



BOARD OF SELECTMEN

MEETING AGENDA

Monday, March 14, 2022

7:00 p.m.

Pursuant to Chapter 20 of the Acts of 2021, An Act Relative to Extending Certain COVID-19 Measures Adopted During the State of Emergency, signed into law on June 16, 2021, this meeting will be conducted via remote participation. No in-person attendance by members of the public will be permitted.

To view or listen

- Live Stream link YouTube:
https://www.youtube.com/channel/UCRdBrw3HeEAMB_KFKasrgXA
- Zoom webinar link: <https://town-northborough-ma-us.zoom.us/j/84889680795>
When prompted, enter Password 070707
- CATV Government Channels: Verizon Channel 30, Charter Channel 192
- Call 1-646-876-9923
When prompted, enter Meeting ID 848 8968 0795 and Password 070707

For Public Comment

*** Public comment will be limited to 3 minutes per person ***

- **By Phone** Dial *9 to raise your hand and wait to be recognized by the Chair. Please note that part of your phone number will be visible to those viewing the meeting.
 - **By Zoom** Click “Raise Hand” on the bottom of your screen and wait to be recognized by the Chair
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BOARD OF SELECTMEN

MEETING AGENDA

Monday, March 14, 2022

7:00 p.m.

[*Approval of February 28, 2022 Meeting Minutes](#)

7:00 p.m. - PUBLIC HEARING

To consider a petition as submitted by New Cingular Wireless PCS, LLC d/b/a AT&T for a Grant of Location for a Small Wireless Facility on a Replacement Utility Pole near 170 Hudson Street.

7:05 p.m. - PUBLIC HEARING

To consider a petition as submitted by New Cingular Wireless PCS, LLC d/b/a AT&T for a Grant of Location for a Small Wireless Facility on a Replacement Utility Pole near 138 Main Street.

7:10 p.m. - WILLIAM LYVER, POLICE CHIEF

Appointment of Melissa Lonergan as Police Officer.

7:20 p.m. - FRED GEORGE, TOWN MODERATOR

Discussion in consultation with the Board regarding the date, time and location of Annual Town Meeting.

7:35 p.m. - JOHN CAMPBELL, COMMUNITY PRESERVATION COMMITTEE CHAIR

Presentation on CPC Town Meeting Warrant Articles.

7:55 p.m. - KERRI MARTINEK, PLANNING BOARD CHAIR

Presentation on Zoning Town Meeting Warrant Articles.

REPORTS PUBLIC COMMENTS NEW BUSINESS

1. [Review and Approval of Draft Legislative Priorities Letter.](#)
2. [Presentation of FY2023 Capital Budget and FY2023 ARPA Funding Plan Authorization.](#)
3. [Review and Close Town Meeting Draft Warrant.](#)
4. Any other business to come before the Board.

**BOARD OF SELECTMEN
MEETING MINUTES – February 28, 2022**

7:00 p.m. - Chairman’s Introduction to Remote Meeting

Chairman Perreault stated that this Open Meeting of the Board of Selectmen was being conducted remotely consistent with Governor Baker’s Executive Order of June 16, 2021, an Act Relative to Extending Certain COVID-19 Measures Adopted During the State of Emergency and that all members of the Board of Selectmen are allowed and encouraged to participate remotely.

Chairman Perreault noted that the Order allows public bodies to meet entirely remotely so long as reasonable public access is afforded so that the public can follow along with the deliberations of the meeting. He added that ensuring public access does not ensure public participation unless such participation is required by law. Chairman Perreault noted that this meeting will allow for Public Comment. He indicated the various ways that the public may view or participate in this meeting as listed on the posted agenda.

Chairman Perreault confirmed that the following members and persons anticipated on the agenda were remotely present and could be heard.

Board of Selectmen

Jason Perreault, Chair
Leslie Rutan, Vice Chair
T. Scott Rogers, Clerk
Julianne Hirsh
Kristen Wixted

Others

John Coderre, Town Administrator
Rebecca Meekins, Assistant Town Administrator
William Lyver, Police Chief
David Parenti, Fire Chief
Scott Charpentier, DPW Director

Meeting Business Ground Rules

Chairman Perreault covered the ground rules for effective and clear conduct of the business. He asked members of the Board to mute their phone or computer when not speaking and to speak clearly and in a way that helps generate accurate meeting minutes. He will go through the items on the agenda. Following presentations, Board members will be offered an opportunity to speak, followed by staff members answering any questions, if necessary. Those responding will be asked to wait until the floor is yielded to them. Members were asked if they wish to respond to the comments of others, to do so through the Chair.

Any votes taken this evening will be done by roll call to ensure that the records of the vote are clear and accurate to the members attending the meeting remotely.

APPROVAL OF MINUTES – FEBRUARY 14, 2022 MEETING

Selectman Rogers moved the Board vote to approve the February 14, 2022 meeting minutes; Selectman Rutan seconded the motion; the roll call vote was taken as follows:

Wixted	“aye”	Rutan	“aye”
Hirsh	“aye”	Perreault	“aye”
Rogers	“aye”		

7:00 p.m. - PUBLIC HEARING

To consider an application as submitted by Margaritas Management Group – Northborough, Inc. d/b/a Tio Juans Margaritas Mexican Restaurant for a Change in Stock Interest and a Change in Officer/Directors for their All Alcoholic Beverages Restaurant License for premises located at 10006 Shops Way.

Jodenne Scott was remotely present on behalf of Margaritas Management Group – Northborough, Inc. d/b/a Tio Juans Margaritas Mexican Restaurant. She stated that the application for a Change in Stock Interest and a Change in Officers/Directors for their All Alcoholic Beverages Restaurant License located at 10006 Shops Way is due to a redistribution of ownership with no financial transactions involved. She confirmed that the restaurant is open and there will be no changes in the management or operation of the restaurant.

Chief Lyver stated that the application has been reviewed by Lieutenant Brian Griffin who has no concerns to report.

Chairman Perreault invited comments from the public. There were none.

Selectman Rutan moved the Board vote to close the public hearing; Selectman Rogers seconded the motion; the roll call vote was taken as follows:

Wixted	“aye”	Rutan	“aye”
Hirsh	“aye”	Perreault	“aye”
Rogers	“aye”		

Selectman Wixted moved the Board vote to approve the application as submitted by Margaritas Management Group – Northborough, Inc. d/b/a Tio Juans Margaritas Mexican Restaurant for a Change in Stock Interest and a Change in Officers/Directors for their All Alcoholic Beverages Restaurant License for premises located at 10006 Shops Way; Selectman Hirsh seconded the motion; the roll call vote was taken as follows:

Wixted	“aye”	Rutan	“aye”
Hirsh	“aye”	Perreault	“aye”
Rogers	“aye”		

7:10 p.m. - PUBLIC HEARING

Implementation of “Jake Break” prohibition on Lyman Street, pursuant to Town Code, Chapter 2-44-130 Compression Brake Use Restriction.

Mr. Charpentier noted that voters approved a compression brake, commonly known as a jake brake, restriction bylaw at the 2021 Annual Town Meeting. Since then, the Planning Department received correspondence from several residents expressing concern over the disruptive noise attributed to the use of compression brakes in the Lyman Street area. He requested that the Board adopt a compression brake prohibition for the segment of Lyman Street from approximately Ridge Road north to Bartlett Street.

Following Mr. Charpentier’s presentation, a discussion ensued about where the signs would be installed and whether language could be added that would inform the average driver, what the term

“No Engine Brake” means and that this prohibition specifically refers to truckers. Chief Lyver indicated that the term “No Engine Brake” is widely known in the trucker industry. Mr. Charpentier added that once the signs are installed, the prohibition is considered enforceable. He added that weather permitting, the signs will be installed in mid-March.

Chairman Perreault invited comments from the public. There were none.

Selectman Rutan moved the Board vote to close the public hearing; Selectman Rogers seconded the motion; the roll call vote was taken as follows:

Wixted	“aye”	Rutan	“aye”
Hirsh	“aye”	Perreault	“aye”
Rogers	“aye”		

Selectman Hirsh moved the Board vote to adopt a compression brake prohibition for the segment of Lyman Street from approximately Ridge Road north to Bartlett Street as recommended by the DPW Director; Selectman Rutan seconded the motion; the roll call vote was taken as follows:

Wixted	“aye”	Rutan	“aye”
Hirsh	“aye”	Perreault	“aye”
Rogers	“aye”		

7:25 p.m. - SCOTT CHARPENTIER, DPW DIRECTOR

Acceptance of MassDOT Grant Award for Development of Complete Streets Prioritization Plan.

Mr. Charpentier provided the following update on the Town’s participation in the Massachusetts Department of Transportation (MassDOT) “Complete Streets Funding Program.” The goal of this program is to support safe and accessible options for all modes of travel – walking, biking, and vehicular. The Board of Selectmen adopted the Town of Northborough Complete Streets Policy at their January 10, 2022 meeting. The Policy was approved by MassDOT on January 18, 2022 with a score of 91.

Mr. Charpentier announced that the Public Works Department submitted a grant application to MassDOT and on February 17, 2022 was awarded the full amount of \$35,200 to aid in the development of a Complete Streets Prioritization Plan. He added that communities with a locally adopted Policy and a MassDOT approved Prioritization Plan are then eligible to seek construction funding grants for up to \$400,000 to aid in plan implementation. Projects often include sidewalk widening, accessible ramps, new sidewalk construction, implementation and/expansion of bicycle lanes and shared lanes, and connections to multimodal destinations. Construction grants cannot be used for survey, land acquisition, or design services. These tasks must be funded through other means such as a local appropriation or through Chapter 90 Roadway Funding.

Mr. Charpentier informed the Board that the next program step is for the Town, with its consultant, to prepare through a public input process a Complete Streets Prioritization Plan for MassDOT acceptance. This plan will identify needs, gaps, possible funding sources, and implementation schedules for sidewalk, bicycle, and accessible transportation connectivity improvements. The

plan is to implement the public input process in May and June and to complete the Prioritization Plan and submit to MassDOT for approval in September.

Mr. Coderre stated that the Complete Streets Program is an outgrowth of the Master Plan, adding that the Master Plan Implementation Committee's (MPIC) focus is on walkability and multimodal avenues of transportation. He stated that moving forward, this process must look at the needs of the community in a wholistic manner and not just focus on one particular neighborhood, project or issue. He added that in addition to the \$400,000 that will be available in grant funding, a funding plan will need to be developed through the Capital Improvement Plan for a recurring revenue source for the continued implementation of the Prioritization Plan.

Selectman Rogers moved the Board vote, pursuant to Massachusetts General Law, Chapter 44, Section 53A, to accept funds from the MassDOT Complete Streets Funding Program, and to authorize the Town Administrator to expend such funds; Selectman Rutan seconded the motion; the roll call vote was taken as follows:

Wixted	“aye”	Rutan	“aye”
Hirsh	“aye”	Perreault	“aye”
Rogers	“aye”		

REPORTS

Kristen Wixted

- Thanked those residents who took the time to email their concerns to the Board regarding the Proctor School roof.
- Reported on the recent meeting of the Community Affairs Committee (CAC).
- Asked residents to let the CAC know if they need help with cleaning up trash in their neighborhoods as they prepare for the annual Louise Houle Clean Up Day.

Julianne Hirsh

- Reported on the recent meeting of the Cultural Council.
- Reported on the recent meeting of the Master Plan Implementation Committee.
- Noted that the Westborough Sustainability Committee is sponsoring an Energy Fair on April 30.
- Requested an update on the take back of 4 West Main Street. Mr. Coderre responded that the building can be returned to the Town in May of 2022. He stated that public access to assess the building needs cannot be done at this time as the property is under a private owner. The lack of parking will also require further discussion and possible negotiations.
- Requested that the Facilities Manager be invited to a future Board meeting to provide an update on public building assessments. Mr. Coderre responded that Facilities Manager Shawn Thompson has just completed training and is now a certified public procurement officer. Now that he is beginning to get settled in, he would be happy to invite him to a future Board meeting.

T. Scott Rogers

- Thanked Principal Assessor Julie Brownlee for taking the time to educate him on the assessment process of residential, commercial and industrial properties.

Leslie Rutan

- Thanked the DPW Department for their clean-up efforts following the recent winter storm.
- Reported on the recent special meeting of the Regional School Committee and provided an update on the masking policies at each of the Schools.
- Provided an update on the Assabet Park Playground project, which is scheduled to be completed by Memorial Day.
- Requested that the newly hired Town Planner be invited to attend a future meeting.

Jason Perreault

- No report.

John Coderre

- No report.

PUBLIC COMMENTS

Chairman Perreault stated that the Public Comment portion of the agenda allows for the public to provide input, comments, questions, or concerns. The Board will not engage or deliberate in any detailed discussion, nor will it take action or make any commitments in real time in response to any public comment. If they are able, present Town staff may respond to any questions that can easily be answered. Those who wish to speak under Public Comment will be admitted to the meeting as an attendee and will be asked to provide their full name and address for the record. Public comment will be limited to 3 minutes per person.

Laura Ziton of 17 Franklin Circle requested that the Board's meeting packets be added to the website on Friday rather than on Monday morning.

VOTE ON MSBA STATEMENT OF INTEREST FOR PROCTOR SCHOOL ROOF

School Superintendent Greg Martineau and Assistant School Superintendent Keith Lavoie were remotely present. Superintendent Martineau stated that the School Department is requesting that the Board of Selectmen authorize him to file a Statement of Interest (SOI) with the Massachusetts School Building Authority (MSBA) under the accelerated program for replacement of the flat sections of the Proctor Elementary School roof. The Town replaced the peaked metal roof sections several years ago and replacement of the flat roof sections is in the Capital Improvement Plan for FY2024. The Town is seeking MSBA's assistance in paying for a portion of the total project cost, which is estimated to be between \$1.5 and \$1.6 million with a MSBA reimbursement of between 42 – 47%. Superintendent Martineau responded that through MSBA's accelerated program, the project is expected to take between 10 – 15 months to complete.

Questions and comments were heard from members of the Board regarding the drainage and ponding water issues on the roof. Mr. Martineau informed the Board that he will be sharing a report with the Northborough School Committee at their March meeting, at which point the School Department may also seek funding to make immediate repairs to the downspouts and drains in order to resolve some of the ponding water issues on the roof.

Mr. Martineau stated that the Proctor School roof was not eligible as an MSBA project until this year due to its age. He confirmed that since 1997, the roof has received routine maintenance with no major roof construction or repairs. He also confirmed that the school custodians are doing a

great job of ensuring that the drains are clear. He added that they also have a roof contractor who is able to make minor short-term repairs until the roof can be fully replaced.

Selectman Rutan moved the Board vote to authorize the School Superintendent to submit to the Massachusetts School Building Authority the Statement of Interest Form dated February 2022, for the Fannie E. Proctor Elementary School located at 26 Jefferson Road which describes and explains the following deficiencies and the priority category(s) for which an application may be submitted to the Massachusetts School Building Authority in the future for replacement of the EPDM roofing system under Priority #5. The replacement of the 40,000 square foot roof system is necessary due to its age, ruptured seams, punctured membrane, and water damage. I acknowledge that by submitting this Statement of Interest Form, the Massachusetts School Building Authority in no way guarantees the acceptance or the approval of an application, the awarding of a grant or any other funding commitment from the Massachusetts School Building Authority, or commits the Town of Northborough to filing an application for funding with the Massachusetts School Building Authority; Selectman Rogers seconded the motion; the roll call vote was taken as follows:

Wixted	“aye”	Rutan	“aye”
Hirsh	“aye”	Perreault	“aye”
Rogers	“aye”		

DISCUSSION OF LEGISLATIVE PRIORITIES

Mr. Coderre indicated that the Town will formally update the legislative priorities letter for the Board’s review at their March 14th meeting in preparation of the Delegation’s attendance at the Board’s March 28th meeting. The top priorities remain basically the same. He reviewed the top legislative priorities relating to Chapter 90 Roadway Repair Funding and Chapter 70 State Aid (the Student Opportunity Act, Special Education Circuit Breaker Program, Regional Transportation Reimbursements and Unrestricted General Government Aid).

Chapter 90 Roadway Repair Funding

The Chapter 90 Roadway Repair Funding is especially critical considering the discussions regarding complete streets, sidewalks, walkability and pedestrian safety. Mr. Coderre noted that Chapter 90 Roadway Repair Funding is the top legislative priority. It has remained at \$200 million statewide over the last five years (FY2018-FY2022). The Town and the MMA continue to lobby for \$300 million statewide. The Town’s legislative priority for Chapter 90 Roadway Repair Funding is to continue to lobby for \$300 million annually statewide and to support the Governor’s supplemental budget for FY2022 including \$100 million in supplemental funding for Chapter 90 distribution, which could potentially provide significant additional revenues for roadway repairs. Under the \$200 million appropriation level Northborough receives approximately \$500,000.

State Aid

The circuit breaker fund reimburses local school districts for a portion of their costs above a certain threshold for educating students with severe disabilities. The Special Education Circuit Breaker has been historically underfunded.

The Regional Transportation Reimbursement program provides funding for transportation reimbursements to regional school districts and is another historically underfunded account, which

creates a hardship for any community in a regional school district. He added that in the Governor's Budget that was submitted this past January again reduced this funding.

The Town is lobbying that the Governor's FY2023 proposed budget reflect an increase in Unrestricted General Government State Aid consistent with the forecasted state "consensus" revenue estimate of 2.7%.

Lastly, the Student Opportunity Act is designed to fix long-known gaps in the Chapter 70 school aid formula by ensuring adequate weight for special education expenses and the cost of health benefits for school personnel, and the additional resources needed to educate English learners and economically challenged students. The \$30 per-student minimum aid commitment for Northborough is far too low and will impede education achievement. The Town joins MMA's call for a minimum aid increase of at least \$100 per student, so that no school system or student is left behind.

Mr. Coderre reviewed the additional secondary legislative issues and initiatives, including funding for environmental and climate-related infrastructure needs, ongoing flexibility in addressing Covid-19, OPEB reform at the State level, promotion of Equity and Diversion in Cities and Towns, opposition to new unfunded mandates, and modernization of procurement and public construction laws. He added that although support for legislation to exempt agricultural composting operations was a priority in recent years, it will not be included in future years. Although previous agricultural composting legislation was not successful, it was valuable to Northborough in that it brought a great amount of attention to the issue and helped to address the two longstanding composting operations in Northborough.

In addition, he recommended adding a priority to support Representative Gregoire's proposed Bills that would create a Municipal Public Safety Building Code similar to the Massachusetts Building Code. He will provide additional information on this effort at the Board's next meeting.

Questions and comments were heard from members of the Board expressing support for Chapter 90 Roadway Repair Funding and Chapter 70 State Aid (the Student Opportunity Act, Special Education Circuit Breaker Program, Regional Transportation Reimbursements and Unrestricted General Government Aid), the promotion of Equity and Diversion in Cities and Towns, ongoing flexibility in addressing Covid-19, specifically the suspension of Open Meeting Law requirements that allows for better access and transparency for residents and businesses to stay involved in local government.

In response to an inquiry regarding a proposed Legislative Bill relative to automated traffic enforcement that would allow municipalities to install cameras at troublesome intersections, additional information will be provided.

UPDATE ON PRELIMINARY FY2023 BUDGET

Mr. Coderre referenced the following overall budget goals and objectives as discussed at the December 20, 2021 Financial Trend Monitoring Presentation:

1. To protect and improve the Town's overall Financial Condition
2. To develop a budget that is in conformance with the Town's comprehensive financial policies

3. To maintain Northborough as an affordable place to live and operate a business

4. To protect the Town's long-run solvency

Mr. Coderre briefly reviewed the FY2023 revenue assumptions as follows:

State Aid

Current budget models assume Northborough's State Aid will increase 1% over the \$5.6 million received in FY2022. The Governor is filing a \$2.4 billion spending bill that includes funding for critical municipal programs, including a \$100 million supplemental distribution for the Chapter 90 local road and bridge program, \$100 million to help municipalities repair winter road damage, and \$150 million for climate change grants, including the Municipal Vulnerability Preparedness program. If passed by the Legislature, these additions will have a significant impact on Northborough's capital improvement plans.

New Growth

New Growth is estimated at \$40 million based upon an analysis of building permits and ongoing construction projects, which will result in approximately \$659,600 in new FY2023 tax revenues. New growth is forecasted to drop back down to approximately \$30 million for the foreseeable future, barring any significant new development coming to Town. As the Town approaches buildout, new growth will become a smaller source of future tax revenues.

Local Receipts

Local Receipts are level funded at \$4.17 million in FY2023, as motor vehicle excise, hotel and meal taxes slowly recover from the impacts of the pandemic. The Local Receipts total also includes approximately \$212,000 in annual revenues resulting from the Regional High School settlement.

Mr. Coderre reviewed the following issues that will impact the key budgets:

The first issue is the status of the outstanding union contract negotiations as well as the ongoing Classification/Compensation Study. All five collective bargaining contracts expire June 30, 2022, and are currently under negotiation for FY2023. The Town is also in the process of completing a comprehensive Classification/Compensation Study designed to update all position job descriptions and conduct a market survey to ensure the Town's compensation and benefits remain competitive. Estimated budget impacts for both contract settlements and the Classification/Compensation Study will need to be budgeted centrally pending completion.

The second issue relates to the Town's health insurance budget. The Town's health insurance carrier, Fallon, made the decision to exit the public market, effective June 30, 2022. As a result, the Town conducted a formal bid process to find a new provider. As part of the bid process, a Joint Procurement Association (JPA) was created with ARHS and the Town of Southborough in order to enhance the market leverage. Following review of the bid results, the Town met with the Insurance Advisory Committee (IAC), which consists of members from all the bargaining units, including the K-8 School department. The IAC voted unanimously to recommend the administration's proposal to select Harvard Pilgrim as the Town's new carrier. While the health insurance budget figures are still being finalized, it is anticipated that the increase should be within the sustainable 3% target increase.

The Town recently received notice from Norfolk County Agricultural High School (NCAHS) that another student applied for admission for the 2022-2023 school year. As in prior years, Northborough has borne the expense of tuition and transportation to the NCAHS in the General Government (non-school) portion of the budget. Since the Town of Northborough does not offer the particular vocational technical education program in which the student is interested, either at the high school or the regional vocational technical high school to which the town belongs (Assabet Valley), the student then has the option to apply to any school that offers such a program.

According to the February 22nd NCAHS letter, the out-of-county tuition rate is \$24,572 per student, exclusive of any transportation costs, which have yet to be determined. Given the late notice of this development, it is not fair to ask departments to cut an additional \$25,000 to \$38,000 from their budgets to accommodate this educational expense, which is why the final General Government budget is likely to increase slightly more than the proposed 3.5%.

Mr. Coderre reported that based upon revised assumptions, the budgets for the key departments are estimated to increase as follows:

- Northborough K-8 Schools increase \$893,275 or 3.46% to \$26,692,953
- General Government (Town) increases \$827,387, or 3.5% to \$24,466,996, pending addition of final NCAHS tuition and transportation expenses.
- The overall Assabet Valley Vocational HS operating budget is increasing \$1,004,684, or 4.3% to \$24,108,684. However, Northborough's Operating Assessment increases by \$189,278, or 20.25% to \$1,123,936 as enrollment increases from 59 to 68 students. Debt service associated with the completed renovation project decreases from \$133,832 to \$130,004, a 2.86% reduction.
 - Net effect of the combined Operating Assessment and new debt service is \$1,253,940, an overall increase of \$185,450, or 17.36%
- The overall Algonquin Regional High School (ARHS) budget is increasing by \$750,378, or 3% to \$25,727,081. However, Northborough's ARHS Operating Assessment is increasing just \$21,469 or 0.17% to \$12,914,966 due primarily to shifting enrollments. The debt for ARHS increases by \$5,223, or 0.81% to \$653,069.
 - Net effect of the combined Operating Assessment and new debt service is an overall increase of \$26,692

Mr. Coderre noted that the Board will be holding its annual joint budget hearing with the Appropriations Committee on March 28th to discuss the FY2023 proposed budget.

In response to questions from members of the Board, Mr. Coderre indicated that the projects included in the Capital Improvement Plan will likely be funded through Free Cash while others such as the Downtown Master Plan and the BeWellNorthborough initiative may be funded through ARPA funds. The detailed separation of funding sources will come from the work of the Financial Planning Committee in their upcoming meetings. He confirmed that those projects funded through ARPA will not require Town Meeting approval and that the intent of the BeWellNorthborough initiative is to be able to work through the existing Boards and Committees to quickly and efficiently identify programs and services that can be funded through ARPA immediately. He

added that the public will have the opportunity to provide input as to what programs and services they would like to see the Town offer.

REVIEW OF PRELIMINARY TOWN MEETING WARRANT SUMMARY

Mr. Coderre presented to the Board a draft summary of the warrant articles for the Annual Town Meeting. He noted that at this stage the initial draft of the Warrant often contains incomplete information and placeholders. Following his review of the draft warrant articles, he indicated that the Board will vote to close the warrant at its March 14th meeting. It will then be reviewed and finalized by Town Counsel and posted prior to Town Meeting.

Mr. Coderre informed the Board that the Town Moderator will be invited to the Board's next meeting to discuss whether to hold Town Meeting in the High School Auditorium on the evening of Monday, April 25th or to again hold it outside on the High School football field on Saturday, April 30th.

EXECUTION OF CEMETERY DEED

Selectman Wixted moved the Board vote to execute Cemetery Deed 1141; Selectman Rogers seconded the motion; the roll call vote was taken as follows:

Wixted	"aye"	Rutan	"aye"
Hirsh	"aye"	Perreault	"aye"
Rogers	"aye"		

OTHER BUSINESS

None.

ADJOURNMENT

Selectman Rogers moved the Board vote to adjourn, Selectman Hirsh seconded the motion; the roll call vote was taken as follows:

Wixted	"aye"	Rutan	"aye"
Hirsh	"aye"	Perreault	"aye"
Rogers	"aye"		

The open meeting ended at 9:30 p.m.

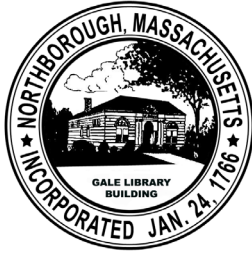
Respectfully submitted,



Diane M. Wackell
Executive Assistant to the
Board of Selectmen

Documents used during meeting:

1. February 28, 2022 Meeting Agenda
2. February 14, 2022 Meeting Minutes
3. Information packet – Margaritas Management Group – Northborough, Inc.
4. Memorandum – Jake Brake Prohibition on Lyman Street
5. Memorandum – MassDOT Grant Award
6. Information packet – MSBA Statement of Interest for Proctor School Roof
7. Information packet – Legislative Priorities
8. Memorandum – Preliminary FY2023 Budget
9. Preliminary Town Meeting Warrant Summary
10. Cemetery Deed



TOWN OF NORTHBOROUGH

Board of Selectmen
Town Offices, 63 Main Street
Northborough, MA 01532-1994
508-393-5040 Phone
www.town.northborough.ma.us

NORTHBOROUGH BOARD OF SELECTMEN PUBLIC HEARING NOTICE

Pursuant to Massachusetts General Laws, Chapter 166, Section 22, you are hereby notified that the Northborough Board of Selectmen will hold a remote Public Hearing on Monday, March 14, 2022 at 7:00pm to consider a Petition for a Grant of Location for a Small Wireless Facility on a Replacement Utility Pole near 170 Hudson Street as submitted by New Cingular Wireless PCS, LLC d/b/a AT&T further described as follows:

Near 170 Hudson Street

AT&T proposes to install: fiber optic cable(s); remote radios in an equipment cabinet 44" long by 21" wide by 20" deep mounted to a proposed replacement 38' 6" tall wood utility pole at 12' 9" above ground level; one top-mounted antenna measuring 24.5" high with a 14.7" diameter; conduits and cable protectors; and an electrical meter 8" AGL with shutoff switch and grounding rod. For reference, the existing wood utility pole has a top height of 23' 11" AGL and the replacement pole will have a top height of 38' 6" AGL. AT&T's antennas must be at least 48" from utility lines.

Reason

To create and monitor better reliability of the rapidly increasing demands on AT&T's wireless network in this area.

Pursuant to Governor Baker's Executive Order of June 16, 2021, an Act Relative to Extending Certain COVID-19 Measures Adopted During the State of Emergency this meeting of the Northborough Board of Selectmen will be conducted via remote participation to the greatest extent possible.

To join the Public Hearing

URL link: . <https://town-northborough-ma-us.zoom.us/j/84889680795> Passcode: 070707

Join by phone: 1 646 876 9923 / Webinar ID: 848 8968 0795 / Passcode: 070707

Any person wishing to be heard should remotely join this Public Hearing at the date and time mentioned above. You can also call the Town Engineer at 508-393-5015 with any questions.

T. Scott Rogers, Clerk
Northborough Board of Selectmen

cc: Abutters

MEMO

TO: John Coderre, Town Administrator

CC: Scott Charpentier, Public Works Director
William Lyver, Police Chief
David Parenti, Fire Chief

FROM: Fred Litchfield, Town Engineer

DATE: March 10, 2022

RE: Small Cell Wireless Facilities

I have reviewed the petition of New Cingular Wireless PCS, LLC d/b/a AT&T for a grant of location for Two (2) Small Cell Wireless Facilities on two (2) replacement utility poles in the right of way near 170 Hudson Street and 138 Main Street. Town Counsel has also reviewed the above referenced application and indicated the proposed installations should be considered by the Board of Selectmen under the provisions of M.G.L. c. 166 ss 21 and 22 which is the pole location approval process typically followed by the Board.

This work is being proposed as part of AT&T's plan to improve cellular service to deal with the increased demand on their wireless network. The poles are owned by National Grid who has authorized AT&T to replace the poles at each of these locations.

The first pole replacement location is proposed at 170 Hudson Street and involves replacing existing pole # 41-1 with a 38.5 foot pole with the small cell antenna to be located on top of the new pole. The additional height is required as the antenna must be located 48 inches above any utility lines. This work is proposed near the Town owned water pump station a minimum of two police officers should be required during the installation process to ensure traffic safety due to the high traffic and road alignment near the aqueduct.

The second pole replacement location is proposed at 138 Main Street and involves replacing existing pole #30 with a 43 foot pole with the small cell antenna to be located on top of the new pole. Again, the additional height is required as the antenna must be located 48 inches above any utility lines. This work is proposed near Town owned property formerly known as the White Cliffs which also has a significant amount of traffic in this area. All equipment should be operated from the sidewalk area and have minimal impact on traffic but at least one detail Police Officer should be required during the installation process to ensure traffic safety.

Since this application was submitted on December 20, 2021, please note Town Counsel has recommended this hearing be held and action be taken by March 21st in order to meet the 90 day decision deadline as required by FCC regulations.

In my opinion there are no other issues with this work as proposed, and I recommend this petition be approved provided public safety is made aware of when the work is going to occur.

December 20, 2021

VIA EMAIL

Board of Selectmen
Town of Northborough
c/o Diane Wackell
Executive Assistant
63 Main Street
Northborough, MA 01532

RE: Petition of New Cingular Wireless PCS, LLC d/b/a AT&T (“AT&T”) for a Grant of Location for Two (2) Small Cell Wireless Facilities, Including Telecommunication Wires, Wireless Attachments and Antennas, and Appurtenances on two (2) Replacement Utility Poles in the Public Right-of-Way near 170 Hudson Street and 138 Main Street

Dear Honorable Members of the Northborough Board of Selectmen:

We represent New Cingular Wireless PCS, LLC (d/b/a "AT&T") with respect to its deployment of small cell facilities in the Town of Northborough and the Commonwealth of Massachusetts. AT&T is licensed by the Federal Communications Commission (the "FCC") to provide wireless communications services in the Town of Northborough and throughout the Commonwealth of Massachusetts.

On behalf of AT&T and while reserving all rights, please accept this submission as a petition for approval (the "Application") for two (2) small cell wireless facilities installed on **two (2) Replacement Utility Poles in the Public Right-of-Way on Hudson and Main Streets** and located near the above-referenced addresses in Northborough, MA (the "Site") pursuant to the federal Telecommunications Act of 1996 (the "Act"), the Declaratory Ruling and Third Report and Order 18-133 (the "Order") issued by the FCC in September 2018 https://docs.fcc.gov/public/attachments/FCC-18-133A1_Rcd.pdf and Massachusetts General Laws Chapter 166, Section 21,22, 25A for telecommunication wires and wireless attachments and appurtenances installed within the public right-of-way. The existing utility poles are owned by National Grid and Verizon. AT&T has entered into a Pole Attachment Agreement with National Grid, and we have included a copy of the license issued by National Grid which allows for the installations. AT&T's small cell wireless facilities comply and are in accordance with the Act, the Order and Massachusetts law.

We have also provided detailed sets of drawings (the "Plans") and maps for the small cell facilities. Also, please find a small cell wireless facility radio frequency emissions report from Mr. Donald Haes, an emissions and radiation expert, demonstrating compliance with applicable exposure to emissions standards established by the FCC.

AT&T proposes these low-power small cell facilities in the Town of Northborough to deal with the rapidly increasing demands on AT&T's wireless network. These small cell



wireless facilities will work in conjunction with the existing macro cell sites installed on rooftops, towers, and other structures in and around the Town of Northborough and provide coverage to the area near the Sites. AT&T's radio frequency engineers targeted the proposed locations due to the high traffic and data demands on AT&T's network in the areas near the Sites. Please see the enclosed coverage maps submitted as part of the Application. AT&T's existing macro cell sites are not providing adequate data capacity in the areas near the Sites due to population, network usage, vehicular and foot traffic, multiple wireless devices used by customers and other contributing factors. These small cell facilities will also work to offload the demands on AT&T's macro cell sites and allow for increased data capacity and speed within the immediate vicinity of the Sites and in the areas surrounding the macro cell sites.

At the Hudson Street location, AT&T proposes to install: fiber optic cable(s); remote radios in an equipment cabinet 44" long by 21" wide by 20" deep (10.69 cubic feet in volume) mounted to a proposed replacement 38' 6" tall wood utility pole at 12' 9" above ground level ("AGL"); One (1) top-mounted antenna measuring 24.5" high with a 14.7" diameter (2.37 cubic feet in volume); conduits and cable protectors; and, an electrical meter 8' AGL with shutoff switch and grounding rod. For reference, the existing wood utility pole has a top height of 23' 11" AGL and the replacement pole will have a top height of 38' 6" AGL. As noted on the Plans, AT&T's antennas must be at least 48" from the utility lines.

At the location near 138 Main Street, AT&T proposes to install: fiber optic cable(s); remote radios in an equipment cabinet 44" long by 21" wide by 20" deep (10.69 cubic feet in volume) mounted to a proposed replacement 43' tall wood utility pole at 12' 9" above ground level ("AGL"); One (1) top-mounted antenna measuring 24.5" high with a 14.7" diameter (2.37 cubic feet in volume); conduits and cable protectors; and, an electrical meter 8' AGL with shutoff switch and grounding rod. For reference, the existing wood utility pole has a top height of 39' 3" AGL and the replacement pole will have a top height of 43' AGL. As noted on the Plans, AT&T's antennas must be at least 48" from the utility lines.

These small cell facilities will be installed using standard, commercially accepted methods in accordance with all applicable federal, state, and local laws, regulations, and orders. All existing wires, streetlights, guy wires, and other attachments will be transferred to the replacement poles. The Plans also provide the proposed locations, pole heights, mounting heights and equipment specifications.

THE TELECOMMUNICATIONS ACT OF 1996

Without the installation of these small cell facilities, AT&T would be unable to provide specifically established coverage and capacity objectives. The existing utility poles are located within the limited geographic area whereby AT&T's radio frequency engineers determined that a wireless facilities are required. The Act imposes substantial restrictions affecting the standard for granting the requested relief. The Act provides that: no laws or actions by any local government or planning or zoning board may prohibit, or have the effect of prohibiting, the placement, construction, or modification of communications towers, antennas, or other wireless



facilities in any particular geographic area, see 47 U.S.C. §332(c)(7)(B)(i); local government or planning or zoning boards may not unreasonably discriminate among providers of functionally equivalent services, see 47 U.S.C. §332(c)(7)(B)(i); health concerns may not be considered so long as the emissions comply with the applicable standards of the FCC, see 47 U.S.C. §332(c)(7)(B)(iv); and, decisions must be rendered within a reasonable period of time, see 47 U.S.C. §332(c)(7)(B)(ii) and the Order commonly referenced as the applicable “shot clocks”. The FCC shot clock in this instance is ninety (90) days. We also note that the Order redefined “effective prohibition” to mean that state and local governments cannot impose requirements that materially limits or inhibits a provider's ability to engage in activities related to the provision of service. This standard applies to efforts to introduce new or enhance coverage, capacity or service capabilities and notes that regulations that cause a financial burden or competitive disparity can be an effective prohibition.

CONCLUSION

We respectfully assert that AT&T's proposed small cell wireless facilities are reasonable and reasonably comply with the requirements of the Town of Northborough in light of the Act, the Order and Massachusetts law. AT&T is ready and willing to work cooperatively with the Town of Northborough with respect to the deployment of its small cell wireless facilities. For the foregoing reasons, as well as to satisfy the mandate of the federal government to facilitate competition in the telecommunications industry as set forth in the Act and the Order, AT&T respectfully requests that the Board grant its approval of the Application.

If you have any questions, please don't hesitate to contact us. We look forward to presenting the Application at an upcoming meeting. For the Board's convenience, we have provided a proposed form of order that can be used for each of the two (2) proposed small cell facilities.

Sincerely,

BROWN RUDNICK LLP

A handwritten signature in black ink, appearing to read 'Michael R. Dolan', is written over a horizontal line. The signature is stylized and cursive.

Michael R. Dolan, Esq.

Enclosures: Plans
Structural Report
Letter of Authorization from National Grid
Radio Frequency Coverage Maps
Emissions Report

ORDER FOR LOCATION FOR TELECOMMUNICATIONS WIRES AND WIRELESS ATTACHMENTS AND APPURTENANCES

By the Board of Selectmen

Of the Town of Northborough, Massachusetts, _____, 2021

ORDERED:

That pursuant to the federal Telecommunication Act of 1996 and Massachusetts General Laws, Chapter 166, NEW CINGULAR WIRELESS PCS, LLC (“AT&T”) is hereby granted a location for and permission to construct and maintain telecommunications wires and wireless attachments and appurtenances, including fiber optic cable(s), remote nodes and top-mounted antennas, to be attached to a National Grid utility pole, located upon, along and under the public way within the Town of Northborough, as substantially shown on the plans filed with said petition.

The forgoing permission is subject to the following condition: the telecommunications wires and wireless attachments and appurtenances shall be installed and operated in compliance with all applicable federal, state and local laws, codes and regulations.

I hereby certify that the foregoing was adopted at a meeting of the Board of Selectmen of the Town of Northborough, Massachusetts, held on the _____ day of _____, 2021.

Town Clerk

Agreement Number: 1702State: MAAttachment Type: Wireless**APPLICATION FOR POLE ATTACHMENT LICENSE**Date: 2/2/22Application Number: 15426097 Mar17Licensee: AT&T - Nexius Solutions IncStreet Address: 300 Apollo DrCity, State, Zip Code: Chelmsford MA 01824

In accordance with the terms and conditions of the License Agreement between us, application is hereby made for a license to make attachments to the specific poles indicated on the attached Form C-1.

Poles: 1 JO and 0 SO UG: _____ MHs & _____ ft of ConduitLicensee: AT&T - Nexius Solutions IncBy: Kelly SandersTitle: Site Acquisition SpecialistTel. No.: 203-246-0606Email: kelly_sanders@nexius.com**POLE ATTACHMENT LICENSE**

Pole Attachment License is hereby granted to make the attachments described in this application which are located as indicated on the attached Form C-1.

Poles: 1 JO and 0 SO UG: 0 MHs & 0 ft of ConduitDate: 09-Jun-2021License Number: 30357615Licensor: National GridBy: Pamela LeavensSignature: Pamela LeavensTitle: Telecom Attachment CoordinatorTel. No.: 781-907-3455**NOTES:**

1. Applications shall be submitted to Licensor.
2. Applications to be numbered in ascending order by municipality.
3. Licensor will process in order of application numbers assigned by Licensee.
4. Licensee shall have thirty (30) days to begin the placement of attachments on National Grid's poles covered by the license.
5. The Licensee shall provide written notice to National Grid within five (5) days of work completion, that Licensee has completed new attachment or overflashing work.



AT&T

PROJECT: NEW_ENGLAND_NEXIUS_CRAN
SITE NAME: CRAN_RCTB_MARL_05
USID: 300761
PACE NUMBER: MRCTB049470
FA NUMBER: 15426099
PTN NUMBER: 2101A0X0E0
COORDINATES: 42.328760°, -71.631250°
SITE ADDRESS: 170 HUDSON STREET
 NORTHBOROUGH, MASSACHUSETTS 01532

PROPOSED BY:

nexus

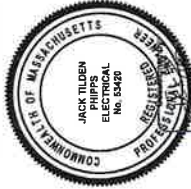
170 HUDSON STREET
 NORTHBOROUGH, MASSACHUSETTS 01532
 ABE OFFICE:
 2395 DALLAS PKWY FRISSCO, TX 75034
 (972) 381-5888

CLIENT:



170 HUDSON STREET
 NORTHBOROUGH, MA 01532

FOR CONSTRUCTION



DATE SIGNED: 12/06/21

170 HUDSON STREET
 NORTHBOROUGH, MA 01532
 PE LICENSE NUMBER: 172972

THIS DRAWING IS THE SOLE PROPERTY AND PROPERTY OF THE ENGINEER AND SHALL BE KEPT IN THE OFFICE OF THE ENGINEER. NO PART OF THIS DRAWING IS TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS WITHOUT THE WRITTEN CONSENT OF THE ENGINEER IN WRITING.

REVISIONS

REV	DATE	DESCRIPTION	BY
A	11/18/21	FOR REVIEW	PM
0	12/09/21	FINAL CD	CS

CHECKED BY: CS

DEIGNED DATE: 12/09/21

SITE INFORMATION:

SITE NAME: CRAN_RCTB_MARL_05

SITE ADDRESS: 170 HUDSON STREET

NORTHBOROUGH, MASSACHUSETTS 01532

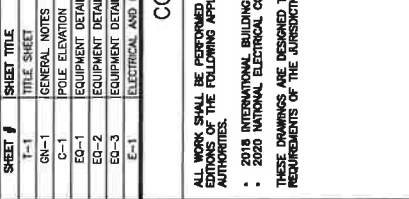
SHEET TITLE: TITLE SHEET

SHEET NUMBER: T-1

PROJECT INFORMATION

PROJECT:	NEW_ENGLAND_NEXIUS_CRAN
SITE NAME:	CRAN_RCTB_MARL_05
USID:	300761
PACE NUMBER:	MRCTB049470
FA NUMBER:	15426099
PTN NUMBER:	2101A0X0E0
COORDINATES:	42.328760°
SITE ADDRESS:	170 HUDSON STREET
	NORTHBOROUGH, MASSACHUSETTS 01532
CITY:	NORTHBOROUGH
STATE:	MA
COUNTY:	MIDDLESEX
JURISDICTION:	CITY OF NORTHBOROUGH
STRUCTURE TYPE:	PROPOSED UTILITY POLE
STRUCTURE OWNER:	NATIONAL GRID & VERIZON
GROUND ELEVATION:	237.2 AMSL
APPLICANT:	NEXIUS SOLUTIONS, INC. 300 APOLLO DRIVE, 2ND FLOOR CHELSEA, MA 01824
SITE ACQUISITION:	2500 W. 30TH DALLAS PARKWAY, SUITE 300 FRISCO, TX 75034 EMAIL: JACK.PIPERS@nexus.com
ENGINEERING SERVICES:	

AERIAL PHOTO



STRUCTURE PHOTO



SCOPE OF WORK

1. INSTALL NEW 48'-0" CLASS 2 (36"-8" A.G.L.) WOOD POLE.
 2. INSTALL (1) PROPOSED ANTENNA ON TOP OF PROPOSED POLE PER MANUFACTURER'S SPECIFICATIONS.
 3. INSTALL (1) EQUIPMENT ENCLOSURE CONTAINING (1) RRU4448, (1) RRU4415 AND (2) PSU AC 06 ON PROPOSED POLE PER MANUFACTURER'S SPECIFICATIONS.
 4. INSTALL (1) METER AND (1) AC DISTRIBUTION BOX/SERVICES DISCONNECT ON PROPOSED POLE PER MANUFACTURER'S SPECIFICATIONS AND PER UTILITY AND NEC REQUIREMENTS.
- ANY DRAWING THAT DIFFERS SUBSTANTIALLY FROM WHAT IS SHOWN ON THE CONSTRUCTION DRAWINGS MUST BE APPROVED BY THE ENGINEER OF RECORD. NO CHANGES THAT ALTER THE CHARACTER OF THE WORK CAN BE MADE DURING CONSTRUCTION WITHOUT ISSUING A CHANGE ORDER.
- DRAWING SCALES ARE INTENDED FOR 11" X 17" SIZE PRINTED MEDIA ONLY. ALL OTHER SIZES ARE DEEMED "NOT TO SCALE".

SHEET INDEX

SHEET #	SHEET TITLE
T-1	TITLE SHEET
GN-1	GENERAL NOTES
G-1	POLE ELEVATION
EQ-1	EQUIPMENT DETAILS
EQ-2	EQUIPMENT DETAILS
E-1	ELECTRICAL AND GROUNDING DETAILS

CODE COMPLIANCE

ALL WORK SHALL BE PERFORMED AND MATERIALS INSTALLED IN ACCORDANCE WITH CURRENT EDITIONS OF THE FOLLOWING APPLICABLE CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES.

- 2018 INTERNATIONAL BUILDING CODE
- 2018 NATIONAL ELECTRICAL CODE

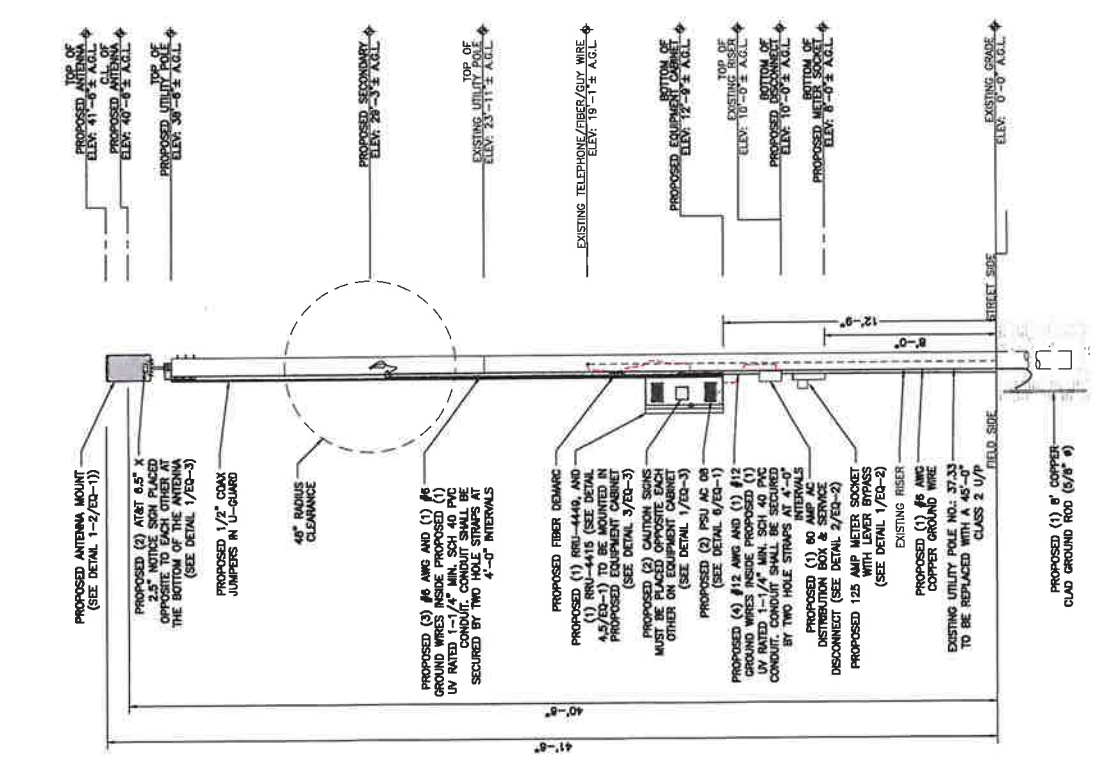
THESE DRAWINGS ARE DESIGNED TO THE LATEST CODES. THEY ALSO MEET THE ADOPTED CODE REQUIREMENTS OF THE JURISDICTION LISTED ABOVE.

ONE CALL

TO OBTAIN LOCATION OF PUBLIC UTILITIES AND FACILITIES BEFORE YOU DIG IN MASSACHUSETTS, CALL DIG SAFE SYSTEM, INC. TOLL FREE: 1-888-344-7233 OR MASSACHUSETTS ONE CALL: 800-348-7333

Know what's below. Call before you dig. NOTICE BEFORE YOU EXCAVATE

- NOTES:**
1. AN ANALYSIS OF THE CAPACITY OF THE EXISTING STRUCTURE TO SUPPORT THE PROPOSED LOADING HAS NOT BEEN COMPLETED BY NEXIUS. DRAWINGS ARE SUBJECT TO CHANGE PENDING OUTCOME OF A STRUCTURAL ANALYSIS.
 2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND CLEARANCES FOR THE INSTALLATION OF THE PROPOSED ANTENNA. THE PROPOSED INSTALLATION OF THE ANTENNA AND ALL APPURTENANCES SHALL MEET THE REQUIREMENTS OF THE POWER COMPANY AND THE 2020 NATIONAL ELECTRICAL SAFETY CODE.
 3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND CLEARANCES FOR THE INSTALLATION OF THE PROPOSED ANTENNA. THE PROPOSED INSTALLATION OF THE ANTENNA AND ALL APPURTENANCES SHALL MEET THE REQUIREMENTS OF THE POWER COMPANY AND THE 2020 NATIONAL ELECTRICAL SAFETY CODE.
 4. THE RECOMMENDED ATTACHMENT METHOD IS TO BOND THE ANTENNA BRACKET TO THE POLE EXTENSION. IF NECESSARY, THE POLE EXTENSION MAY BE FIELD DRILLED AND THE ANTENNA BRACKET THROUGH BOLTED.
 5. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THAT THE ANTENNA BRACKET HAS BEEN PROPERLY INSTALLED AND THAT THE SUPPORTING STRUCTURE HAS BEEN PROPERLY STRUCTURALLY ASSESSED BY A LICENSED PROFESSIONAL ENGINEER TO SUPPORT THE EXISTING AND PROPOSED EQUIPMENT AND ASSOCIATED CONSTRUCTION LOADS, INCLUDING BUT NOT LIMITED TO THOSE DEPICTED, HEREIN. THE CONTRACTOR SHALL ASSUME THE FULL-LIABILITY AND RISK ASSOCIATED WITH THE INSTALLATION OF THE PROPOSED EQUIPMENT AND/OR APPURTENANCES IF PERFORMED WITHOUT STRUCTURAL ENGINEERING REVIEW. ANY SUCH VIOLATIONS SHALL BE PROPERLY INSTALLED AND COMPLETED PRIOR TO THE ONSET OF CONSTRUCTION.



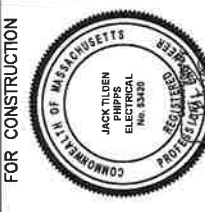
1 POLE ELEVATION
SCALE 3/16" = 1'-0"

2 PHOTO DETAIL
N.T.S.

NEXIUS
COMMUNICATIONS SERVICES
2395 DALLAS ROAD, FROSCO, TX 75034
(972) 381-0686



AT&T
350 COCHRANE ROAD,
FRAMINGHAM, MA 01701



DATE SIGNED: 02/06/21

ISSUED FOR REVIEW BY: JACK TILDEN
PROJECT NO.: 2020-0001
DATE: 1/29/21

THE CONTRACTOR IS THE DESIGNER AND CONTRACTOR OF THE PROJECT AND IS RESPONSIBLE FOR THE DESIGN AND CONSTRUCTION OF THE PROJECT.

REV	DATE	DESCRIPTION	BY
A	11/17/21	FOR REVIEW	PM
0	12/09/21	FINAL CD	GS

CREATED BY: CS
CREATED DATE: 12/06/21
SITE INFORMATION: 3047781
SITE NAME: CPWA ACTELJMWLJRS
SITE ADDRESS: 170 HUDSON STREET
NORTHBOROUGH, MASSACHUSETTS 01532

SHEET TITLE: POLE ELEVATIONS
SHEET NUMBER: C-1



PROJECT: NEW ENGLAND_NEXIUS_CRAN
SITE NAME: CRAN_RCTB_MARL_07
USID: 299719
PACE NUMBER: MRCTB049468
FA NUMBER: 154Z6097
PTN NUMBER: 2101A0X0DZ
COORDINATES: 42.322530°, -71.632200°
SITE ADDRESS: 138 MAIN STREET
 NORTHBOROUGH, MASSACHUSETTS 01532

PROJECT INFORMATION

PROJECT:	NEW ENGLAND_NEXIUS_CRAN
SITE NAME:	CRAN_RCTB_MARL_07
USID:	299719
PACE NUMBER:	MRCTB049468
FA NUMBER:	154Z6097
PTN NUMBER:	2101A0X0DZ
COORDINATES:	42.322530°
SITE ADDRESS:	138 MAIN STREET
CITY, STATE, ZIP:	NORTHBOROUGH, MASSACHUSETTS 01532
JURISDICTION:	WORCESTER
STRUCTURE TYPE:	PROPOSED UTILITY POLE
STRUCTURE OWNER:	NATIONAL GRID & VERIDON
GROUND ELEVATION:	310'± AMSL
APPLICANT:	NEXIUS SOLUTIONS, INC. 300 APOLLO DRIVE, 2ND FLOOR FRISCO, TX 75034
SITE ACQUISITION:	NEXIUS SOLUTIONS, INC. 2505 NORTH DALLAS PARKWAY, SUITE 300 FRISCO, TX 75034
ENGINEERING SERVICES:	NEXIUS SOLUTIONS, INC. 500 WASHINGTON ST, 2ND FLOOR NORTH BOSTON, MA 02116 EMAIL: JACK.PHILIPS@nexus.com

SCOPE OF WORK

1. INSTALL NEW 50'-0" CLASS 2 (43'-0" A.G.L.) WOOD POLE.
 2. INSTALL (1) PROPOSED ANTENNA ON TOP OF PROPOSED POLE PER MANUFACTURER'S SPECIFICATIONS.
 3. INSTALL (1) EQUIPMENT ENCLOSURE CONTAINING (1) BRU44415 AND (2) PSU A03B ON PROPOSED POLE PER MANUFACTURER'S SPECIFICATIONS.
 4. INSTALL (1) METER AND (1) AG DISTRIBUTION BOX/SERVICE DISCONNECT ON PROPOSED POLE PER MANUFACTURER'S SPECIFICATIONS AND PER UTILITY AND NEC REQUIREMENTS.
- ANY DEVIATION THAT DIFFERS SUBSTANTIALLY FROM WHAT IS SHOWN ON THE DRAWINGS SHALL BE THE RESPONSIBILITY OF THE CLIENT. ANY CHANGES THAT ALTER THE CHARACTER OF THE WORK CAN BE MADE DURING CONSTRUCTION WITHOUT ISSUING A CHANGE ORDER.
- DRAWING SCALES ARE INTENDED FOR 11" X 17" SIZE PRINTED MEDIA ONLY. ALL OTHER SCALES ARE DEEMED "NOT TO SCALE".

AERIAL PHOTO



STRUCTURE PHOTO



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EQ-2	EQUIPMENT DETAILS
EQ-3	EQUIPMENT DETAILS
E-1	ELECTRICAL AND GROUNDING DETAILS

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- 2020 NATIONAL ELECTRICAL CODE

THESE DRAWINGS ARE DESIGNED TO THE LATEST CODES. THEY ALSO MEET THE ADOPTED CODE REQUIREMENTS OF THE JURISDICTION LISTED ABOVE.

811 Know what's below. Call before you dig. EXCAVATE

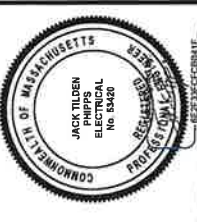
TO OBTAIN LOCATION OF PARTICIPANTS UNDERGROUND FACILITIES BEFORE YOU DIG IN MASSACHUSETTS, CALL DIG SAFE SYSTEM, INC. 344-7233 OR TOLL FREE: 1-888-486-8888

MASSACHUSETTS STATUTE REQUIRES MIN OF 2 WORKING DAYS NOTICE BEFORE YOU EXCAVATE

nexus
 48E OFFICE
 299 NORTH MAIN STREET SUITE 300
 FRISCO, TX 75034
 (972) 581-8968



FOR CONSTRUCTION



DATE SIGNED: 11/18/21

NEXIUS SOLUTIONS, INC.
 MANUFACTURER P.E. NO. 15400
 P.E. LICENSE NUMBER: 476972

THIS DOCUMENT IS THE PROPERTY OF NEXIUS SOLUTIONS, INC. IT IS TO BE USED ONLY FOR THE PROJECT AND SITE SPECIFICALLY IDENTIFIED HEREIN. ANY REUSE OR REPRODUCTION OF THIS DOCUMENT WITHOUT THE WRITTEN CONSENT OF NEXIUS SOLUTIONS, INC. IS STRICTLY PROHIBITED.

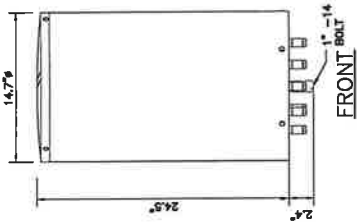
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A	05/04/21	FOR REVIEW	PM
0	11/18/21	RVAL CD	OS

CHECKED BY: OS
 CHECKED DATE: 11/18/21

SITE INFORMATION
 SITE NAME: CRAN_RCTB_MARL_07
 SITE ADDRESS: 299719
 138 MAIN STREET
 NORTHBOROUGH, MASSACHUSETTS 01532

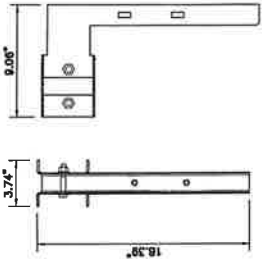
SHEET TITLE: TITLE SHEET
 SHEET NUMBER: T-1

ANTENNA SPECIFICATIONS	
MANUFACTURER	GALTRONICS
MODEL NUMBER	02212-0013
HEIGHT	24.5"
DIAMETER	14.7"
WEIGHT	30.8 LBS.

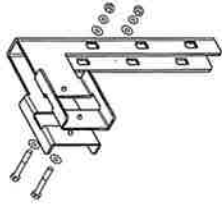


① ANTENNA DETAIL
SCALE: N.T.S.

ANTENNA BRACKET SPECIFICATIONS	
MANUFACTURER	GALTRONICS
MODEL NUMBER	MC-08079
WIDTH	3.74"
DEPTH	9.00"
HEIGHT	18.30"
ITEM NUMBER	ANT18023

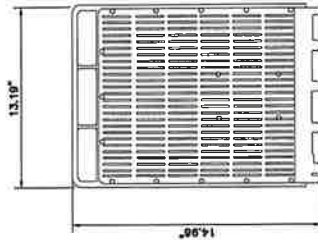


② ANTENNA BRACKET DETAIL
SCALE: N.T.S.



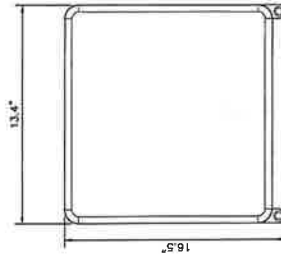
ISOMETRIC

RADIO SPECIFICATIONS	
MANUFACTURER	ERICKSON
MODEL NUMBER	RRU 4448
HEIGHT	14.87"
WIDTH	13.11"
DEPTH	10.65"
WEIGHT	72 LBS.

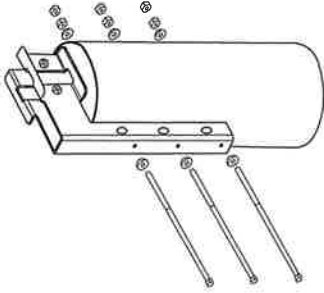


④ RRU 4448 DETAIL
SCALE: N.T.S.

RADIO SPECIFICATIONS	
MANUFACTURER	ERICKSON
MODEL NUMBER	RRU 4415
HEIGHT	13.4"
WIDTH	16.5"
DEPTH	5.9"
WEIGHT	49 LBS.



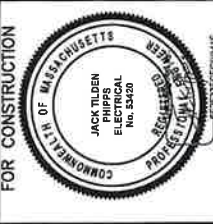
⑤ RRU 4415 DETAIL
SCALE: N.T.S.



③ ANTENNA MOUNTING DETAIL
SCALE: N.T.S.

⑥ NOT USED
SCALE: N.T.S.

PREPARED BY:
nexius
INTEGRATED COMMUNICATIONS
ABE OFFICE
2535 NORTH DALLAS PARKWAY SUITE 300
DALLAS, TEXAS 75245
(972) 381-9936



DATE SIGNED: 11/18/21

NOEL BULLARD, INC.
MASSACHUSETTS EX. NO. 96034D
PE LICENSE RENEWAL 9/30/22

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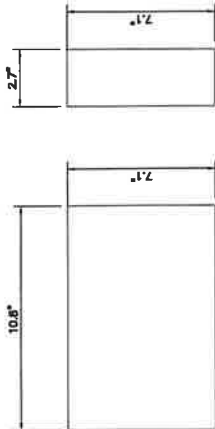
REV	DATE	DESCRIPTION	BY
A	05/04/21	FOR REVIEW	PM
B	11/18/21	FINAL CO	GS

CHECKED BY: GS
DATE: 11/18/21

SITE INFORMATION: SITE NAME: CRANFORD_MARL_07
JOB NO: 1907719
SITE ADDRESS: 130 MAIN STREET
NORTHBOROUGH, MASSACHUSETTS 01532

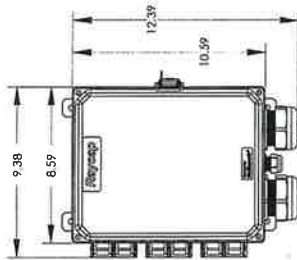
SHEET TITLE: EQUIPMENT DETAILS
SHEET NUMBER: EQ-1

PSU SPECIFICATIONS	
MANUFACTURER	EPSON
MODEL NUMBER	PSU AC 08
HEIGHT	10.8"
WIDTH	10.8"
DEPTH	2.7"
WEIGHT	11.5 LBS.



① PSU AC 08 DETAIL
SCALE: N.T.S.

AC DISTRIBUTION BOX SPECIFICATIONS	
MANUFACTURER	NAVICO
MODEL NUMBER	RSCAC-9556-P-240-D
HEIGHT	12.39"
WIDTH	8.59"
DEPTH	5.65"
WEIGHT	8.0 LBS.
ITEM NUMBER	030-21817



FRONT

BOTTOM

② AC DISTRIBUTION BOX DETAIL
SCALE: N.T.S.

REVISIONS:
NEXIUS
AGE OFFICE:
2595 NORTH DALLAS PARKWAY SUITE 300
FISCO TX 75034
(972) 381-9886



FOR CONSTRUCTION
560 COCHRANE ROAD,
POMERAY, MA 01701



DATE SIGNED: 11/18/21

FOR THE OWNER:
MILBANK
1000 WASHINGTON STREET
NORTHBOROUGH, MASSACHUSETTS 01532

FOR THE CONTRACTOR:
CSM/JC/MAR/L07
288719
138 MAIN STREET
NORTHBOROUGH, MASSACHUSETTS 01532

REV	DATE	DESCRIPTION	BY
A	05/09/21	FOR REVIEW	PM
0	11/18/21	FINAL CD	CS

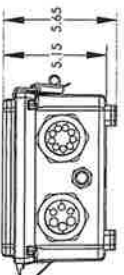
CHECKED BY: CS
CHECKED DATE: 11/18/21

SHEET TITLE: EQUIPMENT DETAILS
SHEET NUMBER: EQ-2



RSCAC-9556-P-240-D

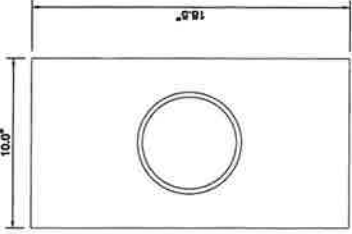
INSIDE



RSCAC-9556-P-240-D
*Hinged cover not shown



SIDE



FRONT

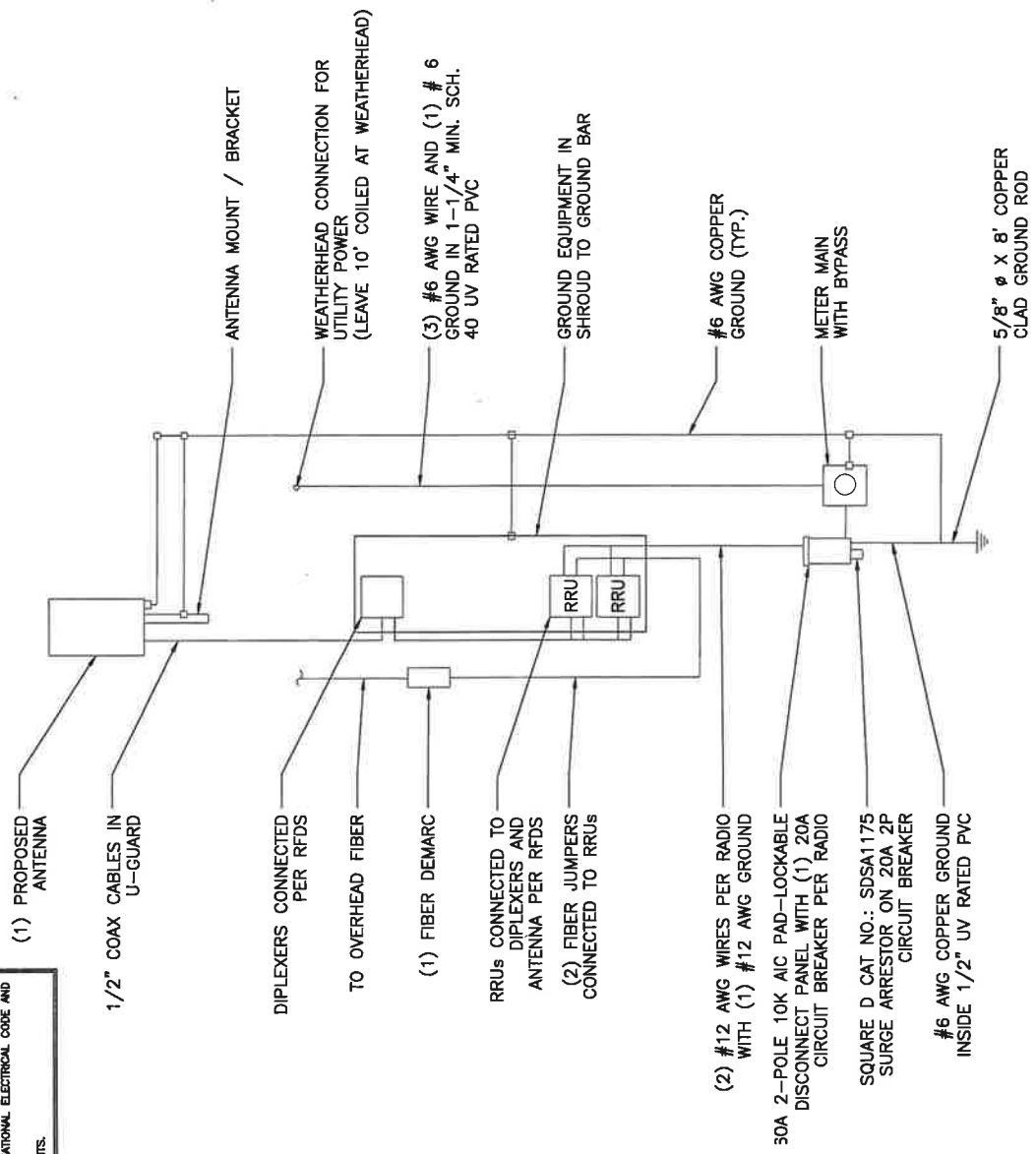
④ METER MAIN WITH BYPASS DETAIL
SCALE: N.T.S.

METER SPECIFICATIONS	
MANUFACTURER	MILBANK
MODEL NUMBER	U272-R-573-BL
HEIGHT	18.5"
WIDTH	10.0"
DEPTH	4.54"

③ NOT USED
SCALE: N.T.S.

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- NOTES:**
1. EQUIPMENT AND LAYOUT SHOWN IS FOR DIAGRAMMATIC PURPOSES ONLY. REFER TO PROPOSED SITE PLAN AND POLE ELEVATION FOR ACTUAL EQUIPMENT LOCATIONS AND CONDITIONS.
 2. ALL ELECTRICAL WORK MUST MEET THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE AND THE NATIONAL ELECTRICAL SAFETY CODE.
 3. BONDING AND GROUNDING TO MEET APPLICABLE NEC REQUIREMENTS.



1 GENERAL WIRING DIAGRAM
SCALE N.T.S.

PROVED BY: **n e x i u s**
 2953 NORTH FARMWAY, SUITE 300
 FRISCO, TX 75034
 (972) 551-9888

CLIENT: **AT&T**
 550 COCKSHUTE ROAD,
 FRAMINGHAM, MA 01701

FOR CONSTRUCTION

COMMONWEALTH OF MASSACHUSETTS
 JACK TILDEN
 PHIPPS
 ELECTRICAL
 NO. 10400
 PROFESSIONAL REGISTERED
 DATE SIGNED: 11/18/21

NECLAR SOLUTIONS, INC.
 MANCHESTER, NH 03103
 PE LICENSE NUMBER: 475072

REV	DATE	DESCRIPTION	BY
A	02/04/21	FOR REVIEW	PM
0	11/18/21	FINAL CD	OS

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SUBMITTALS

CHECKED BY: OS
 CHECKED DATE: 11/18/21

SITE INFORMATION: SITE NAME: ORAN_DCTB_LMVL_07
 SITE ADDRESS: 289718
 138 MAIN STREET
 NORTHBOROUGH, MASSACHUSETTS 01532

SHEET TITLE: ELECTRICAL AND GROUNDING DETAILS
 SHEET NUMBER: E-1

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NEXIUS

Engineering Structural Analysis Report



Jordan D Phillips PE

Digitally signed by Jordan D
Phillips PE
DN: C=US,
E=jordan.phillips@nexius.com,
O="Nexius Solutions, Inc.",
OU=A/E Group - Structural
Engineering, CN=Jordan D
Phillips PE
Location: Sylvan Lake, MI
Reason: I am the author of this
document
Contact Info: (248) 709-3642
Date: 2021.10.24 19:51:09-04'00'

CRAN_RCTB_MARL_07

MRCTB049468

Replacement

10/25/2021

ADEQUATE

Engineering Letter

Reference: Assessment of the **Replacement** 50-ft Class 2 Wooden Pole.
Cascade ID – Candidate: CRAN_RCTB_MARL_07
Site Address: 138 MAIN STREET, NORTHBOROUGH, MA 01532

We are pleased to provide you with our engineering assessment of the 50-ft wooden pole located at 138 MAIN STREET, NORTHBOROUGH, MA 01532.

The pole analyzed for this project is a 50-ft-tall, class 2 pole. The program calculates an applied wind load on the surface area of the attachments and multiplies that by the height of the attachment to determine a bending moment in the pole (WL load and BM). It also calculates the vertical loads applied and adds the moment due to the applied gravity loads. The calculated moment is compared to the pole capacity and capacity utilization is calculated. The final calculations for this pole indicate a capacity utilization is 69.1%. This is below required capacity utilization, 100%, so it is determined that the applied loads and configuration is acceptable for this new pole.

Existing information such as line types and line heights are based on site photographs gathered by Nexius staff. Line and equipment heights are determined based on standard spacing requirements set forth by the pole owner and standard industry practices. If any of these assumptions are not valid or made in error, the conclusion of this assessment may be affected and NEXIUS should review the effect on the structural integrity of the pole.

To the best of our knowledge and based on the result of this pole loading calculation, the additional loadings to the replacement pole will not compromise the structural integrity of this utility/street light pole. This pole loading calculation satisfies the minimum requirements set forth by the National Electric Code, National Electric Safety Code, ANSI O5 utility pole standards, and the pole owner's attachment standards. If any of these assumptions are not valid or made in error, the conclusion of this assessment may be affected and NEXIUS should review the effect on the structural integrity of the pole.

Please contact us if you have any questions.

ASSUMPTIONS AND LIMITATIONS OF ANALYSIS

Please note the following assumptions and limitations inherent in this analysis and report:

A) The equipment configuration is as per “15426097.ZDCD999.210506.REV A” Drawings by NEXIUS, dated 05/06/2021.

Proposed Final Equipment		
Item	Model	Quantity
Antenna	Galtronics GQ2412-06613 w/ Mount Bracket	1
Equipment Shroud/Cabinet	COMMSCOPE SSC-760237600	1
125-Amp Meter	Milbank U3741-XL-100-BL	1
Surge Protector	Raycap RSCAC-9556-P-240-D	1
PSU	Ericsson PSU AC 08	2*
Radio	Ericsson 4449	1*
Radio	Ericsson 4415	1*

*Located inside Equipment Shroud/Cabinet

If any of these assumptions are not valid or made in error, the conclusion of this assessment may be affected and NEXIUS should review the effect on the structural integrity of the pole.

CONCLUSIONS & RECOMMENDATIONS:

The 50-ft wooden pole has been found **ADEQUATE** to support its overall and total load subject to the attached Standard Conditions on **page 4** and the above-mentioned assumptions and limitations.

Please note that the soils report for the foundation were not available to us at the time of this analysis, therefore, the soil conditions have been assumed.

Should you have any questions, comments or require additional information, please do not hesitate to call.

Sincerely,

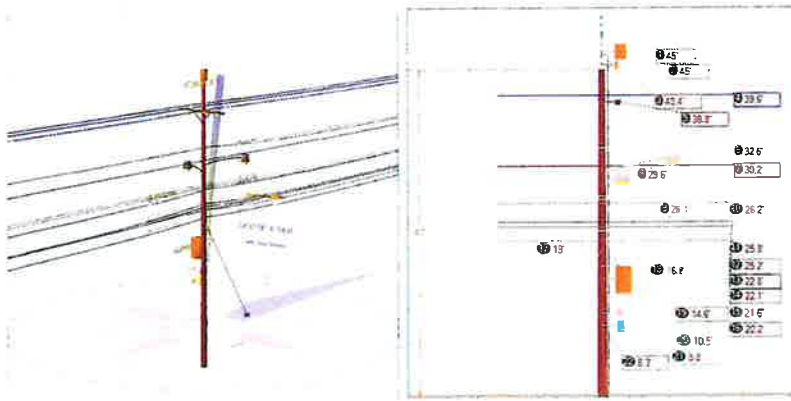
Analysis by: Anna-Maria Khawand

Reviewed by: Jordan Phillips, P.E.

Standard Conditions for Providing Structural Consulting Services

1. If the existing conditions are not as represented in this structural report or attached sketches, we should be contacted to evaluate the significance of the deviation and revise the structural assessment accordingly.
2. The structural analysis has been performed assuming that the structure is in "like new" condition. No allowance was made for excessive corrosion, damaged or missing structural members, loose bolts, etc. If there are any known deficiencies in the structure that potentially compromise structural integrity, we should be made aware of the deficiencies. If we are aware of a deficiency that exists in a structure at the time of our analysis, a general explanation of the structural concern due to the deficiency will be included in the structural report, but the deficiency will not be reflected in capacity calculations.
3. The structural analysis provided is an assessment of the primary load carrying capacity of the structure. We provide a limited scope of service, in that we have not verified the capacity of every weld, plate, connection detail, etc. In most cases, structural fabrication details are unknown at the time of our analysis, and the detailed field measurement of this information is beyond the scope of our services. In instances where we have not performed connection/component capacity calculations, it is assumed that existing manufactured connection/component develop the full capacity of the primary members being calculated.
4. We will not accept any liability for the adequacy of the existing foundation system unless accurate structural foundation drawings are provided with a site-specific geotechnical report. Foundations will be assumed installed per the drawings with no construction deficiency due to initial installation or age.
5. Miscellaneous items such as antenna mounts, coax supports, etc. have not been designed, detailed, or specified as part of our work. It is assumed that material of adequate size and strength will be purchased from a reputable component manufacturer. The attached report and sketches are schematic in nature and should not be used to fabricate or purchase hardware and accessories to be attached to the structure. We recommend field measurement of the structure before fabricating or purchasing new hardware and accessories. We are not responsible for proper fit and clearance of hardware and accessory items in the field.
6. The structural analysis has been performed considering minimum code requirements or recommendations. If alternate wind, ice, or deflection criteria are to be considered, then we shall be made aware of the alternate criteria.

Pole Num:	N/A	Pole Length / Class:	50 / 2	Code:	NESC	Structure Type:	Guyed Tangent
Customer:	AT&T	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status:	Guy Wires Adequate
Site Name:	CRAN_RCTB_MARL_07	Setting Depth (ft):	7.00	Construction Grade:	B	Pole Strength Factor:	0.65
USID:	299719	G/L Circumference (in):	41.61	Loading District:	Heavy	Transverse Wind LF:	2.50
PACE #:	MRCTB049468	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.50	Wire Tension LF:	1.65
Pole Owner:	National Grid & Verizon	Allowable Stress (psi):	5,200	Wind Speed (mph):	39.53	Vertical LF:	1.50
Proposed RAD Center (AGL):	45'-0"	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	42.322530 Deg	Longitude:	-71.632200 Deg	Elevation:	310 Feet		



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	69.1	77.9
Groundline	69.1	77.9
Vertical	1.7	180.0

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	67,637	77.9
Groundline	67,637	77.9
GL Allowable	98,873	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
Expanding - 12" - Soil Class 3	12.0	0.0		0.0	77.9	0.0	0.0
HS 3/8 (Down)			19.0	0.0	77.9	0.0	0.0
System Capacity Summary:				Adequate		Adequate	

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Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 59.5°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	365	14.4	13,415	19.8	13.6	702	384	3	704	13.5
Comms	1,504	59.3	39,429	58.3	39.9	2,062	1,256	9	2,071	39.8
GuyBraces	15	0.6	278	0.4	0.3	15	15	0	15	0.3
GenericEquipments	145	5.7	2,465	3.6	2.5	129	456	3	132	2.5
PowerEquipments	18	0.7	220	0.3	0.2	12	18	0	12	0.2
Pole	361	14.2	7,707	11.4	7.8	403	2,422	18	421	8.1
Crossarms	8	0.3	281	0.4	0.3	15	99	1	15	0.3
Streetlights	65	2.5	2,333	3.5	2.4	122	180	1	123	2.4
Risers	53	2.1	1,274	1.9	1.3	67	80	1	67	1.3
Insulators	6	0.2	234	0.4	0.2	12	88	1	13	0.2
Pole Load	2,538	100.0	67,637	100.0	68.4	3,538	4,999	36	3,574	68.7
Pole Reserve Capacity			31,236		31.6	1,662			1,626	31.3

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 59.5°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
<Undefined>	2,177	85.8	59,930	88.6	60.6	3,134	2,577	19	3,153	60.6
National Grid & Verizon	361	14.2	7,707	11.4	7.8	403	2,422	18	421	8.1
Totals:	2,538	100.0	67,637	100.0	68.4	3,538	4,999	36	3,574	68.7

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	ACSR 1/0 AWG 6/1 RAVEN	39.56	10.81	0.3980	0.07	0.145	80.0	0.0	80.0	500	16,556	-38	1,554	18,073
Primary	ACSR 1/0 AWG 6/1 RAVEN	39.56	10.81	0.3980	0.10	0.145	100.0	180.0	100.0	500	-16,556	-47	1,943	-14,661
Primary	ACSR 1/0 AWG 6/1 RAVEN	39.56	40.45	0.3980	0.07	0.145	80.0	0.0	80.0	500	16,556	-132	1,554	17,979
Primary	ACSR 1/0 AWG 6/1 RAVEN	39.56	40.45	0.3980	0.10	0.145	100.0	180.0	100.0	500	-16,556	-165	1,943	-14,778
Primary	ACSR 1/0 AWG 6/1 RAVEN	39.56	40.45	0.3980	0.07	0.145	80.0	0.0	80.0	500	16,556	111	1,554	18,221

O-Calc® Pro Analysis Report

Line Type	Cable	Height (ft)	Offset (in)	Cable Dia (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	ACSR 1/0 AWG 6/1 RAVEN	39.56	40.45	0.3980	0.10	0.145	100.0	180.0	100.0	500	-16,556	138	1,943	-14,475
Secondary	DUPLEX 6 AWG	30.17	7.02	0.5370	0.79	0.071	85.0	0.0	85.0	500	12,619	-14	1,384	13,989
Secondary	DUPLEX 6 AWG	30.17	7.02	0.5370	0.93	0.071	100.0	180.0	100.0	500	-12,619	-16	1,628	-11,007
Totals:											0	-163	13,504	13,341

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Overlashed Bundle	6M	32.58	7.12	0.2420	0.77	0.104	85.0	0.0	85.0	953	25,972	20	1,524	27,515
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	32.53	7.12	0.6570		0.190	85.0	0.0	85.0			23	500	573
Overlashed Bundle	6M	32.58	7.12	0.2420	0.11	0.104	100.0	180.0	100.0	500	-13,630	23	1,793	-11,814
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	32.53	7.12	0.6570		0.190	100.0	180.0	100.0			27	647	674
Overlashed Bundle	6M	26.17	7.51	0.2420	1.43	0.104	85.0	0.0	85.0	388	8,483	20	993	9,496
Overlashed Bundle	6M	26.17	7.51	0.2420	0.04	0.104	100.0	180.0	100.0	500	-10,946	24	1,168	-9,754
Overlashed Bundle	6M	25.75	7.54	0.2420	1.43	0.104	85.0	0.0	85.0	388	8,348	20	977	9,345
Overlashed Bundle	6M	25.75	7.54	0.2420	0.04	0.104	100.0	180.0	100.0	500	-10,772	24	1,150	-9,598
Telco	TELE 1.0	25.25	7.57	1.0000	0.14	0.400	85.0	0.0	85.0	500	10,562	46	1,507	12,116
Telco	TELE 1.0	25.25	7.57	1.0000	0.19	0.400	100.0	180.0	100.0	500	-10,562	54	1,773	-8,735
CATV	CATV .50	22.75	7.72	0.5700	0.26	0.600	85.0	0.0	85.1	500	9,517	45	1,066	10,627
CATV	CATV .50	22.75	7.72	0.5700	0.35	0.600	100.0	180.0	100.1	500	-9,517	53	1,254	-8,210
Telco	TELE 1.0	22.08	7.77	1.0000	0.14	0.400	85.0	0.0	85.0	500	9,238	47	1,318	10,603
Telco	TELE 1.0	22.08	7.77	1.0000	0.19	0.400	100.0	180.0	100.0	500	-9,238	56	1,551	-7,631
Overlashed Bundle	6M	21.58	7.80	0.2420	0.77	0.104	85.0	0.0	85.0	953	17,204	22	1,009	18,235
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	21.53	7.80	0.6570		0.190	85.0	0.0	85.0			25	364	389
Overlashed Bundle	6M	21.58	7.80	0.2420	0.11	0.104	100.0	180.0	100.0	500	-9,029	26	1,187	-7,815
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	21.53	7.80	0.6570		0.190	100.0	180.0	100.0			29	429	458
Telco	TELE 1.0	20.25	7.88	1.0000	0.14	0.400	85.0	0.0	85.0	500	8,471	48	1,209	9,728
Telco	TELE 1.0	20.25	7.88	1.0000	0.19	0.400	100.0	180.0	100.0	500	-8,471	57	1,422	-6,992
Totals:											15,630	688	22,893	39,211

Generic Equipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Cylinder	ANTENNA	45.00	0.21	0.0	0.0	30.90	24.50	-	14.70	-	0	1,068	1,069
Box	ANTENNA MOUNT	43.40	0.95	270.0	0.0	5.14	12.00	9.00	-	4.00	-1	250	250

O-Calc® Pro Analysis Report

Box	EQUIPMENT SHROUD	14.58	15.73	270.0	0.0	252.00	44.00	20.00	-	21.00	-427	1,413	986
Box	METER	8.77	8.50	270.0	0.0	16.00	18.50	4.84	-	10.00	-15	161	147
Totals:											-442	2,893	2,451

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Box	FIBER DEMARC	16.80	8.59	0.0	0.0	4.00	9.00	0.25	-	6.00	1	96	97
Box	RAYCAP	10.52	10.67	270.0	270.0	8.00	12.39	5.65	-	9.38	-8	129	121
Totals:											-6	225	218

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Normal	CROSSARM 3-1/2 X 4-1/2 X 10	38.75	5.99	180.0	180.0	66.00	4.50	3.50	-	120.00	-25	304	279
Totals:											-25	304	279

Streetlight	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
General	Streetlight - 8 ft. Arm	29.58	4.80	90.0	90.0	75.00	24.00	20.00	3.00	96.00	597	1,147	1,743
General	Streetlight - 3 ft. Arm	28.08	4.90	270.0	270.0	45.00	12.00	20.00	3.00	30.00	-145	722	577
Totals:											452	1,868	2,320

Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Riser- 2" 180.0"	Riser- 2"	8.33	6.81	180.0	180.0	8.33	100.00	2.00	2.00	100.00	-2	72	69
Riser- 2" 292.5"	Riser- 2"	45.00	6.81	292.5	292.5	45.00	540.00	2.00	2.00	540.00	-15	1,213	1,198
Totals:											-17	1,285	1,267

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Pin	Pin Insulator - 5 kV	38.94	9.00	236.4	0.0	6.00	3.50	7.50	-8	68	59
Pin	Pin Insulator - 5 kV	38.94	40.00	261.5	0.0	6.00	3.50	7.50	-28	68	39
Pin	Pin Insulator - 5 kV	38.94	-40.00	98.5	0.0	6.00	3.50	7.50	24	68	91
Bolt	Single Bolt	32.58	0.00	90.0	90.0	5.00	3.00	0.00	4	0	4
Spool	Spool 2.5"	30.17	0.00	180.0	90.0	1.00	2.50	2.12	0	11	10
Bolt	Single Bolt	26.17	0.00	90.0	90.0	5.00	3.00	0.00	4	0	4
Bolt	Single Bolt	25.75	0.00	90.0	90.0	5.00	3.00	0.00	4	0	4
Bolt	Single Bolt	25.25	0.00	90.0	90.0	5.00	3.00	0.00	4	0	4
Bolt	Single Bolt	22.75	0.00	90.0	90.0	5.00	3.00	0.00	4	0	4

O-Calc® Pro Analysis Report

Bolt	Single Bolt	22.08	0.00	90.0	90.0	5.00	3.00	0.00	4	0	4	
Bolt	Single Bolt	21.58	0.00	90.0	90.0	5.00	3.00	0.00	4	0	4	
Bolt	Single Bolt	20.25	0.00	90.0	90.0	5.00	3.00	0.00	4	0	4	
									Totals:	20	213	233

Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
HS 3/8	Down	19.00	0.00	12.00	0.375	75.00	0.0	57.5	0.273	28.45	0.00

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ² (lbs)	Vertical Load (lbs)	Shear Load in Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)	
HS 3/8	Down	2.30e+7	10,800	0.90	9,720	700	0	0	0	0	0	277	
									Totals:	0	0	0	277

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Expanding - 12" - Soil Class 3		0.00	12.00	0.0	40,000	1.00	40,000	0	0	0.0

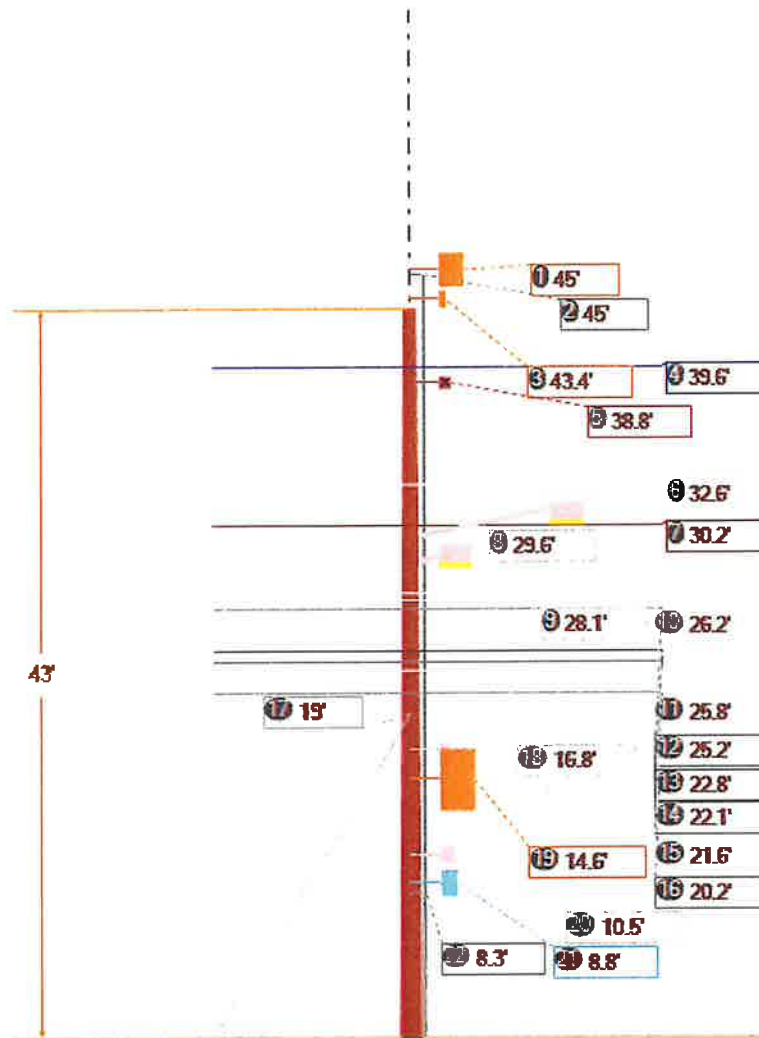
Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	23.34	33.25	12.29	11.23	7.96	13.25	1.60e+6	60.00	57.00	43.00	293,330	2940.38	58.82

O-Calc® Pro Schematic View

Pole Identification: N/A

Report Created: 10/24/2021

File: Pole_MRCTB049468_pplx.pplx



1 - 45' (540")	CANISTER ANTENNA
2 - 45' (540")	Riser- 2" 292.5°
3 - 43.4' (520.8")	Equipment
4 - 39.6' (474.8")	Primary 0° 80' 0.398" (ACSR 1/0 AWG 6/1 RAVEN) Primary 180° 100' 0.398" (ACSR 1/0 AWG 6/1 RAVEN) Primary 0° 80' 0.398" (ACSR 1/0 AWG 6/1 RAVEN) Primary 180° 100' 0.398" (ACSR 1/0 AWG 6/1 RAVEN) Primary 0° 80' 0.398" (ACSR 1/0 AWG 6/1 RAVEN) Primary 180° 100' 0.398" (ACSR 1/0 AWG 6/1 RAVEN)
5 - 38.8' (465")	Normal 10ft 3.5in x 4.5in

6 - 32.6' (391")	6M 0° 85' Msgr:0.242" 6M 180° 100' Msgr:0.242"
7 - 30.2' (362")	Secondary 0° 85' 0.537" (DUPLEX 6 AWG) Secondary 180° 100' 0.537" (DUPLEX 6 AWG)
8 - 29.6' (355")	Streetlight - 8 ft. Arm 8.0 ft arm
9 - 28.1' (337")	Streetlight - 3 ft. Arm 2.5 ft arm
10 - 26.2' (314")	6M 0° 85' Msgr:0.242" 6M 180° 100' Msgr:0.242"
11 - 25.8' (309")	6M 0° 85' Msgr:0.242" 6M 180° 100' Msgr:0.242"
12 - 25.2' (303")	Telco 0° 85' 1.000" (TELE 1.0) Telco 180° 100' 1.000" (TELE 1.0)
13 - 22.8' (273")	CATV 0° 85' 0.570" (CATV .50) CATV 180° 100' 0.570" (CATV .50)
14 - 22.1' (265")	Telco 0° 85' 1.000" (TELE 1.0) Telco 180° 100' 1.000" (TELE 1.0)
15 - 21.6' (259")	6M 0° 85' Msgr:0.242" 6M 180° 100' Msgr:0.242"
16 - 20.2' (243")	Telco 0° 85' 1.000" (TELE 1.0) Telco 180° 100' 1.000" (TELE 1.0)
17 - 19' (228")	HS 3/8 Down Guy 19.0 ft hgt, 57.7° angle
18 - 16.8' (201.6")	Box RFE SAFETY SIGN
19 - 14.6' (175")	Equipment
20 - 10.5' (126.2")	Box RAYCAP
21 - 8.8' (105.2")	Equipment
22 - 8.3' (100")	Riser- 2" 180.0°

NEXIUS

Engineering Structural Analysis Report



Jordan D Phillips PE

Digitally signed by Jordan D Phillips
PE
DN: C=US,
E=jordan.phillips@nexius.com,
O="Nexius Solutions, Inc.", OU=A/E
Group - Structural Engineering,
CN=Jordan D Phillips PE
Location: Sylvan Lake, MI
Reason: I am the author of this
document
Contact Info: (248) 709-3642
Date: 2021.11.09 06:33:15-05'00'

CRAN_RCTB_MARL_05

Replacement

MRCTB049470

11/9/2021

ADEQUATE

Engineering Structural Analysis Report

Reference: Assessment of the **Replacement** 45-ft Class 2 Wooden Pole.
Cascade ID - Candidate: CRAN_RCTB_MARL_05
Site Address: 170 HUDSON STREET NORTHBOROUGH, MA, 01532

We are pleased to provide you with our engineering assessment of the 45-ft Wooden Pole located at 170 HUDSON STREET NORTHBOROUGH, MA, 01532.

The pole analyzed for this project is a 45-ft tall, Class 2 pole. The program calculates an applied wind load on the surface area of the attachments and multiplies that by the height of the attachment to determine a bending moment in the pole (WL load and BM). It also calculates the vertical loads applied and adds the moment due to the applied gravity loads. The calculated moment is compared to the pole capacity and capacity utilization is calculated. The final calculations for this pole indicate a capacity utilization is 57.9%. This is below the maximum allowable capacity utilization, 100%, so it is determined that the applied loads and configuration is acceptable for this pole.

Existing information such as pole height, line types, line heights and depth of set are based on site photographs gathered by Nexius staff. Line and equipment heights are determined based on standard spacing requirements set forth by the pole owner and standard industry practices. If any of these assumptions are not valid or made in error, the conclusion of this assessment may be affected and NEXIUS should review the effect on the structural integrity of the pole.

To the best of our knowledge and based on the result of this pole loading calculation, the additional loadings to the existing pole will not compromise the structural integrity of this utility/streetlight pole. This pole loading calculation satisfies the minimum requirements set forth by the National Electric Code, National Electric Safety Code, ANSI O5 utility pole standards, and the pole owner's attachment standards. If any of these assumptions are not valid or made in error, the conclusion of this assessment may be affected and NEXIUS should review the effect on the structural integrity of the pole.

Please contact us if you have any questions.

ASSUMPTIONS AND LIMITATIONS OF ANALYSIS

Please note the following assumptions and limitations inherent in this analysis and report:

A) The equipment configuration is as per "MRCTB049470_CRAN_RCTB_MARL_05_LE_REV A_20210217" Drawings by NEXIUS, dated 02/17/2021.

If any of these assumptions are not valid or made in error, the conclusion of this assessment may be affected and NEXIUS should review the effect on the structural integrity of the pole.

Proposed Final Equipment		
Item	Model	Quantity
Antenna	Galtronics GQ2412-06613 w/ Mount Bracket	1
Equipment Enclosure	Commscope SSC-760237600	1
Meter Socket	N/A	1
AC Distribution Box/Service Disconnect	NA	1
Radio	Ericsson RRU 4449	1*
Radio	Ericsson RRU 4415	1*
PSU	Ericsson PSU AC08	2*

*Located inside Enclosure

CONCLUSIONS & RECOMMENDATIONS:

The replacement 45-ft wooden pole has been found **ADEQUATE** to support its overall and total load subject to the attached Standard Conditions on **page 4** and the above-mentioned assumptions and limitations.

Please note that the soils report for the foundation were not available to us at the time of this analysis, therefore, the soil conditions have been assumed.

Should you have any questions, comments or require additional information, please do not hesitate to call.

Sincerely,

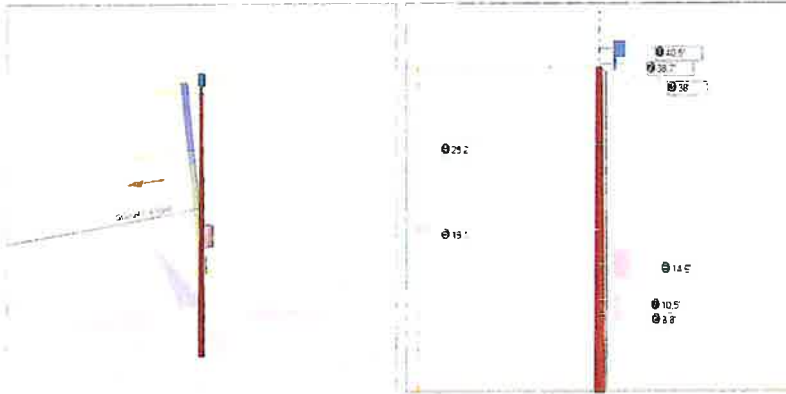
Analysis by: Salman Al Jurdi

Reviewed by: Jordan Phillips, P.E.

Standard Conditions for Providing Structural Consulting Services on Existing Structures

1. If the existing conditions are not as represented in this structural report or attached sketches, we should be contacted to evaluate the significance of the deviation and revise the structural assessment accordingly.
2. The structural analysis has been performed assuming that the structure is in "like new" condition. No allowance was made for excessive corrosion, damaged or missing structural members, loose bolts, etc. If there are any known deficiencies in the structure that potentially compromise structural integrity, we should be made aware of the deficiencies. If we are aware of a deficiency that exists in a structure at the time of our analysis, a general explanation of the structural concern due to the deficiency will be included in the structural report, but the deficiency will not be reflected in capacity calculations.
3. The structural analysis provided is an assessment of the primary load carrying capacity of the structure. We provide a limited scope of service, in that we have not verified the capacity of every weld, plate, connection detail, etc. In most cases, structural fabrication details are unknown at the time of our analysis, and the detailed field measurement of this information is beyond the scope of our services. In instances where we have not performed connection/component capacity calculations, it is assumed that existing manufactured connection/component develop the full capacity of the primary members being calculated.
4. We will not accept any liability for the adequacy of the existing foundation system unless accurate structural foundation drawings are provided with a site-specific geotechnical report. Foundations will be assumed installed per the drawings with no construction deficiency due to initial installation or age.
5. Miscellaneous items such as antenna mounts, coax supports, etc. have not been designed, detailed, or specified as part of our work. It is assumed that material of adequate size and strength will be purchased from a reputable component manufacturer. The attached report and sketches are schematic in nature and should not be used to fabricate or purchase hardware and accessories to be attached to the structure. We recommend field measurement of the structure before fabricating or purchasing new hardware and accessories. We are not responsible for proper fit and clearance of hardware and accessory items in the field.
6. The structural analysis has been performed considering minimum code requirements or recommendations. If alternate wind, ice, or deflection criteria are to be considered, then we shall be made aware of the alternate criteria.

Pole Num:	37.33	Pole Length / Class:	45 / 2	Code:	NESC	Structure Type:	Deadend
Customer:	AT&T	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Site Name:	CRAN_RCTB_MARL_05	Setting Depth (ft):	6.50	Construction Grade:	B	Pole Strength Factor:	0.65
FA #:	15426099	G/L Circumference (in):	40.30	Loading District:	Heavy	Transverse Wind LF:	2.50
PACE ID #:	MRCTB049470	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.50	Wire Tension LF:	1.65
Pole Owner:	N/A	Allowable Stress (psi):	5,200	Wind Speed (mph):	39.53	Vertical LF:	1.50
Proposed RAD Center (AGL):	40'-6"	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	42.328760 Deg	Longitude:	-81.631250 Deg	Elevation:	257 Feet		



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	57.9	240.5
Groundline	57.9	240.5
Vertical	4.8	240.5

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	51,646	239.9
Groundline	51,646	239.9
GL Allowable	89,811	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 239.9°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	825	37.1	24,265	47.0	27.0	1,394	97	1	1,395	26.8
Comms	825	37.1	15,802	30.6	17.6	908	177	1	909	17.5
PowerEquipments	135	6.1	1,816	3.5	2.0	104	397	3	107	2.1
GenericEquipments	41	1.8	1,635	3.2	1.8	94	54	0	94	1.8
Pole	333	15.0	6,504	12.6	7.2	374	2,079	16	390	7.5
Risers	63	2.8	1,616	3.1	1.8	93	57	0	93	1.8
Insulators	0	0.0	8	0.0	0.0	0	9	0	1	0.0
Pole Load	2,223	100.0	51,646	100.0	57.5	2,968	2,869	22	2,990	57.5
Pole Reserve Capacity			38,165		42.5	2,232			2,210	42.5

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 239.9°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
<Undefined>	1,890	85.0	45,142	87.4	50.3	2,594	791	6	2,600	50.0
N/A	333	15.0	6,504	12.6	7.2	374	2,079	16	390	7.5
Totals:	2,223	100.0	51,646	100.0	57.5	2,968	2,869	22	2,990	57.5

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Secondary	DUPLEX 6 AWG	29.25	6.81	0.5370	1.77	0.071	180.0	240.0	180.0	500	24,131	-47	0	24,084
Totals:											24,131	-47	0	24,084

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Overlashed Bundle	6M	19.08	7.71	0.2420	0.35	0.104	180.0	240.0	180.0	500	15,741	-27	0	15,714
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	19.03	7.71	0.6570		0.190	180.0	240.0	180.0			-30	0	-30
Totals:											15,741	-57	0	15,684

PowerEquipment		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Box	AC DIST. BOX		10.52	10.04	150.0	150.0	8.00	12.39	5.65	-	8.59	0	124	124
Box	Meter socket		8.77	10.86	150.0	150.0	16.25	18.50	4.84	-	10.00	0	180	180
Box	Equipment enclosure		14.58	15.99	150.0	150.0	240.50	44.00	20.00	-	21.00	1	1,497	1,497
Totals:												1	1,801	1,802

GenericEquipment		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Box	ANTENNA MOUNTING BRACKET		38.70	0.50	0.0	0.0	5.14	18.39	9.06	-	3.74	0	613	613
Cylinder	AMPHENOL ANTENNA		40.50	1.20	0.0	0.0	30.90	24.50	-	14.70	-	-2	1,013	1,011
Totals:												-2	1,626	1,623

Riser		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Riser- 2" 150.0°	Riser- 2"		38.00	6.57	150.0	150.0	38.00	456.00	2.00	2.00	456.00	0	1,604	1,604
Totals:												0	1,604	1,604

Insulator		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Spool	Spool 2.5"		29.25	0.00	0.00	90.0	0.0	1.00	2.50	2.12	-1	11	10
Bolt	Single Bolt		19.08	0.00	0.00	0.0	0.0	5.00	3.00	0.00	-2	0	-2
Totals:											-3	11	8

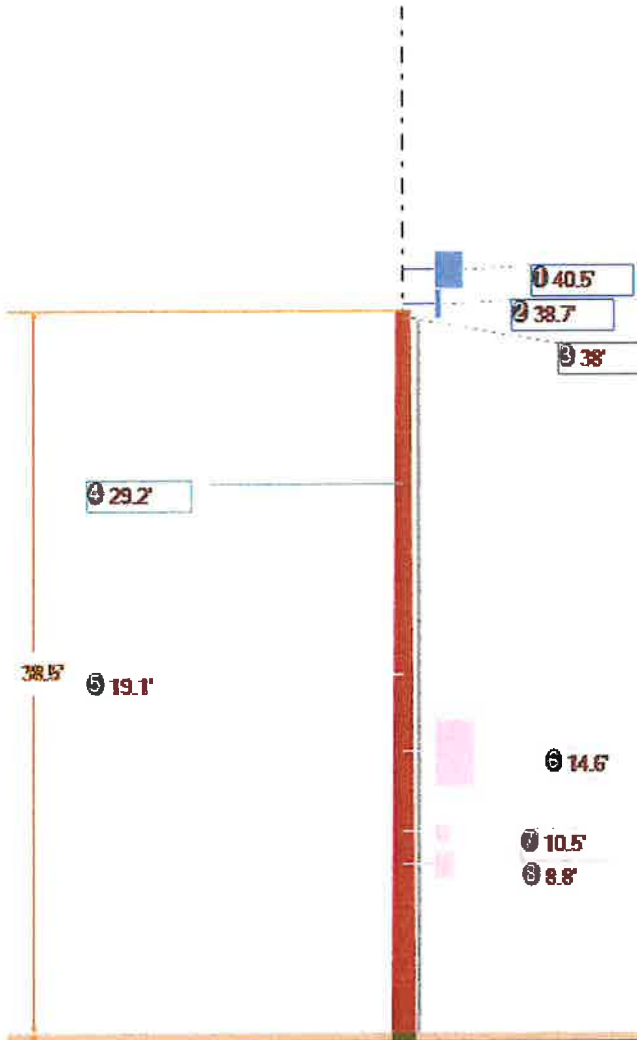
Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	17.78	32.63	12.09	13.02	7.96	12.83	1.60e+6	60.00	57.00	38.50	59,210	597.78	20.83

O-Calc® Pro Schematic View

Pole Identification: 37.33

Report Created: 11/9/2021

File: MRCTB049470.pplx

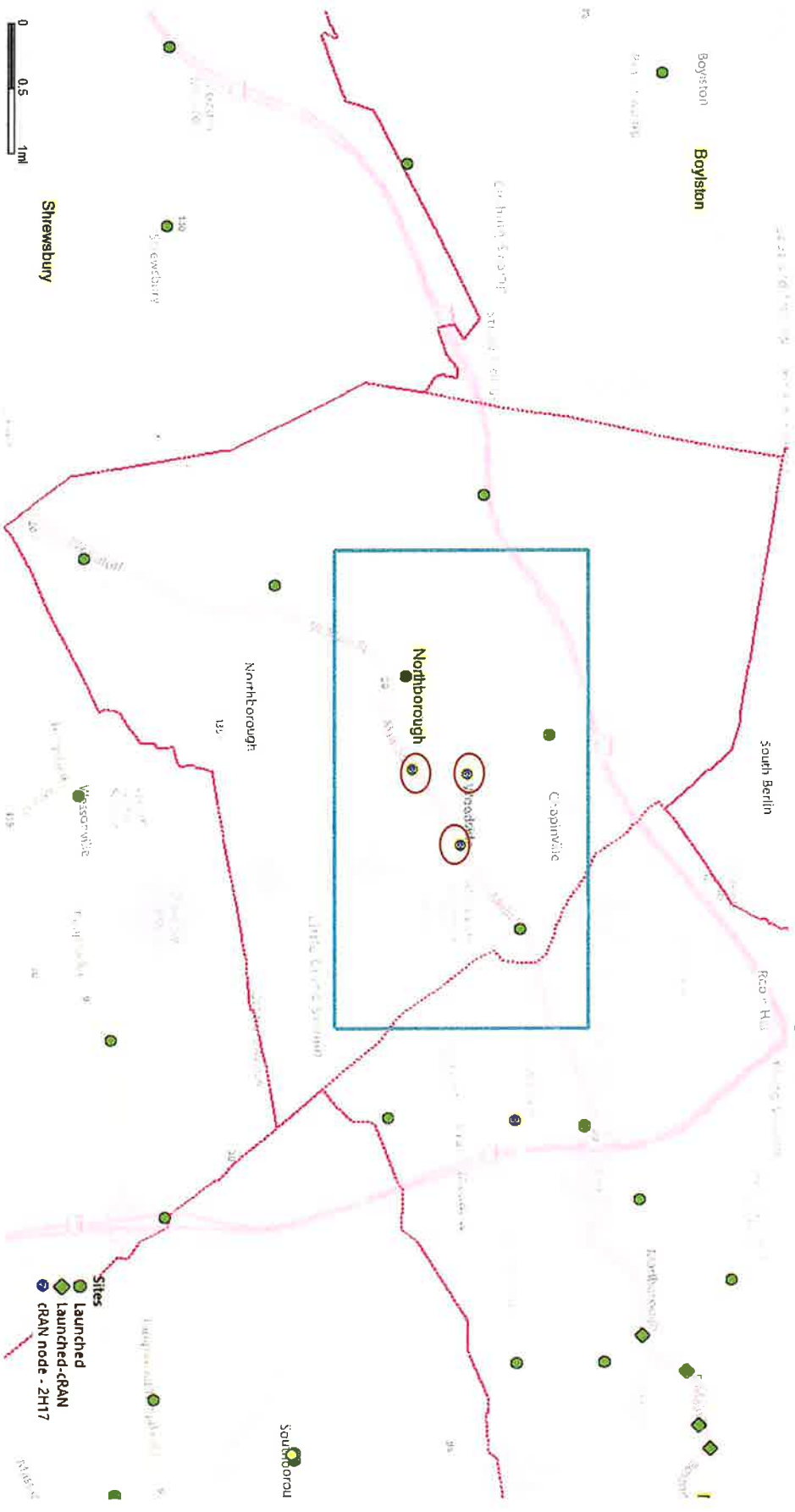


1 - 40.5' (486")	ANTENNA
2 - 38.7' (464.4")	ANTENNA MOUNTING BRACKET
3 - 38' (456")	Riser- 2" 150.0°
4 - 29.2' (351")	Secondary 240° 180' 0.537" (DUPLEX 6 AWG)
5 - 19.1' (229")	6M 240° 180' Msgr:0.242"
6 - 14.6' (175")	Box Equipment enclosure
7 - 10.5' (126.2")	Box meter socket

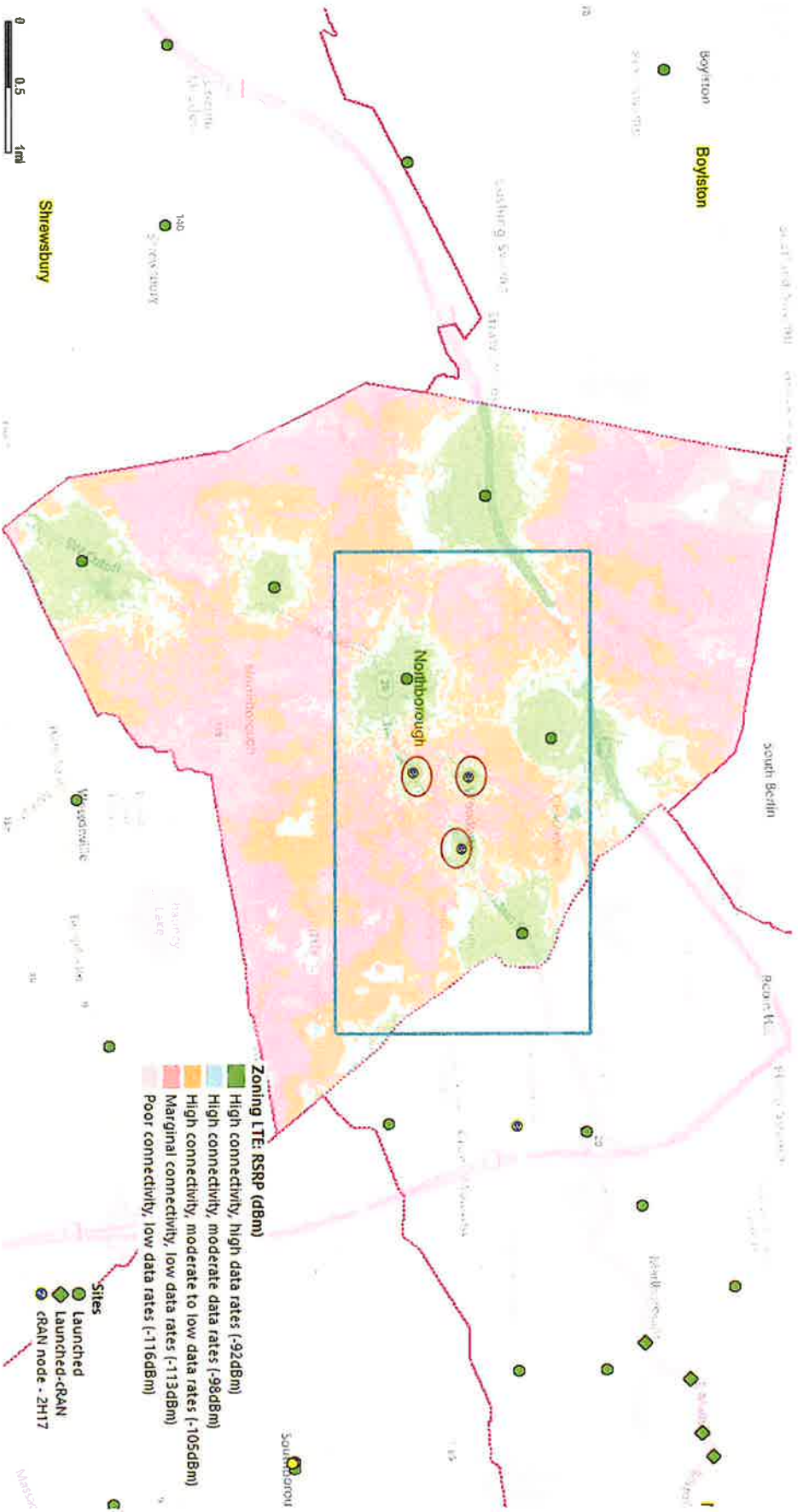
8 - 8.8' (105.2")

Box meter socket

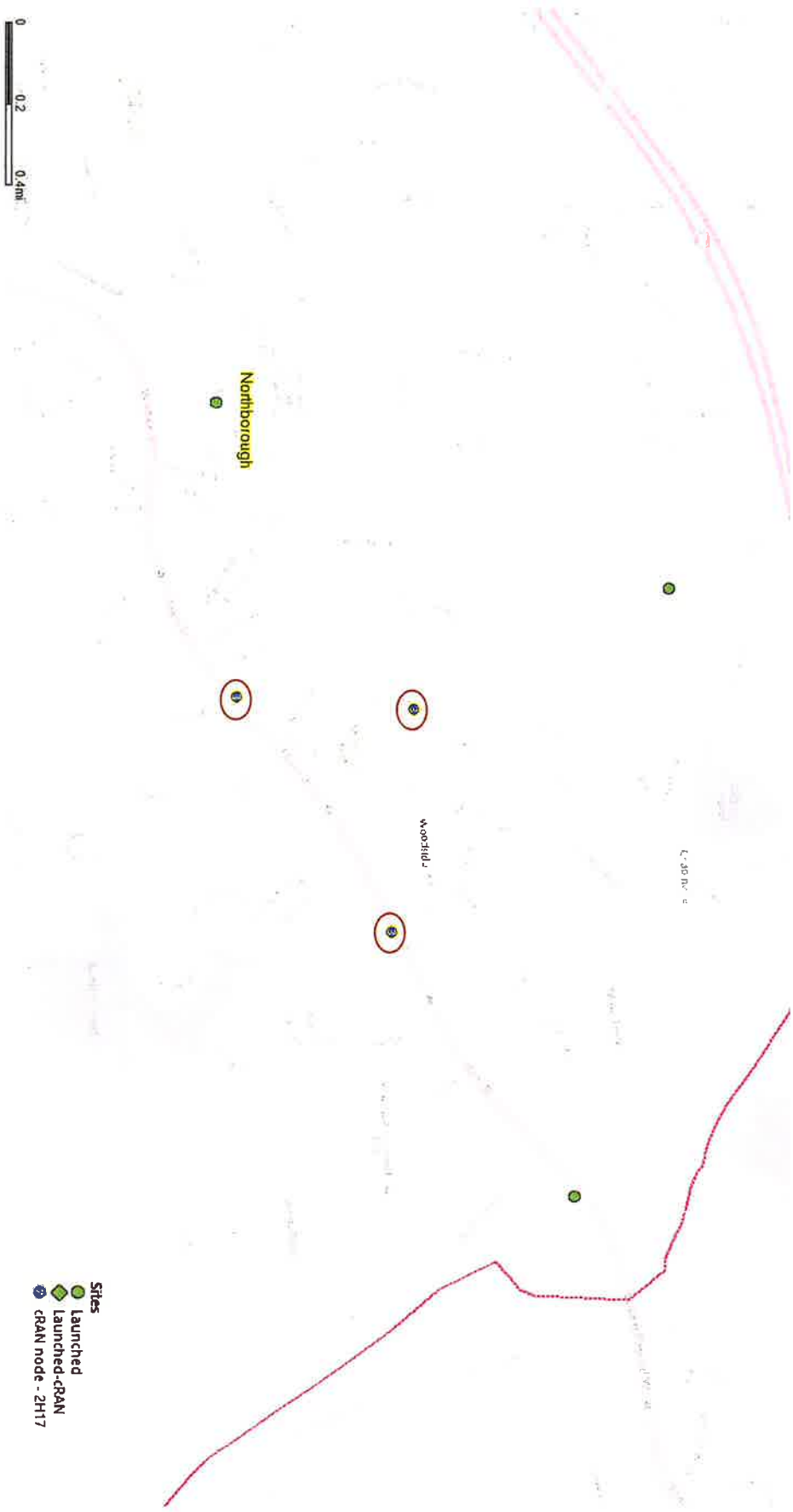
AT&T locations (green dots) and proposed locations (blue dots) in and around Northborough, MA



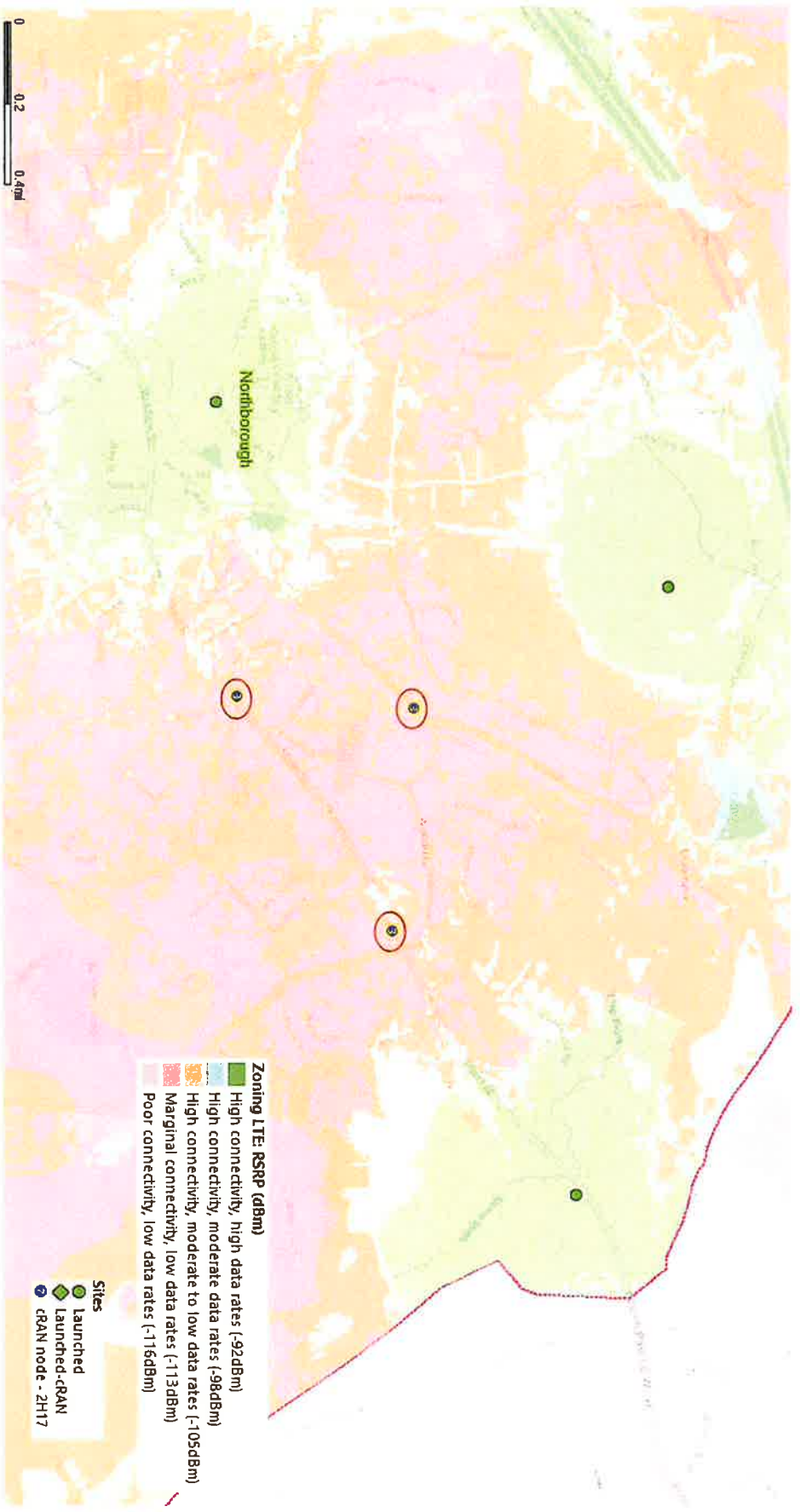
Current AT&T Coverage in Northborough, MA



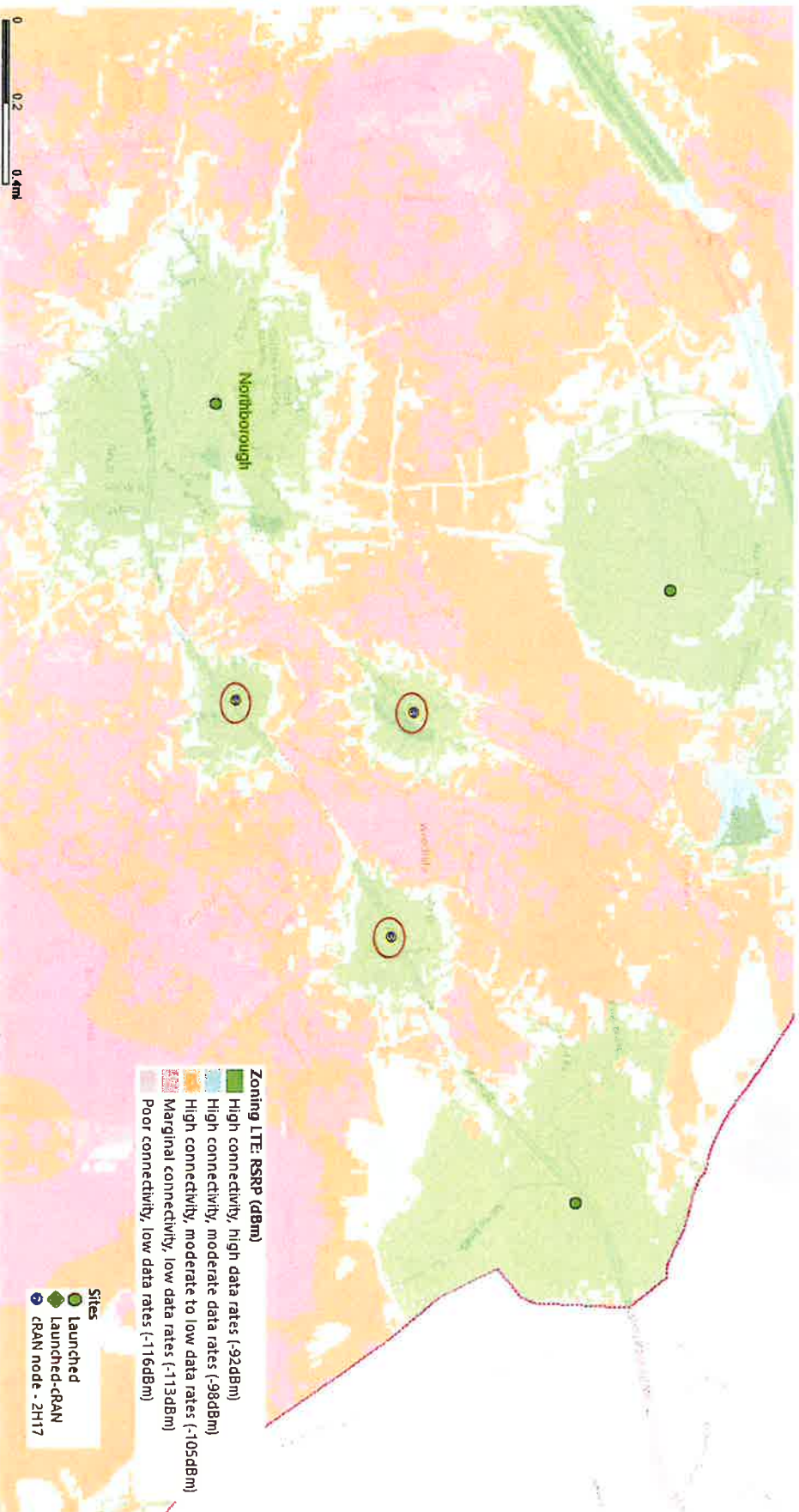
AT&T locations (green dots) and proposed locations (blue dots) in and around the eastern section of Main St



Current AT&T Coverage around the eastern section of Main St



Proposed AT&T Coverage around the eastern section of Main St



DONALD L. HAES, JR., CHP

Radiation Safety Specialist

PO Box 198, Hampstead, NH 03841

617-680-6262

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November 10, 2021

RE: Installation of antennas and associated equipment for the AT&T Mobility PWS “Small Cell” facilities to be mounted on utility poles located within Marlborough, MA and Northborough, MA.

PURPOSE

I have reviewed the information pertinent to the proposed installations. To determine regulatory compliance, theoretical calculations of maximal radio-frequency (RF) fields have been prepared. The physical conditions are that AT&T Mobility proposes to install a canister-styled personal wireless services (PWS) antenna with remote radio head units (comprising a “Small Cell” (SC)) on utility poles located within Marlborough, MA and Northborough, MA.

The theoretical calculations consider the contributions of the proposed AT&T Mobility PWS transmitters (see Table 2) operating at their proposed FCC licensed capacity. The calculated RF field values are presented as a percent of current Maximum Permissible Exposures (%MPE) as adopted by the Federal Communications Commission (FCC),^{i,ii} and those established by the Massachusetts Department of Public Health (MDPH).ⁱⁱⁱ

SUMMARY

This report is intended to provide written evidence that RF fields from the proposed AT&T Mobility PWS facility would comply with the FCC and MDPH RF exposure guidelines. The resulting data indicate the summation of the proposed AT&T Mobility PWS RF contributions would be within the established RF exposure guidelines in all accessible areas on the ground. **The results in Figure 2 support compliance with the pertinent sections of the Massachusetts Department of Public Health regulations regarding PWS facilities, and the FCC’s guidelines for RF exposure.**

Based on the results of the theoretical RF fields I have calculated; it is my expert opinion that these facilities would comply with all regulatory guidelines for RF exposure with the proposed AT&T Mobility antenna and transmitter installations.

Note: The analyses, conclusions and professional opinions are based upon the precise parameters and conditions for each site. **AT&T MOBILITY PWS facilities with model GQ2412-00613 antenna and 4449 and 4415 RRUs mounted on utility poles within Marlborough, MA and Northborough, MA.** Utilization of these analyses, conclusions, and professional opinions for any personal wireless services installation, existing or proposed, other than the aforementioned has not been sanctioned by the author, and therefore should not be accepted as evidence of regulatory compliance.

EXPOSURE LIMITS AND GUIDELINES

RF exposure guidelines enforced by the FCC were established by the Institute of Electrical and Electronics Engineers (IEEE)^{iv} and the National Council on Radiation Protection and Measurement (NCRP).^v The RF exposure guidelines are listed for RF workers and members of the public. The applicable FCC RF exposure guidelines for the public are listed in Table 1 and depicted in Figure 1. All listed values are intended to be averaged over any contiguous 30-minute period. The applicable exposure limits for workers (the “controlled area”) are five times higher but averaged over any 6-minute period.

Table 1: Maximum Permissible Exposure (MPE) Values in Public Areas			
Frequency Bands	Electric Fields	Magnetic Fields	Equivalent Power Density
0.3 – 1.34 MHz	614 (V/m)	1.63 (A/m)	(100) mW/cm ²
1.34 - 30 MHz	824/f (V/m)	2.19/f (A/m)	(100) mW/cm ²
30 - 300 MHz	27.5 (V/m)	0.073 (A/m)	0.2 mW/cm ²
300 - 1500 MHz	--	--	f/1500 mW/cm ²
1500 - 100,000 MHz	--	--	1.0 mW/cm ²

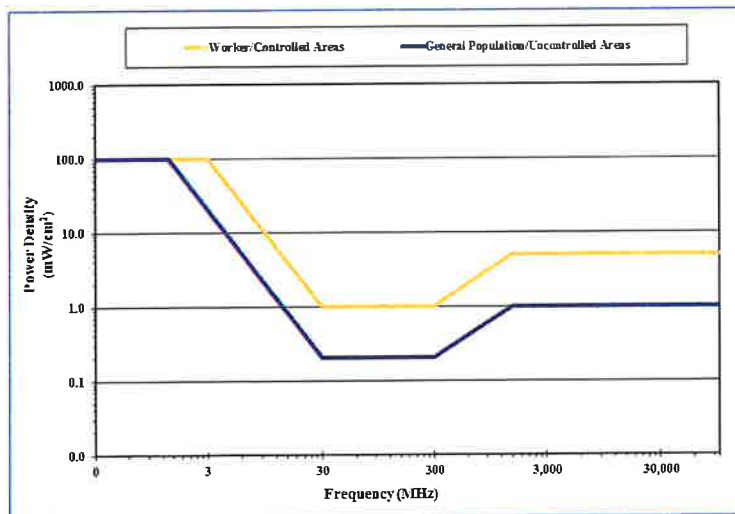


Figure 1: FCC Limits for Maximum Permissible Exposure (MPE)

NOTE: FCC 5% Rule – When the exposure limits are exceeded in an accessible area due to the emissions from multiple fixed RF sources, actions necessary to bring the area into compliance are the shared responsibility of all licensees whose RF sources produce, at the area in question, levels that exceed 5% of the applicable exposure limit proportional to power. (Federal Register / Vol. 85, No. 63 / Wednesday, April 1, 2020 / Rules and Regulations 18145).

INTRODUCTORY INFORMATION: MAKING SENSE OF THE “G”S

There are many references to the so-called “generation” of wireless technologies in use. Each new “generation” of wireless technologies has been designated a numerical value of “G.”¹ The latest “G” to come out, the fifth generation of wireless technologies or so called “5G”, has attracted extensive research interest, both inside and outside the scientific community. According to the third-generation partnership project,² 5G networks should support three major families of applications: (1) Enhanced mobile broadband; (2) Machine type communications, and (3) Ultra-reliable and low-latency communications. There are also enhanced “vehicle-to-everything” communications which are expected to be supported by 5G networks. These situations require much more “connectivity” than the latest fourth generation (aka “4G” or “Long Term Evolution (LTE)”) networks can handle. Thus, new networks must be able to handle this high system throughput, in addition to supporting existing older technologies still in use. This is being accomplished through additional spectrum assignments both higher and lower than currently assigned frequencies used by PWS facilities. In fact, currently deployed 5G networks are operating at frequencies once used by television stations.

Nonetheless, frequencies assigned by the FCC for 5G use are all within the bands currently under regulatory oversight, including setting safe limits of exposure to RF energy for both workers, and members of the public. Just recently (4/2020) the FCC has reaffirmed the efficacy of their regulatory exposure limits to RF energy; including those for 5G. On another note, the premiere journal on matters associated with radiation safety (The Health Physics Journal) has released an article on 5G: [IEEE Committee on Man and Radiation—COMAR Technical Information Statement: Health and Safety Issues Concerning Exposure of the General Public to Electromagnetic Energy from 5G Wireless Communications Networks](#); Bushberg, J.T.; Chou, C.K.; Foster, K.R.; Kavet, R.; Maxson, D.P.; Tell, R.A.; Ziskin, M.C.

From an RF safety standpoint, there is nothing peculiar about the fifth generation of wireless technologies that would set it apart from any of the other advancements of technologies; including the first two generations (first analog then digital communications), the third generation (the first to be referred to a numbered-series as “3G”), and the currently deployed fourth generations (LTE). Recently published studies in peer-reviewed journals^{vi} have shown typical exposures to RF energy from operating 5G systems to be well-within the exposure limits.

¹ PWS “Generations”: **1G**: Analog voice; **2G**: Digital voice; **3G**: Mobile data; **4G**: LTE and mobile Internet; **5G**: Mobile networks interconnect people, control machines, objects, and devices with multi-Gbps peak rates and ultra-low latency.

² SOURCE: (<https://www.3gpp.org/about-3gpp>) The 3rd Generation Partnership Project (3GPP) unites [Seven] telecommunications standard development organizations (ARIB, ATIS, CCSA, ETSI, TSDSI, TTA, TTC), known as “Organizational Partners” and provides their members with a stable environment to produce the Reports and Specifications that define 3GPP technologies.

THEORETICAL RF FIELD CALCULATIONS - GROUND LEVELS

METHODOLOGY

These calculations are based on what are called "worst-case" estimates. That is, the estimates assume 100% use of all transmitters simultaneously. Note that any losses along the horizontal direction were neglected which means the results would be the maximum values in any direction. The resultant values are thus conservative in that they over-predict actual resultant power densities. The data used to prepare the theoretical RF field calculations are outlined in Table 2.

The calculations are based on the following information:

1. Effective Radiated Power (ERP) (See Table 2 and Appendix A data).
2. Antenna height (40.5' (lowest) feet centerline, above ground level (AGL)). Simple trigonometry was used to determine the resultant "RANGE," and the antenna depression angles.
3. Antenna vertical energy patterns; the source of the negative gain (G) values. See Appendix B. "Directional" antennas are designed to focus the RF signal, resulting in "patterns" of signal loss and gain. Antenna vertical energy patterns display the loss of signal strength relative to the direction of propagation due to elevation angle changes.

The magnitude of the RF field (the power density (S)) from an isotropic RF source is calculated making use of the power density formula as outlined in FCC's OET Bulletin 65, Edition 97-01: ^{vii}

$$S = \frac{P \cdot G}{4 \cdot \pi \cdot R^2} \quad \text{Where:} \quad \begin{array}{l} P \rightarrow \text{Power to antenna (watts)} \\ G \rightarrow \text{Gain of antenna} \\ R \rightarrow \text{Distance (range) from antenna source to point of intersection} \\ \text{with the ground (feet)} \\ R^2 = (\text{Height})^2 + (\text{Horizontal distance})^2 \end{array}$$

Since: $P \cdot G = \text{EIRP}$ (Effective Isotropic Radiated Power), and for the situation of off-axis power density calculations, apply the negative elevation gain (G^E) value from the vertical energy patterns with the following formula:

$$S = \frac{\text{EIRP} \cdot G^E}{4 \cdot \pi \cdot R^2}$$

Ground reflections may add in-phase with the direct wave, and essentially double the electric field intensity. Because power density is proportional to the *square* of the electric field, the power density may increase by a factor of four (4). Since ERP is routinely used, convert ERP into EIRP by multiplying by the factor of 1.64 (the gain of a 1/2-wave dipole relative to an isotropic radiator).

$$S = \frac{4 \cdot (\text{ERP} \cdot 1.64) \cdot G^E}{4 \cdot \pi \cdot R^2} = \frac{\text{ERP} \cdot 1.64 \cdot G^E}{\pi \cdot R^2} = \frac{0.522 \cdot \text{ERP} \cdot G^E}{R^2}$$

To calculate the % MPE, use the formula:

$$\% \text{ MPE} = \frac{S}{\text{MPE}} \cdot 100$$

Table 2: Transmitter and Antenna Data and Supporting Parameters for Theoretical Maximum RF Field Exposure Calculations- Ground Levels Proposed AT&T PWS SC Sites in Marlborough, MA and Northborough, MA

Remote Radio Head Unit (RRH or RRU) See Appendix A for Data			Antenna See Appendix B for Energy Patterns		
Model	Frequency (MHz) [†] / Technology	Tx Output Power (watts) [‡]	Manufacturer / Model	Gain (dBd)	ERP (watts) ^{**}
Centerline Height 40.5' (lowest). AGL*					
RRUS-4415	1930-1950 / B25 PCS	40	Galtronics / GQ2412-00613	8.6	290
RRUS-4449	720-780 / B5 / B12 LTE	40		4.3	108

Table Notes

† Transmitter (Tx) Frequency: Central transmit frequency used to account for multiple channels.

‡ Maximum rated output power (per channel).

** ERP: Effective Radiated Power; Equivalent Radiated Power; (ERP)

In a given direction, the relative gain of a transmitting antenna with respect to the maximum directivity of a half-wave dipole multiplied by the net power accepted by the antenna from the connected transmitter. (Source IEEE).^{viii}

Personal Wireless Services (PWS) Technologies

AWS: Advanced Wireless Services

LTE: Long Term Evolution (a.k.a. "4G")

PCS: Personal Communication System

UMTS: Universal Mobile Telecommunications Services

WCS: Wireless Communication Service

* **Note on antenna mounting centerline height: The centerline height chosen for the calculations was 40.5 feet AGL. Calculations for HIGHER centerline mounting heights with identical RRUs and antenna for similar SC facilities would result in LOWER predicted RF fields, hence LOWER potential RF exposures.**

RESULTS

The results of the theoretical Cumulative Maximum Percent MPE - vs. - Distance calculations are shown in Figure 2 as plotted against linear distance from the base of the utility poles representing the highest possible values along ANY direction. The values have been calculated for a height of six feet above ground level in accordance with regulatory rationale. The calculated theoretical %MPE values are plotted in comparison to the MPE of 100% for continuous exposure to members of the general public. Also depicted on the graph are values for a height of 16' AGL (height of a typical second story), albeit not required by FCC rules.

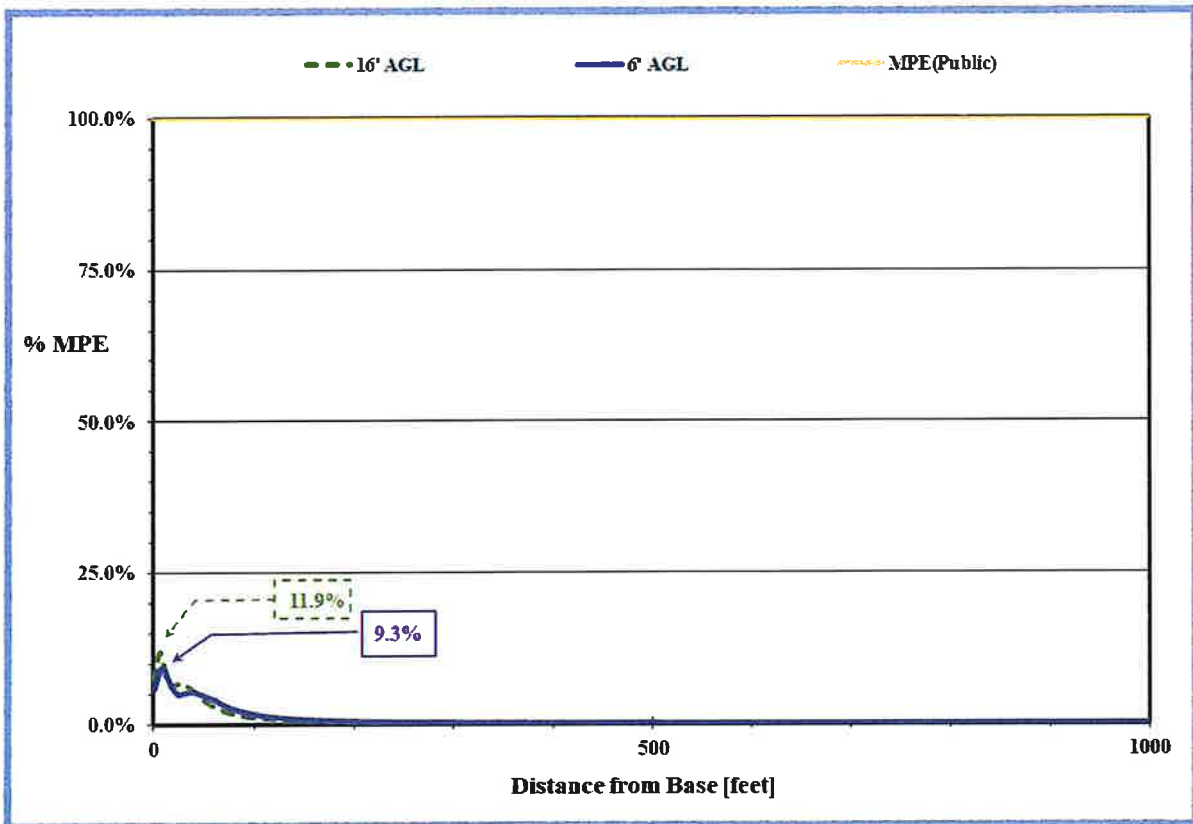


Figure 2: Theoretical Cumulative Maximum Percent MPE - vs. - Distance Proposed AT&T PWS SC Sites in Marlborough, MA and Northborough, MA

OBSERVATIONS IN CONSIDERATION WITH FCC RULES §1.1307(B) & §1.1310

Is it physically possible to stand next to or touch any omni-directional antenna? No, access to each utility pole is restricted, and the utility companies will adhere to RF safety guidelines regarding potential access to the proposed PWS antennas mounted on the poles.

CONCLUSION

This report is intended to provide written evidence that RF fields from the proposed AT&T Mobility PWS facility would comply with the FCC and MDPH RF exposure guidelines. The resulting data indicate the summation of the proposed AT&T Mobility PWS RF contributions would be within the established RF exposure guidelines in all accessible areas on the ground. **The results in Figure 2 support compliance with the pertinent sections of the Massachusetts Department of Public Health regulations regarding PWS facilities, and the FCC's guidelines for RF exposure.**

The number and duration of calls passing through PWS facilities cannot be accurately predicted. Thus, to estimate the highest RF fields possible from operation of these installations, the maximal amount of usage was considered. Even in this so-called "worst-case," the resultant increase in RF field levels would be far below established levels considered safe.

Based on the results of the theoretical RF fields I have calculated; it is my expert opinion that these facilities would comply with all regulatory guidelines for RF exposure with the proposed AT&T Mobility antenna and transmitter installations.

Feel free to contact me if you have any questions.

Sincerely,



Donald L. Haes, Jr.

Certified Health Physicist

Note: The analyses, conclusions and professional opinions are based upon the precise parameters and conditions for each site. **AT&T MOBILITY PWS facilities with model GQ2412-00613 antenna and 4449 and 4415 RRUs mounted on utility poles within Marlborough, MA and Northborough, MA.** Utilization of these analyses, conclusions, and professional opinions for any personal wireless services installation, existing or proposed, other than the aforementioned has not been sanctioned by the author, and therefore should not be accepted as evidence of regulatory compliance.

DONALD L. HAES, JR., CHP

Radiation Safety Specialist

PO Box 198, Hampstead, NH 03841

617-680-6262

Email: donald_haes_chp@comcast.net

STATEMENT OF CERTIFICATION

1. I certify to the best of my knowledge and belief, the statements of fact contained in this report are true and correct.
2. The reported analyses, opinions, and conclusions are limited only by the reported assumptions and limiting conditions, and are personal, unbiased professional analyses, opinions, and conclusions.
3. I have no present or prospective interest in the property that is the subject of this report and I have no personal interest or bias with respect to the parties involved.
4. My compensation is not contingent upon the reporting of a predetermined energy level or direction in energy level that favors the cause of the client, the amount of energy level estimate, the attainment of a stipulated result, or the occurrence of a subsequent event.
5. This assignment was not based on a requested minimum environmental energy level or specific power density.
6. My compensation is not contingent on an action or event resulting from the analyses, opinions, or conclusions in, or the use of, this report.
7. The consultant has accepted this assessment assignment having the knowledge and experience necessary to complete the assignment competently.
8. My analyses, opinions, and conclusions were developed, and this report has been prepared, in conformity with the *American Board of Health Physics* (ABHP) statements of standards of professional responsibility for Certified Health Physicists.

Date: November 10, 2021



Donald L. Haes, Jr.

Certified Health Physicist

DONALD L. HAES, JR., CHP

Radiation Safety Specialist

PO Box 198, Hampstead, NH 03841

617-680-6262

Email: donald_haes_chp@comcast.net

SUMMARY OF QUALIFICATIONS

• **Academic Training -**

- Graduated from Chelmsford High School, Chelmsford, MA; June 1973.
- Completed Naval Nuclear Power School, 6-12/1976.
- Completed Naval Nuclear Reactor Plant Mechanical Operator and Engineering Laboratory Technician (ELT) schools and qualifications, Prototype Training Unit, Knolls Atomic Power Laboratory, Windsor, Connecticut, 1-9/1977.
- Graduated Magna Cum Laude from University of Lowell with a Bachelor of Science Degree in *Radiological Health Physics*; 5/1987.
- Graduated from University of Lowell with a Master of Science Degree in *Radiological Sciences and Protection*; 5/1988.

• **Certification -**

- Board Certified by the American Board of Health Physics 1994; renewed 1998, 2002, 2006, 2010, 2014, and 2018. Expiration 12/31/2022.
- Board Certified by the Board of Laser Safety 2008; renewed 2011, 2014, 2017, 2020. Expiration 12/31/2023.

• **Employment History -**

- Consulting Health Physicist; Ionizing/Nonionizing Radiation, 1988 - present.
- Radiation, RF and Laser Safety Officer; BAE Systems, 2005–2018 (retired).
- Assistant Radiation Safety Officer; MIT, 1988 – 2005 (retired).
- Radiopharmaceutical Production Supervisor - DuPont/NEN, 1981 – 1988 (retired).
- United States Navy; Nuclear Power Qualifications, 1975 – 1981 (Honorably Discharged).

• **Professional Societies -**

- Health Physics Society [HPS].
- American Academy of Health Physics [AAHP]
- Institute of Electrical and Electronics Engineers [IEEE];
- International Committee on Electromagnetic Safety [ICES] (ANSI C95 series).
- Laser Institute of America [LIA].
- Board of Laser Safety [BLS].
- American National Standards Institute Accredited Standards Committee [ASC Z136].
- Committee on Man and Radiation [COMAR].

APPENDIX A

SPECIFIC REMOTE RADIO HEAD UNITS RRU RRUS-4415 / B25

ERICSSON		EXHIBIT 13		1/21	
ERAWALA		Date		2017-12-20	
BINEPBAJD		Rev		B	

Federal Communications Commission
 Authorization & Evaluation Division
 7433 Oakland Mills Road
 Columbia, Maryland 21046
 Aberdeen Equipment Authorization Branch

Subject: Certification for FCC ID: TABAKRC161836

To Whom It May Concern:

Ericsson AB requests a Grant of Certification (Type Acceptance) for the above mentioned FCC Identifier.

The radio operates in the Cellular band as per 47 CFR Part 24.

This radio (Radio 4415 B2 B25) is designed for use in GSM, WCDMA and LTE cellular telephone system. This FCC radio operates in Band 2 and in Band 25.

The Transmitter part of this RRU, operates with GSM, WCDMA, LTE in frequency band 2, 1930 - 1920 MHz and with WCDMA, LTE in frequency band 25, 1930 - 1920 MHz.
 The Receiver part of this RRU operates with GSM, WCDMA, LTE in frequency band 2, 1920 - 1910 MHz and with WCDMA, LTE in frequency band 25, 1920 - 1910 MHz.

It supports channel bandwidths of 200 kHz for GSM, 4.2 - 5 MHz for WCDMA, 1.4, 3, 5, 10, 15 and 20 MHz for LTE. The radio supports modulation type QPSK, AQPSK and BPSK for GSM, QPSK, 16 QAM and 64 QAM for WCDMA and QPSK, 16QAM, 64QAM and 256 QAM for LTE.

The radio supports spectrum consisting of two or more sub-blocks separated by sub-carrier gap(s) (NCS - Non-Contiguous Spectrum). The radio unit supports carrier aggregation.

The radio has the ability to be used in a RBS system configured for 3GPP dual TX and Quad RX technologies for GSM.

The radio has the ability to be used in a RBS system configured for 3GPP up to 2x2 MIMO Spatial multiplexing and beam-forming technologies for WCDMA.

The radio has the ability to be used in a RBS system configured for 3GPP up to 4x4 MIMO Spatial multiplexing and beam-forming technologies for LTE.

The radio supports LTE NB-IoT Inband functionality.

The radio will in normal mode operate at a maximum power of 40 W per port at the output connectors. The radio has 4 Tx ports.

This radio will always require a license for transmission.

The Exhibit 1 user manuals submitted with this application is generic and may cover multiple products.

This application is only valid for the model specified in the Exhibit 12 circuit description.

ERICSSON		EXHIBIT 13		2/21	
ERAWALA		Date		2017-12-20	
BINEPBAJD		Rev		B	

Ericsson AB accepts by this request the agreement set out in the document IF SPGR 129 Annex A2 Agreement on Post-market surveillance for radio equipment certified for the US market.

Ericsson AB requests confidentiality under CFR 0.429 according to attached letter. We further certify that the applicant nor any party to the application is subject to a Court of Federal benefits, but includes FCC benefits, pursuant to section 2351 of the Anti-Drug Abuse Act of 1988, 21 U.S.C. Section 982.

If additional information is needed, please contact me on the below listed number.

Lars Wallin
 Quality and Release Management
 Bergsjogatorget 10
 SE-194 03 Stockholm, Sweden
 Telephone No. +46 8 267 00 42
 e-mail lars.wallin@ericsson.com

RRU RRUS-4449 / B2/B12

Receipt date	November 15, 2017
Nemko sample ID number	None

3.2 EUT information

Product name	Radio 4449
Model	Radio 4449 B5 B13
Part number	KRC 161 749/1
Revision	R1A
Serial number	B440591478
Antenna ports	4 TX/RX Ports
RF BW / ISW	B5: 25 MHz B13: 10 MHz
FDD	B5: 45 MHz B13: 31 MHz
B5 Frequency range	TX (DL): 869–894 MHz RX (UL): 824–849 MHz
B13 Frequency range	TX (DL): 746–756 MHz RX (UL): 777–787 MHz
Nominal O/P per antenna port	Config 1: B5: Single Carrier, Ports A through D: 1 × 40 W (46 dBm) Config 1: B13: Single Carrier, Ports A through D: 1 × 40 W (46 dBm) Config 2: B5: Single Carrier, Ports A and D: 1 × 60W (47.78 dBm) Config 2: B13: Single Carrier, Ports A and D: 1 × 60W (47.78 dBm)
Accuracy (nominal)	±0.1 ppm
Nominal voltage	2 × -48 V _{oc} @ 20 A
RAT	LTE: SC, MIMO
Modulation	LTE: QPSK, 16 QAM, 64 QAM, 256QAM
Channel bandwidth	LTE: 5 MHz (B5), 10 MHz (B13)
Maximum combined OBW per port	15 MHz
CPRI	10 Gbps
Channel raster	LTE: 100 kHz
Regulatory requirements	Radio: FCC Part 2, 22, 27 EMC: FCC Part 15, ICES-003 Safety: IEC/EN 62368-1, UL/CSA 62368-1 IEC/EN 60950-22, IEC/EN 60529, UL 50E
Emission Designator	5M00W7D (B5), 10M0W7D (B13)
Supported Configuration	SC, MC, Single Antenna, TX Diversity, MIMO, Carrier Aggregation
Operating temperature	-40 °C to +55 °C
Total Power based on ISW	Config 1: 4 × 40 W (B5) + 4 × 40 W (B13) Config 2: 2 × 60 W (B5) + 2 × 60 W (B13)
Supported carrier / port	LTE BW, B5: 5 (1-3), 10 (1-2); LTE BW, B13: 5 (2), 10 (1)
Optional Fan Tray	N/A

APPENDIX B

ANTENNA SPECIFICATIONS & ENERGY PATTERNS

GALTRONICS / GQ2412-00613



2' Pseudo Omni 12-Port Canister Antenna [698-896, 1695-2360, 3550-3700 and 5150-5925 MHz]

GQ2412-06613

Description:

- Pseudo Omni Canister Antenna for Outdoor DAS and Small Cells
- 2x ports for Low Band 698-896 MHz
- 4x ports for AWS/PCS/WCS Band 1695-2360 MHz
- 4x ports for CBRS Band 3550-3700 MHz
- 2x ports for U-NII Band 5150-5925 MHz*



*Compliant to 47CFR 1.5703 (2017 General U-NII Test Procedures New Rules v01-16-17). The antenna meets current U-NII-1 requirements for gain and upper side-lobe performance. Guidelines for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices - Part 15, Subpart E

Electrical Specifications

Frequency Band [MHz]	698-896	1695-2360	3550-3700	5150-5925
Input Connector Type	2x 4.3-10(F)	4x 4.3-10(F)	4x 4.3-10(F)	2x 4.3-10(F)
Isolation (min.)	20 dB			
VSWR (max.) / RL (min.)	1.5:1 / 14.0 dB			
Impedance	50 Ω			
Polarization	Dual plane 45° (±45°)			
Horizontal Beamwidth	Omnidirectional (360°)			
Vertical Beamwidth	41.7°	19°	15.9°	18°
Gain (max.)	7.8 dBi	8.9 dBi	9.1 dBi	9 dBi
Gain (avg.)	5.1 dBi	7.3 dBi	8.0 dBi	5.4 dBi
Downtilt	0° Fixed			
Max Power / Port	100 Watts	100 Watts	50 Watts	1 Watt
PIM @ 2x43 dBm	< -153 dBc	< -153 dBc	N/A	N/A

2D Antenna Patterns

758 MHz

1930 MHz

3550 MHz

5800 MHz

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Proprietary Information. All rights reserved. Galtronics reserves the right to modify or amend any antenna or specification without prior notice.

Revision Date: February 20, 2020, Rev: 001, 01, 000000013

REFERENCES

- ⁱ. Federal Register, Federal Communications Commission Rules; *Radiofrequency radiation; environmental effects evaluation guidelines* Volume 1, No. 153, 41006-41199, August 7, 1996. (47 CFR Part 1; Federal Communications Commission).

- ⁱⁱ. Telecommunications Act of 1996, 47 USC; Second Session of the 104th Congress of the United States of America, January 3, 1996.

- ⁱⁱⁱ. 105 CMR 122.000: Massachusetts Department of Public Health, *Non-Ionizing Radiation Limits for: The General Public from Non-Occupational Exposure to Electromagnetic Fields, Employees from Occupational Exposure to Electromagnetic Fields, and Exposure from Microwave Ovens*.

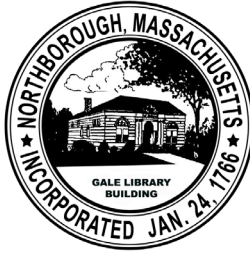
- ^{iv}. IEEE C95.1-1999: American National Standard, *Safety levels with respect to human exposure to radio frequency electromagnetic fields, from 3 kHz to 300 GHz* (Updated in 2020 as C95.1-2019/Cor 2-2020TM *Standard for Safety Levels with Respect to Human Exposure to Electric, Magnetic, and Electromagnetic Fields, 0 Hz to 300 GHz, Corrigenda 2*).

- ^v. National Council on Radiation Protection and Measurements (NCRP); *Biological Effects and Exposure Criteria for Radiofrequency Electromagnetic Fields*, NCRP Report 86, 1986.

- ^{vi}. Jamshed, Muhammad Ali (Institute of Communication Systems (ICS), Home of 5G Innovation entre (5GIC), University of Surrey, Guildford GU2 7XH, U.K). *Electro-magnetic field exposure reduction/avoidance for the next generations of wireless communication systems*. IEEE Journal of Electromagnetics, RF, And Microwaves in Medicine and Biology, Vol. 4, No. 1, March 2020.

- ^{vii}. OET Bulletin 65: Federal Communications Commission Office of Engineering and Technology, *Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields*; Edition 97-01, August 1999.

- ^{viii}. "IEEE Standard Definitions of Terms for Antennas," in IEEE Std 145-1983 , vol., no., pp.1-31, 22 June 1983, doi: 10.1109/IEEESTD.1983.82386.



TOWN OF NORTHBOROUGH

Board of Selectmen
Town Offices, 63 Main Street
Northborough, MA 01532-1994
508-393-5040 Phone
www.town.northborough.ma.us

NORTHBOROUGH BOARD OF SELECTMEN PUBLIC HEARING NOTICE

Pursuant to Massachusetts General Laws, Chapter 166, Section 22, you are hereby notified that the Northborough Board of Selectmen will hold a remote Public Hearing on Monday, March 14, 2022 at 7:00pm to consider a Petition for a Grant of Location for a Small Wireless Facility on a Replacement Utility Pole near 138 Main Street as submitted by New Cingular Wireless PCS, LLC d/b/a AT&T further described as follows:

Near 138 Main Street

AT&T proposes to install: fiber optic cable(s); remote radios in an equipment cabinet 44" long by 21" wide by 20" deep mounted to a proposed replacement 43' tall wood utility pole at 12' 9" above ground level; one top-mounted antenna measuring 24.5" high with a 14.7" diameter; conduits and cable protectors; and an electrical meter 8' AGL with shutoff switch and grounding rod. For reference, the existing wood utility pole has a top height of 39' 3" AGL and the replacement pole will have a top height of 43' AGL. AT&T's antennas must be at least 48" from utility lines.

Reason

To create and monitor better reliability of the rapidly increasing demands on AT&T's wireless network in this area.

Pursuant to Governor Baker's Executive Order of June 16, 2021, an Act Relative to Extending Certain COVID-19 Measures Adopted During the State of Emergency this meeting of the Northborough Board of Selectmen will be conducted via remote participation to the greatest extent possible.

To join the Public Hearing

URL link: . <https://town-northborough-ma-us.zoom.us/j/84889680795> Passcode: 070707

Join by phone: 1 646 876 9923 / Webinar ID: 848 8968 0795 / Passcode: 070707

Any person wishing to be heard should remotely join this Public Hearing at the date and time mentioned above. You can also call the Town Engineer at 508-393-5015 with any questions.

T. Scott Rogers, Clerk
Northborough Board of Selectmen

cc: Abutters

[RETURN TO AGENDA](#)



Northborough Police Department

211 Main Street
Northborough, Massachusetts 01532
508-393-1515 Fax 508-393-1519



William E. Lyver, Jr.
Chief of Police

March 9, 2022

Mr. Jason Perreault, Chairman
Northborough Board of Selectmen
63 Main Street
Northborough, MA 01532

Dear Chairman Perreault,

I respectfully request that I be placed on the March 14, 2022, Selectmen's meeting agenda. This request is made so that I may present a candidate for appointment as a full-time police officer.

The candidate, Melissa Lonergan, is a resident of Worcester, MA and a graduate of Medway High School. In 2006 she earned a Bachelor of Science degree in Human Services. She currently works for District Attorney Joseph Early as a Victim /Witness Advocate. She serves her country as a Behavioral Health Specialist in the U.S. Army Reserve. Melissa has two children, ages nine and five.

Melissa has been enrolled in and accepted at the NECC Police Academy, Recruit Officer Course, located on the grounds of Northern Essex Community College in Haverhill, MA. Melissa successfully completed her background investigation, medical exam, psychological evaluation, and state administer Physical Abilities Test (PAT)

We are particularly pleased to say that Melissa will be the first woman appointed as a police officer in Northborough in over 22 years. This appointment brings to fruition my goal of bringing women to the department and I hope to see more join our ranks.

I ask that Melissa's appointment be effective April 1, 2022. Her pay grade will be step one of the Patrolman's CBA (\$18.93/hour)

Respectfully submitted,

William E. Lyver, Chief of Police

[RETURN TO AGENDA](#)



TOWN OF NORTHBOROUGH PLANNING DEPARTMENT

Town Hall Offices • 63 Main Street • Northborough, MA 01532 • 508-393-5040 x 7 • 508-393-6996 Fax

March 11, 2022

John Coderre, Town Administrator
Town Hall Offices
63 Main Street
Northborough, MA 01532

Dear Mr. Coderre,

Enclosed please find the Community Preservation Committee's proposed Articles for inclusion on the Annual Town Meeting Warrant. The Chair of the Community Preservation Committee, John Campbell, will be present at the Board of Selectmen meeting to speak on the applicable articles.

Please let me know if you have any follow up questions or comments.

Sincerely,

Laurie Connors
Town Planner

[RETURN TO AGENDA](#)



TOWN OF NORTHBOROUGH PLANNING DEPARTMENT

Town Hall Offices • 63 Main Street • Northborough, MA 01532 • 508-393-5040 x 7 • 508-393-6996 Fax

March 10, 2022

John Coderre, Town Administrator
Town Hall Offices
63 Main Street
Northborough, MA 01532

Dear Mr. Coderre,

Enclosed please find the Planning Board's proposed Articles for inclusion on the Annual Town Meeting Warrant. The Planning Board Chair, Kerri Martinek, will be present at the Board of Selectmen meeting to speak on Articles 32 through 38 and Town Engineer Fred Litchfield will speak to Article 39.

Please let me know if you have any follow up questions or comments.

Sincerely,

Laurie Connors
Town Planner

[RETURN TO AGENDA](#)



TOWN OF NORTHBOROUGH

63 Main Street
Northborough, MA 01532-1994
(508) 393-5040 Phone
(508) 393-6996 Fax

March 14, 2022

Governor Charles D. Baker
Massachusetts State House
Office of the Governor
Room 280
Boston, MA 02133

Dear Governor Baker:

On behalf of the Town of Northborough, I respectfully request your support for the proposed legislative reforms outlined on the following pages. These are the priorities of the Town's Public Officials, as well as the Massachusetts Municipal Managers' Association and the Massachusetts Municipal Association. We believe that your administration's support of these items is in line with your demonstrated commitment to strengthening partnerships with local officials and building stronger communities across the Commonwealth.

The reforms that are highlighted herein would benefit municipal leaders' efforts to mitigate heightened pressures on local resources. Many of the rules, regulations and state laws that are in place today hinder their ability to apply creative and innovative means to effectively manage their organizations, and many may in fact create inefficiencies, redundancies, and waste in the use of the limited financial and human resources that are at a municipal manager's disposal.

We would be pleased to provide additional information or meet with you or your staff if you think this would be helpful. Again, thank you for your consideration.

Sincerely,

Jason Perreault, Chair
Northborough Board of Selectmen

CC: Board of Selectmen
Town Administrator
Asst. Town Administrator
Finance Director
Superintendent of Schools
Appropriations Committee
Financial Planning Committee

Senator James Eldridge
Senator Harriette Chandler
Representative Danielle Gregoire
Representative Meghan Kilcoyne



TOWN OF NORTHBOROUGH
STATE LEGISLATIVE PRIORITIES
March 2022

1. Provide a Multi-Year \$300 Million Chapter 90 Authorization

Increased funding of the Chapter 90 program, through which the Commonwealth reimburses municipalities for eligible roadway improvement projects, is critically important as communities across the state seek to maintain safe local roadways and build strong local economies. The program's formula-based funding considers a community's population, road miles and employment. The Legislature authorized a \$300 million Chapter 90 program for Fiscal 2015, and ultimately, the full amount was released to cities and towns in January 2015. For several years now, the Town has called on state officials to permanently fund Chapter 90 at \$300 million a year, and to release the funds in a timely fashion. Funding in the last five years (Fiscal 2018-2022), has remained \$200 million. The Governor has again filed for \$200 million in Chapter 90 Local Transportation Funding in Fiscal Year 2023.

Level funding the Chapter 90 program for Fiscal 2023 provides inadequate support to communities seeking to maintain roads in a state of good repair. A biennial state-wide survey by the Massachusetts Municipal Association (MMA) found that municipalities would need to spend more than \$685 million annually to bring roads up to the industry standard for ensuring well-maintained roads in good condition. The proposed FY2023 Chapter 90 funding falls flat at \$200 million and supports less than one third of the reported need. The purchasing power of the Chapter 90 program has been substantially diminished since Fiscal 2012, due to several factors, primarily construction inflation. If Chapter 90 remains at \$200 million for fiscal 2023, the real (inflation-adjusted) level of state support for local road projects would drop by 42.6%, to an inflation-adjusted \$117 million in fiscal 2023. That is a loss of \$83.2 million purchasing power over 11 years. The increasing costs reflect the overall deterioration of our roadway infrastructure and underscore the detrimental effects of under investment in our aging infrastructure.

The timing of legislative action on Chapter 90 is also critically important with adherence to the April 1 notification date necessary to allow municipalities the needed time to plan, bid and award paving contracts and make maximum use of the funds during the full construction season. For most cities and towns, Chapter 90 is the primary source of funds for road construction and repairs, and delays or reductions in funding can result in paving projects being postponed until the following season. A multi-year bond bill would allow for better multi-year planning and more effective use of funding as well.

The Town strongly urges your support of House Bill 4358, which proposes to increase state-wide Chapter 90 funding to \$300 million. The Town also urges support of the Governor's FY2022 supplemental budget that proposed to add an additional one-time \$100 million in Chapter 90 funding, as well as \$100 million in pothole funding.

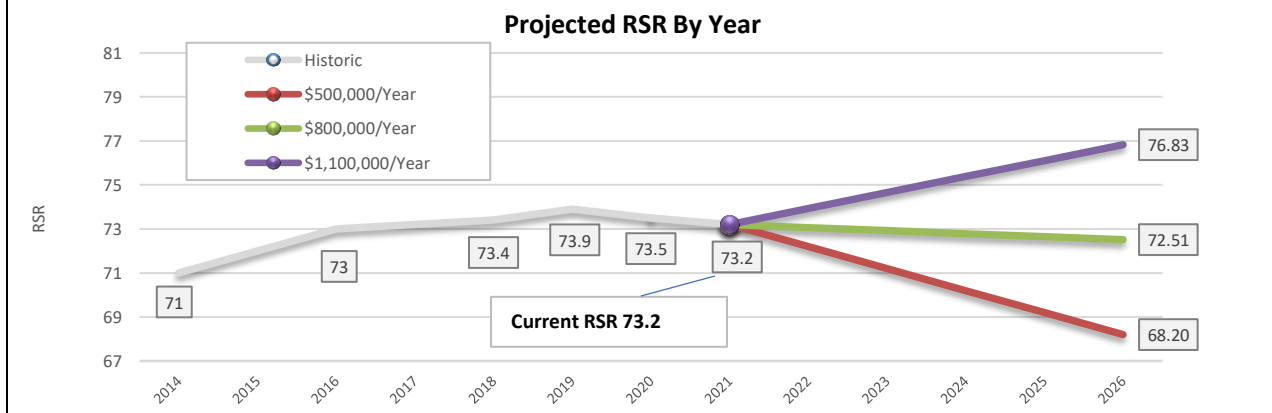
Why is Chapter 90 Funding a Legislative Priority for the Town of Northborough?

The Town of Northborough has approximately 93 miles of roadway. Prior to FY2016, the Town's annual spending on road construction projects was limited to its Chapter 90 allocation, which was insufficient to keep pace with needed maintenance and investments. In 2013, the Town completed a comprehensive pavement management study which assessed the condition of the Town's roadways. Notably, the study found only 4% of the Town's roadways to be in excellent condition and in need of no maintenance, and over one quarter (27%) of the roads were found to be in such poor condition that they require reclamation or reconstruction.

Ultimately, deferring investment in our roadways will negatively impact the Town's financial condition and bond rating by increasing costs and reducing the Town's ability to fund other services. Since completing the pavement management study, the Town has developed a pavement management plan to guide its investment in local roadway infrastructure. The Town's study found that if it were to invest only Chapter 90 funds for ten years, the backlog of roadway maintenance work would increase from an estimated \$17 million to almost \$44 million over that time. Annual spending of \$1.1 million would be necessary to maintain current pavement conditions.

When Chapter 90 funds were increased to approximately \$800,000 during FY2016 and paired with an increased local appropriation of \$300,000, the Town met the minimum requisite funding. When the Town subsequently updated its Pavement Management Study, a slight improvement in the overall Road Surface Rating was noted. Unfortunately, Chapter 90 funds were reduced back to approximately \$500,000 in FY2017 where they have remained. At this level, the Town's Chapter 90 allocation of approximately \$500,000 plus a local appropriation of \$300,000 results in a \$300,000 funding gap, which would be filled if the statewide Chapter 90 funding were increased to \$300 million. It is therefore critical that the Governor and Legislature act to ensure the swift passage and full funding of at least a \$300 million Chapter 90 program in Fiscal 2023 and beyond.

The chart below projects the average road surface rating in Northborough under the various funding scenarios, with the top option being the minimum funding needed at \$1.1 million to prevent further deterioration. It also assumes that none of the \$1.1 million is diverted to repair failing culverts, which has been an issue during the past couple of years. In 2021, the Town's average estimated RSR dropped again for the second year in a row by 0.3. The reduction in the Town's RSR reflects the reduction in buying power from a \$200 million Chapter 90 allocation from the State and increasing market costs for roadway infrastructure work.



2. Local Aid increases that keep pace with state revenues

- **Student Opportunity Act and Minimum Aid**—We are pleased that the Governor is proposing to fully fund the second year of the Student Opportunity Act in FY2023. Passage of the Student Opportunity Act has fixed long-known gaps in the Chapter 70 school aid formula by ensuring adequate weight for special education expenses and the cost of health benefits for school personnel, and the additional resources needed to educate English learners and economically challenged students. These are important changes that will benefit those communities and school districts that have high numbers of low-income students, which is where most of the new money will be targeted. However, 136 of 318 school districts, including Northborough, will remain “minimum-aid-only” at \$30 per student. The \$30 per-student minimum aid commitment in the law is far too low and will translate into below-inflation aid increases every year for a majority of school districts, impeding education achievement in these communities, which is why the Town supports the MMA’s call for a minimum aid increase of at least \$100 per student, so that no school system or student is left behind.
- **Special Education Circuit Breaker**— Another top priority for the Town of Northborough is increased funding of the state’s special education reimbursement program known as the “Circuit Breaker Program.” The circuit breaker fund has been in existence since 2004 and reimburses local school districts for a portion of their costs above a certain threshold for educating students with severe disabilities. The Special Education Circuit Breaker must be fully funded every year and we applaud the Legislature’s decision to expand the program to include transportation costs, and to commit to full funding of the account. Maintaining this will be an important priority to the benefit of all school districts.
- **Regional Transportation Reimbursements**—We support funding for transportation reimbursements to regional school districts. This account is vital to all regional districts and their member cities and towns. The Governor’s FY2023 budget proposes a reduction in funding for regional transportation reimbursements from \$82.1 million to \$77.8 million in FY2023, creating a significant hardship for all communities in regional districts, including Northborough. We respectfully ask that you support increasing this key account to reflect higher transportation costs for communities and to move the state closer to its full reimbursement commitment.
- **Unrestricted General Government Aid**—We strongly support an increase in the Unrestricted General Government Aid (UGGA) account consistent with the forecasted state tax collections for Fiscal Year 2023. In FY2023, state tax collections are forecasted to be \$2.5 billion higher (7.3%) than the tax base that was used to pass the FY2022 budget last July, and state tax collections have increased by \$6.2 billion (21.3%) since FY2020. However, the Governor’s House 2 proposal includes an increase of 2.7% for UGGA, or \$31.5 million to be distributed across 351 cities and towns. The Governor’s budget (H2) uses a recently upgraded revenue estimates for FY2022, rather than the one used in the state budget as enacted, which fails to share the higher-than-expected revenue growth experienced through the pandemic, with cities and towns. With local aid still trailing levels from more than a decade ago, capped property

taxes, and inflation running significantly higher than 2.7%, local reliance on the property tax remains stubbornly high. We request that the Legislature increase the UGGA account by 7.3%, consistent with the growth from the initial FY2022 state budget figure.

Why are increases in State Aid a Legislative Priority for the Town of Northborough?

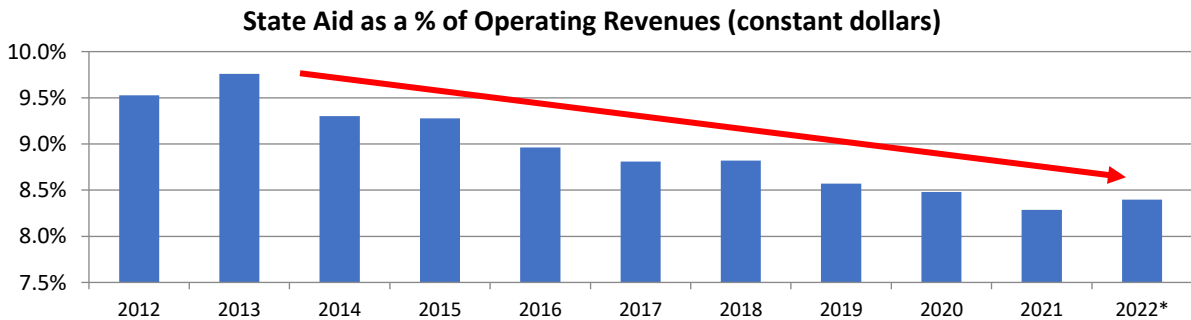
Although on the surface Northborough’s State Aid appears to be growing modestly at 1-2% in recent years, it continues to lag the state’s overall revenue growth. In addition, Northborough’s State Aid continues to increase at a slower rate than the Town’s overall general budget increases, which tend to be between 3-4% annually, so State Aid as a percentage of the operating revenues continues to shrink.

State Aid to Northborough historically represents approximately 10% of total municipal revenue. Northborough’s State Aid peaked in FY2003, when it represented 13.1% of revenues. As a percentage of revenues, it has steadily declined from 10.6% in FY2009 to 8.4% in FY2022. The decrease represents an unfavorable trend with no end in sight.

The Town’s Fiscal 2023 budget model assumes Northborough’s State Aid will increase 1% over the \$5.6 million received in Fiscal 2022. The estimate is based upon the Governor’s Fiscal 2023 Budget, which was released on January 26th. After the Governor’s Budget announcement, detailed preliminary Cherry Sheets were released, which include a first look at initial State Assessments. Our State Aid under the Governor’s budget would increase by just \$57,185 or 1.03%.

What is critical to note is that Chapter 70 represents approximately 73% of Northborough’s State Aid under the Governor’s Fiscal 2022 Budget (\$4,060,174 out of \$5,557,510), and the Student Opportunity Act is unlikely to provide any meaningful revenue increases moving forward unless the Legislature increases the \$30 per student minimum aid. Although Unrestricted General Government Aid (UGGA) is scheduled to increase by 2.7% under the Governor’s Budget, UGGA represents only 22% of State Aid, which is why that account is less important than Chapter 70 in determining overall increases. Unless the Legislature increases the minimum aid under Chapter 70, Northborough will continue to see State Aid as a percentage of its revenue deteriorate, resulting in local property taxes shouldering a larger portion of the budget.

The Chart below shows the steady decline of State Aid as a percentage of Northborough’s operating budget revenues, resulting in a shifting burden onto local taxes.



In addition to the top two legislative priorities, the Town is also including the following bulleted list of additional (secondary) issues and initiatives that we hope you will support.

- **Funding for environmental and climate-related infrastructure needs:** The Town requests your support of long-term state and federal funding and regulatory support that allows cities and towns to build, repair and maintain our legacy environmental infrastructure systems—drinking water, wastewater, and stormwater—and to address the threat of climate with state funding and support to make municipal infrastructure systems and assets resilient to the effects of global warming. Environmental infrastructure is a top priority especially considering emerging challenges such as climate mitigation and adaptation strategies and investments to protect and prepare our communities. Included in the Governor’s \$2.4 billion supplemental funding bill in FY2022 is an additional \$150 million in supplemental grants to fund climate resiliency initiatives, including the Municipal Vulnerability Preparedness Grant Program, which Northborough has taken advantage of in the past. We strongly support the state providing additional funding to existing programs using surplus revenue and COVID recovery dollars. Cities and towns are already familiar with these programs and have relied on funding to complete important climate-related projects. Additional funding for similar programs like MVP and Green Communities will allow cities and towns, including Northborough, to continue to address environmental and climate-related infrastructure needs.
- **Ongoing Flexibility in Addressing Covid-19:** We have heard strong support from residents for a continuation of the ability to utilize many of the technological techniques employed to mitigate the spread of the Covid-19 virus (use of Zoom and other online meeting platforms) indefinitely. While the Governor has signed a supplemental bill allowing for flexibility in holding virtual public meetings until July of 2022, we want to express support for those flexibilities indefinitely. While Covid-19 presented obvious challenges with respect to Open Meeting Law requirements, the temporary suspension of those requirements by the Governor opened many communities to a new world of possibilities that allows for better access and transparency for residents and businesses to stay involved in local government. We support continuation of the utilization of online meeting platforms to conduct business for local Board and Committees. Additionally, we support no-excuse voting by mail as a permanent change to allow all citizens to vote from their home. House Bill 4367 and Senate Bill 2554 will allow for all elections, including local, to have the option of voting by mail without restrictions. We do request that citizens who wish to request ballots use a central online portal or traditional written request, rather than any additional administrative burden at the local level. We also support the local option for early voting as set forth in House Bill 4367.
- **An Act Creating a Municipal and Public Safety Building Authority:** Bills S.2457 and H.3821 would establish a new independent state authority, as well as a separate municipal and public safety building fund, to assist municipalities with the construction of or improvements to public safety or municipal office buildings. With property tax and other local revenues strictly limited by state law, municipalities are constantly challenged with obtaining adequate funding to keep up with ongoing maintenance and needed modern updates to municipal buildings. This independent state authority would act much like the Massachusetts School Building Authority or the Massachusetts Board of Library Commissions, both of which has available state funding to assist municipalities and school districts with addressing infrastructure needs for schools and libraries. We support bills S.2457 and H.3821 which would assist in addressing public safety and general municipal building needs.

- **An Act Relative to A Streaming Entertainment Operator's Use of Public Rights of Way:** H.1440 and S.834 seek to level the playing field for companies who sell video and audio entertainment services in Massachusetts. For decades, cable companies who distributed products using public rights of way have had to pay up to 5% of their gross annual revenue for that use. These franchise fees make up the bulk of the annual budget for the Northborough Cable Access Television operation. Companies who stream video (like Hulu or Netflix) who use the same rights of way do not pay anything back. CATV has seen a reduction in funding due to cord cutting, as the revenue for CATV relies on the number of cable subscribers in town. To continue to provide valuable coverage for government, school and community events and meetings, the revenue lost from cord cutting should be replaced with streaming companies who utilize the same rights of way and currently do not provide funding for cable access. Support for H.1440 and S834 would ensure that important funding for cable access services is secured for years to come.
- **Promoting Equity and Diversity in Cities and Towns:** Providing funding to implement recommendations from the Black and Latino Advisory Commissions has been a key priority for the Administration, particularly in a year where the impacts of the pandemic have fallen disproportionately on people of color. However, there is ongoing pressure on cities and towns to address diversity, equity, and inclusion on a local level. This often is spurred by a specific incident, or simply in response to growing national tensions around racial inequality and Police brutality. For communities to respond in a way that can stimulate meaningful change, we ask that the Commonwealth include Promotion of Diversity and Inclusion as a new Community Compact best practice in the category of Human Resources. This would open funding for communities to conduct Diversity, Equity and Inclusion Plans and implement meaningful change so that we can ensure that our workforce accurately reflects the communities we serve. The Massachusetts Municipal Managers Association Diversity, Equity and Inclusion Committee is pursuing the inclusion of DEI Strategic Plans as a best practice through the Community Compact Program, and we strongly support their endeavours to do so.
- **Ensure Sustainable OPEB Costs for Cities and Towns:** Legislative action to reduce the looming Other Post-Employment Benefits (OPEB) funding crisis is critical to keeping cities and towns from gutting essential services and increasing local property taxes. OPEB refers to non-pension benefits provided to retirees, consisting primarily of health insurance. Currently, employees who retire at age 55 having worked for at least 20 hours per week for at least ten years typically qualify to receive health insurance benefits for life. Unlike pensions, these medical benefits are not adjusted to account for full or part-time work, years of service, or age of the recipient at the time of retirement and are funded on a pay-as-you go basis. This model, adopted during a different era, is no longer sustainable. Reform is necessary to protect not only the financial well-being of municipalities, but to also protect retiree benefits in both the short and long term and to protect municipal jobs. Although Northborough has created a dedicated trust fund and is appropriating \$550,000 annually to address this issue, meaningful OPEB reform at the state level is a key piece of the puzzle to solving this problem. We understand that OPEB reform is not currently on the docket for this legislative session; however, we urge the Legislature not to lose sight of OPEB reform for next year.
- **Oppose Unfunded Mandates:** We seek your support in working with the MMA and municipalities to comprehensively review and analyze unfunded mandates imposed by state law, regulation, or other action. In addition to seeking full funding for all current mandates, we

ask that you support the MMA's proposal that would require the Executive Office to specify the local impact of any signed legislation.

- **Modernize Procurement and Public Construction Laws:** The following suggestions would reduce the direct financial and administrative costs of dealing with overly restrictive and outdated purchasing and public construction regulations and laws. A major cost factor in public construction is a requirement that Towns pay "prevailing wages" that are often greater than the wages paid by local contractors. In addition, this requirement involves far more paperwork than local contractors are prepared or willing to take on for a one-time project. It is ironic that a law, which was initiated to encourage the award of contracts to local tradesmen, would have an opposite effect. There should be legislation that would exempt construction projects of \$100,000 or less from the prevailing wage law. We urge you to address the long overdue problem of excessively high public construction costs within the Commonwealth.

On behalf of the Town of Northborough, thank you in advance for your consideration of these important issues, projects, and initiatives.



TOWN OF NORTHBOROUGH
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TOWN OF NORTHBOROUGH
EARMARK PROJECT REQUESTS
March 2022

In addition to the legislative priorities set forth in the letter to Governor Baker dated March 14, 2022, below is a list of specific earmark requests for various infrastructure projects that Northborough anticipates pursuing in the upcoming year. In the last year, Northborough has witnessed an increase in the number of awarded earmarks in the region. Included in the recent ARPA legislation signed On December 13, 2021, Shrewsbury received earmark funding to make school HVAC upgrades, Marlborough received \$390,000 for I.T. infrastructure upgrades, and Southborough received \$70,000 to repair a collapsed culvert. Other surrounding communities including Hudson and Grafton also received sizeable earmarks to address failing infrastructure. Below is a list of high priority capital projects that we believe are strong candidates for State Earmarks. This list contains a multi-departmental overview of various projects with cost estimates that would otherwise be financially burdensome for the town to fund.

1. **Fire Station Building Project:** The Town has completed a Feasibility Study, as well as the conceptual design phase for the location of a new Fire Station in Northborough. The existing station, of which there is only one in Northborough, was built in 1975 and stands at 11,100 SF. The station was built as a volunteer station prior to the ALS services that the department currently provides. There are no facilities for female firefighters and inadequate space for full-time personnel. The total cost estimate for the project at the time of the conceptual design in 2019 was approximately \$19M. The town is aware of legislation that has been put forward to support a Municipal and Public Safety Building Authority, to be operated like the MSBA. The town is in full support of that legislation and strongly advocates for some portion of the \$19M station to be funded through the state.
2. **Water Meter Transmitter Replacement:** Cellular carriers announced early in 2021 that they would discontinue support of all 3G communication devices by December 31, 2022. This has put an enormous burden on the Town of Northborough Water Division. The Town has utilized cellular transmitters on water meters since 2015 as a means of promoting water conservation and to improve billing operations. Customers can remotely monitor their water use and receive leak or high flow alerts. The Water Division is now burdened with replacing approximately 4,200 3G transmitters with 5G devices at a total cost of \$240,600 for materials alone. This unexpected expense has had a negative impact on the stability of the Water Division, posing undue financial duress on water users.
3. **Lincoln Street Culvert Replacement:** In 2019, the Town completed a town-wide culvert inventory and condition assessment. Several culverts have been found in need of replacement. Drainage systems in town are aging and many have surpassed their functional life. The Lincoln Street culvert, a 6-foot diameter metal pipe, is located directly adjacent

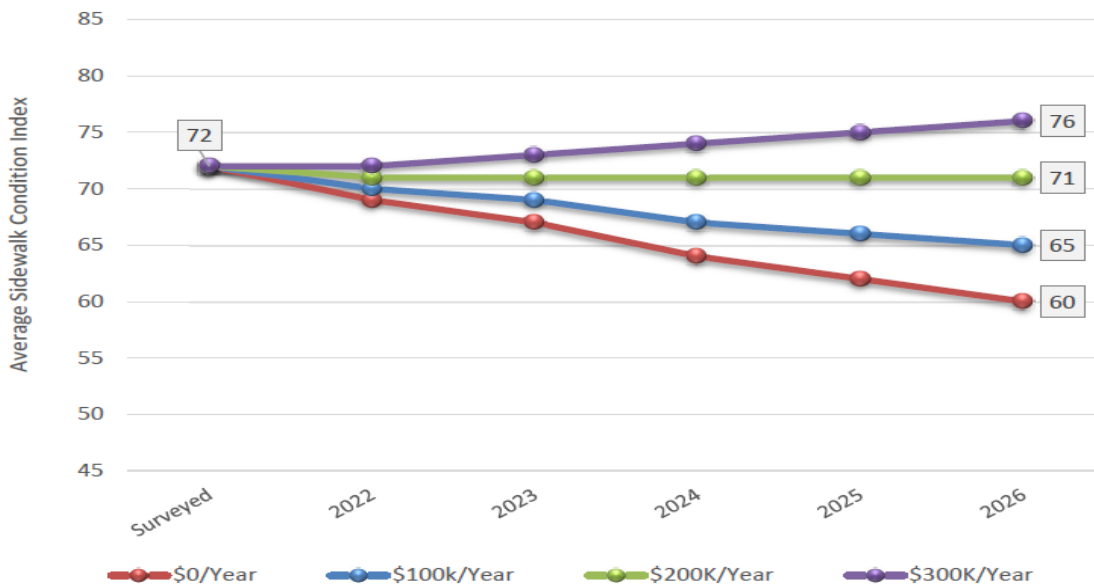
to the newly reconstructed Lincoln Street Elementary School and conveys Cold Harbor Brook, a major waterway in Town. The culvert failed and caused a major sink hole in the roadway and sidewalk on June 30, 2021. The hole is covered and being monitored. We have begun design and permitting services but are hereby requesting assistance with the \$300,000 replacement cost.

4. **Northborough Reservoir Dam Removal:** The Town of Northborough owns the Northborough Reservoir and associated dam and is located between Shrewsbury and Boylston. Rawson Brook was dammed in the 19th century to create the reservoir which served as the Town's water supply until 1953 when it was taken out of service. It no longer provides any benefit and has been deemed by the State Office of Dam Safety to be in poor condition, and due to it being a significant hazard dam, has been ordered to be repaired or removed. Removal is the most environmentally responsible and cost-effective disposition and is deemed as beneficial to both climate change adaptation and wetland resource viability. The Town is in the design and permitting process for this work and seeks funding assistance for the physical removal of the structure. The cost estimate for the removal is \$900,000, which supports the goals of the Commonwealth and the community.
5. **Supervisory Control and Data Acquisition (SCADA):** This project includes expansion of the Supervisory Control and Data Acquisition (SCADA) system for the Northborough sewer division. The Town is currently installing this emergency alarm, communication, and control infrastructure for only three of our locations, which is one third of the necessary sites. We strongly need additional funds to complete this critical safety and security project. Expansion of this program will allow safe and secure operations and controls for the following locations:
 - Church Street Sewer Pump Station, which is directly adjacent to Cold Harbor Brook, a critical environmental resource.
 - Lincoln Street Sewer Pump Station, which while also adjacent to this brook, also serves one of largest and newest elementary schools.
 - Forbes Road Sewer Pump Station, which serves one of the Town's largest technology and manufacturing districts.
 - Town Hall Sewer Pump Station, which serves essential local government operations as well as a large Senior Housing Authority property.
 - Lyman Street Sewer Pump Station, which is located directly adjacent to Hop Brook and serves a large extended hours department/grocery store.

These needed upgrades are a means to reduce the likelihood of environmental impacts and public health risks due to the failing of a pump station. The failing of a pump station can cause Sanitary Sewer Overflows which pose direct risks to the surrounding area and community by exposing raw, untreated wastewater. The ability to consistently monitor the remote sites using the SCADA system and the improved emergency alarm system will alert the operators to issues who can provide efficient responses. The cost for these critical improvements is \$345,000.

6. **Sidewalk Repair Project:** As part of its ongoing roadway asset management program, Northborough had all sidewalks and pedestrian curb ramps along Town roads inventoried

and assessed. Sidewalks are a critical part of a municipality’s infrastructure, providing safety and mobility to pedestrians, and enhancing access to public and private facilities, businesses, and generating community connectivity. Pedestrian Curb Ramps enable that access for pedestrians with mobility altering disabilities. The assessment revealed that Northborough has 32.69 miles of sidewalk and 212 pedestrian curb ramps. The average sidewalk condition is a 72 out of 100, with most sidewalks being in good or fair condition. Eighty out of the 212 existing pedestrian curb ramps are rated as fair or poor. The chart below projects the average sidewalk condition in Northborough under various funding scenarios, with the top option being the minimum funding needed at \$300,000 per year over five years to improve the overall condition of sidewalks in Northborough and to address the backlog of sidewalk infrastructure projects. A permanent increase to Chapter 90 funding in the amount of \$300M, coupled with the town’s recent Complete Streets program adoption will allow the town to maintain sidewalks moving forward and construct additional sidewalks to connect existing routes. Unfortunately, the current backlog of sidewalk improvement work will require significant one-time additional funding to address before new sidewalks are added. The overall backlog of sidewalk improvement work is estimated to cost approximately \$1.5M.



On behalf of the Town of Northborough, thank you in advance for your consideration of these important projects.

[RETURN TO AGENDA](#)



TOWN OF NORTHBOROUGH

63 Main Street
Northborough, MA 01532-1994
(508) 393-5040 Phone
(508) 393-6996 Fax

MEMORANDUM

TO: Board of Selectmen

FROM: Town Administrator, John W. Coderre

SUBJECT: FY2023 Capital Budget and ARPA Plan

DATE: March 11, 2022

CC: Appropriations Committee, Financial Planning Committee,
Financial Team, School Superintendent

At the January 24th Board of Selectmen meeting, I provided a detailed presentation regarding the FY2023 Free Cash Plan, anticipated Capital Budget projects, and the proposed American Rescue Plan Act (ARPA) projects and initiatives. Since the Board's January 24th meeting, the Financial Planning Committee and Appropriations Committee have begun reviewing the various capital and operating budget plans for FY2023.

The proposed FY2023 Capital Budget project list is now finalized and included in the draft 2022 Annual Town Meeting Warrant. At your meeting on March 14th the Board will be asked to consider the release of ARPA resources to fund the projects and initiatives contained in the attached table.

I look forward to discussing these exciting projects and initiatives in more detail.

Below is the revised table that lists the proposed projects to be funded through the Capital Project Articles at Town Meeting using available Free Cash, and projects recommended to be funded using ARPA funds, which may be released by a vote of the Board of Selectmen.

REVENUES		FY2023		
ARPA		\$2,258,092		
Free Cash		\$2,024,259		
Total FY2023 Available Budget		\$4,282,351		
			TM CIP	BOS Vote
			Free Cash	ARPA
EXPENDITURES				
Police Cruisers Replacements		\$165,000	\$165,000	
Fire Engine Replacement		\$800,000		\$800,000
Roadway Improvements/Maintenance		\$454,000	\$454,000	
One-Ton Dump Truck w/Plow (replaces 2012s, 2016)		\$130,000	\$130,000	
Culvert and Drainage Replacement Lincoln St		\$300,000	\$300,000	
Loader (replaces 2006)		\$290,000	\$290,000	
20-Ton Truck w/ Spreader & Plow		\$340,000	\$340,000	
Highway Garage Tight Tank Project		\$400,000		\$400,000
Backhoe (replaces 2005)		\$195,000	\$195,000	
Proctor School Roof Drain repairs		\$38,000		\$38,000
MPIC-Downtown Master Plan Study		\$150,000	\$150,000	
MPIC-Sidewalk Master Plan Phase 1		\$400,000		\$400,000
Affordable Housing (NAHC)		\$100,000		\$100,000
FY23 Operating Budget Subsidy for OPEB		\$250,000		\$250,000
Assabet Fence		\$20,000		\$20,000
Pickleball Alternates		\$18,000		\$18,000
BeWellNorthborough Initiative		\$100,000		\$100,000
COVID Expense Reserve		\$132,351		\$132,092
TOTAL		\$4,282,351	\$2,024,000	\$2,258,092

[RETURN TO AGENDA](#)

Town of Northborough



DRAFT 3/14/22
Annual Town Meeting
2022

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TOWN OF NORTHBOROUGH
ANNUAL TOWN MEETING HANDOUT
APRIL 25 or 30, 2022

WORCESTER, SS

GREETINGS:

To any Constable in the Town of Northborough, County of Worcester:

In the name of the Commonwealth of Massachusetts, you are hereby commanded to warn and notify the legal voters of the Town of Northborough to meet at THE ALGONQUIN REGIONAL HIGH SCHOOL on DATE/TIME, to act on the following warrant articles:

ARTICLE 1: Appointing Deputy Moderator

To see if the Town will vote to ratify the appointment by the Moderator of Gerald Hickman as Deputy Moderator, as provided by Article II, Section 2-2 of the Northborough Home Rule Charter.

ARTICLE 2: Compensating Balance Agreement

To see if the Town will vote to authorize the Treasurer, with the approval of the Board of Selectmen, to enter into a Compensating Balance Agreement or Agreements pursuant to Massachusetts General Laws, Chapter 44, Section 53F, if necessary.

- This Article provides authorization for the Town to enter into a compensating balance agreement to obtain banking services. A compensating balance is an arrangement by which a town maintains municipal funds on deposit in return for banking services. Under such an arrangement, the earnings retained by the bank on the account balances “compensate” the bank for the services provided.

ARTICLE 3: Prior Years’ Bills

To see if the Town will vote to raise and appropriate or transfer from unappropriated available funds in the Treasury, or other available funds, a sum of money to pay bills incurred in prior years, or take any action relative thereto.

- Town Meeting action is required to pay bills incurred in prior fiscal years. This Article will be passed over if no bills for goods and services incurred in prior fiscal years are presented to the Town.

ARTICLE 4: Town Budget

To see if the Town will vote to raise and appropriate and transfer from available funds the sum of Twenty-Three Million Seven Hundred Three Thousand Nine Hundred Twenty-Six Dollars (\$23,703,926) for Town Government as displayed in the warrant booklet, and to meet said appropriation, the following sums available for appropriation be transferred:

From:

Transfer from Cemetery Trust Fund Income	\$9,006
Transfer from Cemetery Sale of Lots	\$18,500
Transfer from Debt Exclusion Premium Reserve	\$545
Transfer from Debt Exclusion Reserve	\$10,550
Transfer from DPU Transportation Fund	\$1,764
Transfer from Conservation Commission Fees	\$11,309
Transfer from Fire Emergency Medical Services Revolving Fund	\$354,487
Transfer from Recreation Revolving Fund	\$75,000
Transfer from Animal Control Revolving Fund	\$28,000
Transfer from Medicare Part D Subsidy	\$0
Transfer from PEG Access Cable Related Fund	\$257,671
Transfer from ARPA Fund to offset OPEB Contribution	\$250,000
Free Cash	\$500,000

for a total of One Million Five Hundred Sixteen Thousand Eight Hundred Thirty-Two Dollars (\$1,516,832) and that the sum of Twenty-One Million Four Hundred Ninety-Four Thousand Six Hundred Thirty-Nine Dollars (\$22,187,094) be raised by taxation.

ARTICLE 5: Water, Sewer and Solid Waste Enterprise Funds

To see if the Town will vote to raise and appropriate and transfer from available funds the sum of Six Million One Hundred Four Thousand Four Hundred Forty-Four Dollars (\$6,104,442) for Water, Sewer and Solid Waste Funds as displayed below for the operation of the Water, Sewer and Solid Waste Utilities, and to meet said appropriation, the following sums available for appropriation be transferred:

From:

Water Fund Free Cash	\$316,548
Solid Waste Fund Free Cash	\$ 93,984

Raise and Appropriate by Taxation:

Solid Waste General Fund Subsidy	\$337,160
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for a total of Seven Hundred Forty-Seven Thousand Six Hundred Ninety-Two Dollars (\$747,692) and that the sum of Five Million Three Hundred Fifty-Six Thousand Seven Hundred Fifty Dollars (\$5,356,750) be financed from Water, Sewer and Solid Waste Revenues.

Water Fund	\$2,768,618
Sewer Fund	\$2,407,712
Solid Waste	<u>\$ 928,112</u>
Total	\$6,104,442

ARTICLE 6: Northborough K-8 Schools Budget

To see if the Town will vote to raise and appropriate by taxation the sum of Twenty-Six Million Six Hundred Ninety-Two Thousand Nine Hundred Fifty-Three Dollars (\$26,692,953) for the operation of the Northborough Public Schools, or take any action relative thereto.

ARTICLE 7: Algonquin Regional High School Budget

To see if the Town will vote to raise and appropriate by taxation Northborough's share of the assessment for the operation of the Northborough-Southborough Regional School District, the sum of Thirteen Million Five Hundred Sixty-Eight Thousand Thirty-Five Dollars (\$13,568,035), or take any action relative thereto.

ARTICLE 8: Assabet Valley Regional Vocational School District Budget

To see if the Town will vote to raise and appropriate by taxation Northborough's share of the assessment for the operation and debt service of the Assabet Valley Regional Vocational School District, the sum of One Million Two Hundred Fifty-Three Thousand Nine Hundred Forty Dollars (\$1,253,940), or take any action relative thereto.

ARTICLE 9: Revolving Funds Authorization of Expenditure Limits

To see if the Town will vote to authorize revolving fund annual expenditure limits for Fiscal Year 2023 as shown in the table below:

Revolving Fund	Annual Expenditure Limit
Fire Department (EMS and Haz Mat)	\$750,000
Animal Control	\$50,000
Family & Youth Services	\$20,000

Council on Aging	\$300,000
Community Affairs	\$20,000
Library	\$20,000

or take any other action relative thereto.

- Pursuant to the Town’s Revolving Fund Bylaw and the provisions of Massachusetts General Laws Chapter 44, Section 53E½, an annual vote is required to establish expenditure limits for the revolving funds. The Recreation Department revolving fund is authorized under Massachusetts General Laws Chapter 44, Section 53D, and does not require annual reauthorization.

ARTICLE 10: Appropriations Committee Reserve Fund

To see if the Town will vote to appropriate the sum of One Hundred Fifty-Five Thousand Dollars (\$175,000) for a Reserve Fund to provide for extraordinary or unforeseen expenditures in accordance with Massachusetts General Laws Chapter 40, Section 6, and to meet said appropriation, One Hundred Seventy-Five Thousand Dollars (\$175,000) be transferred from Free Cash, or take any action relative thereto.

- This Article provides the Town operations with an option for the funding of extraordinary or unforeseen expenditures during the year.

ARTICLE 11 (CIP): Police – Police Cruiser Replacements (3)

To see if the Town will vote to appropriate the sum of One Hundred Sixty Five Thousand Dollars (\$165,000) for the use of the Police Department for the purchase of three new police vehicles, and to meet said appropriation the sum of One Hundred Sixty Five Thousand Dollars (\$165,000) be transferred from Free Cash.

- This Article provides funds for the purchase of two replacement patrol vehicles and one replacement detective vehicle, with three existing vehicles being traded-in. Included in the funding request is the cost of outfitting the vehicles with the required ancillary equipment.

ARTICLE 12 (CIP): Fire – Ambulance Replacement

To see if the Town will vote to appropriate the sum of Four Hundred Thousand Dollars (\$400,000) for the use of the Fire Department for the purchase of one new ambulance, and to meet said appropriation, the sum of Four Hundred Thousand Dollars (\$400,000) be raised by borrowing, in accordance with the provisions of Massachusetts General Laws, Chapter 44, Section 7(9) or any other enabling authority, and the Treasurer, with the approval of the Board of Selectmen, be authorized to issue bonds or notes therefor.

- This Article provides funds for the replacement of a 2013 ambulance. The debt service on the bonds for the ambulance will be paid from the EMS revolving account. The EMS revolving account is funded by the ambulance service fees and charges.

ARTICLE 13 (CIP): DPW – Road Improvements and Maintenance

To see if the Town will vote to appropriate the sum of Four Hundred Fifty Four Thousand Dollars (\$454,000) for Road Improvements and Maintenance, and to meet said appropriation the sum of Four Hundred Fifty Four Thousand Dollars (\$454,000) be transferred from Free Cash.

- This Article provides funds in addition to the State’s Chapter 90 transportation funding to maintain current road conditions in accordance with the Pavement Management Plan.

ARTICLE 14 (CIP): Culvert and Drainage Replacement

To see if the Town will vote to appropriate the sum of Three Hundred Thousand Dollars (\$300,000) for the use of the Department of Public Works to fund the repair and replacement of drainage culverts and drainage system components, and to meet said appropriation the sum of Three Hundred Thousand Dollars (\$300,000) be transferred from Free Cash.

- This Article provides funds to replace/rehabilitate culverts and failing drainage systems, including anticipated replacement of the culvert on Lincoln Street.

ARTICLE 15 (CIP): DPW – One-Ton Dump Truck with Plow Replacement

To see if the Town will vote to appropriate the sum of One Hundred Thirty Thousand Dollars (\$130,000) for the use of the Department of Public Works for the purchase of a one-ton dump truck with a plow, and to meet said appropriation the sum of One Hundred Thirty Thousand Dollars (\$130,000) be transferred from Free Cash.

- This Article provides funds for the purchase of a one-ton dump truck with a plow to replace a 2012 one-ton dump truck that has surpassed its useful life. As part of this vehicle replacement, an existing similar vehicle will be repurposed to extend its useful life.

ARTICLE 16 (CIP): DPW – 20-Ton Dump Truck with Spreader and Plow Replacement

To see if the Town will vote to appropriate the sum of Three Hundred Forty Thousand Dollars (\$340,000) to purchase a 20-ton dump truck with spreader and plow; and to meet said appropriation, the sum of Three Hundred Forty Thousand Dollars (\$340,000) be transferred from Free Cash.

- This Article provides funds for the purchase of a 20-ton dump truck with spreader and plow to replace a 2002 20-ton dump truck with spreader and plow that has surpassed its useful life. As part of this vehicle replacement, an existing similar vehicle will be repurposed to extend its useful life.

ARTICLE 17 (CIP): DPW – Loader Replacement

To see if the Town will vote to appropriate the sum of Two Hundred Ninety Thousand Dollars (\$290,000) to purchase a loader; and to meet said appropriation, the sum of Two Hundred Ninety Thousand Dollars (\$290,000) be transferred from Free Cash.

- This Article provides funds for the purchase of a loader to replace a 2006 loader that has surpassed its useful life. As part of this replacement, the 2014 model year loader will be refurbished to extend its useful life.

ARTICLE 18 (CIP): DPW – Backhoe Replacement

To see if the Town will vote to appropriate the sum of One Hundred Ninety Five Thousand Dollars (\$195,000) to purchase a loader, and to meet said appropriation the sum of One Hundred Ninety Five Thousand Dollars (\$195,000) be transferred from Free Cash.

- This Article provides funds for the purchase of a backhoe to replace a 2005 backhoe that has surpassed its useful life. As part of this replacement, the 2015 model year backhoe will be refurbished to extend its useful lie.

ARTICLE 19 (CIP): MPIC – Downtown Master Plan Study

To see if the Town will vote to appropriate the sum of One Hundred Fifty Thousand Dollars (\$150,000) for the Master Plan Implementation Committee (MPIC) to “Conduct a design study of the Downtown to help focus ideas and develop a clear vision for the area”, and to meet said appropriation the sum of One Hundred Fifty Thousand Dollars (\$150,000) be transferred from Free Cash.

- This Article would fund the preparation of a Downtown Vision Study. This Vision Study will engage Northborough residents, property owners, and business owners to define a vision for its Downtown that will be implemented incrementally over time.

ARTICLE 20 (CIP): SEWER – Inflow & Infiltration (I/I) Mitigation

To see if the Town will vote to appropriate the sum of Three Hundred Sixty Thousand Dollars (\$360,000) to perform the second year of inflow and infiltration elimination from the sanitary sewer system, and to meet said appropriation the sum of Three Hundred Sixty Thousand Dollars (\$360,000) be raised by transfer from available funds, borrowing or otherwise.

- This article provides funds to remove non-sanitary flows from the sewer system as mandated by MassDEP under 314 CMR 12.04. The Town has a comprehensive 15-year inflow and infiltration elimination plan and this is the second year of implementation. For each gallon of storm/groundwater that is removed from the sewer system, that is one less gallon that must be treated and one more gallon available for future use.

ARTICLE 21: Consolidated Personnel Bylaw

To see if the Town will vote to amend the Consolidated Personnel Bylaw as shown in the appendix to this warrant) entitled “Article 20 – Consolidated Personnel Bylaw Amendments – 2022 Annual Town Meeting,” a copy of which is viewable on the Town’s website at <https://www.town.northborough.ma.us>.

ARTICLE 22: Community Preservation Fund – Housing Authority – Construction of Eight Affordable Low-Income, Senior One-Bedroom Rental Units

To see if the Town will vote to appropriate the sum of One Million Three Hundred Forty Thousand Dollars (\$1,340,000), or any other sum, from the following sources:

Community Preservation Fund revenues	\$230,548
Community Preservation Affordable Housing Reserve	\$127,863
Community Preservation Unreserved Fund	\$486,274
2009 Annual Town Meeting Article 37	\$ 569
2015 Annual Town Meeting Article 57	\$ 24,746
2016 Annual Town Meeting Article 38	\$100,000
2017 Annual Town Meeting Article 42	\$100,000
2018 Annual Town Meeting Article 28	\$100,000
2019 Annual Town Meeting Article 23	\$150,000

To the Northborough Housing Authority for the construction of eight affordable low-income senior one bedroom rental units, of which four will be first-floor handicap accessible units, at 26 Village Drive, or any other sum, or take any other action relative thereto.

- The Northborough Housing Authority, the Northborough Affordable Housing Corporation, and the MA Department of Housing and Community Development will be developing eight senior rental apartments located in one two-story building at 26 Village Drive. Four Handicap accessible units will be located on the first floor. The Town is proposing contributing \$100,000 separately from ARPA funds to supplement the funds appropriated in this article, and transfer of funds will be contingent on grant funding to the Authority from the State and funds supplemented from the Authority for a total anticipated project cost of \$2,440,000. Transfer of these funds will also be contingent upon successful execution of a contract with the Town.

ARTICLE 23: Community Preservation Fund – Brigham Street Burial Ground Beautification

To see if the Town will vote to appropriate the sum of One Hundred Thirty-One Thousand Six Hundred Seventy-Nine Dollars (\$131,679), or any other sum, from the Community Preservation Fund revenues and the sum of Five Thousand Eight Hundred Twenty-One Dollars (\$5,821), or any other sum from Community Preservation Historic Reserve Fund for a total of One Hundred Thirty-Seven Thousand Five Hundred Dollars (\$137,500) to the Northborough Department of Public Works and the Northborough Historic District Commission, for improvements to the Brigham Street Burial Ground, or take any other action relative thereto.

- This is for the beautification of the burial ground including removal of dead trees, installation of a sign post and fencing, and overall roadside improvements.

ARTICLE 24: Community Preservation Fund – (2) Signs to Identify the Kizer section of the Northborough Cemetery

To see if the Town will vote to appropriate the sum of Five Thousand One Hundred Twenty-Four Dollars (\$5,124), or any other sum, from the Community Preservation Fund revenues to the Northborough Historic District Commission for the purchase and installation of two signs for the Kizer section of the Northborough Cemetery, or take any other action relative thereto.

- Two signs, one for each end of the Kizer section, will be installed to assist with identification of the newer section of the cemetery.

ARTICLE 25: Community Preservation Fund – Shutter Restoration of Historical Society Building

To see if the Town will vote to appropriate the sum of Fifty-Five Thousand Dollars (\$55,000), or any other sum, from the Community Preservation Fund revenues to the Northborough Historical Society for replacement of missing building shutters and renovation of damaged building shutters for the building located at 52 Main Street, or take any other action relative thereto.

- Thirty-three shutters will be replaced and/or renovated at the Northborough Historical Society building as part of multi-phase restoration and improvement project.

ARTICLE 26: Community Preservation Fund – Replacement of Fencing for Assabet Park

To see if the Town will vote to appropriate the sum of Twenty Thousand Dollars (\$20,000), or any other sum, from the Community Preservation Fund revenues to the Northborough Recreation Department and Northborough Department of Public Works for the replacement of fencing at Assabet Park, or take any other action relative thereto.

- The existing chain link fence along the granite wall on South Street will be removed and replaced with a fence to enhance the recently renovated playground area at Assabet Park.

ARTICLE 27: Community Preservation Fund – Design and Project Management for Dog Park

To see if the Town will vote to appropriate the sum of Thirty-Five Thousand Five Hundred Dollars (\$35,500), or any other sum, from the Community Preservation Unreserved Fund to the Northborough Recreation Department and Department of Public Works for the initial assessment and site survey for up to five locations for a dog park, or take any other action relative thereto.

- This will be the first phase of a three-phase project to determine a location for a community dog park.

ARTICLE 28: Community Preservation Fund – Design of ADA Accessible Trail located at the Senior Center

To see if the Town will vote to appropriate the sum of Twenty-Eight Thousand Five Hundred Dollars (\$28,500), or any other sum, from the Community Preservation Fund revenues to the Northborough Trails Committee and the Department of Public Works for the design of an ADA accessible trail located at the Northborough Senior Center, or take any other action relative thereto.

- The existing trail located at the Senior Center will be upgraded to ADA standards to be the first completely accessible trail in Northborough. Additional funding will be sought for the construction of the upgrades.

ARTICLE 29: Community Preservation Fund – Preliminary Design of Pedestrian Access Over the Assabet River Aqueduct Bridge

To see if the Town will vote to appropriate the sum of Fifty-Five Thousand Eight Hundred Forty-Nine Dollars (\$55,849), or any other sum, from the Community Preservation Fund revenues and the sum of Eight Hundred Thirteen Dollars (\$813), or any other sum, from the Community Preservation Open Space Reserve fund and the sum of Seventy-Six Thousand Nine Hundred Ninety-Six Dollars (\$76,996) from the Community Preservation Unreserved Fund for the total sum of One Hundred Thirty-Three Thousand Six Hundred Fifty-Eight Dollars (\$133,658) to the Northborough Trails Committee and the Department of Public Works for the preliminary design of pedestrian access over the Assabet River Aqueduct Bridge, or take any other action relative thereto.

- Preliminary design work for pedestrian access over the Assabet River Aqueduct Bridge with cost estimates will include replacement of decking and security rails, structural inspection, relocation of utilities, and submission of plan to the Massachusetts Water Resources Authority.

ARTICLE 30: Community Preservation Fund – White Cliffs Debt Service

To see if the Town will vote to appropriate the sum of One Hundred Eighty Five Thousand Eight Hundred Dollars (\$185,800), or any other sum, from the Community Preservation Fund revenues to the Northborough Community Preservation Committee for Fiscal Year 2023 debt service and

expenses associated with the acquisition of the property at 167 Main Street, or take any other action relative thereto.

- Fifth debt service payment associated with the purchase of 167 Main Street (the “White Cliffs”).

ARTICLE 31: Community Preservation Fund – CPA Administration

To see if the Town will vote to appropriate the sum of Thirty-Seven Thousand Five Hundred Dollars (\$37,500), or any other sum, from the Community Preservation Fund revenues to the Northborough Community Preservation Committee for expenses associated with the implementation of the Community Preservation Act including but not limited to clerical assistance, office supplies, property surveys, appraisals, attorney’s fees, and other professional services, recording fees, printing and all other necessary and proper expenses for the Fiscal Year 2023, or take any other action relative thereto.

- Funds used for the administration of the Community Preservation Act.

ARTICLE 32: Zoning Bylaw – Section 7-09-040, Signs

To see if the Town will vote to amend Part 7 of the Northborough Town Code, the Northborough Zoning Bylaw, Section 7-09-040 Signs, by deleting the text shown below in strikethrough and adding the text shown below as underlined, or take any action relative thereto.

7-09-040 Signs.

A. Purpose. Signs are a necessary means of communicating information. Since signs are intended to be seen, they attract attention and are one (1) of the most visible and apparent aspects of a town’s character. They tend to produce a lasting impression on residents and visitors, and they provide an indication of the commercial health of a business area and a town as a whole. Simplicity in design and restrained use of signs are necessary to prevent a sign overload, which creates clutter and is as confusing as no signs at all.

B. Definitions. For the purpose of this section, the following terms shall have the following meanings:

- (1) **AGRICULTURAL SIGN** - A sign which may have wording that may be changed periodically to advertise products raised or grown principally on the premises.
- (2) **AWNING SIGN** - A permanent sign which is affixed to or consists of a permanent or retractable awning or marquee permanently mounted to the exterior surface of a building.
- (3) **BANNER SIGN** – A temporary sign intended to be hung either with or without frames, possessing characters, letters, illustrations or ornamentations applied to paper, plastic or fabric of any kind. ~~National flags, flags of political subdivisions, and symbolic flags of any institution or business shall not be considered banners for the purpose of this section.~~

- (4) BILLBOARD SIGN - A sign which advertises a business, service, product, commodity, entertainment or similar object or activity which is conducted, sold or offered on a lot other than the lot on which the sign is erected.
- (5) BUSINESS CENTER - Any aggregation of three (3) or more business or industrial tenants which share a common parking area.
- (6) CONSTRUCTION SIGN - A sign identifying the proposed building, the owner or intended occupant and the contractor, architect and engineers. A construction sign for more than a single lot will be considered to be a subdivision sign.
- (7) DIRECTIONAL OR INFORMATIONAL SIGN - A sign which is necessary for the safety and direction of vehicular or pedestrian traffic.
- (8) DIRECTORY SIGN - A sign listing the name and location of the occupants of a site or building.
- (9) DISPLAY AREA - See “sign area.”
- (10) ELECTRONIC MESSAGE CENTER - Any sign that utilizes computer-generated messages or some other electronic means of changing copy.
- (11) ERECTING - Any installing, constructing, reconstructing, replacing, relocating, re-lettering, except as specifically provided, extending, altering or otherwise changing of a sign. “Erecting” shall not include repairing or maintaining an existing sign.
- (12) EXTERNALLY ILLUMINATED SIGN – a sign which utilizes an external and stationary light source which is shielded and directed solely at the sign.
- ~~(12)~~ (13) EXTERIOR SIGN - A wall sign, projecting sign or awning sign placed on or about the exterior of any structure.
- ~~(13)~~ (14) FLAG - ~~See “banner.”~~ A piece of cloth or similar material, typically oblong or square, attachable by one edge to a pole or rope and used as the symbol or emblem of a governmental jurisdiction.
- ~~(14)~~ (15) FREESTANDING SIGN - A non-movable sign not affixed to any building but constructed in a permanently fixed location of the ground with its own support structure, including a monument sign, and displaying a sign face on not more than two (2) sides.
- (16) GASOLINE CANOPY SIGN - A permanent sign consisting of letters and or logo surrounding the covering structure placed over gasoline pumps.
- ~~(15)~~ (17) GASOLINE PUMP SIGN - The standard type of gasoline pump bearing thereon in the usual size and form the name or type of gasoline and the price thereof.

~~(16)~~ (18) INDIVIDUAL LETTER SIGN - A wall sign consisting of individual letters, mounted to a building surface without any background or frame.

(19) INTERNALLY ILLUMINATED SIGN - A sign that is illuminated by a light source internal to the sign. Internally illuminated signs include signs which utilize translucent panels.

~~(17)~~(20) MOVABLE SIGN - Any sign not permanently attached to the ground or to a building or permanent structure, which is designed to be portable, such as an A-frame, H-frame, T-frame, banner or flag, trailer sign placed on the surface of the ground, temporarily staked into the ground or a sign attached to a motor vehicle (registered or unregistered).

~~(18)~~(21) NEON SIGN - A sign which features exposed glass tubing filled with fluorescent gas.

~~(19)~~ (22) OFFICE PARK OR INDUSTRIAL PARK - See “business center.”

~~(20)~~ (23) PENNANT SIGN - Any lightweight plastic, fabric or other material, whether or not containing a message of any kind, suspended from a rope, wire or string, usually in series, designed to move in the wind.

~~(21)~~ (24) PERMANENT SIGN - A sign that is permanently attached to a building or having in-ground supporting structure(s) or braces.

~~(22)~~(25) POLITICAL SIGN - A sign designated to influence the action of voters for the passage or defeat of a measure, or the election of a candidate to a public office at a national, state, county or local election.

~~(23)~~(26) PROJECTING SIGN - A sign which is permanently affixed to the exterior surface of a building or structure with the display area positioned perpendicular to the wall to which the sign is mounted.

~~(24)~~ (27) REAL ESTATE SIGN - A sign which is used to offer for sale, lease or rent the property upon which the sign is placed.

~~(25)~~ (28) ROOF SIGN - A sign attached to or erected wholly upon and over the roof of any building and supported solely on the roof structure; including the lower slope of a gambrel or mansard roof.

~~(26)~~ (29) SHOPPING CENTER - See “business center.”

~~(27)~~ (30) SIGN - Any words, lettering, parts or letters, figures, numerals, phrases, sentences, emblems, devices, designs, trade names or trademarks, whether stationary or portable, by which anything is made known, such as are used to designate or locate an individual, a firm, an association, a corporation, a profession, a business or a commodity or product, which are visible from a public or private street or right-of-way and used to attract attention.

(28) (31) SIGN AREA - The area of the smallest horizontally or vertically oriented rectangle which could enclose all the display area of the sign, together with any backing different in color or material from the finish material of the building face, without deduction for open space or other irregularities. Structural members not bearing advertising matter shall not be included unless internally or decoratively lighted. Where sign faces are placed back-to-back and face in opposite directions, the sign area shall be defined as the area of one (1) face of the sign.

(29) (32) SPECIAL EVENT SIGN - A sign, which is to be portable, to announce a church bazaar, fair, circus, festival, business or shop opening, special sale by a store or business or similar event. Such sign shall identify the event and the date of the event, and it may display the event's sponsor, organizer or main feature.

(30) (33) SUBDIVISION SIGN - A sign to identify the name of the residential subdivision and located on the property of the subdivision.

(34) (34) TEMPORARY SIGN - A sign that is used only temporarily, for a specific length of time, and is not permanently mounted.

(32) (35) TENANT - As used in this section, "tenant" means a business or other establishment occupying space within a building under an agreement with the owner, or the owner-occupant of the building.

(33) (36) TRAILER SIGN - A sign mounted on a vehicle normally licensed by the state as a trailer and used for advertising or promotional purposes.

(34) (37) WALL SIGN - A sign which is painted or otherwise permanently affixed to a vertical exterior surface of a building or structure with the display area positioned parallel with the wall to which the sign is mounted, and including such a sign affixed to a parapet, ~~or to the lower slope of a gambrel or mansard roof.~~

(35) (38) WINDOW SIGN - A sign, picture, symbol or message that is placed inside a window, drawn, painted or etched on the window pane or glass or otherwise attached in or on a window and visible from the exterior of the window, not including any part of a customary window display of merchandise or other product.

C. Sign permits. Non-Conformity and Compliance.

(1) No sign shall be erected on the exterior of any building or on any land unless the Building Inspector has issued a sign permit. Application for a sign permit shall be on the form prescribed by the Building Inspector and shall include such information and drawings as the Building Inspector requires.

(2) All signs erected hereunder shall be erected in the exact location and manner described in the permit.

(3) The re-lettering of a sign shall be equivalent to the erecting of a sign, except when the original wording is reproduced.

(4) Any nonconforming sign and/or support structure, legally permitted and erected prior to the adoption of this provision, or any amendments thereto, which remains unaltered in any way, may be continued if maintained.

(5) Nonconforming signs shall not be enlarged, redesigned, or structurally altered except in conformity with this bylaw.

(6) A non-conforming sign which is removed or abandoned for longer than 30 days or destroyed beyond repair shall not be replaced unless it complies with this bylaw.

(7) No use variances are allowed for any signs.

D. Basic requirements.

(1) The only signs allowed in the Town of Northborough are signs that advertise, call attention to or indicate the person occupying the premises on which the sign is erected or maintained, or the business transacted thereon, or that advertise the property itself or any part thereof as for sale or rent and which contain no other matter.

(2) Billboards and similar signs are specifically prohibited.

(3) No sign shall be part of or attached to roofs, including such a sign affixed to the lower slope of a gambrel or mansard roof, marquees, gasoline canopies, or awnings.

(4) Wind driven, whirling, spinning, flashing, pennants, and moving and animated signs are prohibited.

(5) Signs containing electronic streaming messages are prohibited.

(6) Changeable copy signs that provide a variable message, the content of which is changed manually, are allowed.

(7) No sign may be illuminated between 12:00 midnight and 6:00 a.m. except signs identifying police or fire stations or essential public services.

(8) “No hunting, fishing, etc.,” signs not to exceed one (1) square foot are allowed.

(9) Construction, erection and location of all freestanding signs shall be subject to the approval of the Building Inspector. No freestanding signs shall be erected if they create a safety hazard to vehicular or pedestrian traffic, in the opinion of the Building Inspector.

(10) The location, by street number, for all nonresidential structures shall be included on the freestanding sign. The portion of the area used for the street address shall not exceed fifteen percent

(15%) of the allowed square footage and shall not affect the calculation of allowed sign square footage.

(11) Illumination standards for signs with electronic message centers.

(a) Each electronic message center shall be equipped with a light sensing device that automatically adjusts the brightness of the sign as ambient light conditions change.

(b) All electronic message center signs shall contain a default design that will freeze the sign in one (1) position if a malfunction occurs.

(c) No electronic message center sign shall exceed a brightness level of three-tenths (0.3) foot candles above ambient light as measured using a foot candle (Lux) meter at a pre-set distance in accordance with the following procedure:

[1] At least thirty (30) minutes past sunset, record the ambient light while the sign is off or displaying all black copy;

[2] The light meter shall be held five (5) feet above the finished grade as close as practical to a perpendicular plane of the sign;

[3] The meter shall be aimed toward the center of the automatic changeable copy sign;

[4] From the same location, a second reading shall be recorded while the sign is on and not blocked;

[5] If the difference between the measurements is three-tenths (0.3) foot candles or less, the brightness is properly adjusted; otherwise the brightness level must be adjusted to comply with this standard;

[6] The measurement distance shall be determined using the following formula:

$$\text{Measurement Distance} = \sqrt{\text{area of sign in sq. ft.} \times 100}$$

Example: Proposed sign is fifty (50) square feet

$$50 \times 100 = 5,000$$

$$\sqrt{5000} = 70.71' \text{ (use 71')}$$

Therefore the foot candles measurement shall be taken seventy-one (71) feet from the sign.

(12) Electronic Message centers are specifically prohibited in the Downtown Business, Business East, Business West, Business South, and Industrial districts and all residential districts.

(13) Internally illuminated signs are specifically prohibited in Downtown Business.

(14) In addition to the regulations in this section, section 7-09-020 D. (2) shall also apply to signs in the Downtown Business, Business East, Business West, and Business South Districts. E. Construction and maintenance of signs.

(1) All signs shall be constructed of durable and weatherproof material. They shall be maintained in safe structural condition and good visual appearance at all times, and no sign shall be left in a dangerous or defective state. The Building Inspector shall have the authority to inspect any sign and order the owner to paint, repair or remove a sign which constitutes a hazard or a nuisance due to improper or illegal installation, dilapidation, obsolescence or inadequate maintenance.

(2) No sign shall be painted or posted directly on the exterior surface of any wall, including windows and doors. All signs must be painted, posted or otherwise securely affixed to a substantial intermediate removable surface, and such surface shall be securely affixed to the wall of the building. However, the foregoing shall not prevent installation of a sign by individual letters or devices cut into or securely affixed to the exterior wall of a building; provided, that such letters or devices have a minimum depth or projection of one-fourth (1/4) of an inch. The material of the sign and intermediate surface, and the manner of affixing the sign to the intermediate surface and of the intermediate surface to the wall of the building, shall be subject to the approval of the Building Inspector for the purpose of protecting the safety of the public. Notwithstanding the foregoing, signs may be painted or posted on the interior surface of any wall, including windows and doors.

F. Signs in residential districts.

(1) The following signs are permitted in the Residence A, Residence B, Residence C, General Residential, Main Street Residential, and Downtown Neighborhood Districts:

(a) One (1) wall sign or freestanding sign which does not exceed two (2) square feet in area, having the name of the occupant or designation of any authorized occupation permitted in the district, or both, shall be permitted.

(b) One (1) wall sign, freestanding sign or temporary sign which does not exceed six (6) square feet in area, advertising the rental, lease or sale of the premises, shall be permitted; provided, however, that such sign shall be removed within seven (7) days of the rental, lease or sale of the premises.

(c) Bulletin board accessory to a public or semi-public use, a school, hospital or place of worship or assembly, not exceeding ten (10) square feet in area.

(d) Temporary signs not exceeding six (6) square feet in area may be erected to warn against contagious diseases, to warn against danger or to ensure silence where serious illness exists.

(2) No sign shall be located over eight (8) feet from the ground to the top of the sign if attached to a building, or over six (6) feet from the ground to the top of any free-standing sign.

(3) In a residential district, no internally-illuminated signs shall be permitted except for an agricultural sign. Externally illuminated signs are permitted when associated with an allowed nonresidential use or a lawfully pre-existing nonconforming business use. ~~Lighting of signs for nonresidential uses shall comply with subsection (D)(5) of this section.~~

G. Signs in business districts.

(1) Type, size and number of signs. There shall not be more than the following on each lot:

(a) **Downtown Business District.**

[1] Lot with one (1) or two (2) tenants:

[a] Freestanding sign: one (1) freestanding sign; size not to exceed thirty-two (32) square feet, height not to exceed ten (10) feet as measured from the ground to the highest point of the sign or twelve (12) feet to the top of the sign structure. The freestanding sign shall indicate the name(s) of tenant(s) of the facility, in a fixed manner, and may have an additional sixteen (16) square feet of space for changeable copy message.

[b] Wall sign: one (1) wall sign not to exceed thirty-two (32) square feet in area or two (2) wall signs with a combined total area not to exceed thirty-two (32) square feet.

[c] Directory sign: one (1) directory of the tenants of the building, affixed to the exterior wall. The area of the directory sign shall not exceed one (1) square foot for each tenant of the building.

[2] Lot with three (3) or more tenants.

[a] Freestanding sign: one (1) freestanding sign for each ten (10) tenants; size not to exceed forty (40) square feet, height not to exceed ten (10) feet as measured from the ground to the highest point of the sign or twelve (12) feet to the top of the sign structure. The freestanding sign shall indicate the name of the facility in a fixed manner, and may include space for listing of individual tenants, and may have an additional twenty (20) square feet of space for changeable copy message. When more than one (1) freestanding sign on a lot, there shall be not less than fifty (50) feet between signs and no sign shall be located so as to obstruct the viewing of any other sign.

[b] Wall sign: one (1) wall sign not to exceed thirty-two (32) square feet for each tenant, attached to the wall of the store, or two (2) wall signs with a combined total area not exceeding thirty-two (32) square feet.

[c] Directory sign: one (1) directory of the tenants affixed to the exterior wall of the building. Such directory sign shall not exceed an area determined on the basis of one (1) square foot for each tenant of the building.

(b) **Business East, Business West, and Business South Districts.**

[1] Lot with one (1) or two (2) tenants.

[a] Freestanding sign: one (1) freestanding sign, size not to exceed thirty-two (32) square feet in area, height not to exceed ten (10) feet as measured from the ground to the highest point of the sign or twelve (12) feet to the top of the sign structure. The freestanding sign shall indicate the name(s) of the tenant(s), in a fixed manner and may have an additional sixteen (16) square feet of space for changeable-copy message.

[b] Wall sign: one (1) wall sign not to exceed thirty-two (32) square feet in area or two (2) wall signs with a combined total area not to exceed thirty-two (32) square feet.

[c] Directory sign: one (1) directory of the tenants of the facility, affixed to the exterior wall. Such directory sign shall not exceed an area determined on the basis of one (1) square foot for each tenant of the building.

[2] Lot with three (3) or more tenants.

[a] Freestanding sign: one (1) freestanding sign for each ten (10) tenants located on the lot; size not to exceed fifty (50) square feet, height not to exceed ten (10) feet as measured from the ground to the highest point of the sign or twelve (12) feet to the top of the sign structure. The freestanding sign shall indicate the name of the facility in a fixed manner and may have space for listings of individual tenants and may have an additional twenty-five (25) square feet of space for changeable-copy message. When there is more than one (1) freestanding sign on a lot, there shall be not less than fifty (50) feet between signs, and no sign shall be located to obstruct the viewing of any other sign.

[b] Wall sign: one (1) wall sign not to exceed thirty-two (32) square feet for each tenant, attached to the wall of the store, or two (2) or more wall signs with a combined total area not exceeding thirty-two (32) square feet.

[c] Directory sign: one (1) directory of the tenants of the building affixed to the exterior wall of the building. Such directory sign shall not exceed an area determined on the basis of one (1) square foot for each tenant of the building.

(c) **Highway Business District.**

[1] Lot with one (1) or two (2) tenants.

[a] Freestanding sign. Not more than one (1) freestanding sign, size not to exceed one hundred (100) square feet, height not to exceed twenty (20) feet as measured from the ground to the highest point of the sign. The freestanding sign shall indicate the name(s) of the tenant(s), in a fixed manner and may have an additional fifty (50) square feet of space for changeable-copy message. Electronic message centers may be used as part of a freestanding sign.

[b] Wall sign: one (1) wall sign, size not to exceed one hundred (100) square feet or two (2) wall signs with a combined total area not to exceed one hundred (100) square feet.

[c] Directory sign: one (1) directory of the tenants of the building affixed to the exterior wall. Such directory sign shall not exceed an area determined on the basis of one (1) square foot for each tenant of the building.

[2] Lot with three (3) or more tenants.

[a] Freestanding sign. Not more than one (1) freestanding sign for each ten (10) tenants located on the lot; size not to exceed one hundred (100) square feet, height not to exceed twenty (20) feet as measured from the ground to the highest point of the sign. The freestanding sign shall indicate the name of the facility in a fixed manner and may have space for listings of individual tenants and may have an additional fifty (50) square feet of space for changeable-copy message. When there is more than one (1) freestanding sign on a lot, there shall be not less than fifty (50) feet between signs, and no sign shall be located to obstruct the viewing of any other sign.

~~[3]~~[b] Wall sign: one (1) wall sign not to exceed one hundred (100) square feet for each tenant, attached to the wall of the store, or two (2) wall signs with a combined total area not exceeding one hundred (100) square feet.

~~[4]~~[c] Directory sign. There may be not more than one (1) directory of the tenants of the building affixed to the exterior wall of the building. Such

directory sign shall not exceed an area determined on the basis of one (1) square foot for each occupant or tenant of the building.

(2) Location.

(a) A freestanding sign shall be permitted only when erected on the property which is advertised, and no portion of the sign shall be located within the airspace above any other abutting property.

(b) A wall sign attached to a building shall be securely affixed to one (1) of the walls of the building. The sign shall not project beyond the face of any other wall of the building or above the top of the wall to which it is attached, nor shall it be located on the roof of any building. In the case of a sign parallel to the wall, the sign shall not project more than twelve (12) inches. In the case of a sign perpendicular to the wall, the sign shall not project more than six (6) feet from the face of the wall to which it is attached. If the sign is attached to a parapet, it shall not exceed the height of the parapet.

(c) In no case shall any sign or part thereof project over a property line or over a public way.

(3) Temporary signs. Signs for the purpose of announcing a special day or event and not to exist more than fifty-six (56) days per calendar year shall be permitted. The Board of Selectmen may grant an extension of this time period. One (1) exterior *movable sign* shall be limited to fifteen (15) square feet. One (1) temporary sign shall be permitted for each freestanding sign as permitted by this section. Temporary signs shall be placed a minimum distance of thirty (30) feet apart from each other. Temporary signs affixed to the inside of a window shall not exceed thirty percent (30%) of the window area of the storefront. To place a temporary sign on property other than that which is being advertised, the applicant must have written permission from the landowner and the Board of Selectmen.

H. Signs in the Industrial District.

(1) Signs shall be allowed that advertise the name of the firm or goods or services available or manufactured on the premises; provided, that:

(a) No sign shall project over a street or way used by the public.

(b) The total area of all signs shall not exceed two hundred (200) square feet.

(c) No sign shall move or flash or be designed to attract the eye by intermittent or repeated motions.

(d) No sign shall be illuminated by exposed neon or fluorescent tubes.

(e) No sign shall constitute a hazard to vehicular traffic by the direction of and amount of its illumination.

(f) The length of the sign shall not exceed thirty percent (30%) of the total width of the wall to which it is attached.

(g) All lettering is to be open and the height of the letters shall be limited to eight (8) feet.

(h) Such signs shall be attached and parallel to a building wall or roof, and the top of the sign shall not project higher than forty-two (42) inches above the main cornice line of the building or extend beyond the end of the building or project more than twenty-four (24) inches out from the building wall.

(2) No more than two (2) directional signs may be erected in any required front yard, and each shall be limited to four (4) square feet in area.

(3) Freestanding signs. Freestanding signs shall not exceed twenty (20) feet in height measured from the ground to the highest point of the sign or sign structure, and shall not exceed forty-two (42) square feet in area. An additional twenty (20) square feet may be added for changeable copy message. Electronic message centers may be used as part of a freestanding sign.

I. Auto filling or service stations. The standard type of gasoline pump bearing thereon in usual size and form the name or type of gasoline and the price thereof shall not be deemed to be in violation of this chapter.

J. Agricultural signs. One (1) sign not to exceed thirty-two (32) square feet shall be allowed, and the wording may be changed periodically to advertise products raised or grown principally on the premises.

K. Permit not required. The following types of signs do not require a permit from the Building Inspector:

(1) Real estate signs advertising rent, lease or sale are permitted; provided, that:

(a) The sign shall not exceed thirty-two (32) square feet in area.

(b) The sign shall advertise only the premises on which it is located.

(c) The sign shall be removed no more than one (1) week after the completion of the sale or rental.

(2) Construction signs.

(a) The sign shall not exceed thirty-two (32) square feet in area.

- (b) The sign shall be maintained on the premises during construction and shall be removed upon completion of the construction or issuance of a certificate of occupancy and use, whichever occurs first.
- (3) Real estate signs advertising an open house event.
- (a) The sign shall not exceed six (6) square feet in area.
- (b) The sign may be erected on private property provided permission from the property owner has been granted. Upon request by the building inspector, a copy of the letter granting such permission shall be provided to the building inspector.
- (c) The sign shall only be erected on the day of the open house and shall be removed at the conclusion of the open house each day. The date of the open house shall be included on the sign.
- (4) Signs not exceeding one (1) square foot in area and bearing only property numbers, post box numbers, or names of occupants of premises.
- (5) Flags and insignia of any government, except when displayed in connection with commercial promotion.
- (6) Legal notices, identification information or direction signs erected by governmental bodies.
- (7) Integral decorative or architectural features of buildings, except letters, trademarks, moving parts, or moving lights.
- (8) Signs directing and guiding traffic and parking on private property, but bearing no advertising matter.
- (9) Noncommercial message. Sign for nonprofit organization; sign which displays no commercial message; “open” and “closed” signs; and/or similar type of sign which is subject to the approval of the Building Inspector.
- (10) Historic Signs, Markers and Municipal Plaques. Signs and markers signifying historical importance and municipal plaques shall not be subject to this bylaw and shall be permitted in all use districts without permit.

(4-27-09 ATM, Art. 31; 4-26-10 ATM, Art. 28; 4-28-14 ATM, Art. 41; 4-27-15 ATM, Arts. 44, 45; 4-22-19 ATM, Art. 33.)

ARTICLE 33: Zoning Bylaw Section 7-05-020, Classification of Uses G. Business Uses (2) Hospitality and Food Service, Section 7-05-020, Classification of uses, I. Industrial Uses, Section 7-05-030, Table of Uses, Table 1, Part B and Section 7-09-030 Off-Street Parking and Loading

To see if the Town will vote to amend Part 7 of the Northborough Town Code, the Northborough Zoning Bylaw, Sections 7-05-020, 7-05-030 and 7-09-030, by deleting the text shown below in strikethrough and adding the text shown below as underlined, or take any action relative thereto.

Part 1: Definitions

7-05-020 G.(2)(i) Brew Pub: Restaurants, licensed under the relevant state and federal statutes, to produce and sell malt beverages, including beer and ale, and hard ciders at the location and whose primary business is the sale and preparation of food to be consumed on the premises. Malt beverages and hard ciders produced on the premises may be sold to other establishments but such sales shall not exceed 25 percent of the establishment’s production capacity.

7-05-020 G.(2)(j) Nanobrewery : Also considered a craft brewery, a facility, licensed under the relevant state and federal statutes, for the small scale production of malt, wine, or hard cider beverages primarily for on premises consumption and sale with limited distribution at retail or wholesale, with a capacity of not more than six thousand (6,000) barrels per year (a barrel being equivalent to thirty one (31) gallons), and which may include a tap room where beverages produced on premises may be sold and consumed. May include a restaurant use, including outdoor dining if otherwise permitted in the zoning district.

7-05-020 G.(2)(k) Microbrewery: A facility, licensed under the relevant state and federal statutes, for the production and packaging of malt, wine, or hard cider beverages for distribution at retail or wholesale, on or off the premises, with a capacity of not more than fifteen thousand (15,000) barrels per year (a barrel being equivalent to thirty one (31) gallons), and which may include a tap room where beverages produced on the premises may be sold and consumed. May include a restaurant use, including outdoor dining if otherwise permitted in the zoning district.

7-05-020 I. (7) Brewery, Distillery, or Winery: A facility, licensed under the relevant state and federal statutes, for the production and packaging of malt, wine, hard cider or spiritous beverages for distribution at retail or wholesale, which may include a tap room where beverages produced on the premises may be sold and consumed. May include a restaurant use, including outdoor dining if otherwise permitted in the zoning district.

Part 2: Amend Section 7-05-030, Table of Uses, Table 1, Table of Uses, Part B. Commercial and Industrial Districts

Hospitality and Food Services

	DB	BE	BW	BS	HB	I
Restaurant, excluding alcoholic beverages	Y	Y	Y	BA	Y	N
Restaurant, including alcoholic beverages	BA	BA	BA	BA	Y	N
<u>Nanobrewery or Brew Pub</u>	<u>BA</u>	<u>BA</u>	<u>BA</u>	<u>BA</u>	<u>BA</u>	<u>PB</u>
<u>Microbrewery</u>	<u>N</u>	<u>BA</u>	<u>BA</u>	<u>BA</u>	<u>BA</u>	<u>PB</u>
<u>Brewery, Distillery, or Winery</u>	<u>N</u>	<u>N</u>	<u>N</u>	<u>N</u>	<u>N</u>	<u>N</u>

Part 3: Off-street parking and loading. Amend Section 7-09-030 B.(2)(b) Commercial uses.

[15] Nanobrewery, Brew Pub, Microbrewery: minimum one (1) space per three (3) seats, plus one (1) space for every two (2) employees on the largest shift.

Part 3: Off-street parking and loading. Amend Section 7-09-030 B.(2)(c) Industrial uses

[6] Nanobrewery, Brew Pub, Microbrewery, Brewery, Distillery, or Winery : minimum one (1) space per three (3) seats, plus one (1) space for every two (2) employees on the largest shift.

ARTICLE 34: Zoning Bylaw – Section 7-03-080, Enforcement

To see if the Town will vote to amend Part 7 of the Northborough Town Code, the Northborough Zoning Bylaw, Section 7-03-080 Enforcement, by deleting the text shown below in strikethrough and adding the text shown below as underlined, or take any action relative thereto.

Northborough 7-03-080:

A. General. The Building Inspector, as Zoning Enforcement Officer (ZEO), shall be charged with the enforcement of this bylaw and shall withhold a permit for the erection, alteration or moving of any building or structure if the building or structure as erected, altered or moved would be in violation of this bylaw; and no permit or license shall be granted for a new use of a building, structure or land which use would be in violation of this bylaw.

~~Original B. Enforcement request. If the Building Inspector is requested in writing to enforce this bylaw against any person allegedly in violation of the same and the Building Inspector declines to act, he shall notify, in writing, the party requesting such enforcement of any action or refusal to act, and the reasons therefor, within fourteen (14) days of receipt of such request.~~

Enforcement request. If the Building Inspector shall be informed, by written request, that any provision of this Zoning Bylaw or of any permit (issued by the Building Inspector, Special Permit Granting Authority or Board of Appeals) or decree thereunder has been, is being, or is likely to be violated, then the Building Inspector shall make or cause to be made an investigation of the facts, including an inspection of the property where the violation may exist, and, if he finds any violation, then the Building Inspector shall, within fourteen (14) days, give notice in writing to the owner of the property or his duly authorized agent and to the occupant of the property, and shall order that any violation shall immediately cease and may also order corrective action.

If the Building Inspector determines that there is no violation, he shall give written notice of his decision, and reasons therefor, to the party requesting such enforcement or action within fourteen (14) days after the receipt of such request.

C. Penalty for violation. Any person, firm or corporation who violates or refuses to comply with any applicable provision of this bylaw or any of the conditions under which a permit is issued by the Building Inspector, or any decision rendered by the Special Permit Granting Authority or Board of Appeals under the provisions of this bylaw shall be fined a sum not to exceed three hundred dollars (\$300.00) for each such violation. This bylaw may be enforced by the non-criminal disposition method under MGL C. 40, § 21D, as set forth in section 1-04-020 of the Town Code, in which case the penalties shall be as follows: first violation - \$50, second violation - \$100, third and subsequent violations - \$300. Each day that a violation exists shall constitute a separate offense ~~day that any violation is permitted to exist after written notification thereof by the Building Inspector/Zoning Enforcement Officer shall constitute a separate offense.~~ The town shall be the beneficiary of all fines and penalties paid, including the costs of prosecuting any legal action if allowable by law.

D. If, after such notice and order, such violation continues, or if any owner, agent or occupant fails to obey any lawful order of the Building Inspector with respect to any violation or any use contrary to the provisions of this Zoning Bylaw, the Building Inspector may revoke any permit issued for the occupancy of the premises, may make complaint to the Superior Court or any court of competent jurisdiction for an injunction or order restraining the further use of the premises, and may take such other action as is necessary to enforce the provisions of this Zoning Bylaw.

ARTICLE 35: Zoning Bylaw – Section 7-03-030 and 7-050-010.A Use Variances

To see if the Town will vote to amend Part 7 of the Northborough Town Code, the Northborough Zoning Bylaw, Sections 7-03-030 and 7-05-010.A by deleting the text shown below in strikethrough, and adding the text shown as underlined, or take any action relative thereto.

7-03-030 Board of Appeals.

B. Powers. The Board of Appeals shall have and exercise all the powers granted to it by MGL C. 40A, C. 40B, and C. 41 and by this bylaw. The Board's powers are as follows:

(1) Unless otherwise specified herein, the Board of Appeals shall serve as special permit granting authority and will hear and decide applications for special permits.

(2) To hear and decide appeals or petitions for variances from ~~the use,~~ dimensional or density requirements of this bylaw, with respect to particular land or structures, as set forth in MGL C. 40A, § 10. Use variances are prohibited.

7-05-10 General provisions.

- A. No building or structure shall be erected and no building or structure or land or water area shall be used for any purpose or in any manner except in accordance with this chapter. Use variances are prohibited.

ARTICLE 36: Zoning Bylaw –Re-Zoning 37 South Street

To see if the Town will vote to amend the Northborough Zoning Bylaw and Zoning Map by removing the land located at and known as 37 South Street, Assessors' Map 63 Parcel 175, from the General Residential (GR) zoning district and placing it in the Downtown Business (DB) zoning district, or take any action relative thereto.

- Since the 1950's when zoning was first adopted by Northborough, this parcel has been used for various commercial uses and has not been used for residential purposes. When sections of the town were rezoned in 2009, this parcel was inadvertently placed in the GR district when it should have been placed in the DB district.

ARTICLE 37: Zoning Bylaw – Section 7-03-050, Site Plans A.(4) Exceptions

To see if the Town will vote to amend Part 7 of the Northborough Town Code, the Northborough Zoning Bylaw, Section 7-03-050, Site Plans A.(4) Exceptions, by deleting the text shown in strikethrough, or take any action relative thereto.

A.(4)(b) New construction or alteration of a detached single-family dwelling ~~or two-family dwelling~~ shall not be subject to this section except when such alteration is associated with any use other than a single-family dwelling ~~or two-family dwelling~~.

- By vote of the 2018 Annual Town Meeting, under Article 39, Two-family dwellings in Residence C, General Residential, Main Street Residential and Downtown Neighborhood districts were added to site plan and design review process, by amendment of Section 7-03-060B(1)(e), and Section 7-05-030 (Table of Uses, Part A, Residential Districts) and footnote #3 to Part A.

ARTICLE 38: Zoning Bylaw – Section 7-10-060, Distribution and Transportation Uses (Warehouses and Trucking, rail or freight terminal)

To see if the Town will vote to amend the Town's Zoning Bylaw by adding a new Section 7-10-060, Temporary Moratorium on Distribution and Transportation Uses, that would provide as

follows, and further, to amend the Table of Contents to add Section 7-10-060, “Temporary Moratorium on Distribution and Transportation Uses”, or take any action relative thereto

SECTION 7-10-060 – Temporary Moratorium on Distribution and Transportation Uses

A) Purpose. The Town of Northborough has recently seen a significant increase in tractor trailer traffic due to numerous distribution facilities/warehouses being constructed and occupied. This is becoming a traffic/safety hazard that affects the Town as a whole. There is an identifiable community need to establish long-term zoning regulations to ensure that such uses will be consistent with the Town’s long term planning interests. The Town hereby adopts a temporary moratorium on the use of land for such purposes, as set forth below, and on the issuance of special permits or building permits in connection with the same, so as to allow the Town sufficient time to address the effects of such structures and uses in the Town and to enact or amend bylaw related thereto.

B) Definitions. Warehouse: Building for the sorting, storage or wholesale marketing of materials, merchandise, products or equipment

Trucking, rail, or freight terminal: Facility in which freight brought by truck or rail is assembled or stored for reshipment, or in which tractor or trailer units and other trucks are parked or stored, including accessory facilities for the fueling and repair of trucks parked or stored on the premises.

C) Temporary Moratorium.

Notwithstanding any other provision in the Town of Northborough Zoning Bylaw to the contrary, no special permit or building permit may be issued for the construction or permitting of any Distribution or Transportation Use, as set forth in Section 7-05-020 Classification of uses, until after May 1, 2023. The purpose of this temporary moratorium is to allow sufficient time for the Town to engage in a planning process to address the effects of such structures and uses in the Town and to enact or amend bylaws related thereto in a manner consistent with sound land use planning goals and objectives.

As part of the moratorium a Warehouse, Traffic and Trucking Committee will be formed by the Planning Board to study these uses and structures and report its findings and recommendations to the Planning Board. The scope of the review may include:

- a. Traffic impact studies
- b. Trip generation analysis by classification
- c. Development of definitions to better align with current day e-commerce terms and trends
- d. E-commerce zoning best practices
- e. Changes to site plan review and approval process
- f. Traffic mitigation agreements
- g. Truck and van restriction zones

- h. Off-site parking of delivery vehicles
- i. Requirement for delivery vehicles to be registered in same municipality to capture excise tax
- j. Monitoring post-occupancy studies for corrective action
- k. Technological innovations such as drones and autonomous vehicle deliveries.
- l. Fiscal Impact

The composition of the committee will be one (1) Planning Board representative, one (1) Board of Selectmen representative and three (3) residents selected by the Planning Board. The committee will be formed within 30 days of adoption of the moratorium provided for herein.

ARTICLE 39: Zoning Bylaw – Section 7-05-020, Classification of Uses. I, Industrial Uses, (5) Distribution and Transportation Uses

To see if the Town will vote to amend Part 7 of the Northborough Town Code, the Northborough Zoning Bylaw, Section 7-05-020 Classification of uses, I. Industrial uses, (5) Distribution and transportation uses, by deleting the text shown in strikethrough and adding the text shown as underlined, or take any action relative thereto.

(5) Distribution and transportation uses.

(a) ~~Warehouse with Distribution: Building for the sorting, storage or wholesale marketing of materials, merchandise, products or equipment. A building and related facilities where goods, products or materials owned by a single entity are received, stored on site for varying time frames and primarily distributed to a single or narrow group of retailers, wholesalers, and/or business clients. This use is not intended to include Fulfillment Center.~~
A building and related facilities where goods, products or materials owned by a single entity are received, stored on site for varying time frames and primarily distributed to a single or narrow group of retailers, wholesalers, and/or business clients. This use is not intended to include Fulfillment Center.

(b) Trucking, rail or freight terminal: Facility in which freight brought by truck or rail is assembled or stored for reshipment, or in which tractor or trailer units and other trucks are parked or stored, including accessory facilities for the fueling and repair of trucks parked or stored on the premises.

(c) Fulfillment Center: A building and related facilities where goods or products sold via direct customer order (whether by internet, telephone, or mail order) by a single entity or a single entity and its affiliated sellers are received and stored on-site temporarily for the purpose of delivery direct to consumer destinations. Such facilities may include automated systems, office space and a pick and pack area to be used for sorting and packaging goods and products for delivery from available, on-site inventory.

(d) Package/Freight Delivery Facility: A building and related facilities where packages and/or freight from multiple sellers of such items is received and stored on-site temporarily for the purpose of delivery to a destination specified by the seller. This use is not intended to include Fulfillment Center or Warehouse with Distribution.

(e) Delivery Station: A building and related facilities where goods or products sold via direct customer order (whether by internet, telephone, or mail order) are prepared for ‘last-

mile' delivery to customers who are typically located within a tightly defined radius of the station. This use is not intended to include Fulfillment Center.

ARTICLE 40: Zoning Bylaw – Section 7-05-030, Table of Uses, Table of Uses, Part B Commercial and Industrial Districts

To see if the Town will vote to amend Part 7 of the Northborough Town Code, the Northborough Zoning Bylaw, Section 7-05-030, Table of Uses Table 1. Table of Uses, Part B. Commercial and Industrial Districts, by deleting the text shown in strikethrough and adding the text shown as underlined, or take any action relative thereto.

Distribution and Transportation Uses						
	DB	BE	BW	BS	HB	I
<u>Warehouse with Distribution</u>	N	N	N	BA	N	PB
Trucking, rail or freight facility, or parcel distribution facility	N	N	N	N	N	PB
<u>Fulfillment Center</u>	<u>N</u>	<u>N</u>	<u>N</u>	<u>N</u>	<u>N</u>	<u>N</u>
<u>Package/Freight Delivery Facility</u>	<u>N</u>	<u>N</u>	<u>N</u>	<u>N</u>	<u>N</u>	<u>N</u>
<u>Delivery Station</u>	<u>N</u>	<u>N</u>	<u>N</u>	<u>N</u>	<u>N</u>	<u>N</u>

ARTICLE 41: Zoning Bylaw – Section 7-07-020, Floodplain Overlay District

To see if the Town will vote to amend Part 7 of the Northborough Town Code, the Northborough Zoning Bylaw, Sections 7-07-020 by deleting the text shown below in strikethrough and adding the text shown below as underlined, or take any action relative thereto.

A. General provisions.

- 1) ~~The purpose of the Floodplain Overlay District is to preserve and maintain the groundwater table; to protect the public health and safety and persons and property against the hazards of floodwater inundation; to protect and preserve wildlife habitat; and to protect the community against costs which may be incurred when unsuitable development occurs in swamps, marshes, along watercourses and in areas subject to floods.~~
- 1) The purpose of the Floodplain Overlay District is to:
 - a) Ensure public safety through reducing the threats to life and personal injury
 - b) Eliminate new hazards to emergency response officials
 - c) Prevent the occurrence of public emergencies resulting from water quality, contamination, and pollution due to flooding

- d) Avoid the loss of utility services which if damaged by flooding would disrupt or shut down the utility network and impact regions of the community beyond the site of flooding
 - e) Eliminate costs associated with the response and cleanup of flooding conditions
 - f) Reduce damage to public and private property resulting from flooding waters
- 2) The Floodplain Overlay District shall be considered as overlying other districts. All uses permitted in the Floodplain Overlay District shall conform to uses permitted in the underlying district.
 - 3) The Floodplain District is herein established as an overlay district. The District includes all special flood hazard areas within the Town of Northborough designated as Zone A, AE, AH, or AO on the Worcester County Flood Insurance Rate Map (FIRM) dated July 16, 2014 issued by the Federal Emergency Management Agency (FEMA) for the administration of the National Flood Insurance Program. The exact boundaries of the District shall be defined by the 1%-chance base flood elevations shown on the FIRM and further defined by the Worcester County Flood Insurance Study (FIS) report dated July 16, 2014. The FIRM and FIS report are incorporated herein by reference and are on file with the Planning Board, Conservation Commission and the Town Engineer.
 - 4) The Town of Northborough hereby designates the position of Building Inspector/Zoning Enforcement Officer to be the official Floodplain Administrator for the Town of Northborough.
 - 5) The Town of Northborough requires a permit for all proposed construction or other development in the floodplain overlay district, including new construction or changes to existing buildings, placement of manufactured homes, placement of agricultural facilities, fences, sheds, storage facilities or drilling, mining, paving and any other development that might increase flooding or adversely impact flood risks to other properties.
 - 6) The town's permit review process includes the requirement that the proponent obtain all local, state and federal permits that will be necessary in order to carry out the proposed development in the floodplain overlay district. The proponent must acquire all necessary permits, and must demonstrate that all necessary permits have been acquired.
 - 7) In the Floodplain Overlay District, there shall be no land filling or dumping and no new construction or extension of existing structures except as provided below, and for all areas designated as floodways, any proposed encroachment in a floodway is prohibited unless certification by a registered professional engineer or architect is provided by the proponent, demonstrating that such encroachment shall not result in any increase in flood levels during the occurrence of the one-hundred-year flood.
 - 8) The Floodplain District is established as an overlay district to all other districts. All development in the district, including structural and non-structural activities, whether permitted by right or by special permit, must be in compliance with MGL C. 131, § 40 and with the following:

- a) Section of the Massachusetts State Building Code which addresses floodplain and coastal high hazard areas;
- b) Wetlands Protection Regulations, Department of Environmental Protection (DEP);
- c) Inland Wetlands Restriction, DEP; and
- d) Minimum Requirements for the Subsurface Disposal of Sanitary Sewage, DEP.

Any variances from the provisions and requirements of the above referenced state regulations may only be granted in accordance with the required variance procedures of these state regulations.

9) Variances to building code floodplain standards

The Town of Northborough will request from the State Building Code Appeals Board a written and/or audible copy of the portion of the hearing related to the variance and will maintain this record in the community's files.

The Town shall also issue a letter to the property owner regarding potential impacts to the annual premiums for the flood insurance policy covering that property, in writing over the signature of a community official that (i) the issuance of a variance to construct a structure below the base flood level will result in increased premium rates for flood insurance up to amounts as high as \$25 for \$100 of insurance coverage and (ii) such construction below the base flood level increases risks to life and property.

Such notification shall be maintained with the record of all variance actions for the referenced development in the floodplain overlay district.

10) Variances to local Zoning Bylaws related to community compliance with the National Flood Insurance Program (NFIP)

A variance from these floodplain bylaws must meet the requirements set out by State law and may only be granted if:

- 1) Good and sufficient cause and exceptional non-financial hardship exist;
- 2) The variance will not result in additional threats to public safety, extraordinary public expense, or fraud or victimization of the public; and
- 3) The variance is the minimum action necessary to afford relief.

11) All subdivision proposals must be designed to assure that:

- a) Such proposals minimize flood damage;
- b) All public utilities and facilities are located and constructed to minimize or eliminate flood damage; and
- c) Adequate drainage is provided to reduce exposure to flood hazards.

~~11) Floodway Data. In Zones A and AE, along watercourses that have not had a regulatory floodway designated, the best available federal, state, local, or other floodway data shall be used to prohibit encroachments in floodways which would result in any increase in flood levels within the community during the occurrence of the base flood discharge.~~

12) In Zones A, A1-30, and AE, along watercourses that have not had a regulatory floodway designated, the best available Federal, State, local, or other floodway data

- shall be used to prohibit encroachments in floodways which would result in any increase in flood levels within the community during the occurrence of the base flood discharge.
- 13) In Zones A1-30 and AE, along watercourses that have a regulatory floodway designated on the Town of Northborough's FIRM Map encroachments are prohibited, including fill, new construction, substantial improvements, and other development within the adopted regulatory floodway unless it has been demonstrated through hydrologic and hydraulic analyses performed in accordance with standard engineering practice that the proposed encroachment would not result in any increase in flood levels within the community during the occurrence of the base flood discharge.
- 14) In A Zones, in the absence of FEMA BFE data and floodway data, the building department will obtain, review and reasonably utilize base flood elevation and floodway data available from a Federal, State, or other source as criteria for requiring new construction, substantial improvements, or other development in Zone A and as the basis for elevating residential structures to or above base flood level, for floodproofing or elevating nonresidential structures to or above base flood level, and for prohibiting encroachments in floodways.
- 15) Within Zones AO and AH on the FIRM, adequate drainage paths must be provided around structures on slopes, to guide floodwaters around and away from proposed structures.
- 16) Base Flood Elevation Data. Base flood elevation data is required for subdivision proposals or other developments greater than fifty (50) lots or five (5) acres, whichever is the lesser, ~~within unnumbered A-zones~~ the proponent must provide technical data to determine base flood elevations for each developable parcel shown on the design plans.
- 17) In A1-30, AH, AE Zones, all recreational vehicles to be placed on a site must be elevated and anchored in accordance with the zone's regulations for foundation and elevation requirements or be on the site for less than 180 consecutive days or be fully licensed and highway ready.
- 18) Notification of Watercourse Alteration. In a riverine situation, the ~~Town Engineer~~ Building Inspector/Zoning Enforcement Officer shall notify the following of any alteration or relocation of a watercourse:
- a) Adjacent communities;
 - b) NFIP State Coordinator, Massachusetts Department of Conservation and Recreation, 251 Causeway Street, Suite 600-700, Boston, MA 02114-2104;
 - c) NFIP Program Specialist, Federal Emergency Management Agency, Region I, 99 High Street, 6th Floor, Boston, MA 02110.
- 19) Abrogation and greater restriction section
The floodplain management regulations found in this Floodplain Overlay District section shall take precedence over any less restrictive conflicting local laws, ordinances or codes.

20) Disclaimer of liability

The degree of flood protection required by this bylaw [ordinance] is considered reasonable but does not imply total flood protection.

21) Severability section

If any section, provision or portion of this bylaw is deemed to be unconstitutional or invalid by a court, the remainder of the bylaw shall be effective.

22) Requirement to submit new technical data

If the Town/City acquires data that changes the base flood elevation in the FEMA mapped Special Flood Hazard Areas, the Town/City will, within 6 months, notify FEMA of these changes by submitting the technical or scientific data that supports the change(s.) Notification shall be submitted to:

FEMA Region I Risk Analysis Branch Chief
99 High St., 6th floor, Boston, MA 02110

And copy of notification to:

Massachusetts NFIP State Coordinator
MA Dept. of Conservation & Recreation, 251 Causeway Street, Boston, MA
02114

B. Definitions

1) General Definitions

DEVELOPMENT means any man-made change to improved or unimproved real estate, including but not limited to building or other structures, mining, dredging, filling, grading, paving, excavation or drilling operations or storage of equipment or materials. [US Code of Federal Regulations, Title 44, Part 59]

FLOODWAY. The channel of the river, creek or other watercourse and the adjacent land areas that must be reserved, in order to discharge the base flood without cumulatively increasing the water surface elevation more than a designated height. [Base Code, Chapter 2, Section 202]

FUNCTIONALLY DEPENDENT USE means a use which cannot perform its intended purpose unless it is located or carried out in close proximity to water. The term includes only docking facilities, port facilities that are necessary for the loading and unloading of cargo or passengers, and ship building and ship repair facilities, but does not include long-term storage or related manufacturing facilities. [US Code of Federal Regulations, Title 44, Part 59] Also [Referenced Standard ASCE 24-14]

HIGHEST ADJACENT GRADE means the highest natural elevation of the ground surface prior to construction next to the proposed walls of a structure. [US Code of Federal Regulations, Title 44, Part 59]

HISTORIC STRUCTURE means any structure that is:

a) Listed individually in the National Register of Historic Places (a listing maintained by the Department of Interior) or preliminarily determined by the Secretary of the Interior as meeting the requirements for individual listing on the National Register;

b) Certified or preliminarily determined by the Secretary of the Interior as contributing to the historical significance of a registered historic district or a district preliminarily determined by the Secretary to qualify as a registered historic district;

c) Individually listed on a state inventory of historic places in states with historic preservation programs which have been approved by the Secretary of the Interior;
or

d) Individually listed on a local inventory of historic places in communities with historic preservation programs that have been certified either:

(1) By an approved state program as determined by the Secretary of the Interior
or

(2) Directly by the Secretary of the Interior in states without approved programs.

NEW CONSTRUCTION. Structures for which the start of construction commenced on or after the effective date of the first floodplain management code, regulation, ordinance, or standard adopted by the authority having jurisdiction, including any subsequent improvements to such structures. *New construction includes work determined to be substantial improvement.* [Referenced Standard ASCE 24-14]

RECREATIONAL VEHICLE means a vehicle which is:

- Built on a single chassis;
- 400 square feet or less when measured at the largest horizontal projection;
- Designed to be self-propelled or permanently towable by a light duty truck;
and
- Designed primarily not for use as a permanent dwelling but as temporary living quarters for recreational, camping, travel, or seasonal use.

REGULATORY FLOODWAY - see FLOODWAY.

SPECIAL FLOOD HAZARD AREA. The land area subject to flood hazards and shown on a Flood Insurance Rate Map or other flood hazard map as Zone A, AE, A1-30, A99, AR, AO, AH. [Base Code, Chapter 2, Section 202]

START OF CONSTRUCTION. The date of issuance for new construction and substantial improvements to existing structures, provided the actual start of construction, repair, reconstruction, rehabilitation, addition, placement or other improvement is within 180 days after the date of issuance. The actual start of construction means the first placement of permanent construction of a building (including a manufactured home) on a site, such as the pouring of a slab or footings, installation of pilings or construction of columns.

Permanent construction does not include land preparation (such as clearing, excavation, grading or filling), the installation of streets or walkways, excavation for a basement, footings, piers or foundations, the erection of temporary forms or the installation of accessory buildings such as garages or sheds not occupied as dwelling units or not part of the main building. For a substantial improvement, the actual “start of construction” means the first alteration of any wall, ceiling, floor or other structural part of a building, whether or not that alteration affects the external dimensions of the building. [Base Code, Chapter 2, Section 202]

STRUCTURE means, for floodplain management purposes, a walled and roofed building, including a gas or liquid storage tank, that is principally above ground, as well as a manufactured home. [US Code of Federal Regulations, Title 44, Part 59]

SUBSTANTIAL REPAIR OF A FOUNDATION. When work to repair or replace a foundation results in the repair or replacement of a portion of the foundation with a perimeter along the base of the foundation that equals or exceeds 50% of the perimeter of the base of the foundation measured in linear feet, or repair or replacement of 50% of the piles, columns or piers of a pile, column or pier supported foundation, the building official shall determine it to be substantial repair of a foundation. Applications determined by the building official to constitute substantial repair of a foundation shall require all existing portions of the entire building or structure to meet the requirements of 780 CMR. [As amended by MA in 9th Edition BC]

VARIANCE means a grant of relief by a community from the terms of a flood plain management regulation. [US Code of Federal Regulations, Title 44, Part 59]

VIOLATION means the failure of a structure or other development to be fully compliant with the community's flood plain management regulations. A structure or other development without the elevation certificate, other certifications, or other evidence of compliance required in §60.3 is presumed to be in violation until such time as that documentation is provided. [US Code of Federal Regulations, Title 44, Part 59]

2) Flood Zone definitions

ZONE A means an area of special flood hazard without water surface elevations determined

ZONE A1-30 and ZONE AE means area of special flood hazard with water surface elevations determined

ZONE AH means areas of special flood hazards having shallow water depths and/or unpredictable flow paths between (1) and (3) feet, and with water surface elevations determined

ZONE AO means area of special flood hazards having shallow water depths and/or unpredictable flow paths between (1) and (3) ft. (*Velocity flow may be evident; such flooding is characterized by ponding or sheet flow.*)

ZONE A99 means area of special flood hazard where enough progress has been made on a protective system, such as dikes, dams, and levees, to consider it complete for insurance rating purposes. (Flood elevations may not be determined.)

ZONES B, C, AND X means areas of minimal or moderate flood hazards or areas of future-conditions flood hazard. (Zone X replaces Zones B and C on new and revised maps.)

~~B.~~C. Prohibited uses. Except as provided in subsections (C) and (D) of this section, all new construction and encroachments including grading, filling, excavating, substantial improvements and other development are prohibited unless:

- (1) A technical evaluation by a registered professional engineer demonstrates that the new construction or encroachment will not result in any increase in flood levels during the occurrence of the base flood discharge; and
- (2) It is otherwise allowed by a special permit from the Zoning Board of Appeals under subsection (D) of this section.

C.D. Permitted uses.

~~(1) Maintenance and repair of existing structures and improvement of existing structures; provided, that any such improvement is either within the existing structure or above the base flood elevation.~~

- (1) Maintenance, repair and replacement of existing structures in a driveway or private way or in an associated easement. Structures referred to herein are banks, walls, culverts, bridges or similar structures.
- (2) Any woodland, grassland, wetland, agricultural, horticultural or recreational use of land or water not requiring filling, including parking facilities requiring no permanent structures. Alteration or extension of preexisting nonconforming structures (see Chapter 7-08) shall be designed, placed and constructed to offer a minimum obstruction to the flow of water and shall be firmly anchored to prevent floating away.
- (3) Any activity, construction or installation conducted solely for the purpose of environmental clean-up or remediation, and required or approved by the United States Environmental Protection Agency or the Massachusetts Department of Environmental Protection.
- (4) Driveways across floodplain areas are to be designed so that the existing elevations are not altered in such a way as to decrease the flood control potential of the area or interfere with the flow of water.

~~B.~~ E. Uses permitted by special permit.

- 1) Buildings and sheds accessory to the uses described in subsection (C) of this section, and driveways and roads are permitted on approval of the Zoning Board of Appeals in accordance with Section 7-03-040. In hearing such applications, the Zoning Board of Appeals shall consider the following, in addition to any other factors it deems pertinent:

- a) Any such building, structure, driveway or road shall be designed, placed and constructed so as to offer a minimum obstruction to the flow of water; and said building or structure shall be firmly anchored to prevent floating away.
 - b) Such structure shall not be used for sustained human occupancy.
 - c) Such structure shall be designed to protect against damage from inundation by floodwaters, equipment or materials stored therein.
 - d) There shall be no practical alternative means of access, and the Town Engineer has certified that the said driveway or road, if constructed, shall not endanger the health, safety or welfare of the public.
 - e) The proponent has obtained any existing flood elevation data, and it has been reviewed by the Building Inspector for its reasonable utilization toward meeting the elevation or flood proofing requirements of the State Building Code.
 - f) No application approval by the Zoning Board of Appeals shall be considered to supersede the requirements of MGL C. 131, § 40 (Wetlands Protection Act) or the Massachusetts State Building Code (780 CMR).
- 2) If any land in the Floodplain Overlay District is proven to the satisfaction of the Board of Appeals as being in fact not subject to flooding or not unsuitable because of drainage conditions for any use which would otherwise be permitted if such land were not, by operation of this section, in the Floodplain Overlay District, and said Board finds that the use of such land for any such use will not interfere with the general purpose for which the Floodplain Overlay District has been established and will not be detrimental to the public health, safety or welfare, the Zoning Board of Appeals may, after a public hearing with due notice, issue a special permit for any such user, provided written approval from FEMA verifying the parcel does not belong in the floodplain is submitted with any application for a special permit.
 - 3) Any other bylaw or regulation to the contrary notwithstanding, no construction shall be permitted within the Floodplain Overlay District unless the Zoning Board of Appeals determines that all utilities are located, elevated and constructed so as to minimize or eliminate flood damage and that the methods of disposal for sewage, refuse and other wastes and for providing drainage are adequate to reduce flood hazards.
 - 4) If a special permit is granted, the Zoning Board of Appeals shall impose such conditions and safeguards as public safety, welfare and convenience may require. Upon completion of any authorized work, an as-built plan, prepared by a registered professional engineer or a registered land surveyor, as appropriate to the data, of all improvements in the Floodplain Overlay District shall be submitted to the Building Inspector and shall specify the elevation of the lowest floor including basement, the elevation to and method by which any structure has been floodproofed and the finished grades of all disturbed areas.

ARTICLE 42: Citizen Petition – Annual Town Meeting Saturday 9 AM

To see if the Town will vote to amend the Northborough Town Code, Section 1-80-020 Holding of Annual Town Meeting, by changing the meeting date to the Saturday preceding the 4th Monday in April with start at 9 AM and end at 1 PM. Additional needed sessions to be held on subsequent weeknight(s) starting at 6 PM and ending at 10 PM. Special Town Meetings to follow same Saturday and weeknight format as needed.

ARTICLE 43: Citizen Petition – Property Tax Exemption for Gold Star Parents

To see if the Town will vote to accept the provisions of M.G.L. c. 59 ss5, Clause Twenty-second H (inserted by Chapter 218 of the Acts of 2018, known as An Act Relative to Veterans’ Benefits, Rights, Appreciation, Validation, and Enforcement (“BRAVE Act”)), signed into law August 28, 2018, which provides for a property tax exemption for real estate as follows: to the full amount of the taxable valuation of the real property of the surviving parents or guardians of soldiers and sailors, members of the National Guard and veterans who: (i) during active duty service, suffered and injury or illness documented by the United States Department of Veterans Affairs or a branch of the armed forces that was a proximate cause of their death; (ii) are missing in action with a presumptive finding of death as a result of active duty service as members of the Armed Forces of the United States; provided, however, that the real estate shall be occupied by the surviving parents or guardians as the surviving parents’ or guardians’ domicile; and provided further that the surviving parents or guardians shall have been domiciled in the Commonwealth for the 5 consecutive years immediately before the date of filing for an exemption pursuant to this clause or the soldier or sailor, member of the National Guard or veteran was domiciled in the Commonwealth for not less than 6 months before entering service.

Surviving parents or guardians eligible for an exemption pursuant to this clause shall be eligible regardless of when the soldier or sailor, member of the National Guard or veteran died or became missing in action with a presumptive finding of death; provided, however, that the exemption shall only apply to tax years beginning on or after January 1, 2019. Such exemption shall be available until such time as the surviving parents or guardians are deceased. No real estate shall be so exempt which has been conveyed to the surviving parents or guardians to evade taxation.

ARTICLE 44: Reports

[RETURN TO AGENDA](#)