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CITY OF SAN JOSE
CAPITAL OF SILICON VALLEY

Memorandum

TO: HONORABLE MAYOR AND CITY COUNCIL

FROM: John Ristow

SUBJECT: SEE BELOW

DATE: August 3, 2020

Approved D.DSyL

Date 8/12/20

SUBJECT: NEW TRANSIT – AIRPORT CONNECTOR AND STEVENS CREEK LINE NEXT STEPS

RECOMMENDATION

Direct staff, in collaboration with all jurisdictions involved, to pursue the development of both the Airport Connector and Stevens Creek Transit Lines in parallel paths:

a. Develop the partnerships, project definition, and funding to deliver a publicly funded and operated transit solution, and
b. Develop the legal and procedural processes to allow for a privately funded and operated transit solution.

OUTCOME

Adopting the recommendations will enable staff to progress the Airport Connector and Stevens Creek Line project definitions for a publicly funded option and create a mechanism for a privately funded option.

EXECUTIVE SUMMARY

The City of San José, in partnership with the Santa Clara Valley Transportation Authority (VTA), City of Santa Clara, City of Cupertino, and County of Santa Clara issued a request for information (RFI) to learn how new technologies, business and operational practices, and project delivery methods can introduce competitive transit options in the near future, particularly for the following two major routes:

Diridon Transit Station to Mineta San José International Airport (Airport Connector)

Diridon Transit Station along the Stevens Creek Blvd Corridor to De Anza College (Stevens Creek Line)

In response to the RFI, 23 submissions were received. An evaluation of these responses revealed that there are indeed technologies in operation or near market ready that would align with the goals of the RFI. Also, that a rapid pace of innovation and high levels of investment will likely lead to more new transit solutions in the coming years.

BACKGROUND

Prior Studies

A grade-separated airport connector from the Mineta San José International Airport (SJC) to local and regional transit has been contemplated since the 1990s. In 2000, Santa Clara County voters approved Measure A which included *"connections from San José International Airport to BART, Caltrain, and the VTA Light Rail, specifically, with the airport connector."* VTA and the cities of San José and Santa Clara have carried out multiple studies to develop this project, including:

- Airport Automated People Mover Planning Study, Conceptual Cost Estimate and Ridership Analysis (2000 - 2001)
- Automated People Mover Alignment Alternatives Study (2006)
- Rental Car Facility Transportation System Study (2007)
- San José International Airport Automated Transit Network Feasibility Study (2012)
- Automated Guideway Transit Study (2017)

The various studies evaluated alignments and potential technologies for the SJC connector. The early studies focused on an east to west alignment connecting Santa Clara Caltrain and future BART Station to the Airport and then the Metro Light Rail station on First Street. In the 2012 and 2017, the studies explored both internal circulation and SJC to Diridon Station alignment questions. The 2017 study found that connecting the Airport to Diridon Station would generate three times the demand as the earlier east-west alignment. Various alignment options between the Airport and Diridon Station were studied and are used as the basis for the current investigation.

The jurisdictions also investigated technologies in these studies, looking at various forms of automated people and guideway systems. Early studies were inconclusive on whether technologies available at the time would be able to provide the service planned for. Later studies found that Automated Transit Network technologies would serve the SJC to Diridon connection and further area transit connections. The 2017 study found that the technology would be well-suited to serve the potential travel demand of an expanded Automated Gateway Transit (AGT) network, providing fast, on-demand, point-to-point travel.

Diridon Station

Located on the western edge of Downtown San José, Diridon Station is the South Bay's primary transit hub, with roughly 17,000 daily passengers. Multiple transit systems converge at the station today, including regional rail systems Caltrain, Altamont Commuter Express (ACE), and Capitol Corridor; and local and intercity light rail and bus services. Additional new and enhanced rail systems are currently being constructed and/or planned, including Caltrain Electrification, California High-Speed Rail, and BART Silicon Valley Extension Phase 2, which will significantly increase the number of passengers using the station.

In addition to these transportation improvements, the City of San José is updating and implementing its land use and infrastructure plans for the Diridon Station Area. Google has purchased much of the land surrounding the station with the ambition of building a mixed-use development with space for 20,000 employees along with housing and retail. Just east of the station, Downtown San José is seeing significant redevelopment with over 10 million square feet of office, 300,000 square feet of retail, and close to 8,000 residential units currently under construction or in the entitlement process. With these changes, Diridon Station will transform into one of the busiest transportation hubs on the West Coast with early estimates showing over 100,000 daily passengers.

Mineta San José International Airport

Mineta San José International Airport is one of America's fastest-growing airports. In 2018, SJC served a record 14.3 million annual passengers, and is projected to serve 22.5 million annual passengers by the year 2037. City and regional leaders have long sought a means to better connect the Airport with population and job centers in San José and Silicon Valley via high-quality transit.

On February 15, 2019, recognizing that a redesign of the City's Diridon Station transit hub is underway, Mayor Sam Liccardo directed staff to explore the viability of a public-private partnership to provide a direct airport transit connection by tunnel or viaduct. The Airport Connector is envisioned as a fast and efficient link between Silicon Valley's airport and the anticipated largest rail station hub in Northern California, less than three miles apart.

Santa Clara County Measure A in 2000 established a 30-year half-cent sales tax to support transit projects, including an airport connection. However, Measure A is underfunded and VTA has indicated that there may be limited Measure A funds available to continue the development of the planning and preliminary engineering for this project. Additionally, Measure A funding can only apply to the Airport to Diridon segment on the alignment.

Stevens Creek Corridor

The Stevens Creek Corridor, beginning along West San Carlos Street near Diridon Station and extending to the west to Highway 85, is a major spine that connects regional job centers focusing on health, education, and tech to housing and commercial areas. Prominent sites along the corridor include De Anza College, Main Street Cupertino, the currently-under-development

Vallco mixed-use mall, Apple headquarters, Agilent Technologies headquarters, five San José Urban Villages – one of which includes the Santana Row/Valley Fair shopping district, new West San Jose Innovation Zone and a "Future Focus Area" in the City of Santa Clara. This corridor is also seeing high levels of development activity, including eight million square feet of office, commercial, mixed, and residential uses, planned in the San José portion of the corridor.

The corridor, which is already heavily congested and that continues to see rapid development, needs a fast, reliable, and frequent transit system with grade-separated right-of-way. The Stevens Creek Line would support densification and urbanization in this vital corridor. Such a system would provide a high-capacity transit link between this part of Silicon Valley – a geography that currently lacks this type of transit service – and connect major sites via transit to the rest of the Bay Area via Caltrain, BART, ACE, and Capitol Corridor services at Diridon Station. The City and its partners have already submitted a basic concept for a Stevens Creek Corridor transit service to the Metropolitan Transportation Commission's (MTC) Regional Transportation Plan development process, Horizons/Plan Bay Area 2050. MTC staff has recommended the Stevens Creek Line be included and have access to regional funding in the update to the Plan Bay Area 2050. The plan update is currently in progress and are anticipated to seek adoption from the MTC Commission and ABAG Executive Board of the Preferred Alternative for environmental analysis purposes in late 2020

As of 2018, the City of San José has adopted five Urban Village plans in the area to accommodate and guide increased development activity. Increased development activity has also been seen along the entire corridor. During and following the urban villages' adoption, transportation and planning staff from the Stevens Corridor Jurisdictions (VTA, City of Cupertino, City of Santa Clara, and City of San José), began to meet regularly to coordinate on transportation challenges along the entire corridor at the encouragement of their elected leaders.

In 2019, the cities of Cupertino, Santa Clara, and San José, and Santa Clara County all adopted resolutions in support of a VTA-led joint study of the Stevens Creek Corridor. A steering committee of elected officials from the participating jurisdictions has formed to guide the work along the corridor.

Request for Information (RFI) Process

In February 2019, based on the joint efforts and studies described above, City Council directed staff to *"present for discussion various technology and alignment options for connecting the San José International Airport to Diridon Station. The same discussion may or may not include other potential corridors to Diridon Station, depending on staff's readiness."* Based on this direction staff developed a Request for Information (RFI), with input from VTA, the City of Cupertino, and the City of Santa Clara.

On July 1, 2019, the City released the developed RFI for transit solutions on the Diridon-Airport and Diridon-Stevens Creek corridors. The high-level questions asked in the RFI were:

1. Are there new technologies, project delivery, or operating models that can provide grade-separated, high-capacity, high-speed transit?

2. Do these systems have lower construction, operations, and/or maintenance costs than traditional systems?
3. Can these systems be deployed faster than traditional projects?
4. Do these systems have viable financial outlooks?
5. How will these systems be constructed and deliver service on the specified corridors?

On August 1, 2019, the City and its partners hosted a pre-proposal meeting for interested parties to ask questions and share information. Over 40 participants attended. Their contact information, questions, and answers were recorded and subsequently published on the bidsync website for their reference. In addition to providing information, the intent of the meeting was to facilitate exchange and partnership among the stakeholders, recognizing that many interested parties offer components of transit systems that need to be combined in order to generate a comprehensive 'transit solution' proposal.

ANALYSIS

Twenty-three responses were received in response to the RFI by September 30, 2019, when the RFI closed. The Stevens Creek Corridor jurisdictions and a consultant team led by Kimley-Horn established criteria to evaluate the RFI submissions. The evaluation criteria included areas that focused on: technological readiness, cost, and financing and delivery.

Reviewers were limited to the information contained within the proposals and did not independently research or validate elements of the proposals. No independent evaluation,

verification, or assessment of the technology, costs, operational parameters, design feasibility, or any other aspect of the proposal was completed. Nineteen of the proposals were reviewed. The four not reviewed were either on other topics, or to conceptual.

The evaluation gave the partners a broad picture of the market for new transit solutions. The evaluation was not intended to select one submission over the others. Instead, it allowed the partners to judge whether there are new transit solutions in the market place and what those new solutions would require to become a reality.

Infrastructure Readiness, Vehicle Capacity and Throughput

The proposals received varied widely with respect to their readiness for implementation, ranging from widespread technology with multiple implementations to those that are purely conceptual at this stage.

The majority of the proposals presented technologies that would operate relatively small vehicles without human operators. This ranged from currently operational automated people movers (APMs) with capacity for 20 or more passengers to small personal rapid transit (PRT) vehicles in which fewer than five people could ride at a time.

Many of the proposals received did not explicitly state a maximum passenger throughput. However, based on the stated vehicle capacity and headway, throughput ranged from 1,500 to over 11,000 passengers per direction per hour.

Scalability

Some technologies were found to be more easily scalable than others, based on features that:

- Primarily operate on, or can operate on, existing infrastructure such as roadways
- Do not have proprietary features that would pose additional challenges or restrictions to future expansion
- Is not inherently costly, complicated, and/or risky

Maintenance and Storage

Transit systems typically require a centralized storage and maintenance facility to store vehicles when not in use and to perform regular repair and upkeep. Siting such a facility can often pose a challenge due to the space-intensive nature of vehicle storage and a maintenance floor. Some proposals provided more detail than others about the storage needs of their vehicles, though none went as far as to propose a site or size for a facility.

Costs and Funding

Capital costs varied widely across submissions, ranging from estimates of $500,000 per mile of guideway to $400 million per mile. However, proposals that were sufficiently-documented and represented innovative and lower-cost technologies fell into a narrower range, typically between $20 million to $50 million per mile of grade-separated guideway.

Only six of the proposals provided estimates of operating costs, which ranged from $1.6 million per year to $21 million per year. For context, the existing BART to Oakland Airport AGT connector has an annual operating cost of $6.5 million.

Proposals received in this RFI included examples of both legacy funding models and innovative funding models. The plurality of proposals suggested a system in which construction would be publicly financed. Several proposals recommended a public-private partnership arrangement between a public entity and the private transit provider in which funding could be leveraged from both sides to provide necessary up-front costs. Two proposals stated they would privately finance the construction and operation of the transit system. One proposal specifically stated that it would charge mileage tolls to fund the proposed system or would sell a monthly subscription allowing unlimited use. The financing strategies included in most proposals represented a public-private partnership with risk borne by the public and typical financing strategies. However, a few included alternative strategies.

Timeline

Most proposals indicated that technology would be ready to begin construction within one to five years, although reviewers deemed some of these estimates optimistic. The reviewers estimate the timeline for implementation for many technologies fell in the range of four to eight years.

Notable Proposals

This section highlights five proposals that most closely aligned with the stated objectives.

2getthere
2getthere currently operates four permanent deployments internationally, with several more planned in the coming years. Vehicles operate using existing technology, operate at relatively low speeds, and without drivers. This proposal was the only one submitted by a company that has an existing Group Rapid Transit/Personal Rapid Transit deployment and experience operating and maintaining such a system. As such, proposal reviewers considered the cost and timeline estimates to be reasonable.

BYD
Known in the US most for its work with battery-electric buses, BYD is currently operating three APM systems internationally, with several more in development and testing. Driverless vehicles would run on an elevated guideway with columns at roughly 100-foot intervals. Because the system would operate with on-board batteries, track electrification would not be necessary, decreasing the cost and complexity of development. The proposal was deemed aggressive but possible depending on environmental clearance. The fact that BYD has a China-based parent company may present challenges given the current regulatory and trade climate.

Modutram
ModuTram Mexico proposes a system called AutoTrén, a system it calls an Automated Transit Network (ATN) providing high-capacity transit for up to six seated passengers riding in driverless battery-powered electric mini-trains on elevated guideways. Passengers would indicate their destination upon boarding and would be taken directly to their destination station without the need for intermediate stops. The company currently operates a full-scale test facility in Mexico. Due to the fact that the system does not have any real-world deployments yet, there is some uncertainty about the system cost as well as the proposal that it could privately finance construction.

Plenary Glydways
Plenary Glydways Transit Solutions (PGTS) would develop a system consisting of a fleet of autonomous electric vehicles operating on existing roads or a dedicated guideway. The vehicles would be small but would operate at high frequency, with the proposal promising up to 10,000 persons/hour in each direction at a low cost. PGTS proposes a DBOM model in which the company would take on responsibility for all aspects of the project including financing for a 30 to 40-year term. Proposal reviewers found the submission to be reasonably comprehensive and well-articulated. However, the company does not yet have a physical test facility, and feasibility of vehicle storage was not fully addressed. Therefore, the technology has great uncertainty regarding readiness and cost.

The Boring Company (TBC)
TBC has stated that its tunneling technology operates at a fraction of the cost of existing models. The proposal for San José would construct a small dual-bore tunnel with driverless electric vehicles operating on rubber tires providing point-to-point service. The vehicles themselves would be Tesla Model X or a modified version of existing production vehicles. Stations would be below-grade and accessed via vehicle elevator. The company currently operates a test track at its Hawthorne headquarters in Los Angeles County and is currently developing a working facility at the Las Vegas Convention Center. The proposal lacked details for how the tunneling cost savings were realized. Several other aspects of the proposal were deemed questionable, such as including tunnels with radii not currently achievable by TBMs and vehicle operating speeds that are likely infeasible in a transit environment. Additionally, there are concerns regarding the ADA accessibility of the proposed vehicles. However, the proposal suggests a firm-fixed price proposal that would potentially limit agency risk and at potentially significant cost savings.

CONCLUSION

Project Strategies

Given prior studies and the new information from the RFI, staff recommends a two-pronged approach to achieving new transit solutions for the Airport Connector and Stevens Creek Line:

a. Develop the partnerships, project definition, and funding strategies to deliver a publicly-funded and operated transit solution

Staff recommends developing the additional planning and engineering definition needed to progress this project, as well as the public funding framework needed to bring this project to life. Initial focus would be on developing the airport connector project based on earlier studies and work. Staff recommends the development of the Stevens Creek Line following the VTA-led High Capacity Transit study.

b. Develop the legal framework to allow for a privately-funded and operated transit solution

Based on the RFI responses and communication from proposers, a potential market for a privately-funded and operated system appears to exist. Staff recommends a framework and legal structure to enable a privately-funded project. Issues that require investigation include: allowing a part of the public right-of-way to be used for private transit operation; how to hold a private provider accountable to minimum standards on delivering services (travel time, reliability, cleanliness, security, accessibility, availability, etc.); and the ability to re-purpose the system and any permanent infrastructure from one provider to another. Staff will determine the legal and logistical requirements to enable a privately-funded and operated option.

EVALUATION AND FOLLOW-UP

If directed to pursue the proposed approach, staff will coordinate with the City Council offices along the routes on an outline and public outreach effort for both options. Staff will regularly report to the Transportation and Environment Committee on progress of these projects as part of the regular updates on various regional transportation or transportation planning items.

CLIMATE SMART SAN JOSÉ

The recommendation in this memo aligns with one or more Climate Smart San José energy, water, or mobility goals.

PUBLIC OUTREACH

The evaluation report and progress on this project have been regularly posted to the project website (https://www.sanjoseca.gov/your-government/departments-offices/transportation/transit/airport-diridon-stevens-creek-connector)

The Department of Transportation has also update the public through posts to the City's blog which can be found at https://www.sanjoseca.gov/news-stories/news/blog

This memorandum will be posted on the City's website for the August 25, 2020 City Council agenda.

COORDINATION

This memorandum has been coordinated with the City Attorney's Office, Airport, and the City Manager's Budget Office.

COMMISSION RECOMMENDATION/INPUT

There is no commission recommendation on this action at this time.

COST SUMMARY/IMPLICATIONS

No specific funding is required at this time. Staff will return with a specific budget request once the scope of work is finalized and a shared cost burden proposal is developed among the corridor partner jurisdictions.

CEQA

Not a Project, File No. PP17-001, Feasibility and planning studies with no commitment to future actions. Any plan to be adopted as a result of these joint efforts will require its own CEQA clearance.

/s/
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Director of Transportation

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