



CROWELL ROAD INTERSECTION DESIGN PROJECT

Main Street/Crowell Road/Queen Anne Road/ Depot Road



CHATHAM | PUBLIC INFORMATION MEETING

OCTOBER 16, 2017



HOWARD STEIN HUDSON

Engineers + Planners



Agenda

CROWELL ROAD INTERSECTION DESIGN PROJECT

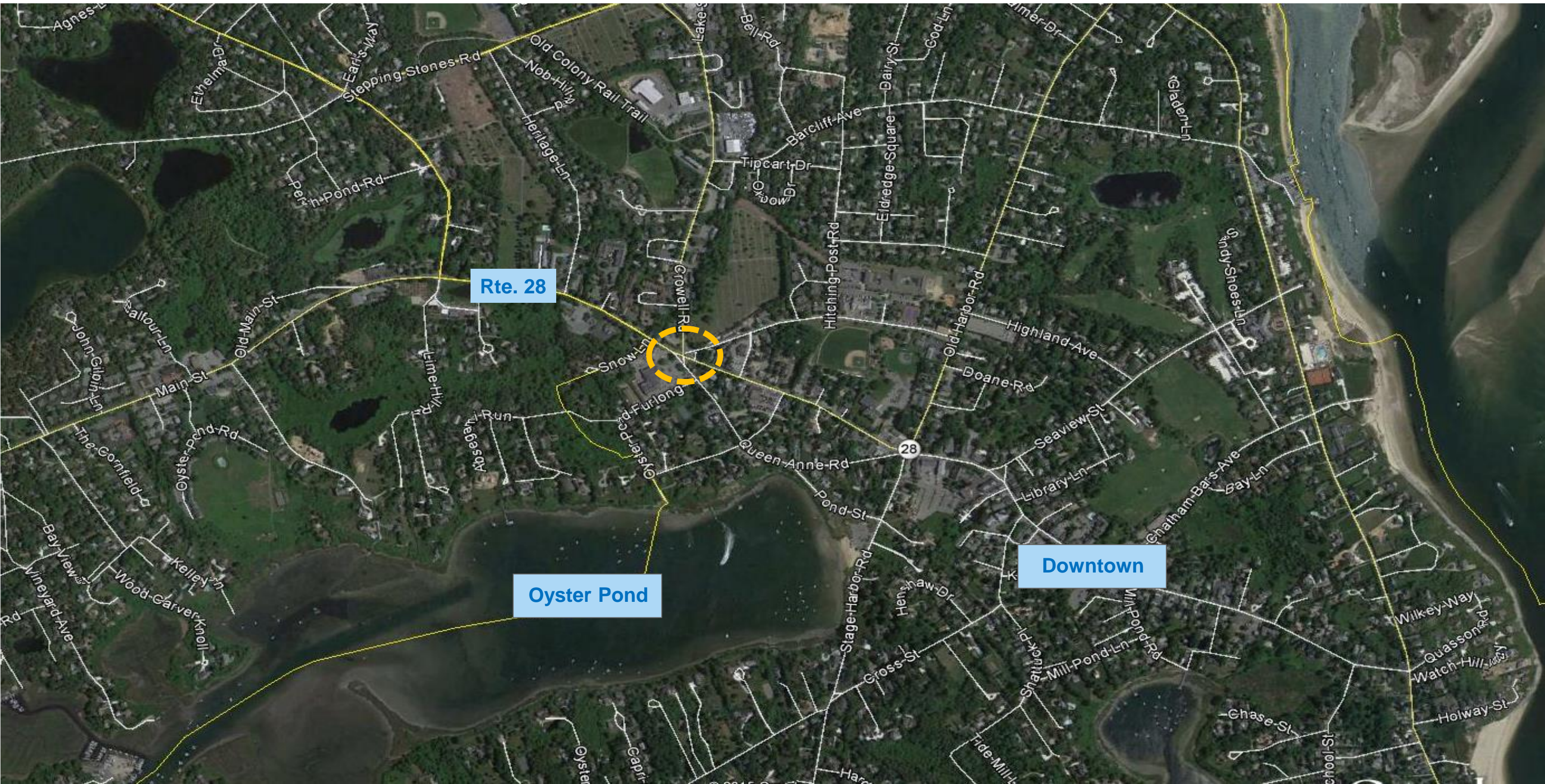
- Project Area
- Current Project History
- Existing Field Observations
- 2017 Design Concepts (HSH)
- Next Steps/Process
- Questions and Comments





Project Area

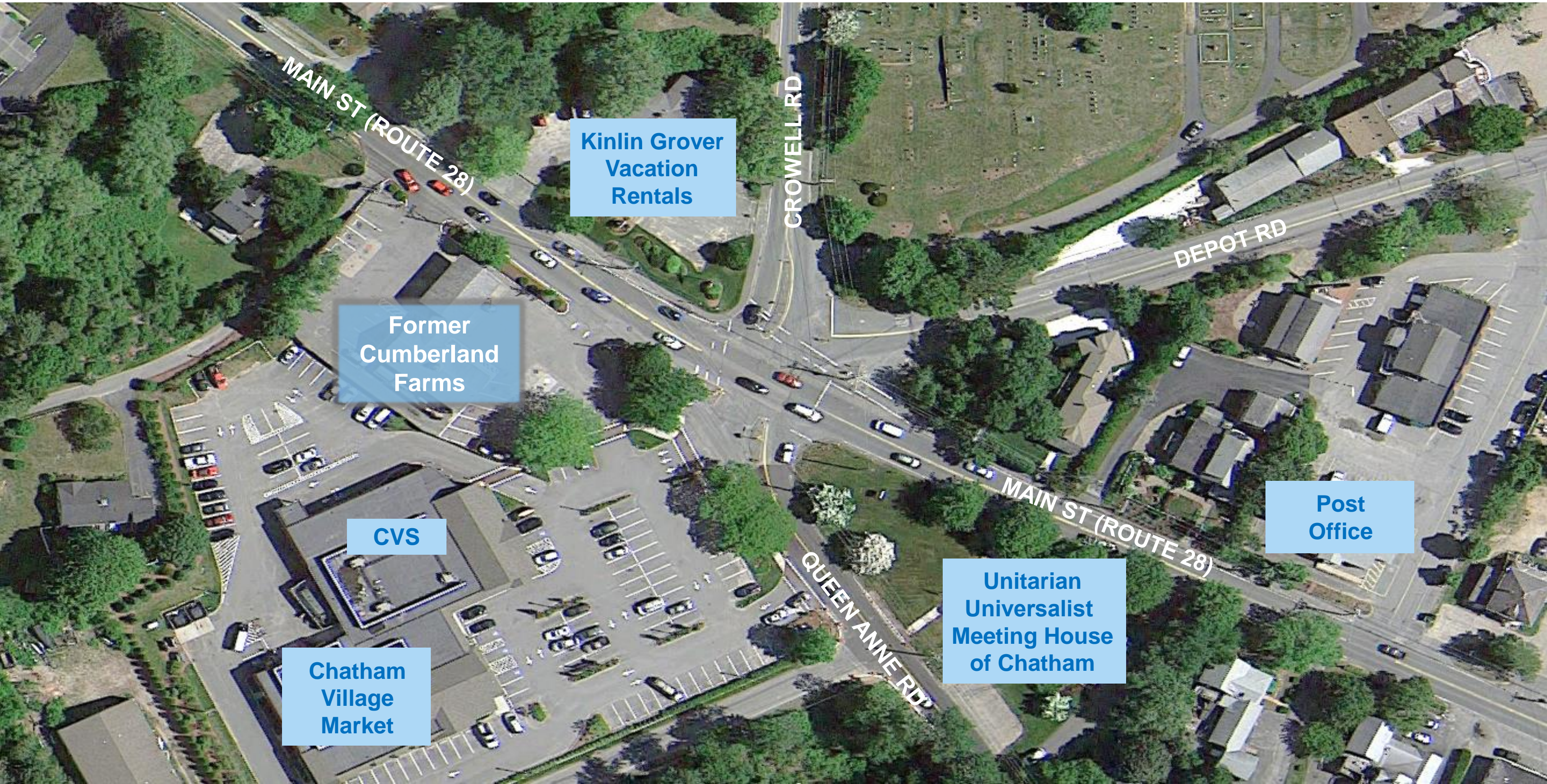
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Project Area

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**Kinlin Grover
Vacation
Rentals**

**Former
Cumberland
Farms**

CVS

**Chatham
Village
Market**

**Unitarian
Universalist
Meeting House
of Chatham**

**Post
Office**



Current Project History

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- **Town's Comprehensive Plan (2003)**
- **Public Outreach Meeting #1 – June 22, 2015**
- **Abutter Interviews – June 2015**
- **Town of Chatham and MassDOT Agency Coordination Meetings**
 - May 5, 2015
 - January 18, 2017
- **Appearance before Board of Selectmen – August 15, 2017**
 - 60 day comment period – extended to October 20, 2017
- **Public Outreach Meeting #2 – October 16, 2017 – *tonight***





HSH 2014 Data Collection

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- **Survey Information**
- **Turning Movement Counts (TMCs)**
 - Thursday, Jun. 19, 2014
 - Saturday, Jun. 21, 2014
 - Saturday, Aug. 23, 2014
 - Saturday, Jul. 25, 2015
- **Automatic Traffic Recorder (ATRs)**
 - 3-day: Jun. 19-21, 2014

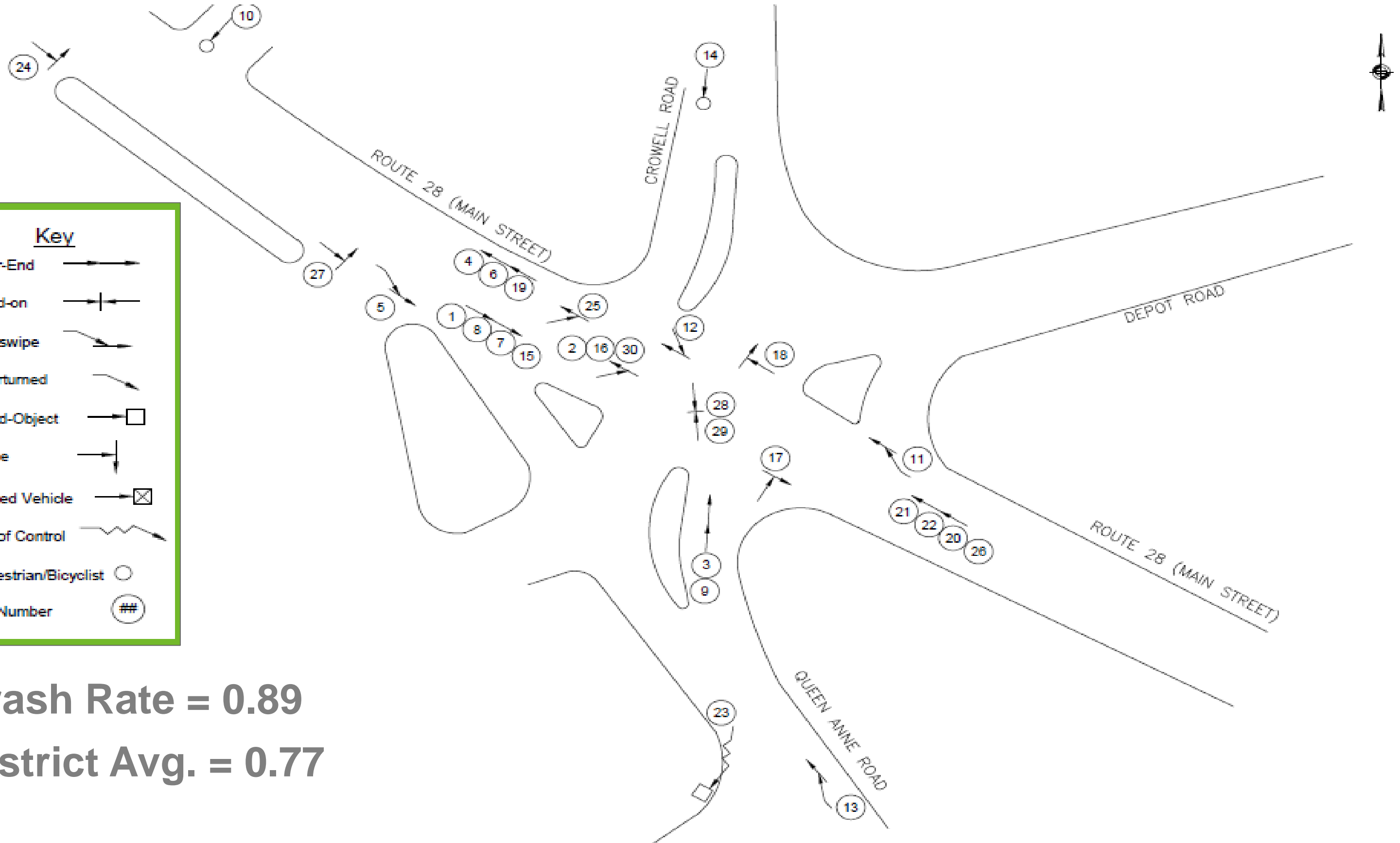


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Collision Diagram (01/2009 – 08/2014)

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Crash Rate = 0.89

District Avg. = 0.77



FIELD OBSERVATIONS

Main Street Looking East

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Extensive Queuing
“It’s impossible to turn left during the summer”





FIELD OBSERVATIONS

Main Street Looking East

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No Left-turn Lanes
Signal Indication Visibility



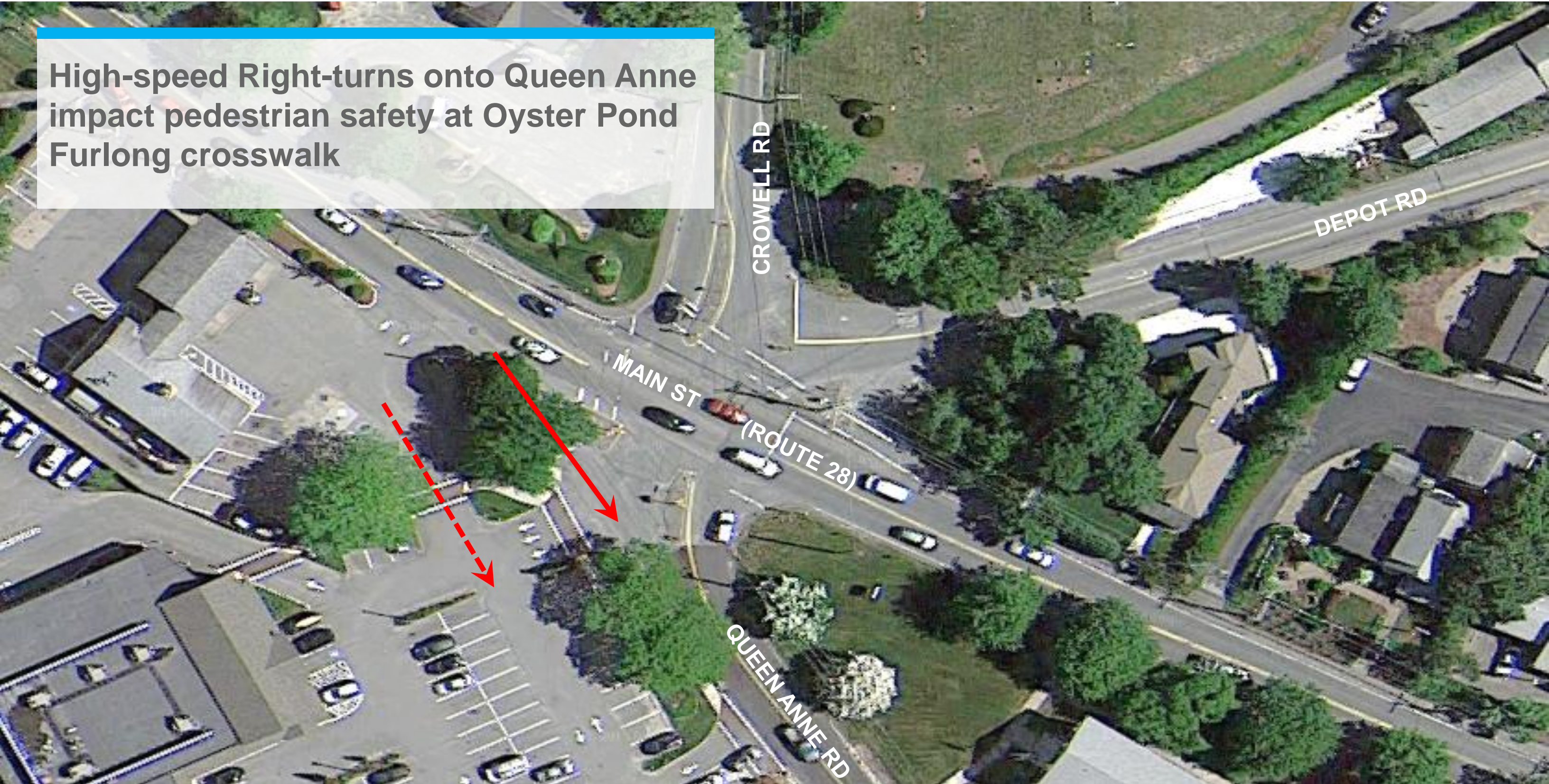


FIELD OBSERVATIONS

Aerial View

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High-speed Right-turns onto Queen Anne impact pedestrian safety at Oyster Pond Furlong crosswalk



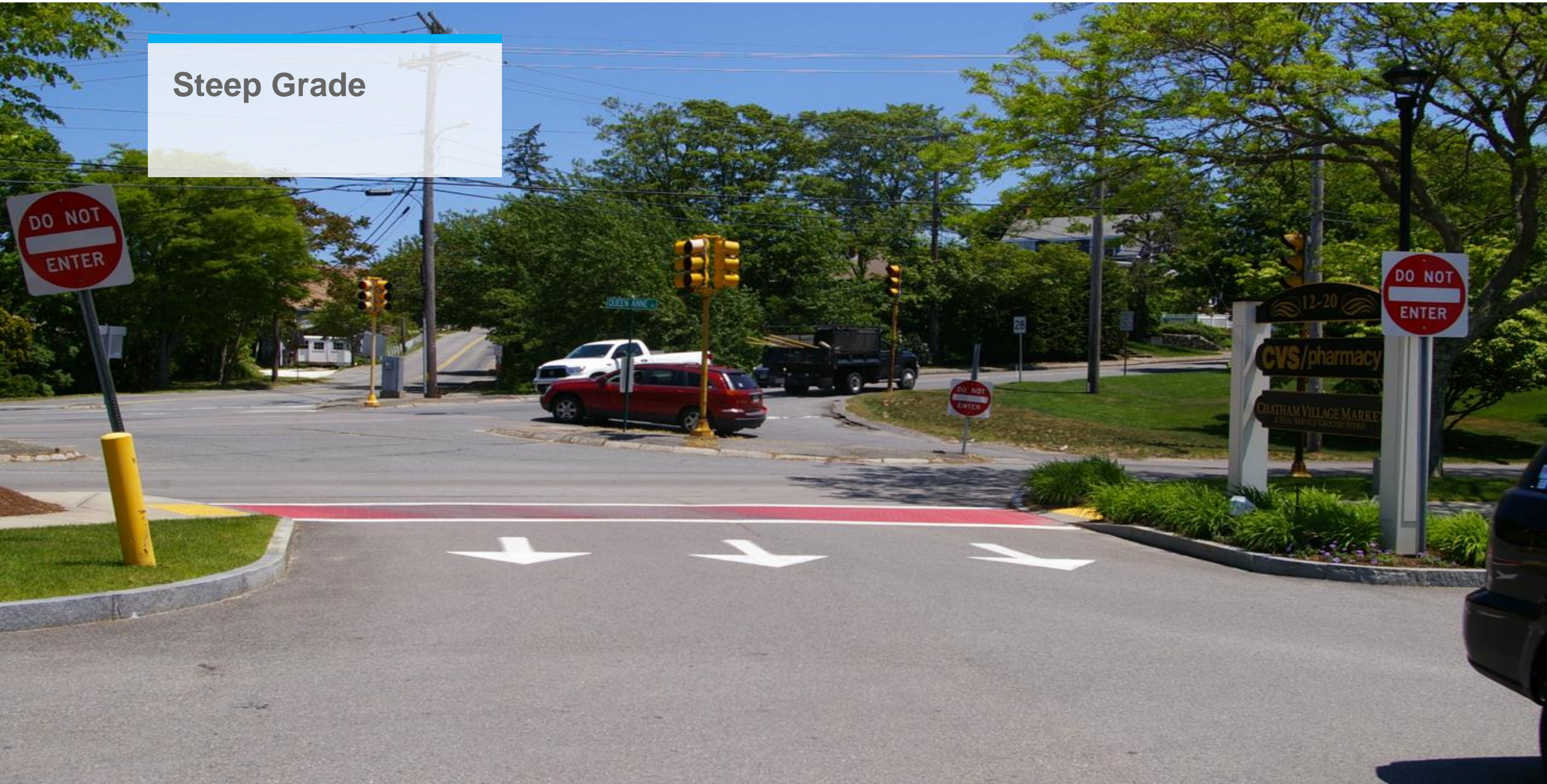


FIELD OBSERVATIONS

Chatham Village Market/CVS Looking North

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Steep Grade





FIELD OBSERVATIONS

Main Street Looking West

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Lack of left-turn lanes lead to queueing and driver aggression/confusion





FIELD OBSERVATIONS

Main Street Looking West

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No Southern Sidewalk
Narrow Shoulder
Steep Grade
Signal Visibility
Queuing Conditions





FIELD OBSERVATIONS

Depot Road Looking West

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Emergency Vehicle Access





FIELD OBSERVATIONS

Pedestrian Crossing at Main Street

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No Accessible Ramps
No Pedestrian Phase/
Signal Equipment





FIELD OBSERVATIONS

Crowell Road Looking South

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Limited Pedestrian Accommodations
Raised Islands
Signal Indications





FIELD OBSERVATIONS

Signal Equipment

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Pavement Condition
Antiquated signal equipment limits signal ability/fails when wet



FIELD OBSERVATIONS

Cyclists on Main Street

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Limited Bicycle
Accommodations





2017 Design Concepts

HSH Design started in 2014



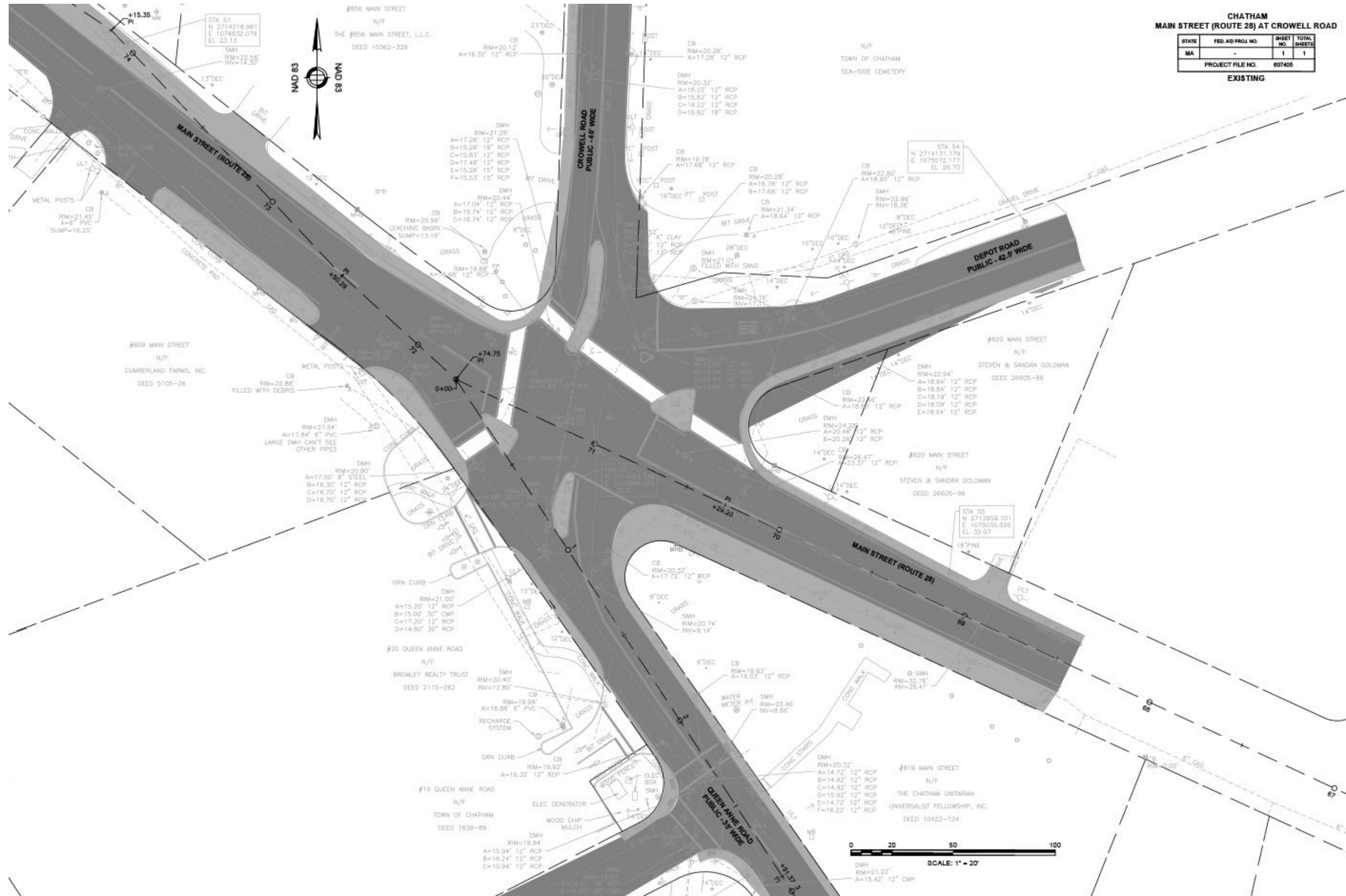
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Alternative 1 – No-Build

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Alternative 1 – No-Build

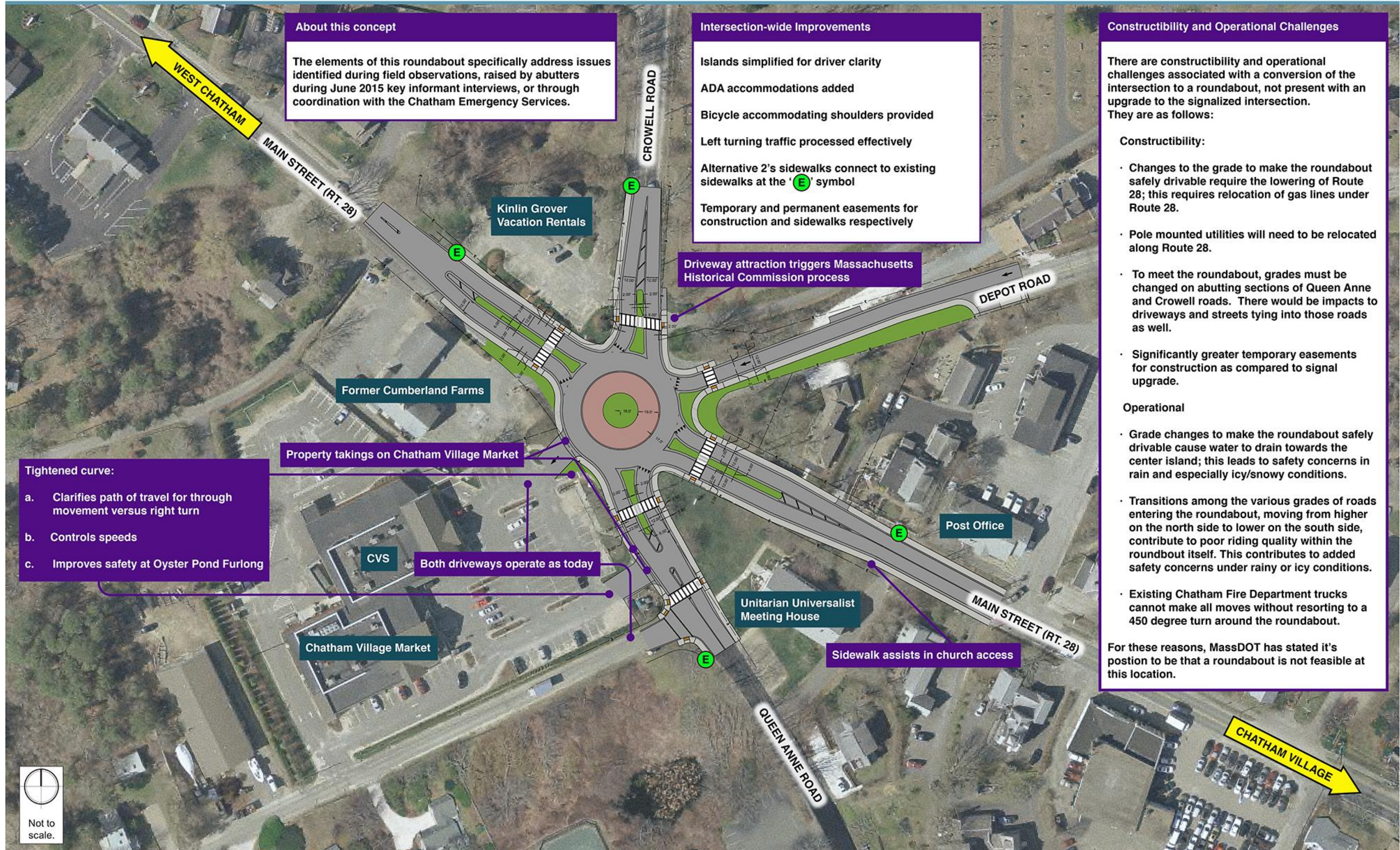
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- **The status quo**
- **No changes to:**
 - Roadway geometry
 - Signal equipment
 - Pedestrian accommodations
- **All documented concerns remain as today**





Alternative 2 - Roundabout



About this concept

The elements of this roundabout specifically address issues identified during field observations, raised by abutters during June 2015 key informant interviews, or through coordination with the Chatham Emergency Services.

Intersection-wide Improvements

- Islands simplified for driver clarity
- ADA accommodations added
- Bicycle accommodating shoulders provided
- Left turning traffic processed effectively
- Alternative 2's sidewalks connect to existing sidewalks at the 'E' symbol
- Temporary and permanent easements for construction and sidewalks respectively

Constructibility and Operational Challenges

There are constructibility and operational challenges associated with a conversion of the intersection to a roundabout, not present with an upgrade to the signalized intersection. They are as follows:

Constructibility:

- Changes to the grade to make the roundabout safely drivable require the lowering of Route 28; this requires relocation of gas lines under Route 28.
- Pole mounted utilities will need to be relocated along Route 28.
- To meet the roundabout, grades must be changed on abutting sections of Queen Anne and Crowell roads. There would be impacts to driveways and streets tying into those roads as well.
- Significantly greater temporary easements for construction as compared to signal upgrade.

Operational

- Grade changes to make the roundabout safely drivable cause water to drain towards the center island; this leads to safety concerns in rain and especially icy/snowy conditions.
- Transitions among the various grades of roads entering the roundabout, moving from higher on the north side to lower on the south side, contribute to poor riding quality within the roundabout itself. This contributes to added safety concerns under rainy or icy conditions.
- Existing Chatham Fire Department trucks cannot make all moves without resorting to a 450 degree turn around the roundabout.

For these reasons, MassDOT has stated it's position to be that a roundabout is not feasible at this location.

Tightened curve:

- Clarifies path of travel for through movement versus right turn
- Controls speeds
- Improves safety at Oyster Pond Furlong

Driveway attraction triggers Massachusetts Historical Commission process

Property takings on Chatham Village Market

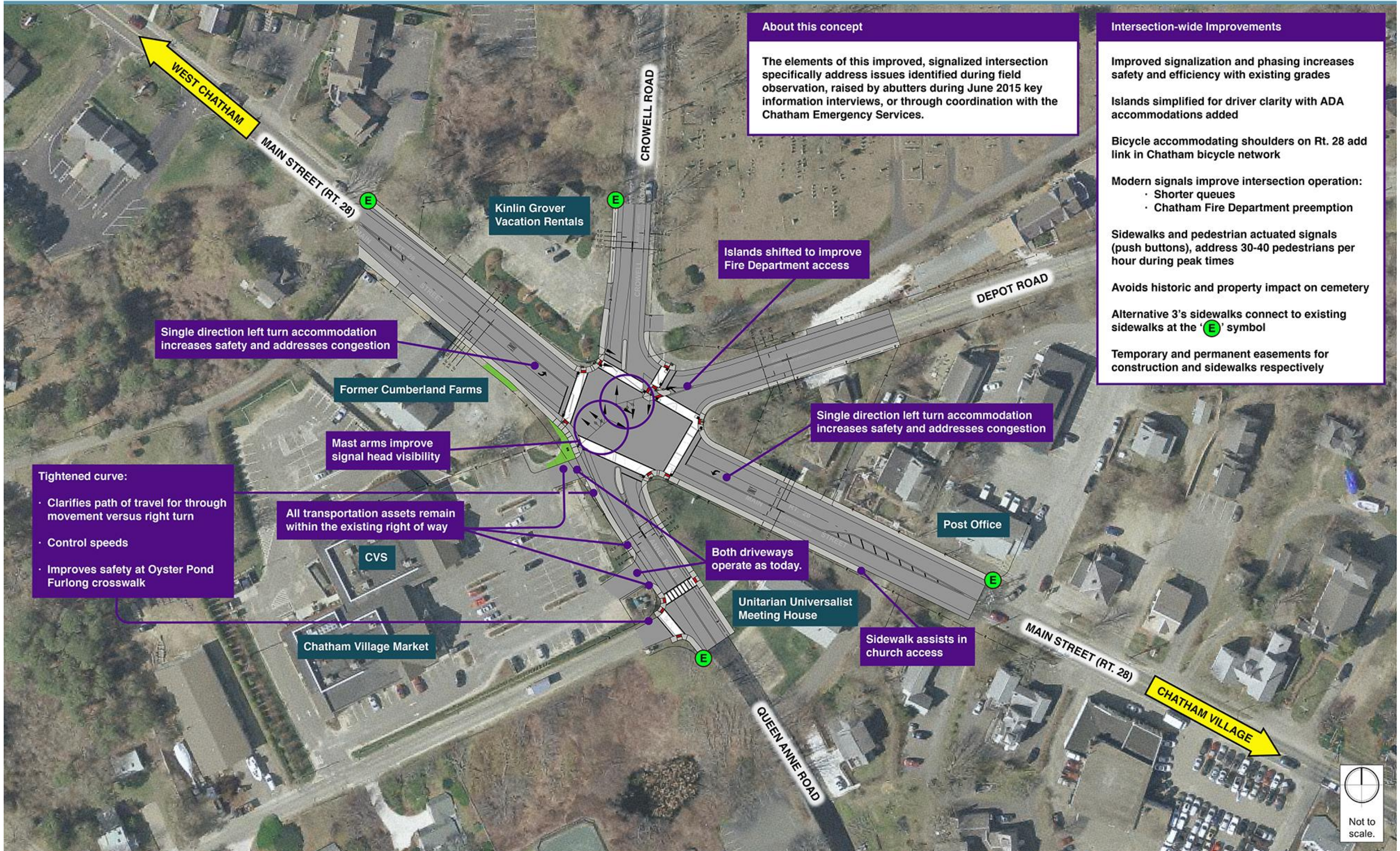
Both driveways operate as today

Sidewalk assists in church access





Alternative 3 - New Signal



About this concept

The elements of this improved, signalized intersection specifically address issues identified during field observation, raised by abutters during June 2015 key information interviews, or through coordination with the Chatham Emergency Services.

Intersection-wide Improvements

- Improved signalization and phasing increases safety and efficiency with existing grades
- Islands simplified for driver clarity with ADA accommodations added
- Bicycle accommodating shoulders on Rt. 28 add link in Chatham bicycle network
- Modern signals improve intersection operation:
 - Shorter queues
 - Chatham Fire Department preemption
- Sidewalks and pedestrian actuated signals (push buttons), address 30-40 pedestrians per hour during peak times
- Avoids historic and property impact on cemetery
- Alternative 3's sidewalks connect to existing sidewalks at the 'E' symbol
- Temporary and permanent easements for construction and sidewalks respectively

Single direction left turn accommodation increases safety and addresses congestion

Islands shifted to improve Fire Department access

Single direction left turn accommodation increases safety and addresses congestion

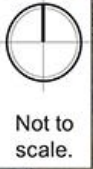
Tightened curve:

- Clarifies path of travel for through movement versus right turn
- Control speeds
- Improves safety at Oyster Pond Furlong crosswalk

All transportation assets remain within the existing right of way

Both driveways operate as today.

Sidewalk assists in church access





FAQ – Based on Comment Period Input #1

CROWELL ROAD INTERSECTION DESIGN PROJECT

| Question | Answer |
|---|--|
| How does the proposal improve queuing observed during the summer? | Dedicated left turning lanes and signal phases for both directions of Route 28 would cut down queues and improve safety. |
| How does the proposal improve pedestrian conditions? | Pedestrians will be provided with pedestrian signal heads triggered by push buttons. The intersection will be reconfigured with ADA compliant ramps to provide access to new crosswalks. |
| What happens to the right turn onto Queen Anne Road? | The current right turn onto Queen Anne Road from Route 28 eastbound requires only a gentle turn and little deceleration from motorists. The proposal tightens the intersection and formalizes this right turn to require drivers to reduce speed as they turn onto Queen Anne Road. This will boost pedestrian safety not only at the intersection, but at the crosswalk at Oyster Pond Furlong. Preliminary analysis does not show this as degrading intersection operations. |
| Why not a roundabout? | <p>The main issue with the roundabout is one of topography:</p> <ul style="list-style-type: none">• Grading the topography at Route 28/Crowell Road to work with a roundabout would cause water to drain towards the center island causing safety concerns in rain and particularly icy conditions.• Getting Route 28 to match into the roundabout would require lowering the gas line under the roadway increasing project cost and impact.• Grades would need to be “chased” back onto roadways coming into the roundabout meaning changes to adjoining roads and driveways increasing project cost and impact.• Even with these changes, grade changes would be present within the roundabout itself leading to poor ride quality and safety concerns in bad weather.• Existing CFD equipment cannot make all moves. <p>For these reasons, MassDOT does not recommend a roundabout at this location.</p> |





FAQ – Based on Comment Period Input #2

CROWELL ROAD INTERSECTION DESIGN PROJECT

| Question | Answer |
|--|---|
| What are the construction impacts of each option? | The intersection improvement has fewer construction impacts than the roundabout due to grading and utility issues |
| Which option processes traffic better? | At the conceptual level, both process traffic about the same with improvement over today's conditions. |
| What about access into the Chatham Village Market? | All driveways into the market remain as they are today under the proposed concept. |
| What about "sidewalks to nowhere?" | Of the sidewalks in the proposal, four provide connections to existing sidewalks. The rest are in keeping with MassDOT complete streets policies. |
| Why not a mini roundabout? FHWA guidance suggests one may be possible. | FHWA guidance notes that mini roundabouts are generally most effective when there are 4 or fewer approaches to the roundabout. Closely spaced approaches, such as Depot Road and Crowell Road are also considered problematic when paired with a mini roundabout. Likewise the very shallow or flush island associated with true mini roundabouts may tempt drivers to go straight over it in winter when traffic volumes fall leading to safety hazards. |





Next Steps

CROWELL ROAD INTERSECTION DESIGN PROJECT

- **Document tonight's meeting**
- **November 2017 – BOS meeting:**
 - Discussion of public comments
 - Discussion of design refinements
 - Request BOS recommendation on concept for 25% design
- **Winter 2017/2018 – Submit 25% Design to MassDOT**
- **Spring 2018 – MassDOT 25% Design Public Hearing**
 - Opportunity for public comment
 - Opportunity to offer design refinements
 - Chance to ask questions
- **Winter 2020/2021 - Construction**





Questions and Comments

CROWELL ROAD INTERSECTION DESIGN PROJECT

www.chathamcrowellroad.info

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