

March 27, 2023

To: Network Siting Policy Board

Cc: File

# Re: February 6<sup>th</sup> Meeting Follow Up

Dear Board Members,

Enclosed in this letter, you will find a follow-up to our meeting back in February 6<sup>th</sup> to summarize and expand upon our prior discussions relative to the currently ongoing Hub Express program activities.

For public readers, the Hub Express System is a multi-conduit underground utility system owned by TOWARDEX Technologies International, Inc., a corporation and a competitive local exchange carrier duly licensed in the Commonwealth of Massachusetts (the "Corporation") who is engaged in the business of providing high speed data communications, internet connectivity and telecommunications infrastructure services. The Hub Express System is managed by the Corporation's President and CEO through its HEX Program Office.

In accordance with the Project Charter of the Hub Express System (PCHEX), an advisory board known as the Network Siting Policy Board (NSPB) was formed under the powers granted by the Corporation's Board of Directors. The purpose of NSPB is to develop and manage capital projects for the Hub Express System, provide oversight and advise the Corporation's President and CEO in administrative matters of the Hub Express System, and to assist in ensuring that Hub Express System assets and its facilities are managed in a competitively neutral and nondiscriminatory basis in accordance with the Telecommunications Act of 1996 and federal law as provided under 47 U.S. Code § 224.

Pursuant to Section 4 of PCHEX, a subsidiary entity of the Corporation known as the Joint Trench Administrator shall be formed and be responsible for managing and lawfully regulating all aspects of operations over the Hub Express System. On May 18, 2021, TWDX Infrastructure, LLC was incorporated as a wholly-owned subsidiary of the Corporation, and has been duly designated and granted powers as the Joint Trench Administrator of the Hub Express System by the Corporation's Board of Directors.

During our last meeting on February 6, the NSPB had raised a few topics for the Joint Trench Administrator to expand and follow up on, and provide research for further discussions. In this memorandum, we will address all of these discussions in the following listed order:

- <u>Page 2</u>: Inner Belt Gateway Improvement Project
- <u>Page 5</u>: Electric Transmission System Interconnection onto the Hub Express System
- Page 8: Response to inquiry re: determining licensing authority for ducts owned by the Hub Express System

Please feel free to contact my office at <u>plantmaster@towardex.com</u> with any questions you may have.

Sincerely,

Gavin R. Schoch General Manager



# **Inner Belt Gateway Improvement Project**

On December 5, 2022, the NSPB issued a Directive to the Joint Trench Administrator to develop a capital project delivery plan to upgrade the existing HEX Conduit System trench located along 50—59 Inner Belt Road in Somerville, Massachusetts. The proposed work area is located within HEX Contract Section (HEXC#) C19BA ("Inner Belt Row System") of the Hub Express System.

#### Background

The trench section between 50 and 63 Inner Belt Road in the C19BA transmission line was constructed in 2021. The trench terminates into a 3'x3' pull box manhole (MH# C19BA-200) installed in front of 59 Inner Belt Road. When this trench was originally planned, TWDX IP (a business unit of TOWARDEX which sells wholesale internet connectivity to non-residential customers) was the sole owner and member of the construction.

TWDX IP only required 1 - 1.25" conduit to install its fiber optic line into the former INAP data center at 50 Inner Belt Road. However, pursuant to PCHEX § 2, TWDX IP's proposed construction was subject to **Joint Trench Partaking Procedures** as adopted by NSPB for all new constructions of transmission lines onto the Hub Express System. In response, TWDX IP transferred its construction plans to the HEX Program Office and the proposed construction was then subsequently redeveloped into a joint-use, common trench duct package of 8 - 4" conduits and 4 - 1.25" shadow conduits. Two of the 1.25" shadow conduits are provided to TWDX IP, and the remaining 1.25" shadow conduits are provided for City of Somerville's use pursuant to the Easement Agreement governing Hub Express Program activities in Inner Belt.

Because TWDX IP was the sole sponsor of the trench and it only needed to place its own 288F fiber optic cable into the INAP data center, a tail lateral of just 1 - 4" conduit was installed from manhole C19BA-200. This 1 - 4" lateral was owned by TWDX IP, and as a participating member of the Zayo-operated Joint Trench Partners ("JTP") system in the area, TWDX IP had requested permission from Zayo to have this conduit connect into Zayo-owned manhole SOM7.5A, instead of connecting directly into INAP's manhole located inside 50 Inner Belt Road's private property. Zayo had subsequently approved the construction and permission for TWDX IP to perform a "manhole breakout" from Zayo manhole 7.5A and into HEX manhole C19BA-200. The placement of this tail conduit into Zayo's system instead of INAP's private property manhole, effectively meant that only TWDX IP and members of the JTP system could install their fiber optic lines into 50 Inner Belt Road, making it difficult for new providers or non-JTP members to use this conduit. Without making any judgment as to credibility or questioning any party's motives at the time of the construction, this arrangement did not make things any easier for future providers to install their fibers into the INAP data center.

# Third Avenue Interconnection

In 2022, on behalf of TOWARDEX, the Joint Trench Administrator delivered a \$1.17MM capital delivery project for HEXC# C15A2, known as the Third Avenue Interconnection. The purpose of Third Avenue Interconnection was to construct a 99-innerduct multi-cable interconnector to directly connect fiber optic conduits in Inner Belt Road over to MBTA property at the end of Third Avenue. This was a critical dependency project that would enable further infrastructure developments to occur, in order to better connect Boston's key internet hub facilities to the Lynn network using MBTA's right-of-way.

During the development of the Third Avenue Interconnection, CoreSite, an American Tower-owned data center provider owning property at 70 Inner Belt Road, had requested installation of a new, uniquely diverse utility entrance into their data center from Third Avenue. This new utility entrance into CoreSite from Third Avenue Interconnection will be owned by the Hub Express System and thus, will be made available on an "open access" basis, where all telecommunications and internet service providers could obtain a license to install their fiber optic lines into the data center. An Easement Agreement was granted by CoreSite to TOWARDEX to support this project, and an application for constructions of an 8 - 5" lateral and 68 - 1.25" building entrance duct bank was approved by the NSPB in April 2022, with construction completing in November 2022.

The new entrance into CoreSite had peaked interest from telecom carriers looking to overbuild their backbones into the data center. The Joint Trench Administrator received new route development inquiries from members of the JTP system, and all of them had requested that they would like to connect the new Third Avenue entrance into their larger backbone networks located at New Washington Street. Because the Third Avenue Interconnection project did not account for conditions of existing facilities in Inner Belt Road, the single 1—4" lateral built by TWDX IP connecting Zayo-operated JTP system at 50—59 Inner Belt Road became the sole feasible point of approach from the north. As a result, in October of 2022, TOWARDEX corporate management, acting under advisement from NSPB, had revoked TWDX IP's sole-use ownership of this 1—4" lateral, and transferred its ownership to the HEX Program Office. The transfer had reclassified this conduit to become part of HEX Mainline Conduits, and therefore, the conduit was consequently made available for



licensing by all telecommunications providers, where TWDX IP is no longer the licensing authority to issue a permit to use this conduit.

During the reclassification of this 1—4" conduit as a HEX Mainline Conduit, the conduit had to be subdivided into several "inner" ducts, so that different parties can equally utilize the conduit to pull their fiber optic cables. However, TWDX IP's existing installation in the conduit had resulted in a condition known as "cable overriding", which restricted the maximum potential capacity which can be realized from the conduit. Moreover, a single 4" conduit can only provide a maximum capacity of 9 innerduct "cells" using fabric subdivision technology from a supplier called MaxCell. Meanwhile, the Third Avenue Interconnection has a design capacity of 99 innerducts, thereby resulting in a paradoxical oversubscription of available pathways to access Third Avenue from the north, coming from New Washington Street.

# NSPB Directive on December 5, 2022

Given the oversubscription caused by the single 4" conduit connecting Zayo's JTP system at 50 Inner Belt Road onto the Hub Express System, the NSPB had determined that an upgrade will be required to meet capacity requirements for use by multiple telecommunications providers, and therefore, the street will need to be re-opened. The NSPB had tasked the Joint Trench Administrator to perform an engineering study of facilities along 50—63 Inner Belt Road and submit a plan to upgrade the existing trench.

The Joint Trench Administrator had reviewed conditions of existing facilities in the area and came up with following findings:

- The existing HEX manhole C19BA-200 installed by TWDX IP is a small manhole, with dimensional size of 3' (W) x 3' (L) x 4' (D). This effectively restricts the manhole's function to be that of a maintenance access pull box, where it could only be used to facilitate insertion and removal of fiber optic cables. Moreover, TWDX-IP, being the first tenant, installed a large splice case from CommScope (600D FOSC) into this manhole. The presence of this large 600D case in a small 3'x3' manhole virtually made it impossible for other conduit users to install any slack coils or splice cases of their own. As such, the Joint Trench Administrator had restricted all new installations in this manhole to be only that of straight-through cable transits, without any slack coils and/or splice cases for restorations or future mid-span access permitted.
- The INAP data center at 50 Inner Belt Road was purchased by Evocative in 2022, a company specializing in carrier-neutral data center solutions, similar to that of CoreSite. The acquisition by Evocative had peaked new interest in the facility, and the company was eager to accommodate connections into the Hub Express System to ease new fiber optic installations into their Boston data center. As such, the Joint Trench Administrator had inspected Evocative's private property "zero" manhole facing Inner Belt Road, and determined that there is a plenty of innerduct capacity available going into the building, and the north-facing wall of the manhole is open for a new direct connection onto the Hub Express System.
- Upon review of civil plans and locating existing utilities at 50—59 Inner Belt Road, it was determined that the road is fairly congested and is unable to accommodate large "Meet-Me Hole" communications vaults which are typically sized between 12'x6' to 12'x8'. Project engineers had determined that the maximum vault size which can be accommodated without risking any nearby utilities in the area, and provide safe clearance for trench protection during construction, will be a 7'x5'x6.5'D vault. Given the size of the existing Hub Express System mainline along 50—63 Inner Belt Road, and anticipated future installations, a 7'x5' communications vault will provide plenty of capacity to facilitate new and future anticipated fiber optic cable installations by multiple parties in the area. Further, it would present a significant upgrade to the existing 3'x3' manhole, which is currently unable to accommodate any new slack coils or splice cases for conduit system users.

# **Inner Belt Gateway Improvement Plans**

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The Joint Trench Administrator has developed the following high-level construction plan to upgrade the existing Hub Express System trench at 50—63 Inner Belt Road, which will completely alleviate the pathway congestion in the area:

- C19BA transmission line will extend by 42' further north, with duct bank of 12 4" ducts divided as follows:
  - 4-4" Joint Network Facilities conduits, with each having 3-1.25" HDPE inner ducts
    - 2 1.25" HDPE ducts provided for City of Somerville's use
    - 10 1.25" HDPE ducts for use by TWDX IP and its conduit exchange/joint build partners
  - o 8-4" HEX Mainline Conduits, with each having 9 MaxCell innerduct "cells" (72 innerducts total)



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- 145' of common trench to provide following laterals:
  - 5 4" HEX conduits connecting the new 7'x5' vault to Zayo's JTP manhole 7.5B
    - 45 innerducts provided using MaxCell, to be licensed to all telecom providers
  - $\circ$  3 4" HEX conduits connecting the new 7'x5' vault to Evocative's zero manhole
    - 27 innerducts provided using MaxCell, to be licensed to all telecom providers
- The new 7'x5' communications vault for C19BA transmission line which will be installed, has been designated as HEX MH# C19BA-199.
- Evocative has approved the proposed lateral installation and breakout at their zero manhole.
- Zayo has approved new additional manhole breakouts of 5 4" conduits into JTP manhole 7.5B.
- Inner Belt Road in the area was recently repaved by City of Somerville in November of 2021, thus, it is statutorily a "Guaranteed Road" for purposes of street re-opening works. Therefore, the Joint Trench Administrator proposes to repave the street "curbside to curbside" along the length of the new trench, upon conclusion of the construction to meet City's public works requirements.
- The new common trench lateral into Zayo's JTP manhole 7.5B and Evocative's zero manhole will require multiple sidewalk panels to be removed. As such, the Joint Trench Administrator proposes to fully replace all sidewalk panels disturbed by the proposed project. Furthermore, the sidewalk occupied by Zayo's manhole 7.5A located near Evocative's zero manhole has been undermined due to aging, and will require the manhole's existing Metromedia Fiber Networks cast-iron cover and frame to be removed and replaced. Zayo has agreed to the manhole repair, and will deliver to the project a new Zayo-branded manhole cover and frame.

The diagram of this proposed construction is attached hereto under **Appendix A**. The City of Somerville has approved the project plan hereto and the Joint Trench Administrator is expecting construction to commence in early April. All installations hereunder must comply with the 2021 Easement Agreement between the City of Somerville and TOWARDEX concerning Hub Express System activities in Inner Belt, and MGL c.166 § 21.

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# Electric Transmission System Interconnection onto the Hub Express System

In November 2022, a telecommunications carrier had reached out to see if it would be feasible to "cross connect" the Hub Express System to an underground electric transmission system owned by Eversource, formerly Boston Edison Company (BECo). The rationale provided by this carrier is that first, Eversource is one of the easiest utilities to work with for telecommunications providers, where lot of their electric conduits are available for fiber optic licensing, provided conduit space is available for rent; and secondly, this particular carrier wanted to avoid Zayo's JTP system on Inner Belt Road, because their existing backbone is on JTP already, and they wanted to develop a unique, diverse path of approach to attach onto Hub Express System's entrance into the CoreSite data center.

This request was discussed in depth during the NSPB Meeting on December 5, 2022, the summary of which is as follows:

- A consultant working for HEX program had expressed that the street between 30 Inner Belt Road and intersection with Third Ave is quite congested. While an interconnection with Eversource at their electric vault MHC 26995 is possible in theory, it could be very challenging to implement due to the level of underground congestion and conflicts with other utilities in the area.
- TWDX IP opposed the proposed system "cross connection" between the HEX Conduit System and Eversource, citing concerns of dangers posed by fire hazard and exploding manholes inherent in electric transmission systems. TWDX IP further contended that the carrier's rationale to avoid JTP system in Inner Belt Road makes little to no sense, considering that both Zayo's JTP and Eversource transmission systems are both using the same 48" steel lined tunnel underneath the elevated railroad tracks (the "tubes") built by BEC0 in 1996. As both systems are sitting inside the same jack-and-bore tunnel underneath the tubes, TWDX IP argued that both are already riding in the same commonly "shared fate", and therefore, there is no operational need to justify an electric system cross connection in Inner Belt Road.
- NSPB dismissed liability concerns raised by TWDX IP, stating that these issues should be covered by XCU coverage under liability insurance policies, and further, Eversource and telecommunications system cross connections occur very commonly everywhere throughout Boston, including at multiple locations across the JTP system, and that fears of exploding manholes destroying nearby telecom systems are somewhat overblown.
- Pursuant to PCHEX, the parties in the meeting hereto agreed to defer the issue to the Joint Trench Administrator, and task it to research the issue in depth, and offer its findings on following grounds: (i) evaluate the general feasibility and business case of interconnecting Hub Express System onto electric transmission systems on their merits; and (ii) where such interconnections are deemed possible, offer a high-level plan of technical engineering on how such an interconnection could be implemented in practice.

# Joint Trench Administrator's Findings on Electric System Interconnections

The Joint Trench Administrator had thoroughly reviewed the issue in depth, including conducting research and discussing with utility owners and network operators regarding the topic. We came up with the following findings:

(i) In accordance to Section 2 of PCHEX and provisions of the 47 USC § 224, we determined that under the spirit of the Project Charter of the Hub Express System and legal requirements under the federal law, TOWARDEX has the "common carrier" duty of obligation to provide a cable television system or any telecommunications carrier with nondiscriminatory access into the Hub Express System. This would include, access through a cross connection from an electric transmission system, and as such, TWDX IP's request to not allow these connections is denied in part, and approved in part.

Denied in part, the Joint Trench Administrator found that TWDX IP failed to produce evidence that it faces risk of loss as a result of approving electric system cross connections, and that interconnections between Eversource and telecom utilities is a common occurrence throughout Boston. Therefore, the Joint Trench Administrator has determined that the aforementioned carrier's request for an electric system cross connection is approved hereto on its merits. Approved in part, the Joint Trench Administrator determined that TWDX IP's specified opposition to the proposed interconnection occurring in 30—70 Inner Belt Road has merit on engineering and practicality grounds. We found that even if these connections were made in 30—70 Inner Belt Road, the pathway offered by the Eversource system would not provide any reasonable diversity away from Zayo JTP's existing facilities to cross under the "tubes", and therefore, TWDX IP's opposition at the proposed site of interconnection is approved for reasons of engineering practicality.

(ii) In response to TWDX IP's concerns of underground hazards inherent in electric transmission systems, the Joint Trench Administrator evaluated various examples and implementation-specific building codes of



cross connections occurring between energy and telecommunications utilities. We found that the utility industry is very well versed in these types of projects, and that it is possible to create safe and functional cross connections between the Hub Express System and electric transmission systems, without overburdening tenants of either systems with increased risks of outage or loss.

# Technical Overview of Electric System Interconnection with the Hub Express System

Under the current practices, it is advisable for telecom attachers to avoid or minimize installing any slack coils or splice cases in electric manholes for reasons of fire and personnel safety. Therefore, every interconnection from a telecom licensee into the Eversource system requires a separate installation of what is called a "buffer manhole", and the telecom licensee is solely responsible to undertake permitting and construction efforts in arranging installations of such buffer manholes. Electric vaults are meant to be utilized by telecom licensees generally for straight-thru cable transits. These practices ensure that electric cable vaults are free of potential congestions caused by telecom users, and helps to promote a safe environment for line crews working in energized electric manholes.

In consideration of safety concerns pressed by TWDX IP and after reviewing industry practices, the Joint Trench Administrator proposes the following application-specific building standards for implementing any interconnections between electric utilities and the Hub Express System:

- At each site of the proposed interconnection, a buffering transit chamber of between 4'x6' and 4'x8' shall be installed to function as a "Demarcation Manhole" between the Hub Express System and the subtending electric utility.
- Each interconnection or "system cross connection" between the Hub Express System and an electric utility shall consist of 6 4" ducts. Each 4" duct in the cross-connection role is restricted to not more than 5 tenant cables maximum (as opposed to maximum of 9 cables possible with MaxCell) to enhance firestopping performance. Therefore, each interconnection with an electric utility will provide up to 30 tenant cables.
- In the Demarcation Manhole, all conduit entries (both duct banks coming from electric utility on one side, Hub Express System on the other) shall be sealed and fire stopped, especially including occupied conduits having cables in them, as follows:
  - Each duct seal shall be Ex rated for working in potentially explosive gas atmospheres.
  - Duct seals must provide "multi cable transit" functionality to support firestopping in occupied conduits and provide rated fire protection under IBC High-Hazard Group H categories.
  - O During the NSPB meeting, a consultant had suggested requiring tenants to install flame-retardant fiber optic cables when crossing from HEX to an electric transmission system. However, because OSP cables do not meet NFPA and NEC Article 770 requirements for fire resistance, the Joint Trench Administrator instead recommends all duct openings in the Demarcation Manhole be equipped with specialized fire retarding multi-cable transits. Each cable transit duct seal shall be made of a material which reacts to the heat, expands, seals and cuts the fiber optic cable during a fire, thereby preventing flames from spreading and communicating through ducts beyond the Demarcation Manhole.
  - Given the relatively short distance of cross connection conduits between the electric manhole and the Demarcation Manhole, and limitation of no more than 5 cables in each 4" conduit, the Joint Trench Administrator recommends against installing MaxCell in these conduits. Instead, we recommend tenants to override each other's cable and stop filling the conduit once the total cable count reaches 5. However, MaxCell may be installed only if approved by the subtending electric utility—in this case, MaxCell must be cut in length and any excess length must be folded and pushed back into the conduit. No mule tapes, MaxCell or any innerduct may protrude outside of a transit duct seal, as any such configuration may compromise fire retarding performance.
- No slack coils and no splice cases of any kind are permitted inside Demarcation Manholes. Only straight-thru cable transit is allowed in these manholes.
- All cable racks and hooks inside Demarcation Manholes must be non-conductive, colored for higher visibility, and be rated for use in underground electric transmission systems.
- Demarcation Manholes shall use a specialized venting manhole cover with the following characteristics:
  - The manhole cover shall have open vents to passively let out and prevent buildup of any gas communicating from the electric transmission system.



- The manhole cover shall be designed in such a configuration so that during an underground explosion, the manhole cover remains attached to its frame when it blows open due to forces of the blast, instead of becoming a dangerous flying projectile to lives and property nearby.
- No street water inflow or rainwater control measures are permitted in Demarcation Manholes. Inflow protector covers must <u>never</u> be installed in Demarcation Manholes, as such installations will prevent passive venting of any gas buildup.
- No manhole covers or entry apparatus with locking security mechanism are permitted in any Demarcation Manholes, as such security systems present a safety hazard for line crews working inside.

The Joint Trench Administrator will present the above proposed technical standards for adoption during the next NSPB meeting. If there are no objections, we will formally register and publish these standards to the Hub Express System Operating Practices publication due for release in the latter half of 2023.

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# Response to inquiry re: determining licensing authority for ducts owned by the Hub Express System

#### Inquiry on determining the appropriate licensing authority to obtain permits from, in order to occupy HEX ducts:

On January 20, 2023, the NSPB received an inquiry from a network provider (will be referred to as "Attacher") regarding confusions surrounding licenses being issued by different departments or business subunits of the Corporation for cable attachments onto TOWARDEX-owned conduits. The Attacher's inquiry is summarized as follows:

• TWDX Infrastructure publicly lays out procedures and pricing on its web site for making attachments onto the Hub Express System. However, the Attacher had noted that some telecom providers are making attachments under a different form of arrangement, instead of through the standard HEX License Agreement. More specifically, the Attacher had noted that some telecom providers are receiving permits from TWDX IP (a business unit of TOWARDEX), instead of going through the publicized HEX licensing procedure.

The Attacher had raised a question on why there are different departments and procedures for issuing permits for making attachments onto HEX, and sought guidance on how to best navigate these differences.

The NSPB had deferred to the Joint Trench Administrator to address the above inquiry raised by the Attacher. The Joint Trench Administrator had reviewed the inquiry in depth, and provides the following detailed clarification:

# Understanding Licensing and Permitting Authorities in the Hub Express System

Prior to making attachments, a prospective Attacher must first obtain three separate levels of consent before they can install a fiber optic cable in the Hub Express System, as follows:

# Step 1. Consent by Authority at the Right-of-Way to Occupy HEX Ducts

Prior to making attachments onto HEX, the Attacher must first reach out to the public authority at the right-of-way to determine whether, and to what extent, a revocable consent would be required before a fiber optic cable can be installed in public ways. Per G.L. c. 166 § 22, the state law provides that a Grant of Location is required:

- Prior to new construction of any new wires, poles, piers, abutments or conduits upon, along or across a public way, a petition for Grant of Location is required by law, and a public hearing must be held before a consent can be granted.
- For making attachments onto an existing conduit system, such as HEX, *without* doing any new construction, the municipality *may*, without notice or hearing, by order permit an increase in the number of wires or cables. Generally, any significant alteration to existing facilities, such as reconstruction to increase capacity of the duct system, or substantial changes to its stated use, would require a new or an amended Grant of Location.

However, whether a municipality would require the applicant to seek a new Grant of Location to pull a fiber optic cable in an existing duct system without doing any new construction, is dependent upon each municipality's telecom policies for issuing Grant of Location consents. Prior to each construction of the HEX Conduit System, TOWARDEX engages with public authorities to transparently communicate our intent and design of the joint trench infrastructure offered by HEX. As such, authorities are typically very well versed in the joint-use nature of the HEX system—wherefore, some municipalities may choose to permit cable attachments onto the HEX system without requiring a new Grant of Location, while some may issue an Amended Grant of Location to facilitate such attachments.

Therefore, it is advised for each Attacher to first engage with local authorities to seek guidance, prior to applying for any new attachment onto HEX.

• For attachments onto HEX facilities that are located in MBTA property, a municipal Grant of Location is not used, as attachment occurs in a state agency property. Instead, the Attacher must first seek a license from MBTA for each telecommunications or transmission cable to be deployed inside the authority's property, prior to applying for a license from TOWARDEX for attachment onto HEX.



# Step 2. Consent by TOWARDEX to Occupy HEX Ducts

Upon receiving permission from the public authority at the right-of-way, the Attacher will now need to obtain consent from TOWARDEX to occupy any conduits and facilities (including manholes) belonging to the HEX Conduit System. Per G.L. c.166 § 35, state law requires the Attacher to first obtain permission from the owner of the utility or property used to affix wires for telecommunications, prior to making any attachment. Two Licensing Authorities exist within TOWARDEX for granting such consent to attach onto and/or occupy the HEX duct system: **HEX Program Office** and **TWDX IP**. Which Licensing Authority applies to an Attacher's application for conduit occupancy will depend on the type of conduit the Attacher is looking to utilize, as described below.

The HEX Common Trench is divided into two primary types of conduits:

# • HEX Mainline Conduits

HEX Mainline Conduits are owned by TOWARDEX and these ducts provide open access to the underground transmission infrastructure for all telecommunications companies and internet service providers. A license is required prior to occupying HEX Mainline, and the Licensing Authority for these conduits is the HEX Program Office. As such, to apply for a license to use HEX Mainline Conduits, the Attacher must follow procedures as published on TWDX Infrastructure's web site at <a href="https://infrastructure.twdx.net">https://infrastructure.twdx.net</a>. The standard form Revocable License for Conduit Occupancy is used for licensing of HEX Mainline Conduits, and pricing and procedures published on TWDX Infrastructure's web site will apply.

# • Joint Network Facilities ("JNF") Conduits

JNF conduits are installed by TWDX IP to facilitate attachments for any Joint Trench customers and shadow conduits for itself and authorities at the right-of-way. In almost all situations, with the exclusion of limitations established by applicable governing agreements, JNF conduits are also property of TOWARDEX. However, TWDX IP is the Licensing Authority over JNF conduits. Therefore, permission from TWDX IP is required prior to making attachment or otherwise occupying a JNF conduit.

The costs of installing JNF conduits are not passed onto licensees of HEX Mainline Conduits, as required by federal law under 47 U.S. Code § 224(g).

With respect to the original inquiry over this very topic, the Attacher noted that a participating member of the Level 3-MFN Joint Trench Partners system had made attachments onto the HEX Common Trench without obtaining a standard form Revocable License for Conduit Occupancy from HEX. The Joint Trench Administrator reviewed this inquiry in depth, and determined that the aforementioned company who made such attachments had in fact, made attachments onto a JNF conduit operated by TWDX IP. TWDX IP in turn, as the duly permitted Licensing Authority over JNF conduits, had issued a revocable consent for the said company to make these attachments.

# Step 3. Obtain Work Permits

Once the Attacher receives consent from both the public authority and TOWARDEX as described in the above two steps, the final step is to now obtain permits to work in the facilities. The Attacher will need to obtain two permits as follows:

# • Obtain Encroachment Permit from Public Authority at the Right-of-Way

Attacher will need to obtain an encroachment permit from the authority prior to working in the right-of-way. For municipalities, this is typically provided by Street and/or Sidewalk Occupancy Permit with an approved traffic control plan and a surety bond from the Attacher. For any work upon MBTA property, a License and permit from MBTA will be required to cover the scope of the work occurring in their right-of-way, and for Railroad Worker Protection (RWP) to be provided, as applicable.

# • Obtain Utility Work Permit from the Joint Trench Administrator

The Attacher must also obtain a Utility Work Permit (Form NC-2) from the Joint Trench Administrator prior to working in the HEX Conduit System. The requirement to obtain this permit applies to both HEX Mainline customers and JNF users—TWDX IP does not have the authority to issue a Utility Work Permit, only the Joint Trench Administrator can issue this permit. The permit application is posted at the following link:

https://infrastructure.twdx.net/hex/forms/nc2\_2021\_form.pdf



For any questions regarding the Utility Work Permit, call the Joint Trench Helpdesk at (617) 863-8325 or email plantmaster@towardex.com.

These clarifications regarding licensing and permitting authorities over the Hub Express System will be published on the next NSPB State of Program Activities memorandum. Furthermore, the Joint Trench Administrator will also submit these clarifications to the Hub Express System Operating Practices publication due for release in the latter half of 2023.

