



Town of Berlin

**2023 Plan of Conservation and Development Committee
Meeting #8 Transportation and Infrastructure**

4/28/22



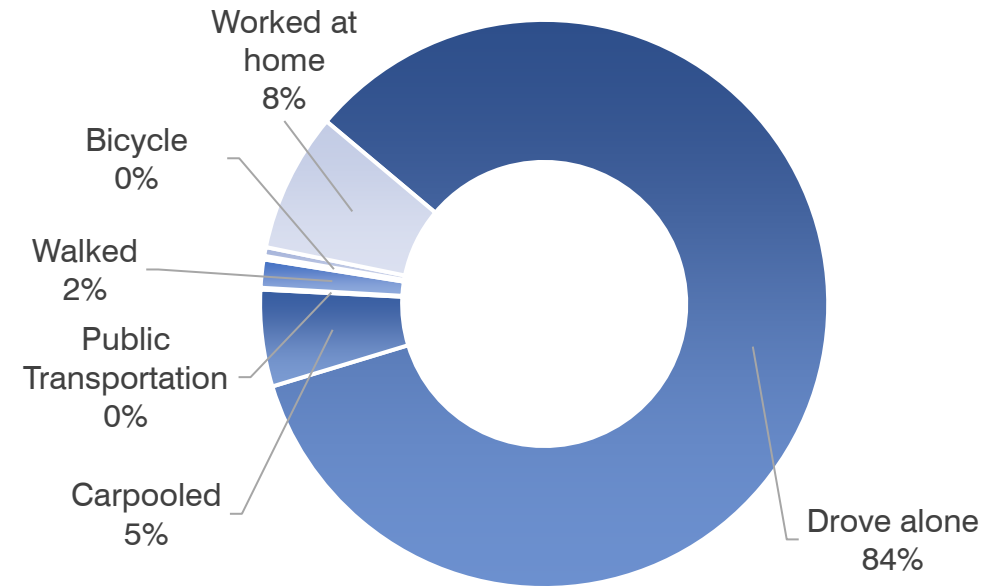
Agenda

1. Review of Transportation Resources and Needs
2. Review of Infrastructure Resources and Needs
3. Discuss survey and outreach
4. Discuss Affordable Housing Plan
5. Next steps

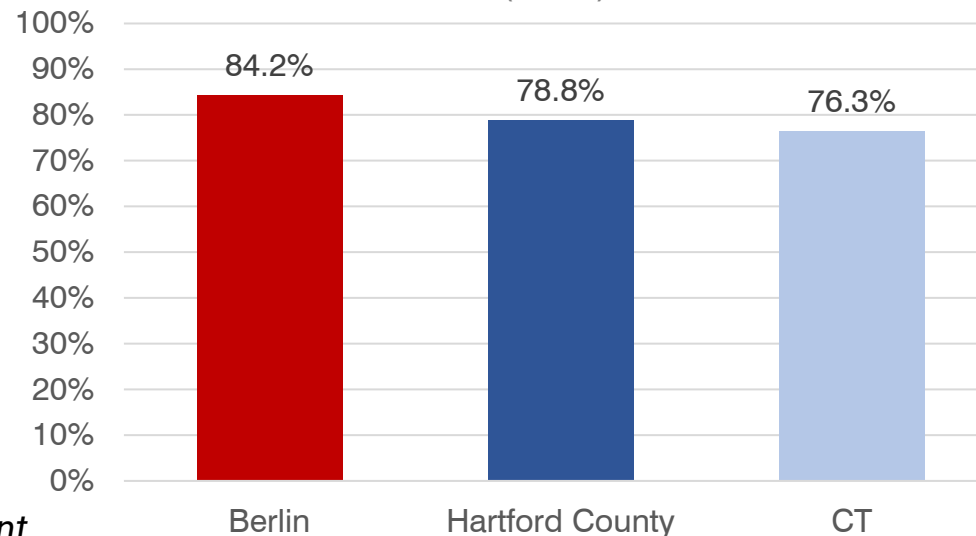
Transportation to Work

- Most (84%) of Berlin residents commute to work by driving alone.
- This is more than Hartford County and the State.
- 8% of residents worked from home in 2020.

Means of Transportation to Work
(2020)

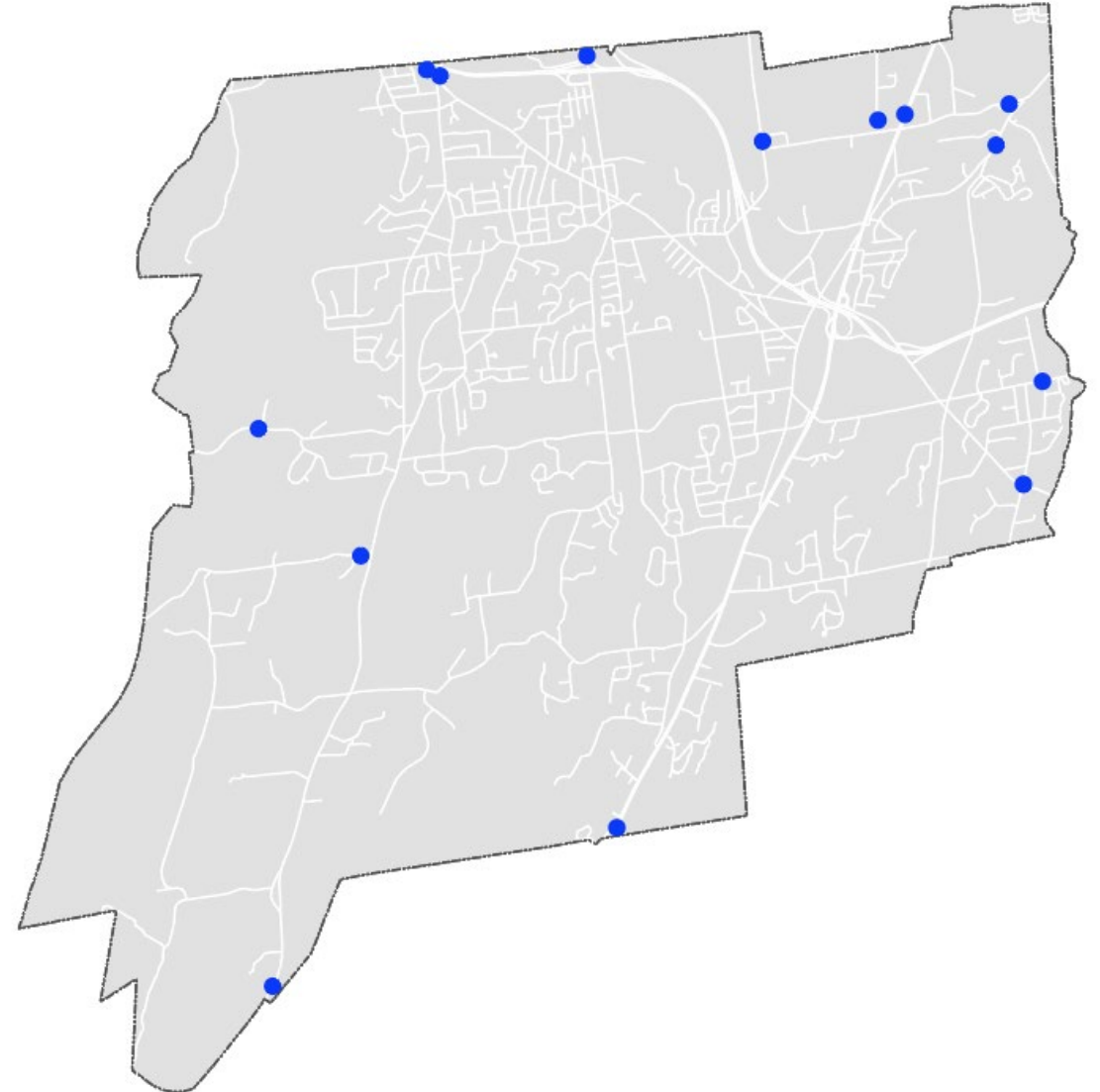
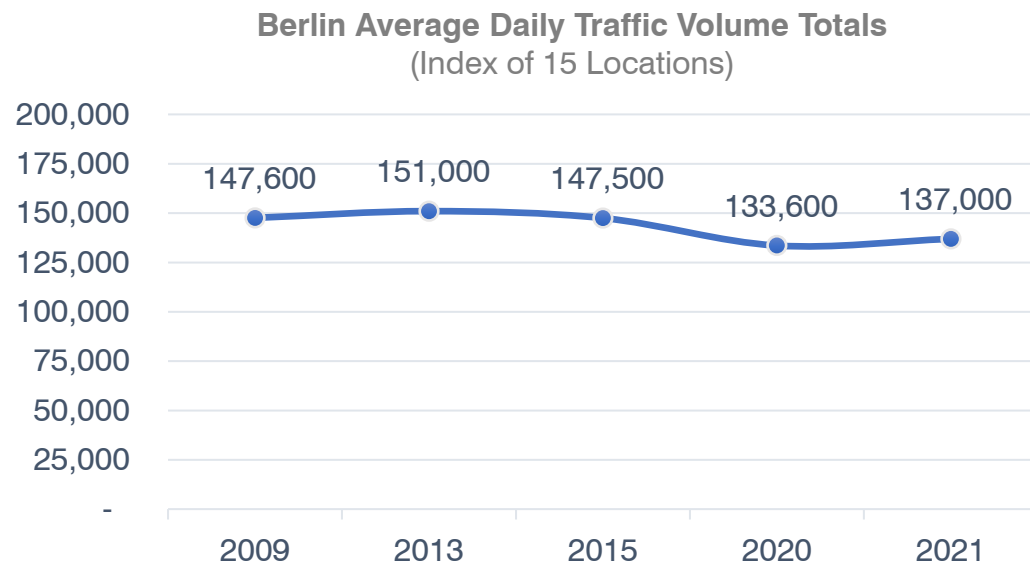


Drove Alone to Work
(2020)



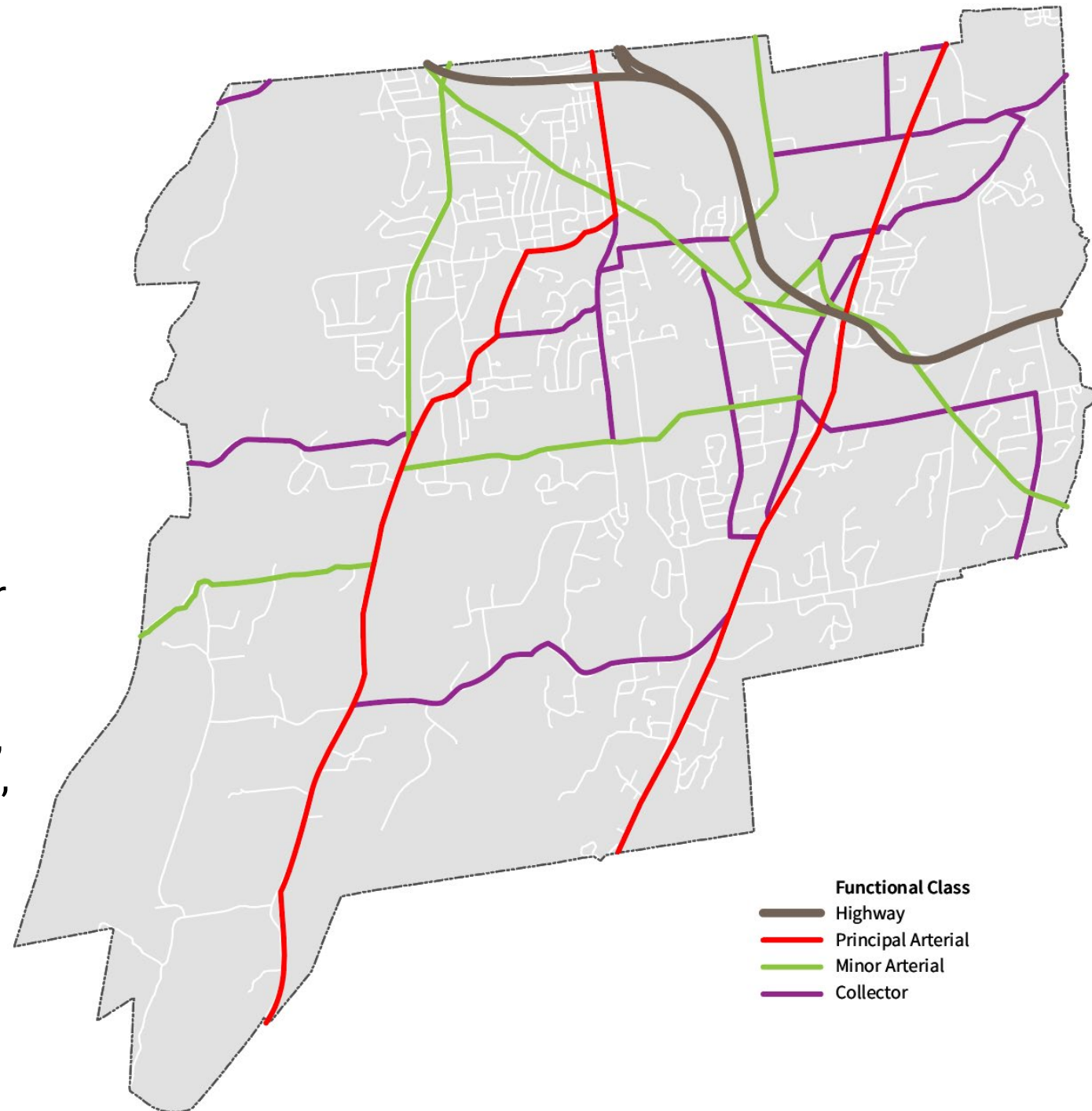
Traffic Volume Trends

- Between 2009 and 2015, traffic volume as measured at 15 locations dropped by 1%.
- Traffic volume dropped by 7% between 2015 and 2020 (pandemic related).
- Traffic has rebounded since 2020 but has not yet reached levels seen since 2015.



Functional Class

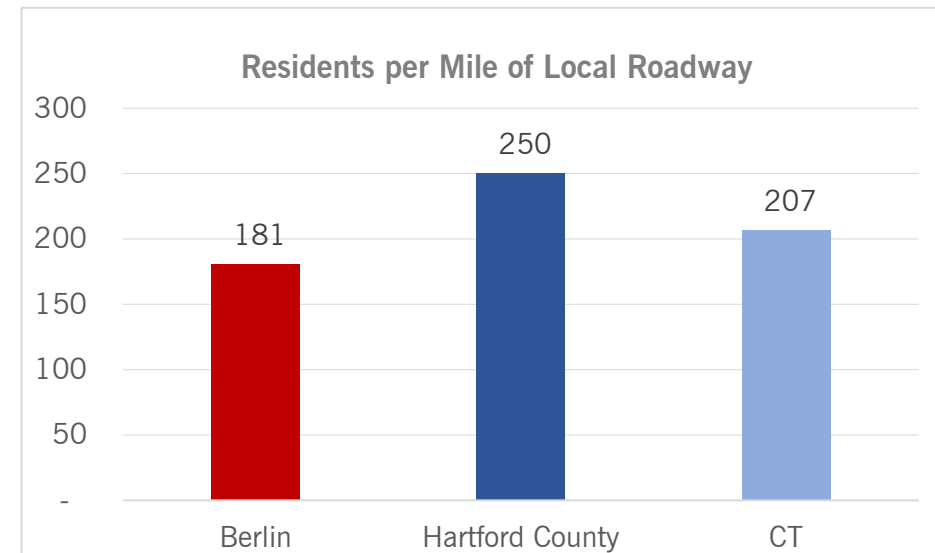
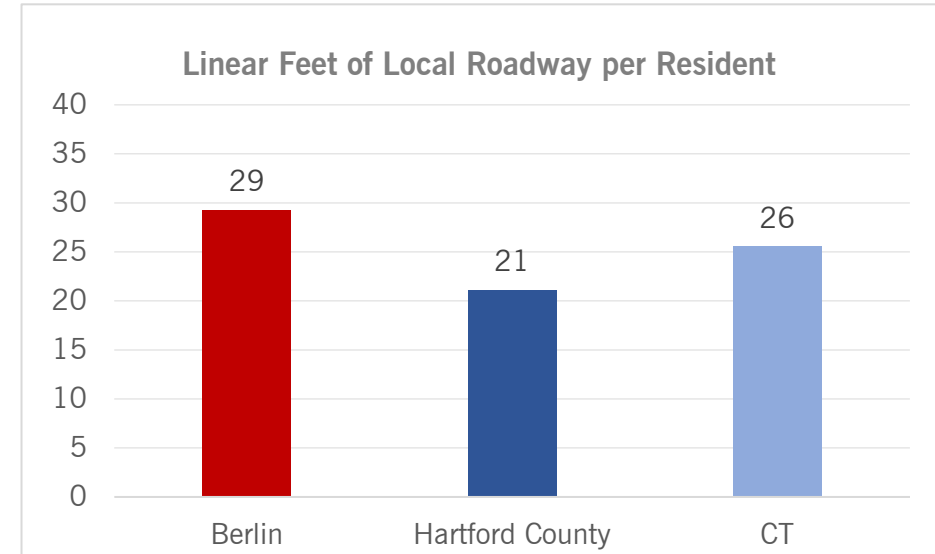
- Berlin's roadways are comprised of highways, arterials roadways, collectors, and local roads.
- Highways: Route 9 and 571
- Principal Arterials: Route 5/15, Route 71
- Minor Arterials: Southington Rd, Norton Rd, Chamberlin Hwy, Farmington Ave, Christian Ln, Mill St, Massirio Dr, Webster Sq, Deming Rd.
- Collectors: Camel's Back, Burnham St, Porters Pass, Kensington Rd, Deming Rd, Episcopal Rd, Rowley St, Wethersfield Rd, Bacon Ln, Worthington Ridge Rd, Farmington Ave, Lower Ln, Middletown Rd, Berlin St, Main St, Orchard Rd, Reservoir Rd



Roads

- Berlin has 142 miles of State and Local roadways and highways
- 32 miles of State highway/110 miles of local roadway
- 29 linear feet of local roadway per resident
- 181 people per mile of roadway

More roadway per person = greater cost of maintaining roadways per capita



Paving

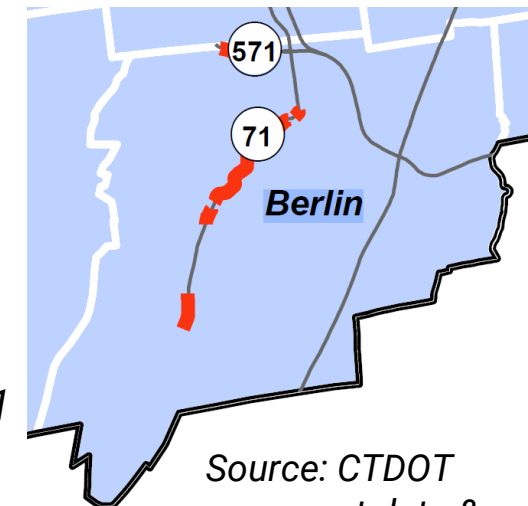
- The Town will average 3.17 miles of road repaving per year over the past two years. This is 2.9% of the Town's local road network per year.
- Recent paving projects have been funded with State grants, no Town bonding in last three years.
- 6 to 7 miles of paving is needed per year to keep up with pavement needs.
- The Town has engaged a consultant to conduct a townwide pavement conditions assessment to assist the Town in making strategic investments.

2021

Street	Mileage
Timberwood Road	0.21
Shady Notch	0.12
Winesap Road	0.51
Cider Mill Road	0.26
Cole Lane (south of Norton Road)	0.10
Valentine Drive	0.06
Total	1.26

2022

Street	Mileage
Christian Lane	2.57
Deming Road	
Porters Pass	
Other	2.5
Total	5.07



Poor pavement conditions on Route 71 (5.31 miles according to 2019 Metropolitan Transportation Plan)

Source: CTDOT pavement data & CRCOG 2019 MTP

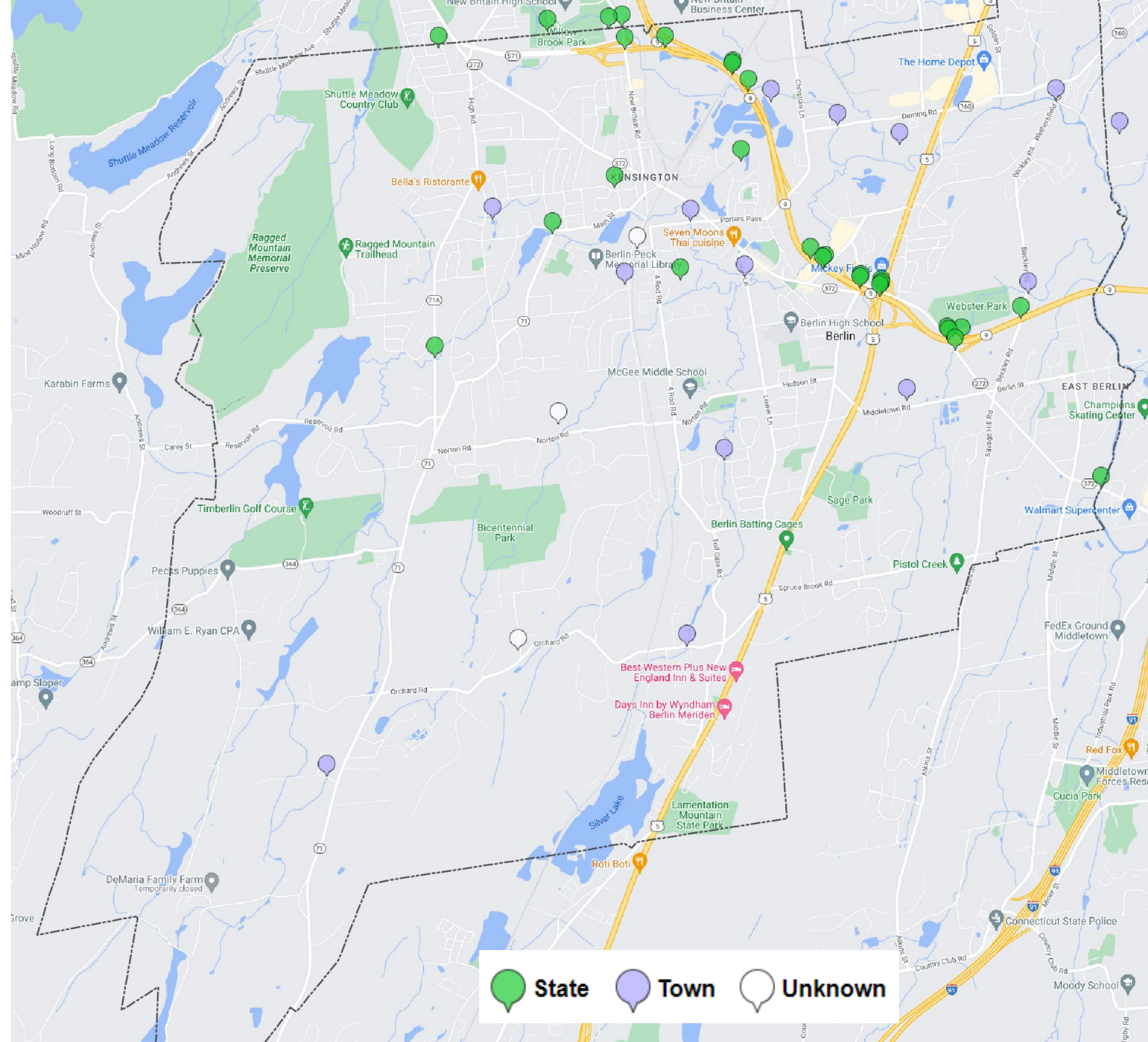
Bridges

Bridges in Berlin include both Town and State-owned bridges.



Recently reconstructed Burnham Street Bridge

Berlin Plan of Conservation and Development



Bridges and Culverts

- Berlin has 37 local bridges and culverts, 15 of which are on the National Bridge Inventory
- Conditions range from good to poor

**In design,
approved LOTCIP
funding**

**Projects recently
completed under
the Federal Bridge
preservation
program**

Bridge Number	Type	Year Built	Facility Carried	Feature Spanned	Condition
06854	Concrete Culvert	2012	Beckley Rd	Spruce Brook	Good
05224	Prestressed Box Beam or Girders	1981	Berlin St	Mattabesset River	
04473	Steel Culvert	2019	Burnham St	Mattabesset River	
06824	Concrete Culvert	1950	Christian Ln	Willow Brook	Fair
05814	Steel Culvert	1970	Deming Rd	Willow Brook	Fair
04474	Prestressed T- Beam	2017	Farmington Ave	Mattabesset River	Good
06955	Culvert	1957	Glen St	Mattabesset River	Poor
06123	Concrete Culvert	1985	Heritage Dr	Stocking Brook	
03657	Steel Culvert	1958	Kensington Rd	Mattabesset River	Poor
04062	Prestressed Slab	1970	Lower Ln	Mattabesset River	Fair
06124	Concrete Culvert	1999	Middletown Rd	Spruce Brook	Good
04472	Steel Culvert	1974	Orchard Rd	Belcher Brook	Fair
04477	Prestressed Box Beam or Girders	1970	Wethersfield Rd	Mattabesset River	Fair
06122	Concrete Culvert	1980	Wildermere Rd	Belcher Brook	
04476	Prestressed Slab	1996	Worthington Ridge	Mattabesset River	

Other Bridge and Culvert work

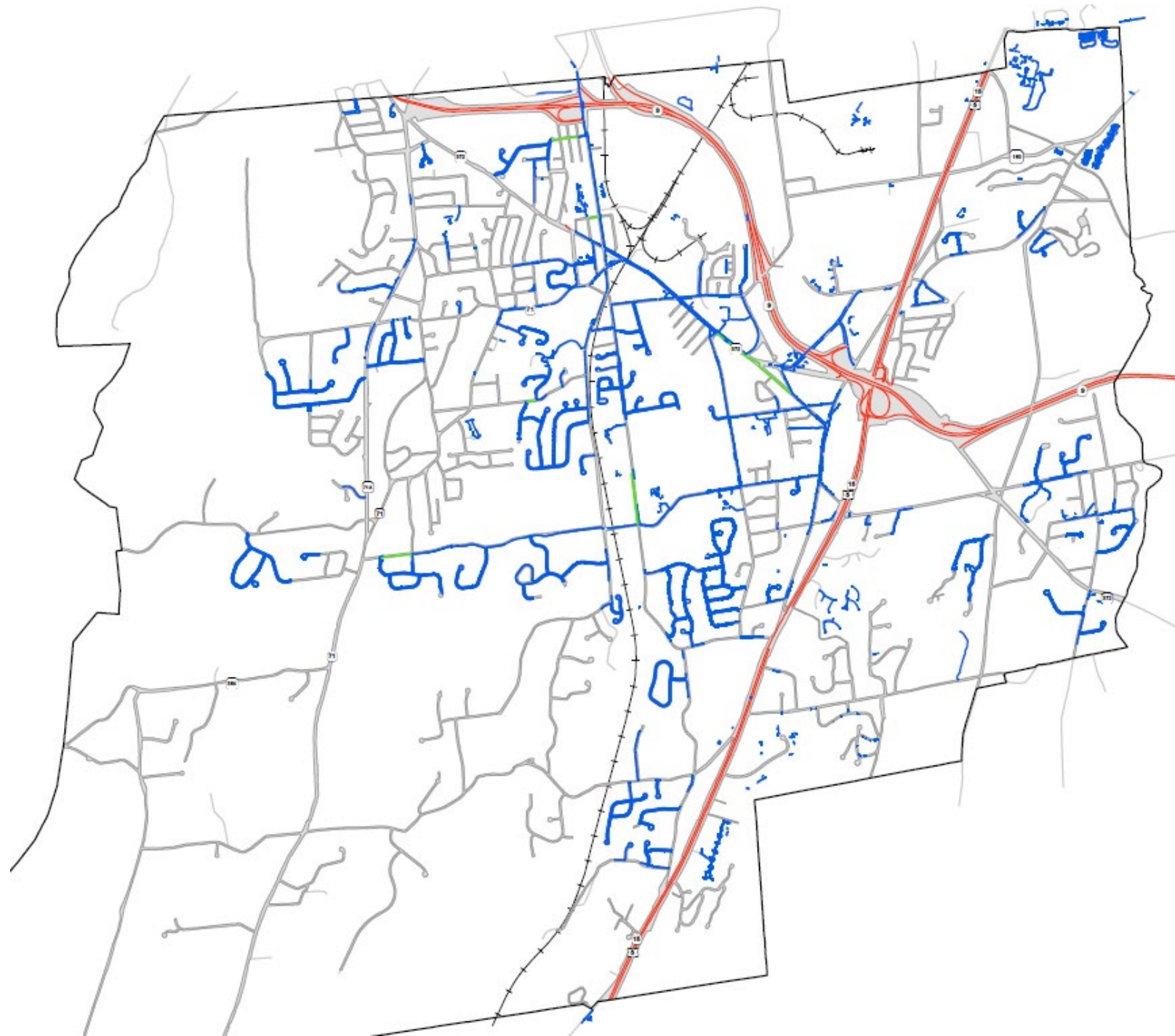
- High Street bridge recently replaced.
- Spruce Brook Road: Funded through the State Local Bridge Program. Design is 75% complete and currently being permitted.
- Edgewood Road: Culvert bridge, design is 65% complete and currently being permitted.
- Town has hired a consultant to provide a report on condition of other bridges and provide guidance on maintenance, repair, and replacement priorities.



New High Street Bridge

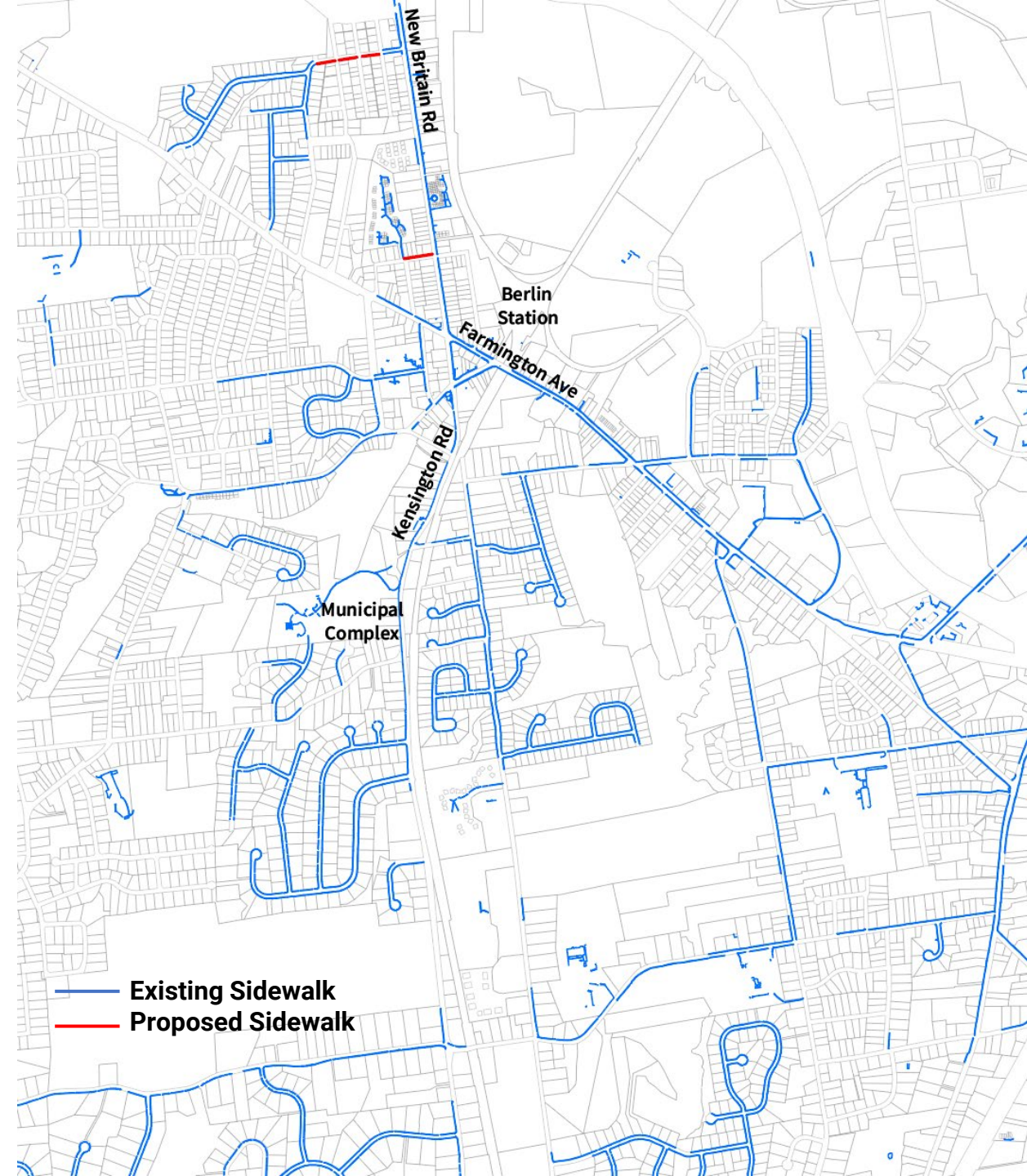
Sidewalks

- Berlin's sidewalk network is limited with sidewalks more extensive in Kensington Center and in areas more recently developed.
- 89 miles of sidewalk in public right-of-way (27% of public road edge)
- The Town budgets \$100k to \$125k per year for sidewalk repairs and replacement.



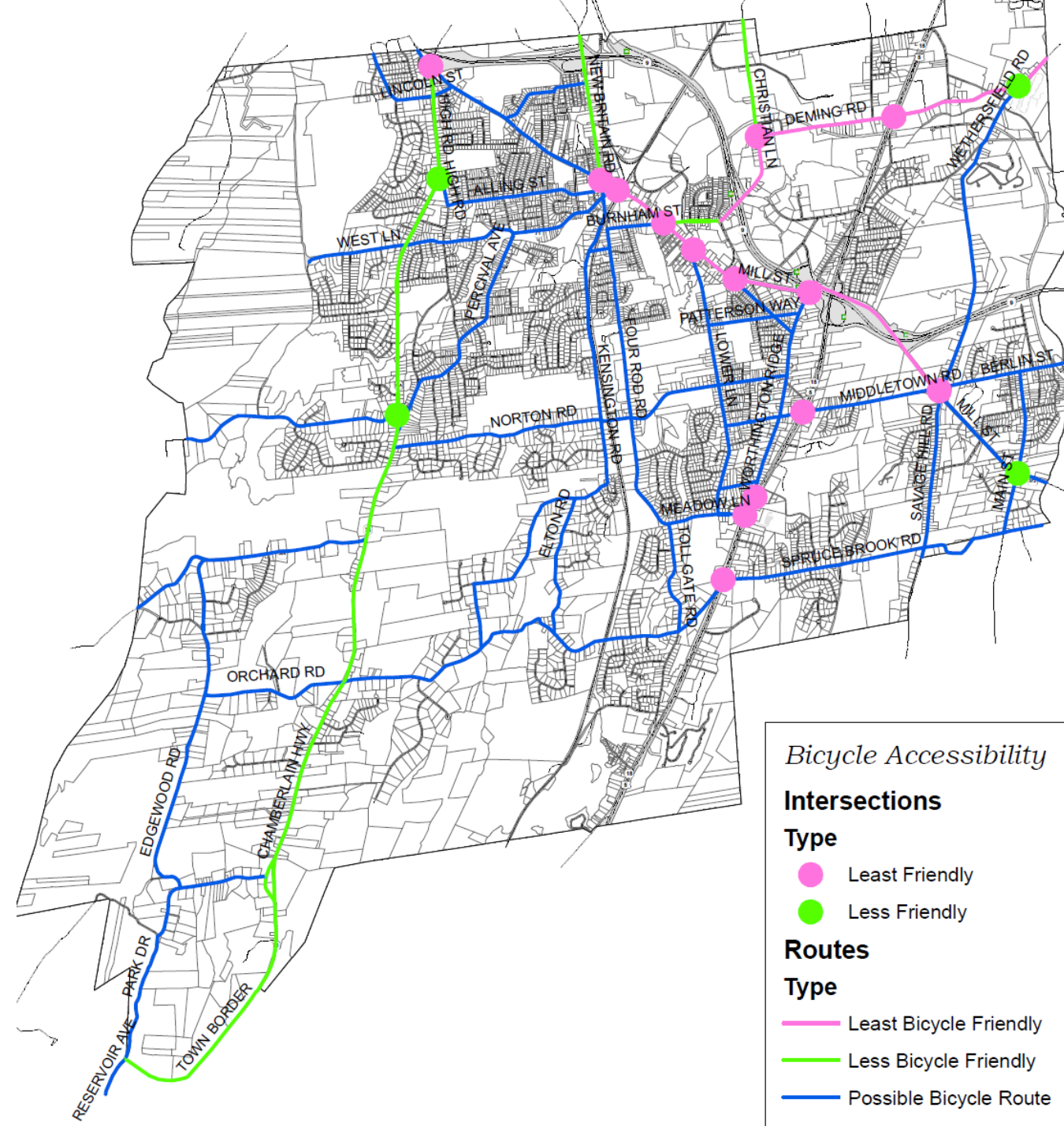
Sidewalks

- Recent sidewalk improvements have been concentrated in Kensington Center with the goal of completing gaps in the sidewalk network that will better connect surrounding neighborhoods, including the Municipal Complex, to the Center and Berlin Station.
- Streetscape projects have recently been completed on Steele Boulevard and Main Street.



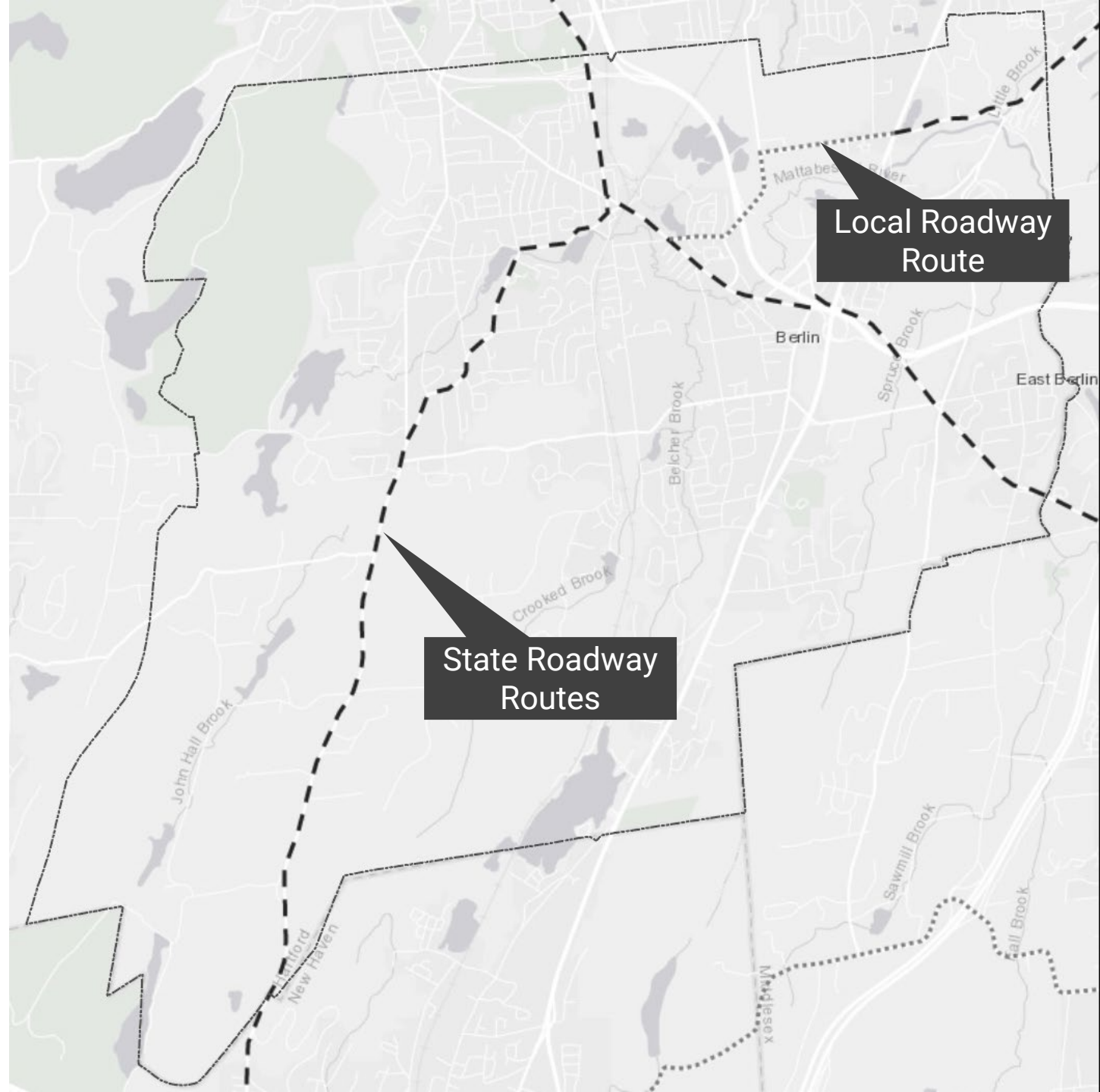
Bike Routes

- Multiple corridors in Berlin have been identified as possible bicycle routes.
- Berlin currently has no on-street bicycle facilities such as bicycle lanes, buffered bicycle lanes, or separated bicycle lanes.
- Bicycle lanes and Complete Streets improvements currently being designed for Episcopal Road and Rowley Street. Project will be funded through CRCOG with State funds.



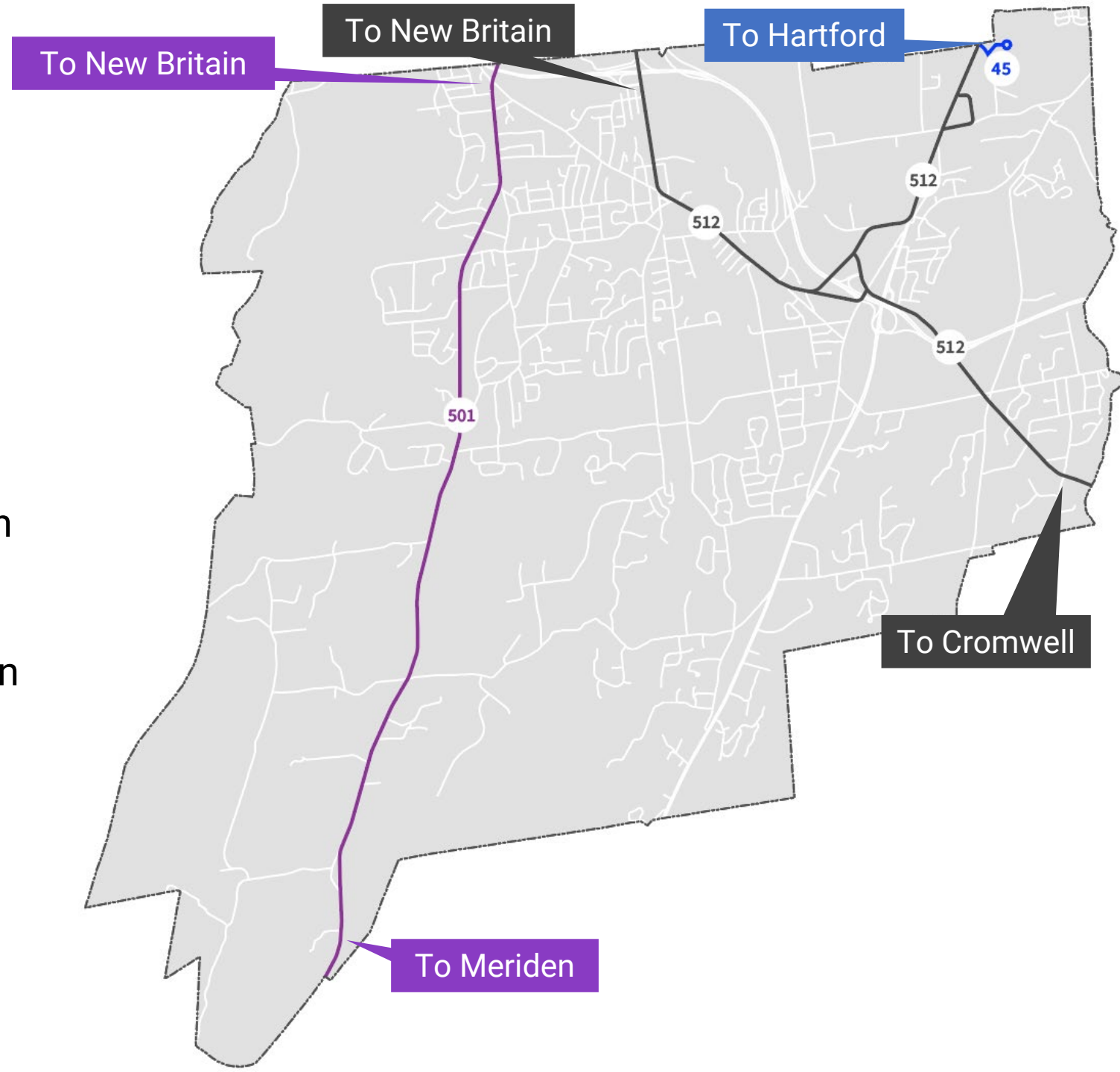
Bike Routes

- Connecticut's Statewide Active Transportation Plan identifies three preferred corridors for regional bicycle routes.
- These include Christian Lane/Deming Road and Routes 372 and 71.
- There are no plans or funding in place to construct bicycle facilities along these corridors.



Transit: Bus

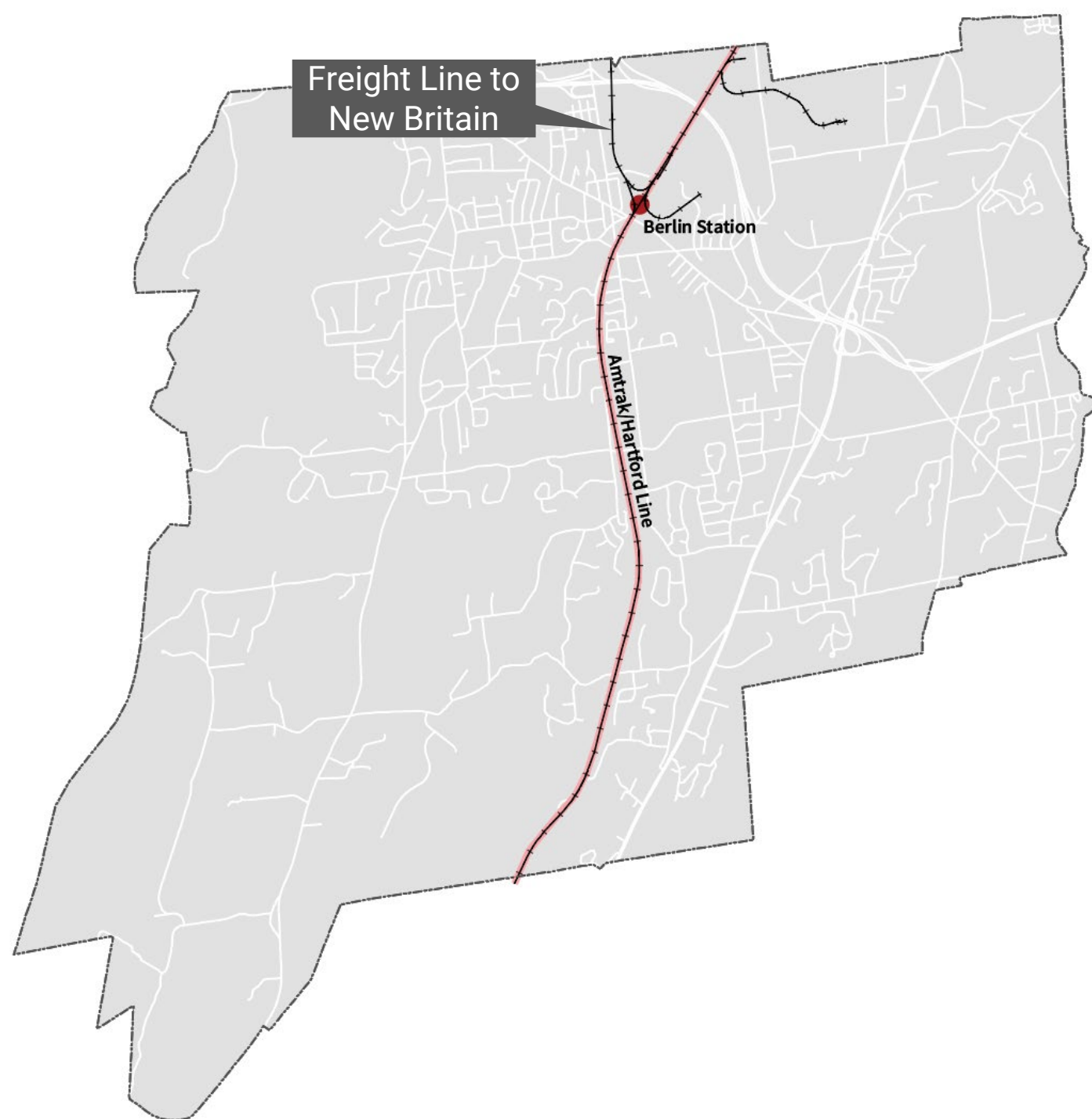
- Three CT Transit routes in Berlin
- Route 501 (along Chamberlin Highway) connecting between New Britain and Meriden
- Route 512 (along Route 372/Berlin Tpk) Street from Middletown to New Britain.
- Route 45 provides service between Eversource and Hartford.
- Paratransit operated by Senior Center Monday through Friday. Berlin and New Britain trips only.



Transit: Rail

- Amtrak and Hartford Line Service via Berlin Station
- A commuter rail study conducted by CTDOT in 2016 explored feasibility of providing commuter rail service between Berlin Station and Waterbury Station along the Pan Am Freight Line. The study determined that:

Implementing passenger rail service at this time is not viable due to its high costs, potentially low ridership, and difficulties in upgrading the Terryville Tunnel. An alternative might be to extend bus service within the corridor and consider express service between Bristol and Waterbury as a near term improvement.

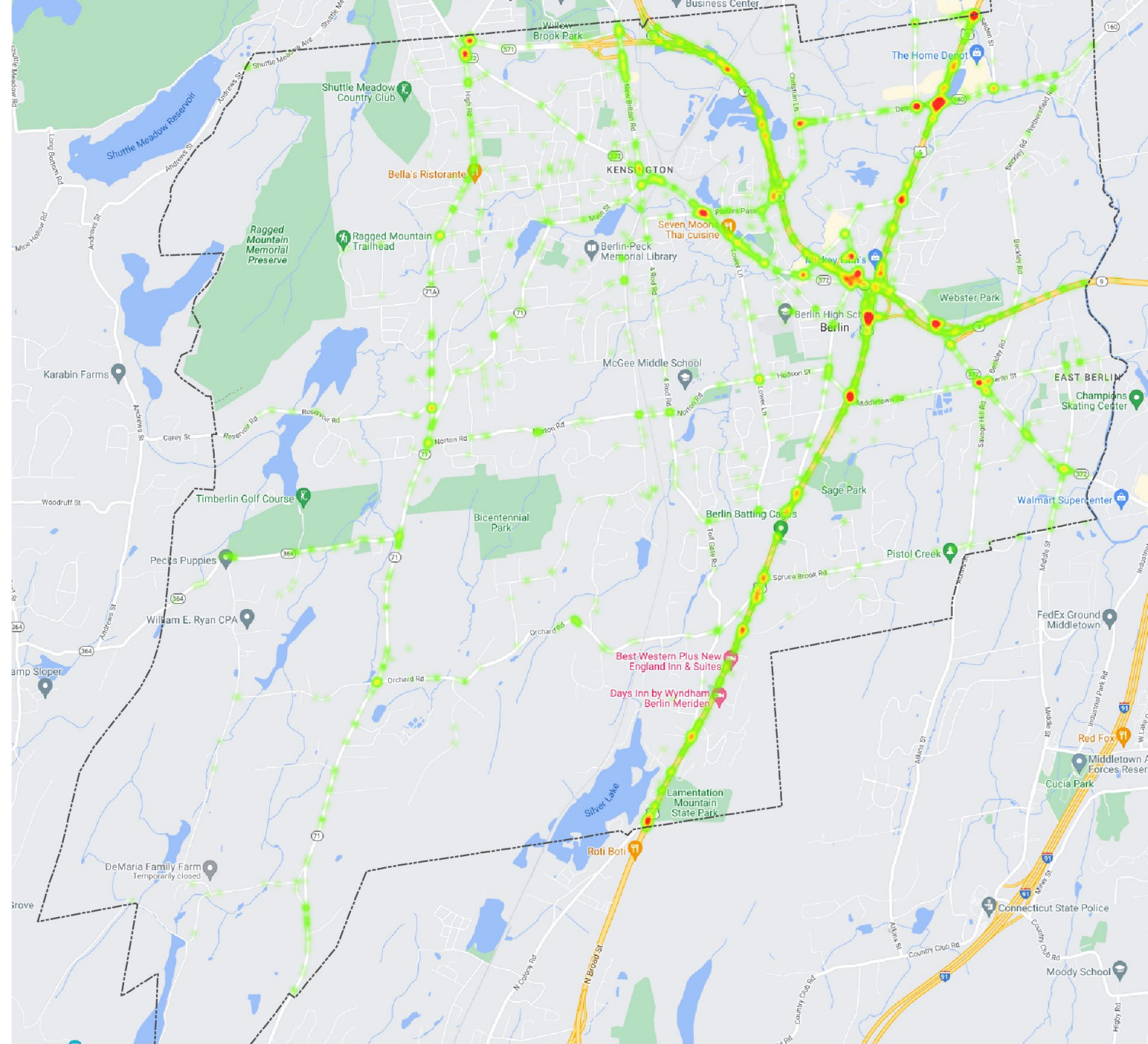


Traffic Safety

Most of Berlin's crashes occur along high-volume state highways such as the Berlin Turnpike, Route 9, and 372.

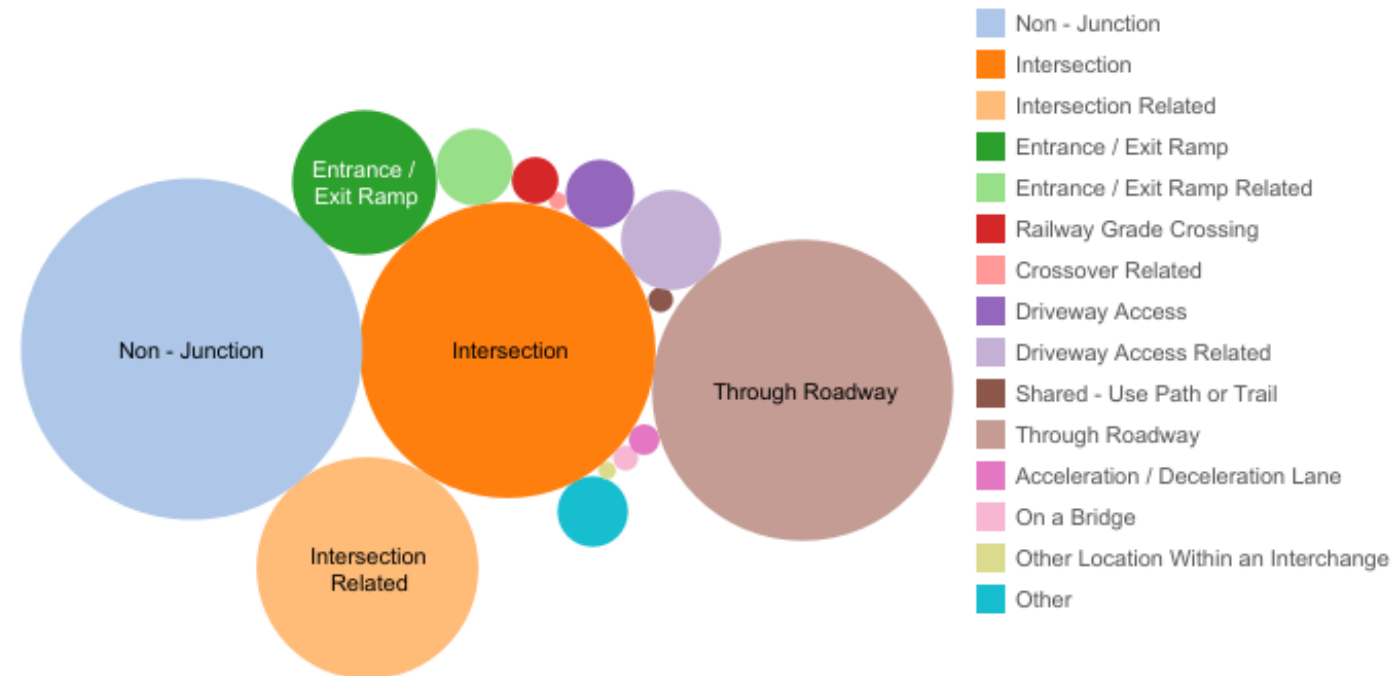
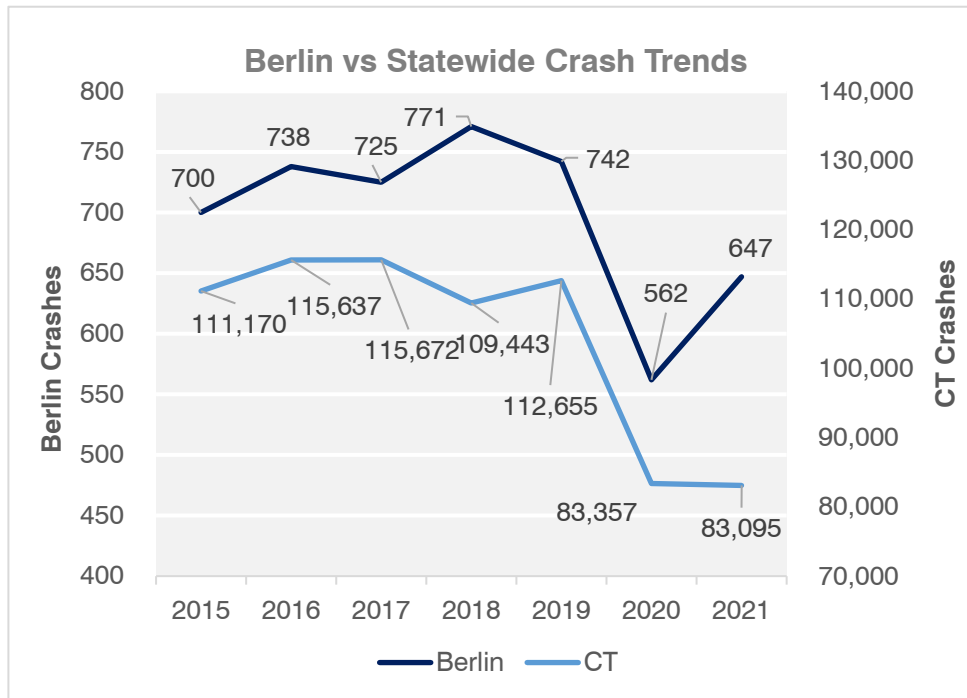
Top 10 Routes for Crashes

15	387
9	228
71	144
160	14
372	148
571	21
CHRISTIAN LA in Berlin	31
DEMING RD in Berlin	20
EPISCOPAL RD in Berlin	15
NORTON RD in Berlin	20



Traffic Safety

- Berlin's crash rates have mirrored the State's over the past several years.
- Crash locations are heavily associated with intersections.



Pedestrian and Bicycle Crashes

- There are few pedestrian and bicycle crashes in Berlin in the average year.
- Towns and cities with low pedestrian and bicycle activity typically experience low crash rates.

Pedestrian Crashes in Berlin						
2015	2016	2017	2018	2019	2020	2021
7	3	3	1	9	1	4

Pedestrian Fatalities in Berlin						
2015	2016	2017	2018	2019	2020	2021
1	0	0	0	2	0	0

Pedestrian Injuries in Berlin						
2015	2016	2017	2018	2019	2020	2021
6	2	3	1	5	1	3

Bicyclist Crashes in Berlin						
2015	2016	2017	2018	2019	2020	2021
1	1	1	1	1	0	5

Bicyclist Fatalities in Berlin						
2015	2016	2017	2018	2019	2020	2021
0	0	0	0	0	0	0

Bicyclist Injuries in Berlin						
2015	2016	2017	2018	2019	2020	2021
1	1	1	1	1	0	5

Road Safety Audit: Deming Road

- Conducted by CT DOT in 2016
- Several short, medium, and long term improvements were recommended.
- Short Term:
 - Restriping
 - Reduce speed limit
 - Remove sight-line obstructions
 - Add turn lanes
- Mid-Term:
 - Center turn lanes
- Long-Term:
 - Intersection improvements
 - Add sidewalk
 - Add pedestrian crossing
 - Add bike lanes

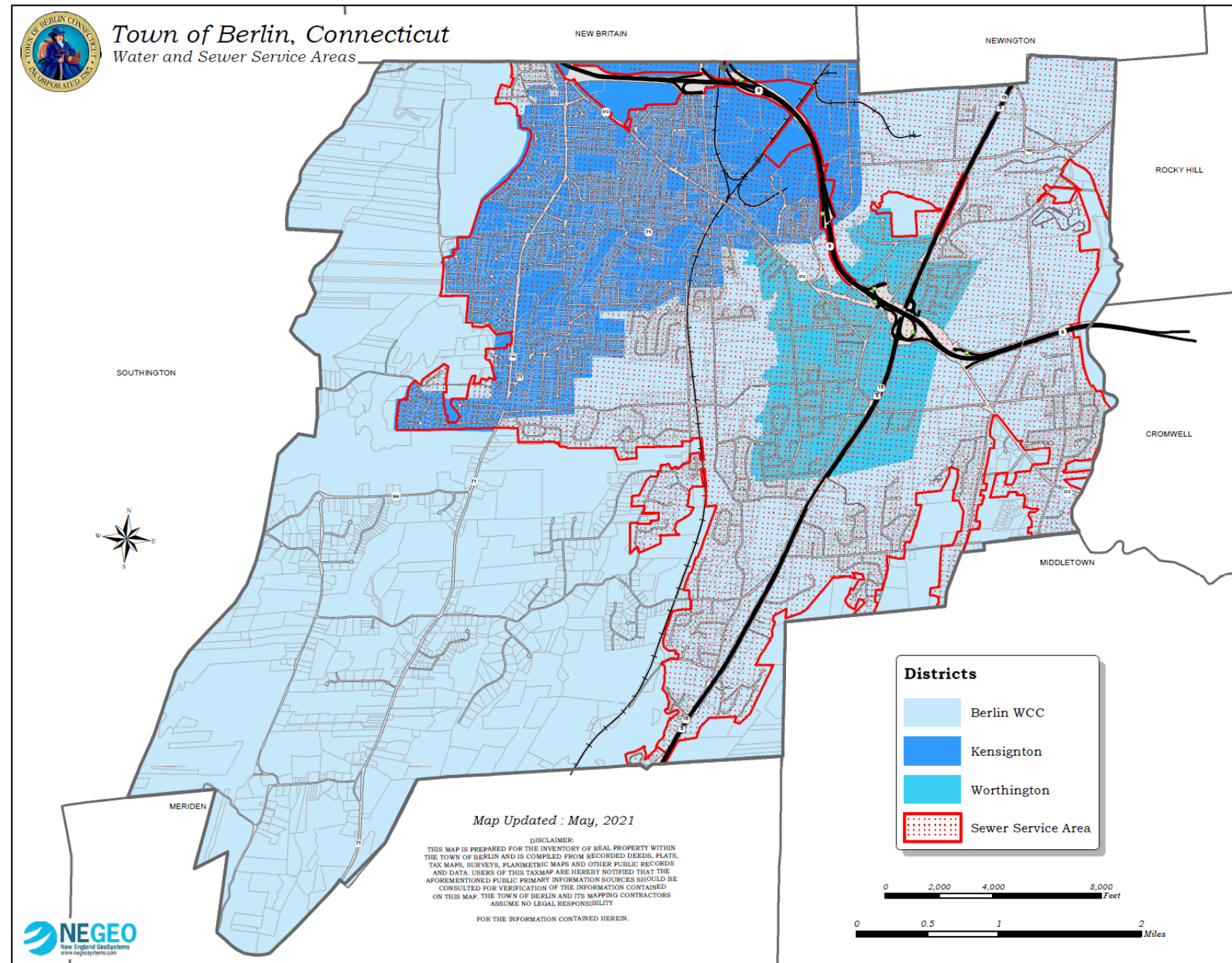


- No improvements have been made to date (with exception of planned Episcopal Road intersection improvements).

Water and Sewer Service Areas

Berlin is served by three water districts:

- Berlin WCC
- Kensington
- Worthington

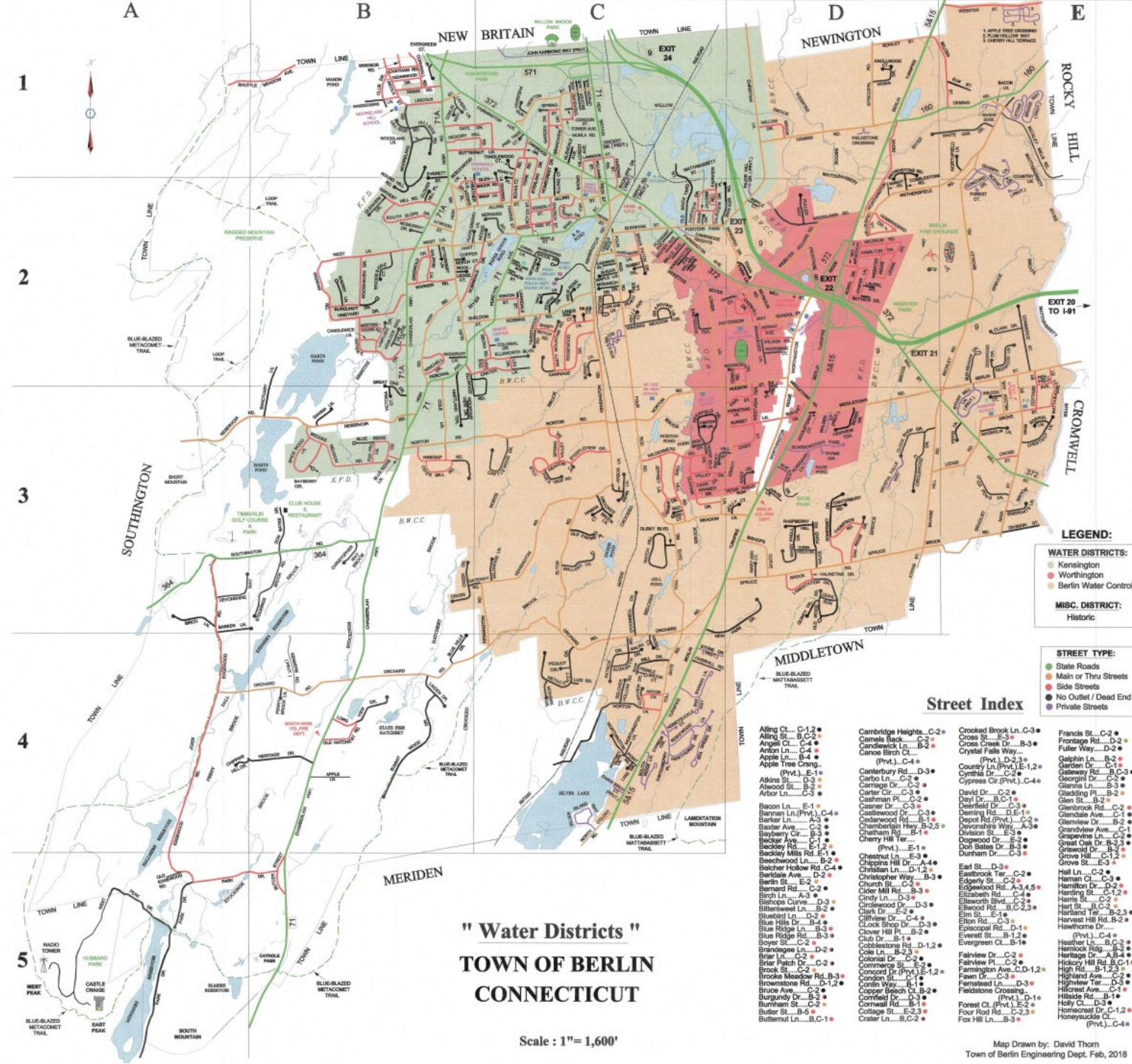


Water and Sewer Service Areas

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Berlin Plan of Conservation and Development

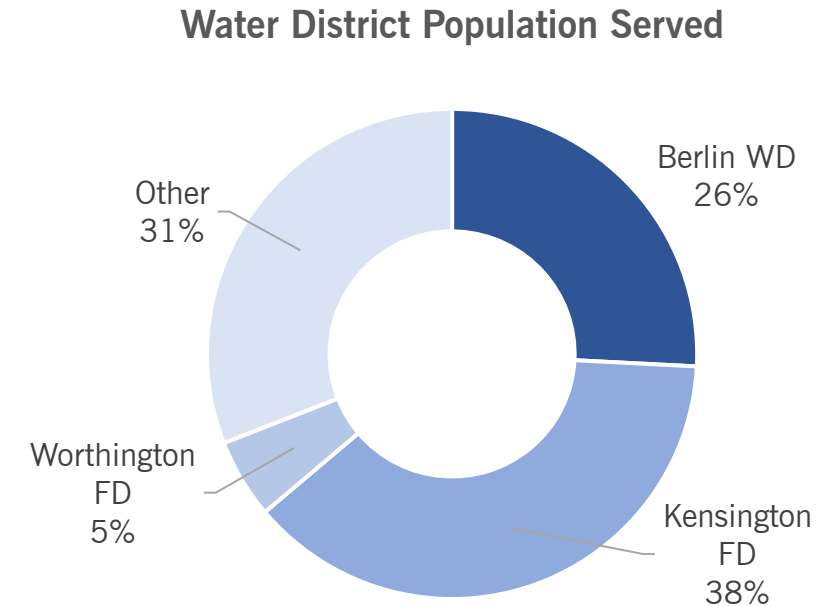


"Water Districts"
TOWN OF BERLIN
CONNECTICUT

Scale : 1" = 1,600'

Water and Sewer Service Districts

- Both the Kensington Fire District and the Worthington Fire District were created through special acts in 1921, which allowed fire districts to supply water for fire protection and domestic use.
- The Kensington Fire District and the Worthington Fire District are special taxing districts that levy property taxes.
- The City of New Britain and the Cromwell Fire District supply 45% of the water to the Town, 55% is supplied by the Town's Elton well field.
- Consolidation of the water companies has been studied and considered multiple times over the past several decades.



Water and Sewer Infrastructure (Townwide)

- 99.2 miles of sewer mains
- 72 miles of water mains
- Water storage consists of (1) two-million-gallon tank
- On-going and recently completed major projects include:
 - \$4 million infiltration/inflow sewer lining projects have been completed including the 2018-19 Belcher Brook Trunk Interceptor relining project and the 2012-13 Webster Square project.
 - Rehabilitation of the both Elton Rd pump station and sanitary sewer lift station.
 - Water storage tank painting and miscellaneous capital improvements items annually.
- New Britain and Meriden Water Companies have significant surface water supplies in Berlin.

Water and Sewer Infrastructure Needs

- Deming Road sewer pump station needs a \$3 million improvement. The MDC will fund 50-60% of the cost as the MDC contributes flow to the station. (BWC)
- The Berlin Turnpike and Middletown Road pump stations need to be updated. (BWC)
- Inflow and Infiltration prevention improvements are needed within the Kensington and Worthington Districts. (KFD/WFD)
- Water mains in East Berlin need relining and replacement. Improvement of mains in those areas could allow for an interconnection with the Middletown Water Department. (BWC)
- Interconnection with the Meriden Water Company needs to be completed (BWC)
- Interconnection with the Cromwell Fire District needs to be expanded (BWC)
- Interconnection with the New Britain Water Department needs to be upgraded (BWC)
- The interconnection with the MDC needs to be maintained. (BWC)

Berlin Water Control Commission

- Customer base: 2,800 residential, 121 commercial, 15 industrial.
- Population served: 6,200.
- Sold 345.8 million gallons of water to its residential, commercial, and industrial customers in 2021.
- Rates: No tax levy, \$4.15 per 100 cu ft water rate, \$5.92 per 100 cu ft sewer rate/\$117.57 flat rate. Sewer and water connection fees for new service.
- Produced 62% (214.8 million gallons) of its water needs and purchased 26.9% (92.8 million gallons) from the New Britain Water Department and 11.1% (38.2 million gallons) from the Cromwell Fire District.
- Processes about 1 billion gallons of sanitary effluent for the entire Town through its sewer collection system, which is discharged to the Mattabassett District system.

Berlin Water Control Commission

Local supply comes from two (2) sources:

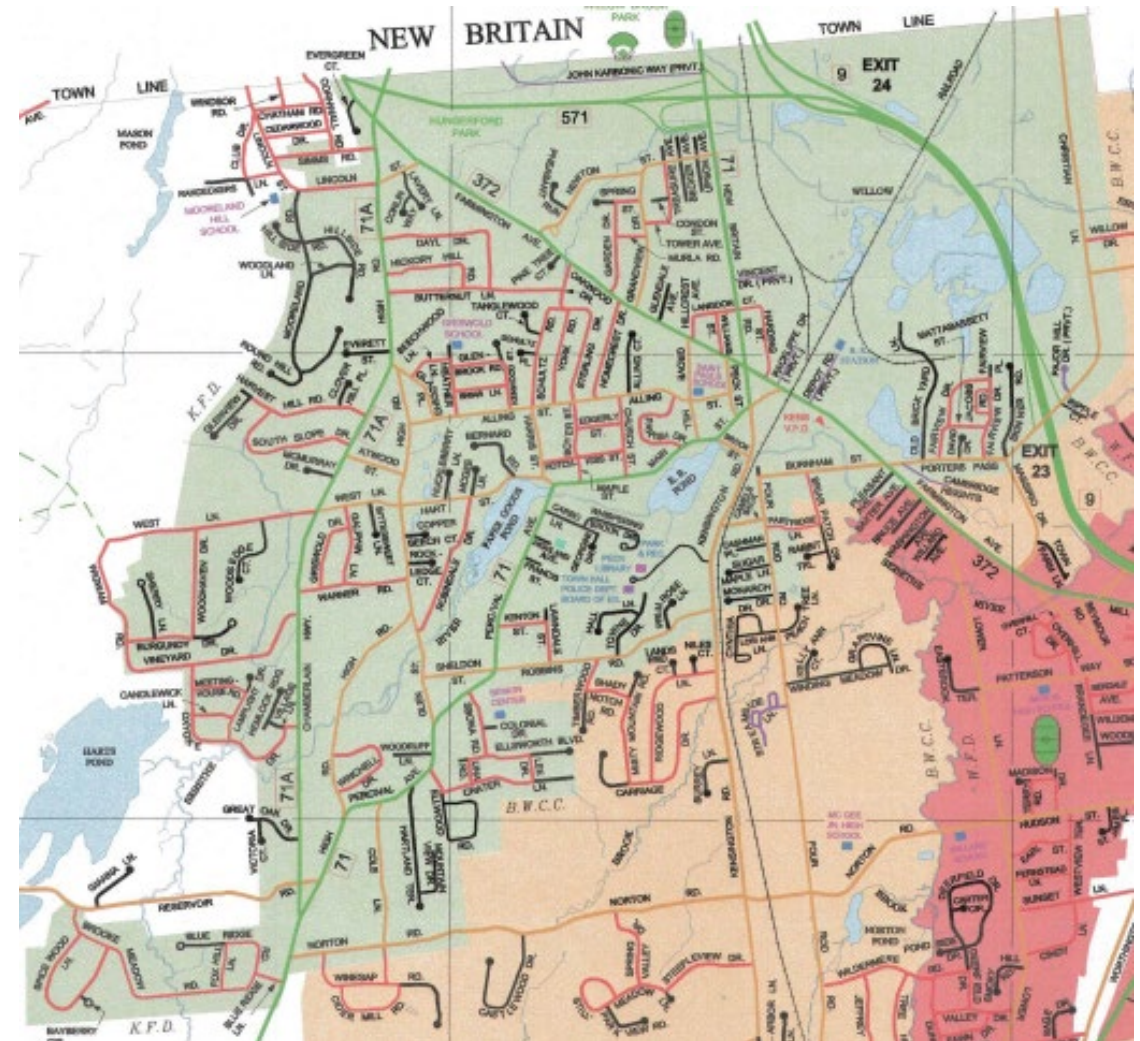
- Elton Well #2A (with a depth of 95 feet and a production of 350 gallons per minute, as stated above) was placed in service in 1996 and was rehabilitated in 2017.
- Elton Road Well #1B replaced Well #1A in 2017. Well #1B is capable of pumping over 350 gallons per minute.
- Water from Elton Wells #1B and #2A are blended together prior to entering the distribution system.
- The wellfield is potentially capable of 1 million gallons per day production.



Elton Road Well Pump, Source: Municipal Sewer and Water Magazine

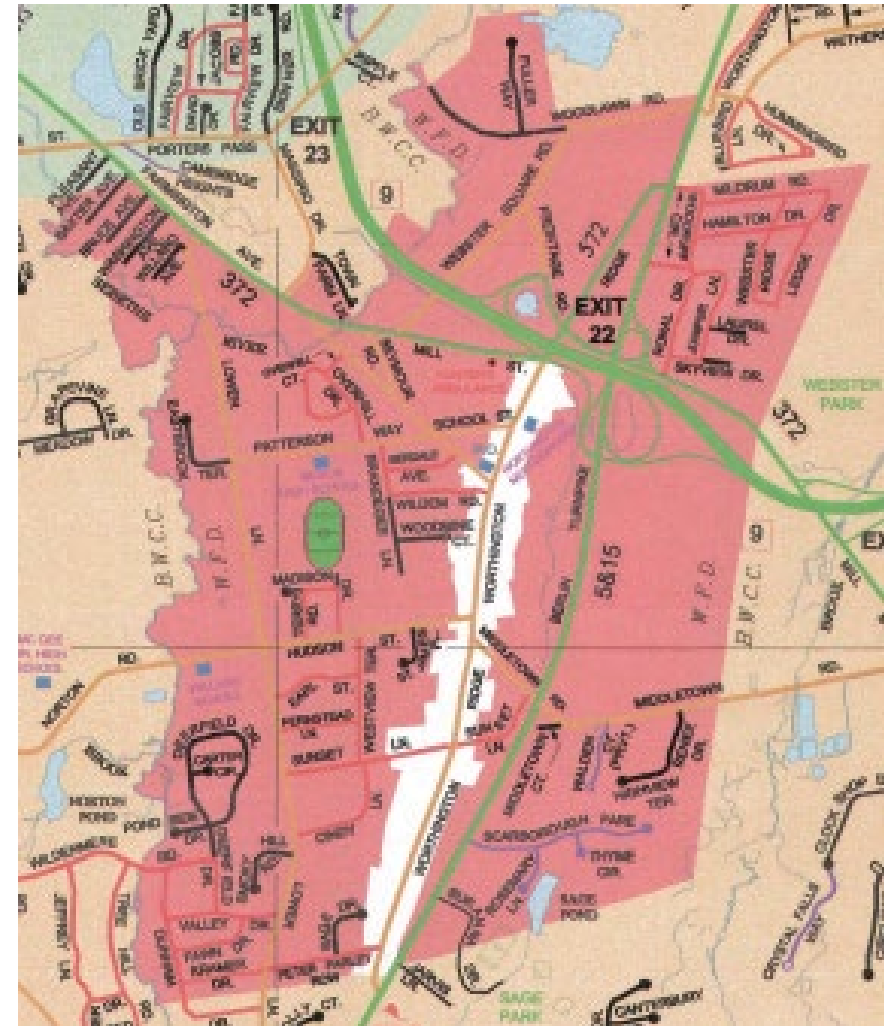
Kensington Fire District

- Customer base: 3,200 residential, 228 commercial
- Population served: 7,553
- Rates: 1.1 mill rate, \$4.40 per 100 cu ft of water, \$5.45 per 100 cu ft of water sold for sewer
- Water source consists of a consecutive supply from the New Britain Water Department
- Daily water production averages around 653,000 gallons, with an estimated yearly withdrawal of 240 million gallons
- Maintains approximately 44 miles of watermain



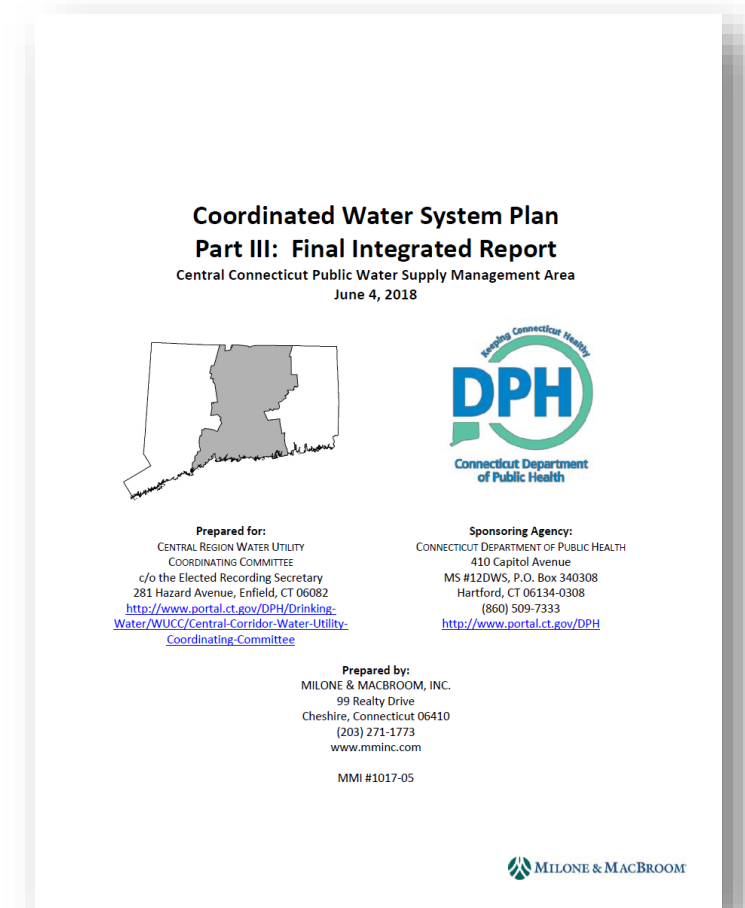
Worthington Fire District

- Customer base: 1,200 residential
- Population served: 2,875
- Rates: 1.54 mill rate, \$4.25 per 100 cu ft water rate, \$4.25 per 100 cu ft water sold sewer rate
- Water exclusively supplied from the Berlin Water Control Department through seven metered locations.



The 2018 Coordinated Water System Plan for the Central Connecticut Public Water Supply Management Area

- The Coordinated Water System Plan for the Central Public Water Supply Management Area (PWSMA) in Connecticut is comprised of the individual water supply plans of the public water systems within the PWSMA that serve over 1,000 people or have 250 or more service connections.



Residential Service Population of Districts

(From Coordinated Water System Plan)

ESA Holder	2015-2016 Total Residential Service Population	2023 Total Residential Service Population	2030 Total Residential Service Population	2060 Total Residential Service Population
Berlin Water Control Commission	7,010	7,493	7,748	9,138
Kensington Fire District	7,553	7,762	7,965	9,640
Worthington Fire District	2,898	2,990	3,068	3,713

Estimates, not actual.

Water System Interconnections

(From Coordinated Water System Plan)

Active Interconnections

Supplier	Receiver	Town	Average-Day Transfer (mgd)	Data Year
New Britain Water Department	Berlin Water Control Commission	Berlin	0.667	2016
New Britain Water Department	Kensington Fire District	Berlin*	0.810	2016
Berlin Water Control Commission	Worthington Fire District	Berlin*	0.218	2016
Cromwell Fire District Water Department	Berlin Water Control Commission	Cromwell	0.076	2016
Metropolitan District Commission	Berlin Water Control Commission	Newington	0.000	2016

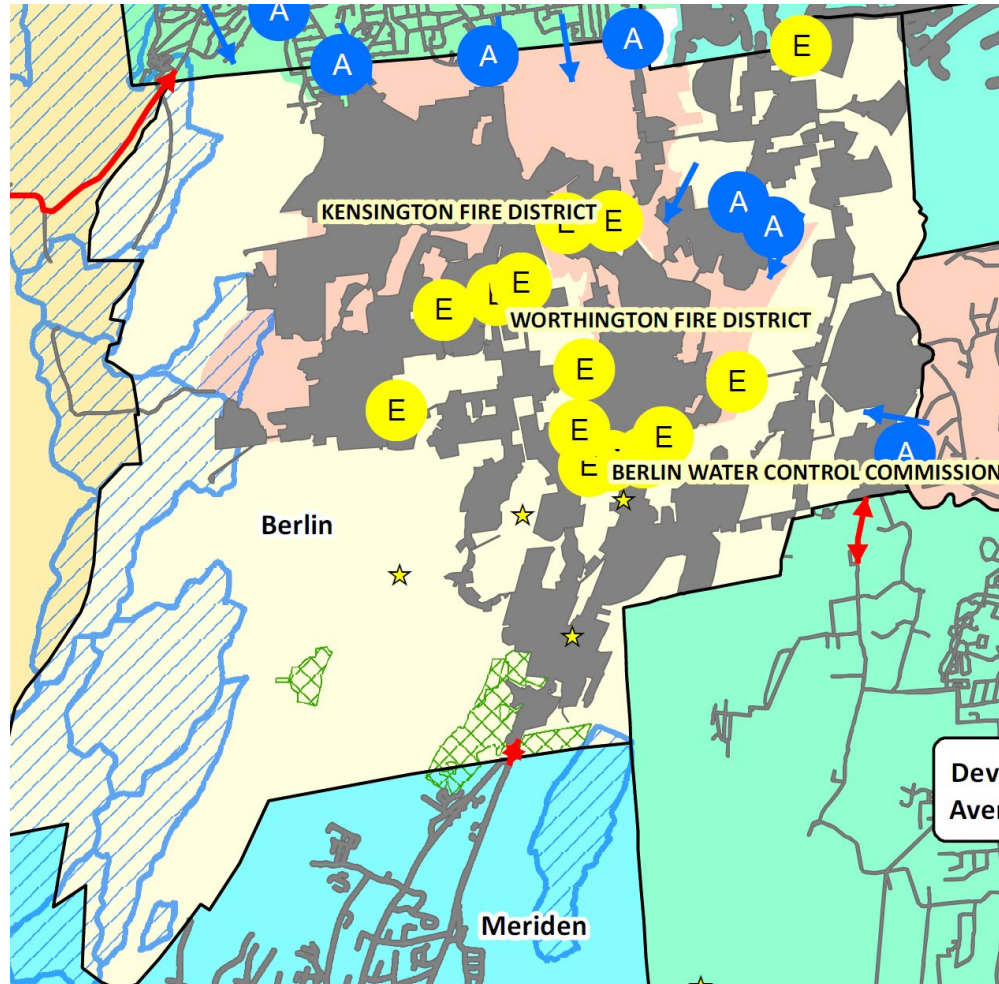
Emergency Interconnections

Supplier	Receiver	Town
Berlin Water Control Commission	Worthington Fire District	Berlin*
Kensington Fire District	Berlin Water Control Commission	Berlin*

*Multiple interconnections exist between the two utilities.

Water System Interconnections

(From Coordinated Water System Plan)



Legend

★ NON-COMMUNITY WATER SYSTEM

Existing Interconnections

ⓐ ACTIVE

ⓔ EMERGENCY

Ⓟ PROPOSED INTERCONNECTION

Ⓢ PROPOSED SUPPLY SOURCE

↔ PROPOSED INTERCONNECTION

▭ PROPOSED SUPPLY SOURCE AREA

■ COMMUNITY WATER SYSTEMS

Water System Recommendations

(From Coordinated Water System Plan)

The 2018 Coordinated Water System Plan Part III: Final Integrated Report for the Central Connecticut Public Water Supply Management Area recommended the following:

- The Berlin Water Control Commission and Meriden Water Division should consider developing an emergency interconnection along Route 5 where each system is proximal, which would further connect Meriden to interconnected systems in the central part of the region. \$1.7 million in watermain improvements at the southern end of the Berlin Turnpike that will enable this interconnection are currently planned and likely to be completed in 2023 or 2024.
- Middletown Water Department should consider developing emergency interconnections with the Berlin Water Control Commission and Cromwell Fire District, which would tie this system into the regionally interconnected systems. (The Cromwell Fire District is actively pursuing this interconnection.)

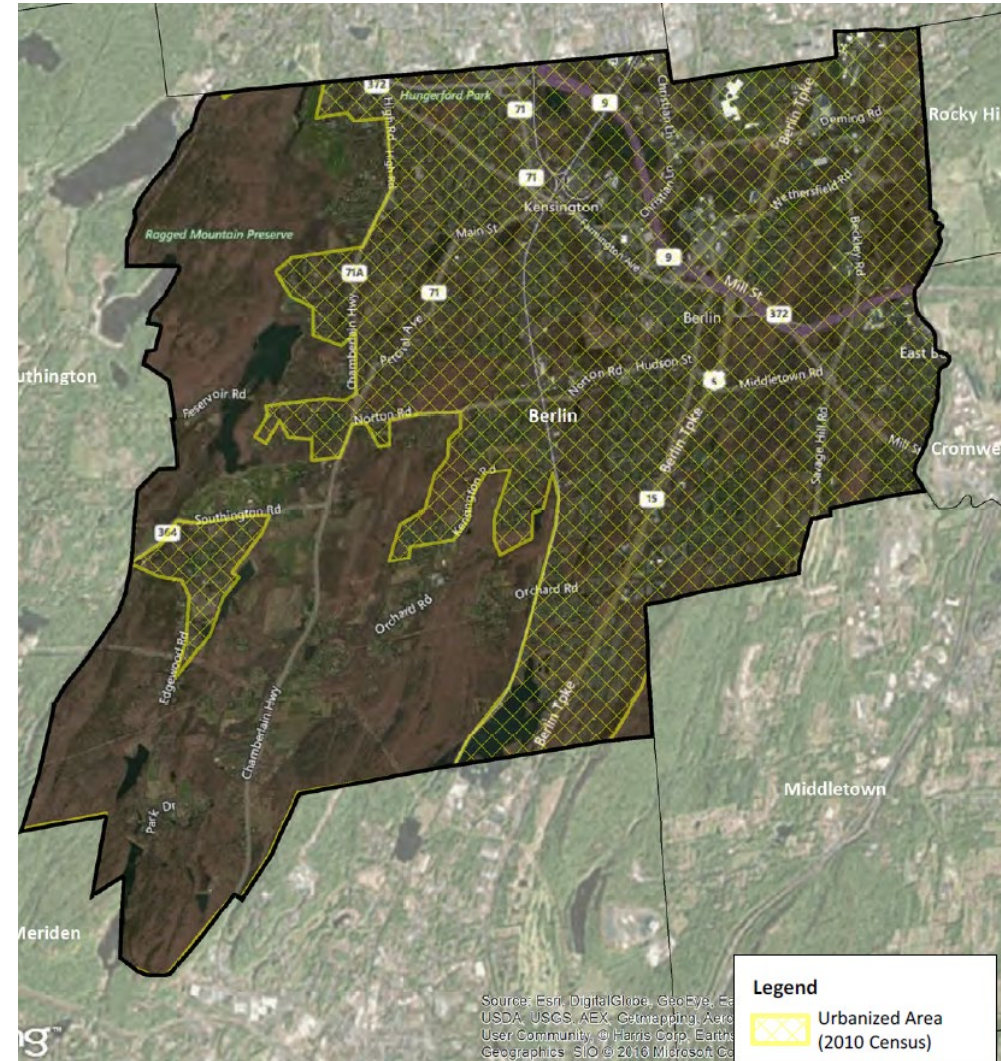
The Mattabassett District

- The Mattabassett District's Water Pollution Control Facility processes wastewater from New Britain, Berlin, Cromwell, Middletown, Newington, Rocky Hill and Farmington, and discharges treated water into the Connecticut River.
- Berlin joined the District in 1961.
- Flow from Berlin averages 3.35 million gallons per day. This is 16% of flow into the system.
- The District has requested that participating districts reduce their inflow and infiltration into the system to assist with their permit compliance.



Stormwater Infrastructure

- The Town adopted a stormwater management plan in 2017 as required by its Municipal Separate Storm Sewer System (MS4) permit.
- Annual reporting is conducted as required by the permit.
- The permit and compliance activities are focused on Urbanized Areas (UA), which are the areas defined by the U.S. Census Bureau. The UA within Berlin comprises 58% of the Town's area.
- The plan has the following components:
 - Public Education and Outreach on Stormwater Impacts
 - Public Involvement/Participation
 - Illicit Discharge Detection and Elimination
 - Construction Site Stormwater Runoff Control
 - Postconstruction Stormwater Management in New Development and Redevelopment
 - Pollution Prevention/Good Housekeeping for Municipal Operations



Recent Capital Projects: Kensington Dam

- The Kensington Dam impounds the Mattabeset River to form the 12-acre Railroad Pond. The dam is 210 feet in length and 25 feet in height. It consists of a concrete gravity dam with a centrally located spillway approximately 74 feet in width.
- \$1.6 million repair project
- \$250,000 state and federally funded fishway installation
- Completed in 2019



Source: myrecordjournal.com

Other Planned or Needed Capital Improvements

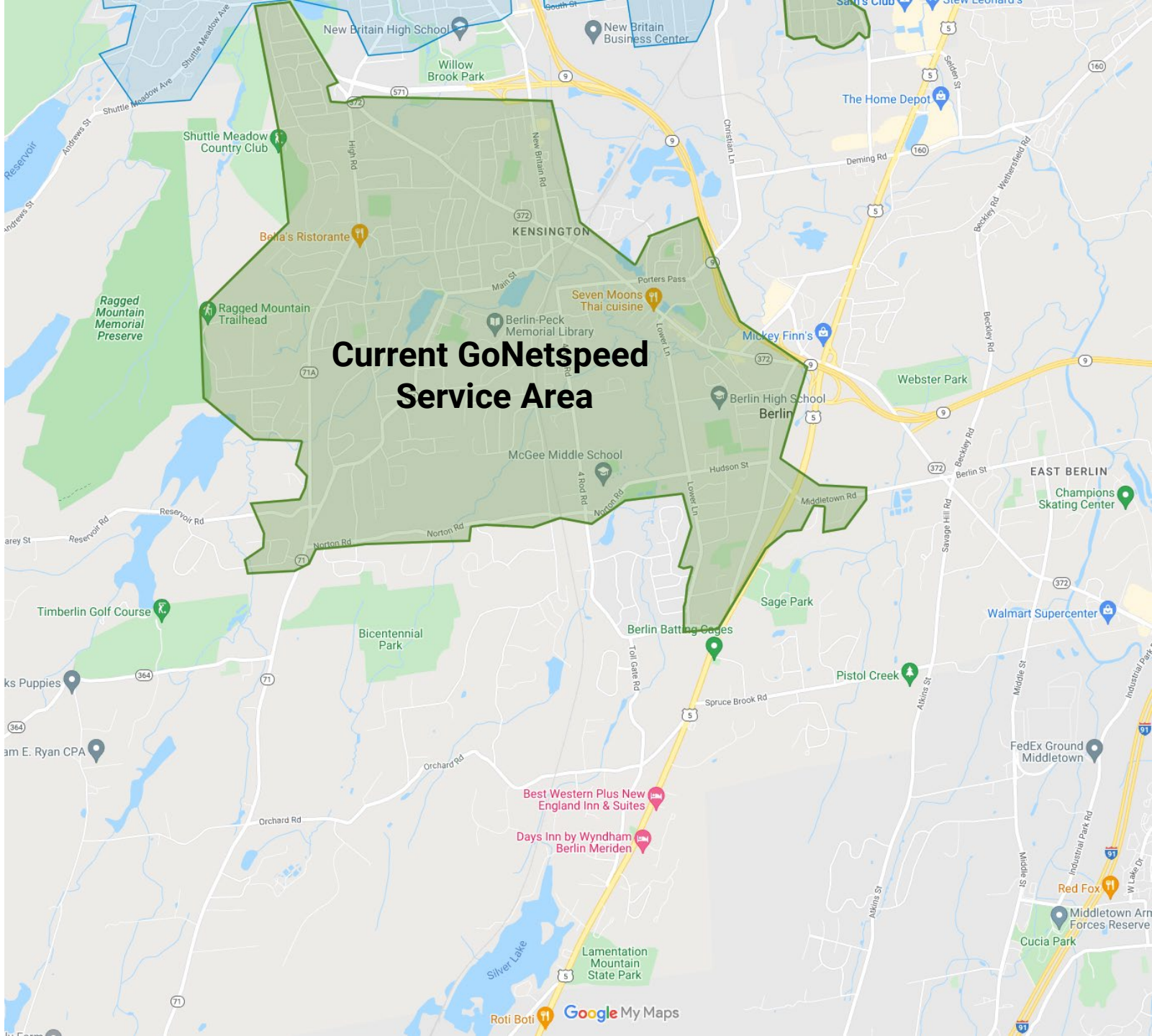
- The Paper Goods Dam needs maintenance and repairs. An engineering review will be conducted in 2022 with potential repairs conducted in 2024.
- The Town now owns and maintains streetlights, many are in need of repair or replacement with new poles needed in many areas. The Town needs standards for streetlights.



Paper Goods Dam, Source: Google Earth

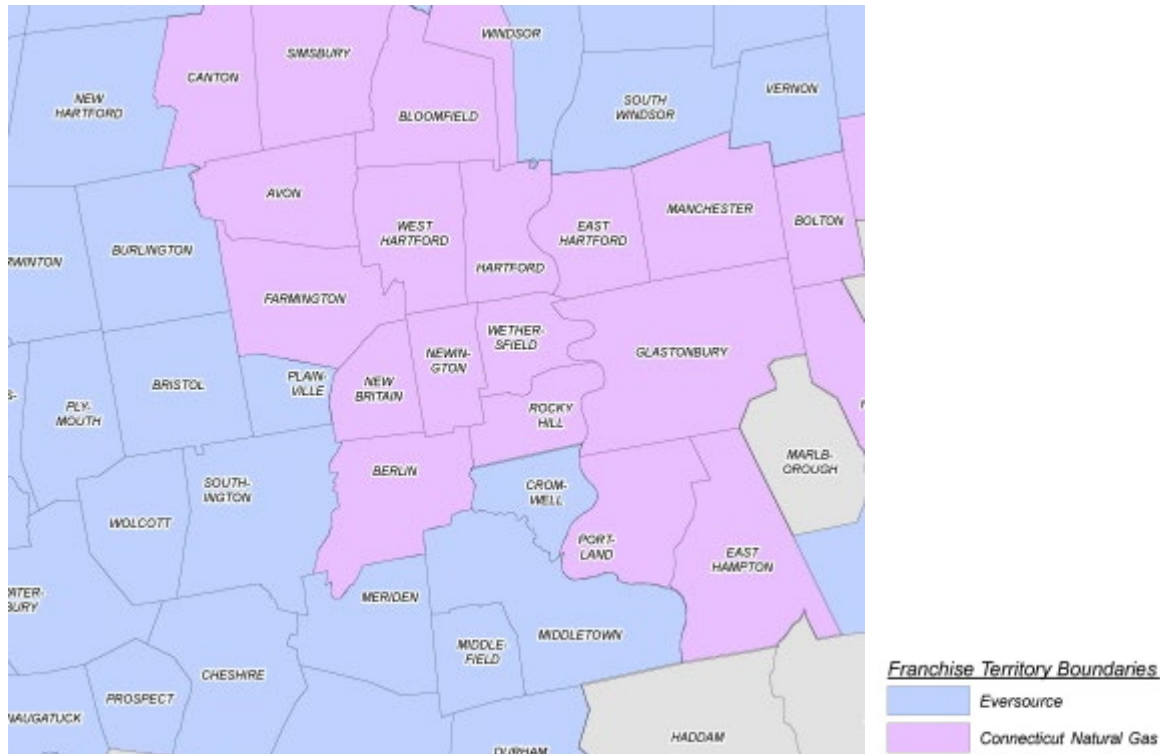
Broadband

- GoNetspeed, a high-speed internet service provider, initiated fiber optic development in Berlin in 2021.
- The service area in Berlin is currently limited to the Kensington area.
- Comcast provides internet service town-wide



Natural Gas

- Berlin is traversed, from east to west, by the Algonquin natural gas transmission line.
- Local service is provided by Connecticut Natural Gas.



Planned Outreach

- Online survey currently under development. Survey launch is expected by mid-May.
- Public workshop and is being planned for early June.
- Thematic Meetings are being planned for late June. Four meetings will be conducted and potential topics include:
 - Transportation, Infrastructure, and Facilities
 - Housing and Neighborhoods
 - Economic Development and Commercial Areas
 - Open Space, Farms, Historic, and Environmental Resources

Berlin Plan of Conservation and Development

Welcome to Berlin's Plan of Conservation and Development Survey!

The purpose of this survey is to collect information to assist the Town with its update to the Plan of Conservation and Development (POCD). The plan covers areas such as economic development, housing, transportation, infrastructure, open space, environment, and municipal services.

The Town would like your thoughts on how Berlin should grow and change in the future. Your response to this survey will help in the preparation of the 2023 POCD. This is an opportunity for everyone in the community to decide how to guide change over the coming decade. By participating in this survey, you will be contributing to this effort.

POCD Next Steps

- Launch Community engagement efforts
 - Launch online survey
 - Prepare for workshop
 - Prepare for thematic meetings
- Continue to coordinate mapping with NEGEO
- Collect information on facilities and services in preparation for May meeting

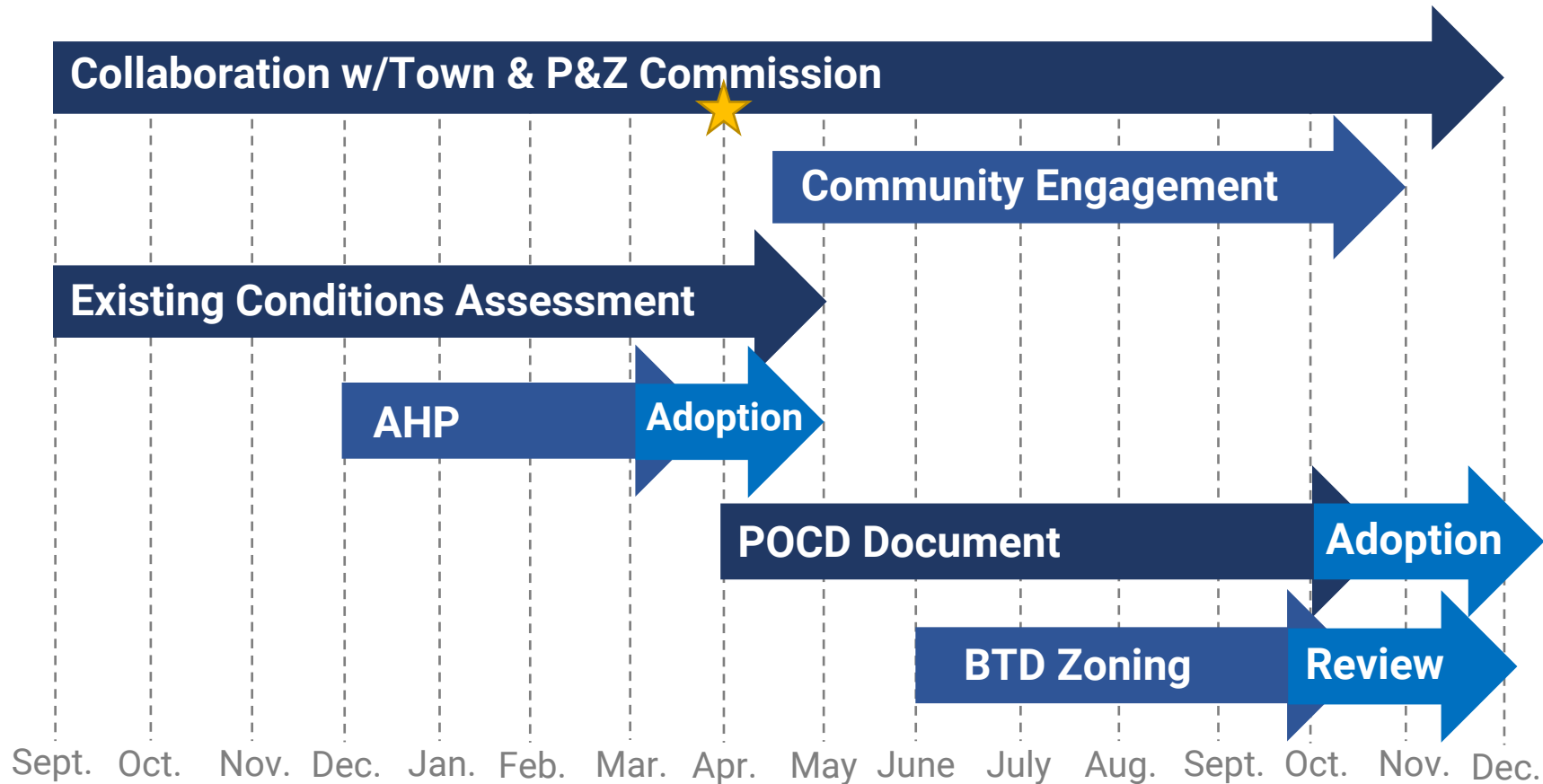
Affordable Housing Plan Update

- The draft plan is currently available for public review on the Town's website and in the Town Clerk's office.
- Public Hearing will be conducted at Town Council meeting on May 17th at 7:00 pm.



POCD Project Schedule

15 months (concluding by end of 2022)



Next POCD Meeting

- Town Facilities and Services
- Meeting date Thursday May 26th at 6:00 pm.

MAY 2022

SUN	MON	TUE	WED	THU	FRI	SAT
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31	1	2	3	4

www.GrabCalendar.com