
QUEEN CITY PARK – AUSTIN DRIVE BICYCLE PEDESTRIAN CONNECTIONS SCOPING STUDY APPENDICES



CHITTENDEN COUNTY RPC
Communities Planning Together



Prepared for the CCRPC, City of Burlington and City of South Burlington

5 May 2022 | DRAFT

ATTACHMENTS

1. Advisory Committee Meeting Notes
2. Survey Results
3. Public Meeting Notes and Presentation
4. Hazardous Materials Table
5. Cost Estimates by Segment
6. Preferred Alternative Concept Plans

Queen City Park Road/Austin Drive Bicycle and Pedestrian Connections Scoping Study
Advisory Committee – September 23, 2021

Attendees:

Lucy Gibson, Julie Shapiro – Toole design
Nicole Losch – Burlington Public Works, Transportation Planner
Justin Rabidoux – Director of Public Works, South Burlington
Peter Keating – Burlington Walk/Bike Council
Gillian Bell – Burlington South End
Tim Barrett – South Burlington City Council
Doug Goodman – Queen City Park Resident
Chris Damiani – Green Mountain Transit
Amanda Holland – South Burlington Bicycle & Pedestrian Committee

Lucy reviewed the study area and noted that a study was done on the bridge over the railroad many years ago. This study will include the preferred alternative from that study.

Justin asked if it is still the plan to cul-de-sac Pine Street? Nicole said that that Burlington is moving forward with that recommendation. The Champlain Parkway will begin construction next year, with the middle section being constructed first.

Lucy discussed the scope of work for this study. It will identify possible improvement ideas and bring them to a defined project. We will look at, and map, existing conditions, constraints, environmental conditions, and land ownership. Elements of the scope of work include the following items.

- › Public engagement for this study will include an online map and survey.
- › Alternatives will developed to address the needs that are identified through the public engagement process. Alternatives will include bike lanes and paths. The study will evaluate costs, utilities, environmental issues, and connectivity.
- › The next meeting of the Advisory Committee will identify alternatives.
- › A Public Meeting will be held to present alternatives to the public.
- › A preferred alternative will be selected.
- › The study will evaluate feasibility and cost and will develop an implementation plan.
- › Possible funding sources will be discussed.

Project schedule –

- › We have been working on existing conditions and base mapping.
- › The online public engagement, which includes an interactive map and survey, will be open through mid-October.
- › We will begin developing alternatives in early November.
- › A Public Meeting will take place in early January to select a preferred alternative.
- › Once we have a preferred alternative the report will be finalized and will include concept plan.

Comment – Will the Advisory Committee make recommendation on the preferred alternative?

Answer – The Advisory Committee will make a recommendation to the City Council or bicycle and pedestrian committees.

Toole noted that the online tools were advertised with Lawn Signs placed in the study area and thought social media posts. We have had a good response.

The committee discussed the on-street parking near Oakledge.

The committee discussed available right of way in the study area.

The committee discussed current plans to move the Shelburne Road/Queen City Park Road crosswalk to the southern leg of the intersection.

The committee noted that the aspirational goal would be bike lanes and a wider path where possible.

The committee discussed the crossing at Pine Street and how it would change with the cul-de-sac of Pine Street.

The committee noted that wayfinding could be better in the project area. Users are not sure where to go.

The committee noted that the advisory lanes on Queen City Park Road seem to work but they are concerned about winter conditions when the pavement markings may not be visible. The Corner near Burton can be tough.

The committee discussed whether a sidewalk is enough on Queen City Park Road with the existing Champlain Parkway Path which parallels Queen City Park Road?

The committee noted that it is difficult walking in the winter.

It was noted that people from Rhino and Burton do walk and use transit.

GMT noted that buses pull in or pull out of bus depot 175 times during the day. That is a lot of movement. There are also a lot of trucks in the area.

The next advisory committee meeting will be November 18 at 6 pm.

Queen City Park Road/Austin Drive Bicycle and Pedestrian Connections Scoping Study
Advisory Committee – November 18, 2021

Attendees:

Bob Britt – South Burlington Bicycle & Pedestrian Committee
Chris Damiani – Green Mountain Transit
Doug Goodman – Queen City Park Resident
Gillian Bell – Burlington South End
Eleni Churchill, Christine Forde - CCRPC
Lucy Gibson, Julie Shapiro – Toole Design
Marla Keene – Development Review Planner, City of South Burlington
Nicole Losch – Transportation Planner, Burlington Public Works
Peter Keating – Burlington Walk/Bike Council
Tim Barrett – South Burlington City Council

Progress to date

- Created and posted a storymap online that shows existing conditions.
- Collected public feedback from the interactive map and survey. Received over 400 comments on issues throughout the corridor. Most common areas of concern – Shelburne Road crossing, area around Pine Street, one lane bridge, Home Avenue intersection with Queen City Park Road, Redstone Condos, Oakledge entrance.
- Survey respondents – 43% South Burlington, 57% Burlington. 48% female, 1% non-binary, 51% male. Few non-English speakers and majority white.

Project goals

- Safe movement for people walking, biking, and taking transit, and filling the gap in the regional bicycle network.

Types of bicycle facility types that will be considered in this study

- Shared use path – separate facility on a separate alignment
- Separated bike lanes – can be one-way or two-way and have some type of separation from traffic. Not just paint. One-way safest at intersections because travels in the direction of traffic. Two-way allow side by side riding and are typically wider so some people prefer them
- Conventional bike lanes – includes space for bikes but no physical separation
- Advisory lanes – mark bike lanes where there isn't really room. Share space with traffic

Alternatives considered

- No Build
- 1. Shared use path whole length. Completely separated path.
- 2. Shared use path along most of the length but uses existing Champlain Parkway Path between Pine Street and Home Avenue. Sidewalk on QCPR between Pine Street and Home Ave/Austin Drive
- 3. Continuous sidewalks and bike lanes

Study area divided into 5 segments for easier discussion. The three alternatives can be mixed and matched segment by segment.

Shelburne Road Crossing to Hannaford entrance.

- There is a current VTrans project to upgrade the traffic signal. The project will move the crosswalk to south side of the intersection.
- Ideal design – widen crosswalk, widen sidewalk along Shelburne Road. Not part of VTrans project but maybe longer term consideration. Also upgrade path from US7 to condo driveway – widen, repave.

Condo driveway/Hannaford entrance/QCPR

- Option 1 – shared use path extending from Shelburne Road – widen existing sidewalk to 10 feet and add crosswalk to Hannaford Drive. Widen sidewalk west of Hannaford driveway. Buffer strip 2-4 feet.
- Option 2 – Separated bike lanes – one-way or two-way. The existing sidewalk on Queen City Park Road stays where it is. This option would require widening QCPR by about 5 feet. Adds cost and impervious pavements. The two-way separated bike lane could be constructed on the north side where there are no driveways or curb cuts. The two-way lane would connect to the Champlain Parkway path. But sidewalk no buffer.
- With either option the road would narrow from 30 feet to 24 feet.

Comment – one advantage of a south side path is that the rider wouldn't have to cross Queen City Park Road to go to red rocks, but they would have to cross for Champlain Parkway Path.

Pine Street Crossing

- Existing curb cut on south side. Add crosswalk. Don't think Rectangular Rapid Flashing Beacon (RRFB) will be necessary.

Pine Street to the bridge

- Road width is narrower in this section. Adding separated bike lanes would require the road to be widen 5-10 feet.
- For shared use path the buffer would be narrowed.

Central Avenue

- The bridge has been studied separately so not proposing bridge alternatives.
- There is an existing path on the south side from the bridge to Red Rocks. Could follow this path and build a spur to a Central Avenue Queen City Park Road crosswalk.

Central to Austin Drive/Home Avenue

- No sidewalk or bike lanes in this section except a small bit of sidewalk by the Green Mountain Transit facility. The road is not wide enough for bike lanes. There are drainage swales on either side that would have to be modified.
- The road is striped for Advisory Bike Lanes – good but hard to see in the winter.
- There was a previous study of a sidewalk on Queen City Park Road. The study concluded that the east/north side would be a better location for a sidewalk because of utility poles on west side.
- Would require either moving the drainage ditch or place the sidewalk outside of drainage ditch. This would be outside of the right of way. One land owner – Burton.
- Why east side? Not clear why previous study chose that side.

Home Avenue / Austin Drive / Queen City Park Road Intersection-

- A new path is to be constructed along Home Avenue east of Queen City Park Road as part of Champlain Parkway project.
- What to do west of QCPR? Widen sidewalk south side for shared use path. Less stress option.
- Bike lanes – how to cross for westbound? Traffic does not stop.

Redrocks Drive –

- Wide open paved area. City working on narrowing the neck of the intersection to improve safety.

Austin Drive –

- 60 foot right of way. Widening the sidewalk to 10 feet would be pretty easy and would fit within the existing right of way.
- The roadway is generally 30 feet wide except for the curve at Redrocks Drive – wider. Wide enough for bike lanes but not spared bike lanes.

Burlington Bike Path --

- Not a lot of comments in this location.
- Due to on street parking the bike lanes end – not enough room.
- Consider curb extension into parking lane for traffic calming and to increase visibility of bike lane and visibility for walkers and cyclists.
- Could not have parking and bike lane.
- Shared use path option – no bike lanes.

How the three alternatives achieve the purpose and need for the project

- All alternatives provide sidewalks so similar benefit
- Continuous shared use path would benefit the most people – low stress environment for beginner/more cautious cyclists.
- Bike lanes -- some people prefer bike lanes but generally not preferred by more cautious cyclists. I

Preliminary construction cost estimate – A -- \$2.6 million. B -- \$2.9 million. C -- \$1.4 million. No ROW or utility.

Comment – Recommend shared use path from the bridge to Red Rocks.

Comment – Where would funding come from? Answer – uncertain at this time. Considering VTrans Bicycle and Pedestrian grant program and Transportation Enhancement grant program, but will evaluate other options if they become available.

Next steps

- Continue to refine the alternatives.
- Email slide deck.
- Public meeting early January. Likely to be virtual.

Queen City Park Road/Austin Drive Bicycle and Pedestrian Connections Study
Advisory Committee
February 22, 2022

Meeting Notes

Attendees:

Peter Keating
Lucy Gibson
Eleni Churchill
Nicole Losch
Tim Barrett
Bob Britt
Doug Goodman

Christine reviewed the purpose of this meeting, which is to review the options developed for the corridor and prepare for the next public meeting scheduled for March 9. We would like to identify if there is consensus from this group as to recommendations for a preferred alternative. Another consideration is long-term and short-term options and potentially having some short-term options that could be done more quickly.

Lucy shared the draft PowerPoint that will be used for the public meeting.

Slides

- Agenda
- Project Goals
- Graphic of Low Stress Bicycling
- Map of Level of Traffic Stress in the project area
- Diagram showing the difference between shared use path, separate bike lanes, conventional bike lanes, advisory bike lanes.
- Winter Maintenance Considerations
- Segment Map
- Details of each segment
 - Segment 1 – Lindenwood Drive to Hannaford intersection
 - One alternative -- widen the sidewalk on Shelburne Road, widen the existing path from Shelburne Road to the Hannaford Intersection.
 - Segment 2 -- Hannaford Intersection to Champlain Parkway Path
 - Shared Use Path
 - Separated Bike Lanes – requires more right of way. North side is better because no curb cuts and no crossing required to get to Champlain Parkway path.
 - One lane directional bike lanes – requires about 5 feet more right of way.

- › Conventional bike lanes – could be done quickly but doesn't provide low stress facility – no physical separation. Could narrow lanes to 10 feet.
- › Marked crosswalk at Champlain Parkway path – could be done quickly.

Discussion

- › What is the direction the two cities want to go regarding two way vs on-road vs separate path?
- › Two-way north side is good for connection to Champlain Parkway Path but not so good for connectivity to Red Rocks Park or businesses on QCPR.
- › An unknown is the cost to upgrade drainage along Queen City Park Road. Maybe opportunities for green stormwater treatment? Pine Street to bridge – no drainage infrastructure.
- › Segment 3 – Champlain Parkway Path to Central Avenue
 - › Separate study evaluates the bridge. There is a sidewalk but narrow and dogs don't want to cross. Also, can't get to it in the winter because of snow.
 - › Could consider some signage or caution lights indicating pedestrians/bikes present.
 - › Bridged structural rating is satisfactory but it doesn't meet standards because of width or clearance (not enough for double stack).
 - › For this study propose to design the path on either side the way we want it to be and wait for the bridge.
 - › Include bridge map for the public meeting?
 - › Alternatives
 - › Shared use path option – cross Central Avenue and Queen City Park Road west of Central to north side of Queen City Park Road.
 - › Two-Way bike lanes and sidewalk – would have to cross Queen City Park Road to get to Red Rocks Park.
 - › Sidewalk and conventional bike lanes.
- › Segment 4 – Central Avenue to Home/Austin Drive
 - › No sidewalk except a small section near GMTA.
 - › Burton site plan does not include sidewalk around the perimeter. There is an internal sidewalk and the public won't be prohibited from using it.
 - › Advisory lanes experimental installation. Permit not issued by FHWA. Is it dangerous for Burlington because not OKed by FHWA if there is a crash? Also concerned about sight lines and treatment at intersections.
 - › Burlington is aware of this. Checked all guidance and decided that this is an OK location for this facility. Initially thought of them as temporary installation. Not enough width for bike lanes.
 - › Public concerns that the advisory lanes are not adequate.
 - › Advisory lanes may not work if higher vehicle volumes due to Higher Ground.
 - › There is room for a 10-foot path within right of way with 11-foot lanes and a 4-foot buffer strip. Could go down to 8 feet for the path if necessary.
 - › Alternatives

- Separate bike facility plus sidewalk – could fit in the existing right of way, but would require road widening.
 - Retain advisory lanes and construct sidewalk – maybe sufficient if low bike traffic.
 - Northern end – should the sidewalk/path cross at GMTA garage? Why – wetland impacts. Unprotected midblock crosswalk. If want to get to Champlain Parkway Path would have to cross again. We don't think the wetlands are protected. Keep on east side? Yes.
- Segment 5 – Austin/Home/Queen City Park Road to Waterfront Path
 - Champlain Parkway will extent the shared use path to Queen City Park Road.
 - Bike lanes on the south side is better because of possible queuing traffic for Champlain Parkway signal.
 - Realign Red Rocks Drive to tighten intersection.
 - Curb extension at crosswalk to Waterfront Path?
 - Alternatives
 - Shared Use Path
 - Sidewalk and Separated bike lanes
 - Sidewalk and conventional bike lanes – would have to eliminate parking
 - Put bike lane on the between parking and the curb? Would require more widening. Would need door zone buffer.

Discussion

- How to make the presentation simpler for the public. More photos and simpler visualizations?
- Make a recommendation?
- Do we want to be able to consider mix and match of alternatives for different sections? Does that make sense?
- Comment -- we are trying to get from point A to point B but are these the right points to connect?

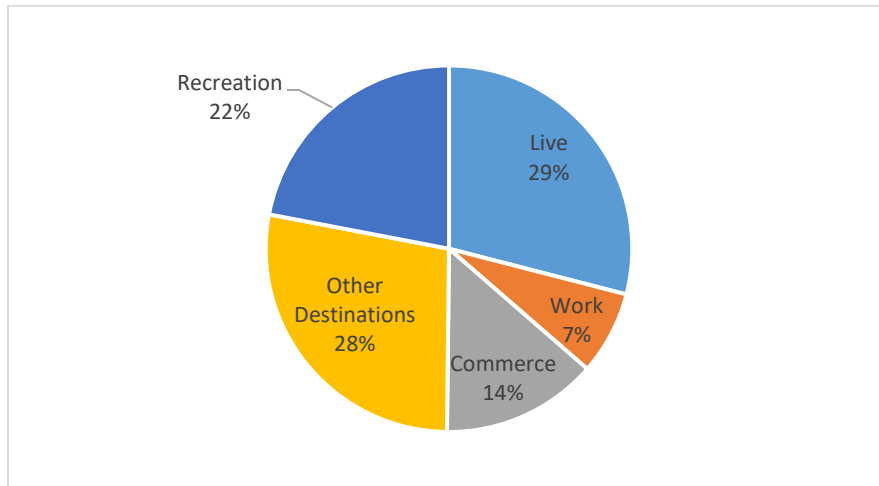
Maybe the route we are considering is not the best way to get there. Consider building a shared use path on Flynn Avenue to City Market and connect to Champlain Parkway Path. We are missing the opportunity to take advantage of the advisory lanes on Flynn Avenue.

Also traveling through the Proctor neighborhood in South Burlington and connect to the I-189 path.

Austin Drive is not a good way to connect Burlington to South Burlington.

Queen City Park/Austin Drive Scoping Study Web Map and Survey Results

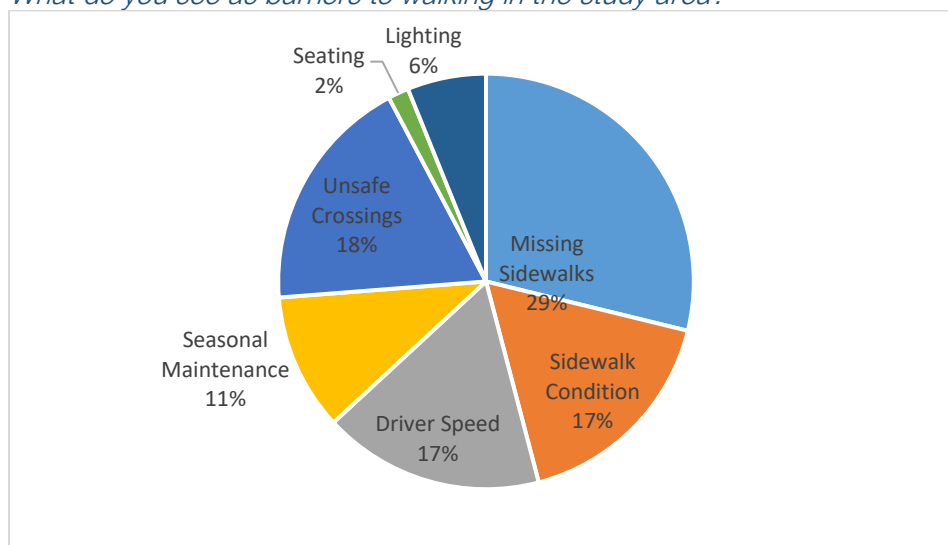
What's your connection to the study area?



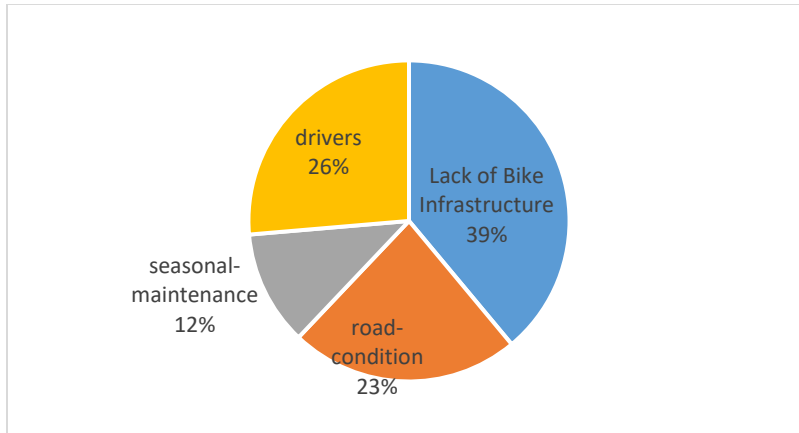
If you regularly travel on Austin Drive and/or Queen City Park Road, what mode(s) do you use?

| Mode | Number |
|-----------|--------|
| Bike | 221 |
| Car | 313 |
| Walk/roll | 166 |
| Bus | 11 |
| Carshare | 4 |
| Other | 3 |

What do you see as barriers to walking in the study area?



What do you see as barriers to riding a bike in the study area?



What do you see as barriers to taking transit in the study area? Choose all that apply

| <i>Barrier</i> | <i>Number</i> |
|--|---------------|
| <i>Bus stops are too far away from my destinations</i> | 29 |
| <i>Buses don't run frequently enough</i> | 91 |
| <i>Shelters are inadequate</i> | 25 |
| <i>Bus service is unreliable</i> | 53 |
| <i>Lack of seating</i> | 9 |

Where do you live?

43% South Burlington/57% Burlington

How old are you?

| <i>Response</i> | <i>Number</i> |
|-----------------|---------------|
| <i>18-44</i> | 144 |
| <i>45-64</i> | 139 |
| <i>65+</i> | 84 |
| <i>no</i> | 8 |
| <i>(blank)</i> | 520 |

What is your gender identity?

| <i>Response</i> | <i>Number</i> |
|--|---------------|
| <i>Female</i> | 167 |
| <i>Gender nonconforming or nonbinary</i> | 4 |
| <i>Male</i> | 178 |
| <i>Prefer not to say</i> | 23 |

Public Meeting
Queen City Park Road/Austin Drive Bicycle and Pedestrian Connections Study – March 9, 2022
Meeting Notes

Christine Forde, the Project Manager from Chittenden County Regional Planning Commission (CCRPC), introduced the meeting and noted that this project is being funded with federal transportation planning dollars provided through the Chittenden County Regional Planning Commission and is being undertaken at the request of, and in collaboration with, the cities of South Burlington and Burlington.

Lucy Gibson from Toole Design Group, a consulting firm hired to conduct this study, provided an overview of the existing conditions in the project area and the alternatives that are being considered. The study area begins at the US7/Lindenwood Drive intersection and extends along Queen City Park Road and Austin Drive to Oakledge Park. She noted that there are a lot of differing bicycle and pedestrian conditions through the project area.

The project team consists of staff level representatives of Burlington and South Burlington as well as the consultant team and CCRPC (Marla Keene – City of South Burlington, Nicole Losch – Burlington, Christine Forde – CCRPC, Lucy Gibson and Julie Shapiro – Toole Design Group). There is also an Advisory Committee consisting of representatives of the city councils, adjacent neighborhoods and bicycle and pedestrian groups from South Burlington and Burlington (Tim Barrett – South Burlington City Council, Chip Mason - Burlington City Council, Bob Britt / Amanda Holland - South Burlington Bicycle & Pedestrian Committee, Peter Keating – Burlington Walk Bike Council, Gillian Bell / Doug Goodman – neighborhood representatives). We also consulted with local businesses Green Mountain Transit (Chris Damiani) and Burton Snowboards (Justin Worthley).

The overall goals of the project are to facilitate safe movement of people walking, biking, taking transit, and driving in the study area, and to fill the gap in the regional bicycle network. At this meeting we are looking for comments on whether we are missing any pertinent information or if there are additional considerations for weighing the alternatives.

Previous work on this project included collecting community feedback through an interactive map and a survey. The locations with most comments were the intersection of Home Avenue/Austin Drive/Queen City Park Road, the Shelburne Road intersections, and at the one-lane bridge.

The goal of this study is to develop a low stress bicycle facility that would be appropriate for most riders including kids and less experienced riders. Most of the existing corridor does not provide for separation between bicyclists and vehicles.

Lucy then defined three types of bike facilities that we will be discussing this evening.

- Shared use paths – pedestrians and bicyclists share the same facility which is separated from traffic.
- Separate bike lanes – the lanes are generally at street level and are separated from traffic by some means such as posts or cones.
- Conventional bike lanes – the lanes are separated from traffic by paint.
- Advisory lanes – a section of the road is marked with dashed lines for bicycles with cars yielding to oncoming traffic in one lane.

To facilitate this discussion the study area has been broken into 5 segments roughly reflecting differing conditions in the corridor.

Segment 1 – Shelburne Road to Hannaford entrance

One option was considered in this segment consisting of the following

- Widening the sidewalk between Lindenwood drive and the crosswalk to 10-feet. This is possible within the road right-of-way.
- Widen the and rehabilitate the existing shared use path from Shelburne Road to the Hannaford entrance to 10-feet.
- Estimated cost - \$138,200

Segment 2 – Hannaford entrance to Champlain Parkway Path

- Shared use path option – narrow the roadway pavement from 30-feet to 24-feet and widen the existing sidewalk from 6-feet to 10-feet. Drainage structure relocation would be required. Cost -- \$333,800
- Separated bike lanes – constructed a separate two-way bicycle facility on the north side of the road. This option would require about 5 feet of additional right-of-way. Drainage structure relocation would be required. Cost -- \$273,300
- Both options would include a crosswalk at the Champlain Parkway Path.

Question – What will happen at the driveway to the Humane Society?

Answer – The sidewalk widening will take place toward the road and not into the Humane Society property. The path would be constructed across the driveway to make it clear that the driveway is crossing a multiuse path.

Question – Why does the graphic show the path continuing past the Champlain Parkway Path at Pine Street?

Answer – The project is looking at bike connections throughout the corridor including accessing properties on Queen City Park Road and Red Rocks Park.

Question – Will there be a signal at Pine Street?

Answer – Current volumes on Queen City Park Road don't meet the thresholds for a signal. Adding a signal in the future could be a consideration if future traffic volumes are higher.

Question – Is there an option for separated bike lanes that doesn't require widening?

Answer – To maintain separation between traffic and bike lanes it is unlikely we could provide separated lanes within the existing right-of-way.

Question – Could we have one lane bike lane on either side of the road rather than a two-way facility.

Answer – There is enough room now in this section to stripe bike lanes. This study is looking to create a low stress option.

Section 3 – Champlain Parkway Path to Central Avenue.

- This segment includes the one-lane bridge which was subject of a separate study. It is acknowledged that improvements are needed in this location but this study does not reevaluate the recommendations of the previous study.
<https://studiesandreports.ccrpcvt.org/wp-content/uploads/2017/01/Queen-City-Park.pdf>
- Shared Use Path Alternative – includes a crosswalk at Central Avenue and also crosses Queen City Park Road west of Central Avenue. Cost -- \$265,200
- Sidewalk and Bike Lanes Alternative – Sidewalk continues on the south side of Queen City Park Road to Central Avenue and then crosses Central Avenue and Queen City Park Road at two crosswalks to the north side of Queen City Park Road. Cost -- \$364,000.

Comments – the bridge is tough for bicycle and pedestrian access. Improving the sidewalk across the bridge and improving the approaches could be a short-term improvement.

Response – the bridge is addressed in a separate study. We could consider short term improvements to the approaches and the sidewalk.

Segment 4 – Queen City Park Road from Central Avenue to Home Avenue

- Shared use Path Alternative – construct an 8- to 10-foot-wide shared use path on the east side to avoid utility poles and drainage swale. Cost - \$476,000
- Sidewalk and Separated Bike Lanes – this alternative would require road widening. Cost – 866,000
- Sidewalk with Advisory Bike Lanes – retain the advisory bike lanes and construct a sidewalk on the east side of Queen City Park Road. Cost - \$568,000. Note that this cost is higher than the shared use path option because we assumed that the sidewalk would be concrete, and the path would be asphalt which is cheaper.

Comment – bicyclists should be encouraged to take the Champlain Parkway Path and should not be encouraged to travel towards the Red Rocks Park area because of the existing high traffic volumes.

Comment – the design for the advisory bike lanes is too timid because cars can ignore the dashed line. Before giving up on the advisory bike lane would like to see the city be more assertive and make them more than advisory. The design is not working as intended.

Segment 5 – Home Avenue/Austin Drive/Queen City Park Road to the Burlington Bike Path. The Champlain Parkway Path will extend along Home Avenue to Queen City Park Road.

- Shared Use Path Alternative – add a crosswalk of Queen City Park Road and widen the sidewalk on the south side of Austin Drive to 10 feet. Cost - \$943,900
- Separated Bicycle Lanes Alternatives – would require widening the road by about 5 feet either to the north or the south. Cost - \$894,400

Total Cost of all segments --

Shared Use Path -- \$2,157,000

Bicycle Lanes and Sidewalk - \$2,536,000

Comment – It is important to consider short term options that could be done at a lower cost.

Comment – Some other possible alignments were recommended in the chat. It was noted that this project is looking at this particular alignment, but we will note other recommendations in the report.

Suggested Alternative Routing -- As someone who bikes this, I've often longed for a cutoff from Austin Drive through the start of Redstone Condos, and along the edge of the field toward Queen City Park Road. I know that Burlington wants to also continue the path straight north from Home Avenue along the tracks to the main part of the existing bike path, and that's understandable for those trying to commute who are less concerned about the quality of their bike ride. But for those of us looking to be along parkland and waterfront, we want to be away from the road as much as possible. I would find it substantially more favorable if the bike path did not continue east along Austin Drive, past Oak Beach Drive, and instead cut through the edge of Redstone Condos.

Thank you

Suggested Alternative Routing -- Has any thought been given to using the Ledgewood entryway off Austin Drive that connects to Oak Beach Drive as a pathway to Flynn Avenue and the bike path in Oakledge Park? Oak Beach Drive has sidewalks on both sides. Both Austin and Oak Beach are city streets. Ledgewood owns the entryway but wants to transfer it to the city. A sidewalk would need to be built on the entryway (about 200 feet) to connect to the sidewalk on Oak Beach Drive. It would get bikers and walkers off Austin Drive.

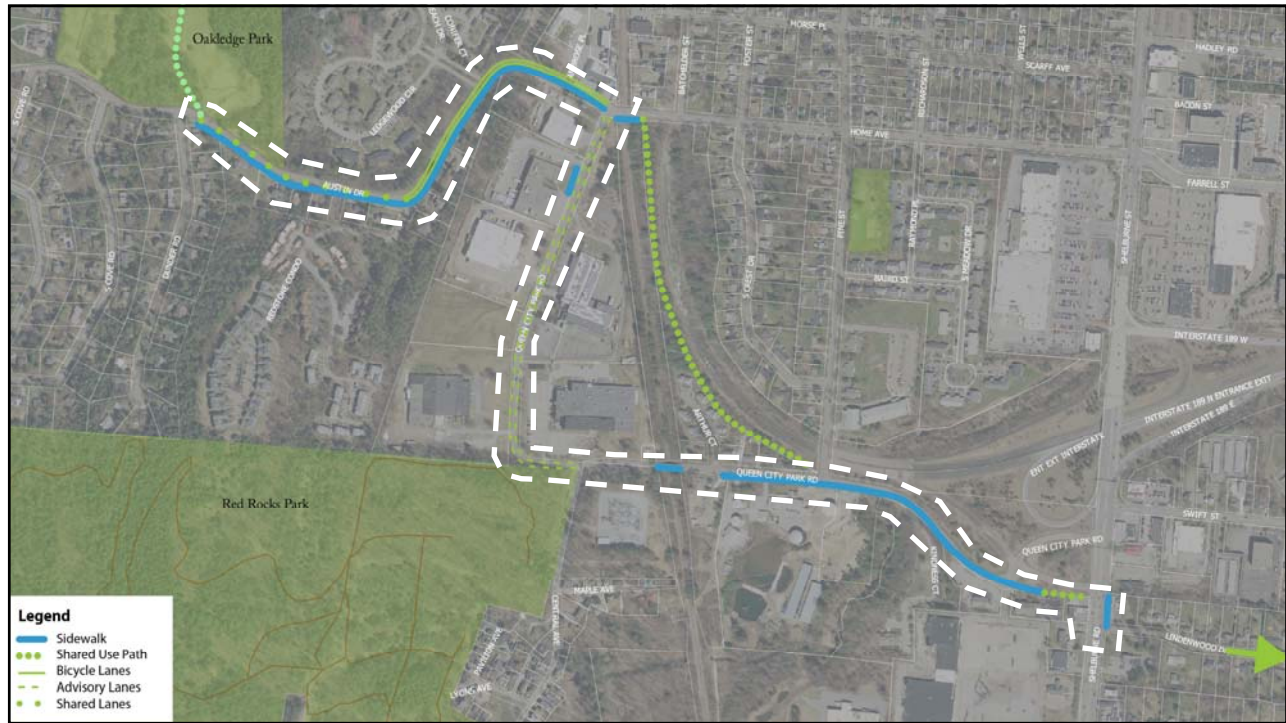


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Tonight's Meeting

- Project Overview
- Alternative Concepts
 - Are we missing any pertinent information?
 - Are there additional considerations for weighing the alternatives?
- Schedule and next steps
- Discussion/Questions

2



3

Project Team - Staff

| Member | Representing |
|-----------------|---|
| Christine Forde | CCRPC |
| Nicole Losch | City of Burlington Department of Public Works |
| Marla Keene | City of South Burlington Planning and Zoning |
| Lucy Gibson | Toole Design Group |
| Julie Shapiro | Toole Design Group |

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Project Team - Advisory Committee

| Member | Representing |
|-----------------|---|
| Peter Keating | Burlington Walk Bike Council |
| Gillian Bell | Burlington Neighborhood Planning Assembly |
| Chip Mason | Burlington City Council |
| Doug Goodman | South Burlington Neighborhood Representative |
| Bob Britt | South Burlington Bicycle & Pedestrian Committee |
| Amanda Holland | South Burlington Bicycle & Pedestrian Committee |
| Tim Barrett | South Burlington City Council |
| Chris Damiani | Green Mountain Transit |
| Justin Worthley | Burton Snowboards |

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Project Goals

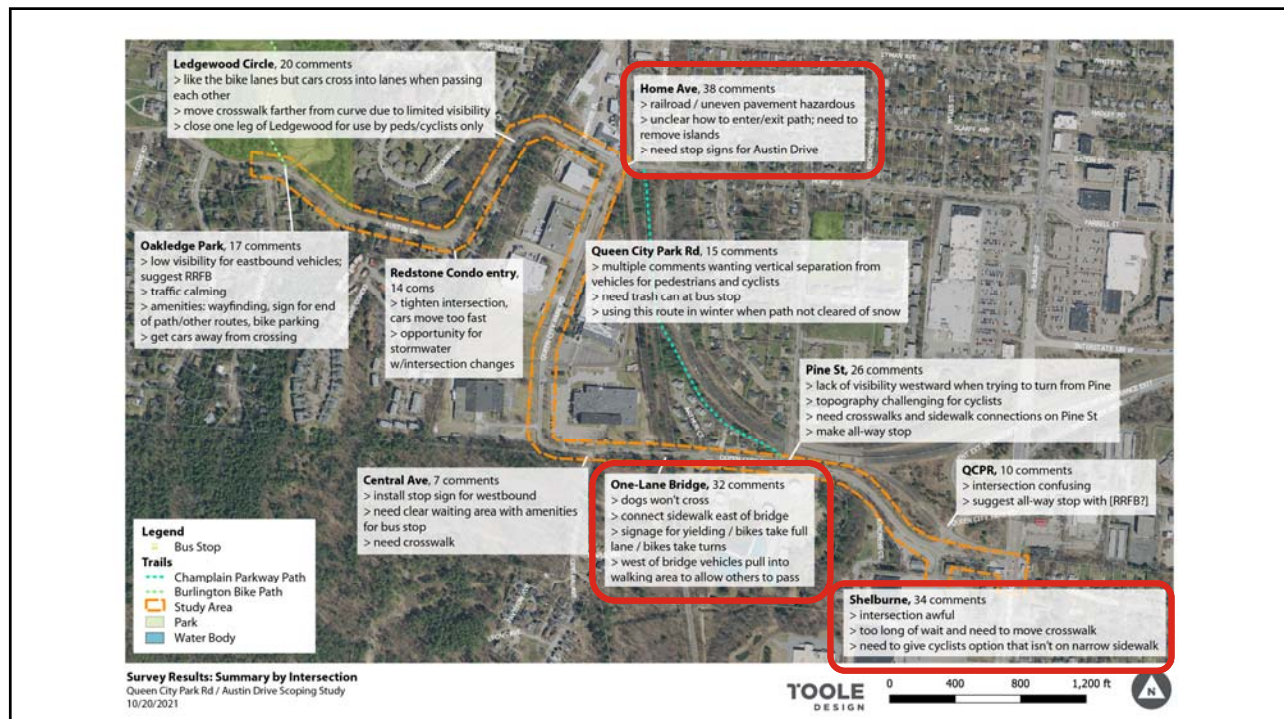
- A. Safe movement for people walking, biking, taking transit and driving throughout study area
- B. Fill the gap in the regional bicycle network to connect South Burlington's path network with Red Rocks Park, Oakledge Park and the Burlington Bike Path with a low stress facility

6

What we have been doing so far

- Site analysis and observations, review available data
- Collecting community feedback through an interactive map and survey
- Developing alternatives
- Assessing costs, benefits, and impacts of each alternative (safety, conflicts, utilities, right-of-way)

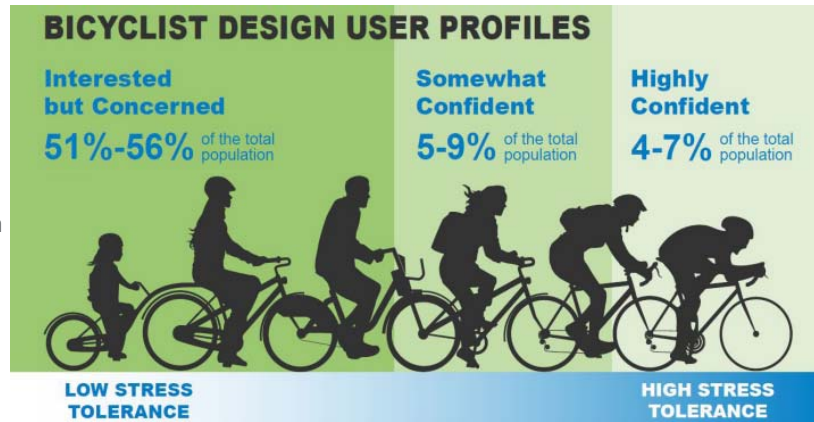
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Low Stress (8-80) Bicycling

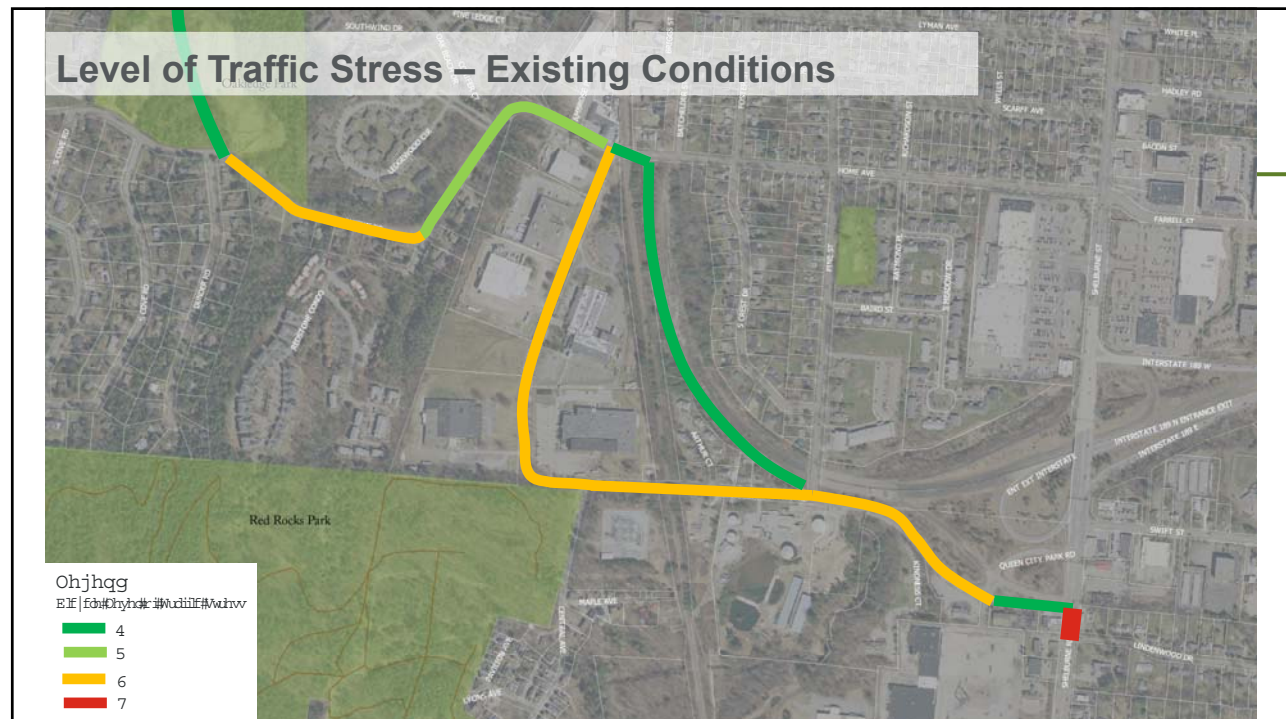
- Low speeds
- Low volumes
- Separation from motor vehicles



- High speeds
- High volumes
- Limited or no separation from motor vehicles

Source: FHWA Bikeway Selection Guide

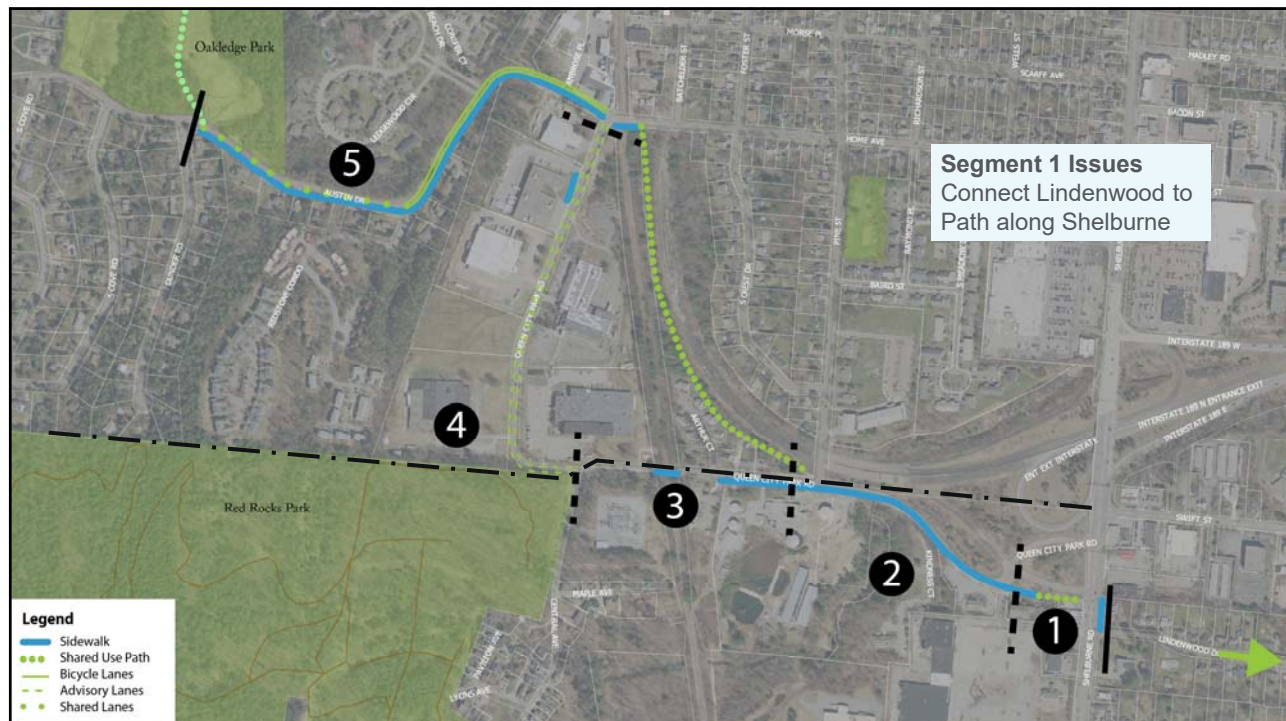
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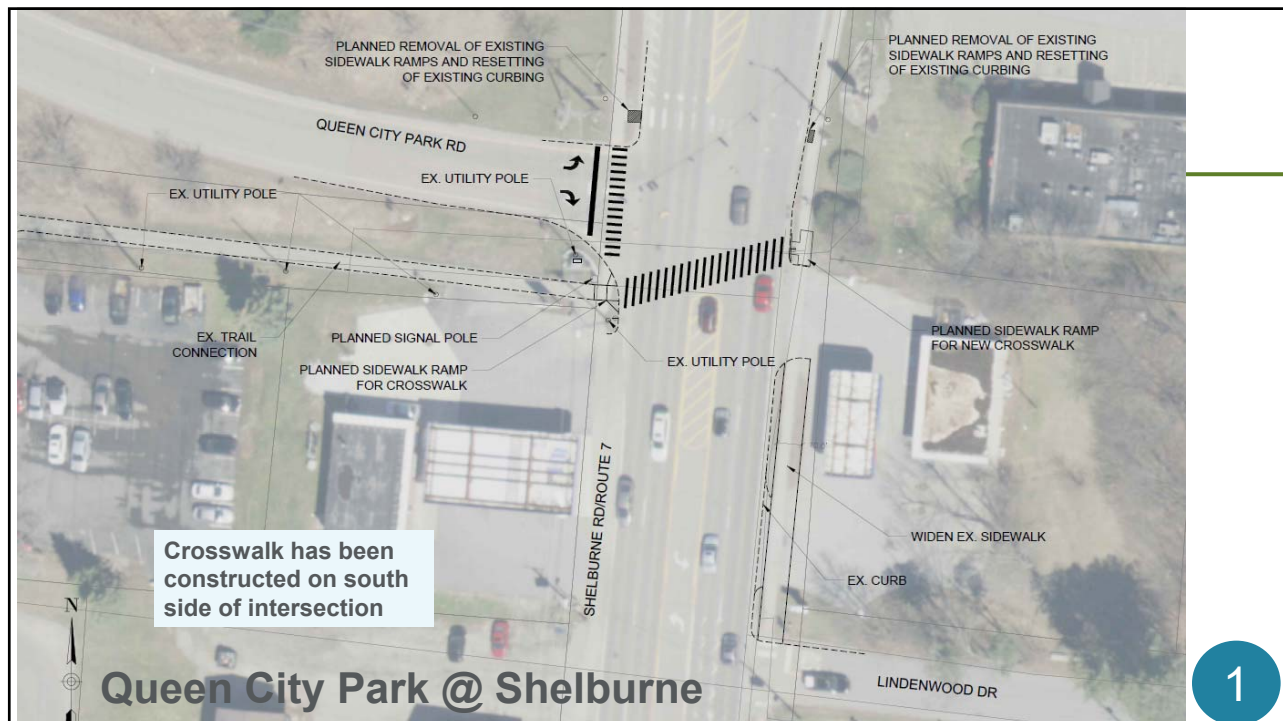
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Existing Conditions – Segment 1



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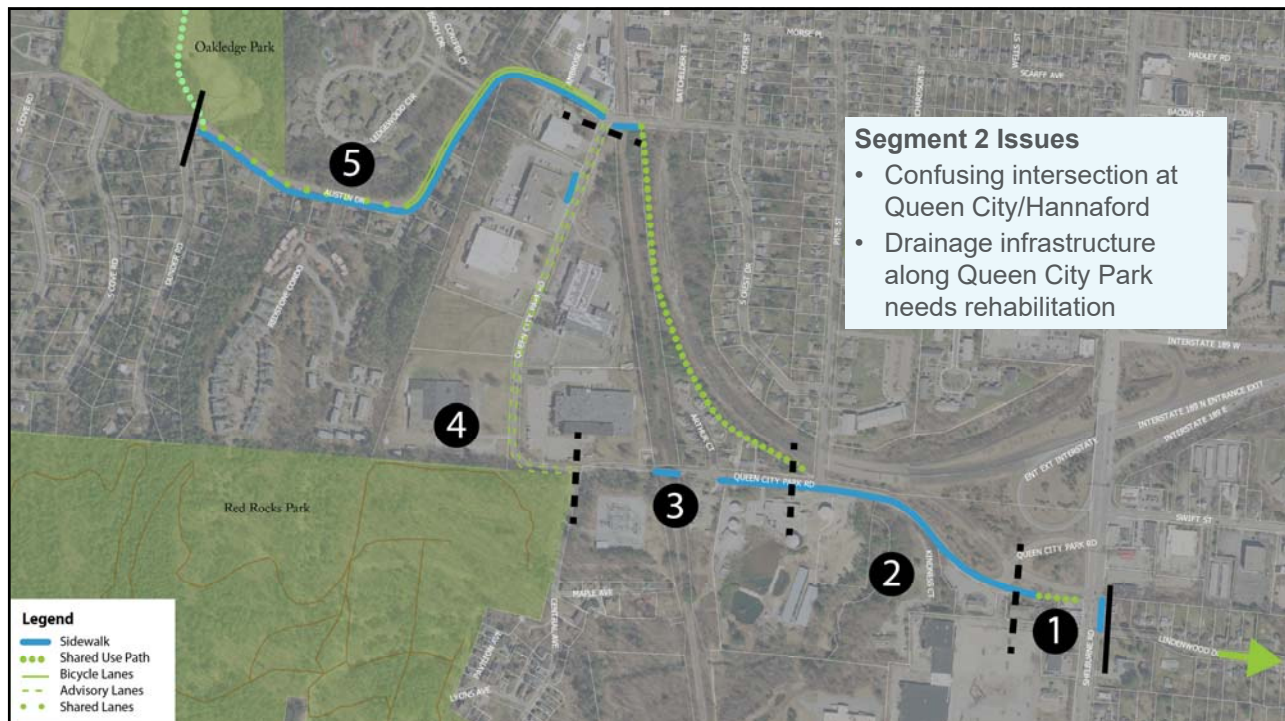


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Evaluation – Segment 1

| Alternative | Level of Stress | Utility Impacts | Estimated Cost | Comments |
|---|-----------------|-----------------|----------------|--|
| No Build/Baseline | 4 | - | - | |
| Shared Use Path on Shelburne; Rehabilitate existing path | 1 | 0 | \$138,200 | Can be accomplished within existing right-of-way |
| Bicycle lanes on Shelburne | | | | Not Feasible |

17



18

Existing Conditions – Segment 2

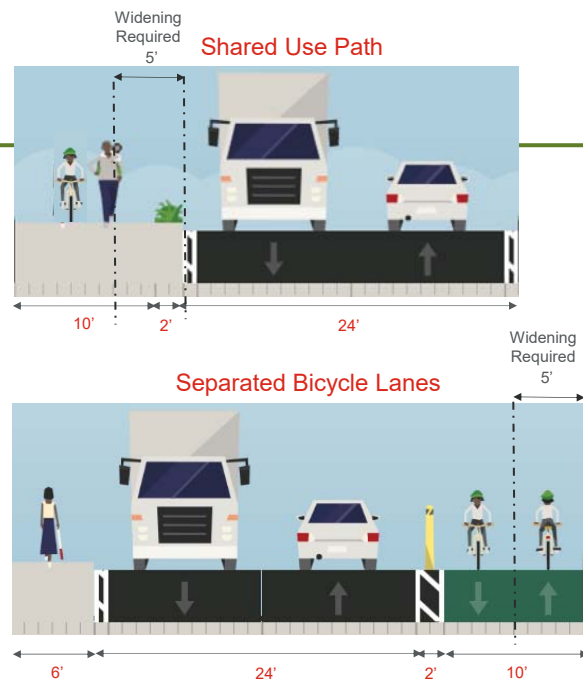
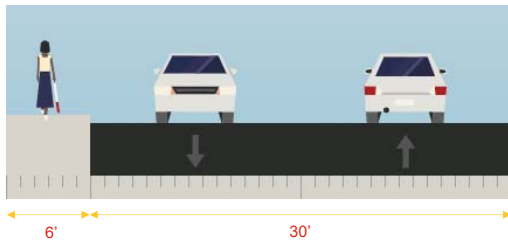


2

19

Queen City Park Rd

Existing cross-section:



2

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21



22



23

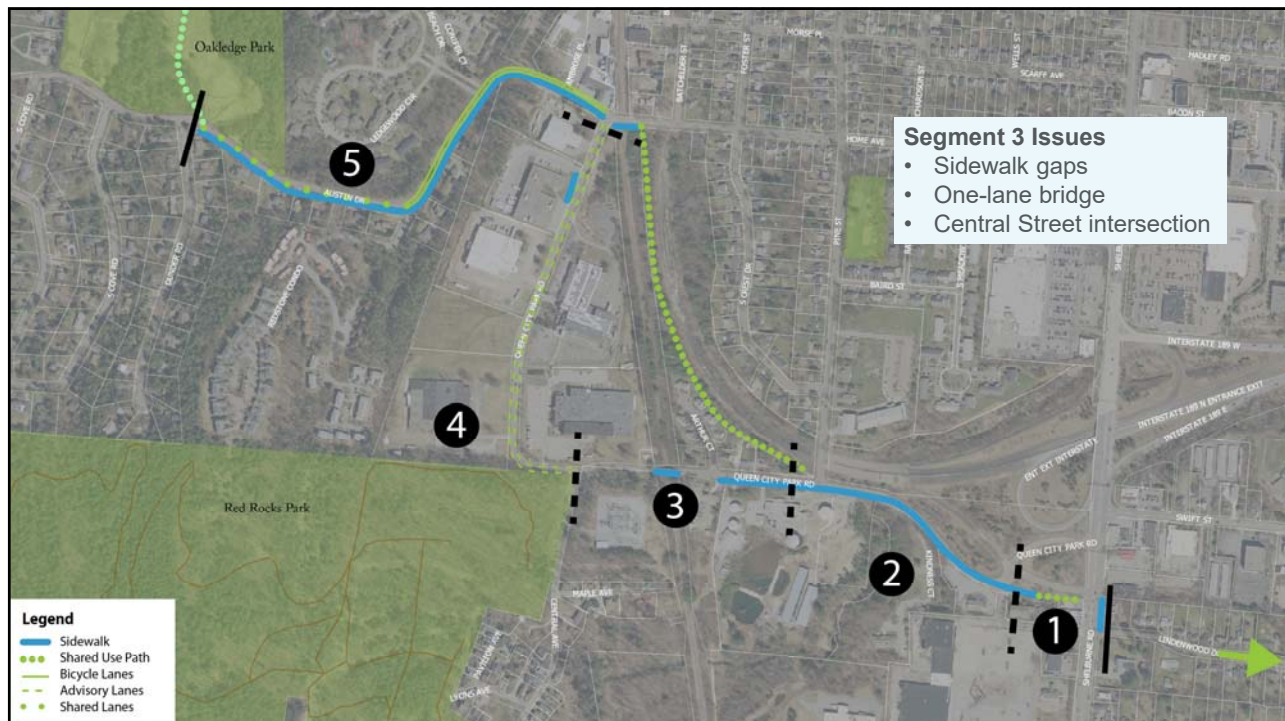


24

Evaluation – Segment 2

| Alternative | Level of Stress | Utility Impacts | Estimated Cost | Other Considerations |
|--------------------------------------|-----------------|-----------------|----------------|--|
| No Build | 3 | - | - | |
| 1) Shared Use Path | 1 | 1 pole 3 DI | \$333,800 | Easier snow removal; lower annual maintenance; consistent experience with existing paths |
| 2) Sidewalk and Separated Bike Lanes | 1 | 1 pole 1 DI | \$273,300 | Snow removal will take more time; flexposts and pavement markings require annual maintenance |

25



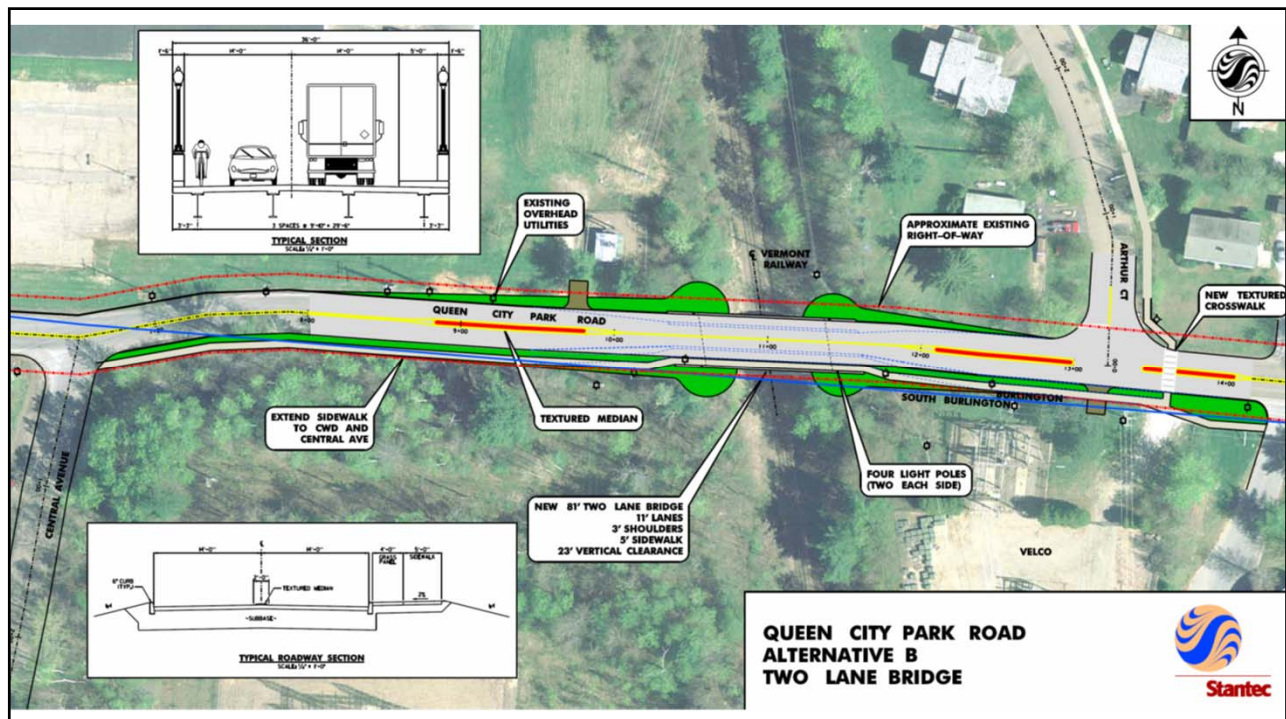
26

Existing Conditions



3

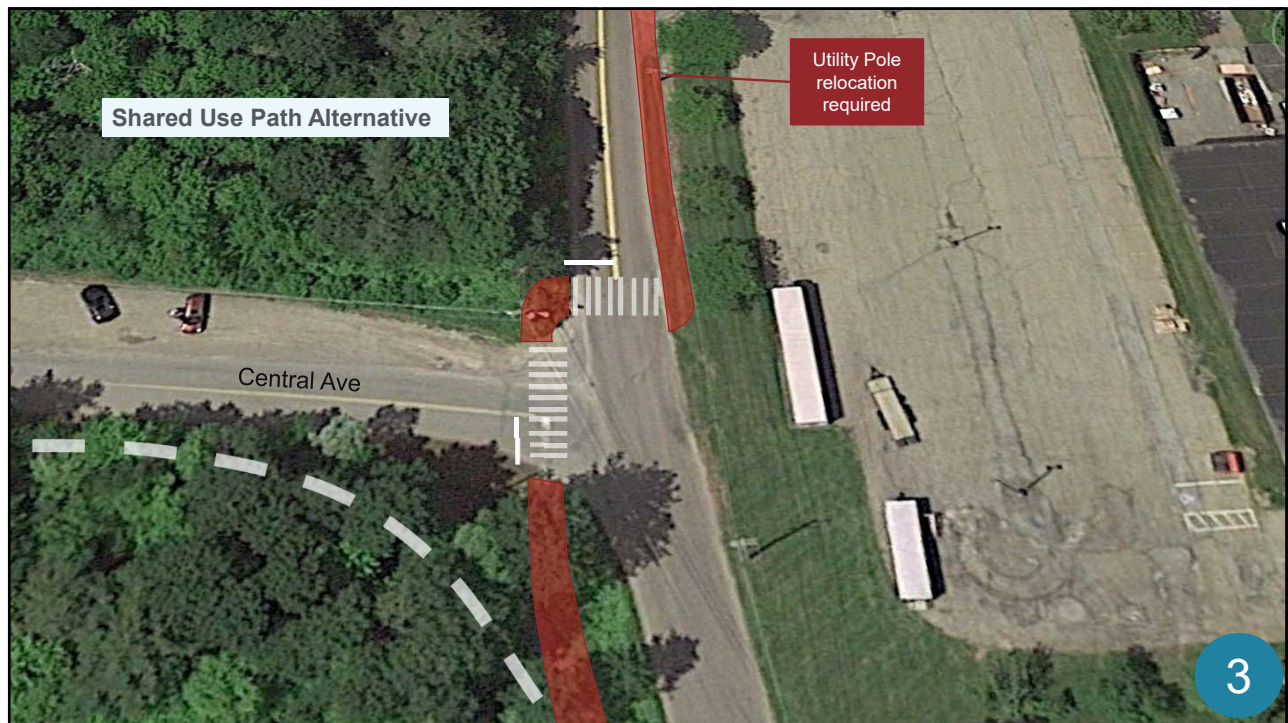
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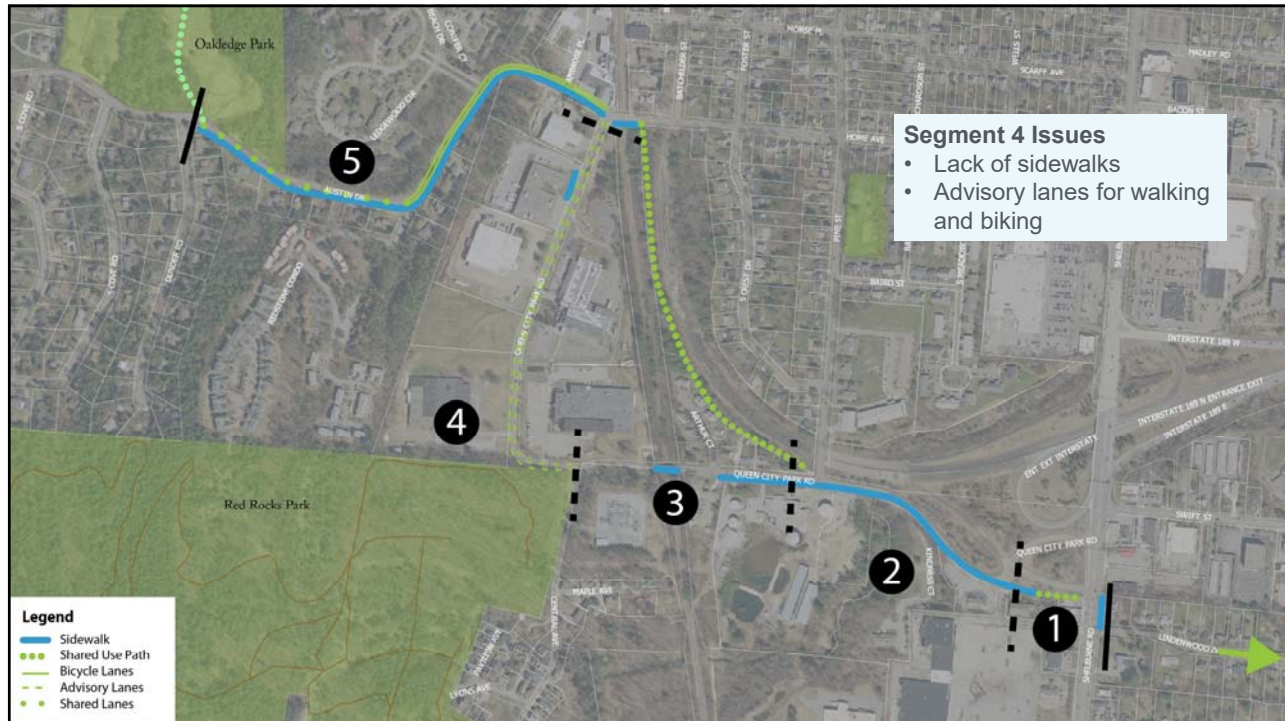
31

Evaluation – Segment 3

| Alternative | Level of Stress | Utility Impacts | Estimated Cost* | Other Considerations |
|--------------------------------------|-----------------|-----------------|-----------------|--|
| No Build | 2 | - | - | |
| 1) Shared Use Path | 1 | 3 poles | \$265,200 | Easy to maintain |
| 2) Sidewalk and Separated Bike Lanes | 1 | 8 poles | \$364,000 | Snow removal will take longer; annual maintenance of flexposts and paint |

* Cost does not include bridge replacement; only road widening, sidewalk construction and path construction

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33

4

Queen City Park Road Central St to Austin Drive

- Small section of sidewalk on west side
- Utility poles line west side
- Reconstruction of Queen City Park has changed drainage patterns
- Marshy area on east side determined not a wetland



34



35

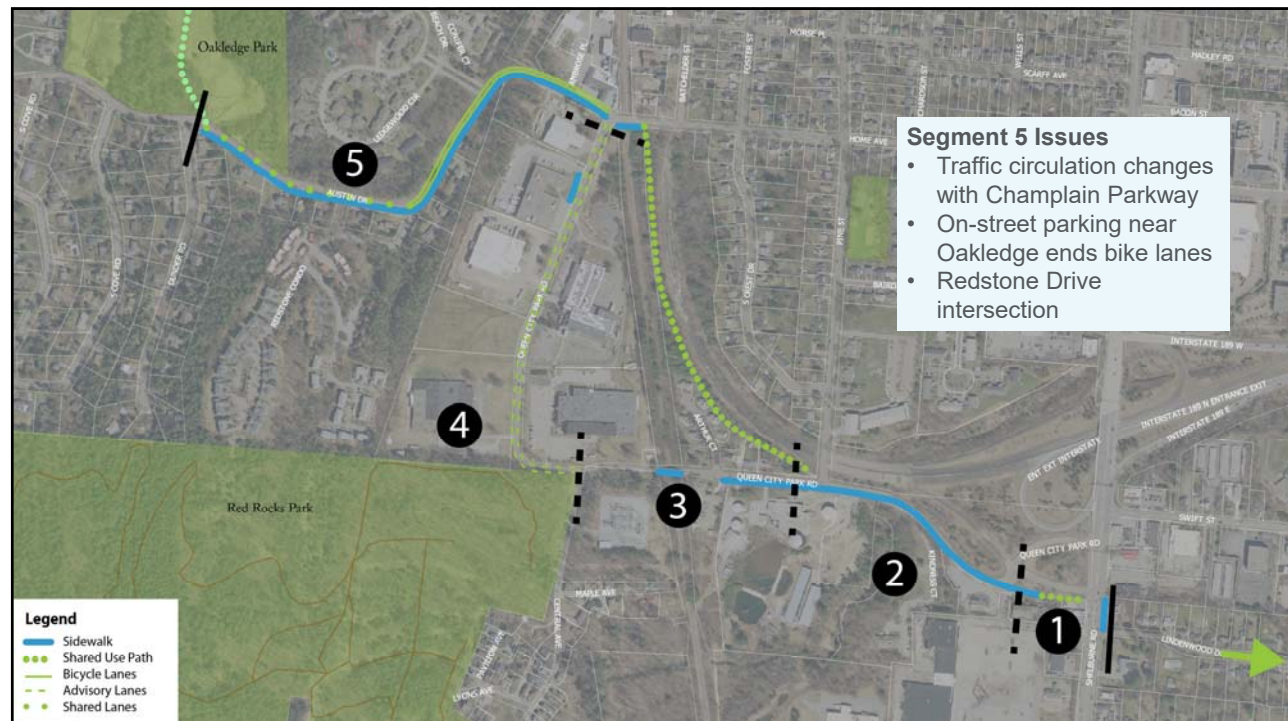


36

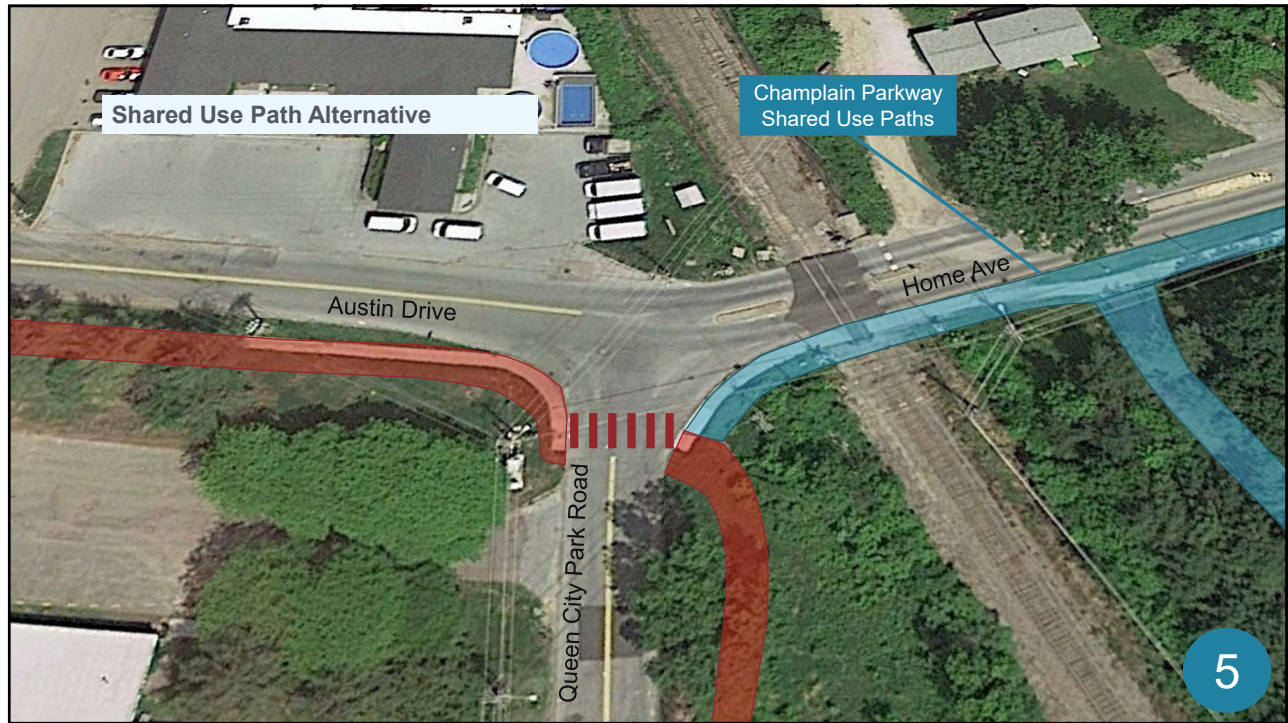
Evaluation – Segment 4

| Alternative | Level of Stress | Utility Impacts | Estimated Cost | Additional Considerations |
|--------------------------------------|-----------------|-----------------|----------------|---|
| No Build | 3 | - | - | |
| 1) Shared Use Path | 1 | TBD | \$476,000 | 8-10 ft Asphalt path |
| 2) Sidewalk and Separated Bike Lanes | 1 | TBD | \$866,000 | Requires road widening and additional maintenance effort |
| 3) Sidewalk with Advisory Bike Lanes | 3 | TBD | \$568,000 | 6 ft Concrete walkway Does not provide low stress bicycle option |

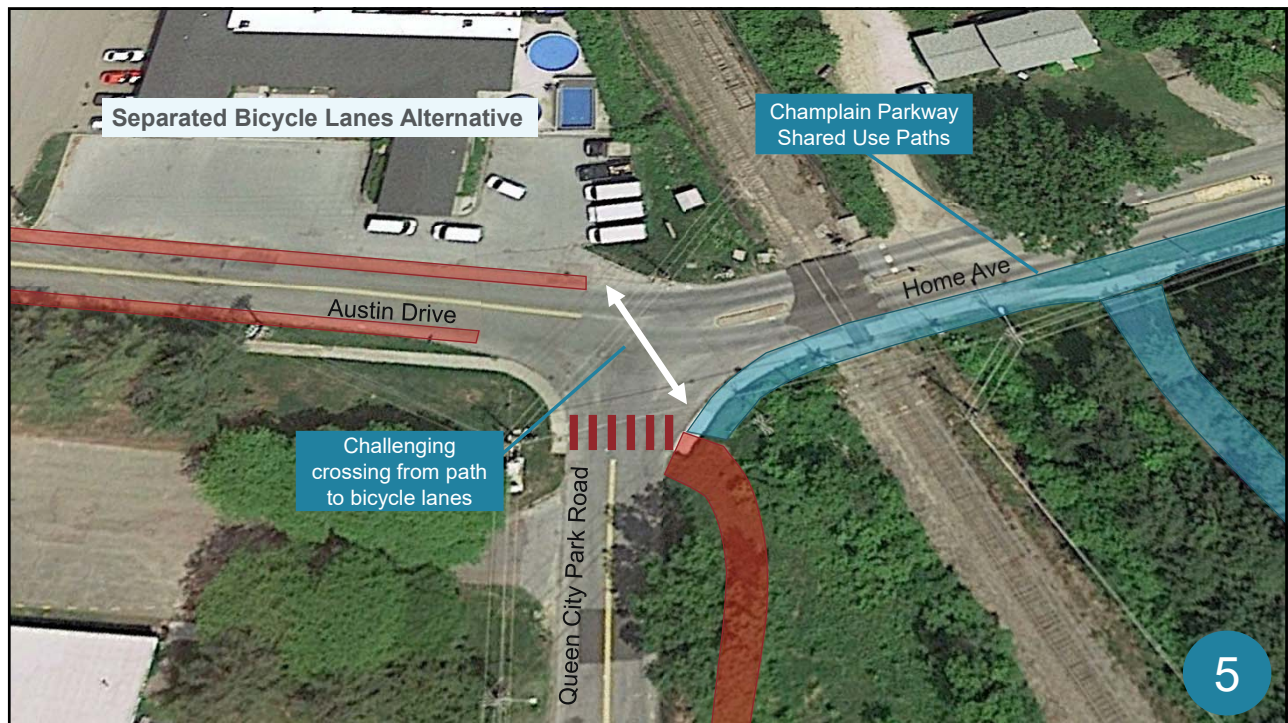
37



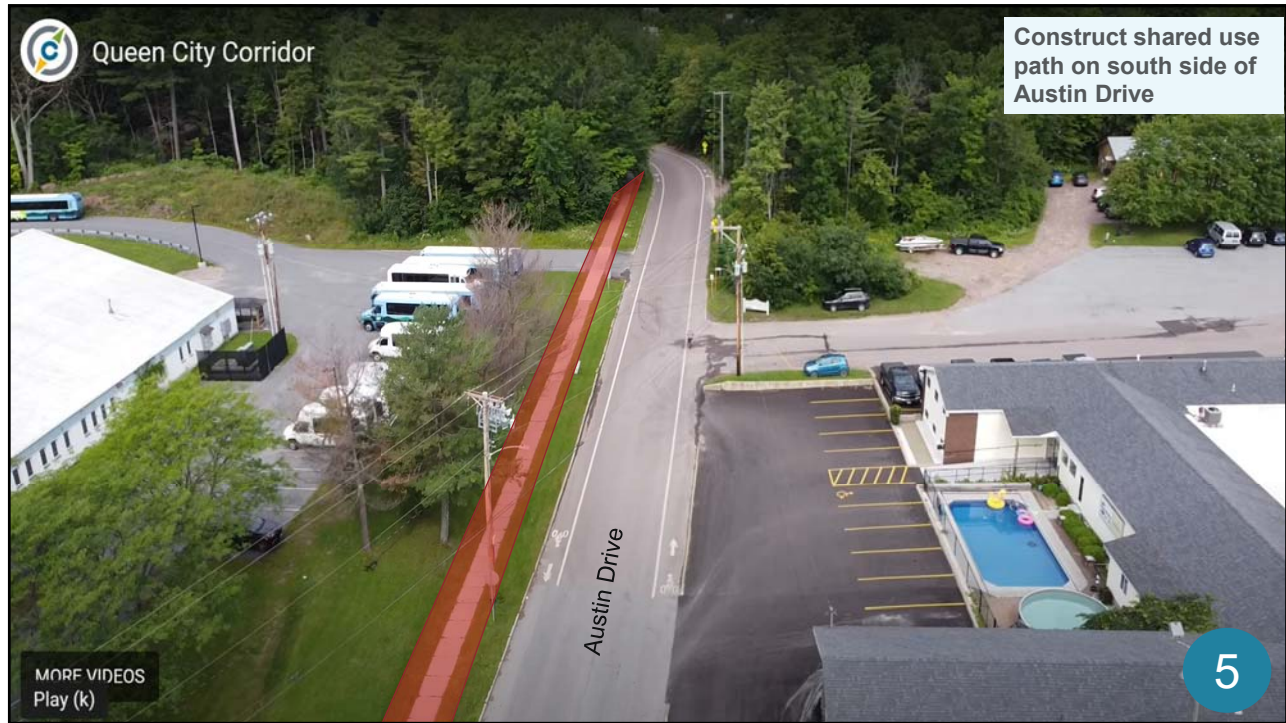
38



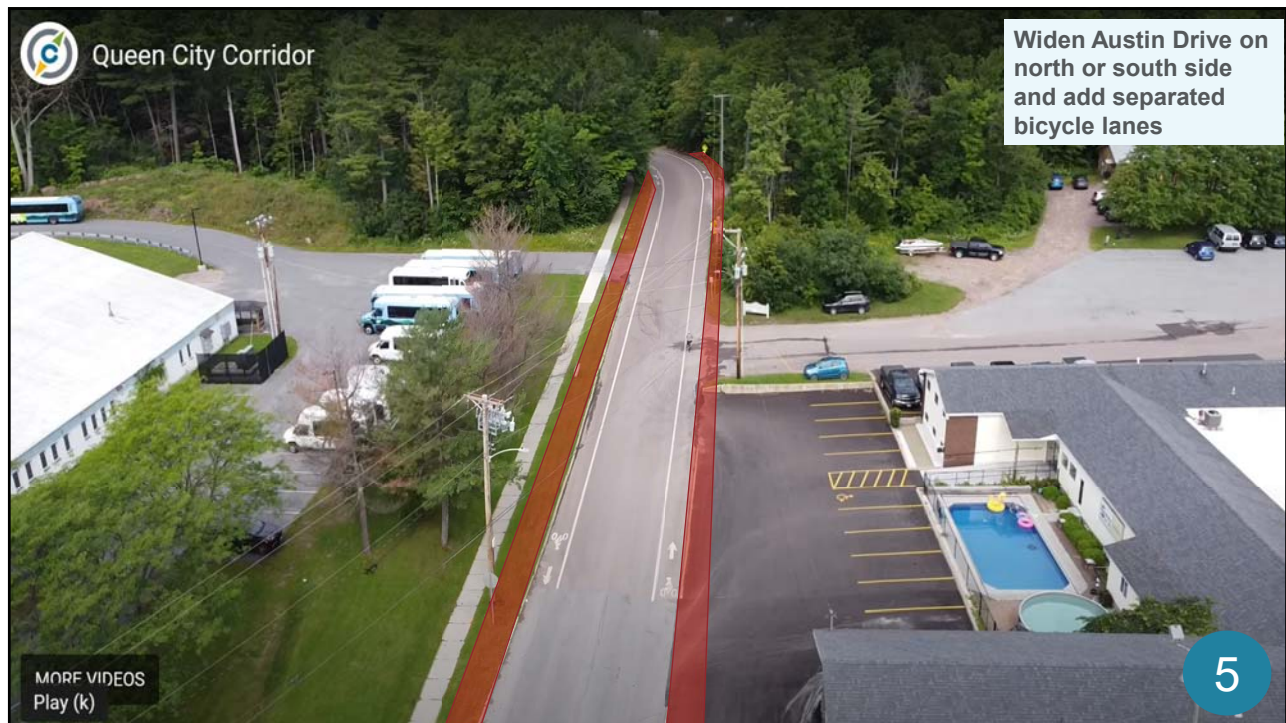
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40



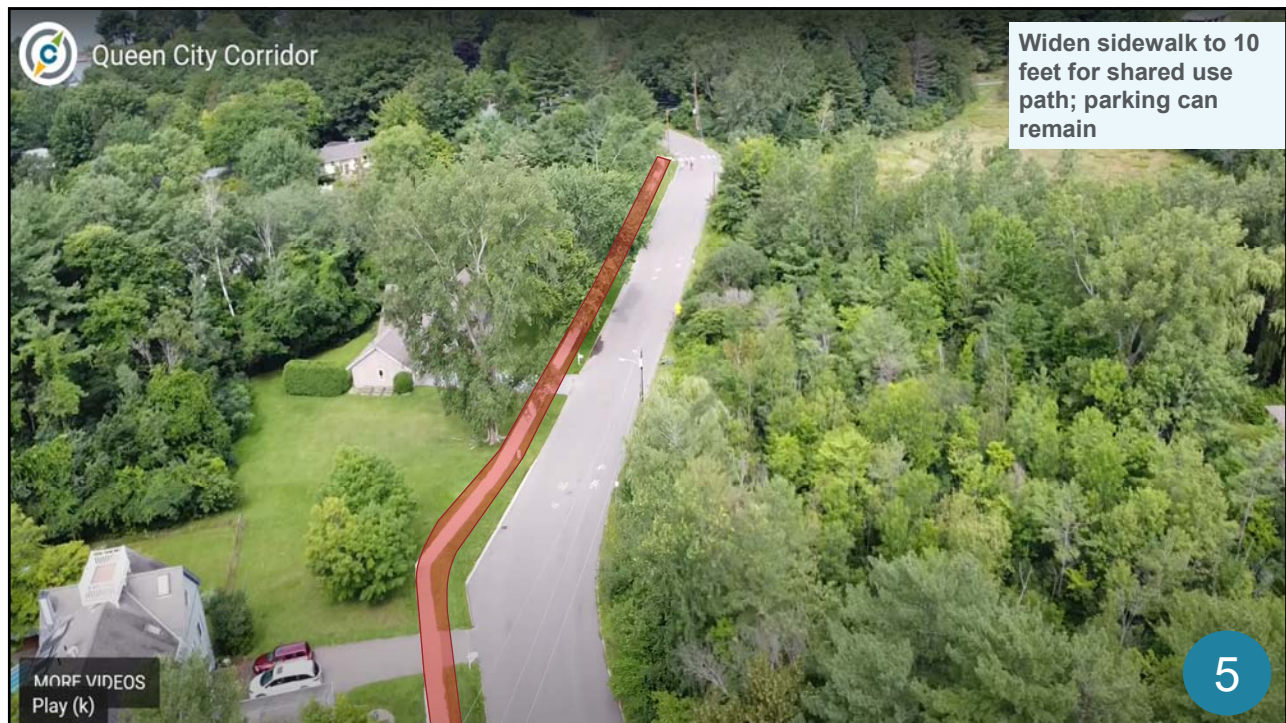
41



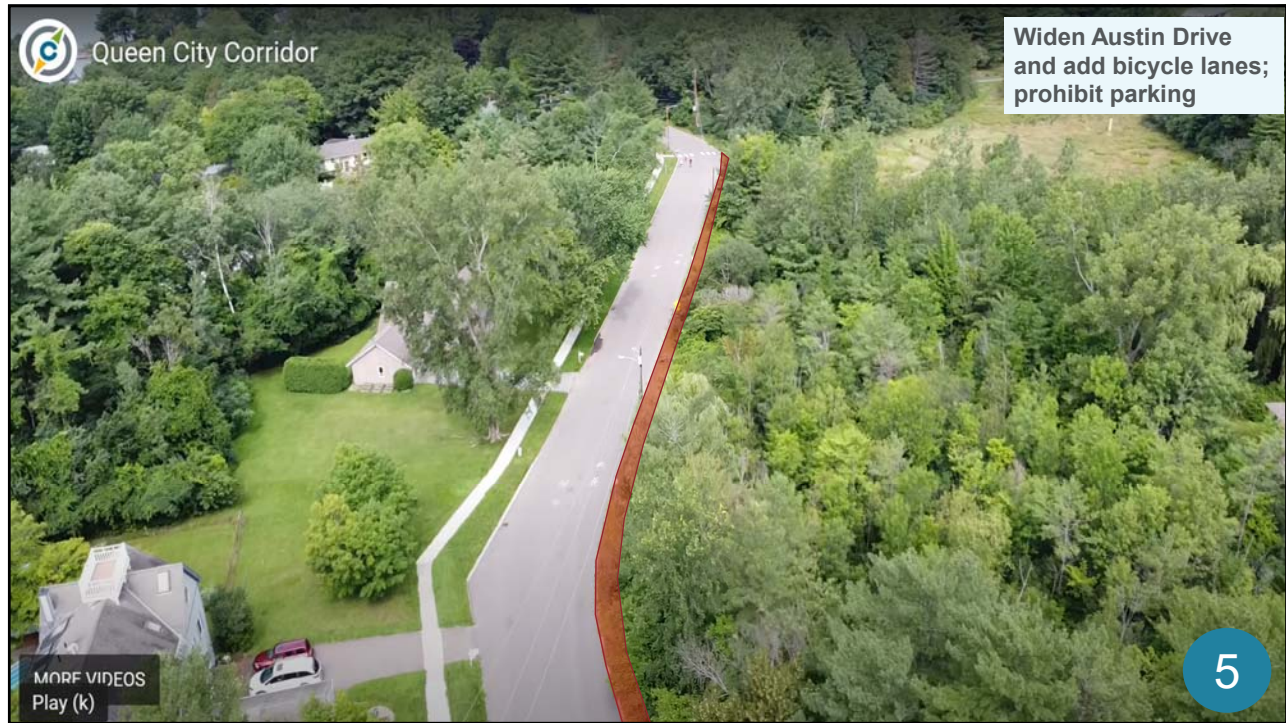
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Evaluation – Segment 5

| Alternative | Level of Stress | Utility Impacts | Estimated Cost | Comments |
|--|-----------------|-----------------|----------------|--|
| No Build | 2 | - | - | |
| 1) Widen sidewalk to Shared Use Path | 1 | 6 Pole | \$943,800 | <ul style="list-style-type: none"> Parking can remain Easier winter maintenance Less annual maintenance |
| 2) Sidewalk and Separated Bike Lanes on north side | 1 | 9 Pole 3 DI | \$894,400 | <ul style="list-style-type: none"> Removes parking More costly to maintain during winter Difficult connection at Home/Austin/Queen City Park intersection |

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Cost Summary

| Segment | Length | Shared Use Path | Bicycle Lanes and Sidewalk |
|--------------|-------------|---------------------|----------------------------|
| 1 | 450 | \$ 138,150 | \$ 138,150 |
| 2 | 1120 | \$ 333,760 | \$ 273,280 |
| 3 | 1300 | \$ 265,200 | \$ 364,000 |
| 4 | 2000 | \$ 476,000 | \$ 866,000 |
| 5 | 2600 | \$ 943,800 | \$ 894,400 |
| TOTAL | 7470 | \$ 2,157,000 | \$ 2,536,000 |

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Additional Considerations

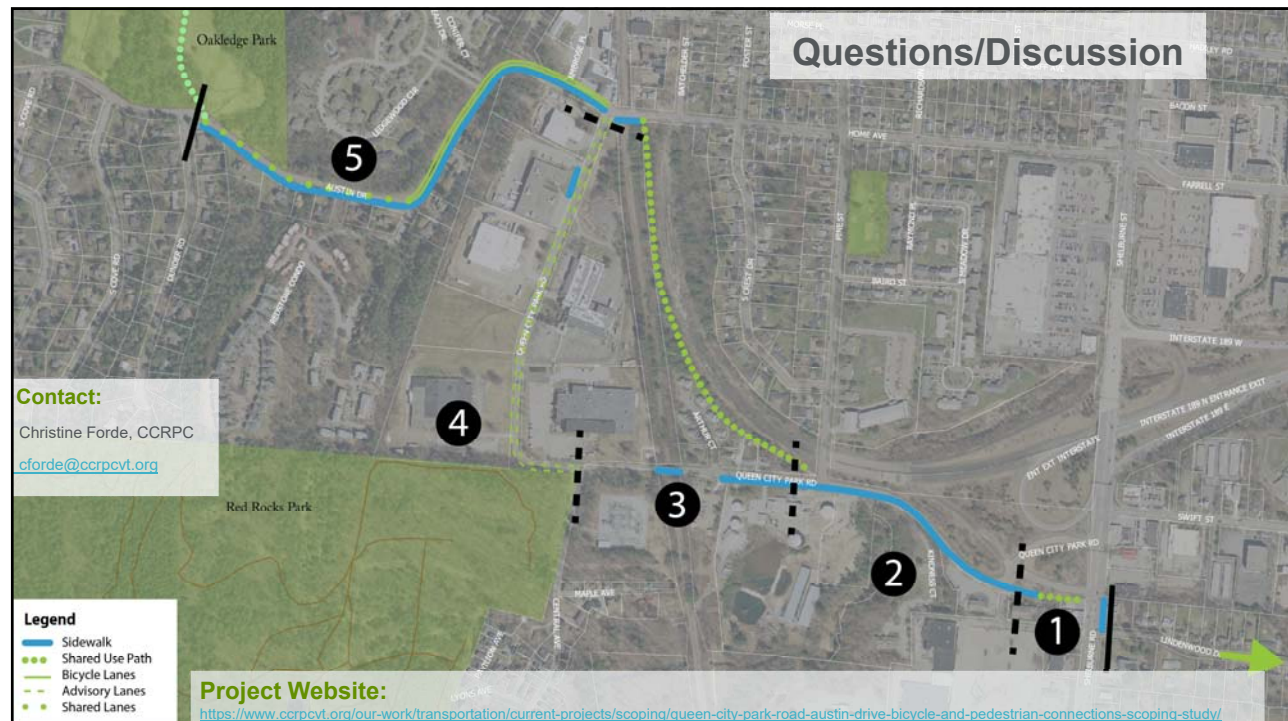
- Winter maintenance and annual maintenance is generally easier for shared use path than separated bicycle lanes.
- Is there enough foot traffic that we should separate walkers from bikers?
- How important is it to have one type of facility for the entire route?
- Should we preserve parking on Austin Drive?
- What else?

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Next Steps

- Refine and select Preferred Alternative
- Prepare Final Report
 - Present to Burlington and South Burlington City Councils (Date TBD)
 - Project will be eligible for funding through VTrans grants

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Contact:

Christine Forde, CCRPC

cforde@ccrpcvt.org

Project Website:

<https://www.ccrpcvt.org/our-work/transportation/current-projects/scoping/queen-city-park-road-austin-drive-bicycle-and-pedestrian-connections-scoping-study/>

| Site | Address | Town | Site Use | Site Number | DEC Manager | Priority | Site Status | Project Status | Source of Contamination | Contaminant | Institutional Control | Site Closure Date | DEC Contact Email Address | Record Last Updated |
|-------------------------------|----------------------|------------------|------------|-------------|------------------|---|------------------|---|---|--------------------------|----------------------------|--|-----------------------------|---------------------|
| General Electric Comp. A&esd | Industrial Avenue | Burlington | Industrial | 770040 | --- | SMAC - Site Management Activities Completed | | Landfarming of soils completed. Groundwater monitoring completed. | Other, Spill | Heating Oil | Deed Restriction, Easement | 36014 | | 43124 |
| A O T Southern Connector | n/a | Burlington | | 870121 | Unassigned | NFAP - No Further Action Planned | | Site Closed | UST-Gasoline | | | 35804 | Chuck.Schwer@vermont.gov | 41052 |
| Dattilios Sunoco | 794 Shelburne Rd | South Burlington | Business | 982490 | Richard Spiese | LOW - Site with contamination to soils or groundwater, but no effect on sensitive receptors | | Contaminated soil stockpiled. Groundwater onsite above GWESs. Annual monitoring ongoing in 3 site MWs.. | UST-Gasoline | Gasoline, MTBE | | | Richard.Spiese@vermont.gov | 44259 |
| General Electric Comp. A&esd | Industrial Avenue | Burlington | Industrial | 770040 | --- | SMAC - Site Management Activities Completed | | Landfarming of soils completed. Groundwater monitoring completed. | Other, Spill | Heating Oil | Deed Restriction, Easement | 8/7/1998 | | 1/24/2018 |
| Edlund Industries | n/a | Burlington | | 880269 | Unassigned | NFAP - No Further Action Planned | | Site Closed | | | | | Chuck.Schwer@vermont.gov | 3/8/2005 |
| C C T A Garage | 1 Industrial Parkway | Burlington | Industrial | 951791 | John Schmeltzer | SMAC - Site Management Activities Completed | Voluntary Action | Hydraulic Oil Recovery Complete, Limited To On-site. 233t of diesel contam soil sent to Waste USA during parking lot rebuild. | UST-Diesel, UST-Gasoline, Waste Oil | Diesel, Other, Waste Oil | | 4/1/1997 | John.Schmeltzer@vermont.gov | 3/1/2019 |
| Hoechner/ Shelburne Road Gulf | 793 Shelburne Road | South Burlington | Garage | 20154597 | Tami Wuestenberg | MED - Site with sensitive receptors that are threatened by contamination | Voluntary Action | Contamination discovered during UST replacement. A large concrete structure (well) was discovered at the rear of the building. The owner was told when he purchased the property that it was part of an old remedial system. There was fuel/gasoline impacted water found within the well. The well appeared to be acting as an oil/water separator with inlet and outlet pipes. Significant contamination was discovered at the outlet of the system which is on an adjacent property. Gasoline USTs and a fuel oil UST were removed. The replaced gasoline USTs were in good condition and the contaminated soil associated around them appears to be from an old release. The fuel oil UST was in poor condition with significant contamination surrounding the tank near the concrete structure. An ISI is forthcoming. 2018 - ISI, soil gas and sub slab work conducted around site and in potentially impacted apartment building. A confirmatory subslab sampling in apartment building and full GW Monitoring event to occur in 2019. Confirmatory sampling in subslab vapors are low however above SSVs therefore indoor air sampling will be occur. 2021 - additional VI work being conducted. SSD pilot test failed - materials under building are unknown; ECAA expected 2/21. Site across RTE 7 (Datilios) is contributing some contamination to the upper portion of the site. Site cleanup work should start 2021. Delays/misunderstanding regarding South Burlington zoning has pushed site work into 2022. CAP for source will be written over the winter and corrective action on and offsite will occur in 2022. | Above Ground Storage Tank, UST-Diesel, UST-Gasoline | Gasoline, MTBE | | Tami.Wuestenberg@vermont.gov | 1/31/2022 | |
| Hannafords | 929 Shelburne Rd | South Burlington | Business | 20083860 | Ashley Desmond | SMAC - Site Management Activities Completed | | Contamination discovered during the removal an abandoned UST from the parking lot. Four monitoring wells installed at the property. No significant contamination encountered in any of the monitoring wells. Water is supplied by the municipal system. Monitoring wells properly abandoned. | UST-Heating Oil | Heating Oil | | 2/26/2010 | Ashley.Desmond@vermont.gov | 3/3/2010 |

Segment 1

| ITEM # | DESCRIPTION | QTY | UNIT | Unit Price | AMOUNT |
|-----------------------------------|-----------------------------------|-----|------|--------------|-------------------|
| | Clearing and Grubbing | 0.1 | Acre | \$ 10,000.00 | \$ 686 |
| | Unclassified Excavation | 55 | CY | \$ 20.00 | \$ 1,107 |
| | Excavation of Surfaces and Paven | 55 | CY | \$ 35.00 | \$ 1,937 |
| | Solid Rock Excavation | | CY | \$ 120.00 | \$ - |
| | Subbase Gravel | 28 | CY | \$ 37.00 | \$ 1,024 |
| | Subbase Sand Borrow | 28 | CY | \$ 28.00 | \$ 775 |
| | Catch Basin Replacement | 2 | EA | \$ 5,000.00 | \$ 10,000 |
| | Adjust manhole elevation | | EA | \$ 1,200.00 | \$ - |
| | Culvert Replacement | | EA | \$ 8,000.00 | \$ - |
| | Shared Use Bridge | | SF | \$ 150.00 | \$ - |
| | Bituminous Concrete Path | 60 | TON | \$ 490.00 | \$ 29,400 |
| | New Granite Curb | | LF | \$ 60.00 | \$ - |
| | Remove and Reset Granite Curb | 140 | LF | \$ 40.00 | \$ 5,600 |
| | Remove and Reset Guardrail | | LF | \$ 20.00 | \$ - |
| | Accessible Ramps | 4 | EA | \$ 4,100.00 | \$ 16,400 |
| | Detectable Warning Surface | 4 | EA | \$ 722.00 | \$ 2,888 |
| | Durable 4" Yellow Line, Type 1 Ta | 540 | LF | \$ 4.00 | \$ 2,160 |
| | Durable 12" White Line, Type I Ta | 540 | LF | \$ 8.00 | \$ 4,320 |
| | Telecom Pedestel Relocation | | EA | \$ 2,000.00 | \$ - |
| | Hydrant Relocation | | EA | \$ 4,000.00 | \$ - |
| | Utility Pole Relocation | | EA | \$ 7,500.00 | \$ - |
| | Traffic Signs & Posts | 4 | EA | \$ 150.00 | \$ 600 |
| | Loam & Seed | 169 | SY | \$ 18.00 | \$ 3,040 |
| | Tree Plantings | | EA | \$ 750.00 | \$ - |
| | Erosion Control | 1 | LS | \$ 4,000.00 | \$ 4,000 |
| | Traffic Control | 1 | LS | \$ 8,000.00 | \$ 8,000 |
| | Mobilization | 1 | LS | \$ 5,000.00 | \$ 5,000 |
| SUBTOTAL = | | | | | \$ 97,000 |
| 25% CONTINGENCY = | | | | | \$ 24,000 |
| DESIGN ENGINEERING = | | | | | \$ 27,000 |
| CONSTRUCTION ENGINEERING = | | | | | \$ 18,000 |
| TOTAL = | | | | | \$ 166,000 |
| Cost per foot = | | | | | \$ 307 |

Segment 2: Separated Bike Lanes

| ITEM # | DESCRIPTION | QTY | UNIT | Unit Price | AMOUNT |
|-----------------------------------|-----------------------------------|-------|------|--------------|-------------------|
| | Clearing and Grubbing | 0.3 | Acre | \$ 10,000.00 | \$ 2,571 |
| | Unclassified Excavation | 130 | CY | \$ 20.00 | \$ 2,593 |
| | Excavation of Surfaces and Paven | 130 | CY | \$ 35.00 | \$ 4,537 |
| | Solid Rock Excavation | | CY | \$ 120.00 | \$ - |
| | Subbase Gravel | 65 | CY | \$ 37.00 | \$ 2,398 |
| | Subbase Sand Borrow | 65 | CY | \$ 28.00 | \$ 1,815 |
| | Catch Basin Replacement | 1 | EA | \$ 5,000.00 | \$ 5,000 |
| | Adjust manhole elevation | | EA | \$ 1,200.00 | \$ - |
| | Culvert Replacement | | EA | \$ 8,000.00 | \$ - |
| | Shared Use Bridge | | SF | \$ 150.00 | \$ - |
| | Bituminous Concrete Path | 90 | TON | \$ 490.00 | \$ 44,100 |
| | New Granite Curb | | LF | \$ 60.00 | \$ - |
| | Remove and Reset Granite Curb | 1,400 | LF | \$ 40.00 | \$ 56,000 |
| | Remove and Reset Guardrail | | LF | \$ 20.00 | \$ - |
| | Accessible Ramps | 2 | EA | \$ 4,100.00 | \$ 8,200 |
| | Detectable Warning Surface | 2 | EA | \$ 722.00 | \$ 1,444 |
| | Durable 4" Yellow Line, Type 1 Ta | 1,400 | LF | \$ 4.00 | \$ 5,600 |
| | Durable 12" White Line, Type I Ta | 1,400 | LF | \$ 8.00 | \$ 11,200 |
| | Telecom Pedestel Relocation | | EA | \$ 2,000.00 | \$ - |
| | Hydrant Relocation | | EA | \$ 4,000.00 | \$ - |
| | Utility Pole Relocation | 1 | EA | \$ 7,500.00 | \$ 7,500 |
| | Traffic Signs & Posts | 4 | EA | \$ 150.00 | \$ 600 |
| | Loam & Seed | 622 | SY | \$ 18.00 | \$ 11,200 |
| | Tree Plantings | | EA | \$ 750.00 | \$ - |
| | Erosion Control | 1 | LS | \$ 8,000.00 | \$ 8,000 |
| | Traffic Control | 1 | LS | \$ 16,000.00 | \$ 16,000 |
| | Mobilization | 1 | LS | \$ 10,000.00 | \$ 10,000 |
| SUBTOTAL = | | | | | \$ 199,000 |
| 25% CONTINGENCY = | | | | | \$ 50,000 |
| DESIGN ENGINEERING = | | | | | \$ 55,000 |
| CONSTRUCTION ENGINEERING = | | | | | \$ 37,000 |
| TOTAL = | | | | | \$ 341,000 |
| Cost per foot = | | | | | \$ 244 |

Segment 2: Shared Use Path

| ITEM # | DESCRIPTION | QTY | UNIT | Unit Price | AMOUNT |
|----------------------------|-----------------------------------|-------|------|--------------|------------|
| | Clearing and Grubbing | 0.3 | Acre | \$ 10,000.00 | \$ 2,571 |
| | Unclassified Excavation | 140 | CY | \$ 20.00 | \$ 2,806 |
| | Excavation of Surfaces and Paven | 140 | CY | \$ 35.00 | \$ 4,910 |
| | Solid Rock Excavation | | CY | \$ 120.00 | \$ - |
| | Subbase Gravel | 70 | CY | \$ 37.00 | \$ 2,595 |
| | Subbase Sand Borrow | 70 | CY | \$ 28.00 | \$ 1,964 |
| | Catch Basin Replacement | 3 | EA | \$ 5,000.00 | \$ 15,000 |
| | Adjust manhole elevation | | EA | \$ 1,200.00 | \$ - |
| | Culvert Replacement | | EA | \$ 8,000.00 | \$ - |
| | Shared Use Bridge | | SF | \$ 150.00 | \$ - |
| | Bituminous Concrete Path | 120 | TON | \$ 490.00 | \$ 58,800 |
| | New Granite Curb | | LF | \$ 60.00 | \$ - |
| | Remove and Reset Granite Curb | 1,400 | LF | \$ 40.00 | \$ 56,000 |
| | Remove and Reset Guardrail | | LF | \$ 20.00 | \$ - |
| | Accessible Ramps | 4 | EA | \$ 4,100.00 | \$ 16,400 |
| | Detectable Warning Surface | 4 | EA | \$ 722.00 | \$ 2,888 |
| | Durable 4" Yellow Line, Type 1 Ta | 1,400 | LF | \$ 4.00 | \$ 5,600 |
| | Durable 12" White Line, Type I Ta | 1,400 | LF | \$ 8.00 | \$ 11,200 |
| | Telecom Pedestel Relocation | | EA | \$ 2,000.00 | \$ - |
| | Hydrant Relocation | | EA | \$ 4,000.00 | \$ - |
| | Utility Pole Relocation | 1 | EA | \$ 7,500.00 | \$ 7,500 |
| | Traffic Signs & Posts | 4 | EA | \$ 150.00 | \$ 600 |
| | Loam & Seed | 622 | SY | \$ 18.00 | \$ 11,200 |
| | Tree Plantings | | EA | \$ 750.00 | \$ - |
| | Erosion Control | 1 | LS | \$ 10,000.00 | \$ 10,000 |
| | Traffic Control | 1 | LS | \$ 20,000.00 | \$ 20,000 |
| | Mobilization | 1 | LS | \$ 12,000.00 | \$ 12,000 |
| SUBTOTAL = | | | | | \$ 243,000 |
| 25% CONTINGENCY = | | | | | \$ 61,000 |
| DESIGN ENGINEERING = | | | | | \$ 67,000 |
| CONSTRUCTION ENGINEERING = | | | | | \$ 46,000 |
| TOTAL = | | | | | \$ 417,000 |
| Cost per foot = | | | | | \$ 298 |

Segment 3: Separated Bicycle Lanes

| ITEM # | DESCRIPTION | QTY | UNIT | Unit Price | AMOUNT |
|-----------------------------------|-----------------------------------|-------|------|--------------|-------------------|
| | Clearing and Grubbing | 0.2 | Acre | \$ 10,000.00 | \$ 2,204 |
| | Unclassified Excavation | 22 | CY | \$ 20.00 | \$ 444 |
| | Excavation of Surfaces and Pave | 133 | CY | \$ 35.00 | \$ 4,667 |
| | Solid Rock Excavation | | CY | \$ 120.00 | \$ - |
| | Subbase Gravel | 11 | CY | \$ 37.00 | \$ 411 |
| | Subbase Sand Borrow | 11 | CY | \$ 28.00 | \$ 311 |
| | Catch Basin Replacement | - | EA | \$ 5,000.00 | \$ - |
| | Adjust manhole elevation | | EA | \$ 1,200.00 | \$ - |
| | Culvert Replacement | | EA | \$ 8,000.00 | \$ - |
| | Shared Use Bridge | | SF | \$ 150.00 | \$ - |
| | Bituminous Concrete Path | 120 | TON | \$ 490.00 | \$ 58,800 |
| | New Granite Curb | | LF | \$ 60.00 | \$ - |
| | Remove and Reset Granite Curb | | LF | \$ 40.00 | \$ - |
| | Remove and Reset Guardrail | | LF | \$ 20.00 | \$ - |
| | Accessible Ramps | 4 | EA | \$ 4,100.00 | \$ 16,400 |
| | Detectable Warning Surface | 4 | EA | \$ 722.00 | \$ 2,888 |
| | Durable 4" Yellow Line, Type 1 T& | 1,200 | LF | \$ 4.00 | \$ 4,800 |
| | Durable 12" White Line, Type I T& | 1,200 | LF | \$ 8.00 | \$ 9,600 |
| | Telecom Pedestel Relocation | | EA | \$ 2,000.00 | \$ - |
| | Hydrant Relocation | | EA | \$ 4,000.00 | \$ - |
| | Utility Pole Relocation | 6 | EA | \$ 7,500.00 | \$ 45,000 |
| | Traffic Signs & Posts | 4 | EA | \$ 150.00 | \$ 600 |
| | Loam & Seed | 533 | SY | \$ 18.00 | \$ 9,600 |
| | Tree Plantings | 8 | EA | \$ 750.00 | \$ 6,000 |
| | Erosion Control | 1 | LS | \$ 8,000.00 | \$ 8,000 |
| | Traffic Control | 1 | LS | \$ 16,000.00 | \$ 16,000 |
| | Mobilization | 1 | LS | \$ 10,000.00 | \$ 10,000 |
| SUBTOTAL = | | | | | \$ 196,000 |
| 25% CONTINGENCY = | | | | | \$ 49,000 |
| DESIGN ENGINEERING = | | | | | \$ 54,000 |
| CONSTRUCTION ENGINEERING = | | | | | \$ 37,000 |
| TOTAL = | | | | | \$ 336,000 |
| Cost per foot = | | | | | \$ 280 |

Segment 3: Shared Use Path

| ITEM # | DESCRIPTION | QTY | UNIT | Unit Price | AMOUNT |
|-----------------------------------|-----------------------------------|-------|------|--------------|-------------------|
| | Clearing and Grubbing | 0.2 | Acre | \$ 10,000.00 | \$ 1,510 |
| | Unclassified Excavation | 122 | CY | \$ 20.00 | \$ 2,436 |
| | Excavation of Surfaces and Pave | 122 | CY | \$ 35.00 | \$ 4,262 |
| | Solid Rock Excavation | | CY | \$ 120.00 | \$ - |
| | Subbase Gravel | 61 | CY | \$ 37.00 | \$ 2,253 |
| | Subbase Sand Borrow | 61 | CY | \$ 28.00 | \$ 1,705 |
| | Catch Basin Replacement | - | EA | \$ 5,000.00 | \$ - |
| | Adjust manhole elevation | | EA | \$ 1,200.00 | \$ - |
| | Culvert Replacement | | EA | \$ 8,000.00 | \$ - |
| | Shared Use Bridge | | SF | \$ 150.00 | \$ - |
| | Bituminous Concrete Path | 110 | TON | \$ 490.00 | \$ 53,900 |
| | New Granite Curb | | LF | \$ 60.00 | \$ - |
| | Remove and Reset Granite Curb | | LF | \$ 40.00 | \$ - |
| | Remove and Reset Guardrail | | LF | \$ 20.00 | \$ - |
| | Accessible Ramps | 4 | EA | \$ 4,100.00 | \$ 16,400 |
| | Detectable Warning Surface | 4 | EA | \$ 722.00 | \$ 2,888 |
| | Durable 4" Yellow Line, Type 1 T& | 1,200 | LF | \$ 4.00 | \$ 4,800 |
| | Durable 12" White Line, Type I T& | 1,200 | LF | \$ 8.00 | \$ 9,600 |
| | Telecom Pedestel Relocation | | EA | \$ 2,000.00 | \$ - |
| | Hydrant Relocation | | EA | \$ 4,000.00 | \$ - |
| | Utility Pole Relocation | 1 | EA | \$ 7,500.00 | \$ 7,500 |
| | Traffic Signs & Posts | 4 | EA | \$ 150.00 | \$ 600 |
| | Loam & Seed | 533 | SY | \$ 18.00 | \$ 9,600 |
| | Tree Plantings | | EA | \$ 750.00 | \$ - |
| | Erosion Control | 1 | LS | \$ 6,000.00 | \$ 6,000 |
| | Traffic Control | 1 | LS | \$ 12,000.00 | \$ 12,000 |
| | Mobilization | 1 | LS | \$ 7,000.00 | \$ 7,000 |
| <i>SUBTOTAL =</i> | | | | | \$ 143,000 |
| <i>25% CONTINGENCY =</i> | | | | | \$ 36,000 |
| <i>DESIGN ENGINEERING =</i> | | | | | \$ 39,000 |
| <i>CONSTRUCTION ENGINEERING =</i> | | | | | \$ 27,000 |
| TOTAL = | | | | | \$ 245,000 |
| <i>Cost per foot =</i> | | | | | \$ 204 |

Segment 4: Separated Bike Lanes

| ITEM # | DESCRIPTION | QTY | UNIT | Unit Price | AMOUNT |
|-----------------------------------|--------------------------------------|-------|------|--------------|-------------------|
| | Clearing and Grubbing | 0.3 | Acre | \$ 10,000.00 | \$ 2,893 |
| | Unclassified Excavation | 78 | CY | \$ 20.00 | \$ 1,556 |
| | Excavation of Surfaces and Pavements | | CY | \$ 35.00 | \$ - |
| | Solid Rock Excavation | | CY | \$ 120.00 | \$ - |
| | Subbase Gravel | 39 | CY | \$ 37.00 | \$ 1,439 |
| | Subbase Sand Borrow | 39 | CY | \$ 28.00 | \$ 1,089 |
| | Catch Basin Replacement | 1 | EA | \$ 5,000.00 | \$ 5,000 |
| | Adjust manhole elevation | | EA | \$ 1,200.00 | \$ - |
| | Culvert Replacement | | EA | \$ 8,000.00 | \$ - |
| | Shared Use Bridge | | SF | \$ 150.00 | \$ - |
| | Bituminous Pavement - Bike lane: | 440 | TON | \$ 120.00 | \$ 52,800 |
| | New Granite Curb | | LF | \$ 60.00 | \$ - |
| | Remove and Reset Granite Curb | | LF | \$ 40.00 | \$ - |
| | Remove and Reset Guardrail | | LF | \$ 20.00 | \$ - |
| | Accessible Ramps | 4 | EA | \$ 4,100.00 | \$ 16,400 |
| | Detectable Warning Surface | 4 | EA | \$ 722.00 | \$ 2,888 |
| | Durable 4" Yellow Line, Type 1 T&E | - | LF | \$ 4.00 | \$ - |
| | Durable 12" White Line, Type I T&E | 4,200 | LF | \$ 8.00 | \$ 33,600 |
| | Telecom Pedestel Relocation | | EA | \$ 2,000.00 | \$ - |
| | Hydrant Relocation | | EA | \$ 4,000.00 | \$ - |
| | Utility Pole Relocation | 2 | EA | \$ 7,500.00 | \$ 15,000 |
| | Traffic Signs & Posts | 4 | EA | \$ 150.00 | \$ 600 |
| | Loam & Seed | 933 | SY | \$ 18.00 | \$ 16,800 |
| | Tree Plantings | | EA | \$ 750.00 | \$ - |
| | Erosion Control | 1 | LS | \$ 7,000.00 | \$ 7,000 |
| | Traffic Control | 1 | LS | \$ 15,000.00 | \$ 15,000 |
| | Mobilization | 1 | LS | \$ 9,000.00 | \$ 9,000 |
| SUBTOTAL = | | | | | \$ 182,000 |
| 25% CONTINGENCY = | | | | | \$ 46,000 |
| DESIGN ENGINEERING = | | | | | \$ 50,000 |
| CONSTRUCTION ENGINEERING = | | | | | \$ 34,000 |
| TOTAL = | | | | | \$ 312,000 |

Cost per foot = \$ 149

Segment 5: Separated Bike Lanes

| ITEM # | DESCRIPTION | QTY | UNIT | Unit Price | AMOUNT |
|-----------------------------------|--------------------------------------|-------|------|--------------|-------------------|
| | Clearing and Grubbing | 0.5 | Acre | \$ 10,000.00 | \$ 4,959 |
| | Unclassified Excavation | 1,000 | CY | \$ 20.00 | \$ 20,000 |
| | Excavation of Surfaces and Pavements | | CY | \$ 35.00 | \$ - |
| | Solid Rock Excavation | | CY | \$ 120.00 | \$ - |
| | Subbase Gravel | 500 | CY | \$ 37.00 | \$ 18,500 |
| | Subbase Sand Borrow | 500 | CY | \$ 28.00 | \$ 14,000 |
| | Catch Basin Replacement | 3 | EA | \$ 5,000.00 | \$ 15,000 |
| | Adjust manhole elevation | | EA | \$ 1,200.00 | \$ - |
| | Culvert Replacement | | EA | \$ 8,000.00 | \$ - |
| | Shared Use Bridge | | SF | \$ 150.00 | \$ - |
| | Bituminous Concrete Path | 270 | TON | \$ 490.00 | \$ 132,300 |
| | New Granite Curb | | LF | \$ 60.00 | \$ - |
| | Remove and Reset Granite Curb | 2,700 | LF | \$ 40.00 | \$ 108,000 |
| | Remove and Reset Guardrail | | LF | \$ 20.00 | \$ - |
| | Accessible Ramps | 4 | EA | \$ 4,100.00 | \$ 16,400 |
| | Detectable Warning Surface | 4 | EA | \$ 722.00 | \$ 2,888 |
| | Durable 4" Yellow Line, Type 1 T&E | 2,700 | LF | \$ 4.00 | \$ 10,800 |
| | Durable 12" White Line, Type I T&E | 2,700 | LF | \$ 8.00 | \$ 21,600 |
| | Telecom Pedestel Relocation | 9 | EA | \$ 2,000.00 | \$ 18,000 |
| | Hydrant Relocation | | EA | \$ 4,000.00 | \$ - |
| | Utility Pole Relocation | 6 | EA | \$ 7,500.00 | \$ 45,000 |
| | Traffic Signs & Posts | 4 | EA | \$ 150.00 | \$ 600 |
| | Loam & Seed | 1,200 | SY | \$ 18.00 | \$ 21,600 |
| | Tree Plantings | | EA | \$ 750.00 | \$ - |
| | Erosion Control | 1 | LS | \$ 22,000.00 | \$ 22,000 |
| | Traffic Control | 1 | LS | \$ 44,000.00 | \$ 44,000 |
| | Mobilization | 1 | LS | \$ 27,000.00 | \$ 27,000 |
| SUBTOTAL = | | | | | \$ 543,000 |
| 25% CONTINGENCY = | | | | | \$ 136,000 |
| DESIGN ENGINEERING = | | | | | \$ 149,000 |
| CONSTRUCTION ENGINEERING = | | | | | \$ 102,000 |
| TOTAL = | | | | | \$ 930,000 |

Cost per foot = \$ 344

Segment 5: Shared Use Path

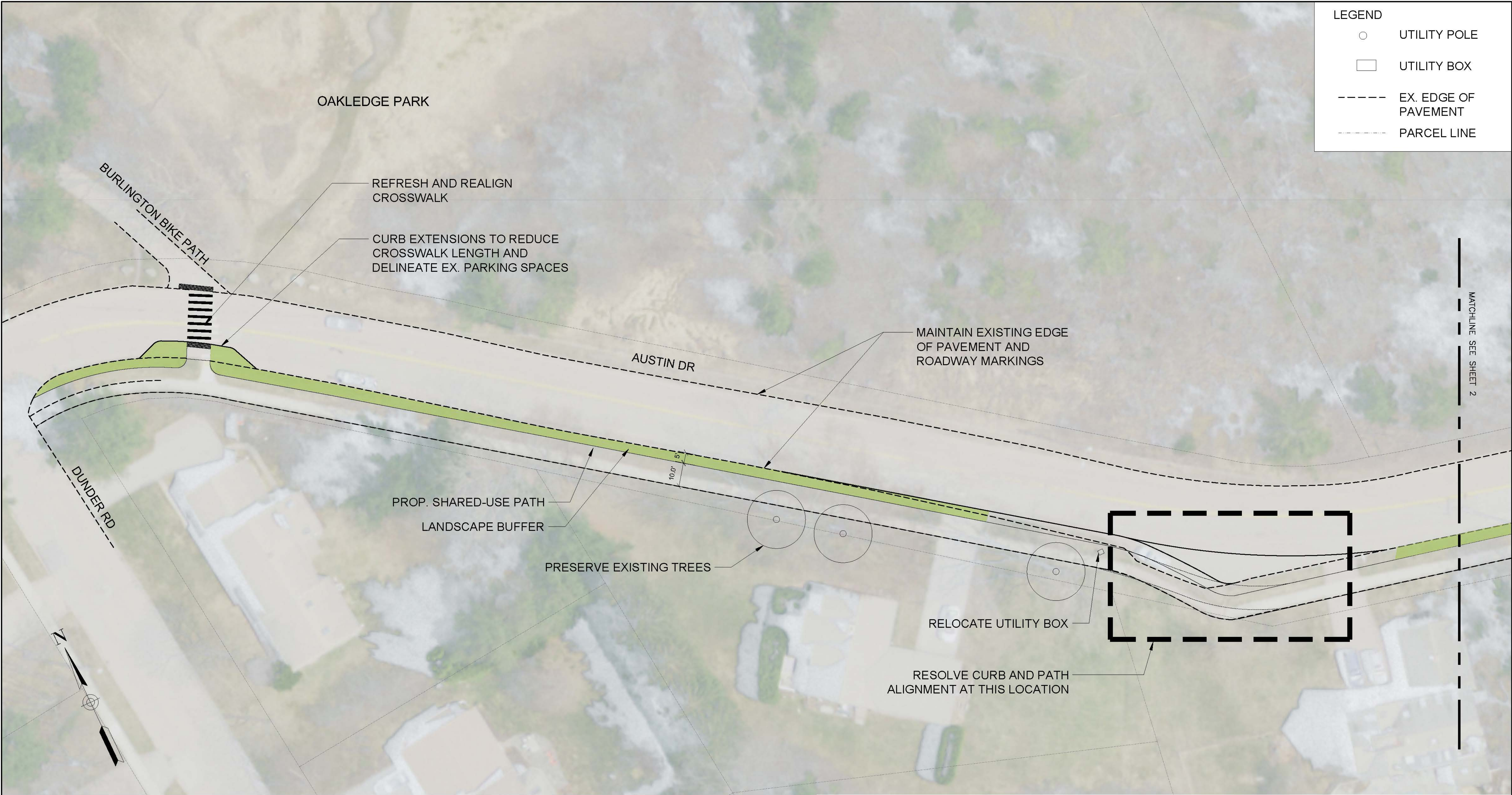
| ITEM # | DESCRIPTION | QTY | UNIT | Unit Price | AMOUNT |
|-----------------------------------|-----------------------------------|-------|------|--------------|-------------------|
| | Clearing and Grubbing | 0.5 | Acre | \$ 10,000.00 | \$ 4,959 |
| | Unclassified Excavation | 1,000 | CY | \$ 20.00 | \$ 20,000 |
| | Excavation of Surfaces and Pave | 300 | CY | \$ 35.00 | \$ 10,500 |
| | Solid Rock Excavation | 20 | CY | \$ 120.00 | \$ 2,400 |
| | Subbase Gravel | 500 | CY | \$ 37.00 | \$ 18,500 |
| | Subbase Sand Borrow | 500 | CY | \$ 28.00 | \$ 14,000 |
| | Catch Basin Replacement | 3 | EA | \$ 5,000.00 | \$ 15,000 |
| | Adjust manhole elevation | | EA | \$ 1,200.00 | \$ - |
| | Culvert Replacement | | EA | \$ 8,000.00 | \$ - |
| | Shared Use Bridge | | SF | \$ 150.00 | \$ - |
| | Bituminous Concrete Path | 270 | TON | \$ 490.00 | \$ 132,300 |
| | New Granite Curb | | LF | \$ 60.00 | \$ - |
| | Remove and Reset Granite Curb | 2,700 | LF | \$ 40.00 | \$ 108,000 |
| | Remove and Reset Guardrail | | LF | \$ 20.00 | \$ - |
| | Accessible Ramps | 4 | EA | \$ 4,100.00 | \$ 16,400 |
| | Detectable Warning Surface | 4 | EA | \$ 722.00 | \$ 2,888 |
| | Durable 4" Yellow Line, Type 1 T& | 2,700 | LF | \$ 4.00 | \$ 10,800 |
| | Durable 12" White Line, Type I T& | 2,700 | LF | \$ 8.00 | \$ 21,600 |
| | Telecom Pedestel Relocation | 9 | EA | \$ 2,000.00 | \$ 18,000 |
| | Hydrant Relocation | | EA | \$ 4,000.00 | \$ - |
| | Utility Pole Relocation | 6 | EA | \$ 7,500.00 | \$ 45,000 |
| | Traffic Signs & Posts | 4 | EA | \$ 150.00 | \$ 600 |
| | Loam & Seed | 1,200 | SY | \$ 18.00 | \$ 21,600 |
| | Tree Plantings | 15 | EA | \$ 750.00 | \$ 11,250 |
| | Erosion Control | 1 | LS | \$ 23,000.00 | \$ 23,000 |
| | Traffic Control | 1 | LS | \$ 47,000.00 | \$ 47,000 |
| | Mobilization | 1 | LS | \$ 28,000.00 | \$ 28,000 |
| SUBTOTAL = | | | | | \$ 572,000 |
| 25% CONTINGENCY = | | | | | \$ 143,000 |
| DESIGN ENGINEERING = | | | | | \$ 157,000 |
| CONSTRUCTION ENGINEERING = | | | | | \$ 107,000 |
| TOTAL = | | | | | \$ 979,000 |
| Cost per foot = | | | | | \$ 363 |

Segment 4: Sidewalk

| ITEM # | DESCRIPTION | QTY | UNIT | Unit Price | AMOUNT |
|-----------------------------------|--------------------------------------|-------|------|--------------|-------------------|
| | Clearing and Grubbing | 0.4 | Acre | \$ 10,000.00 | \$ 3,857 |
| | Unclassified Excavation | 78 | CY | \$ 20.00 | \$ 1,556 |
| | Excavation of Surfaces and Pavements | | CY | \$ 35.00 | \$ - |
| | Solid Rock Excavation | | CY | \$ 120.00 | \$ - |
| | Subbase Gravel | 39 | CY | \$ 37.00 | \$ 1,439 |
| | Subbase Sand Borrow | 39 | CY | \$ 28.00 | \$ 1,089 |
| | Catch Basin Replacement | - | EA | \$ 5,000.00 | \$ - |
| | Adjust manhole elevation | | EA | \$ 1,200.00 | \$ - |
| | Culvert Replacement | | EA | \$ 8,000.00 | \$ - |
| | Shared Use Bridge | | SF | \$ 150.00 | \$ - |
| | Portland Cement Sidewalk | 1,400 | SY | \$ 120.00 | \$ 168,000 |
| | New Granite Curb | 1,260 | LF | \$ 60.00 | \$ 75,600 |
| | Remove and Reset Granite Curb | | LF | \$ 40.00 | \$ - |
| | Remove and Reset Guardrail | | LF | \$ 20.00 | \$ - |
| | Accessible Ramps | 4 | EA | \$ 4,100.00 | \$ 16,400 |
| | Detectable Warning Surface | 4 | EA | \$ 722.00 | \$ 2,888 |
| | Durable 4" Yellow Line, Type 1 T&E | - | LF | \$ 4.00 | \$ - |
| | Durable 12" White Line, Type I T&E | - | LF | \$ 8.00 | \$ - |
| | Telecom Pedestel Relocation | | EA | \$ 2,000.00 | \$ - |
| | Hydrant Relocation | | EA | \$ 4,000.00 | \$ - |
| | Utility Pole Relocation | | EA | \$ 7,500.00 | \$ - |
| | Traffic Signs & Posts | 4 | EA | \$ 150.00 | \$ 600 |
| | Loam & Seed | 933 | SY | \$ 18.00 | \$ 16,800 |
| | Tree Plantings | | EA | \$ 750.00 | \$ - |
| | Erosion Control | 1 | LS | \$ 14,000.00 | \$ 14,000 |
| | Traffic Control | 1 | LS | \$ 28,000.00 | \$ 28,000 |
| | Mobilization | 1 | LS | \$ 17,000.00 | \$ 17,000 |
| SUBTOTAL = | | | | | \$ 348,000 |
| 25% CONTINGENCY = | | | | | \$ 87,000 |
| DESIGN ENGINEERING = | | | | | \$ 96,000 |
| CONSTRUCTION ENGINEERING = | | | | | \$ 65,000 |
| TOTAL = | | | | | \$ 596,000 |
| Cost per foot = | | | | | \$ 284 |

Segment 4: Shared Use Path

| ITEM # | DESCRIPTION | QTY | UNIT | Unit Price | AMOUNT |
|-----------------------------------|--------------------------------------|-------|------|--------------|-------------------|
| | Clearing and Grubbing | 0.4 | Acre | \$ 10,000.00 | \$ 3,857 |
| | Unclassified Excavation | 78 | CY | \$ 20.00 | \$ 1,556 |
| | Excavation of Surfaces and Pavements | | CY | \$ 35.00 | \$ - |
| | Solid Rock Excavation | | CY | \$ 120.00 | \$ - |
| | Subbase Gravel | 39 | CY | \$ 37.00 | \$ 1,439 |
| | Subbase Sand Borrow | 39 | CY | \$ 28.00 | \$ 1,089 |
| | Catch Basin Replacement | - | EA | \$ 5,000.00 | \$ - |
| | Adjust manhole elevation | | EA | \$ 1,200.00 | \$ - |
| | Culvert Replacement | | EA | \$ 8,000.00 | \$ - |
| | Shared Use Bridge | | SF | \$ 150.00 | \$ - |
| | Bituminous Concrete Path | 180 | TON | \$ 490.00 | \$ 88,200 |
| | New Granite Curb | 1,260 | LF | \$ 60.00 | \$ 75,600 |
| | Remove and Reset Granite Curb | | LF | \$ 40.00 | \$ - |
| | Remove and Reset Guardrail | | LF | \$ 20.00 | \$ - |
| | Accessible Ramps | 4 | EA | \$ 4,100.00 | \$ 16,400 |
| | Detectable Warning Surface | 4 | EA | \$ 722.00 | \$ 2,888 |
| | Durable 4" Yellow Line, Type 1 T&E | 2,100 | LF | \$ 4.00 | \$ 8,400 |
| | Durable 12" White Line, Type I T&E | 2,100 | LF | \$ 8.00 | \$ 16,800 |
| | Telecom Pedestel Relocation | | EA | \$ 2,000.00 | \$ - |
| | Hydrant Relocation | | EA | \$ 4,000.00 | \$ - |
| | Utility Pole Relocation | 1 | EA | \$ 7,500.00 | \$ 7,500 |
| | Traffic Signs & Posts | 4 | EA | \$ 150.00 | \$ 600 |
| | Loam & Seed | 933 | SY | \$ 18.00 | \$ 16,800 |
| | Tree Plantings | | EA | \$ 750.00 | \$ - |
| | Erosion Control | 1 | LS | \$ 12,000.00 | \$ 12,000 |
| | Traffic Control | 1 | LS | \$ 24,000.00 | \$ 24,000 |
| | Mobilization | 1 | LS | \$ 14,000.00 | \$ 14,000 |
| SUBTOTAL = | | | | | \$ 292,000 |
| 25% CONTINGENCY = | | | | | \$ 73,000 |
| DESIGN ENGINEERING = | | | | | \$ 80,000 |
| CONSTRUCTION ENGINEERING = | | | | | \$ 55,000 |
| TOTAL = | | | | | \$ 500,000 |
| Cost per foot = | | | | | \$ 238 |



LEGEND

UTILITY POLE

UTILITY BOX

EX. EDGE OF PAVEMENT

PARCEL LINE

MATCHLINE SEE SHEET 2

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SCALE 1"=20'

PRELIMINARY - NOT FOR CONSTRUCTION

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|---|--|-----|------|----------|--|--|-------------|--|
| PROFESSIONAL CERTIFICATION I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF [STATE]. LICENSE NO. _____ EXPIRATION DATE: _____ | REUSE OF DOCUMENTS ALL DRAWINGS ARE INSTRUMENTS OF PROFESSIONAL SERVICE FOR THIS PROJECT. REUSE OR ALTERATION IS AT THE USER'S SOLE RISK. | | | | <div>TOOLE DESIGN</div> <div>2 OLIVER STREET, SUITE 305 BOSTON, MA 02109 PHONE: 617.619.9910 FAX: 301.927.2800 www.tooledesign.com</div> | QUEEN CITY PARK ROAD/ AUSTIN DRIVE SCOPING STUDY CCRPC, CITY OF BURLINGTON, CITY OF SOUTH BURLINGTON | PROJECT NO. | |
| | DSGN | | | | | | DATE | |
| | DR | | | | | | DRAWING NO. | |
| | CHK | | | | | | SHEET NO. | |
| | APVD | NO. | DATE | REVISION | BY | APVD | 1 OF 14 | |

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LEGEND

UTILITY POLE

UTILITY BOX

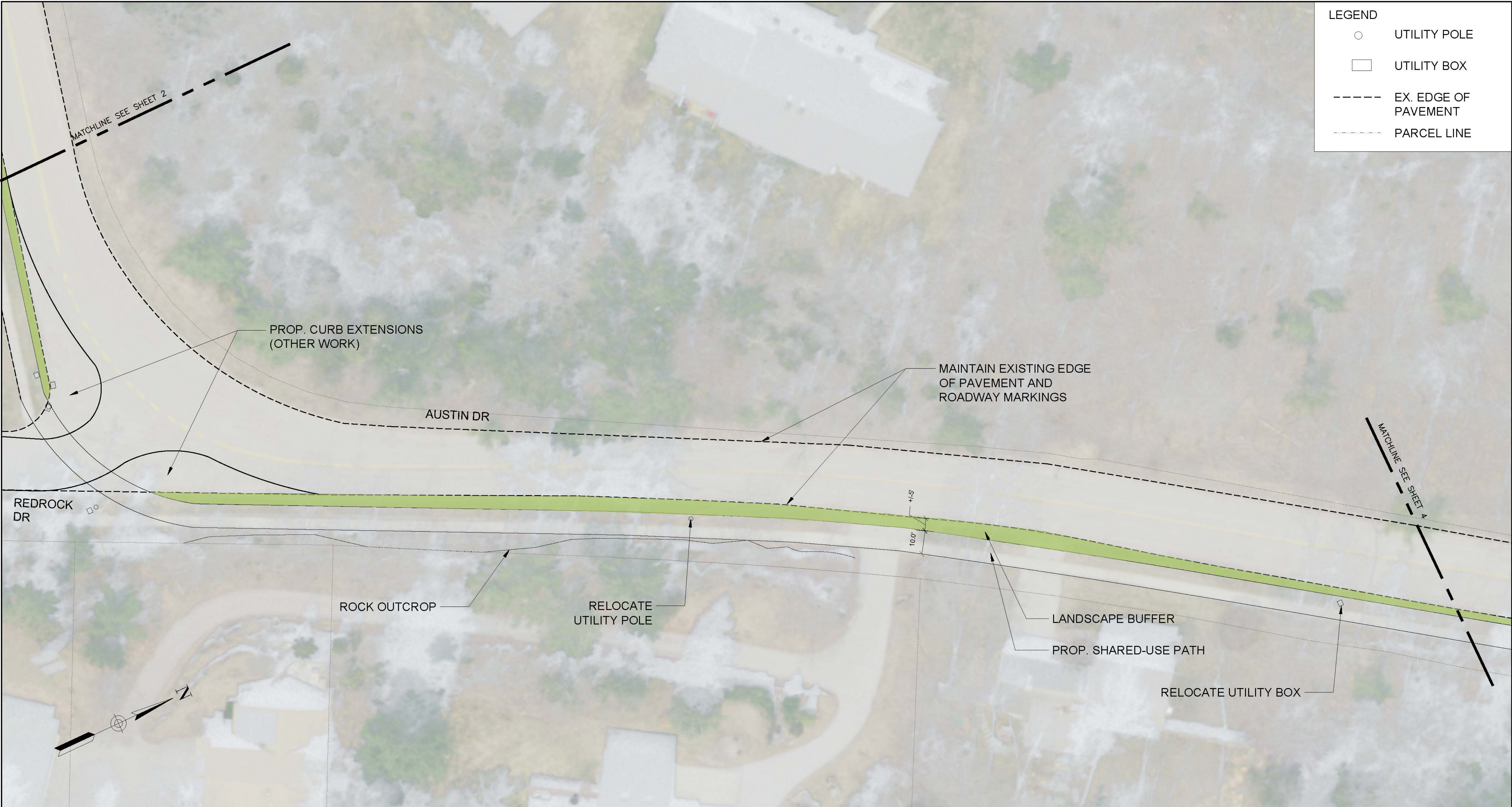
EX. EDGE OF PAVEMENT

PARCEL LINE

PRELIMINARY - NOT FOR CONSTRUCTION

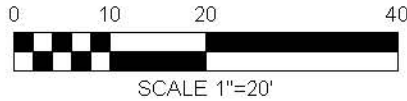
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| | DSGN | | | | | | | | | DATE |
| | DR | | | | | | | | | DRAWING NO. |
| | CHK | | | | | | | | | SHEET NO. |
| | APVD | NO. | DATE | REVISION | BY | APVD | | | 2 OF 14 | |

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LEGEND

UTILITY POLE

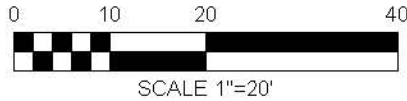
UTILITY BOX

PRELIMINARY - NOT FOR CONSTRUCTION

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| PROFESSIONAL CERTIFICATION | | REUSE OF DOCUMENTS | | | | | | <div>TOOLE DESIGN</div> <div>2 OLIVER STREET, SUITE 305 BOSTON, MA 02109 PHONE: 617.619.9910 FAX: 301.927.2800 www.tooledesign.com</div> | QUEEN CITY PARK ROAD/ AUSTIN DRIVE SCOPING STUDY | | CCRPC, CITY OF BURLINGTON, CITY OF SOUTH BURLINGTON | | PROJECT NO. |
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| | | DSGN | | | | | | | | | DRAWING NO. | | |
| | | DR | | | | | | | | | SHEET NO. | 3 OF 14 | |
| | | CHK | | | | | | | | | | | |
| APVD | NO. | DATE | REVISION | | | BY | APVD | | | | | | |



- LEGEND
- UTILITY POLE
 - UTILITY BOX
 - EX. EDGE OF PAVEMENT
 - PARCEL LINE

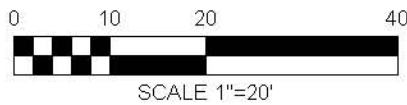
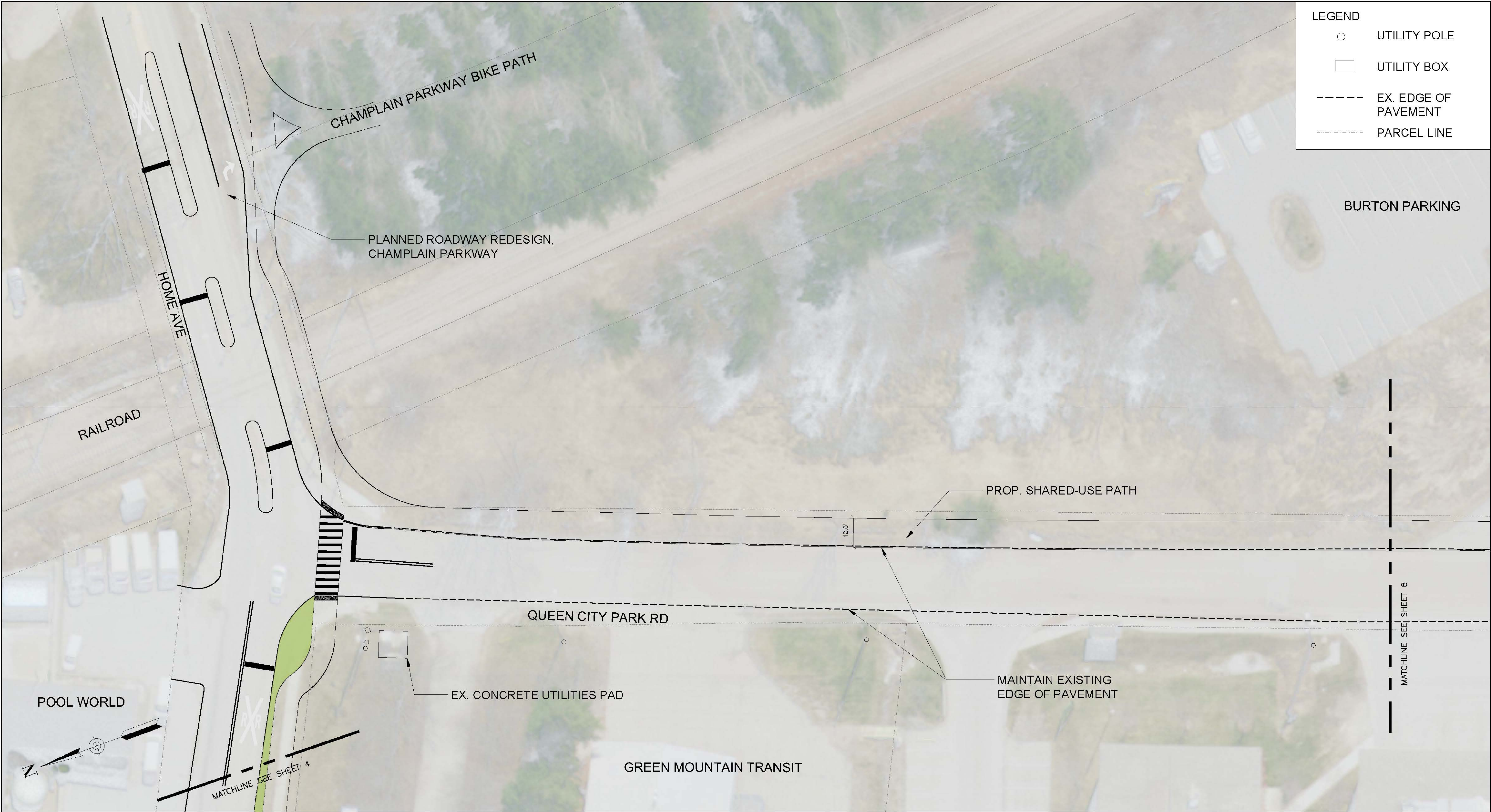


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|---|--|---|-----|------|----------|----|-----------------|---------|---|--|--|--|-------------|--|
| PROFESSIONAL CERTIFICATION | | REUSE OF DOCUMENTS | | | | | TOOLE DESIGN | | 2 OLIVER STREET, SUITE 305 BOSTON, MA 02109 PHONE: 617.619.9910 FAX: 301.927.2800 www.tooledesign.com | | QUEEN CITY PARK ROAD/ AUSTIN DRIVE SCOPING STUDY CCRPC, CITY OF BURLINGTON, CITY OF SOUTH BURLINGTON | | PROJECT NO. | |
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| | | DR | | | | | | | SHEET NO. | | | | | |
| | | CHK | | | | | | | | | | | | |
| | | APVD | NO. | DATE | REVISION | BY | APVD | 4 OF 14 | | | | | | |

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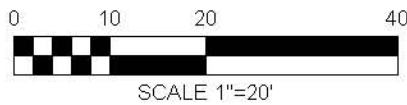
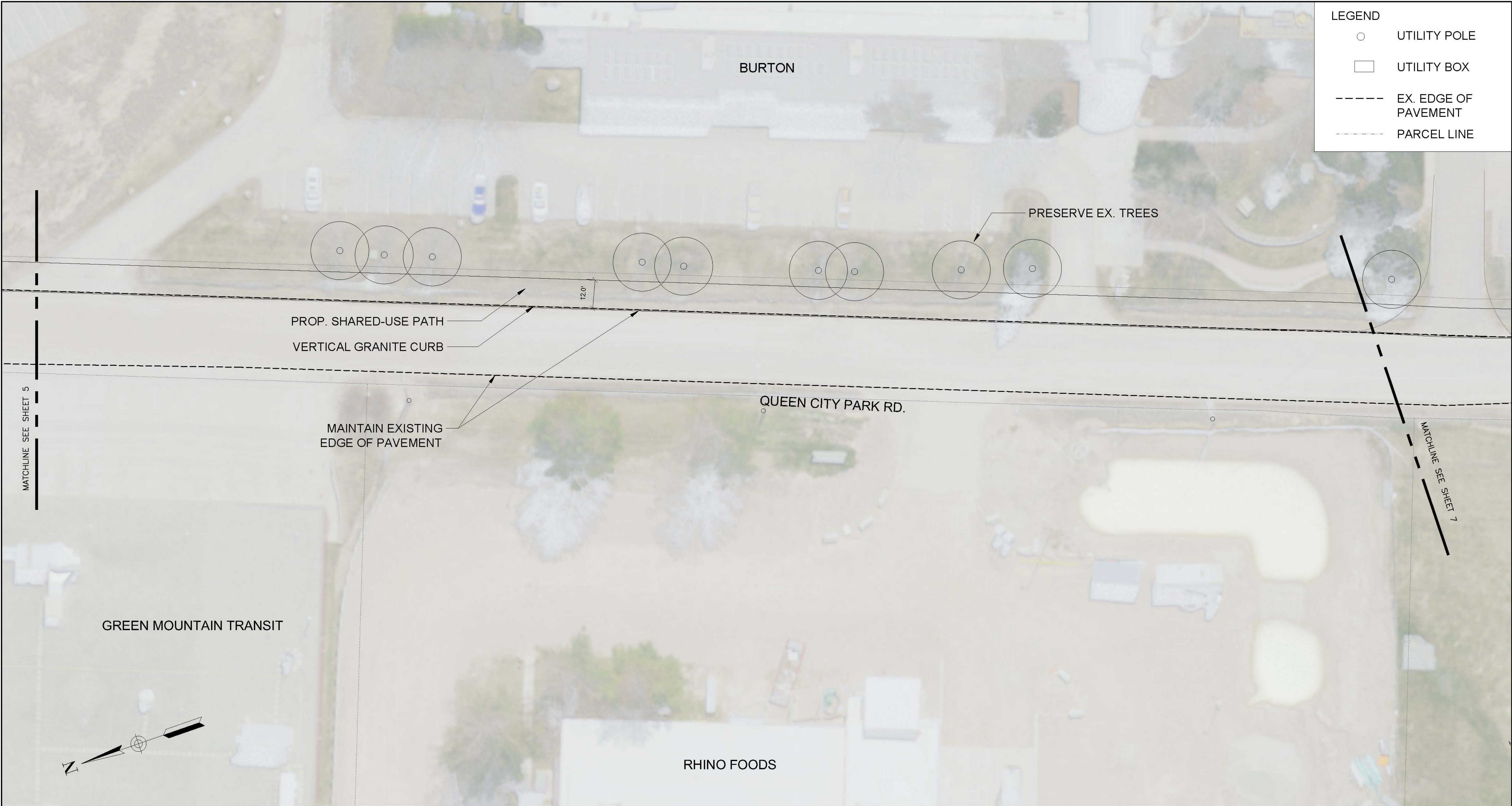
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| DATE | | | | | | | | | | | | | |
| DRAWING NO. | | | | | | | | | | | | | |
| SHEET NO. 5 OF 14 | | | | | | | | | | | | | |
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| | | DR | | | | | | | | | | | |
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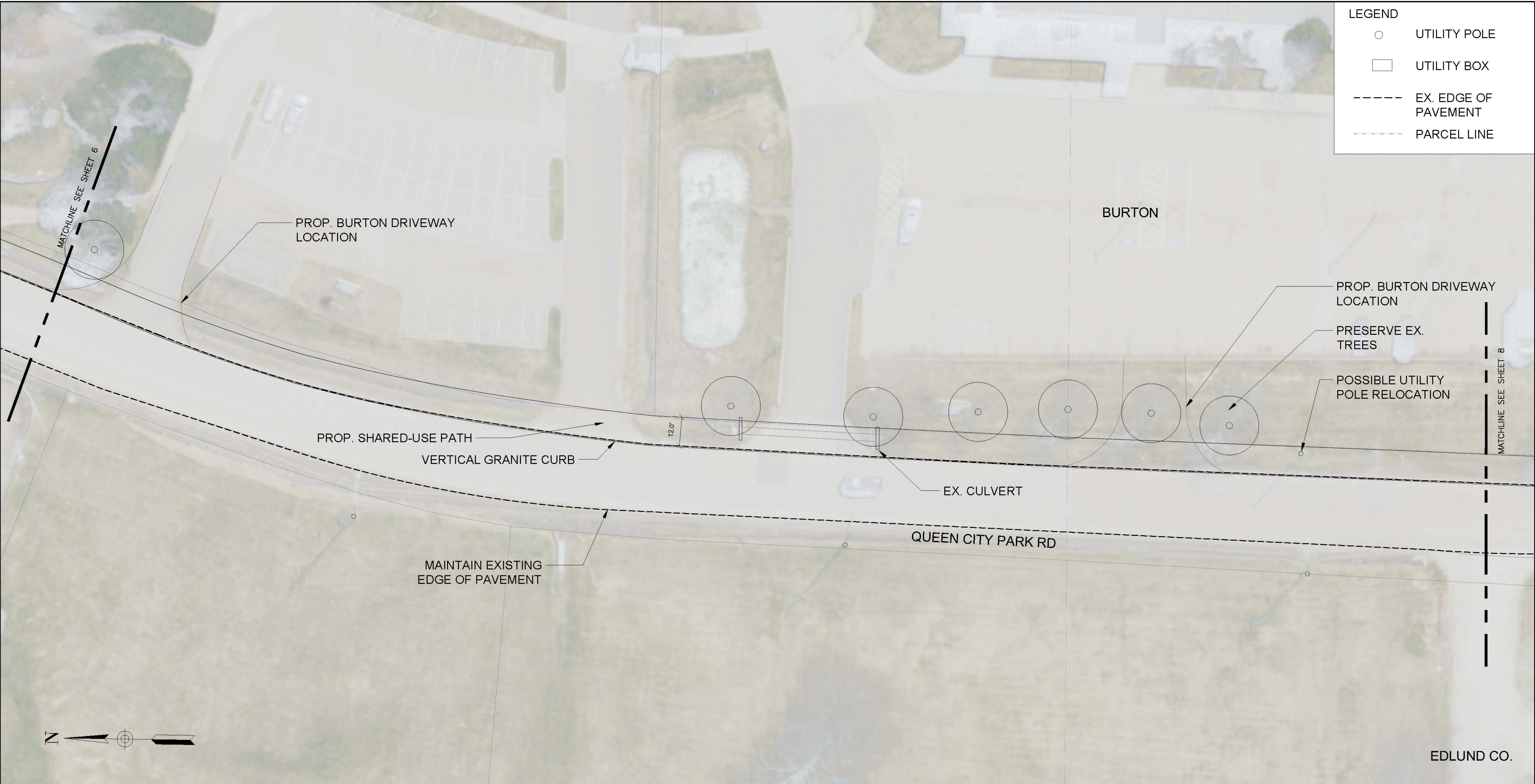
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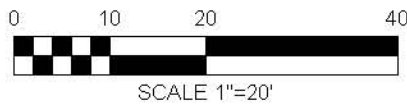
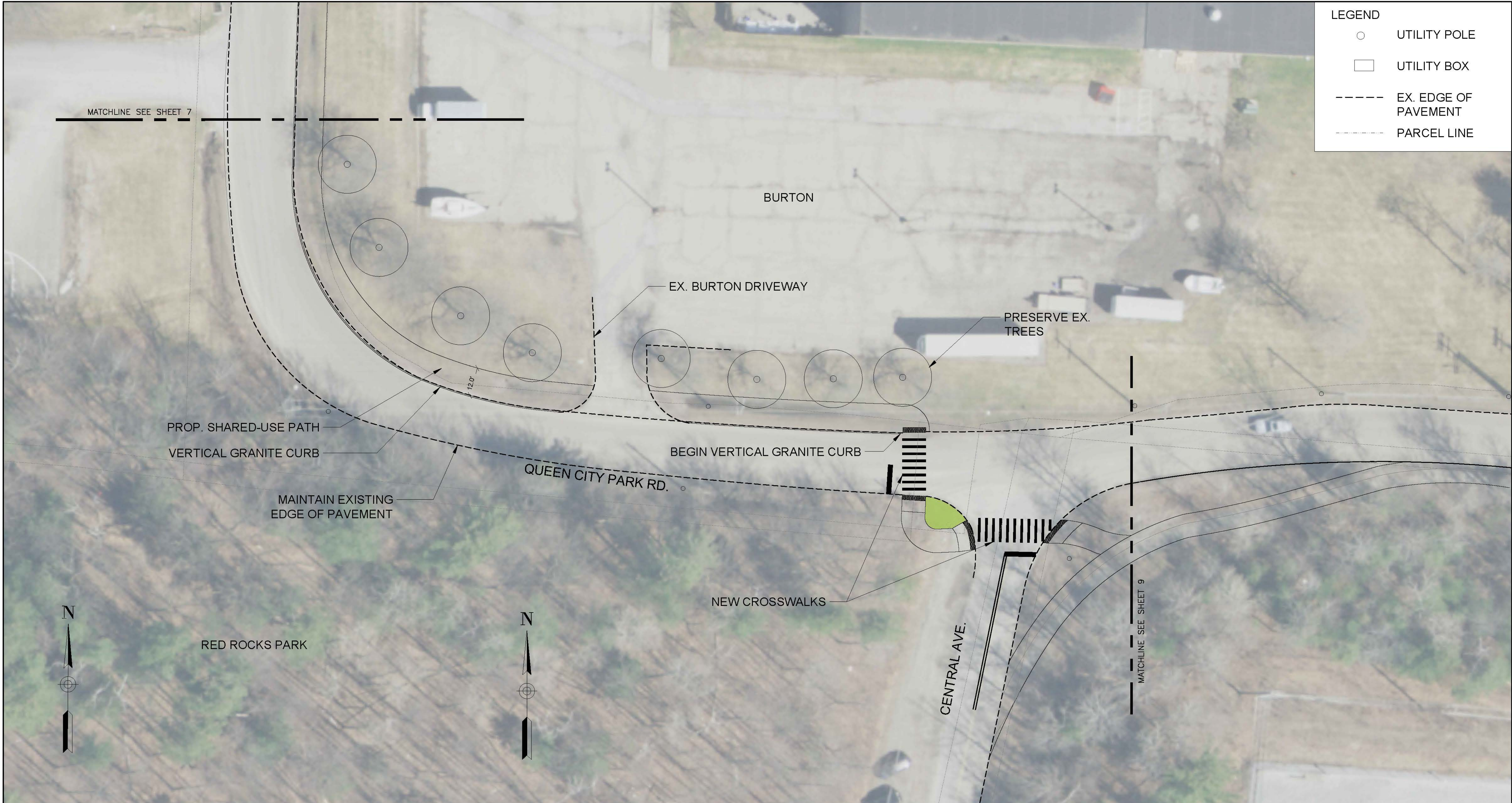
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| | | DRAWING NO. | | | | | | | | | | | |
| | | SHEET NO. | | 6 OF 14 | | | | | | | | | |
| APVD | | NO. | DATE | REVISION | | BY | APVD | | | | | | |

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| | | DSGN | | | | | | | | | | | |
| | | DR | | | | | | | | | | | |
| | | CHK | | | | | | | | | | SHEET NO. | |
| | | APVD | | NO. | | DATE | | REVISION | | BY | | APVD | |
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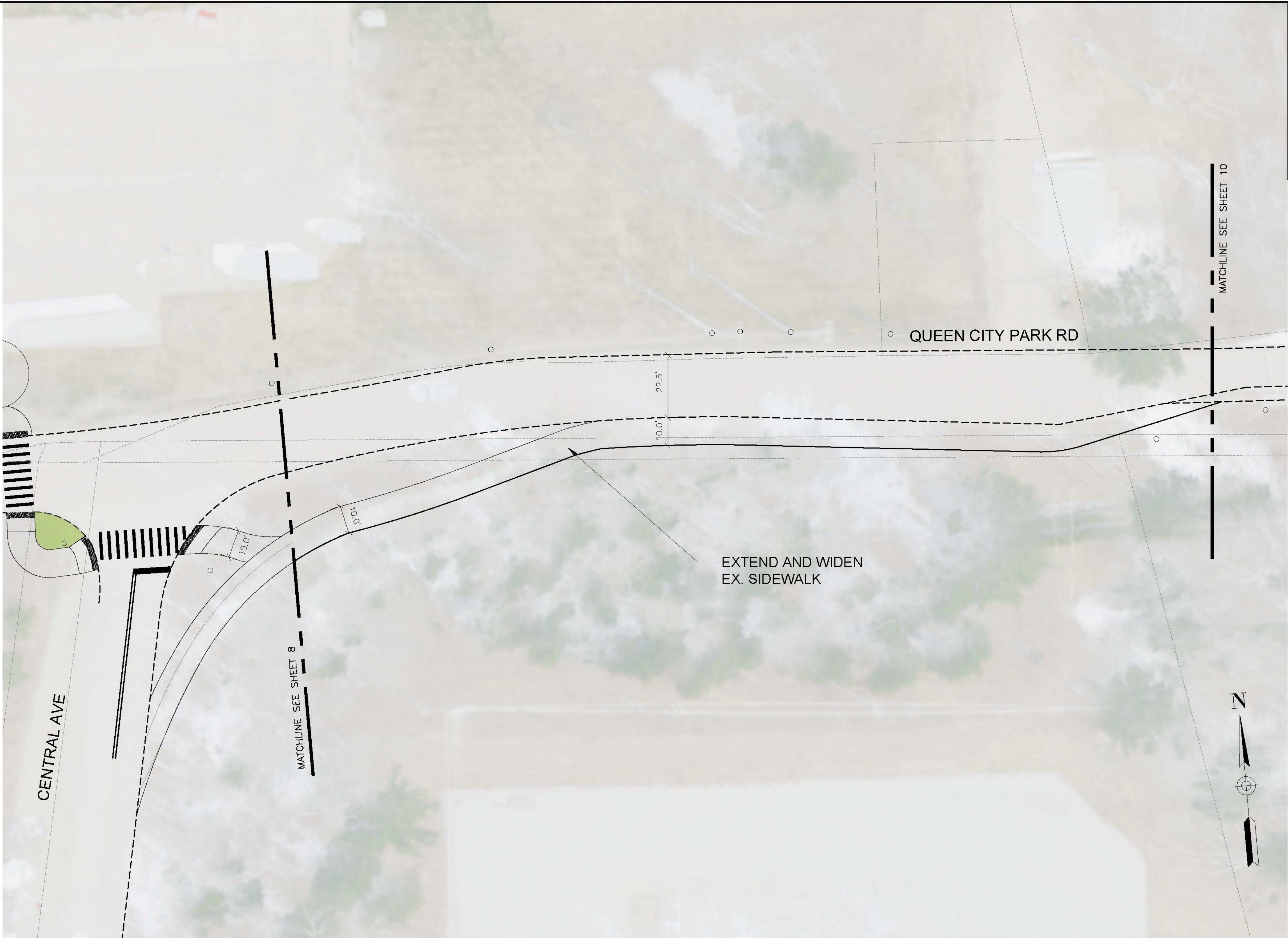


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| | | | | | | | | | |
|---|--|---|-----|------|----------|--|--|--|-------------|
| PROFESSIONAL CERTIFICATION I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF [STATE]. LICENSE NO. _____ EXPIRATION DATE: _____ | | REUSE OF DOCUMENTS ALL DRAWINGS ARE INSTRUMENTS OF PROFESSIONAL SERVICE FOR THIS PROJECT. REUSE OR ALTERATION IS AT THE USER'S SOLE RISK. | | | | <div>TOOLE DESIGN</div> <div>2 OLIVER STREET, SUITE 305 BOSTON, MA 02109 PHONE: 617.619.9910 FAX: 301.927.2800 www.tooledesign.com</div> | QUEEN CITY PARK ROAD/ AUSTIN DRIVE SCOPING STUDY CCRPC, CITY OF BURLINGTON, CITY OF SOUTH BURLINGTON | | PROJECT NO. |
| | | DSGN | | | | | | | DATE |
| | | DR | | | | | | | DRAWING NO. |
| | | CHK | | | | | | | SHEET NO. |
| | | APVD | NO. | DATE | REVISION | BY | APVD | | 8 OF 14 |

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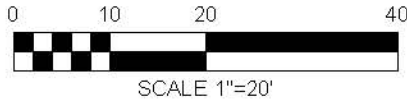
LEGEND

UTILITY POLE

UTILITY BOX

EX. EDGE OF PAVEMENT

PARCEL LINE



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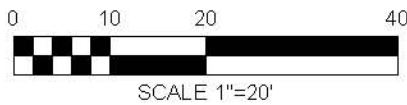
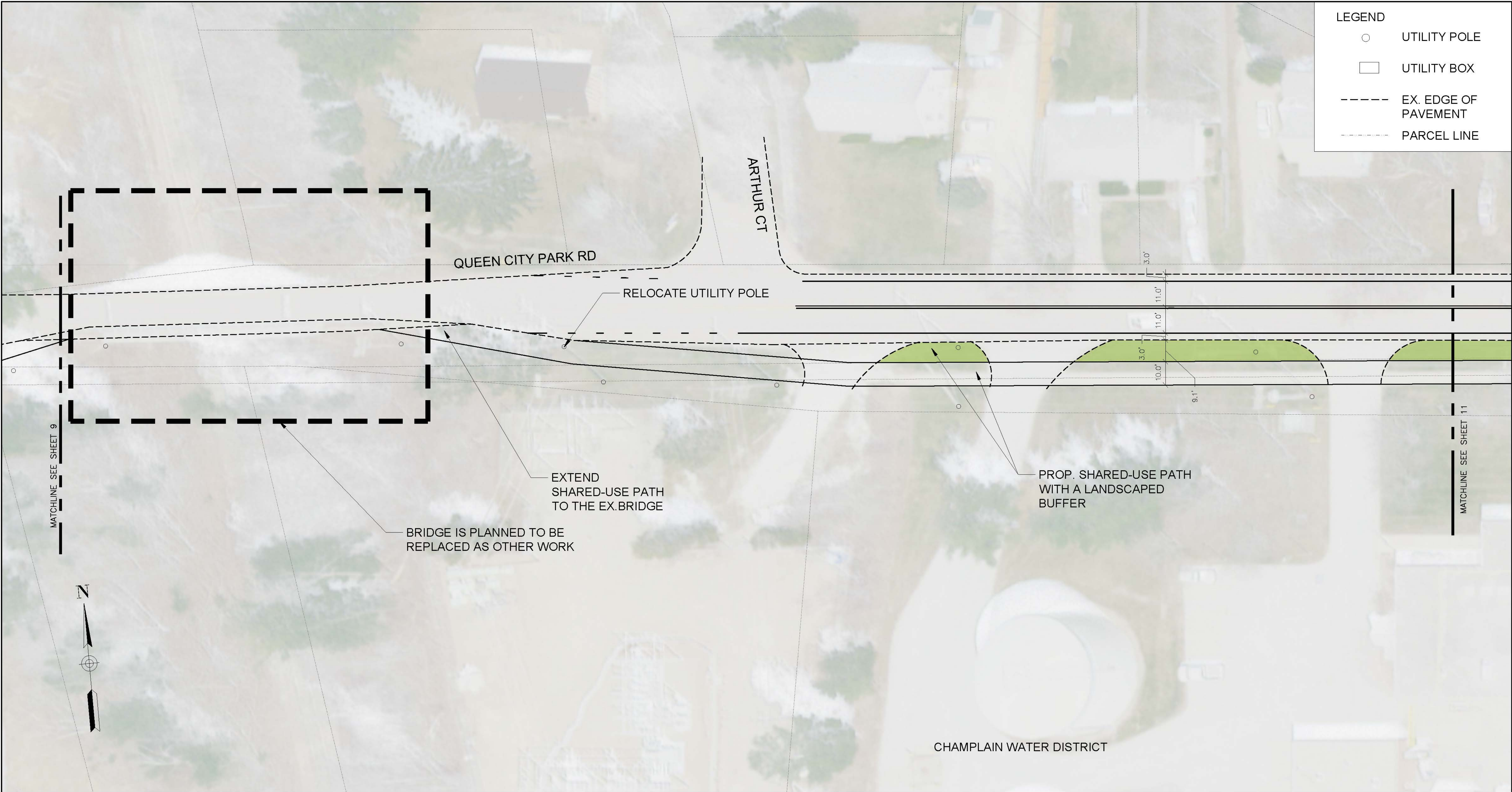
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SCOPING STUDY

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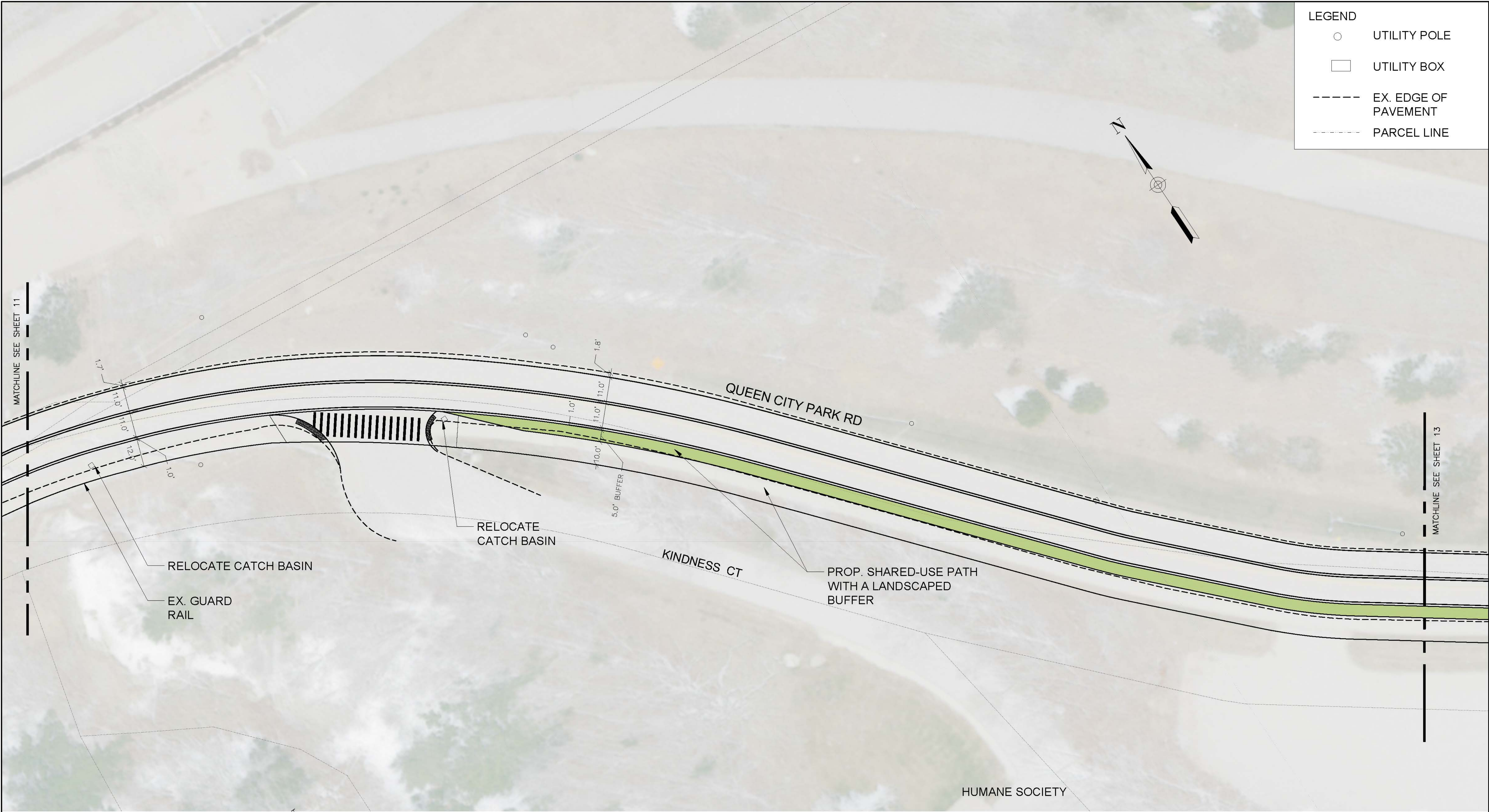
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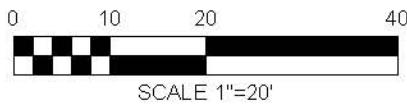
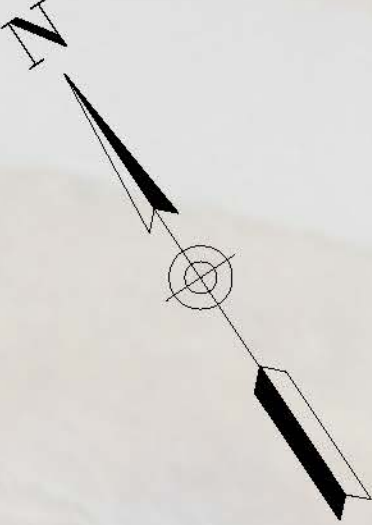
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LEGEND

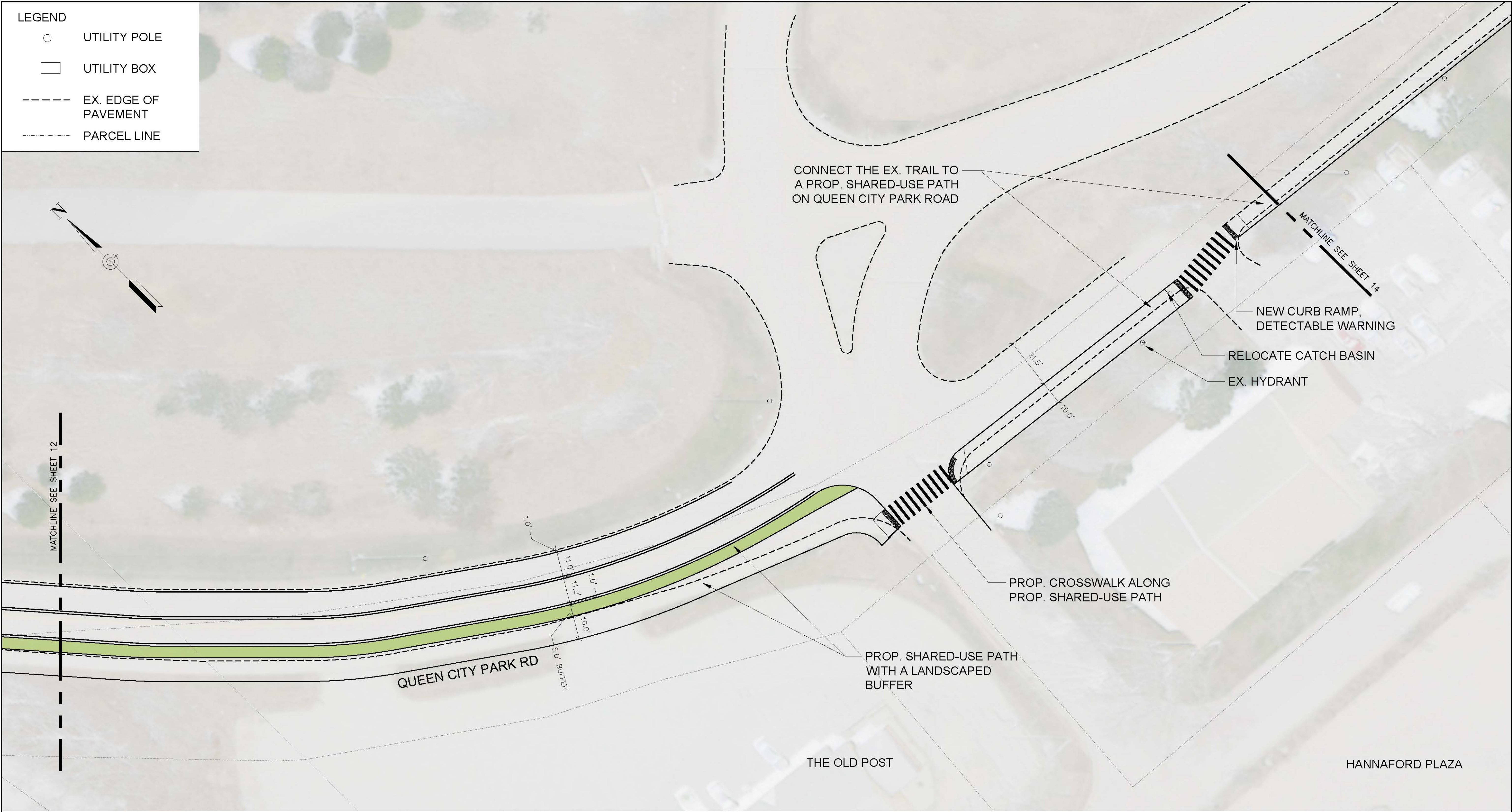
- UTILITY POLE
- UTILITY BOX
- EX. EDGE OF PAVEMENT
- - - - - PARCEL LINE



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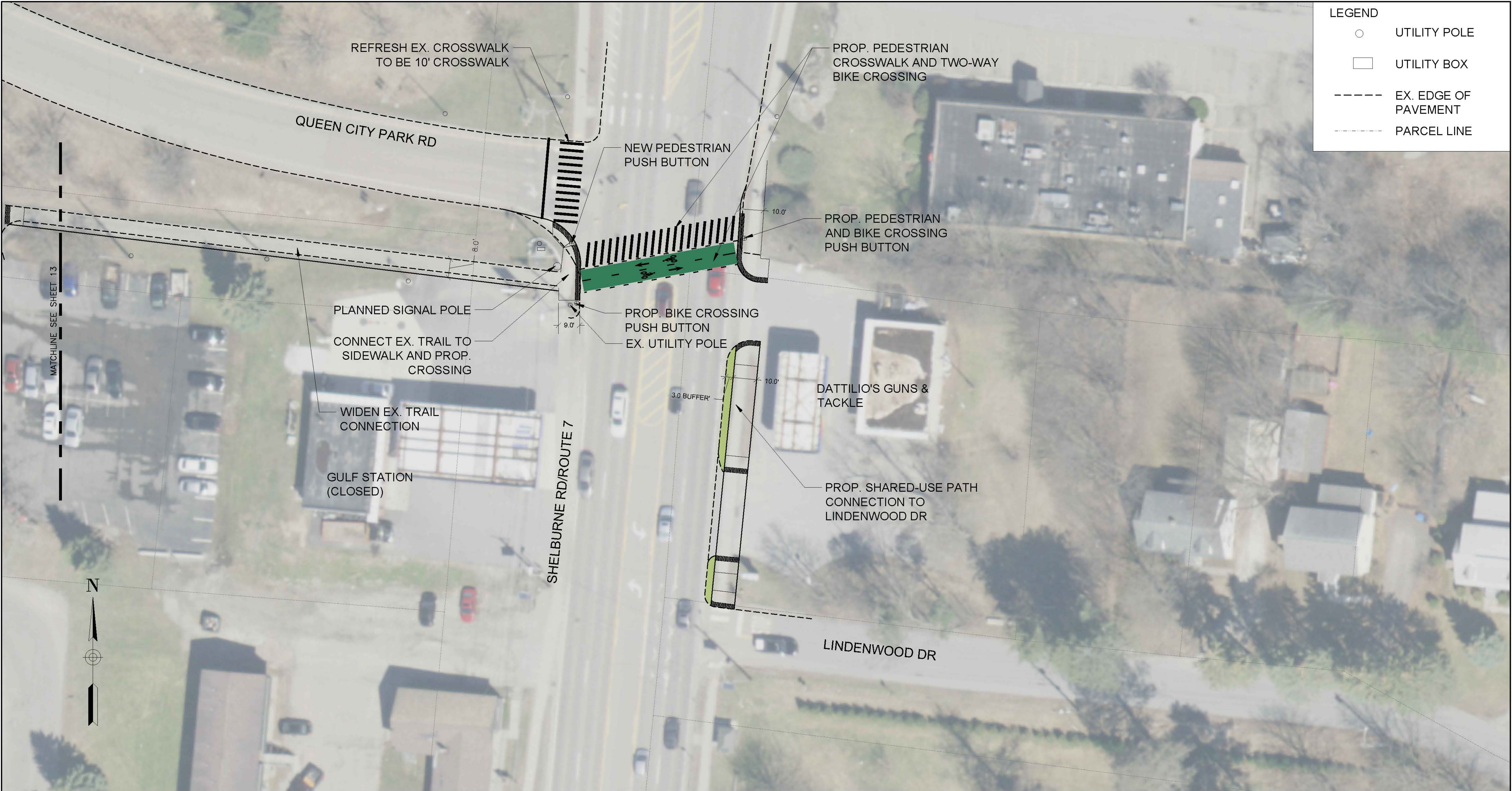
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