PROPOSAL

Great Park Aerial Transit Travel Forecasting

January 2025

January 17, 2025

Sean Crumby, Assistant City Manager
City of Irvine
1 Civic Center Plaza
Irvine, California, 92606

RE: Great Park Aerial Transit Travel Forecasting

Dear Sean,

In response to your request and discussions of the proposed aerial transit system in the Great Park, HDR is providing the following proposal to assist the City of Irvine with travel forecasting services. As you have identified, the purpose of this effort is to develop a methodology for understanding the manner in which the aerial system will provide connectivity for visitors traveling to and within the Great Park. Our understanding of the project and scope of work are further outlined in Attachment A.

The work to be completed will be provided on a time and materials basis according to the rate structure provided as Attachment B. Invoicing for services will be submitted monthly and accompanied by a brief explanation of the work activities of team members, as well as a progress report as referenced in the scope of work.

If upon your review you have any questions, please feel free to reach out to me at (657) 436-3051 or Mark McLaren at (602) 793-8003. We look forward to working with you and your staff to begin this transformational project for the Great Park and the City of Irvine.

Sincerely,

HDR Engineering, Inc.

Anna Lantin, PE
Vice President

cc: Mark McLaren, Tom Kim, Dina Rochford

Attachments:

Attachment A: Approach and Scope of Work
Attachment B: Cost Proposal

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Attachment A: Approach and Scope of Work

APPROACH

As the City of Irvine explores the benefits of an aerial transit system to enhance mobility in the development and expansion of the Great Park, several key questions about how this transit service would operate and what ridership could be achieved have been raised by the City and its stakeholders. The best way to approach this type of project is to examine it from the demand side (demand associated with the proposed aerial tramway system serving people coming from outside the park and circulating inside the park), the supply side (supply of the service), and how the system connects with surrounding transportation infrastructure and services.

Demand Side

The Great Park is on track to bring a wide variety of unique cultural and recreational opportunities to Irvine, with the potential to be one of the largest municipal parks in the United States. Located on the site of the former Marine Corps Air Station El Toro, the Great Park's 1,300 acres are being developed for recreation, cultural activities, and to support access to the natural environment for people near and far. Over 500 acres of the park are built and operating, and in 2022, the City approved the Great Park Framework Plan to guide the next phase of development. A map of the proposed development is shown in **Figure 1**. Demand should be examined from two perspectives, spatially and temporally, and will be developed from a detailed market analysis with assumptions and methodology vetted and peer reviewed by the stakeholders.

Figure 1: Map of Proposed Great Park

Source: City of Irvine

Spatial Analysis

An important component of spatial analysis is understanding external flows into and out of the park. External flows would identify who would travel to the Great Park from which locations, by which mode, and other key characteristics such as party size, length of stay, and other characteristics that can add insight into internal park activities. Regional productions and attractions would also be identified. Identifying these markets from surrounding land uses is key to linking them to the activities occurring in the park. This information can be mined using local travel demand models, big data, and other available data sets.

Great Park demand is fed from external trips and land uses. Understanding how this demand can make use of the different land uses inside the park is key to understanding how travelers would circulate the park and utilize the proposed aerial tramway (also known as Whoosh® Transportation Technology).

Temporal Analysis

Most travel demand models work at a high temporal level, focusing on daily demand or time period (such as AM or PM peak periods). The analysis of demand should also try to isolate whether peak demand is on a weekday or weekend. These temporal breakdowns would look at trip flows regionally, usually for a forecast year that is either the opening year which could be 10 years out or another year that is 20 years out. We will need to identify local data on how each land use will produce and attract trips by weekday/weekend and by time of day. This will require input from the City and national research on land use types.

A project like this also needs demand information at a finer temporal resolution to understand operations, capacity, and vehicle/pod requirements. A simulations model will be utilized for this analysis, which will reflect transit demand and capacity and can help the City understand the link between regional demand feeding into the Great Park with internal circulation.

Supply Side

Swyft Cities is the sole licensee of Whoosh® Transportation Technology in North America, creating personalized, point-to-point transportation for passengers using smart electric vehicles on a light and flexible elevated cable and rail network. This would provide circulation internal to the Great Park, and linkages to locations outside of the Great Park. Whoosh® networks include small pull-off stations and larger hub stations that provide high throughput of vehicles and allow for a variety of destination options, which would provide point-to-point on-demand service coverage across the Great Park. Vehicles or pods can use the cable sections to span over geographic obstacles without interference to the area below. The vehicles can change elevation or turn after transitioning from cable to rail, creating countless route options throughout the Great Park.

To understand how this technology would be integrated into the larger regional transportation system in Irvine, we will need information on the background transportation system, the local transit system, parking lot locations, and roadway network/auto travel times from locations outside of the park to entry point locations. Understanding the current transit demand through counts and any recent passenger surveys will provide the foundation to build a regional model. This model will provide insight on how the regional transportation system will be used to access the Great Park at a higher temporal and spatial resolution based on the regional flows developed from the market analysis.

A simulations model would need information on the internal transit system, response times, station locations, travel times between stations, cost (if any), means of access to the station, and internal access at each station. Another important metric is understanding the pod carrying capacity and availability to service high demand times. This analysis will need to be done at a finer spatial resolution (each station) and a finer temporal resolution (peak use times, such as 15 minutes or hour of use).

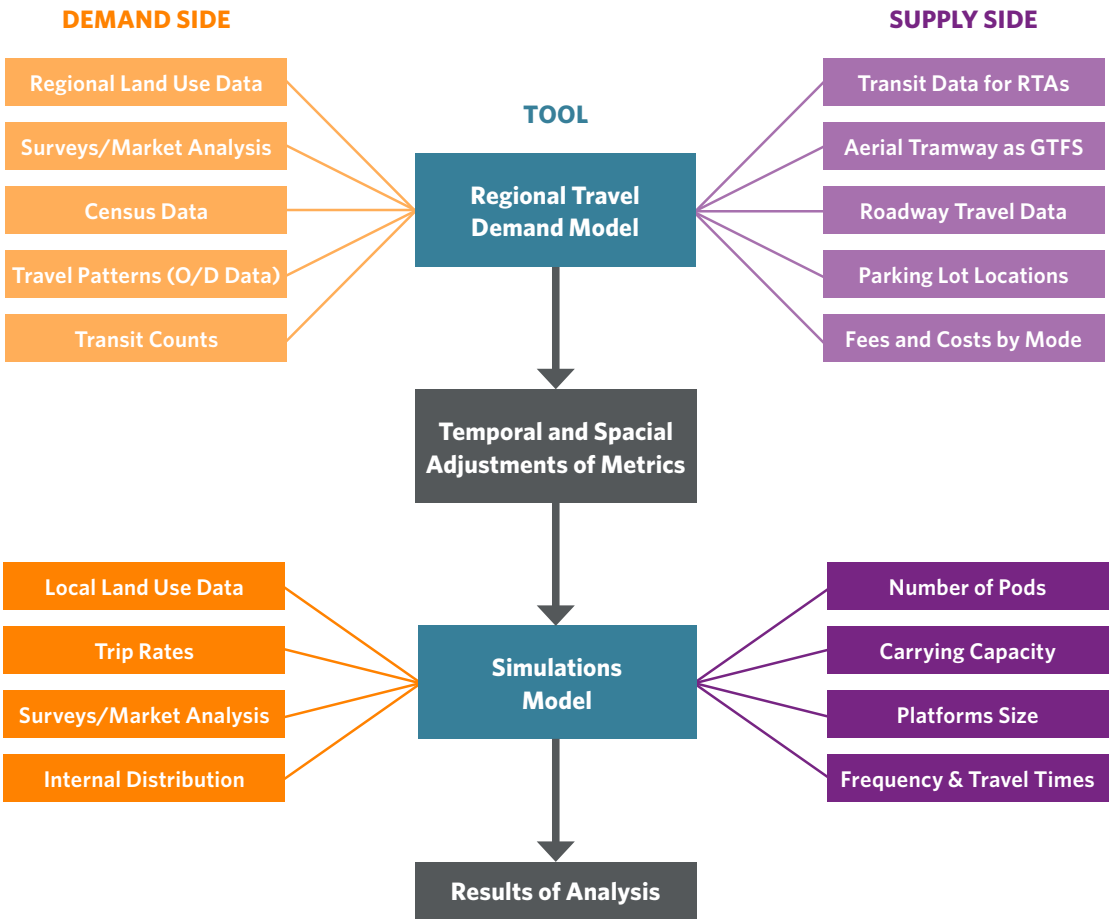
Methodology

The proposed methodology for understanding the supply and demand questions of Whoosh® Transportation Technology at Great Park requires a two-tiered analysis as shown in **Figure 2** on the following page.

To understand the regional supply and demand at an aggregate spatial and temporal level, HDR proposes using the City of Irvine's regional travel demand model, which is a more refined travel demand model from Orange County. This model is multi-modal and can be broken down by time of day and by trip purpose.

The simulations model, which could be developed with MatSim or VISUM, would use the demand and flows produced at the regional level from STOPS after being processed to develop the finer temporal and spatial resolution to understand the carrying capacity and operational characteristics of the service within the park. We will research available simulations tools to identify the best fit for this type of analysis and the metrics needed to help with the evaluation.

Figure 2: Proposed Ridership Analysis



SCOPE OF WORK

Based on this methodology, the City of Irvine has requested HDR's assistance in undertaking the analysis necessary to understand the forecasted ridership for the Whoosh® Transportation Technology system proposed within the Great Park, as well as the possibility of future connections to key destinations within the City. This will be an evolving process beginning with data collection and analysis, the identification and application of modeling tools for evaluating trips within, to, and from the park, and testing alternatives to assist the City in evaluating and planning the Whoosh network. This information is intended to not only provide insight into the use of Whoosh, but also for understanding the capacity needs of the system at specific station locations and peak demands associated with special events.

This process will commence with discussions of ongoing planning activities and data collection (including forecasts for park visitation, traffic and parking, and operational information specific to Whoosh). In addition, the team will engage with City staff to obtain information and technical assistance related to the ITAM model.

HDR will provide regular updates to City staff on progress of work, expenditures, and schedule at intervals requested by the City. Additionally, HDR will provide a Project Management Plan to the City, which will outline HDR points of contact, project staff, and an understanding of the communications protocol between the HDR team, City of Irvine, Swyft Cities, and the other consultants under contract to the City for work activities specific to the Great Park. The Project Management Plan will be submitted to the City within five business days of receiving Notice to Proceed.

Any estimations or forecasts prepared for the City of Irvine are for planning and programming purposes only, and are not intended to be used as investment grade analyses for securing and/or guaranteeing funding.

Attachment B: Cost Proposal

HDR proposes to initiate the work activities outlined in Attachment A on a time and materials in an amount not to exceed $50,000 without the prior written approval of the City of Irvine. Fees for services provided will be based on the following hourly billing rates:

CLASSIFICATION/TITLE	RATE (2025)
Project Manager	$440
Principal Travel Forecaster	$290
Senior Travel Forecaster	$260
Travel Forecaster	$205
Senior Transit Planner	$260
Transit Planner	$165
Senior Transit Engineer	$425
Senior Advisor	$465
Advisor	$415
Administrator	$150

EXPENSES

Any indirect expenses incurred will be invoiced to the City at cost with a 5% administration fee.

No travel, other than local mileage, will be invoiced without the prior approval of the City of Irvine.

PERIOD OF PERFORMANCE

The initial work effort as outlined in the Scope of Work will be accomplished within 90 days following Notice to Proceed.

Following the period of performance, HDR will be available for follow-up meetings as the budget permits.