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# Whoosh 3D/VR Experience of Great Park, City of Irvine

## Summary:

This project involves integrating the Whoosh Smart Transportation System into the 3D model of the Great Park. The primary objective is to deliver an immersive simulation that allows users to experience the Whoosh system both as passengers riding the vehicles and as pedestrians observing the system within the park environment. The final deliverables will include a fully interactive VR simulation compatible with Oculus Meta Quest 3 headsets, as well as a standard 3D fly-through version. The simulation will accurately depict vehicle movements, station interactions, and the system's integration into the existing park layout, providing a realistic and engaging experience for users.

## Project Details:

### 1. Model Supply

- The City of Irvine and its master planning team shall provide all essential 3D models of Great Park and non-Whoosh elements in a compatible file format.
- Consultant shall not be responsible for creating or modifying supplied models, except for the integration of the Whoosh system and relevant infrastructure.

### 2. 3D Environment Creation

- Consultant shall configure the scene settings to simulate a realistic and natural park atmosphere, including lighting, materials, and environmental effects to the effect possible to run the simulation.
- Consultant shall model and integrate the Whoosh system's stations, infrastructure, and relevant connections at predetermined locations based on determined specifications.

### 3. System Simulation

- Consultant shall develop an accurate simulation of Whoosh pod movements, ensuring:
  - Vehicles follow designated paths based on provided speed tables.
  - Movements align as closely as possible with real-world conditions and operational behavior.
  - Synchronization of stations, boarding processes, and travel between locations.
- If discrepancies arise between simulation and real-world expectations, Consultant shall make reasonable adjustments within technical feasibility limits.

#### 4. 3D and VR Experience

- Users shall have the ability to navigate the environment in multiple viewing modes, including:
  - **Sky Mode:** Aerial exploration of the entire park to inspect system integration.
  - **Interactive Mode (VR):** Pedestrian-level simulation to be compatible with VR headsets, including Oculus Meta Quest 3, ensuring:
    - Users can board and disembark Whoosh vehicles at designated stations.
    - Users can freely walk around the park and observe the system from different vantage points.
    - Proper interaction mechanics are in place for entering, exiting, and experiencing the ride.

#### Deliverables:

**1. VR-Enabled Experience:** A VR-compatible application enabling immersive interaction, supporting Oculus Meta Quest 3 headsets, able to fully run connected to a laptop.

- Features to include:
  - 3D Sky Mode: Using solely the laptop, users shall be able to free-fly aerial exploration of the park to observe system integration.
  - Interactive Mode (VR): Using the Oculus, there shall be a ground-level user experience, with the ability to:
    - Walk through the park environment.
    - Board and ride Whoosh vehicles between stations.
    - Disembark at designated stations.
  - Interactive mechanics for entering, exiting, and navigating the experience.
- Deliverable Format:
  - Windows 11 executable application and VR build compatible with Oculus Meta Quest 3; installation files and instructions for deployment.

**2. Hardware Package:** Consultant shall procure, configure, and deliver the following hardware components for operating and demonstrating the VR experience:

- Oculus Meta Quest 3 VR Headset
- 3D/VR Enabled Laptop with a dedicated graphics card (Windows 11)
- Associated Accessories

**3. User Guide and Training:** Instructions for launching and operating both the standard simulation and VR experience, including hardware/software requirements. Consultant shall provide training for up to (3) of the Client's staff to run the simulation on their own.

Schedule:

Week	Dates	Milestone
Week 1	March 22 – March 28	Model Acquisition, Environment Setup & Initial System Paths
Week 2	March 29 – April 4	Whoosh System Infrastructure Modeling
Week 3	April 5 – April 11	3D Fly-Through Version Simulation Development
Week 4	April 11 – April 12	Client Review: 3D Fly-Through Version
Week 4	April 12 – April 18	VR Experience Development
Week 5	April 19 – April 26	VR Refinement & Hardware Setup
Week 6	April 27 – May 2	Client Review of VR Version & Final Productions
Delivery Day	May 6, 2025	Final Delivery & Demonstration Day

Cost:

Cost Summary			
Role	Hours	Rate	Cost
Lead Digital Designer	140	\$180.00	\$25,200.00
Digital Designer	280	\$125.00	\$35,000.00
		Subtotal	\$60,200.00
Hardware			\$5,000.00
		Total	\$65,200.00

Payment Terms:

The total fee for services provided under this Agreement shall be payable in four installments as follows:

1. Initial Payment: Twenty-five percent (25%) of the total fee shall be due upon execution of this Agreement, prior to commencement of work. Work shall not begin until this payment is received.
2. 3D Fly-Through Acceptance Payment: Twenty-five percent (25%) of the total fee shall be due upon the Client’s written acceptance of the 3D fly-through simulation deliverable, as outlined in the Milestone Schedule. Acceptance shall be deemed complete if no written notice of deficiencies is provided within seven (7) business days of delivery.
3. VR Demonstration Payment: Twenty-five percent (25%) of the total fee shall be due upon delivery and demonstration of the VR-compatible version of the simulation, as specified in the Milestone Schedule. Acceptance of the VR version shall follow the same review period and criteria as above.
4. Final Delivery Payment: The remaining twenty-five percent (25%) shall be due following final delivery of all deliverables, including documentation and hardware, and after the Demonstration Day as set forth in the Milestone Schedule.



### **Consultant Disclaimers:**

The Consultant shall not be held liable for any health-related issues, injuries, or adverse physical reactions arising from the use of the 3D simulations, renderings, or VR experiences provided under this Agreement. The Client acknowledges that the use of VR technology, including but not limited to Oculus Meta Quest 3 headsets, may pose certain inherent risks such as motion sickness, dizziness, disorientation, eye strain, or other discomforts. It is the responsibility of the Client to inform users of these risks and ensure appropriate safety measures are in place during public or private demonstrations of the VR experience.

The Consultant expressly disclaims any responsibility for:

- User injuries, health conditions, or medical events resulting from the use of VR equipment or software.
- Improper use, misuse, or unsupervised use of the simulation and hardware.
- Compliance with any applicable health and safety regulations, which shall be the sole responsibility of the Client when deploying or exhibiting the simulation to end-users.

### **Changes and Additional Services:**

Any changes requested less than one (1) week before the final submittal that require additional modeling and/or substantial adjustments shall be considered additional services and billed on an hourly basis, with a minimum billing increment of one hour. The Consultant will make reasonable efforts to accommodate these changes within the requested timeline but cannot guarantee completion without prior written agreement. Changes or project redesigns requested after the agreed-upon submission date will be treated as a new scope of work, charged on an hourly basis. Terms, including scope, estimated costs, and timelines, must be mutually agreed upon in writing before work commences.

The City of Irvine acknowledges that additional services may result in increased costs and adjusted timelines. The Consultant reserves the right to adjust delivery schedules to accommodate the requested changes. Changes resulting from errors or omissions by the Consultant will be corrected promptly at no additional cost. Any unauthorized or verbal requests for changes will not be addressed until confirmed in writing by both parties.

The Consultant shall not be held responsible for delays or failure to perform resulting from causes beyond reasonable control, including but not limited to acts of God, supply chain delays, hardware failures, or delays in receiving required materials from the City.

### **Authorship, Reproduction, and Credit:**

The City of Irvine and its project affiliates are granted the right to reproduce, distribute, and use reproductions of the renderings and animations to promote the Whoosh Smart Transportation System. Renderings, animations, simulations and references to these shall bear the Consultant's signature and shall be used in all presentation materials unless otherwise requested in writing by the City of Irvine.

The Consultant shall be credited as the "author" of the simulations, renderings, and animations in any external publications or public-facing materials. This credit shall include the phrase, "Whoosh Simulation at Great Park Amphitheater © [Consultant Name]," or a similar designation in a prominent text caption.

The Consultant retains the right to use the simulations, renderings, and animations for marketing and promotional purposes once the project visuals are deemed “sufficiently public,” as defined in writing by the City of Irvine. Marketing materials shall not disclose sensitive or proprietary information unless expressly approved by the City of Irvine.

Consultant retains exclusive ownership of all simulations, renderings, and animations, including any derivative works, until full and final payment has been received. Upon receipt of full and final payment, the Consultant automatically grants the City of Irvine and its project affiliates a perpetual, non-exclusive, royalty-free license to use the renderings and animations for the purposes of promoting the Whoosh Smart Transportation System. This license does not transfer ownership of the underlying intellectual property or copyrights.

The Consultant retains artistic copyright over all visualization and creative elements specific to the Whoosh models. This reservation does not extend to copyrighted designs of Great Park or other parts of the City of Irvine, which remain the property of their respective authors or owners.

Any modifications to the simulations, renderings, and animations must be approved in writing by the Consultant to ensure the integrity of the original work is maintained. Unauthorized modifications shall void the Consultant’s obligations under this agreement.