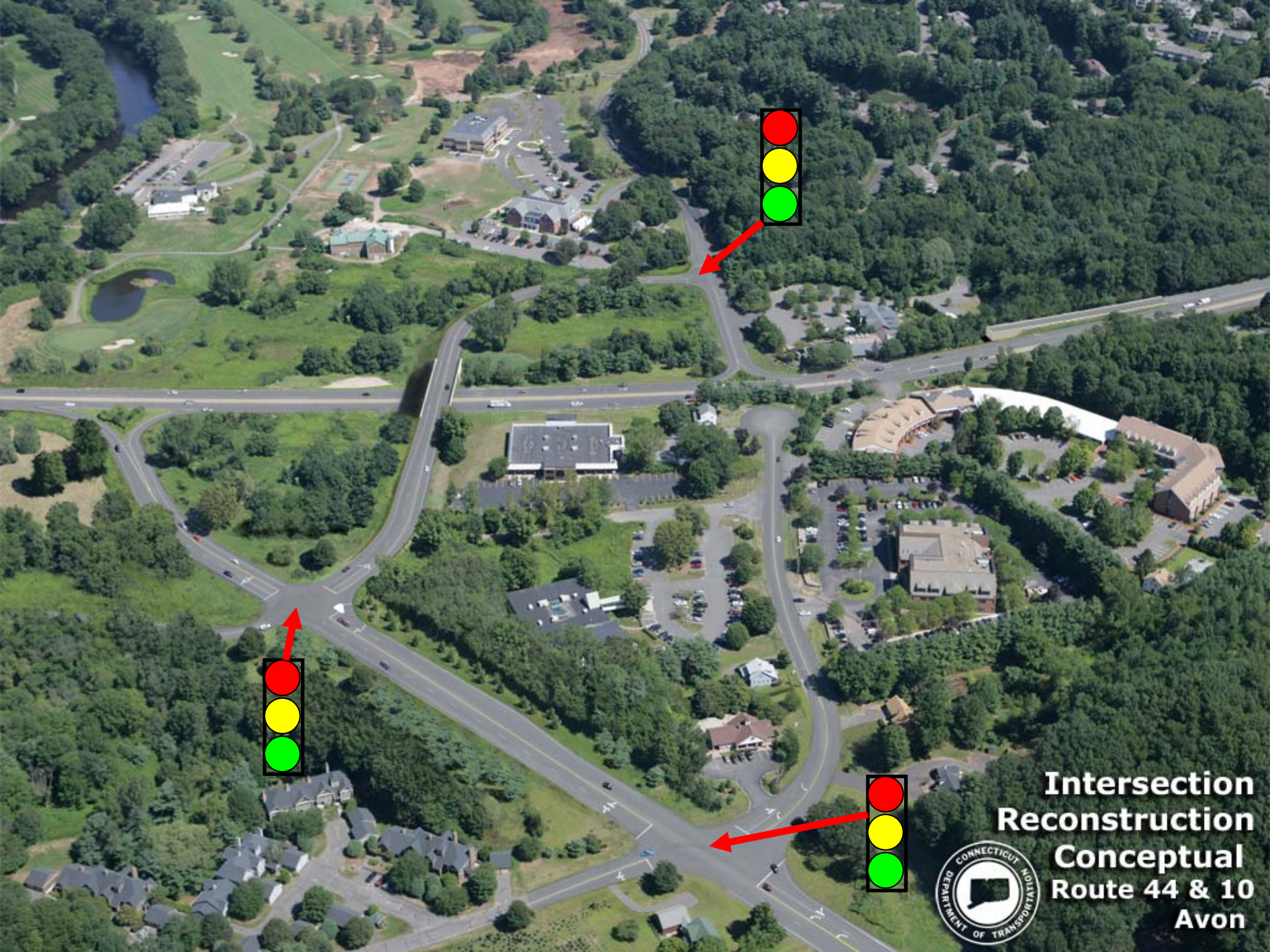




**Intersection  
Reconstruction  
Conceptual  
Route 44 & 10  
Avon**







**Intersection  
Reconstruction  
Conceptual  
Route 44 & 10  
Avon**





**New Truck  
Escape Ramp**



**Intersection  
Reconstruction  
Conceptual  
Route 44 & 10  
Avon**





**New Connector  
Road over  
Route 44**

**New Truck  
Escape Ramp**



**Intersection  
Reconstruction  
Conceptual  
Route 44 & 10  
Avon**





**New Connector  
Road over  
Route 44**

**New Truck  
Escape Ramp**



**Route 10  
Realigned**



**Intersection  
Reconstruction  
Conceptual  
Route 44 & 10  
Avon**





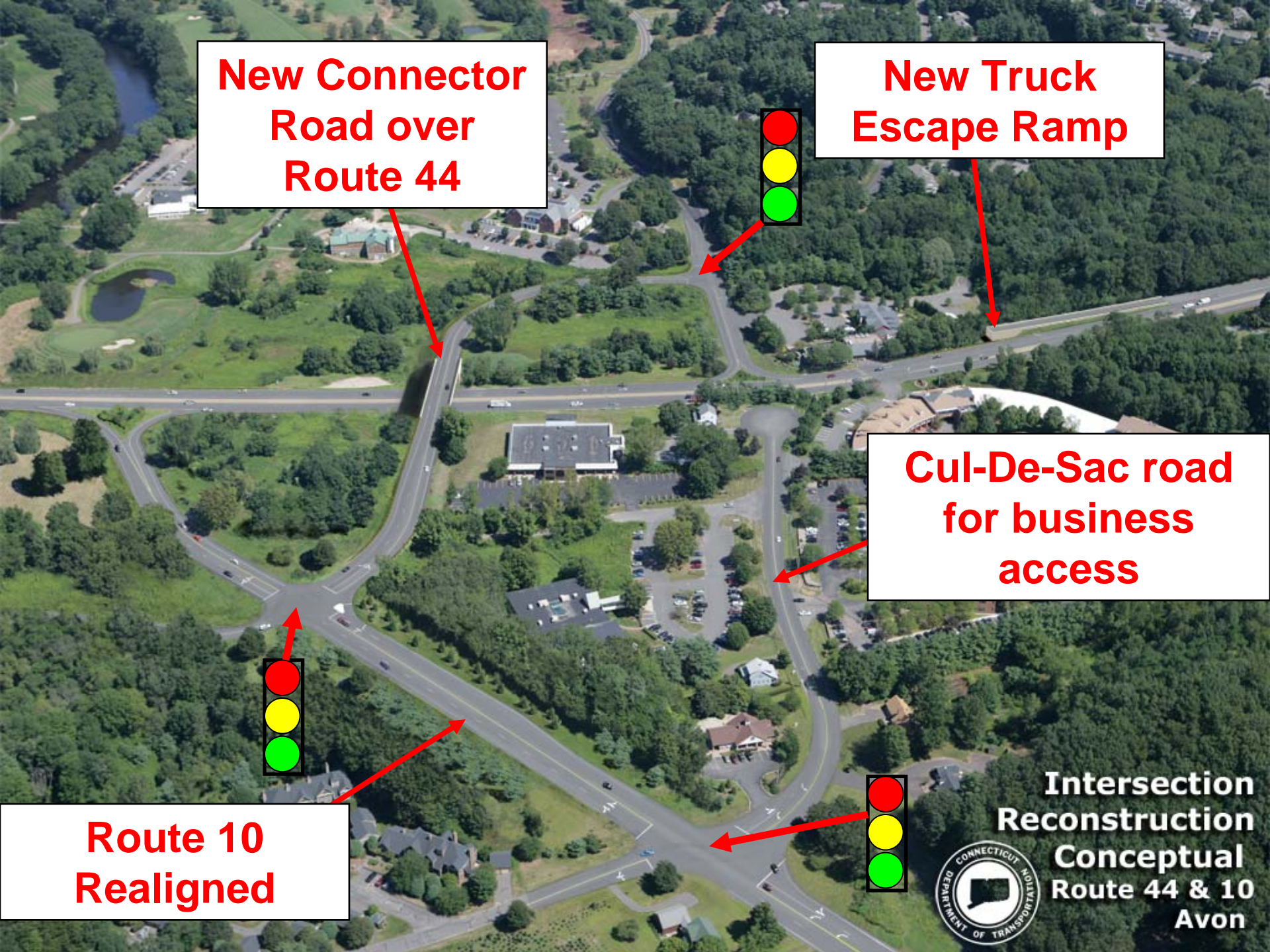
**New Connector  
Road over  
Route 44**

**New Truck  
Escape Ramp**

**Cul-De-Sac road  
for business  
access**

**Route 10  
Realigned**

**Intersection  
Reconstruction  
Conceptual  
Route 44 & 10  
Avon**



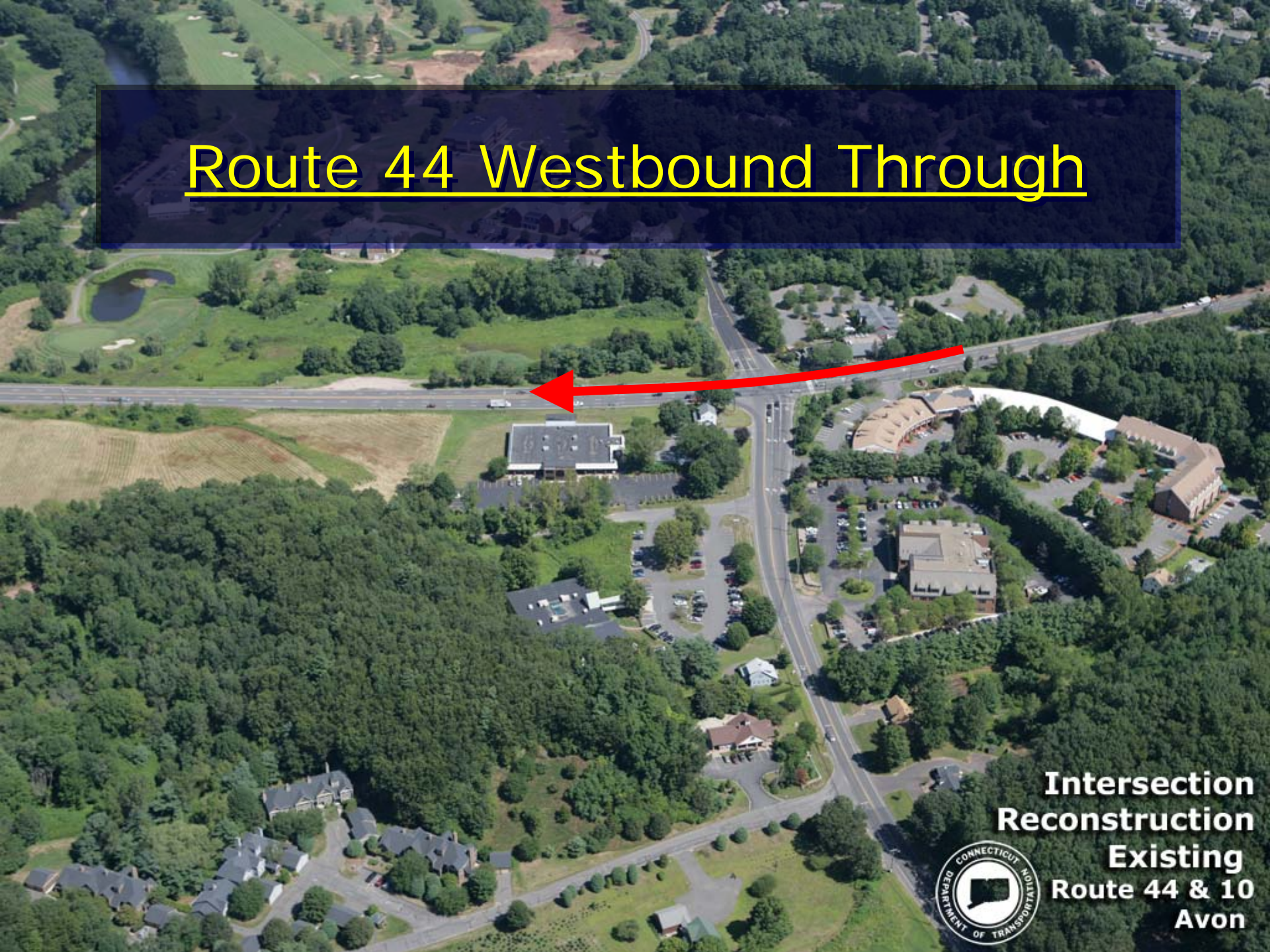
# Elimination of at-grade intersection

## Review of Vehicle Movements





# Route 44 Westbound Through



**Intersection  
Reconstruction  
Existing  
Route 44 & 10  
Avon**





# Route 44 Westbound Through

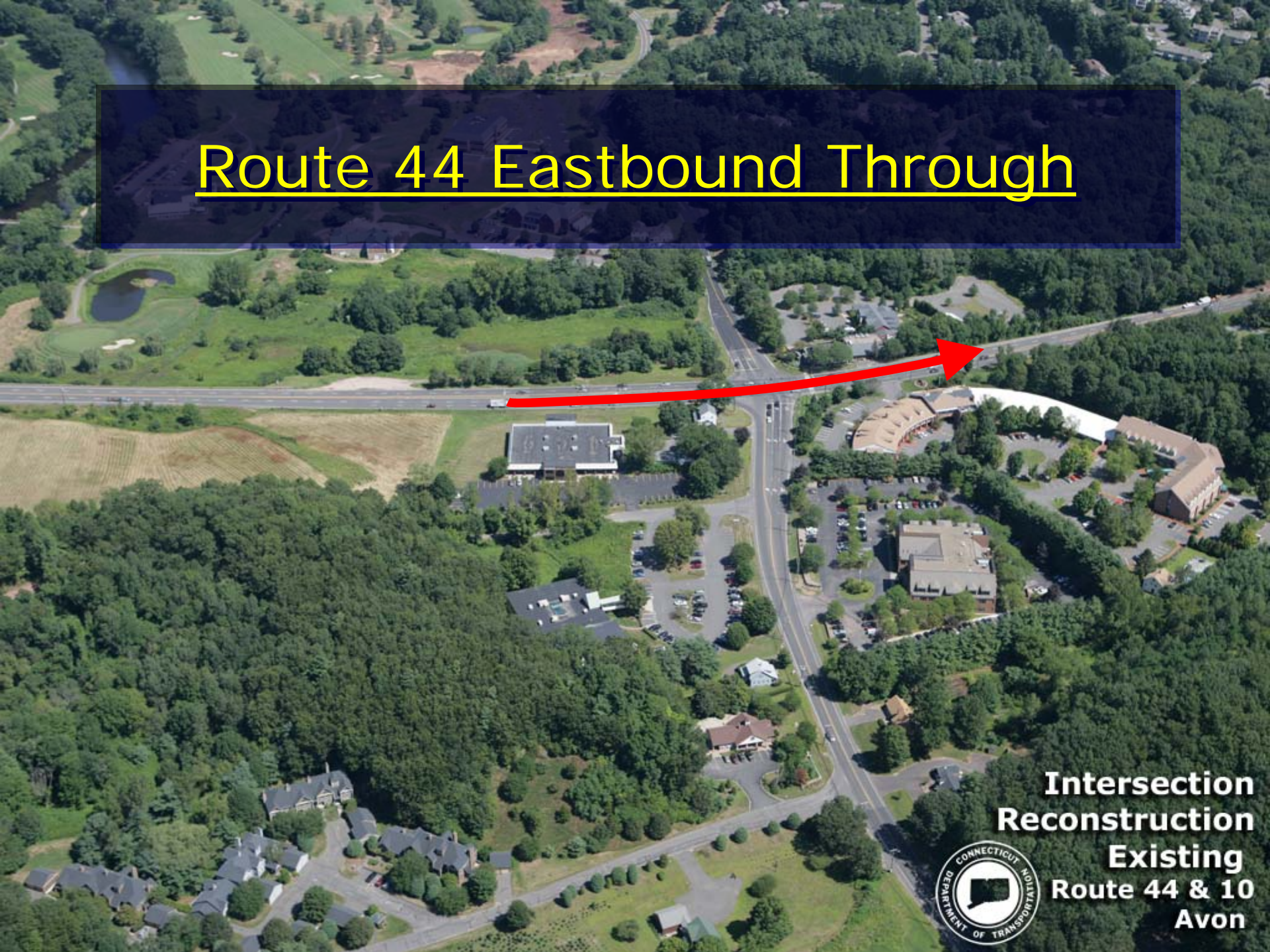


**Intersection  
Reconstruction  
Conceptual  
Route 44 & 10  
Avon**





# Route 44 Eastbound Through



**Intersection  
Reconstruction  
Existing  
Route 44 & 10  
Avon**





# Route 44 Eastbound Through

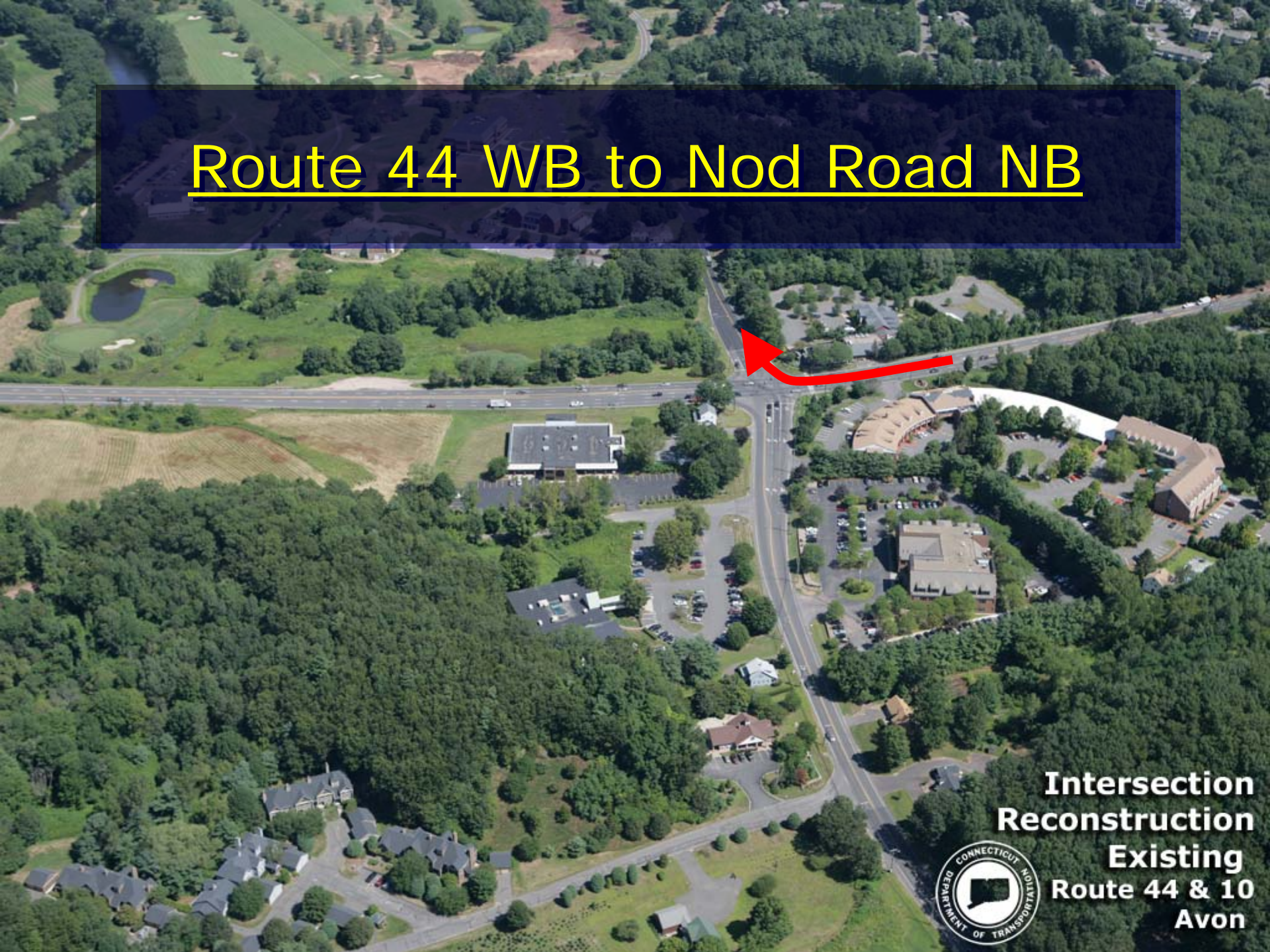


**Intersection  
Reconstruction  
Conceptual  
Route 44 & 10  
Avon**





# Route 44 WB to Nod Road NB

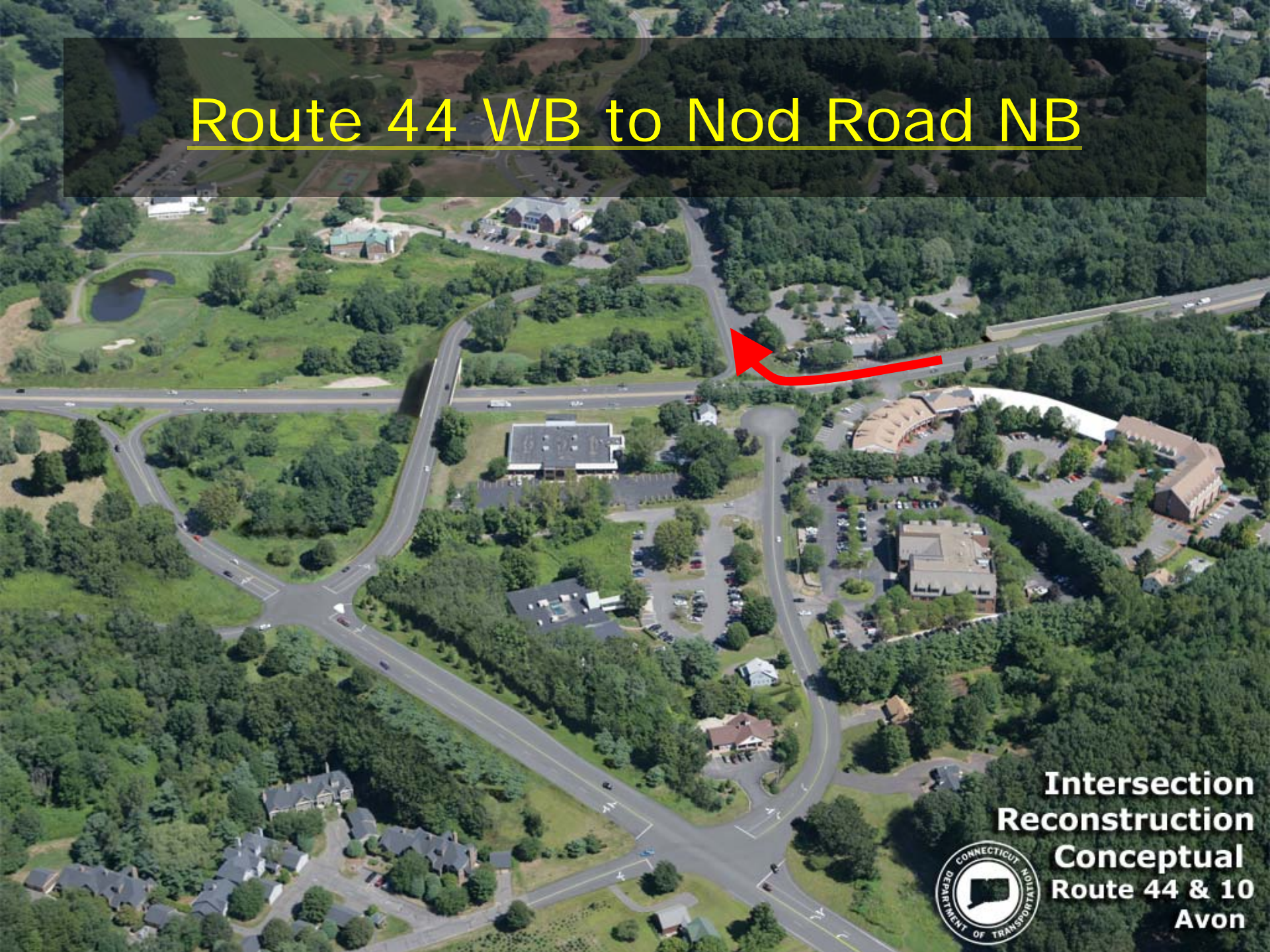


**Intersection  
Reconstruction  
Existing  
Route 44 & 10  
Avon**





# Route 44 WB to Nod Road NB



**Intersection  
Reconstruction  
Conceptual  
Route 44 & 10  
Avon**





# Nod Road SB to Route 44 WB



**Intersection  
Reconstruction  
Existing  
Route 44 & 10  
Avon**





# Nod Road SB to Route 44 WB



**Intersection  
Reconstruction  
Conceptual  
Route 44 & 10  
Avon**





# Route 44 WB to Rte 10 SB



**Intersection  
Reconstruction  
Existing  
Route 44 & 10  
Avon**





# Route 44 WB to Rte 10 SB

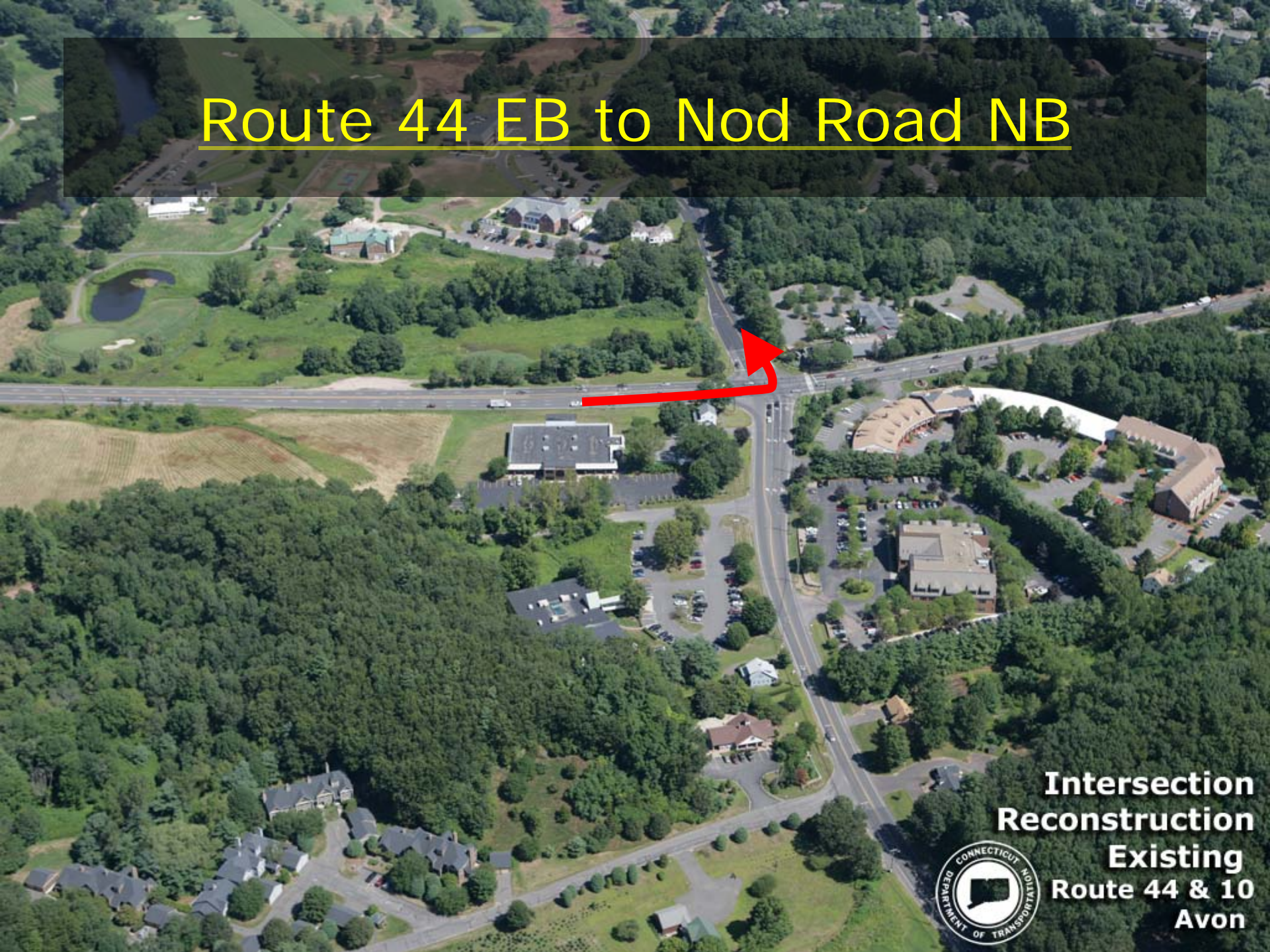


**Intersection  
Reconstruction  
Conceptual  
Route 44 & 10  
Avon**





# Route 44 EB to Nod Road NB



**Intersection  
Reconstruction  
Existing  
Route 44 & 10  
Avon**





# Route 44 EB to Nod Road NB



**Intersection  
Reconstruction  
Conceptual  
Route 44 & 10  
Avon**





# Route 44 EB to Route 10 SB

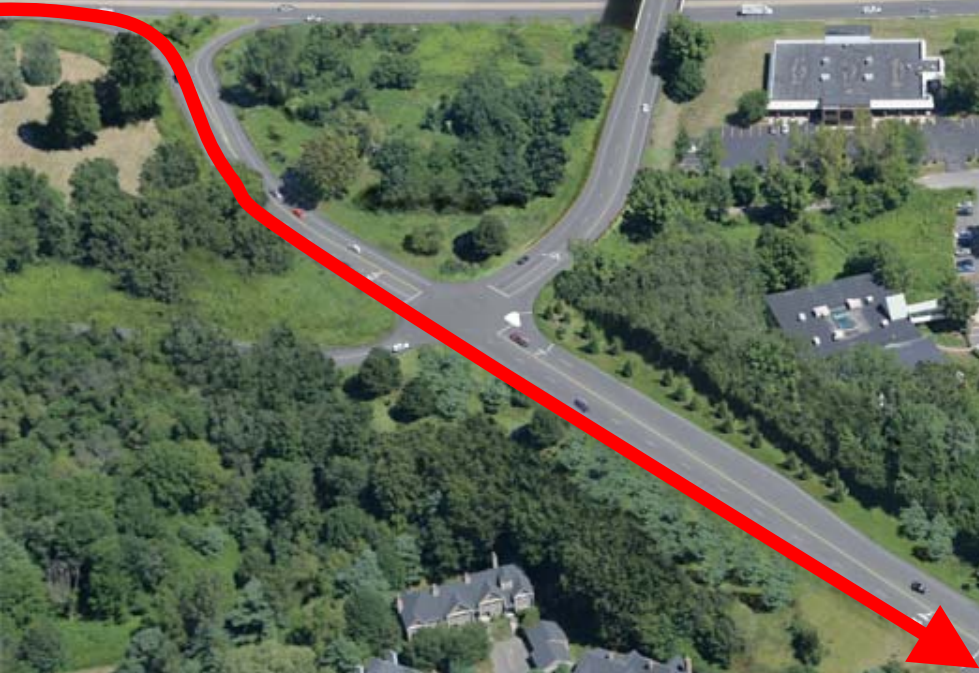


**Intersection  
Reconstruction  
Existing  
Route 44 & 10  
Avon**





# Route 44 EB to Route 10 SB



**Intersection  
Reconstruction  
Conceptual  
Route 44 & 10  
Avon**





# Route 10 NB to Route 44 WB



**Intersection  
Reconstruction  
Existing  
Route 44 & 10  
Avon**





# Route 10 NB to Route 44 WB

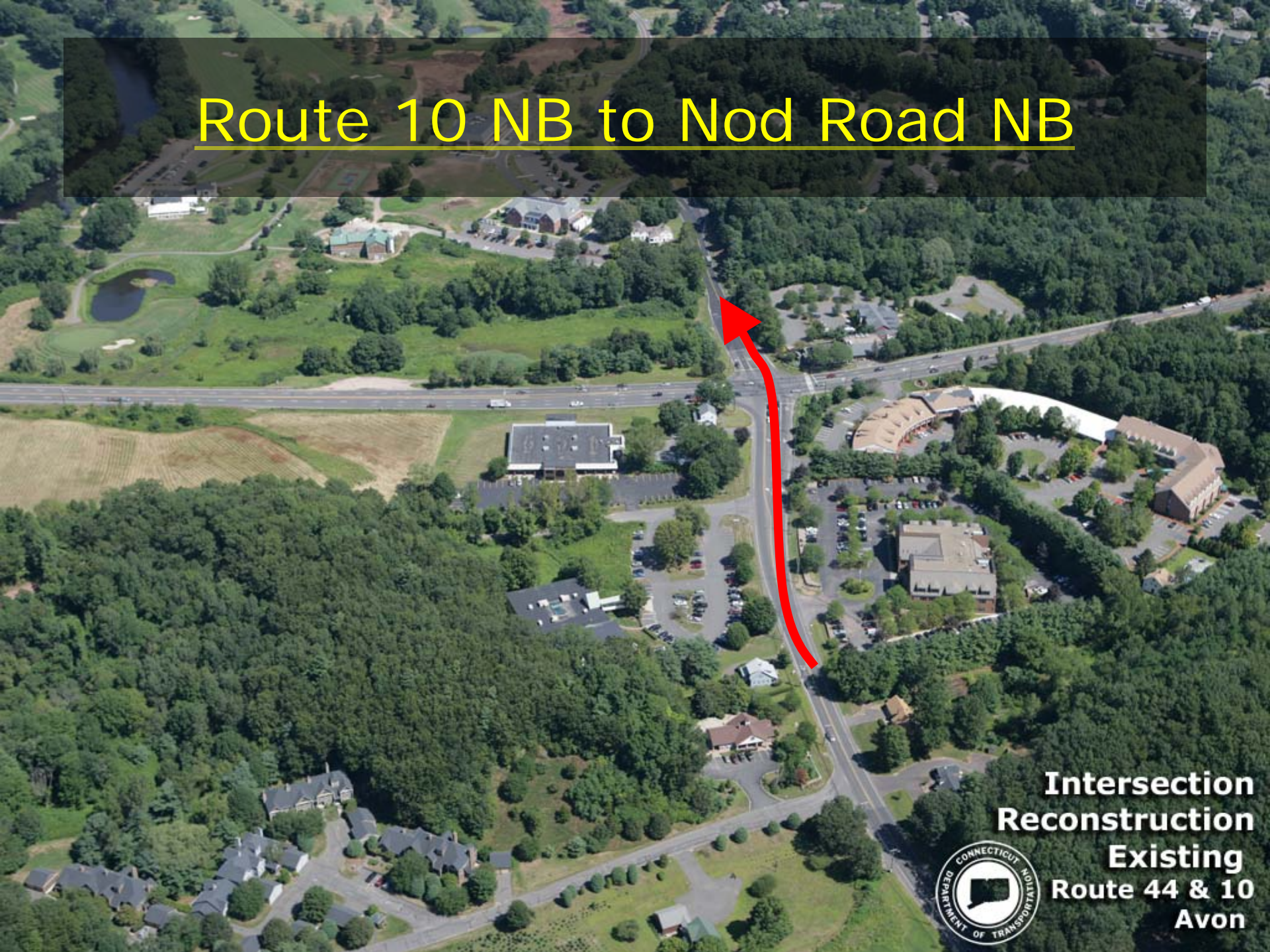


**Intersection  
Reconstruction  
Conceptual  
Route 44 & 10  
Avon**





# Route 10 NB to Nod Road NB

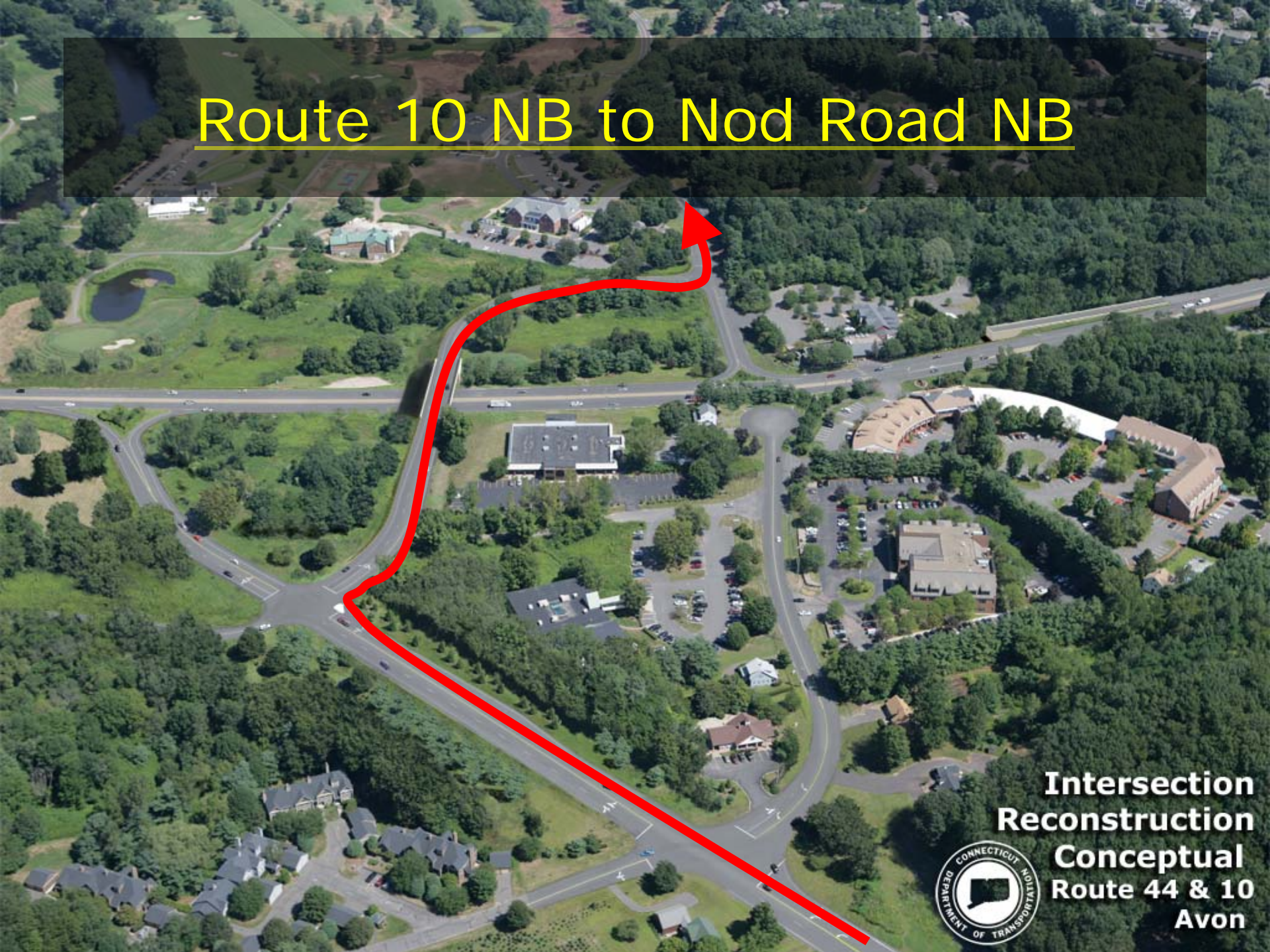


**Intersection  
Reconstruction  
Existing  
Route 44 & 10  
Avon**





# Route 10 NB to Nod Road NB



**Intersection  
Reconstruction  
Conceptual  
Route 44 & 10  
Avon**





# Route 10 NB to Route 44 EB

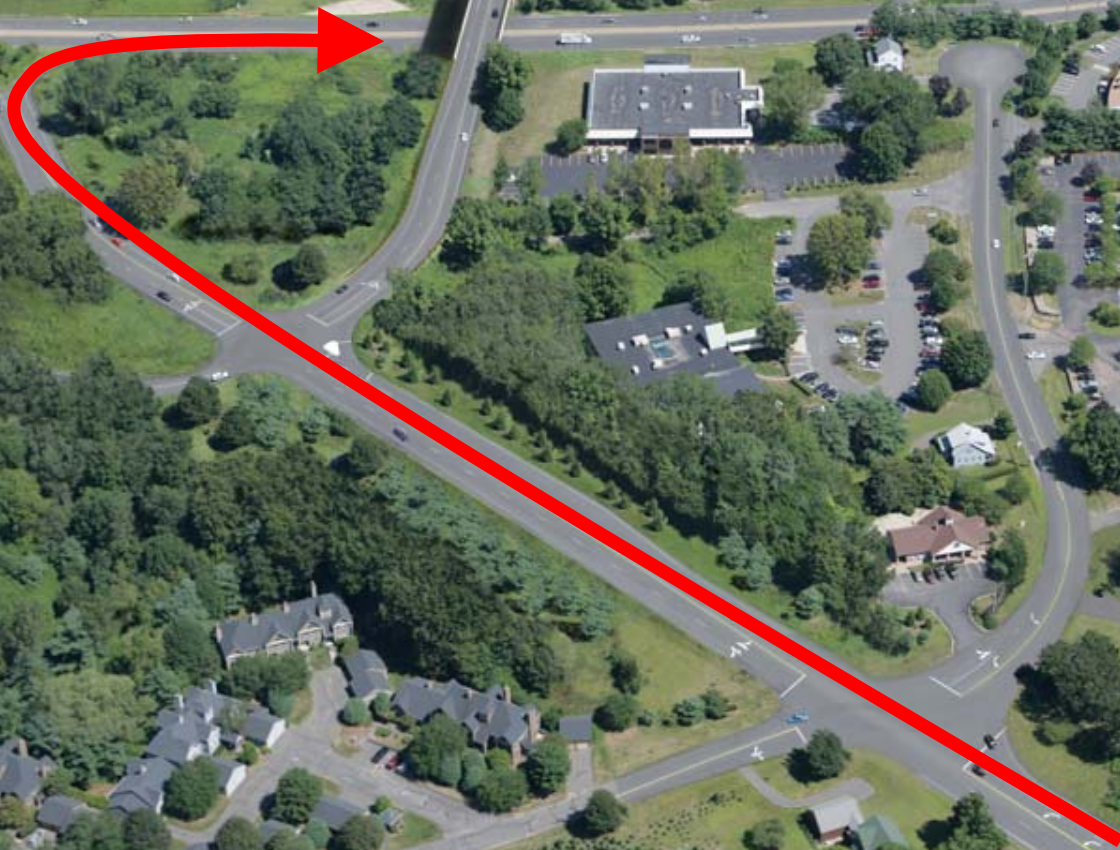


**Intersection  
Reconstruction  
Existing  
Route 44 & 10  
Avon**





# Route 10 NB to Route 44 EB



**Intersection  
Reconstruction  
Conceptual  
Route 44 & 10  
Avon**





# Nod Road SB to Route 44 EB



**Intersection  
Reconstruction  
Existing  
Route 44 & 10  
Avon**





# Nod Road SB to Route 44 EB



**Intersection  
Reconstruction  
Conceptual  
Route 44 & 10  
Avon**





# Nod Road SB to Route 10 SB



**Intersection  
Reconstruction  
Existing  
Route 44 & 10  
Avon**





# Nod Road SB to Route 10 SB



**Intersection  
Reconstruction  
Conceptual  
Route 44 & 10  
Avon**





# Vehicle Movements

- 68% of all traffic movements stay the same or similar







**Intersection  
Reconstruction  
Conceptual  
Route 44 & 10  
Avon**





# Anticipated Impacts

## ● Right of Way

- 11 partial property acquisitions including a section of Alsop Meadow (preserved open space)

## ● Environmental (Required Permits & Documents)

- Federal Environmental Assessment
- State Environmental Impact Evaluation
- Flood Plain Management, Inland Wetland, Army Corp and Storm Water Discharge
- 6F (for acquisition of preserved open space)
- May require Section 4(f) (for impacts to historical or archaeological resources.)

## ● Estimated Construction Costs

- 30 to 40 million dollars





**Approximate Limits  
of Alsop Meadows**



**Intersection  
Reconstruction  
Conceptual  
Route 44 & 10  
Avon**





**Approximate  
Floodway Limits**



**Intersection  
Reconstruction  
Conceptual  
Route 44 & 10  
Avon**





# Community Considerations

- **Speed control – traffic calming**
  - Boulevard-style median/roadside landscaping
  - Additional locations for police ticketing areas
  - Shape/size of bridge opening
- **Aesthetic treatments**
  - Bridge type, style & surface treatment
  - Pavement treatments
  - Landscaping (volume, variety and locations)
    - ✍ Gateway treatments





## Community Considerations cont.

- **Residential Issues** (River Mead Condominiums & others)
  - **Raised landscaped buffers**
- **Business concerns**
  - **Some access revisions**
  - **Signing**





## Community Considerations cont.

- Pedestrian/bicycle linkages
- Fully integrate the intersection and overpass with local preservation & recreational goals by:
  - Incorporating trails/access to the Farmington River
  - Work with the community to develop a design consistent with the scale and character of the area.





## Concept Development

- Continue stakeholder meetings
- Engage town/local resources in advancing concept
- Possible charrette
- Public informational meeting
- Town Council support





# End of Presentation

- Questions & discussion

