PLANNING AND ZONING COMMISSION
AGENDA
REGULAR MEETING / WORKSHOP VIRTUAL
May 23, 2023, 7:00 P.M.

Planning and Zoning Commission
May 23, 2023, 7:00 – 10:00 PM (America/New_York)

Please join my meeting from your computer, tablet or smartphone.
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REGULAR MEETING

I. Call to Order / Roll Call

II. Approval of Minutes

A. May 9, 2023 – Regular Meeting / Workshop

III. Recognition of Guests / Public Comments (non-Agenda items)

IV. Action on Pending Applications

V. Old Business

VI. New Business

A. New Applications:

1. **Petition 2023-03** – Receipt of Special Permit Application from Andrew Rainone for replacement of exterior security lighting with illumination in excess of six (6) foot-candles under Section 5.F.2.4 of the Hebron Zoning Regulations, premises located at 109 Main Street, Main Street District.

B. Set Public Hearing Date:

1. **Petition 2023-03** - Special Permit Application from Andrew Rainone for replacement of exterior security lighting with illumination in excess of six (6) foot-candles under Section 5.F.2.4 of the Hebron Zoning Regulations, premises located at 109 Main Street, Main Street District.

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1. **Petition 2023-03** - Special Permit Application from Andrew Rainone for replacement of exterior security lighting with illumination in excess of six (6) foot-candles under Section 5.F.2.4 of the Hebron Zoning Regulations, premises located at 109 Main Street, Main Street District.

C. Other New Business

1. Workshop Discussion: 2024 Plan of Conservation and Development – Affordable Housing Insert, Utilities and Infrastructure
2. Workshop Discussion: Regulating Cannabis Establishments

VII. Public Comment (non-Public Hearing applications)

VIII. Correspondence

IX. Adjournment
Next Meeting: June 13, 2023 – Regular Meeting / Workshop

TOWN OF HEBRON
PLANNING AND DEVELOPMENT DEPARTMENT

TO: Planning and Zoning Commission

FROM: Matthew Bordeaux, Town Planner

DATE: May 18, 2023

RE: Planner's Report for May 23, 2023 Regular Meeting/Workshop

REGULAR MEETING

Petition 2023-03 – Special Permit Application from Andrew Rainone for replacement of exterior security lighting with illumination in excess of six (6) foot-candles under Section 5.F.2.4 of the Hebron Zoning Regulations, premise located at 109 Main Street, Main Street District.

The Commission is in receipt of a new application for Special Permit under Section 5.F.2.4 for a proposal to replace and enhance the security lighting provided for the Bank of American 24/7 ATM Kiosk. The kiosk is located at the Dunkin Donuts at 109 Main Street.

Section 5.F.2.4 states:

"In order to preserve energy and to avoid excessive distraction, six foot-candles at ground level shall not be exceeded except where through a Special Permit Application the Commission determines that public safety or a unique use (e.g., gasoline filling station pump islands or car dealerships, etc.) requires a higher intensity, and where the Commission finds that the proposed light intensity is compatible with surrounding land uses and their existing lighting plans."

An application accompanied by product specifications and photometric plans are included for your review. The plans have been distributed to Town staff for review and comment.

I recommend the Commission schedule a public hearing for Petition #2023-03 at its June 13, 2023 meeting. A public hearing for the Hebron Lions Petition #2023-02 was scheduled for that evening as well.

Workshop Discussion: 2024 Plan of Conservation and Development – Affordable Housing Insert, Utilities and Infrastructure

Mike O'Leary has prepared materials for the Commission workshop discussion. Attachments include a summary of affordable housing options in Hebron in response to the Commission's request; revised Town Center and Transitional Area maps; draft sections and maps addressing roadways, stormwater and other utilities and associated background information; and an updated Status Table.

Workshop Discussion: Regulating Cannabis Establishments

As time allows, we can continue our discussion regarding the Commission's thoughts on the various licensed Cannabis Establishments. We should begin by completing our discussion of Micro-cultivators and move on to the different types of production facilities, including Food and Beverage Manufacturer, Product Manufacturer and Product Packager. I will continue my research and share what information I have at the meeting.

MRB
H:\Matt\PZC\2023\05-23-2023\Planners Report.docx

PLANNING AND ZONING COMMISSION
MINUTES
REGULAR MEETING / WORKSHOP VIRTUAL
May 9, 2023, 7:00 P.M.

Members Present: N. Wood, F. Zitkus, D. Sousa, J. Boice
Alternate Members Present: T. McManus
Members Absent: D. Garner
Staff: Matt Bordeaux- Town Planner
Guests: Bonnie Davis- Fastsigns, 101 Hill Rd., Manchester 06042

REGULAR MEETING
I. Call to Order / Roll Call: N. Wood called roll call and the meeting to order at 7:03p.m.
N. Wood sat T. McManus as a voting member in place of D. Garner.

II. Approval of Minutes
A. April 25, 2023 – Regular Meeting / Workshop:
Corrections: Page 2, end of the first paragraph add "F. Zitkus requested that the cemetery section be sent to the HHPC for their input."
Workshop: Add the initial questions from the April 11, 2023 PZC Meeting:

- May PZC allow for cannabis establishments that sell only medical/palliative-use marijuana? If yes, is such an establishment considered a Dispensary Facility? If not, how would they be regulated (if considered to be the closest existing regulated use)?

- Are cultivator license establishments permitted in residential zones (i.e. on farms / farmland)? What safeguards regulations are recommended for cultivator license establishments?

- Product Manufacturer, Food and Beverage Manufacturer and Product Packager License establishments are typically allowed only in business zones I suspect. What safeguard regulations are recommended for such establishments?

- Regarding Delivery Service and Transporter Licenses, where would such a service be located from? Within a business zone only? Within a residential zone?

- For locally permitted cannabis establishments, what additional State regulations apply to such establishments?

- Are licenses still being issued at a rate per community population? If so, are those determined by municipal boundary or regionally?

The motion to accept the April 25, 2023 Regular Meeting/Workshop Minutes as amended was made by F. Zitkus, seconded by T. McManus; the motion passed unanimously.

III. Recognition of Guests / Public Comments (non-Agenda items): None

IV. Action on Pending Applications: None

V. Old Business: None

VI. New Business:
A. New Applications:
The motion to move section VI A.2 ahead of section VI A.1 was made by F. Zitkus, seconded by D. Sousa; the motion passed unanimously.
2. Sign Application – New Wall Sign and Replace Free Standing Sign at 117 Main St., Main Street District.
Bonnie Davis- Fastsigns, 101 Hill Rd., Manchester 06042
Bonnie is proposing two different signs. One would be on the building, the dimensional letters that are currently there from the previous name would be removed and they are proposing a 96 inch wide by 36 inch high, three mm, max metal sign with vinyl and laminate over it, with a one inch aluminum tube frame attached to the building. The second one is a free standing post and panel sign that is 71.5 inch wide by 36 inch high. The post and panel sign will have landscaping done for cosmetic reasons after it is installed. The types of plantings are not known at this time, but they will be low-level as to not block the signage. Any lighting needs will also be addressed in the future, and conditioned by the Commission.
M. Bordeaux addressed the Commission stating that signs proposed in Hebron are subject to the provision of Section 5.B of the Hebron Zoning Regulations. Signs proposed in districts other than the Hebron Green or Village Square are subject to the provisions of Section 5.B.5.2. The proposed wall sign is 24 square feet in area (36" x 96"). Section 5.B.5.2.2.a provides that for buildings not less than 150' from the street, a wall sign may be one square foot for each lineal foot of the building frontage assigned to each unit of occupancy. The building has a single occupant and is approximately 120' long. Therefore, the proposed 24 square foot sign is compliant with the dimensional standards. The proposed freestanding sign will replace an existing free standing sign using the same posts. The sign is just short of six (6) square feet in area (36" x 71.5"). In accordance with Section 5.B.5.2.1.b, one pole or ground sign with a maximum height of six (6) feet and a maximum sign area of twenty-four 24) square feet is permitted. The proposed sign is no greater than six (6) feet in height and is therefore compliant with the dimensional standards.
Section 5.B.5.2.6 Design Guidelines, states that in order to maintain the desirable character of Hebron's Business districts, all signs submitted to the Commission shall be subject to the design guidelines incorporated in Section 5.A of the Hebron Zoning Regulations.

The motion to approve a new wall and replacement freestanding sign of 117 Main St., Hebron with the following three conditions: 1) Any and all signage lighting shall be shut off 2) Ground lit lighting shall not glare off the site 3) All plantings shall be of a native variety was made by F. Zitkus, seconded by T. McManus; the motion passed unanimously.

1. Petition 2023-01 – Site Plan Modification of Town of Hebron Parks and Recreation Dept. to Replace Playground Equipment at Veteran's Memorial Park, 66 Wall St., R-1 District.

The Town of Hebron Parks and Recreation Department is proposing to utilize American Rescue Plan Act (ARPA) funds approved by the Hebron Board of Selectmen and endorsed by the Hebron Parks and Recreation Department to replace the existing playground equipment at Veteran's Memorial Park at 66 Wall Street in the R-1 District.

The proposal will occur in the footprint of the existing playground area and will not expand or intensify the use. Approval of a Site Plan Modification is requested to permit this activity.

Veteran's Memorial Park is approximately 15.7 acres and consists of two (2) baseball/softball fields, a basketball court, a defunct skate park, a multi-use practice field, a restroom pavilion and parking. The multi-use nature of the park makes a playground an ideal amenity for families with multiple siblings. The playground replacement plan was prepared by Creative Recreation LLC of Newington, CT and will utilize the same footprint as the existing playground. The existing playground is divided into two areas. One side of the playground (north side) has been designed for use by children ages 2-5 years old and the other (south side) for children ages 5-12 years old. All replacement equipment will be compliant with ASTM standards and ADA guidelines. There are two proposed inclusive swings available for visitors with disabilities. There are no underground utility conflicts, abnormal soils or significant vegetation that will be encountered or impacted by the equipment replacement. The equipment will be installed code-compliant footings and the ground surface will be improved with certified engineered wood fiber. The proposed playground equipment replacement project will occur in the same footprint as currently exists. No increase in the nature or intensity of the use is proposed, therefore a Site Plan Modification approval should suffice to permit the improvement.

Parks and Recreation Director Craig Bryant will manage the contract with Creative Recreation LLC. Construction is anticipated to commence in the Fall '23. The Parks and Recreation Department will be responsible for removing the existing equipment and resurfacing following the installation of the new equipment.

M. Bordeaux shared his screen and members viewed images of the proposed playground.

T. McManus posed to the Commission a question about the nearby skate park, which is a possible hazard.

F. Zitkus inquired if there was fencing to delineate the 2-5 year old play area from the 5-12 year old area, and there is none proposed at this time, but the vendors did suggest including signs that made the distinction. M. Bordeaux will make the recommendation, but does not encourage making it a condition of approval.

D. Sousa asked who is responsible for inspecting the equipment to be sure of the ASTM standards and the ADA guidelines. N. Wood responded that generally a building inspector will come and make sure it's built to specifications. M. Bordeaux believes that Creative Recreation should endorse those standards in their contract, he will verify that for the Commission.

The motion to approve Petition 2023-01 from the Town of Hebron Parks and Recreation Department for Site Plan Modification to replace playground equipment and associated ground surfacing at Veteran's Memorial Park at 66 Wall Street, R-1 District was made by T. McManus, seconded by D. Sousa; the motion passed unanimously.

3. Petition 2023-02 – Receipt of Special Permit Application of the Hebron Lions Agricultural Society for the sale of beer and wine on September 7th thru 10th, 2023, under Section 5.O.3 of the Hebron Zoning Regulations, premise located at 347 Gilead Street, R-1 District

The Hebron Lions Agricultural Society is requesting the annual renewal of a Special Permit for the Temporary Liquor Permit associated with a Recreation Facility in a Residence District in accordance with Section 5.O.3.2 of the Hebron Zoning Regulations. A Special Permit was previously approved with conditions on June 14, 2022. The current proposal is identical to the previously approved activity except for the date of the event.

The Commission has routinely dedicated the second meeting of each month to the workshops as it continues to update the Plan of Conservation and Development. As the Hebron Lions Agricultural Society's event isn't for several months, M. Bordeaux recommends the Commission schedule a Public Hearing for Petition 2023-02 at its June 13, 2023 meeting.

Members discussed possibly making this a bi-annual application. D. Sousa brought up the subject of symbols of hate (confederate flags) being sold in conjunction with the sale of beer and wine. M. Bordeaux is going to notify the Lion's Club representatives of this general inquiry prior to the Public Hearing so they will then have time to make a response.

B. Set Public Hearing Date:

1. Petition 2023-02 – Special Permit Application of the Hebron Lions Agricultural Society for the sale of beer and wine on September 7th thru 10th, 2023, under Section 5.O.3 of the Hebron Zoning Regulations, premise located at 347 Gilead Street, R-1 District.

The Public Hearing is set for the June 13, 2023 Planning and Zoning Meeting at 7:00p.m., virtual.

C. Other New Business:

1. Referral to Hebron Board of Selectmen under Section 8-24 of CT General Statutes for the disposition of Parcel #46-26X Abby Rd

In response to the inquiry of adjacent property owners, Town staff has been directed by the Hebron Board of Selectmen to prepare the transfer of 0.28 acres of Town-owned property identified as Parcel #46-26X located on Abby Drive.

The Town-owned parcel was historically intended to provide access to undeveloped land located to the north. The access strip was designed to meet the standards for construction of a new public street that would allow for future residential development, however the approximately 104-acre parcel (identified as Parcel #46-18+19) was acquired by the State of Connecticut Department of Energy and Environmental Protection and no longer has any future development potential.

M. Bordeaux upon the request of the BOS started conducting inquiries into the property, and subsequently discovered that the State land to the North is publicly accessible and that there is a great deal of frontage on North Street, where there is a farm access drive and a portion of that property continues to be used for agricultural purposes. He then reached out to the state's

regional wildlife biologist who indicated there is no real interest or desire to utilize the access from Abby Dr., but it is not her call. So, while it's worthwhile to bring the issue to the Commission's attention, he will ultimately pursue the issue with the States land management body to review the intention of the use of this property, and whether or not they see any need for the Town to retain possible access via this paper road. Therefore, he thinks it is appropriate to hold off on taking any action on this subject and wait for more information from the state before giving a recommendation to the BOS.

F. Zitkus pointed out that direct access to the State's of Connecticut's recently acquired (2021) 104-acre Wildlife Management Area (formerly Fracchia) is currently limited to 2 locations:
1. A State DEEP un-marked, unimproved farmers "lane", up-gradient from and easterly to North Street, Route 85.
2. The Town of Hebron owned a 50' access strip between 29 and 35 Abby Road, a cul de sac.
And, of note, the Hebron Open Space Land Acquisition Committee referred this 104-acre and adjacent Fracchia 178-acre parcel on the opposite side of Route 85 to the State to their land acquisition unit a few years ago.
Members reviewed a map provided by F. Zitkus.

The Commission would like more details from the State and dimensions of the other site as well as access options from M. Bordeaux and will continue this discussion at a future meeting.

2. Workshop Discussion: Regulating Cannabis Establishments:
M. Bordeaux went over with the Commission information he has garnered from sources who have dealt with the introduction of cannabis establishments, and discussed four different license types; retailer, hybrid-retailer, cultivator, and micro cultivator licenses.
Any municipality may establish rules regulating the following regarding cannabis establishments:

- Prohibit the establishment
- Reasonably restrict their hours in signage
- Restrict their proximity to schools, religious institutions, charitable institutions, hospitals, Veteran Homes, certain Military establishments
- Ct. General Statutes, 21.A-420 established the regulation of adult use cannabis and then the regulation for Ct. State Agencies, 21.A-421 established the policies and procedures that were drafted by the Connecticut Department of Consumer Protection, that dictate the issuance of the license is essentially establishing the industry. And how each licensed cannabis establishment shall operate.

Retailer- “A person, excluding a dispensary facility that is licensed to purchase cannabis and cannabis products from producers, cultivators, product manufacturers and food and beverage manufacturers and to sell cannabis products to consumers and research programs”

- A retailer may not conduct sales of medical marijuana products nor offer discounts or other inducements to qualifying patients or caregivers
- Retailers shall maintain a secure location, in a manner approved by the commissioner
- May sell, transport, or transfer cannibal to a delivery service or delivery utilizing its own employees

Hybrid Retailer- “A person that is licensed to purchase cannabis and sell cannabis and medical marijuana products”

- In addition to general retail sales, may sell to qualifying patients and caregivers
- Medical products shall be dispensed by a licensed pharmacist and recorded in electronic prescription drug monitoring program
- Pharmacists on site at all times when open

M. Bordeaux recently reached out to the Manchester Senior Town Planner, as Manchester has approved two retail establishments, and found out the following information:

- The most important questions for the Commission to consider is if and where they think it is appropriate to have retail sales, what the process should be, for example a special permit, and the three considerations a municipality can regulate; hours, signage, and proximity to other facilities. Manchester has found that as far as traffic is concerned there actually has been no more of an influx than any other retail store opening.
- Concerning the discussion about the number of establishments that can be allowed per community population, those provisions have been eliminated, so it’s no longer a situation where the TOH can only have one due to population.
- These establishments have been designed to place an order in advance, so town’s don’t have lines at the door.
- The Town of Manchester decided to regulate their hours of operation consistent with the way they do liquor sales. One of the stores in Manchester already had medical sales, and they were then able to evolve into retail sales.

The Commission then reviewed additional license types:

Micro-Cultivator- “A person licensed to engage in the cultivation, growing, and propagation of the cannabis plant at an establishment containing not less than 2,000 square feet and not more than 10,000 square feet, of grow space, prior to any expansion authorized by the commissioner.”

- 2,000 to 10,000 square feet of “grow space” and may request expansion at 5,000 sq. ft. annually up to maximum 25,000 sq.ft.
- May label, manufacture, package, and perform extractions with food and beverage manufacturer, product manufacturer or product packer license.
- May sell directly to consumers, only by delivery.
- Deliver cannabis to consumers using their own employees

Cultivator- “A person that is licensed to engage in the cultivation, growing , and propagation of the cannabis plant at an establishment with not less than 15,000 sq.ft. of grow space; “Grow Space” means the portion of a premises owned and controlled by a producer, cultivator, or micro cultivator that is utilized for the cultivation, growing or propagation of the cannabis plant, and contains cannabis plants in an active stage of growth, measured starting from the outermost wall of the room containing cannabis plants and continuing around the outside fo the room. “Grow space” does not include space used to cure, process, store harvester cannabis, or manufacture cannabis once the cannabis has been harvested”

- >15,000 sq.ft.

- May label, manufacture, package, and perform extractions with food and beverage manufacturer, product manufacturer, or product packager license.
- May not sell, transfer, or deliver to consumers or qualifying patients
- “Outdoor Grow” areas are subject to additional provisions: 12’ high chain link fence with full visual obstruction and 20’ radius lighting (downward cast and shielded) at all points of egress, locked, and video monitored.

Discussion:
Are these established only in business districts or are they in residential areas, like on a farm? Would there be two permits required, and if so, what are the required regulations to make sure it is safe to do so?
M. Bordeaux responded that due to the industrial nature of these facilities and the way their security is regulated and in the scale of these facilities are most appropriate for industrial zones, and that’s how the licenses have played out at this point.
Members discussed whether they feel either of these would be appropriate in Hebron. It comes down to if cannabis establishments come to Town, would it be growth or sales, and if growth, where could it go, the Commercial Technical Zone?
If industrial is permitted, then an operations desire to expand could be an issue as well.
It is also possible to not make a decision of permitting one way or another, and just visit it on a case by case basis.
Generally members agree that micro cultivators are appropriate in the industrial section of Hebron and cultivators, due to size, aren't appropriate in any zone in Hebron.

Follow up questions:
Can Hebron allow for a dispensary facility only?
Can a pharmacy sell medical marijuana?
What towns around Hebron are allowing retail?

VII. Public Comment (non-Public Hearing applications): None

VIII. Correspondence: None

IX. Adjournment:
The motion to adjourn the May 9, 2023 Regular Meeting/ Workshop was made by D. Sousa, seconded by F. Zitkus; the motion passed unanimously.
The meeting was adjourned at 9:08p.m.
Next Meeting: May 23, 2023 – Regular Meeting / Workshop

Respectfully Submitted,
Catharine Brinkman
Board Clerk

Memo

To: Planning and Zoning Commission

From: Michael K. O'Leary, AICP
Planning Consultant

Date: 5/15/2023

Re: Affordable Housing

At the last workshop there was a request to add a section to the Community Profile on the number of affordable housing units in Town. I have drafted the attached for your review and comments. I thought that instead of just a list of State defined affordable housing units, that a brief description would be in order. It would be easy to edit this to make this shorter if that is desired. This information was taken from the recently adopted housing study,

Attachments

Hebron's Affordable Housing

In 2022, Hebron approved its first affordable housing plan, the "2022-2027 Plan for Housing Choices" (Plan). The data in this section is derived from that Plan.

When we talk about affordable housing, it is housing that costs thirty percent or less of the household income (CGS Section 8-39a). A household spending more than 30 percent of its income on housing might be considered "housing cost burdened." And data from the American Community Survey, estimates that 852 existing households in Hebron are potentially housing cost burdened since they are spending 30 percent or more of their income on housing. This includes 751 owner occupied households and 101 renter households.

Naturally Affordable Units

There are affordable housing units in Hebron and all communities that are considered "naturally affordable" as they are affordable to a household at 80% of the area median income, and they are not the result of any government programs or controlled by a deed restriction.

The Plan states that these are the naturally affordable housing units in Hebron:

- Hebron may have had about 1,137 ownership units in 2019 valued at $250,000 or less (affordable to a household at 80% of area median income).
- Hebron may have had about 191 rental units in 2019 which had a gross rent of $1,500 or less per month (affordable to a household at 80% of area median income).

Since almost all of the above units are not deed-restricted, they are not considered by the State of Connecticut toward meeting the criteria for affordable housing and do not count towards Hebron's affordable housing totals.

State of Connecticut Recognized Affordable Housing

To meet the State definition of affordable housing, they must fall into the one or more of the following categories:

- It is assisted housing,
- The owners have a CHFA/USDA mortgage,
- The tenants receive tenant rental assistance, or
- The unit meets the requirements for a deed-restricted unit.

The State "Affordable Housing Appeals List" prepared by the Department of Housing recognizes 105 housing units in Hebron qualifying as "State defined

affordable housing units." These units count towards the Affordable Housing Appeals List (105 out of 3,567 units = 2.94%).

Assisted Housing:
Stonecroft Village (Housing Authority) – 25 units
Hillside Farms Apartments - 32 units
Bolton Group Homes – 1 unit

Other Housing:
Tenant Rental Assistance - 3
CHFA/USDA Mortgages – 44

Although there are additional units in Hebron that are deed restricted, they do not meet the State's definition of affordable housing, so they are not included in their totals for Hebron.

Memo

To: Planning and Zoning Commission

From: Michael K. O'Leary, AICP
Planning Consultant

Date: 5/15/2023

Re: Revised Maps - Hebron Center; Transitional areas

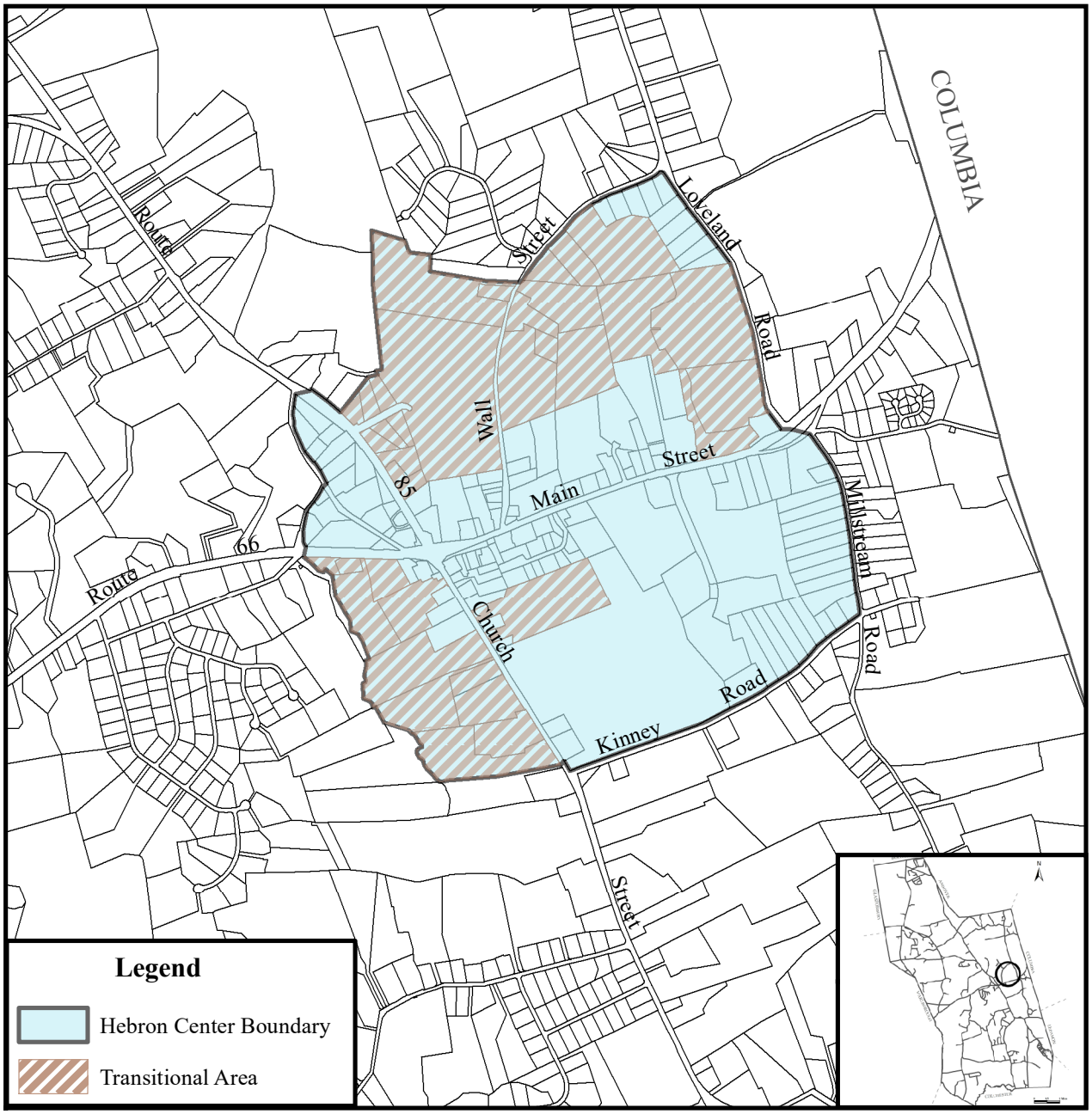
Attached are slightly revised maps for Hebron Center and Transitional Areas. It was requested to add some additional street names to these maps.

Attachments

Map No. 17

HEBRON TOWN CENTER

2024 Hebron Plan of Conservation and Development
Hebron, Connecticut



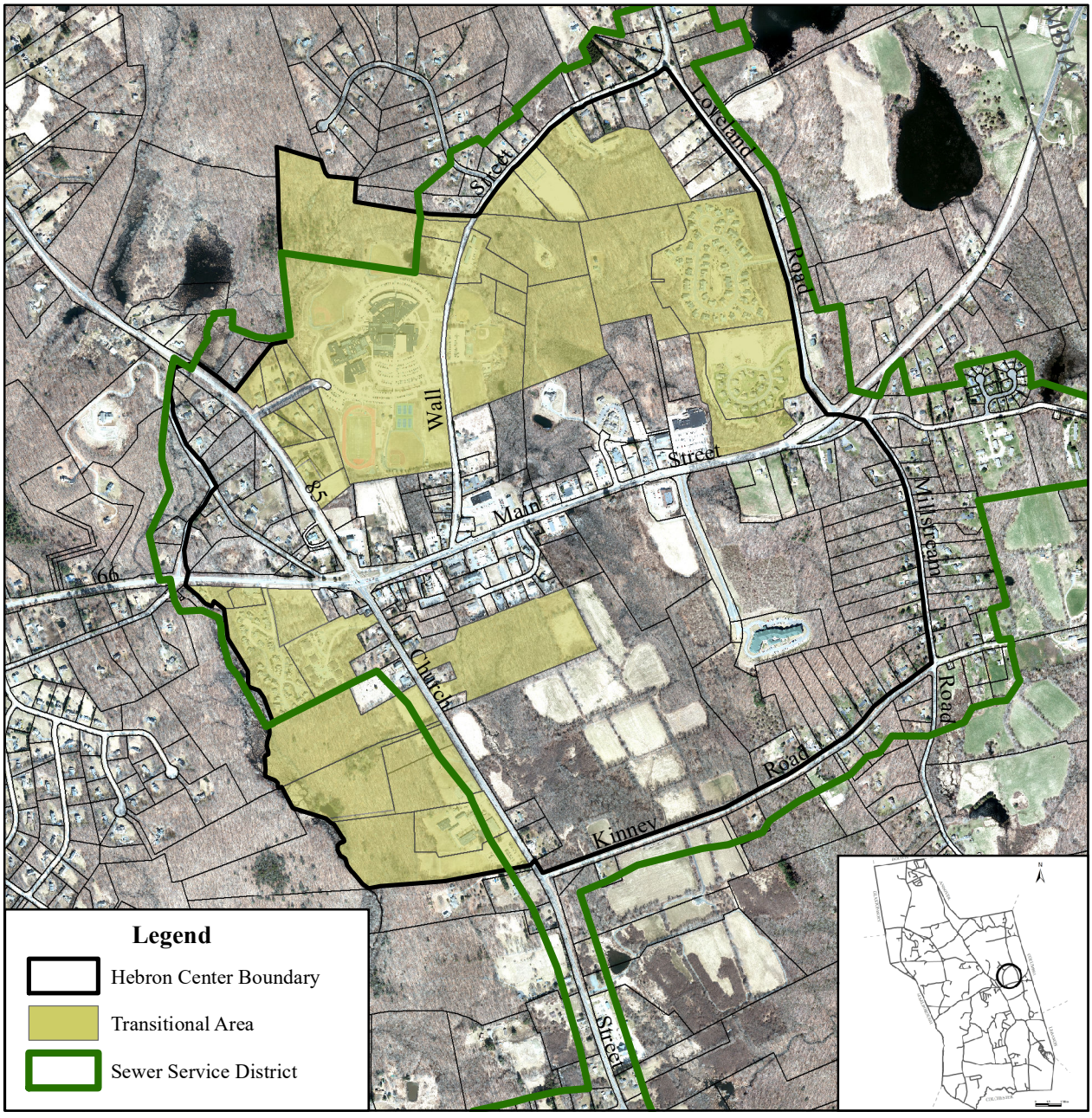
Source: Digitized Hebron Assessors Map, 2020; Town of Hebron Zoning Map, 2017

NATHAN L. JACOBSON & ASSOCIATES, INC.

Map No. 22

HEBRON CENTER TRANSITIONAL AREA

2024 Hebron Plan of Conservation and Development
Hebron, Connecticut



Source: Digitized Hebron Assessors Map, 2020; Town of Hebron Zoning Map, 2017; USGS Connecticut Orthoimagery 2019

NATHAN L. JACOBSON & ASSOCIATES, INC.

Memo

To: Planning and Zoning Commission

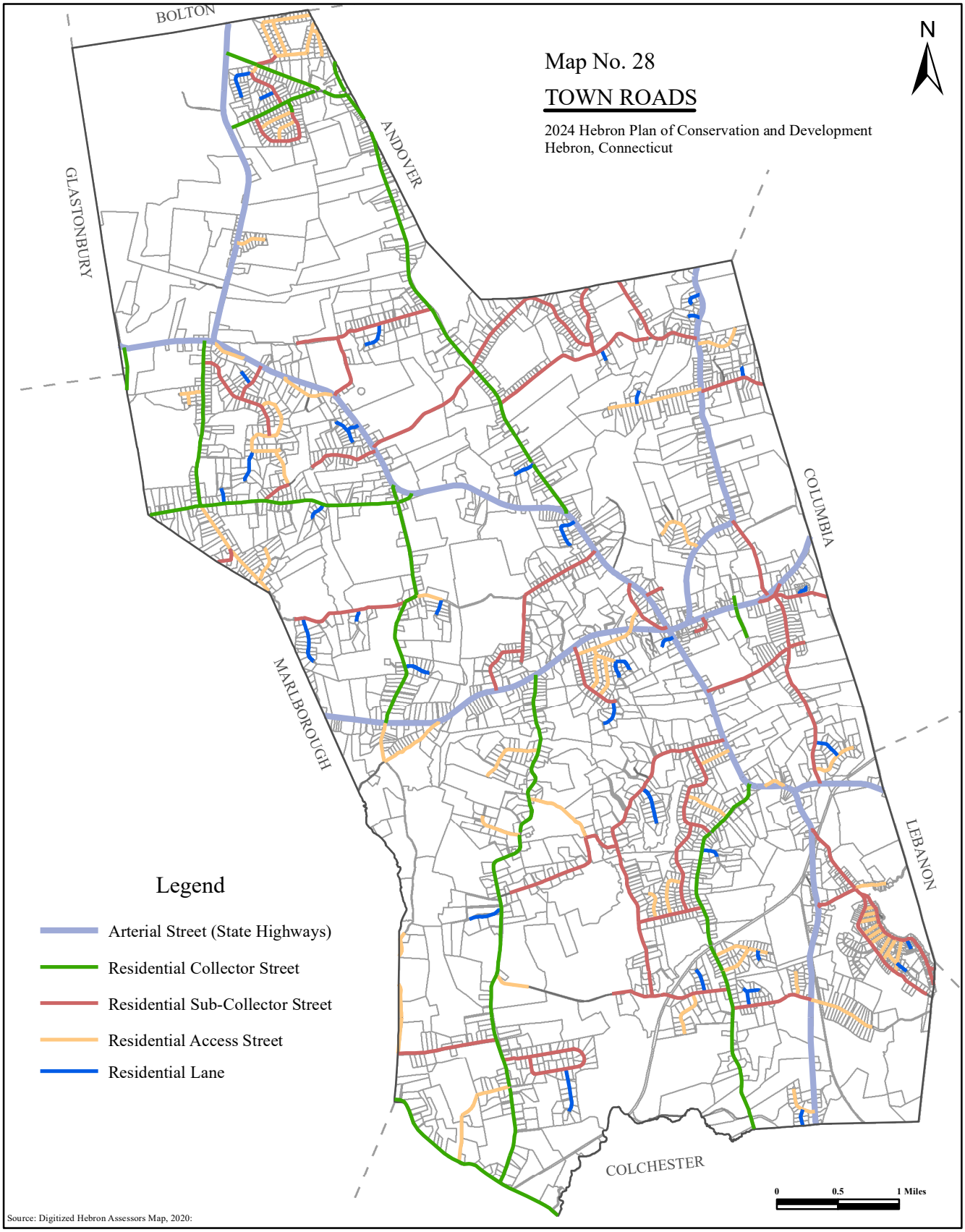
From: Michael K. O'Leary, AICP
Planning Consultant

Date: 5/15/2023

Re: Town Roads Map

This is the map that will be included in the "Roadways, Stormwater, Bridges, and Walkway" section of the plan. It was updated from the map in the 2014 POCD.

Attachment


BOLTON
GLASTONBURY
ANDOVER
COLUMBIA
MARLBOROUGH
LEBANON
COLCHESTER
N
Map No. 28
TOWN ROADS
2024 Hebron Plan of Conservation and Development
Hebron, Connecticut
Legend
Arterial Street (State Highways)
Residential Collector Street
Residential Sub-Collector Street
Residential Access Street
Residential Lane
0
0.5
1 Miles
Source: Digitized Hebron Assessors Map, 2020:
NATHAN L. JACOBSON & ASSOCIATES, INC.

Memo

To: Planning and Zoning Commission

From: Michael K. O'Leary, AICP

Planning Consultant

Date: 5/17/2023

Re: DRAFTS:
Section 4: G. Roadways, Stormwater, Bridges, and Walkways,
Section 4: H. Utilities - II. Sanitary Sewers ; and,
Section 1: B. Land Use

Attached for your review and comment are drafts of several sections of the Plan of C&D.

I met recently with the Town Engineer, the Director of Public Works and Town Planner to review the "Roadways, Stormwater, Bridges, and Walkways" section of the Plan as well as "Sanitary Sewers". Their input to these sections was invaluable and is included in these drafts.

Also, working with the GIS consultant, we have finished the updating of the 2023 Land Use map. I have used this map and the resulting acreage of different land uses to complete the draft of the Land Use section in Section 1, Community Profile.

There are a few small pieces of information in these sections that still need to be inserted and I am waiting for others to get back to me on those.

The updated Land Use map and Status Table is also attached.

Attachment

G. Roadways, Stormwater, Bridges, and Walkways

This section of the Plan will provide an overview of the Town's existing transportation since the adoption of the 2014 Plan, will identify infrastructure, will note improvements to the infrastructure that have occurred any existing areas of concern, and will outline the Town's current program for maintaining and improving Roadways. This section will also include goals and policies for the Bridges and Walkways now and into the foreseeable future Town to guide officials in managing, improving, and developing this system. For the purposes of this Plan, the Town's transportation system consists of roadways, bridges, and walkways.

Roadways

As of December 31, 2021, there were 101.87 miles of road in Hebron. Of this amount, the State of Connecticut maintains 22.23 miles (21.8 percent), the Town maintains 78.04 miles (76.6 percent), and 1.6 miles (1.6 percent) are privately owned and maintained roads. All roads in Hebron have one or two lanes.

The main State roads in Hebron are CT Routes 66 and 85. The main north-south roadway in Hebron is CT Route 85, Gilead Street north of CT Route 66 and Church Street south of CT Route 66. The main east-west roadway is CT Route 66, Main Street east of CT Route 85 and West Main Street west of CT Route 85. CT Route 66 is the most heavily travelled roadway in Town used by both commercial and passenger car traffic and serves commuter traffic from eastern CT traveling west to access Route 2 and the greater Hartford area. CT RT 85 and CT RT 66 intersect in the center of town, in the historic Hebron Green area. The intersection is controlled by one of the three traffic signals in Town. The other State roads in Town are CT Route 316, Wall Street, extending north from CT Route 66 and eventually into Andover; CT Route 207, Lebanon Road, extending from CT Route 85 in Amston and running east to the Lebanon town line; and, CT Route 603, London Road, running east-west through a residential area of Hebron between CT Route 85 and the Andover town-line.

Hebron has several Town-owned main collector roads including East Street, West Street,

Burrows Hill Road / Jones Street, and Old Colchester Road (all north / south roads) and Martin Road (an east / west road). Most of these major roads run north / south due to the general topographic layout of the Town and in particular due to the many north / south running major watercourses. The lack of east / west collector roads particularly in the southern half of Town somewhat hampers an efficient roadway network and causes trips that are not local in nature travelling through local subdivision streets. As can be expected, the majority of streets in Town are local streets serving individual, mostly residential, properties.

A Town Roadway map is included in this section showing the distinction between State, Town and privately maintained roads, as well as the functional classification system used by the State of CT.

Road Maintenance: The State of CT DOT offices that oversee all new construction on State roads in Hebron, and does permitting and inspections for all new construction, falls under the purview of the CT DOT District 2 office, for areas south of CT Route 66 and District 1 office for areas north of CT Route 66. The maintenance of State roads in Hebron is handled by three different CT DOT garages: the Colchester garage south of CT Route 66; the East Hampton garage covers CT Route 66; and, the Bolton garage north of CT Route 66. There are no significant maintenance or construction projects planned by the State over the next several years.

Town roads are maintained by the Hebron Public Works Department. This includes the Director, his Administrative Assistant, the Road Foreman, and 10 employees. In addition, there is a full time and part time employee working at the Town's transfer station. Winter snow removal involves 12 of these employees. Responsibilities of the department include paving and resurfacing, snow and ice control, roadside mowing, brush removal, drainage maintenance, curbing and curb replacement, and road, drainage, and infrastructure improvement projects. One of the current changes in maintenance operations now underway is the planned movement away from using sand as the primary product in ice control on the roadways. Due to a State-wide concern of the impacts of sand build-up in watercourses, waterbodies and wetlands, and the significant cost with the sweeping of roadways and vacuuming of catch basins to remove the sand, the Town has moved to using treated salts on the Town roads in the winter. The Town uses their one sweeper for Spring clean-up of roads and no longer contracts for sweeping services.

Public Works personnel have been participating in the Green Snow Pro training program sponsored by UCONN. Green Snow Pro is a voluntary salt applicator certification program. Program staff trains municipal public works employees and private contractors. This training includes information about the science of salt, the downstream impacts of salt, how to properly apply salt given weather conditions, and how to calibrate equipment. All highway crew members are scheduled to complete this training.

Funding: The road network in Hebron is generally in good condition and normal maintenance by the State and the Town should keep the existing roads at this standard. There is a fairly consistent level of funding for road maintenance and repairs. The General Fund has included general road maintenance costs in each annual budget, and the Capital Improvement Program (CIP) has included monies for more significant road improvement projects. Over time there has been a slight increasing percentage coming from the CIP account. It is critical to maintain a sufficient level of funding for this important Town asset. If the appropriate funding

levels are not maintained in the road budget the excellent quality of the Town's road maintenance efforts could suffer. There are studies that clearly show it is far less expensive to properly fund a yearly road maintenance budget than to fund the repair costs associated with deferred or neglected maintenance.

In 2019 the Town hired VHB to perform a pavement management study of town roads to determine the existing conditions of the roadway pavement and recommend options to address the conditions discovered. One option recommended was to catch up on maintenance issues by passing a one-time referendum for a roadway bond. Later in 2019 a $2.4 million roadway improvement bond was proposed and was approved at referendum. Since then, these funds have been spent on improving a number of major town roads and school parking lots. The study also established a roadway management system being used by the Town and recommended properly funding a road maintenance budget on an annual basis.

To supplement local funds, there have been recent efforts to seek out grant funding for roadway work. A 2020 Local Transportation Capital Improvement Program (LOTCIP) grant application was approved by the Capitol Region Council of Governments (CRCOG) for a $3 million grant to reconstruct Martin road. Construction under this grant is expected to commence in 2024. More recently an application was made under the State Transportation Rural Improvement Grant Program (TRIP) for rehabilitation of Jones Street. This application is still under review.

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Traffic Counts: The average daily traffic (ADT) is a common metric used to measure the volume of traffic on a road. It represents the total number of vehicles passing a point on a road in both directions during a 24-hour period. The most heavily traveled roads in town are CT Routes 66 and 85. The most recent traffic counts available from the State of Connecticut, Department of Transportation (CT DOT) is from 2020. Given the pandemic that year traffic counts were substantially down across the State. For this Plan, the next most recent counts from 2017 will be used. The highest ADT was 15,200, just west of the intersection of CT Routes 66 and 316. The ADT on CT Route 66 ranged between 9,300 and 15,200 along its entire length in Hebron. CT Route 85 showed a traffic count of 8,400 north of CT Route 66, and 12,000 south of CT Route 66. While these counts reflect relatively busy State roads, the data shows that traffic is within the roadways' design capacity.

Accident History: The University of Connecticut's Transportation Institute reports traffic accidents on all Connecticut's roads. During the years 2020 - 2022, between 59 and 87 traffic accidents were reported annually on roads in Hebron. During this time period injuries occurred with 27.2 % of all accidents, and one fatality was reported. Over _____% of all accidents occurred on State roads. There were no locations on Town roads that exhibited a concentrated or high traffic incident rate, and there were no locations that met the criteria for inclusion on the state's list of road safety concern, known as S.L.O.S.S. (Suggested List of Surveillance Study Sites).

Traffic Signals: There are three full traffic signals in town: one at the intersection of CT Routes 85 and 66, one less than 1/8th of a mile east at the intersection of CT Routes 66 and 316, and the Town's newest traffic signal at CT Route 66 and John Horton Boulevard which was installed in 2013.

Scenic Roads: Consistent with its rural character, Hebron has many primary and secondary roads that cross natural areas, including some that present scenic vistas of the surrounding area. The Zoning and Subdivision regulations recognize the value of preserving this rural character, as illustrated by the setback requirements for building development, the use of appropriate screening and plantings, as well as the requirement of the Planning and Zoning Commission to use conservation easements along Town roads to preserve tree lines and stonewall.

Beyond the typical measures to preserve the rural character of roads in Hebron, it is also possible for a road to be designated a "Scenic Road" under the Town's Scenic Road Ordinance. The process for a road to be designated a scenic road can be initiated by the residents owning property along a particular road or by the Planning and Zoning Commission, according to the criteria set forth in the Scenic Road Ordinance. A Scenic Road designation can place limitations on improvements to and alterations of such designated roads, except those required for safety purposes. To date, one road has been designated as a Scenic Road in Town: Burrows Hill Road, from CT Route 66 south to Hope Valley Road.

Hebron Center / Village Square: Some, if not all of the roads in the Village Square development, adjacent to Main Street, are likely to become Town roads. The Master Concept Plan for this development shows a road connecting Main Street to Kinney Road near to an improved intersection with Church Street. The main road through the development will be a Town road and the layout and design should be carefully guided and planned by the Town to improve overall circulation in the whole of Hebron Center.

A traffic impact study was prepared as part of the Village Square approval process, which identified anticipated traffic generation from this development as well as the need for future roadway improvements. It is necessary that the Town be proactive in reviewing improvements in this area, with the State DOT, for as new development occurs it will be necessary to balance the need for safe traffic flow through Hebron Center in a way that does not damage the character of the center of Town. It is recommended therefore that contextual street design and traffic calming measures must be considered and implemented to lessen the impact of increased traffic and to maintain reasonable speeds.

Accomplishments:

Since the 2014 Plan of Conservation and Development was adopted, several improvements to Town roads have been accomplished:

1. A 2020 Local Transportation Capital Improvement Program (LOTCIP) grant application was approved by the Capitol Region Council of Governments (CRCOG) for a $3 million grant to reconstruct Martin Road.
2. An application was made under the State Transportation Rural Improvement

Grant Program (TRIP) for rehabilitation of Jones Street.

3. In 2019 the Town hired VHB to perform a pavement management study of town roads to determine the existing conditions of the roadway pavement and recommend options to address the conditions discovered.
4. in 2019 a $2.4 million roadway improvement bond was approved at referendum. Since then, these funds have been expended on a number of major town roads and school parking lots.
5. A LOTCIP grant funded improvement for the Wall Street / Main Street intersection to add turning lanes, replace the existing traffic signals, and add a full set of pedestrian crossing buttons is scheduled to commence construction in 2023.

Stormwater

Infrastructure: An integral part of the Town's infrastructure relates to the conveyance, control, and management of stormwater runoff. The Town's drainage system includes two bridges, which are discussed later in this section, along with numerous culverts of varying size which convey watercourses beneath town roads. Also, many of the Town's roadways have surface or subsurface drainage provided by conveyance systems consisting of drainage inlets and piping or roadside swales. In addition to ongoing regular maintenance, the Public Works Department periodically undertakes drainage improvement projects to improve the safety and functionality of the road system through improved handling of stormwater runoff. Such improvements can minimize roadway flooding in severe storms, eliminate icing conditions and extend the longevity of roads by minimizing the impacts of freeze thaw cycles.

It should be noted that repair and rehabilitation of existing drainage culverts and systems will be an ongoing necessity in the immediate and longer-term future. Specifically, drainage systems with corrugated metal piping and masonry or concrete block catch basins that were constructed 40 to 50 years ago are reaching the end of their useful life. These required repairs must be considered in future public works budgets.

Water Quality Aspects of Stormwater Management: In addition to the control and conveyance of stormwater runoff, an aspect of stormwater management which is increasingly relevant and important is the impact of runoff on water quality. The management and control of runoff from developed land is a concern in the context of the surrounding environment. Increased runoff from both impervious and managed surfaces has been shown to have both direct and indirect impacts on water quality, stream channel geomorphology and aquatic systems due to pollutant inputs and changes in the magnitude, frequency, and duration of stormwater discharges to receiving waters. The practice of stormwater management is intended to reduce or mitigate these impacts.

On a broad scale, the controls used to manage stormwater runoff can be classified as land

use controls or source controls. Land use controls involve the regulatory processes, including zoning, that govern land development and other activities. Typical examples would be stream or wetland buffer requirements, steep slope restrictions, impervious coverage limitations or requirements for erosions and sedimentation control. Source controls can be structural or non-structural and are intended to reduce pollutants at or near their source. Non-structural controls include best management practices such as illicit discharge detection, spill prevention, and storm drainage system maintenance. Structural controls are practices designed to reduce or mitigate impacts from stormwater runoff such as settling basins or infiltration practices.

On a smaller scale, the stormwater management controls used in land development design practices can be categorized as: storage controls, such as retention basins; infiltration controls, such as vegetated swales; or, end of pipe controls, such as hydrodynamic separators.

Historically, the emphasis on stormwater management has been flood control and reducing peak runoff rates. This typically resulted in development projects incorporating large detention or retention basins. While such measures can be effective in mitigating increased flows, they can also be an unattractive nuisance. The maintenance of these facilities often falls through the cracks, with private entities not being capable of carrying out maintenance tasks and time-strapped municipal public works departments having difficulty keeping up with them because of the amount of other responsibilities required of their department.

In recent years, the approach to land development practices is evolving as it relates to the control of stormwater runoff by better integrating the stormwater management components of a project into the overall project design. This is best accomplished by incorporating low impact development (LID) techniques such alternate design standards for streets and parking areas, minimizing, and disconnecting impervious surfaces, breaking up drainage systems so as to create multiple points of smaller discharge, and treating stormwater at the source through infiltration practices instead of by end of pipe large scale storage basins.

The Town of Hebron has been progressive in its approach to stormwater management. The Town commissioned or participated in several studies which evaluated the impacts of stormwater runoff and recommended actions to minimize those impacts and improve water quality. Amendments to the land use regulations have incorporated specific stormwater management guidelines and have allowed for reduced impervious surfaces and incorporation of LID techniques in new land development projects. Further, the Town has incorporated LID practices in recent municipal sponsored projects.

EPA Stormwater Phase II Program: The current EPA Stormwater Phase II Program is implemented on the State level by the CT DEEP via the General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems (MS4s). The MS4 General Permit was most recently issued initially issued 2017. This mandatory Permit applies to all Towns with an Urbanized Area (UA) and census populations exceeding 1,000 in that UA. The Town of Hebron falls within this threshold and therefore must comply with the Permit requirements.

The intent of the General Permit is to ensure that each municipality takes steps to keep the stormwater entering its storm sewer systems clean before entering water bodies. More specifically, the Permit requires that the Town prepare and execute a Stormwater Management Plan which addresses six minimum control measures (MCMs). These measures are as follows:

1. Public education and outreach on stormwater impacts

2. Public Involvement/Participation

3. Illicit discharge detection and elimination

4. Construction site stormwater runoff control

5. Post construction runoff management in new development and redevelopment

6 Pollution prevention/good housekeeping for municipal operations

The Town of Hebron has been very proactive with respect to these areas, specifically:

- The Town has a number of regulations in place to allow for integration of Low Impact Development (LID) measures into stormwater management for subdivision and site plan developments and a number of sites have implemented LID measures since the early 2000's.
- The Town has submitted the Registration and the Stormwater Management Plan in 2017 for the current modified permit.
- All required Annual Reports have been submitted including the 2022 MS4 Annual Report.
- The Town updated their Zoning Regulations in 2018 to be consistent with the new General Permit requirements.
- The Public Works Department has initiated a program for regular maintenance of town-owned post construction stormwater practices (i.e., subdivision stormwater basins)
- The Town constructed two municipal infrastructure projects incorporating LID practices (pervious pavement)
- Stormwater samples are collected annually from six (6) stormwater outfalls, two (2) within residentially zoned areas, two (2) within commercially zoned areas and two (2) within industrial zoned areas.

Accomplishments:

Since the adoption of the 2014 Plan of Conservation and Development the following was accomplished:

1. The Town continues to participate in the Salmon River Watershed Partnership by annually contributing to their operating budget, by implementing recommendations

to our land use regulations, and by encouraging the continuation of water quality testing throughout the watershed.

2. 2018 update to the Hebron Zoning Regulations contains multiple provisions to encourage LID initiatives to promote reduced impact to water quality by new development, including establishing a maximum number of impervious parking spaces.

3. Town improvements such as the new parking lots behind the Douglas Library and on Pendleton Drive incorporated pervious pavement designs as a means of low impact development.

4. The Public Works Department has initiated a systematic schedule of maintenance of detention basins, water quality basins, and sediment structures in subdivisions to ensure these improvements continue to function as intended.

5. During the fall of 2021, a team of UCONN students as well as Extension faculty Conducted a "Hebron Stormwater Runoff Reduction Plan", which was an evaluation of potential stormwater infrastructure opportunities on Town owned land in Hebron.

Bridges

There are 4 significant bridges in Town within the Town road rights-of-way: one on Marjorie Circle, two on Grayville Road, and one on Old Colchester Road. The Marjorie Circle Bridge was recently reconstructed as it was determined to be structurally deficient based on a prior State Inspection. The State lists other "bridges" in Town having culvert spans greater than 20 feet and, therefore, are included in the National Bridge Inventory.

There are numerous small private driveway bridges leading to private homes. Inspection of these bridges is not required, and it is the responsibility of the homeowner to maintain them in good condition. The Fire Chief has expressed concerns about their ability to carry the weight of fire trucks.

Accomplishments:

Since the adoption of the 2014 Plan of Conservation and Development, the following was accomplished:

1. The Marjorie Circle Bridge was completely reconstructed and funded through the State's Local Bridge Program.

2. The State has begun design work to completely replace the Old Colchester Bridge on Old Colchester Road. Design is currently underway by the State DOT and construction is tentatively scheduled for 2025.

Walkways

Walkways will include a description of both sidewalks and pedestrian paths. For the purposes of this section, the term "sidewalks" refers to pedestrian ways located alongside roadways, through residential neighborhoods or through established commercial developments. Sidewalks are usually paved or are constructed of brick or some impervious material. "Pedestrian paths" on the other hand, for the purposes of this section, shall refer to pedestrian walkways that are not usually alongside a roadway. They often are not paved and are covered with a pervious material. Pedestrian paths also include trail networks through town or state-owned or maintained areas, such as Gay City State Park.

The Town of Hebron has greatly expanded its sidewalk system over recent years with sidewalks on the north and south side of Main Street within the Town's business district, through the Hebron Green area, north on Gilead Street to the Town Hall, north on Wall Street to RHAM, and along Liberty Drive and John Horton Boulevard. Most recently sidewalks were constructed along Church Street from Hebron Center to the Neighborhood Convenience District. These sidewalks were funded through a combination of Town CIP funds but primarily from grants funded through the Small Town Economic Assistance Program (STEAP) and the LOTCIP program. This expansion of sidewalks serves to improve pedestrian flow throughout the Town center and reduces vehicle use for short journeys (i.e., store to store), and important recreational uses.

In addition to sidewalks, the Town has also created an excellent system of pedestrian paths in the center of Town extending from Veterans Park east, through Town open space, connecting to the Liberty Drive sidewalks, and extending further east through the Loveland Road residential developments and connecting to Main Street just east of Ted's market forming a large loop walking system around and through the Town Center.

There are significant pedestrian paths on State owned properties. The State owns and maintains a significant path/nature trail network at Gay City State Park. Another outstanding path system is the Air Line Trail, a reclaimed railroad line. This trail, which is part of an extensive and growing statewide network, passes through Hebron in the southern portion of Town. It crosses significant nature areas, wetlands, and streams. It has a stone dust surface and is frequented by joggers, cyclists, and walkers. The Air Line Trail is located on property owned by the State of CT and has been fully upgraded by the Town using State grant funds. It is now the responsibility of the Town to maintain the Air Line Trail within Hebron.

The Recreation section of the Plan contains more information and maps on trails within Hebron

and plans for future connections.

Accomplishments:

Since the adoption of the 2014 Plan of Conservation and Development, the following was accomplished:

1. Using a 2016 LOTCIP grant funding, the Town extended the Hebron Center sidewalk system south along Church Street to the Neighborhood Convenience District which was completed in 2019.

2. The Hebron Center Trail was completed by the construction of a pedestrian bridge by the developer of Loveland Farms and extending the stone dust path to the Main Street sidewalks just east of Ted's market creating a 2-mile pedestrian loop.

3. Funding has been secured through the CIP program and State grants, and the design is complete, to extend the Wall Street sidewalks north from RHAM to Ridge Road.

4. The Town constructed a STEAP grant funded sidewalk connection between Main Street and AHM.

5. Raymond Brook Preserve trails were extended from Phase I trails in the Park, across Raymond Brook, to Millstream Road using a DEEP Recreational Trails grant.

6. Using a CT DOT Connectivity grant, design work is underway on the pedestrian connection from Raymond Brook Preserve trails to the Air Line Trail.

7. The Town was awarded a STEAP grant to construct a pedestrian connection between the Library Parking Lot and Pendleton Drive up to the AHM location.

Goals and Policies and Action Items

Goal: **To maintain a safe primary and secondary road and bridge network throughout the Town, and to maintain such roads and bridges in good condition.**

Policies:

1. To work with the CT DOT in managing the needed improvements to CT RTs 66 and 85 as development occurs in Hebron Center in a way that slows traffic through the Center, in a manner that encourages pedestrian movements along Main Street, and with a design that is accomplished in context with the character of Center of Hebron.

2. To encourage roadway improvements and traffic calming measures when

approving subdivisions and when approving curb cuts on town roads to minimize speed and decrease the risk of accidents.

3. To reduce the number of existing and future curb cuts and to provide for improved internal circulation by encouraging: (1) the use of common driveways; (2) connections between commercial parking lots; and (3) a roadway connection from Pendleton Drive into the Village Square road system, as vehicles exiting Pendleton Drive now often have trouble making a left hand turn.

4. To encourage the Town to adequately increase road maintenance budgets, as recommended by the VHB study, as the mileage of Town roads increases and as inflation increases the cost of materials, and to provide a stable funding source in the general fund.

5. To encourage appropriate roadway connections and an overall efficient Town road system to facilitate better response times for emergency vehicles.

6. Continue to use the Pavement Management System to evaluate and assess the local road system to identify roadways most in need of maintenance or improvement.

Action Items:

1. The Town should take the initiative in working with the CT DOT in designing and implementing traffic calming measures, and pedestrian improvement measures, along Main Street (CT Route 66).

2. To research and adopt standards to ensure that small bridges on private driveways be constructed to support the weight of fire and emergency vehicles.

3. Wellswood Road has been identified as a substandard roadway. The grade of the roadway as it approaches the intersection with Millstream Road is steep and does not meet accepted road standards. Throughout its length there are areas of excessive grades, curves, drainage and sight-line problems that should be addressed.

4. The Lake Road / Ames Road / North Pond Road / Deepwood Drive intersection is an area that does not meet typically accepted design standards. This should be reviewed to determine if a more typical intersection design can be achieved to slow speeds and better control traffic movements.

5. Continue to work with the State DOT on the design and replacement of the Old Colchester Road bridge.

Goal: To reduce environmental impacts from the construction of new roads and minimize increases in town maintenance costs and paved acreage.

Policies:

1. To minimize the amount of impervious area and the linear feet of future town roads by encouraging cluster and open space development.

2. To encourage the creative design of subdivision roads, minimizing road widths, incorporating alternate cul-de-sac designs (vegetated island), and promoting low impact development practices (such as leaving a vegetated island) as outlined in the Town Subdivision Regulations and as recommended in the Salmon River Watershed Partnership studies.

6. To advocate application for scenic road designation to encourage preservation of the rural and scenic nature of the road, where the road meets the requirements of the scenic road ordinance.

7. Continue to utilize Conservation Easements along existing roads to protect stonewalls and treelines and the character of existing Town roads.

8. Support measures to limit the removal of trees within Town rights-of-way balancing the need for public safety and preserving the Town character.

9. Continue to investigate and encourage the use of environmentally friendly products for snow / ice removal and weed control.

Goal: **To maintain the stormwater infrastructure throughout the town and safely convey stormwater runoff to minimize potential impacts to roads and property.**

Policies:

1. To assess, prioritize and undertake necessary repairs to existing drainage systems nearing the end of their useful life.

2. To continue to evaluate roadway conditions and make drainage improvements as needed to improve the safety and functionality of the Town's road system.

Goal: **To control and manage stormwater runoff from existing infrastructure and new development to minimize impacts to water resources:**

Policies:

1. Prioritize and implement stormwater quality retrofit projects as outlined in the various stormwater management studies that have been completed to improve the quality of stormwater runoff.

2. Continue to incorporate LID techniques where possible in municipal infrastructure improvement projects.

3. Continue to evaluate land use regulations and promote the reduction of impervious surfaces and incorporation of LID techniques in new development projects.

4. Evaluate PWD maintenance practices including use of materials for snow and ice control, with consideration toward reducing the water quality impacts resulting from these activities.

5. Continue to prioritize maintenance activities such as cleaning of drainage structures and road sweeping so that priority and frequency are given to areas with more direct impacts to water resources.

Goal: To further encourage pedestrian traffic and cycling through the continued development of sidewalks, bikeways, and pedestrian paths.

Policies:

1. Continue to encourage pedestrian access and non-vehicular travel through the development of sidewalks and pedestrian paths throughout the business districts in Hebron Center in all appropriate locations.

2. To advocate, in coordination with the CT DOT, installation of pedestrian crosswalk zones, pedestrian push buttons, and pedestrian walk lights at the major intersections in Hebron Center.

3. To promote health and public safety, consider, where appropriate, requiring the establishment of a pervious pathway along new subdivision roads. Also consider pathways along existing road as part of any road improvement projects

4. Review potential locations for public access points, parking, and new trails in newly acquired open spaces, particularly as required by the conditions of State Grants.

Action Items:

1. To complete the funded and designed sidewalk extension along Wall Street from RHAM north to Ridge Road.

2. Continue to plan and implement the long-term objective of connecting the Hebron Center via a pedestrian path or bikeway to the Air Line Trail and its Spur.

3. Continue to plan and execute the expansion and interconnection of trail systems including the connection from Burnt Hill Park to RHAM and Hebron Center (the Jeremy River Trail).

4. Work with the State of CT in implementing pedestrian crossing signals at Air Line Trail crossing of roadways in Town.

H. Utilities

II. Sanitary Sewers

The Town installed public sewers in the early 1990s in response to an order from the CT Department of Environmental Protection to remedy areas of septic system failures. Approximately 17 miles of sewer lines have been installed and are supported by 9 pump stations.

Sewers were installed along the following roads: Route 85 from Route 66 south to Crouch Road, Crouch Road, North Pond Road, Brennan Road, portions of Hope Valley Road, Slicer Drive, portions of Millstream Road, Kinney Road, portions of Wall Street, Main Street and Wellswood Road. Sewers were also installed in the Hebron portion of the Amston Lake area. The system in this area was sized to accommodate flows from the Amston Lake area of Lebanon. In 2012 the Town of Lebanon began construction of a sewer system in this neighborhood and in 2013 connected them into the Hebron sewer system.

Presently the average combined sewage flow from the Town of Hebron and Lebanon is 200,000 – 300,000 gallons per day (GPD). The planned maximum flows from Hebron were expected to be approximately 500,000 gallons per day. The sewage is pumped to the Town of Colchester and then pumped to the Town of East Hampton where the treatment plant is located. Hebron's basic sewer infrastructure (pipes) is designed to a capacity of 1 million gallons per day. This is not the case for the pumps at the various sewer pump stations which can be upgraded on an 'as needed' basis. The combined Hebron and Colchester sewage flows are approximately 450,000 – 500,000 GPD. This flow all enters the Colchester pumping station, and that facility is nearing capacity. When the Colchester facility is upgraded, Hebron will need to participate in that cost at a rate equal to its share of the total sewer flows to that pumping station (presently at 36%). The cost of the Colchester facility upgrades was discussed by Hebron's CIP committee in recent years. The consensus between all towns using the station at that time was that there would be likely a 3-to-5-year period of design and approval process for this upgrade, which would give the Towns an early warning on the expenses required. The cost of the upgrade will likely be bonded by the Town of Colchester over a 20-year period, and Hebron's portion of the expense will likewise be spread out over this same time period. Both towns should continue to share information on these issues and future expenses on an ongoing basis. The East Hampton Treatment Plan has no capacity issues presently nor are any envisioned in the foreseeable future. That plant accepts over one million gallons per day.

When the sewer system was originally designed and installed, extensive discussions were held to define its purpose and a specific sewer service area was mapped. The primary purpose of the system was to address areas of septic failures. A secondary purpose was to promote economic development consistent with the goals and objectives of the Town's Plan of Conservation and Development primarily in the Hebron Center area. This is evident on the Sewer Service District (SSD) map which shows a large area in the center of Town within the district, and which is now classified as the Village Square district – an area of planned future economic development in Town. At the time of the Master Plan approval for the Village Square District, an analysis was performed of the amount of flows that would be generated by this project. The estimate at the time, given the projected uses, was a maximum of 67,000 GPD at full build-out. It was concluded that the overall system can support this build-out. That study identified one area in the Hebron infrastructure that will need to be upgraded, which is a short area of sewer pipe in Church Street near Old Colchester Road.

Agreements between the Town and the State were clear that the purpose of the system was to avoid development in environmentally sensitive areas. To support this concept the Town has adopted policies that limit expansions of the sewer service district and that serve to implement these original agreements.

Accomplishments:

Since the adoption of the 2014 Plan of Conservation and Development, the following was accomplished:

1. In 2019, the Town approved a referendum to bond improvements to the Town's sewer system. A total of $7.6 million was authorized to upgrade all 9 pump stations. Currently Phase I of this project is nearing completion which rebuilt 4 stations and installed generators at all 9 locations.

Goal and Policies

Goal: **Continue to manage the Town's sewer service system in a way that supports the land use goals in the Plan of Conservation and Development.**

Policies:

1. Allow future expansions of the Sewer Service District only in those instances where it would be required to serve the Town's needs.

2. Continue to implement the policy that the sewer system should not permit development in environmentally sensitive areas.

3. Establish a consistent regular discussion between the Planning and Zoning Commission and the Water Pollution Control Commission and others to discuss the boundaries of the Sewer Service District as well as the sewer system in general as it may impact upon potential future development in Hebron.

4. The towns of Hebron and Colchester should continue to share information with each other and their respective Boards of Selectmen regarding the capacities of the system and its facilities so that future planning for improvements is clearly understood

B. Land Use

The land use of the community is the focus of a significant amount of local planning efforts and subsequent public policy discussions and zoning and subdivision regulations. The perceived character of a town, its quality of life, as well as its economic health is, in large part, a reflection of its land use make-up. It is therefore important to know and understand the Town's land use fabric as background for establishing policies intended to regulate future land use changes.

Methodology

For the 2024 Plan update, the Town's Geographic Information System (GIS) is the primary source for land use calculations. The land use data is derived mainly from the Hebron Assessor's land use codes. This should provide an accurate record of existing land use tabulations and changes over time.

The following assumptions were made in determining Land use area calculations:

- If a parcel of land is occupied by some land use, but the majority of land is vacant, a portion of land is calculated as developed, and the remainder of the parcel is calculated as vacant.
- Privately owned open space is calculated as vacant land, as that land is not permanently committed to open space.
- Farmland not permanently protected under a farmland preservation program is calculated as vacant, because it still can be developed.
- Permanently protected farmland, where development rights were purchased by the State of CT, is considered as permanent open space.

Residential Land Use

Residential land use is the largest single land use category in Hebron. A total of 32.5 % of the overall land in Town is used for residential purposes. Single family development accounts for 31.7% of the Town's land whereas multi-family land use accounts for about 0.8% of Hebron's land area. Of all the developed land in Town, or land that is committed to some type of land use (such as permanent open space), approximately 50% of it is used for residential purposes.

Land Uses in Hebron May 2023		
Developed / Committed Land		
Land Use	**Acres**	**% of Town**
Single Family	7,630	31.7 %
Multi-Family	192	0.8%
Institutional	253	1.1%
Commercial	109	0.5%
Industrial	17	0.1%
Roads	780	3.3%
Sub-total: Developed Land	**8,981**	**37.4%**
Town Open Space	1,991	8.8%
State Open Space	3,264	13.6%
Sub-total: Public Open Space	**5,255**	**21.9%**
Preserved Agriculture	1,118	4.7%
Sub-Total: Open Space / Preserved Agricultural Land	**6,373**	**26.5%**
Total Developed / Committed Land Use	**15,354**	**63.9%**
Vacant Land		
Land Use	**Acres**	**% of Town**
Private Open Space	1,463	6.1%
Vacant	7,219	30.%
Total Vacant Land	**8,682**	**36.1%**
Total		
Total Hebron Land Area	**24,036**	**100%**

Business & Industrial Land Use

As primarily a rural town, Hebron's business and industrial sectors are still emerging and this land use category is likely to remain a relatively small segment of the overall Town.

Business use occupies 109 acres in Hebron and is primarily located in Hebron Center, although there are other commercial areas along Church Street (CT Route 85). While there are other smaller business districts, the Route 66 corridor is seen as the most likely location for future growth. This is particularly true due to the existing concentration of businesses in this area, the existence of the new Village Square District for future expansion of the business district on the south side of Rt. 66, and with the availability of public sewers and public water in this area.

Land devoted to industrial uses is limited to approximately 17 acres. These sites are generally located in the older industrial areas, particularly in the Amston Village District located on Church Street. The total amount of land in Hebron developed to date with business and industry amounts to one-half of a percent of the Town's land area.

Agriculture Land Use

Over 2,000 acres within the Town is presently being farmed, accounting for about 10% of the total land area of the community. This tremendously affects the positive impression many people have of the Town, retains a land use that is an important historic aspect of the community that dates back to its origins, and maintains a vibrant economic activity in the Community.

Of the total land area devoted to agriculture, 1,118 acres (4.7% of the Town) is permanently preserved agricultural land through the State's Farmland Preservation program. Approximately 200 acres of land was added to this land use category through this highly successful State farmland preservation program since the last Plan of Conservation and Development was adopted in 2014. As permanently preserved open land, these 1,118 acres are shown under the permanent "open space" land use category in various sections of the plan. The remaining agricultural land, over 1,000 acres, is not permanently preserved. These areas are shown as part of the vacant land category as this land is subject to future development.

Institutional Land Use

Land devoted to institutional uses (churches, cemeteries, town and regional schools, firehouses, etc.) accounts for about 253 acres of land in Town or 1.1% of the Town's land area. These uses are routinely found throughout residential neighborhoods of the Town as they generally serve residential land uses.

Developed and Committed Land

A total of 15,354 acres of land are now considered to be either developed or committed to permanent open space. This land area represents approximately 63.9% of the total land area in Hebron. This area is comprised of 8,981 acres developed as houses, stores, offices, schools, roads, etc., 5,255 acres of public open space, and 1,118 acres of preserved agricultural lands.

Map # 1

Vacant Land

This leaves 8,682 acres of land in Hebron, which are considered vacant, representing approximately 36.1% of the Town's land area. This acreage is comprised of non-protected farmland, privately owned open space, and other vacant properties. Private open space is included in this category as those properties are generally larger parcels of land, presently being used for very low intensity uses, and potentially could be developed in the future for higher density uses.

A 1987 land use analysis of the Town, conducted by RPPW, Inc., a planning consulting firm, determined that as of 1987 approximately 17,430 acres were vacant. This represented 73% of the Town's land area.

In the intervening 36 years (1987 - 2023) over 8,748 acres were converted from the vacant land use category to a developed / committed land use category. This acreage represents 36.4% of the entire Town. The majority of this acreage was converted to single-family development. Other lands were developed with business uses, became open space through either the subdivision process or through outright purchases, or became protected farmland via the purchase of development rights. The remaining acreage was developed for institutional uses or other types of land use changes.

Of the 8,682 acres of land now vacant, approximately ___ acres are located within the Town's business districts, and approximately _____ acres are residentially zoned. An analysis of this vacant land, and the potential that this holds for future housing and population growth, is contained later in this Plan.

Town of Hebron, CT - Land Use 2023

N
W E
S

Legend

- Single Family
- Single Family >10 Acres
- Commercial
- Institutional
- State of CT Open Space
- Hebron Open Space
- Private Open Space
- Farm Land Preservation
- Industrial
- Multi-Family Dwellings
- Vacant Land

CAI Technologies
Precision Mapping. Geospatial Solutions.

SCALE: 1" = 1250'

1,250 0 1,250 2,500 3,750 5,000 6,250 Feet

0.25 0.125 0 0.25 0.5 0.75 1 Miles

NOTES

THIS MAP IS BASED ON THE TOWN OF HEBRON, CONNECTICUT
IT IS INTENDED FOR REFERENCE AND PLANNING PURPOSES ONLY.
PROPERTY LINES CURRENT TO JANUARY 1, 2022

The Town of Hebron
Plan of Conservation and Development
2024 Update – Overview and Status
January 2021 – rev. dates:2/4/21; 3/9/21; 4/27/21;6/3/21;7/9/21;11/19/21;1/26/22;2/15/22;6/27/22; 7/14/22;7/27/22;9/13/22;10/3/22;11/29/22; 1/15/23; 1/24/23; 4/18/23; 5/17/23

Section Name	Primary Responsibility	Subcommittee Members	Coordinate With Other Agencies	Notes / Status	Target Date
Forward	Staff			Draft Prepared: 9/10/22	
Section 1. Community Profile	Staff			Draft prepared for 4/23 mtg; **Final Draft:4/18/23**	
Section 2. Conservation Plan & Policies					
A. Sustainability			Green Committee; Conservation Comm.; Town Manager; Building Committee;	This section generally contained a summary of Section 2, Conservation Plan & Policies, findings. Packet sent to all agencies: 2/7/22	End of 2021
				At the 1-26-21 mtg we agreed to send cover letters to each group noted below with existing section of the POCD with maps, and	**First Priorities in BLUE**:

				the Implementation Plan pages for each section	
B. Underground Drinking Water Supplies			Town Engineer; Conservation Comm.; CT Water Co.; Parks & Rec.	First draft: 5-11-21; rev:11-19-21 Packet sent to all agencies (4/21). **Final Draft: 11-30-21**	2021 (Jan. – June)
C. Stream Corridors and Bodies of Water			Conservation Comm.; Parks & Rec.; OSLAC; Salmon River Partnership	First draft: 5-11-21; rev:11-19-21 Packet sent to all agencies (4/21). **Final Draft: 11-30-21**	2021 (Jan. – June)
D. Amston Lake			AL Tax District; Town Engineer; PW Director; CT Water Co.; Conservation Comm.;	First draft: 5-11-21; rev:11-19-21 Packet sent to all agencies (4/21). **Final Draft: 11-30-21**	2021 (Jan. – June)
E. Private Open Space and Institutional Lands			Conservation Comm.; Lions; Hemlocks; Blackledge; Tallwood; Parks & Rec.; OSLAC	First Draft: 6/21 Packet sent to all agencies (4/21). **Final Draft:1-2-22**	2021 (Jan. – June)
F. Agriculture and Farming			Hebron Farmers; CT Farm Bureau; Hebron Farmers Market; Park & Rec.; Maple Fest; Conservation Comm.	First Draft: 6/21 Packet sent to all agencies (5/10). **Final Draft:1-2-22**	2021 (Jan. – June)
					Second Priorities in Yellow:

G. Wildlife, Plant Life and Other Significant Natural Features			Conservation Comm.; Historic Prop. Comm (SNF sec); Green Committee	Packet sent to all agencies (11/21). First Draft: 1-8-22 CC comments: 1/18/22 HPC comments:1-13-22 **Final Draft: 2-22-22**	2021 (July – Dec)
H. Scenic Vistas and Streetscapes			OSLAC; Parks & Rec.; Conservation Comm.	Packet sent to all agencies (11/21). First Draft: 1-8-22 CC comments: 1/18/22 HPC comments: 1-13-22 **Final Draft: Jan 2022**	2021 (July – Dec)
I. Areas of Historical Heritage			Historic Properties Commission; Historical Society;	Packet sent to all agencies (11/21). First Draft: 1-10-22 CC comments: 1/18/22 HPC comments: 1-13-22 **Final Draft: Jan 2022**	2021 (July – Dec)
J. Recreation			Parks & Rec.; Boosters; OSLAC; Conservation Comm.	Packet sent to all agencies (11/21). HPC comments: 1-13-22 CC comments: 2-14-22 **Final Draft: 3-22-22**	2021 (July – Dec)
K. The Open Space Plan			OSLAC; Parks & Rec.; Conservation Comm.; HPC;	Packet sent to all agencies (11/21). HPC Comments: 1/13/22 CC comments:2-14-22 **Final Draft: 4-26-22**	2021 (July – Dec)

Public Informational Meeting on Conservation Plan and Policies					9/27/22 **Completed**
Section 3. Development Plan & Policies				Initial discussion: 7/26/22 Meeting with EDC: 10/25/22	
A. Introduction				Draft prepared: 9/3/22 Revised:9/13/22 PZC mtg **Rev: 10/25/22 PZC mtg**	
B. Business Districts					
I. Town Center - Overall Boundary and Concept			Economic Development Commission; Town Center Project	Packet sent out 7/14/22 Draft Prepared: 9/7/22 Revised:9/13/22 PZC mtg **Final Draft: 12/1/22**	2022
II. Hebron's Main Street - Route 66 Main Street Business District			Economic Development Commission; Town Center Project	Packet sent out 7/14/22 **Final Draft: 1/24/23**	2022
III. Hebron Green District			Economic Development Commission; Historic Properties Commission; Town Center Project	Packet sent out 7/14/22 **Final Draft: 1/24/23**	2022
IV. Village Square District			Economic Development Commission; Town Center Project	Packet sent out 7/14/22 **Final Draft: 1/24/23**	2022

V. Transitional Areas			Economic Development Commission	Packet sent out 7/14/22 **Final Draft: 1/24/23**	2022
VI. Neighborhood Convenience District			Economic Development Commission	Packet sent out 7/14/22 **Final Draft: 1/24/23**	2022
VII. Commercial Technology Zone			Economic Development Commission	Packet sent out 7/14/22; **Final Draft: 1/24/23**	2022
VIII. Amston Village District			Economic Development Commission	Packet sent out 7/14/22 **Final Draft: 1/24/23**	2022
C. Residential Development					
I. Residential Land Analysis				**Land Use Map update Final May 2023**	2023
II. Plan for Residential Growth				**Final Draft:2/20/23**	2023
III. Potential Housing and Population Growth					2023
IV. Housing Diversity				**Final Draft: 3/1/23**	2023
Public Informational Meeting on Development Plan & Policies					May 2023
Section 4. Municipal Infrastructure					
A. Education			Board of Education; Public Building Committee	**Facilities Study in Progress**	2022
B. Emergency Services			Town Manager; Public Building Committee	**Facilities Study in Progress**	

I. Fire Protection			Fire Chief	**Facilities Study in Progress**	2022
II. Emergency Medical Services			Fire Chief	**Facilities Study in Progress**	2022
III. Police Services			Resident State Trooper;	**Facilities Study in Progress**	2022
IV. Emergency Management				**Facilities Study in Progress**	2022
C. Public Works			Public Works Director; Public Building Committee	**Previous Facilities Study**	2023
D. Town Offices			Town Manager; Public Building Committee	**Facilities Study in Progress**	2023
E. Library			Library Board of Trustees; Library Dir.; Public Building Committee	**Facilities Study in Progress**	2023
F. Cemeteries			Historical Society; Historic Properties Commission	**Letter sent to HHS & HPC; April 2023**	2023
G. Roadways, Bridges and Walkways			Public Works Director	**Letter sent to PW Director; April 2023 Draft: May 17, 2023**	2023
H. Utilities					
I. Water			CT Water Company; Health District	**Letter sent to CT Water / Health District; April 2023**	2023
II. Sanitary Sewers			WPCA; Public Works Dir.	**Letter sent to PW Director; April 2023 Draft: May 17, 2023**	2023
I. Telecommunication					2023
Public Informational Meeting on Municipal Infrastructure					September 2023

Section 5. Consistency with State and Regional Plans					2023
Appendix					
A. List of Maps					2023
Final Public Information Meeting on the Draft POCD					January 2024
Distribution and Posting of the Final Draft of the POCD as per CGS					February 2024
Public Hearing on Adoption of the POCD					May 2024

Memo

To: Planning and Zoning Commission

From: Michael K. O'Leary, AICP

Planning Consultant

Date: 5/17/2023

Re: Background Information – Municipal Infrastructure Sections

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Attached are various documents that have been shared with me from the Public Works Director and Town Engineer pertaining to the Municipal Infrastructure section of the POCD. I used the information in them to update various sections of the Plan and thought you would be interested in these.

Attachment

Pavement Management Study

Presentation Overview

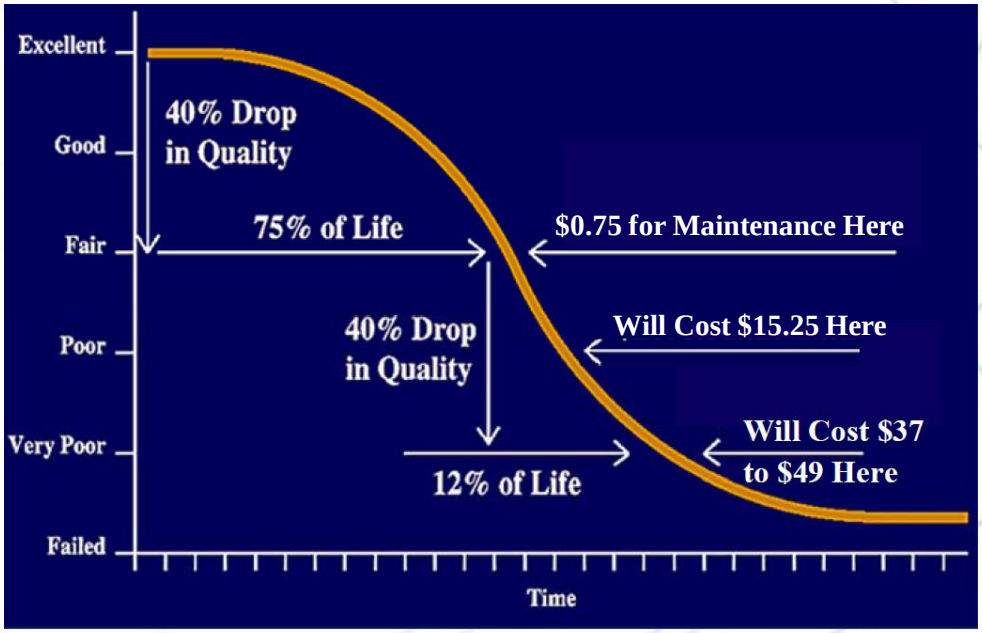
- **Pavement Management Background**
- **Pavement Management in Hebron**
  - The Process
  - Current Conditions & Backlog
  - Budget Analysis
- **Recommendations**
- **Draft Improvement Program**

What is Pavement Management?

The practice of planning for pavement maintenance and rehabilitation with the goal of maximizing the value and life of a pavement network.

Otherwise known as:

"Getting the Biggest Bang for Your Buck"



The Process

- Existing Process

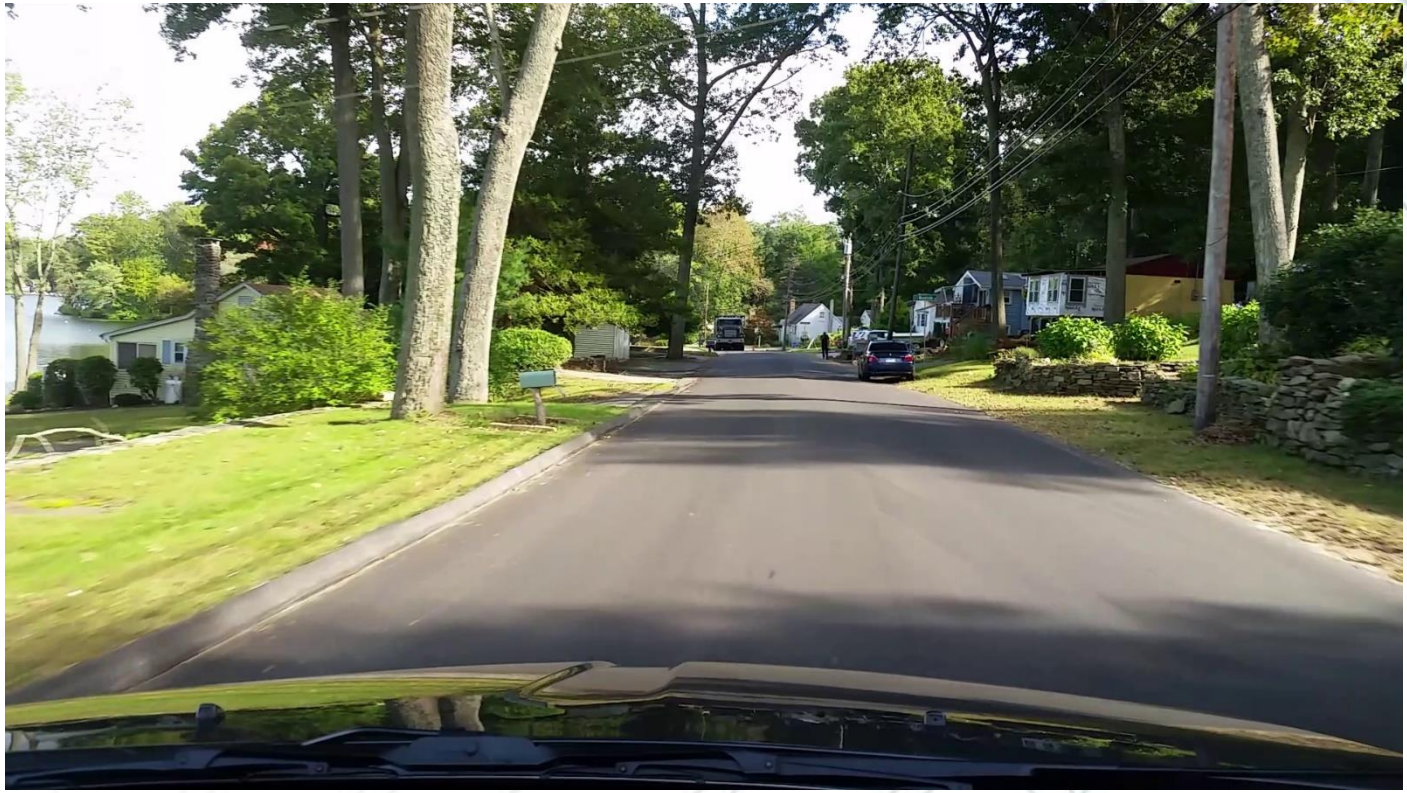
Town of Hebron Road List 2018			use 26' as average width.		2016-17	2017-18	2018-19	201
	Miles	Condition	Improvement year	treatment				
Abby Drive	0.26		2020	Reclaim and pave				
Alice La	0.21	c	2014 crack seal	mill & overlay				
Ames Rd	0.27	c	19-20	Overlay				
Attawanhood Rd	0.77	c	2014 crack seal					
Bangor Rd	0.08	c	18-19	overlay			7400	
Basketshop Rd	0.54	d	2018	cold in place				
Bass Lake Rd	0.26	c	18-19	overlay			24255	
Bissell ridge Rd	0.25	b	crack seal - micro					
Blackman Rd	0.57	c	2014	Chipsealed and leveled				
Brennan Rd	0.26	e	2016	reclaim, 3.5 pave, curb	79270			
Brian Dr	0.32	a	2015	Reclaimed, Paved 3.5, new curb				

- Pavement Section Inventory
- Pavement Condition Assessment
- Estimated Pavement Condition Index (PCI)
- Define Repair Strategies and Costs
- Test Budget Scenarios
- Develop list of candidate projects
- Apply engineering and local judgment to finalize road program

Pavement Treatment Bands

Do Nothing Condition (PCI 93-100)

PCI = 100

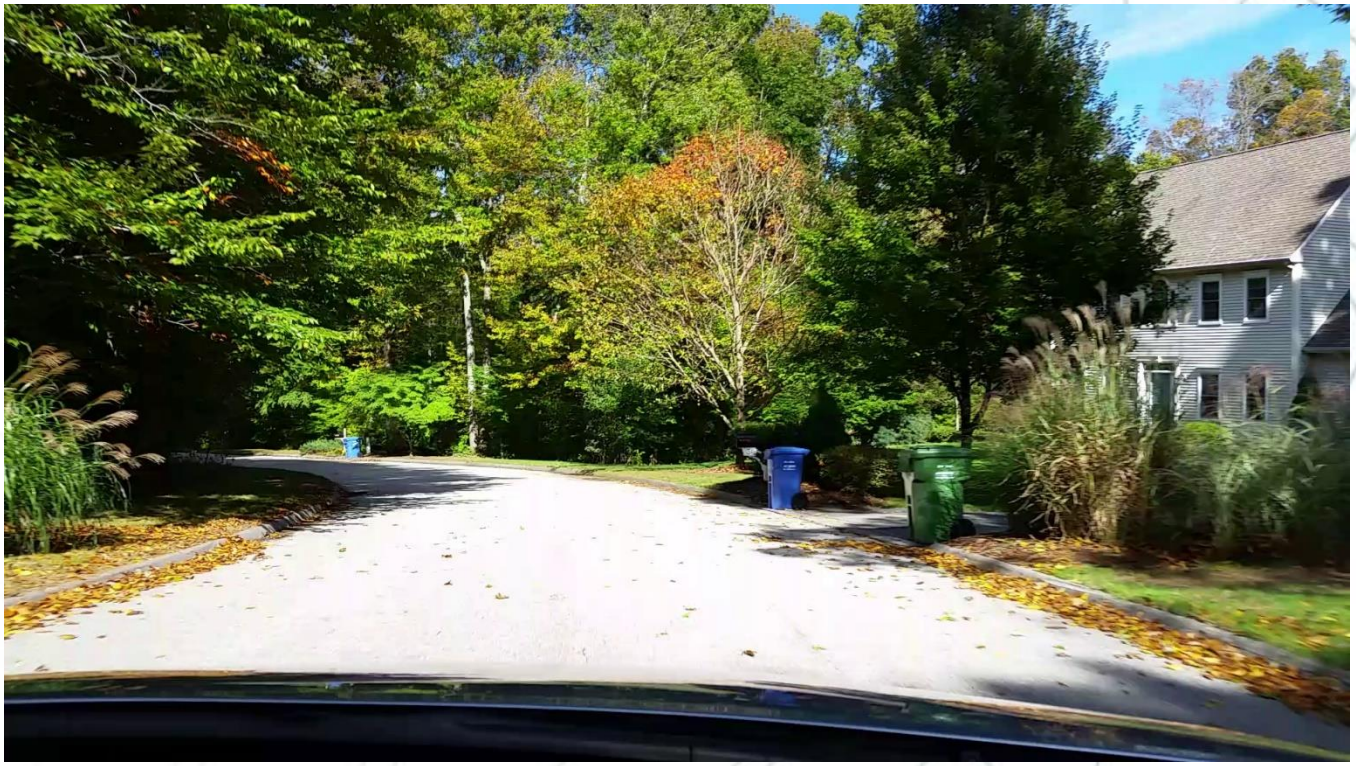


Deepwood Drive

Pavement Treatment Bands

Routine Maintenance Condition (PCI 85-92)

PCI = 85



Knowlwood Road

Treatment options – Crack sealing

Pavement Treatment Bands

Preventive Maintenance Condition (PCI 73-85)

PCI = 77

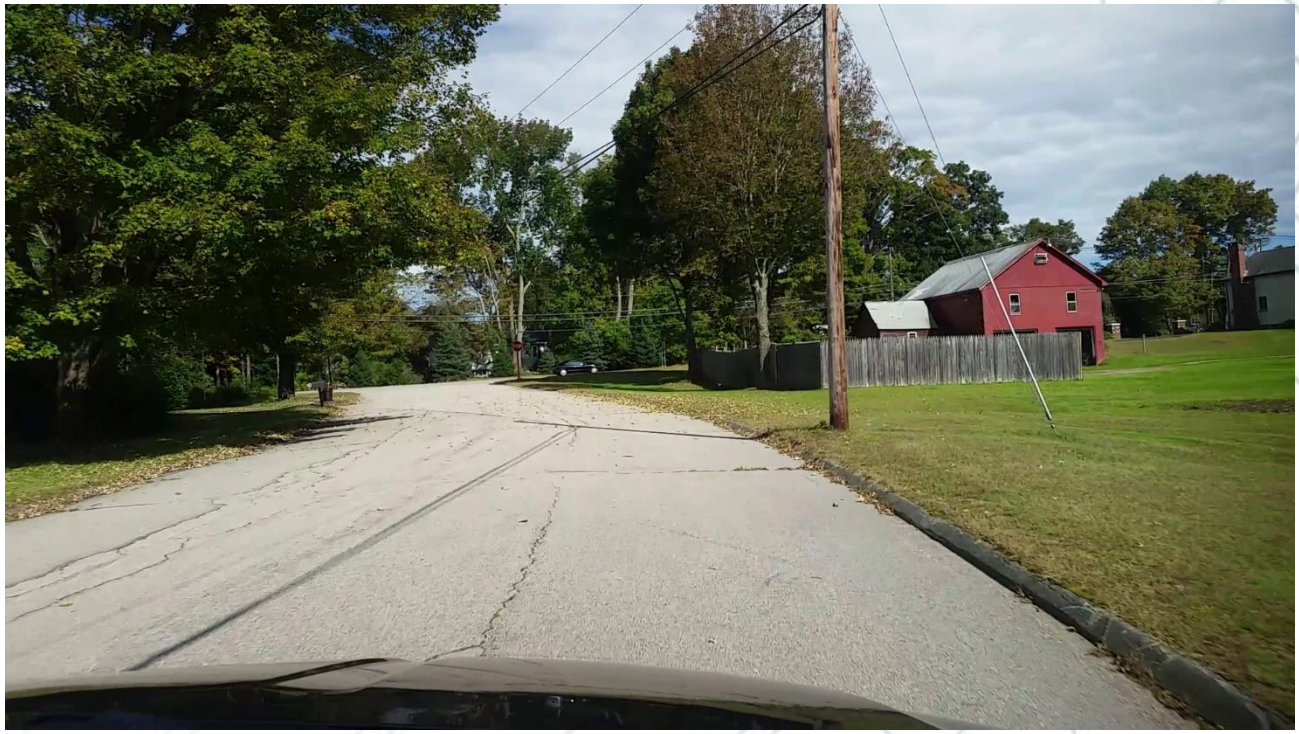
Chestnut Hill Road

Treatment options – Crack Seal & Patch, Chip Seal, or Thin Overlay

Pavement Treatment Bands

Structural Improvement Condition (PCI 61-72)

PCI = 67



Carriage Drive

Treatment options – Mill & Overlay or Overlay, both with patching preparation

Pavement Treatment Bands

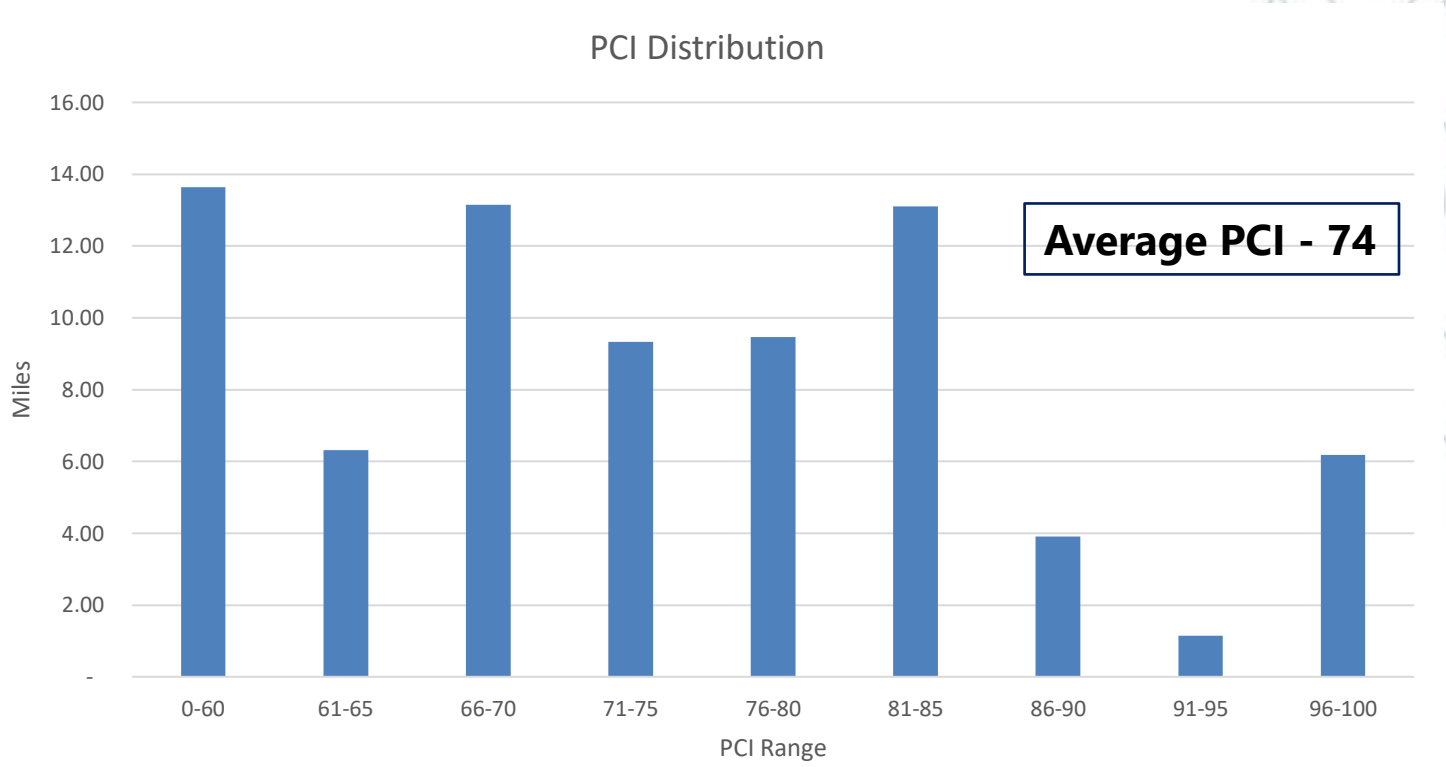
Base Rehabilitation Condition (PCI 0 - 60)

PCI = 53

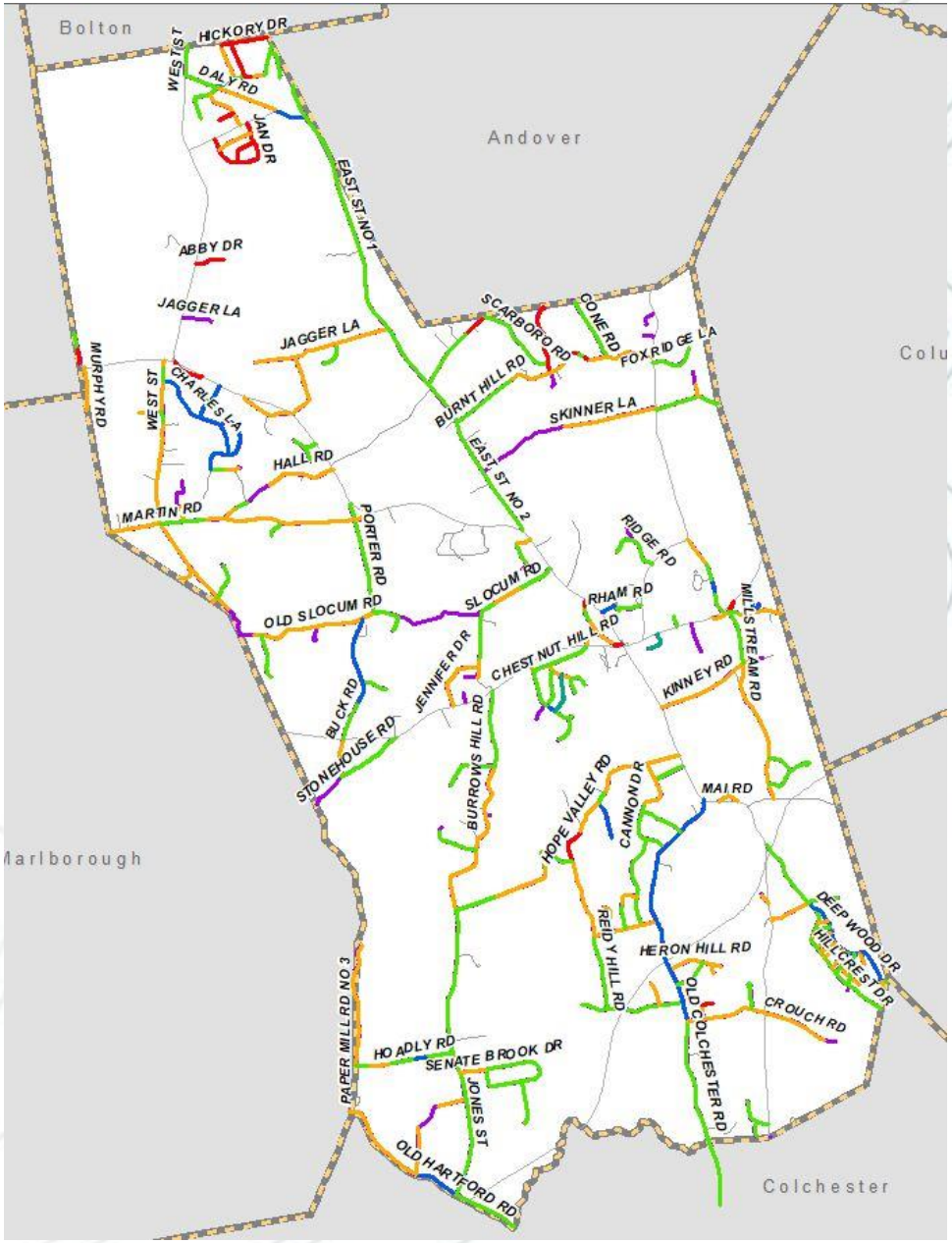
Chittenden Road

Treatment options – Reclamation, Reconstruction

PCI Distribution



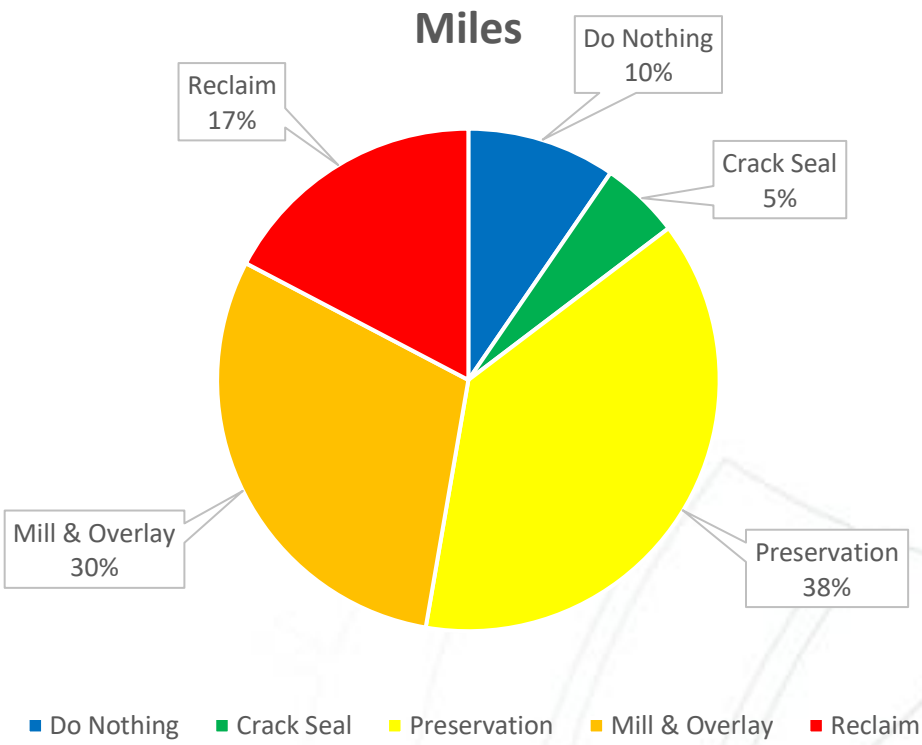
GIS Integration

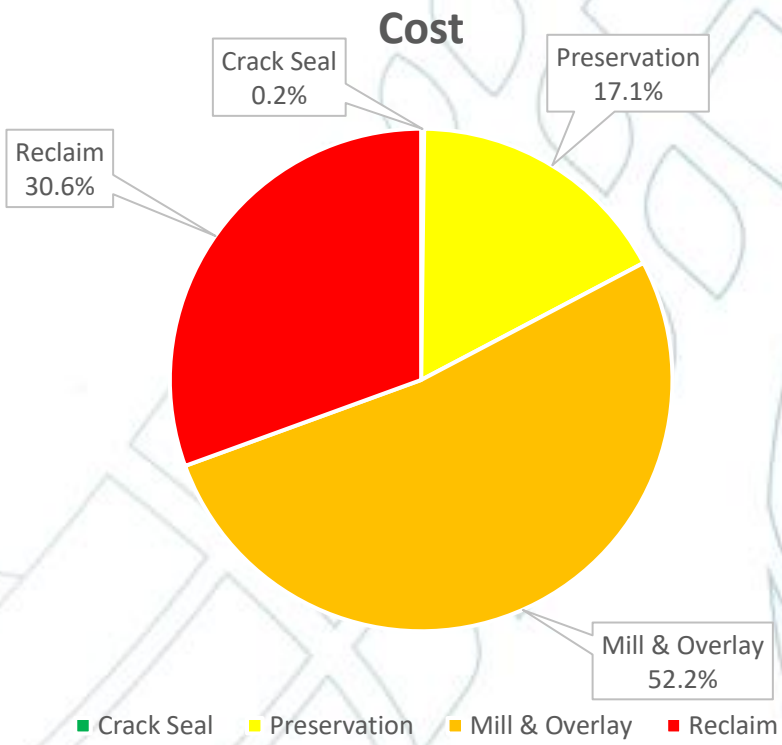


Pavement Backlog Summary

Treatment Band	Cost	Miles
Do Nothing	-	7.3
Routine Maintenance	28,868	3.9
Preventive Maintenance	2,575,932	29.1
Structural Improvement	7,857,460	22.9
Base Rehabilitation	4,603,590	13.3
Grand Total	**$ 15,065,850**	**76.6**

Pavement Backlog Summary





Pavement Funding Scenario Analysis

VHB compared the predicted effects of 3 potential funding scenarios:

- $450,000 per year for 5 years
- $1.0 million per year for 5 years
- $1.5 million per year for 5 years
- $3.4 million* over 2 years, followed by $1 Million/year for 3 years

* $2.5 million bond, plus $450k/year road budget

Pavement Funding Scenario Analysis

Recommendations

- Provide funding sufficient to reach the Town's pavement condition goals
- Focus annual road program on more heavily used roadways
- Include a mix of treatments based on conditions
- Continue to include crack sealing in the road program
- Correct drainage deficiencies before pavement improvement
- Perform subsurface sampling and testing to determine proper treatment for rehabilitation on a project by project basis

Draft Program Summary

Treatment	Cost	Miles
Chip Seal, Rubber Chip	469,277	5.3
Overlay, CIP, Spot Paving	2,528,644	10.2
Reclaim	265,746	0.6
Crack Sealing & Contingency	136,333	
Grand Total	$ 3,400,000	16.1

Questions & Answers?

Pavment Improvements since 2019

		year	Type	cost	
Crouch Road		2019	Mill and overlay 2"	92,409	
Brighton Road	London to 200' past Pub Circle	2019	Reclaim and Pave 3.5	43,470	
Old Hartford Road		19-May	Mill shoulders and pave 2"	111,838	
Elizabeth Drive	Walnut to Webster	2019	Reclaim and Pave	75,621	
Elizabeth Drive	Daly to Walnut	2015 est.	Overlay 2"	70,100	
Daly Road		2019	Reclaim and Pave	196,105	
East Street section paving-- Full overlay 2021		19-20	mill and pave	189,186	est
John Horton Boulevard		Jun-20	2: overlay 2"	59,515	
Old Colchester Road		2020	Chipseal	83,722	
Burnt Hill Road		2020	Cold in place 1.5 overlay	395,906	
Meeting House Road		2020	Cold in place 1.5 overlay	216,965	
Rham Road		18-Jun	2" overlay	24,038	
Hillcrest Road			2"overlay	36,091	
Charles Lane/Joel Drive		2018	2"overlay	97,600	
Ridge Road		2018est	Micropave	36,860	est

Village La. Cottage La	2018est	Micro pave	12,000	est
Pub Circle	18-Aug	2"overlay	62,726	
East Street	2021	Mill and overlay2"	462,932	
West Street	2021	Mill and overlay 2"	248,046	
West Street Extention	Oct-21	Overlay 2"	137,022	
Burros Hill Road	2021	Mill and overlay	420,091	
Webster La, Hichory Drive. Walnut Drive,	2021	RFP- reclaim and pave	397,000	
Oak Drive	2021	Overlay 2"	71,000	
Hoadly Road	2022	Reclaim 1200' Pave and overlay	180,769	
Indianfield Road	2022	Reclaim and pave 3.5	288,350	est.

TOWN OF HEBRON

MILES OF LOCALLY MAINTAINED ROADS AS OF DECEMBER 31, 2021

NUM	DIR	STREET NAME	GRID	UNIMP. MILES	IMP. MILES	TOTAL
1	E	ABBY DR	C 04		.26	.26
100	N	ALICE LA	K 15		.21	.21
2	E	AMES RD	M 13		.27	.27
96	S	ATTAWANHOOD TR	J 12		.77	.77
3	W	BANGOR RD	M 14		.08	.08
4	E	BASKET SHOP RD	K 06		.54	.54
5	N	BASS LAKE RD	M 14		.26	.26
163	S	BIRCH HILL RD	K 15		.40	.40
148	S	BISSELL RIDGE RD	E 06		.25	.25
83	S	BLACKMAN RD	G 10		.55	.55
77	W	BRENNAN RD	K 11		.26	.26
107	N	BRIAN DR	C 06		.32	.32
85	S	BRIGHTON RD	C 02		.38	.38
6	N	BUCK RD	E 11		1.05	1.05
7	W	BURNT HILL RD	G 06		1.86	1.86
8	N	BURROWS HILL RD	G 13		2.04	2.04
95	S	CANNON DR	K 12		.74	.74
9	W	CAROLYN DR	C 02		.29	.29
82	W	CARRIAGE DR	H 08		.31	.31
147	S	CARVER LA	H 11		.24	.24
144	N	CEDAR RIDGE DR	H 11		.33	.33
108	E	CHARLES LA	C 06		.90	.90
136	W	CHESTERFIELD RD	G 13		.38	.38
10	W	CHESTNUT HILL RD	H 10		.49	.49
74	N	CHITTENDEN RD NO 1	F 17		.39	.39
11	W	CHITTENDEN RD NO 2	F 16		.24	.24
145	S	COATES FARM RD	J 12		.33	.33
12	W	COLEMAN RD	C 09		.20	.20
13	N	CONE RD	H 05		.53	.53
110	E	CONGRESS DR	G 16		.65	.65
119	W	COTTAGE LA	L 09		.05	.05
112	S	COUNTRY LA	H 10		.64	.64
84	E	CROUCH RD	L 15		.56	.56
14	E	DALY RD	C 01		.82	.82
15	S	DEEPWOOD DR	M 14		1.03	1.03
133	S	DEER MEADOW LA	H 10		.30	.30
16	N	EAST ST NO 1	F 05		3.55	3.55
76	N	EAST ST NO 2	D 02		.48	.48
69	N	ELIZABETH DR	C 01		.44	.44
17	E	ELSMERE RD	M 14		.13	.13
135	S	FIELDSTONE DR	J 10		.15	.15
18	N	FOOTE LA	A 05		.28	.28
146	E	FOREST VIEW LA	F 10		.23	.23
151	E	FOX RIDGE LA	K 06		.41	.41
98	E	FRANCIS RD	M 14		.04	.04
120	S	GILEAD LANDING	D 07		.11	.11
93	S	GOLF LA	B 06		.10	.10
19	W	GRAYVILLE RD NO 1	J 15		.83	.83

TOWN OF HEBRON

MILES OF LOCALLY MAINTAINED ROADS AS OF DECEMBER 31, 2021

NUM	DIR	STREET NAME	GRID	UNIMP. MILES	IMP. MILES	TOTAL
20	E	GRAYVILLE RD NO 2	G 15	.11		.11
21	N	GRISTMILL RD	J 09		.17	.17
160	E	GRISWOLD LA	K 13		.16	.16
22	W	HALL RD	C 08		.59	.59
23	N	HARDY RD	D 06		.55	.55
158	W	HAWKS LANDING	L 16		.32	.32
121	W	HAYFIELD LA	K 05		.11	.11
134	S	HEARTHSTONE DR	D 08		.16	.16
25	E	HEBRON CENTER RD	J 09		.09	.09
113	W	HEBRON LANDING	J 05		.15	.15
140	E	HERON HILL RD	K 14		.47	.47
70	W	HICKORY DR	C 01		.40	.40
153	E	HIGHLAND DR	M 12		.48	.48
26	S	HILLCREST DR	M 14		1.10	1.10
139	S	HILLS LA	F 09		.14	.14
27	S	HILLSDALE RD	M 14		.21	.21
28	E	HOADLY RD	E 16		.84	.84
29	W	HOPE VALLEY RD	G 13		2.74	2.74
118	N	INDIAN FIELD RD	H 06		.58	.58
30	E	JACKMAN RD	M 14		.15	.15
31	W	JAGGER LA	D 06		1.16	1.16
33	E	JAN DR	C 02		.78	.78
102	N	JENNIFER DR	F 11		.52	.52
114	S	JOEL DR	C 07		.71	.71
162	S	JOHN E HORTON BLVD	K 09		.28	.28
34	S	JONES ST	G 17		2.40	2.40
138	E	JUDD BROOK LA	L 15		.11	.11
109	N	KAREN CIR	C 06		.14	.14
90	W	KARLSWOOD RD	B 06		.21	.21
36	E	KINNEY RD	K 10		.89	.89
150	N	KNOLLWOOD DR	D 09		.31	.31
149	N	KRISTEM LA	K 06		.12	.12
106	E	LAKE RD	L 13		.34	.34
37	N	LAURA DR	D 02		.24	.24
156	N	LIBERTY DR	K 09		.10	.10
38	N	LOVELAND RD	K 08		.69	.69
92	E	MAI RD	K 12		.18	.18
39	N	MAPLE AV	L 14		.08	.08
40	S	MARJORIE CIR	J 09		.54	.54
41	W	MARTIN RD	B 08		2.21	2.21
42	S	MEADOWBROOK RD	M 14		.09	.09
43	E	MEETING HOUSE RD	E 07		1.07	1.07
44	S	MILLSTREAM RD	L 10		1.73	1.73
154	E	MINT BROOK LA	M 11		.22	.22
105	N	MOHEGAN LA	J 14		.25	.25
45	S	MURPHY RD	A 06		.34	.34
46	W	NILES RD	K 15		.66	.66
47	S	NORTH POND RD	L 13		.61	.61

TOWN OF HEBRON

MILES OF LOCALLY MAINTAINED ROADS AS OF DECEMBER 31, 2021

NUM	DIR	STREET NAME	GRID	UNIMP. MILES	IMP. MILES	TOTAL
91	E	NORTHAM RD	J 14		.53	.53
71	S	OAK DR	D 01		.29	.29
48	W	OAKLAND RD	M 14		.15	.15
49	N	OLD ANDOVER RD	F 06		.72	.72
50	S	OLD COLCHESTER RD	K 13		3.08	3.08
122	S	OLD DANIELS LA	H 16		.37	.37
24	W	OLD HARTFORD RD	F 17		.87	.87
51	S	OLD HEBRON RD NO 1	K 10		.10	.10
155	W	OLD HEBRON RD NO 2	K 10		.02	.02
62	E	OLD SLOCUM RD	E 09	.14	1.29	1.43
131	N	OLDE HALL RD	D 08		.23	.23
52	S	PAPER MILL RD NO 1	E 11		.32	.32
88	N	PAPER MILL RD NO 2	E 15		.56	.56
89	N	PAPER MILL RD NO 3	E 14		.22	.22
115	S	PENDLETON DR	K 10		.21	.21
141	E	PEPPERBUSH DR	K 15		.30	.30
53	N	PORTER RD	E 08		.93	.93
54	E	PRENTICE HILL RD	D 06		.44	.44
86	W	PUB CIRCLE	C 02		.15	.15
103	N	REED RD	J 09	.01		.01
56	N	REIDY HILL RD	H 13		1.29	1.29
55	E	RHAM RD	J 09		.12	.12
97	N	RIDGE RD	J 08		.48	.48
116	W	RIVENDELL RD	C 09		.04	.04
57	E	RONDALAY RD	M 14		.14	.14
161	S	ROOT LA	E 10		.13	.13
58	S	SAINT RONAN RD	M 14		.20	.20
59	E	SALT BOX RD	C 06		.27	.27
157	N	SAW MILL WAY	L 15		.27	.27
117	N	SCARBORO RD	H 05		.70	.70
60	N	SCHOOL HOUSE RD NO 1	H 13	.15		.15
104	E	SCHOOL HOUSE RD NO 2	G 12		.06	.06
111	E	SENATE BROOK DR	G 16		.67	.67
143	S	SENTINAL WOODS DR	D 10		.38	.38
94	W	SETTLEMENT RD	J 12		.36	.36
159	S	SETTLERS PATH	L 17		.14	.14
81	W	SKINNER LA	G 07		.79	.79
78	N	SLICER DR	J 11		.21	.21
75	W	SLOCUM RD	G 09		.68	.68
152	W	SMITH FARM RD	G 12		.47	.47
63	W	STONEHOUSE RD	E 11		.56	.56
124	S	TANNERY HILL LA	C 07		.26	.26
123	S	TEICHERT LA	H 06		.10	.10
64	W	TURNER RD	M 14		.15	.15
99	N	UNCAS DR	J 14		.38	.38
126	N	VILLAGE LA	L 09		.11	.11
72	S	WALNUT DR	C 01		.29	.29
127	W	WARNER POND LA	E 07		.23	.23

TOWN OF HEBRON

MILES OF LOCALLY MAINTAINED ROADS AS OF DECEMBER 31, 2021

NUM	DIR	STREET NAME	GRID	UNIMP. MILES	IMP. MILES	TOTAL
80	N	WEBSTER LA	D 01		.26	.26
137	N	WELLINGTON WAY	K 15		.18	.18
65	E	WELLSWOOD RD	L 09	.01	.60	.61
125	N	WEST BRANCH DR	D 07		.30	.30
66	S	WEST ST	B 08		2.28	2.28
132	S	WILDFLOWER DR	H 10		.39	.39
79	E	WILLOW DR	D 01		.27	.27
128	E	WINDRUSH LA	H 05		.04	.04
129	N	WINTHROP RD	C 08		.15	.15
67	S	WOOD ACRES RD	M 14		.15	.15
142	S	WOOD POND LA	L 14		.09	.09
68	S	WOODSIDE RD	M 14		.18	.18
87	W	YORKSHIRE DR	C 02		.41	.41

TOTAL UNIMPROVED MILES AS OF DECEMBER 31, 2021	0.42
TOTAL IMPROVED MILES AS OF DECEMBER 31, 2021	77.62
TOTAL MILES AS OF DECEMBER 31, 2021	**78.04**

Hebron Stormwater Runoff Reduction Plan Fall 2021

University of Connecticut Stormwater Corps | November 2021

Alex Joslin
(Environmental Science, 2022)

Amealia Maynard
(Applied and Resource Economics, 2022)

Lexi Cyr
(Environmental Science, 2022)

UCONN

Summary

During the fall of 2021, a team of UCONN students as well as Extension faculty performed an evaluation of potential stormwater infrastructure opportunities in the town of Hebron, CT. The process involved a desktop analysis as well as field visits to determine where potential green stormwater infrastructure(GSI) installation opportunities exist on publicly owned land. Calculations were performed to determine the potential stormwater and pollution reduction benefits from each of the proposed installations. If all projects identified in the report are implemented, **104,774 sq.ft**. of Impervious Cover (IC) will be disconnected from the current stormwater drainage system. This also means that **2,784,659** gallons of stormwater, **28.61** pounds of Nitrogen, as well as pounds **3.62** of Phosphorus will have been removed from entering the storm system as well as polluting local water bodies annually.

Impervious Surfaces & Runoff

Impervious surfaces include roads, parking lots, as well as other developments that do not allow water to penetrate through to the ground. Natural surfaces such as grass, leaf litter, vegetated areas, and even dirt areas, absorb significant amounts of precipitation and runoff. Once the water enters the ground, it flows through the groundwater and into the water bodies or recharges groundwater aquifers. When natural surfaces get replaced with impervious cover, the cycle is disrupted. Soil infiltration decreases, while surface runoff significantly increases. This often results in adding to the stormwater management systems and discharged into local water bodies to attempt to prevent flooding in developed areas.

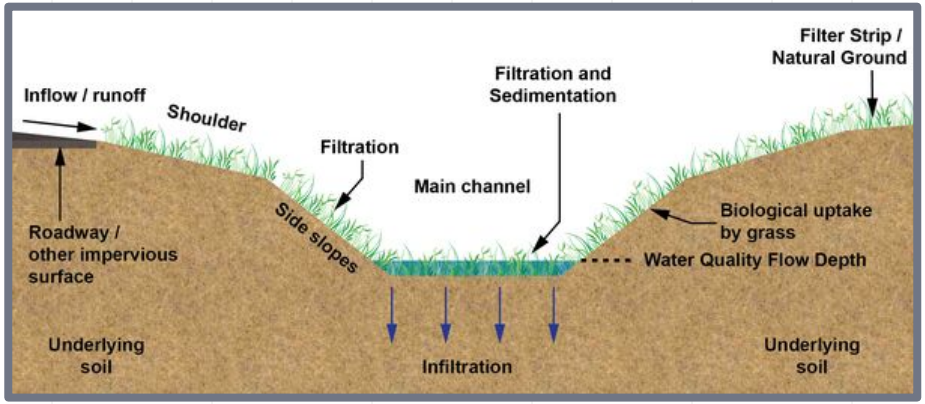
Runoff over impervious cover often collects pollutants, such as nitrogen and phosphorus as well as other sediments, which can cause a plethora of issues, including flooding, erosion, poor water quality, even impact local wildlife. To mitigate these issues, more specifically in water quality, runoff can be disconnected from the stormwater management system by implementing green infrastructure practices that reduce impervious surface impact. For example, disconnecting the downspouts on buildings and directing them into a rain garden or bioretention can help significantly reduce many of these water issues as well as add to the scenery. Previously impervious surfaces mentioned, can be disconnected using these previous alternatives to traditional practices.

Common Practices

Rain gardens: A rain garden is a man-made depression in the ground which collects rainwater, typically from an impervious structure or from an area where stormwater runoff has been disconnected from running directly into a sewage system. This form of bioretention is a much more residential-friendly type of GSI practice, with no special soil media or underdrain/overflow structures. They are typically 6”-12” to allow for some ponding, but for the stormwater to be absorbed by the media within 3-4 hours. The soil condition is also very important for stormwater infiltration, and they should be sized to withstand 1 inch of runoff from 100% impervious watersheds. They often add an aesthetically pleasing element to the buildings or land they are added to. In some cases, extra amenities such as curb cuts and special media may be used to account for overflow.

Common Practices

Grass swale: a grass swale is a graded landscape which forms a channel, and is used for collecting runoff storm water and allowing it to filtrate into the ground. It aids in reducing flow velocity, and in some cases where the flow of runoff is fast due to the steepness of the swale, extra media such as gravel or wood to create channels to slow flow rate. In the case of intense storms, this GSI practice can direct overflow directly into drainage systems. Maintenance is relatively basic, with mowing the entirety of the area including the swale being unhindered, some replanting if necessary, and removing large objects of debris or accumulated sediment to ensure it operates properly.



Common Practices

Permeable Pavements: Pervious pavements include permeable asphalt and concrete, which replace the typical asphalt/concrete that make up sidewalks and roads. By removing fine aggregates from the mix, these pavements are able to absorb stormwater and runoff and much higher rates than their impervious counterparts. Porous pavements are also a smart infrastructure investment, as they can eliminate the need for other green stormwater infrastructure such as swales, extensive bioretention areas, and more.

This pavement is able to achieve such high rates of absorption because of its structure. The porous pavement is the top layer, which allows stormwater to flow through. The thicker choker course underneath stabilized the pavement. A clean graded coarse aggregate is used as temporary stormwater storage, and the uncompacted subgrade on the bottom maximizes infiltration to the soil. Depending on the type of pavement chosen to implement, special equipment may be needed to put in new permeable concrete or asphalt.

Site Location Overview

In the meeting with the Town of Hebron, there was a discussion on using a variety of different practices, including but not limited to rain gardens, pervious pavements, as well as green roofs. We wanted to offer as much of a variety as possible when recommending practices, but also tried to keep LID practices practical. Before coming to conclusions about any retrofits that were suggested, our team conducted site visits to determine which sites would be the best option for implementing a variety of LID practices. Once the site visits were complete, as well as looking at advantages and disadvantages of the sites, the practices presented in this presentation were decided based on the suitability of the site.

The sites we ultimately decided on were Hebron Elementary School, Russell Mercier Senior Center, Hebron Town Office Building, Veteran's Memorial Park, Rham Middle/High School, Burnt Hill Park, & Gilead Hill School. Each of these sites provided opportunities to suggest retrofits that could also offer educational opportunities along with increasing aesthetic appeal.

Location Overview & Site Criteria

1. Hebron Elementary School
2. Russell Mercier Senior Center
3. Hebron Town Office Building
4. Veteran's Memorial Park
5. Rham Middle & High School
6. Burnt Hill Park
7. Gilead Hill School

- Has a significant proportion of connected impervious cover
- Municipally owned property
- Has the potential to have significant portions of impervious surfaces disconnected
- Locations where practices would be feasible

Hebron Elementary School | 92 Church St

Hebron Elementary School Impervious Cover Map

Hebron Elementary School | 92 Church St

Option 1: Rain Garden

Drainage Area	3,504 SF
Annual Gallons Treated	92,258 gal.
Nitrogen Treated	0.96 lb N/yr
Phosphorus Treated	0.12 lb P/yr
Suggested Size	584 SF

Hebron Elementary School Pros/Cons: Rain Garden (Option 1)

Pros:

- Will be visually appealing.
- Educational opportunities.

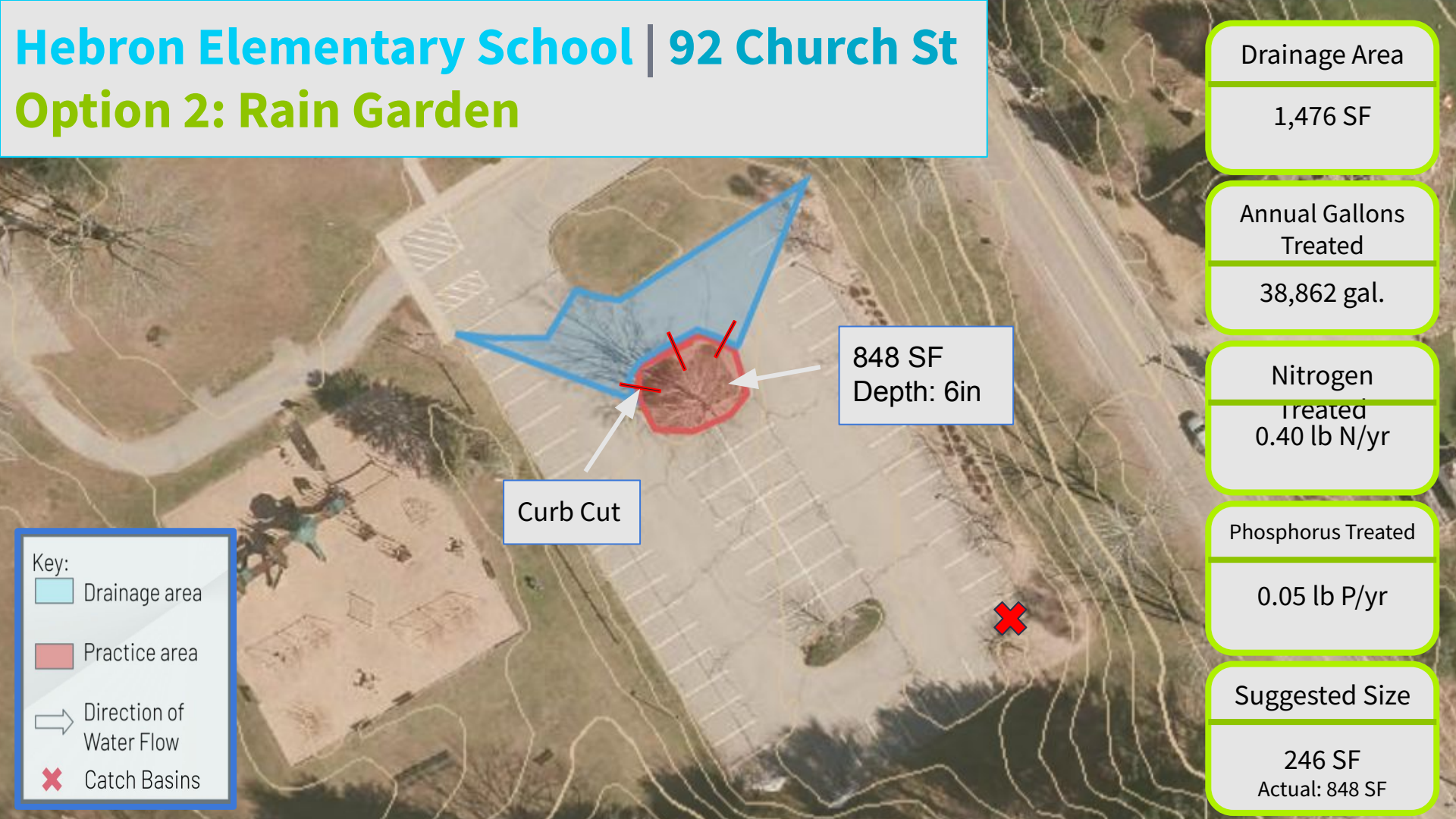
Cons:

- Will need to modify the garden.
- Could be in the way of recreational activity.

About the site: The rain garden will be a long strip extending the garden already there. Someone will be able to mow around the practice, and it will require the same maintenance as the garden already on-site.

Hebron Elementary School | 92 Church St

Option 2: Rain Garden



Drainage Area	1,476 SF
Annual Gallons Treated	38,862 gal.
Nitrogen Treated	0.40 lb N/yr
Phosphorus Treated	0.05 lb P/yr
Suggested Size	246 SF Actual: 848 SF

Hebron Elementary School Pros/Cons: Rain Garden (option 2)

Pros:

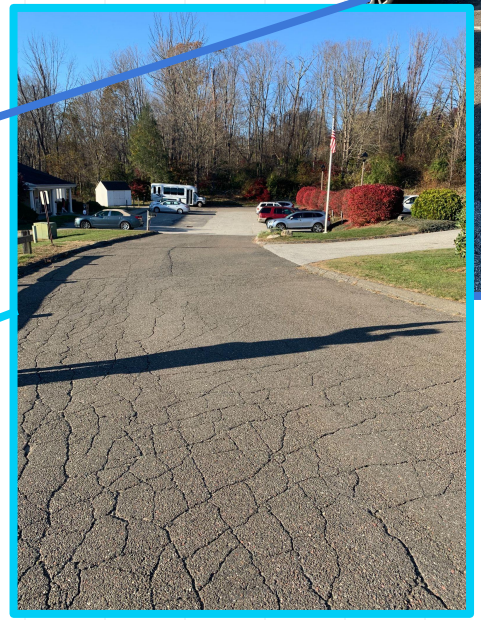
- Can disconnect some of the parking lot and reduce the debris building up and around the catch basin.
- Will make the parking lot look nice.

Cons:

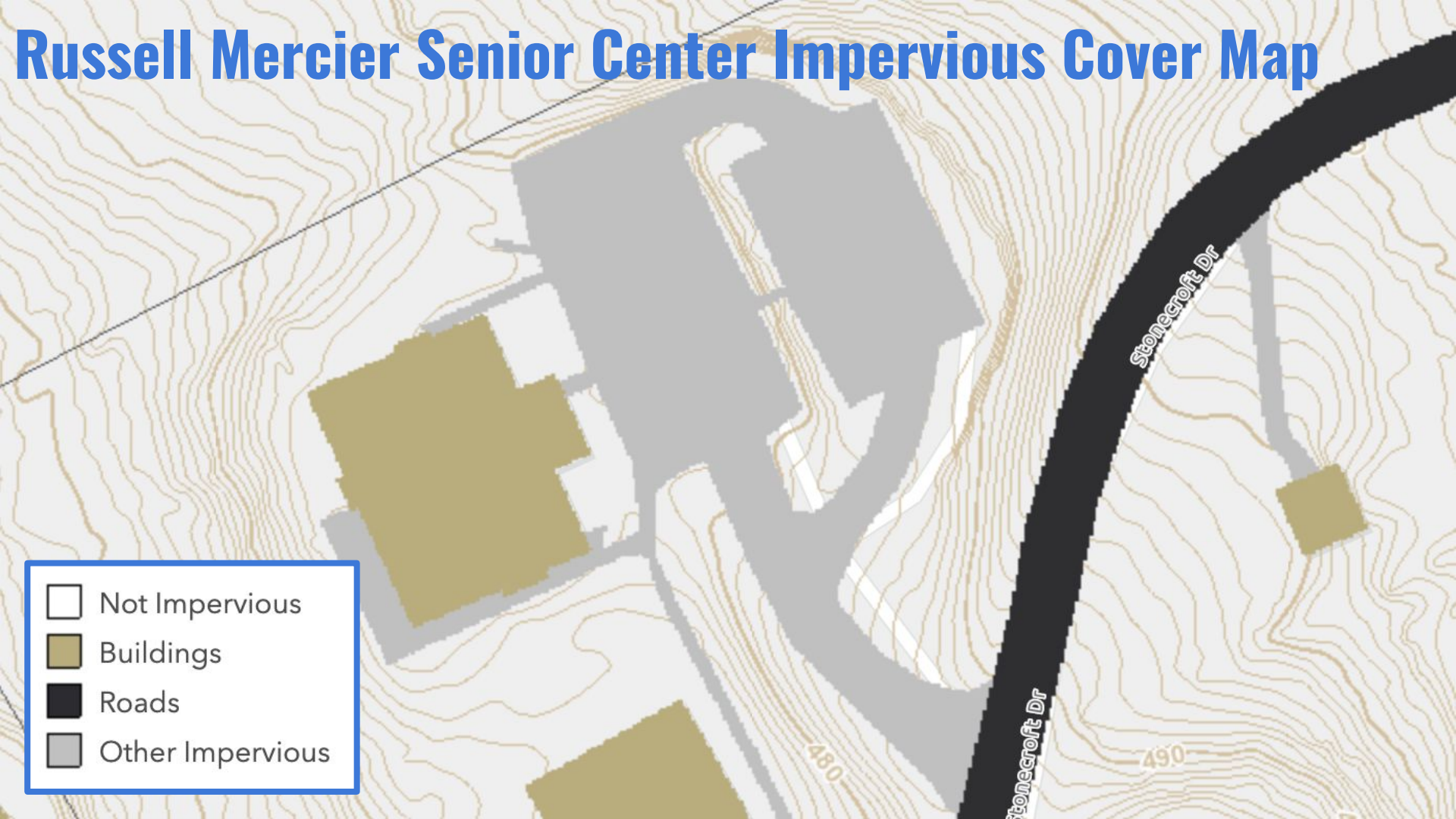
- Could be hard to dig up and create a garden in such as small area.
- Needs curb cuts.

About the site: There is only one catch basin in the back of the parking lot. The other grassy divider behind option 2 could also be made into a rain garden.

Russell Mercier Senior Center Location Images



Russell Mercier Senior Center Impervious Cover Map



Russell Mercier Senior Center | 14 Stonecroft Drive

Option 1: Pervious Asphalt

Treated Area
17,294 SF

Annual Gallons Treated
517,436 gal.

Nitrogen Treated
4.74 lb N/yr

Phosphorus Treated
0.60 lb P/yr

Suggested Size
6,578 SF

Russell Mercier Senior Center Pros/Cons

Pros:

- Huge Drainage Area
- Less need for Salting since water doesn't collect
- Reduced Frost Heaves
- Treats nearly 100% of runoff
- May take up additional runoff from the connecting road
  - depending on how the road is graded
- Will last much longer than regular pavements

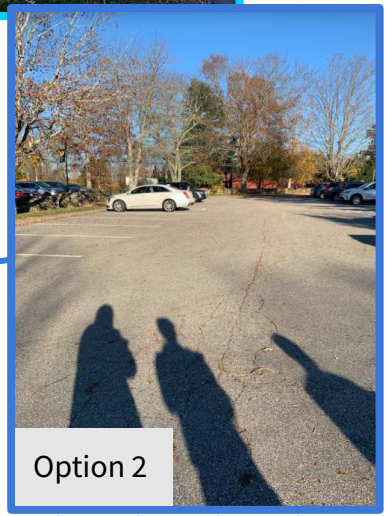
Cons:

- More expensive than regular pavement
- Must vacuum approximately twice a year to avoid more expensive maintenance
- Cannot use sand at this location and attempt to not use it nearby as well if it is being used!

About This Site:
This site is a lot of parking lot surrounded by many nice plants. Since There were so many plants, and the building itself would be difficult to disconnect anything significant from, the parking lot seemed like a great place to look as it is looking in rough shape as it is. This would be perfect for people to easily get around safely, but also make the property look much nicer in general. While not marked, as we were unsure, it may also take up more drainage than we thought of, and be able to be disconnected even more potentially.

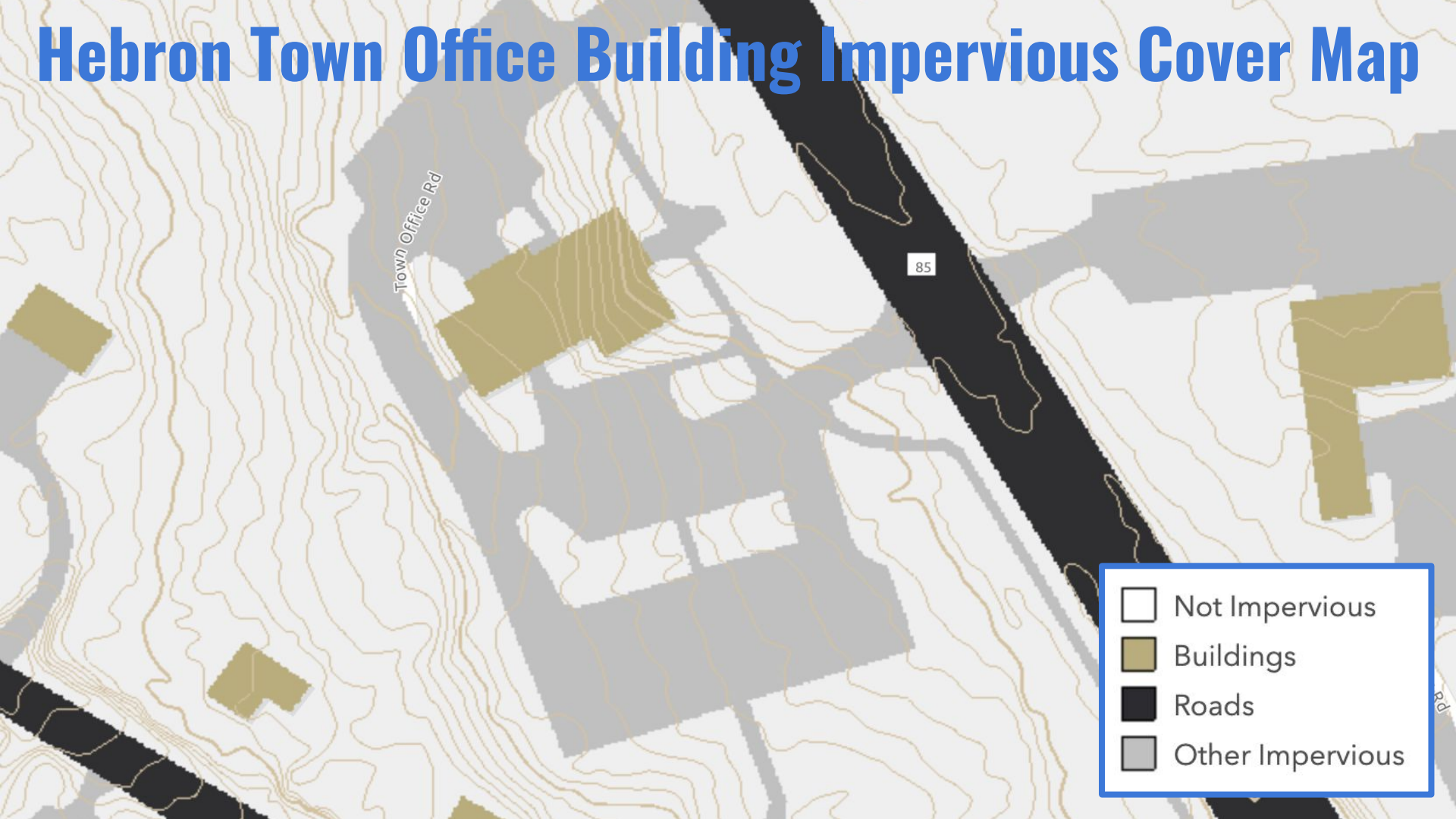
Hebron Town Office Building

Option 1



Option 2

Hebron Town Office Building Impervious Cover Map



Hebron Town Office Building | 15 Gilead St

Option 1: Rain Garden

Drainage Area
4,221 SF

Annual Gallons Treated
111,152 gal.

Nitrogen Treated
1.15 lb N/yr

Phosphorus Treated
0.15 lb P/yr

Suggested Size
704 SF

Hebron Town Office Building Option 1 Pros/Con

Pros:

- Larger rain garden means more water is treated
- Plenty of space to adjust the size and shape
- Easy maintenance-ability to mow around the garden

About the Retrofit:

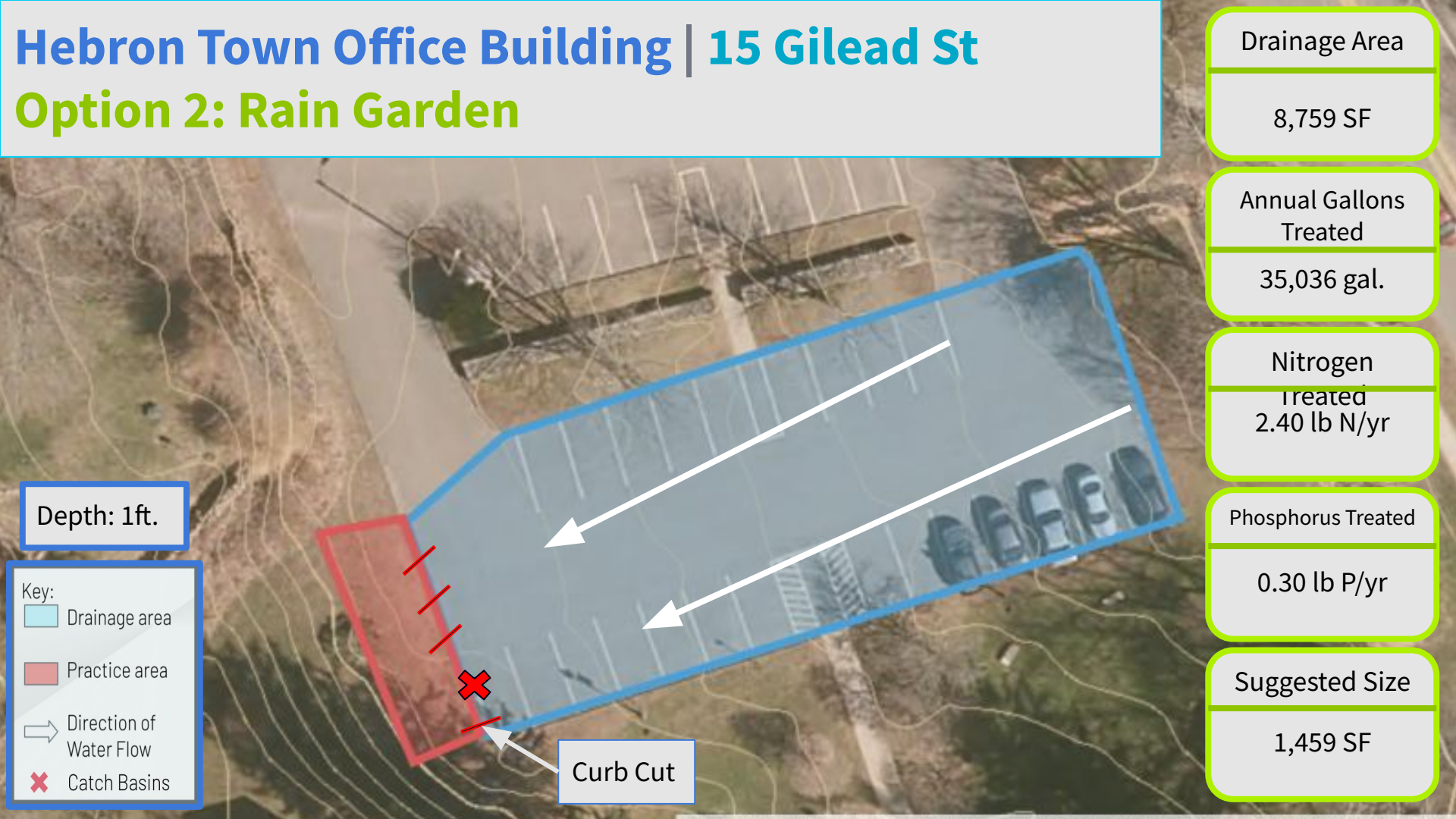
This retrofit would be placed near the parking lot on the left side. The drainage basin the drainage area pitches to takes a lot of the parking lot, and provides ample space for a rain garden that will be visible from the building.

Cons:

- Larger practice means more money upfront to build
- Will be big, but not centrally located
- Possible curb cuts may increase price

Hebron Town Office Building | 15 Gilead St

Option 2: Rain Garden



Drainage Area	8,759 SF
Annual Gallons Treated	35,036 gal.
Nitrogen Treated	2.40 lb N/yr
Phosphorus Treated	0.30 lb P/yr
Suggested Size	1,459 SF

Hebron Town Office Building: Pros/Cons of Option 2

Pros:

- Large area to disconnect.
- Rain Garden is visually pleasing for staff, residents, and visitors.
- Catch basin can be used for overflow

About the site:

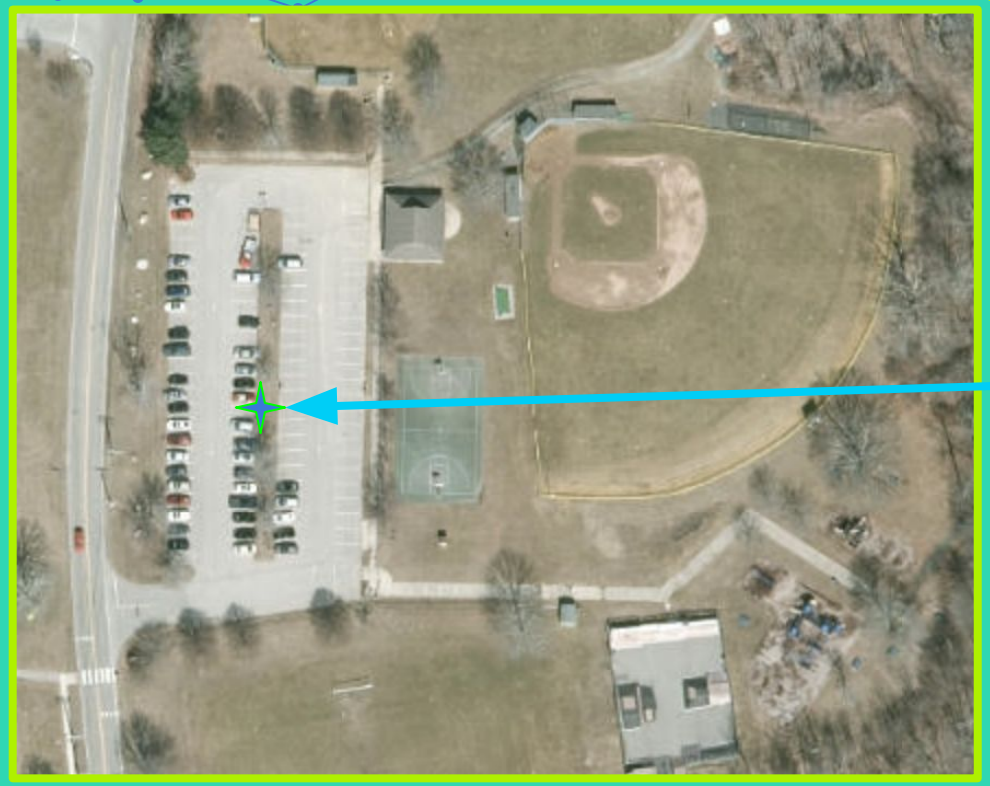
Since the parking lot is large, the rain garden needs to be 1 foot deep.

Right behind the rain garden is a steep downward slope.

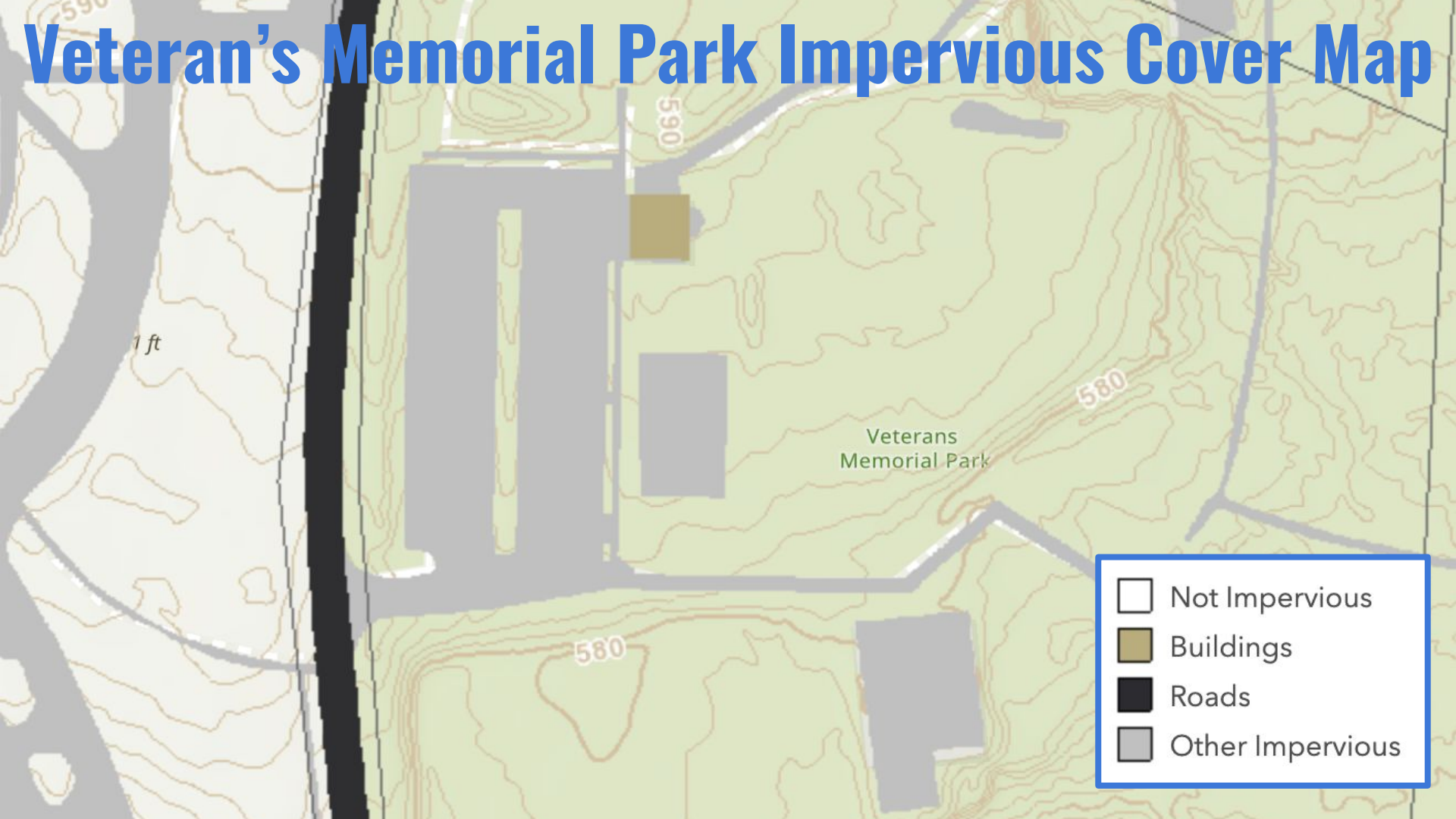
Cons:

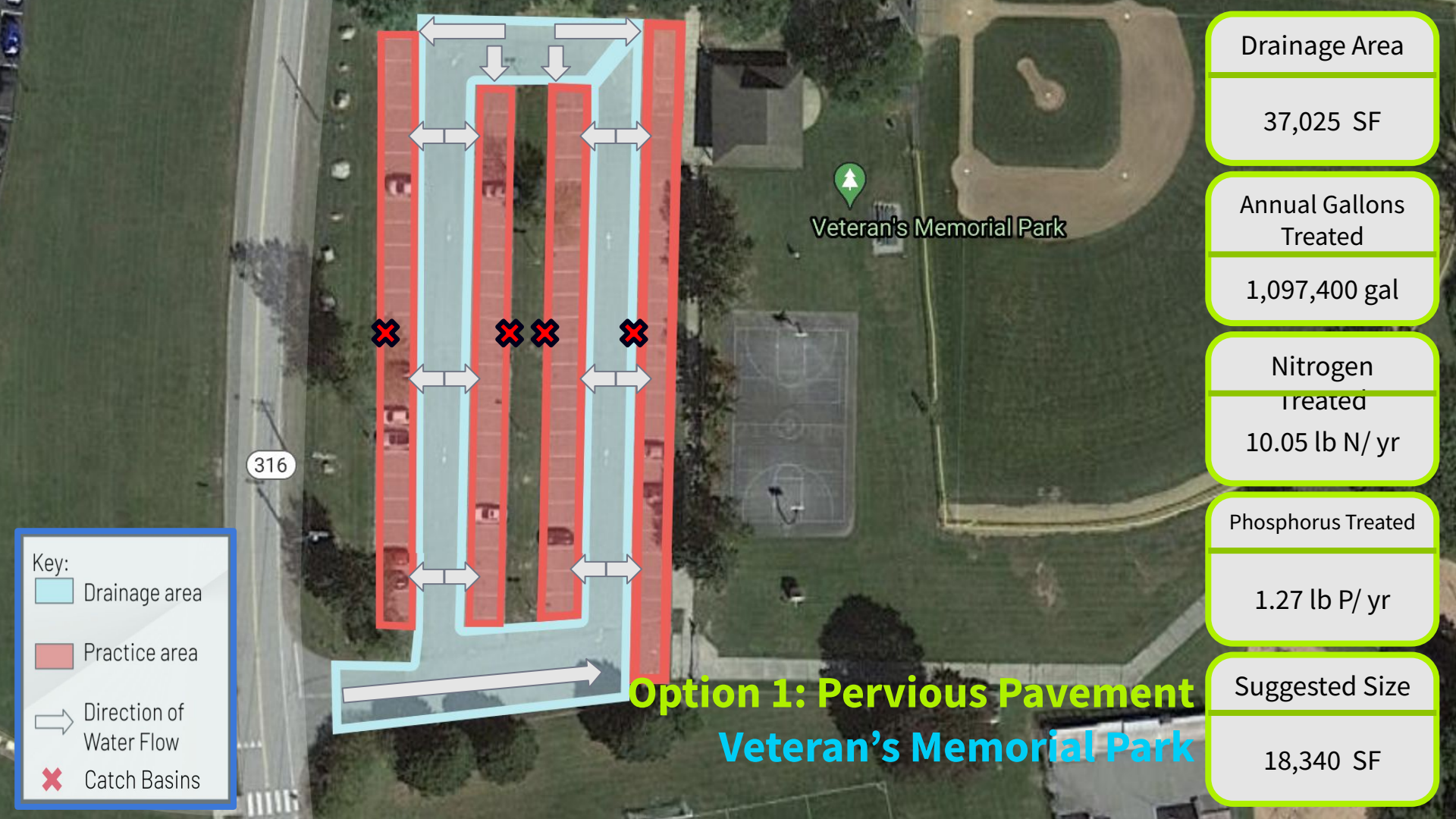
- Mechanical problems.
- Maintenance for a larger rain garden will take more time and it may be hard to mow around.

Veteran’s Memorial Park Location Imagery



Veteran's Memorial Park Impervious Cover Map





Option 1: Pervious Pavement
Veteran's Memorial Park

Drainage Area	37,025 SF
Annual Gallons Treated	1,097,400 gal
Nitrogen Treated	10.05 lb N/ yr
Phosphorus Treated	1.27 lb P/ yr
Suggested Size	18,340 SF

Veterans Memorial Park Pros/Cons

Pros:

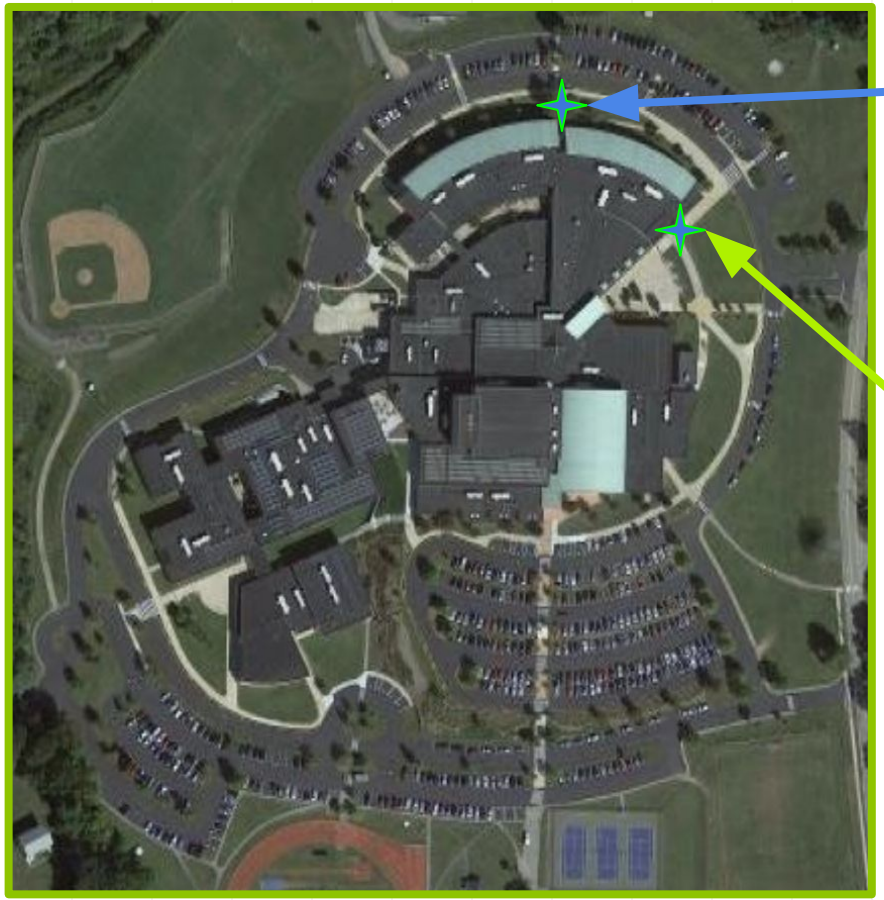
- Very large amount of water treated [nearly 100% of the parking lot]
- May also get some of the sidewalk and roof from the nearby building
- great aesthetic addition to the park
- Can do only part of it if necessary

Cons:

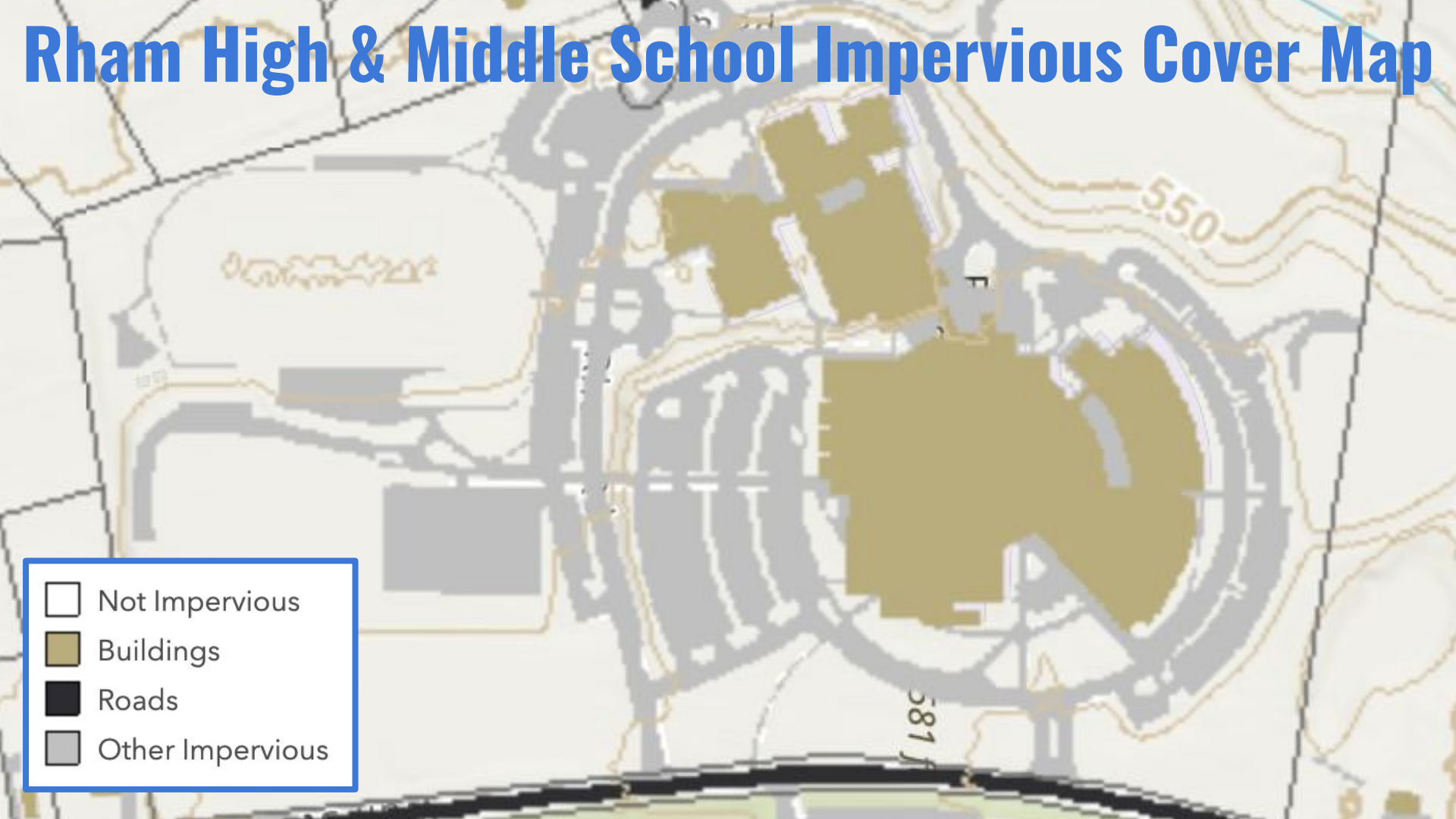
- Rain Garden not really easy due to the road being pitched in the center, so less water captured
- Pricier than practices, but for the ability to disconnect more of the water
- Must maintain and avoid sand nearby or practice will become clogged

About this site:
This is right across from Rham Middle/High School, which looked like a relatively active place for parents to bring their kids. While it may not be ready for replacement now, in the next few years, it could definitely have potential to have some green infrastructure installed, even if it's just the parking spots. Overall it will last longer and save money over time, which means there will be less needed to save for it in the future.

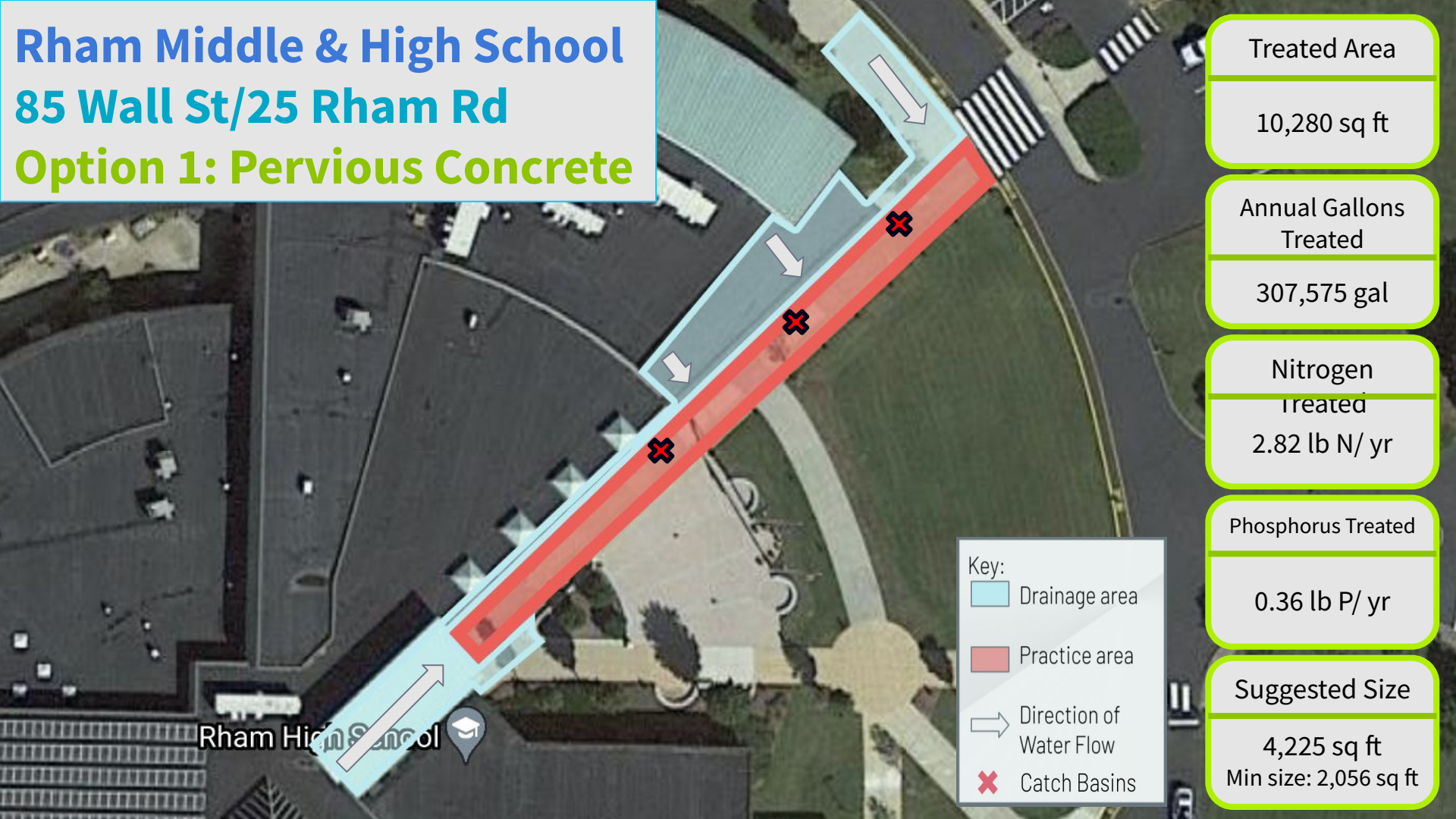
Rham Middle & High School



Rham High & Middle School Impervious Cover Map



Rham Middle & High School
85 Wall St/25 Rham Rd
Option 1: Pervious Concrete



Treated Area	10,280 sq ft
Annual Gallons Treated	307,575 gal
Nitrogen Treated	2.82 lb N/ yr
Phosphorus Treated	0.36 lb P/ yr
Suggested Size	4,225 sq ft Min size: 2,056 sq ft

Rham Middle & High School: Pro/Cons for Option 1

Pros:

- Will take up water from larger storms
- Fixes the issue of needing a pitched walkway
- May take up even more depending on flow of rest of sidewalk as well as if more from roof can be disconnected
- Can make minimize the practice size to be cheaper

Cons:

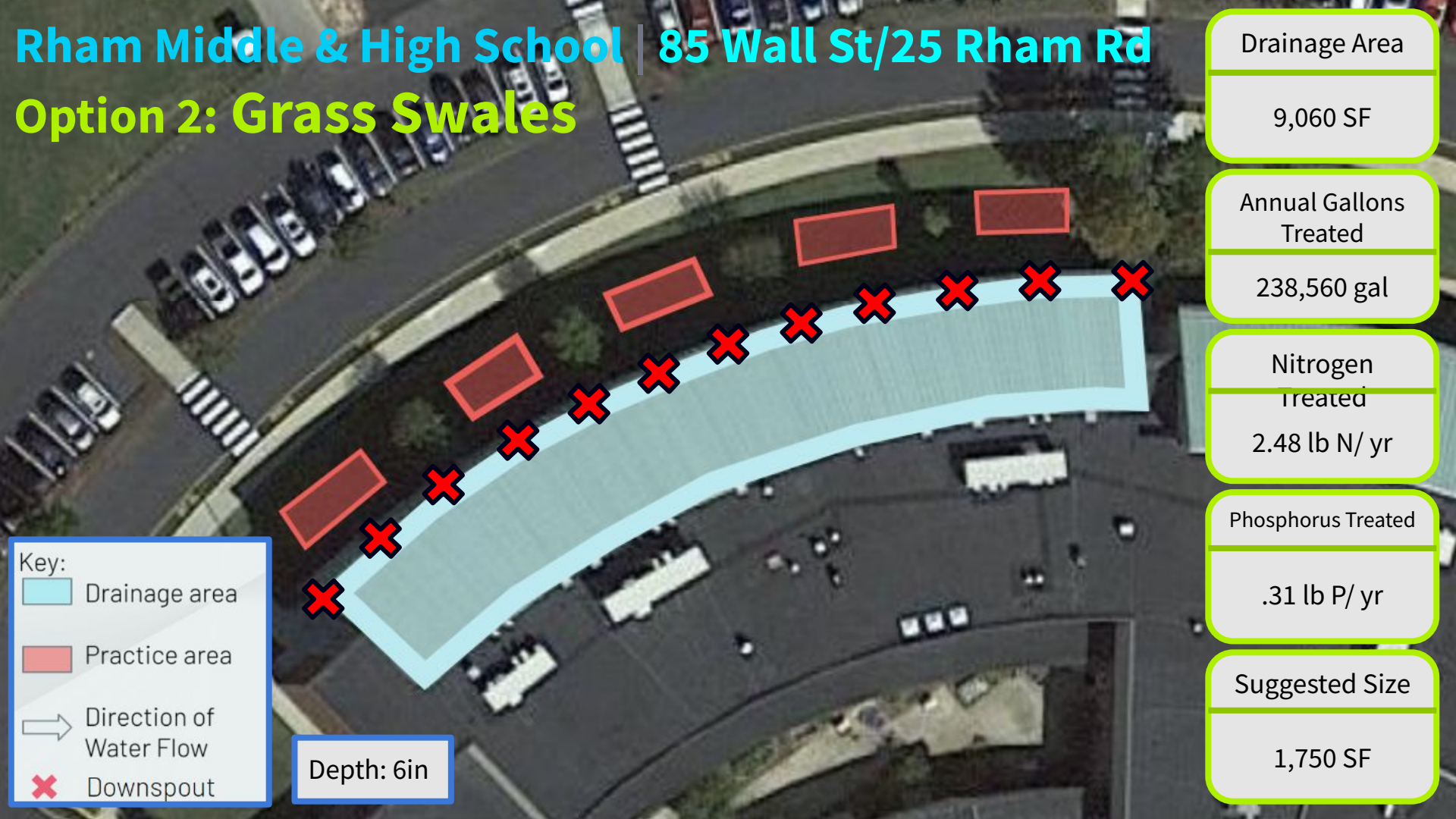
- Not many alternatives
- Awkward drainage area
- Amount of water is variable & can change depending on what can be disconnected.
- Drainage basins make having a rain garden instead difficult, but a possible cheaper alternative if there were modifications to the pathway not being pitched to the center and to the road.

About the site:

Since this site is right in the front, it would be nice to tie in the look of the area by renovating, would be great for everyone to see and as a learning material. There is a lot of variation as what is going on with the roof, but overall is a good spot to look into with a lot of flexibility. While it's not completely ready to tear up and renovate in this point in time, it will be likely in the next few years as something to consider.

Rham Middle & High School | 85 Wall St/25 Rham Rd

Option 2: Grass Swales



Drainage Area	9,060 SF
Annual Gallons Treated	238,560 gal
Nitrogen Treated	2.48 lb N/ yr
Phosphorus Treated	.31 lb P/ yr
Suggested Size	1,750 SF

Rham Middle & High School: Pro/Cons for Option 2

Pros:

- Huge drainage area
- Very simplified and can move the seating area on the other side of the bordering sidewalk
- Cheaper to disconnect a huge area
- Very easy to maintain

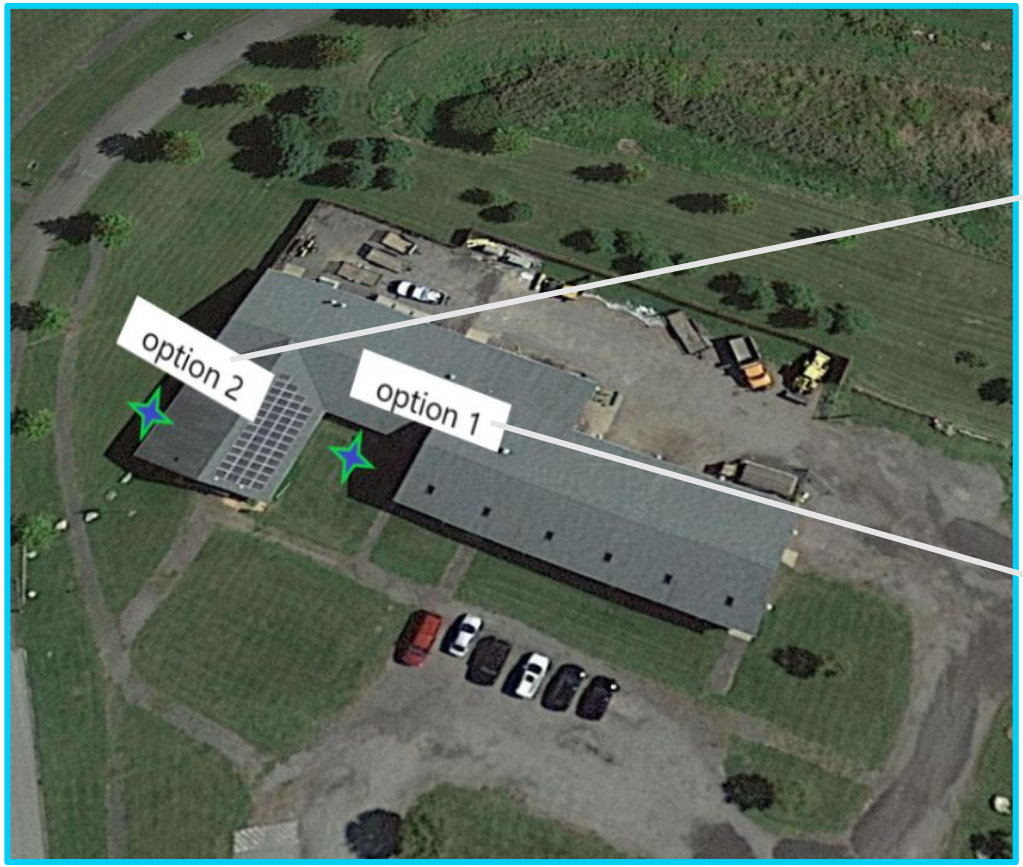
Cons:

- May not be able to disconnect one or two pipes due to tree roots in the way
- Will have to relocate picnic tables to the right of the walking path or just spread them out along the area more, to add every single swale.

About the site:

This site is all in the back of the school, where there is a lot of benches to sit around and relax at. Since it doesn't seem like too many people will see it aside from when they sit there or drive by, it can be used not only for educational purposes, but also make it easier to maintain in comparison to a rain garden because it's just grass.

Burnt Hill Park



Burnt Hill Park Impervious Cover Map

Burnt Hill Park

Option 1: Rain Garden/Grass Swale

Drainage Area	2520 SF
Annual G Treated	66359 G
N Treated	0.69 lb/yr
P Treated	0.09 lb/yr
Suggested Size	420 SF
Depth	0.6 in

Burnt Hill Park Option 2 Pros/Cons

Pros:

- Easy maintenance; mowing around the edge and weeding
- Educational opportunity; signage
- Smaller price tag
- Along the side of the building, aesthetic
- Could be placed further away from building if there is a basement

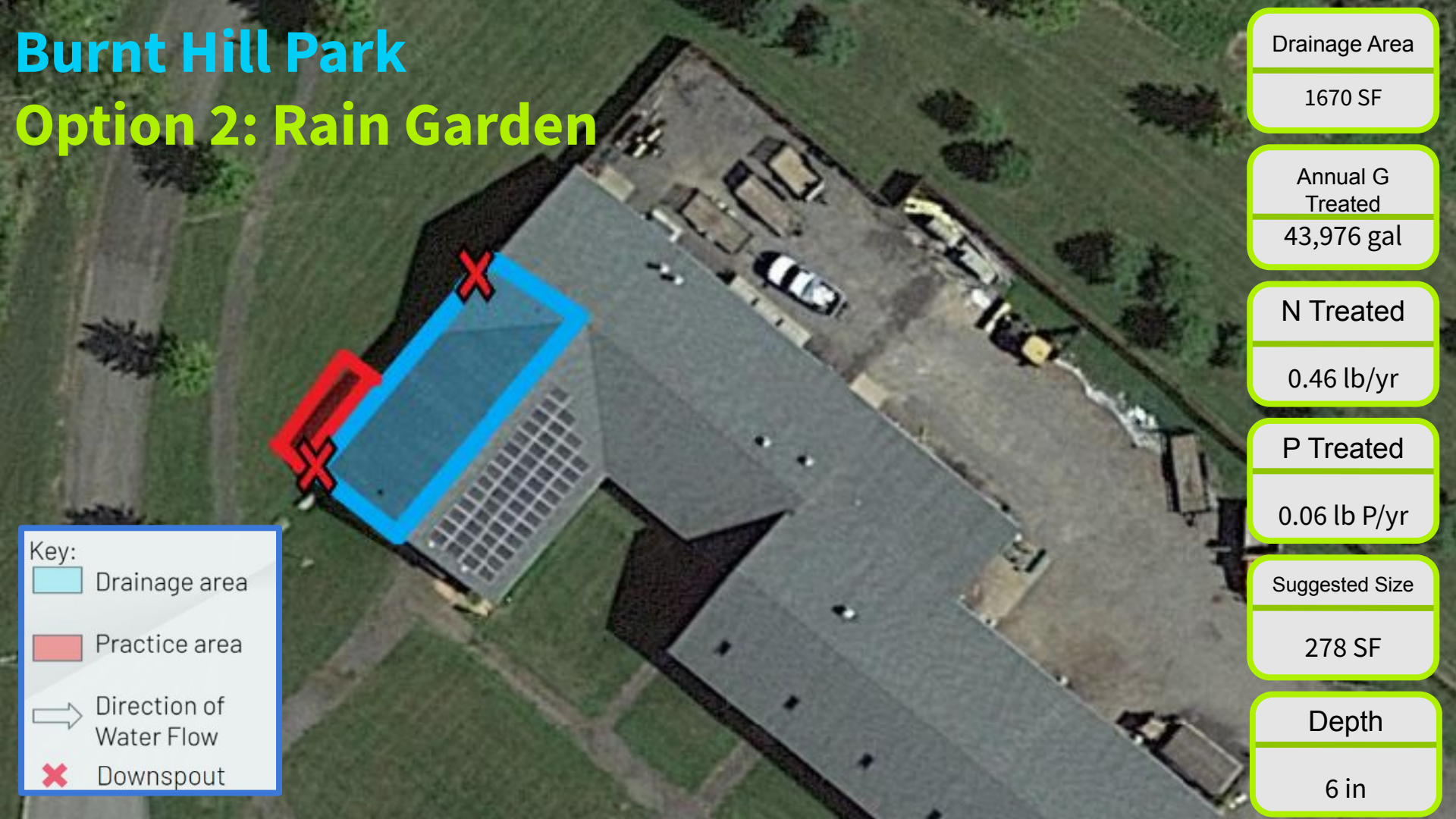
About the site:

Located along the side of the building, there is already a small garden to slow the water exiting the storm drains. It would be an easy installation, as the garden would essentially just need to be made deeper and possibly add a drain.

Cons:

- Located near door-foot traffic may cause issue
- Extra drainage/gravel may be needed because of pitching
- Smaller drainage area means less treated

Burnt Hill Park
Option 2: Rain Garden



Drainage Area	1670 SF
Annual G Treated	43,976 gal
N Treated	0.46 lb/yr
P Treated	0.06 lb P/yr
Suggested Size	278 SF
Depth	6 in

Burnt Hill Park Option 1 Pros/Cons

About the site

This location has the Parks and Recreation building on site, which is where the retrofits would be put in. There are a number of downspouts which would be disconnected, and the land is already sloping toward the area where we want to put in a small rain garden.

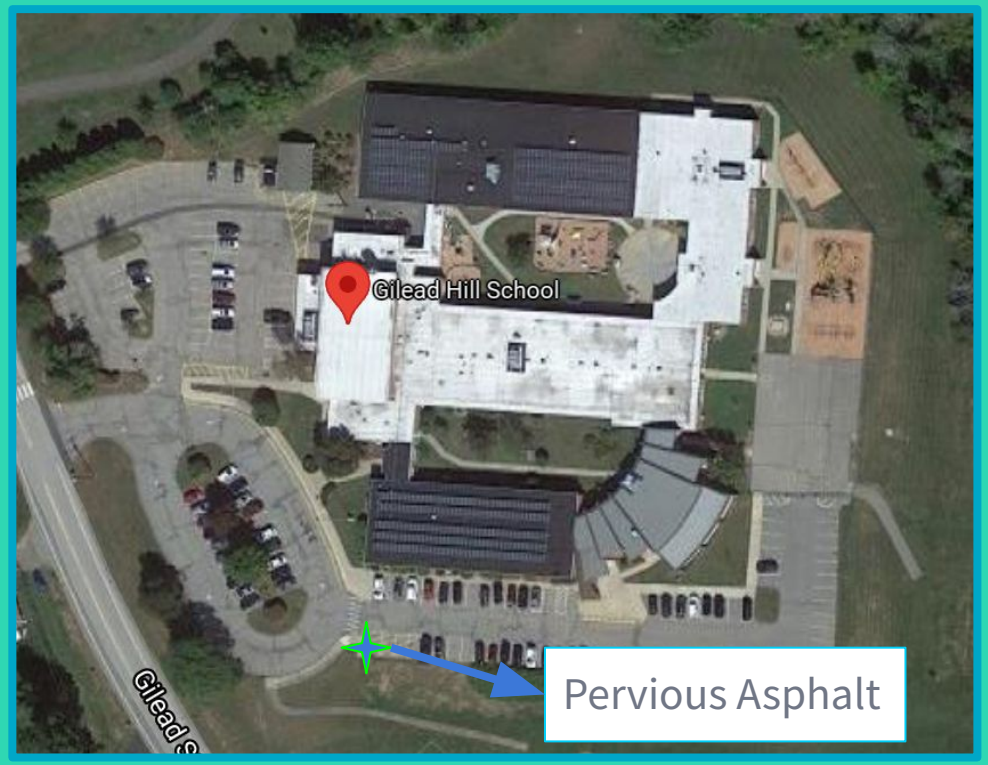
Pros

- Smaller garden means smaller price tag
- Similar to all other rain gardens; easier maintenance, educational opportunity, aesthetic appeal

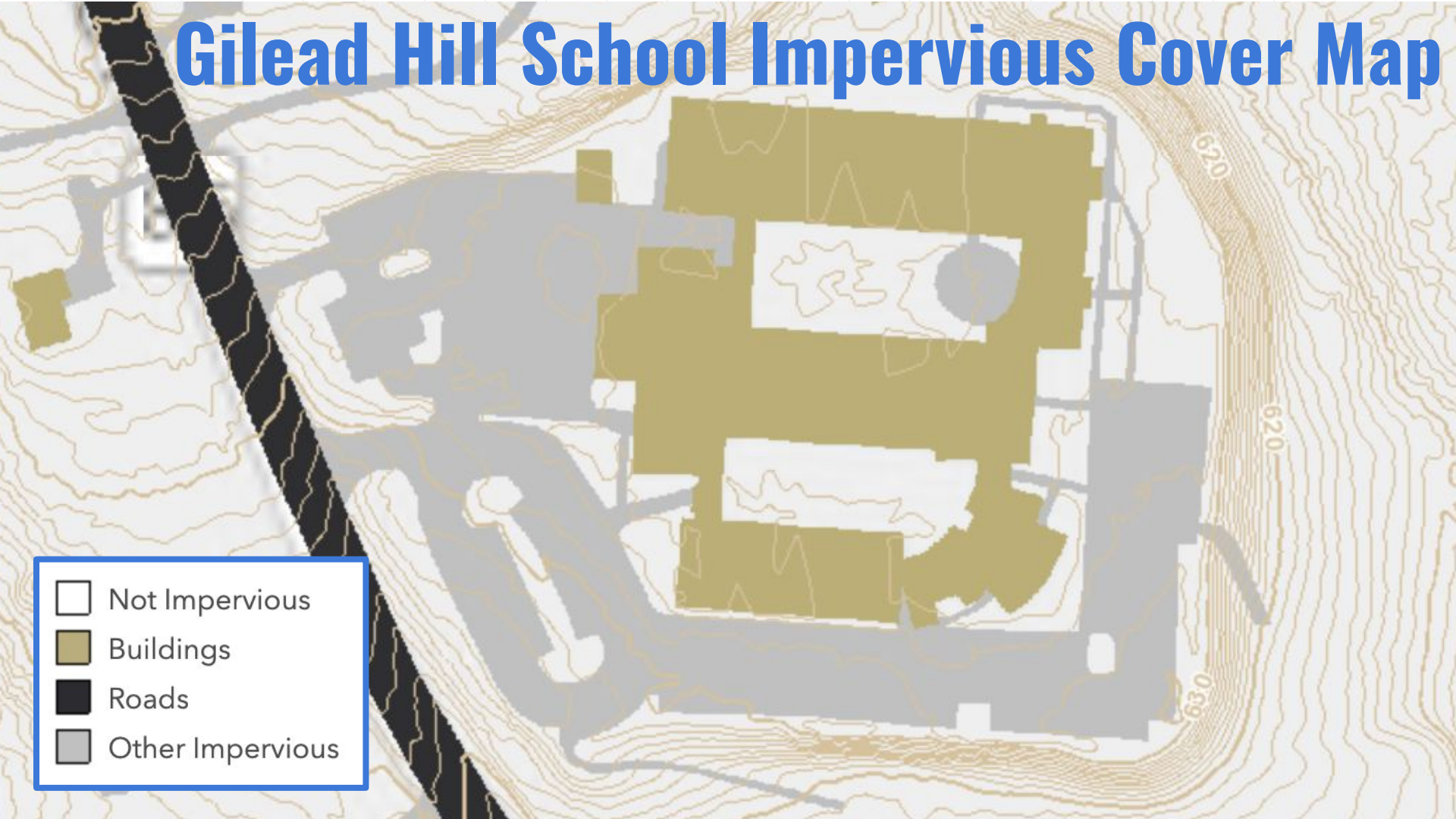
Cons

- Small
- Only a few downspouts can be disconnected
- Hard to see from a distance; not the greatest visibility

Gilead Hill School



Gilead Hill School Impervious Cover Map



Gilead Hill School | 580 Gilead St

Pervious Asphalt

Drainage Area	8,965 SF
Annual Gallons Treated	236,045 gal
Nitrogen Treated	2.46 lb N/yr
Phosphorus Treated	0.31 lb P/yr
Suggested Size	1,494 SF

Pros/Cons for Pervious Concrete at Gilead Hill School

Pros:

- Large area to disconnect
- Educational opportunity
- Good choice if planning on repaving the parking lot.

Cons:

- High installation costs.
- Maintenance can be expensive.

About the site: This site captures a good portion of the parking lot and by only doing a portion with pervious pavement it cuts down on the cost. We did not consider a rain garden here due to the proximity to the sidewalk.

Grand totals of all retrofits:

Practice Location	Practice Type	Drainage Area [sq ft]	Price Low	Price High
Hebron Elementary School (option 1)	Rain Garden	3,504	$2,336	$9,344
Hebron Elementary School (option 2)	Rain Garden	1,476	$3,392	$13,568
Hebron Town Buildings (option 1)	Rain Garden	4,221	$2,816	$11,264
Hebron Town Buildings (option 2)	Rain Garden	8,759	$5,836	$23,344
Gilead Hill School	Pervious Asphalt	8,965	$11,952	$25,398
Russell Mercier Senior Center	Pervious Asphalt	17,294	$23,020	$52,620
Veteran's Memorial Park	Pervious Asphalt	37,025	$64,190	$146,710
Rham High School (option 1)	Pervious Concrete	10,280	$21,125	$57,040
Rham High School (option 2)	Grass Swales	9,060	$7,875	$35,000
Burnt Hill Park (option 1)	Rain Garden	1,670	$1,112	$4,448
Burnt Hill Park (option 2)	Rain Garden	2,520	$10,080	$40,320
Totals:		104,774	$153,734	$419,056

*** These prices are informal estimates prepared by Joshua Snarski, University of Connecticut. They provide context for the scope of our practice recommendations.

Contact & Partners

This project was completed by students enrolled in the Stormwater Corps course at the University of Connecticut as part of the University's E-Corps Program, funded by the National Science Foundation. For more information, visit the websites and contacts below.

Stormwater Corps Contacts:
https://nemo.uconn.edu
Mike Dietz, UConn CLEAR, michael.dietz@uconn.edu, 860-486-2436
Dave Dickson, UConn CLEAR, david.dickson@uconn.edu, 860-345-5228

E-Corps Contacts:
https://ecorps.initiative.uconn.edu
Chet Arnold, UConn CLEAR, chester.arnold@uconn.edu

CLEAR
Center for Land Use Education & Research

Ooo9o

Town of Hebron, Connecticut

Town Office Building
15 Gilead Street; Hebron, Connecticut 06248
Phone: (860) 228-5971 Fax: (860) 228-5980

SPECIAL PERMIT APPLICATION

✓ New Special Permit Application; ___ Amendment to Approved Special Permit

Applicant Information:

Name: Andrew Rainone

Address: 1 Bishop Lane Madison CT 06443

Phone: 203-560-5588 Fax: _____

Email: arainone@hortongroupllc.com

Legal Interest: General Contractor

Owner Information:

Name: VE Hebron LLC

Address: PO Box 847 Colchester CT 06415

Phone: 860-377-5850 Fax: _____

Email: george@venezianocompanies.com

☐ Attached is documentation verifying ownership of the property.

Subject Parcel:

Address: 109 Main St

Size: 0.87A Zone: MS Assessor's Map and Lot # : 13-17

Is the subject parcel within 500 ft. of the Town boundary? ☐ yes ☑ no

Requested Use:

Application is made under Section 5.F of the Hebron Zoning Regulations, requesting approval of the following use: Exterior security lighting upgrades with illumination above 6 footcandles in the interest of public safety (24Hr ATM on site)

Relationship of Proposed Special Use to the Plan of Development:

Benefits of Proposed Special Use to the Town of Hebron:

A slight increase in output/distribution of light to further improve visibility at night for members of the public using 24hr ATM services, as well as the vendors who provide ATM support (cash management/ATM service).

Parties of Interest*:

Engineer/ Architect Name: GMR Protection Resources

Address: 629 Smirl Dr Ste 200 Heath, TX, 75032-7624 United States

Phone: 972-772-1322 Fax: _____

Email: ajandrup@gmr1.com

Developer/ Builder Name: Andrew Rainone- Horton Group LLC

Address: 1 Bishop Lane Madison CT 06443

Phone: 203-560-5588 Fax: _____

Email: arainone@hortongroupllc.com

*Complete information in this section as applicable.

Taxes:

Are all real estate, sewer use, and sewer assessment taxes current? ☑ yes ☐ no

☑ Attached is proof of payment. (Required)

Fees:

Town Fee* $_____ + $10 Processing Fee + $60.00 (State Fee) = $_____ (payable to the Town of Hebron)

* Town fee is established by Town ordinance.

Signatures:

Signature of Owner(s) Jorge Vergara Date: 4/18/23

Signature of Applicant(s) _____ Date: 4/18/23

Revised 7/13

TOWN OF HEBRON
Revenue Collector
15 Gilead Street
Hebron, CT 06248

Phone: 860 228-5971 Fax: 860 228-4859
Hours: Mon.-Wed.; 8:00a.m.-4:00p.m.; Thurs.; 8:00a.m.-6:00p.m.; Fri.; 8:00a.m.-1:00p.m.

Date: March 23, 2023

PROPERTY TAX CLEARANCE

Owner of Record: VE HEBRON LLC

Property Location: 109 Main Street

X Real Estate

X Sewer Use

X Sewer Assessment

The above property has been reviewed and it is determined as of the above date there are no taxes are due.

_____
Revenue Department

The Assessor's office is responsible for the maintenance of records on the ownership of properties. Assessments are computed at 70% of the estimated market value of real property at the time of the last revaluation which was 2021.

Information on the Property Records for the Municipality of Hebron was last updated on 3/23/2023.

Parcel Information

Location:	109 MAIN ST	Property Use:	Restaurant	Primary Use:	Fast Food
Unique ID:	571	Map Block Lot:	13-17	Acres:	0.8700
490 Acres:	0.00	Zone:	MS	Volume / Page:	0473/0181
Developers Map / Lot:	4/7/17	Census:	5261		

Location:	109 MAIN ST	Property Use:	Restaurant	Primary Use:	Fast Food
Unique ID:	571	Map Block Lot:	13-17	Acres:	0.8700
490 Acres:	0.00	Zone:	MS	Volume / Page:	0473/0181
Developers Map / Lot:	4/7/17	Census:	5261		

Value Information

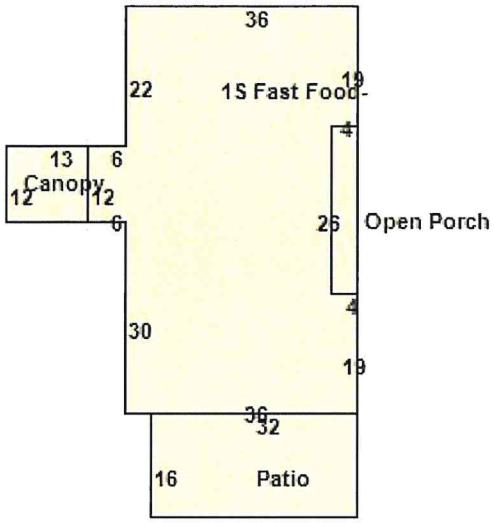
	Appraised Value	Assessed Value
Land	243,500	170,450
Buildings	299,500	209,650
Detached Outbuildings	16,200	11,340
Total	559,200	391,440

Owner's Information

Owner's Data

VE HEBRON LLC
PO BOX 847
COLCHESTER, CT 06415-0847

Building 1



Category:	Restaurant	Use:	Fast Food	GLA:	2,272
Stories:	1.00	Construction:	Masonry	Year Built:	1971
Heating:	Forced Hot Air	Fuel:	Oil	Cooling Percent:	100
Siding:	Brick/Vinyl Siding	Roof Material:	Arch Shingles	Beds/Units:	0

Special Features

Wet Sprinklers	2272

Attached Components

Type:	Year Built:	Area:
Canopy	1971	156
Patio	1971	512
Open Porch	1971	104

Detached Outbuildings

Type:	Year Built:	Length:	Width:	Area:
Asphalt Paving	1977	0.00	0.00	8,800
Light Poles	2018	0.00	0.00	4

Owner History - Sales

Owner Name	Volume	Page	Sale Date	Deed Type	Sale Price
VE HEBRON LLC	0473	0181	05/03/2011		$550,000
ON CENTER LLC	0196	0380	02/01/1999		$260,000
FLEET BANK KOLL - MSN CTOPX16A	0150	0059	02/11/1992		$0

Building Permits

Permit Number	Permit Type	Date Opened	Reason
23-62	Comm Renovations	02/13/2023	PLUMBING ASSOCIATED WITH REMODEL
23-6	Comm Renovations	01/27/2023	ELECTRICAL FOR REMODEL
22-33	Comm Renovations	12/15/2022	EXTERIOR PAINTING
22-21	Comm Renovations	10/02/2022	ELECTRICAL FOR NEW OVEN RECEPTACLES
27286	Comm Renovations	10/19/2018	SIDEWALK
26902	Electrical	02/12/2018	4 NEW LIGHT POLES
26764	Mechanical	10/18/2017	LEASED SPACE FOR WALK-UP ATM
26602	Other	06/19/2017	INSTALL ENERGY MANAGEMENT MONITORING SYSTEM
14-203B	Comm Renovations	02/26/2014	CO ISSUED 3/07/14 #14-113CA
14-40B	Comm Renovations	08/19/2013	
11-20812	Signs	12/15/2011	
10-20118	Repair	06/09/2010	
8-0573	Electrical	07/15/2008	

Permit Number	Permit Type	Date Opened	Reason
12822	Mechanical	10/01/2004	
12813	Mechanical	09/28/2004	
12529		03/30/2004	

CPY Series - Version A

CPY250® LED Canopy/Soffit Luminaire

Product Description

The CPY250® LED Canopy/Soffit Luminaire has an extremely thin profile constructed of rugged cast aluminum. It can be surface mounted easily from below the canopy deck and can be pendant mounted. Direct imaging of the LEDs is eliminated with a highly efficient patterned flat or 0.91" (23mm) drop glass lens.

Applications: Petroleum canopies, CNG fueling stations, soffits

Performance Summary

Made in the U.S.A. of U.S. and imported parts

Initial Delivered Lumens: Up to 17,470

Efficacy: Up to 125 LPW

CRI: Minimum 70 CRI

CCT: 4000K (+/- 300K), 5700K (+/- 500K) Standard

Limited Warranty†: 10 years on luminaire/10 years on Colorfast DeltaGuard® finish

IP66 Rated (Direct Mount only)

Class I, Division 2 Hazardous Location for select models

† See http://lighting.cree.com/warranty for warranty terms

Accessories

Field-Installed

Direct Mount Luminaires

Canopy Upgrade Kits (18 ga. steel)

XA-BXCCMW – for use with Jet-Philips, 21.60" (549mm) square
XA-BXCCNW – for use with Elsco Franciscan, 22.06" (560mm) square
XA-BXCCPW – for use with LSI Dakota or Masters, 22.50" (572mm) square
XA-BXCCQW – for use with Whiteway Riviera or Rig-A-Lite, 20.60" (523mm) square
XA-BXCCRW – for use with Elsco Merrit, 18.06" (459mm) square
XA-BXCCSW – for use with LSI Richmond or Whiteway Civic, 23.00" (584mm) L x 13.00" (330mm) W

Direct Mount Junction Box/Stem Kit

XA-BXCCJB0X – 6.0" (152mm) H x 3/4" (19mm) NPT Stem
- Watertight
- Rated for feed through 8 (4 in, 4 out) #12 AWC conductors

Direct Mount Beauty Plates

XA-BXCCBPW – 26.17" (665mm) Beauty Plate Only (18 ga. steel)
XA-BXCCBPB12W – 26.17" (665mm) Beauty Plate (18 ga. steel) w/12" (305mm) Backer Plate (16 ga. steel)
- For use in canopies where deck opening is larger than what is required for mounting the CPY250 luminaire. Maximum deck opening 10.75" x 15" (183mm x 375mm)

XA-BXCCBPB16W – 26.17" (665mm) Beauty Plate (18 ga. steel) w/16" (406mm) Backer Plate (16 ga. steel)
- For use in canopies where deck opening is larger than what is required for mounting the CPY250 luminaire. Maximum deck opening 12" x 15" (305mm x 375mm)

Pendant Mount Luminaires

Pendant Mount Kits

XA-PS12KIT* – 5" (127mm) pendant
XA-PS18KIT* – 11" (279mm) pendant
XA-PS22KIT* – 15" (381mm) pendant
- Includes two conduit fittings and 3/4-14 NPT pipe threaded on two ends

Hand-Held Remote

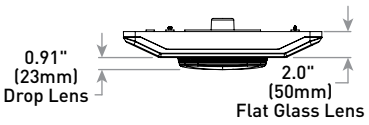
XA-SENSREM
- For successful implementation of the programmable multi-level option, a minimum of one hand-held remote is required

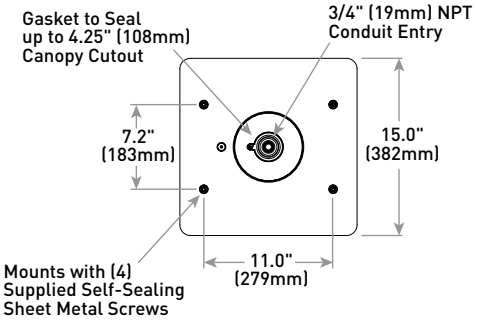
* Must specify color

DM Mount

Flat Lens

Drop Lens





Weight
12.5 lbs. (5.7kg)

Ordering Information

Example: CPY250-A-DM-D-D-UL-SV

CPY250	A						
Product	**Version**	**Mounting**	**Optic**	**Input Power Designator**	**Voltage**	**Color Options**	**Options**
CPY250	A	**DM** Direct **PD** Pendant	**D** 0.91" (23mm) Drop Lens **F** Flat Lens	**A** 82W **D** 140W	**UL** Universal 120-277V **UH** Universal 347-480V	**BK** Black **BZ** Bronze **SV** Silver **WH** White	**DIM 0-10V Dimming** - Available with D Input Power Designator only - Control by others - Refer to Dimming spec sheet for details - Can't exceed wattage of specified Input Power Designator **HZ Class I, Div. 2 Hazardous Location Certification** - Not available with DIM or PML options **PML Programmable Multi-Level** - Available with D Input Power Designator only - Available with UL voltage only - Refer to PML spec sheet for details **40K 4000K Color Temperature** - Minimum 70 CRI - Color temperature per luminaire

Product Specifications

CONSTRUCTION & MATERIALS

- Slim, low profile design
- Easy mounting and servicing from below the deck
- Luminaire housing is constructed of rugged cast aluminum with integral heat sink specifically designed for LED
- Flat lens is 0.125" tempered Solite® glass
- Drop lens is 0.157" molded borosilicate glass
- Direct mount is suitable for use in single or double skin canopies with a minimum 4.0" (102mm) wide panels and a minimum 22 gauge, 0.030" (0.7mm) canopy thickness
- Direct mount luminaire mounts directly to the canopy deck with the drilling of a single 2" to 4" (51mm to 102mm) round hole, is secured in place with self-sealing screws that provide a weathertight seal and includes 3/4" (19mm) conduit entry for direct wire feed
- Standard pendant mount includes a mounting bracket and a J-Box for customer wiring and is intended to be mounted by 3/4 IP pendant (by others)
- Hazardous location pendant mount has a threaded hub which accepts 3/4" NPT conduit (by others) and secures with a 1/4"-20 set screw
- Exclusive Colorfast DeltaGuard® finish features an E-Coat epoxy primer with an ultra-durable powder topcoat, providing excellent resistance to corrosion, ultraviolet degradation and abrasion. Black, bronze, silver and white are available
- **Weight:** 12.5 lbs. (5.7kg)

ELECTRICAL SYSTEM

- **Input Voltage:** 120-277V or 347-480V, 50/60Hz, Class 1 drivers
- **Power Factor:** > 0.9 at full load
- **Total Harmonic Distortion:** < 20% at full load
- Integral 6kV surge suppression protection standard
- To address inrush current, slow blow fuse or type C/D breaker should be used
- **10V Source Current:** 0.15mA
- **Operating Temperature Range:** Applications Requiring Class I, Division 2 Hazardous Location Ratings: -40˚C - +25˚C; A Input Power Designator:-40˚C - +40˚C (direct mount to plywood), -40˚C - +45˚C (direct mount to sheet metal/suspended); D Input Power Designators: -40˚C - +35˚C (sheet metal/suspended only)

  WARNING: Exceeding maximum operating temperature may result in thermal foldback

REGULATORY & VOLUNTARY QUALIFICATIONS

- cULus Listed
- Suitable for wet locations when ordered with DM mount
- Suitable for damp locations when ordered with PD mount
- Suitable for wet locations when ordered with PD mount and HZ option
- Enclosure rated IP66 per IEC 60529 when ordered with DM mount
- Consult factory for CE Certified products
- 6kV surge suppression protection tested in accordance with IEEE/ANSI C62.41.2
- Meets FCC Part 15, Subpart B, Class A standards for conducted and radiated emissions
- DLC and DLC Premium qualified versions available. Please refer to https://www.designlights.org/search/ for most current information
- Luminaire and finish endurance tested to withstand 5,000 hours of elevated ambient salt fog conditions as defined in ASTM Standard B 117
- Meets Buy American requirements within ARRA
- RoHS compliant. Consult factory for additional details
- Class I, Division 2 Hazardous Location rated when ordered with the HZ option. Not available with DIM or PML options. Consult factory for additional details
- **CA RESIDENTS WARNING:** Cancer and Reproductive Harm – www.p65warnings.ca.gov

Electrical Data*

Input Power Designator	System Watts 120-277V	System Watts 347-480V	Total Current (A)					
			120V	208V	240V	277V	347V	480V
A	82	84	0.69	0.40	0.35	0.32	0.24	0.18
D	140	145	1.24	0.71	0.62	0.54	0.44	0.29

* Electrical data at 25˚C (77˚F). Actual wattage may differ by +/- 10% when operating between 120-480V +/- 10%

Recommended CPY Series - Version A Lumen Maintenance Factors (LMF)[1]

Ambient	Input Power Designator	Initial LMF	25K hr Projected[2] LMF	50K hr Projected[2] LMF	75K hr Projected[2] LMF	100K hr Projected[2] LMF
5˚C (41˚F)	A	1.05	1.00	0.93	0.87	0.81
	D	1.05	0.98	0.90	0.83	0.76
10˚C (50˚F)	A	1.04	0.99	0.92	0.86	0.80
	D	1.04	0.98	0.89	0.82	0.75
15˚C (59˚F)	A	1.02	0.97	0.91	0.84	0.79
	D	1.02	0.96	0.88	0.80	0.74
20˚C (68˚F)	A	1.01	0.96	0.90	0.84	0.78
	D	1.01	0.95	0.87	0.80	0.73
25˚C (77˚F)	A	1.00	0.95	0.89	0.83	0.77
	D	1.00	0.94	0.86	0.79	0.72
30˚C (86˚F)	A	0.99	0.94	0.88	0.82	0.76
	D	0.99	0.93	0.85	0.78	0.72

[1] Lumen maintenance values at 25˚C (77˚F) are calculated per TM-21 based on LM-80 data and in-situ luminaire testing on sheet metal

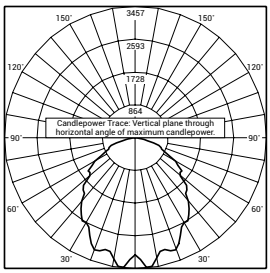
[2] In accordance with IESNA TM-21-11, Projected Values represent interpolated value based on time durations that are within six times (6X) the IESNA LM-80-08 total test duration (in hours) for the device under testing ([DUT] i.e. the packaged LED chip)

[3] In accordance with IESNA TM-21-11, Calculated Values represent time durations that exceed six times (6X) the IESNA LM-80-08 total test duration (in hours) for the device under testing ([DUT] i.e. the packaged LED chip)

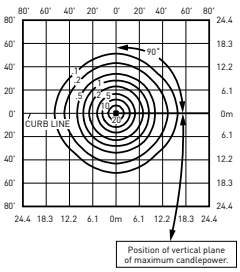
Photometry

All published luminaire photometric testing performed to IESNA LM-79-08 standards by a NVLAP accredited laboratory. To obtain an IES file specific to your project consult: http://lighting.cree.com/products/outdoor/canopy-and-soffit/cpy-series

DROP LENS



CESTL Test Report #: 2013-0111
CPY250-A-**-D-A-UL
Initial Delivered Lumens: 8,356



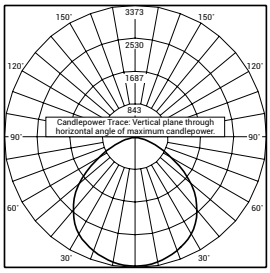
CPY250-A-**-D-D-UL
Mounting Height: 15' (4.6m)
Initial Delivered Lumens: 17,059
Initial FC at grade

Drop Lens Distribution

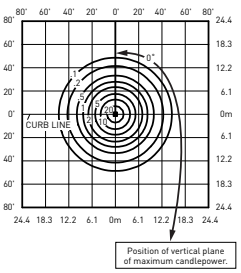
Input Power Designator	4000K		5700K	
	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11
A	7,600	B3 U2 G1	8,000	B3 U2 G1
D	16,403	B4 U3 G2	17,059	B4 U3 G2

* Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -10 and +10% of initial delivered lumens
** For more information on the IES BUG (Backlight-Uplight-Glare) Rating visit: https://www.ies.org/wp-content/uploads/2017/03/TM-15-11BUGRatingsAddendum.pdf

FLAT LENS



ITL Test Report #: 76866
CPY250-A-**-F-A-UL
Initial Delivered Lumens: 8,821



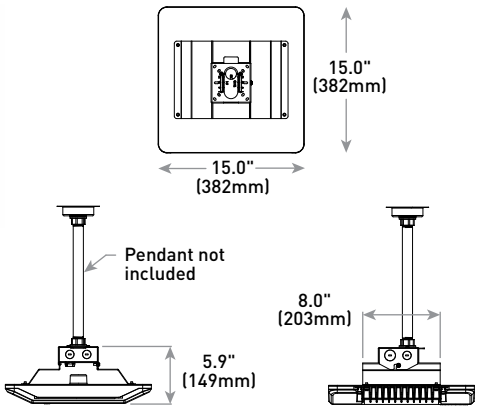
CPY250-A-**-F-D-UL
Mounting Height: 15' (4.6m)
Initial Delivered Lumens: 17,470
Initial FC at grade

Flat Lens Distribution

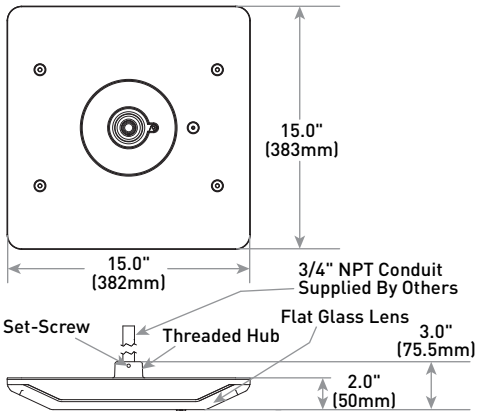
Input Power Designator	4000K		5700K	
	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11
A	7,600	B3 U0 G1	8,000	B3 U0 G1
D	16,798	B4 U0 G1	17,470	B4 U0 G1

* Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -10 and +10% of initial delivered lumens
** For more information on the IES BUG (Backlight-Uplight-Glare) Rating visit: https://www.ies.org/wp-content/uploads/2017/03/TM-15-11BUGRatingsAddendum.pdf

PD Mount



PD Mount w/HZ Option



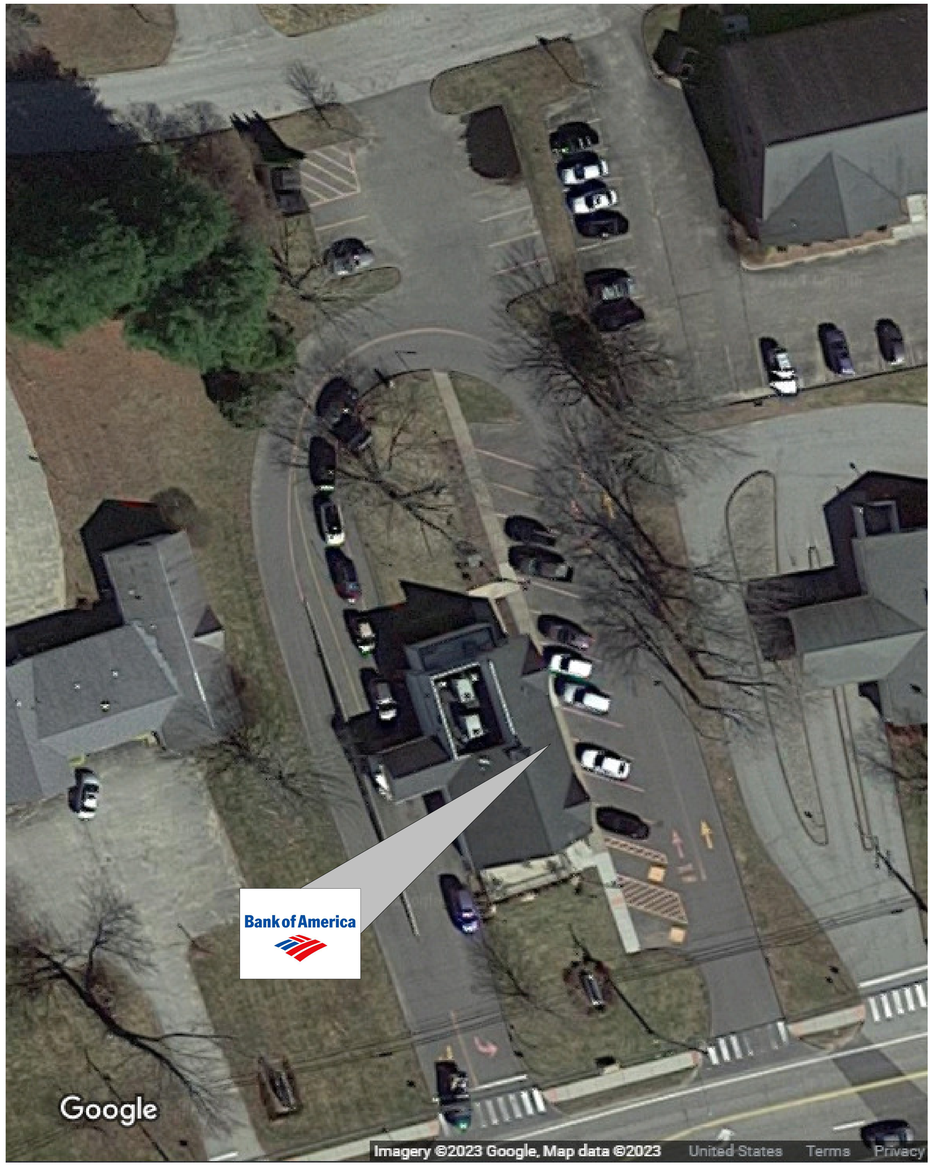
US: lighting.cree.com T (800) 236-6800 F (262) 504-5415
Canada: www.cree.com/canada T (800) 473-1234 F (800) 890-7507

Bank of America

EXTERIOR LIGHTING PROGRAM

CTW-003
109 Main St (Rte 66)
Hebron, CT 06248

DRAWING INDEX:



VICINITY MAP

v1 230213

SCOPE OF WORK	
COUNT	NOTES
17	REPLACE EXISTING FIXTURE
10	OUT OF SCOPE

Office: (972) 771-6038
1629 Smirl Drive, Suite 200, Heath, Texas 75032
www.gmr1.com

CONTRACTOR RESPONSIBILITY NOTES:

1. CONTRACTOR SHALL BE RESPONSIBLE FOR PERMITTING, INCLUDING COORDINATION WITH THE LOCAL JURISDICTION AND ANY ASSOCIATED PERMIT FEES OR PROCESSING. CONTRACTOR SHALL NOTIFY GMR UPON RECEIPT OF PERMIT.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PERMITTING DOCUMENTS THAT ARE NOT INCLUDED IN THE LIGHTING DESIGN PACKAGE. THESE INCLUDE, BUT ARE NOT LIMITED TO, STAMPED ELECTRICAL DRAWINGS, STAMPED POLE BASE DRAWINGS, AND PROFESSIONAL SURVEYS.
3. SHOULD STAMPED PHOTOMETRIC DRAWINGS BE REQUIRED, CONTRACTOR SHALL ENGAGE LOCAL ENGINEER OR LIGHTING DESIGNER AS REQUIRED TO PROVIDE STAMP ON GMR PHOTOMETRIC DESIGN DOCUMENTS.
4. CONTRACTOR SHALL PROVIDE THE BANKING CENTER NOTIFICATION AT LEAST ONE WEEK IN ADVANCE OF VISITING SITES OR STARTING WORK.
5. CONTRACTOR SHALL VERIFY VOLTAGE REQUIREMENTS FOR FIXTURES PRIOR TO PLACEMENT OF FIXTURE ORDERS.
6. CONTRACTOR TO VERIFY LIGHTING CONTROLS PRIOR TO BEGINNING CONSTRUCTION. SEE LIGHTING CONTROL NOTES.
7. CONTRACTOR SHALL RECEIVE FORMAL APPROVAL FROM GMR ON ANY FIXTURE MODIFICATIONS OR VARIATIONS FROM THE LUMINAIRE SCHEDULE.
8. CONTRACTOR SHALL VERIFY EXISTING AND PROPOSED FIXTURE MOUNTING CONDITIONS IN FIELD. ANY SPECIAL MOUNTING HARDWARE NEEDED FOR PROPOSED FIXTURES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
9. CONTRACTOR SHALL SUPPLY ALL NEW LIGHT POLES. NEW LIGHT POLES SHALL MATCH EXISTING CONDITIONS ON SITE FOR POLE TYPE AND PAINT COLOR.
10. CONTRACTOR SHALL ORDER ALL FIXTURES FROM BORDER STATES IN ACCORDANCE WITH BANK OF AMERICA NATIONAL ACCOUNT. CONTACT NATIONAL ACCOUNT QUOTES DEPARTMENT AT BOA@BORDERSTATES.COM OR 704-372-3040.
11. CONTRACTOR SHALL PERFORM ALL NECESSARY PATCHING OR REPAINTING FOR ADDED, REMOVED, OR REPLACED FIXTURES.
12. CONTRACTOR SHALL REPAIR ANY DISTURBED AREAS BACK TO EXISTING CONDITION INCLUDING PAVED AREAS, LANDSCAPED AREAS, ETC.
13. CONTRACTOR SHALL VERIFY AND DOCUMENT COMPLETED WORK DURING NIGHT HOURS. ALL FIXTURES MUST BE FUNCTIONAL DURING NIGHT HOURS PRIOR TO SCHEDULING A FINAL SURVEY WITH GMR.
14. CONTRACTOR SHALL PROVIDE BEFORE AND AFTER NIGHT TIME PHOTOS OF THE SITE.
15. CONTRACTOR SHALL UTILIZE THE “BOA ELP INCENTIVE SITE SURVEY FORM” TO DOCUMENT THE EXACT DETAILS OF EACH FIXTURE BEING REMOVED FOR REBATE AND ENERGY SAVINGS CALCULATION PURPOSES.
16. CONTRACTOR SHALL RECEIVE A PUNCHLIST FROM GMR UPON FINAL SURVEY FOR ANY REMAINING ITEMS TO BE COMPLETED.

CONTROLS & ADDITIONAL NOTES:

LIGHTING CONTROL NOTES:

THE CONTRACTOR SHALL VERIFY THE CONTROLS FOR ALL EXTERIOR LIGHTING AND ATM/AHD INTERIOR LOBBIES ON THE SITE (EXCLUDING SIGNAGE) AND ADJUST ACCORDING TO THE FOLLOWING:

- IC3 CONTROL:

  CONTRACTOR SHALL VERIFY THAT EXTERIOR LIGHTING CIRCUITS ARE CONTROLLED BY THE CORRECT IC3 CIRCUIT. WHERE EXTERIOR LIGHTING IS INCLUDED ON CONTROL CIRCUITS FOR INTERIOR SYSTEMS, INTERIOR LIGHTING, OR EXTERIOR SIGNAGE, CONTRACTOR SHALL ADJUST EXTERIOR LIGHTING TO THE CORRECT CONTROL CIRCUIT AS REQUIRED.

- PHOTOCELL CONTROL:

  CONTRACTOR SHALL REPLACE EXISTING PHOTOCELLS WITH NEW AND INSTALL IN A LOCATION BEST SUITED TO PROVIDE APPROPRIATE LIGHT EXPOSURE SUCH THAT EXTERIOR LIGHTS ARE ON DURING DARKNESS.

- TIME CLOCK CONTROL:

  CONTRACTOR SHALL VERIFY LOCATION OF TIME CLOCK. IF TIME CLOCK IS IN ELECTRICAL ROOM ALONG WITH IC3 CONTROLS, CONTRACTOR SHALL ADJUST CIRCUIT TO BE CONTROLLED BY IC3 EXTERIOR LIGHTING CONTROLS. IF TIME CLOCK IS IN A REMOTE LOCATION NOT IN CLOSE PROXIMITY TO THE IC3 CONTROLS, CONTRACTOR SHALL VERIFY TIME CLOCK IS SET PROPERLY AND LEAVE CIRCUIT ON TIME CLOCK CONTROL.

- MANUAL CONTROL:

  CONTRACTOR SHALL VERIFY THAT NO EXTERIOR LIGHTING IS CONTROLLED MANUALLY. IF ANY EXTERIOR LIGHTING IS ON A MANUALLY CONTROLLED CIRCUIT, CONTRACTOR SHALL ADJUST TO BE CONTROLLED BY PHOTOCELL OR IC3, WHICHEVER IS MOST ECONOMICALLY ACCOMPLISHED.

ADDITIONAL CONTRACTOR NOTES:

CONSTRUCTION COMPLETION VERIFICATION

UPON COMPLETION OF THE WORK, THE CONTRACTOR SHALL PROVIDE VERIFICATION IN WRITING TO THE BANK OF AMERICA PJM THAT ALL WORK IS COMPLETE ACCORDING TO THE CONSTRUCTION DOCUMENTS, AND THAT ALL EXTERIOR LIGHTING IS FUNCTIONING DURING NIGHTTIME HOURS. COMPLETION PHOTOS, TAKEN AT NIGHT, SHALL BE PROVIDED IN THE FOLLOWING FORMAT:

PROVIDE A SINGLE DOCUMENT CONTAINING THE FOLLOWING:
- SITE PHOTOS FROM ALL SIDES OF BUILDING
- MINIMUM OF 3 PHOTOS OF EACH COMPLIANCE AREA (ATM(S), AFTER-HOUR DEPOSITORIES, ASSOCIATE ENTRY) FROM DIFFERENT ANGLES
- MINIMUM OF 2 PHOTOS OF ALL NON-COMPLIANCE AREAS FROM DIFFERENT ANGLES

FIXTURE CLARIFICATION NOTES:

1. OUT OF SCOPE - EXISTING FIXTURES TO REMAIN ON SITE WITHOUT MODIFICATION. NO ACTION REQUIRED UNLESS NOTED OTHERWISE.
2. REMOVE AND PATCH - EXISTING FIXTURES TO BE FULLY REMOVED AND ANY PAINTING, PATCHING OR ELECTRICAL WORK NEEDED IS TO BE ASSESSED AND PERFORMED BY CONTRACTOR.
3. REPLACE EXISTING FIXTURE - EXISTING FIXTURE TO BE FULLY REMOVED AND REPLACED IN THE SAME LOCATION WITH A NEW FIXTURE. CONTRACTOR TO VERIFY IF POLE AND/OR POLE BASE IS SUFFICIENT FOR THE NEW FIXTURES. ANY PAINTING, PATCHING OR ELECTRICAL WORK NEEDED IS TO BE ASSESSED AND PERFORMED BY CONTRACTOR.
4. ADD NEW FIXTURE - NEW FIXTURES TO BE ADDED. ANY PAINTING, PATCHING OR ELECTRICAL WORK NEEDED TO BE ASSESSED AND PERFORMED BY CONTRACTOR.
5. ADD NEW POLE & FIXTURE - A NEW POLE AND FIXTURE TO BE ADDED. CONTRACTOR TO SPECIFY POLE TO MATCH EXISTING STYLE AND COLOR AND, IF NOT PROVIDED, POLE BASE DATA FOR NEW POLE LOCATIONS. CONTRACTOR TO VERIFY IF POLE AND POLE BASE IS SUFFICIENT FOR THE HEIGHT, LOCATION AND FIXTURE SPECIFIED.
6. GMR DOES NOT SPECIFY MOUNTING HARDWARE FOR ANY SPECIFIED FIXTURES. CONTRACTOR IS TO WORK WITH DISTRIBUTOR AND/OR MANUFACTURER ON A CASE BY CASE BASIS TO IDENTIFY AND ORDER REQUIRED MOUNTING HARDWARE.
7. CONTRACTOR TO VERIFY WHETHER EXISTING WIRING LOCATIONS OR THE ADDITION OF WIRING FOR NEW FIXTURE LOCATIONS IS SUFFICIENT FOR THE DESIGNATED FIXTURE LOCATION.
8. CONTRACTOR TO SPECIFY POLE COLOR AND TYPE PRIOR TO ORDERING.
9. ALL FIXTURES ARE ASSUMED BRONZE IN COLOR UNLESS NOTED OTHERWISE IN THE LUMINAIRE SCHEDULE. CONTRACTOR TO CONFIRM PRIOR TO ORDERING.

GENERAL NOTES:

1. EXISTING CONDITIONS SHOWN ON THE DRAWINGS ARE BASED ON A LIMITED AMOUNT OF INFORMATION AVAILABLE TO THE ENGINEER. ALL SUCH CONDITIONS SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO SUBMITTING THE BID AND ADJUSTED IF NECESSARY. NO ADDITIONAL COMPENSATION SHALL BE GRANTED AFTER AWARDING A BID FOR ANY EQUIPMENT, MATERIAL OR LABOR REQUIRED TO REWORK OR OTHERWISE MODIFY EXISTING CONDITIONS.
2. THIS LIGHTING DESIGN IS BASED ON A COMBINATION OF STATE STANDARDS, THE BANK'S CURRENT SECURITY POLICY FOR EXTERIOR ATM AND AFTER-HOUR DEPOSITORIES AND BANK GUIDELINES FOR NON-SECURITY COMPLIANCE ZONES.
3. TRIM ALL TREES/LANDSCAPING TO MINIMIZE IMPEDING LIGHT FROM ANY LIGHT FIXTURES THAT IMPACT THE 60' RADIUS AROUND ALL ATMS AND A RADIUS OF 50' AROUND ALL AFTER-HOUR DEPOSITORIES. CONSIDERATION MUST BE GIVEN TO TREES/LANDSCAPING IN A STATE OF FULL FOLIAGE/BLOOM AND FUTURE GROWTH. ALL LANDSCAPING WORK WILL BE PERFORMED BY OTHERS WITH A SEPARATE PERMIT (IF REQUIRED).
4. ALL MOUNTING HEIGHTS ARE INTENDED TO THE BOTTOM OF THE FIXTURE.
5. CONTRACTOR TO FIELD VERIFY FIXTURE PLACEMENT DIMENSIONS PRIOR TO CONSTRUCTION.
6. DIMENSIONING PROVIDED IS FOR PROPOSED FIXTURE LOCATIONS ONLY, UNLESS OTHERWISE NOTED ON THE DRAWING.
7. THE CONTRACTOR SHALL ATTEMPT TO ELIMINATE THE USE OF EXPOSED CONDUIT WHERE POSSIBLE. IF EXPOSED CONDUIT IS NECESSARY, THE CONTRACTOR SHALL VERIFY USE WITH PROJECT MANAGER.
8. ALL EXISTING LIGHTS WILL BE REPLACED WITH LED LIGHTS AND ALL PROPOSED LIGHTS WILL ALSO BE LED, UNLESS OTHERWISE NOTED.
9. ALL FIXTURES ARE TO BE MOUNTED ABOVE FINISH GRADE. UNLESS OTHERWISE NOTED, MATCH EXISTING POLE BASES.

SITE ABBREVIATIONS:

PL = PROPERTY LINE
AFG = ABOVE FINISHED GRADE
FC = FOOTCANDLE
CBO = CONTROLLED BY OTHERS
AHD = AFTER HOUR DEPOSITORY

THIS LIGHTING PLAN ILLUSTRATES ILLUMINATE LEVELS CALCULATED FROM LABORATORY DATA UNDER CONTROLLED CONDITIONS IN ACCORDANCE WITH ILLUMINATING ENGINEERING SOCIETY OF NORTH AMERICAN (IESNA) APPROVED METHODS. ACTUAL SITE ILLUMINATION LEVELS AND PERFORMANCE OF LUMINAIRES MAY VARY DUE TO VARIATIONS IN WEATHER, ELECTRICAL VOLTAGE, TOLERANCE IN LAMPS AND OTHER RELATED VARIABLE FIELD CONDITIONS.

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REVISION NO.	DESCRIPTION	REVISED BY
1		
2		
3		KRM

Hebron Dunkin Donuts
CTW-003
109 Main St (Rte 66)
Hebron, CT 06248

GENERAL NOTES

DESIGNED BY:	DRAWN BY:
JDH	JDH
REVIEWED BY:	APPROVED BY:
AWD	KRM

SHEET NO.
LU-1

SEE FIXTURE CLARIFICATION NOTE #9

LUMINAIRE SCHEDULE

CONTRACTOR TO VERIFY MOUNTING ACCESSORIES BEFORE ORDERING

SYMBOL	TOTAL FIXTURE COUNT	TYPE	NEW POLE COUNT	MANUFACTURER	MODEL	MODEL NUMBER	NOTES	MOUNTING HEIGHT	MOUNTING ACCESSORY	BUG RATING	MOUNTING	KILOWATT PER HOUR	TOTAL WATTAGE
	11	UBA1	-	CREE	CPY	CPY250-C-2L-30K8-F-UL-DM-BZ	REPLACE EXISTING FIXTURE	MATCH EXISTING CANOPY HEIGHT	-	B1-U0-G0	SURFACE CANOPY MOUNT	0.014	154 W
	4	UGX1	-	CREE	OSQ	OSQ-M-B-16L-30K7-5N-UL-NM-BZ	REPLACE EXISTING FIXTURE	MATCH EXISTING	OSQ-ML-B-DA-BZ	B4-U0-G3	POLE MOUNT	0.104	416 W
	2	UHL1	-	CREE	OSQ	OSQ-L-B-22L-30K7-4M-UL-NM-BZ	REPLACE EXISTING FIXTURE	MATCH EXISTING	OSQ-ML-B-DA-BZ, OSQ-BLSLF	B2-U0-G3	POLE MOUNT	0.132	264 W
	5	YI1	-	-	-	-	OUT OF SCOPE	-	-	-	POLE MOUNT	0	0 W
	5	YK1	-	-	-	-	OUT OF SCOPE	-	-	-	WALL MOUNT	0	0 W
GRAND TOTAL WATTAGE													834 W

THIS LIGHTING PLAN ILLUSTRATES ILLUMINATE LEVELS CALCULATED FROM LABORATORY DATA UNDER CONTROLLED CONDITIONS IN ACCORDANCE WITH ILLUMINATING ENGINEERING SOCIETY OF NORTH AMERICAN (IESNA) APPROVED METHODS. ACTUAL SITE ILLUMINATION LEVELS AND PERFORMANCE OF LUMINAIRES MAY VARY DUE TO VARIATIONS IN WEATHER, ELECTRICAL VOLTAGE, TOLERANCE IN LAMPS AND OTHER RELATED VARIABLE FIELD CONDITIONS.

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Hebron, CT 06248

LUMINAIRE SCHEDULE

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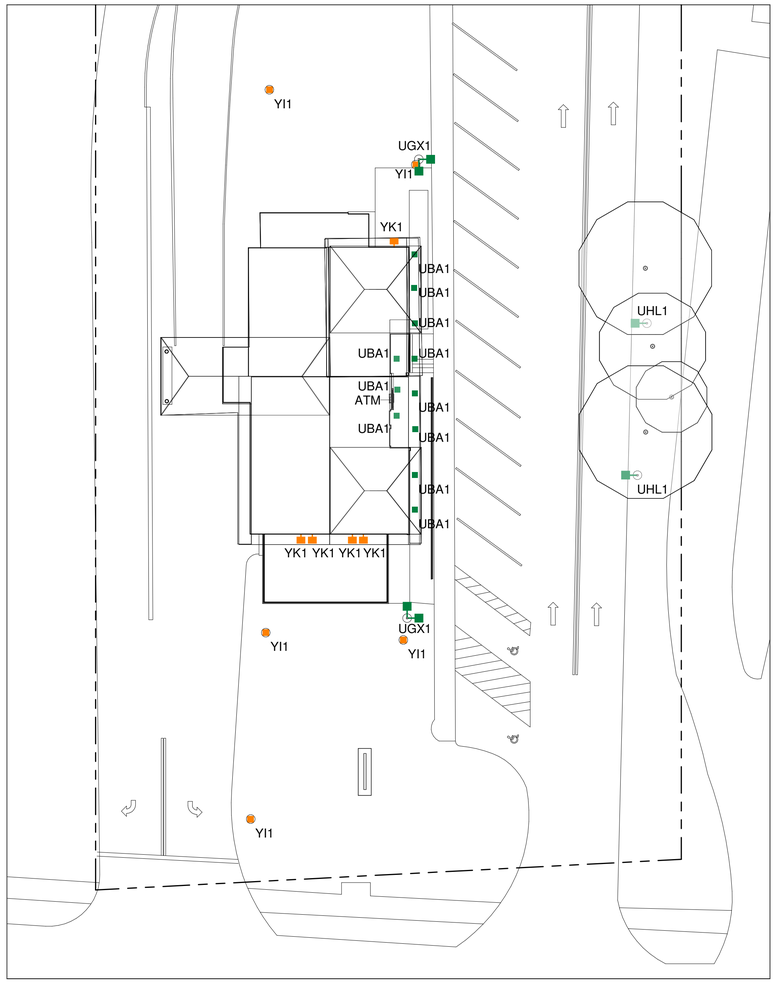
REVIEWED BY:	APPROVED BY:
AWD	KRM

SHEET NO.

LU-2

TOTAL FIXTURE COUNT	TYPE	NOTES	MOUNTING HEIGHT
11	UBA1	REPLACE EXISTING FIXTURE	MATCH EXISTING CANOPY HEIGHT
4	UGX1	REPLACE EXISTING FIXTURE	MATCH EXISTING
2	UHL1	REPLACE EXISTING FIXTURE	MATCH EXISTING
5	YI1	OUT OF SCOPE	-
5	YK1	OUT OF SCOPE	-



1 OVERALL SITE PLAN
1/16" = 1'-0"

BLUE = NEW FIXTURE
GREEN = EXISTING FIXTURE LOCATION TO BE REPLACED
ORANGE = EXISTING FIXTURE TO REMAIN
TURQUOISE = FIXTURE TO BE REMOVED
PINK = REPLACE WITH NEW POLE AT NEW HEIGHT
= PROPERTY LINE BASED ON COUNTY APPRAISAL INFORMATION
= INDICATES NEW SECURITY FENCE
= BURIED ELECTRICAL CIRCUIT

SITE NOTES:	EXISTING CONDITIONS:
1. LIGHTING IS REQUIRED FOR COMPLIANCE AND WILL REQUIRE LANDLORD APPROVAL PRIOR TO INSTALLATION. BANK MUST HAVE LANDLORD AGREE TO LEAVE FIXTURES ON ALL HOURS OF DARKNESS.	1. EXISTING POLES - SQUARE - STEEL 2. EXISTING POLE BASES - 10" 3. EXISTING DRIVE THRU CEILING - N/A

THIS LIGHTING PLAN ILLUSTRATES ILLUMINATE LEVELS CALCULATED FROM LABORATORY DATA UNDER CONTROLLED CONDITIONS IN ACCORDANCE WITH ILLUMINATING ENGINEERING SOCIETY OF NORTH AMERICAN (IESNA) APPROVED METHODS. ACTUAL SITE ILLUMINATION LEVELS AND PERFORMANCE OF LUMINAIRES MAY VARY DUE TO VARIATIONS IN WEATHER, ELECTRICAL VOLTAGE, TOLERANCE IN LAMPS AND OTHER RELATED VARIABLE FIELD CONDITIONS.

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Hebron, CT 06248

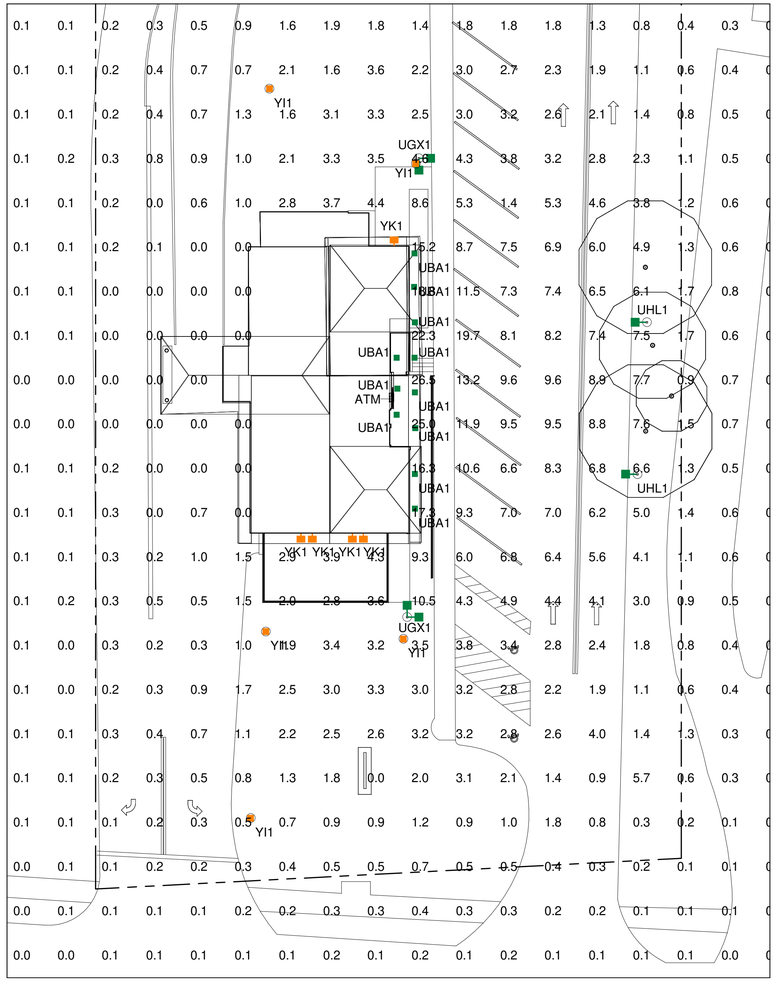
OVERALL SITE PLAN

DESIGNED BY:	DRAWN BY:
JDH	JDH
REVIEWED BY:	APPROVED BY:
AWD	KRM

SHEET NO.
LU-3

NOTES:

1. THE SCOPE OF WORK FOR THIS PROJECT IS LIMITED TO EXTERIOR LIGHTING RENOVATIONS AS SHOWN ON THE PLANS.
2. ALL PROPOSED LIGHTS WILL BE FULL CUTOFF LED LIGHT FIXTURES.
3. ALL EXISTING LIGHTS WILL BE REPLACED WITH FULL CUT OFF LED LIGHT FIXTURES.
4. REFERENCE THE LUMINAIRE SCHEDULE (SHEET LU-2) FOR ADDITIONAL LIGHT FIXTURE INFORMATION.



1 FULL SITE PHOTOMETRICS PLAN
1/16" = 1'-0"

CALCULATION SUMMARY FULL SITE					
Calculation Points Name	Average	Maximum	Minimum	Ave/Min	Max/Min
FULL SITE @ GRADE	2.2 fc	26.5 fc	0.0 fc	0.0	0.0

THIS LIGHTING PLAN ILLUSTRATES ILLUMINATE LEVELS CALCULATED FROM LABORATORY DATA UNDER CONTROLLED CONDITIONS IN ACCORDANCE WITH ILLUMINATING ENGINEERING SOCIETY OF NORTH AMERICAN (IESNA) APPROVED METHODS. ACTUAL SITE ILLUMINATION LEVELS AND PERFORMANCE OF LUMINAIRES MAY VARY DUE TO VARIATIONS IN WEATHER, ELECTRICAL VOLTAGE, TOLERANCE IN LAMPS AND OTHER RELATED VARIABLE FIELD CONDITIONS.

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BLUE = NEW FIXTURE
GREEN = EXISTING FIXTURE LOCATION TO BE REPLACED
ORANGE = EXISTING FIXTURE TO REMAIN
TURQUOISE = FIXTURE TO BE REMOVED
PINK = REPLACE WITH NEW POLE AT NEW HEIGHT
= PROPERTY LINE BASED ON COUNTY APPRAISAL INFORMATION
= INDICATES NEW SECURITY FENCE
= BURIED ELECTRICAL CIRCUIT

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FULL SITE PHOTOMETRICS PLAN

DESIGNED BY:	DRAWN BY:
JDH	JDH
REVIEWED BY:	APPROVED BY:
AWD	KRM

SHEET NO.
LU-4

SHEET INTENTIONALLY LEFT BLANK

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FIXTURE REMOVAL PLAN

DESIGNED BY:	DRAWN BY:
JDH	JDH
REVIEWED BY:	APPROVED BY:
AWD	KRM

SHEET NO.

LU-5

SHEET INTENTIONALLY LEFT BLANK

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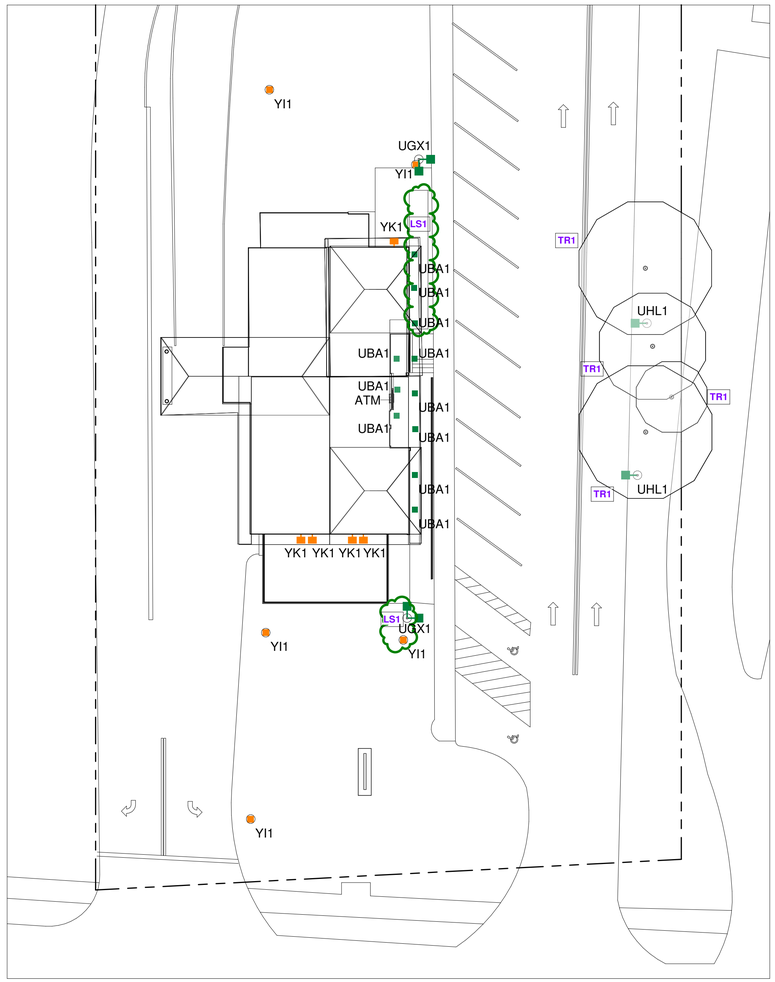
DIMENSIONING PLAN

DESIGNED BY: JDH	DRAWN BY: JDH
REVIEWED BY: AWD	APPROVED BY: KRM

SHEET NO.
LU-6



1 LANDSCAPING PLAN
1/16" = 1'-0"

Main St

BLUE = NEW FIXTURE
GREEN = EXISTING FIXTURE LOCATION TO BE REPLACED
ORANGE = EXISTING FIXTURE TO REMAIN
TURQUOISE = FIXTURE TO BE REMOVED
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= BURIED ELECTRICAL CIRCUIT

LANDSCAPING SCHEDULE

SYMBOL	QTY	NOTE
LS1	2	TRIM LANDSCAPING DOWN TO 36"
TR1	4	TRIM TREE UP TO 20' AND THIN OUT TREE CANOPY AND AWAY FROM LIGHT FIXTURE TO ENSURE THAT IT DOES NOT INTERFERE WITH INTENDED ILLUMINATION

GC TO VERIFY WITH LOCAL AUTHORITY HAVING JURISDICTION ON TREE TRIMMING AND/OR REMOVAL PRIOR TO COMMENCING WORK

THIS LIGHTING PLAN ILLUSTRATES ILLUMINATE LEVELS CALCULATED FROM LABORATORY DATA UNDER CONTROLLED CONDITIONS IN ACCORDANCE WITH ILLUMINATING ENGINEERING SOCIETY OF NORTH AMERICAN (IESNA) APPROVED METHODS. ACTUAL SITE ILLUMINATION LEVELS AND PERFORMANCE OF LUMINAIRES MAY VARY DUE TO VARIATIONS IN WEATHER, ELECTRICAL VOLTAGE, TOLERANCE IN LAMPS AND OTHER RELATED VARIABLE FIELD CONDITIONS.

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LANDSCAPING PLAN

DESIGNED BY:	DRAWN BY:
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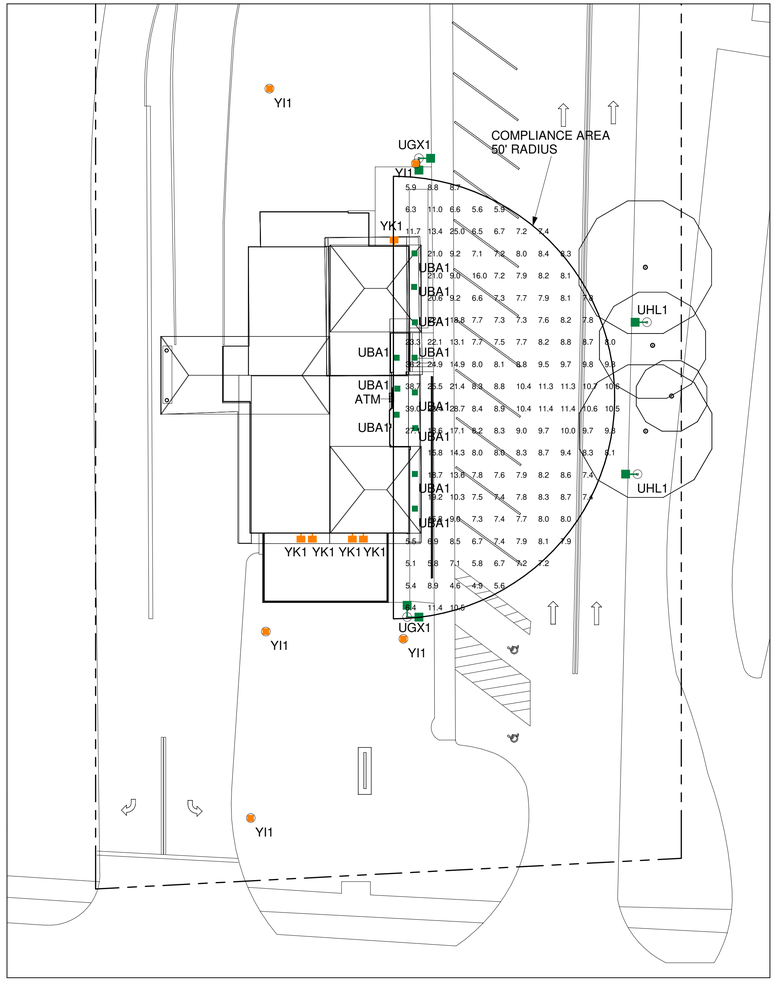
REVIEWED BY:	APPROVED BY:
AWD	KRM

SHEET NO.
LU-7



1 ATM COMPLIANCE AREA PHOTOMETRICS PLAN
1/16" = 1'-0"

CALCULATION SUMMARY COMPLIANCE					
Calculation Points Name	Average	Maximum	Minimum	Ave/Min	Max/Min
ATM 50' @ 36"	10.8 fc	39.0 fc	4.6 fc	2.3	8.5

NOTES:

1. READINGS ARE MEASURED AT 36" (3') ABOVE GRADE.
2. THE SCOPE OF WORK FOR THIS PROJECT IS LIMITED TO EXTERIOR LIGHTING RENOVATIONS AS SHOWN ON THE PLANS.
3. REFERENCE THE LUMINAIRE SCHEDULE FOR ADDITIONAL LIGHT FIXTURE INFORMATION.
4. GC TO VERIFY WITH LOCAL AUTHORITY HAVING JURISDICTION ON TREE TRIMMING AND/OR REMOVAL PRIOR TO COMMENCING WORK.

THIS LIGHTING PLAN ILLUSTRATES ILLUMINATE LEVELS CALCULATED FROM LABORATORY DATA UNDER CONTROLLED CONDITIONS IN ACCORDANCE WITH ILLUMINATING ENGINEERING SOCIETY OF NORTH AMERICAN (IESNA) APPROVED METHODS. ACTUAL SITE ILLUMINATION LEVELS AND PERFORMANCE OF LUMINAIRES MAY VARY DUE TO VARIATIONS IN WEATHER, ELECTRICAL VOLTAGE, TOLERANCE IN LAMPS AND OTHER RELATED VARIABLE FIELD CONDITIONS.

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ATM COMPLIANCE AREA PHOTOMETRICS PLAN

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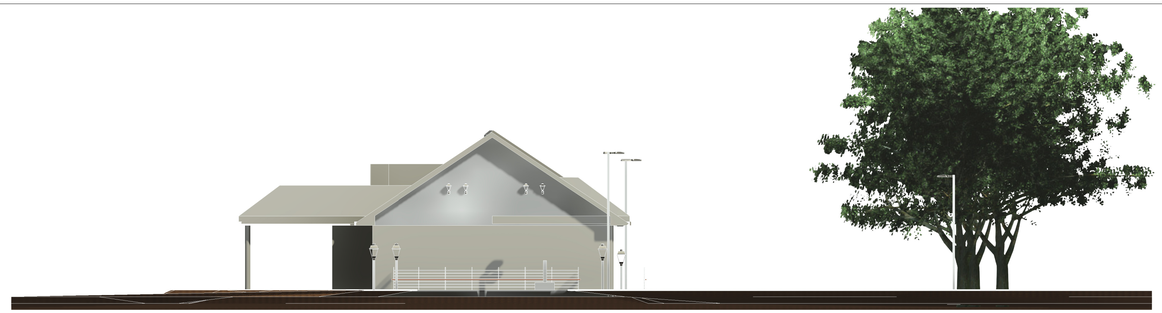
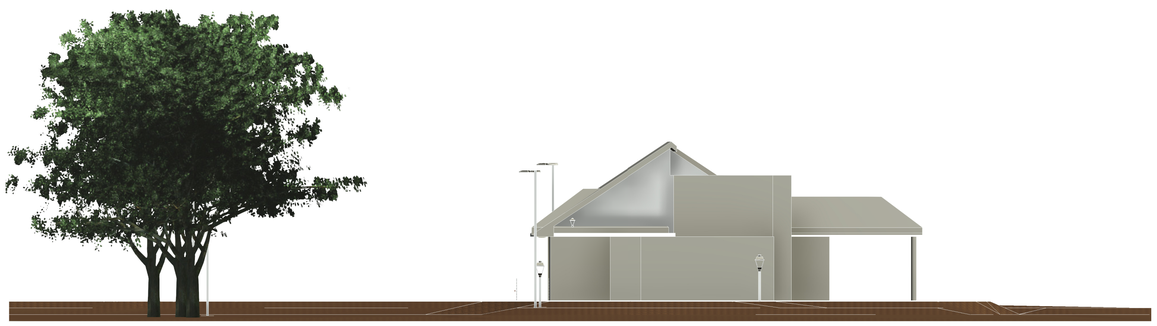
REVIEWED BY:	APPROVED BY:
AWD	KRM

SHEET NO.
LU-8



1 ELEVATION 1
3/32" = 1'-0"

2 ELEVATION 2
3/32" = 1'-0"



3 ELEVATION 3
3/32" = 1'-0"

4 ELEVATION 4
3/32" = 1'-0"

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REVISION NO.	DESCRIPTION	REVISED BY
1		
2		
3		KRM

GMR

Hebron Dunkin Donuts
CTW-003
109 Main St (Rte 66)
Hebron, CT 06248

ELEVATIONS

DESIGNED BY:	DRAWN BY:
JDH	JDH
REVIEWED BY:	APPROVED BY:
AWD	KRM

SHEET NO.

LU-9

OSQ Series

OSQ™ LED Area/Flood Luminaire featuring Cree TrueWhite® Technology – Medium

Rev. Date: V25 03/31/2020

Product Description

The OSQ™ Area/Flood luminaire blends extreme optical control, advanced thermal management and modern, clean aesthetics. Built to last, the housing is rugged cast aluminum with an integral, weathertight LED driver compartment. Versatile mounting configurations offer simple installation. Its slim, low-profile design minimizes wind load requirements and blends seamlessly into the site providing even, quality illumination. The 'B' Input power designator is a suitable upgrade for HID applications up to 250 Watt, and the 'K' Input power designator is a suitable upgrade for HID applications up to 400 Watt.

Applications: Parking lots, walkways, campuses, car dealerships, office complexes, tunnels, underpasses, and internal roadways

Performance Summary

Utilizes Cree TrueWhite® Technology on 5000K Luminaires

NanoOptic® Precision Delivery Grid™ optic

Assembled in the U.S.A. of U.S. and imported parts

Initial Delivered Lumens: Up to 17,291

Efficacy: Up to 136 LPW

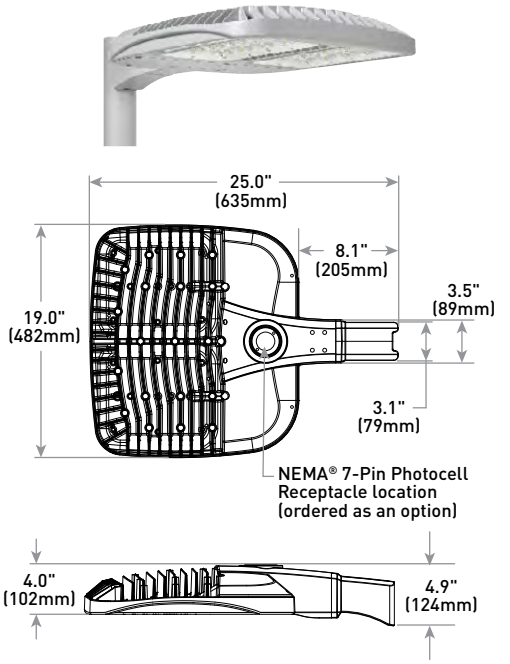
CRI: Minimum 70 CRI (3000K, 4000K & 5700K); 90 CRI (5000K)

CCT: 3000K, 4000K, 5000K, 5700K

Limited Warranty†: 10 years on luminaire; 10 years on Colorfast DeltaGuard® finish; up to 5 years for Synapse® accessories; 1 year on luminaire accessories

† See http://creelighting.com/warranty for warranty terms. For Synapse accessories, consult Synapse spec sheets for details on warranty terms.

DA Mount



Weight
28.9 lbs. (13.1kg)

Ordering Information

Fully assembled luminaire is composed of two components that must be ordered separately:
Example: **Mount:** OSQ-B-AASV + **Luminaire:** OSQ-A-NM-2ME-B-40K-UL-SV

Mount (Luminaire must be ordered separately)*	
OSQ-	
OSQ-B-AA Adjustable Arm **OSQ-DA** Direct Arm **OSQ-M-TSP** Transportation Mount (stainless steel; do not specify color) **OSQ-TM** Trunnion Mount	**Color Options:** **SV** Silver **BZ** Bronze **BK** Black **WH** White

* Reference EPA and pole configuration suitability data beginning on page 9

Luminaire (Mount must be ordered separately)

OSQ	A	NM						
Product	**Version**	**Mounting**	**Optic**	**Input Power Designator**	**CCT**	**Voltage**	**Color Options**	**Options**
OSQ	A	**NM** No Mount	**Asymmetric** **2ME*** Type II Medium **3ME*** Type III Medium **4ME*** Type IV Medium **Symmetric** **5ME** Type V Medium **5SH** Type V Short **WSN** Wide Sign **15D** 15° Flood **25D** 25° Flood **40D** 40° Flood **60D** 60° Flood	**B** 86W **K** 130W **Z** 53W	**30K** 3000K, 70 CRI **40K** 4000K, 70 CRI **50K** 5000K, 90 CRI **57K** 5700K, 70 CRI	**UL** Universal 120-277V **UH** Universal 347-480V - Available with B & K Input Power Designators only	**BK** Black **BZ** Bronze **SV** Silver **WH** White	**PML Programmable Multi-Level, up to 40' Mounting Height** - Refer to PML spec sheet for details - Intended for downlight applications at 0° tilt **PML2 Programmable Multi-Level, 10-30' Mounting Height** - Refer to PML spec sheet for details - Intended for downlight applications at 0° tilt **Q9/Q6/Q5/Q4/Q3/Q2/Q1 Field Adjustable Output** - Must select Q9, Q6, Q5, Q4, Q3, Q2, or Q1 - Offers full range adjustability - Refer to pages 11-12 for power and lumen values - Available with B & K Input Power Designators only - Not available with PML or PML2 options **R NEMA® 7-Pin Photocell Receptacle** - 7-pin receptacle per ANSI C136.41 - Intended for downlight applications with maximum 45° tilt - Factory connected 0-10V dim leads - 18" (457mm) seven-conductor cord exits luminaire - Requires photocell or shorting cap by others **RL Rotate Left** - LED and optic are rotated to the left - Refer to RR/RL configuration diagram on page 13 for optic directionality **RR Rotate Right** - LED and optic are rotated to the right - Refer to RR/RL configuration diagram on page 13 for optic directionality

* Available with Backlight Shield when ordered with field-installed accessory (see table above)

US: creelighting.com (800) 236-6800
Canada: creelighting-canada.com (800) 473-1234

CREE LIGHTING

Product Specifications

CREE TRUEWHITE® TECHNOLOGY

A revolutionary way to generate high-quality white light, Cree TrueWhite® Technology is a patented approach that delivers an exclusive combination of 90+ CRI, beautiful light characteristics and lifelong color consistency, all while maintaining high luminous efficacy – a true no compromise solution.

CONSTRUCTION & MATERIALS

- Slim, low profile design minimizes wind load requirements
- Luminaire housing is rugged die cast aluminum with an integral, weathertight LED driver compartment and high-performance heat sink
- Convenient interlocking mounting method on direct arm mount. Mounting adaptor is rugged die cast aluminum and mounts to 3" (76mm) or larger square or round pole, secured by two 5/16-18 UNC bolts spaced on 2" (51mm) centers
- Mounting for the adjustable arm mount adaptor is rugged die cast aluminum and mounts to 2" (51mm) IP, 2.375" (60mm) O.D. tenon
- Adjustable arm mount can be adjusted 180˚ in 2.5˚ increments
- Transportation mount is constructed of 316 stainless steel and mounts to surface with (4) 3/8" fasteners by others
- Trunnion mount is constructed of A500 and A1011 steel and is adjustable from 0-180˚ in 15˚ degree increments. Trunnion mount secures to surface with (1) 3/4" bolt or (2) 1/2" or 3/8" bolts
- Includes 18" (340mm) 18/5 or 16/5 cord exiting the luminaire. When ordered with R option, 18" (340mm) 18/7 or 16/7 cord is provided
- Designed for uplight and downlight applications
- Exclusive Colorfast DeltaGuard® finish features an E-Coat epoxy primer with an ultra-durable powder topcoat, providing excellent resistance to corrosion, ultraviolet degradation and abrasion. Silver, bronze, black, and white are available
- **Weight:** OSQ-DA: 28.9 lbs. (13.1kg); OSQ-B-AA: 28.4 lbs. (12.9kg); OSQ-M-TSP: 42 lbs. (19.1kg); OSQ-TM: 32.6 lbs. (14.8kg)

ELECTRICAL SYSTEM

- **Input Voltage:** 120-277V or 347-480V, 50/60Hz, Class 1 drivers
- **Power Factor:** > 0.9 at full load
- **Total Harmonic Distortion:** < 20% at full load
- Integral 10kV surge suppression protection standard
- When code dictates fusing, a slow blow fuse or type C/D breaker should be used to address inrush current
- Consult factory if in-luminaire fusing is required
- Designed with 0-10V dimming capabilities. Controls by others
- Refer to Dimming spec sheet for details
- **Maximum 10V Source Current:** 1.0mA

REGULATORY & VOLUNTARY QUALIFICATIONS

- cULus Listed
- Suitable for wet locations
- Enclosure rated IP66 per IEC 60529 when ordered without R option
- Consult factory for CE Certified products
- Certified to ANSI C136.31-2001, 3G bridge and overpass vibration standards with AA, DA, TM, and TSP mounts
- ANSI C136.2 10kV surge protection, tested in accordance with IEEE/ANSI C62.41.2
- Meets FCC Part 15, Subpart B, Class A limits for conducted and radiated emissions
- Luminaire and finish endurance tested to withstand 5,000 hours of elevated ambient salt fog conditions as defined in ASTM Standard B 117
- Meets Buy American requirements within ARRA
- DLC and DLC Premium qualified versions available with 70 CRI. Some exceptions apply. Please refer to https://www.designlights.org/search/ for most current information
- RoHS compliant. Consult factory for additional details
- Dark Sky Friendly, IDA Approved when ordered with 30K CCT and direct or transportation mounts only. Please refer to https://www.darksky.org/our-work/lighting/lighting-for-industry/fsa/fsa-products/ for most current information
- ⚠ **CA RESIDENTS WARNING:** Cancer and Reproductive Harm – www.p65warnings.ca.gov

Product Specifications

SYNAPSE® SIMPLYSNAP INTELLIGENT CONTROL

The Synapse SimplySNAP platform is a highly intuitive connected lighting solution featuring zone dimming, motion sensing, and daylight harvesting with utility-grade power monitoring and support of up to 1000 nodes per gateway. The system features a reliable and robust self-healing mesh network with a browser-based interface that runs on smartphones, tablets, and PCs. The Twist-Lock Lighting Controller (TL7-B2) and Site Controller (SS450-002) take the OSQ Series to a new performance plateau, providing extreme energy productivity, code compliance and a better light experience.

Electrical Data*

Input Power Designator	System Watts 120-480V	Total Current (A)					
		120V	208V	240V	277V	347V	480V
B	86	0.73	0.43	0.37	0.32	0.25	0.19
K	130	1.09	0.65	0.56	0.49	0.38	0.28
Z	53**	0.46	0.26	0.22	0.19	N/A	N/A

* Electrical data at 25˚C (77˚F). Actual wattage may differ by +/- 10% when operating between 120-277V or 347-480V+/-10%
** Available with UL voltage only

OSQ Series Ambient Adjusted Lumen Maintenance[1]

Ambient	Optic	Initial LMF	25K hr Reported[2] LMF	50K hr Reported[2] LMF	75K hr Reported[2] LMF	100K hr Reported[2] LMF
5˚C (41˚F)	Asymmetric	1.04	1.03	1.01	0.99	0.97
	Symmetric	1.05	1.04	1.03	1.03	1.02
10˚C (50˚F)	Asymmetric	1.03	1.02	1.00	0.98	0.96
	Symmetric	1.04	1.03	1.02	1.01	1.00
15˚C (59˚F)	Asymmetric	1.02	1.01	0.99	0.97	0.95
	Symmetric	1.02	1.02	1.01	1.00	0.99
20˚C (68˚F)	Asymmetric	1.01	1.00	0.98	0.96	0.94
	Symmetric	1.01	1.01	1.00	0.99	0.98
25˚C (77˚F)	Asymmetric	1.00	0.99	0.97	0.95	0.93
	Symmetric	1.00	0.99	0.98	0.98	0.97

[1] Lumen maintenance values at 25˚C (77˚F) are calculated per IES TM-21 based on IES LM-80 report data for the LED package and in-situ luminaire testing. Luminaire ambient temperature factors (LATF) have been applied to all lumen maintenance factors. Please refer to the Temperature Zone Reference Document for outdoor average nighttime ambient conditions.
[2] In accordance with IES TM-21, Reported values represent interpolated values based on time durations that are up to 6x the tested duration in the IES LM-80 report for the LED.

Accessories

Field-Installed

Backlight Shield
OSQ-BLSMF
– Front facing optics
OSQ-BLSMR
– Rotated optics

Hand-Held Remote
XA-SENSREM
- For successful implementation of the programmable multi-level option, a minimum of one hand-held remote is required

Bird Spikes
OSQ-MED-BRDSPK

Shorting Cap
XA-XSLSHRT

Synapse Wireless Control Accessories

Twist-Lock Lighting Controller
TL7-B2
- Suitable for 120-277V (UL) voltage only
- Requires NEMA/ANSI C136.41 7-Pin Dimming Receptacle
- Not for use with PML or Q options
- Provides On/Off switching, dimming, power metering, digital sensor input, and status monitoring of luminaires
- Refer to TL7-B2 spec sheet for details

SimplySNAP Central Base Station
CBSSW-450-002
- Includes On-Site Controller (SS450-002) and 5-button switch
- Indoor and Outdoor rated
- Refer to CBSSW-450-002 spec sheet for details

Synapse Wireless Sensor
WSN-DPM
- Motion and light sensor
- Control multiple zones
- Refer to WSN-DPM spec sheet for details

SimplySNAP On-Site Controller
SS450-002
- Verizon® LTE-enabled
- Designed for indoor applications
- Refer to SS450-002 spec sheet for details

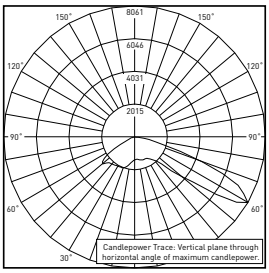
Building Management System (BMS) Gateway
BMS-GW-002
- Required for BACnet integration
- Refer to BMS-GW-002 spec sheet for details

Outdoor Antennas
(Optional, for increased range, 8dB gain)
KIT-ANT420SM
- Kit includes antenna, 20' cable and bracket
KIT-ANT360
- Kit includes antenna, 30' cable and bracket
KIT-ANT600
- Kit includes antenna, 50' cable and bracket
- Refer to Outdoor antenna spec sheet for details

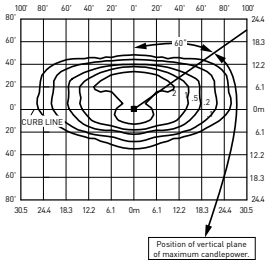
Photometry

All published luminaire photometric testing performed to IES LM-79-08 standards. To obtain an IES file specific to your project consult: https://creelighting.com/products/outdoor/area/osq-series

2ME



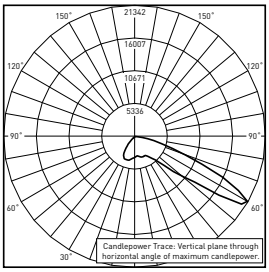
RESTL Test Report #: PL08877-001A
OSQ-A-**-2ME-B-30K-UL
Initial Delivered Lumens: 10,381



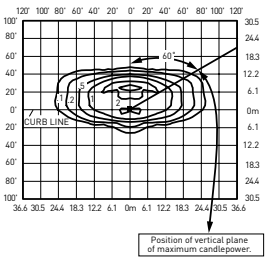
OSQ-A-**-2ME-B-40K-UL
Mounting Height: 25' (7.6m) A.F.G.
Initial Delivered Lumens: 11,424
Initial FC at grade

Type II Medium Distribution								
Input Power Designator	3000K (70 CRI)		4000K (70 CRI)		5000K (90 CRI)		5700K (70 CRI)	
	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11
B	10,738	B2 U0 G2	11,424	B2 U0 G2	9,350	B2 U0 G2	11,648	B2 U0 G2
K	16,022	B3 U0 G3	16,959	B3 U0 G3	14,000	B3 U0 G2	17,291	B3 U0 G3
Z	6,481	B2 U0 G1	6,896	B2 U0 G1	5,750	B1 U0 G1	7,031	B2 U0 G1

* Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -10 and +10% of initial delivered lumens
** For more information on the IES BUG (Backlight-Uplight-Glare) Rating visit: https://www.ies.org/wp-content/uploads/2017/03/TM-15-11BUGRatingsAddendum.pdf. Valid with no tilt



CESTL Test Report #: PL07700-001A
OSQ-A-**-2ME-U-57K-UL w/OSQ-BLSLF
Initial Delivered Lumens: 22,822



OSQ-A-**-2ME-B-40K-UL w/OSQ-BLSMF
Mounting Height: 25' (7.6m) A.F.G.
Initial Delivered Lumens: 8,779
Initial FC at grade

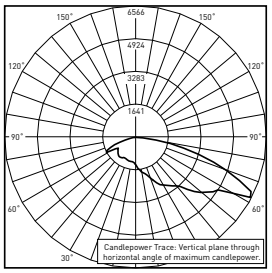
Type II Medium w/BLS Distribution								
Input Power Designator	3000K (70 CRI)		4000K (70 CRI)		5000K (90 CRI)		5700K (70 CRI)	
	Initial Delivered Lumens*	BUG Ratings** Per TM 15 11	Initial Delivered Lumens*	BUG Ratings** Per TM 15 11	Initial Delivered Lumens*	BUG Ratings** Per TM 15 11	Initial Delivered Lumens*	BUG Ratings** Per TM 15 11
B	8,251	B2 U0 G2	8,779	B2 U0 G2	7,200	B1 U0 G1	8,950	B2 U0 G2
K	12,312	B2 U0 G2	13,032	B2 U0 G2	10,750	B2 U0 G2	13,286	B2 U0 G2
Z	4,980	B1 U0 G1	5,299	B1 U0 G1	4,420	B1 U0 G1	5,402	B1 U0 G1

* Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -10 and +10% of initial delivered lumens
** For more information on the IES BUG (Backlight-Uplight-Glare) Rating visit: https://www.ies.org/wp-content/uploads/2017/03/TM-15-11BUGRatingsAddendum.pdf. Valid with no tilt

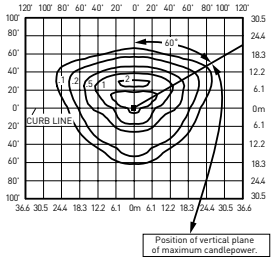
Photometry

All published luminaire photometric testing performed to IES LM-79-08 standards. To obtain an IES file specific to your project consult: https://creelighting.com/products/outdoor/area/osq-series

3ME



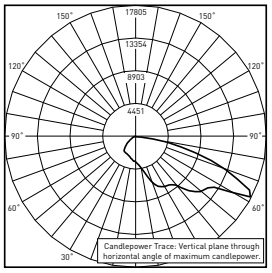
RESTL Test Report #: PL08876-001A
OSQ-A-**-3ME-B-30K-UL
Initial Delivered Lumens: 10,421



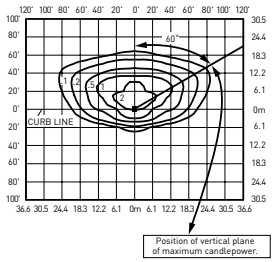
OSQ-A-**-3ME-B-40K-UL
Mounting Height: 25' (7.6m) A.F.G.
Initial Delivered Lumens: 11,424
Initial FC at grade

Type III Medium Distribution								
Input Power Designator	3000K (70 CRI)		4000K (70 CRI)		5000K (90 CRI)		5700K (70 CRI)	
	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11
B	10,738	B3 U0 G3	11,424	B3 U0 G3	9,350	B2 U0 G2	11,648	B3 U0 G3
K	16,022	B3 U0 G3	16,959	B3 U0 G3	14,000	B3 U0 G3	17,291	B3 U0 G3
Z	6,481	B2 U0 G2	6,896	B2 U0 G2	5,750	B2 U0 G2	7,031	B2 U0 G2

* Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -10 and +10% of initial delivered lumens
** For more information on the IES BUG (Backlight-Uplight-Glare) Rating visit: https://www.ies.org/wp-content/uploads/2017/03/TM-15-11BUGRatingsAddendum.pdf. Valid with no tilt



CESTL Test Report #: PL07699-001A
OSQ-A-**-3ME-U-57K-UL w/OSQ-BLSLF
Initial Delivered Lumens: 23,601



OSQ-A-**-3ME-B-40K-UL w/OSQ-BLSMF
Mounting Height: 25' (7.6m) A.F.G.
Initial Delivered Lumens: 9,019
Initial FC at grade

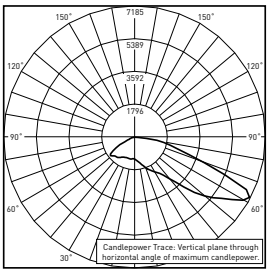
Type III Medium w/BLS Distribution								
Input Power Designator	3000K (70 CRI)		4000K (70 CRI)		5000K (90 CRI)		5700K (70 CRI)	
	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11
B	8,477	B1 U0 G2	9,019	B1 U0 G2	7,400	B1 U0 G2	9,196	B1 U0 G2
K	12,649	B2 U0 G2	13,389	B2 U0 G2	11,050	B2 U0 G2	13,650	B2 U0 G2
Z	5,117	B1 U0 G1	5,444	B1 U0 G1	4,540	B1 U0 G1	5,551	B1 U0 G1

* Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -10 and +10% of initial delivered lumens
** For more information on the IES BUG (Backlight-Uplight-Glare) Rating visit: https://www.ies.org/wp-content/uploads/2017/03/TM-15-11BUGRatingsAddendum.pdf. Valid with no tilt

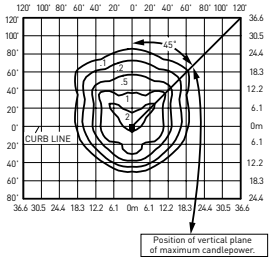
Photometry

All published luminaire photometric testing performed to IES LM-79-08 standards. To obtain an IES file specific to your project consult: https://creelighting.com/products/outdoor/area/osq-series

4ME



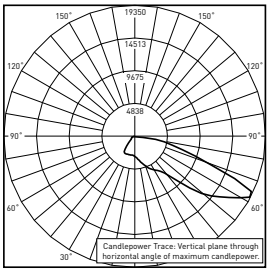
RESTL Test Report #: PL08878-001A
OSQ-A-**-4ME-B-30K-UL
Initial Delivered Lumens: 10,230



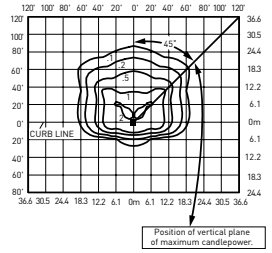
OSQ-A-**-4ME-B-40K-UL
Mounting Height: 25' (7.6m) A.F.G.
Initial Delivered Lumens: 11,424
Initial FC at grade

Type IV Medium Distribution								
Input Power Designator	3000K (70 CRI)		4000K (70 CRI)		5000K (90 CRI)		5700K (70 CRI)	
	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11
B	10,738	B2 U0 G2	11,424	B2 U0 G2	9,350	B2 U0 G2	11,648	B2 U0 G2
K	16,022	B3 U0 G3	16,959	B3 U0 G3	14,000	B3 U0 G3	17,291	B3 U0 G3
Z	6,481	B2 U0 G2	6,896	B2 U0 G2	5,750	B2 U0 G1	7,031	B2 U0 G2

* Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -10 and +10% of initial delivered lumens
** For more information on the IES BUG (Backlight-Uplight-Glare) Rating visit: https://www.ies.org/wp-content/uploads/2017/03/TM-15-11BUGRatingsAddendum.pdf. Valid with no tilt



CESTL Test Report #: PL07692-001A
OSQ-A-**-4ME-U-57K-UL w/OSQ-BLSLF
Initial Delivered Lumens: 22,793



OSQ-A-**-4ME-B-40K-UL w/OSQ-BLSMF
Mounting Height: 25' (7.6m) A.F.G.
Initial Delivered Lumens: 8,779
Initial FC at grade

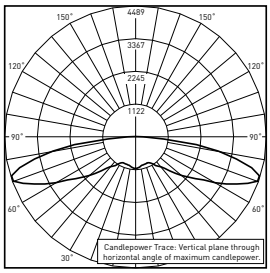
Type IV Medium w/BLS Distribution								
Input Power Designator	3000K (70 CRI)		4000K (70 CRI)		5000K (90 CRI)		5700K (70 CRI)	
	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11
B	8,251	B1 U0 G2	8,779	B1 U0 G2	7,200	B1 U0 G2	8,950	B1 U0 G2
K	12,312	B2 U0 G2	13,032	B2 U0 G2	10,750	B2 U0 G2	13,286	B2 U0 G2
Z	4,980	B1 U0 G1	5,299	B1 U0 G1	4,420	B1 U0 G1	5,402	B1 U0 G1

* Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -10 and +10% of initial delivered lumens
** For more information on the IES BUG (Backlight-Uplight-Glare) Rating visit: https://www.ies.org/wp-content/uploads/2017/03/TM-15-11BUGRatingsAddendum.pdf. Valid with no tilt

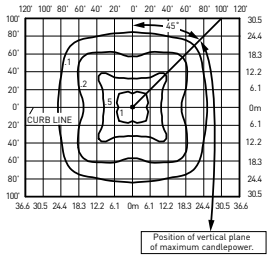
Photometry

All published luminaire photometric testing performed to IES LM-79-08 standards. To obtain an IES file specific to your project consult: https://creelighting.com/products/outdoor/area/osq-series

5ME



RESTL Test Report #: PL08534-001B
OSQ-A-**-5ME-B-40K-UL
Initial Delivered Lumens: 10,519

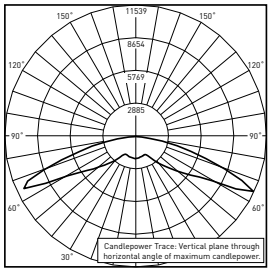


OSQ-A-**-5ME-B-40K-UL
Mounting Height: 25' (7.6m) A.F.G.
Initial Delivered Lumens: 10,867
Initial FC at grade

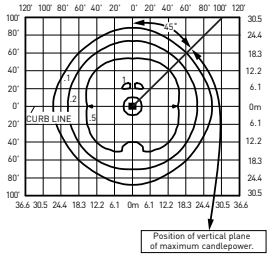
Type V Medium Distribution								
Input Power Designator	3000K (70 CRI)		4000K (70 CRI)		5000K (90 CRI)		5700K (70 CRI)	
	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11
B	10,232	B4 U0 G3	10,867	B4 U0 G3	10,000	B4 U0 G3	11,056	B4 U0 G3
K	15,063	B4 U0 G4	15,999	B4 U0 G4	14,925	B4 U0 G4	16,277	B4 U0 G4
Z	5,257	B3 U0 G3	6,086	B3 U0 G3	6,175	B3 U0 G3	6,192	B3 U0 G3

* Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -10 and +10% of initial delivered lumens
** For more information on the IES BUG (Backlight-Uplight-Glare) Rating visit: https://www.ies.org/wp-content/uploads/2017/03/TM-15-11BUGRatingsAddendum.pdf. Valid with no tilt

5SH



CESTL Test Report #: PL10754-001A
OSQ-A-**-5SH-U-40K-UL
Initial Delivered Lumens: 25,679



OSQ-A-**-5SH-B-40K-UL
Mounting Height: 25' (7.6m) A.F.G.
Initial Delivered Lumens: 11,478
Initial FC at grade

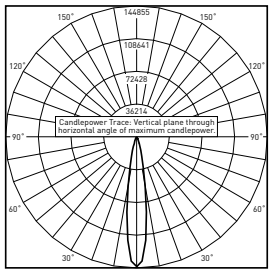
Type V Short Distribution								
Input Power Designator	3000K (70 CRI)		4000K (70 CRI)		5000K (90 CRI)		5700K (70 CRI)	
	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11
B	10,806	B4 U0 G2	11,478	B4 U0 G2	10,575	B4 U0 G2	11,678	B4 U0 G2
K	15,909	B4 U0 G3	16,897	B4 U0 G3	15,800	B4 U0 G3	17,191	B4 U0 G3
Z	5,552	B3 U0 G1	6,428	B3 U0 G2	6,525	B3 U0 G2	6,539	B3 U0 G2

* Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -10 and +10% of initial delivered lumens
** For more information on the IES BUG (Backlight-Uplight-Glare) Rating visit: https://www.ies.org/wp-content/uploads/2017/03/TM-15-11BUGRatingsAddendum.pdf. Valid with no tilt

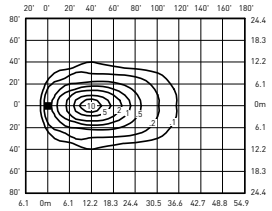
Photometry

All published luminaire photometric testing performed to IES LM-79-08 standards. To obtain an IES file specific to your project consult: https://creelighting.com/products/outdoor/area/osq-series

15D



CESTL Test Report #: PL07689-001A
OSQ-A-**-15D-U-30K-UL
Initial Delivered Lumens: 23,254

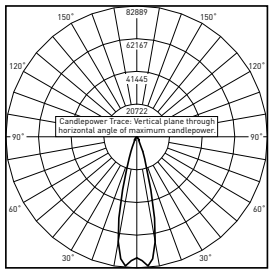


OSQ-A-**-15D-B-40K-UL
Mounting Height: 25' (7.6m) A.F.G., 60° Tilt
Initial Delivered Lumens: 11,478
Initial FC at grade

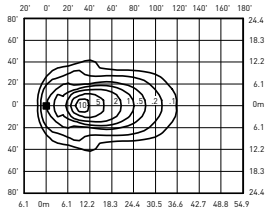
15° Flood Distribution				
Input Power Designator	3000K (70 CRI)	4000K (70 CRI)	5000K (90CRI)	5700K (70 CRI)
	Initial Delivered Lumens*	Initial Delivered Lumens*	Initial Delivered Lumens*	Initial Delivered Lumens*
B	10,806	11,478	10,575	11,678
K	15,909	16,897	15,800	17,191
Z	5,552	6,428	6,525	6,539

* Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -10 and +10% of initial delivered lumens
** For more information on the IES BUG (Backlight-Uplight-Glare) Rating visit: https://www.ies.org/wp-content/uploads/2017/03/TM-15-11BUGRatingsAddendum.pdf. Valid with no tilt

25D



CESTL Test Report #: PL07696-001A
OSQ-A-**-25D-U-30K-UL
Initial Delivered Lumens: 23,265

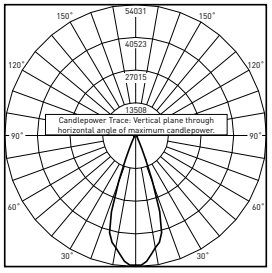


OSQ-A-**-25D-B-40K-UL
Mounting Height: 25' (7.6m) A.F.G., 60° Tilt
Initial Delivered Lumens: 11,478
Initial FC at grade

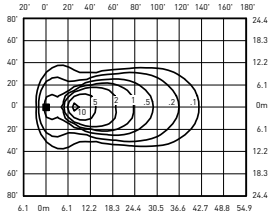
25° Flood Distribution				
Input Power Designator	3000K (70 CRI)	4000K (70 CRI)	5000K (90CRI)	5700K (70 CRI)
	Initial Delivered Lumens*	Initial Delivered Lumens*	Initial Delivered Lumens*	Initial Delivered Lumens*
B	10,806	11,478	10,575	11,678
K	15,909	16,897	15,800	17,191
Z	5,552	6,428	6,525	6,539

* Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -10 and +10% of initial delivered lumens
** For more information on the IES BUG (Backlight-Uplight-Glare) Rating visit: https://www.ies.org/wp-content/uploads/2017/03/TM-15-11BUGRatingsAddendum.pdf. Valid with no tilt

40D



CESTL Test Report #: PL07697-001A
OSQ-A-**-40D-U-30K-UL
Initial Delivered Lumens: 22,943



OSQ-A-**-40D-B-40K-UL
Mounting Height: 25' (7.6m) A.F.G., 60° Tilt
Initial Delivered Lumens: 11,478
Initial FC at grade

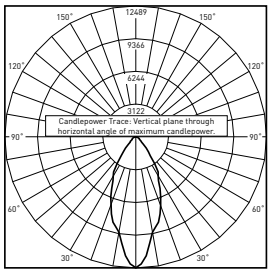
40° Flood Distribution				
Input Power Designator	3000K (70 CRI)	4000K (70 CRI)	5000K (90 CRI)	5700K (70 CRI)
	Initial Delivered Lumens*	Initial Delivered Lumens*	Initial Delivered Lumens*	Initial Delivered Lumens*
B	10,806	11,478	10,575	11,678
K	15,909	16,897	15,800	17,191
Z	5,552	6,428	6,525	6,539

* Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -10 and +10% of initial delivered lumens
** For more information on the IES BUG (Backlight-Uplight-Glare) Rating visit: https://www.ies.org/wp-content/uploads/2017/03/TM-15-11BUGRatingsAddendum.pdf. Valid with no tilt

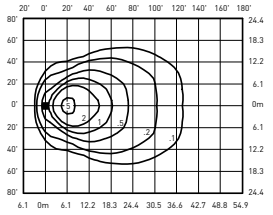
Photometry

All published luminaire photometric testing performed to IES LM-79-08 standards. To obtain an IES file specific to your project consult: https://creelighting.com/products/outdoor/area/osq-series

60D



CESTL Test Report #: PL08100-001B
OSQ-A-**-60D-B-30K-UL
Initial Delivered Lumens: 10,079

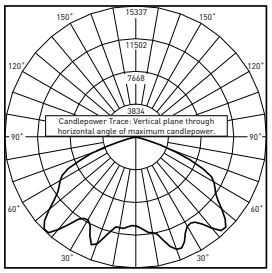


OSQ-A-**-60D-B-40K-UL
Mounting Height: 25' (7.6m) A.F.G., 60° Tilt
Initial Delivered Lumens: 11,478
Initial FC at grade

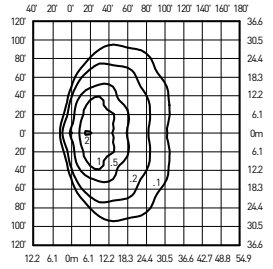
60° Flood Distribution				
Input Power Designator	3000K (70 CRI)	4000K (70 CRI)	5000K (90 CRI)	5700K (70 CRI)
	Initial Delivered Lumens*	Initial Delivered Lumens*	Initial Delivered Lumens*	Initial Delivered Lumens*
B	10,806	11,478	10,575	11,678
K	15,909	16,897	15,800	17,191
Z	5,552	6,428	6,525	6,539

* Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -10 and +10% of initial delivered lumens
** For more information on the IES BUG (Backlight-Uplight-Glare) Rating visit: https://www.ies.org/wp-content/uploads/2017/03/TM-15-11BUGRatingsAddendum.pdf. Valid with no tilt

WSN



CESTL Test Report #: PL07695-001A
OSQ-A-**-WSN-U-30K-UL
Initial Delivered Lumens: 23,116



OSQ-A-**-WSN-B-40K-UL
Mounting Height: 25' (7.6m) A.F.G., 60° Tilt
Initial Delivered Lumens: 11,478
Initial FC at grade

Wide Sign Distribution				
Input Power Designator	3000K (70 CRI)	4000K (70 CRI)	5000K (90 CRI)	5700K (70 CRI)
	Initial Delivered Lumens*	Initial Delivered Lumens*	Initial Delivered Lumens*	Initial Delivered Lumens*
B	10,806	11,478	10,575	11,678
K	15,909	16,897	15,800	17,191
Z	5,552	6,428	6,525	6,539

* Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -10 and +10% of initial delivered lumens
** For more information on the IES BUG (Backlight-Uplight-Glare) Rating visit: https://www.ies.org/wp-content/uploads/2017/03/TM-15-11BUGRatingsAddendum.pdf. Valid with no tilt

Luminaire EPA

Adjustable Arm Mount – OSQ-B-AA Weight: 28.4 lbs. (12.9kg)							
Single	2 @ 180˚	2 @ 90˚	3 @ 90˚	3 @ 120˚	3 @ 180˚	4 @ 180˚	4 @ 90˚
Tenon Configuration (0˚-80˚ Tilt); If used with Cree Lighting tenons, please add tenon EPA with Luminaire EPA							
 PB-1A*; PT-1; PW-1A3**	 PB-2A*; PB-2R2.375; PD-2A4(180); PT-2(180); PW-2A3**	 PB-2A*; PD-2A4(90); PT-2(90)	 PB-3A*; PD-3A4(90); PT-3(90)	 PB-3A*; PT-3(120)	 PB-3A*; PB-3R2.375	 PB-4A*(180)	 PB-4A*(90); PB-4R2.375; PD-4A4(90); PT-4(90)
0˚ Tilt							
0.74	1.48	1.19	1.93	1.63	3.33	4.66	2.38
10˚ Tilt							
0.75	1.48	1.49	2.23	2.15	4.22	5.84	2.98
20˚ Tilt							
1.12	1.48	1.86	2.60	2.85	5.31	7.32	3.72
30˚ Tilt							
1.46	1.48	2.20	2.94	3.56	6.34	8.68	4.40
45˚ Tilt							
1.96	1.96	2.69	3.43	4.54	7.83	10.68	5.38
60˚ Tilt							
2.33	2.33	3.07	3.81	5.11	8.94	12.16	6.14
70˚ Tilt							
2.49	2.49	3.23	3.97	5.11	9.43	12.80	6.46
80˚ Tilt							
2.58	2.58	3.32	4.06	5.11	9.71	13.16	6.64
Tenon Configuration (90˚ Tilt); If used with Cree Lighting tenons, please add tenon EPA with Luminaire EPA							
PB-1A*; PT-1; PW-1A3**	PB-2A*; PB-2R2.375; PD-2A4(180); PT-2(180); PW-2A3**	PB-2A*	PB-3A*	PB-3A*; PT-3(120)	PB-3A*; PB-3R2.375	PB-4A*(180)	PB-4A*(90); PB-4R2.375
90˚ Tilt							
2.61	2.61	4.44	6.05	5.11	9.79	13.28	10.39

* Specify pole size: 3 (3"), 4 (4"), 5 (5"), or 6 (6") for single, double or triple luminaire orientation or 4 (4"), 5 (5"), or 6 (6") for quad luminaire orientation
** These EPA values must be multiplied by the following ratio: Fixture Mounting Height/Total Pole Height. Specify pole size: 3 (3"), 4 (4"), 5 (5"), or 6 (6")

Tenon EPA

Part Number	EPA
PB-1A*	None
PB-2A*	0.82
PB-3A*	1.52
PB-4A*(180)	2.22
PB-4A*(90)	1.11
PB-2R2.375	0.92
PB-3R2.375	1.62
PB-4R2.375	2.32
PD Series Tenons	0.09
PT Series Tenons	0.10
PW-1A3**	0.47
PW-2A3**	0.94
WM-2	0.08
WM-4	0.25
WM-DM	None

* Specify pole size: 3 (3"), 4 (4"), 5 (5"), or 6 (6") for single, double or triple luminaire orientation or 4 (4"), 5 (5"), or 6 (6") for quad luminaire orientation
** These EPA values must be multiplied by the following ratio: Fixture Mounting Height/Total Pole Height. Specify pole size: 3 (3"), 4 (4"), 5 (5"), or 6 (6")

Tenons and Brackets‡ (must specify color)

Square Internal Mount Vertical Tenons (Steel)
- Mounts to 3-6" (76-152mm) square aluminum or steel poles

PB-1A* – Single
PB-2A* – 180˚ Twin
PB-3A* – 180˚ Triple
PB-4A*(90) – 90˚ Quad
PB-4A*(180) – 180˚ Quad

Square Internal Mount Horizontal Tenons (Aluminum)
- Mounts to 4" (102mm) square aluminum or steel poles

PD-2A4(90) – 90˚ Twin
PD-2A4(180) – 180˚ Twin
PD-3A4(90) – 90˚ Triple
PD-4A4(90) – 90˚ Quad

Wall Mount Brackets
- Mounts to wall or roof

WM-2 – Horizontal for OSQ-B-AA mount
WM-4 – L-Shape for OSQ-B-AA mount
WM-DM – Plate for OSQ-DA mount

Round External Mount Vertical Tenons (Steel)
- Mounts to 2.375" (60mm) O.D. round aluminum or steel poles or tenons

PB-2R2.375 – Twin
PB-3R2.375 – Triple
PB-4R2.375 – Quad

Round External Mount Horizontal Tenons (Aluminum)
- Mounts to 2.375" (60mm) O.D. round aluminum or steel poles or tenons
- Mounts to square pole with PB-1A* tenon

PT-1 – Single (Vertical)
PT-2(90) – 90˚ Twin
PT-2(180) – 180˚ Twin
PT-3(90) – 90˚ Triple
PT-3(120) – 120˚ Triple
PT-4(90) – 90˚ Quad

Mid-Pole Bracket
- Mounts to square pole

PW-1A3** – Single
PW-2A3** – Double

Ground Mount Post
- For ground-mounted flood luminaires

PGM-1 - for OSQ-B-AA mount

‡ Refer to the Bracket and Tenons spec sheet for more details

Luminaire EPA

Direct Arm Mount – OSQ-DA Weight: 28.9 lbs. (13.1kg)					
Single	2 @ 180˚	2 @ 90˚	3 @ 90˚	3 @ 120˚	4 @ 90˚
					
0.74	1.48	1.19	1.93	1.63	2.38

Direct Mount Configurations

Compatibility with OSQ-DA Direct Mount Bracket					
Input Power Designator	2 @ 90˚	2 @ 180˚	3 @ 90˚	3 @ 120˚	4 @ 90˚
3" Square					
B, K & Z	N/A	✓	N/A	N/A	N/A
3" Round					
B, K & Z	N/A	✓	N/A	N/A	N/A
4" Square					
B, K & Z	✓	✓	✓	N/A	✓
4" Round					
B, K & Z	✓	✓	✓	✓	✓
5" Square					
B, K & Z	✓	✓	✓	N/A	✓
5" Round					
B, K & Z	✓	✓	✓	✓	✓
6" + Square					
B, K & Z	✓	✓	✓	N/A	✓
6" + Round					
B, K & Z	✓	✓	✓	✓	✓

Luminaire EPA

Trunnion Mount – OSQ-TM Weight: 32.6 lbs. (14.8kg)
Single
0˚ Tilt
0.75
15˚ Tilt
0.99
30˚ Tilt
1.57
45˚ Tilt
2.07
60˚ Tilt
2.46
75˚ Tilt
2.67
90˚ Tilt
2.33

Field Adjustable Output (Q9/Q6/Q5/Q4/Q3/Q2/Q1) Option Description:

The Field Adjustable Output option enables the OSQ area luminaires to be tuned to the exact needs of a particular application through multiple levels of adjustment. When ordered with the Q option, the luminaire will be shipped from the factory at the selected Q setting and will be fully adjustable between the nine settings.

Q Option Power & Lumen Data – Designator B

Q Option Setting	CCT/CRI	System Watts	Lumen Values						Optics Qualified on DLC QPL	
		120-480V	Asymmetric	5ME	5SH & Floods	2ME w/ BLS	3ME w/ BLS	4ME w/BLS	Standard	Premium
Q9 (Full Power)	30K (70 CRI)	86	10,738	10,232	10,806	8,251	8,477	8,251	5ME	2ME, 3ME, 4ME, 5SH, 15D, 25D, 40D, 60D, WSN
	40K (70 CRI)		11,424	10,867	11,478	8,779	9,019	8,779	N/A	2ME, 3ME, 4ME, 5ME, 5SH, 15D, 25D, 40D, 60D, WSN
	50K (90 CRI)		9,350	10,000	10,575	7,200	7,400	7,200	TBD	TBD
	57K (70 CRI)		11,648	11,056	11,678	8,950	9,196	8,950	N/A	2ME, 3ME, 4ME, 5ME, 5SH, 15D, 25D, 40D, 60D, WSN
Q6	30K (70 CRI)	77	9,449	9,004	9,509	7,261	7,460	7,261	5ME	2ME, 3ME, 4ME, 5SH, 15D, 25D, 40D, 60D, WSN
	40K (70 CRI)		10,053	9,563	10,101	7,726	7,937	7,726	N/A	2ME, 3ME, 4ME, 5ME, 5SH, 15D, 25D, 40D, 60D, WSN
	50K (90 CRI)		8,350	8,950	9,450	6,425	6,600	6,425	TBD	TBD
	57K (70 CRI)		10,250	9,729	10,277	7,876	8,092	7,876	N/A	2ME, 3ME, 4ME, 5ME, 5SH, 15D, 25D, 40D, 60D, WSN
Q5	30K (70 CRI)	72	8,913	8,492	8,969	6,848	7,036	6,848	5ME	2ME, 3ME, 4ME, 5SH, 15D, 25D, 40D, 60D, WSN
	40K (70 CRI)		9,482	9,020	9,527	7,287	7,486	7,287	N/A	2ME, 3ME, 4ME, 5ME, 5SH, 15D, 25D, 40D, 60D, WSN
	50K (90 CRI)		7,525	8,050	8,525	5,775	5,950	5,775	TBD	TBD
	57K (70 CRI)		9,668	9,176	9,693	7,429	7,633	7,429	N/A	2ME, 3ME, 4ME, 5ME, 5SH, 15D, 25D, 40D, 60D, WSN
Q4	30K (70 CRI)	62	7,731	7,367	7,780	5,941	6,103	5,941	5ME	2ME, 3ME, 4ME, 5SH, 15D, 25D, 40D, 60D, WSN
	40K (70 CRI)		8,225	7,824	8,264	6,321	6,494	6,321	N/A	2ME, 3ME, 4ME, 5ME, 5SH, 15D, 25D, 40D, 60D, WSN
	50K (90 CRI)		6,575	7,025	7,425	5,050	5,175	5,050	TBD	TBD
	57K (70 CRI)		8,387	7,960	8,408	6,444	6,621	6,444	N/A	2ME, 3ME, 4ME, 5ME, 5SH, 15D, 25D, 40D, 60D, WSN
Q3	30K (70 CRI)	53	6,550	6,241	6,592	5,033	5,171	5,033	5ME	2ME, 3ME, 4ME, 5SH, 15D, 25D, 40D, 60D, WSN
	40K (70 CRI)		6,969	6,629	7,002	5,355	5,502	5,355	N/A	2ME, 3ME, 4ME, 5ME, 5SH, 15D, 25D, 40D, 60D, WSN
	50K (90 CRI)		5,575	5,975	6,325	4,290	4,410	4,290	TBD	TBD
	57K (70 CRI)		7,105	6,744	7,124	5,460	5,610	5,460	N/A	2ME, 3ME, 4ME, 5ME, 5SH, 15D, 25D, 40D, 60D, WSN
Q2	30K (70 CRI)	45	5,476	5,218	5,511	4,208	4,323	4,208	5ME	2ME, 3ME, 4ME, 5SH, 15D, 25D, 40D, 60D, WSN
	40K (70 CRI)		5,826	5,542	5,854	4,477	4,600	4,477	N/A	2ME, 3ME, 4ME, 5ME, 5SH, 15D, 25D, 40D, 60D, WSN
	50K (90 CRI)		4,550	4,890	5,175	3,500	3,590	3,500	TBD	TBD
	57K (70 CRI)		5,940	5,639	5,956	4,565	4,690	4,565	N/A	2ME, 3ME, 4ME, 5ME, 5SH, 15D, 25D, 40D, 60D, WSN
Q1	30K (70 CRI)	34	4,188	3,990	4,214	3,218	3,306	3,218	5ME	2ME, 3ME, 4ME, 5SH, 15D, 25D, 40D, 60D, WSN
	40K (70 CRI)		4,455	4,238	4,476	3,424	3,517	3,424	N/A	2ME, 3ME, 4ME, 5ME, 5SH, 15D, 25D, 40D, 60D, WSN
	50K (90 CRI)		3,500	3,770	3,980	2,690	2,760	2,690	TBD	TBD
	57K (70 CRI)		4,543	4,312	4,554	3,491	3,586	3,491	N/A	2ME, 3ME, 4ME, 5ME, 5SH, 15D, 25D, 40D, 60D, WSN

Field Adjustable Output (Q9/Q6/Q5/Q4/Q3/Q2/Q1) Option Description:

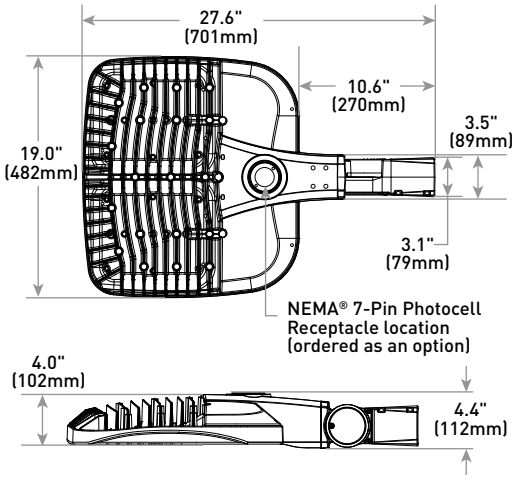
The Field Adjustable Output option enables the OSQ area luminaires to be tuned to the exact needs of a particular application through multiple levels of adjustment. When ordered with the Q option, the luminaire will be shipped from the factory at the selected Q setting and will be fully adjustable between the nine settings.

Q Option Power & Lumen Data – Designator K

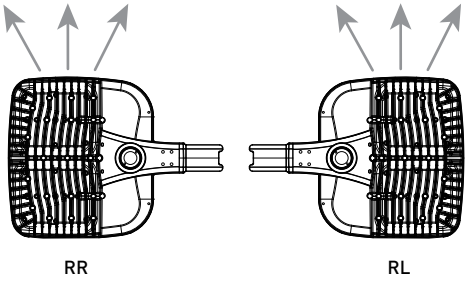
Q Option Setting	CCT/CRI	System Watts	Lumen Values						Optics Qualified on DLC QPL	
		120-480V	Asymmetric	5ME	5SH & Floods	2ME w/BLS	3ME w/BLS	4ME w/BLS	Standard	Premium
Q9 (Full Power)	30K (70 CRI)	130	16,022	15,063	15,909	12,312	12,649	12,312	5ME	2ME, 3ME, 4ME, 5SH, 15D, 25D, 40D, 60D, WSN
	40K (70 CRI)		16,959	15,999	16,897	13,032	13,389	13,032	N/A	2ME, 3ME, 4ME, 5ME, 5SH, 15D, 25D, 40D, 60D, WSN
	50K (90 CRI)		14,000	14,925	15,800	10,750	11,050	10,750	TBD	TBD
	57K (70 CRI)		17,291	16,277	17,191	13,286	13,650	13,286	N/A	2ME, 3ME, 4ME, 5ME, 5SH, 15D, 25D, 40D, 60D, WSN
Q6	30K (70 CRI)	117	14,099	13,255	14,000	10,835	11,131	10,835	5ME	2ME, 3ME, 4ME, 5SH, 15D, 25D, 40D, 60D, WSN
	40K (70 CRI)		14,924	14,079	14,869	11,468	11,782	11,468	N/A	2ME, 3ME, 4ME, 5ME, 5SH, 15D, 25D, 40D, 60D, WSN
	50K (90 CRI)		12,500	13,350	14,100	9,600	9,875	9,600	TBD	TBD
	57K (70 CRI)		15,216	14,324	15,128	11,692	12,012	11,692	N/A	2ME, 3ME, 4ME, 5ME, 5SH, 15D, 25D, 40D, 60D, WSN
Q5	30K (70 CRI)	110	13,298	12,502	13,204	10,219	10,499	10,219	5ME	2ME, 3ME, 4ME, 5SH, 15D, 25D, 40D, 60D, WSN
	40K (70 CRI)		14,076	13,279	14,025	10,817	11,113	10,817	N/A	2ME, 3ME, 4ME, 5ME, 5SH, 15D, 25D, 40D, 60D, WSN
	50K (90 CRI)		11,250	12,050	12,725	8,650	8,900	8,650	TBD	TBD
	57K (70 CRI)		14,352	13,510	14,269	11,027	11,330	11,027	N/A	2ME, 3ME, 4ME, 5ME, 5SH, 15D, 25D, 40D, 60D, WSN
Q4	30K (70 CRI)	93	11,536	10,845	11,454	8,865	9,107	8,865	5ME	2ME, 3ME, 4ME, 5SH, 15D, 25D, 40D, 60D, WSN
	40K (70 CRI)		12,210	11,519	12,166	9,383	9,640	9,383	N/A	2ME, 3ME, 4ME, 5ME, 5SH, 15D, 25D, 40D, 60D, WSN
	50K (90 CRI)		9,825	10,525	11,100	7,550	7,750	7,550	TBD	TBD
	57K (70 CRI)		12,450	11,719	12,378	9,566	9,828	9,566	N/A	2ME, 3ME, 4ME, 5ME, 5SH, 15D, 25D, 40D, 60D, WSN
Q3	30K (70 CRI)	80	9,773	9,188	9,704	7,510	7,716	7,510	5ME	2ME, 3ME, 4ME, 5SH, 15D, 25D, 40D, 60D, WSN
	40K (70 CRI)		10,345	9,759	10,307	7,950	8,167	7,950	N/A	2ME, 3ME, 4ME, 5ME, 5SH, 15D, 25D, 40D, 60D, WSN
	50K (90 CRI)		8,350	8,950	9,475	6,425	6,600	6,425	TBD	TBD
	57K (70 CRI)		10,548	9,929	10,487	8,104	8,327	8,104	N/A	2ME, 3ME, 4ME, 5ME, 5SH, 15D, 25D, 40D, 60D, WSN
Q2	30K (70 CRI)	67	8,171	7,682	8,114	6,279	6,451	6,279	5ME	2ME, 3ME, 4ME, 5SH, 15D, 25D, 40D, 60D, WSN
	40K (70 CRI)		8,649	8,159	8,617	6,646	6,828	6,646	N/A	2ME, 3ME, 4ME, 5ME, 5SH, 15D, 25D, 40D, 60D, WSN
	50K (90 CRI)		6,825	7,325	7,725	5,250	5,375	5,250	TBD	TBD
	57K (70 CRI)		8,818	8,301	8,767	6,776	6,962	6,776	N/A	2ME, 3ME, 4ME, 5ME, 5SH, 15D, 25D, 40D, 60D, WSN
Q1	30K (70 CRI)	51	6,249	5,875	6,205	4,802	4,933	4,802	5ME	2ME, 3ME, 4ME, 5SH, 15D, 25D, 40D, 60D, WSN
	40K (70 CRI)		6,614	6,240	6,590	5,082	5,222	5,082	N/A	2ME, 3ME, 4ME, 5ME, 5SH, 15D, 25D, 40D, 60D, WSN
	50K (90 CRI)		5,250	5,650	5,975	4,030	4,150	4,030	TBD	TBD
	57K (70 CRI)		6,743	6,348	6,704	5,182	5,324	5,182	N/A	2ME, 3ME, 4ME, 5ME, 5SH, 15D, 25D, 40D, 60D, WSN

AA Mount

Weight
28.4 lbs. (12.9kg)



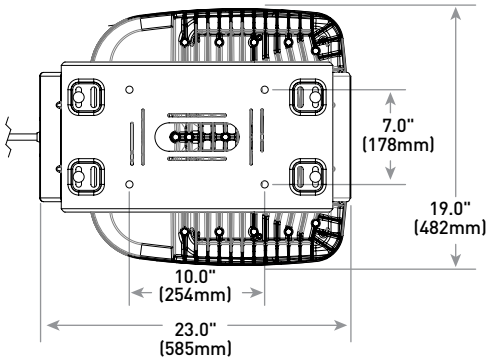
RR/RL Configuration

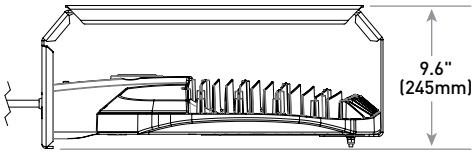


TSP Mount

Weight
42.0 lbs. (19.1kg)

OSQ Large luminaire shown.

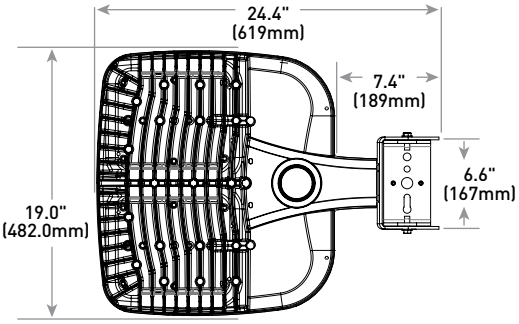


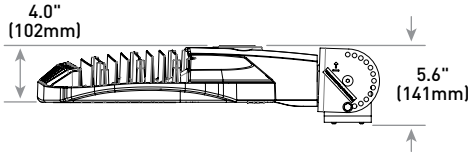


TM Mount

Weight
32.6 lbs. (14.8kg)

OSQ Large luminaire shown.





US: creelighting.com **(800) 236-6800**
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