

*City of Arts & Innovation*

# City Council Memorandum

**TO: HONORABLE MAYOR AND CITY COUNCIL**                      **DATE: OCTOBER 6, 2020**  
**FROM: COUNCILMEMBER RONALDO FIERRO**                      **WARDS: ALL**  
**SUBJECT: TIG/M STREETCAR SYSTEM – FEASIBILITY STUDY PROPOSAL**

**ISSUE:** Receive a status report and provide direction on funding in relation to an updated feasibility study proposal as the first critical step towards the establishment of the first alignment of a sole-sourced, zero emission streetcar line connecting the Innovation District and the city's neighborhoods.

## **RECOMMENDATIONS:**

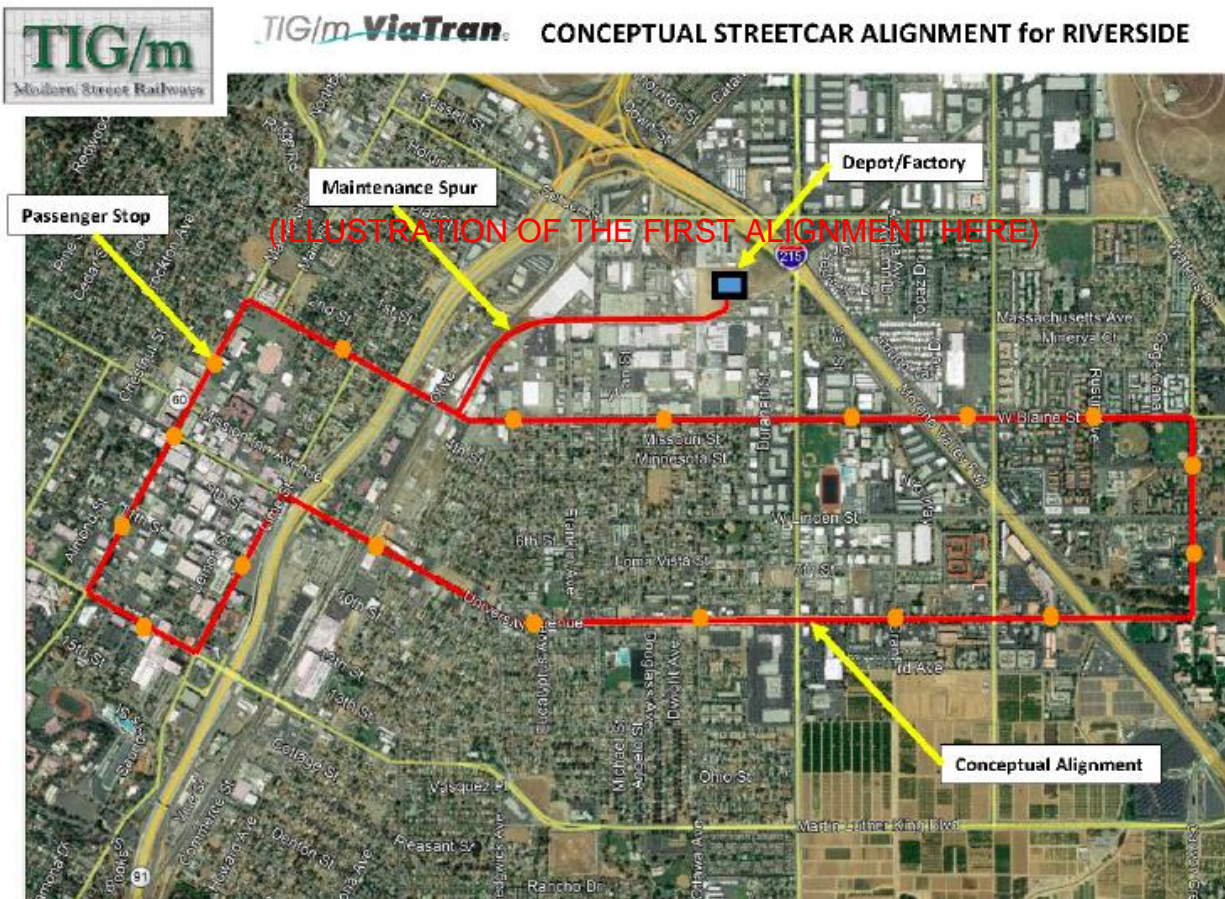
That the City Council:

1. Receive a report from TIG/m CEO Brad Read on an updated streetcar feasibility study proposal to study conceptual alignments, ridership projections, cost/benefit analysis and a community benefits analysis for the initial segment of a sole-sourced, zero emission and wire-free streetcar line within the Innovation District; and
2. Direct staff to pursue internal funding sources for the feasibility study including RPU Cap and Trade dollars, economic development funds, streets and transportation funds and any applicable special funds and bring recommendations back to the City Council; and
3. Request the Board of Public Utilities at the next applicable meeting in accordance with the Sunshine Ordinance to review the use of Cap and Trade to fund a portion of the feasibility study as it relates to a better understanding of electrification of transit systems; and
4. Direct the City Attorney and City Manager, or his designee, to draft a contract agreement with TIG/m designating TIG/m as the entity that will complete the streetcar feasibility study; bring to City Council for approval in 45 days with the final budget allocations; and
5. Direct staff to prepare analysis and bring back to the Economic Development, Placemaking, Branding/Marketing Committee the feasibility and funding options for investment in smart infrastructure to increase electrification of all transportation methods and to incentivize common usage of zero emission vehicles (ZEV) in line with California Governor's Executive Order N-79-80 (ZEV by 2035).

**BACKGROUND:**

On February 25, 2020, the City Council heard a presentation from TIG/m President Brad Read about the company’s innovative, self-powered and completely sustainable streetcar line onto the streets of Riverside. Prior to this presentation, TIG/m and the City of Riverside had been in consistent talks regarding the compatibility of Riverside with his revolutionary public transit concept.

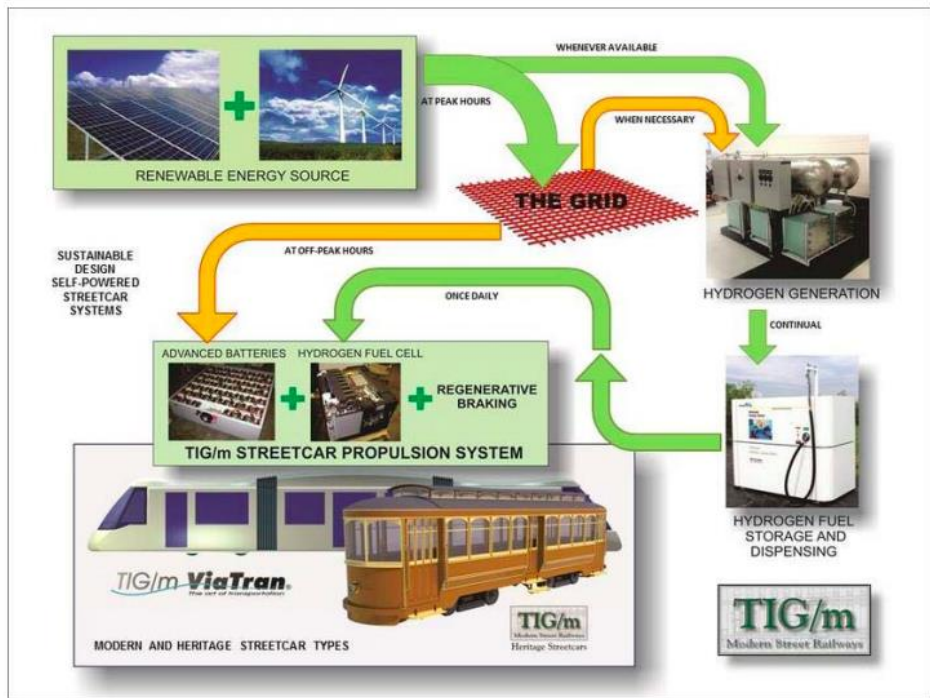
The first segment of the proposed streetcar would run through the Innovation District and connect UC Riverside, our vibrant downtown and the Northside. It is envisioned that once the first segment proves successful, the project would be expanded with an alignment down the Magnolia Transit Corridor and additional expansive lines connecting our sprawled neighborhoods with centralized cores, such as the Brockton Arcade, Magnolia Center and La Sierra.



TOTAL ALIGNMENT LENGTH: Single Track (one-way loop) = 7.75 mi.  
 Double Track (two-way loop) = 15.5 mi.  
 Number of Passenger Stops = 18

As the Council report noted, “TIG/m designs, manufactures, and operates revolutionary self-powered public transportation rail systems commonly known as "streetcars", "trams", or "trolleys". TIG/m systems require no wayside power infrastructure thereby dramatically reducing the visual, technical, and economic impacts to a community. The vehicles are self-powered by a battery-dominant propulsion system and can operate for 20 hours on a single charge.”

Sustainable design practices are central to TIG/m’s concept as they have achieved the world's first zero-carbon public transportation system. The graphic below illustrates their model for Sustainably Designed Self-Powered Streetcar System:



Read initially reached out to Mayor Rusty Bailey indicating his interest in Riverside, writing:

“I have learned that Riverside is on the right path towards economic prosperity and environmental stewardship. We are interested in relocating our facility to Riverside for a number of important reasons: proximity to the California Air Resources Board Southern California Headquarters and UCR/CE-CERT – whose leadership in air quality and advanced transportation are important to our business; availability to cutting edge research and local talent through Riverside’s four universities and college, as well as others in the region; easy access to rail, highway and air transportation and TIG/m PresentationηPage 2 central location within Southern California; existing and potential partnerships with innumerable local agencies, businesses, and Riverside Public Utilities; and, business friendliness of the City and its City and State representatives.

On February 25, 2020, The City Council voted 7-0 to direct staff to explore financing options, evaluate project feasibility, and provide site selection assistance to TIG/m for the purpose of relocating their manufacturing and operation headquarters to the City of Riverside; and authorized the City Manager to apply for grants, seek state/federal funding, encourage private capital investment and evaluate City funding opportunities for the purpose of initiating a feasibility study to establish a world-class advanced technology manufacturing facility and an operational public transportation rail system in the City of Riverside.

If the concept were to come to fruition, TIG/m has committed to moving their manufacturing operations to a location within the City of Riverside, bringing with them 150 high-paying jobs. Additionally, TIG/m indicated a need for a 60,000 square feet facility and connection to a test track for depot, operation, maintenance and storage.



In order to even begin real discussions on bringing this sustainable streetcar concept to Riverside, a feasibility study must be completed. The estimate for completing the study is \$438,415. Extensive efforts to pursue external funding sources has been stymied by the fact that this proposal would be the first of its kind in the United States. As such, there is little appetite from traditional funding sources to go out on a limb to fund feasibility. Staff and TIG/m spent over 6 months pursuing grant opportunities such as the California Air Resources Board (CARB) Sustainable Transportation Equity Project (STEP), which required for the project to have had already have a proof of concept in California. Staff pursued Southern California Association of Governments (SCAG) funding and was told that the project does not fit into the Sustainable Communities program, however it may be included within the Spring 2021 funding round. Federal and State funding opportunities were dashed due to COVID-19 pandemic budget restraints and incompatibility with federal transportation standards.

As such, in order to complete the feasibility study, a critical step towards bringing greater mobility options to Riverside residents, it is recommended that staff pursue internal funding sources for the feasibility study including RPU Cap and Trade dollars, economic development funds, streets and transportation funds and any applicable special funds.

The compensation for the proposed feasibility study will cover the following:

- Project administration
- Public and private sector liaison
- Travel and site work
- Alignment design
- Civil design
- Civil engineering
- Track engineering
- Demand analysis
- Operations and maintenance planning and design
- Financial analysis
- Presentation preparation
- Printing and publication

The study will explore various alternative alignment concepts for the streetcar lines along with investigation of the possibility of phasing the project through sequential construction. Concurrently, a demand analysis will be undertaken to identify the optimal configuration of the streetcar system, using land-use mapping, building data and footfall mapping. A community benefits analysis as well as a cost/benefit analysis will also be included. In addition, the study will project the costs and project financing options through a capital cost estimate and an operations and maintenance cost model, consisting of ROM estimates and taking account of all aspects of the ongoing system's functionality for the life of the project.

## **DISCUSSION:**

In 2002, a Smart Growth America report compiled by a team of researchers from Cornell University and Rutgers University ranked the Riverside-San Bernardino metro area as the *nation's worst example of urban sprawl*. The report put blame on the then lack of economic and social cores, a poorly connected road system and unchecked suburban growth. Since the commissioning of the report in 2002, however, Riverside County has seen large growth that has propelled the City of Riverside into the urban and social core of the region.

In October of 2006 the Riverside City Council unanimously approved the Riverside Renaissance Initiative, a \$1.6 billion plan to do 30 years of public improvements in just five years; including improvements to parks, arts, culture, transportation, public works and city facilities. These investments brought a huge expansion of blue-collar jobs and helped set the stage for further development in the region. In 2009, Riverside Mayor Ron Loveridge gathered civic and community leaders to develop a 20-year strategic vision. The city council approved the plan entitled “Seizing Our Destiny: The Agenda for Riverside’s Innovative Future” in May 2009. The plan is a 52-page document that introduces strategies on topics such as growing the economy, developing the workforce, and improving education. It also set plans for community revitalization through building renovation and space usage. The economic development initiatives resulted in tangible growth, especially in the tech industry. Forbes ranked Riverside second in America’s New Tech Hot Spots in the U.S. in 2013. It had an 18.6% growth in STEM employment from 2001-2012. The initiatives to make Riverside a more attractive location for small businesses and entrepreneurs have also been successful, resulting in the rating of #1 U.S. City for Small Business in 2014 by Inc. Magazine.

In the 2014 edition of the Smart Growth America report, the Riverside-San Bernardino region ranked No. 7 nationwide for regions with the most sprawl – and the only metro area in California that landed on the top 10 list of most sprawling. Among metro areas with more than 1 million residents, it was ranked third-most-sprawling.

In 2016, the City of Riverside, the Greater Riverside Chambers of Commerce, UC Riverside and the County of Riverside successfully competed for Air Resources Board, the largest clean air regulatory agency in the world, to build their Southern California headquarters in Riverside. Opening in 2021, they will be bringing with them over 400 high-paying jobs as well as manufacturers and clean tech industries eager to move their operations closer to the new CARB headquarters. The headquarters will be LEED Platinum (the highest level of energy efficiency) and will also be the single largest net-zero energy structure in the nation, in terms of square footage and load, meaning it will produce as much energy as it uses.

According to a study by the Transportation Research Board, a primary factor in deciding where to live for urban young adults without children is whether a city is “easy to get around,” with “plenty of public transit options available.” Nearly two-thirds of millennials report a preference for mixed-use communities with a variety of businesses and entertainment options clustered together.

Out of the 13 largest Cities in California, Riverside, Bakersfield and Fresno are the only cities that do not have some form of light rail connecting residents. Currently, there are few multi-modal transportation methods for residents to get around. Besides from getting in a private vehicle, residents can utilize the Riverside Transit Agency (RTA) bus lines, which span across the City, mainly concentrating a Rapid Link line down the transit corridor. Besides from the bus, though, there are few mobility options and currently no public micro-mobility options. The Bike Riverside program has been halted while staff pursue other options and Bird scooters are no longer allowed within City limits due to an ordinance that prohibits the operation of private shared mobility services.

Making it easier for residents to get around is just one benefit of smart transit infrastructure. Another long-term benefit is the critical role it plays towards helping us reaching our climate goals and decreasing greenhouse gas (GHG) emissions. Transportation currently makes up 41% of GHG emissions in the City of Riverside. Our community currently lives in an area with the some of the worst air quality in the Country coupled with large populations of disadvantaged and frontline communities. The Riverside area is classified as a non-attainment area in the 2018 “CalEnviroScreen 3.0” Report and the Global Warming Solutions Act of 2006.

Additionally, The State of California is mandated by SB 100 to reach 100% carbon neutrality by 2035. On September 23, 2020, California Governor Gavin Newsom signed Executive Order N-79-80, mandating that by 2035, all new cars and passenger trucks sold in California be zero-emission vehicles, citing transportation for currently accounting for more than 50% of all GHG emissions in the State.

In 2016, the City Council adopted the Riverside Restorative Growthprint Climate Action Plan and Economic Prosperity Action Plan (RRG), establishing greenhouse gas emissions reduction targets and prescribed five smart growth strategies for low-carbon economic development activities that are in line with the goals of this public transit concept. They included:

- **PLACEMAKING:** Support the development of a sustainable “place” for Riverside to thrive by utilizing the community’s assets to improve upon or create public spaces that actively benefit and empower the local community, strengthen social ties, create a sense of “belonging”, and spur economic activity.
- **POLICY LENS:** Analyze policy decisions through an RRG-oriented Policy Lens – a sustainability lens that examines whether future policies achieve both GHG reductions and support smart growth. Assessing environmental benefits in conjunction with economic benefits at the policy-making stage will allow for more collaboration between key stakeholders – the business community, building industry, and the City.
- **SMART GROWTH INFRASTRUCTURE:** Accommodate growth and development while reducing per capita land consumption, saving open space, revitalizing neighborhoods, helping cool the planet and **improving access to alternative modes of transportation**. Developing intelligently will spark an explosion of sustainable development in the City.
- **CONNECTED COMMUNITIES:** Create livable and connected communities by bridging sectors of the community that would not otherwise interact. Majority of the EOAs help to create those connections – from bike infrastructure, to the buy local campaign, to EV infrastructure. **By getting people out of their cars, shortening commutes, encouraging money to stay within the local business community, and creating pathways from colleges to local employers/ businesses for residents, the RRG encourages stronger community connections.** The onset of new services to encourage the sharing economy (car sharing, bike sharing, coworking spaces) will also provide additional opportunity to create stronger community bonds.
- **FUTURE LEADERS:** A primary goal of the RRG is to maximize the economic benefits inherent to addressing climate change, and to do this by cultivating opportunities for entrepreneurial growth that contribute to a thriving, prosperous, and sustainable community. Furthermore, implementation of the RRG will result economic benefits for individuals, businesses, and institutions in Riverside, while also providing public health benefits, environmental benefits, **a variety of feasible transportation modes**, the protection and preservation of valuable resources, and enhanced resource efficiency.

The effects of climate change disproportionately affect marginalized and vulnerable populations in frontline communities. This largely has to do with systematic policies and socioeconomic inequalities that increase poverty and often leave the marginalized behind. According to the U.S Census, 15.6 percent of the City of Riverside’s population lives below the federal poverty line. Those living in poverty or those that are homeless systematically occupy undesirable areas that

are often the most effected by climate hazards such as water contamination and are the first to suffer when extreme weather occurs. Marginalized populations and those in poverty also are the first to benefit from increased public transportation methods.

On June 16, 2020, the City Council voted 6-1 to adopt Vehicle Miles Traveled (VMT) as a standard for the California Environmental Quality Act. In adopting the standard, the City Council adopted a threshold consistent with 15% below the City's current VMT per capita. This action incentivizes development along the City of Riverside's Transit Priority Areas (TPA) and curbs development sprawled across the City.

As such, expanding public transit options throughout the City will expand the Transit Priority Area and incentivize growth along the High-Quality Transit Corridor, as noted by SCAG and in the current General Plan. According to a study by the American Public Transportation Association, investing in public transit can lead to both short-term economic stimulus due to job creation and also long-term, cumulative impact on economic productivity near the transit lines. This can be complimented by City efforts to rezone and incentivize transit-oriented development projects. An initial study of a streetcar concept in Riverside in 2017 estimated that it could spur development of 9,000 residential units and, 7 million square feet of commercial space and the creation of 15,000 new jobs.

In the past few months, the City Council has begun to formulate the 2025 Strategic Plan. The Strategic Priority "Infrastructure, Mobility & Connectivity" noted a goal of ensuring safe, reliable infrastructure that benefits the community and facilitates connection between people, place and information. The indicators included access to transportation choices, infrastructure quality and reliability, outside investment, smart city ecosystem and greening facilities, fleet and systems. The TIG/m streetcar concepts fits directly into this Strategic Priority and has cross-cutting threads with "Environmental Stewardship", "Economic Opportunity" and "Community Well-Being."

This staff report recommends that the City Council:

1. Receive a report from TIG/m CEO Brad Read on an updated streetcar feasibility study proposal to study conceptual alignments, ridership projections, a cost/benefit analysis and a community benefits analysis of the initial segment of a sole-sourced, zero emission and wire-free streetcar line within the Innovation District; and
2. Direct staff to pursue internal funding sources for the feasibility study including RPU Cap and Trade dollars, economic development funds, streets and transportation funds and any applicable special funds and bring recommendations back to the City Council; and
3. Request the Board of Public Utilities at the next applicable meeting in accordance with the Sunshine Ordinance to review the use of Cap and Trade to fund a portion of the feasibility study as it relates to a better understanding of electrification of transit systems; and
4. Direct the City Attorney and City Manager, or his designee, to draft a contract agreement designating TIG/m as the entity that will complete the streetcar feasibility study; bring to City Council for approval in 45 days with the final budget allocations; and
5. Direct staff to prepare analysis and bring back to the Economic Development, Placemaking, Branding/Marketing Committee the feasibility and funding options for investment in smart infrastructure to increase electrification of all transportation methods and common usage of zero emission vehicles (ZEV) and electric vehicle adoption, in line with Executive Order N-79-80 (ZEV by 2035).

A study by the American Public Transportation Association found that millennials are more likely than those of other generations to flexibly utilize multiple travel options, whether driving, public transit, biking or walking. In fact, the study says, nearly 70 percent of millennials use multiple travel options several times each week. Transit-oriented development and adapting our transportation infrastructure for walkability and reliable public transit is truly integral to the equation if we wish to truly *Seize Our Destiny* and capitalize on the untapped potential of our region.

The City of Riverside is currently the 12<sup>th</sup> largest City in California and the County seat to the third most populous County in California. In the past 20 years the City has made considerable headway in developing our economic cores, including Downtown, the Magnolia Center, UC Riverside and La Sierra – all notably along the magnolia transit corridor. Connecting these centralized cores will not only make them more accessible to all residents, but will bolster growth along the transit corridors and strengthen our local small businesses.

While the City of Riverside has made huge strides since 2002; our City, County and metro area are still hindered by urban sprawl and persistent mobility challenges that separate residents, challenge current infrastructure and contribute to GHG emissions. A comprehensive and sustainable public transit rail system has the potential of invigorating quality of life for Riversiders and catalyzing business attraction and development efforts, truly putting Riverside on the map.

### **FISCAL IMPACT:**

There is no immediate fiscal cost to this item. The feasibility study will be approximately \$438,000. Initial funding has been identified in RPU Cap and Trade, economic development funds, streets and transportation funds and applicable special funds.

Prepared by:



RONALDO FIERRO  
City Councilmember, Ward 3

### **Attachments:**

1. Letter of Intent – TIG/m CEO Brad Read
2. Feasibility Study Proposal – TIG/m
3. Executive Order N-79-80
4. California's Fourth Climate Change Region Report
5. LA Times Article – "Chatsworth Trolley Maker is Going Places"