Economic Development, Placemaking and Branding/Marketing Committee

City of Arts & Innovation

TO: **ECONOMIC DEVELOPMENT, PLACEMAKING AND BRANDING/MARKETING COMMITTEE MEMBERS** **DATE: OCTOBER 20, 2022**

FROM: **PUBLIC WORKS DEPARTMENT** **WARDS: ALL**

SUBJECT: **RIVERSIDE STREETCAR FEASIBILITY STUDY**

ISSUE:

Receive a report on the Riverside Streetcar Feasibility Study.

RECOMMENDATIONS:

That the Economic Development, Placemaking and Branding/Marketing Committee:

1. Receive, review and provide feedback on the Riverside Streetcar Feasibility Study; and

2. Direct staff to seek grant funding to integrate the findings of the TIG/m report into an expanded federally compliant zero-emission transportation feasibility study which includes bus rapid transit amongst other alternatives.

BACKGROUND:

On October 6, 2020, the City Council received a report reviewing a feasibility study proposal from TIG/m LLC. Following discussion, the City Council directed staff to draft an agreement with TIG/m designating TIG/m to complete the streetcar feasibility study; and once completed, present the study to the Economic Development, Placemaking, Branding/Marketing Committee.

On November 17, 2020, the City Council pulled the proposed professional services agreement with TIG/m LLC to develop the Streetcar Feasibility Study from the Consent Calendar and recommended it for a separate discussion. After discussion, the Streetcar Feasibility study was approved by a vote of 4-3.

DISCUSSION:

Study Development

In early 2021, TIG/m LLC initiated development of the City's Streetcar Feasibility Study and began engagement with the community. An online survey and informational page were hosted and linked through the City's webpage. The survey was available in both English and Spanish. Pop-up

engagement was conducted along the Main Street Pedestrian Mall, and printed versions of the survey were made available at five survey kiosk locations hosted across the community. TIG/m hosted Zoom sessions with stakeholders to solicit input on the project's scope and conceptual alignment. Adjustments were made to the project alignment following community feedback. The City and TIG/m additionally met with regional stakeholders including the Riverside Transit Agency (RTA) and the Riverside County Transportation Commission (RCTC) who provided valuable insight regarding the logistics and challenges related to constructing and operating a fixed route transit line.

Study Overview and Ridership Findings

The TIG/m report (Attachment 1) provides a thorough introduction to streetcar systems, the history of streetcars in Riverside, and the ability for public transportation to better communities through economic, environmental, and social impacts. The study reviews existing market conditions in relation to a conceptual streetcar alignment, and includes projections for ridership, revenues, installation costs, and operating costs. The TIG/m technology is unique in that their streetcars are zero emission, reliant on battery electric with hydrogen fuel cell backup.

The proposed alignment of the Riverside Streetcar would include a circulator loop within the Downtown, which travels along University Avenue to serve the Eastside Neighborhood and ultimately the University of California, Riverside Campus. Projections and costs included within the report are for the proposed alignment are shown in Figure 1. The report stipulates that future additions to the project could include an extension to the west end of the City.

In addition to the hand calculations performed by TIG/m, staff requested that TIG/m develop ridership projections using an industry standard model known as STOPs. The TIG/m ridership numbers are contingent on the development of a series of park & ride facilities across the city, with the assumption that motorists would make use of these park & rides, transfer to a bus or other mode of transportation, and then complete their trip on the Streetcar.

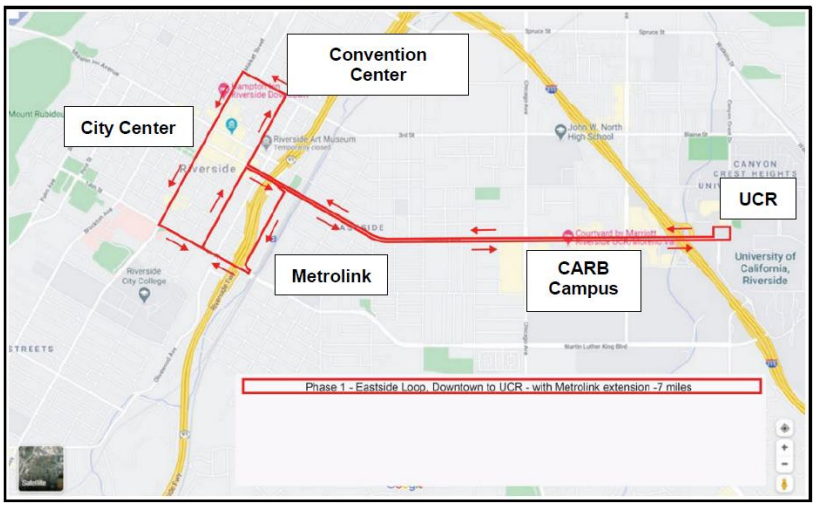

Figure 1: Conceptual Alignment

TIG/m projects that in its opening year (shown as 2025 for analysis purposes), the streetcar system would carry an estimated 1,814,953 passengers per year, or 4,972 passengers per day. For reference, prior to the pandemic RTA carried approximately 3,050 passengers per day along the entirety of its Route 1.

TIG/m further projects that by the year 2055 the system will carry 5,771,232 passengers per year, or 15,811 passengers per day. These assumptions are predicated on anticipated growth in the Downtown, Eastside, and UCR neighborhoods, in addition to the construction of eight park and

ride facilities that TIG/m tied to the ridership of the streetcar system.

Configuration and Engineering

The TIG/m report reviewed the proposed alignment in detail, and included an assessment of potential boarding stations, preliminary plan & profile geometrics, and a review of potential utility conflicts. TIG/m prepared conceptual schematic plans assuming that the streetcar would be designed as a curb running, meaning the tram vehicle would travel parallel to the curb and share space with vehicles and bicycles on-street. The streetcar would broadcast its position to both riders waiting at passenger stops and to traffic signals in order to optimize its progression.

Figure 2: Conceptual streetcar rendering

Because TIG/m vehicles are operated using on-board, zero-emission energy sources, large trackside wire systems and in-road charging facilities are not needed. This can represent a substantial cost savings compared to traditional electric streetcar systems. The TIG/m schematic designs also make use of track sections comprised of unique panelized track that can be lifted and removed in sections without damaging the track or adjacent pavement in order to facilitate access to below-ground utilities. Staff noted that the conceptual design as shown would need to be modified to accommodate the final configuration of the Third Street Grade Separation with respect to access to the maintenance station and potential utility conflicts.

Cost Model and Operations

The Riverside Streetcar as envisioned by TIG/m would initially serve 30 passenger stations in a seven-mile loop. The streetcar would have a 40-second dwell time at passenger stations, and travel at an average of 25 MPH on-street. It is anticipated that on average, the streetcar would have a nine-minute headway, meaning passengers arriving at a stop would need to wait at most nine minutes for a streetcar to arrive.

TIG/m's report included an assessment of capital and operational expenses over a 33-year operating period. Depending on the operating year and passenger demand level, the total number of and types of trams in service would vary. TIG/m assumed that in its first year of operation the streetcar would generate $1.74 million in advertisement and sponsorship revenue. The study found that the total cost of the project would amount to $408 million, with a total revenue through the fare box, advertisements and sponsorships, and state & local funding of $491 million. It is important to note that a total of $86.9 million was anticipated through local and state funding. TIG/m additionally stipulated that the balance of funds needed to deploy the system would be privately financed. The study does not rely on federal funding because due to the unique nature of TIG/m's product and their current scale of operations in the United States, they are not eligible

for federal funds; furthermore, feasibility studies supporting federal grant funding requests must meet specific requirements not set forth in the scope of this feasibility study – which was intended to primarily study the TIG/m proposal in detail.

Staff & Peer Review

At the direction of the City Council, the Public Works Department retained a peer reviewer, EXP Services, to conduct an assessment of the feasibility study. While the study underwent several review cycles, both staff and the peer reviewer felt that additional resources could have been directed in the final draft to support the operating cost to revenue ratio. This project would be unique in streetcars in that it is proposed to generate a small profit (when state & local funds are excluded). Staff also felt that additional clarity was needed regarding the private financing model with respect to risks to all parties involved; part of this risk assessment would include a thorough verification of the proposed cost and revenue estimates. Further clarity regarding the eight proposed park and ride facilities, some of which fall outside of the City, would have benefited the study. As such, EXP Services and staff concur that if the City were to move forward with the intent of exclusively entertaining TIG/m technology, the following additional studies would be suggested to best protect the City's interests:

1. Travel demand (ridership) forecast with sensitivity analyses $100,000-150,000
2. Independent Capital & Operating Cost Estimates $75,000-$100,000
3. Ancillary Revenues Estimate (optional: existing peer reviews and local RTA experience is probably sufficient to confirm the magnitude of these revenue sources) $25,000-$75,000
4. Traffic impact studies (may be required as part of CEQA, but the City may desire microsimulation in congested areas) $100,000-150,000

Staff Recommendation

The City has recently tracked several large-scale federal grant opportunities related to infrastructure. In order to consider the broadest range of options and to potentially compete for federal funds, staff recommends that the City seeks funding to integrate the findings of the TIG/m report into an expanded federally compliant zero-emission transportation feasibility study which includes bus rapid transit amongst other alternatives. This course of action would allow the City to capitalize on the findings of the TIG/m feasibility study, assess alternatives alongside our partners in collaboration with our partners and local agencies with subject matter expertise, and prepare a study that can propel us towards a broader range of grant funding operations. This action considers the typical reality that transit projects must be subsidized, even lower cost projects with high ridership attraction. Staff anticipates that such a grant-funded expanded study could cost approximately $600,000.

STRATEGIC PLAN ALIGNMENT:

This program contributes to **Strategic Priority 6 – Infrastructure, Mobility & Connectivity** and **Goal 6.1** - Provide, expand and ensure equitable access to sustainable modes of transportation that connect people to opportunities such as employment, education, healthcare, and community amenities.

This project aligns with each of the Cross-Cutting Threads:

1. **Community Trust** – TIG/m conducted engagement with neighborhood groups and stakeholders throughout the study development process, and shared a bilingual survey on

the project webpage.

2. **Equity** – The project would serve the Eastside Neighborhood, which has been recently funded as a Transformative Climate Community.

3. **Fiscal Responsibility** – Should the project advance with TIG/m, staff and the peer reviewer have recommended additional assessment of the project cost model to ensure a fiscally responsible path forward for the project.

4. **Innovation** – The TIG/m streetcar would be a unique municipal deployment of track-mounted transportation in the United States that limits utility & aesthetic impacts while providing a zero-emission transportation alternative.

5. **Sustainability & Resiliency** – Pursuit of more frequent and zero-emission transit options in the City is important to meet the Strategic Plan Goal 4.1 – Rapidly decrease Riverside's carbon footprint.

FISCAL IMPACT:

While there is no fiscal impact at this time, staff's recommendation is to pursue a potential $600,000 or more in grant funding to prepare an expanded, second phase feasibility study which includes an additional alternatives analysis that meets federal guidelines for funding eligibility.

Prepared by: Gilbert Hernandez, Public Works Director

Certified as to availability of funds: Edward Enriquez, Interim Assistant City Manager/Chief Financial Officer/City Treasurer
Approved by: Kris Martinez, Assistant City Manager
Approved as to form: Phaedra A. Norton, City Attorney

Attachments:
1. Streetcar Feasibility Study
2. Presentation