Respondent Profile completed as a cover page:

The GTF Transportation Network

Response to City of San José RFI : September 30, 2019

Respondent Profile:

The General Transportation Fund (GTF) Group of companies collectively are engaged in the design, engineering, manufacturing, development and financing of automated transportation networks. GTF is investing in new technologies and engaged in adapting proven concepts into its transportation network. GTF is now engaged in developing projects in North America, Africa and China. GTF is not wedded to any manufacturer or technology; we seek to integrate what fulfills the needs of our customers. We collaborate openly and fairly to develop meaningful and sustainable projects and technologies.

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High Level Description of Concept:

A zero emissions, elevated, suspended, solar powered automated transit network that offers compelling economic advantages over existing forms of public transportation.

High Level Description of Business Plan:

On balance, the GTF network offers compelling financial value compared to other competing forms of public transit and with several viable revenue streams – demonstrates financial characteristics required to eliminate public subsidy and attract private investment capital. Pending greater Project detail, and resolution of potential cost over-runs related to permitting/ environmental/rights of way/entitlement costs, GTF would likely propose working with San José on a 25 year build own operate and transfer (BOOT) agreement to finance the Project.

General Transportation Fund

The GTF Transportation Network

General Transportation Fund
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September 30, 2019

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Executive summary

General Transportation Fund (GTF) is pleased to respond to the City of San José RFI regarding future transit options from the Mineta San José International Airport to Diridon Station, Stevens Creek and beyond.

GTF is an investor and developer of elevated, suspended, solar powered automated transit networks as a response to global warming and the fact that existing modes of transportation contribute an estimated 25% of global carbon emissions (in Silicon Valley the estimate is significantly higher: 62.8%). To maintain a habitable world, we must unite behind the science, and that includes the science of economics. Thus, GTF integrates existing technology in a practical manner, resulting in a ***zero emissions*** public transit system that offers ***compelling economic advantages*** over existing public transportation systems. GTF has invested in unique IP, relevant R&D and engineering, and has affiliations and joint ventures with several manufacturers, controls/software engineering firms, EPCs, and is a proud sponsor and proponent of the Spartan Superway program at San José State University.

GTF has designed a scalable, modular transportation system that can be adapted to any urban landscape in the world. Since 2013, GTF has invested in the testing of various elements of its transportation system at a 1 km test track operated by Futran, an affiliate in South Africa. A key feature of the GTF transportation system is to employ a solar canopy and energy storage for transport requirements, optimized as an electric micro-grid (with utility scale battery storage), with services addressing grid stabilization, energy storage and excess energy sales. The guideway can also serve fiber optic communications, telecommunications, ISP and other utility-like services.

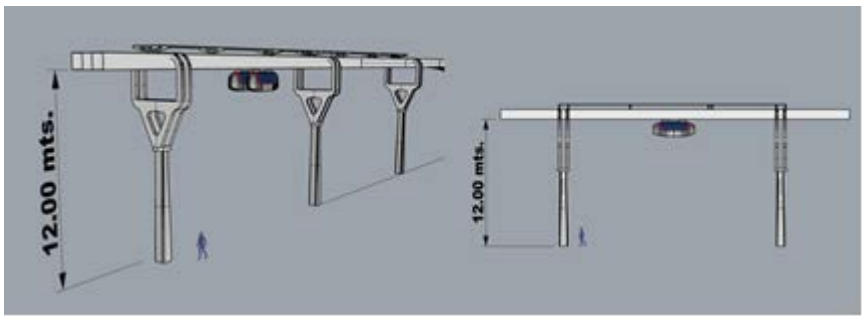
For Silicon Valley, the success of a GTF automated transit network is predicated on two major assumptions:

- Sufficient number of stations in order to drive passenger throughput resulting in increased utilization of existing public transportation systems. A 50 km GTF network can provide throughput of 18,000+ passengers per hour in either direction. Real Estate values increase based on access to the network, as opposed to location.
- Commitments and action from California state, county and cities with regard to expedited and streamlined permitting, air rights, rights of way, environmental compliance, utility easements and interconnection. Project economics will be negatively affected by timing and delays in these areas.

GTF, in conjunction with its affiliates, can significantly reduce transportation related emissions, reduce traffic congestion, unlock real estate value with access to the network and overall provide a significant engine for economic growth.

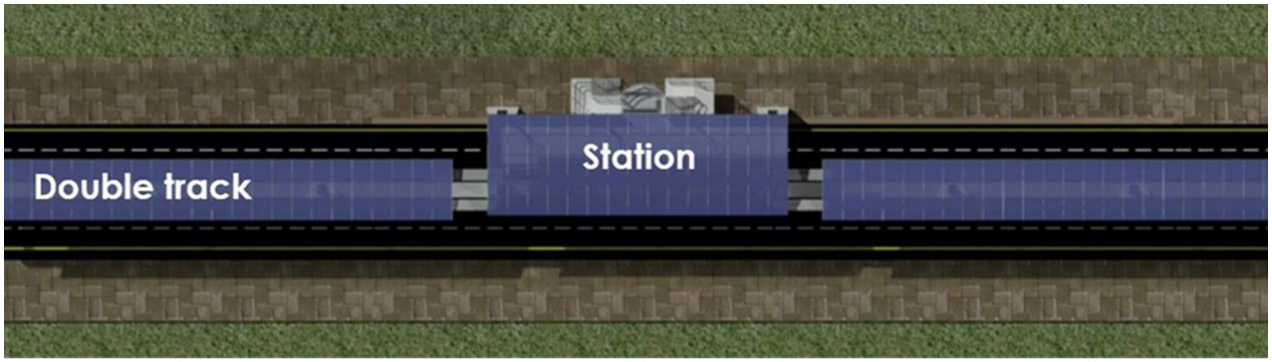
1. The integrated GTF Transportation Network:

GTF's transportation network features self-powered vehicles with capacity for up to 8 passengers, utilizing a suspended pod car design. The integrated conduit will utilize modular construction featuring support structures with a minimal at-grade footprint. The system is flexible in nature, adapting to existing urban terrain in elevation or direction thus minimizing or avoiding costly modification or movement of existing public and utility infrastructure.



The design translates to lower installed costs, superior passenger ride comfort with unobstructed views, and a platform for solar power with utility services provided by the guideway. Maintenance is lower because the platform does not collect debris, ice or snow, and limits obstructions on guideways. Safety is enhanced from the incorporation of numerous backup systems, three separate sources of electricity, and backup bogies with multiple motors. Further, the elevated nature of the design will have minimal effect on existing congested roads or rail – and people will not be able to stand within the pathway of the Podcar vehicles.

The energy infrastructure consists of a large solar module canopy above the transit guideway that provides renewable energy for the transportation network and can be optimized as an electric microgrid with battery storage at stations. Channels within the guideways are designed to incorporate wayside power, electric distribution, and pipes for fiber optic, gas/fluids, wireless and other utility-like services, all of this is within an elevated structure that can cost-effectively be deployed on top of existing roads and road easement/right of way corridors.

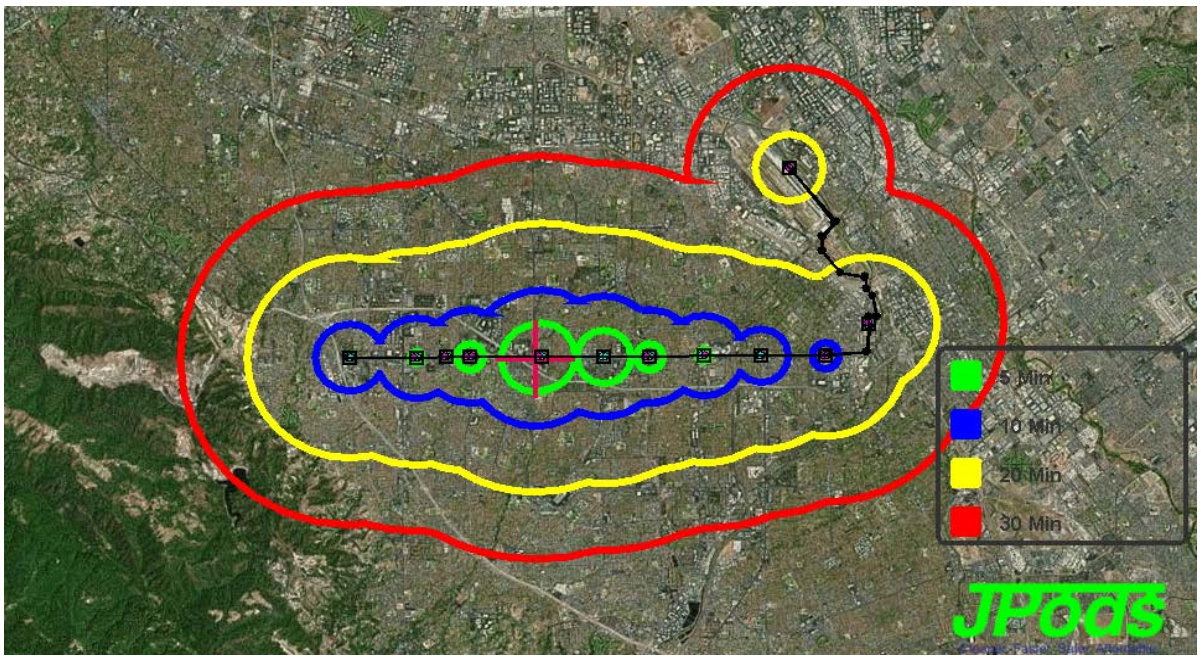


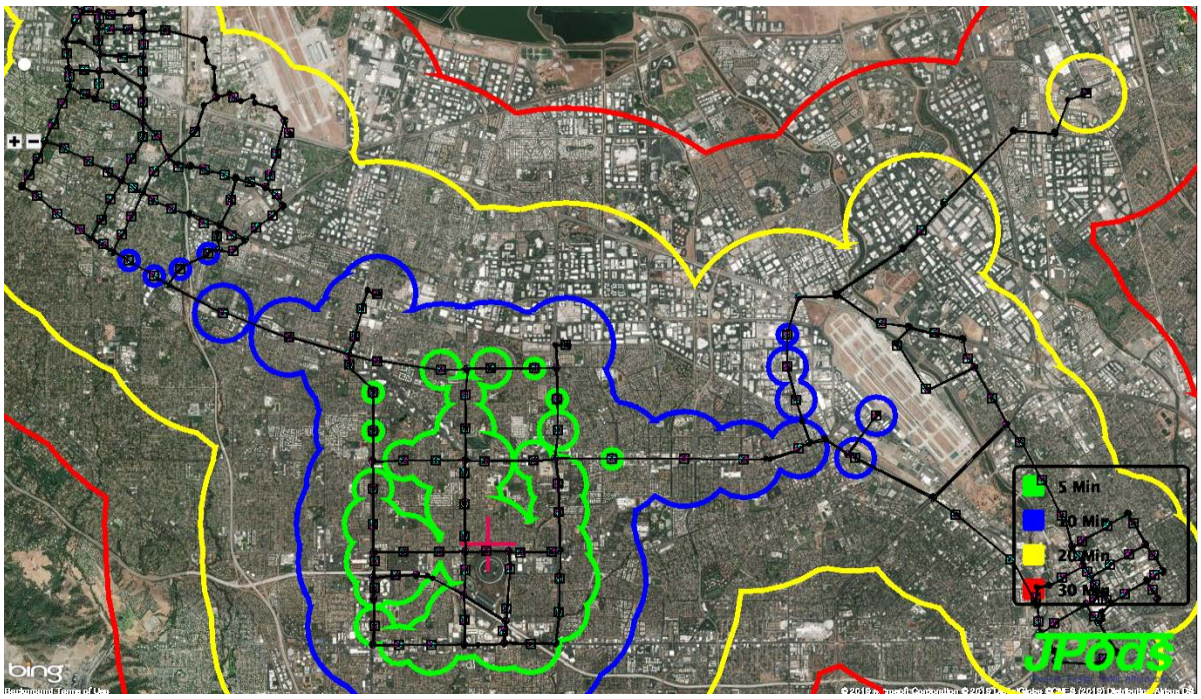
(***Futran Group***)

The economic viability of the GTF transportation network is dependent upon having a sufficient number of typically small, economical stations that serve to aggregate passengers into the network. A large network would cost a small fraction of at-grade light rail or elevated

monorail, can produce significant passenger throughput in either direction (ranging from 7,000 pax/hour to 20,000 pax/hour depending on configuration), not only relieving congestion but also giving much higher utilization to existing public transportation services. By contrast, a corridor design, with a limited number of elaborate online stations elevated above existing congested routes, is limited in total passenger throughput.

Below are a couple of conceptual maps (presented with permission of JPODs) to demonstrate the proposed Airport/Diridon Station/Stevens Creek route as proposed and an evolution into a 150 km transportation network. The estimated travel times go out as far as 30 minutes.



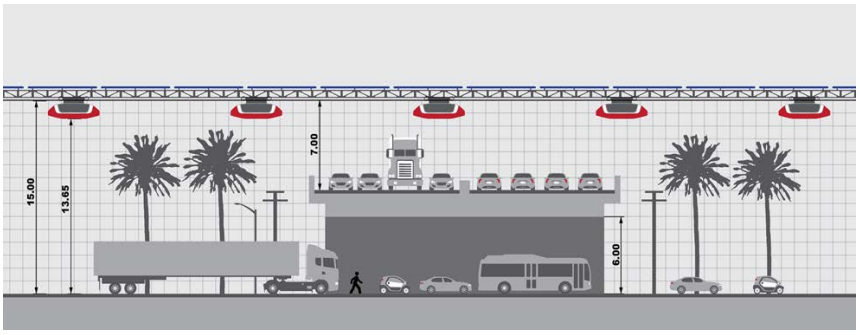


By expanding the service areas, the interconnected loops of a GTF transportation network can provide "last mile" service, thus connecting main transportation corridors with various neighborhoods and stranded location real estate. Real estate values throughout will benefit from the GTF transportation network. Maximum capacity would rise to approximately 20,000 passengers per hour. The critical shift will be away from location and instead unlock property access:

2. The versatility of the GTF network and conduit:

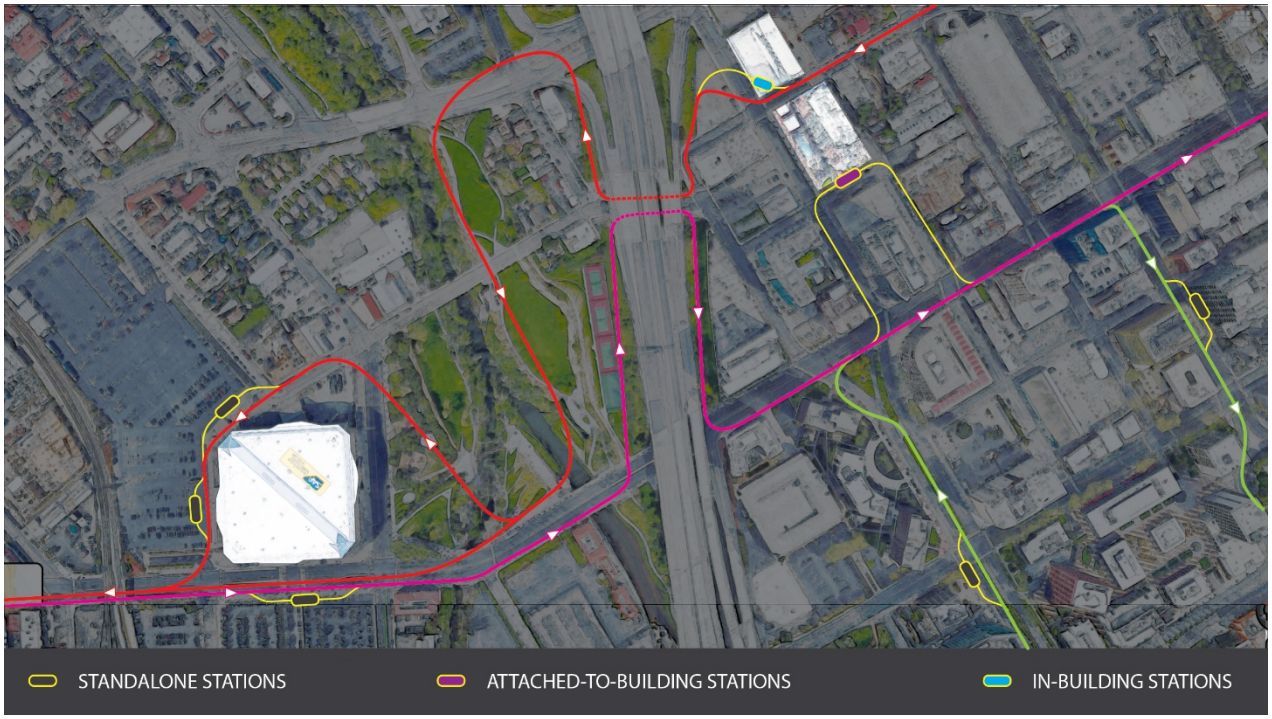
Because of its light footprint and modular construction, the network design can be installed by adapting to existing infrastructure and rights of way in a manner that augments existing modes of public transportation. Design versatility also is applicable to various station designs – both stand alone and in-building. Operationally the system retains the ability to ramp capacity reflecting changing time of day and passenger utilization through the Control System Software. To illustrate the GTF network flexibility, note the three conceptual illustrations below:

First, for example, take an existing freeway and related freeway underpass resulting in a less than desirable 15 meter "fly over" required to clear:



Alternatively, GTF can utilize freeway underpass design, the track ramps down with minimal impact on pedestrian crosswalks and automobile traffic:

A conceptual application of the GTF network to the areas around the SAP ”Shark Tank” and downtown San José utilizing varying station designs:



Again, this demonstrates the key to financial viability of the GTF system which is largely determined by the number and location of stations attracting passengers into the network.

Working with various affiliates in the Silicon Valley area, GTF has come up with an adaptive, modular station design that incorporates the latest collision-free safety and handicap access features and most importantly augment existing forms of public transit.

Finally, the GTF conduit provides a variety of services, most importantly enabled by GREEN, SUSTAINABLE ENERGY:

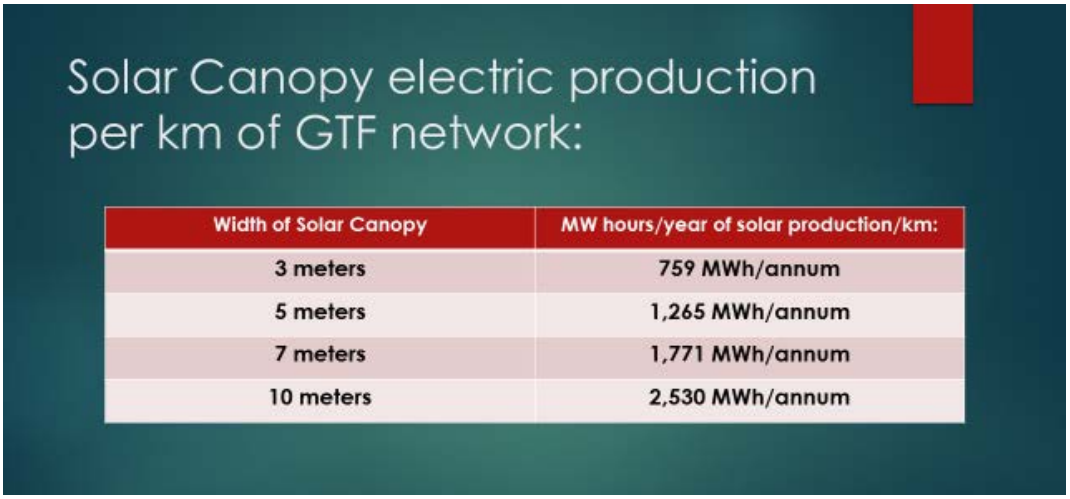
- Generating, distributing and storing solar electricity along the transportation network
- Excess electricity production sales
- Grid stabilization and micro-grid time of day capacity charge avoidance services
- Enabling 24 / 7 goods and services delivery all along the GTF network thus reducing the cost of business
- Deploying solar powered electric vehicle (EV) charging stations across the city, thus enabling the taxi industry to adopt electric vehicles
- Fast and efficient emergency services deployment, any time of day or night.
- Increased public safety through increased video monitoring and data gathering
- SMART city enablement through increased data gathering and mobility management
- Fiber optic cable, cell services, wi-fi internet, potential liquid pipelines

Because of the use of sustainable energy that is capitalized up front, the utilization of existing public space that does not have to be procured, as well as the shared use of the utility viaduct by many services, the cost of all services offered benefit compared to stand alone alternatives.

3. Solar power and micro-grid services

GTF has designed a curved solar canopy that allows deployment of fixed axis solar modules in an aesthetic array. The canopy can be deployed in such a manner that it both optimizes solar insolation and capitalizes on rainwater to clean the panels. Rainwater is also captured on the sides and stored for general use, including cleaning the solar panels in times of draught.

The wider the solar canopy is, the more solar energy can be generated in the city along the Conduit. In San José, a relatively high insolation factor of 1,641 kWh/kWp applies, and it is possible to maximize this – with as much as a 10 meter wide canopy.

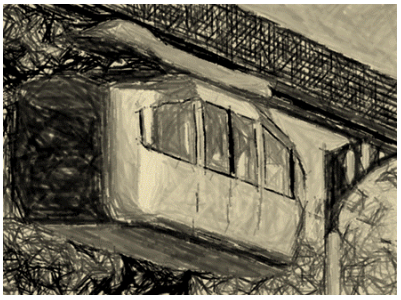


By adding battery storage to the system, electricity is available at night and by connecting the batteries to the city power grid, the GTF Conduit system becomes a microgrid as well as a city grid stabilization platform where the City can use the batteries to store grid power during the night and access it during the day.

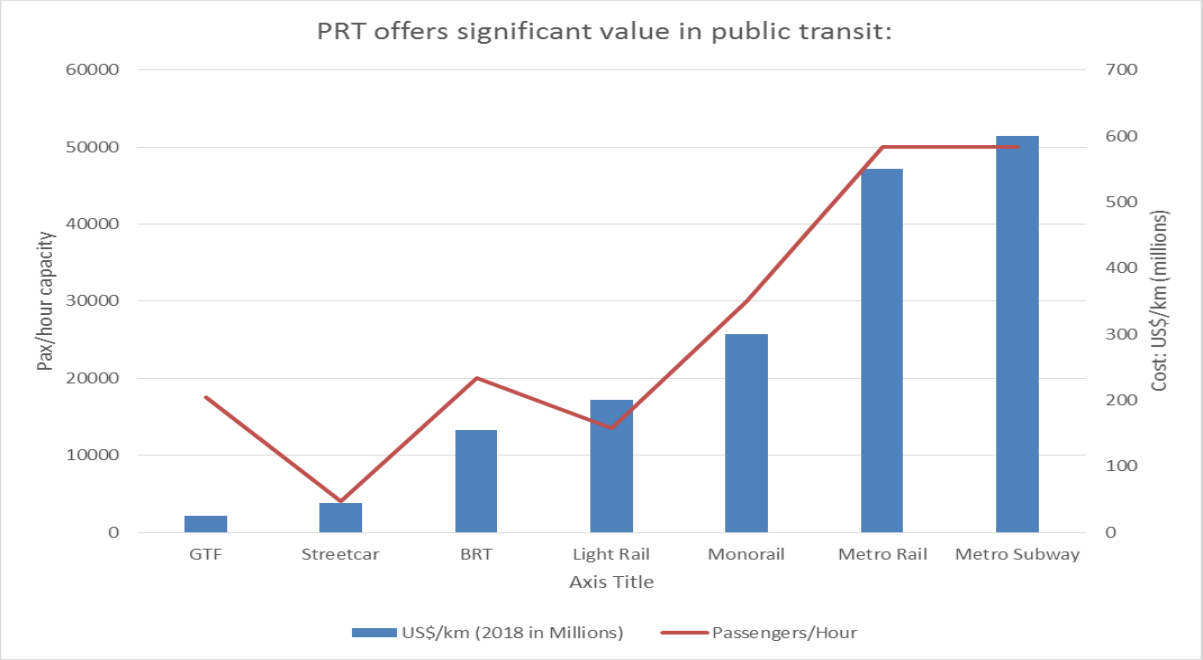
4. Low Cost Public Transportation

Below the solar canopy, suspended from the track system, run automated GTF electric pod cars that use stored solar energy as their power source. GTF is working with several affiliates in designing various size and specification podcars to serve varying transportation needs.

The GTF electric vehicles use durable steel wheels on a steel track, low maintenance electric motors, long lasting batteries and self-lubricating, sealed roller-bearings. Designed to minimize operations and maintenance costs and robust enough to serve the GTF network for 15 years or more, operating costs for the GTF transportation network are projected to be significantly lower than other forms of public transit.



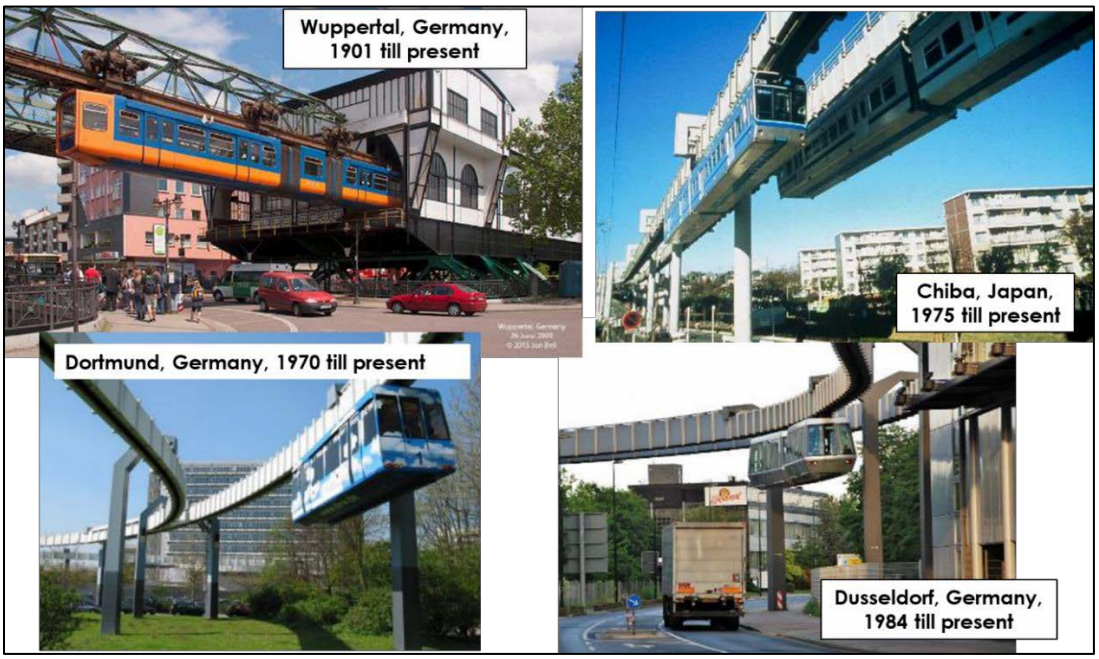
Multiple types of vehicles, varying in design capacity and utilization, can run on the same track at the same time, making the movement of people, goods, deliveries, refuse removal, emergency services and even water distribution possible on the same track at the same time. All stations are OFFLINE where vehicles have to pull off the main running line before they can enter a station, so vehicles can run past stations where they need not stop, making transit times much faster and more efficient.



Projected installed costs under various design configurations for a suspended GTF Transportation System are significantly lower than public transportation alternatives. Various design configurations such as double rails and coupling, combined with low headways and multiple stations feeding passengers can result in relatively high levels of passenger throughput. This combination – low cost, high capacity – gives the GTF system a significant competitive advantage over other forms of public transportation.

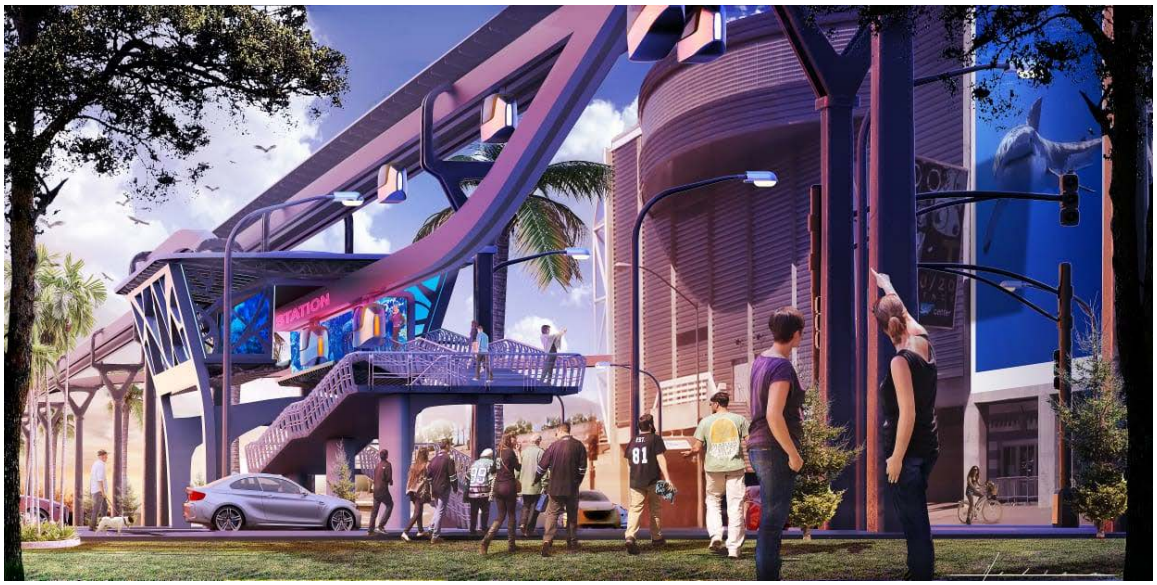
5. A practical application of proven technology

In Germany and Japan the concept of elevated, suspended track superstructures for non-grade level mobility has been tested and proven for over 100 years, but these first and second generation systems suffer from certain shortcomings such as low throughput (mostly due to in-line stations with track-based lane switching), lack of flexibility (can only be used for people transportation), high capital cost (custom designed superstructure using conventional structural elements), high operating cost (large vehicles being used on a system with very low throughput).



The GTF Transportation Network is an evolution of these successful designs. It has a range of unique features that helps it solve many of the traditional shortcomings of suspended transportation systems, including:

1. Patented "suspended vehicle track switching" without requiring any moving parts on the track itself, thereby enabling high density traffic movement along a grid network
2. The use of offline stations as opposed to in-line stations making it possible for units to run past stations at full speed without being influenced by traffic in the station
3. The use of small, automated units running past stations where they need not stop
4. Utility viaduct where the space is shared with other services, thereby lowering cost
5. The deployment of multiple sizes and types of vehicles on the same track (people, goods, services)
6. Modular structural design that keep costs low and are replicated from project to project.



GTF, working with various EPC and real estate development firms in San José has produced several station designs – the above representing a stadium station design, incorporating various safety features and handicap access.

GTF has several affiliates that are considered experts in the area of vehicle and automated transportation network safety. In addition, the software control system will be designed to highest safety standards and reflect a collision free and vision zero goal for no more traffic deaths. Existing pod car systems have proven to be extremely safe. One US system (Morgantown, PA) has experienced over 80 million vehicle miles with just a single minor accident.

6. Financial Analysis

On balance, the GTF network offers compelling financial value to other competing forms of public transit and with several viable revenue streams – demonstrates financial characteristics required to eliminate public subsidy and attract private investment capital. For Silicon Valley, the level of detail required to generate those numbers would be provided by a feasibility study, one that would provide project specifics that better detail the specific route(s), stations, passenger demand and limitations. Based on its industry experience, GTF would like to make the following points:

- Installed costs for the network and conduit are projected at a range between $15 million to $25 million/km depending upon design variables and soft costs such as permitting, rights of way, geotechnical requirements, and environmental review, all or any of which could escalate costs significantly. Preliminary financial analysis demonstrates that the transportation network would be economically viable with as much as a 50% increase in the installed cost of the system. The single largest risk relates to the assumptions on costs related to securing rights of way, space for single

and crossover stations on both public and private property, moving existing utility infrastructure and time delays related to securing permitting, rights of way, environmental, and entitlement process.

- Lower projected operating and maintenance costs – electric motors demonstrate lower wear and tear than their predecessors. Calculating operating expense per passenger/km makes several assumptions and is depending upon network configuration and the ability to optimize pod usage. More information needs to be developed in order to quote an operating expense number, but we have seen operating expense per pod vary from $0.07/km to $0.14/km (dependent primarily on network design and pod usage km/yr).

- Multiple potential revenue streams – ticketing, logistics, power/micro grid revenues, fiber optic cable, internet/wi-fi, advertising, fluid piping, mobile telephony. Investors prefer multiple revenue streams because it diversifies the risk of the project.

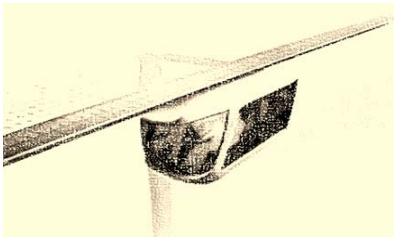
- Commercial network access – commercial clients such as hotels, malls, and business centers will pay for access to the network for its clients. This model has been promoted and accepted by GTF development affiliates in non-North America projects.

- Real Estate values – network access will unlock location stranded values resulting in higher property tax valuations

- Technology Risk: as mentioned previously, the GTF network and conduit is largely an integrated application of existing technology in a unique manner. In North America, a municipal sponsor commitment toward a podcar project has been lacking because one has yet to be constructed since the successful Morgantown project built in the 1970s. For Project Developers, private capital has been made difficult by the potential cost over-runs related to permitting/environmental/rights of way/entitlement costs. GTF affiliates have been making progress on gaps that exist in the engineering, design and software development. GTF will embrace existing technology and make sure its systems are designed to incorporate newer technology when it avails itself

- GTF intends to work with experienced manufacturers, technology partners and EPCs in order to facilitate financial investment in its network and conduit

- It appears that the financial characteristics of the GTF system would present an attractive investment for private capital. Outside of the US and Canada, transportation systems are financed utilizing a 25 year “build own operate and transfer” (BOOT) agreement. GTF has been active in financially structuring private capital for affiliate development opportunities.



To summarize, the largest risk facing the project relate to securing permitting, rights of way (including movement of existing utilities), completing the environmental permitting and the entitlement process. Sponsor "skin in the game" is a key aspect of attracting project financing. The question for San José specifically and Silicon Valley in particular is what assurances and commitment can they give to manage and help alleviate this risk?

7. GTF and its affiliates

The GTF group of companies collectively is engaged in the design, engineering, manufacturing, development and financing of automated transportation networks. GTF is investing in new technologies and engaged in adapting proven concepts into its transportation network. GTF is now engaged in developing projects in North America, Africa and China. GTF is not wedded to any manufacturer or technology; we seek to integrate what fulfills the needs of our customers. We collaborate openly and fairly to develop meaningful and sustainable projects and technologies.

GTF's Affiliates include:

The Futran Group – Based in South Africa, Futran is engaged in all aspects of automated transportation development including IP technology, manufacturing and project development. Futran has major projects in its pipeline and is establishing a robust manufacturing facility. GTF has invested in Futran's test track and is a co-investor in IP.

Rodz+ – Based in Mexico, Rodz+ is an advanced design and innovation consulting firm specializing in the transportation industry. A multi-disciplinary group, Rodz+ has a successful track record in developing highly complex R&D projects for companies such as Ford Motor, General Motors, Chrysler, Audi, Nissan, Mazda, Pininfarina and others.

Spartan Superway – Located within the Mechanical Engineering department at San José State University, Spartan Superway is an interdisciplinary project led by commercial collaborators seeking real problem solving in designing and operating various aspects of an Automated Transportation System using solar powered renewable energy.

Swenson Solar – Based in Santa Cruz, Swenson Solar has developed several innovative and aesthetic commercial solar projects, including public-private-partnerships (PPP) which parallel the transportation sector's growing use of PPP and "BOOT" projects.

8. Conclusion

"The greatest opportunity to create value through innovation lies in the early stages of project development."

Robert Edgell – Edison International

GTF's transit network and conduit offer a compelling answer to the most significant challenge facing humanity at this time: global warming. Transportation systems commit in excess of 25% of global carbon emissions into the atmosphere yearly, and for San José, that estimate is over 60%. The GTF solution offers zero emissions combined with economic advantages not to be ignored.

GTF is a developer and investor in automated transportation networks. It is not betrothed to any single technology or design; its mission is to invest in, develop and execute applicable technology and projects.

We welcome the opportunity to work together to execute a solar powered automated transit project in San José