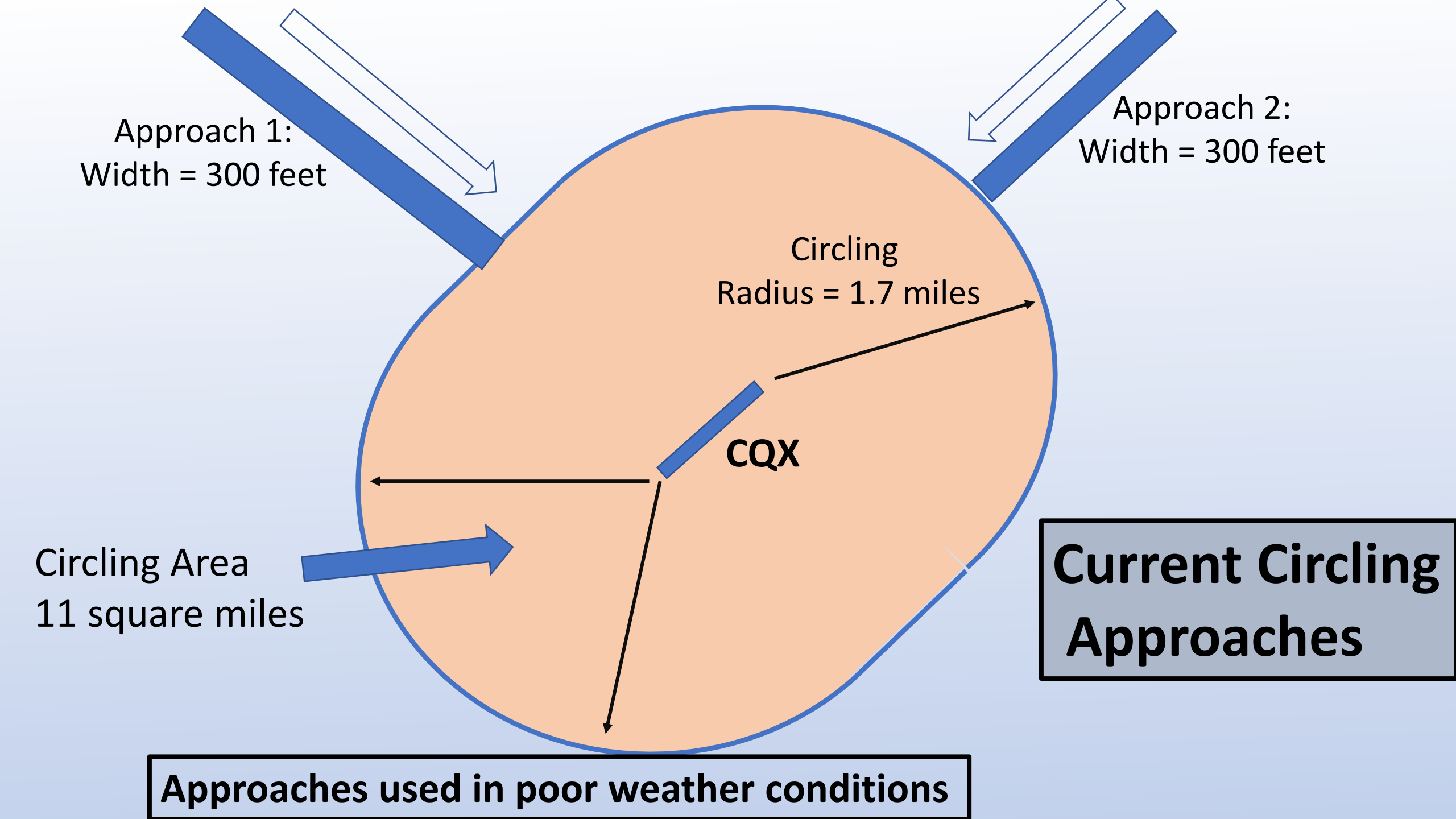
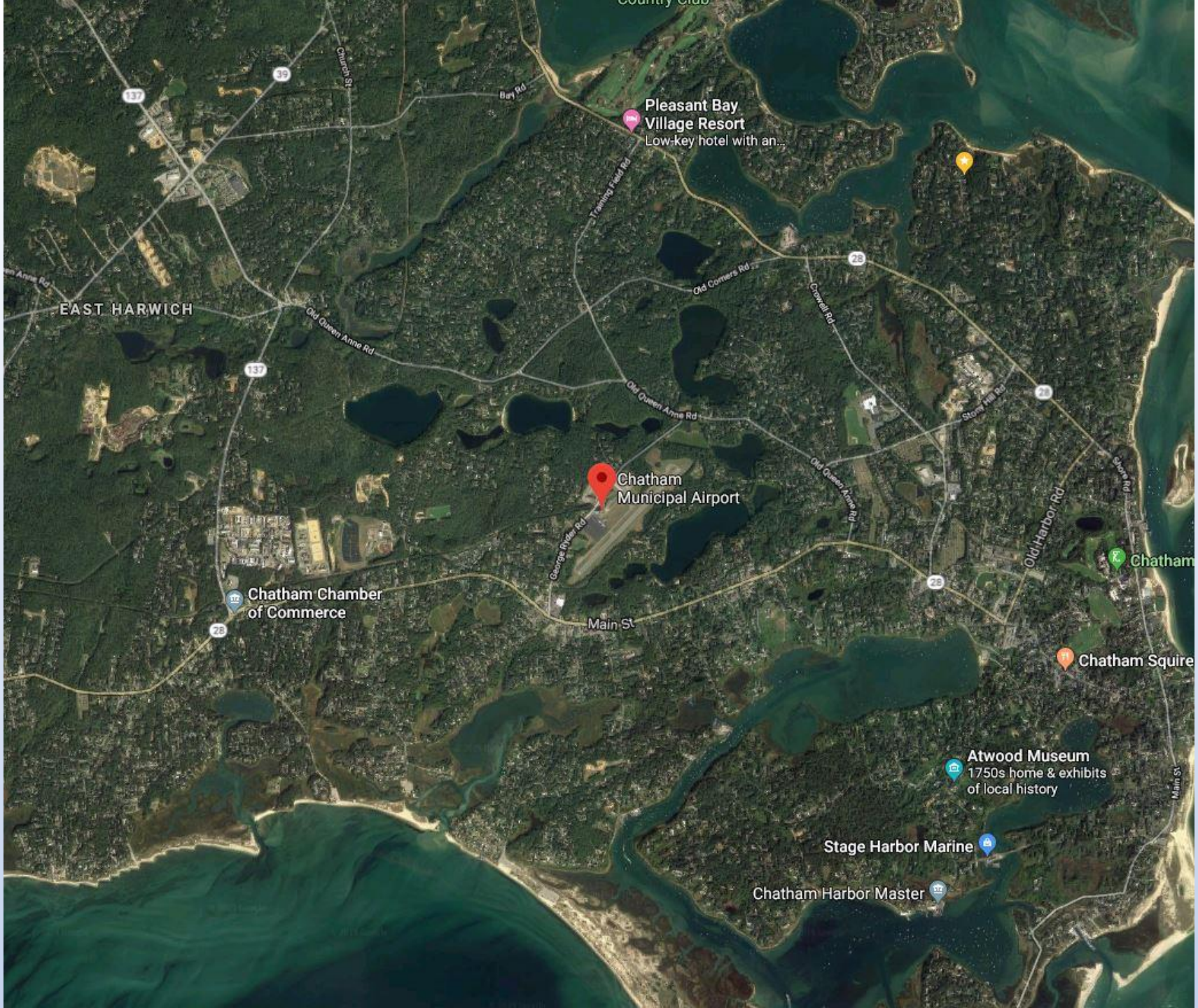
CQX Airport Master Plan Update

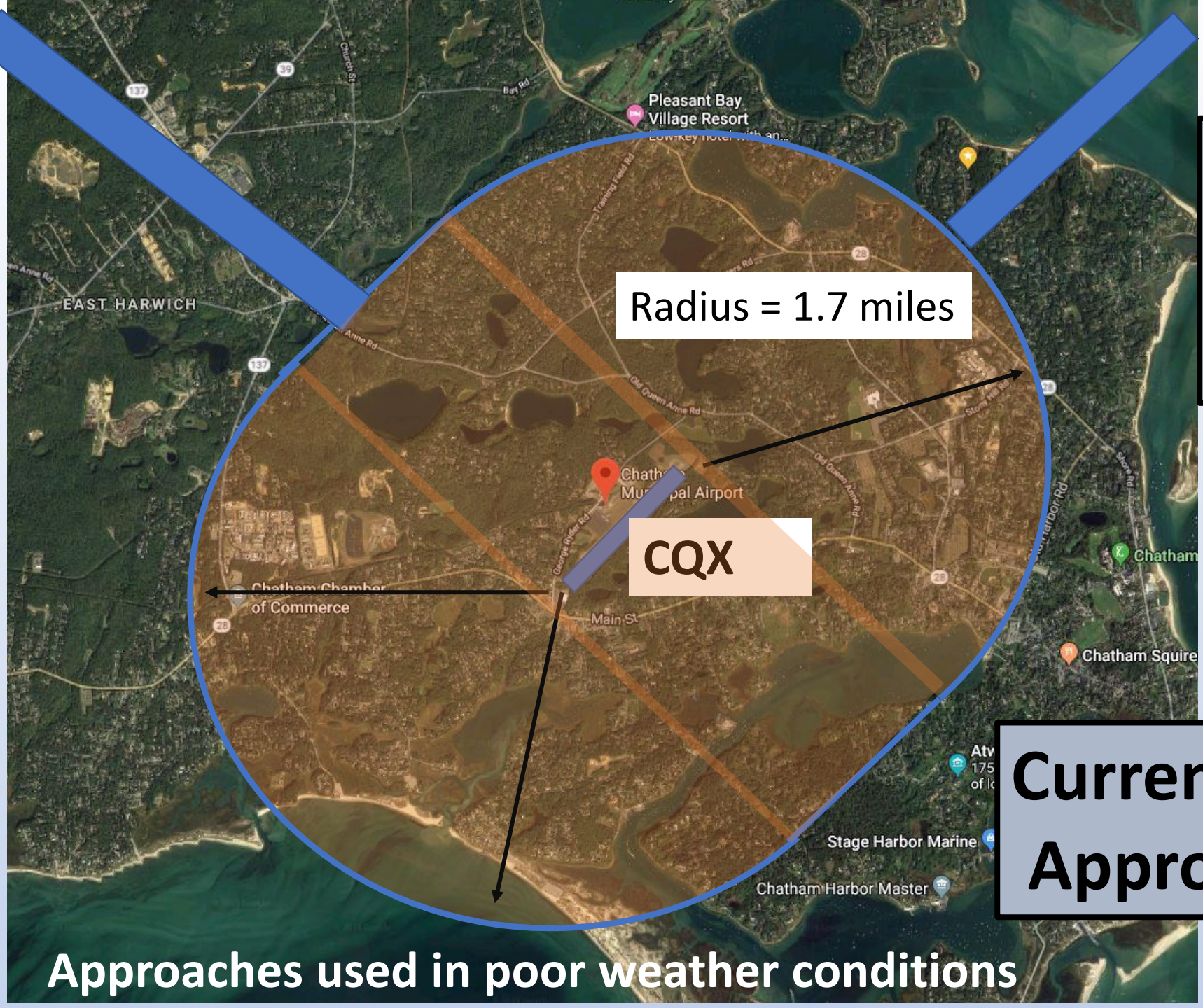
- Instrument Approaches – current and proposed
- Removal of obstructions
- Summary

What is an Instrument Approach?

- Approach to landing at CQX when there are low clouds and/or visibility is limited
- Instruments on the aircraft guide it to safely approach and “find” the airport in these varied weather conditions
- **Once below the clouds, aircraft visually land just as they do on a clear day**
- Instrument approaches have been in place at Chatham for many years
- Instrument approaches are used by all sizes and types of aircraft
- Instrument approaches are very important and greatly increase the utility and safety of any airport.

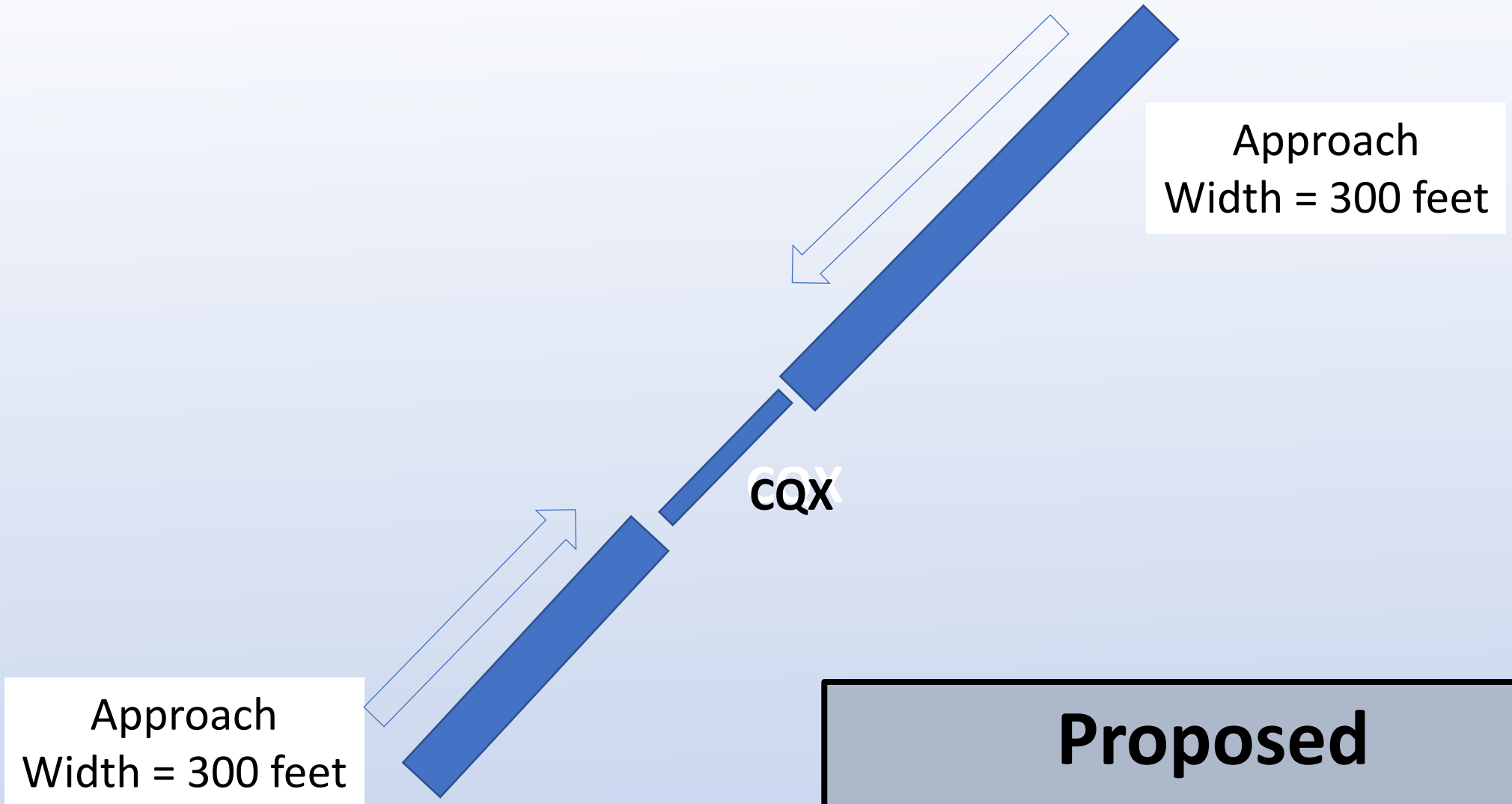

Approach 1:
Width = 300 feet
Approach 2:
Width = 300 feet
Circling
Radius = 1.7 miles
CQX
Circling Area
11 square miles
Current Circling Approaches
Approaches used in poor weather conditions


Pleasant Bay
Village Resort
Low-key hotel with an...
EAST HARWICH
Chatham
Municipal Airport
Chatham Chamber
of Commerce
Main St
Chatham Squire
Atwood Museum
1750s home & exhibits
of local history
Stage Harbor Marine
Chatham Harbor Master
Church St
Bay Rd
Training Field Rd
Old Comers Rd
Crowell Rd
Old Queen Anne Rd
Stony Hill Rd
George Ryder Rd
Old Harbor Rd
Shore Rd
Main St
137
39
28



Area > 11 square miles

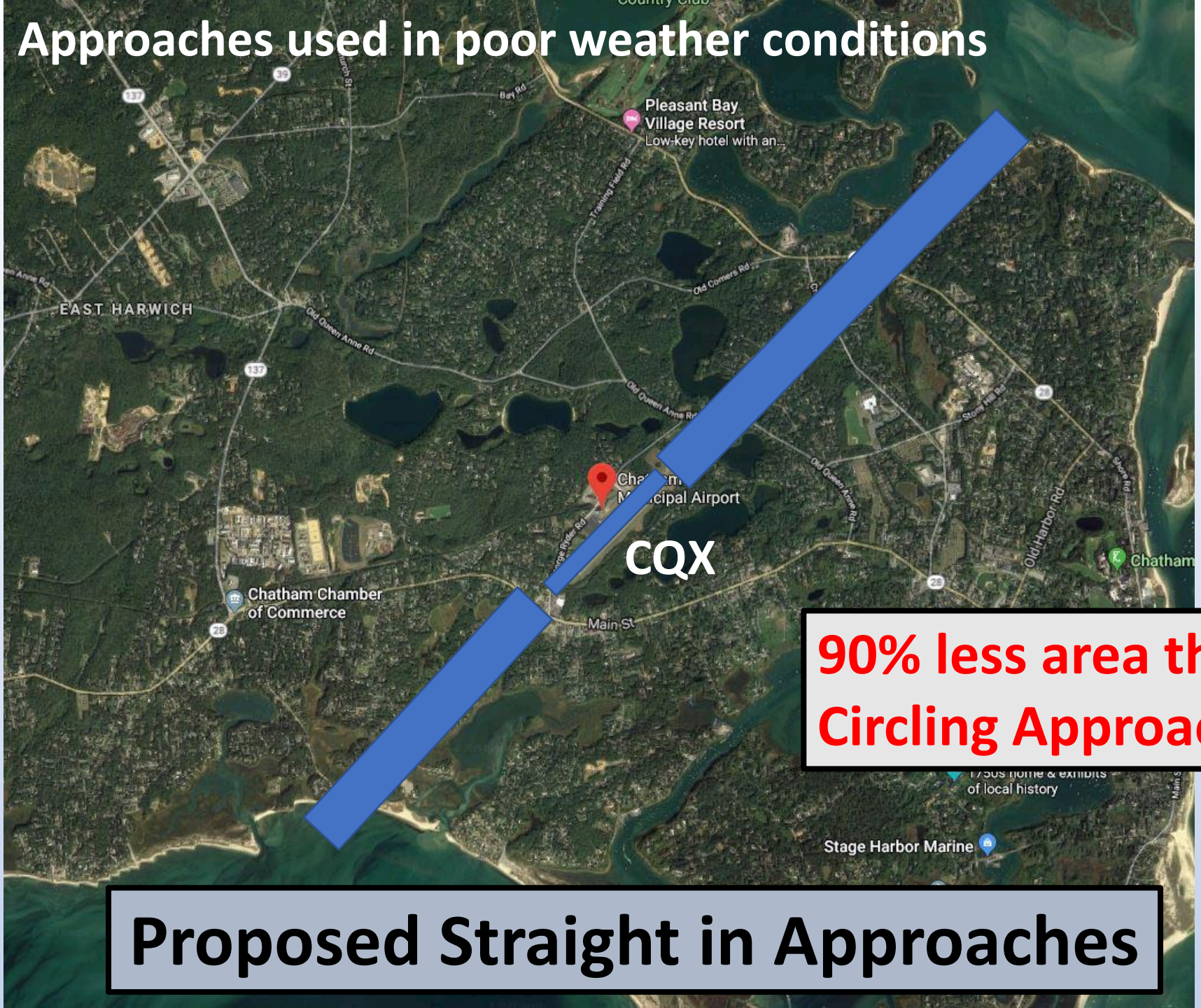
Current Circling Approaches



Proposed Straight-in Approaches

Approaches used in poor weather conditions

Approaches used in poor weather conditions



Area < 1 square mile

90% less area than Circling Approaches!

Proposed Straight in Approaches

Proposed New Approaches

- **Safer** for pilots and their passengers: precise state of the art GPS guidance, lower workload, less stress
- **Safer** for residents: Higher safety for aircraft means even lower chance of harm to those on the ground
- **Quieter** for residents: Over 90% reduction in noise "footprint" plus lower noise from aircraft in a precise and steady descent
- **Aircraft would fly over people's homes at the same altitude that they currently do on a clear day**
- **Absolutely no change to the size and type of aircraft that can use the airport**

Glidepath Qualification Surface (GQS)

- GQS is a sloping “floor” that sits beneath a safety buffer which is under the aircraft glidepath
- GQS is analogous to the outside edge of a shoulder on a roadway
- The safety buffer is itself analogous to the shoulder on a roadway
- **Cars do not drive on the shoulder – aircraft do not fly in the safety buffer!**
- **Aircraft fly in the glide path, above the safety buffer.**
- **The glide path is at the same altitude as used today**
- **If aircraft enters the safety buffer, the approach must be aborted**

Diagram not to scale

Aircraft do not fly in this “red” zone!

Standard Glidepath angle is 3 degrees +/- .25 degrees

A higher angle could be employed to reduce the number of obstructions that would need to be mitigated

Glidepath 20:1 slope

Safety Buffer

Glidepath Qualification Surface (GQS) 30:1 slope

All objects must be below the GQS

CQX

Great Hill and Homes lie under the GQS

GQS defines the “floor” of a safety buffer

Diagram not to scale

Aircraft do not fly in this “red” zone!

Standard Glidepath angle is 3 degrees +/- .25 degrees

A higher angle could be employed to reduce the number of obstructions that would need to be mitigated

Glidepath 20:1 slope

Safety Buffer

Glidepath Qualification Surface (GQS) 30:1 slope

All objects must be below the GQS

CQX

Twenty years ago – trees were smaller

Diagram not to scale

Aircraft do not fly in this “red” zone!

Standard Glidepath angle is 3 degrees +/- .25 degrees

A higher angle could be employed to reduce the number of obstructions that would need to be mitigated

Glidepath 20:1 slope

Safety Buffer

GQS 30:1 slope

All objects must be below the GQS

CQX

Today - Trees Have Grown into the GQS

Management of Tree Obstructions

- Trees have grown significantly since the last Master Plan Update
- Growth is between one and two feet per year
- Town bylaws specify an airport protection zone which may require property owners to trim/remove trees at their own expense
- 95% of the cost will be borne by Federal and State funding
- Safety benefits accrue even for everyday visual approaches
- **Removal of trees will not change the glidepath that aircraft use every day**
- **Aircraft will not fly lower over people's homes**

Summary

- Instrument Approach proposals **will improve safety of** operations at CQX
- New approaches use precise, state of the art GPS guidance
- Noise levels will be the same in good weather, and **REDUCED** in bad weather
- **Safety** of residents, pilots and passengers **will be INCREASED**
- Any approved improvements will be 95% funded by Federal and State Grants
- Any implementation will be guided by FAA safety standards to achieve the highest possible level of safety for the Community while balancing the needs of Airport neighbors
- Any Implementation proposals would still need Federal, State, environmental and Town Meeting approval for local share of funding