

June 16, 2021  
10258372

City of Hudson Planning Board  
520 Warren Street  
Hudson, NY 12534

Re: Verizon Wireless Proposed Rooftop Installation  
119 Columbia Street, Hudson, New York 12534  
Supplemental Technical Memorandum

Dear Chairperson Steim and Members of the Planning Board:

This supplemental technical memorandum (Tech Memo) was prepared to summarize HDR's continued review of the above-referenced application and technical materials received after the submittal of our March 3, 2021 Tech Memo. Since the submittal of our Tech Memo in March, the application was discussed at the March 9, April 13 (including a work session held with the applicant before the regular meeting), May 11, and June 8, 2021 Planning Board meetings. This supplemental Tech Memo focuses on the applicant responses submitted to the Planning Board based on the Findings, Recommendations, and Outstanding Information identified in HDR's March 3, 2021 Tech Memo. Of note, the Alpha and Beta sector antennas have been reconfigured by Verizon to be oriented on top of the building's existing penthouse, and all six antennas are now proposed to be screened with stealthing measures.

The following information was reviewed by HDR for this supplemental Tech Memo:

- Letter from Young Sommer, dated 3/5/2021 (22 pp.), including responses to public and Planning Board comments, and evaluation of 2 additional alternatives (Harney & Sons rooftop and Verizon Building rooftop on Union Street);
- Alternate Site List, received 3/23/2021 from Planning Board (email);
- Supplemental Alternate Site evaluation (Verizon; 15 pp.), received 4/12/2021. Coverage maps provided for additional properties: Columbia County Board of Elections rooftop location; Hudson Youth Center rooftop location; St. Mary's Academy rooftop location; new tower build location southeast of Harney & Sons Warehouse (100'/150' tower build scenarios). This submittal was in response to HDR's information request of 4/2/2021;
- Verizon Powerpoint presentation (74 pp.) prepared for the April 13, 2021 Planning Board work session. Information included:
  - RF Search Area narrative;
  - Verizon's site selection process (identification of candidate sites, search ring, and alternative evaluations);
  - Coverage maps and evaluations for potential alternative sites; and
  - Proposed alternate design for 119 Columbia Street: prior photosimulations; new Drawing images for the stealth design at all sectors; new photosimulations with the stealth screening for the Alpha/Beta combined sector; sample photos of stealth screening from similar projects.

- Verizon supplemental submittal (dated 5/7/2021; 37 pp.), in response to HDR's 5/4/2021 email memo on complying with Tech Memo conditions and information requests. This correspondence included:
  - Letter outline responses by applicant to the Outstanding Items and Recommendations of HDR's March 3, 2021 Tech Memo;
  - New photosimulations, including the stealth screening for the Alpha/Beta combined sector; and
  - Updated Drawing set (10 sheets; dated 5-8-2021).
- Structural Design letter (dated 5/27/2021; 3 pages) from Verizon's engineer;
- Young Sommer letter (dated 5/28/2021; 4 pages) discussing the alternate stealth design and code interpretation regarding setbacks / need for variance or waiver;
- Updated Drawing set (10 sheets; dated 5-18-2021); and
- Updated Drawing set (10 sheets; dated 6-4-2021), based on comments provided by the Code Enforcement Officer. [***These Drawings represents the latest Planning Board review set as of the date of this supplemental Tech Memo***]

Project background information is provided below, followed by a review of the above-referenced supplemental applicant submittals. There are two [Exhibits](#) and two [Appendices](#) attached to this supplemental Tech Memo.

We note that the Findings and Recommendations submitted by HDR in our March 2021 Tech Memo are still valid. For reference, [Exhibit 1](#) of this supplemental Tech Memo includes a copy of the March 2021 Tech Memo Findings, Recommendation, and Outstanding Information (with completeness inventory based on HDR's review of the applicant filings received after the March Tech Memo was submitted; notes on completeness are added in **red text** in [Exhibit 1](#)). Some new or enhanced Recommendations for the Planning Board's consideration based on the supplemental filings and recent Planning Board meeting discussions are also included in the attached [Exhibit 1](#) in **red text**.

### **Background**

The application is for the construction of a new wireless telecommunications facility proposed at the above-referenced location (the site) in a "GC – General Commercial" zoning district in the City of Hudson. The facility is proposed on the rooftop of an existing five-story apartment building (Providence Hall Apartments), fronted by Columbia Street, N. 1<sup>st</sup> Street, N 2<sup>nd</sup> Street, and Prison Alley, and located adjacent to the Warren Street Historic District. Verizon has reported a need to supplement its network's capacity and coverage to provide enhanced and reliable 4G wireless services to the site area. Site Plan and Special Use Permit approvals are being requested of the Planning Board. If approved, a Building Permit will also be required.

### **Alternate Proposed Configuration**

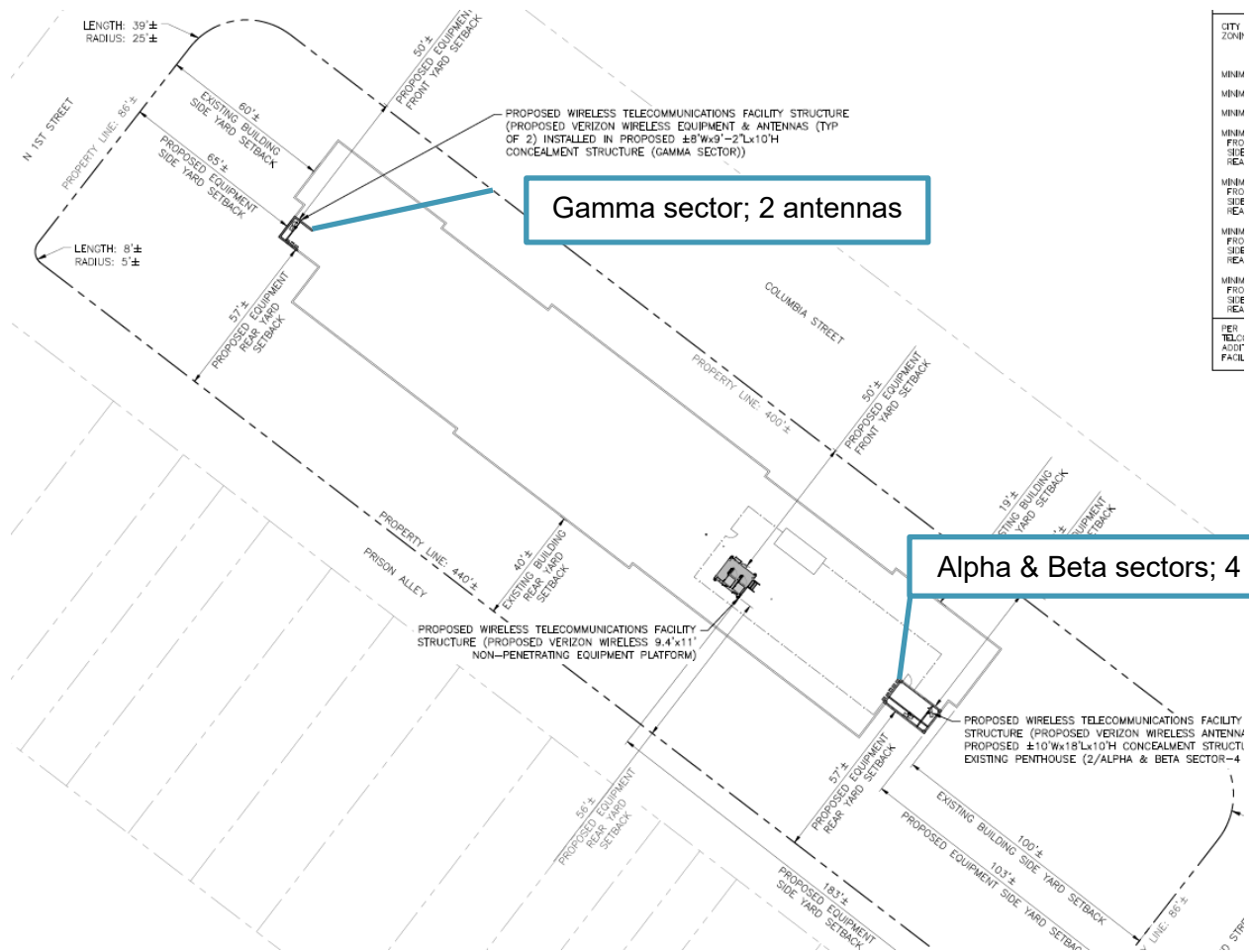
Verizon initially proposed the installation of a new rooftop wireless telecommunication facility with six (6) white panel antennas (2 per sector; 3 sectors). Installation of an equipment platform on the roof is also proposed. In March and April 2021, Verizon proposed the following modifications to its proposed facility:

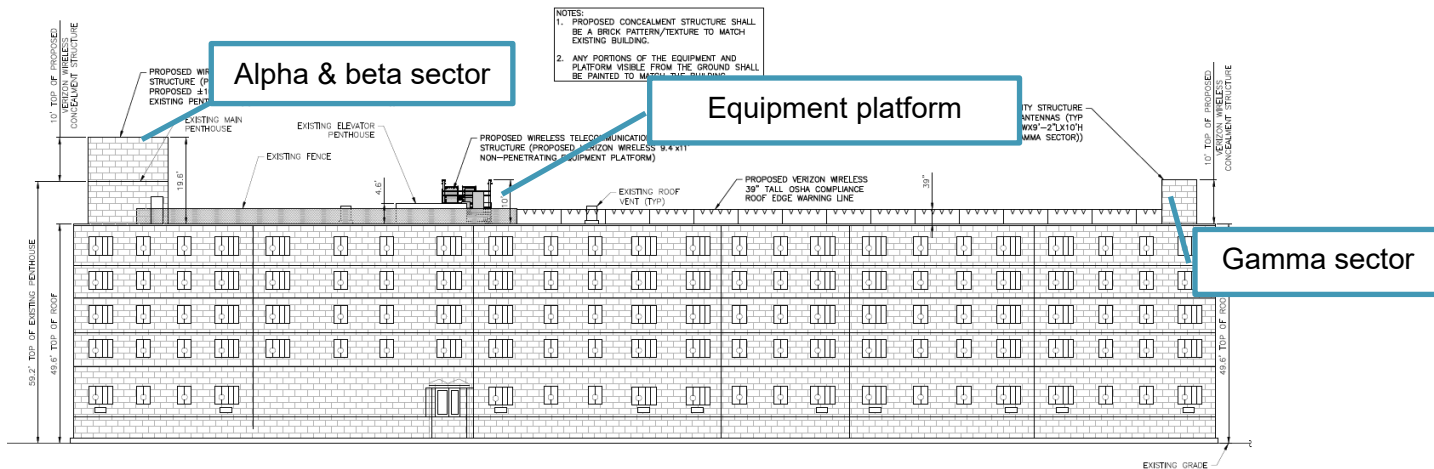
- Installation of a combined Alpha sector and Beta sector on the existing penthouse.

- Installation of stealth screening walls surrounding the Alpha and Beta sector antennas, on top of the penthouse.
- Installation of a stealth wall surrounding the Gamma sector antennas.

Stealth screening was discussed with the Planning Board, and HDR prepared photo examples of rooftop stealth screening measures employed at other sites (photo examples are included in [Appendix A](#) of this supplemental Tech Memo).

Images of the currently proposed facility at 119 Columbia Street from the 6-4-2021 Drawings are included below.

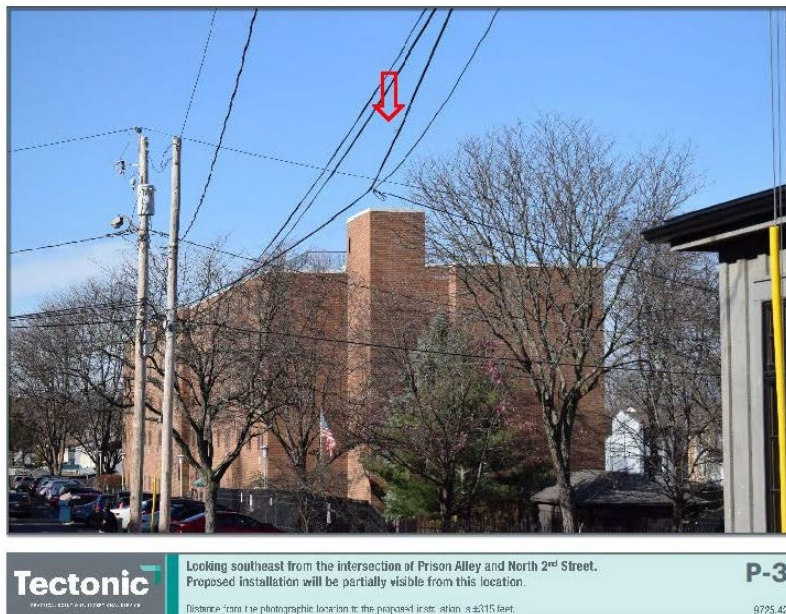




### Cross-Section View of Building and Proposed Equipment (6-4-2021 Drawing Set)

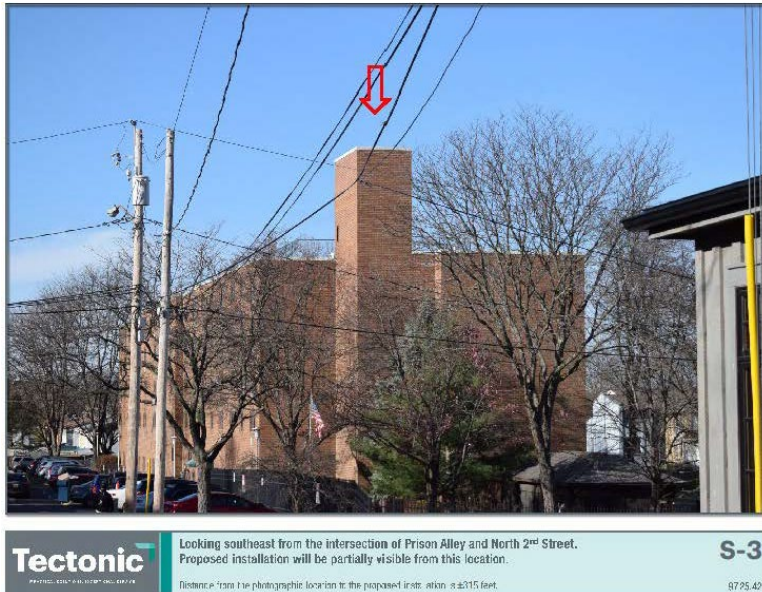
The height of the existing roof is 49.6 ft above grade, with the top of the penthouse at 59.2 ft. The height of the proposed panel antennas and stealth screening above the penthouse is 69.2 ft. As noted in recent correspondences, the City Code Enforcement Officer requested edits to the Verizon Drawing Set (see 6-4-2021 Drawings for latest version; the proposed rooftop facility is now referred to as “Wireless Telecommunications Facility Structure”) and has determined that a variance / request for waiver is not necessary and that the proposed wireless telecommunications facility will meet the required setbacks.

The stealth wall, or concealment structure, will be painted to match the existing brick façade, as shown in the photosimulation (second image) provided below.



Existing penthouse, looking westward





#### Photosimulation of combined alpha/beta sector on penthouse, looking westward

Several other simulations were provided by the applicant in its supplemental filings. A subset of the new photosimulations are included in [Exhibit 2](#) of this supplemental Tech Memo, as reference.

#### Alternate Site Assessment

Verizon submitted coverage maps after March 5, 2021 for potential alternate locations, as requested by the Planning Board. The alternate locations included the Verizon building on Union Street (rooftop) and Harney & Sons Tea (rooftop), based on Planning Board feedback. In March 2021, the Planning Board provided HDR with a list of other potential properties to assess in terms of viability to serve as an alternate to the proposed 119 Columbia Street rooftop. These sites included:

- Verizon building behind the Post Office / 400 block of Union Street;
- Columbia County Health Building / 325 Columbia Street, a 3-story office building within the C-C Central Commercial zoning district;
- Columbia County Board of Elections Building / State Street and 4th Street;
- Boys Club / 3rd Street and Union Street;
- Former church / 79 North 2nd Street and Robinson Street;
- St. Mary's Academy / corner 3rd Street and Allen Street;
- John L. Edwards elementary school site / State Street and North 4th Street;
- Harney + Sons Tea warehouse / N 2nd Street;
- Landfill site west of Harney + Sons Tea warehouse;
- Hillside southeast of Harney + Sons Tea warehouse;
- Fireman's home + museum site on Harry Howard Boulevard;
- Water tower in the Lorenz Park section of Joslen Boulevard, on the west side of the road just north of the high school;

- Misc tower sites along Dock Street / Tax Parcel IDs # 109.8-1-4; 109.8-1-5; 109.8-1-8; 109.8-1-6; 109.8-1-17;
- Middle Ground Flats / sandbar + landfill island in the Hudson River, between Hudson and Athens;
- Mount Merino; and
- DPW property on Rossman Avenue (formerly Mount Ray Reservoir).

HDR conducted site reconnaissance and/or desktop evaluations of all the locations. Some of the Planning Board sites were screened out from further consideration based on distance from search ring, logistical issues, lower code priority, and / or other reasons. On April 2, 2021, HDR requested from Verizon the technical analysis of four additional potential alternates: Columbia County Board of Elections Building (4th and State); Hudson Youth Center (formerly the Hudson Boys and Girls Club, 3rd Street and Union Street); St. Mary's Academy (corner 3rd Street and Allen); and the hillside southeast of Harney + Sons Tea warehouse (tower scenario).

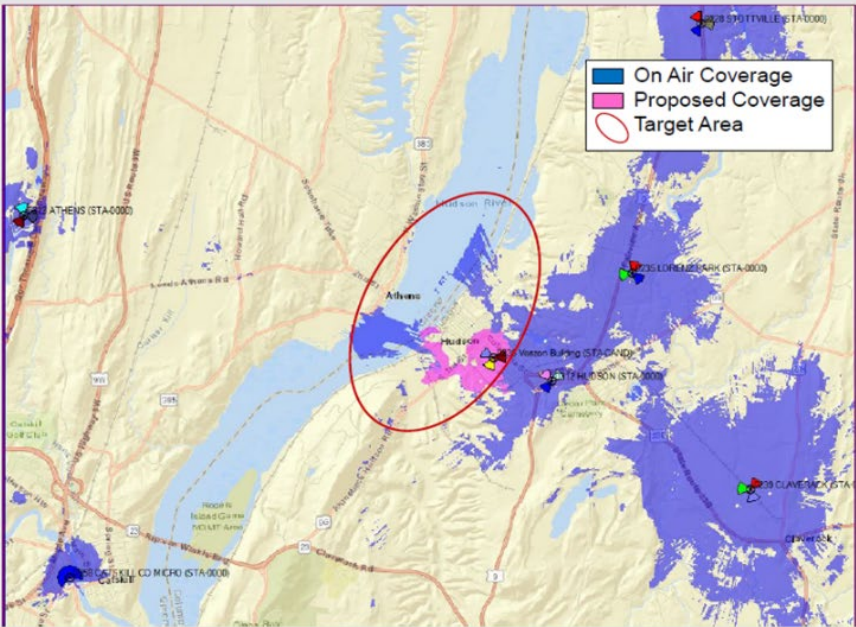
Verizon provided coverage analyses for these sites, which show that these alternates would provide inferior service and leave gaps in Verizon's search area – particularly for the high band 2100 MHz frequency - when compared to the proposed site at 119 Columbia Street. This is based on the locations of the alternate sites and assumed antenna heights, existing infrastructure and topography which can effectively block signal to the target area, and proximity to existing cell sites. A summary of the alternate sites assessed throughout the application review process is included in [Appendix B](#) of this supplemental Tech Memo ("alternatives matrix"). The matrix includes a summary table of sites evaluated / criteria assessed, along with photos and coverage maps from the proposed site at 119 Columbia Street and potential alternatives. It should be noted that the alternate site analysis did not consider (a) the availability for co-location or property owners' willingness to accommodate a wireless facility, (b) logistics associated with building conditions, pitched rooftops, or (c) potential set-backs/variance needs.

2100 MHz coverage maps for the supplemental alternates assessed are provided below, with the corresponding coverage from the 119 Columbia Street presented for comparison.

Verizon Building (Union Street; rooftop)

**Verizon Building (rooftop) - AWS (2100MHz) Best Server -95dBm RSRP**

The plot below depicts the actual footprint of each existing sector at one threshold so the viewer can accurately evaluate the additional coverage area that would be provided by the Verizon Building rooftop location.



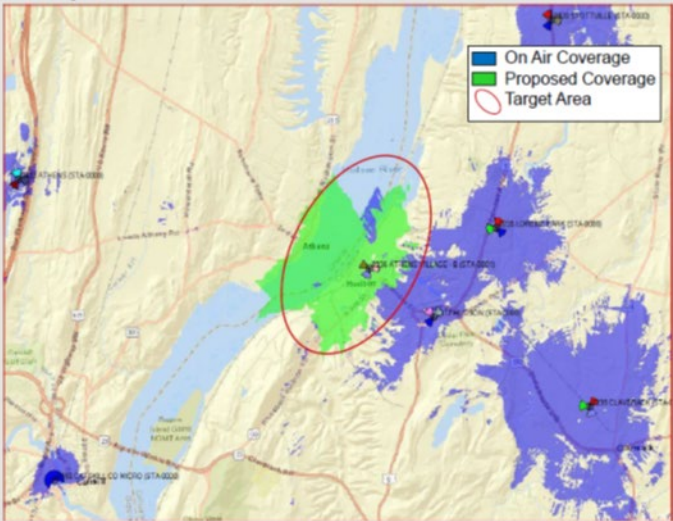
The map above represents current -95 coverage from existing sites and planning board requested alternate candidate (Verizon Building rooftop) location. Blue coverage is from existing on air sites and Pink is coverage from planning board requested alternate candidate (Verizon Building rooftop).



35

**Proposed AWS (2100MHz) Best Server -95dBm RSRP**

Best Server plots depict the actual footprint of each sector in question at one threshold so the viewer can accurately evaluate the coverage area provided by the new sites dominant signal area.



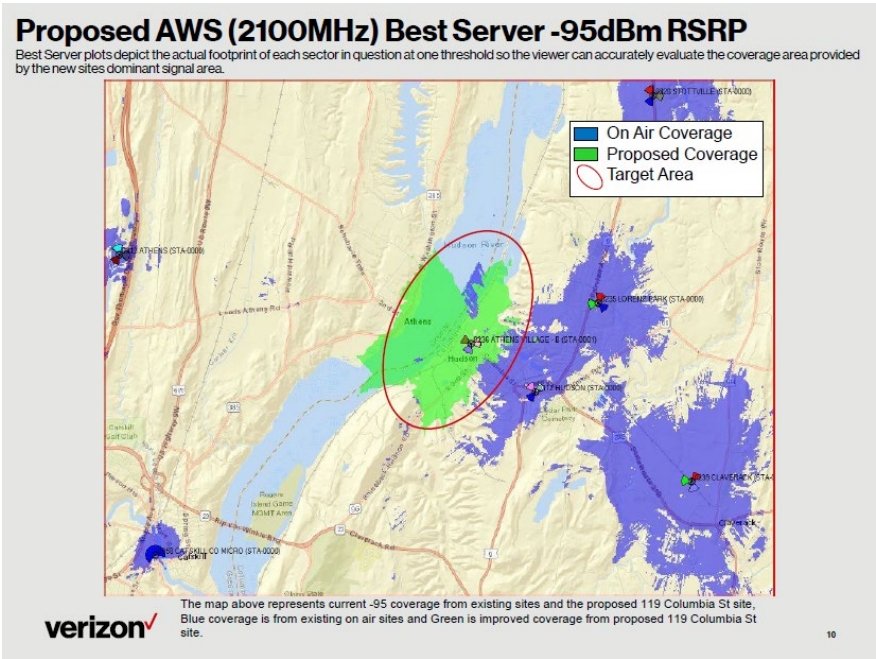
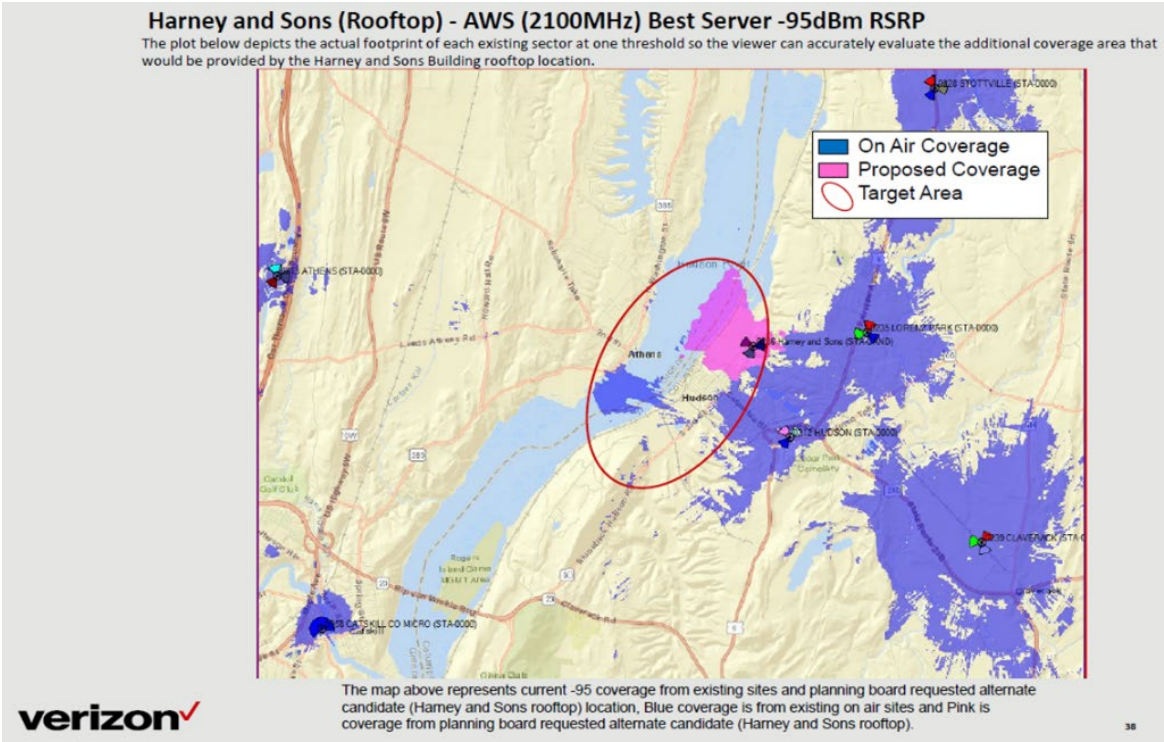
The map above represents current -95 coverage from existing sites and the proposed 119 Columbia St site. Blue coverage is from existing on air sites and Green is improved coverage from proposed 119 Columbia St site.



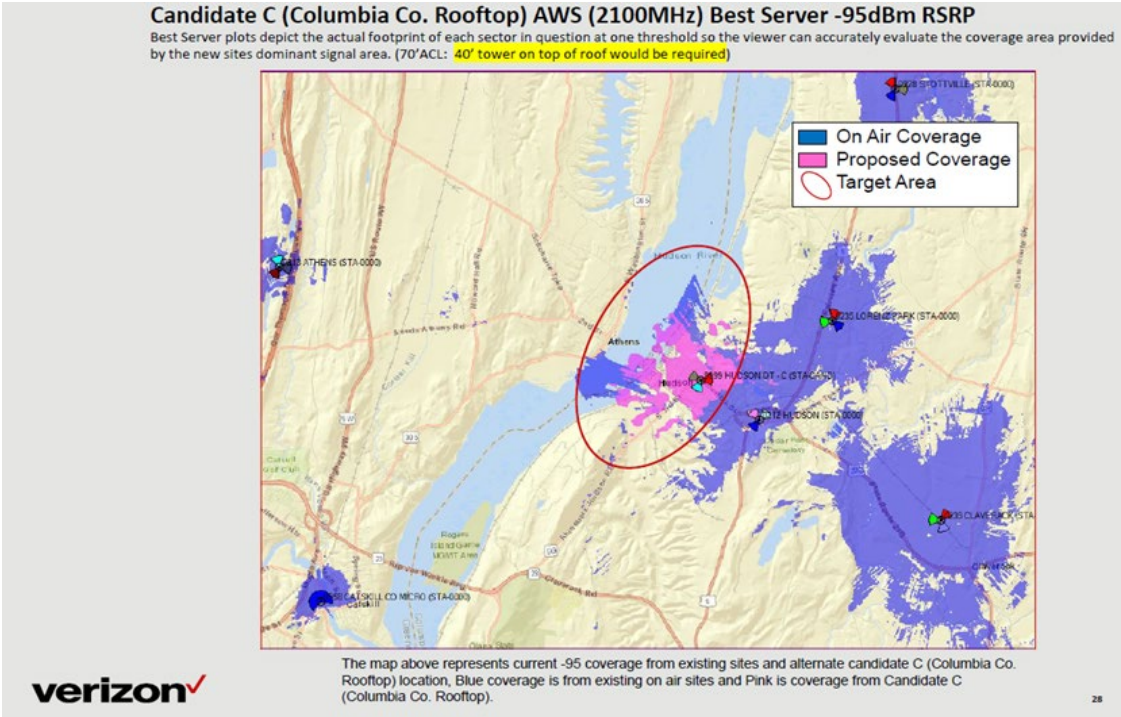
10



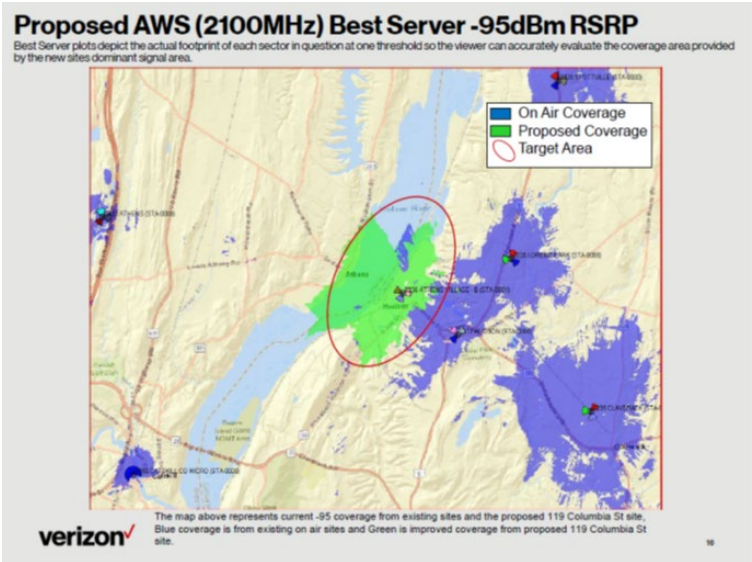
Harney & Sons (rooftop)



Columbia County Building (325 Columbia Street; rooftop)



The above map assumes a 40 ft extension or tower on top of the roof

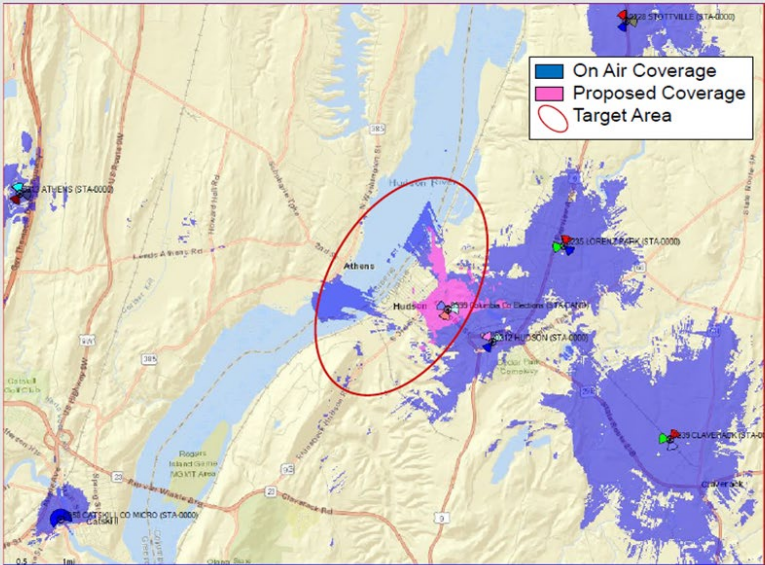




Columbia County Board of Elections (401 State Street; rooftop)

Columbia Co. Board of Elections (rooftop) - AWS (2100MHz) Best Server -95dBm RSRP

The plot below depicts the actual footprint of each existing sector at one threshold so the viewer can accurately evaluate the additional coverage area that would be provided by the Columbia Co Board of Elections Building rooftop location.

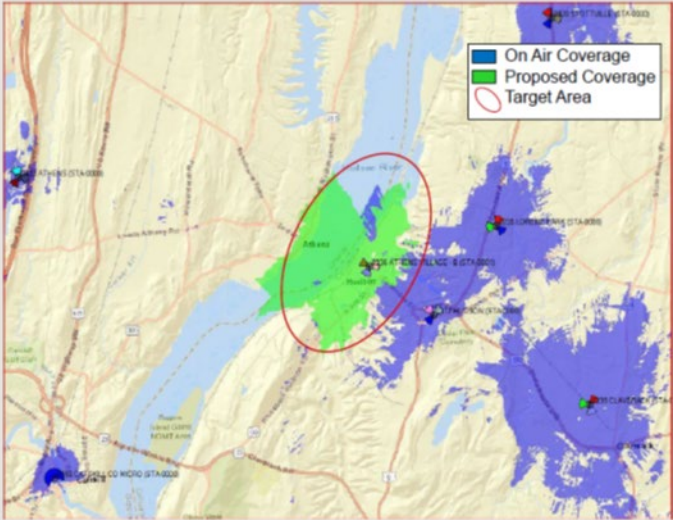


The map above represents current -95 coverage from existing sites and planning board requested alternate candidate (Co Board of Elections Building rooftop) location. Blue coverage is from existing on air sites and Pink is coverage from planning board requested alternate candidate Co Board of Elections Building rooftop). Gaps in AWS coverage in lower Hudson are clearly shown above and unfortunately will not meet network requirements.

44

Proposed AWS (2100MHz) Best Server -95dBm RSRP

Best Server plots depict the actual footprint of each sector in question at one threshold so the viewer can accurately evaluate the coverage area provided by the new sites dominant signal area.



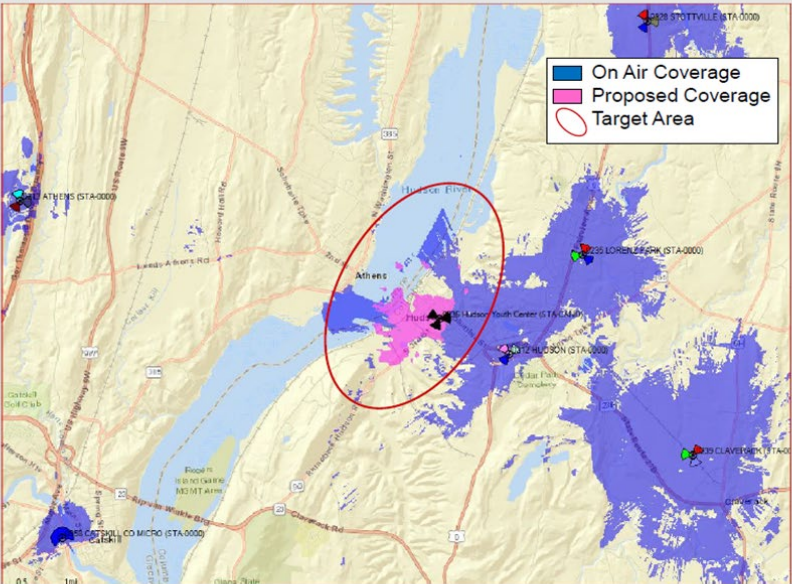
The map above represents current -95 coverage from existing sites and the proposed 119 Columbia St site. Blue coverage is from existing on air sites and Green is improved coverage from proposed 119 Columbia St site.

18

Hudson Youth Center (rooftop)

**Hudson Youth Center (Rooftop) - AWS (2100MHz) Best Server -95dBm RSRP**

The plot below depicts the actual footprint of each existing sector at one threshold so the viewer can accurately evaluate the additional coverage area that would be provided by the Hudson Youth Center rooftop location.

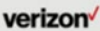
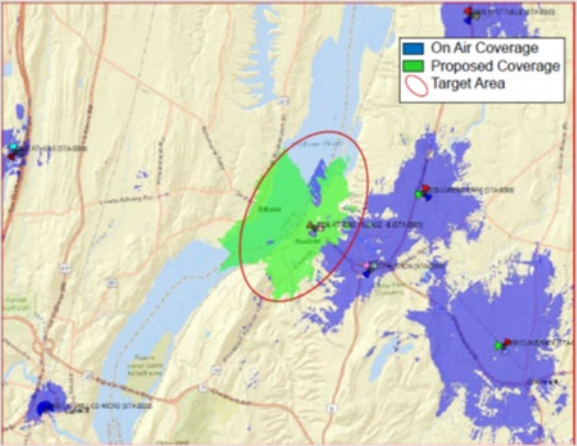


The map above represents current -95 coverage from existing sites and planning board requested alternate candidate (Hudson Youth Center rooftop) location. Blue coverage is from existing on air sites and Pink is coverage from planning board requested alternate candidate (Hudson Youth Center rooftop). Gaps in AWS coverage on the north side of lower Hudson are shown above and unfortunately will not meet network requirements.

47

**Proposed AWS (2100MHz) Best Server -95dBm RSRP**

Best Server plots depict the actual footprint of each sector in question at one threshold so the viewer can accurately evaluate the coverage area provided by the new sites dominant signal area.



The map above represents current -95 coverage from existing sites and the proposed 119 Columbia St site. Blue coverage is from existing on air sites and Green is improved coverage from proposed 119 Columbia St site.

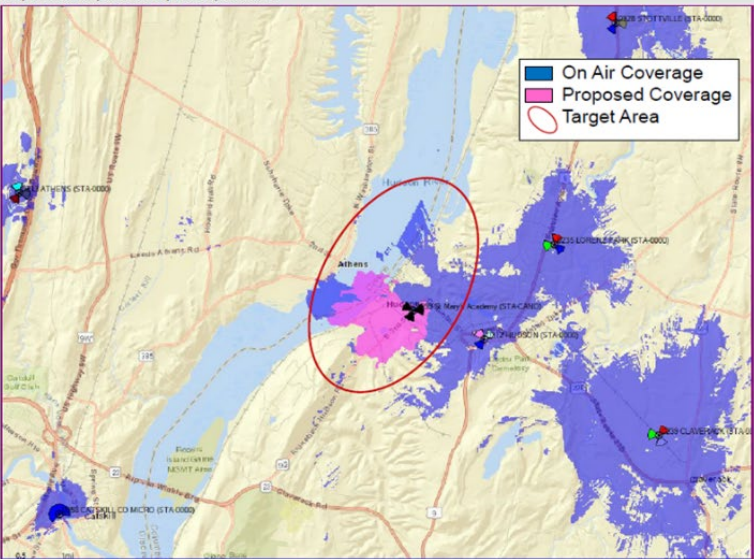
48



St. Mary's Academy (rooftop)

**St Mary's Academy (Rooftop) - AWS (2100MHz) Best Server -95dBm RSRP**

The plot below depicts the actual footprint of each existing sector at one threshold so the viewer can accurately evaluate the additional coverage area that would be provided by the St Mary's Academy rooftop location.

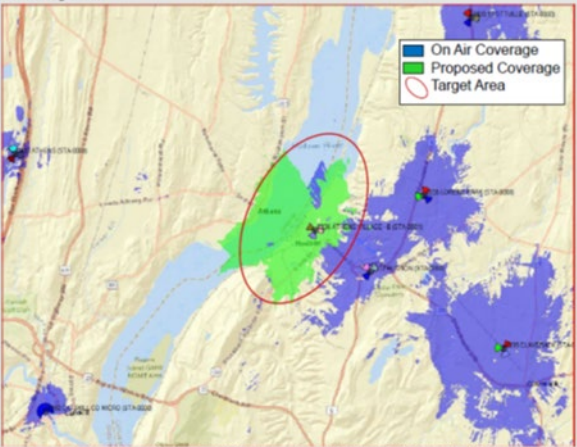


The map above represents current -95 coverage from existing sites and planning board requested alternate candidate (St Mary's Academy rooftop) location. Blue coverage is from existing on air sites and Pink is coverage from planning board requested alternate candidate (St Mary's Academy rooftop). Gaps in AWS coverage on the north side of lower Hudson are shown above and unfortunately will not meet network requirements.

30

**Proposed AWS (2100MHz) Best Server -95dBm RSRP**

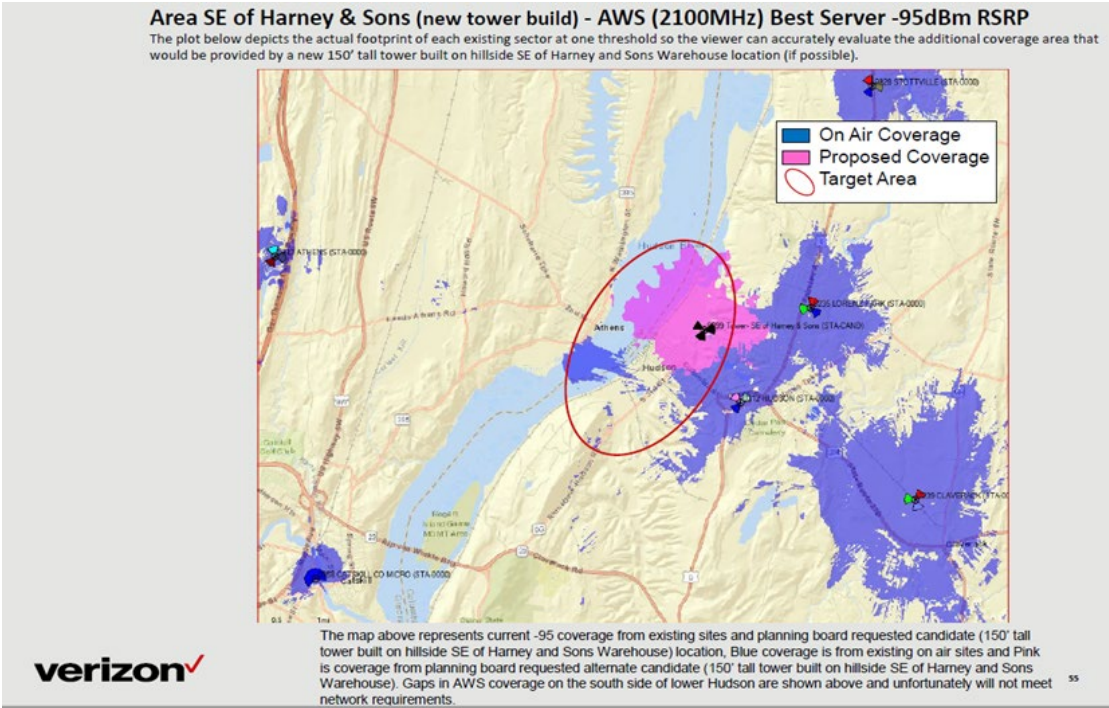
Best Server plots depict the actual footprint of each sector in question at one threshold so the viewer can accurately evaluate the coverage area provided by the new sites dominant signal areas.



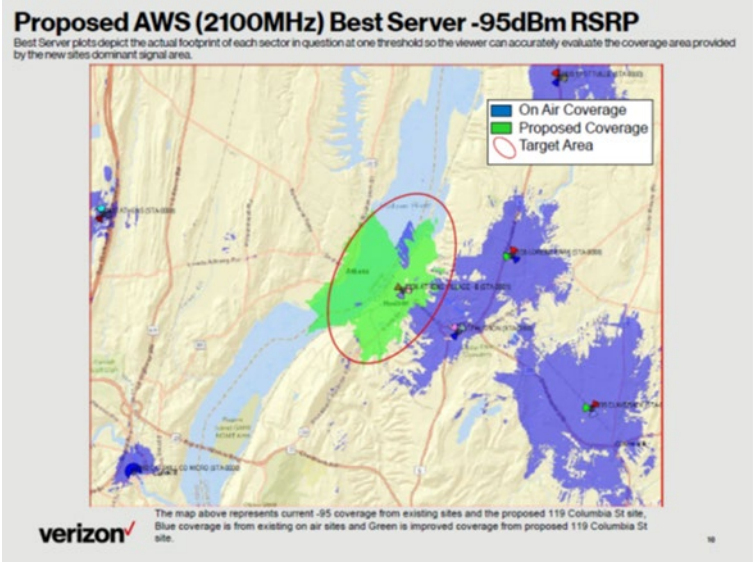
The map above represents current -95 coverage from existing sites and the proposed 119 Columbia St site. Blue coverage is from existing on air sites and Green is improved coverage from proposed 119 Columbia St site.

31

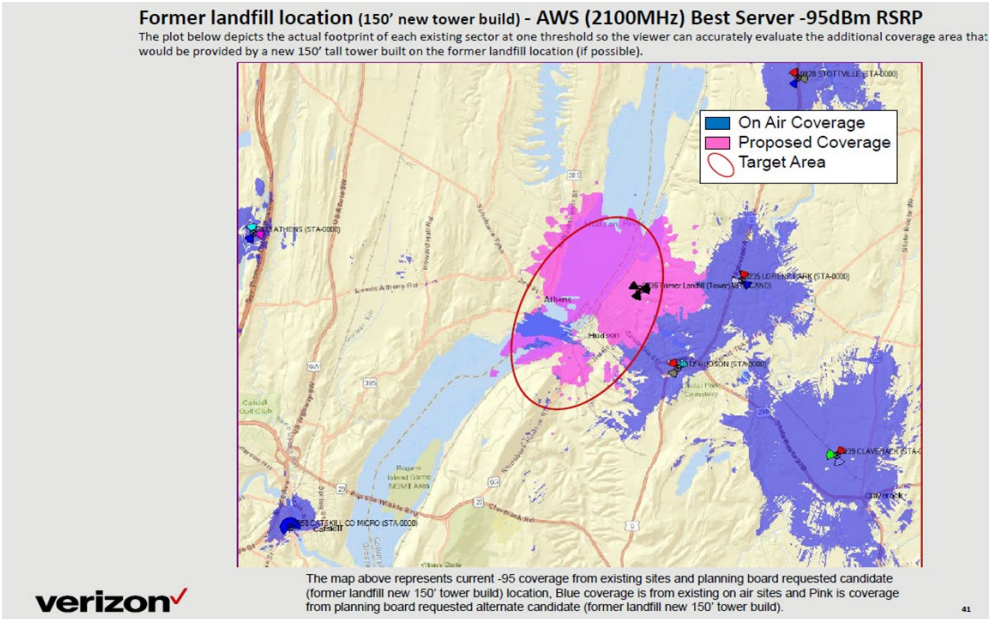
Hillside Southeast of Harney & Sons (tower scenario)



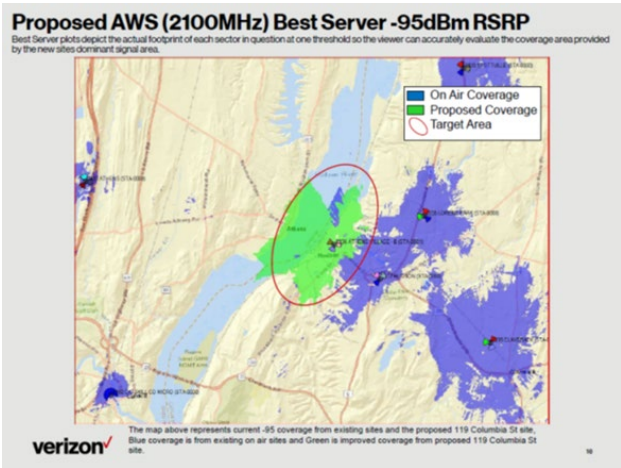
150 ft tower



Landfill (150 ft tower scenario)



150 ft tower





**Summary of Findings and Recommendation**

Please refer to [Exhibit 1](#) of this supplemental Tech Memo for updated Findings and Recommendations based on the supplemental application filing submitted since HDR's March 3, 2021 Tech Memo. Updates to HDR's prior Findings and Recommendations are included in **red text**. With the responses and supplemental technical information provided, the application for the proposed rooftop facility can be considered complete and responsive to technical questions and information needs that were submitted to the applicant during the Planning Board review.

HDR will continue to support the Planning Board and attorney Polidoro with the preparation of Draft SEQRA-related forms (Part 2) and a draft Resolution for this application.

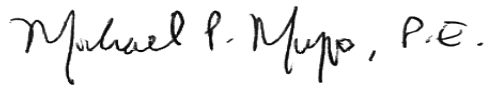
Please feel free to contact me should you have any questions on this supplemental Tech Memo.

Sincerely,

Henningson, Durham & Richardson

Architecture and Engineering, P.C.

in association with HDR Engineering Inc.



Michael P. Musso, P.E.

Senior Project Manager

Attachments

**Verizon – 119 Columbia Street****Summary of Technical Review Findings, Recommendations and Outstanding Information [HDR March 2021] Comments for June 2021 Supplemental Tech Memo and Completeness Review are provided below in red text*****Findings***

- The applicant filings, responses to comments, and supplemental information provided to date appear to be responsive to HDR's comments, and the combined application materials / filings appear to be in accordance with the requirements of the City's Wireless Code (Chapter 284). See *Outstanding Information* below.
- As depicted in the application materials and described in this Tech Memo, a need for Verizon to provide capacity and coverage to its local wireless network has been documented. A telecommunications facility on the rooftop of 119 Columbia Street, with configuration and height as proposed in the application materials, will provide enhanced services to the site area and capacity relief to the existing Verizon network. As described above and in Attachment B of this Tech Memo, the proposed Verizon facility will predominately serve the City of Hudson and areas east of the Hudson River (vs. areas in Greene County, NY). This conclusion is based on an analysis of the applicant's technical information and an assessment of land uses and demographics within the coverage map areas depicted for Verizon's low band and high band frequencies. It is also noted that Verizon is currently filing an application for a proposed cell site in the Town of Athens.
- The use of the subject rooftop (an existing other structure), as proposed, is noted to be the second highest of the five siting criteria of the Wireless Code (Chapter 284-9 A).
  - (1) *On existing towers or other structures on City-owned properties;*
  - (2) ***On existing towers or other structures on other property in the City;***
  - (3) *A new tower on City-owned properties;*
  - (4) *On properties in areas zoned for heavy industrial use;*
  - (5) *On properties in areas zoned for commercial use.*

Information on City-owned properties (highest Code priority) as potential alternates has been submitted and evaluated, including RF analyses and coverage maps developed for two alternates (325 Columbia Street and Dock Street property). HDR agrees with the applicant in that the properties would provide inferior service and leave gaps in Verizon's search area, when compared to the proposed site at 119 Columbia Street. There are no existing telecommunication towers located within Verizon's search area which can be utilized.

Wireless Code Section 284-8.K.1 (application for a new tower), includes the language, *In the case of a new tower, the applicant shall be required to submit a written report demonstrating its meaningful efforts to secure shared use of existing tower(s) or the use of alternative buildings or other structures within the City*, which implies that use of existing towers or buildings are favored over the construction of new tower structures. Section 284-10.A notes, *the City, as opposed to the construction of a new tower, shall prefer locating on existing towers or other structures without increasing the height*.

- HDR understands that other alternatives need to be evaluated based on discussions of the February 9, 2021 Planning Board meeting, and as relayed by the Planning Board Chairperson in an email dated February 20, 2021 (see Outstanding Information below). Additional potential alternates were reviewed for this supplemental Tech Memo, including Harney & Sons (north of proposed site) and the Verizon building on Union Street. In March 2021, the City Planning Board provided HDR with a list of other potential properties to assess in terms of viability to serve as an alternate to the proposed 119 Columbia Street rooftop. HDR conducted site reconnaissance and evaluated the properties. Some of the Planning Board sites were screened out from further consideration based on distance from search ring, logistical issues, lower code priority, and / or other reasons. On April 2, 2021, HDR requested from Verizon the technical analysis of four additional potential alternates. Verizon provided coverage analyses for these sites, which show that these alternates would provide inferior service and leave gaps in Verizon's search area particularly for the 2100 MHz frequency range (high band), when compared to the proposed site at 119 Columbia Street. This is based on the location of the alternate sites and assumed antenna heights, existing infrastructure and topography which can effectively block signal to the target area, and proximity to existing cell sites.

A summary of the alternate site reviews conducted throughout the application review process is included in Appendix B of this supplemental Tech Memo ("alternatives matrix"). The matrix includes a summary table of sites evaluated / criteria assessed, along with photos and coverage maps from the potential alternatives. It should be noted that the alternate site analysis did not consider (a) the availability for co-location or property owners' willingness to accommodate a wireless facility, or (b) logistics associated with building conditions, pitched rooftops, (c) potential set-backs/variance needs.

- In order to evaluate RF emissions from the proposed facility and confirm compliance with the applicable FCC general population MPE criteria, RF levels were modeled for the proposed Verizon antenna installation (Site Safe submittals as described earlier in this Tech Memo). The calculated RF emissions demonstrate that the proposed rooftop facility will operate within acceptable FCC limits across the majority of the rooftop and at adjacent areas in the site vicinity. Compliance with the FCC general population MPE would also be

achieved within the 119 Columbia Street building, based on antenna configurations, antenna patterns, and attenuation of signal by building materials. Although the modeling shows that the majority of the roof areas will be compliant with the general public MPE limit, RF levels in the vicinity of the Verizon antenna sectors ("nearfield" areas) may exceed the FCC general public MPE limit, as is common with many rooftop cell sites. The applicant has proposed RF warning signage and chain barrier systems, in accordance with FCC guidance. With these measures in place, the rooftop facility would meet applicable FCC compliance requirements (see Recommendations related to RF emissions and safety below).

- No FAA lighting will be required for the proposed rooftop facility. Two small light fixtures (four 25-watt LED bulbs) will be mounted on the equipment platform at a height of approximately 9 ft above the roof. The light fixtures operate on a shut-off dial timer (one hour maximum) to accommodate night-time maintenance visits by Verizon technicians that may be needed.

### **Recommendations**

The following recommendations were identified based on HDR's technical review of the application materials. Some of the below recommendations may be considered as conditions of the Site Plan and Special Use Permit, if the application for the rooftop site at 119 Columbia Street is approved by the Planning Board and the facility is constructed. HDR notes that many of the below recommendations would be applicable for other rooftop or 'other structure' cell sites.

1. RF-Transparent Screening Walls are recommended at all three antenna sectors, in addition to the screening currently proposed around the Gamma (western) antenna sector. The stealth screening is recommended in accordance with Wireless Code Section 284-5.E: *Promoting and encouraging, wherever possible, the placement, height and quantity of wireless telecommunications facilities in such a manner, including, but not limited to, **the use of stealth technology, as to minimize adverse aesthetic and visual impacts on the land, property, buildings, and other facilities adjacent to, surrounding, and in generally the same area as the requested location of such wireless telecommunications facilities, which shall mean using the least visually and physically intrusive facility that is not technologically or commercially impracticable under the facts and circumstances**; and Section 284-8.Q: **The wireless telecommunications facility and any and all accessory or associated facilities shall maximize the use of building materials, colors and textures designed to blend with the structure to which it may be affixed and/or to harmonize with the natural surroundings; this shall include the utilization of stealth or concealment technology as may be required by the City.***

Recommendations for screening walls are included below for the Planning Board's consideration. The heights of screening employed should match the heights of the top of

the antennas, and the width / surface area should be the minimum needed to conceal the equipment.

- Alpha sector (northeast corner of building): screening on all 4 sides of the array should be installed, oriented with the existing building lines and to match the nearby existing penthouse;
- Beta sector (southeast corner of building): screening on south, east, and west sides, oriented with the existing building lines and to match the nearby existing penthouse; and
- Gamma sector (western array): screening on all 4 side of the array should be installed, oriented with the existing building lines.

The supplemental applicant submittals received and Planning Board meeting discussions since the March 2021 HDR Tech Memo confirm that stealth screening at all three sectors is now proposed by Verizon. The Alpha and Beta sectors are now being combined atop the existing penthouse on the eastern side of the roof. As noted in recent correspondences, the City Code Enforcement Office requested edits to the Verizon Drawing Set (see 6-4-2021 Drawings for latest version; the proposed rooftop facility is now referred to as “Wireless Telecommunications Facility Structure”) and has determined that a variance / request for waiver is not necessary and that the proposed wireless telecommunications facility will meet the required setbacks.

Exhibit 2 of this supplemental Tech Memo provides photosimulations that have been provided by the applicant for the revised rooftop configuration.

The screening walls should have a red-brick appearance to match the façade of the building and the existing penthouse and rooftop elements, as depicted in the Gamma sector photosimulations of the Visual Resource Evaluation dated December 31, 2020. (See Outstanding Information below as related to Planning Board assessment of stealth screening.) If the Site Plan and Special Use Permit are approved by the Planning Board, it is understood that details of the proposed stealthing will be reviewed during the Building Permit phase of the project. HDR suggests the following action items and reviews prior to the issuance of a Building Permit and prior to commencement of construction:

- Pre-Construction Meeting with Building Department representatives, Verizon representatives, and property owner representatives to discuss construction procedures; stealthing requirements; color-matching with the building’s brick appearance; conformance with the stealth screens depicted in the photosimulations; and all Planning Board conditions.
- The City Building Department should review the final structural analysis (condition of approval) and confirm the design criteria used by Verizon’s engineer.
- Verizon should provide the name, qualifications, and experience of its selected stealth vender. The vender’s experience with stealthing / color-



matching at other rooftop wireless sites should be submitted, along with photo examples. Physical samples of the RF-transparent stealthing materials proposed for the site, along with the dimensional, load, and other physical specifications, should be submitted.

HDR recommends that the maximum heights proposed for all rooftop equipment (i.e., not to exceed 10 ft above rooftop surface or the height of the existing penthouse, as depicted on the applicant's Drawings) and the screening walls be documented and memorialized in the final Planning Board Drawing set. Refer to 6-4-2021 Drawing Set and Exhibit 2 of this supplemental Tech Memo for simulations. Stealth screening is proposed at heights to match the top of all proposed panel antennas; Alpha and Beta sectors are now configured on top of penthouse to address aesthetic comments.

It is understood that final design/configuration, colors, textures, and other aesthetic aspects of all proposed equipment are subject to Planning Board review and approval. Visible portions of the proposed Verizon equipment (including RRH units, cabinet shelter, stealth screening walls) shall be color matched to the existing rooftop / building features.

Per the applicant's 5/7/2021 filing and 6-4-2021 Drawings, notes on stealth screening now proposed and color-matching have been added to the Site Plan. The applicant agrees to adhere to Recommendation #1.

2. FCC Eligible Facilities Request (EFR) – As part of final Site Plan / Special Use Permit approval conditions, the property owner and Verizon should acknowledge that all approved aesthetic conditions (equipment configuration, equipment height, stealth screening, etc.) will be maintained at the site, and that the heights of the proposed equipment and the stealth elements will not be altered from the final approval. The name and qualifications of the vender selected to design and provide the recommended stealth screening should be submitted to the Planning Board.

As noted above, Verizon should provide the name, qualifications, and experience of its selected stealth vender as part of the Building Permit review. The vender's experience with stealthing / color-matching at other rooftop wireless sites should be submitted, along with photo examples. Physical samples of the RF-transparent stealthing materials proposed for the site, along with the dimensional, load, and other physical specifications, should be submitted. This information should be submitted to the Building Department, reviewed, and approved prior to issuance of a Building Permit, and prior to commencement of construction.

Section 284-5.A of the City's Wireless Code notes that any modifications to an existing cell site must first obtain Special Use Permit approval. Thus, if Verizon is approved and the proposed facility is constructed, any proposed changes to operations (e.g., future addition of 5G services) and/or equipment will need to be reviewed and approved by the

Planning Board under a new Special Use Permit application and by the Building Department for a building permit.

The applicant agrees to adhere to this Recommendation, per its 5/7/2021 supplemental filing.

3. Rooftop Management and Future Co-Location - It is recommended that City discussions with the property owner should be made to confirm the property owner's involvement with and understanding of this application. Verizon has drafted a lease for the 119 Columbia Street rooftop; however, if approved, other wireless carriers cannot be installed 'as of right' and significant modifications cannot be made without the property owner first consenting (City review of Site Plan and Special Use Permit applications would of course be required for any future co-location or modification proposed). It is recommended that the City meet with and discuss the proposed facility with the property owner during the Building Permit phase of the project (see Pre-Construction Meeting recommendation above). The property owner's plans to accommodate more than one wireless facility on the rooftop in the future (or not) should be understood. HDR notes that based on the rooftop dimensions and conditions / recommendations that may be applied to the proposed Verizon facility, the subject rooftop site may not be able to safely / aesthetically accommodate another facility.

HDR has contacted a representative of Arbor Management (property owner) to confirm awareness of the Verizon application and to relay Planning Board discussions that have occurred. Further discussions with the property owner before, during, or after the March 9, 2021 Planning Board meeting are recommended to understand the owner's experience with similar projects, to discuss the recommendations of this Tech Memo and all Planning Board conditions (including the management of a rooftop wireless facility), and to evaluate future co-location / modifications at the site. It is noted that the applicant and property owner may need to revise the lease and lease exhibits to account for Planning Board approval conditions.

Per the applicant's 5/7/2021 filing, the applicant agrees to adhere to Recommendation #3. Verizon notes that it has had several discussions with the owner of the property with respect to the various recommendations provided in the Technical Memo and that the property owner has not raised any issues relative thereto.

4. A final structural analysis will need to incorporate all Planning Board conditions including, but not limited to, stealth screening and mounting of equipment on the roof. It is submitted that the final structural analysis can be reviewed by the City as part of the Building Permit phase of the project should the Site Plan and Special Use Permit be approved.

Per the applicant's 5/7/2021 filing, the applicant agrees to adhere to Recommendation #4. A structural Design letter (dated 5/27/2021) has been submitted by the applicant's

engineer (Tectonic, a NYS P.E.) agreeing to provide a full structural analysis as a condition of approval.

5. If Planning Board approval is obtained and the facility is built, a Structural/Safety Compliance Report shall be submitted. The periodic report should include a statement by a NYS P.E. that the structural integrity of the building rooftop, antenna mounts, rooftop equipment platform, and stealth enclosures are in accordance with the approved Site Plan and meet the applicable City and State codes, and that the stealth enclosures / other conditions are maintained in accordance with the Planning Board approvals. Wireless Code sections, including but not limited to Section 248-8.T, should be followed. The scope, design criteria (e.g., wind, ice assumptions), and schedule (e.g., 3-year reporting interval) of the Structural/Safety Compliance Report can be established during the Building Permit phase of the project.
  - a. Prior to construction, the Building Department shall be notified to verify schedule, logistics, equipment needed (e.g., crane), number of workdays, and City requirements (work hours; other local approvals for construction; third-party inspections, if required). Construction may only occur after all necessary approvals from the Planning Board are obtained and after a building permit is issued.
  - b. A set of “As-Built” Drawings shall be submitted for Building Department review after the facility is constructed and before a certificate of compliance is issued. Any deviations from the final Planning Board Drawings or approval conditions shall be noted with the As-Built Drawing submittal. As Built drawings should include the following information along with any additional items required by the Planning Board or Building Department:
    - Documentation/survey of actual equipment location and height, including stealth screening.
    - Actual centerline height of the Verizon antennas.
    - Location of utility connections associated with the new facility.
    - Documentation that antennas and all other equipment is properly grounded and in compliance with all applicable electrical and fire codes.
    - Documentation that all necessary permits for work and third-party inspections (as required by the City) have been obtained and complied with.
  - c. Inspection of the stealth screening should be performed by the City after construction to confirm that it matches the Planning Board conditions and the applicant’s photosimulations. An Inspection and Maintenance Plan, which includes an annual inspection and response plan should the stealth screening materials become damaged or faded by wind / weather, should be provided at the building permit phase of the project for Building Department review.

Per the applicant’s 5/7/2021 filing, the applicant agrees to adhere to Recommendation #5.

6. The 10-23-2020 Drawing set will require revisions per the applicant's January 2021 supplemental submittal and will need to include all Planning Board conditions associated with the Site Plan and Special Use Permit (if the application is approved), including but not limited to the depiction of stealth screening at the three antenna arrays. The 10-23-2020 Drawing RFE-1 will need to be revised to include the measures provided in SiteSafe's December 18, 2020 RF Site Compliance Report. The property lot line dimensions should be confirmed on Drawing C-1.

Refer to revised Drawings dated 6-4-2021 (latest set as of the date of this supplemental Tech Memo). Updates have been made. It is understood that the Drawing Set submitted for the Building Permit will incorporate any final Planning Board conditions and detail that may be needed by the Building Department.

#### 7. RF Emissions and Site Safety -

- a. The rooftop access signage (Verizon contact information and FCC warning/notification), signage at the antenna arrays and equipment platform, and barrier systems near the antenna arrays should be routinely inspected and maintained in accordance with all FCC rules, regulations, and guidance by Verizon and the property owner. The mitigation measures proposed in the SiteSafe RF Site Compliance Report, dated December 18, 2020, should be adhered to by Verizon to ensure that the rooftop operates as an FCC Controlled Exposure environment.
- b. To eliminate the potential for RF exposures at levels above the general population MPE, protocols should be established and maintained for rooftop access for persons not trained in RF emissions, such as maintenance workers that may need to work on the roof in proximity to the antennas. Such work should be coordinated between Verizon and the property owner / building operator.
- c. If Planning Board approval is obtained and the facility is built, an Annual RF Emissions Compliance Report shall be submitted. The annual report should include a statement by a qualified RF Engineer that the operations (power levels, frequencies) are in compliance with FCC regulations; that signage and barriers are maintained; and that the rooftop complies as an FCC Controlled Exposure environment. The Annual RF Emissions Compliance Report should also confirm - with citations - the current and applicable FCC MPE levels (both general population and occupational) and FCC guidelines, and confirm that rooftop access protocols are in place. The full scope of content (e.g., checklist and photos) and schedule of the Annual RF Emissions Compliance Report can be established during the Building Permit phase of the project.

Per the applicant's 5/7/2021 filing, the applicant agrees to adhere to Recommendation #7.

8. If approved, operations should be maintained in accordance with the City's Wireless Code (Chapter 284), all other applicable City codes, and State / Federal requirements. Any proposed modifications, or increases in Verizon's number of antennas, antenna sizes, or number/sizes of other equipment from the "final" configurations as noted on the final Planning Board Drawing Set shall be approved by the City prior to any modifications.

Per the applicant's 5/7/2021 filing, the applicant generally agrees to adhere to Recommendation #8. A note has been added to Drawing C-2. The applicant states that any proposed modifications or increases in the Verizon Wireless number of antennas, antenna sizes, or numbers/sizes of other equipment from the "final" configurations as noted on the final Planning Board Drawing set shall be approved by the City prior to any modifications except that Verizon shall be permitted to perform routine maintenance of its antennas and equipment, including like-for like antenna replacements, provided such maintenance does not result in the increase in the number of antennas or increased visibility of the facility.

**HDR recommends that that a Building Permit be required for all antenna change outs at the site (future), and that all modifications be recorded in the Annual RF Emissions Compliance Report.**

9. It is understood that the Applicant and the Applicant's engineer maintain full responsibility for the accuracy and adequacy of all aspects of the design and structural analyses, and for the construction and maintenance/operation of the Verizon facility.
10. If approved, the Planning Board and the Building Department should review the applicant's insurance and workers' compensation submittals; Contractor licenses as applicable for the construction work; required performance / removal bond (\$25,000; Section 284-21); fees; and escrows to verify they are adequate.
  - a. The applicant shall confirm that the requirements of Sections 284-23 (Liability Insurance) and 284-24 (Indemnification) will be submitted to the City upon approval of the Site Plan and Special Use Permit.
  - b. It is requested that the applicant (a) furnish General Liability certificate without a pollution exclusion, and (b) include the City and its officers, councils, employees, committee members, attorneys, agents, and consultants as additional insureds.

Per the applicant's 5/7/2021 filing, the applicant has noted the following:

- The indemnification provisions of section 284-24 do not apply to this application due to the fact that the property upon which the project is proposed is not city-owned property.
- Verizon agrees to maintain commercial general liability insurance and automobile coverage in the amounts listed in Section 284-23 (A) of the Hudson Code. Additionally, Verizon is willing to provide an evidence only certificate for pollution liability.

**HDR recommends that final indemnification and insurance requirements should be established during the Building Permit phase of the project.**



### ***Outstanding Information***

As of the date of the HDR Tech Memo (3-3-2021), the following information has been identified by HDR to be outstanding. HDR notes that based on the supplemental technical filings dated 3/5, 4/12, 4/13 (Powerpoint presentation), 5/7, 5/27, and 6/4/2021, the applicant has adequately responded to the Outstanding Information as identified in the March 2021 HDR Tech Memo

- Response to / evaluation of possible alternates, as discussed at the February 9, 2021 Planning Board meeting and as were to be submitted to the Planning Board by February 19, 2021. See email correspondence from Planning Board Chairperson dated February 20, 2021 in which two potential alternate rooftop sites in the City were noted, as well as vacant land at the City landfill off of 2<sup>nd</sup> Street.
  - Two potential rooftop sites (Harney Tea and the Verizon building off of Union Street) would also appear to qualify as Priority #2 sites of Wireless Code Section 284-9.A, as the 119 Columbia Street site does; however, the feasibility of these locations to work within Verizon's existing network of sites and the property owner's willingness to accommodate a wireless facility have not been assessed by the applicant. As noted in the above Findings, a new tower structure ranks lower on the Wireless Code's priorities than use of an existing building rooftop. Alternate site coverage maps (700 MHz and 2100 MHz) were provided for review.
  - Other questions were posed in the Chairperson's February 20, 2021 email correspondence that the applicant should clarify and respond to. The 3/5/2021 applicant submittal responded to the other questions in the February 20, 2021 email correspondence.
- Stealth Screening – To supplement the recommendation for stealth screening in this Tech Memo, the applicant should provide to the Planning Board the following supplemental “off-leaf” simulations from the December 31, 2020 Visual Resources Evaluation. The intent is to depict the stealthing around the Alpha and Beta antenna sectors:
  - S-3A
  - S-5B
  - S-6B
  - S-9B
  - S-14 (stealthing at Gamma sector should be shown)
  - S-17
  - S-24

The applicant should also furnish vender information and qualifications of the firm selected to design the stealth screening, along with spec sheets for the stealth screening materials to be utilized. Supplemental photosimulations of the refined site configuration were provided (4/13 presentation and 5/7/2021 submittals). Refer to Exhibit 2 of this supplemental Tech Memo.

- Assessment of service from proposed facility at 119 Columbia Street. Attachment B of this Tech Memo provides an analysis that concludes that the proposed facility will predominately serve the City of Hudson and areas east of the river (vs. areas in Greene

County, NY). The applicant should review HDR's assessment and provide comments / enhancements based on Verizon's area network information (see also Planning Board member comments in the Chairperson's February 20, 2021 email correspondence). The applicant should also confirm Verizon's plans for the Town of Athens, in terms of a recent wireless facility application. Information as to the service area of the proposed facility at 119 Columbia Street was provided by the applicant in its 3/5/2021 supplement. The 5/7/2021 submittal confirmed that there is a pending application in the Town of Athens.

- Documentation (i.e., Case Law, litigation decisions) of the applicability of Verizon's use of coverage maps and capacity data – as submitted with this application – to provide substantive evidence for cell site need. Applicant to provide. Responses (non-technical) were provided in March 2021.
- EFR - Acknowledgement by applicant and property owner that approved configuration and heights of equipment will not be altered in the future, given that the facility abuts the Warren Street Historic District. Response provided in the 5/7/2021 applicant submittal, noting that Verizon (if approved) will not seek to change or alter the height of the proposed antennae and equipment without first receiving approval from the Planning Board. Verizon does not currently have any plans to alter the height of the proposed antennae and equipment. Verizon has reportedly discussed this with the representative of the property owner, who has agreed that no subsequent modification of the antennas or equipment shall be permitted unless and until such modification is approved by the City of Hudson Planning Board. See HDR notes under above Recommendations #1 and #3.

# Appendix A

## Stealth Screening Examples

## Wireless Facilities

4/13/2021 Planning Board Work Session

HDR

# Vendor Examples





# Vender Examples



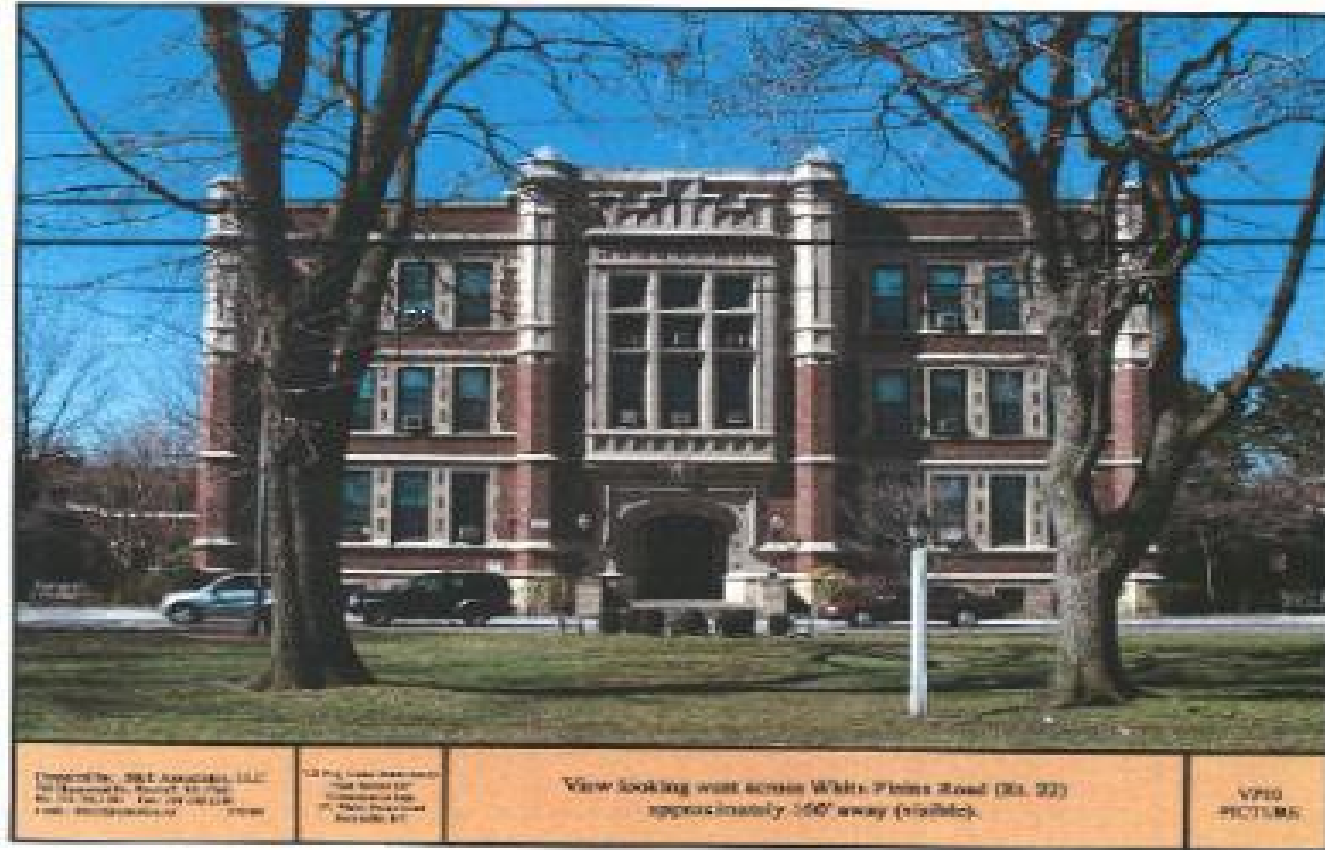
# Vender Examples



# Vender Examples



# HDR Project Examples





# HDR Project Examples



## EXHIBIT 2

### Supplemental Photosimulations (Refined Rooftop Configuration)













**Tectonic**  
PRACTICAL SOLUTIONS. EXCEPTIONAL SERVICE.

Looking northwest from #228 Columbia St.  
Proposed installation will be visible from this location.

Distance from the photographic location to the proposed installation is  $\pm 495$  feet.

**P-9**

9725.42





**Tectonic**  
PRACTICAL SOLUTIONS. EXCEPTIONAL SERVICE.

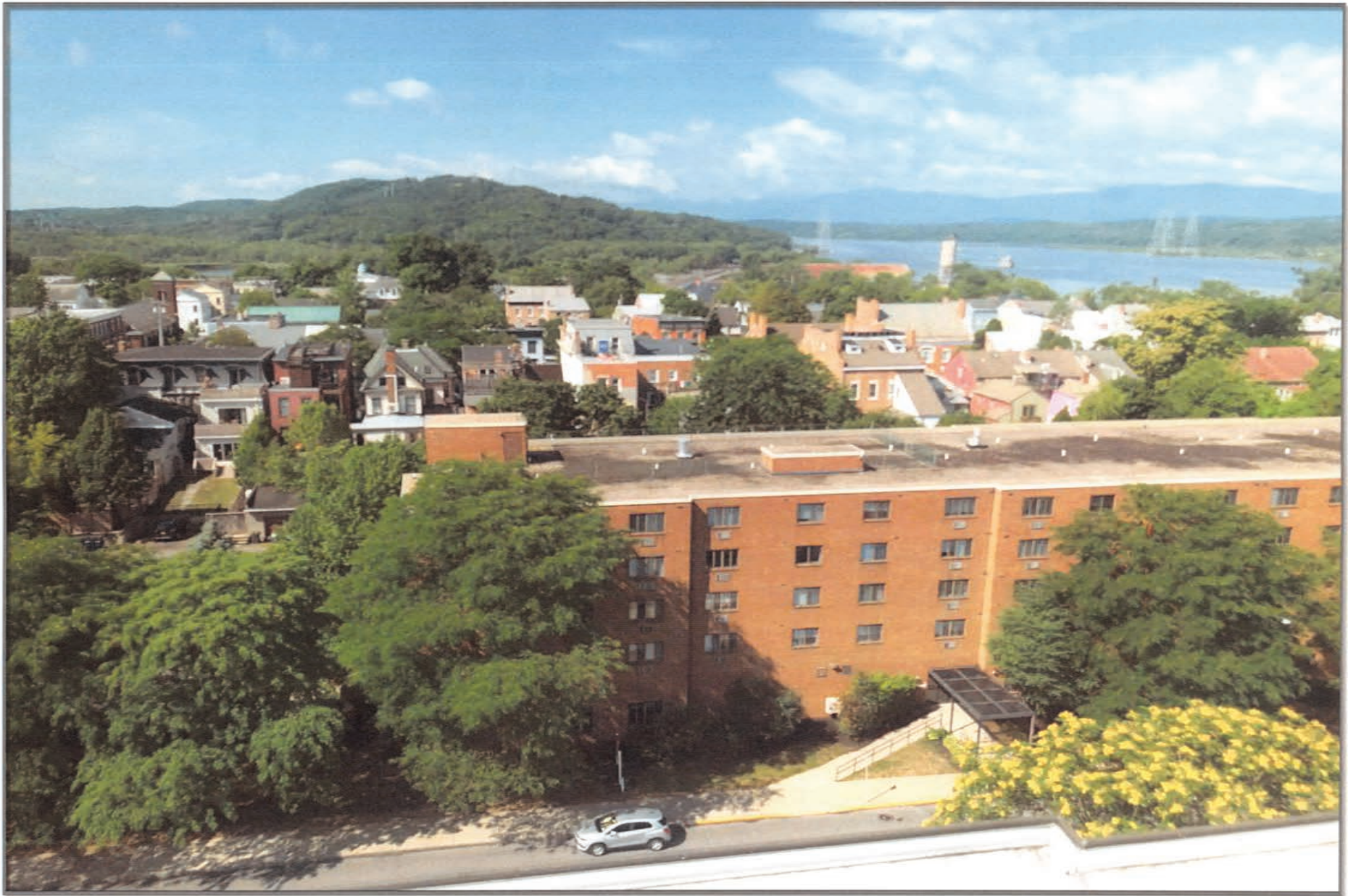
Looking northwest from #228 Columbia St.  
Proposed installation will be visible from this location.

Distance from the photographic location to the proposed installation is  $\pm 495$  feet.

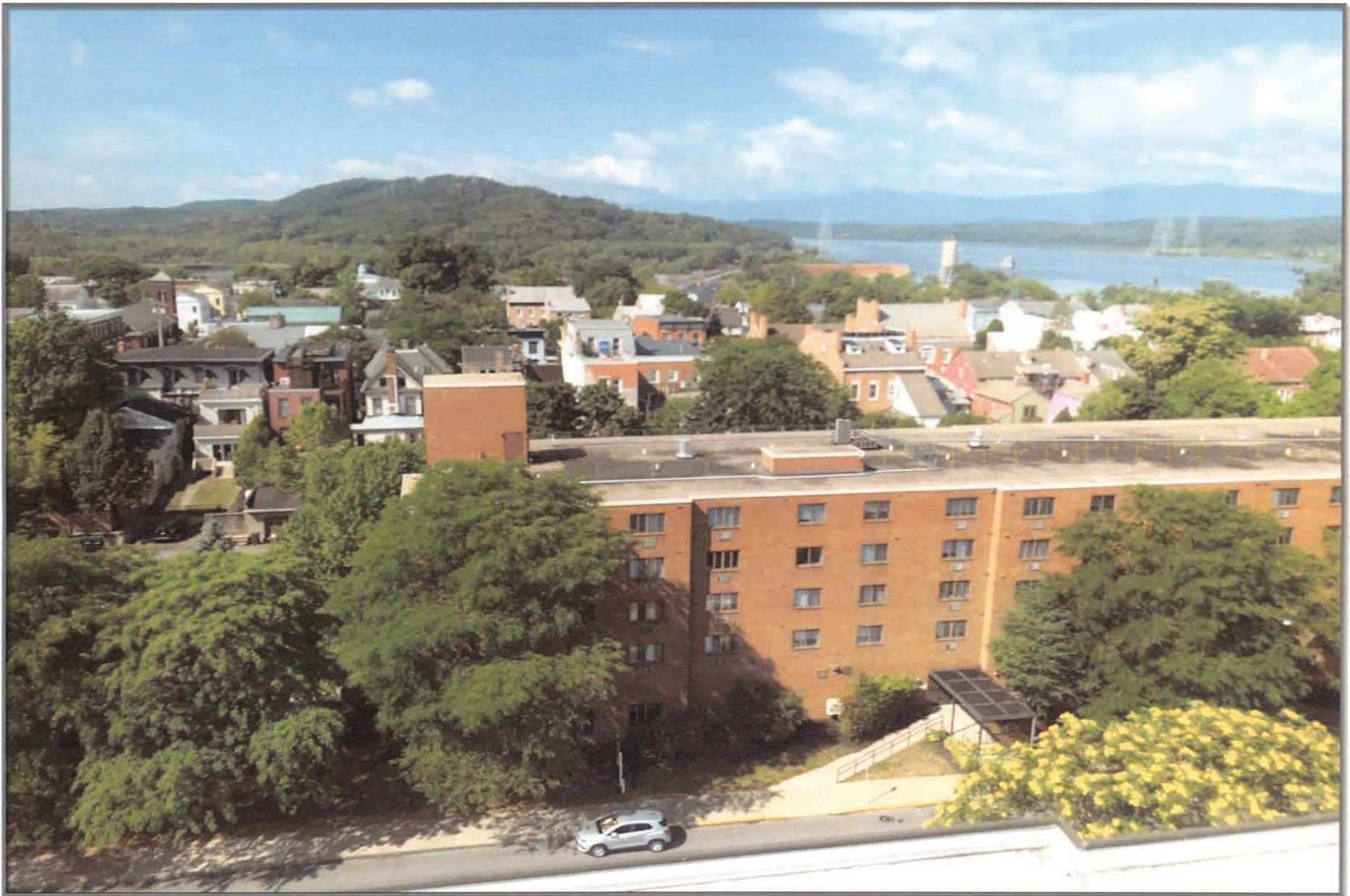
**S-9**

9725.42



























## Appendix B

### Alternate Sites Matrix

#### INTRODUCTION

This Alternate Site workbook was developed in coordination with the City of Hudson Planning Board to examine potential alternates to Verizon's proposed rooftop facility at 119 Columbia Street.

The Summary Table lists the proposed site and several alternates, along with HDR's analysis of the alternates.

The rows coded in blue indicate potential alternatives that were evaluated in detail.



The rows codes in light yellow indicate potential alternatives that were screened out from further analysis (based on distance from search area, viability, and need for a new cell tower structure).



ALTERNATE SITES SUMMARY  
PLANNING BOARD INPUT  
(HDR June 2021)

Verizon Application - 119 Columbia Street

#	Site / Description	Address	Town	Tax Lot and Block	Zoning District	Property Owner Name and Mailing Address	Distance from 119 Columbia St (approx.)	Distance from Cultural Resource	Location Priority (\$284-9.A)	Would it be a tower or rooftop site?	Verizon Evaluated?	Verizon provided coverage map(s)?	Is stealthing an option?	Within Verizon search ring?	Viable Alternative?
0	119 Columbia Street (proposed site)	119 Columbia Street	Hudson	109.35-2-51	Com 1 Zoning Code: GC	North Delaware Realty (Arbor Mgmt) P.O. Box 9496 4 Denny Rd Wilmington DE 19809	0	Approximate 50 ft to Hudson Historic District	2	rooftop	Yes	Yes	Yes - Suppl Sims for Alpha+Beta on penthouse pending	Yes	This is the proposed site. It is a 5-story building.
1	Verizon building behind the Post Office / 400 block of Union Street	420 Union Street	Hudson	109.52-3-53 for 418 - 422 Union St	Com 1 Zoning Code: CC	Verizon New York, Inc. / Property Tax Compl P.O. Box 2749 Addison TX 75001	0.4 miles	Within Hudson Historic District	2	rooftop	YES	YES	Unknown; roof is pitched. Dish antenna was sited on rooftop historically.	No	No. Verizon-owned 2-1/2 story building with "A"-type pitched (not flat) roof. It is within the Historic District. The height/elevation is too low and too far S/SE based on coverage maps.
2	Harney + Sons Tea (Warehouse / N 2nd Street)	128 2nd Street Ext	Hudson	110.5-1-12 and 110.5-1-13 for 128 N Second St	Com 1 Zoning Code: I1	John David Realty LLC 5723 Route 22 Millerton NY 12546	0.5 miles	Approximate 240 ft to North Bay Recreation and Natural Area	2 (if rooftop)	rooftop	YES	YES	Yes	No	No. 1 story building near a Recreation area. Outside of the search ring. The height/elevation is too low and too far N based on coverage maps.
3	Columbia County Department of Health (3-story office building within the C-C Central Commercial zoning district)	325 Columbia Street	Hudson	109.44-3-32	Com 1 Zoning Code: CC	County of Columbia 15 N Sixth St Hudson NY 12534	0.2 miles	Within Hudson Historic District	2 (if rooftop)	rooftop most likely	Yes (Candidate C Site)	Yes (Candidate C Site - see Tab 3.0)	Yes	Yes	The 3-story building (flat roof) is too low (elevation/height) per the coverage maps furnished prior. It is within the Historic District.
4	Columbia County Board of Elections (Building / State @ 4th Street)	401 State Street	Hudson	109.52-2-1	Com 1 Zoning Code: R2	County of Columbia 15 N Sixth St Hudson NY 12534	0.4 miles	Within Hudson Historic District	2	rooftop	Yes	Yes	Yes	No	It is a 3-story building owned by the County. It is within the Historic District. It is within the Verizon search ring. The height/elevation is too low.
5a	Hudson Youth Center (formerly the Hudson Boys and Girls Club (Boys Club / 3rd Street @ Union)	18 S. 3rd Street	Hudson	109.52-1-37	Com 1 Zoning Code: R3	City of Hudson 520 Warren St Hudson NY 12534	0.2 miles	Within Hudson Historic District	1	rooftop	Yes	Yes	Yes	Yes	It is a 2-1/2 story City-owned building with "A"-type pitched (not flat) roof. It is within the Historic District. It is within the Verizon search ring. The height/elevation is too low.
5b	St. Mary's Academy (Corner 3rd and Allen Street)	301 Allen Street	Hudson	109.51-1-39 for 1 Willard Pl (alternate address)	Com 1 Zoning Code: R3	St. Mary's Church 429 East Allen S Hudson NY 12534	0.3 miles	Adjacent to Hudson Historic District	2	rooftop	Yes	Yes	Yes	Yes	It is a 2-story building with a flat roof. It is adjacent to the historic district. It is within the Verizon search ring. The height/elevation is too low.
6	Hillside southeast of Harney + Sons Tea warehouse (see attached diagram in Tab 6, suggested by Council member) Possible location for solar array site	N 2nd Street Ext	Hudson	110.5-1-1.2 (part of the landfill parcel)	Com 1 Zoning Code: I1	City of Hudson IDA 520 Warren St Hudson NY 12534	0.5 miles	Adjacent to North Bay Recreation and Natural Area. Tower likely to present SHPO and/or issues with aesthetic effects on Hudson River (Scenic Hudson, other stakeholders)	3	tower	Yes	Yes	Possibly (tower considerations)	No	It is adjacent to a Recreation Area. Since it is outside the search ring, it may not provide adequate coverage. Since a new tower would be needed, it is a lower priority site per Code. Visual Impact considerations for River and Recreation Area. Additional technical information for a 100 ft and 150 ft tower was provided.
7	Private Residence in Former Church (79 North 2nd Street @ Robinson Street)	79 North 2nd Street	Hudson	109.8-1-38 for 73 - 79 N Second St	Com 1 Zoning Code: R4	The Grange, 7379 LLC P.O. Box 292 Hudson NY 12534	0.1 miles	Within Hudson Historic District	2 (if rooftop)	rooftop	No	No	Yes	Yes	No. RESIDENTIAL PROPERTY. Appears to be 2-1/2 story building with "A"-type pitched (not flat) roof, however tax record indicates 1-story building. It is within the Historic District.
8	Former John L. Edwards Elementary School (State Street @ North 4th Street - currently vacant; proposal as of 23 March 2021 for low-income housing at this site)	360 State Street	Hudson	110.37-1-1	Com 1 Zoning Code: R1	Hudson City School 360 State St Hudson NY 12534	0.4 miles	Adjacent to Hudson Historic District	1 (if rooftop)	could be either	No	No	Yes	No	It appears to be a 2-story building with a flat roof, however the tax record indicates a 4-story building. Since it is outside the search ring, it may not provide adequate coverage. Vacant, but proposal for low-income housing.
9	Landfill site west of Harney + Sons Tea warehouse	N 2nd Street Ext	Hudson	110.5-1-1.2	Com 1 Zoning Code: I1	City of Hudson IDA 520 Warren St Hudson NY 12534	0.5 miles	Within North Bay Recreation and Natural Area. Tower likely to present SHPO and/or issues with aesthetic effects on Hudson River (Scenic Hudson, other stakeholders).	3	tower	Yes	Yes	Possibly (tower considerations)	No	No. Landfill / Env issues. Since it is outside the search ring, it may not provide adequate coverage. Since a new tower would be needed, it is a lower priority site per Code. Visual Impact considerations for River and Recreation Area.
10	Fireman's Home + Museum site on Harry Howard Boulevard							The campus is not listed as a Historic Site (although they celebrated 125 yr history in May 2017) <b>POSSIBLE SHPO ISSUES</b>							NO
10a	Firemen's Association of the State of New York (FASNY) Firemen's Home	125 Harry Howard Avenue	Hudson	110.5-1-1.1	Com 1 Zoning Code: R1	Firemen's Association Of / The State of New York 125 Harry Howard Ave Hudson NY 12534	0.8 miles	Across the street from eligible cultural resource areas (Findlay-Nash House and M.C. Smith Middle School) <b>POSSIBLE SHPO ISSUES</b>	2 (if rooftop)	could be either	No	No	Yes	No	No. Various 1 to 4-story buildings. Since it is well outside of the search ring, will not provide adequate coverage. Potential access issue.

ALTERNATE SITES SUMMARY

PLANNING BOARD INPUT

(HDR June 2021)

Verizon Application - 119 Columbia Street

#	Site / Description	Address	Town	Tax Lot and Block	Zoning District	Property Owner Name and Mailing Address	Distance from 119 Columbia St (approx.)	Distance from Cultural Resource	Location Priority (\$284-9.A)	Would it be a tower or rooftop site?	Verizon Evaluated?	Verizon provided coverage map(s)?	Is stealthing an option?	Within Verizon search ring?	Viable Alternative?
10b	FASNY Museum of Firefighting	117 Harry Howard Avenue	Hudson	110.5-1-1.1	Com 1 Zoning Code: R1	Firemen's Association Of / The State of New York 125 Harry Howard Ave Hudson NY 12534	0.7 miles	Across the street from eligible cultural resource areas (Findlay-Nash House and M.C. Smith Middle School) <b>POSSIBLE SHPO ISSUES</b>	2 (if rooftop)	could be either	No	No	Yes	No	No. Since it is well outside of the search ring, will not provide adequate coverage. Potential access issue.
11	Water tower in the Lorenz Park section of Joslen Boulevard, on the west side of the road just north of the high school (215 Harry Howard Ave, Hudson, NY 12534)	Joslen Blvd (north of Cedar Pkwy, south of Livingston Pkwy, west side of Blvd)	Hudson	100.18-1-32	Com 1 Zoning Code: 08	Greenport Water Dist 600 Town Hall Dr Hudson NY 12534	1.3 miles	Approximate 0.3 miles to listed Turtle House	1 if on water tanl structure (assuming this property is City-owned). 3 if tower	could be on water tank or new tower	No	No	Yes	No	No. Since it is well outside of the search ring, will not provide adequate coverage.
12	Misc tower sites along Dock Street and Mill Street/ Tax Parcel IDs # 109.8-1-4; 109.8-1-5; 109.8-1-8; 109.8-1-6; 109.8-1-17														NO for rooftop options. Tower would be needed.
12a		Dock St	Hudson	109.8-1-4	Com 1 Zoning Code: I1	City of Hudson IDA 520 Warren St Hudson NY 12534	0.2 miles	Approximate 200 to 500 ft to Hudson Historic District. Tower likely to present SHPO and/or issues with aesthetic effects on Hudson River (Scenic Hudson, other stakeholders)	3	tower	Yes (Candidate D Site)	Yes (Candidate D Site see Tab 12a for rooftop evaluation)	Possibly (tower considerations)	Yes	No. The applicant reported the buildings are approx 15 ft tall and the elevation and heights are too low. Various 1 story buildings.
12b		Dock St	Hudson	109.8-1-5	Com 1 Zoning Code: I1	City of Hudson IDA 520 Warren St Hudson NY 12534	0.2 miles	Approximate 200 to 500 ft to Hudson Historic District. Tower likely to present SHPO and/or issues with aesthetic effects on Hudson River (Scenic Hudson, other stakeholders)	3	tower	Yes (Candidate D Site)	Yes (Candidate D Site see Tab 12a for rooftop evaluation)	Possibly (tower considerations)	Yes	No. The applicant reported the buildings are approx 15 ft tall and the elevation and heights are too low. 1 story building.
12c		Dock St	Hudson	109.8-1-8	Com 1 Zoning Code: I1	City of Hudson IDA 520 Warren St Hudson NY 12534	0.2 miles	Approximate 200 to 500 ft to Hudson Historic District. Tower likely to present SHPO and/or issues with aesthetic effects on Hudson River (Scenic Hudson, other stakeholders)	3	tower	Yes (Candidate D Site)	Yes (Candidate D Site see Tab 12a for rooftop evaluation)	Possibly (tower considerations)	Yes	No. The applicant reported the buildings are approx 15 ft tall and the elevation and heights are too low. 1 story building.
12d		Mill St	Hudson	109.8-1-6	Com 1 Zoning Code: I1	City of Hudson IDA 520 Warren St Hudson NY 12534	0.2 miles	Approximate 200 to 500 ft to Hudson Historic District. Tower likely to present SHPO and/or issues with aesthetic effects on Hudson River (Scenic Hudson, other stakeholders)	3	tower	Yes (Candidate D Site)	Yes (Candidate D Site see Tab 12a for rooftop evaluation)	Possibly (tower considerations)	Yes	No. The applicant reported the buildings are approx 15 ft tall and the elevation and heights are too low. 1 story building.
12e		85 Mill St	Hudson	109.8-1-17	Com 1 Zoning Code: I1	City of Hudson IDA 520 Warren St Hudson NY 12534	0.2 miles	Approximate 200 to 500 ft to Hudson Historic District. Tower likely to present SHPO and/or issues with aesthetic effects on Hudson River (Scenic Hudson, other stakeholders)	3	tower	Yes (Candidate D Site)	Yes (Candidate D Site see Tab 12a for rooftop evaluation)	Possibly (tower considerations)	Yes	Tower needed.
13	Middle Ground Flats (sandbar + landfill island in the Hudson River, between Hudson and Athens)		Athens				0.4 miles	Adjacent to Lighttower Fiber Networks - Submarine Fiber Optic Cable Installation. Approximate 0.2 miles to Hudson Historic District. Approximate 0.5 miles to North Bay Recreation and Natural Area	not applicable to 1 through 5	tower	No	No	Possibly (tower considerations)	No	No. NYSDEC Unique Area; critical habitat; floodplain, inaccessible in winter. Feasibility of construction and potential access issue.
14	Mount Merino Manor	4317 State Route 23	Greenport	119.1-49.121	Res 1 Zoning Code: 01	Rita Birmingham 4317 Route 23 Hudson NY 12534	2.6 miles	Approximate 0.6 miles to Olana State Historic Site	NA	unknown	No	No	Yes	No	No. The building is 2-1/2 story, is approximately 2.8 miles to the south, and is well outside of the search ring.
15	DPW property on Rossman Avenue (formerly Mount Ray Reservoir)	Top of Rossman Avenue	Hudson	110.17-1-30	Com 1 Zoning Code: R1	City of Hudson 520 Warren St Hudson NY 12534	1.2 miles	Approximate 400 ft to Rossman-Prospect Avenue Historic District	1 3 (tower)	on water tank or roof or new tower	No	No	No	No	No. This location is 1.2 miles from the proposed site. It is south of the Prospect St Hospital cell site and likely would not provide coverage in the target area.

**Notes:**  
Distances are approximate.

284-9.A: priorities are in order with "1" being highest priority:  
1-on existing towers or other structures on City-owned properties  
2-on existing towers or other structures on other property in the City  
3-a new tower on City-owned properties  
4-on properties in areas zoned for heavy industrial use  
5-on properties in areas zoned for commercial use

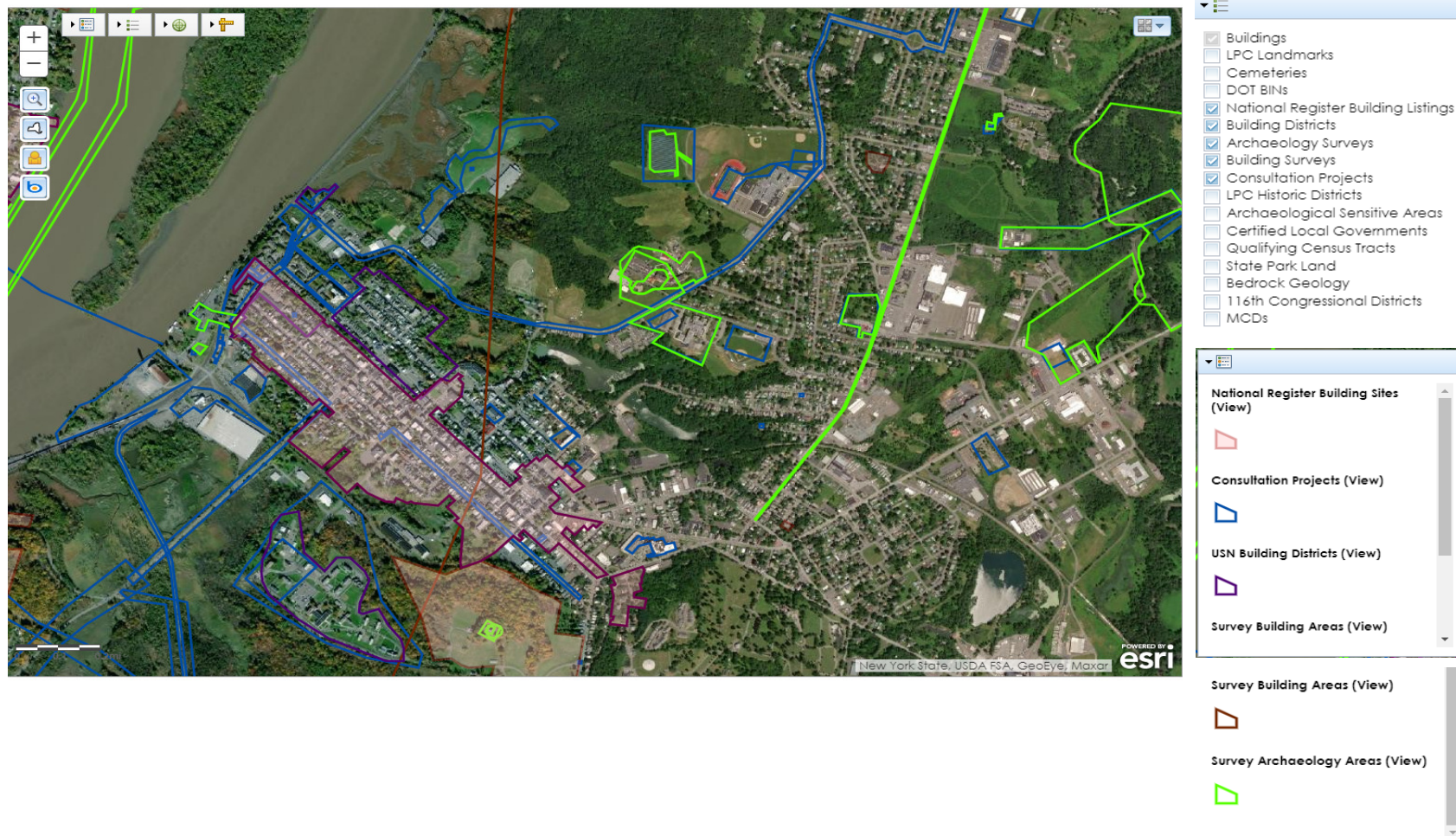
Alternative assessed in further detail

Alternative eliminated from further consideration

Tax property information provided by Columbia County <https://columbia.sdnys.com/>  
Cultural Resource information provided by NY CRIS <https://cris.parks.ny.gov/Default.aspx>  
Verizon's Search Ring was provided as Attachment 1 - Topographical Search Ring in Verizon's December 8, 2020 Site Selection Analysis (Yound/Sommer LLC submittal January 6, 2021, Tab H)

## HISTORIC SITES -- NY Cultural Resource Information System

<https://cris.parks.ny.gov/Default.aspx>





## Location # 0 (Proposed Site)

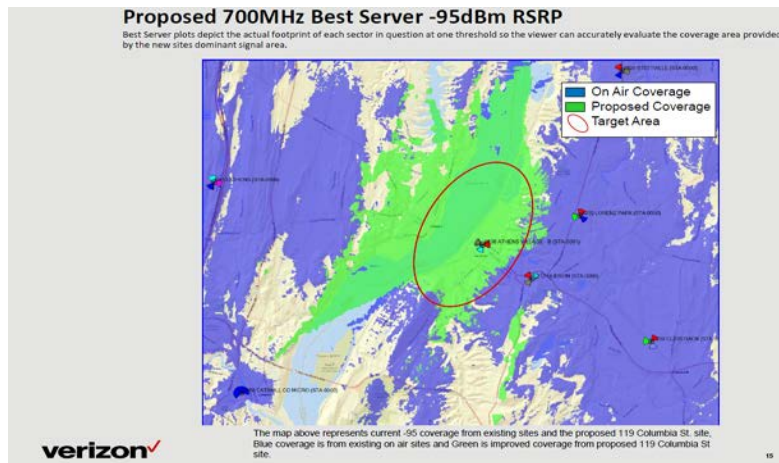
119 Columbia Street

## Images

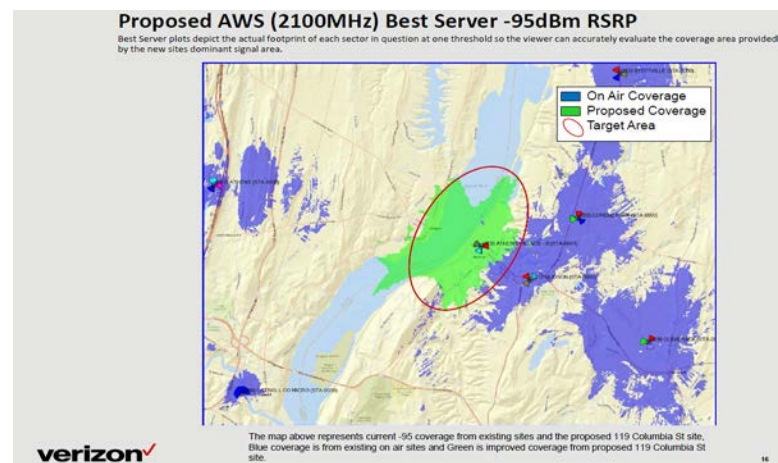


## Coverage Maps

700 MHz



2,100 MHz



## Location # 1

Verizon building behind the Post Office / 420 Union Street, Hudson, NY 12534

## Images

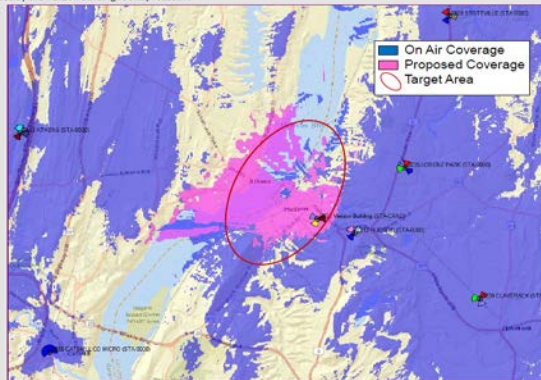


## Coverage Maps

700 MHz

### Verizon Building (Rooftop) - 700MHz Best Server -95dBm RSRP

The plot below depicts the actual footprint of each existing sector at one threshold so the viewer can accurately evaluate the additional coverage area that would be provided by the Verizon Building rooftop location.



verizon

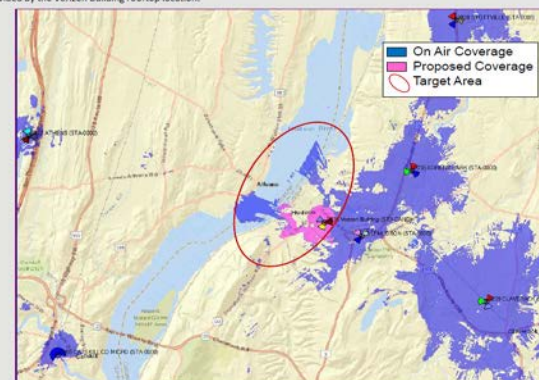
The map above represents current -95 coverage from existing sites and planning board requested alternate candidate (Verizon Building rooftop) location. Blue coverage is from existing on air sites and Pink is coverage from planning board requested alternate candidate (Verizon Building rooftop).

34

2,100 MHz

### Verizon Building (rooftop) - AWS (2100MHz) Best Server -95dBm RSRP

The plot below depicts the actual footprint of each existing sector at one threshold so the viewer can accurately evaluate the additional coverage area that would be provided by the Verizon Building rooftop location.



verizon

The map above represents current -95 coverage from existing sites and planning board requested alternate candidate (Verizon Building rooftop) location. Blue coverage is from existing on air sites and Pink is coverage from planning board requested alternate candidate (Verizon Building rooftop).

35



## Location # 2

Harney + Sons Tea / 128 N 2nd Street Ext, Hudson, NY 12534

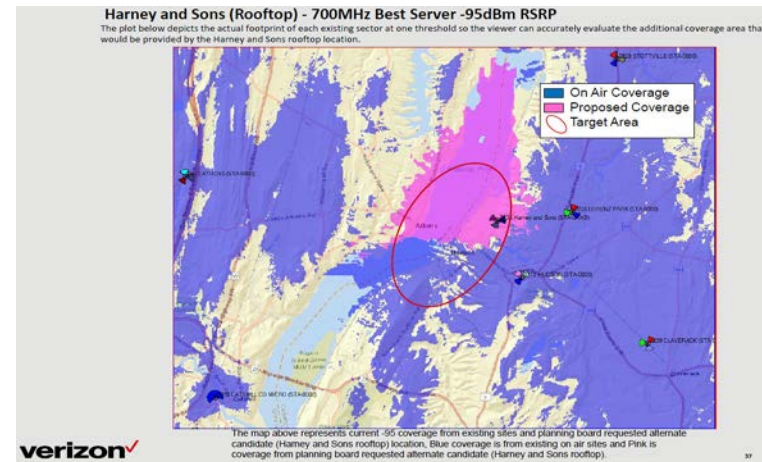
(warehouse / N 2nd Street)

## Images

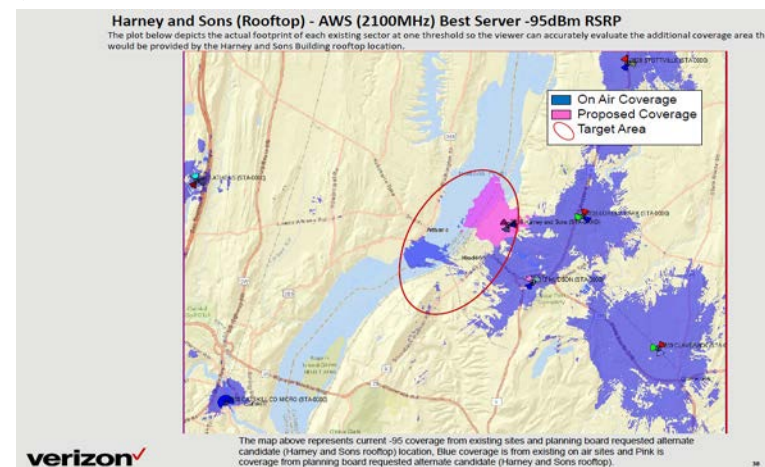


## Coverage Maps

700 MHz



2,100 MHz





### Location # 3

Columbia County Department of Health / 325 Columbia Street, Hudson, NY 12534

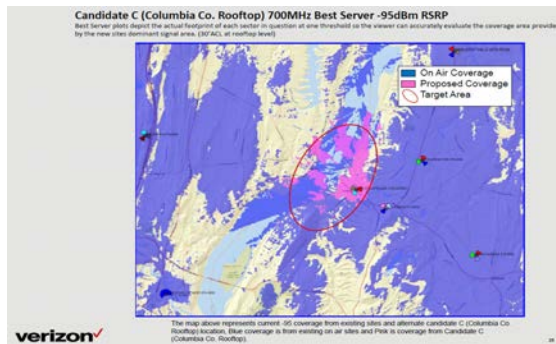
(3-story office building within the C-C Central Commercial zoning district)

### Images

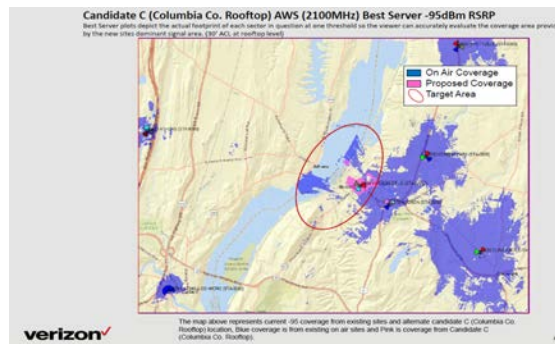


### Coverage Maps

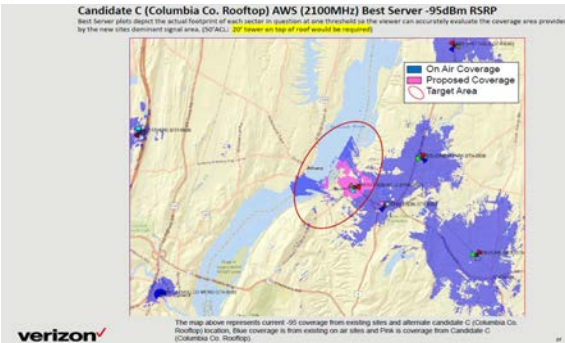
700 MHz



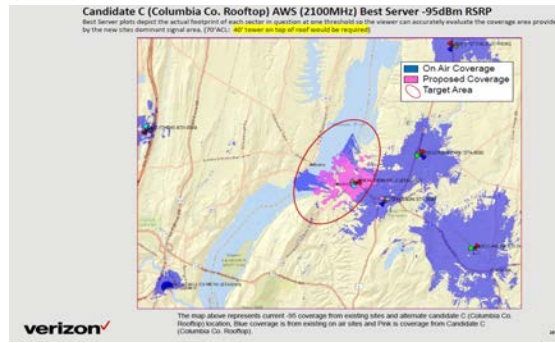
2,100 MHz



2,100 MHz, with 20 ft extension on roof



2,100 MHz, with 40 ft extension on roof



#### Location # 4

Columbia County Board of Elections / 401 State Street, Hudson, NY 12534

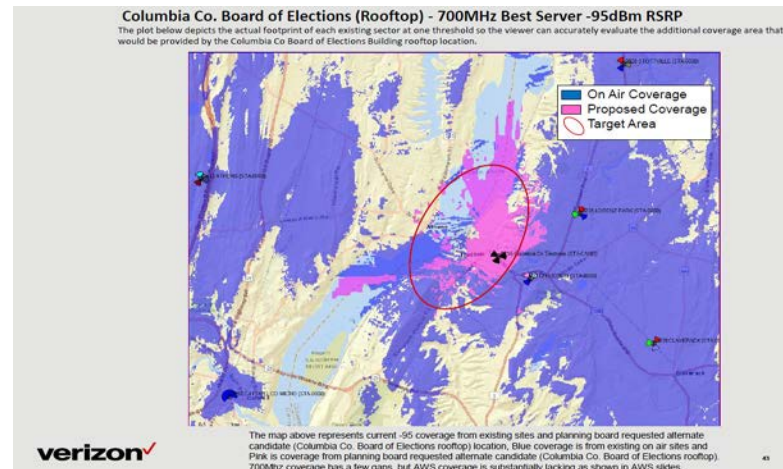
(Building / State @ 4th Street)

#### Images

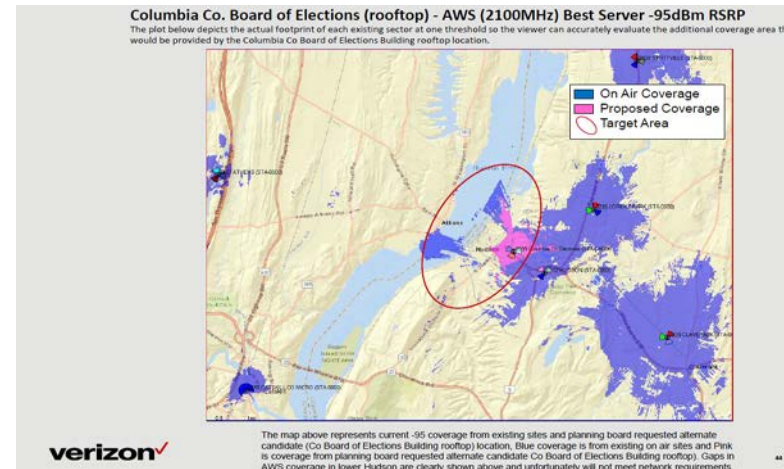


#### Coverage Maps

700 MHz



2,100 MHz



## Location # 5a

Hudson Youth Center / 18 S. 3rd Street, Hudson, NY 12534

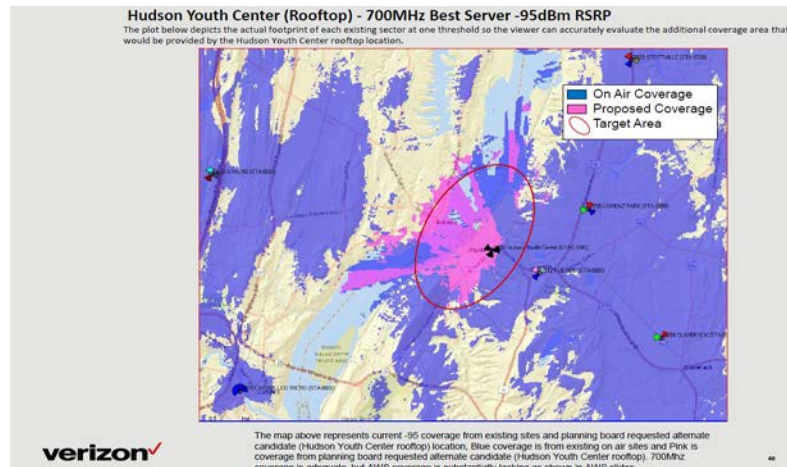
(formerly the Hudson Boys and Girls Club (Boys Club / 3rd Street @ Union)

## Images

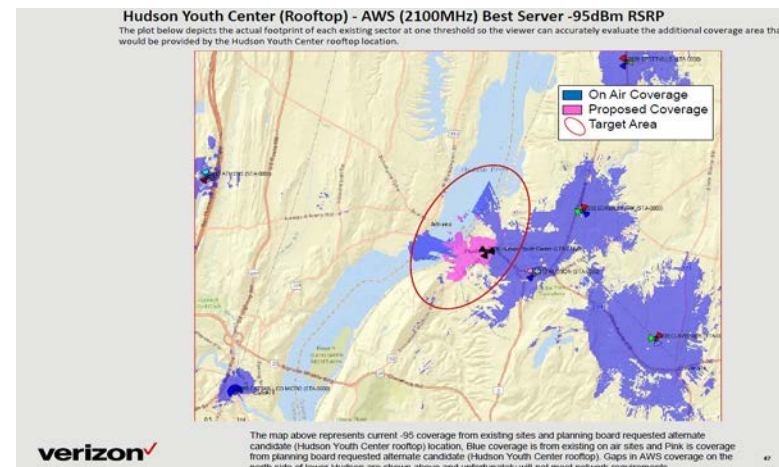


## Coverage Maps

700 MHz



2,100 MHz





## Location # 5b

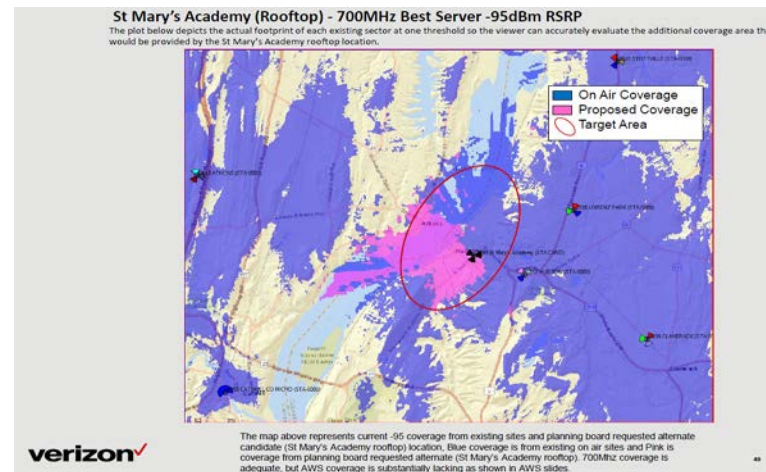
St. Mary's Academy / 301 Allen Street, Hudson, NY 12534  
(corner 3rd and Allen Street)

## Images

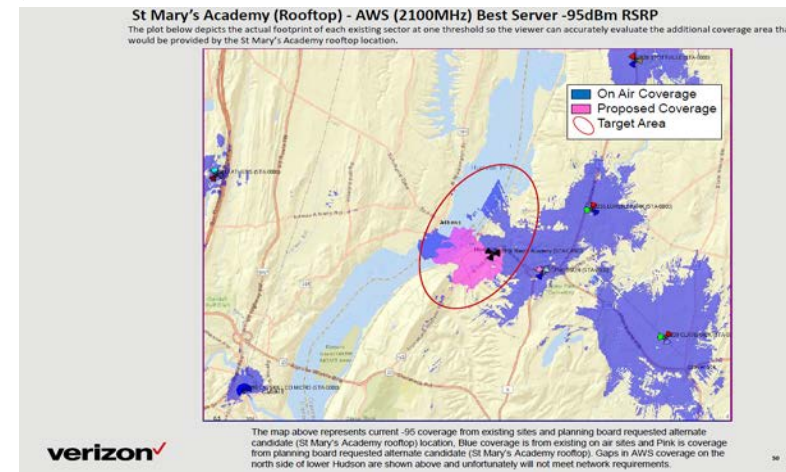


## Coverage Maps

700 MHz



2,100 MHz



## Location # 6

Hillside southeast of Harney + Sons Tea warehouse

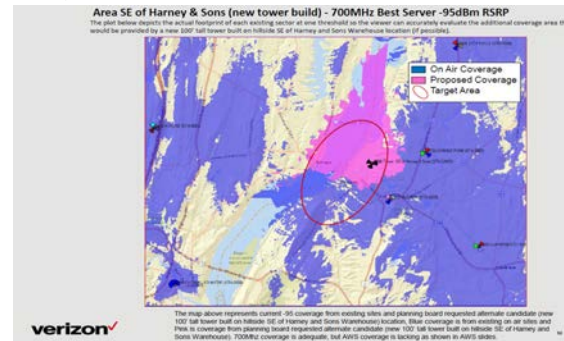
(see attached diagram)

## Images

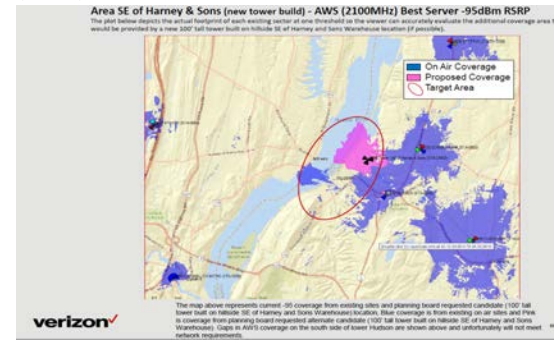


## Coverage Maps

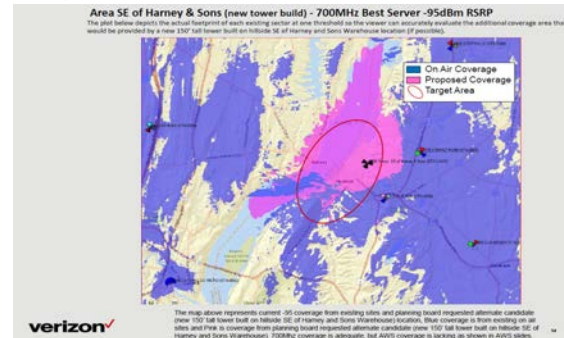
700 MHz, 100 ft tower



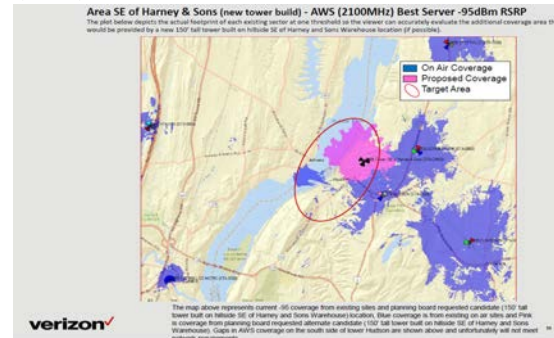
2,100 MHz, 100 ft tower



700 MHz, 150 ft tower



2,100 MHz, 150 ft tower





**Location # 7**

Former Church / 79 North 2nd Street, Hudson, NY 12534

(79 North 2nd Street @ Robinson Street)

**Images**



## Location # 8

John L. Edwards Elementary School / 360 State Street, Hudson, NY 12534

(State Street @ North 4th Street - Currently vacant, though there is a proposal as of 23 March 2021 for low-income housing)

## Images



## Location # 9

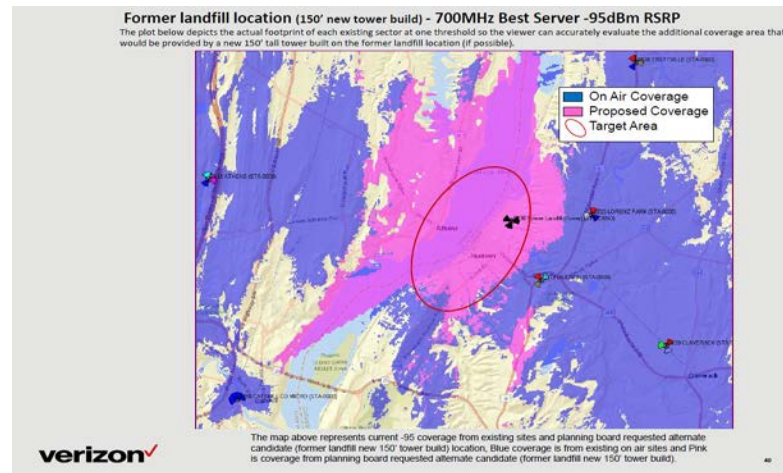
Landfill site west of Harney + Sons Tea warehouse / 128 N 2nd Street Ext, Hudson, NY 12534

## Images

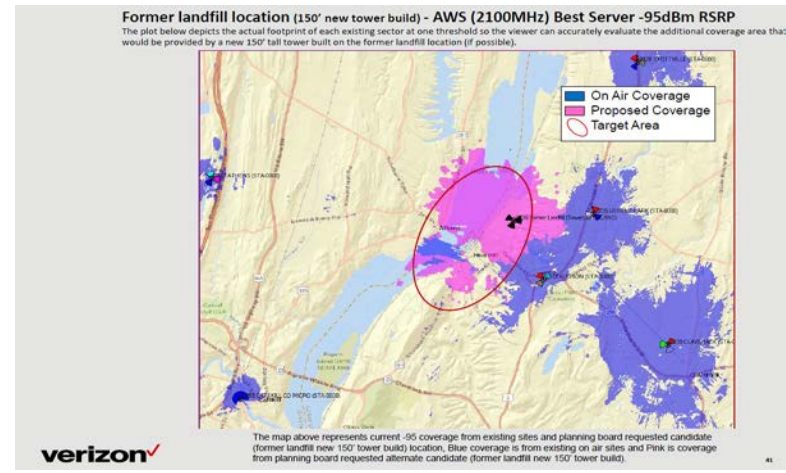


## Coverage Maps

700 MHz



2,100 MHz





**Location # 10a**

Firemen's Association of the State of New York (FASNY) Firemen's Home / 125 Harry Howard Avenue

**Images**

**Location # 10b**

FASNY Museum of Firefighting / 117 Harry Howard Avenue

**Images**

**Location # 11**

Water tower in the Lorenz Park section of Joslen Boulevard

[On the west side of the road just north of the high school (215 Harry Howard Ave, Hudson, NY 12534) and the cul de sac]

**Images**



## Location # 12a

Misc tower sites along Dock Street / Tax Parcel IDs # 109.8-1-4

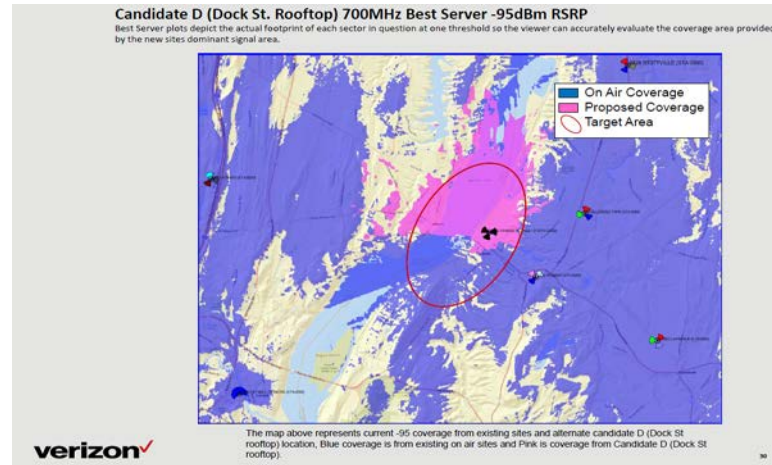
## Images

See orange outline below for parcel.

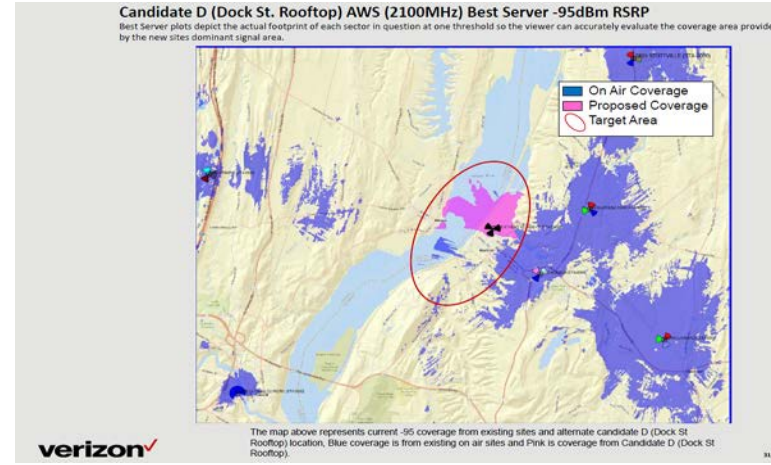


## Coverage Maps

700 MHz



2,100 MHz



**Location # 12b**

Misc tower sites along Dock Street / Tax Parcel IDs # 109.8-1-5

**Images**

See orange outline below for parcel.

**Coverage Maps**

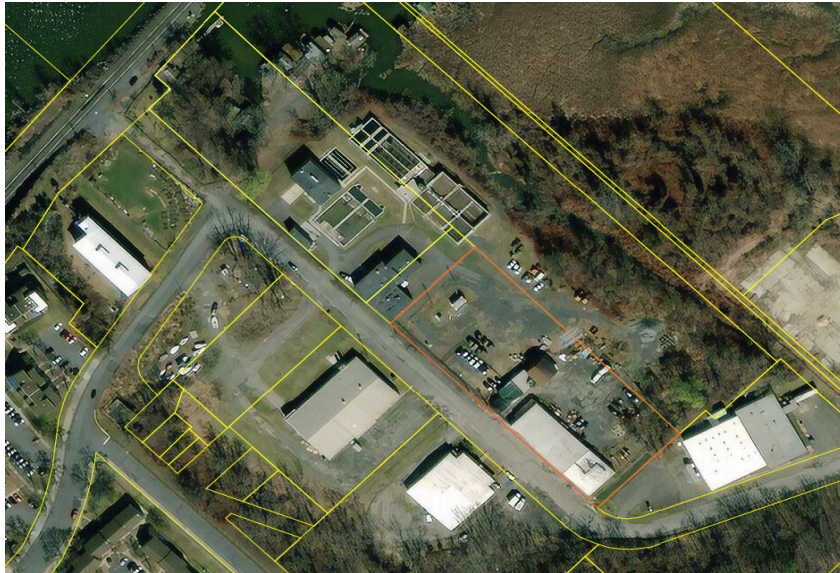
See Location #12a

**Location # 12c**

Misc tower sites along Dock Street / Tax Parcel IDs # 109.8-1-8

**Images**

See orange outline below for parcel.

**Coverage Maps**

See Location #12a



## Location # 12d

Misc tower sites along Dock Street / Tax Parcel IDs # 109.8-1-6

## Images

See orange outline below for parcel.



## Coverage Maps

See Location #12a

**Location # 12e**

Misc tower sites along Dock Street / Tax Parcel IDs # 109.8-1-17

**Images**

See orange outline below for parcel.

**Coverage Maps**

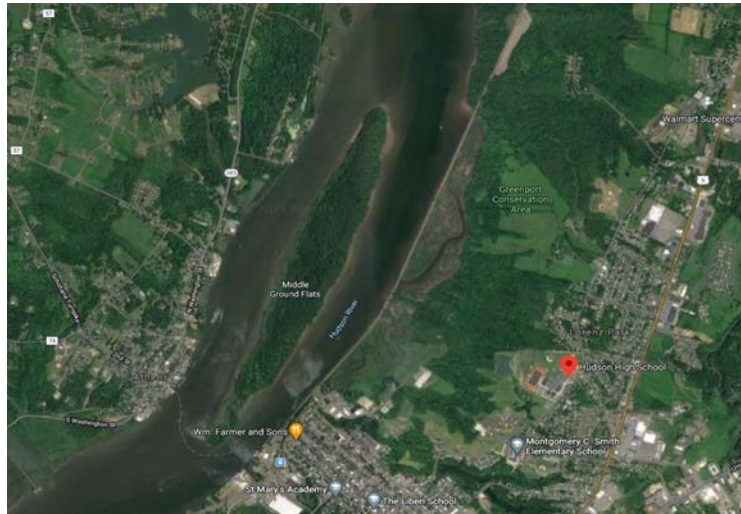
See Location #12a

## Location # 13

### Middle Ground Flats

(sandbar + landfill island in the Hudson River, between Hudson and Athens)

## Images



## Additional Information

From NYS Office of Parks, Recreation and Historic Preservation Regulations, 9 NYCRR Title 9, Subtitle I

<https://parks.ny.gov/documents/inside-our-agency/Rulemaking/OPRHPRegulations9NYCRRSubtitleI.pdf>

Owned by the State of New York. It is listed as "Middle Ground Flats Unique Area in Greene County" (page 58, Other State Land by geographical area, Capital District)

From Significant Habitats and Habitat Complexes of the New York Bight Watershed: Upper Hudson River Estuary (fws.gov)

[https://nctc.fws.gov/pubs5/web\\_link/text/upp\\_hud.htm](https://nctc.fws.gov/pubs5/web_link/text/upp_hud.htm)

**Vosburgh Swamp-Middle Ground Flats** is a freshwater wetland complex extending for 6.4 kilometers (4 miles) along the western shore of the Hudson, upstream from the village of Athens at river kilometer 192 (river mile 119). This 486-hectare (1,200-acre) complex includes mudflats, shallows, freshwater tidal marsh, freshwater marsh, palustrine hardwood swamp, dredged material bank islands habitat, and freshwater creek (i.e., a 0.8-kilometer (0.5-mile) section of Murderers Creek to the first barrier, the Sleepy Hollow Lake Dam.

What is unusual is that Middle Ground Flats contains one of the only known bank swallow (*Riparia riparia*) breeding colonies in the area. Several rare plants occur here, including exemplary occurrences of heart-leaf plantain and southern estuarine beggar-ticks, as well as kidneyleaf mud-plantain and smooth bur-marigold.

From Athens Comprehensive Plan, dated Sept 2007

<https://athensvillageny.com/wp-content/uploads/2020/02/2007-Athens-Comp-Plan-Vol-2.pdf>

The Middle Ground Flats is a large wooded island located on the eastern edge of the town in the Hudson River, mid-way between the village and City of Hudson. A number of squatters' cabins exist on the property. The island is a nest location for breeding Bald Eagles. The north and south portions of the island also have sandy beaches that are popular destinations with boaters. A management and use plan for this area will likely be developed in the future once the land is transferred to DEC or OPRHP for management. Both the Town and Village of Athens, and the Hudson River Alliance, will be invited to participate in the development of the management plan for the island.

Considering the restoration of the rivers health and ecosystem, further riverfront development is predictable. In addition, Middle Ground Flats, approximately two miles long and 1,200 feet wide, provides an excellent opportunity for recreational use and is included in the Village's Coastal Area. The floating docks at Riverfront Park create a maritime entrance to the Village. The Village of Athens LWRP recommended that to preserve the Middle Ground Flats area, a management plan should be created. The New York State Open Space Conservation Plan identifies Priority Conservation Projects for the Hudson River Estuary/Greenway Trail Corridor.14 The Plan recommends the transfer of Middle Ground Flats, along with other state lands with river access and natural resource values, to the NYS Department of Environmental Conservation (DEC), The NYS Office of Parks, Recreation and Historic Preservation (OPRHP), or local entities for management agencies. Middle Ground Flats would make a nice addition to the Hudson River Islands State Park, bringing potential increased tourism to the Athens' waterfront.

In Athens, the designated floodplains are concentrated along the Potic Creek and the Hudson River. Along the Hudson, the floodplain includes all of the shoreline, Middle Ground Flats, and up Murderers Creek to the dam. A narrow floodplain exists along the length of Potic Creek and then widens at the border between Athens and Catskill.

New York has designated several critical habitats within the Town of Athens. These include Middle Ground Flats and the tidal flats and swamps along the Hudson River. Vosburgh Swamp and Middle Ground Flats have been designated by New York State as a Critical Habitat and it extends for approximately four miles along the western shore of the Hudson River, upstream from the Village of Athens, in the Towns of Coxsackie and Athens, Greene County. See page 135 of the report on Fish and Wildlife Values.



**Location # 14**

Mount Merino Manor / 4317 State Route 23

**Images**

**Location # 15**

DPW property

(Top of Rossman Avenue, formerly Mount Ray Reservoir)

**Images**