

**JPods**

# Digitizing Mobility in Las Vegas



So this is the future  
of transportation!





# Welcome to the world's first solar-powered mobility network

## Hello!

**JPods wants to take you for a ride on the world's first solar-powered mobility network in Las Vegas creating an experience that produces benefits beyond arriving at your destination.**

Every time you take a ride you are empowering the use of renewables, reducing the effects of climate change, creating local jobs and building a more fluid community all while saving yourself money.

Everyone has equal access to mobility regardless of age, ability, or wealth. Aside from being sustainable, it saves families a car payment per month. Because JPods are personal, just like a chauffeured car, you move non-stop from your origin to your destination by yourself or with your group.

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## Execution

### WE START SMALL AND ITERATE RELENTLESSLY.

The early network will just connect the Las Vegas North Outlet to Symphony Park and the Fremont Street Experience. As this small network is built, we build the manufacturing base and train the workers needed to build much larger networks. This small start then extends to connect the Sahara Monorail.

As people get used to being able to move in a network of Horizontal-Elevators™, fewer and fewer car trips will be made. Fewer and fewer traffic accidents will occur. Less and less pollution will occur. We will shift from burning oil while moving two tons of automobile to moving a person with solar energy powering the economy within a solar budget.

As the networks spread, more and more jobs will be created setting an example to the world with Las Vegas being “The First City of the Sun.” The first city to create jobs building a sustainable city, changing its economic lifeblood from oil to ingenuity

The proposed Las Vegas Mobility Network is built upon the well-defined JPods architecture. The system will provide people with direct origin-to-destination travel between locations of interest and defined by the city of Las Vegas. Specifically, from the Sahara Monorail to The Fremont Experience along Las Vegas Blvd, with additional segments to Symphony Park and the North Outlet Mall. With the very small turning radius of JPods, the system provides access to many locations with new stations being part of those locations and placed in nearby but unobtrusive spots.





# JPods

## The Company

### Why did we create JPods solar-powered mobility networks?

#### **MOBILITY IS THE PHYSICAL MANIFESTATION OF LIBERTY.**

Society prospers when everyone has equal access to affordable on-demand mobility regardless of age, ability, or wealth. Our passion for liberty and social equity led to a search for an enabling solution.

**LIFE REQUIRES ENERGY.** Cheap oil is finite. Solar-powering urban mobility secures life within a solar budget. Perpetual oil-wars since 1991 awoke us in 1998 to the need to end America's foreign oil addiction. Eight Presidents, before and since have called us to this action. World leaders have called us to action since Kyoto to end Climate Change. Las Vegas will be leading the world by building solar-powered mobility networks, answering all these calls to action to provide "our Posterity" with a sustainable future.



## Background and Experience

“Sunshine is spread out thin and so is electricity.  
Perhaps they are the same.”

Quote by Thomas Edison and shared during [TedX Atlanta](#)  
Tomorrow's Solar Transportation by Bill James

### Key Leadership

Our current JPods team has extensive leadership experience in logistics, software, regulatory management, solar energy and energy storage, technology, manufacturing, and robotics.

Software is a major component of JPods deployment. We have team members credited with participating in the encryption of BitCoin and another member of the team wrote software recognized as the 'Best New High Tech Product of the Year' in Minnesota.

Regulatory Management and certifying the systems is essential to operating them. One JPods team member is an expert in railroads having rebuilt those in Iraq after our invasion. Another member was a key leader in certifying over 100 thrill rides at major theme parks.

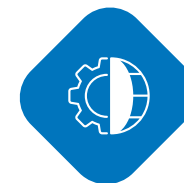
### The Full Team

The approach to refining the design and deploying it will involve a full team of partners. The full team will be brought on when the Right of Way (ROW) has been approved and subsequently funding is gained. The full team includes:



#### CIVIL ENGINEERING

A local civil engineering partner will be utilized for site surveys, locating all underground utilities, determining the applicable types of footings, creating, submitting, and gaining approval of plans, and the actual oversight of construction.



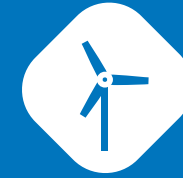
#### PROFESSIONAL ENGINEERING

Professional engineering services team members will be drawn from global engineering companies to tailor the system to the Las Vegas' needs and define and independently execute those tests as part of System Acceptance Testing.



#### PROGRAM MANAGEMENT

Program Management will also be a key area. The program will rely on the experience of a seasoned program manager with direct experience in other similar systems and in managing electrical, mechanical, software, and test engineers.



#### POWER DESIGN

The JPod Full Team will leverage its existing relationship with solar power design company Aesthetic Green Power to design the specific panels for the top of the guideway and stations.



Examples of solar collector systems designed for deployment over JPods guideway applied to the parking lot at Plantronic's Headquarters in Santa Cruz, CA.



Notional example of solar collector systems designed for deployment over stations.



# Proposed Solution

## Overview



### THERE ARE FIVE PHASES TO MAKE LAS VEGAS THE FIRST CITY OF THE SUN AND A COMMERCIAL CENTER.

The information presented in this proposal is based on the initial route information provided by Las Vegas to us in the file “Potential JPod Routes.pdf”. We have gone a step further, creating an integrated system servicing all of the desired locations while adhering to the rights of way indicated. We believe this will offer a better and more easily deployed system. The difference in route details is simply noted here to reconcile any differences between the pictures provided in this proposal and the initial potential route document. Of course, the specifics of any actual route will be discussed in detail at the start of a program.

### Phase 1.

An initial small system will be set up under a Special Events Permit. This system is analogous to Kitty Hawk, where the Wright Brothers first flew 120 feet and changed the world. This phase adheres to our philosophy of “Start Small, Iterate Relentlessly.” The initial system will allow immediate, demonstrable progress.

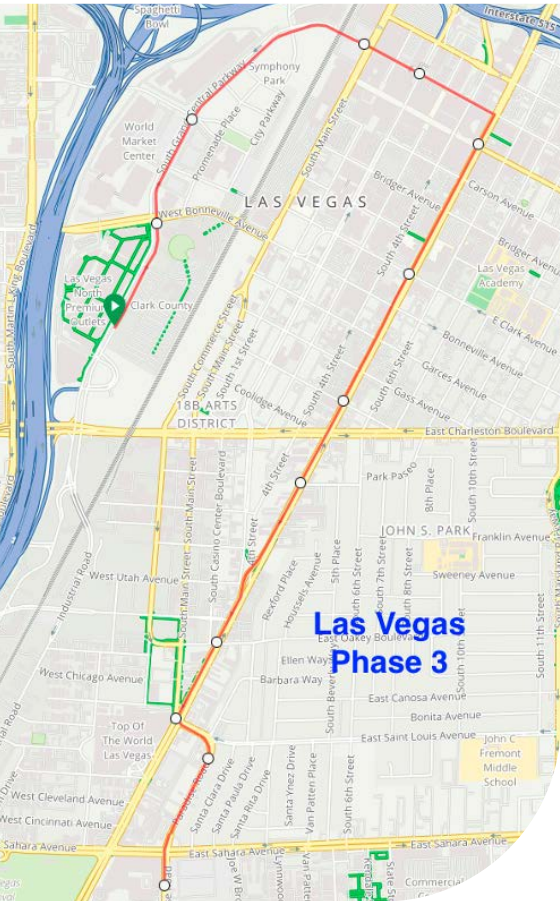
### Phase 2.

Symphony Park, Las Vegas North Outlet, Fremont Street Experience: In this phase, an operational system is created that brings immediate value and acceptance; people can see the system in operation and it brings direct economic benefit and utility to the people in Las Vegas. The figures below show a simulation of the system in this area. This phase is included within the scope of the proposal.



### Phase 3.

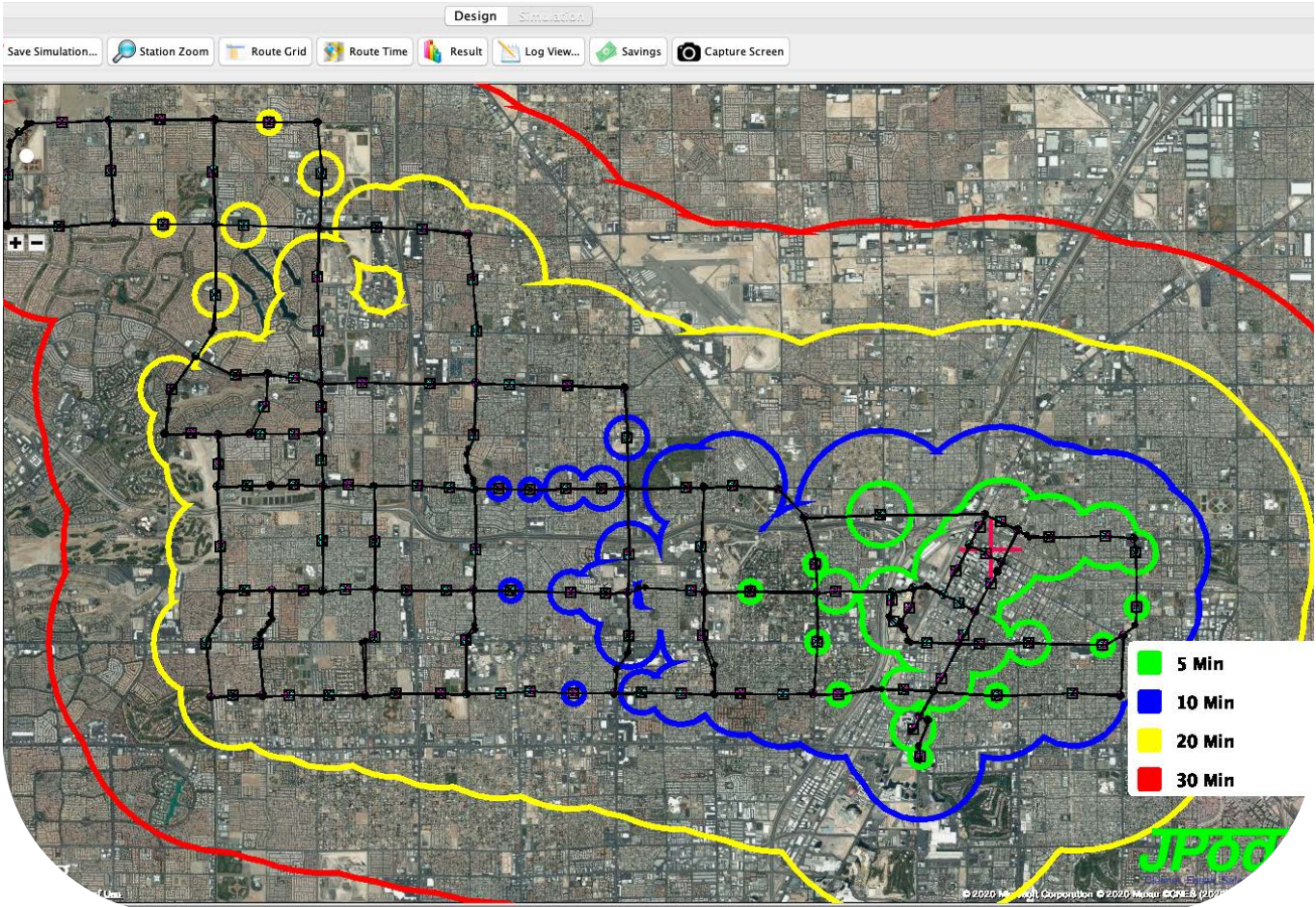
Expand to the Sahara Monorail Station: In this phase, additional portions of the system are installed, providing significantly enhanced access for a large portion of Las Vegas across multiple areas of high interest to people. This phase is included within the scope of the proposal. The figures below show a simulation of the system in this area.





Phase 4.

Expand across Las Vegas: In this phase, the system is expanded for greater economic benefits and wider-scale use by the Las Vegas greater community. It brings significant benefits, such as transportation to medical and healthcare facilities, more diverse shopping needs and a wider range of social venues to the residential areas of Las Vegas.



Phase 5.

Export the solution to the world. In this phase, Las Vegas enjoys the benefits of being the world's first solar-powered mobility network. People interested in deploying a solar-powered mobility network of their own will come to Las Vegas to see the system and to learn about the technical aspects of development and deployment. Furthermore, once they move forward, local Las Vegas manufacturing companies will be the source of the designs, guideway structures, and pods needed for other systems. This will drive local jobs.



Privacy And Security

Each ride starts with a passenger or party traveling together entering their individual JPod. Only the people in your group travel together. In this way, each ride is private to that person, group, or family.

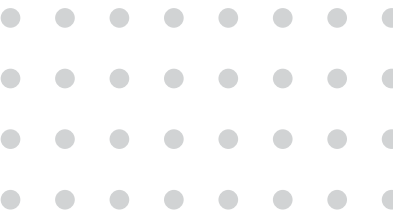
The ride is secure. People enter at the origin and depart at the destination, with no other access points along the way. This eliminates the uncomfortable moments similar to when other people share an elevator.

Cameras within the station monitor boarding, so no one outside your party can jump into your JPod. If a minor is traveling alone, the interior cameras remain on during the trip. If you want privacy while traveling, your phone app sets your preferences, you can turn them off with the vehicle's computer, or voice command.

“ When we demonopolize industries and bring back free markets, companies have to differentiate themselves by innovating. Innovation creates ten times better products ”

- Bill James, JPods Founder





## Passenger Engagement

Rides are purchased with your phone on the JPod App, at a kiosk, or by using facial/finger recognition. Rides can be purchased as a one-time, day pass, number of days, or monthly/annual subscription.

Before your trip, your phone JPod App lets you know the time of travel and arrival time to your destination.

To begin a ride, a person simply walks up to the stanchion at a station. Your phone is chatting with the vehicle as you approach and it opens for you and the ride begins. It is also possible that businesses will want to provide rides as part of a stay package, a dining package, or other event packages. These can be managed using a promo code or similar approach on the system's web site.

Your time is your own while you travel. You can text or chat on your phone. You have access to the Internet using the JPod WiFi to your phone or computer. Each JPod will be equipped with the creature comforts you have come to expect such as heating and air conditioning.

The system provides a number of entertainment and information options (infotainment) to patrons. These include "Advertising Upcoming Events", "Music from Smartphone Playlist", and "WiFi". You can choose to benefit from these sources of information while en route.

During travel, the system makes announcements about boarding, the destination, departure, time to destination, arrival, and deboarding. This could be enabled or disabled on your ride preferences through the app.

If a passenger needs to change the destination on route, feels uncomfortable and wants to get off, or has any kind of emergency, they use the voice command, 'change route' on app, or press Emergency Call Button to connect with a system operator. In an emergency the system operator will identify the best choice and route the passenger accordingly (i.e. nearest station with a bathroom, hospital, etc.)

In the unlikely case that an issue occurs that stops a JPod, the system has built in redundant paths for travel, automatic rerouting, and service personnel that can immediately assist in solving any issue. Passengers are automatically informed of any change and brought to a nearby station.



## The System Elements

JPods enter a Station in what is called an offline guideway. The JPods diverge from the main line traffic to stop and allow passengers to board or deboard. In this way, nobody else on the system is hindered in their travel due to people getting on or off. The offline Stations can be free-standing or can become a part of a building, depending on the best fit with a business or municipal need. One example might be a station under a canopy attached at the back of a hotel or one of the stores in the Las Vegas North Outlet Mall. The following is an example of a free-standing station. A full video of station operations can be found at <https://vimeo.com/99893372>

Stations have multiple berths, with some for queuing on arrival, some for deboarding, and

some for boarding. These can be seen in the full video of station operations. The number of each kind of berth is driven by the station capacity in JPods per minute. The station capacity will be defined in the early portion of the project once initial demand at each location is known. Stations will also include signage tailored to that station that provides information on system operation, a map of locations, and up-to-date status. In addition, stations could have signage incorporating advertising for upcoming events or other promotions.





## JPods

There will likely be as many types of pods as there are types of vehicles on roads. The planned payload is 1200 pounds. The system provides the following versions of JPods:

**PASSENGER JPODS** are capable of carrying up to four people and their luggage. In addition, we think bicycles are 75% of the solution to personal mobility in a sustainable city, so with rare exception, JPods are equipped to accommodate someone's bike or scooters. The same mechanisms that secure bikes, secure wheelchairs.

**CARGO JPODS** stream palletized payloads to feed and supply a city.

**MEDICAL JPODS** are capable of carrying a gurney, EMS people, and their supplies. As the system expands, the benefits of routing a person directly from a station to a medical facility without any hindrance from traffic will become highly effective.

**SOCIAL AND SCENIC JPODS** add to the fun and tourism.

**PRIVATE JPODS** are the same as owning your car. It simply stores itself when you are not using it and meets you when you call it.

**DETACHABLE JPODS** move from the guideway to clamp to a chassis so they can travel off-guideway. You could even drive one into your own garage.



## Guideway

JPods are suspended from the guideway. Traveling on an overhead guideway removes the safety, security, and traffic risks of traveling on roads. The guideway also provides the structure for deploying the solar collection system that powers the network.

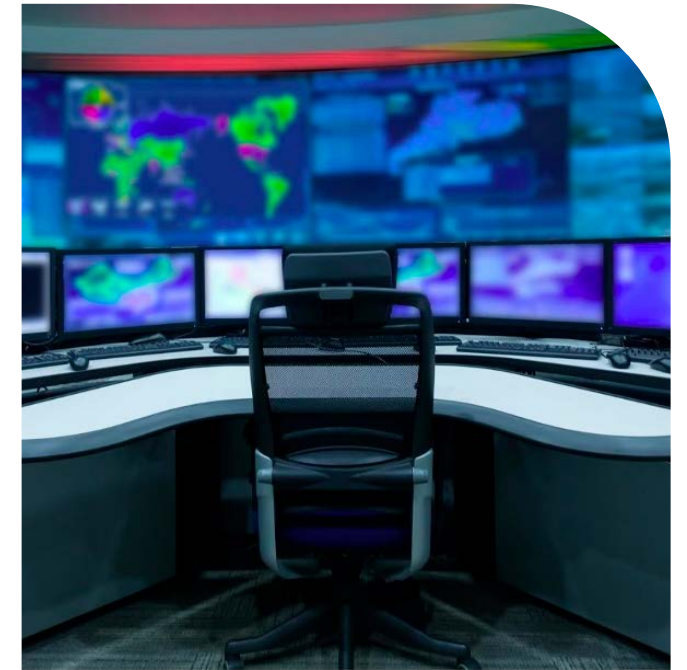
## System Monitoring Center (SMC)

The system includes a physically-secure location where fully-automated operations are monitored by staff. JPods vehicles are like bees in a hive. They are autonomous. They can complete their mission to deliver you where you want. If there is a communications failure or if there is a power failure, your JPod will still carry you to your destination.

The following is a notional view of how the SMC positions may be set up. The number of screens and System Monitoring Operators (SMO) will depend on what is needed to monitor the system. Two SMO positions are envisioned.

The System Monitoring Center provides the System Monitoring Operators with:

- A full view of all JPods in operation (their location, destination, occupancy, and status)
- Means to interact with passengers if needed (audio, change of destination, etc.)
- Video monitoring of all stations and JPods that have not commanded the cameras to be off
- Communications with any emergency services (i.e. police, fire, hospital)
- Ability to manage any system changes, e.g. bringing more JPods into service for spikes in demand
- Control over any recovery operations



## Maintenance Facility

The Maintenance Facility provides all the equipment necessary to train personnel, store supplies and chemicals, perform routine cleaning, and perform repairs and diagnostics on JPods, station equipment, and guideway.

The amount of maintenance expected for a fleet of JPods is far less than what is required for a common automobile, given the simple nature of the design. That said, there are routine tasks scheduled as lubrication and cleaning that will occur.

### RESCUE OPERATIONS AND REDUNDANT PATHS

In the unlikely event that a mechanical issue occurs that stops a JPod, we have built in redundant paths for travel and service personnel that can immediately assist in solving any issue.





# Why Choose JPods Solution

**GRADE-SEPARATION.** Having the guideways elevated with JPods preempts safety risks and simplifies the complexity of mixing existing traffic with digital self-driving vehicles.

**CLEAN ENERGY.** JPods guideways provide a mounting system for the solar collectors that gather 40,000 vehicle-miles of power per mile of guideway per day. Las Vegas mobility can be powered by Las Vegas sunshine.

**MOBILITY IS PERSONAL.** You are not forced to ride with others that are not in your party. The family-size packet of JPod vehicles provides the same on-demand service of the family car without the capital costs of owning a car or the land consumption of cars.

**CONTAGION SUPPRESSION.** COVID-19 spread rapidly through NYC with the queuing and transfers on subways amplifying the contagion as documented in an MIT study. A similar London Tube study documents how queuing and transfers amplifies flu contagion by 6 times normal. JPods have the ability to reduce wait times and queuing to on-demand entry. Additionally between rides, using UCV technology, JPods can be disinfected and quickly put back into the workflow. [\(link\)](#)

**ACCESS.** Family-size pods enable stations to be as small as your garage. Small, inexpensive stations allows there to be many more access points. In contrast, buses and trains require large stations, reducing the number of access points.

**FLEXIBILITY.** Analogous to the internet packet-switching data, JPods packet-switch people, cargo, garbage, etc.

**TIME AND ENERGY.** Traveling non-stop from origin to destination eliminates energy wasting repetitive start-stops that cars, trains, and buses create. This also reduces travel time by using JPods.

**PEDESTRIAN WAYS.** Where able, JPods will create below guideways bike and pedestrian ways for safer travel through the city.

**TOURISM.** People will come from around the world to experience JPods. They will save energy while riding and use that energy for more shopping, dining, and entertainment.

**COSTS.** JPods are 10X less expensive to operate than cars, 25X less than trains, and 50X less than buses [\(link\)](#).

**CAPITAL COSTS.** JPods typically cost about \$15 million per mile versus \$100 million per mile to \$1 billion per mile for light rail.

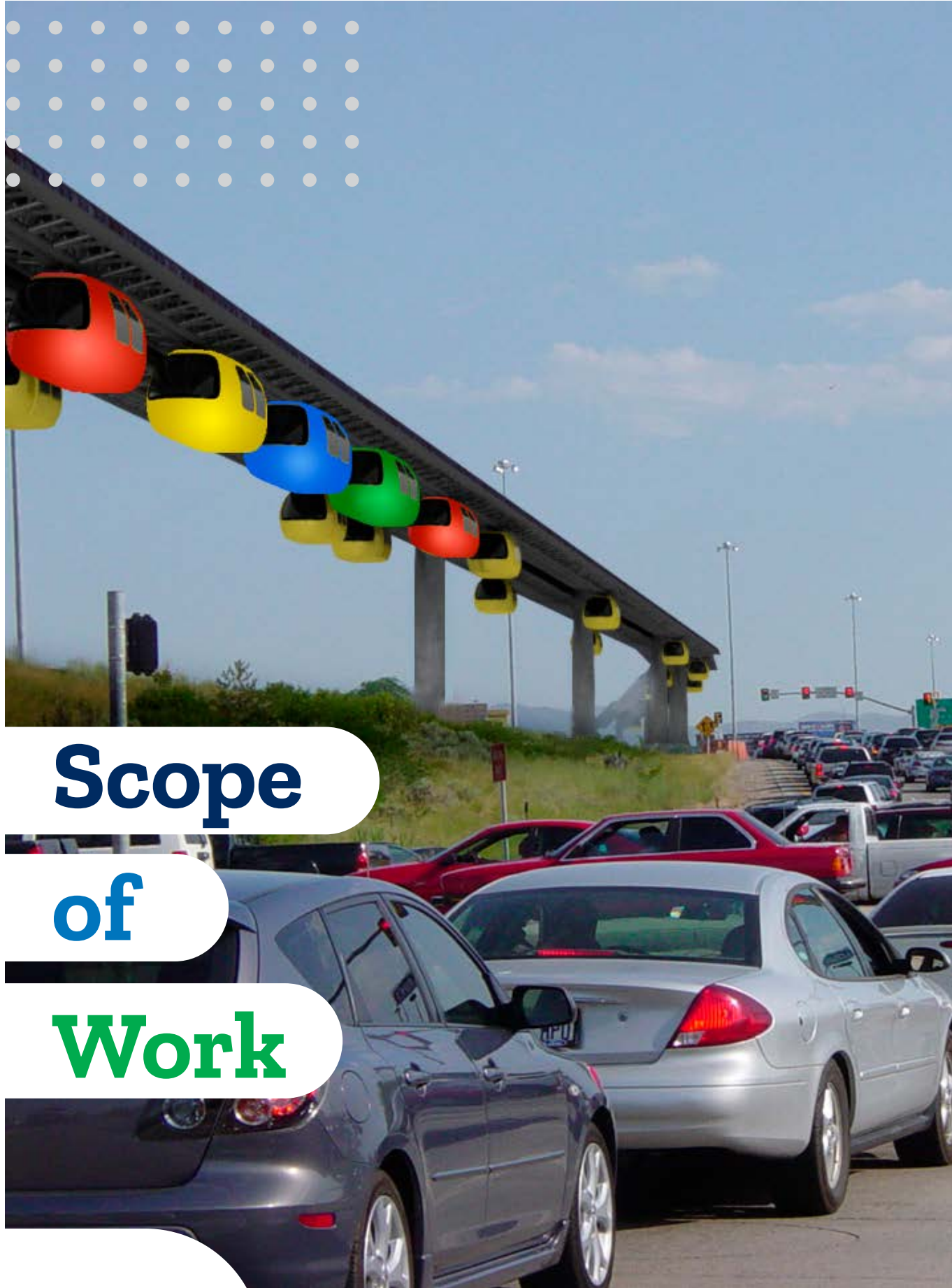
**LAND USE.** JPods only occupy half of a parking space for every 100 feet. For every automobile there are 6 parking spaces [\(link\)](#).

**SAFETY.** Using Clark County Building Standards, emphasizing the ASTM F24, provides a 10,000 times better safety record. Most of the world uses the ASTM F24. Products made in Las Vegas sighting that regulation can be exported.

## Scorecard of alternatives.

	More Personal Cars	More Rental Cars	More Ride Services	Monorail Extension	Hyper- loop	Gondola	JPods
Safety (Grade-Separated)	●	●	●	●	●	●	●
Energy Efficiency	●	●	●	●	●	●	●
Solar Powered	●	●	●	●	●	●	●
Privacy / Security	●	●	●	●	●	●	●
Contagion Suppression	●	●	●	●	●	●	●
Access (Frequent Stations)	●	●	●	●	●	●	●
Travel Time (Wait + Travel)	●	●	●	●	●	●	●
Congestion	●	●	●	●	●	●	●
Boarding Ease	●	●	●	●	●	●	●
Station Cost	●	●	●	●	●	●	●
System Cost	●	●	●	●	●	●	●
Land Use	●	●	●	●	●	●	●
Overall (Scale of 10)	5.0	5.0	4.2	3.3	3.3	6.3	10.0





# Four Stages

The execution of the program will have four phases: The Adoption of the 5X5 Standard by Las Vegas to secure private funding (MOU, Special Events Permit and Franchise Ordinance similar to cell towers), Finalizing the Route, Fabrication, and Deployment.



## 1 LOCALITY ADOPTION, APPROVAL, AND FUNDING

This includes the Letter of Intent to adopt the 5X5 Standard by Las Vegas, passage of a Franchise Ordinance similar to those used to grant Rights of Way to cell towers, communication to the investment community that there is an Opportunity Zone investment in Las Vegas, and raising the capital to build.

## 2 FINALIZING SYSTEM ROUTE AND FEATURES

This phase includes meetings with all stakeholders to finalize the route and station locations that establish Right of Way (ROW) details. Commitments to provide ROW will be in place, but may need legal actions to finalize. It will also finalize the number of people using the system at each station by time of day (demand) and include simulation of the operations to demonstrate the planned number of JPods meet the demand. It includes support for holding public meetings to socialize the planned project details.



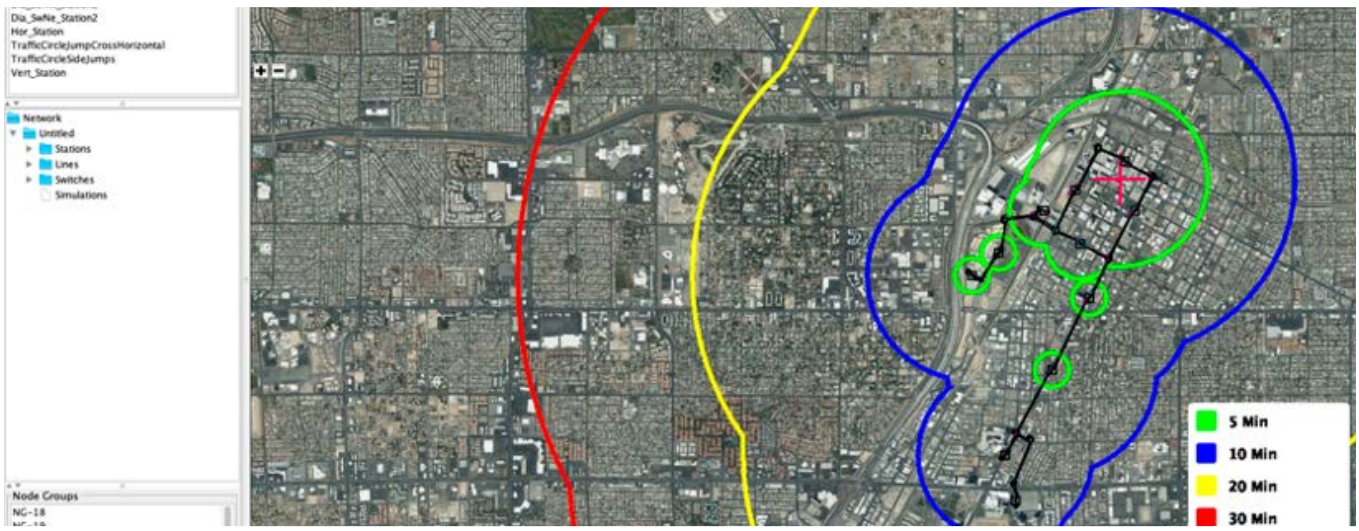
In preparation for this proposal, we have already created and simulated an operating system, as shown in the figures here.



Aerial View and System Access



Aerial View and System Access



Pedestrian System Access - showing walking time to access the system.

### 3 DESIGN REFINEMENTS AND FABRICATION

This phase includes refining the features of the system such as what the station layout will look like, the color scheme of the JPods, how many solar panels are needed and where, etc. Partnerships with other vendors for civil work, JPod fabrication, guideway fabrication, and solar panels will be initiated. All construction permits and associated civil engineering documents will be created in accordance with Clark County Building Codes. Fabrication of the initial portion of the system will occur, leading to testing of the initial portion of the system. A small System Monitoring Center and Maintenance Facility will be created.

### 4 DEPLOYMENT

The full system will be deployed using guideways and JPods fabricated off-site, manufactured in or shipped to Las Vegas, and assembled in place. The civil engineering for the guideway support poles will be done first (laser sighting, installation, settling of the soil, and re-sighting of every footing). With this work done, the installation of the guideway will go quickly; prefabricated support poles and guideway truss sections will be hoisted and bolted in place with minimal disruption to local traffic. Once the guideway is complete, the full fleet of JPods will be added and system acceptance testing will be performed. The System Monitoring Center and Maintenance Facility will be completed and the operational staff and maintenance staff will join the program. Support for public hearings will also be provided during this phase. A formal System Acceptance Test will conclude with the acceptance of the system for operation and public use.

## GZA of Wu-Tang Clan

“Cities are expanding at tremendous rates, meg-cities with more than 10 million inhabitants are the way of the future, an enormous amount of energy will be needed to fuel their transportation systems. JPods could both increase their connectivity within these mega-cities and even put energy back into the power grid.”

[RedBull Documentary: Transportation](#)







# Timeline

# Private Funding

Speed of Execution is critical for attracting capital to invest. Investors must understand the timeline to ROI. The exact timeline for completing the Symphony Park/Fremont/Sahara network is difficult to judge without knowing the complexities of existing underground utilities, but JPods would like to have it completed within 18-24 months. Once the footings are in place and materials staged, setup can be accomplished with minimum disruption to traffic.

## Costs and Funding Model

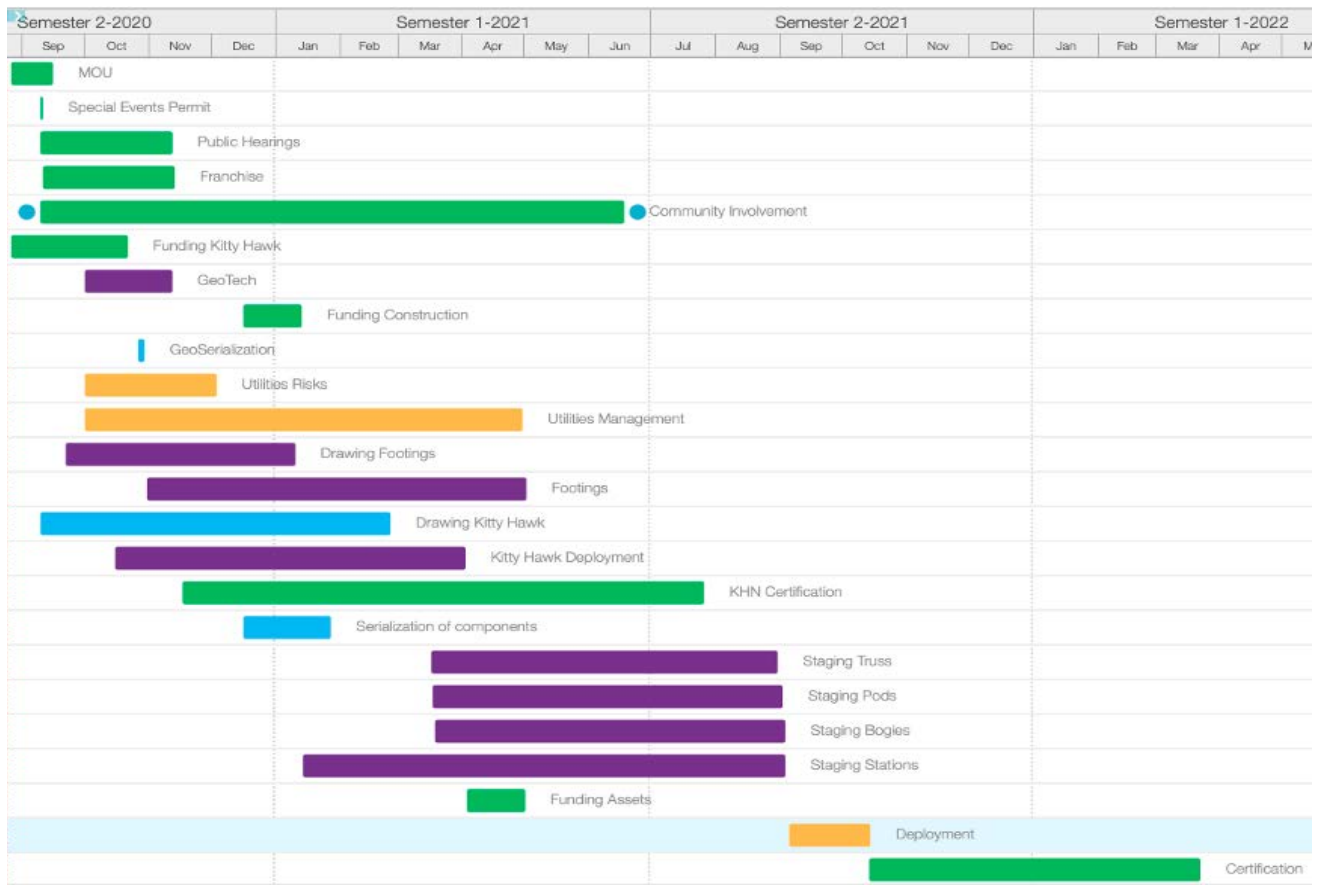
JPods funding of projects is very similar to that of funding the building of hotels. There are three basic steps:

- Define a project and the building codes required to be met. This is accomplished by the Nevada Mobility Company
- Build the network with construction funds. Opportunity Zone funds have expressed an interest in funding this phase.
- On certification, sell the network to an operating company to run. Goldman Sachs provided a Letter of Interest for funding this phase.

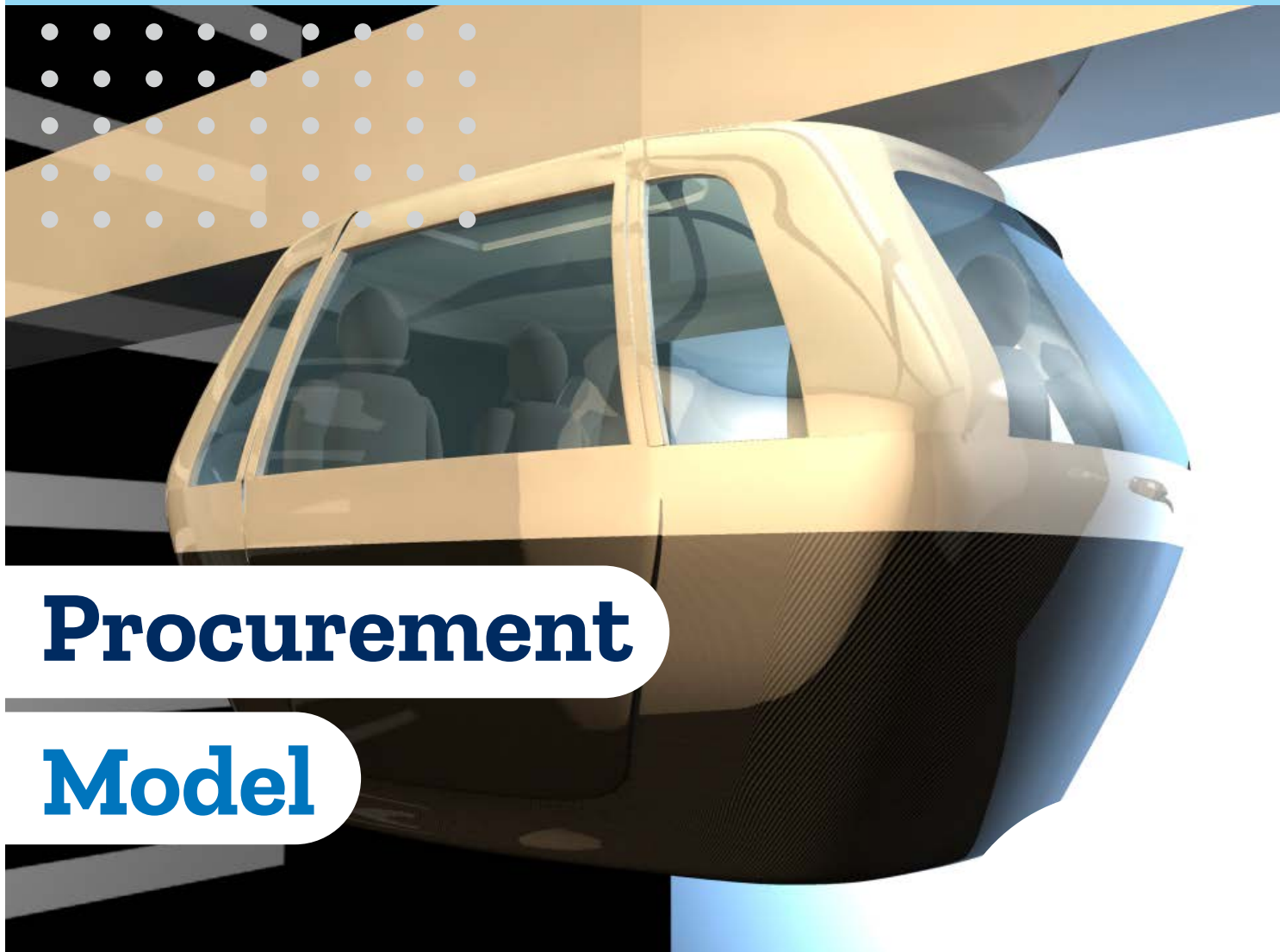
JPods has detailed costs for about \$15 million per mile to build based on components that are certified to 110 mph wind and California Earthquake Standards. These costs must be justified to our capital sources to fund projects. The key to funding projects is to define the cost of regulation. Tesla is operating in tunnels in Clark County and on roads, so similar regulations may be applied to JPods self-driving cars on grade-separated guideways.

Another key part of financing is the return of revenue to the local property owners and city. JPods networks pay 5% of gross transportation revenues to the aggregate Rights of Way holders.

Finally, there are no risks of Eminent Domain actions. JPods networks will be built on public rights of way or across private property with the consent of the property owner.







## Procurement

## Model

### JPods is investing in Las Vegas in the same way hotels and cell companies invest.

The proposal is not asking Las Vegas to make a procurement from JPods. As with cell companies, the JPods networks will pay a usage fee (5% of gross transportation revenues) to the aggregate Rights of Way holders.

Within the program execution and private to the Nevada Mobility Company, the company will utilize a combination of competitive and non-competitive contracts and partnerships that offer the best solution for the program execution.



## What is the ask of the city

**BY (date recommended) AUG 29, 2020**, sign a Letter of Intent with JPods for 4 Phases of non-exclusive use of Rights of Way to build solar-powered mobility networks.

**BY (date recommended) SEPT 19, 2020**, process a Temporary Events Permit for JPods to build a temporary network in a mutually agreed to location near Symphony Park.

**BY (date recommended) SEPT 19, 2020**, pass a Franchise Ordinance ([link](#)) granting a 30-year non-exclusive use of Rights of Way to build JPods solar-powered mobility networks on the following routes with the noted conditions

- Phase 1: Special Events Permit
- Phase 2: Connect between the Las Vegas North Outlets, Symphony Park, and the Fremont Experience
- Phase 3: Based on mutually agreed-to progress on Phase 1, extend the Phase 2 network to the Sahara Monorail down S. Las Vegas Blvd and along E. Sahara Ave.
- Phase 4: Based on mutually agreed-to progress on Phase 3, extend the non-exclusive use of Rights of Way to expand the networks to service Las Vegas as mutually agreed to.

- Document in the Franchise Ordinance that safety will be regulated by the Clark County Building Code and by ASTM F24 standards.

Document in the Franchise Ordinance that JPods and its associated company may build manufacturing plants, maintenance facilities, System Monitoring Center, a corporate headquarters, a Deployment Center, and other supporting facilities in appropriate Opportunity Zones.

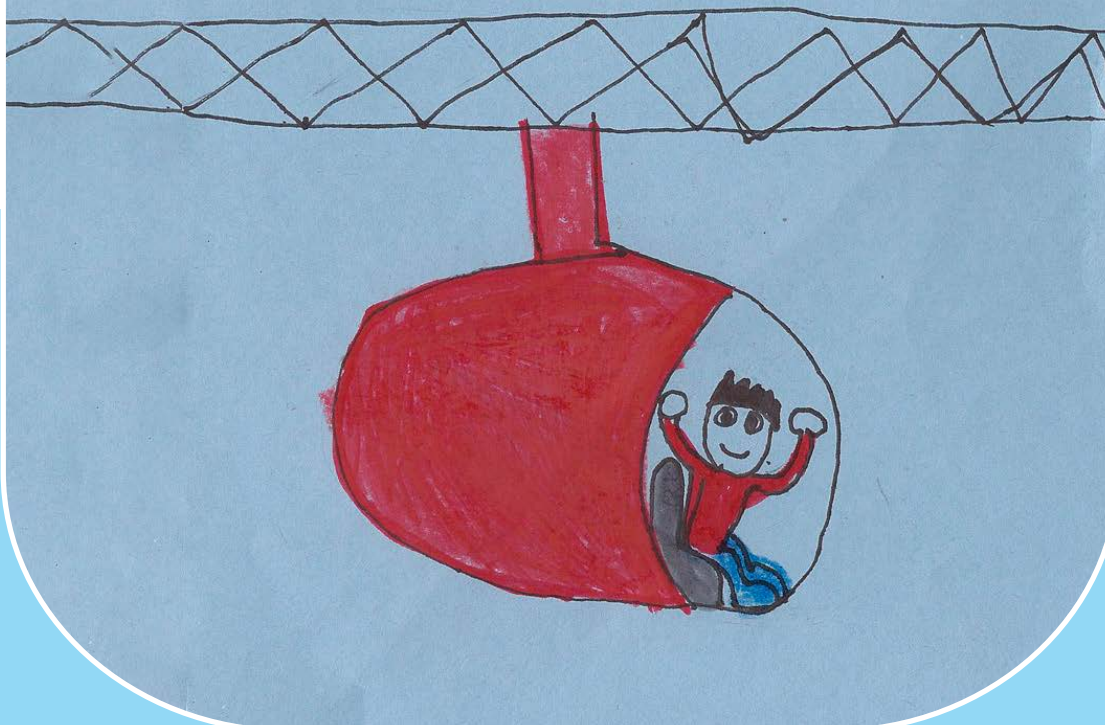
Identify locations for the following:

- The Maintenance Facility
- The System Monitoring Center
- Corporate Headquarters
- A Deployment Center: This is a facility where the Nevada Mobility Company will bring people to train them on how to define systems, manage site surveys, operate systems, etc. It is a campus of buildings that allow Las Vegas to export the system technology through local activities.

Are you ready for solar mobility?



Thank you!



**JPods**

**Nick Garzilli**

Co-Founder

[Nick.Garzilli@JPods.com](mailto:Nick.Garzilli@JPods.com)

310.729.6905

**John Mardirosian**

Co-Founder

[John.Mardirosian@JPods.com](mailto:John.Mardirosian@JPods.com)

978.846.1280

**Terra James**

Co-Founder

[Terra.James@JPods.com](mailto:Terra.James@JPods.com)

651.331.9902