Capital District Gondola Feasibility Study

ALBANY/RENSSELAER – NEW YORK

October 2016

McLaren ENGINEERING GROUP applied ingenuity

Doppelmayr®

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McLaren Engineering and Doppelmayr designed and constructed the gondola system at the New Wynn Palace in Cotai.

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Executive Summary

On July 7, 2016, the McLaren Engineering Group (McLaren) announced the launch of a transportation feasibility study for an aerial gondola that would connect the Albany-Rensselaer Amtrak Train Station to downtown Albany – with the intent of providing a new, reliable and efficient transportation option for commuters, visitors and tourists. The nation's 9th busiest train station is physically isolated from the capital city. Urban gondola systems are a growing trend being contemplated or studied in a number of cities across the United States, and around the world.

The objective of the Capital District Gondola (CDG) feasibility study is to conduct an initial assessment and overview of: possible alignments; technical feasibility; capital and operating costs; potential ridership; economic and environmental impacts; implementation timeframes; approval constraints; and to determine overall system sustainability and viability. The study also identified interested parties and stakeholders, gauged sentiment of such stakeholders and searched for any single item that might be cause for disapproval of the project. Determining feasibility is the first step toward preliminary and final design, funding, environmental review, construction, and operation. Future work will examine specific project issues in much greater detail.

McLaren has teamed with Doppelmayr, the world's leading manufacturer of ropeway technologies. As an indicator of the project's potential, the team grew to six (6) well respected members in just over two months' time, to address items such as ridership, economic impact, funding and constructability (see Figure 1). A background on the firms comprising the Project Team and their role, is provided in Appendix C. In addition, Capital Gondola LLC has been created to facilitate funding and permit applications.

Equally important to the creation of a well versed team, was the support and input received from key public/private stakeholders on both sides of the Hudson River. The team spent hundreds of hours meeting with, and reviewing information provided by these stakeholders represented by Figure (1). The team comprises many seasoned transportation professionals who were pleasantly surprised by the strong enthusiasm and interest in the study.

The findings of the three (3) month exercise have met or exceeded expectations. We have identified a one mile long operating corridor that begins at the Amtrak Station, heads west across the Hudson River to a proposed station on South Pearl Street near the Times Union Center/Key Bank Building, and then continues on to the Empire State Plaza. The project is technically feasible and constructible with minimal impacts. The construction budget and operating costs can be offset by passenger and advertising revenue, with ridership well in the hundreds of thousands each year. An overview of the findings can be found on the following pages.

After three months, the Project Team finds the CDG to be feasible, and retains the potential of being a transformational project that will create a spark of increased mobility, tourism, and economic development in two areas of the cities of Albany and Rensselaer that are currently underdeveloped. We look forward to continuing our work with key stakeholders, the general public, and investors as we advanced this unique project.

Figure 1: *Project Team is composed of Capital Gondola LLC, McLaren Engineering, Doppelmayr, Camoin Associates, Lemery Greisler, Urban Gondola Systems LLC, and Harrison & Burrowes*

Introduction

Background & Purpose of Study
In the late 1960's Union Station in downtown Albany was abandoned and the rail station for travel to and from Albany - now known as the Albany-Rensselaer Amtrak Station (Amtrak Station) - was moved across the Hudson River to Rensselaer. This move physically separated the station from downtown Albany and the State Capitol, making it more difficult for people who live and work in the city to access the station and for visitors arriving by train whose destination is across the river in downtown Albany.

The Amtrak Station's location has posed challenges for Rensselaer as well. Much of the real estate directly around the rail station is either vacant commercial land or surface parking acting as a barrier to the rest of downtown and the waterfront. There is a sense that the city acts only as a pass-through to other destinations rather than a destination itself. (City of Rensselaer, June 2016)

In several places in the United States and around the world, aerial gondolas have been used to solve transportation challenges such as the one between the Albany and Rensselaer. Additionally, urban gondolas have resulted in increased economic development activity adjacent to the stations, attracted tourists and had a positive impact on the environment.

The purpose of the study is to assess the feasibility of constructing and implementing a CDG service between the Amtrak Station in Rensselaer and two locations in downtown Albany (Figure 2: study area). This unique connection would help solve a transportation challenge while offering stunning views of the Hudson River, the Empire State Plaza and historic downtown, enhancing the area's tourism appeal. The CDG service would also make it more attractive to live in Rensselaer and encourage Transit Oriented Development (TOD).

Objectives of the Project
A CDG system would help meet the following objectives:

1. Address the issue of the Amtrak Station's physical separation from downtown Albany and the Empire State Plaza.
2. Encourage economic development via transit oriented development, tourism, improved livability, and additional mobility.
3. Provide an improved bicycle and pedestrian connection between the Amtrak station, the new esplanade trail in Rensselaer, and bicycle and pedestrian facilities in Albany.
4. Provide an environmentally friendly option for crossing the Hudson River.
5. Reduce the number of automobile trips and compliments existing transit services.
6. Provide a multi-model and ADA compliant system.
7. Initiate a transformative project that "creates a spark" for development.
8. Improve quality of life in the Capital District.

Project Location

The project area (see Figure 2) is located in downtown Albany and Rensselaer, New York, adjacent to the Dunn Memorial Bridge and South Mall Arterial roadway. The proposed CDG system would extend across features such as the CSX/Amtrak tracks in Rensselaer, the Hudson River, I-787, and the South Mall Arterial approaching the Empire State Plaza.

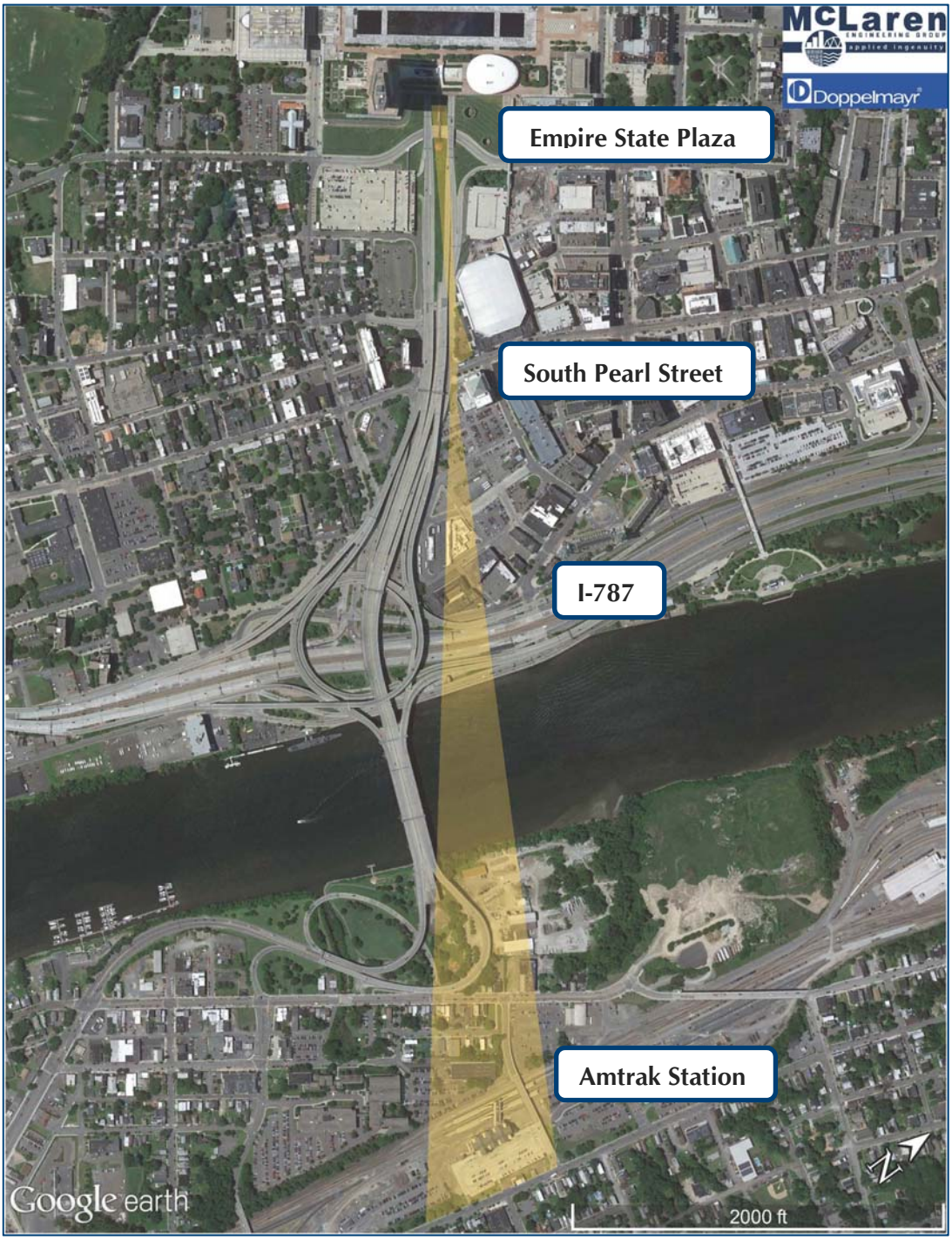


Figure 2

Local Plans for the Project Area
Based on discussions with key stakeholders (Figure 1), the proposed CDG was assessed in light of current and future plans in the project area for compatibility. It was found that the CDG would enhance and be synergistic with several projects that are planned or in progress in the area, including the Capital Center (March 2017), the Times Union Center improvements, and the downtown Albany streetscape enhancements on the west side of the Hudson River; and Rensselaer's Esplanade (2017) and DeLaet's Landing apartments (2018).

The CDG would be consistent with local and regional planning efforts, including the Albany 2030 plan, which places a strong emphasis on the importance of a multi-modal transportation system that provides the ability to safely and efficiently move via different modes of transportation. The CDG system would also complement the Capital District Regional Economic Development Council's "Capital 2030 Upstate Revitalization Initiative Plan" and the "2016 Rensselaer Waterfront Downtown Revitalization Initiative" proposal.

Stakeholders
McLaren Engineering Group, is leading the study effort in association with Doppelmayr, the world's leading manufacturer of ropeway technologies for gondolas, Camoin Associates, Harrison & Burrowes, Urban Gondola Systems LLC, and Lemery Greisler LLC (team member overviews can be found in Appendix C). In addition, the Capital Gondola LLC has been created to facilitate funding and permit applications. The team has received valuable input and insight from regional transportation partners, public organizations, and private entities for the preparation of this feasibility study. Their time and effort is deeply appreciated. A press release on the intent of the study was released on July 7, 2016. Conversations have been held with numerous public officials and public/private stakeholders in Albany and Rensselaer to obtain input on the project. In general, the response has been positive and supportive. The stakeholder chart (Figure 1) illustrates the collaborative effort. The Project Team is at the core since it receives information from – and disseminates information to – all pertinent stakeholders.

Alignments

After investigating eight (8) potential alignments (see Figure 6) along the one mile corridor, one alignment was selected for cost estimating purposes only. Final station locations to be determined. Gondolas travel in one continuous loop. It is more economical to have the gondola system alignment as straight as possible. Bends and turns increase cost.

The alignment comprises two (2) phases.

Phase 1 provides for construction of a 3,891-foot long CDG line from the Amtrak Station to South Pearl Street (Key Bank/Times Union Center area). This would allow individuals arriving at the Amtrak station to travel to downtown Albany destinations. It would consist of 8 towers and 2 gondola stations (Figures 3, 4A & 4B) with the primary drive location within the South Pearl

Figure 3: *Amtrak Station – Gondola station shown at the SW corner of Amtrak Station*

Street station. For purposes of cost estimating the South Pearl Street station is shown near Key Bank. Another location could be adjacent to the Times Union Center. Phase 1 lines would travel at a speed of 14 mph with a trip time of 4.27 minutes.

Design Option A – Functional: This design option includes CDG stations at the Amtrak Station and South Pearl Street. Project needs would be met.

Design Option B – Enhanced: This design option is similar to Design Option A, but would include architectural upgrades, such as glass walls at the stations, as funding permits.

Phase 2 would extend the system an additional 1,556 feet to the Empire State Plaza (Figure 5). Phase 2 would include 6 additional towers with the primary drive location within the station at South Pearl Street. Phase 2 would travel at a speed of 14 mph, with a trip time of 2.31 minutes.

Design Option A – Functional: This design option addresses project needs and provides an enjoyable experience.

Design Option B – Enhanced: This design option is similar to Design Option A, but would include architectural upgrades such as glass walls at the South Pearl Street station.

The total system represented by the combination of Phase 1 and Phase 2 alignments would be over 1-mile long. Phase 1 and Phase 2 are designed to function as separate systems, with a common station on South Pearl Street. This allows Phase 1 and Phase 2 to be built concurrently, or Phase 2 at a later date, depending on funding and logistics. The total system would be designed to accommodate 1,200 people per hour (pph) initially. Cabins can be added to accommodate up to 2,400 pph as demand grows, with a cab spacing of 240 feet, and a cabin arriving every 24 seconds at each station. Cabins would detach from the moving line and slow to a walking speed within the stations for boarding purposes.

Only Phases 1 and 2 are potential actions that would address the objectives of this study. The Null Alternative, does not.

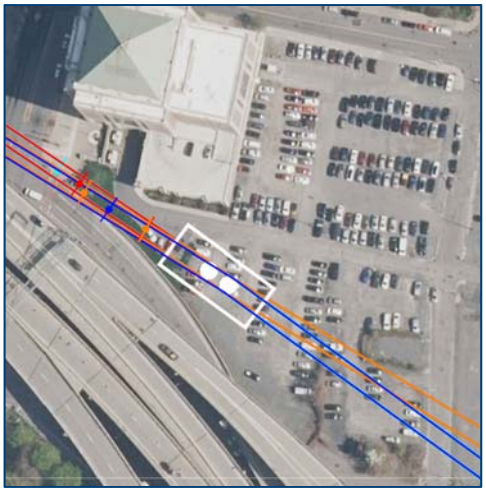


Figure 4A: *South Pearl Street Station – Key Bank Option*

Figure 4B: *South Pearl Street Station – Times Union Center Option*

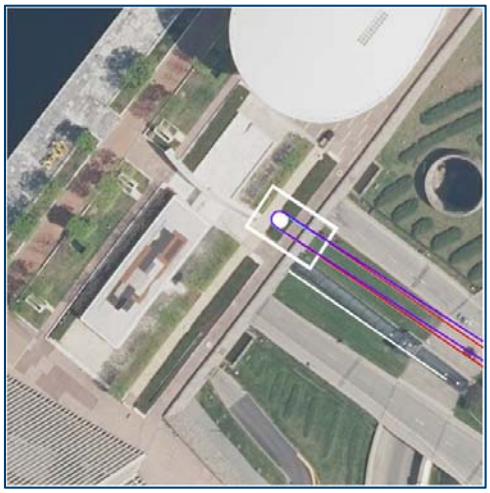


Figure 5: *Empire Plaza Station – Option using existing vacant transportation tunnel*

Development Costs

Depending on the alignment and phase/option chosen, the budgeted cost for planning, design, fabrication, construction, and inspection ranges from approximately $17M to $30M, as detailed below:

Item	Phase 1 – Option A	Percent	Phase 1 – Option B	Percent	Phase 2 – Option A	Percent	Phase 2 – Option B	Percent
Amtrak Station	$2,090,430		$3,580,050					
South Pearl Street Station (TU Center)	$3,200,000		$4,600,000					
Empire State Plaza Station	0		0		$1,000,000		$2,000,000	
Tower Foundations	$1,942,960		$1,942,960		$1,446,120		$1,446,120	
Towers 11 & 12	0		0		$587,220		$587,220	
Gondola Components	$6,562,550		$6,562,550		$5,786,109		$5,786,109	
Reset Ped Ramp Along I-787	$1,000,000		$1,000,000		0		0	
Maintenance/Protection of Traffic	$250,000		$250,000		$250,000		$250,000	
Line/Component Installation	$1,500,000		$1,500,000		0		0	
TOTAL	**$16,545,940**		**$19,435,560**		**$9,069,449**		**$10,069,449**	

Total – Option A	Percent	Total – Option B	Percent
$2,090,430	8%	$3,580,050	12%
$4,600,480	18%	$6,031,920	20%
$1,000,000	4%	$2,000,000	7%
$3,389,080	13%	$3,389,080	11%
$587,220	2%	$587,220	2%
$12,348,659	48%	$12,348,659	42%
$1,000,000	4%	$1,000,000	3%
$500,000	2%	$500,000	2%
$252,000	1%	$252,000	1%
$25,767,869	**100%**	**$29,688,929**	**100%**

Option A	Phase 1	64%	$16,580,820
	Phase 2	36%	$9,187,049
	Total	**100%**	**$25,767,869**
Option B	Phase 1	66%	$19,501,880
	Phase 2	34%	$10,187,049
	Total	**100%**	**$29,668,929**

Annual Operating & Maintenance Costs	
Phase 1	$1,610,000
Phase 2	$790,000
Total	**$2,400,000**

Note: Planning, design, permitting, inspection costs, as well as contingencies are included in cost estimates.

Operations & Maintenance (O&M)
It is anticipated that the CDG would operate approximately 16 hours per day, seven days a week throughout the year. The CDG would operate in most weather conditions.

Based on the experience at other existing gondola locations an optimum staff of up to 36 full and part time employees will be needed for operation and maintenance when the CDG is fully functional. Fewer staff would be needed if only phase one were implemented.

The O&M team would consist of management, maintenance staff and operating personnel.

The following positions will be needed to operate and maintain the CDG:

General Manager - would plan, direct, manage, and oversee the overall operation and maintenance of the CDG. The position provides a high level of responsible and complex management, coordinating activities with other management staff and outside agencies.

Duty/Shift Manager - would primarily responsible for overseeing the day-to-day operations and maintenance of the CDG, troubleshooting, organizing maintenance schedules, and keeping records. The position also involves ensuring the proper execution of day-to-day administrative functions of the office, as well as ensuring the proper conduct of all employees.

Mechanical/Electrical Technician - would be responsible for performing preventive and corrective maintenance to all CDG components. The Technician also troubleshoots and resolves operational disturbances. All maintenance technicians will be cross-trained to operate the system, which will provide staffing flexibility for break relief, emergency shifts, and vacation coverage.

Operator - would be responsible for monitoring the CDG during all modes of operation. The position also involves performing minor troubleshooting, such as identifying alarms and resetting faults.

Administrative Assistant - is primarily responsible for providing administrative services in order to ensure effective and efficient operations. The position involves managing the activities of the office and support the operations team.

To guarantee that personnel are available to address all concerns regarding the operation and maintenance of the CDG, the following shift pattern based on a standard shift model and good industry practice would be followed:

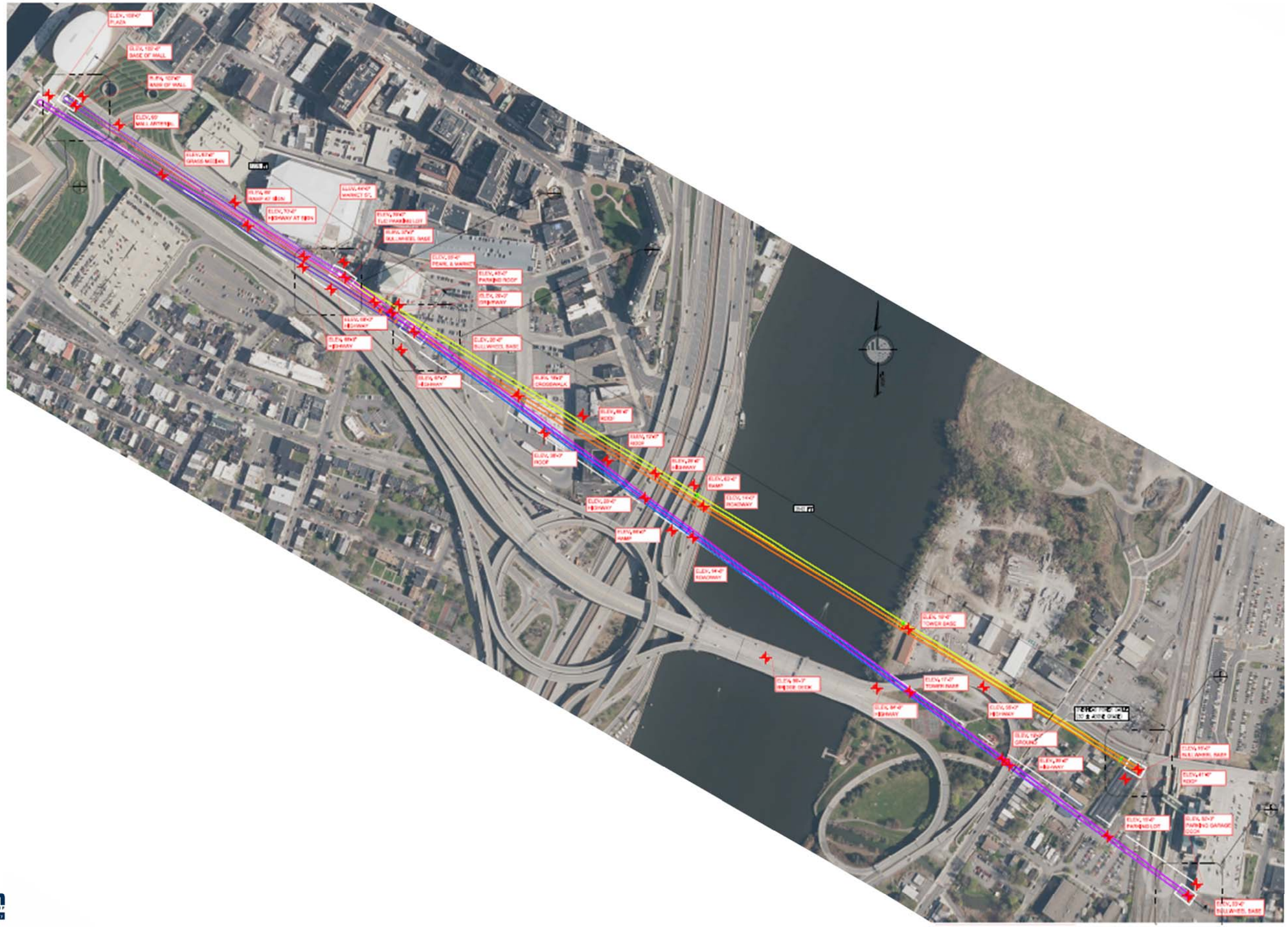
- During operational hours of the system at least one staff member will have managerial duties and will act as Duty/Shift Manager.
- Platform supervision is done at each station platform by at least two responsible operators as per codes and standards.
- At least one technician will be on duty during hours of operation and three mechanical/ electric technicians will perform maintenance tasks during the non-operational shift.

Schedule
The entire project could be built and operational by the end of 2019.

Task Description	Start Date	End Date
Feasibility Study	July 2016	Oct. 2016
Funding	July 2016	Dec. 2019
Permitting	Nov. 2016	Sept. 2019
Detailed Design	Jan. 2017	June 2017
SEQRA Process/Final Design Report	Nov. 2016	June 2017
Fabrication of Components	Sept. 2017	Mar. 2018
General Construction	April 2018	Sept. 2019
System Testing & Adjustment	Sept. 2019	Nov. 2019
Opening		Dec. 2019

Completion of this project according to the proposed schedule and development costs is contingent upon securing private, state, federal, and local government, necessary to initiate construction in June, 2017.

Figure 6: *CDG Alignments & Stations*



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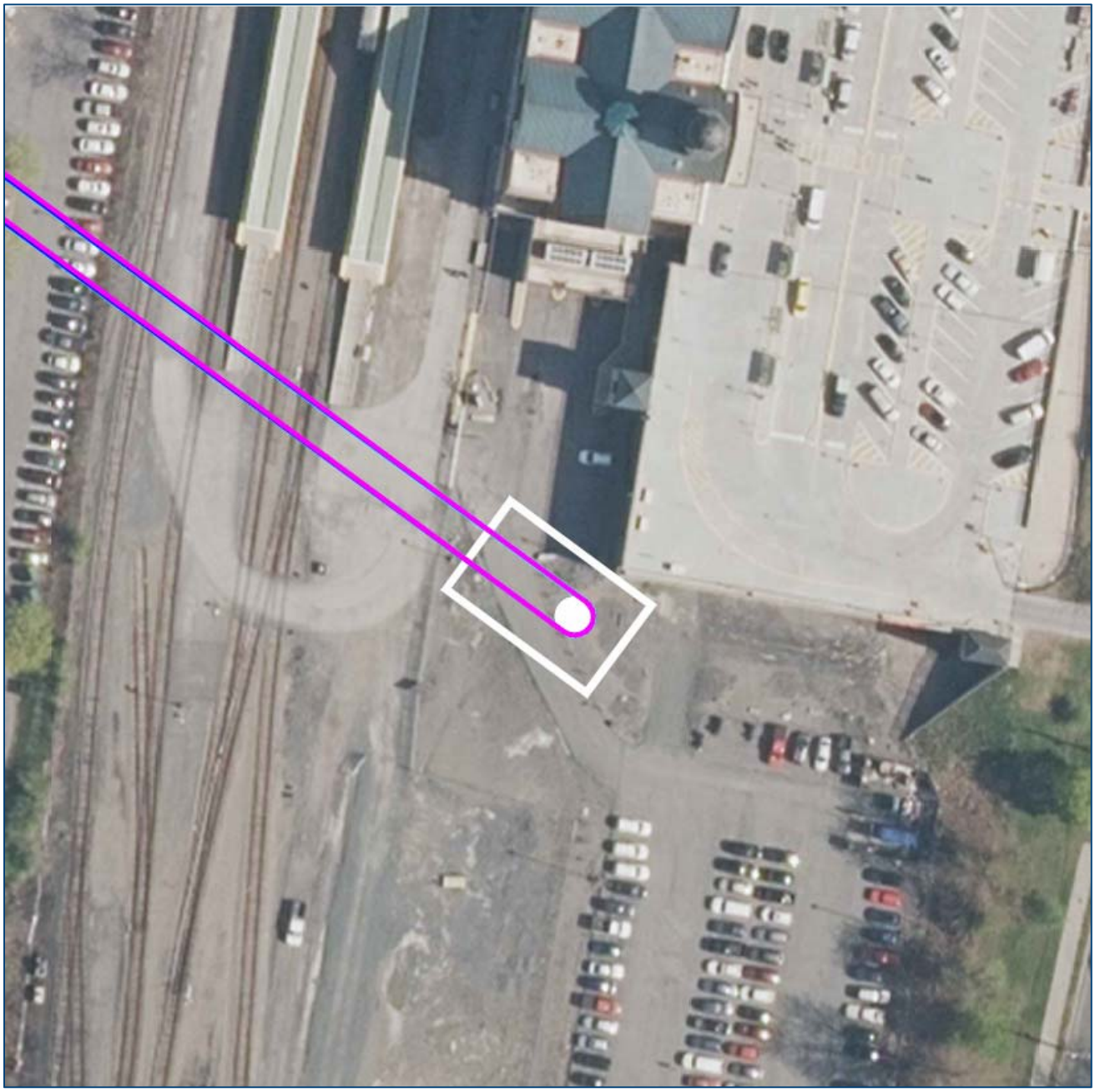

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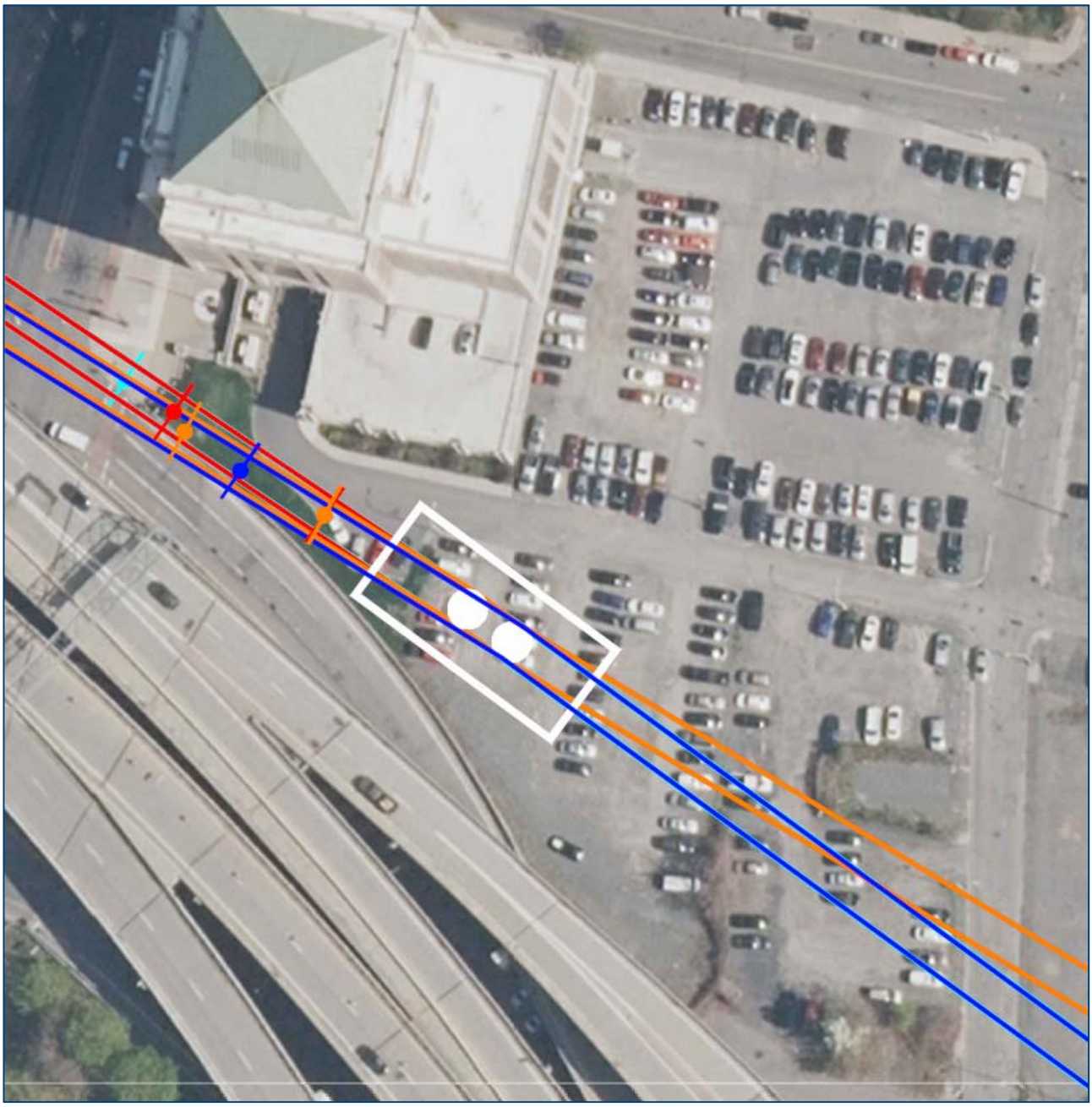
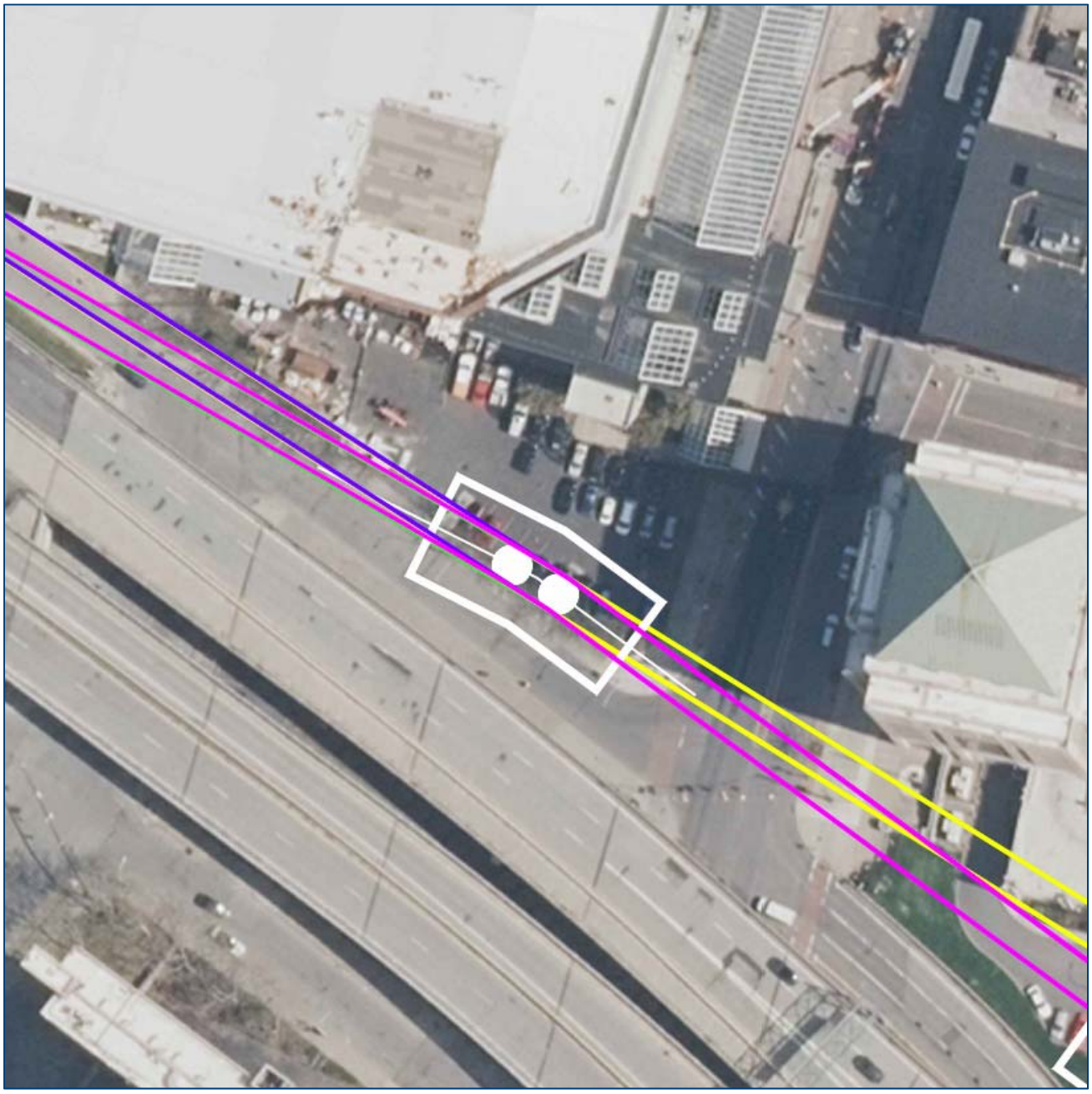


Figure 4B: *South Pearl Street Station – Times Union Center Option*



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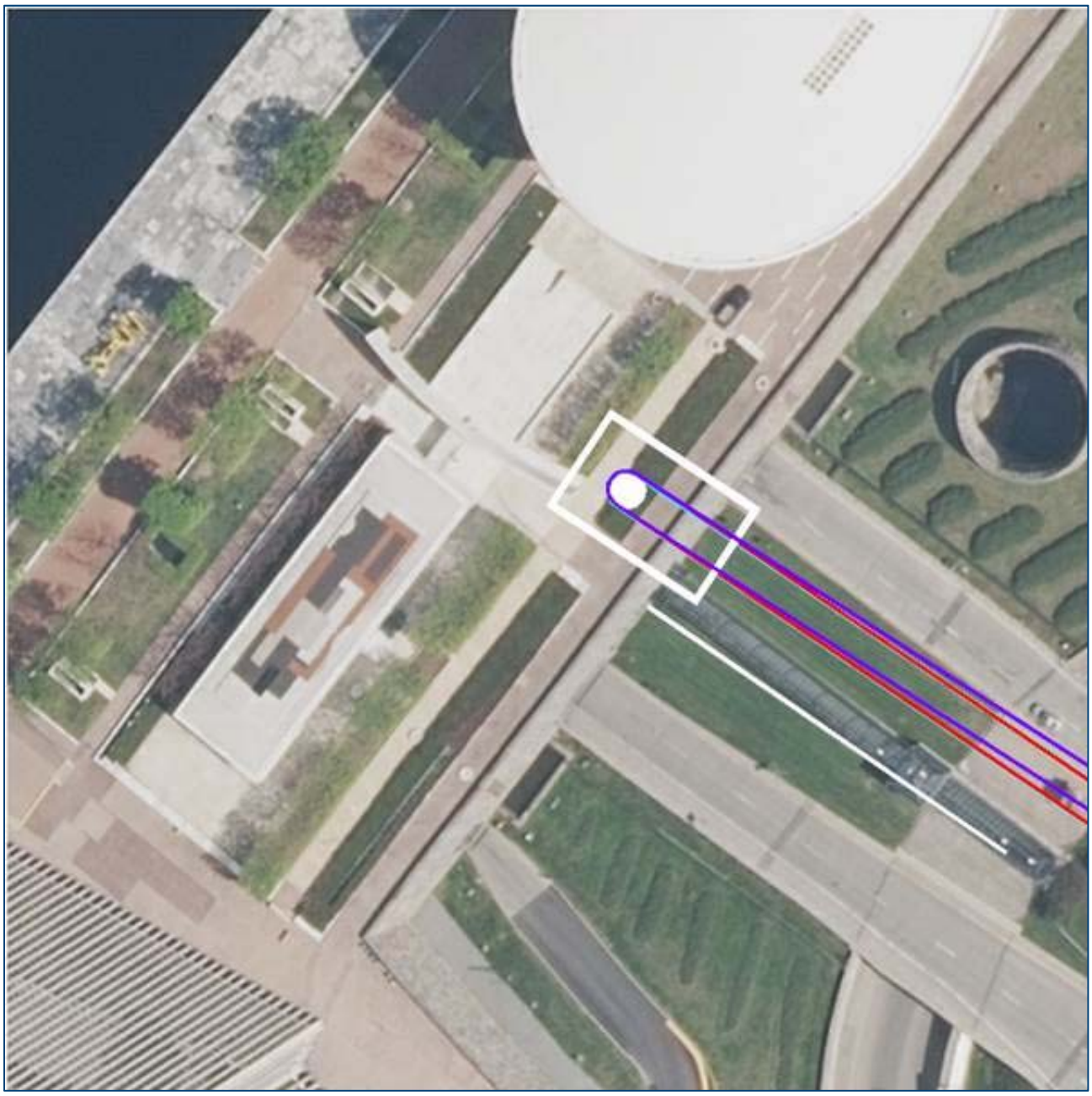


Gondola Details

CDG Cabins
Functional level cabins would feature level-step boarding for ADA accessibility, as well as flip up seats to make room for handicap mobility devices and bicycles. Cabin doors operate using automatic opening and closing mechanisms in each station, and feature doorway spotlights to be used during night operations. Windows provide UV protection, as well as passive ventilation designs and kick panel ventilation that continue to maintain high safety standards. A wide variety of cabin upgrade options are available. CDG capacity is maximum of 8 people, less if there is a wheel chair or bicycle on board. The capacity is 6 people if cabins are air conditioned due to weight limitations.

CDG Safety Features
Many safety features are standard for CDG systems, lending to their reputation as a safe and reliable form of transportation. To keep the system operating during times of maintenance or even the full loss of power, the main drive station operates off of a diesel backup motor. During these periods, line speeds slow to a walking pace to allow the remaining passengers to exit. Cabins can be optionally equipped with two-way radio connections to the stations to allow communication with passengers during evacuations or emergencies. Customized maintenance schedules can also be created to minimize loss of service for riders. In the rare event that an emergency evacuation is needed, vertical evacuation procedures can be performed.

Potential Benefits

It is expected that the CDG would generate a variety of benefits to users of the service and the region, as explained below:

Symbiotic Relationship Benefits
Construction of the CDG, particularly the stations, can result in mutually beneficial symbiotic relationships with other proposed projects in the project area. For example, a Regional Intermodal Center has been proposed by CDTA for the downtown Albany area. There is the potential to leverage CDTA's goals with the Gondola station at South Pearl Street to result in economies of scale, instead of building separate facilities. One could also add a private developer, for example, for a parking garage, retail, etc. A win-win-win scenario. Similar scenarios could happen at the Amtrak Station and the Empire State Plaza.

Transportation Benefits
Development of a CDG system would provide an attractive transportation alternative for travel within the study area. It would be quicker, cleaner and more efficient than existing modal options and consistent with New York State Smart Growth policy, which encourages mobility through transportation choices including improved public transportation and reduced automobile dependency. For example, state employees working at the Empire State Plaza who need to take the train, can use the CDG to and from the station, which may reduce travel expenses for the individual and the state.

In other cities where gondola systems have been installed as a part of the transportation network there have been reductions in automobile trips, which leads to lower levels of automobile emissions (Davila, 2013). In Albany, this would mean less trips on the Dunn Memorial Bridge and South Mall Arterial.

The CDG system would improve the conditions for walking and biking in the two cities by providing connections between areas that have traditionally required an automobile to travel. The CDG would provide a link between the new multi-use trail in Rensselaer and the statewide Mohawk-Hudson/Erie Canalway Trail which begins across the river in Albany.

Social Benefits

The CDG would provide a variety of societal benefits, perhaps most notably it would act as a catalyst for social and economic development in the Capital District: an innovative spark that is currently lacking. The increased interactions between the two cities will help to build social capital in the region, inspiring creative ideas and projects. It would enhance pride in the community.

By helping to remove the barriers to active transportation, the CDG would encourage more people to bike and walk, increasing levels of physical activity and reducing air pollution within the region. It is estimated that by making the switch to active transportation for trips of less than five miles results in an estimated gain of 9.25 years of life expectancy across all ages (Hartog, 2010). Implementing a CDG system would put Albany and Rensselaer at the forefront of the movement to implement transportation systems that improve public health and wellbeing.

There will also be quality of life benefits as a result of the CDG. The CDG would reduce the stress of travelers coming to and from the area by providing a simple, fast and fun connection between the two downtowns. It would also provide a low stress commuting option between Albany and Rensselaer.

Community Development Benefits

Implementation of the Capital District could provide significant community development benefits in Albany and Rensselaer. CDG projects in other locations around the United States and abroad have been found to stimulate increased economic activity in the areas around the stations. CDG stations in Rensselaer and downtown Albany where there is vacant property nearby, provide an excellent opportunity for Transit Oriented Development (TOD). TOD is a type of community development that includes a mixture of housing, office, retail and/or other amenities integrated into a walkable neighborhood and located within a half-mile of public transportation hubs. It is essential that TOD creates better access to jobs, housing and opportunity for people of all ages and incomes, which the CDG can help ensue. Successful TOD provides people from all walks of life with convenient, affordable and active lifestyles and create places where our children can play and our parents can grow old comfortably. (Reconnecting America Website)

Preliminary Economic Benefit Assessment

The potential economic impact of the CDG is a critical factor in assessing the feasibility of the project. Camoin Associates, a national economic development consultant, was commissioned to conduct an initial assessment on whether this type of project will have a positive or negative impact on the host region's economy. While the full report is included in Appendix D, a summary of the findings is provided below.

Camoin first conducted a review of similar projects around the United States and abroad to assess the impacts on host communities and provide "lessons learned" about how to conduct a successful project. Gondola systems in London, England, Portland, Oregon, Telluride, Colorado, LePaz, Bolivia, Koblenz, Germany and New York City, New York. Although it is not a gondola system, Walkway over the Hudson in Poughkeepsie, New York was also reviewed. While these examples are not identical to the situation in the Capital District, they are nonetheless instructive. The case studies show that the aerial gondola or cable car is a versatile mode of transportation that can fit in

dense urban areas, historic districts, geographically challenging areas, and tourism hubs. These systems generally have a positive environmental effect on their host communities, generate tourist use, and stimulate increased economic activity in the areas around the stations.

Secondly, Camoin conducted an inventory of the sources of likely riders for the CDG based on a review of nearby tourism assets, regional commutation patters and the potential for longer stays by existing visitors to the area and others. A full economic impact analysis is required to understand the magnitude of the project will result in new jobs, earnings, and sales for the region, but based on the review of other projects, an understanding of the Capital Region and downtown Albany, and the factors that determine success of a project like this, Camoin believes that an initial determination is possible. The main sources of new economic impact that will result from the Project include:

- Annual Impact: The Project would result in annual new economic activity as people who are currently visiting downtown Albany and the Capital Region extend their stay to ride the CDG. This will result in new jobs, earnings, and sales in the region as they spend more time and money locally. The CDG will also be a draw all on its own, attracting people to the Capital Region who otherwise may not have come to visit.

- Construction Impact: There will be a temporary economic impact during the period of construction. This impact will be substantial, a portion of which will be sourced locally and have an impact on local suppliers and companies.

- Transformational Impact: The Project will result in transformational impacts for the Capital Region that cannot yet be measured, such as environmental benefit, increased development on the Rensselaer side, increased development on vacant land in Albany, rising property value, increased diversity of transportation options, more regionalism as Rensselaer and Albany are connected, and a unique feature to highlight for the Capital District marketing materials.

Based on these three different types of impacts, Camoin determined it is clear that the CDG will create new economic activity for the host communities resulting in new jobs, earnings, sales, and local tax revenue. The degree to which the CDG will impact the communities will vary from a large temporary impact during construction to a more moderate annual impact depending on the number of annual riders and the proportion of those riders who are spending new money in the area. Furthermore, the ability of the CDG to grow will be tied to marketing of the facility, strong connections to existing tourist destinations, and development on the Rensselaer side of the Hudson River.

Potential Impacts

Gondolas cause nominal disruption to the natural areas over which they pass because of their aerial nature. There is no need for major infrastructure or environmental changes because of their modular installation process and their impact on land use is far less than other modes of transit. They also emit minimal noise and light pollution compared to automotive and light rail alternatives and they have been proven to reduce air pollution in cities where they have been built. The systems are powered by electric motors which are assisted by batteries that use many of the same recharging principles found in hybrid automobiles.

As most of the property that the CDG would aerially cross is publicly owned, Right-of-Way (ROW) impacts will be minimal given the site of the project.

The most significant impact would be visual as the towers, cars and cable line would extend across the skyline. While some may think that this is visually disruptive, to others the appearance of the small CDG cabins in continual motion will provide a sense that the region is dynamic and forward thinking. In addition, the CDG system will offer users long range views of the Hudson River Valley.

Financing & Funding Options

There are several possible ways to fund a large transportation project like the CDG, ranging from fully private to fully public or a combination of the two, known as public-private partnerships (PPP)

Private
Investors are often interested in financing transportation solutions like the CDG. A private team may form a limited liability company (LLC) that develops, finances, constructs, and own and operates the CDG. Funds are raised by the private team from a myriad of sources, including private equity, private placement of securities or a low interest loan from the federal Department of Transportation known as Transportation Infrastructure Finance and Innovation Act (TIFIA) or other local and state transportation funding. Private land owners and developers may also be interested in having the CDG land or take off from their property or in their building.

Public
A public municipality, agency or authority might assemble the funding required to construct and operate the CDG through programming its own funds or by utilizing federal transportation grants such as the Transportation Investment Generating Economic Recovery (TIGER) program or state grants such as the Consolidated Funding Application (CFA), subsidies and charging user fees. A local government entity can lease land for ascent and descent for a nominal charge.

Public-Private Partnership (PPP)
A public sector organization and a private party may enter into a contract in which the private party implements the CDG project and assumes a majority of the financial, technical and operational risk in the project. The government contributions to a PPP may be in kind. In a PPP the public sector is able to harness the expertise and efficiencies that the private sector can bring to the delivery of facilities traditionally procured and delivered by the public sector. A PPP is structured so that the public sector body seeking to make a capital investment does not incur any borrowing. The PPP borrowing is incurred by the private sector entity implementing the project.

Implementation

Prior to constructing, the CDG permits would be required from the appropriate regulatory agencies. A State Environmental Quality Review (SEQR) would be required as well. In addition, right-of-way would need to be assembled for the stations, towers and air rights and municipal planning approvals would be required as explained further below:

Permitting
Potential permits that would be needed before construction could start include the following:

- NYS Department of Environmental Conservation (DEC) - erosion and sediment control plan and a storm water pollution prevention plan (SWPPP) will be required if more than an acre of land is being disturbed. A protection of waters permit would be required for work in or adjacent to the river.

- NYS Department of Transportation (DOT) Right-of-Way Work Permit - needed for work within and over State Highway ROWs.

- State Historic Preservation Office (SHPO) - archeological and historic preservation review.

- United States Army Corps of Engineers (ACOE) - nationwide permit for work in or over the river.

- State Environmental Quality Review Act (SEQRA) - a SEQRA review will be conducted to assess the environmental impacts associated with the implementation of the CDG project. A lead agency will need to be determined for the environmental quality review. This is typically a municipality or the county, but can be a state agency. The lead agency will determine if the proposed action is a Type II, unlisted or Type 1. Unlisted Type I actions will require that an environmental assessment form be completed. At the conclusion of the review process, a positive or negative determination will be made by the lead agency. Since the CDG is a transportation facility, the New York State Department of Transportation (NYSDOT) would be a likely candidate to be lead agency.

- Rail crossing permits – the CDG will pass over rail tracks owned or operated by Amtrak and CSX/Canadian Pacific, which may require permits for working overhead.

- Federal Aviation Administration (FAA) – a Form 7460-1, Notice of Proposed Construction or Alteration FAA permit may be required.

Planning Reviews
The CDG will be located in two principal jurisdictions, the cities of Albany and Rensselaer. The CDG towers and stations will require review by the respective municipal planning boards for conformance with the zoning code. The city councils will also need to approve the overall project concept.

Conclusion/Next Steps

The objective of the CDG feasibility study was to conduct a short duration assessment of the viability of an urban gondola system. McLaren and Doppelmayr entered this study not knowing what we would discover. The findings of the three (3) month exercise have met or exceeded expectations. Our Project Team grew as the initial findings came back positive, and the information gleaned from numerous meetings with public and private stakeholders in the study corridor was very helpful in progressing this study. The enthusiasm expressed by stakeholders also exceeded expectations.

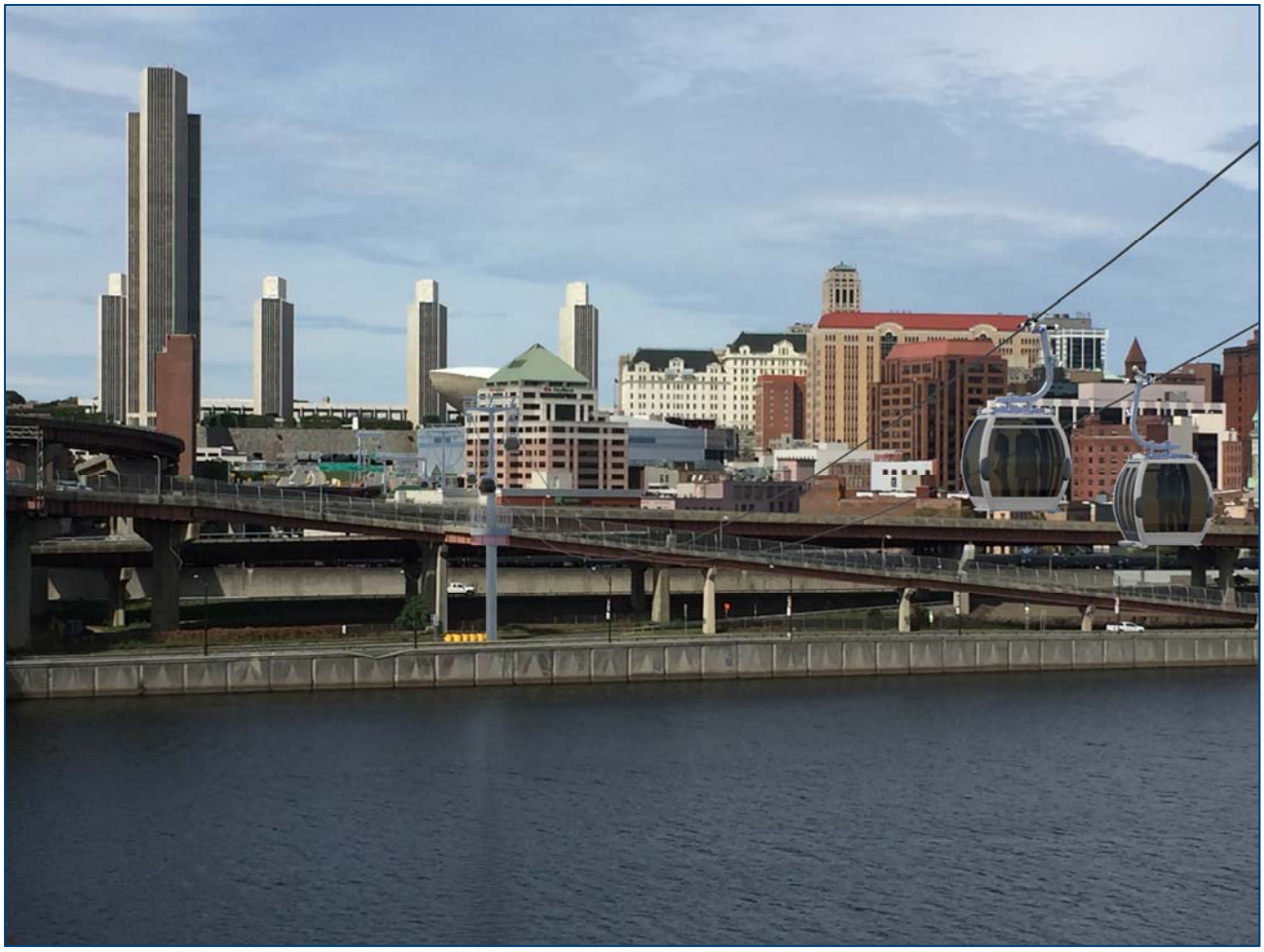
We have identified a 1 mile long operating corridor that is anchored by the Albany-Rensselaer Amtrak Station on the east, and the Empire State Plaza on the west with an intermediate station at

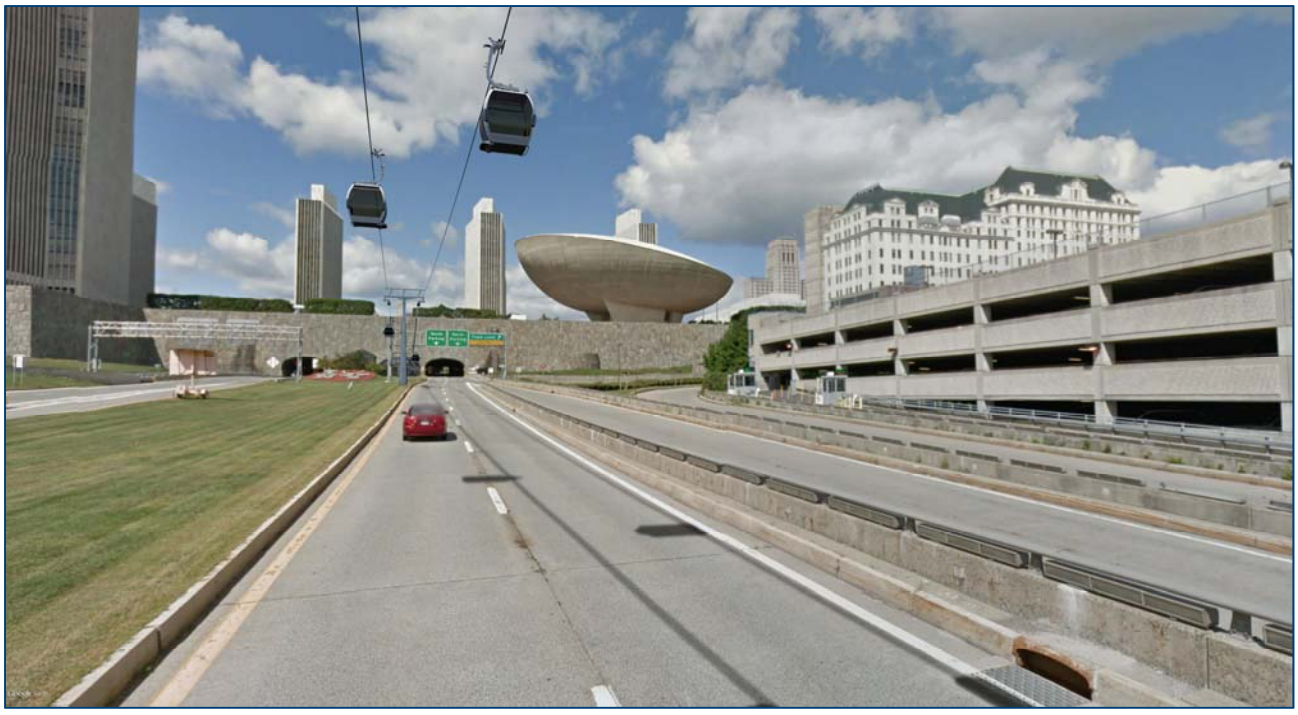
South Pearl Street in the vicinity of the Times Union Center and Key Bank Building. The system can be built in one or two phases depending on sequencing and funding. The construction budget and operating costs can be addressed by a combination of private investment, public funds, advertising revenue, and passenger fees. Ridership is expected to be in the hundreds of thousands annually.

We have found the CDG to be feasible and has the potential of being a transformational project for the Capital District. The study's findings support advancing the project. The next steps will focus on securing funding sources, optimizing public/private partnerships; and developing a more refined ridership and economic impact analysis. The Project Team will continue to work closely with public stakeholders / elected officials as the work progresses to obtain the necessary reviews and approvals, develop a construction schedule, and keep develop and maintain a public outreach program.

We wish to acknowledge the many people, both public and private, who contributed time, energy and resources to this study. It truly was a collaborative effort, and we look forward to building on those relationships as this exciting project progresses.

Appendix A: Capital District Gondola Visuals





Appendix B: Press Releases

McLaren Engineering Group Launches Gondola Study
to Connect Albany's Downtown with Albany–Rensselaer Train Station

Innovative, vital multi-modal transportation link will provide the Capital Region with economic, tourism and environmental benefits

Albany, NY – July 7, 2016 – McLaren Engineering Group announced today the launch of a transportation feasibility study for an aerial gondola that would connect the Albany-Rensselaer Train Station to downtown Albany – providing a new, reliable and efficient transportation option for commuters, visitors and tourists.

The study will be managed out of McLaren's downtown Albany office by Tom Madison, Executive Director. Currently, McLaren is self-funding the study and assembling a team to execute it. The team includes Doppelmayr, the world's leading manufacturer of ropeway technologies for gondolas, which has a nearby Ballston Spa, NY, office.

"The gondola will provide a much-needed transportation link across the river for commuters, visitors and tourists," says Malcolm McLaren, President and CEO, McLaren Engineering Group. "The Albany train station, Amtrak's 9th busiest, is physically isolated from the capitol and downtown businesses. An aerial gondola system will provide a unique, cost-effective transportation mode that will benefit the entire region."

"I want to thank McLaren for undertaking this study for a new and innovative link between the train station and our Capital City," says Albany Mayor Kathy Sheehan. "Cities around the country and the world have used gondolas as a cost effective way to solve transportation challenges and this is the first step in determining whether it is the right solution for Albany."

Gondola systems, comprising a series of cable cars, can be constructed at a fraction of the cost and time frame required for traditional rail systems. No bridges or tunnels are necessary, and a well-designed system can be up and running within two years. Additionally, cable cars can cross obstacles easily, are safe for passengers, offer views of the city and are environmentally friendly with no emissions.

"This is one of those 'once in a lifetime' projects that will gain significant momentum as it is better understood," continues McLaren. "We expect this project to generate considerable excitement and draw supporters and funding sources from the public and private sector."

"We commend McLaren for its vision and commitment to seeking innovative solutions. We look forward to reviewing the findings from the feasibility study," says Mark N. Eagan, CEO, Capital Region Chamber.

"The Capital District Transportation Authority (CDTA) is exploring new and expanded ways to improve mobility throughout the Capital Region so this study is well-timed," said Carm Basile, Chief Executive Director, Capital District Transportation Authority.

About McLaren Engineering Group
McLaren Engineering Group features eight engineering divisions, staffed with nearly 200 employees in 10 offices. Founded in 1977, McLaren has successfully completed over 12,000 projects, from inspection to design to construction management. With experts in numerous engineering disciplines – and a passion for innovation and out-of-the-box thinking – McLaren can address any project's specific range of design requirements with technical excellence and innovation. Headquartered in West Nyack, NY, McLaren has offices in New York City, NY; Albany, NY; Lehigh Valley, PA; Middletown, CT; Baltimore, MD; Roswell, GA; Orlando, FL; San Luis Obispo, CA; and Oran, Algeria. *www.mgmclaren.com*

Appendix C: Team Overview

McLaren Engineering Group, with almost 40 years of service, is a respected and renowned firm that features multiple engineering divisions, staffed with over 180 employees in 10 offices worldwide. We have successfully completed over 14,000 projects, a figure that encompasses inspection, design, and management for many different project types.

As its legacy builds, McLaren has grown into a company that offers a set of engineering services that few other firms provide. With experts in numerous engineering disciplines, we blend staff resources to address a project's specific range of design requirements. This ability leads to better management, cost efficiencies, and a more elegant, technically sound solution.

McLaren serves our clients through the Transportation, Leisure & Amusement Entertainment Industries, Government, Education, Energy, Healthcare, Industrial, Maritime, Public Infrastructure, and Real Estate Development Markets:

As quality, technology and market leader in gondola engineering, **Doppelmayr** operates production plants, as well as sales and service centers in over 35 countries worldwide. They manufacture cable cars, gondolas, chair lifts, ski resorts and amusement parks, as well as urban people movers and material handling systems. To date, they have built more than 14,700 installations for customers in 90 nations. Flexibility, know-how and pioneering spirit make Doppelmayr ideally equipped to meet the project needs.

Innovative transport systems from Doppelmayr continually set new standards. Top comfort and safety define our installations – in summer and winter tourism regions, as well as in the urban transit sector. Our material transport and gondolas systems offer impressive efficiency and performance. All-year-round experience and innovative concepts round off our extensive portfolio.

With Doppelmayr, customers get top quality in modern design, user-friendly solutions and optimum service. From the initial idea to the completed project and beyond.

Harrison & Burrowes is a 36 year old company that was founded in 1980 by brothers Wally and Jeff DiStefano. H&B has had a storied history in the heavy highway industry with many significant and reputable projects to its name. H&B has completed two successful design-build projects to go along with the award winning Checkerhouse Bridge in Richmond, Vermont, the Walkway over the Hudson, the Batchellerville Bridge over the Great Sacandaga Reservoir, the Rehabilitation of the Dunn Memorial Bridge (once in 2005 during its collapse and again in 2011 under contract) and the Albany Riverwalk Pedestrian Bridge to the Corning Preserve.

Camoin Associates has provided economic development consulting services to municipalities, economic development agencies, and private enterprises since 1999. They specialize in real estate market analysis to evaluate the feasibility and impacts of proposed projects. Through the services offered, Camoin Associates has had the opportunity to serve EDOs and local and state governments from Maine to Texas; corporations and organizations that include Lowes Home Improvement, FedEx, Volvo (Nova Bus) and the New York Islanders; as well as private developers proposing projects in excess of $600 million. Their reputation for detailed, place-specific, and accurate analysis has led to projects in 27 states and garnered attention from national media outlets including Marketplace (NPR), Forbes magazine, and The Wall Street Journal. Additionally, their marketing strategies have helped clients gain both national and local media coverage for their projects in order to build public support and leverage additional funding. The firm currently has offices in Saratoga Springs, NY, Portland, ME, and Brattleboro, VT.

Lemery Greisler LLC is a leading Capital District business law firm with significant experience in Economic and Project Development, Private Equity and Public Finance. Lemery Greisler partners Seth Finkell and Charles Dumas will draw on their experience in financing and development to support Capital Gondola LLC on this groundbreaking project that requires the coordination of several public and private interests. Mr. Finkell will assist on matters of financial structuring and Mr. Dumas will assist on matters of zoning and development. Lemery Greisler has advised on many local projects that use entrepreneurial ventures to benefit the public good. The most visible example in recent history is Lemery Greisler's serving as lead counsel on the Luther Forest Technology Campus zoning and development which was critical to the successful launch of GlobalFoundries in Malta, New York.

Urban Gondola Systems LLC (UGS) has experienced team members and an extensive track record that gives them the ability to successfully manage complex infrastructure and transportation projects, integrating finance, management and operational issues to deliver full service project delivery.

UGS has a dedicated team that will work closely on clarifying the project objectives and opportunities to then develop a streamlined plan for our goals on the project. Their services include Public Private Partnership (P3) project delivery; Concessionaire and construction contractor selection; Project planning and project management; Cost projections and traffic studies; Procurement design and implementation; Constructability reviews; Overcoming permitting hurdles; Investigating transportation grant opportunities; and user focus strategy embracing stakeholder outreach, social media, branding, and political local, state and federal government.

Appendix D: Preliminary Impact Assessment

Appendix E: References

Amtrak, A. M. (2013, October 13). *News Release*. Retrieved from Amtrak: https://www.amtrak.com/ccurl/730/658/FY13-Record-Ridership-ATK-13-122.pdf

Amtrak, A. M. (2015). *NEC MAPS & DATA*. Retrieved from Amtrak: https://nec.amtrak.com/content/stations-and-ridership

Davila, Julio. "Medellín's Aerial Cable-cars: Social Inclusion and Reduced Emissions." University College London, 2013. https://www.ucl.ac.uk/silva/bartlett/dpu/metrocables/dissemination/Davila-Daste-2012-UNEP.pdf

Environmental Defense Fund (EDF), "The Cross-State Air Pollution Rule Health and Economic Benefits for New York." Environmental Defense Fund, 2009. https://www.edf.org/sites/default/files/EDF%20CSAPR%20Fact%20Sheet_NY.pdf

Hartog, Jeroen Johan De, Hanna Boogaard, Hans Nijland, and Gerard Hoek. "Do the Health Benefits of Cycling Outweigh the Risks?" *Environmental Health Perspectives* 118.8 (2010): 1109-116. University of Utrecht. Web. 4 Nov. 2015.

Houston, D., Wu, J., Ong, P., & Winer, A. (n.d.). Structural Disparities of Urban Traffic in Southern California: Implications for Vehicle-Related Air Pollution Exposure in Minority and High-Poverty Neighborhoods. Journal of Urban Affairs, 565-592.

Novaco, Raymond W., and Oscar I. Gonzalez. "Commuting and Well-being." *Technology and Psychological Well-being* (2009): 174-205. Cambridge University Press.

City of Rensselaer (June 2016). *Downtown Rensselaer Waterfront.* Rensselaer: Submitted to NYS Capital Region Regional Economic Development Council.

SMG. (2016). *What is the Capital Complex?* Retrieved from Albany Capital Center: http://albanycapitalcenter.com/what_is_the_capital_complex/