TRANSPORT LONG ISLAND

A Train-to-Plane Connectivity Study

May 2018

ISP Long Island MacArthur Airport

Town of Islip Suffolk Co. N.Y.

Suffolk County New York

MTA Long Island Rail Road

NYMTC New York Metropolitan Transportation Council

Transport Long Island: A Train-to-Plane Connectivity Study was funded through the New York Metropolitan Transportation Council 2016-2017 Unified Planning Work Program. This document is disseminated under the sponsorship of the New York Metropolitan Transportation Council in the interest of information exchange. The contents of this report reflect the views of the authors who are responsible for the facts and accuracy of the data presented herein. The contents do not necessarily reflect the official views or policies of the Federal Transit Administration, Federal Highway Administration or the State of New York. This report does not constitute a standard, specification or regulation.

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May 2018

We are pleased to present to you the Final Report for the Transport Long Island: A Train-to-Plane Connectivity Study. With the completion of this study, we are one step closer to the establishment of an enhanced connection between these two regional assets. This report documents the study process and its outcomes in the form of four implementation plans over the short, medium and long-term time frames. This study also identifies connection modes and technologies from national and international case-studies and best practices, and evaluates those modes using community, air-traveler and project delivery focused screening criteria, to determine the most suitable Train-to-Plane connection for our region.

As Suffolk County and the greater region continue to grow, this Train-to-Plane connection helps to fulfill regional transportation needs such as system linkage, economic growth and travel demand, and provides an integrated, attractive connection and experience for residents and visitors traveling to and from LI MacArthur Airport.

We would like to express our thanks to the New York Metropolitan Transportation Council (NYMTC) for serving as the primary sponsor and our partner in this effort. We would also like to give our thanks to all the stakeholders and community members who have been involved in this process - your input and collaboration has been invaluable in shaping this study. With your continued support, we can move this vision into a reality.

Sincerely

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Acknowledgements

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1. Introduction

Introduction

Ronkonkoma is a major railroad station and transportation hub along the Ronkonkoma Branch of the Long Island Rail Road (LIRR), and serves over 17,000 riders daily. Owned and operated by the Town of Islip, Long Island MacArthur Airport is located one mile south of the Ronkonkoma LIRR station, and serves approximately 2 million commercial passengers annually and is the closest airport for over 1.5 million Suffolk County residents. Suffolk County, the Town of Islip, and the Airport Administration – in coordination with Metropolitan Transportation Authority (MTA) LIRR and County stakeholders – have partnered for the study to explore opportunities to improve intermodal connectivity between these two regional assets, improve access to regional destinations, support economic development and tourism initiatives, and create a seamless experience for users across transportation networks.

This study identifies and evaluates modes and technologies, based on review of national and international case-studies and best practices, to enhance connectivity between the Long Island MacArthur Airport ("the Airport") and the Ronkonkoma Long Island Railroad Station ("the Station"). It builds on previous studies and current Suffolk County plans, with a goal of maximizing access between two major transportation hubs, and with a strong emphasis on land use opportunities, economic development, and benefits commonly associated with train-to-plane connections.

This project figures prominently in Governor Andrew M. Cuomo's $160 million plan to "Transform Long Island," of which $20 million dollars were identified to support the development of a direct connection between the Airport and the Station, as well as funding for Enhanced Station Initiatives (ESI) upgrades at Ronkonkoma Station, outlined in the January 2017 "State of the State" address.[1]

There are significant opportunities, both current and future, that the study leverages and the proposed recommendations can facilitate. These include a strong existing and growing customer base at the Airport including new Frontier Airlines service, and increased seating capacity from Southwest Airlines and American Airlines that will offer alternatives to travelers looking for more convenient flight options. Under the leadership of Suffolk County Executive Steve Bellone, Suffolk County's focus on increasing transit use through transit-oriented development, planned bus rapid transit, and walkable communities ensures travelers have high-quality mobility options as alternatives to traditional single-occupancy vehicle trips. Furthermore, customers of the new train-to-plane connection will benefit from coordinated ESI improvements at the Ronkonkoma LIRR Station.

An improved connection between the Airport and the Station contributes to an integrated and reliable transportation network that incorporates modern technology and enhances the high-quality air service offered by the Airport. This connection supports key policy areas of Suffolk County's *Connect Long Island Plan* and *Framework for the Future – Suffolk County Comprehensive Master Plan 2035*, including the development of a modern transit network and priority actions such as the development of compact, walkable communities. As Suffolk County and the greater region continue to grow, this train-to-plane connection helps fulfill regional transportation needs such as system linkage, economic growth and travel demand, and provides an integrated, attractive connection and experience for residents and visitors traveling to and from Long Island MacArthur Airport.

1 New York State, Governor's Press Office. (2017, January 10). Governor Cuomo Presents 24th Proposal of 2017 State of the State: $160 Million to Transform Long Island. [Press Release] Retrieved from https://www.governor.ny.gov/news/governor-cuomo-presents-24th-proposal-2017-state-state-160-million-transform-long-island

2. Project Overview

2.1 Project Purpose and Needs

The purpose of *Transport Long Island: A Train-to-Plane Connectivity Study*, is to provide a transportation link between the Ronkonkoma LIRR Station with LI MacArthur Airport, providing an integrated, reliable and affordable linkage for air travelers served by Long Island Rail Road and county transit services. The project supports the growth of LI MacArthur Airport's catchment area and reaffirms the Airport's value of offering an efficient and comfortable experience to its customer base.

The identified needs for this project fall into three categories – System Linkage, Transportation Demand, and Economic Growth –outlined below:

System Linkage

- To link LI MacArthur Airport with the Ronkonkoma LIRR Station
- To link LI MacArthur Airport with Suffolk County's transit services.

Transportation Demand

- To integrate LI MacArthur into the LIRR network, serving markets in Suffolk County, Nassau County and New York City.
- To offer a scalable and flexible connection that accommodates future airport growth plans.

Economic Growth

- To pursue Suffolk County's policies for expansion of public transit as a means to enable growth without degrading current quality of life standards.
- To strengthen compact, walkable communities that will foster economic development.
- To catalyze economic growth in Suffolk County, strengthening LI MacArthur Airport's position as a regional asset.

2.2 Project Context

Local Context

Suffolk County has a strong foundation in transportation investments with many regional assets like the Airport and the Station that promote economic development and improved quality of life for its residents. This project supports the County's initiative to move from automobile-oriented land use and development patterns characterized throughout the region into a system of multimodal mobility options that connects the County's growing and vibrant downtowns and local and regional destinations. Through its *Connect Long Island Plan* and the *Long Island Innovation Zone (I-Zone),* the County outlined visions of bus rapid transit (BRT) corridors and transit-oriented developments (TOD) clustered at LIRR stations. Suffolk County is on the path of re-envisioning mobility in its communities to increase the share of public transportation usage, attract more choice riders, and make transit an attractive option for residents, visitors, and travelers.

The County is currently building out a network of vibrant transit-oriented downtowns with high-quality connections and access to transportation hubs and local and regional destinations. Offering more and better connections in the County will add to its competitive advantage and its ability to adapt to changing economic conditions through a diversified transportation network. The Ronkonkoma Hub, a residential, retail and office development is currently being constructed north of the LIRR tracks. On the south side of the tracks, a community-driven planning process is currently being undertaken. The County and the town are working together to select a master developer for the development of the south side.

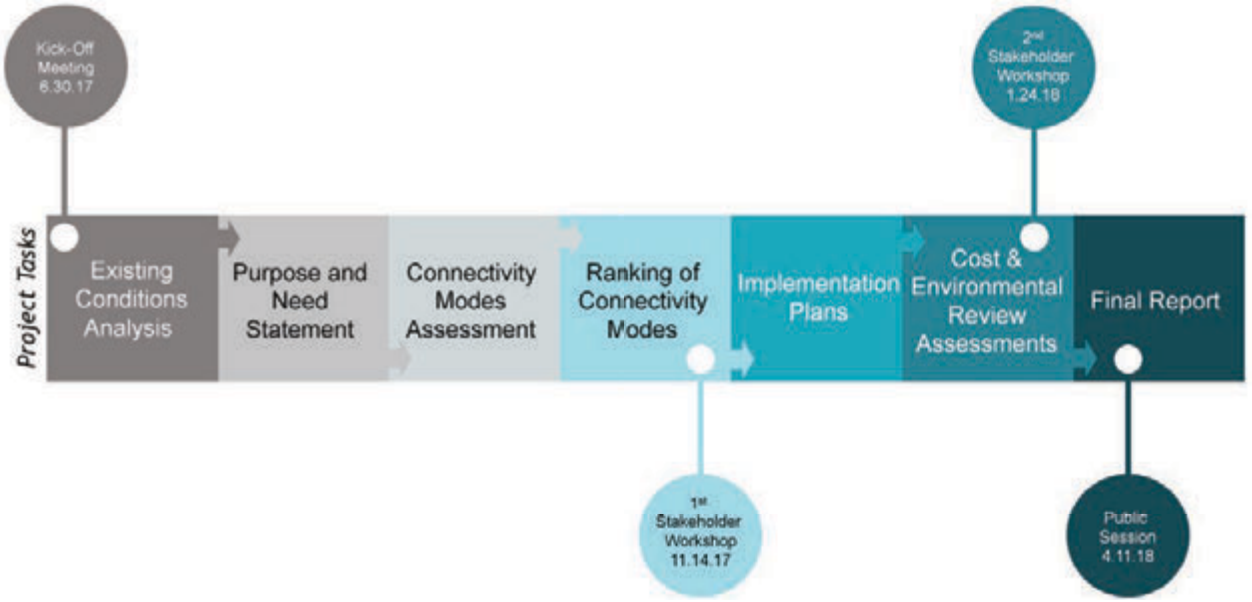

Figure 1: *Transport Long Island: A Train-to-Plane Connectivity Study* Methodology and Schedule

This study's connectivity solutions not only facilitate the local train-to-plane connection between the Airport and Station, but also achieve the larger key policy of building a 21st century transit network to provide more choices, and to improve mobility, access and safety. This connectivity investment will support residents and workers in the Towns of Islip and Brookhaven, and will also serve tourists that want to access the many destinations the area offers. A stronger connection between these two major transportation assets is an opportunity to foster the local development and growth of business and industry, TODs, and other capital investments around the Airport and Station. At the core of the entire transportation network are the people using these systems and services – local residents, workers and visitors – for whom this new connection and experience will be designed.

Regional Context

Continued transportation investment in the region is necessary to sustainably accommodate projected growth, mitigate projected congestion, and to maintain the competitiveness of Suffolk County in the region. This requires regional coordination that this study has benefited from, with leadership from Suffolk County, New York Metropolitan Transportation Council (NYMTC), LIRR, the Airport, and regional business leaders—to shape the investments for today and the future. This study helps achieve many regional goals including: improving mobility, building the innovation economy, alleviating traffic congestion and supporting economic development initiatives with TOD development at the forefront. Enhancing the region's transportation networks will link together the County's assets – from the iZone to universities to tourism destinations – and provide the region with a cohesive regional identity and diverse mobility network on which the regional economy can flourish.

The Train-to-Plane connection will become fully integrated into the region's transportation structure, in part by supporting the County's existing regional investment in connectivity with Bus Rapid Transit (BRT) routes to improve north-south connections and make more connections to regional hubs and destinations. It is intended to support the region's

economic development by enhancing tourism, attracting more visitors to Suffolk County, and providing a seamless experience as they explore and traverse the region. Connecting the Airport directly to the wider regional transportation network helps position the Airport as a foundation for future investments by ensuring the transportation system is better managed, with better value and improved service for regional users.

The study was coordinated with the Long Island Rail Road, one of the core transportation networks with regional scope, whose current projects range from the Enhanced Stations Initiative (ESI) to East Side Access and Double Track, which will improve access to and from New York City, increase train frequency and service, reduce travel time, and yield significant benefits for housing and economic vitality in Suffolk County. These rail investments position Ronkonkoma Station, in particular, as a major transportation and development hub central to the entire region, set the stage for future growth and contribute greatly toward building a more convenient, flexible transportation system for the region.

National Context

The Airport has strategically positioned itself for growth, most recently by designing a new U.S. Customs facility (CBP), which expands its capacity to offer international flights. Construction of the CBP facility is slated to be substantially complete by the end of 2019. Strengthening the connection between the Airport and Ronkonkoma Station – two of the County's largest and most utilized assets –benefits customers who choose to ride LIRR to the airport and helps position the Airport to build a greater national presence as a well-connected, mobility-oriented Airport that serves as a gateway to and from Long Island for national and international travelers. The Train-to-Plane connection, in tandem with ongoing transportation investments and economic development, can help position Ronkonkoma and the Airport as a major transportation hub that Suffolk County can market nationwide as a vibrant and connected place to attract innovation companies, new businesses, new residents, and visitors.

2.3 Project Goals and Methodology

Project Goals

The goals outlined in the kick-off meeting with the working group provided the framework for the Train-to-Plane Study. Perspectives from County leaders, advocates, and representatives were significant and informative contributions to the study vision and process. They highlighted the aspirations the County seeks to achieve through this project as well goals beyond connectivity related to how transportation, technology and investments will continue to shape the County and the region's growth.

Key goals and aspirations outlined by the stakeholder working group included:

- Investing in the Airport and Station area as important assets for the region as a whole;
- Creating a seamless experience for users via both operations and information;
- Integrating a technology strategy in tandem with the connectivity strategy;
- Cost-effectiveness;
- Capitalizing on the "100-year opportunity" at this moment to get the design right;
- Connectivity as a catalyst for TODs, development and job creation;
- Attracting broader and more travelers ranging from County residents to business travelers from the region, to international passengers and

tourists from around the globe, and a keen desire to improve connectivity both within and beyond the project area in Suffolk County.

Project Methodology and Schedule

The study began in June 2017 and concluded in April 2018, and was structured along a sequence of tasks and deliverables. Two stakeholder workshops were held during the study to garner feedback and inform the final recommendations. Figure 1 illustrates major project tasks as well as opportunities for stakeholder input.

The project team engaged a diverse working group for stakeholder feedback at critical points during the study process. The working group comprised the County Executive and Chief-of-Staff, along with leadership and staff persons from the following organizations: SCEDP, LI MacArthur Airport, MTA LIRR, the Town of Islip, and leaders from Long Island business and community associations.

Key tasks and subtasks conducted for the train-to-plane study included:

Existing Conditions Analysis

Review of current conditions and operations at the Station and the Airport, site visits, stakeholder meetings, review of existing studies, inventory of local regulations and guidelines related to project, purpose and needs statement.

Connectivity Modes Identification and Assessment

Identification and investigation of 10 potential connectivity modes, including high-level technology and feasibility assessment. Potential connections included modes that are either existing or likely to be realized in the near-term or long-term.

Connectivity Mode Ranking and Selection of Preferred Modes

Development of screening criteria and assessment of the 10 potential connectivity modes. Each mode was assessed and then ranked through a comprehensive process that included mode assessment against the screening criteria as well as feedback from the project working group received during Stakeholder Workshop #1. The ranking process and input led to the identification of four preferred modes that underwent more detailed vetting and implementation plans.

Implementation Plans

High-level implementation plans for near, medium, and long-term connections were developed for the four preferred modes. These included planning-level cost estimates, key considerations, and levels of effort related to environmental reviews. Stakeholder Workshop #2 was held during this project stage to engage the working group's feedback on the Implementation Plans.

Public Information Session

Suffolk County hosted a public information session in April 2018 to brief community members and members of the public on the Train-to-Plane Study, and get feedback on the four alternatives outlined in this report. The study content shared at the Public Information Session can be found in Appendix E.

Final Report

This report summarizes the project context, existing conditions analysis, mode assessment; highlights the four selected modes and respective implementation plans; and provides information for the County to progress a dialogue with the public and advance the implementation plans with stakeholders and transportation partners.

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3. Existing Conditions

3.1 Existing Plans and Initiatives

Over the past ten years, Suffolk County has released plans outlining a vision for improving the county's transportation infrastructure and advancing broader regional connectivity goals outlined in plans developed by the Long Island Regional Economic Development Council (LIREDC) and the Long Island Regional Planning Council (LIRPC). The goals advanced by these plans served as the foundation for the development of the study. These plans leverage existing transportation and business assets to spur economic development and smart growth in the County. The Airport is a key asset for the County, and serves a key role in Long Island's future by better connecting residents and businesses with major markets around the U.S. and potentially abroad.

The train-to-plane connection builds from the County's goals and creates a series of connections that better integrates the Airport into its surrounding community, improving airport accessibility, and promotes transit ridership. Increasing density around Ronkonkoma Station through planned transit-oriented development, improvements to LIRR service, expanding mobility options in Suffolk County, and growth at the Airport itself are the critical drivers for improving the train-to-plane connection which will both expand and enhance traveler choice and experience.

2017 Long Island MacArthur Airport Master Plan Update

In 2017, the Town of Islip undertook a Master Plan Update to guide the development of the Airport's facilities and service for a planning period ending in 2037. The plan, prepared in accordance with FAA guidelines, includes an inventory of the existing facilities and the development a set of alternatives for the airfield, terminal and general aviation to accommodate future needs and forecasted increases in passenger demand. The final plan outlines a recommended development program for the future of Long Island MacArthur Airport, including two runway extensions, with activity-based milestones that can respond to growth trends and align the Airport's improvements with dynamic airline industry and passenger travel choice changes over time. Implementation of the Master Plan Update recommendations along with the airport's Air Service Development program will support efforts to attract new air service and increase passenger demand.

Suffolk County Land Use and Transportation Plans and Initiatives

Suffolk County's 2035 Comprehensive Master Plan sets forth an agenda to promote sustainability and to grow the business base creating jobs around Long Island's top research facilities at Stony Brook University, Brookhaven National Laboratory, and along the Route 110 corridor. This plan also emphasizes the importance of the Airport as a critical economic development asset. The plan notes that "the full potential of MacArthur Airport to serve as an important economic engine for the region remains untapped", and identified proximity to airport as one of criteria for prioritizing growth center locations for "advanced manufacturing", and "office areas, including R&D and start-up space".[2]

The *Connect Long Island - A Regional Transportation and Development Plan*, commissioned by Suffolk County, aims to create sustainable economic growth through coordinated land use and transportation planning. The plan calls for investments in transportation infrastructure that strategically connects Suffolk's educational and research institutions, transit-oriented developments, and Long Island Rail Road stations.

2 Transportation, Economic Development and Housing Strategies for Suffolk County: Background Documentation, Suffolk County Comprehensive Master Plan 2035.

Two major projects envisioned in Connect Long Island are the Ronkonkoma Hub and the Nicolls Road BRT, a 15-mile bus rapid transit (BRT) route along the Nicolls Road / CR97 corridor. The Ronkonkoma Hub, adjacent to Ronkonkoma Station, broke ground in the fall of 2017 on its first phase and will transform vacant lands and surface parking around Ronkonkoma Station into a mixed-use community. It will eventually comprise 1,450 residential units, 195,000 square feet of retail space, 360,000 square feet of office space and 60,000 square feet of flexible space. The Nicolls Road BRT project will fill a gap in rapid transit service along a major north-south corridor, connecting Ronkonkoma Station with other regional assets between Stony Brook and Patchogue. Both projects have significant potential to generate additional trips between Ronkonkoma Station and the Airport.

A related initiative is the development of the Innovation Zone ("I-Zone"), Suffolk County's vision to connect TODs with the region's research institutions and build out a major innovation hub to attract new businesses and highly-skilled workers. The plan brings together multiple levels of government and leaders of the region's top research institutions. The goal is to create a "quality of life ecosystem" to support smart economic growth within the county. The iZone comprises four major projects: (1) The transformation of Nicolls Road into a multimodal corridor complete with Bus Rapid Transit and an extensive Hiking/ Biking Network; (2) The full build-out of the Ronkonkoma area adjacent to the Ronkonkoma Train Station; (3) The establishment of a new train-to-plane connection between Long Island MacArthur Airport and Ronkonkoma Train Station; and (4) The relocation of the underutilized Yaphank LIRR Station to Brookhaven National Laboratory.[3]

MTA and New York State Plans and Investments

Statewide and regional transit initiatives and policies support the train-to-plane connection. The MTA and LIRR are currently engaged in several infrastructure expansion programs that greatly enhance the regional transit network, including East Side Access, which will connect the Long Island Rail Road to a new LIRR terminal beneath Grand Central Terminal in Manhattan, and the Main Line Double Track and Third Track Programs, which enhance capacity, reliability, and ability for reverse commuting.

In 2018, MTA anticipates completion of Double Track improvements, which will provide a second track on the LIRR Ronkonkoma Branch between Ronkonkoma and Farmingdale. The second track will allow for increased service along the line, and increase the overall transit accessibility of the airport. In addition to service improvements, Ronkonkoma Station is among the many LIRR stations slated for major customer experience improvements as part of the Enhanced Station Initiative (ESI).

Improving connectivity to the Airport is critical part of Suffolk County's vision for development. It also figures prominently into Governor Andrew M. Cuomo's $160 million plan to "Transform Long Island," one of 37 key budgetary proposals announced in the January 2017 State of the State address. The Governor identified $20 million dollars to support the development of a direct connection between LI MacArthur Airport and the Ronkonkoma LIRR station, as well funding for the ESI program.[4]

3 Suffolk County Government. (2015, June 16). *Bellone, Romaine, Carpenter and Major Research Institutions Announce Regionally Transformative Plan to Build "Innovation Zone."* Retrieved from http://www.suffolkcountyny.gov/Government/CountyExecutive/CE/tabid/1515/ctl/details/itemid/3609/mid/876/bellone-romaine-carpenter-and-major-research-institutions-announce-regionally-t.aspx

4 Office of the Governor. (2017, January 10). *Governor Cuomo Presents 24th Proposal of 2017 State of the State: $160 Million to Transform Long Island*. Retrieved from https://www.governor.ny.gov/news/governor-cuomo-presents-24th-proposal-2017-state-state-160-million-transform-long-island

3.2 Existing Train-to-Plane Connection

Currently, customers have three options for connecting between the train station and airport terminal: the official LI MacArthur Shuttle and taxi service; transportation network companies (TNCs) such as Uber, Lyft or Via; or infrequent transit buses. According to the FAA, in 2007 about 8% of the Airport's passengers used LIRR to access the airport (6% as their primary mode, and 2% as a secondary mode).[5,6]

Village Taxi operates the on-site taxi and LI MacArthur Shuttle service for the airport. Service is made available during all hours of airport operations. The company stages vehicles in a dedicated parking area near the train station to ensure that customers arriving on LIRR can obtain immediate service. Their fleet consists of town cars, SUVs, and small vans with capacity for up to 10 passengers. The company reports that, since the introduction of Frontier Service, as many as 40 passengers at a time from arriving flights have requested service to the train station.

At the train station, Village Taxi picks up customers on the roadway loop directly adjacent to the train station. The company office at that location functions as a waiting room. At the airport, pickup and drop-off is located outside of the baggage claim area. Passengers wishing to connect to the train station are directed to a separate queuing area from the general taxi line.

Village Taxi / LI MacArthur Shuttle service between the train station and airport terminal costs $5 ride per passenger. While a discounted train and taxi package ticket is available from LIRR ticket windows and kiosks, it is marketed as a "Long Island Getaway" and few customers appear to be aware of this option. Just 162 combined tickets were sold in 2015 and 119 were sold in 2016.[7]

In addition to authorized taxi operations, train riders may choose to arrange a ride to the airport with a transportation network company (TNC), such as Uber and Lyft. These companies began operating for-hire vehicle services in Suffolk County in 2017 and are already drawing customers at Ronkonkoma Station. However, convenience of this connection depends on the availability of nearby drivers, which cannot be guaranteed. A typical Uber ride is about $10, although fares may vary by time, date, and driver availability.

Suffolk County Transit offers a connection between train station and the airport via the S57 bus route. However, this option is likely to be inconvenient for most customers because service is infrequent and the bus schedule is not aligned with the train or flight schedules. Service operates only hourly and with a limited service span (7:00am to 7:00pm, Monday through Saturday).[8]

3.3 MTA LIRR and Ronkonkoma Station

Service Patterns

The Airport is accessible by rail transit on the Ronkonkoma Branch of the LIRR at Ronkonkoma Station, which, with over 17,000 daily riders when last tabulated in 2006, is the busiest station in Suffolk County.[9] Express service to Ronkonkoma is available from Penn Station in Manhattan, from the Jamaica and Woodside LIRR stations in Queens, and the Mineola

5 FAA Regional Air Service Demand Study, Task A (2007).
6 Primary modes and secondary modes were self-reported by customers in response to the survey questions "How did you get to the airport today?" and "What other mode of transportation did use to reach the airport today?"

7 2016 (Source: MTA, via email).
8 Suffolk County Transportation (2016, October 10). *Suffolk County Transit Bus Information - S57*. Retrieved from http://www.sct-bus.org/schedules/s57.pdf
9 Transportation, Economic Development and Housing Strategies for Suffolk County, Background Documentation, Suffolk County Comprehensive Master Plan 2035.

LIRR station in Nassau County. Typical scheduled travel times to Ronkonkoma during peak periods are about 78 minutes from Penn Station; 59 minutes from Jamaica; and 34 minutes from Hicksville, where the Port Jefferson and Ronkonkoma Branches diverge. Peak service is provided approximately every 18 minutes. Off-peak service is hourly.

Significant portions of single track on the route limit the capacity of the line, resulting in a 2 ½ -hour gap in off-peak direction during peak periods. There are no eastbound trains between about 6:30am and 9:00am, and no westbound trains between about 4:45pm and 7:15pm.

To eliminate this gap in service, LIRR is building a second track between Farmingdale and Ronkonkoma stations that will allow off-peak and shoulder service expansion on the Ronkonkoma branch. The first phase, between Ronkonkoma and Central Islip, was completed in 2016. The second phase, between Central Islip and Farmingdale, is scheduled for completion in December 2018. Once fully completed, the additional track will allow LIRR to run trains in opposing directions without compromising the frequency of service in the peak direction.[10]

Figure 2: Ronkonkoma Station

Station Layout

The Ronkonkoma LIRR station has three platforms and two tracks. An overpass connects the three platforms to exits on the north and south sides of the tracks. The passenger waiting room is located on the north side of the station. Neither the platforms nor the overpass feature wayfinding signage indicating directions for LI MacArthur Airport access, the taxi stand, or the bus stop.

Ronkonkoma is among 17 stations slated for renovations as part of the LIRR Enhanced Station Initiative (ESI). MTA has budgeted $150 million for the program, which will deliver “new facilities, Wi-Fi, charging stations, public art, new platform waiting areas, general station renovations and improved signage.”[11,12] MTA is currently procuring design and construction services for ESI improvements. Ronkonkoma is in the Phase 2 package along with four other stations, with a budget of $45 to $55 million for all stations.

Station Area

Currently, surface parking comprises the primary land use around Ronkonkoma Station. The station has a total of 5,868 parking spaces, the majority of

10 Metropolitan Transportation Authority. (2018). *Long Island Rail Road Double Track Project - Ronkonkoma to Farmingdale*. Retrieved from http://web.mta.info/lirr/doubletrack/

11 MTA Capital Program 2015-2019 - Renew. Enhance. Expand. - Amendment no. 2

12 Metrpolitan Transportation Authority. (2017, January 10). *Governor Cuomo Proposes $120 Million to Enhance 16 LIRR Stations and Improve System Connectivity with MacArthur Airport and Brookhaven National Laboratory*. Retrieved from http://www.mta.info/news/2017/01/10/governor-cuomo-proposes-120-million-enhance-16-lirr-stations-and-improve-system.

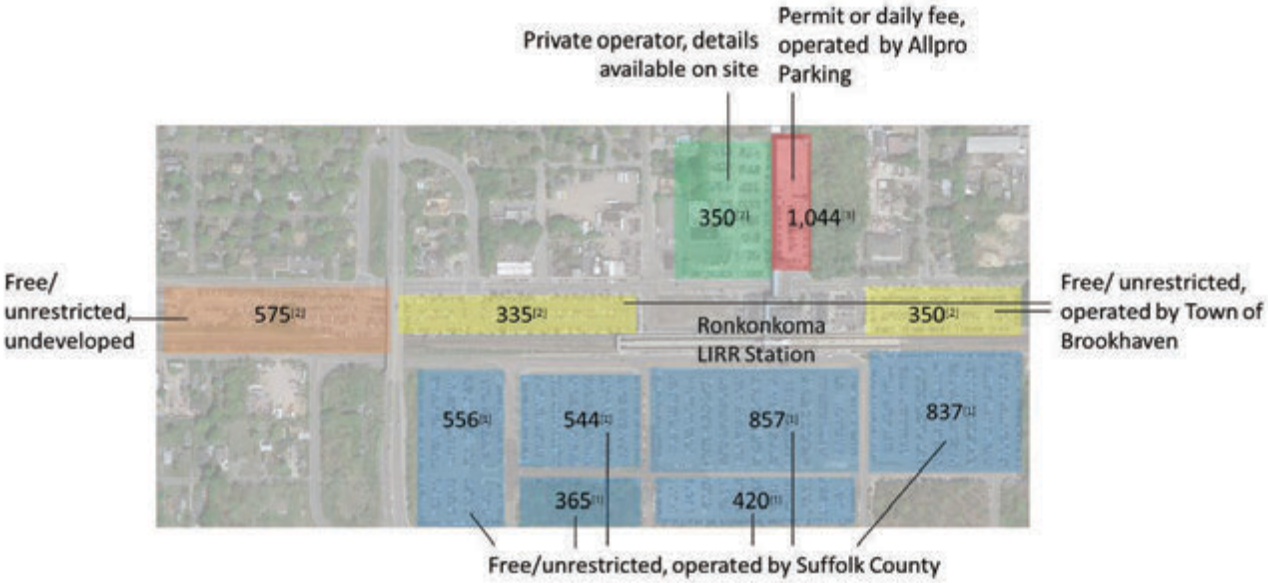

Figure 3: Ronkonkoma LIRR Station, Showing Location of Parking Facilities[14]

Figure 4: Current Taxi and Shuttle Boarding Area at Ronkonkoma Station

Figure 5: Ronkonkoma Hub Rendering and Ronkonkoma Phase I Site Plan

which are public, free, and unrestricted.[13] There are two privately operated parking lots on the north side of the station. The capacity for each parking lot is indicated in Figure 3.

The taxi and shuttle service picks up and drops off passengers in the loop located just west of the LIRR station house, north of the tracks. From the station overpass, passengers may take an elevator or stairs to the ground level under a covered path to reach the Village Taxi office. Passenger shelter is provided

in the retail space currently used as Village Taxi's dispatching and business office. Passengers' paths to the existing taxi area are illustrated in Figure 4.

Transit-oriented development will greatly impact the area around Ronkonkoma Station, and generate new users, by converting vacant land and surface parking areas to mixed use residential, commercial, office, and retail uses. The Ronkonkoma Hub project will include 1,450 residential units (20% of which will be set aside as affordable housing) and over half-million square feet of retail and commercial space. When fully built out, Ronkonkoma Hub will add thousands of residents and visitors to the area just north of Ronkonkoma Station, and within the catchment of any potential train-to-plane connector.

To reinforce creation of a walkable, transit-oriented community around the station, Suffolk County has also begun to seek developers interested in redeveloping the parking lots south of the train station (known as "Ronkonkoma South"), an area comprised of up to 40 acres available for potential redevelopment.[15]

13 Lot ownership/operation: http://web.mta.info/lirr/images/stationmaps/ronkonkoma.pdf Suffolk County lots: Arup; Allpro Parking garage counts: Allpro Parking; Town of Brookhaven, free unrestricterd/undeveloped, and other private operators' lots: VHB (Proposed Adoption of the Land Use and Implementation Plan for the Ronkonkoma Hub Transit-Oriented Development (TOD))

14 MTA Long Island Railroad. *Parking, Bus and Taxi Information - Ronkonkoma Station*. Retrieved from http://web.mta.info/lirr/images/stationmaps/ronkonkoma.pdf

15 Winzelberg, David. (2017, October 20). Major New Ronkonkoma Development Sought. *Long Island Business News*. Retrieved from https://libn.com/2017/10/20/major-new-ronkonkoma-development-sought/

3.4 Long Island MacArthur Airport

Commercial Air Service

LI MacArthur Airport is owned and operated by the Town of Islip. Though it is designated by the FAA as an Official Metro Airport, IATA does not group the Airport under the NYC Metropolitan Area code with JFK, Newark-Liberty, LaGuardia, and Stewart International in travel and information searches for New York airports. The Airport currently serves approximately 2 million commercial passengers annually and has available capacity.

Three commercial carriers currently operate flights at the Airport: Southwest Airlines, Frontier Airlines, and American Airlines. Together, these airlines operate 25 scheduled flights each day.

Southwest offers daily nonstop flights to the following destinations:

- Baltimore–Washington International, MD (BWI)
- Fort Lauderdale International, FL (FLL)
- Orlando International, FL (MCO)
- Tampa International, FL (TPA)
- Palm Beach International, FL (PBI)

American Airlines currently operates daily non-stop service to one destination, Philadelphia International, PA (PHL). Frontier Airlines currently operates daily non-stop service to the following destinations:

- Orlando International, FL (MCO)
- Miami International, FL (MIA)
- Palm Beach International, FL (PBI)
- Southwest Florida International, Fort Meyers, FL (RSW)
- Tampa International, FL (TPA)
- New Orleans International Airport, LA (MSY)
- Hartsfield-Jackson International, Atlanta, GA (ATL)
- Chicago O'Hare International, IL (ORD)
- Detroit Metropolitan, MI (DTW)
- Minneapolis-Saint Paul International, MN (MSP)
- San Juan International Airport, PR (SJU)
- Myrtle Beach International Airport (MYR)

Airport and Terminal Layout

The airport has one passenger terminal, four runways and two helipads, and covers a footprint of 1,311 acres located within the Town of Islip. In addition to commercial service, the airport has general aviation and U.S. Army Guard facilities. The terminal, located on the south side of the airfield, was built in 1966 and expanded in 1999 and 2006. It features 10 active gates and 7 remote loading positions. Check-in, ticketing and baggage counters, and security screening checkpoints for departing commercial passengers are located toward the east of the terminal. The baggage claim, taxi/shuttle pick up area, and car rental counters are located toward the west of the terminal.

A replacement U.S. Customs and Border Protection facility is scheduled to open in 2019 in the central terminal. This facility will allow the airport to continue to accommodate international general aviation, and to serve the needs of scheduled international airline flights, should they arise.

The Airport plans to build a new ground transportation facility on the east side of the property to consolidate and support car rental operations, taxis, and other ground transport services. This facility is scheduled for construction in 2018. The availability of this new facility was considered in the development of train-to-plane connection alignments and alternatives.

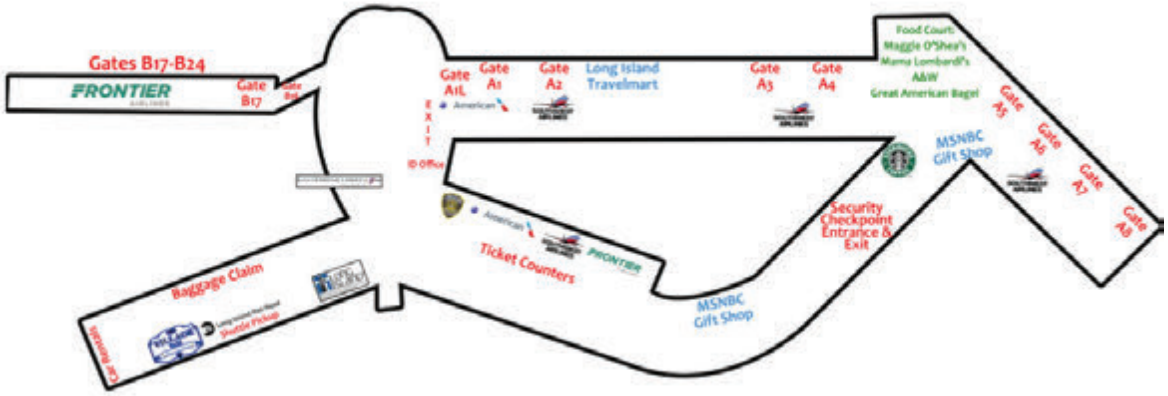

Figure 6: Airport Terminal Map

Figure 7: Existing Airport Terminal and Planned Location for Ground Transportation Facility

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4. Evaluation Process, Methodology and Screening

4.1 Process

The initial stage of the train-to-plane study was to conduct a thorough evaluation of the existing conditions. This review compiled information about current and planned infrastructure and service patterns at the airport and train station. To inform this study, the project team conducted site visits; reviewed existing plans and data; synthesized information provided by project stakeholders; investigated national best practices; and carried out additional desktop research and analysis. Section 3 above recaps the major highlights from the existing conditions review.

The resulting existing conditions report documented the current and future issues and opportunities that could be addressed by the train-to-plane connection, forming the basis for establishing the purpose and needs for the project. The three broad project needs identified were linking transit and airport services; integrating the airport into the LIRR network with a scalable and flexible connection; and enhancing Suffolk County's transit and aviation assets to foster economic growth.

The study next identified a range of transportation modes that could satisfy these project needs in the local context of Suffolk County. The initial list of connection modes included options that could be implemented over various time periods and scalable to meet the evolving needs of the airport and changes to existing land use patterns and infrastructure. A high-level, comparative evaluation of these options resulted in a shorter list of plans to be further explored and developed.

4.2 Methodology

The initial list of train-to-plane connection options consisted of ten mode options, comprising a wide range of transportation modes including existing modes currently in use across the U.S. and internationally for airport connections, as well as more advanced technologies. The initial list of connection options is presented in Table 2. Detailed profiles and descriptions of these ten modes can be found in Appendix A.

Category	Description	Modes Included
Point to Point	• Pick-up and drop-off passengers at nearly any location • No major investment in stations, tracks, rolling stock	• Taxis • TNCs
Structured, Centered on Airport	• Mostly used for a train-to-plane connection • Focused on airport-generated demand • New investment in stations, transit-ways, and roling stock	• Shuttle • Gondola • Automated People Mover • Personal Rapid Transit • Moving Walkways
Structured, Branched to Airport	• Used as part of a regional transit network, with an extension for a train-to-plane connection • New investment in stations, transit-ways, and rolling stock	• Bus Rapid Transit • Streetcar • Light Rail Transit

Table 1: Mode Category and Grouping

Initial List of Connection Options		
Upgraded Taxi Service		A fleet of for-hire vehicles offers rides for individual passengers or small groups. Rides are summoned by hailing a taxi parked at a stand or driving by. The updated taxi system mode differs from the existing conditions baseline service by the provision of enhanced facilities and amenities for passengers such as a dedicated mobile app.
Transportation Network Companies		Two variations of TNCs would suit the connection: 'ride-hailing' services, from companies like Uber and Lyft provide customers the ability to arrange a ride using a GPS-enabled mobile device; 'microtransit' services such as Chariot, Birdj and Via connect passengers to high-occupancy vehicles and shared rides.
Upgraded Shuttle Bus		A dedicated bus service traveling along fixed routes at fixed schedules.
Bus Rapid Transit		Enhanced buses, traveling along dedicated lanes with signal priority, offer reliable, convenient, and fast transit. Systemic operational control ensures high levels of service.
Light Rail Transit		Rail service running on dedicated right-of-way. Smaller vehicles and lower operating costs than traditional subways or commuter rail services.
Automated People Mover		APM is a grade-separated mass transit system with full automated, driverless operations, featuring vehicles that travel on guideways with an exclusive right-of-way.
Gondola		Cabins supported and propelled by overhead cables connecting stations. Used to cross landscapes where ground options are too costly or inconvenient.
Personal Rapid Transit		Small autonomous vehicles providing on-demand point-to-point service along a fixed guideway.
Moving Walkway to North-Side Terminal		A slow-moving conveyor mechanism that transports people across a horizontal or inclined plane over a short to medium distance.
Streetcar		Streetcars are electric, rail vehicles, operating in mixed-traffic and on tracks embedded in the pavement. Station design is similar to a high quality bus stop.

Table 2: Initial List of Connection Options

Screening Criteria	
Air-Traveler Focused	
Ease of Connection:	Convenience of the accessing the connection vehicle, assessed by walking distance, level changes, wayfinding, and baggage accommodation.
Reliability:	Potential frequency of delays and vehicle availability
Passenger Experience:	Overall quality and convenience of the train-to-plane journey, considering fare transactions, station quality, and in-vehicle comfort
Community Focused	
Neighborhood Integration:	Degree to which the travel mode complements or degrades the neighborhood and adjacent land uses, considering shading, obstructed views, scale, and context
Ability to Serve Other Markets:	Convenience of integrating the mode to the regional transit network, serving other travel markets and contributing to the county's goal of creating a 21st century transit network
Environmental Performance:	Efficiency of the mode with respect to natural resource consumption and magnitude of adverse effects on natural system
Delivery Focused	
Rollout Phasing:	Ability of the project to be delivered in incremental stages and build additional capacity over time to match demand
Ease of Implementation:	Overall complexity of the project and delivery timeframe
Capital Costs:	Order of magnitude estimate of funding require for construction, vehicle procurement, and systems procurement
Operating Costs:	Order of magnitude estimate of annual funds required to operate the connection

Table 3: Mode Screening Criteria

The ten modes can generally be organized by the following categories and descriptions in Table 1.

These options were evaluated against one another using 10 screening criteria developed based on the established project goals, input from stakeholders, and industry best practices. See Table 3 for a list and description of screening criteria.

4.3 Mode Evaluation Screening

Each connection mode received a score of Good (10 points), Fair (4 points), or Poor (1 point) based on its performance along each of the criteria. The modes were then scored for their overall performance across all criteria and were assigned short-term, medium-term, and long-term time frames. Modes were evaluated relative to both the existing airport terminal, as outlined in Figure 8, as well as to a future potential north side terminal, shown in Figure 9. Detailed information on the screening of the ten modes can be found in Appendix C.

Figure 8: Mode Evaluation Screening Matrix for Existing Terminal

Figure 9: Mode Evaluation Screening Matrix for Potential Future North Side Terminal

Rating levels		Score
●	Good	10
◒	Fair	4
○	Poor	1

Table 4: Rating levels key

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5. Train-to-Plane Connection Selected Alternatives

5.1 Upgraded Taxi Service (Short-term, 1-2 years)

Mode Overview

The Upgraded Taxi Service connection option builds upon the existing train-to-plane service between the Station and the Airport, but improves the customer experience through an enhanced fleet of modern vehicles designed for airport-bound taxi passengers' needs and expectations, with defined pick up points, through service that is supported by mobile transactions with contemporary reservation and payment systems.

Both at Ronkonkoma LIRR Station and at the Airport terminal, passenger pick up and drop off will take place at predetermined locations. At the LIRR Station, this area is in the parking lot north of the railway tracks. At the Airport, taxi riders are currently directed to the western edge of the terminal's front curbside; however, once the new Transportation Facility is completed, all taxi operations will be relocated to this new facility east of the terminal, where the Airport plans to direct all its commercial ground access vehicles. Taxis can choose their travel route between the airport and the train station, as there will be no pre-determined alignment. Free from a rule to follow specific roads for travel, drivers can choose the best travel route based on traffic conditions, as reported by a mobile application.

The upgraded fleet can offer more comfort than the taxi vehicles currently operating between the Station and the Airport. A wide variety of vehicles are available to be integrated into the upgraded fleet, including sedans, SUVs, and minivans. Taxis based on modified small cargo vans – such as the Ford Transit and Nissan NV200 – have grown in popularity among operators. These vehicles offer good mix of passenger amenities and have been designed to maximize interior space on a small chassis. Desirable amenities for the new taxi fleet include:

- Capacity to seat a minimum of four passengers plus one driver comfortably;
- Sliding doors, interior grab-handles, and swing out-steps to maximize ease of entry and exit;
- Flat vehicle floors which provide additional comfort and space for small luggage;
- USB / charger stations
- Independent rear climate control;
- Spacious rear luggage compartment;
- Wipe-clean interior surfaces;
- Reading lights and floor lighting;
- Universal Accessibility features.

In addition to upgraded vehicles, introduction of an electronic reservation, dispatching, and payment system is proposed. This system will allow users to request rides in advance of arriving at the taxi area using a mobile device. After the user requests a ride through the mobile app, an available driver receives the order and prepares to welcome the upcoming passenger. Drivers and passengers identify one another using profile information (e.g., driver name, vehicle model, license plate number) shared by the application. If they choose to do so, passengers can pay for the ride with the app, in a cashless transaction.

There are many vendors capable of offering this electronic hailing and dispatch service, with either custom or off-the-shelf systems. Cloud-based services are preferred to avoid procurement, setup and maintenance of network servers. Still, to ensure service reliability and provide service options for passengers, the ability to request a taxi in person and pay in cash or a physical credit card should be preserved alongside introduction of new digital technology.

To promote the taxi upgrade and disseminate a consistent message of the system values, a new branding strategy should accompany the system launch. A distinctive, recognizable and strong brand will ensure that the public gets a positive and accurate impression of the system from the onset, raising the social profile of existing Airport customers, and increasing the potential of attracting new users.

The combination of these elements defines a visual identity which will be systematically deployed every time the system sends visual cues to riders: on signage at the Airport and Station, on driver uniforms, on vehicles liveries, at the mobile application and at the connection's webpage. This visual identity will be distinguished from the taxi operator's, to guarantee consistency in the event of a future change of operator, but it may reference the LIRR's and the Airport's brands, to increase its association with them.

Upgraded Taxi Vehicles

- Vehicles available from different vendors, and in different configurations including light commercial vehicles and SUVs.
- Ample interior space with flat floors, lighting and independent rear climate control.
- Facilitated entry and exit with swing-out steps, sliding doors, interior grab-handles.
- A spacious rear compartment capable of accommodating at least 4 bags.
- Wipe-clean interior surfaces, and anti-bacterial pleather seats.
- Universal Accessibility features.
- Hybrid electric vehicle technology for increased fuel efficiency and reduced pattern of emissions

Ancillary improvements associated with the upgraded taxi service include:

- Improved wayfinding signage at Ronkonkoma LIRR Station to guide passengers to the taxi curb
- Installation of video screens near the taxi station, providing up-to-date flight information.

Key Benefits

Improved passenger experience

The updated system would deploy modern vehicles equipped with onboard digital amenities, and design favorable for stepping in and out, baggage movement and accommodation of persons with disabilities. The new fleet would allow passengers to pay by cash/card in addition to a new mobile device function, and to reserve a trip in advance through their smartphone.

Operational ease and improvements

Similar to operations today, outsourcing train-to-place connection operations to a third-party taxi operator enables the airport to have lower operational costs and minimizes management responsibilities. Updating the current operating agreement could deliver improvements to service, standards, and performance if amended for its next valid period.

Upgraded taxis would pick up and drop off passengers at a very similar station location as they do today. Drivers would still accept cash or credit card payments, as well as LIRR Getaway Package vouchers. Current riders would benefit from more comfortable rides and more options for securing their rides, while still having familiar experience in hailing taxis.

Improved technology and performance tracking

A new mobile application would allow users to easily book taxi trips, and inform them of ride availability, and on trip details such as expected travel time, fare

level, driver identification and vehicle accessibility features. The same application could facilitate transactions, handling payment and issuing receipts for passengers with registered accounts.

This new application would also benefit the system operator and the contract sponsor. Gathering data on vehicle location and passenger trips, the application could offer subsidy to optimization problems, such as dispatching, produce planning insights based on usage trends. Furthermore, system transparency would be boosted by online dashboards, which could report on average waiting times, typical trip durations and other performance metrics.

E-hailing application

- Digital system to allow passengers to request and secure taxi rides before they arrive at the taxi station.
- E-hailing application available for riders' mobile devices, which enables fare transactions for cashless payment.
- Online system monitoring dashboard available for the taxi operator and the system sponsor.
- Integration with the MTA mobile app sale of getaway package offers.

LIRR Ronkonkoma Station Improvements

- Electric chargers set up at the taxi parking area.
- Improved signage to facilitate navigation and enhance awareness.

5.2 Upgraded Shuttle on Public Roadways (Medium-term, 5-7 years)

Mode Overview

An upgraded shuttle system would handle the potential medium-term growth in demand for the connector, capitalizing on existing customers and new riders generated by LIRR Double Track service, Nicolls Road BRT service, and the build out of Ronkonkoma Hub. With moderate levels of investment into a shuttle system, the overall connection capacity would be expanded, and travelers could access a wider range of options. In addition to the taxi service, riders would have access to timed, spacious buses departing from stations built to accommodate the needs of air travelers.

The upgraded shuttle plan involves changes and improvements to the current system infrastructure and operations to enhance the customers' sense of connectivity when using transit to access the airport. Most changes to the system center on adoption of high-standard vehicles, introduction of frequent service, and improvements to the passenger experience at the train station and at the boarding and drop-off zones.

Passenger Shelters

- Enclosed shelters include seating, heating and cooling, and check-in kiosks/MTA ticket vending machines.
- Displays inform passengers on shuttle waiting times, flight departure status/LIRR schedule.
- Raised shelters allow shuttle-level boarding for passengers

There are two options for siting the shuttle stop at the Ronkonkoma station: the loop north of the tracks, or south of the tracks. The shuttle would proceed along a route on public roadways, following Smithtown Avenue, Lakeland Avenue, and Veterans Memorial Highway before accessing the airport via Schaeffer Road.

Generally, shuttles would be scheduled to depart from the train station and airport terminal approximately every twenty minutes during peak activity hours, with adjustments to meet every train arrival. Service should be provided during all hours during which the airport is active –. Departures should follow a fixed schedule published online, allowing travelers to plan their trips with the support of an online travel service, such as the MTA Trip Planner, thus ensuring they can always arrive on time for their connections.

The service should operate with new buses. Two vehicles plus one spare should be sufficient to operate the service. These vehicles are usually 40-feet in length, with a capacity to seat 40 persons and hold a similar number of standing passengers. However, to improve the experience for air-travelers, the final fit-out should include a seating arrangement that accommodates luggage racks and better in-vehicle circulation. To reduce emissions, the fleet could be comprised of new, battery electric buses.

While such buses are more expensive to purchase and require installation of new charging infrastructure, they have lower lifetime costs due to lower fuel and maintenance expenses. Buses should be equipped with an automatic vehicle location (AVL) system that can be used to track the location of the vehicles in transit and provide real time passenger information (RTPI) on shuttle arrival times for passengers waiting at the train station or the airport. Vehicle livery should be designed with a unique brand to reinforce the new connectivity provided by the service.

Ancillary improvements associated with the upgraded shuttle system include:

- An enclosed bus shelter at Ronkonkoma LIRR Station would provide a comfortable waiting area for passengers at the train station. The station should feature amenities such as seating, heating and cooling, information displays, and check-in kiosks. To ensure that the shelter can comfortably accommodate travelers with luggage, a minimum of 10 square feet per passenger, net of furnishings, is recommended for shelter sizing.[16] MTA should be consulted on developing wayfinding signage in and around the station area to help guide passengers to the shuttle pick-up area. Signage should feature branding elements consistent with the vehicles.

- To provide space for a new shelter, capital improvements (eg; extending curb lines and building new concrete sidewalks) are needed adjacent to the train station area.

- A small depot is required to provide the buses with light maintenance, cleaning, storage and charging (should the vehicles be electric).

- A layover area for driver breaks is also required on airport property. Stakeholders have indicated that the new Transportation Facility located at 150 Arrival Avenue should be suitable upon completion.

- Video screens for passenger information should be set up at the train station bus shelter, and at the airport terminal. While the shelter at the Rail Station would display flight arrival and departure times and may also offer flight check-in kiosks, the shelter at the Airport would display the Railroad schedule and hold LIRR ticket vending machines.

Key Benefits

More environmentally friendly

Having a full shuttle bus of passengers is more environmental friendly than multiple taxis or cars transporting passengers to and from the airport. Reducing the number of vehicle trips around the airport will help improve local air quality and may reduce carbon emissions. This effort could be further enhanced by procurement and use of low or zero-emission shuttle buses.

More affordable options for passengers

If the connector shuttle cost was free to passengers, had a subsidized fare by stakeholders, or was part of a combined fare media, it would provide a less expensive alternative to the cost of a taxi, providing users with more options for mode, cost, and comfort.

Shuttle Vehicles

- 40-foot long shuttle buses, fit for the specific needs of air travelers: flat floors for facilitated in-vehicle circulation, and luggage racks.

- Two vehicles plus one spare should be sufficient to operate the service.

- Vehicles equipped with an automatic vehicle location system feed information to shuttle operators, and riders waiting at shelters.

- Light maintenance, cleaning and charging done out of a small depot located within airport property.

- Fully electric buses have lower lifetime costs and produce zero local emissions.

16 Based on the minimum threshold for a Level of Service “B” rating for queuing areas.

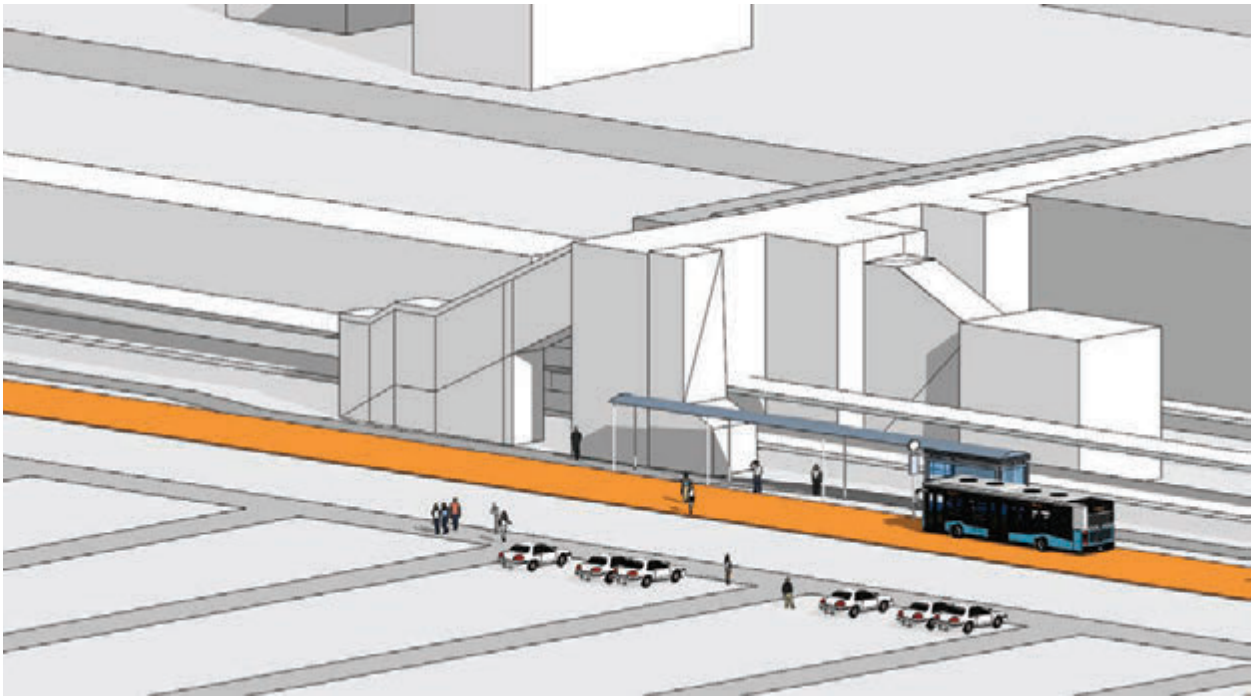

Figure 10: Axonometric view of potential location for a shuttle pick-up and passenger waiting area, south of Ronkonkoma Station tracks.

Service Details

- Service should be available at all times the airport operates: from 4:00am to 1:00am.
- Shuttle schedules should meet every train arrival/departure, with frequencies of 20 minutes or lower.

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5.3 Autonomous Vehicle Shuttle on Private Airport Roads (Long-term, 20+ years)

Mode Overview

The upgraded shuttle on private roads would operate with similar elements and service to the upgraded shuttle on public roads. The service would accept passengers at the Ronkonkoma LIRR Station shortly after arriving LIRR trains from a sheltered station, bringing them to a station located at the airport terminal and vice versa. The primary difference between the two shuttle options is the routing. Shuttles will travel mostly on exclusive right-of-way, entirely within airport property.

The shuttle will travel along a portion of Railroad Avenue south of the LIRR tracks, entering the airport property at a secure gate located north-north-east of the airfield. Shuttles would then travel toward the terminal along a new roadway within the airport, approximately 3.5 miles in length. An Airport Operation Area (AOA) fence will be required on both sides of the roadway until the roadway exits the airport secured area and enters public area.

To avoid a conflict with the Runway Protection Zones (RPZ) and other FAA protected surfaces for runways 6/24 and 15R/33L, the airport shuttle roadway would traverse underneath the two RPZs and other surfaces in tunnels to be constructed as part of the system implementation. Preliminary geotechnical observations suggest that a culvert box tunnel would be most cost efficient and viable. A cut and cover method shall be considered as the preferred construction technique for the tunnel.

A dedicated roadway could be built almost entirely within airport property, with just short segments overlapping with the future Ronkonkoma Hub South, and with Railroad Avenue. The Airport has enough room to accommodate a new roadway, with no need to tear down any existing facilities to clear the pathway. Geological conditions are favorable, and the underpasses required to keep the runway safety areas clear of obstructions could be constructed with pre-fabricated culvert boxes tunnels.

Due to the tunnel and roadway construction, this option is viable only in the long-term (20+ years). Given technological advances during this time frame, and the exclusive right-of-way, it may be possible to offer the shuttle service using autonomous vehicles (AVs). In the context of the train-to-plane connection, an AV would arrive at the designated shuttle station south of the train station, transporting passengers to the airport. At the airport, the passenger pick-up and drop-off area would be located at the end of the shuttle route, near the new transportation facility, and not curbside in front of the terminal.

To avoid railway crossings, the shuttle station should be located south of the LIRR tracks. The frequency and operational plan of the service should be similar to the public roads shuttle, with vehicles headways of approximately 20 minutes, with some deviation to meet arriving trains and aircraft as needed during peak activity periods.

Additional technical details on this long-term alternative and related ancillary improvements including security, utilities and stormwater systems are outlined in Appendix D.

Autonomous Vehicles

- Vehicles do not have a steering wheel or pedals. Current models seat 10 people, but future capacities could be larger.
- Power by electric engines, vehicle has zero local emissions.
- Onboard audio/video communication system allows passengers to contact operators.
- While sector standards and regulations are evolving fast, currently AV shuttles cannot operate in public roads in New York State.

Dedicated Roadways

- A new roadway dedicated to the connection shuttle could be constructed in the airport site, even after consideration of current runway extension plans.
- An Airport Operation Area (AOA) fence will be required on both sides of the roadway to separate riders from the airport secure area.
- To ensure clearance from the runway protection zones one 2,000 foot underpass would be constructed under each major runway.
- Preliminary geotechnical observations suggest that a cost-efficient, pre-cast culvert box tunnel would be viable.

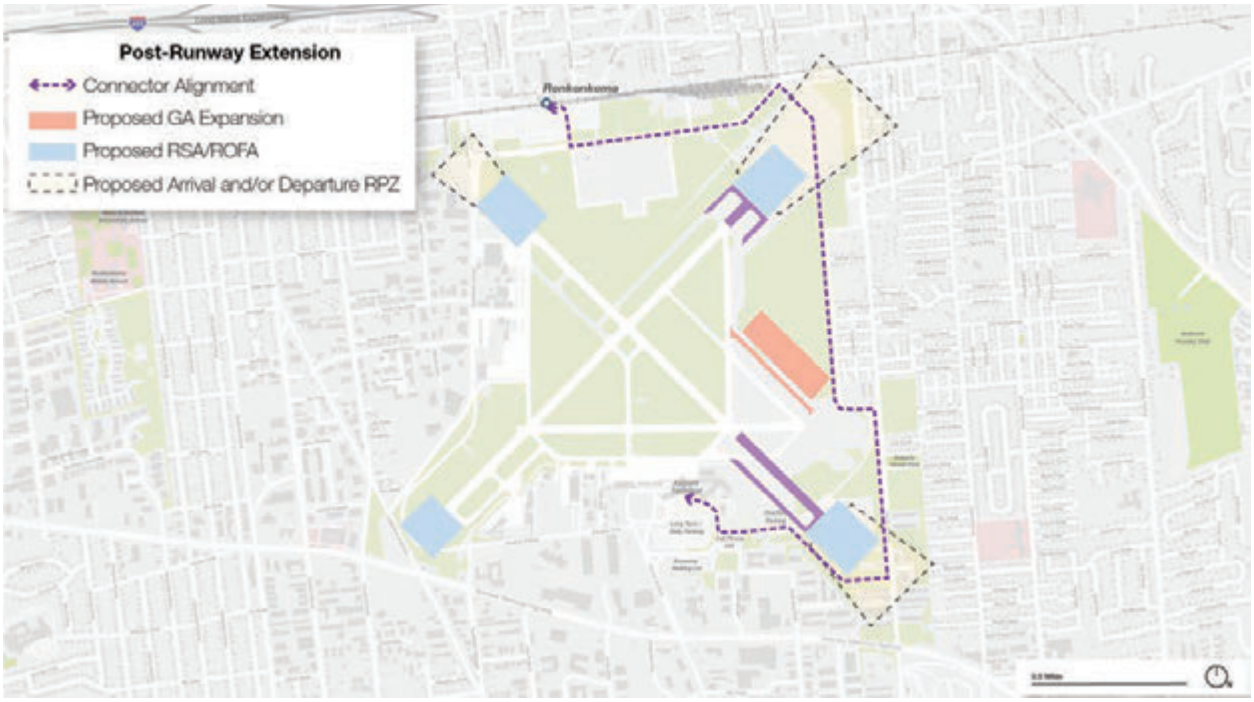

Figure 11: AV Shuttle on Private Airport Roadway – Proposed Route Alignment

Key Benefits

More reliable and resilient service

A dedicated alignment on a private airport roadway would provide more reliable service and improve travel conditions for both shuttle riders and drivers around the airport area. Because shuttle vehicles would run through a private airport road, the public roadways would not incur any impacts of AVs. In their turn, shuttle riders would experience increased reliability, since they would no longer be surprised by delays caused by road accidents, construction road closures and other forms of congestion.

Faster journey times

A dedicated private road would have a marginally more direct route and fewer junctions, meaning that journey times to the airport from the station may be marginally faster than a shuttle bus or taxi on public roads.

More environmentally friendly

Having a full shuttle bus of passengers is more environmental friendly than multiple taxis or cars transporting passengers to and from the airport. Reducing the number of vehicle trips around the airport will help improve local air quality and may reduce carbon emissions. This effort could be further enhanced by procurement and use of low or zero-emission shuttle buses.

More affordable options for passengers

If the AV shuttle cost was free to passengers, had a subsidized fare by stakeholders, or was part of a combined fare media, it would provide a less expensive alternative to the cost of a taxi, providing users with more options for mode, cost, and comfort.

Potential operational efficiencies

Replacing the traditional shuttle buses with autonomous vehicles (AVs) would mitigate cost spikes of increased service. While driving staff is the largest operating cost item on traditional shuttle systems, it is completely absent on AV-based systems, which, therefore, can increase trip frequencies more efficiently.

5.4 Moving Walkway to Relocated North Side Terminal (Long-term, 20 + years)

Mode Overview

In a future scenario wherein the Airport terminal may be considered for relocation to the north side of the airfield, the new terminal would be located much more proximately to Ronkonkoma LIRR Station and a vehicular-based transportation system may be unnecessary due to the short journey distance. Instead, a moving walkway could bridge transit-riders' final trip segment from the station building to a north-side terminal. This system would consist of two parallel conveyor systems to aid passengers' travel in both the direction of the train station and the airport. The walkways would provide universal access – without vertical steps – and allow passengers to walk or ride at faster-than-walking speed. Because the system would run continuously, customers will simply walk between the station and airport, with no delays or wait time. The walkway system enhances the passenger experience and journey by making it faster and more comfortable.

The alignment of the walkway would be determined to provide the shortest, most direct connection between the train station and terminal and would be housed within a climate-controlled structure, with entry/exit points located directly at the train station and terminal buildings. Depending on the ultimate on future development of the airport and adjacent properties, the walkway could be constructed at ground level, elevated, or potentially underground.

Various moving walkway systems and technologies exist, with slightly varying speeds and lengths. It is estimated that a moving walkway system for the Airport would have a travel time in the range of 3.5 to 6 minutes. These short travel times are possible due to a recent technology of high-speed walkways, which have been deployed around the world to bridge distances similar to the one envisioned in this study. Trip times could be minimized by using variable speed walkways. This type of walkway has two-speeds: typical walkway speeds towards the access and egress points, and faster "cruise" speeds at the middle of the walkway.

Key System Features

- Conveyor mechanism provides continuous service between the Station and North-Side Terminal.
- No-step access, passengers can walk or ride at faster-than-walking speeds within a climate-conditioned space.
- Adjacent walking lane accommodates passenger-assist vehicles, provides redundancy.
- Travel times in the walkway would be in the 3.5 – 6 minutes range, depending on design specifications.
- Walkway has two speed zones to enhance safety: slower speeds on the access and egress, and "cruise" speeds in the middle section.

For maximum passenger comfort, the supporting structure for the system should include sufficient access to views and daylight, and be safely lit during times of darkness. This structure should also include enclosure walls, external railing, guards, closures, shutters, ventilation, and smoke barriers as required. Adequate areas should be provided for passengers to queue before entry and to re-adjust any baggage, attend to children, etc. upon exit, with further detail as defined in ASME A17.1 (Section 6.2.3.8.4).

In this alternative, an additional physical structure enclosing a moving walkway would offer a more cohesive train-to-plane connection and passenger experience than any solution involving surface transportation vehicles. Because a moving walkway would be designed in conjunction with the new terminal, it is envisioned be fully integrated to the terminal building, connecting passengers from the train station overpass directly to the terminal concourse. The passenger would experience the Station and the Terminal as a single, unified transportation hub for the County and the larger regional transportation network.

Key Benefits

Shortens journey distance between the Station and Airport

A moving walkway between the train station and a new northern terminal would significantly reduce the time it takes to transfer from train to airport. The shorter the transfer time the more attractive ISP will be for passengers. With a shuttle or taxi, a passenger might have to wait a few minutes for service but with a moving walkway there is zero waiting time, it is always available when the passenger needs it.

Seamless Journey and Passenger Experience

This option would provide a seamless journey between transportation networks and passengers' Airport experience could begin at Ronkonkoma Station. Additionally, travelling on a moving walkway is easier than using a taxi or shuttle bus, as passengers do not need to lift baggage into a taxi or shuttle. Secondly, most passengers do not perceive a moving walkway as a mode of transport and therefore in the eyes of the consumer moving between the train station and the airport would not require a 'transfer'.

Weather Protection

Depending on the design of the walkway, passengers could move from the train station to the airport under cover. If the walkway is fully enclosed, passengers could benefit from a more comfortable transfer.

Automation and operational efficiencies

Once constructed, a moving walkway has low operating costs and does not require staff to operate. It would require regular maintenance costs.

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6. Implementation Plans

High-level implementation plans were developed and are outlined in this section for the four selected modes described in Section 4. The implementation plans include: potential roll-out plans, key considerations and cost estimates.

In addition, the implementation plans include estimates about the level of effort required to undertake an environmental assessment for each connection option. This assessment is aimed at assisting decision-making that could impact the development of the train-to-plane connection, and it includes a summary of key regulatory and policy considerations with illustrative assessment durations and potential costs. The schedule and cost estimates reflect rough order-of-magnitude approximations based on information currently available. It is recommended that detailed environmental assessments, in compliance with all relevant local, state and federal regulations, be undertaken to inform subsequent project stages.

6.1 Upgraded Taxis (Short-term, 1-2 years)

Roll-Out Plan

The high-level roll out plan for implementing an upgraded taxi fleet is outlined and depicted in Figure 12. Some steps may require more complex decisions or additional design work that must be completed as part of the implementation process. These are discussed in Section 6.1.2 as key considerations. The initial steps involve investigating vehicles, contractual requirements, and systems. Suffolk County should choose a vehicle standard, or mix of vehicles, that will be used in provision of the taxi service. Ultimately, these vehicles may be owned by the taxi operator, or owned by a public agency and leased to the operator under a service agreement. Both cases will require changes to existing contractual agreements. Simultaneously, Suffolk County should begin the process of refined scoping and vendor identification for the mobile hailing and dispatching service.

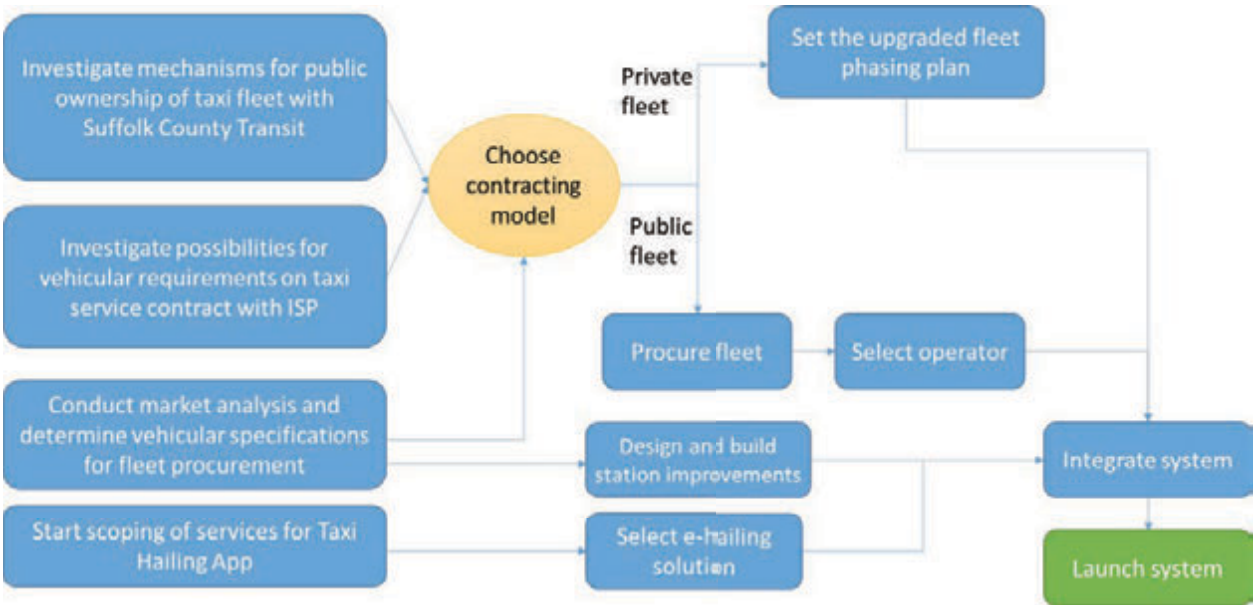

Figure 12: Roll-out Plan, Upgraded Taxis (Short-term, 1-2 years)

Once the contractual model is chosen, and a preferred vendor for the electronic hailing solution identified, the procurement process can proceed. If the preferred model involves private ownership of the upgraded fleet, the operator must agree to a plan specifying the vehicle performance requirements and timeline for phasing in the new vehicles. Under a public ownership model, a specified government entity will directly procure the vehicles. The taxi service provider only needs to operate and maintain the vehicles. The final design and construction of ancillary improvements may take place on a similar timeframe. Once the vehicles and electronic hailing solution are in place, the digital infrastructure and systems can be integrated. The process entails the testing of the services to determine operational readiness and subsequently, launching the service to the public.

Key Considerations

Key considerations for upgraded taxi service include:

Fleet ownership and operation model

Two potential options for ownership of the upgraded taxi fleet were identified through this study. The fleet may be procured and owned by a public entity such as Suffolk County or Suffolk County Transit, and then leased to a private taxi operator. This private operator would provide service and maintain the vehicles under the terms of a lease and service agreement. This model decreases financial risk to the operator associated with capital investment in new vehicles. Direct procurement also eliminates potential negotiation with the operator regarding vehicle specifications and costs, enabling straightforward delivery of the fleet.

Alternatively, the upgraded fleet could be procured directly by the private operator, after an update of the taxi service provision contract that include higher standards of quality. The company would own, maintain and operate the fleet under contract to a public entity. This arrangement may require more gradual introduction of the new fleet, as the taxi operator manages risk and capital investments in their vehicles.

Vehicle specifications

Final vehicle specifications – or a mix of vehicles specifications – must be selected in order to provide the service. This process may involve choosing among available vehicles based on performance. If a hybrid vehicle is selected, chargers will have to be procured and installed in at least one of the waiting areas for the taxis, and in that case the Ronkonkoma LIRR Station should be prioritized, as it is the location where the taxis dwell, even when they are not returning from a trip to airport. A summary of taxi fleet vehicles is provided in Appendix D for informational purposes.

Electronic hailing platform

Either a private operator or a public entity could serve as the contracting entity for an electronic hailing ("e-hailing") platform. If the private operator is selected, a list of minimal requirements should be specified. As discussed above, a variety of vendors can provide applications using solutions ranging from off-the-shelf, semi-customized, to fully customized. These systems are likely to include an upfront cost for set up and development as well as ongoing subscription or transaction-based fees.

Cost Estimate

The total expected capital expenditures associated with an upgraded taxi fleet including 10 vehicles is $1.1 million. The expected cost for new taxis will be $40,000 per vehicle.

No estimate of operating costs is provided for this mode, as operating costs will depend largely on the contractual arrangement with the taxi operator. In addition, the operating costs will include ongoing

costs associated with the electronic hailing application; however, not enough public information is available to inform a reliable estimate.

Cost estimate classification and general assumptions for these figures are outlined at the end of this report.

Environmental Review Effort Assessment

It is assumed that no Federal funding will be used for the development of this option and therefore no National Environmental Policy Act (NEPA) review will be required by the U.S. Environmental Protection Agency.

The project is an unlisted action under the New York State Environmental Quality Review (SEQR). The environmental review will require the preparation of an Environmental Assessment Form (EAF) followed by a Negative Declaration as per SEQR requirements. No public hearings would be required as part of this SEQR review.

A SEQR Lead Agency will need to be identified, and it is anticipated that the EAF will include multiple Involved Agencies, so a coordinated review will be necessary.

The only element of the development of this option anticipated to require environmental analysis would be the construction of electric vehicle (EV) charging stations. Per current development plans, the proposed locations for EV charging stations are on paved and/or previously disturbed surfaces which have been maintained as developed sites. From preliminary review, no trees or other natural vegetation will need to be cleared. It is anticipated that there are no federal or state listed endangered, threatened special concern species, significant natural communities or rare plants that will need to be addressed.

The project is not in the designated Coastal Zone. There are no surface waters or wetlands in the vicinity. The project is in a Sole Source Aquifer area; however, no detailed analysis is anticipated. It is anticipated that there are no cultural resources in the vicinity that could be impacted.

Estimated timeline for assessment:
2 – 3 months

Estimated cost of assessment:
$25,000 - $50,000

6.2 Upgraded Shuttle on Public Roadways (Medium-term, 5-7 years)

Roll-out Plan

The initial steps for implementing the upgraded shuttle service involve siting the new infrastructure required. First, the location of shuttle stops must be finalized. The existing options at the LIRR station are either north or south of the tracks. At the airport, the route may be configured for shuttles at a new location near the transportation facility. Preliminary engineering of the stations and shelters may be required to inform this process. Suitable locations and size must also be determined for parking at the driver layover area and for the bus depot capable of supporting light-maintenance, cleaning, and vehicle charging.

At a future conceptual design phase, Suffolk County should further explore options for contractual means and business models for operations. This involves identifying the appropriate public and/or private entities to purchase the vehicles and to provide drivers and administrative staff for operations. The service could be operated by Suffolk County Transit, or a private contractor. In the latter case, the vehicles and technology may be owned by a public entity and operated and maintained under a service agreement. Alternatively, a private entity willing to purchase and own the vehicles could be sought.

The next steps are to begin acquiring and constructing the elements needed to run the service. At this stage, vehicles, shelters, AVL and real-time passenger information systems will be procured from a vendor. Final design and construction for the bus depot and transportation center improvements will begin. Final designs for the shuttle station at the LIRR should be coordinated with the MTA and/or property developers of Ronkonkoma Hub and Ronkonkoma South, and then constructed.

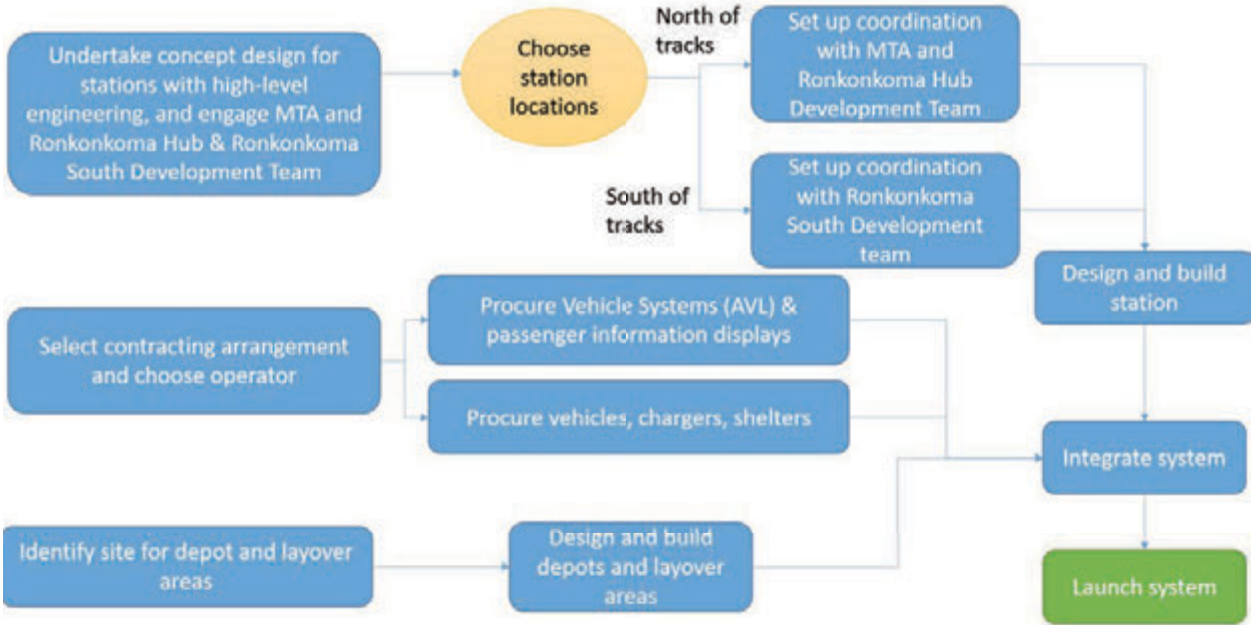

Figure 13: Roll-out Plan, Upgraded Shuttles on Public Roadways (Medium-term, 5-7 years)

In the final step, the operator defines the service plan (scheduling trips and assigning shifts to drivers). It also requires integrating the technology components so that real time information on flights, trains, and shuttles are communicated and displayed appropriately to customers. Subsequently, the service can be launched to the public.

Key Considerations

The key considerations for the upgraded shuttle service are related to contractual model and siting of various elements.

Contractual models – Key considerations on the contractual model focuses on two key questions: who will operate the bus service and who will purchase the vehicles? Duties of the operator will include providing staff for driving, cleaning and conducting light maintenance for vehicles, and periodically updating the service plan as train and flight schedules change. A selected public entity, such as Suffolk County Transit, would procure and own the buses, in-vehicle technology, and charging infrastructure. If the operator is a private company, the private contractor would operate and maintain the publicly-owned fleet under a service agreement. A private ownership model would involve accepting proposals to identify a company that would be willing to purchase vehicles and technology meeting Suffolk County's standards in addition to operating the bus service. The public procurement model is likely to be more successful, as the capital investment in new high-standard vehicles poses a large financial risk to the operators.

Infrastructure siting

There are two potential locations for siting the shuttle station at the LIRR Ronkonkoma station: within the loop north of the station, or south of the station,

Figure 14: Shuttle Stop Location Options (A&B) and Routing Options at Ronkonkoma Station

as shown in Figure 13. While the northern station alignment (Location A) avoids potential delay resulting from heavy park-and-ride activity during the morning and evening peak hours, the routing is more circuitous and must stop at the signalized intersections located just east and west of Smithtown Avenue on Railroad Avenue. The southern alignment (Location B) may suffer delays from conflicts with parking vehicles, but avoids potentially recurring stops at the traffic lights.

Because the sidewalks adjacent to the train station are narrow, installation of the proposed shelters requires additional capital work at either location. At Location A, the curb would be extended and the grass median shifted northward to allow installation of the shelter and a clear path on the south side of the loop. At Location B, the curb would be extended southward into the existing drop off area to allow for installation of the shelter and a clear path on the north side of Easton Street. In addition, the plan for Location A would require coordination with the long-term development of Ronkonkoma Hub, while the Location B plan for south side operations would require coordination with the eventual development of the Ronkonkoma South Site.

In addition to stations, a convenient layover area where driver may park vehicles during breaks is required. It is desirable to place parking near the new transportation facility at the airport terminal, as this location has been identified as a suitable location for administrative functions and to house bathrooms, break rooms, and other amenities for drivers.

Bus depot

This facility should be designed to support bus storage, light maintenance, and regular cleaning of the shuttle buses. Electric vehicle charging infrastructure should also be located at the depot (only if the vehicular fleet is electric or hybrid). Ideally, this location would be close to the new transportation facility, to consolidate the operational infrastructure (parking, break rooms, and administrative functions) within the Airport's property,

Cost Estimate

The total expected capital expenditures associated with an upgraded shuttle service amount to $8.5 million. This includes a fleet of three new, battery electric buses along with charging infrastructure and ancillary structures.

The annual operating costs could amount to approximately $2.2 million, but this would vary with specific operating plans and contractual arrangements.

Cost estimate classification and general assumptions for these figures are outlined at the end of this report.

Environmental Review Effort Assessment

Even if the project is not funded through the AIP program, grant assurances require the airport to conduct a NEPA review. Because the only new building in the airport would be the bus depot, the FAA would require the airport to complete a Categorical Exclusion (CATEX) or short form EA.

The project is an unlisted action under the New York State Environmental Quality Review (SEQR). The environmental review will require the preparation of an Environmental Assessment Form (EAF) followed by a Negative Declaration as per SEQR requirements. No public hearings would be required as part of this SEQR review.

A SEQR Lead Agency will need to be identified, and it is anticipated that the EAF will include multiple Involved Agencies, so a coordinated review will be necessary.

Per current development plans, the proposed locations for the shuttle stations and bus depot are on either paved and/or previously disturbed surfaces that have been maintained as developed sites. Based on existing information, it is anticipated that a Phase 1 Environmental Site Assessment (ESA) will be required. It is assumed that no potential hazardous waste issues will be identified.

From preliminary review, no trees or other natural vegetation will need to be cleared. It is anticipated that there are no federal or state listed endangered, threatened special concern species, significant natural communities or rare plants that will need to be addressed.

The project is not in the designated Coastal Zone. There are no surface waters or wetlands in the vicinity. The project is in a Sole Source Aquifer area; however, no detailed analysis is anticipated. It is anticipated that there are no cultural resources in the vicinity that could be impacted.

Estimated assessment duration:
3 – 5 months

Estimated assessment cost:
$40,000 - $80,000

6.3 Automated Vehicle Shuttle on Private Airport Road (Long-term, 20+ years)

Roll-out Plan

The initial step is to coordinate with key stakeholders to determine the feasibility of the autonomous shuttle operations. NYSDOT will likely need to issue regulatory approval for the AV program as the regulator. Consulting with automated vehicle (AV) vendors is necessary to determine the available vehicle specifications and the operating requirements of these vehicles. Depending on regulatory and technological changes in the future, an AV shuttle may require that some right-of-way *outside* the airport also be converted to exclusive AV routes. It is important to coordinate with the developers of Ronkonkoma Hub and Ronkonkoma South to understand any impacts to nearby land uses of changes to the road network and siting of the shuttle station.

If autonomous vehicles are deemed feasible, the next steps are to set forth vehicle specifications (capacity, features, number of vehicles required) and to begin the procurement process. At this stage, a new or updated bus depot and all roadway improvements needed to run the AV shuttle should be constructed. Updates to the AVL and real-time passenger information systems will proceed around this time.

If conventional vehicles are selected to operate on the airport, the airport may already be operating service with suitable vehicles. (If no service is in operation at that time, vehicles should be procured and an operator selected, per the previous section). However, if a sheltered shuttle station had been placed north of the LIRR, it may need to be relocated to the south side of the tracks to efficiently access the airport via Railroad Avenue. A final determination should be made whether this is necessary and feasible.

Regardless of the vehicle technology used, conceptual designs for the roadway alignment and tunnel underpasses should also be completed in an independent, parallel timeline. This initial design phase is necessary to apply for and obtain approvals by the FAA for Obstruction Evaluation/Airport Airspace Analysis (OE/AAA), by the New York State Department of Environmental Conservation (NYS DEC) for the State Environmental Quality Review (SEQR), and the United States Environmental Protection Agency (EPA) for the National Environmental Policy Act (NEPA) process (the last only if the project is funded at least in part from federal sources). Once approvals are received, final design and construction for the new roadway, tunnels, bus shelters, and associated infrastructure improvements can move forward. Once infrastructure improvements are made and the passenger information systems have been upgraded, the service may be launched to the public.

Key Considerations

The key considerations for an upgraded shuttle traveling on private roadways to the airport terminal are the vehicle technology, the regulatory environment, and complexity of construction.

Vehicle Technology

The concept of a shuttle service on airport roads does not depend on use of any vehicle technology. The service could be provided using conventional buses, in which case similar considerations to the shuttle operating on public roads concept would apply. Alternatively, a shuttle service could potentially be provided using autonomous shuttle vehicles. The implementation requirements will depend on the best-available technology at the time of deployment. Currently, pilot projects in the U.S., Europe, and Japan are underway using low-capacity (9-12 person) autonomous shuttles.[17]

17 AAA. (2017, November 8). *AAA and Keolis Launch Nation's First Public Self-Driving Shuttle in Downtown Las Vegas*. Retrieved from https://www.prnewswire.com/news-releases/aaa-and-keolis-launch-nations-first-public-self-driving-shut-

These vehicles generally meet the criteria for "high automation," meaning the vehicle is "capable…of all driving functions under certain conditions."[18,19,20] These vehicles are not yet capable of navigating busy public roads with mixed-traffic, but circulate in private areas or very limited sections of public roads. While the individual vehicles do not require drivers, the system is managed remotely by operators capable of handling exceptions and issues.

The technology to enable "full automation" – which allows vehicles to perform "all driving functions under all conditions" – is advancing rapidly.[21] Full automation would allow the autonomous shuttle to operate in mixed traffic safely and reliably.

If the "high automation" level represents the best available technology at the time of deploying the train-to-plane connection system, portions of the road network south of the train station may need to be closed to private traffic to operate the autonomous shuttle safely. Physically separated automated vehicle lanes could also be required on segments of Railroad Avenue used by shuttles to access the on-airport roadways. However, if "full automation" technology is commercially available, the shuttle vehicles could likely operate independently in mixed traffic under any scenario, generally without supervision from a remote operator.

Regulatory Environment

As AV technology evolves over the next decade, so too will AV regulations. To provide this service, the final operator of the autonomous shuttle system (whether a public entity or a private contractor) will need to seek approval from NYSDOT to provide commercial service using unmanned vehicles. Currently, NYSDOT does not have a specific policy that would cover this type of train-to-plane connection. The agency may develop such a policy in the future or require an approval as the primary regulatory for commercial transportation in the State of New York.

The extensive construction in the airport will trigger the need to seek additional approvals. The roadways and tunnels under the RPZ would likely require an update to LI MacArthur Airport's Airport Layout Plan (ALP). The airport will need to coordinate with the FAA's New York Airports District Office to determine the scope of changes to the ALP. In addition, the capital works will trigger environmental reviews by State and Federal agencies (depending on the project's funding sources), and air space reviews by the FAA.

Cost Estimate

Capital expenditures for this option are expected to be in the rough-order-of-magnitude of $41 million. This figure includes construction of the new roadways and tunnels.

Not enough public information is available to inform an estimate of the capital and annual operating costs of procuring and operating AV shuttles. However, the initial investment in vehicles is likely to be small in comparison to the costs of providing the roadway and tunnel infrastructure.

Cost estimate classification and general assumptions for these figures are outlined at the end of this report.

tle-in-downtown-las-vegas-300551187.html

18 Easymile. (2018). ***Newsroom***. Retrieved from http://www.easymile.com/#Newsroom

19 Leary, Kyree. (2017, September 13). Japan is Testing Driverless Buses to Help the Elderly Get Around. *Futurism*. Retrieved from https://futurism.com/japan-is-testing-driverless-buses-to-help-the-elderly-get-around/

20 Navya. (2017, July 3). *Inauguration of the Autonomous Shuttles Services at La Defense in Paris*. Retrieved from https://navya.tech/en/inauguration-of-the-autonomous-shuttles-service-at-la-defense-in-paris-2/

21 National Highway Traffic Safety Administration. *Automated Vehicles for Safety*. Retrieved from https://www.nhtsa.gov/technology-innovation/automated-vehicles-safety

Environmental Review Effort Assessment

It is assumed that the development of a new runway and tunnel will involve Federal funding, from sources other than the AIP, which currently cannot be committed for the project. A NEPA review would be required, and a Federal Lead Agency would need to be identified to determine NEPA documentation format. A detailed Design Report and Environmental Assessment (DR/EA) would be required, and, depending on its findings, an Environmental Impact Statement (EIS) will have to be prepared.

The DR/EA may also serve as the SEQR document. It is anticipated that there would be multiple SEQR Involved Agencies, so a coordinated review will be necessary. The DR/EA will be subject to a Public Hearing, and depending on the requirements of the eventual Federal NEPA Lead Agency, public information meetings may also be required.

Per current development plans, it is anticipated that that trees or other natural vegetation would need to be cleared. Depending on the season of clearing, surveys for the Northern Long-eared Bat (NLEB) may be required. Other than the NLEB, it is anticipated that there are no federal or state listed endangered, threatened special concern species, significant natural communities or rare plants that will need to be addressed.

The project is not in the designated Coastal Zone. Preliminary review indicates a federally regulated wetland may be present on the airport property that will need to be avoided. Under federal wetland regulations, there is no regulatory boundary beyond the limits of the wetland. There are no surface waters or State regulated wetlands in the vicinity.

The project is within in a Sole Source Aquifer Area. If any new pavement is proposed, a groundwater analysis will be required. A State Pollutant Discharge Elimination System (SPDES) permit and Stormwater Pollution Prevention Plan (SWPPP) will be required if the clearing equals or exceeds one (1) acre.

It is anticipated that there are no cultural resources in the vicinity that could be impacted.

Estimated assessment duration:
18 – 24 months

Estimated assessment cost:
$500,000 - $1,000,000

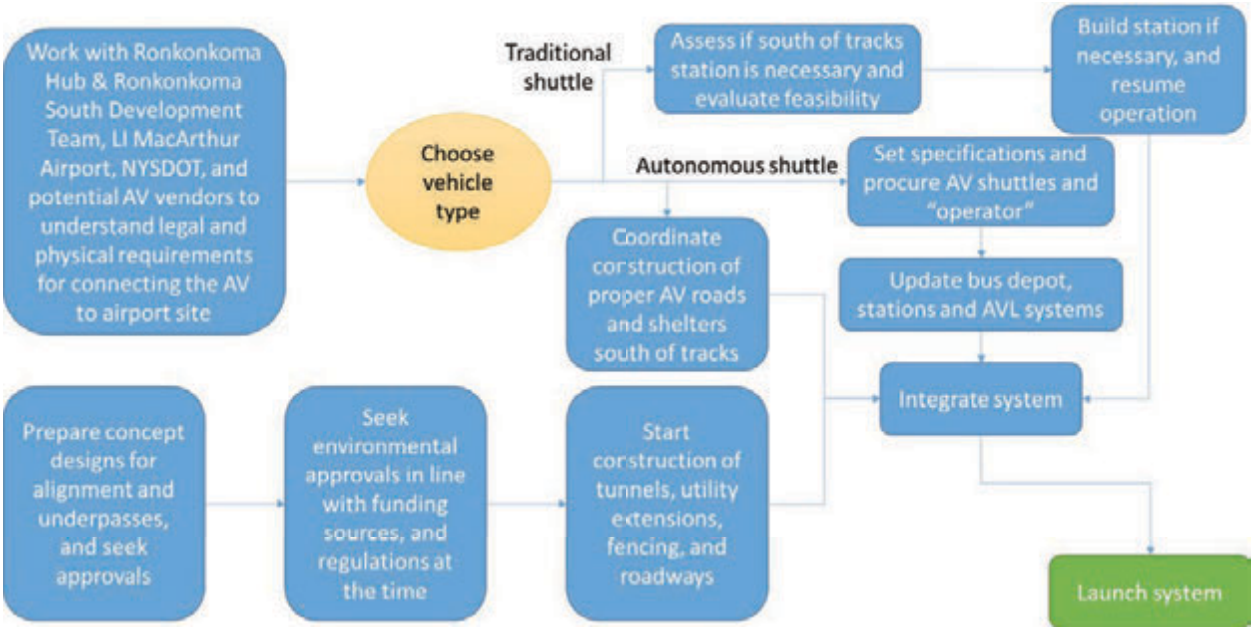

Figure 16: Roll-out Plan, AV Shuttles on Private Roadways (Long-term, 20+ years)

6.4 Moving Walkway to Relocated North Side Terminal (Long-term, 20+ years)

Roll-out Plan

With consideration of the County's transit-oriented development intentions for Ronkonkoma Station, the physical environment surrounding Ronkonkoma Station will be significantly different from current conditions in the next ten to twenty years. A moving walkway proposal and TOD growth would need to complement and not preclude one other as projects move forward during that time line. Thus, the first stage in developing the moving walkway system plan is to coordinate conceptual designs between the terminal development team and the developers of Ronkonkoma Hub and Ronkonkoma South sites. The location and mass of structures and future roadway alignments will influence the final alignment of the walkway system and help determine whether an at-grade or elevated walkway structure is preferable.

If the walkway is at-grade (at street level) several opportunities should be explored. First, there may be potential for providing additional access points to new development sites. In addition, reconfiguration of the street grid south of the train station may be required to provide the at-grade walkway system to avoid conflicts with circulating traffic on the street level.

Once the final elevation is determined, the access points and structures – including mechanical integration of the walkway – will be designed. During this period, the airport may begin the process of procuring the walkway components from a manufacturer. The next phase is to construct the moving walkway, meeting the construction timeline of the new terminal – with the new facilities opening to the public at the same time.

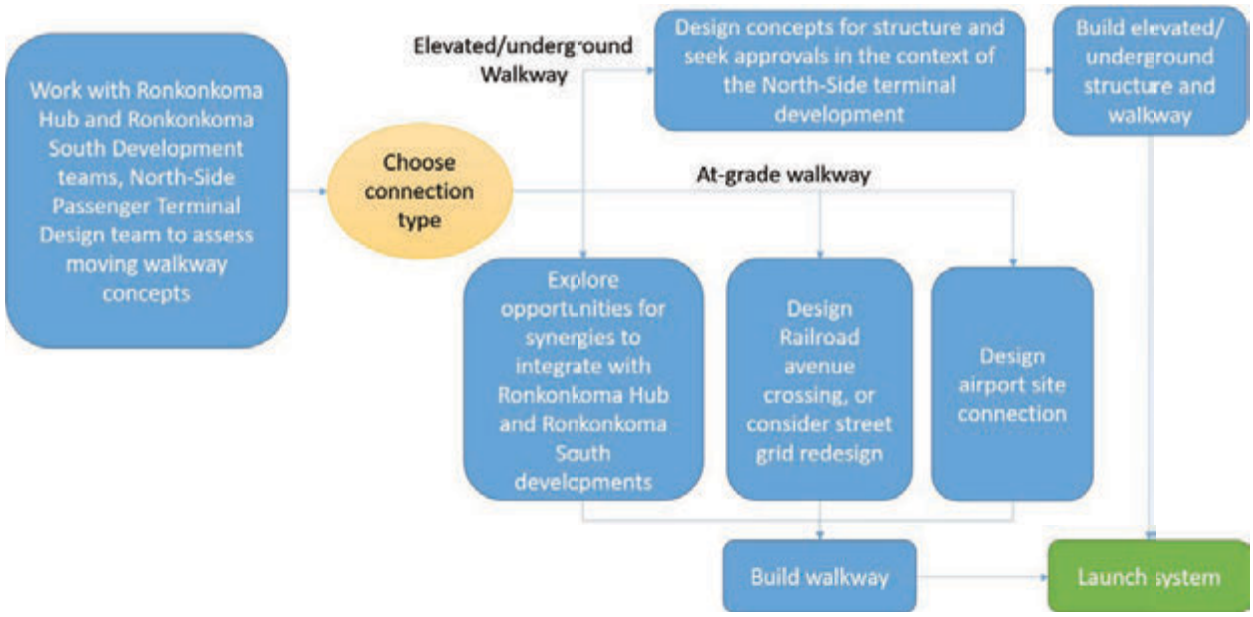

Figure 17: Roll-out Plan, Moving Walkway (Long-term, 20+ years)

Key Considerations

The key considerations for the moving walkway center on the timeframe, future development, and the supporting structure.

Airport Development and Coordination

The moving walkway system is not feasible without relocation of the LI MacArthur Airport passenger terminal to the north side of the airfield, adjacent to the Ronkonkoma LIRR station. Redevelopment of the airport is a major undertaking, placing the potential for a walkway connection firmly on a long term (20+ years) planning horizon. Any required environmental review related to the walkway would be folded into the larger assessment of an airport terminal development.

Future Development around Ronkonkoma Station

The system would be constructed concurrent to the development of the proposed North-Side Terminal, and should be integrated into the design of any proposed new build that occurs between Ronkonkoma Station and LI MacArthur Airport – the Ronkonkoma Hub South project. For example, the Moving Walkway could be integrated into new development proposed for the existing surface parking lot, providing an opportunity for users to exit the walkway for retail opportunity or comfort stations and re-enter to continue their journey.

Supporting Structure

The supporting structure for the Moving Walkway could be constructed at ground level or as an elevated skyway. Ground-level construction would require less structural support, greater flexibility for adjacent walkways, and reduced complexity for integration with the Station and the North-Side Terminal. However, a ground-level structure would obstruct roadways, requiring re-routing of surface transit, or under/overpass construction. An elevated structure would require greater technical and infrastructure considerations, and is thus costlier. However, it would preserve the flexibility of surface-level mobility with a minimal footprint.

As discussed above, the plans for the moving walkway – as well as the terminal relocation – will need to be closely coordinated with land use developments adjacent to the train station, the Ronkonkoma South, which should redevelop the existing park-and-ride lots south of the tracks.

Cost Estimate

The total capital expenditures the moving walkway equipment are expected to reach approximately $15 million. This figure includes the purchase and installation of walkway equipment. This figure does not include the costs of relocating the terminal itself. Due to the high level of uncertainty regarding the range of construction options, it also excludes any elevated structures, tunnels, or other features required for integration with the new terminal.

The annual operating costs for the walkway may reach approximately $150,000. This cost includes the energy requirements of the walkway as well as maintenance and cleaning.

Cost estimate classification and general assumptions for these figures are outlined at the end of this report.

Environmental Review Effort Assessment

Regulations will not permit an environmental review of this option to be segmented apart from the proposed development of the future North Side passenger terminal. Environmental review procedures are anticipated to evolve during the 20-year time frame anticipated to plan, design, fund and construct this facility. The summary below sets out environmental review considerations in line with current regulations.

It is assumed that this project will only take place with Federal funding, from different agencies, as well as other sources at different levels of government. A NEPA review would be required, and a Federal Lead Agency would need to be identified to determine NEPA documentation format. A detailed Design Report and Environmental Assessment (DR/EA) would be required.

The DR/EA may also serve as the SEQR document. It is anticipated that there would be multiple SEQR Involved Agencies, so a coordinated review will be necessary. The DR/EA will be subject to a Public Hearing, and depending on the requirements of the eventual Federal NEPA Lead Agency, public information meetings may also be required.

Per current development plans, it is anticipated that that trees or other natural vegetation would need to be cleared. Depending on the season of clearing, surveys for the Northern Long-eared Bat (NLEB) may be required. Other than the NLEB, it is anticipated that there are no federal or state listed endangered, threatened special concern species, significant natural communities or rare plants that will need to be addressed.

The project is not in the designated Coastal Zone. Preliminary review indicates a federally regulated wetland may be present on the airport property that will need to be avoided. Under federal wetland regulations, there is no regulatory boundary beyond the limits of the wetland. There are no surface waters or State regulated wetlands in the vicinity.

The project is within in a Sole Source Aquifer Area. If any new pavement is proposed, a groundwater analysis will be required. A State Pollutant Discharge Elimination System (SPDES) permit and Stormwater Pollution Prevention Plan (SWPPP) will be required if the clearing equals or exceeds one (1) acre.

It is anticipated that there are no cultural resources in the vicinity that could be impacted.

Illustrative time and cost considerations are not provided for the moving walkway, as the environmental assessment for this option would need to be undertaken in conjunction with the development of the proposed North Side Terminal.

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7. Next Steps

The completion and delivery of this study is a key component toward the creation of the Long Island Innovation Zone (I-Zone) and to enhancing the local and regional transportation choices in Suffolk County.

Following the completion of this study, the County's next steps include:

Ownership and Procurement of Upgraded Fleet

Two potential options for ownership of the upgraded taxi fleet were identified through this study. The County will investigate and evaluate mechanisms for both public ownership of the taxi fleet with Suffolk County Transit as well as private ownership by the operator by upgrading the vehicular requirements on the Taxi Service Contract with ISP. Based on the review of taxi vehicles – Small Cargo Vans (Nissan NV-200 and Ford Transit Connect) and Mini Vans (Toyota Sienna and Dodge Grand Caravan) are good potential options to explore further.

Selection of Operational Model

Depending on the ownership of the upgraded fleet, the private operator would either operate the County-procured vehicles under the term of lease and service agreement or the private operator would procure the fleet after an update to the taxi service provision contract.

Scoping for Taxi Hailing App

County will look into scoping the electronic hailing solution and potential vendors. This study provided a high-level overview of the electronic hailing and dispatching software systems currently available, which included Flywheel, TaxiStartup, ARRO and Curb.

Design of Ancillary Improvements

If hybrid vehicle is selected for the upgraded fleet, charging stations will have to be procured and installed in at least one of the waiting areas for the taxis. The study recommends installing the charging stations at Ronkonkoma LIRR Station. Other ancillary improvements associated with the upgraded taxi system will include improved wayfinding signage at Ronkonkoma LIRR Station to guide passengers to the taxi curb, and installation of video screen near the taxi station, providing up-to-date flight information.

Coordination with the Master Developers & Other Stakeholders

For the mid-term implementation plan, the County will coordinate with the master developers for the Ronkonkoma Hub and Ronkonkoma South, Airport and MTA to finalize the location and design of the shuttle stations, driver layover areas and bus depot; and to define the operational service plan.

Appendices

Appendix A. Mode Book
Appendix B. Existing Conditions and Connection Modes Identification Memo
Appendix C. Project Screening Criteria Memo
Appendix D. High-Level Implementation Plans Memo
Appendix E. Public Information Session Materials
Appendix F. Cost Estimate Classification and General Assumptions
Appendix G. Key Reference Documents
Appendix H. Environmental Review Effort Assessment References