

Staff Summary Report



Council Meeting Date: 8/14/008

Agenda Item Number: _____

SUBJECT: Request authorization for the Mayor to sign a Memorandum of Consent with Gyro 5 LLC (dba Segway of Scottsdale) to allow the operation of for-profit guided Segway tours within Rio Salado Parks.

DOCUMENT NAME: 20080814cdnr03 **RIO SALADO PARK (0706-32)**

SUPPORTING DOCS: Yes

COMMENTS: Council approval is required to allow for-profit activities within City Parks per TCC Chapter 23-56(g) (3). This Memorandum of Consent requires the tour operator to indemnify Tempe, to provide insurance protection established by Tempe Risk Management for this activity and collect \$1 per ticket for each tour sold in the Rio Salado Parks to benefit the Tempe Community Council.

PREPARED BY: Nancy Ryan, Rio Salado Project Manager, 350-8096

REVIEWED BY: Chris Salomone, Community Development Manager, 350-8294
Jeff Kulaga, Assistant City Manager, 350-8844

LEGAL REVIEW BY: Cynthia McCoy, Assistant City Attorney, 858-2187

FISCAL NOTE: No funding is required by the City.

RECOMMENDATION: Authorize the Mayor to execute the Memorandum of Consent with Gyro 5 LLC.

ADDITIONAL INFO: The Memorandum of Consent will require the operator to indemnify the city, to provide insurance, and follow the safety training identified in the proposal. As a community benefit the operator will collect \$1 per ticket for each tour sold in the Rio Salado Parks to benefit the Tempe Community Council. Segway tours will modify the daily times and routes to accommodate planned events in the parks.

Segway of Scottsdale proposes guided tours through Rio Salado parks around Tempe Town Lake. The company currently operates guided Segway tours at the Desert Ridge Marriott, with a confirmed excellent safety record. Tours would last about 1 to 1-1/2 hours with each participant receiving safety instructions for Segway operation and requiring a helmet to be worn. Tours will highlight the history of Tempe and Tempe Town Lake, native plants and animals, activities and events, art, historic structures and future development.

The City consulted with Tempe Convention and Visitors Bureau and the Downtown Tempe Community to respond to the proposal. The proposal for Segway tours is supported by the Rio Salado Advisory Commission and the Enhanced Services Commission. Gyro 5 LLC (dba Segway of Scottsdale) holds the dealership and exclusive territory for Scottsdale and Tempe.

MEMORANDUM OF CONSENT

THIS MEMORANDUM OF CONSENT is made this _____ day of _____, 2008 (the "Effective Date"), by the City of Tempe, a municipality ("City") with regard to the following facts:

A. Gyro 5 L.L.C., dba Segway of Scottsdale, an Arizona limited liability corporation ("Segway") desires to conduct guided segway tours ("Tours") within Rio Salado Park and other areas along Tempe Town Lake ("City Property").

B. Tours will be operated for profit and would otherwise violate Section 23-57(g) of the Tempe City Code.

C. City believes Segway's Tours will provide much-needed recreational activities along Tempe Town Lake, thereby increasing resident and visitor access to and enjoyment of the Lake.

D. City desires to approve the Tours.

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the City hereby authorizes Segway to conduct Tours within the City Property for profit, on strict compliance with and satisfaction of the following conditions:

1. Insurance. Prior to commencing Tours, Segway shall obtain all of the insurance required on Exhibit A hereto from a company or companies licensed to do business in the State of Arizona, and shall continue to maintain all such insurance in full force and effect so long as it conducts Tours on City Property. Segway shall provide the Rio Salado Manager with original certificates (or certified copies) of the aforementioned insurance policies, in form and with insurers acceptable to the City's Risk Manager (or designee).

Insurance limits shall be periodically reviewed by City's Risk Manager to ensure coverage based on market and risk requirements.

2. Indemnification. Segway shall provide the Rio Salado Manager with an executed indemnification agreement in substantially the form attached hereto as Exhibit B, with such changes, insertions and deletions as may be approved by the City Attorney or his designee.

3. Route. Segway shall coordinate its route with the Rio Salado Manager from time to time. Segway's use of City Property shall at all times be subject to any special events or other activities being conducted from time to time on City Property, and Segway shall not have any vested right to use City Property during any such events as a result of this Consent.

4. Safety. Segway will provide adequate numbers of appropriately trained and qualified employees under adequate supervision to conduct Tours. Segway shall ensure that it performs the Tours with reasonable care and in compliance with industry standards and applicable laws and regulations. Further, Segway shall undertake Tours with maximum safety precautions, consistent with industry best practices.

5. Licenses and Permits. Segway shall at its sole cost and expense, obtain any governmental license or permits required for the proper and lawful conduct of its business or other activity carried on, in or at the City Property and the City of Tempe.

6. Modifications; Additional Conditions. No waiver, modification, amendment, discharge or change of this Consent shall be valid unless the same is in writing. City reserves the right to impose such additional conditions as it deems necessary or appropriate for the protection of the public and City Property, or to revoke this consent at any time.

7. Community Benefit. To allow the City to assess the impact of the Tours and to evidence Segway's desire to provide a direct community benefit, Segway shall pay to the Tempe Community Council the sum of \$1.00 per tour, payable quarterly in arrears within 20 days after the end of each calendar quarter. Each payment shall be delivered to the Rio Salado Manager together with a reconciliation showing the number of Tours conducted during such quarter.

8. No Third Party Rights. This Consent is applicable only to Segway and the Tours described herein. Nothing in this Consent, express or implied, is intended to confer upon any other persons the right to use any City property for profit-making purposes.

9. No Partnership. Nothing in this Consent is intended to, and nothing contained in this Consent shall, create any partnership, joint venture or other arrangement between the City and Segway.

CITY OF TEMPE, a municipality of the State of Arizona

By: _____
Hugh L. Hallman, Mayor

ATTEST:

City Clerk

APPROVED AS TO FORM:

City Attorney

Exhibit "A"
Insurance Requirements

I. Minimum levels of insurance:

- A. Commercial General Liability: \$5,000,000 combined single limit per occurrence for bodily injury and property damage, including coverage for contractual liability (including defense expense coverage for additional insureds), personal injury, broad form property damage, products and completed operations.
- B. Liquor Liability: \$5,000,000 single limit (only if alcoholic beverages are sold available during Tours).
- C. Workers' Compensation and Employers' Liability: Workers' Compensation and Employers' Liability statutory limits as required by the State of Arizona.

II. Deductibles and Self-Insured Retentions. Any deductibles or self-insured retentions must be declared and approved by City. At City's option, either the insurer shall reduce or eliminate such deductibles or self-insured retentions as respects City, its officials, employees, and volunteers or Segway shall procure a bond guaranteeing payment of losses and related investigations, claims administration, and defense expenses.

III. Other Insurance Provisions. The policies or self insurance certifications are to contain, or be endorsed to contain, the following provisions:

- A. Commercial General Liability and Automobile Liability Coverage
 - 1. City, its officials, employees, and volunteers are to be covered as additional insureds as respects: liability arising out of activities performed by or on behalf of Segway including the insured's general supervision of Segway; products and completed operations of Segway; premises owned, occupied or used by Segway, or automobiles owned, leased, hired or borrowed by Segway. The coverage shall contain no special limitations on the scope of protection afforded to City, its officials, employees, or volunteers related to Segway's, its employees', agents', subcontractors', or sub-subcontractors' activities pursuant to this Agreement.
 - 2. Segway's insurance coverage shall be primary as respects City, its officials, employees, and volunteers. Any insurance or self-insurance maintained by City, its officials, employees, or volunteers shall be excess of Segway's insurance and shall not contribute to it.
 - 3. Any failure to comply with reporting provisions of the policies shall not affect coverage provided to City, its officials, employees, or volunteers.
 - 4. Coverage shall state that Segway's insurance shall apply separately to each insured against whom claim is made or suit is brought, except with respect to the limits of the insurer's liability.
- B. Workers' Compensation and Employers' Liability Coverage
 - 1. The insurer shall agree to waive all rights of subrogation against City, its officials, employees and volunteers for losses arising from the activities performed by Segway for City pursuant to this Agreement.
- C. All Coverages

1. Each insurance policy required by this Agreement shall be endorsed to state the coverage shall not be suspended, voided, and/or canceled by either party, reduced in coverage or in limits except after thirty (30) days prior written notice by certified mail, return receipt requested, has been given to City.

IV. Other Insurance Requirements: Segway shall:

- A. Provide certified copies of endorsements and policies if requested by City in lieu of or in addition to certificates of insurance.
- C. Replace certificates, policies, and endorsements for any such insurance as they expire.
- D. Maintain such insurance from the time services commence until services are completed.
- E. Place such insurance with insurers and agents licensed and authorized to do business in Arizona and having a "Best's" rating of no less than A-VII.
- F. Maintain such coverage continuously so long as Tours are conducted and without lapse, should any of the required insurance be provided under a claims-made form, to the extent that occurrences give rise to claims made after Segway ceases to conduct Tours under this Consent, such claims shall be covered by such claims-made policies. Such extension of coverage shall be evidenced by annual certificates of insurance.

V. Subcontractors and Sub-Subcontractors

Segway shall include all subcontractors and sub-subcontractors (if any) as insureds under its policies or shall furnish separate certificates and endorsements for each subcontractor and sub-subcontractor. All coverage for subcontractors and sub-subcontractors shall be subject to all of the requirements stated herein for Segway.

Exhibit "B"
Form of Indemnity

The undersigned ("Segway") shall defend, indemnify and hold harmless the City of Tempe, Arizona, its Council members, officers, agents, volunteers and employees (the "Indemnified Parties") from and against any and all actions, costs, claims, demands, liabilities, injuries to third parties, losses, expenses and/or damages, including attorney's fees, expenses incidental to the investigation and defense thereof, fines, penalties and proceedings, arising out of or resulting from Segway's activities on City Property, including the conduct of Tours, such indemnity to include, but not limited to, any damage, injury, or loss to persons or property or Segway's equipment. Segway shall further defend, indemnify and hold harmless the Indemnified Parties from and against any and all actions, costs, claims, losses, expenses and/or damages (i) for or arising out of any personal injuries to or the death of any of its employees or independent contractors, or (ii) for personal injuries or death of any other person arising out of the Segway Tours. Segway hereby agrees to waive any and all claims and any rights of recovery from the Indemnified Parties for any and all bodily injury or property damage claims to Segway, its agents, invitees or employees regardless of the cause of loss.

Segway shall promptly advise the City in writing of any claim or demand against it or City that is known to Segway or arising out of its activities on City Property, and shall attend to the investigation of, and defense of, such claim or demand at its sole cost and expense, including payment of attorney's fees, with the selection of said attorney subject to mutual approval of City and Segway.

IN WITNESS WHEREOF, the undersigned has executed this Indemnity as of the _____ day of _____, 200__.

Gyro 5 L.L.C.,
an Arizona Limited Liability Corporation

By: _____

Its: _____

Proposal for: City of Tempe



Segway Tour at Tempe Town Lake

Submitted by: Darcie Williams and Brian Lamacchia

June 19th, 2008



Proposed to:

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We appreciate the opportunity to present this proposal.

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Objective

Segway of Scottsdale would like to offer Segway tours at the Tempe Town Lake. The lakefront and surrounding areas offer a great place to ride the safe and environmentally friendly Segway personal transporter which will allow visitors, local residents, visiting dignitaries and anyone else the opportunity to see the city in a way that they never have! Segways will allow people to get to the furthest reaches of the area including the serene habitats that may seem too far away to ride a bicycle or to walk- without any effort at all. Segway of Scottsdale has been operating a Segway tour at the JW Marriott Desert Ridge Resort and Spa for nearly 2 years with tremendous success and a perfect safety record, with nearly 2000 visitors in 2007. With this experience, we feel we can bring something to the City of Tempe that will excite visitors and residents and garner major media attention highlighting that Tempe is the city of the future. This Segway Tour will also be a major component of our new dealership-Segway of Tempe, which should opening at Hayden Ferry Lakeside in the fall of 2008.

With this program, Segway of Scottsdale will provide:

- Segway Tours- an experience your visitors will never forget
- Flexibility- We can accommodate route changes as well as time/scheduling challenges with pre-planned events at the park with ease! We do almost every day!
- Something to bring residents and visitors to the Town Lake area, bringing revenue for other local businesses as well
- A way to show visiting dignitaries the city from a new perspective
- An attractive tourist experience that highlights a green-friendly mode of transportation that reduces congestion and pollution



In the news: A collaboration of high-end technology and tourism as a recipe for success is supported in an article on Arizona tourism as an economic growth enzyme for the state.

“My bets are on tourism continuing to be our greatest secret weapon in the war for attracting the knowledge worker in the future,” said Rachel Sacco, president of the Scottsdale Convention and Visitors Bureau.

“We’ve been very good at going for high-end tourism,” said Mary Jo Waits, associate director of the Morrison Institute for Public Policy. “So marrying the high-end tourism with the high-end knowledge worker is a win-win.”

What is a Segway Personal Transporter?

The Segway Personal Transporter (PT) is a revolutionary new way to move, and the technology behind it was invented by Dean Kamen, one of this century's greatest inventors. What Segway calls “personal transportation” is actually an amazing feeling of gliding through the air, almost as if on a magic carpet. By using a technology called “dynamic stabilization,” the Segway PT is able to remain balanced and intuitively move based on inputs from the “glider” or rider. Dynamic stabilization is possible because of the machine's gyroscopes, tilt sensors, and micro processors, which allow a glider to be balanced on a Segway without having to do a thing! When the vehicle leans forward, the motors spin both wheels forward to keep from tilting over. When the vehicle leans backward, the motors spin both wheels backward. When the rider leans the handlebar pole to the left or right, the motors spin one wheel faster than the other, or spin the wheels in opposite directions, so that the vehicle rotates. What makes the machine the most amazing is the way in which it becomes interactive after less than a few minutes of training. The ease at which people learn how to operate a Segway is almost as amazing as the technology itself. The Segway PT was made to be used in everyday life, and was designed to be comfortable in crowded spaces. Segways operate by using a wireless Bluetooth InfoKey, which allows the tour guide to regulate the speed of the Segway and helps in the advancement of rider skill levels by tour instructors. Running on batteries that can be charged from any power outlet, The Segway PT has a range of approximately 24 miles on a full charge, giving the equivalent of 450 miles-per-gallon. See Appendixes A and B for additional information about the Segway Personal Transporter from www.segway.com.

What are the Arizona laws regarding Segway Personal Transporters?

Under Arizona State law the Segway PT is defined as an “electric personal assistive mobility device” which is different than a moped, motorized skateboard or scooter. The same rights and laws that apply to pedestrians apply to a Segway PT rider; however, owners and operators should be familiar with the laws. Some stores and locations will have policies that vary on how they allow Segways within their locations. Segway of Scottsdale always encourages “glider”s to ask permission before entering any store or space. A summary of Arizona’s transportation laws regarding Segways can be found in Appendix C.

Services

Tours

Segway of Scottsdale would like to offer Segway tours to visitors at the Tempe Town Lake. A Segway tour is made up of one or two tour guides or leaders, and one or more tour participants. Tours can be composed of “glides” through shopping districts, museums, a zoo, parks, and just about anywhere there is room to roam on a Segway.

Segwayguidedtours.com boasts over 127 tours worldwide, in such cities as Paris, San Francisco, Austin, Washington DC, and Newport Beach. A basic component of the first Segway tour is training, as the initial training can greatly reduce risk of accident and injury with the new gliders. Most tours for first time gliders consist of 30 minutes of training, followed by a 30-45 minute tour that is relatively simple and in an environment with reduced obstacles and other pedestrians. As a glider becomes more skilled, they can advance to additional tours that are longer in length, more advanced in nature, and at a faster pace. The goal of Segway of Scottsdale is to create a structured training program that will quickly allow “gliders” to achieve skill levels safe enough to travel around the lakefront safely. Tours can be as simple as glides around the lake area, to the zoo, or to other local destinations, and Segway of Scottsdale would work closely with you to determine safe and interesting tour routes.



Pricing

Tours

Segway tours vary in pricing based on length of tour and other amenities. Typical pricing will be around \$50.00 per hour. Segway of Scottsdale will propose a pricing structure that is based on industry averages and offers gliders multi-use discounts.

Some example pricing is as follows:

Segway Orientation Training Training- Learn how to ride a Segway! 30 minute training session followed by a 20 minute Lake Discovery Tour- \$50.00 per person

The Tempe Town Lake Discovery Tour- Learn how to ride a Segway and discover all that the lake has to offer! (90 minutes) \$75.00 per person

Segway Nature Preserve Discovery Tour- Learn about local plant life, birds, and more while riding a Segway PT! (90 minutes)- \$75.00 per person

Strategy

Segway of Scottsdale will develop a structured training and use program that will be ideal for riders varying levels of Segway experience, and encourage users to advance to higher skill levels. This training and tour program will provide novice and experienced Segway riders a desirable destination when visiting the Phoenix area. Segway of Scottsdale will also create and introduce the “Segway Passport,” a log of completed training, tours, and rental time that can be used to gauge experience. This allows gliders to visit other Segway tours and rentals around the country to advance their skill level from where they last left off. This will be particularly beneficial in local resident marketing strategies, earning repeat visits from participants. Marketing will be done through various travel print publications such as Travelhost Magazine, Where Magazine, as well as through media outlets via Press Release. The launch of the tour will undoubtedly gain major media attention!

Implementation

The deployment of Segway tours and rentals at the Tempe Town Lake will consist mainly of developing several components of the program with the Rio Salado staff, City of Tempe staff, and park Rangers. Segway of Scottsdale will be able to launch a tour very quickly, by combining experienced staff and existing processes. Segway of Scottsdale staff is already providing group challenge courses and training riders, as well as tours at the JW Marriot Desert Ridge Resort and Spa. To date our tour has been 100% safe and we will continue to emphasize safety to maintain that record. Prior to the opening of the retail location, the Segways will be kept off-site, so there will not be a need for on-site storage facilities or utilities. On-site locations for training, tours and challenge courses can be identified with city staff, and coordination with event and meeting planners can begin immediately to identify

safe locations for group tours and challenge courses. Segway of Scottsdale will carry all appropriate insurance, in addition to abiding by all state and federal laws and regulations.

Training and Safety

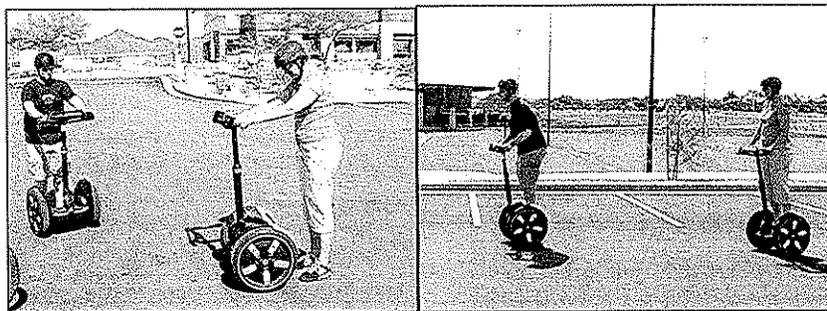
Formalized training methods and procedures already exist for Segway of Scottsdale, with documentation and demonstrations available upon request. Critical to the success of this program will be thorough training and demonstrated safety. All gliders will be required to wear helmets, and will have to meet rider requirements as specified by Segway, LLC. At no time will any glider be allowed to ride a Segway if Segway of Scottsdale staff is uncomfortable with a rider's skill level, or if the person appears to be intoxicated or under the influence of drugs.

Components

Segway Orientation- This training will familiarize a guest with the components and operation of the Segway PT, as well as teach the basics of riding a Segway, all within a controlled environment. Segway etiquette and safety are additional key topics of the orientation training. This training will normally start with 30-45 minutes of practice followed by a 30-45 minute tour.

Introduction Glider Training- This training will mainly comprise of tours and challenge courses. The best way to learn how to glide is by doing just that, which is what makes the learning experience of riding a Segway so much fun! This type of training will also demonstrate Seg etiquette, as well as advanced skills in gliding. Orientation training or demonstrated prior experience will be mandatory to participate in this training.

Advanced Glider Training – Gliders who love the joy of Segging will surely appreciate the Advanced Rider Training. This training will focus on gliding technique and teaching more advanced riding skills with more varied Tours. This advanced rider training is valuable for any glider wishing to rent a Segway, from a safety standpoint as well as for their improved enjoyment.



The Segway Passport

The Segway Passport will be a component of our tours that will allow gliders to demonstrate a proven level of skill each time they return to the city or if they visit other tours around the globe. This method of certifying a glider for advanced skill levels and renter status will be a unique way to ensure specific safety precautions are met at each level of skill. While the Segway Passport is a concept developed by Segway of Scottsdale for various other functions, it is important to point out its function in safety and training.

Marketing

One of the main benefits of the Segway is its growing popularity across an enormous range of ages and backgrounds of people. The Segway PT is a great marketing tool by itself and easily gets attention wherever it goes. Utilizing groups such as the Arizona Tour Guide Association, Segway Guided Tour website, and various other resources like DMC's, the Tempe Town Lake will definitely be known for its Segway tours and rentals. Television, radio and print media will be additional resources for marketing. The Segway community is very organized and community groups will be a great way to drive marketing-some Segway enthusiasts include music stars like Sean Combs and technology legends such as Steve Wozniak. Local venues for training and demonstrations by Segway of Scottsdale will drive visitors to the resort during off peak months. Additional marketing materials will be directed at membership and enthusiast groups such as SEG America, which annually sponsors SegFest, along with other sponsors such as Segway LLC. SegFest is quickly gaining popularity, alongside of Segway Polo. There are unlimited opportunities to target these exciting services offered by the City of Tempe.

Administration

All aspects of the tour and rental program will be the responsibility of Segway of Scottsdale staff. Our staff will abide by all rules and regulations set forth by the City in conducting business with visitors and visiting dignitaries. Segway of Scottsdale staff will be responsible for providing Segways for training, tours, meetings and events, and rentals, as well as transporting all machines to and from the property. Scheduling will be available 24/7 online or by contacting us directly at one of several numbers available.

Disclosures

Liability Waivers-Segway of Scottsdale will request users thoroughly understand and sign liability waivers prior to any participation in Segway usage. These documents are available in Appendices D, E, and F. We can also carry an additional waiver specifically covering the City of Tempe.

Special Pricing-Segway of Scottsdale believes customer satisfaction results from an excellent customer experience at all levels, including price. Certain conditions may require Segway of Scottsdale to re-evaluate pricing for the satisfaction of customers or to accommodate existing discounts or relationships and would be met on a case by case basis.

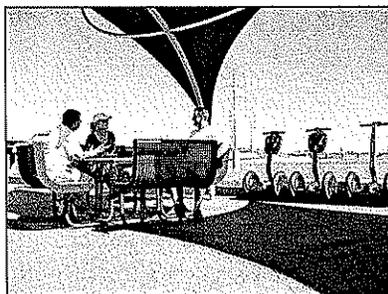
Exclusions- Segway of Scottsdale reserves the right to refuse service to anyone exhibiting any potential safety risk to the themselves and others, including impairments from injury, drugs or alcohol.

Why Segway of Scottsdale?

We have created an exciting package of services that will establish the Tempe Town Lake as a great destination offering Segway services. Segway of Scottsdale has identified a proven market that is excited for these services and can deliver them with efficiency, professionalism, and excellent customer service. Flexibility will also be a great asset for our partners, and we are prepared and experienced at routinely adapting to new new needs and special events! Our track record and experience as a top Segway dealer ensures our ability to effectively manage these services. We can quickly bring these services to the city and create a lasting partnership that will be successful and innovative for years to come. Our skill and knowledge with Segway is exemplified by our dealership status, and you can be confident that safety and enjoyment of all riders will be the number one priority. Our professionalism and dedication to customer satisfaction and a great customer experience will ensure that your visitors and residents will feel the legendary care and treatment that Segway of Scottsdale is known for. Our leadership team carries experience from business management, commercial telecommunications, and over 20 years combined experience in customer relationship management. Our commitment is always to the customer, and to our business partners. In addition, creating an environment that uses alternative methods of transportation and introduces this technology to the general population represents leadership that is necessary to make critical changes in world thinking as we progress forward in the 21st century. Segway of Tempe, our newest store, will be Tempe's source for the worlds coolest green-friendly, congestion reducing, parking space eliminating transportation machine! Lastly, our partnerships with local business, universities, and national membership organizations will benefit the Tempe Town Lake by becoming a popular destination for experienced Segway riders and enthusiasts.

Segway of Scottsdale will be:

- **Reliable**
- **Responsible**
- **Professional**
- **Customer-Focused**
- **Fun!**



Appendices

Appendix A

The Science Behind the Technology

When Dean Kamen unveiled the Segway® Human Transporter (HT) on ABC's Good Morning America, he described the machine as "the world's first self-balancing human transporter." When you look at the machine in motion, you get an idea of what he's talking about. Unlike a car, the Segway only has two wheels—it looks something like an ordinary hand truck—yet it manages to stay upright by itself.

To move forward or backward on the Segway HT, the rider just leans slightly forward or backward. To turn left or right, the rider simply turns the steering grip left or right.

HOW DYNAMIC STABILIZATION WORKS

The ability to balance on its own is the most amazing thing about the Segway HT, and it is the key to its operation. To understand how this system works, it helps to consider Kamen's model for the device—the human body.

If you stand up and lean forward, so that you are out of balance, you probably won't fall on your face. Your brain knows you are out of balance, because fluid in your inner ear shifts, so it triggers you to put your leg forward and stop the fall. If you keep leaning forward, your brain will keep putting your legs forward to keep you upright. Instead of falling, you walk forward, one step at a time.

The Segway HT does pretty much the same thing, except it has wheels instead of legs, a motor instead of muscles, a collection of microprocessors instead of a brain and a set of sophisticated tilt sensors instead of an inner-ear balancing system. Like your brain, the Segway knows when you are leaning forward. To maintain balance, it turns the wheels at just the right speed, so you move forward. Segway calls this behavior **dynamic stabilization** and has patented the unique process that allows the Segway HT to balance on just two wheels.

THE BRAINS AND THE BRAWN

At its most basic, the Segway HT is a combination of a series of sensors, a control system and a motor system. In this section, we'll look at each of these elements.

The primary sensor system is an assembly of gyroscopes. A basic gyroscope is a spinning wheel inside a stable frame. A spinning object resists changes to its axis of rotation, because an applied force moves along with the object itself. If you push on a point at the top of a spinning wheel, for example, that point moves around to the front of the wheel while it is still feeling the force you applied. As the point of force keeps moving, it ends up applying force on opposite ends of the wheel—the force balances itself out.

Because of its resistance to outside force, a gyroscope wheel will maintain its position in space (relative to the ground), even if you tilt it. But the gyroscope's frame will move freely in space. By measuring the position of the gyroscope's spinning wheel relative to

the frame, a precise sensor can tell the pitch of an object (how much it is tilting away from an upright position) as well as its pitch rate (how quickly it is tilting).

A conventional gyroscope would be cumbersome and difficult to maintain in this sort of vehicle, so the Segway HT gets the same effect with a different sort of mechanism. Segway HTs use a special solid-state angular rate sensor constructed using silicon. This sort of gyroscope determines an object's rotation using the Coriolis effect on a very small scale.

Simply put, the Coriolis effect is the apparent turning of an object moving in relation to another rotating object. For example, an airplane traveling in a straight line appears to turn because the Earth is rotating underneath it.

A typical solid-state silicon gyroscope consists of a tiny silicon plate mounted on a support frame. The silicon particles are moved by an electrostatic current applied across the plate. The particles move in a particular way, which causes the plate to vibrate in a predictable manner. But when the plate is rotated around its axis (that is, when the Segway HT rotates in that particular plane), the particles suddenly shift in relation to the plate. This alters the vibration, and the change is in proportion to the degree of rotation. The gyroscope system measures the change in vibration, and passes this information on to the computer. In this way, the computer can figure out when the Segway HT is rotating along particular axes.

The Segway HT has five gyroscopic sensors, though it only needs three to detect forward and backward pitch as well as leaning to the left or right (termed "roll"). The extra sensors add redundancy, to make the vehicle more reliable. All of the tilt information, as well as information from additional tilt sensors, is passed on to the brain of the vehicle. The brain is made up of two electronic controller circuit boards, comprising a cluster of microprocessors. The Segway HT has multiple onboard microprocessors, which boast, in total, about three times the power of a typical PC. The vehicle requires this much brain power because it needs to make extremely precise adjustments to keep from falling over. If one board breaks down, the other will take over all functions so that the system can notify the rider of a failure and shut down gracefully.

The microprocessors run an advanced piece of software that controls the vehicle. This program monitors all of the stability information coming from the gyroscopic sensors and adjusts the speed of several electric motors in response to this information. The electric motors, which are powered by a pair of rechargeable nickel metal hydride (NiMH) batteries, can turn each of the wheels independently at variable speeds.

When the vehicle leans forward, the motors spin both wheels forward to keep from tilting over. When the vehicle leans backward, the motors spin both wheels backward. When the rider operates the steering grip to turn left or right, the motors spin one wheel faster than the other, or spin the wheels in opposite directions, so that the vehicle rotates.

Appendix B

Feel the Freedom

Riding the Segway® HT feels like nothing you've ever experienced, because there's never been anything like it. Step on and your instinct will be to steady yourself, as you would on anything with two wheels. But almost immediately you'll realize that the Segway HT is balancing for you, almost like it has become an extension of you. Just lean forward a little and you'll see that the Segway HT isn't moving you on its own, it's moving in response to you and what you tell it to do.

Remember the dreams you had where you feel as if you could fly? You feel freedom, exhilaration, and confidence. You have the sensation of the ground moving beneath you, but you're not touching it. You are gliding above it. You get the sense of power and speed, yet you also feel a sense of absolute control. It all feels natural and instinctive. That's what riding a Segway HT feels like.

Here's what others who have ridden the Segway HT have said about its intuitive, gliding nature:

"My verdict is that the Segway HT is great fun to ride, is safe and stable, and is a truly impressive use of digital technology. It is easy to learn, and in many ways is just plain amazing."

- Walt Mossberg, *Wall Street Journal*

"Using a Segway is so intuitive that it feels as though the thing has somehow been plugged into your central nervous system."

-*Fortune Magazine*

"The Segway is incredibly stable, whether standing still or moving."

-Dan Bricklin

Co-creator of VisiCalc, the first electronic spreadsheet

Appendix C

Arizona Segway Legislation

Under Arizona State law the Segway HT is defined as an "Electric personal assistive mobility device" which is different than a moped, motorized skateboard or scooter. Basically the same rights and laws that apply to pedestrians apply to a Segway HT rider; however, owners and operators should be familiar with the laws. Below is a link to the State Legislature site as well as some highlighted sections that relate.

Local communities can pass regulations regarding electric personal assistive mobility devices but have to do so specifically for them to apply to the Segway HT. Segway of Phoenix is not aware of any local communities have restricted or regulated the Segway HT; however we recommend that you check with your local community.

The Segway HT is completely safe to use indoors. Private businesses do have the right to restrict your use of them on their property, so it is always good to ask for permission.

Arizona State Legislature Title 28 – Transportation

<http://www.azleg.state.az.us/ArizonaRevisedStatutes.asp?Title=28>

28-101. Definitions

20. "Electric personal assistive mobility device" means a self-balancing two nontandem wheeled device with an electric propulsion system that limits the maximum speed of the device to fifteen miles per hour or less and that is designed to transport only one person.

<http://www.azleg.state.az.us/ars/28/00101.htm>

28-904. Driving on sidewalk

A. A person shall not drive a vehicle on a sidewalk area except on a permanent or duly authorized temporary driveway.

B. This section does not apply to a motorized wheelchair, electric personal assistive mobility device, authorized emergency vehicle; security vehicle owned by this state or small service vehicle owned by this state or a political subdivision of this state.

<http://www.azleg.state.az.us/FormatDocument.asp?inDoc=/ars/28/00904.htm&Title=28&DocType=ARS>

28-908. Persons in wheelchairs or on electric personal assistive mobility devices

A person operating a wheelchair or motorized wheelchair or an electric personal assistive mobility device has all of the rights and duties that are contained in this chapter and chapters 4 and 5 of this title and that are applicable to pedestrians except provisions that by their nature can have no application.

<http://www.azleg.state.az.us/ars/28/00908.htm>

28-791. Pedestrians subject to traffic rules

A. Pedestrians are subject to traffic control signals at intersections as provided in section 28-645 unless required by local ordinance to comply strictly with the signals. At all places other than intersections, pedestrians are accorded the privileges and are subject to the restrictions stated in this article.

B. A local authority may require by ordinance that pedestrians strictly comply with the directions of an official traffic control signal and may prohibit by ordinance pedestrians from crossing a roadway in a business district or crossing a designated highway except in a crosswalk.

<http://www.azleg.state.az.us/ars/28/00791.htm>

28-793. Crossing at other than crosswalk

A. A pedestrian crossing a roadway at any point other than within a marked crosswalk or within an unmarked crosswalk at an intersection shall yield the right-of-way to all vehicles on the roadway.

B. A pedestrian crossing a roadway at a point where a pedestrian tunnel or overhead pedestrian crossing has been provided shall yield the right-of-way to all vehicles on the roadway.

C. Between adjacent intersections at which traffic control signals are in operation, pedestrians shall not cross at any place except in a marked crosswalk.

<http://www.azleg.state.az.us/ars/28/00793.htm>

28-911. Electric personal assistive mobility devices

A person who is under sixteen years of age shall not operate an electric personal assistive mobility device.

<http://www.azleg.state.az.us/ars/28/00911.htm>

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Appendix D

TOUR PARTICIPATION RELEASE AND INDEMNITY AGREEMENT

This is a release and indemnity agreement. By signing this document, you are relinquishing your rights to raise a claim against Gyro 5, LLC and any of its tour operators (collectively, the "Company"). **YOU ARE ASSUMING ALL LIABILITY FOR ANY INJURY OR DAMAGE THAT YOU MAY INCUR OR CAUSE BY PARTICIPATING IN THIS TOUR.**

PLEASE READ THIS DOCUMENT CAREFULLY BEFORE SIGNING IT.

Participation in the tour involves several risks. The tour may require strenuous physical activity compelling you to exert yourself for a sustained period of time.

1. I acknowledge that my participation in the Segway Tour entails known and unanticipated risks which could result in physical or emotional injury, paralysis, death, or damage to myself, to property, or to third parties. I understand that such risks simply cannot be eliminated without jeopardizing the essential qualities of the activity. Furthermore, the tour operators/facilitators have difficult jobs to perform. They seek safety, but they are not infallible. They might be unaware of a participant's fitness or abilities. They might misjudge the weather, the elements, or the terrain. They may give inadequate warnings or instructions, and the equipment being used might malfunction.
2. **I expressly agree and promise to accept and assume all of the risks existing in this activity. My participation in this activity is purely voluntary, and I elect to participate in spite of the risks.**
3. I, for myself and for my heirs, successors and assigns, voluntarily release, forever discharge, and agree to indemnify and hold harmless the Company, its subsidiaries, affiliates, officers, directors, shareholders, agents and employees from any and all claims, demands, or causes of action, which are in any way connected with my participation in this tour and any equipment or facilities associated with the tour, including any such claims which allege negligent acts or omissions of the Company.
4. I, for myself and for my heirs, successors and assigns, agree to indemnify and defend the Company, its subsidiaries, affiliates, officers, directors, shareholders, agents and employees from any and all suits, actions, costs, demands, claims, damages, losses and liabilities of any type and kind arising out of, or for any reason or cause, any property damage or injury, death whatsoever, occurring from, connected with, originating from or caused by my participation in the Tour or use of the Segway Device.

5. Should the company or anyone acting on their behalf, be required to incur attorney's fees and costs to enforce this agreement, I agree to indemnify and hold them harmless for all such fees and costs.
6. I acknowledge that the Company staff will train me on the use and proper operation of the Segway Human Transportation Device. **I further agree to wear the provided safety helmet at all times during the operation of the device and that I will not allow the device to be operated by any individual/individuals that have not been trained by the Company on the use and proper operation of the Segway Device.** I understand that the Segway Device is intended for use on the sidewalks only, and agree to follow all local/state/federal laws regarding the device's use, and to use caution when approaching pedestrians.
7. I certify that I have adequate insurance to cover any injury or damage I may cause or suffer while participating, or else I agree to bear the costs of such injury or damage myself. **I further certify that I am of sound mind, without legal or illegal substance, that may impair my coordination or judgment, nor do I have any medical or physical conditions, which could interfere with my safety in this activity, or else I am willing to assume – and bear costs of - all risks that may be created, directly or indirectly, by any such condition or indemnify the company of any claims pursuant to my physical health.**
8. By signing this document, I acknowledge that if anyone is hurt or property is damaged during my participation in this activity, I may be found by a court of law to have waived my right to maintain a lawsuit against the Company on the basis of any claim from which I have released them herein. **I further agree that I am liable for any repair costs associated with any damage which may occur during my use of the Company's equipment. If any damage occurs, under any circumstances, I authorize the Company to process all charges to my credit card and accept all responsibility for restoration of the equipment.**
9. I hereby give the company personnel to use my photo/video for promotional purposes as they seem fit. **I understand that I will not be compensated for allowing the company to use my likeness.**

INITIAL _____

I am aware of the risk involved in participating in this activity, and I hereby agree to all of the above terms.

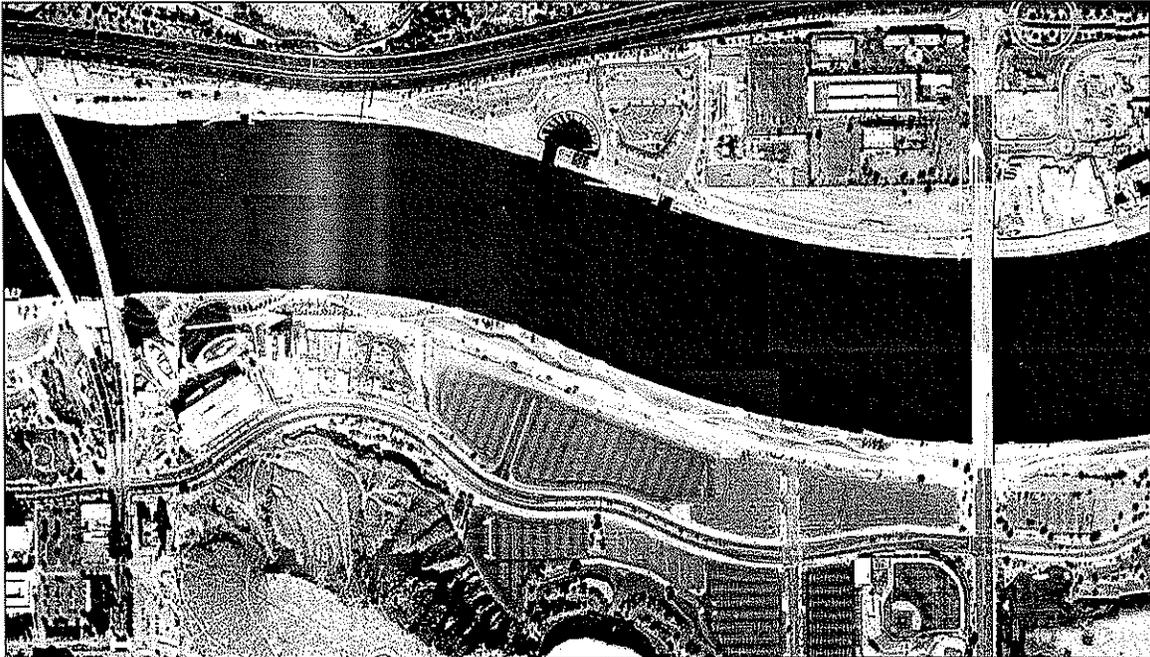
Name: _____
 Date: _____
 Signature: _____

Appendix E

Tempe Town Lake – Segway Tour Map

Aerial View of Starting Point- Hayden Ferry Lakeside

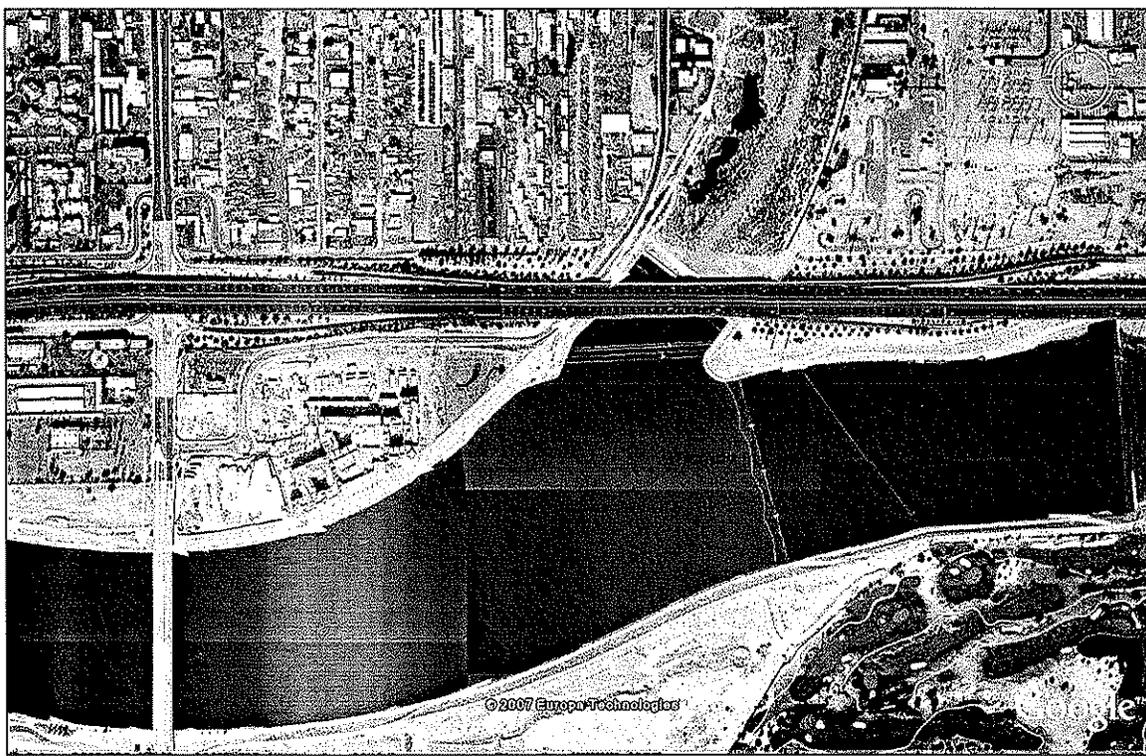
The Segway Tour will start with 30 minutes of training, just outside of our retail store at Hayden Ferry Lakeside. Once all riders are safe and comfortable we head out to the main sidewalk and head east towards Rural Avenue. The this portion of the tour will follow all concrete sidewalks along the south end of the lake with brief stops for pictures along the way. Once at the end of the south lakeside path, the tour will head north over the lake using the pedestrian path on the west side of the Rural Road bridge. This path has been observed for hazards and is safe for Segway travel. Once over the bridge, the tour will take the west side ramp down to the lake path, heading east towards the Indian Bend Wash Restoration area.



Tempe Town Lake – Tour Map cont'd

Aerial View of North Lakeside Tour Path to Indian Bend Wash Habitat

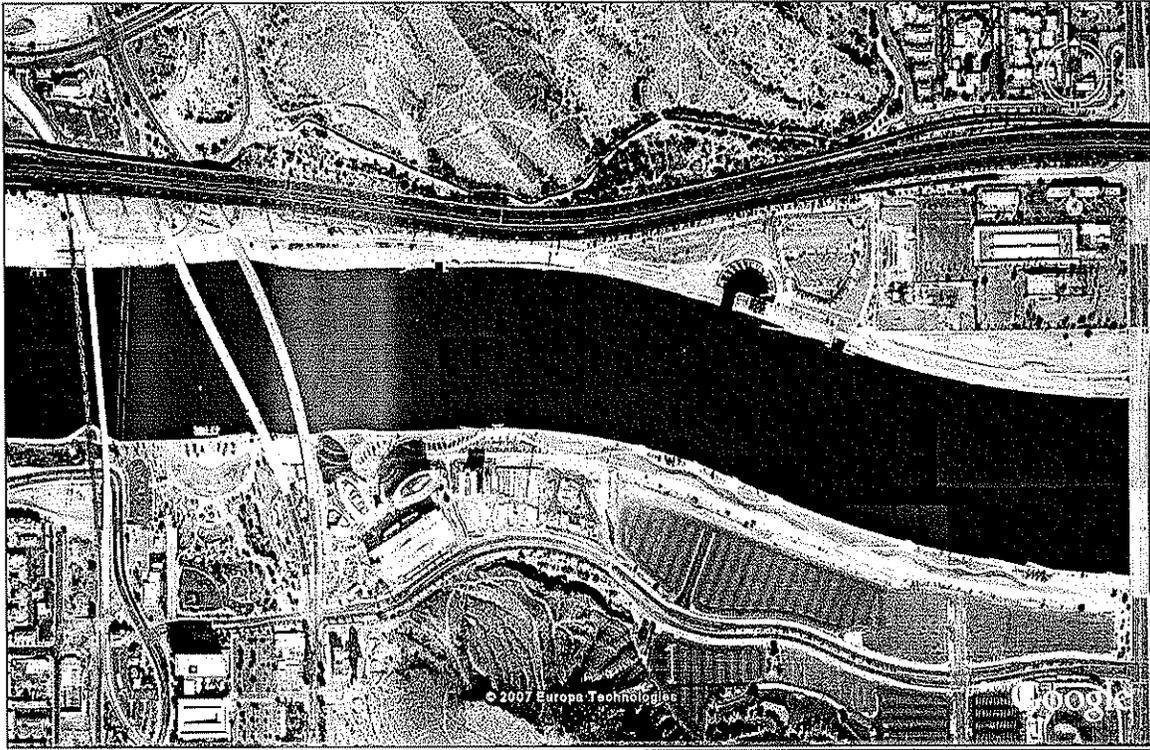
Once across the Rural Road bridge, the tour will rejoin the sidewalk path heading east along the new residential construction area proceeding to the Indian Bend Wash Overlook Ramada for a brief educational overview and rest period. The tour will head back west from the IBW area following the dirt path along the lake front for a chance at spotting the Heron's that are sometimes perched along the lakeside. The tour will proceed west under the bridge, heading towards the marina.



Tempe Town Lake – Tour Map cont'd

Aerial View of North Lakeside Past Marina and Beachfront

The tour will head west through the marina, up the winding ramp, past the beach park and under both bridges. Several stops are anticipated to allow riders to take pictures of Hayden Ferry Lakeside, Sun Devil stadium, and some of the beautiful tile artwork that is along the way. We will proceed past the boat launch to the rest rooms for a brief rest.

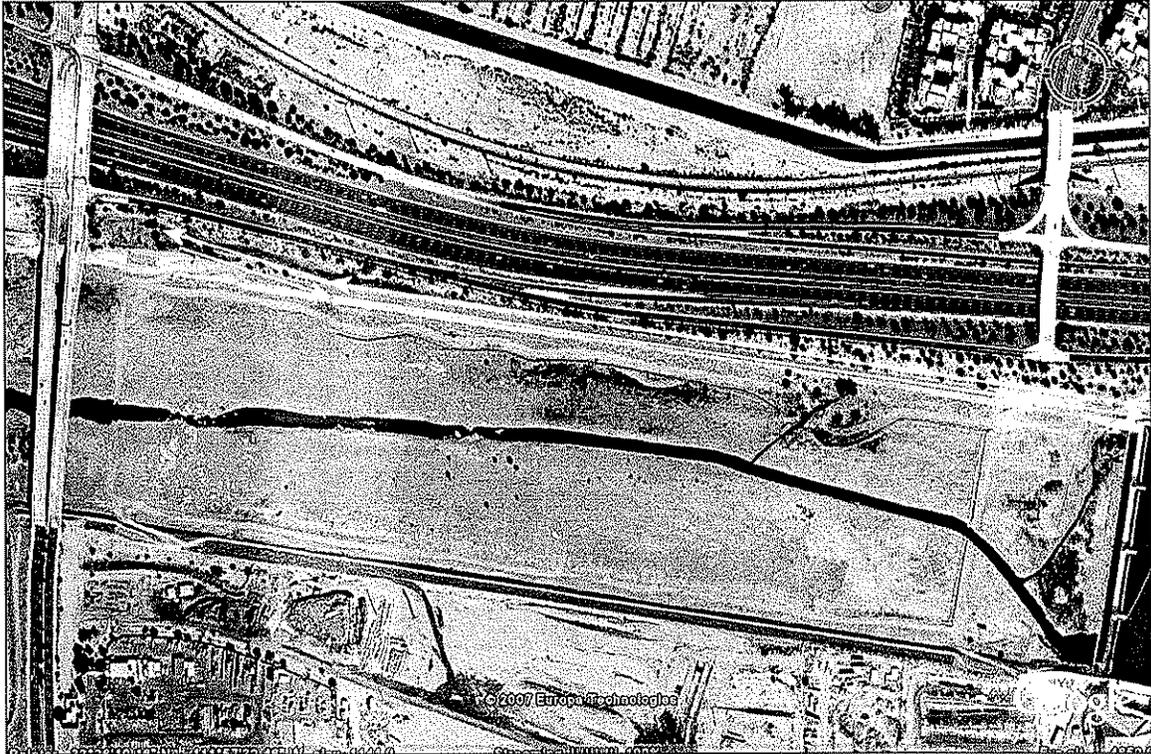


Tempe Town Lake – Tour Map cont'd

Aerial View of North Lakeside Path Extending to the Tree Sculpture

We will head west along on the north lakeside path past the dam and travel all the way to the end of the path where the tree sculpture stands

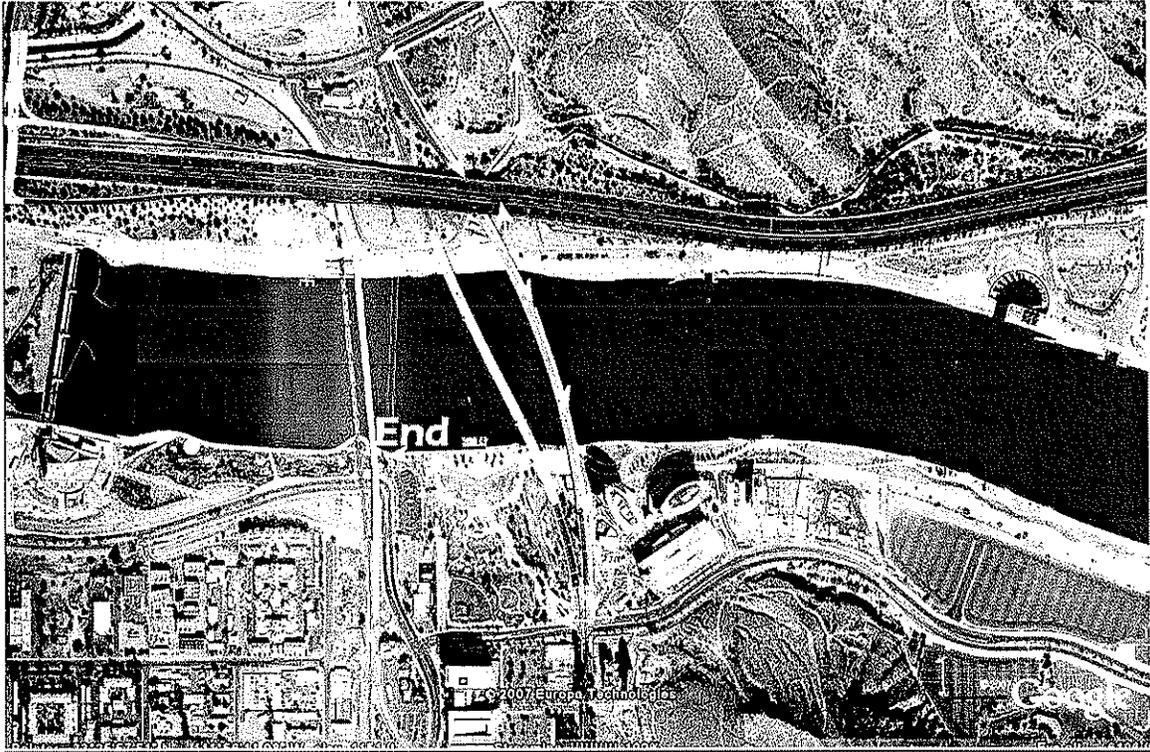
next to the lake bed. This will be a great place to take pictures and for tour participants to view the new Performing Arts center and the city from afar.



Tempe Town Lake – Tour Map cont'd

Aerial View of Mill Ave Bridge-Tour Ending

Tour riders will end the Segway tour returning over the mill avenue bridge to the east with views overlooking the lake and Hayden Ferry- home to Segway of Tempe in 2008!



Tour ending may return to Hayden Ferry, Beach Park Parking Lots, or The Arts Center-
depending on activities within the area.