NJ TRANSITGRID TRACTION POWER SYSTEM

Final Environmental Impact Statement

PREPARED BY: FEDERAL TRANSIT ADMINISTRATION and NEW JERSEY TRANSIT CORPORATION

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Chapter 1

Final Environment Impact Statement

1.1 INTRODUCTION

The Federal Transit Administration (FTA), together with the New Jersey Transit Corporation (NJ TRANSIT) has prepared this Final Environmental Impact Statement (FEIS) and Final Section 4(f) Evaluation (Appendix A) pursuant to the federal environmental laws, regulations and executive orders applicable during the environmental review process. The U.S. Environmental Protection Agency (USEPA) and the U.S. Army Corps of Engineers (USACE) are serving as Cooperating Agencies. NJ TRANSIT proposes to design and construct the NJ TRANSITGRID TRACTION POWER SYSTEM (proposed Project), a first-of-its-kind "microgrid" designed to provide highly reliable power to support limited service in a core segment of NJ TRANSIT's and Amtrak's critical service territory. As defined by the U.S. Department of Energy (USDOE), a microgrid is a local energy grid with "control capability," which means it can disconnect from the commercial power grid and operate autonomously¹. The microgrid would be resilient, making the transportation system substantially less vulnerable to power outages, and thereby able to provide reliable and safe service to customers.

The proposed Project would be designed to generate enough electrical power to maintain operation of commuter and passenger rail service on key segments of Amtrak's Northeast Corridor, NJ TRANSIT's Morris & Essex Line, and NJ TRANSIT's Hudson-Bergen Light Rail (HBLR) system indefinitely and without requiring electrical power from the commercial electrical grid. Specifically, the proposed Project is intended to produce and distribute enough electricity to provide traction (i.e., train locomotive) power to the following service territories:

- Amtrak's Northeast Corridor between New York Penn Station and County Yard/Jersey Avenue Station in New Brunswick, NJ (approximately 32.8 rail miles);
- NJ TRANSIT commuter rail service between Hoboken Terminal and Maplewood Station in Maplewood, NJ, on the Morris & Essex Line (approximately 15.2 rail miles); and
- NJ TRANSIT HBLR (approximately 16.6 rail miles).

The proposed Project would also be designed to support non-traction functions (i.e., NJ TRANSIT signal power, switches, tunnel ventilation, pumping, station and lighting loads) in the above rail segments. Furthermore, the proposed Project will support the signal system on a portion of the NJ TRANSIT Main Line from the intersection with the Morris & Essex Line to the Upper Hack Lift Bridge (approximately 2.5 rail miles) so that diesel trains can operate on that non-electrified segment during power outages.

In addition to the equipment required for the microgrid, up to four acres of land is proposed for a solar (photovoltaic cells) facility. The proposed Project also includes the installation of electrical lines, new

¹ USDOE web page "How Microgrids Work" <u>https://www.energy.gov/articles/how-microgrids-work</u>, accessed in July 2016.

substations, and natural gas-fired emergency generators at the HBLR Headquarters (i.e., a nanogrid) to distribute the power to required areas, including the installation of electrical poles where necessary.

1.1.1 Purpose and Need

The purpose of the proposed Project is to enhance the resiliency of the electricity supply to NJ TRANSIT and Amtrak infrastructure that serves key commuter markets in the New York and New Jersey metropolitan region to minimize public transportation service disruptions and facilitate emergency transportation. The need for the proposed Project is based, in part, on the vulnerability of the commercial electric power grid that serves NJ TRANSIT and Amtrak's Northeast Corridor rail service. The region's public transportation infrastructure is vulnerable to power outages due to the nature of the existing centralized power distribution system and the intensity and frequency of severe weather events.

1.1.2 Severe Weather and the Existing Commercial Power Grid

America's commercial power grid comprises three smaller grids (referred to as "interconnections") that move electricity around the country. Because the existing power grid is so large and interconnected, it is vulnerable to widespread disruption from severe weather and physical or cyber-attacks². The existing commercial power grid is particularly vulnerable to severe weather resulting in, but not limited to, fallen trees, wildfires, and branches that can cause widespread power outages due to the extent of the large service territory and the corresponding length of the electrical lines. Microgrids are a leading technology in the effort to develop a more resilient power grid via the production of cleaner power in decentralized locations. The proposed Project will increase the resiliency of the NJ TRANSIT system by providing localized power for public transportation.

To achieve the resiliency required to operate during commercial grid outages, the facility and supporting infrastructure would be protected against flooding from tropical systems by constructing or hardening critical elements of the project to at least three feet above the water elevation associated with the 1% annual chance storm (100-year flood), which is equal to or greater than the 0.2% annual chance storm (500-year flood). Additionally, the Main Facility and supporting infrastructure (e.g., substations, transmission lines, and catenary lines) would be hardened to requirements for a Risk Category IV building. This would apply to potential impacts from wind, snow, seismic, and ice loads. Other components (stormwater drainage, etc.) will comply with Risk Category IV requirements defined in the NJ Uniform Construction Code (UCC).

1.1.3 Frequency of Severe Weather Events Affecting NJ TRANSIT Service

There is wide recognition that transportation resiliency in this critical area is a high priority. Superstorm Sandy was only the latest of several major events affecting rail transportation in northern New Jersey. Hurricane Floyd in 1999, Hurricane Irene and the subsequent Halloween Nor'easter in 2011, and Tropical Storm Andrea in 2013 also caused significant rail service disruptions. Smaller but more frequent storms have also caused outages that disrupted railroad operations. Between 2011 and 2013 alone, NJ TRANSIT

² USDOE web page "Keeping the Power Flowing", <u>http://www.energy.gov/articles/keeping-power-flowing</u>, accessed in July 2016.

recorded 49 power outages affecting rail operations in the proposed Project service area alone (other than outages from either Hurricane Irene or Superstorm Sandy), with a total duration of over 95 hours. This averages to 16 outages per year with an average duration of two hours, or about 32 hours per year of power outages.

1.1.4 Regional Mobility and Reliable Electrical Power

Reliable electric power is essential to regional mobility. Electric power is necessary to operate the signal system to safely route train movements. In addition, reliable electric power is needed for ventilation equipment and pumps in tunnels to support critical emergency activities in preparation for and recovery from flooding events (maintenance facilities, pump stations, and emergency operation centers need to be energized to pump water from the tunnels and inspect equipment to return trains to revenue service). The region's rail transportation system was largely shut down for nearly a week after Superstorm Sandy with substantial economic consequences.

1.2 REGULATORY CONTEXT

1.2.1 Applicable Regulations

This FEIS has been prepared in accordance with National Environmental Policy Act (NEPA), Council on Environmental Quality (CEQ) guidelines, Section 4(f) of the U.S. Department of Transportation (USDOT) Act of 1966, Section 106 of the National Historic Preservation Act, and other applicable environmental regulations and Executive Orders. Section 106 concurrence and an executed Programmatic Agreement are provided in Appendix B.

The Record of Decision (ROD), provides a table and summary of all applicable regulatory permits for the proposed Project and anticipated standard permit conditions known at this time.

1.2.1.1 Final EIS Errata Sheet Approach

Pursuant to 23 U.S.C. § 139(n) of the FAST Act, "Accelerated Decision Making in Environmental Reviews," the preparation of an FEIS by attaching errata sheets to the Draft Environmental Impact Statement (DEIS) is appropriate if certain conditions are met. The use of errata sheets is appropriate when comments received on a DEIS are minor and the responses to those comments are limited to factual corrections or explanations of why the comments do not warrant further response. Comments received on the proposed Project included requests for clarifications on environmental impacts; requests for alternative benchmarks for analyzing air quality impacts; statements opposing the purpose and need and/or Preferred Alternative; and requests for consideration of alternatives using renewable energy and "transmission only" options not included in the DEIS. Minor factual corrections and clarifications of environmental impacts and analysis methodology are addressed in the DEIS Errata sheets located below in Section 1.5. Direct responses to public comments are included in Appendix C. In addition, Appendix D was created to summarize alternatives proposed by the public and the reasons FTA and NJ TRANSIT determined them to be infeasible and/or insufficient to meet the Purpose and Need as defined in the DEIS (Appendix G).

1.2.1.2 Combined FEIS/ROD

The proposed Project has met the requirements for the issuance of a single Combined FEIS/ROD, including the following:

- Identification of the Preferred Alternative (Section 1.3 of this FEIS);
- Section 4(f) Evaluation and concurrence (Appendix A);
- Section 106 concurrence and an executed Programmatic Agreement (Appendix B);
- Commitments for the Preferred Alternative's mitigation measures (Section 1.6 of this FEIS and additional details in Section 2.4 of the ROD);
- Response to comments received on the DEIS (Appendix C), public outreach since issuance of the DEIS (Appendix E), and agency correspondence that has occurred since the issuance of the DEIS (Section 1.4 of this FEIS and Appendix F).

The primary purpose of this Combined FEIS/ROD is to respond to all substantive comments received during the public comment period. The proposed Project's Combined FEIS/ROD does not include substantial changes to the proposed action in terms of environmental or safety concerns, nor are there significant new circumstances or information relevant to environmental concerns of the proposed Project or its impacts. The ROD states the decision, identifies the alternatives considered in reaching the decision and states the means to avoid, minimize, or mitigate impacts. Mitigation plans, including any enforcement and monitoring commitments, are included in the ROD. The Final Section 4(f) Evaluation is included in Appendix A.

1.3 ALTERNATIVES

This section summarizes the No Action Alternative and the Preferred Alternative presented in the DEIS and demonstrates why the Preferred Alternative remains preferred following the DEIS comment period.

During the public comment period (May 20 – July 19, 2019), several commenters identified potential additional alternatives to the proposed Project. In response to these comments, these alternatives are discussed further in the newly drafted Appendix D. The project team has determined that these proposed alternatives – some of which were previously considered screened prior to the Public Scoping Period (2016) – are infeasible or incompatible with the proposed Project's Purpose and Need. NJ TRANSIT's May 2016 Final Document is located on the project website: Scoping https://njtransitresilienceprogram.com/documents/.

1.3.1 No Action Alternative

In the No Action Alternative, the microgrid would not be constructed and NJ TRANSIT and Amtrak would continue to be served by the existing commercial grid. The No Action Alternative includes other planned and programmed transportation improvements including ongoing initiatives for Amtrak's Northeast Corridor, as well as future development plans for the Hudson County Improvement Authority (HCIA)-

owned Koppers Koke Site (which lies within the Koppers Coke Redevelopment Area [Redevelopment Area]). The No Action Alternative as described in Chapter 2 of the DEIS serves as the basis of comparison for the Preferred Alternative.

1.3.2 Preferred Alternative

The Preferred Alternative was selected based on siting criteria, and consideration of other criteria including capital cost estimates, Buy America requirements, and consistency with proposed Project goals.

The preferred location in Kearny, NJ was identified during the Siting analysis in 2015 based on the following factors:

- Proximity to the substations (NJ TRANSIT's Mason Substation and Amtrak's existing Substation No. 41) that would supply power to the service territory of the Northeast Corridor and Morris & Essex Line;
- Proximity to existing natural gas supply lines;
- Relatively large amount of underdeveloped and vacant land located within an area zoned for heavy industrial use; and
- Desire to reduce the need to construct electrical lines in or above open waterways and wetlands.

Other design options of varying combinations of equipment and facility layouts (including all equipment housed inside one large building versus outside in individual enclosures) were also considered during the concept validation phase.

A financial analysis considered a 30-year project life; present values; operating costs including utilities, fuel and maintenance; and potential revenue. The Preferred Alternative utilizes combined-cycle technology resulting in power generation capacity of 104 megawatts (MW) to 140MW. The preferred equipment configuration includes five gas turbines, one steam turbine and two black start engines, all housed on the Koppers Koke Site was recommended for final design. Approximately four acres of land at the Main Facility site is proposed for a solar panel facility with photovoltaic cells. This configuration provides the mission requirements with safe margin, economic feasibility and provides the best long-term effectiveness. In addition, gas turbines of the size specified are made in the United States and, as a result, their use would comply with FTA's Buy America regulations (49 CFR § 661[2012]), allowing for an expedited project delivery schedule.

The Preferred Alternative would provide reliable power to support limited rail passenger service in a core segment of NJ TRANSIT and Amtrak's critical service territories and consists of seven contiguous-linked project components – Project Component A through Project Component G. Together, the seven segmented Project Components comprise the single Preferred Alternative. The Preferred Alternative includes the following components:

- Project Component A Main Facility
- Project Component B Natural Gas Pipeline Connection
- Project Component C Electrical Lines to Mason Substation
- Project Component D Electrical Lines and New Kearny Substation
- Project Component E Electrical Lines and New NJ TRANSITGRID East Hoboken Substation
- Project Component F Connection to HBLR South
- Project Component G HBLR Connectivity

None of the public or agency comments (substantive or non-substantive³) received on the DEIS resulted in changes to the Preferred Alternative. Figures 1-1 through 1-6 depict the Preferred Alternative.

The USEPA concurred that the Preferred Alternative would result in no significant environmental impacts, and the U.S. Department of Interior (USDOI) had no comments on the DEIS and concurred with the analysis and conclusions of FTA's Section 4(f) Evaluation (Appendix A). The United States Coast Guard (USCG) provided a comment letter that requested factual corrections and minor revisions, as documented in the Errata Sheets (Section 1.5 below). NJ Department of Environmental Protection (NJDEP) also provided comments regarding various permitting requirements, which are acknowledged in the Errata Sheets (Section 1.5 below) and the DEIS (Appendix G). Additionally, no comments raised new circumstances or new information relevant to environmental or safety concerns that would change the selection of the Preferred Alternative. All agency correspondence is included in Appendix F. Section 2.4 of the ROD provides a summary of all applicable regulatory permits for the proposed Project and anticipated standard permit conditions known at this time. Section 2.4 of the ROD.

1.4 PUBLIC AND AGENCY COORDINATION

1.4.1 Scoping

Public Scoping initiated the NEPA process. A Draft Scoping Document was made available for public review on January 7, 2016 on the Project website. A Public Scoping Meeting was held on February 3, 2016 at St. Peter's University in Jersey City, NJ. Availability of the Draft Scoping Document and notice of the meeting were advertised in the Federal Register on January 7, 2016, as well as in English- and Spanish-language newspapers. Notices were posted at 11 public libraries and 17 Section 8 housing complexes. In addition, e-blast notifications were sent to stakeholders and web subscribers.

³ Substantive comments are comments that raise specific issues or concerns regarding the project or the study process, suggest new alternatives, or question or raise concern over new impacts not previously addressed in the DEIS. Non-substantive comments are not relevant to the topics discussed in the EIS, such as general statements of support or opposition to the project, or comments concerning information that was already included in the document, but the reader overlooked.

At the Public Scoping Meeting, a project fact sheet was provided in English and Spanish, and a short presentation was given that described the NEPA process and the proposed Project including the Purpose and Need. Copies of the Draft Scoping Document were provided at the Public Scoping meeting. A video loop of the presentation was available and is posted on the Project website. Comment forms in English and Spanish as well as services of a stenographer and laptop computer with access to the Project website, were provided during the meeting for the attendees to submit comments. The presentation provided the Project website and NJ TRANSIT Resilience Department address for the public to submit questions outside of the Public Scoping meeting.

A *Final Scoping Document*, which summarizes the comments received during public scoping and responses to those comments, was posted to the Project website in May 2016 (<u>https://njtransitresilienceprogram.com/documents/</u>). The Final Scoping Document remains available for review and notice of its availability was widely distributed.

1.4.2 Draft Environmental Impact Statement

FTA and NJ TRANSIT, in cooperation with the USEPA and the USACE, initiated an Environmental Impact Statement (EIS) and Section 4(f) Evaluation for the Project in 2016. The DEIS was issued on May 17, 2019 and was prepared pursuant to NEPA.

The USEPA published the Notice of Availability for the proposed Project's DEIS in the Federal Register on Friday, May 17, 2019, formally beginning the 60-day public review and comment period (May 20, 2019 – July 19, 2019). NJ TRANSIT distributed the DEIS to local, regional, state and federal agencies, interested and affected parties, and the public for review and comment. The public notice included information on where to view the document and how to provide comments during the public comment period. The availability of the DEIS and notice of the Public Hearing sessions were advertised in four area newspapers, (The Jersey Journal on May 20, 2019; The Star-Ledger on May 20, 2019; The Observer on May 22, 2019 and El Especialito on May 24, 2019), on project information flyers to Section 8 Housing Authorities (English and Spanish) and local libraries (English, Spanish and Haitian Creole) for posting at their facilities. Appendix E - Public Outreach Update includes additional details on public outreach efforts as well as the publishedadvertisements. NJ TRANSIT held two public hearings at St. Peters University in Jersey City, NJ on June 18,2019 (2:00PM – 4:00PM and 7:00PM – 9:00PM), where oral and written comments regarding the DEIScould be formally submitted. Comments were also accepted by email and by mail. The review andcomment period ended on July 19, 2019.

The DEIS for the proposed Project is currently available to the public on the Project website (<u>https://njtransitresilienceprogram.com/documents/deis/</u>), at the FTA Region 2 Headquarters located at One Bowling Green, Room 428 New York, New York 10004, and at the NJ TRANSIT Headquarters, One Penn Plaza East, Newark, New Jersey 07105.

1.4.3 Limited English Proficiency Communities

As part of the DEIS public comment period outreach efforts, NJ TRANSIT provided proposed Project fact sheets in English, Spanish, and Haitian Creole. Spanish language and American Sign Language (ASL)

interpreters were available at the public hearing for those requiring necessary assistance. No comments were received from Spanish, Haitian Creole, or ASL communicators during the comment period.

1.4.4 Technical Advisory Committee

A Technical Advisory Committee (TAC) was formed to facilitate effective and timely decision-making and an efficient environmental review process. The TAC includes project team members and Cooperating and Participating Agencies. TAC coordination has occurred as needed at key decision-making points, as shown in Table 1.

TAC Meeting Topic		Timeframe	Coordination Activity	Notes
1.	Project Briefing	October 29, 2015	Review Project concept and agency coordination objectives	Project overview and proposed Project NEPA schedule presented to meeting attendees.
2.	Public Scoping	December 22, 2015 – February 15, 2016	Review/revision of scoping materials prior to the public meeting	Draft Scoping Document provided to TAC members for review prior to the public review period and public meeting. Comments provided by TAC members incorporated, as appropriate, into Draft Scoping Document.
3.	Alternatives	June 22, 2016	Review alternative technologies and siting study	Proposed Project progress and alternative siting analysis presented to meeting attendees.
4.	Preliminary DEIS	eliminary IS February 15 – March 18, 2019 Review/revision of DEIS document prior to publication		Preliminary DEIS provided to TAC members for review prior to public review period and public hearing. Comments provided by TAC members incorporated, as appropriate, into DEIS.
5. FEIS/ROD February 2020		February and April 2020	TAC members will be provided an eBlast NJ TRANSIT and FTA are moving forward second eBlast will be provided prior to t Notice of Availability for the Combined F	notification advising that with a Combined FEIS/ROD. A he USEPA's publication of the EIS/ROD in the Federal Register.

Table 1 Technical Advisory Committee Coordination Schedule

1.4.5 Public Comments Received on DEIS

During the public review period, comment letters were received from four interested parties (such as stakeholders and/or environmental advocacy groups), 39 comments were submitted via email on the Project website and seven individuals spoke at the Public Hearing. The comments received from the public

do not warrant changes to the Preferred Alternative nor do they identify significant new circumstances or information relevant to concerns that would influence the Preferred Alternative. All comments and responses are included in Appendix C – Response to Agency and Public Comments.

1.5 DEIS ERRATA

1.5.1 Introduction to DEIS Errata

The Project Team prepared this Errata following publication of the NJ TRANSITGRID TRACTION POWER SYSTEM DEIS on May 17, 2019. The errata summarize information added to this FEIS or revised in response to comments received as part of public and agency review or due to other changes that occurred since the public release of the DEIS. None of the changes noted in this Section alter the conclusions of the FEIS in any way. Note that the chapter and page numbers referenced in the following sections are chapters and pages of the DEIS.

1.5.2 Errata

1.5.2.1 Comments that do not warrant revisions or additional information to DEIS

Comments from the USEPA were provided in a letter dated July 11, 2019. The comment regarding the identification and impact of the Route 7 connection for access along Frontage Road (Spine Road) does not require revisions to the DEIS. Although the proposed access road would cross the Standard Chlorine Chemical Company (SCCC) site, FTA and NJ TRANSIT do not believe the Route 7 connection is a "connected action" that would require the documentation of the access road impacts as part of the NJ TRANSITGRID DEIS. As stated in the DEIS, the access road is a separate project with separate utility that is part of a larger effort. This larger development project was originally planned as part of the "Koppers Coke Peninsula Redevelopment Plan" which was adopted by the New Jersey Sports and Exposition Authority (NJSEA) in February 2013. The planned development, including warehouses, paved parking and roads, and utility infrastructure is recognized in USEPA's SCCC ROD, dated September 2016 as future development. HCIA is implementing this redevelopment plan using Langan Engineering as the design firm, and Morris Kearny Associates, LLC as the permit applicant. Both of these entities are aware of existing site conditions as evidenced in their coordination with the responsible party for remediation of the site. The access road will be funded by HCIA and built in support of that redevelopment plan on the Koppers Koke property of the peninsula, which encompasses approximately 170 acres, of which 126 acres have been elevated to protect against potential flood effects. The access road would be constructed to provide access to four proposed warehouses surrounding the NJ TRANSITGRID project (approximately 20 acres) regardless of whether the NJ TRANSITGRID Project is constructed by NJ TRANSIT. It is projected that HCIA will begin construction in spring 2020, which includes construction of the roadway, whereas the NJ TRANSITGRID project is anticipated to begin construction in early 2021. As such, the roadway is considered at this stage to be part of the Existing Conditions for the project area. USEPA concurred with this determination in an email dated December 16, 2019. Please see Appendix F – Agency Correspondence for the complete correspondence between USEPA, FTA and NJ TRANSIT regarding this matter.

Comments from the NJDEP were provided in a letter dated July 17, 2019. The comments received from the following departments/divisions do not require revisions to the FEIS: NJDEP's Land Use Regulation Program, Bureau of Tidelands, Fish and Wildlife- Endangered and Non-game Species Program, State Historic Preservation Office, Environmental Infrastructure Financing- Redevelopment of Sewer and Water Connections, Potable and Sewer Connections, NJ Pollution Discharge Elimination System (NJPDES) Discharge to Surface Water (DSW), Water Allocation, NJPDES Discharge to Groundwater (DGW) Stormwater and Environmental Justice. Please refer to Appendix C – Response to Agency and Public Comments for direct responses to each comment provided. Please see Appendix F – Agency Correspondence for the complete correspondence between NJDEP, FTA and NJ TRANSIT. Comments that do require revisions or clarifications are included in the sections below.

1.5.2.2 General Comments

- All references to "Frontage Road" are revised to "Spine Road" in the FEIS.
- All references to the submarine cable option to cross the Hackensack River being laid along or on the Hackensack River bottom are restated to clarify that the submarine cable will be laid on the river bottom within a jet plowed trench one to two feet deep.
- References to the 2015 New Jersey Energy Master Plan are updated to include the *Draft 2019 New Jersey Energy Master Plan Policy vision to 2050.*

1.5.2.3 Executive Summary

• Section ES.5, Table ES-1, page ES-17 includes the following text, supplemented as shown.

Analysis Area	Potential Operational Effects	Potential Construction Effects	Control Measures and Minimization/ Mitigation Commitment	Net Result of Preferred Alternative with Implemented Mitigation	No Action Alternative Effects
Traffic,	Minimal amount of traffic	Temporary (non-significant)	Control Measure and Minimization:	During emergency	Traffic in the
Navigation and	(approximately 20 trips per	increase in vehicular traffic	Planned service disruptions would	conditions, rail commuters	proposed Project
Transportation	each shift, three shifts per	during construction from	be infrequent during construction	would have access to	area will increase
	day for 30 full time	workers traveling to and	and minimized to avoid impacts to	reliable, although limited,	without the
	employees) generated by	from the site and equipment	commuters. <u>Restrictions to vessel</u>	rail service, resulting in a	Preferred Alternative
	Main Facility would be easily	deliveries. Some limited,	traffic would be closely coordinated	lesser impact to vehicle	due to planned
	accommodated into the	planned train service	with the USCG, in accordance with	transportation during	construction of
	traffic network with little	disruptions <u>and/or</u>	33 CFR § 165.5 Establishment	emergencies, which is a	warehouses on the
	noticeable effect. Positive	restrictions to vessel traffic	procedures to facilitate a temporary	positive impact. <u>Some</u>	Kearny Peninsula.
	effects on public	near the Lower Hack Bridge	safety zone, security zone, or	temporary restrictions to	Potential for adverse
	transportation in the region	may be required to	regulated navigation area. The cable	navigation would be	effects (delays and
	would be realized during	accommodate construction	would cross the Hackensack River	required during	strandings) to
	emergency conditions since	activities, such as installation	either via aerial crossing between	construction, but no	commuters during
	limited rail service would be	of electrical lines, deliveries	two monopoles (preferred option)	impacts to navigation from	power outages. <u>No</u>
	available. <u>The Hackensack</u>	for large pieces of	which would be constructed high	operations would be	<u>changes to</u>
	<u>River is a navigable waterway,</u>	equipment (i.e., the turbines	enough to avoid impacts to vessel	<u>realized.</u>	navigation would be
	with a channel maintained	or generators if brought in	traffic passage, or directionally		<u>realized.</u>
	north of the Lower Hack	by rail <u>or barge</u>) and cutover	drilled beneath the river bottom or		
	Bridge approximately 11 feet	from existing Substation No.	installed within a jet-plowed trench		
	<u>deep. No impacts to</u>	41 to the new Kearny	on the river bottom to avoid		
	navigation would occur once	Substation <u>(rail disruptions</u>	reducing existing draft clearances		
	the project is operational.	<u>only)</u> .	and risk of anchor snag. NJ TRANSIT		
			would coordinate with USCG to		
			establish the top of cable depths		
			when crossing river bottom and		
			federal navigation channels.		
			Appropriate signage would be used		
			in the latter two options to warn		
			navigation interests of the presence		
			<u>of the cable.</u>		

Section ES.5, Table ES-1, page ES-21 includes the following text, supplemented as shown.
 Potential Operational Potential Construction Filtratic

Potential Operational Filtratic
Control Measures and Minimization/Mitigation
Net Result of Preferred Alternative with

Analysis Area	Potential Operational Effects	Potential Construction Effects	Minimization/ Mitigation Commitment	Alternative with Implemented Mitigation	No Action Alternative Effects
Safety and	None. The facility would be	Construction workers will	Control Measure and Minimization:	Preferred Alternative would	Improvements to
Security	designed to meet and exceed	be required to attend all	Safety and security features	provide improvements to	safety and security in
	regulatory standards.	applicable NJ TRANSIT	incorporated into the design.	safety of public	the region (i.e.,
		and/or Amtrak safety	Preparation and implementation of	transportation users during	providing reliable
		training. Construction	HASP during construction.	emergency conditions.	public transportation
		activities (deliveries and			if New Jersey and
		installation of electrical line			New York City job
		over Hackensack River) will			centers need to be
		be coordinated with USCG.			evacuated during
					widespread outages
					of the commercial
					grid) would not be
					realized.

1.5.2.4 Chapter 1 – Purpose and Need

• Section 1.2, page 1-2, includes the following text, to be inserted after the first paragraph in Section 1.2 as shown.

Power grids are constructed to have a reserve capacity of 15%, so that demand would only exceed supply once in about every ten years (Center for Energy, Economic & Environmental Policy [CEEEP], 2014). The commercial power grid is comprised of multiple interconnected power generators, such that if one component fails, the grid can continue to operate without interruption. However, if multiple failures occur simultaneously, or within a short period of time, large-scale unplanned blackouts can occur. For example, New Jersey and other nearby states were subject to a bulk power system failure that caused a blackout on August 14, 2003 (CEEEP, 2014). Weather initiated events can also cause large-scale blackouts by affecting the generation, transmission, and distribution networks. In preparation for Superstorm Sandy, ConEdison in New York shut down power as a precaution before the storm made landfall (Walsh, 2012). Nuclear power plants are required by the Nuclear Regulatory Commission to shut down in the event of hurricane-force winds (Walsh, 2012). Public transportation would not be able to operate under these conditions, and commuters would be stranded. By using power generators that were independent of the commercial grid, the College of New Jersey, New York University, Princeton University, and Stony Brook University were able to remain powered throughout Superstorm Sandy (Abi-Samra, 2013). Under normal operating conditions, the NJ TRANSITGRID Project would remain connected to the commercial grid, and would use or supply power from or to the grid, as demand increases or decreases. However, during emergency conditions, when remaining energized with traction power can mean the difference between allowing evacuations or leaving people stranded, the NJ TRANSITGRID Project can disconnect from the commercial grid and continue to operate without interruption. The NJ TRANSITGRID Project is designed specifically to increase the mass transit resilience of the power infrastructure in the region. By creating its own power, NJ TRANSIT will be able to continue to operate when other power plants are damaged or shut down preemptively.

• Section 1.2, page 1-2 includes the following text, revised as shown.

Specifically, the proposed Project is intended to produce and distribute enough electricity to provide traction (train locomotive) power to Amtrak's Northeast Corridor between New York Penn Station and County Yard/Jersey Avenue Station in New Brunswick, NJ (approximately 32.8 rail miles), NJ TRANSIT commuter rail service between Hoboken Terminal and <u>Millburn Maplewood</u> Station in <u>Maplewood</u> Millburn, NJ on the Morris & Essex Line (approximately <u>16.3</u> <u>15.2</u> rail miles), and the NJ TRANSIT Hudson Bergen Light Rail (approximately 16.6 rail miles).

1.5.2.5 Chapter 2 – Project Alternatives

• Section 2.2.1, page 2-2 includes the following text, revised as shown.

FEIS

Limited NJ TRANSIT commuter rail service between Hoboken Terminal and <u>Millburn</u> <u>Maplewood</u> Station on the Morris & Essex Line (approximately 16.3 <u>15.2</u> rail miles), via a power connection to the Mason Substation.

• Section 2.2.9, page 2-15 includes the following text, supplemented as shown.

Under normal conditions, NJ TRANSITGRID will potentially would supply up to 60MW of traction power for the Northeast Corridor (for Amtrak and NJ TRANSIT trains), meet NJ TRANSIT's Morris & Essex load demand of 10 to 15MW. transfer excess Excess energy could be transferred to PJM when those transactions are economically justified. Under emergency conditions (e.g., a PJM system blackout), NJ TRANSITGRID will operate in island mode and provide up to 140MW to meet NJ TRANSIT's Morris & Essex and HBLR loads, and assist Amtrak by moving its Northeast Corridor trains to nearby stations.

• Chapter 2, footnote 6, page 2-15 includes the following text, clarified as shown.

Economically dispatched (i.e., produced at the lowest cost to customers) energy sales to PJM are forecasted to grow change over time and is a function of market economics as older generation resources retire, potentially constraining the PJM market. NJ TRANSITGRID's proportion of capacity factor for PJM energy capacity sales is forecasted to grow from 8% of the total PJM power availability in 2020 to 19% in 2049 as PJM's generation capacity decreases, subject to market conditions.

1.5.2.6 Chapter 3 – Land Use, Zoning, and Public Policy

• Section 3.5, page 3-15 includes the following text, revised as shown.

The permanent easements include the land needed to construct the proposed Project and for ongoing maintenance requirements. A temporary floating access easement would be secured for construction access.

1.5.2.7 Chapter 4 – Community Facilities

• Section 4.3.2, page 4-13 includes the following text, supplemented as shown.

According to NJDEP's Recreation and Open Space Inventory (ROSI) (NJDEP 1996) and a Green Acres Program letter dated November 22, 2017, three properties within the 500-foot study areas of Preferred Alternative Project Component G are Green Acres encumbered. However, no construction from the proposed Project will occur within these NJDEP Green Acres encumbered properties and a reply notification with these details was sent on December 1, 2017. NJDEP Green Acres accepted the notification and it has been deemed that this proposed Project will not impact properties encumbered by NJDEP Green Acres (see Appendix D of DEIS).

In a comment letter from the NJDEP, dated July 17, 2019, (see Appendix C – Response to Agency and Public Comments and Appendix F – Agency Correspondence) three properties were identified as having potential to be impacted from the proposed transmission lines. The properties are the Jersey City Reservoir in Jersey City, 11th Street Oval in Bayonne and Bayside Park in Jersey City. The

transmission lines located near the Reservoir in Jersey City (B 4802, L 1) will be installed within the Bergen Tunnel (NJ TRANSIT right-of-way) and will therefore not impact the Jersey City Reservoir or public access. The 11th Street Oval in the City of Bayonne (B 273, L 13-17) is located adjacent to the HBLR alignment that is elevated. In this area, where the HBLR tracks are elevated, the distribution lines will be attached to the existing elevated structure within the right-of-way and will therefore not impact the 11th Street Oval. Bayside Park in Jersey City (B 26001, L 1) is located approximately 30 to 40 feet from the HBLR right-of-way. Construction activities along the HBLR will remain within the rightof-way and will therefore not impact the Bayside Park. Based on consultation with NJDEP and review of NJDEP's online ROSI, the Project, as proposed, will not result in encumbrance to any Green Acres properties. In the event future design progress results in potential impacts on any Green Acres property, NJ TRANSIT will coordinate with NJDEP Green Acres Program immediately.

1.5.2.8 Chapter 6 – Air Quality

• Section 6.2.1, page 6-2 includes the following text (including new footnote), supplemented as shown.

Several air pollutants have been identified by the EPA as being of concern nationwide. These pollutants, known as "criteria pollutants," are carbon monoxide (CO), nitrogen dioxide (NO₂), ozone (O₃), particulate matter (PM₁₀ and PM_{2.5}), sulfur dioxide (SO₂), and lead (Pb). <u>Ammonia is not considered to be a "criteria pollutant." (Add footnote here)</u> Ambient concentrations of CO are predominantly influenced by motor vehicle activity (i.e., mobile sources).

Footnote text is as shown: <u>An aqueous ammonia system consisting of two 10,000-gallon tanks and an</u> injection system would be used to catalyze NO_x in the exhaust stream to reduce NO_x levels to below the limitations specified in the air permit. The metering of ammonia into the stream would be controlled by computer with input from a Continuous Emissions Monitoring System to prevent excess ammonia from being released. Ammonia releases of 100 pounds or more are required to be reported to the Local Emergency Planning Committees and State Emergency Response Commissions.

• Section 6.2.4, page 6-6 includes the following text, to be inserted at the end of the first paraph of Section 6.2.4 as shown.

<u>Requirements for LAER emissions controls are based on technologies used in the same or comparable</u> <u>industries. The most stringent emissions limitation contained in an existing State Implementation Plan</u> <u>(SIP) for a class or category of source must be considered LAER, unless a more stringent limitation was</u> <u>achieved in practice, or the SIP limitation is demonstrated to be unachievable. Reviewers would look</u> <u>at existing air permits across the country and in the State of New Jersey and would apply the most</u> <u>stringent limitation to the requirements.</u>

• Section 6.2.5, page 6-7 includes the following text, to be inserted after second paragraph of Section 6.2.5 as shown.

As directed by Title IV of the Clean Air Act, which aims to reduce acid rain, USEPA has established a market-based allowance program for SO₂ emissions from utility units (that offer electricity for sale). The Acid Rain Program exempts new utility units "serving one or more generators with a total nameplate capacity of 25MWe or less" as stated in the New Unit Exemption (40 CFR § 72.7). The three simple cycle combustion turbines meet this exemption. However, because the 22.5MW combined cycle turbines also serve the 15MW steam turbine, the two combined cycle units will be subject to the Acid Rain Program. The Acid Rain Program was initiated by the USEPA in 1995 and was the first national cap and trade program in the United States. The SO₂ program established a permanent cap on the total amount of SO₂ that can be emitted from electricity generation in the contiguous United States. For the proposed Project, the background SO₂ concentrations are 20.9 μ g/m³, and the emissions from the Main Facility would be less than 1.7 μ g/m³, the total of which would be much lower than the NAAQS of 196 μ g/m³. Emissions of SO₂ are not expected to contribute significantly to air pollution or acid rain.

• Section 6.11, page 6-20 includes the following text, supplemented as shown.

Additional emission reduction controls technologies, however, may be incorporated into the proposed Project's design during the facility's Title V <u>and Acid Rain</u> permitting process to further reduce emissions, which could reduce the NO_x credits needed to be purchased for emissions greater than 25 tons per year <u>and/or SO₂ allowances required through the USEPA's Acid Rain Program</u>.

1.5.2.9 Chapter 7 – Greenhouse Gas Emissions

• Section 7.4.5, page 7-7, includes the following text, revised and supplemented as shown.

In addition, all of the possible equipment options would be consistent with the 2015 update to the New Jersey State Energy Master Plan, which outlines the State's energy goals and provides strategies and recommendations for reducing overall emissions from power plants. Specifically, the project helps meet Goal 2, "Promote a Diverse Portfolio of New, Clean, In-State Generation," through the development of a microgrid project "to address enhanced energy resilience." (New Jersey Board of Public Utilities and New Jersey Department of Environmental Protection 2015)

On January 27, 2020, Governor Murphy unveiled New Jersey's Energy Master Plan (EMP) which outlines key strategies to reach a goal of 100% clean energy in the State of New Jersey by 2050. Also, on January 27, 2020, Executive Order (EO) 100 was signed, instructing reform to existing state regulations in order to reduce emissions and adapt to climate change. As a state agency, NJ TRANSIT is committed to the clean energy initiatives outlined in EO28 (signed May 23, 2018), EO100 and the newly released Energy Master Plan. NJ TRANSIT developed the *Resiliency and Environmental Sustainability – An Evaluation and Quantification of NJ TRANSITGRID Benefits*, dated December 2019, to evaluate and quantify the full value of the NJ TRANSITGRID TRACTION POWER SYSTEM project. The full report is available on the project website: https://njtransitresilienceprogram.com/documents/. Benefits of the NJ TRANSITGRID are also highlighted in the Energy Benefits Fact Sheet on the project website, accessible via the above link.

To support the Governor's clean energy initiatives, the NJ TRANSITGRID TRACTION POWER SYSTEM will be designed and constructed to accommodate carbon neutral power generation options, such as Renewable Natural Gas (RNG) (made from food waste or other organic materials) and large scale wind and solar generation inputs as they become more commercially feasible. The proposed Project design could potentially be adapted to emerging energy technologies and serve as a potential bridge between today's available technologies and future 100% clean energy. The project is consistent with the Governor's Clean Energy goals of EO28, to reduce emissions and adapt to climate change as per EO100, and will advance the EMP's clean energy goals by doing the following:

- <u>NJ TRANSITGRID employs the best available technology using solar, fly wheel storage and extremely efficient turbine engines and control systems. The use of these technologies will result in low emission rates (0.57 tons of CO₂/MWh⁴ versus 0.83 tons of CO₂/MWh currently generated by the regional power grid)⁵.
 </u>
- <u>NJ TRANSITGRID will displace less efficient, older power plants that currently provide power to</u> <u>New Jersey and to NJ TRANSIT.</u>
- <u>The lower emission rates will result in overall estimated annual reductions of CO₂ emissions</u> ranging from approximately 185,500 to 295,000 tons.
- <u>In addition, NJ TRANSITGRID will displace additional pollutants that are harmful to public health</u> including 412 tons of SO₂, 298 tons of NO_X, and 25 tons of PM_{2.5}, annually.
- <u>NJ TRANSITGRID will increase the resilience of the electric distribution grid, while increasing the grid's ability to integrate renewable power.</u>
- <u>NJ TRANSITGRID will not require any new natural gas transmission infrastructure.</u>
- <u>By 2050, to ensure NJ TRANSITGRID achieves net zero emissions, NJ TRANSIT is currently</u> <u>evaluating contractual requirements to incorporate emerging technologies, including:</u>
 - Increase of variable renewable technology, such as solar;
 - Increase efficiency by using waste heat from the generators for area businesses, such as warehouses;
 - <u>Use of alternative fuels RNG made from food waste or other organic materials and</u> <u>hydrogen gas as they become commercially available; and</u>
 - Incorporation of additional energy storage.

⁴ The measure "tons of CO₂/MWh" is a measure of emissions per megawatt hour of energy production. In other words, this is an emissions *rate* not a cumulative total.

⁵ Emission data are adapted from the *Resiliency and Environmental Sustainability – An Evaluation and Quantification* of NJ TRANSITGRID Benefits Report, available here: <u>https://njtransitresilienceprogram.com/wp-</u> <u>content/uploads/2019/12/NJ-TRANSITGRID-Benefits-Evaluation.pdf</u>

<u>The generation facility will align supply and demand with fast responding turbine and flywheel</u> resources to satisfy a variable load profile and will include solar panels. Approximately four acres of land at the Main Facility site are proposed for a solar (photovoltaic cells) facility that will produce up to 0.6MW.

Offshore wind energy is an emerging technology. The NJ TRANSITGRID's design does not preclude the incorporation of the emerging technologies. In keeping with the purpose and need for the proposed Project and consistent with the source of funds for the proposed Project, offshore wind in itself will not satisfy the resiliency and reliability needs of the proposed Project at this time. Therefore, while NJ TRANSIT will likely be using offshore wind energy by 2050 through regional PJM grid, under the current funding, regulatory conditions, and grant requirements, it is not feasible to include offshore wind as a potential replacement to natural gas generation for the proposed Project.

1.5.2.10 Chapter 10 – Traffic, <u>Navigation</u> and Public Transportation

• Section 10.3.2, page 10-6, includes the following text, revised as shown.

Limited NJ TRANSIT commuter rail service between Hoboken Terminal and <u>Millburn</u> <u>Maplewood</u> Station on the Morris & Essex Line.

• Section 10.3.2, page 10-6, is expanded as shown to be inserted after the Public Transportation subsection.

Vessel Traffic

The preferred Build Alternative for electrical lines crossing the Hackensack River will not impede vessel traffic as the proposed monopoles to support the electrical lines will be up to 220 feet tall (current design [20%] estimates these monopoles will be 175 feet tall). At this height, the lowest point of the electrical line sag would be greater than 150 feet from mean high water (MHW) (estimated at 162 feet above water in the 20% design). Overhead risks are expected to be minimal, as this clearance is consistent with the highest clearance of the nearby Lower Hack Bridge. Should the directional drilling option be selected, the cable would be installed at a sufficient depth beneath the riverbed to avoid hazards to vessel navigation. The submarine cable crossing (on riverbed) would include jet-plow methods to create a trench, into which the cable would be laid. NJ TRANSIT would coordinate with USCG to establish the top of cable depths when crossing river bottom and federal navigation channels." Signage to warn navigation interests of the submerged hazard would be installed if this option was chosen.

1.5.2.11 Chapter 11 – Noise and Vibration

• Section 11.3 page 11-2 and 11-3 includes the following text, revised as shown.

The nearest sensitive receptors to the Main Facility site and proposed new Kearny Substation are residences and parkland located more than 0.9 miles and 0.7 miles away, respectively.

1.5.2.12 Chapter 12 – Natural Resources

• Section 12.3.2 page 12-8 includes the following text, clarified as shown.

Project Component E will intersect the 50-foot riparian zone of the Hackensack River where the electrical line route is proposed to cross the Hackensack River, via one of three methods: an aerial crossing on new monopoles 50 feet north of the Lower Hack Bridge (preferred option), through a submarine cable laid <u>within a jet-plowed trench</u> along the river bottom, or directionally drilled underneath the river bed.

1.5.2.13 Chapter 14 – Contaminated Materials

• Section 14.3.2, page 14-5 includes the following text, revised as shown.

The SCCC property is located along the Hackensack River to the north of the Koppers Koke site. It is identified as PI number G000001583 and there is no LSRP assigned. The 25-acre site property was used for chemical manufacturing and processing operations between the early 1900s and the 1990s. The historic operations at the site included manufacturing of naphthalene products, mothballs (dichlorobenzene), drain cleaner products, creosote disinfectants, lead acid batteries, raw rubber parts, and dye carriers. COPR fill from non-site related activity is present on the property and resulting hexavalent chromium contamination is documented on the western portion of the site. The site is also referred to as Hudson County Chromate "Site 116." The NJDEP identified several AOCs including on-site lagoons, dioxins in soil, VOCs and SVOCs in all media, and groundwater contamination including DNAPL, and contaminated drainage ditch sediment and surface water. Specific contaminants of concern include chromium, VOCs, SVOCs, metals, asbestos, and PCBs, and 2,3,7,8tetrachlorodibenzo-p-dioxin (TCDD). The TCDD (dioxin) contamination was reported in the lagoon system and in the former processing area north of the lagoon system. Prior to remediation activities, the contamination had spread to adjacent properties, resulting in a contaminated area of 42 acres. Due to the extensive contamination, the NJDEP placed the site on the KCSL in 1989 and the USEPA placed the site on the Superfund National Priorities List (NPL) in 2007. The SCCC Superfund site is 42 acres and is depicted on Figures 14-1 and 14-2.

- Note that new figures 14-1 and 14-2 illustrate the boundaries of the 42-acre SCCC Superfund Site
 and its location in relation to the NJ TRANSITGRID project. This figure also includes the Spine Road
 which will be constructed by HCIA, and the temporary access road that will be used if HCIA
 construction of the Spine Road is not complete prior to the start of the proposed Project's
 construction. Figures 14-1 and 14-2 are included in the Errata Figures section of this FEIS.
- Section 14.3.2, page 14-6 includes the following text, revised as shown.

Diamond Shamrock Corporation

The 27-acre Diamond Shamrock property is located west of the Hackensack River between the SCCC site and Amtrak's Northeast Corridor. It is identified as PI number G000001974 <u>and is referred to as</u> <u>"Hudson County Chromate Site 113" also known as Diamond Shamrock Corporation</u>. And has an LSRP assigned. The chromium chemicals manufacturing facility initially engaged in the processing of

imported chromite ore for the purpose of producing sodium bichromate for sale and for use in the manufacturing of other chromium chemicals. The site is also known as Occidental Chemical Corporation (successor to Diamond Shamrock) and Chemical Land Holdings. Chromium chemicals manufactured in the plant included chrome-based leather tanning agents, specifically a product sold under the name "Tanolin," and chromic acid. All operations at the site ceased by the end of 1976. When Occidental Chemical Corporation (OCC) acquired the Diamond Shamrock Chemicals Company in 1986, Maxus Energy Corporation (Maxus) agreed to indemnify OCC for a number of environmental sites including Site 113 and certain other sites alleged to be contaminated by chromite ore processing residue from the former plant. A Maxus subsidiary, Chemical Land Holdings, Inc. ("CLH," later known as Tierra Solutions, Inc. ["Tierra"]), acquired the site to facilitate remediation pursuant to the indemnity. OCC and CLH entered into an Administrative Consent Order (ACO) in April 1990 for that purpose. The 1990 ACO was modified and superseded into by a September 7, 2011, Consent Judgment between NJDEP, OCC and others to govern remediation at the Site under NJDEP review independent on the current LSRP program. Following Maxus/Tierra's entry into bankruptcy in 2016, OCC and its corporate affiliate, Glenn Springs Holdings, Inc. ("GSH"), assumed direct control over site remediation. An affiliate of GSH, Mariana Properties, Inc., is the current owner of the property. Substantial remediation efforts have been completed at the site including construction of a barrier wall containment system surrounding the site and adjacent SCCC Site to contain groundwater, operation of a hydraulic control treatment system to treat groundwater and excavation and consolidated capping of soils and sediments associated with the implementation of the barrier control remedy. A CEA for groundwater was also established. AOCs at the site include COPR impacted site soil, shallow and deep contaminated groundwater aguifers, and the river sediments and surface water. Chromium contaminated material originated from Diamond Shamrock was utilized as fill as off site, which contaminated 40 other sites in Hudson County. The site is also referred to as Hudson County Chromate "Site 113". This site was placed on the KCSL in 1990 and a CEA has been established for the documented groundwater contamination. Tierra Solutions, Inc., is currently completing remediation and redevelopment at the Diamond Shamrock property. A RAWP was submitted May 3, 2018, to NJDEP describing the final capping remedy for the Site.

• Section 14.3.2 page 14-3 includes the following text, clarified as shown.

Previous remedial investigations conducted at the site indicated contamination within the Redevelopment Area, including: pockets of coal tar dense non-aqueous phase liquid (DNAPL) on the north-eastern portion of the site; chlorinated DNAPL to the west of the site (emanating from the adjacent SCCC site); and COPR fill on the eastern and western areas of the site. The area of Preferred Alternative Project Components A and B, <u>as well as the new electrical line alignment for Preferred Alternative Project Component E,</u> are outside the coal tar DNAPL, chlorinated DNAPL, and COPR impacted areas. Site-wide soil and groundwater contamination of VOCs, polycyclic aromatic hydrocarbons (PAHs), cyanide, and metals has been identified and are present within the areas of Preferred Alternative Project Components A and B. Sediment contamination of SVOCs and arsenic was found along the Hackensack River.

1.5.2.14 Chapter 16 – Safety and Security

• Section 16.3.2, page 16-6 is supplemented as shown with below text to be inserted after the last paragraph of the Public Health and Safety subsection.

For marine vessels on the Hackensack River, specifically under and adjacent to the Lower Hack Bridge, overhead risk is expected to be minimal because the proposed height of the monopoles and the aerial wire crossing are consistent with the highest clearance of the nearby Lower Hack Bridge. Although the monopoles may be up to 220 feet tall, the current design (20%) estimates these monopoles will be 175 feet tall. At this height, the lowest point of the electrical line sag would be greater than 150 feet from MHW. Should the directional drilling option be selected, the cable would be installed at a sufficient depth beneath the riverbed, as directed by the USCG, to avoid hazards to vessel navigation, and appropriate signage would be included to warn navigation interests of the submerged hazard if necessary. The submarine cable crossing (on riverbed) would include jet-plow methods to create a trench, into which the cable would be laid. If the cable option were selected, NJ TRANSIT would coordinate with USCG to establish the top of cable depths when crossing river bottom and federal navigation channels. Signage to warn navigation interests of the submerged hazard would be installed if this option was chosen. Over time, the cable would be silted over by natural processes, reducing this risk. In accordance with 33 CFR § 165.5 Establishment Procedures, a written request for establishment of a safety zone, security zone, or regulated navigation area will be submitted to the USCG in advance of construction activities.

•	Table 16-3, page 16-11,	, last row is supplemented as shown below:	
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Element	Accident Risk	Mitigation	User Group Affected
Electrical lines	 Electrical Shock <u>Vessel or vessel</u> <u>anchor, strike or</u> <u>snag at Hackensack</u> <u>River crossing</u> 	 Worker Training <u>Overhead will</u> <u>meet or exceed</u> <u>highest clearance</u> <u>of nearby Lower</u> <u>Hack Bridge;</u> <u>underwater line</u> <u>would be at</u> <u>sufficient depth</u> <u>beneath riverbed</u> <u>to avoid anchor</u> <u>snags and signage</u> <u>would be used to</u> <u>warn navigation</u> <u>interests of the</u> <u>presence of the</u> <u>cable.</u> 	 Involved Workers General Public Recreational boaters Commercial/Government vessel occupants

Table 16-3 Potential Accidents and Mitigation

1.5.2.15 Chapter 17 – Construction Effects

• Section 17.1.1, page 17-2 includes the following revision, as shown below:

A temporary floating access easement would be secured for construction access from the river and sheet pile wall.

• Section 17.3.8, page 17-14 is supplemented with the text below, to be inserted after the last paragraph of the Traffic and Transportation section.

MARITIME TRAFFIC

The Hackensack River is a navigable channel in the vicinity of the Main Facility and the location for the crossing of the Hackensack River near the Lower Hack Bridge. The Harbor Safety, Navigation and Operations Committee of the Port of New York and New Jersey recommends that all entities responsible for the safe movement of vessels in and through the waters of the Port of NY/NJ maintain a minimum clearance of two feet between the deepest draft of their vessel and channel bottom in the Hackensack River between Droyers Point to the turning basin at Marion (U.S. Coast Pilot 2, Chapter 11). The location of the cable crossing is north of the turning basin, where the controlling depth is 11 feet. The crossing will be designed to maintain the current draft availability. If an aerial crossing (preferred option) is not installed, the cable would either be directionally drilled beneath the river bottom to a depth where no impacts from boat strikes or anchor snag would be expected, or laid in a jet-plowed trench across the river bottom, well below the existing mudline. This trench would silt in over time, further reducing the probability of accidental damage to the cable. NJ TRANSIT would coordinate with USCG to establish the top of cable depths when crossing river bottom and federal navigation channels. Proper signage would warn navigation interests of the presence of the submerged cable. Prior to the start of construction of the Hackensack River electrical line crossing, NJ TRANSIT would submit a written request to the USCG, if restrictions to vessel traffic are deemed necessary. The request would be submitted in accordance with 33 CFR § 165.5 Establishment Procedures (Regulated Navigation Areas and Limited Access Areas).

• Section 17.3.10, page 17-17 has been supplemented as shown below:

As stated above, if the preferred alternative of an aerial crossing of the Hackensack River is not possible, Project Component E may include installation of a submarine cable across the Hackensack River bottom <u>within a jet-plowed trench one to two feet deep</u>, or a directionally drilled cable. Either activity would require several federal and state permits and close coordination with natural resource protection agencies, including but not limited to USACE, USCG, NMFS, and NJDEP, to minimize potential impacts to natural resources. <u>The directionally drilled cable option would be installed at a minimum of two feet below the mudline of the Hackensack riverbed. The submarine cable option will be installed in a jet-plowed trench at a sufficient depth within the Hackensack riverbed to reduce the risk of anchor strike or snags. The water bottom on which the cable will be laid upon installed within the riverbed is identified as EFH for summer flounder and Atlantic herring, and migratory habitat for shortnose Atlantic sturgeon, and winter flounder.</u>

1.5.2.16 Chapter 18 – Indirect and Cumulative Effects

• Section 18.3.2, page 18-4, includes the following text, to be inserted after first paragraph.

The air quality analysis considered a two-mile radius based on NJDEP's Guidance for Air Modeling Protocol which calls for a 3-kilometer (1.86 miles) radius. NJDEP's guidance is based on Section 7.2.1.1 Dispersion Coefficients of USEPA's *Guideline on Air Quality Models* (40 CFR Appendix W to Part 51), which includes recommendations for dispersion modeling exercises for prediction of downwind concentrations. Using the 3-kilometer (1.86 miles) radius (with the source of pollution at the center) determines the proper dispersion coefficient (urban or rural) for use in USEPA's dispersion model, AERMOD. The DEIS used two miles to err on the conservative side.

The two-mile radius around the Main Facility overlaps the two-mile radius area around one nearby power generation plant (PSE&G Fossil LLC Kearny Generating Station), and another Title V facility (the Owens Corning Kearny Plan). Single-source air quality modeling indicated that maximum estimated concentrations for all criteria pollutants (except for 24-hour PM2.5) are below the applicable significant impact level (SIL) (e.g., none of these pollutants exceed the applicable increment). The SILs (developed by USEPA and NJDEP) are levels below which the potential impacts of a proposed project are not considered to be significant. The maximum estimated 24-hour impact for $PM_{2.5}$ is greater than the SIL. The radius of influence or significant impact area for PM2.5, which is the area where potential impacts are greater than the PM25 SIL, is approximately 900 meters. The PSE&G facility is outside of the significant impact area for all criteria pollutants for the Main Facility. The Owens Corning Kearny Plant is within the significant impact area for PM2.5. Since the proposed Project modeled impacts exceeded the SIL for the PM_{2.5} 24-hour averaging period, a multisource (cumulative) modeling analysis was conducted to determine if the proposed Project would cause or significantly contribute to a modeled exceedance of the 24-hour PM_{2.5} National Ambient Air Quality Standard (NAAQS). The cumulative modeling analysis includes emissions from the proposed Project, emissions from nearby sources of PM_{2.5} and also monitored background concentrations to represent other sources or regional emissions not explicitly included in the model. The cumulative modeling analysis will be reviewed by NJDEP prior to obtaining an air quality permit to operate and the analysis will be required to demonstrate the proposed Project would not cause or significantly contribute to a modeled exceedance of the NAAQS in order to obtain the permit to operate.

• Section 18.4, page 18-6 includes the following text, added to the end of the first paragraph as shown.

The Hudson County Correctional Facility is located more than 7,000 feet (1.3 miles) to the south of the Main Facility, in Kearny, NJ. The nearest residential property is located approximately 0.7 miles to the southeast in Jersey City. Following Project implementation, all air quality pollutants of concern would remain below the applicable NAAQS and impact thresholds at all sensitive receptors (including the Hudson County Correctional Facility and residential properties in surrounding areas). The proposed Project would not adversely affect <u>USEPA's designation of attainment for NO₂, SO₂, and PM₁₀ or the designation of maintenance for CO and PM_{2.5}, for the area.</u>

1.5.2.17 Chapter 19 – Environmental Justice

• New Section 19.4.3, page 19-24 as shown.

Section 19.4.3 Summary of Significant Adverse Impacts and Mitigation Measures

<u>As stated above, the Build Alternative would not adversely affect minority or low-income populations</u> that are subject to evaluation under Executive Order 12898.

<u>The construction and operation of the Build Alternative would not result in disproportionately high or</u> <u>adverse effects on minority or low-income populations for any of the analyzed resources, including</u> <u>Land Use, Community Facilities, Socioeconomics, Visual Resources, Historic Resources, Traffic,</u> <u>Navigation and Public Transportation, Noise and Vibration, Natural Resources, Soils and Geology,</u> <u>Contaminated Materials, Utilities, or Public Health and Safety.</u>

Regarding Air Quality, the proposed Project would not have an adverse effect, either directly or cumulatively, in the modeled area of air quality impact analysis on any EJ communities. The Hudson County Correctional Facility (residential community facility) is located more than 7,000 feet (1.3 miles) to the south of the Main Facility, in Kearny, NJ. The nearest residential property is located approximately 0.7 miles to the southeast in Jersey City. All air quality pollutants of concern would remain below the applicable NAAQS and impact thresholds at the nearest sensitive receptors (including the Hudson County Correctional Facility and residential properties in surrounding areas). Therefore, the Build Alternative would not disproportionally affect minority or low-income populations that are subject to evaluation under Executive Order 12898. The Build Alternative will improve the reliability of public transportation both during normal operations and during emergency conditions. Therefore, the Build Alternative would not significantly affect minority or low-income populations that are subject to evaluation under Executive Order 12898.

1.5.2.18 Chapter 20 – Section 4(f) Evaluation

• Section 20.3, page 20-3 includes the following text, revised as shown.

Limited NJ TRANSIT commuter rail service between Hoboken Terminal and <u>Millburn Maplewood</u> Station on the Morris & Essex Line (approximately <u>16.3</u> <u>15.2</u> rail miles), via a power connection to the Mason Substation;

1.5.2.19 Chapter 21 – Agency Coordination and Public Participation

• Section 21.2.2, page 21-3 includes the following text, supplemented as shown.

USACE Section <u>10/</u>404 Individual Permit, which is required for, <u>overhead transmission lines</u>, the discharge of dredged or fill materials into a surface water of the United States; and

<u>USCG establishment of a Regulated Navigation Area or Limited Access Area to restrict or prohibit</u> <u>vessel traffic during utility installation crossings of the Hackensack River shall be submitted in writing</u> <u>as per 33 CFR § 165.5.</u>

1.6 CONCLUSION

The DEIS showed that the Preferred Alternative would achieve the Purpose and Need and would represent the least environmentally damaging practicable alternative as compared to the No Action Alternative. While substantive comments received during the public comment period raised points of information, clarification, or correction, comments received during the public comment period did not result in new information requiring substantial additional analysis of impacts or changes to the Preferred Alternative; or in new alternatives warranting full analysis.

1.6.1 Effects of the NEPA Preferred Alternative

The effects of the Preferred Alternative and the cumulative effects of each Project Component on the full range of social, economic, and environmental impacts are presented in Table 2. While the Preferred Alternative would not result in significant adverse effects on social, economic or environmental conditions in the study area that could not be mitigated, there would be some minimized non-significant impacts alleviated by proposed, suitable and commensurate mitigation to the following evaluated environmental categories: Air Quality, GHG Emissions, Historic Resources, Traffic, Navigation and Public Transportation, Natural Resources, and Utilities. Additionally, temporary construction impacts were evaluated in the DEIS and would be reduced with provided mitigation measures and best management practices (BMPs). As designed, the Preferred Alternative is not anticipated to pose any state or federal regulatory permitting compliance issues.

The environmental analyses considered the potential effects in study areas that were defined for each specific environmental topic area. Effects on Air Quality, GHG Emissions, Visual, Historic Resources, and Utilities may differ based on the final Main Facility configuration and connectivity options chosen; however, the analysis in the DEIS considered a reasonable worst-case scenario. The analysis presented described the effects of normal operating conditions. If the potential effects under emergency operating conditions differ from those of normal operating conditions, those effects were described separately in the appropriate resource chapters.

Analysis Area	Potential Operational Effects	Potential Construction Effects	Control Measures and Minimization/ Mitigation Commitment ⁶	Net Result of Preferred Alternative with Implemented Mitigation	No Action Alternative Effects
Land Use,	The Preferred	None. Construction	None	No mitigation is	NJ TRANSIT's
Zoning and	Alternative is	activities would take		required however,	acquisition of the two
Public Policy	compatible with land	place within existing		there would be an	parcels (20-acre and six-
	use, zoning, and public	transportation rights-of-		adverse effect on	acre) would have
	policy in the study	way or easements. The		approximately two	proceeded without the
	area. The preferred site	property acquisition for		acres within Cedar	proposed Project. A
	for the Main Facility is	the 20-acre parcel and		Creek Marsh South, as	new Kearny Substation
	currently a vacant	the six-acre parcel was		discussed under	would still be
	brownfield site. The	completed in July 2019.		Natural Resources.	constructed under the
	NJSEA is seeking			Additionally, the	No Action Alternative,
	redevelopment of			Preferred Alternative	therefore some changes
	brownfield sites in their			would return a vacant	to land use would still
	jurisdiction. The			brownfield site to	occur.
	proposed Project			active use, which is a	
	would return the			positive net result.	
	property, which has				
	laid dormant for 40				
	years, to active use.				

Table 2 Summary of Potential Impacts and Mitigation Commitments for Preferred Alternative

⁶ Minimization measures to reduce impacts are developed and identified as a result of the environmental analysis in the DEIS. Mitigation commitments are obligations identified for significant impacts to resources that exceed a permitting threshold that NJ TRANSIT will fulfill as part of the project, such as obtaining appropriate wetland mitigation credits (to replace the impacted 2 acres of freshwater wetland resource as required by regulatory agencies) and permits prior to construction and ongoing consultation with regulatory agencies as the project design progresses. As noted in the DEIS, all adverse impacts (including insignificant impacts) have been minimized through project design, and as required will be mitigated for under the permitting process, via credit purchase-based on availability, or commensurate mitigation as directed by federal and state regulatory agencies.

Analysis Area	Potential Operational Effects	Potential Construction Effects	Control Measures and Minimization/ Mitigation Commitment ⁶	Net Result of Preferred Alternative with Implemented Mitigation	No Action Alternative Effects
Community Facilities	None. No community facilities, parks, or publicly accessible open space, are located directly within the proposed Project's footprint, including electrical line routes, and no services would be adversely affected during operation.	Some temporary/ short duration increases in noise levels near some community facilities during construction.	Control Measure and Minimization: Conduct construction to minimize noise impacts to nearby community facilities.	Under evacuation scenarios, commuters would have access to designated central meeting points, such as schools, hospitals, and safe shelters.	None
Socio-economic Conditions and Environmental Justice	None. No adverse effects on neighborhood cohesiveness or economic conditions would occur as the proposed Project area is entirely within industrial areas and transportation rights- of-way. Approximately 30 full-time jobs will be created for staffing the Main Facility.	Some short-term (48 months) economic benefits from creation of temporary construction jobs. Some temporary/ short duration increases in noise levels near some neighborhoods during construction.	Control Measure and Minimization: Conduct construction to minimize noise impacts to nearby neighborhoods and residential properties.	Positive net result through creation of approximately 30 full time jobs to operate the Main Facility, and to support commuter travel during commercial power grid outages.	Missed opportunity to increase commuter safety and security in future widespread power outages. No new employment opportunities would be realized.

Analysis Area	Potential Operational Effects	Potential Construction Effects	Control Measures and Minimization/ Mitigation Commitment ⁶	Net Result of Preferred Alternative with Implemented Mitigation	No Action Alternative Effects
Air Quality	Overall air emissions would increase slightly for Nitrogen Oxide (NO _x), Carbon Monoxide (CO) and Hazardous Air Pollutants (HAPs) due to the Main Facility but would be minimized via pollution controls (selective catalytic reduction [SCR] and oxidation catalyst systems) incorporated into the design of the Main Facility. Due to the use of clean burning natural gas, minimal particulates, sulfates, ammonia, or lead will be emitted by the Main Facility. Reduced demand on the commercial grid could partially offset increased emissions in the region.	Potential for increased fugitive dust during construction, and some increased emissions from construction equipment. With mitigation measures, no significant adverse effects on air quality would occur during construction.	Control Measure and Minimization: In consultation with NJDEP, development of additional measures to reduce pollutant emissions which would be monitored by the Title V permit/ NJDEP, and adherence to Title V permit conditions, including purchase of NO _x credits. During construction, quality control measures to reduce fugitive dust would be implemented. Construction equipment would use Tier 4- compliant engines to reduce emissions.	Net effects: Under 24/7 operations, the Preferred Alternative would have minimal impact on Air Quality, but would remain below levels required to maintain USEPA's designation of attainment/ maintenance for criteria pollutants. Modern technology employed would minimize emissions. Those impacts could be partially offset by reduced demand from the commercial power generation plant.	Potential minimal increase in emissions would not be realized. Benefits from the solar facility would not be realized. NJ TRANSIT and Amtrak would continue to rely on the commercial grid for traction power in the core service territory, which includes facilities that burn oil and coal.

Analysis Area	Potential Operational Effects	Potential Construction Effects	Control Measures and Minimization/ Mitigation Commitment ⁶	Net Result of Preferred Alternative with Implemented Mitigation	No Action Alternative Effects
Greenhouse Gas Emissions	The estimated amount of GHGs generated by the worst-case Preferred Alternative is (approximately 576,802 metric tons per year of CO ₂ e). This assumes all 5 turbines would run continuously (8,760 hours per year). Actual GHG emissions will be lower since all five turbines would not run simultaneously at maximum capacity.	Temporary increase in GHG emissions during construction would result from non-road construction engines and on-road trucks would be limited and short-term. With certain commitments, the temporary GHG emissions from construction would not result in significant adverse effects.	Control Measure and Minimization: Pollution controls incorporated into the design (SCR and oxidation catalyst systems). During construction, contractors would be required to source materials locally when feasible, use biodiesel fuel when possible, design efficient transportation routes and adhere to air quality control measures listed above.	The energized assets of the project will no longer use electricity from the commercial power grid. The reduced commercial demand could offset some emissions, depending on mix of energy sources operating on the commercial grid. During emergency conditions, the availability of public transportation would reduce the need for less efficient transportation modes, which could result in reduced GHG emissions during that time.	Potential minimal increase in GHG emissions would not occur. During emergencies, public transportation would not be as available, so less-efficient travel modes would be required, as under current conditions.

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Analysis Area	Potential Operational Effects	Potential Construction Effects	Control Measures and Minimization/ Mitigation Commitment ⁶	Net Result of Preferred Alternative with Implemented Mitigation	No Action Alternative Effects
Visual Quality	Most viewsheds would not be affected by the proposed Project. New monopoles would be the most significant new visible structures and will be designed to be consistent in color and texture to existing monopoles and existing visual character in the various project areas. Effects on historic districts are discussed under Historic Resources. The Main Facility will be constructed in an existing industrial area. The new substations and the nanogrid would be consistent with surrounding visual character.	All changes in views would be limited and temporary and would not result in significant adverse impacts to visual and aesthetic resources during construction.	None	The proposed Project would be consistent with the surrounding visual character. Aesthetic effects on historic districts are summarized below under Historic Resources.	Kearny Peninsula would still be developed with warehouses and the new Kearny Substation would still be constructed in Cedar Creek Marsh South. However, these would not be significant impacts to Visual Quality in the project area.

Analysis Area	Potential Operational Effects	Potential Construction Effects	Control Measures and Minimization/ Mitigation Commitment ⁶	Net Result of Preferred Alternative with Implemented Mitigation	No Action Alternative Effects
Historic Resources	Monopoles would result in an adverse visual effect on the Old Main Delaware, Lackawanna and Western (DL&W) Railroad Historic District, the Bergen Tunnels western portal, the West End Through Truss Bridges, the West End Interlocking Tower, the Hackensack River Lift Bridges Historic District, the Lower Hack Draw Bridge and the DL&W Railroad Boonton Line Historic District.	The construction-period monitoring and mitigation measures would ensure that no significant adverse impacts to historic or archaeological resources occur during construction. There is the potential to encounter archaeological resources depending on design of supporting infrastructure (e.g., electrical line installation, sanitary sewer connection, pile driving, directional drilling, etc.).	Mitigation: Mitigation measures as described in the executed PA, include ongoing consultation with NJ HPO during continued project development, preparation of a comprehensive historic context document for the Old Main DL&W Railroad Historic District, recordation of historic/ architectural resources, preparation and installation of interpretive exhibits that are visible to the public, and having an archaeologist on-site during construction activities in areas designated with archeological sensitivity. Any physical alterations to other architectural resources will be designed in accordance with the Secretary of the Interior's Standards for Rehabilitation.	With the mitigation measures included in the executed Programmatic Agreement (PA) between FTA, New Jersey State Historic Preservation Office (NJ HPO) and NJ TRANSIT, the proposed Project would offset minor changes to historic view sheds with recordation. Areas of sensitivity for potential disturbance of undocumented archaeological resources would be monitored during construction. Recordation and public availability of display signs will provide education to the same individuals that use this Historic District for their daily commutes.	No direct physical or aesthetic effects on historic resources. Lost opportunity to educate commuters on the described historic district and contributing resources.

Analysis Area	Potential Operational Effects	Potential Construction Effects	Control Measures and Minimization/ Mitigation Commitment ⁶	Net Result of Preferred Alternative with Implemented Mitigation	No Action Alternative Effects
Traffic,	Minimal amount of	Temporary (non-	Control Measure and	No adverse effects on	None. Without the
Navigation and	traffic (approximately	significant) increase in	Minimization: Planned service	rail, street or other	preferred alternative,
Public	20 trips per each shift,	vehicular traffic during	disruptions would be	mode during normal	traffic in the proposed
Transportation	three shifts per day for	construction from	infrequent during construction	conditions. During	Project area would
	30 full time employees)	workers traveling to and	and minimized to avoid	emergency conditions,	likely increase in the
	generated by Main	from the site and	impacts to commuters.	rail commuters would	future if planned
	Facility would be easily	equipment deliveries.	Restrictions to vessel traffic	retain access to	construction of
	accommodated into	Some limited, planned	would be closely coordinated	reliable, although	warehouses allowed
	the traffic network with	train service disruptions	with the USCG, in accordance	limited, rail service,	under current zoning on
	little noticeable effect.	and/or restrictions to	with 33 CFR <u>§</u> 165.5	resulting in a lesser	the Kearny Peninsula
	Positive effects on vessel traff		Establishment Procedures to	impact to vehicle	occurs. Potential for
	public transportation in	Lower Hack Bridge may	facilitate a temporary safety	transportation during	adverse effects (delays
	the region would be	be required to	zone, security zone, or	emergencies. Some	and strandings) to
	realized during	accommodate	regulated navigation area. The	temporary restrictions	commuters during
	emergency conditions	construction activities,	cable would cross the	to vessel navigation	power outages. No
	since limited rail	such as installation of	Hackensack River either via	may be required during	changes to vessel
	service would be	electrical lines,	aerial crossing between two	construction, but no	navigation would be
	available. The	deliveries for large	monopoles (preferred option)	impacts to vessel	realized.
	Hackensack River is a	pieces of equipment	which would be constructed	navigation from	
	navigable waterway,	(i.e., the turbines or	high enough to avoid impacts	operations would be	
	with a channel	generators if brought in	to vessel traffic, or	realized.	
	maintained north of	by rail or barge) and	directionally drilled beneath		
	the Lower Hack Bridge	cutover from existing	the river bottom or installed		
	approximately 11 feet	Substation No. 41 to the	within a jet-plowed trench 1		
	deep. Existing channel	new Kearny Substation	to 2 feet deep on the river		
	depth and Lower Hack	(rail disruptions only).	bottom to avoid reducing		
	Bridge vertical		existing draft clearances.		
	clearances will not be		Appropriate signage would be		

Analysis Area	Potential Operational Effects	Potential Construction Effects	Control Measures and Minimization/ Mitigation Commitment ⁶	Net Result of Preferred Alternative with Implemented Mitigation	No Action Alternative Effects
	affected. No impacts to vessel navigation would occur once the project is operational.		used in the latter two cases to warn navigation interests of the presence of the cable.		
Noise and Vibration	None. Project would be designed to meet all applicable noise and vibration standards, including those set forth for the Redevelopment Area, during operation.	Limited augering, directional drilling, and other construction activities required for installation of substations, monopoles, electrical lines, and other project elements, as required, could result in nuisance noise for a few weeks in any given location. Pile driving for foundations for the Main Facility, new Kearny Substation, and nanogrid would be temporary, and removed from sensitive receptors.	Control Measure and Minimization: Construction activities will be conducted during normal business hours (no earlier than 7AM and no later than 7PM, where practical) when activities are near residential areas. Noise or vibration impacts related to aquatic habitats will be avoided through construction windows/seasonal restrictions as currently defined from agency consultations and conditioned under future regulatory permits.	Once operational, noise from the proposed Project would be minimal in residential or other sensitive areas due to the industrial setting of the Main Facility and distance to sensitive receptors from the new NJ TRANSITGRID East Hoboken Substation and the nanogrid.	None
Natural Resources	Approximately 1.7 acres filling of open water resource in Cedar Creek Marsh	All construction effects would be temporary. Pile driving/auger drilling in Cedar Creek	Mitigation: Creation and/or improvement of wetlands elsewhere in New Jersey through the purchase of state	Wetland credit purchase is assumed to be an estimated, equivalence of 1 credit	Approximately 1.7 acres of wetlands (Cedar Creek Marsh South) would be impacted with

Analysis Area	Potential Operational Effects	Potential Construction Effects	Control Measures and Minimization/ Mitigation Commitment ⁶	Net Result of Preferred Alternative with Implemented Mitigation	No Action Alternative Effects
	South for new Kearny	Marsh South would	and federal approved	= 2.4 acres of restored	construction of the new
	Substation and	affect the water bottom	compensatory wetland	high value, functional	Kearny Substation to
	monopole	and displace local fish	mitigation credits in	wetlands. Although up	replace the existing
	improvements would	and aquatic fauna to	accordance with mitigation	to two acres of low	Substation No. 41. No
	be required. Minor	other areas of the	hierarchy, or commensurate	value isolated wetlands	other Natural Resources
	effects on low-value	marsh; however, the	mitigation as deemed	will be eliminated by	would be impacted
	delineated wetlands	habitat value is low	appropriate by federal and	the Preferred	under the No Action
	near Project	because the marsh is	state regulatory agencies.	Alternative, through	Alternative.
	Components A, B and	hydrologically restricted	Permit acquisition (wetlands,	compensatory wetland	
	E. A total of up to two	by tide gates and	flood hazard), adherence to	mitigation the project	
	acres of low resource	drainage pipes.	permit conditions and	will support the	
	value isolated wetlands	Potential impact/	restoration of any vegetation	ecological restoration	
	for the Preferred	displacement during in-	temporarily altered by	of up to 5 acres of	
	Alternative would be	water work to habitat or	construction/ access activities.	higher value, functional	
	required. During	passage areas for	Limiting construction outside	wetlands within a	
	operation of the	summer/ winter	of seasonal windows or within	contiguous tidal marsh	
	proposed Project,	flounder, Freshwater	seasonal windows following	and aquatic nursery of	
	migratory and endemic	herring and Atlantic	conditions and best	the Meadowlands.	
	fish such as summer,	shortnose sturgeon if a	management practices		
	winter flounder and	submarine cable is used	coordinated with NMFS and		
	Atlantic or shortnose	to cross the Hackensack	NJ Bureau of Marine Fisheries		
	sturgeon would resume	River. Bald Eagle and	(NJBMF) to avoid negative		
	normal foraging and	Osprey migratory	effects on aquatic species in		
	migratory activities. No	pathway impact is	the Hackensack River (if		
	operational effects are	minimal or negligible as	required).		
	expected for raptors	work is within an active			
	(birds of prey) that	rail corridor with			
	would migrate and	minimal foraging			

Analysis Area	Potential Operational Effects	Potential Construction Effects	Control Measures and Minimization/ Mitigation Commitment ⁶	Net Result of Preferred Alternative with Implemented Mitigation	No Action Alternative Effects
	forage in the project vicinity, or in proximal waters or tidal marsh.	resources. Once construction is completed any normal or transient predation activities would resume.			
Soils and Geology	No effects on soils and geology are expected during operations. Ground disturbed for the project is largely in areas of previous disturbance.	Potential for erosion and sedimentation during construction activities.	Control Measure and Minimization: Use of Soil Erosion and Sediment Control (SESC) and use of BMPs.	Development of the unvegetated and vacant site will eliminate fugitive dust once the Preferred Alternative is operational.	None
Contaminated Materials	No effects on existing contaminated materials are expected during operations. Operation of the Main Facility would require the storage and handling of small amounts of fuel and hazardous non-fuel substances (such as aqueous ammonia and industrial cleaners used for regular maintenance). The	Potential to expose historic fill or contaminated soil and/or groundwater during construction due to known contamination onsite.	Control Measure and Minimization: Preparation of pre-construction limited investigation plans, Health and Safety Plan (HASP), Remedial Action Workplan (RAWP), Materials Management Plan (MMP), and specification including adherence to regulations. Use of double/multi-cased pilings to minimize potential for contaminant transport at the Main Facility and locations of monopoles.	Preferred Alternative would return a vacant brownfield site to active use, which is a positive net result.	None

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Analysis Area	Potential Operational Effects	Potential Construction Effects	Control Measures and Minimization/ Mitigation Commitment ⁶	Net Result of Preferred Alternative with Implemented Mitigation	No Action Alternative Effects
	proposed Project will be designed to meet or exceed all relevant state and federal safety standards.				
Utilities	Extensions of sanitary sewer and municipal water service required. Capacity of services expected to be adequate for the Preferred Alternative.	New utility extensions would be constructed; however, construction of the Preferred Alternative would not result in significant adverse impacts to existing utilities.	Control Measure and Minimization: Coordination and agreements with utilities. Acquisition of sanitary sewer and water main extension/ connection permits.	Providing reinforced and reliable electrical infrastructure, to support immediate and long-term electrical needs for public transportation in the core service territory.	None
Safety and Security	None. The facility would be designed to meet and exceed regulatory standards.	Construction workers will be required to attend all applicable NJ TRANSIT and/or Amtrak safety training. Construction activities (deliveries and installation of electrical line over Hackensack River) will be coordinated with USCG.	Control Measure and Minimization: Safety and security features incorporated into the design. Preparation and implementation of HASP during construction.	Preferred Alternative would provide improvements to safety of public transportation users during emergency conditions.	Improvements to safety and security in the region (i.e., providing reliable public transportation if New Jersey and New York City job centers need to be evacuated during widespread outages of the commercial grid) would not be realized.

1.6.2 Summary of Required Permits and Mitigation Commitments

Table 3 below includes a summary of all applicable permits, certifications and agreements for the construction and operation of the proposed Project, including anticipated special conditions, commitments and/or mitigation measures to which NJ TRANSIT will adhere. NJ TRANSIT is prepared to comply with all federal, state and local regulations during the design and construction phase of the proposed Project.

Permits/ Certifications/ Agreements	Regulations	Regulatory Agency/ Jurisdiction	Federal/State /Local	Activity	Special Conditions, Commitments and Mitigation Measures ⁷				
Historic Resources & Section 4(f) Properties									
Section 106 - Programmatic Agreement	Section 106 of the National Historic Preservation Act of 1966 (33 CFR Part 800)	FTA, NJ TRANSIT and NJ HPO	Federal/State	Project has been found to potentially adversely affect historic resources. Pursuant to 36 CFR § 800.14 (b), FTA, NJ TRANSIT and NJ HPO have executed a Programmatic Agreement (PA), signed January 16, 2020.	The PA summarizes all Section 106 consultations and establishes stipulations and agreed upon mitigation measures to be implemented during the project's design and construction, to avoid, minimize, or mitigate adverse effects of the Project on historic and archaeological resources. Refer to FEIS Appendix B – Section 106 Programmatic Agreement for details on agreed upon mitigation measures. Measures include survey and photographic recordation of nearby historic resources and monitoring of excavations for unanticipated disturbance of archaeological disturbances. Should unanticipated archaeological resources be discovered, they will be treated in accordance with regulations set forth at 36 CFR § 800.11 and CFR § 800.13. In the event Native American archaeological resources are discovered during construction, construction will cease in the area, and FTA will notify all Tribal representatives. Construction will not resume until such time as the significance, treatment, and disposition of said discoveries can be determined in consultation with consulting parties.				

⁷ Special Conditions, Commitments and Mitigation Measures listed in this table are those that are currently anticipated by NJ TRANSIT. During the permitting process, and as design progresses, regulatory agencies may alter the final conditions/commitments/mitigation measures. NJ TRANSIT will adhere to all requirements of all permits, certifications and agreements, as required by law.

Permits/ Certifications/ Agreements	Regulations	Regulatory Agency/ Jurisdiction	Federal/State /Local	Activity	Special Conditions, Commitments and Mitigation Measures ⁷				
Section 4(f)	Section 4(f) of the Department of Transportation Act of 1966 (23 CFR Part 774)	USDOI	Federal	Evaluation to determine no prudent and feasible alternative exists to avoid use of a Section 4(f) property. Evaluation describes all possible planning to avoid, minimize and mitigate potential project impacts on historical and cultural resources. No significant impacts on public recreation or wildlife refuges were identified.	Refer to Appendix A – Section 4(f) Evaluation and mitigation measures are set forth in the executed Section 106 PA, found in Appendix B – Programmatic Agreement.				
	USACE Section 10/Section 404								
Section 10 Individual Permit	Section 10 of the Rivers and Harbors Act of 1899 (33 USC 403)	USACE New York District	Federal	Section 10 Individual Permit required for obstruction or alteration of navigable waters by replacing or constructing structures within a navigable water, or overhead transmission lines.	 Federal Public Notice period and consult between the USACE and USCG, for the to be submitted Section 10 permit, will ensure: 1. That the preferred crossing via aerial transmission over the Hackensack River has been designed to account for potential line sag and meets the minimum navigational and bridge clearances as required by the USACE and USCG under, Regional Conditions for Nationwide Permit (NWP) (12) Utility Lines, Condition (i), where temperature, load, wind, length of span, and type of supports are factored. 2. The preferred alternative (aerial crossing) does not propose in water activities; however, should other alternatives requiring in water work be permitted, the appropriate USCG-Regulated Navigation Area or Limited Access Area will be established in accordance with 33 CFR § 165.5. The proposed crossing option(s) will be authorized under an Individual permit and will adhere to 				

Permits/ Certifications/ Agreements	Regulations	Regulatory Agency/ Jurisdiction	Federal/State /Local	Activity	Special Conditions, Commitments and Mitigation Measures ⁷
					applicable regional conditions as stipulated under a NWP (12) Utility lines, which provides minimal clearance requirements for aerial transmission lines across navigable waters and buried cables or pipelines across "All Other" federal navigation channels. Establishing top of cable depths when crossing river bottom and federal navigation channels. Any seasonal timing restriction on work within waters to avoid negative effects on aquatic species in the Hackensack River as required by NOAA or NJDEP will be included in the permit.
Section 404 Individual Permit	Section 404 of the Clean Water Act of 1977 (33 USC 1251)	USACE New York District	Federal	Section 404 Individual Permit required for placement of fill, outfall structure, utility, into "waters of the US," including the Hackensack River and Cedar Creek Marsh South. Wetland delineation data to be presented under the Section 404 submission. A separate Jurisdictional Determination will not be procured.	Mitigation under the Section 404 permit will address impacts to wetlands/waters of the U.S. to be authorized under Section 404 Individual Permit. Mitigation commitments include the purchase of state and federally approved compensatory wetland mitigation credits from a federally approved mitigation bank in accordance with mitigation hierarchy, or commensurate mitigation as deemed appropriate by the USACE and NJDEP during the permitting process. Federal Public Notice under Section 404 permit review between the USACE and USCG will ensure any required Regulated Navigation Area or Limited Access Area is established in accordance with 33 CFR <u>§</u> 165.5. Any seasonal timing restriction on work within waters to avoid negative effects on aquatic species in the Hackensack River as required by NOAA or NJDEP will be included in the Permit.

Permits/ Certifications/ Agreements	Regulations	Regulatory Agency/ Jurisdiction	Federal/State /Local	Activity	Special Conditions, Commitments and Mitigation Measures ⁷
Compensatory Mitigation for Losses of Aquatic Resources	Section 404 of the Clean Water Act (40 CFR 230)	USACE New York District	Federal	Mitigation requirements for activities authorized under Section 404 under the USACE NY District are found in 33 CFR Part 332. The New York District Public Notice Announcing the Compensatory Mitigation Guidelines and Mitigation Checklists dated January 10, 2005. Mitigation will be required for filling wetlands/waters of the U.S.	To achieve a "no net loss" of wetlands/waters of the U.S., once a Section 10/404 permit is procured, NJ TRANSIT will purchase federally approved compensatory wetland mitigation credits to offset impacts to wetlands/waters of the U.S. in accordance with mitigation hierarchy, or provide a commensurate mitigation as deemed appropriate by federal and state regulatory agencies.
			NJDEP Div	vision of Land Use Regulation	
In-Water Waterfront Development Permit	Coastal Zone Management Rules (N.J.A.C. 7:7)	NJDEP Division of Land Use Regulation	State	Permit required for construction of outfall structures and a submerged/ directionally drilled cable (not the preferred river crossing option) below the MHW Line of the Hackensack River.	It is anticipated that the permit will identify a seasonal timing restriction on work within tidal waters to avoid negative effects on aquatic species in the Hackensack River.
Water Quality Certificate	Coastal Zone Management Rules (N.J.A.C. 7:7)	NJDEP Division of Land Use Regulation	r State	NJDEP is responsible for issuing Water Quality Certificates (WQC) for activities which may result in a discharge into navigable waters including the discharge of dredged or fill material under Section 401 of the Clean Water Act, at 33 U.S.C. §1341, and implementing state regulations as well as implementing the New Jersey Coastal Management Program.	The WQC would be issued by the NJDEP under the In- Water Waterfront Development permit and also referenced by the USACE in the Section 10/404 permit approval.

Permits/ Certifications/ Agreements	Regulations	Regulatory Agency/ Jurisdiction	Federal/State /Local	Activity	Special Conditions, Commitments and Mitigation Measures ⁷
Flood Hazard Area Individual Permit and Verification	Flood Hazard Area Control Act Rules (N.J.A.C. 7:13)	NJDEP Division of Land Use Regulation	State	A Flood Hazard Area Individual Permit and Verification is required for any work (grading, filling or clearing) above the MHW Line that is within a defined flood hazard area or associated riparian zone.	The proposed Project will ensure restoration of any vegetation within a regulated riparian zone that was temporarily altered by construction/access activities would mitigate localized impacts during construction.
				Tidelands	
Tidelands Conveyance Instrument	Tidelands Act (N.J.S.A. 12:3)	NJDEP Division of Land Use Regulation	State	A tidelands instrument in the form of a utility license is required for a proposed electrical transmission cable that will aerial cross or go under mapped riparian land, or lands that are currently and formerly flowed by the mean high tide of a natural waterway which are claimed by the State of New Jersey.	NJ TRANSIT will provide the Bureau-determined Tidelands Instrument annual fee as necessary upon issuance of the Tidelands Utility License. Additionally, NJ TRANSIT will ensure the authorized Hackensack River crossing construction activities, either overhead installation or submarine cable/directional drilled installation (not preferred option for river crossing), will occur within the conveyed Tidelands area.
			·	Air Quality	
Pre-Construction Permit	N.J.A.C. 7:27-8 Permit and Certificates for Minor Facilities (and Major Facilities Without an Operating Permit)	NJDEP Division of Air Quality	State	Permit required for a major source of air pollutant emissions. Project is subject to operating permit requirements due to potential to emit more than 25 tons per year of NO _x and Project is subject to the Acid Rain Program.	All road and non-road vehicles in operation at the project site must comply with the "No Idling" Law <u>Related Applicable Regulatory Requirements</u> : Nonattainment New Source Review (NNSR) and NJ Subchapter 18 New Source Performance Standards (NSPS) NJ State of the Art (SOTA) Standards Lowest Achievable Emission Rate (LAER) for NO _x Emission Offset Rule compliance

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Permits/ Certifications/ Agreements	Regulations	Regulatory Agency/ Jurisdiction	Federal/State /Local	Activity	Special Conditions, Commitments and Mitigation Measures ⁷		
					Reasonably Available Control Technology (RACT) New Jersey Standards for Combustion of Fuel Title IV of Clean Air Act - Acid Rain Program		
Title V Air Permit (General Operating Permit)	Title V, Clean Air Act N.J.A.C. 7:27- 22.14	NJDEP Bureau of Stationary Sources	Federal, administered by the State	Permit is required to construct and operate major facilities for Title V Major Source Facilities.	Permit application must be submitted within one year of start of operations. Upon issuance of operating permit, terms and conditions of preconstruction permit (see above) and operating certificate are consolidated into operating permit.		
	NJD	EP Environmental	Infrastructure Fi	inancing – Redevelopment of Sewer & V	Nater Connections		
Initial Physical Connection and Safe Drinking Water Permit	Safe Drinking Water Act Rules (N.J.A.C. 7:10)	NJDEP Division of Water Supply and Geoscience	State	Permit is required if water supply demand is greater than 12,000 gallons per day (gpd). Permit required to protect public water supply from contamination by requiring backflow prevention devices.	Project will require permit because non-residential water supply demand for the project is greater than 12,000 gpd.		
Water Quality – Potable and Sewer Connections							
Treatment Works Approval (TWA)	New Jersey Pollutant Discharge Elimination System Regulations (N.J.A.C. 7:14A)	NJDEP Bureau of Environmental, Engineering, and Permitting	State	Permit is required for construction and operation of industrial and domestic wastewater collection, conveyance and treatment facilities, including treatment plants, pumping stations, interceptors, sewer mains and other collection, holding and conveyance systems. The TWA process also involves assessing the design of new sewer lines	TWA approval to be obtained to ensure the proposed Project's compliance with the NJPDES effluent standards. In addition, the TWA review will access and approve the design of the sewer line connection for the proposed Project.		

Permits/ Certifications/ Agreements	Regulations	Regulatory Agency/ Jurisdiction	Federal/State /Local	Activity	Special Conditions, Commitments and Mitigation Measures ⁷
				and other wastewater conveyance facilities.	
		NJ Polluta	nt Discharge Elin	nination System – Discharge to Surface	Water
Short Term De Minimis (B7) Discharge Permit	New Jersey Pollutant Discharge Elimination System Regulations (N.J.A.C. 7:14A)	NJDEP Division of Water Quality	State	Permit is required for short term discharges and discharge of groundwater, during construction dewatering, that contains negligible levels of pollutants, to adjacent surface waters of the Hackensack River.	During construction, any dewatering will be monitored to ensure water quality as determined by the NJDEP through the permit approval process. This permit/authorization will be coordinated with the NJDEP via submittal of a Request for Authorization Certification form at least 14 days prior to discharge activities.
General Groundwater Remediation Clean-up (BGR) Permit	New Jersey Pollutant Discharge Elimination System Regulations (N.J.A.C. 7:14A)	NJDEP Division of Water Quality	State	This general permit authorizes discharges of treated groundwater to surface waters of the state. It regulates discharges from remediation clean-ups that do not typically contain petroleum products. The Hackensack River is not a C1 or PL waters and therefore would allow use of this general permit.	Permit is required for discharges of contaminated and subsequently treated groundwater during construction into surface waters. As required the Project will adhere to any issued permit conditions and requested BMPs.
Discharge to Surface Waters for Industrial Discharge Individual Permit (Category B Permit)	New Jersey Pollutant Discharge Elimination System Regulations (N.J.A.C. 7:14A)	NJDEP Bureau of Surface Water Permitting	State	Permit issued to facilities that discharge treated and non-treated wastewater derived from, but not limited to process and non-process wastewater, contact and non-contact cooling water and storm water run-off.	Construction of proposed stormwater outfalls discharging into the Hackensack River will not require treatment prior to discharge. Only stormwater will be discharged. Cooling tower water would not be discharged to the Hackensack River.

Permits/ Certifications/ Agreements	Regulations	Regulatory Agency/ Jurisdiction	Federal/State /Local	Activity	Special Conditions, Commitments and Mitigation Measures ⁷	
Construction Activities (5G3) General Permit	New Jersey Pollutant Discharge Elimination System Regulations (N.J.A.C. 7:14A)	NJDEP Bureau of Nonpoint Pollution Control	State	Permit is required for point source discharges from proposed general construction activities.	A Stormwater Construction General Permit Request for Authorization would be submitted electronically using the NJDEP Online portal.	
Soil Erosion and Sediment Control (SESC) Certificate	Soil Erosion and Sediment Control Act of 1975 as amended (N.J.S.A. 4:24-39 et seq.)	Hudson-Essex- Passaic Soil Conservation District	Local	SESC certification is required for land disturbance of more than 5,000 square feet for construction.	The proposed Project will disturb more than 5,000 square feet and therefore requires SESC certification. This certificate is required prior to obtaining NJPDES 5G3 Permit.	
Additional Permits/Certifications/Agreements/Requirements						
Regulated Navigation Area or Limited Access Area	33 CFR <u>§</u> 165.5- Establishment procedures	USCG/ USACE	Federal	The preferred alternative (aerial crossing) does not propose in water activities; however, should other alternatives requiring in water work be permitted, the appropriate USCG- Regulated Navigation Area or Limited Access Area will be established in accordance with 33 CFR § 165.5 Establishment procedures to ensure safety to navigating vessels that utilize the Hackensack River.	The proposed electrical transmission line crossing option(s) will be authorized under an Individual permit and will adhere to applicable regional conditions as stipulated under a NWP (12) Utility lines, which provide minimal clearance requirements for aerial transmission lines across navigable waters and buried cables or pipelines across "All Other" federal navigation channels. Establishing top of cable depths when crossing river bottom and federal navigation channels. It is not anticipated that a Regulated Navigation Area or Limited Access Area be established at this time but should further design warrant establishment of this safety	

Permits/ Certifications/ Agreements	Regulations	Regulatory Agency/ Jurisdiction	Federal/State /Local	Activity	Special Conditions, Commitments and Mitigation Measures ⁷
					measure this will be coordinate as required with the USCG and USACE under the permit phase.
Lined Surface Impoundment (LSI) General Permit	New Jersey Pollutant Discharge Elimination System Regulations (N.J.A.C. 7:14A)	NJDEP Bureau of Nonpoint Pollution Control	State	An LSI permit is required for authorization of wastewater discharge into lined surface impoundments (i.e., construction of the proposed Stormwater Detention Basin).	The proposed stormwater design will adhere to requirements established in the LSI general permit, when issued and will also adhere to an O&M Manual for operations and maintenance of the proposed lined stormwater detention basin. This activity will also be tied to the RAWP for the site.
Materials Management Plan (MMP) and NJ TRANSIT's Remedial Action Workplan (RAWP) for the proposed Koppers Seaboard site development	Technical Requirements for Site Remediation (N.J.A.C. 7:26E)	NJDEP Site Remediation Program	State	MMP is required for construction on a remedied site that has been approved by NJDEP. RAWP approval is required from NJDEP and the Responsible Party (RP) to address any disturbance to the active remedy.	MMP/specifications for materials management (soil, groundwater, surface water and sediment) during construction. RAWP approval is required from NJDEP and RP for the Main Facility construction. MMP and RAWP will dictate implementation strategies for construction in contaminated areas. A Remedial Investigation Report (RIR) will be completed upon the completion of construction.
Koppers Coke Redevelopment Plan	District Zoning Regulations N.J.A.C. 19:4	NJSEA	Local	Required coordination and Zoning Certification with NJSEA for construction within the Meadowlands and specifically in the Redevelopment Area.	Redevelopment Plan amendment required for approved land use and variance required for deviation from bulk requirements.

Permits/ Certifications/ Agreements	Regulations	Regulatory Agency/ Jurisdiction	Federal/State /Local	Activity	Special Conditions, Commitments and Mitigation Measures ⁷
Sewer Use Permit	Kearny Municipal Utilities Authority (KMUA) Rules and Regulations	, KMUA	Local	Permit required for sewer discharges into the KMUA system.	The proposed project will adhere to established conditions of the Sewer Use Permit once issued.
Federal Aviation Administration (FAA) Review of Obstruction Evaluation	Safe, Efficient Use, and Preservation of the Navigable Airspace 14 CFR Part 77.9	FAA	Federal	Submission of Notice Criteria Tool necessary for proposed obstacles greater than 200' tall off airport property.	Prior to construction, NJ TRANSIT will complete FAA Obstruction Evaluation / Airport Airspace Analysis (OE/AAA) to prevent temporary or permanent adverse effects on commercial aviation equipment and operations. This condition will be met as identified in May 14, 2019 correspondence with FAA (see Appendix F – Agency Correspondence)
NJDOT Route 7 Highway Occupancy/Access Permit	Access Code Regulations N.J.A.C. 16:47	NJDOT	State	Property owners seeking traffic access to state roadways and transportation infrastructures must submit applications for access to New Jersey Department of Transportation (NJDOT). Access applications with fewer than 500 daily trips are considered minor, while those with more than 500 are considered as major.	Permit required for access to NJ Route 7, if deemed required to facilitate future construction and or access.

FIGURES



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ERRATA FIGURES



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