

EL PASO & SOUTHWESTERN  
GREENWAY  
MASTER PLAN  
APPENDICES

## **APPENDICES**

- A. Open House Report
- B. City of South Tucson Cafecito Report
- C. Traffic Report
- D. Structure Concept Memo
- E. The Bridges Agreement Memo
- F. Phased Statement of Probable Cost
- G. Development White Paper
- H. Funding White Paper
- I. Geotechnical Report

# OPEN HOUSE REPORT



# El Paso & Southwestern Greenway Master Plan Open Houses



## **Davis Bilingual Elementary School**

Thursday, Jan. 20, 2011

5:30 to 7 p.m.

## **Quincie Douglas Library**

Tuesday, Jan. 25, 2011

5:30 to 7 p.m.

## **Santa Rosa Neighborhood Center**

Thursday, Jan. 27, 2011

5:30 to 7 p.m.



## EL PASO & SOUTHWESTERN GREENWAY PROJECT

### January 2011 – Open Houses Meeting Summary

#### Dates, Locations and Time

- Thursday, Jan. 20, 2011  
Davis Bilingual Elementary Magnet School  
500 W. St. Mary's Road  
Tucson, AZ 85701
  
- Tuesday, Jan. 25, 2011  
Quincie Douglas Library  
1585 E. 36th St.  
Tucson, AZ 85713
  
- Thursday, Jan. 27, 2011  
Santa Rosa Neighborhood Center  
1080 S. 10th Ave.  
Tucson, AZ 85701
  
- All meetings were held from 5:30 to 7 p.m.
  - Welcome and introductions began at 6 p.m.

#### Public Notification

- Jan. 3, 2011
  - Government official notification e-mailed
- Jan. 5, 2011
  - Postcard invitation announcing open houses mailed to approximately 11,100 residents and businesses within a two-mile radius of the project area
- Jan. 5 to 20, 2011
  - 15-second radio advertisements announcing Jan. 20, 25 and 27 open houses
  - Invitation posted to the project website
- Jan. 5 to 27, 2011
  - 10-second radio advertisements announcing Jan. 20, 25 and 27 open houses
- Jan. 6, 2011
  - Newspaper advertisement in *The Tucson Weekly* periodical
  - News release sent to local media
- Jan. 7, 2011
  - Newspaper advertisement in *La Estrella* periodical



- Jan. 20 to 25, 2011
  - 15-second radio advertisements announcing Jan. 25 and 27 open houses
- Jan. 26 to 27, 2011
  - 15-second radio advertisements announcing Jan. 27 open house

### **Meeting Purpose and Format**

The purpose of the open houses was to present the Draft Master Plan for the El Paso & Southwestern Greenway and to gather comments during the planning process. The meetings started in an open house format, followed by a brief presentation. Tom Thivener, Project Manager, City of Tucson Department of Transportation, opened up each presentation by welcoming attendees to the meeting and recognizing government officials in attendance. Sandy Bolduc, Project Manager, Kimley-Horn, followed by introducing the project team and providing an overview of the project. Rebeca Field, Kimley-Horn, Lead Designer, asked attendees to move to the large project map located in the center of the room for the interactive portion of the meetings. She guided attendees from north to south, through the proposed El Paso & Southwestern Greenway alignment, as shown on the map. Attendees were encouraged to write comments or requests on the project map to be documented in the Master Plan. Subsequent to being guided through the alignment, attendees were invited to visit information stations to view displays and individually ask project-related questions to team members. The stations were set up as follows:

- Station 1 – Alignment Map
- Station 2 – Destination Chart
- Station 3 – Neighborhood Display Boards
  - Barrio Anita, Dunbar Spring, El Presidio and Downtown
  - City of South Tucson, Barrio Viejo, Barrio Santa Rosa and Ochoa West
  - South Park, Las Vistas and Western Hills II
- Station 4 – Historic Resources Display Boards
- Station 5 – Benefits Display Boards
- Station 6 – Comment Forms

The Destination Chart provided the opportunity for attendees to specify the top three destinations along the Greenway they would most likely travel to by placing dots next to the listed names of destinations. This was designed to give the team insight on which areas of the Greenway would need the most priority. Attendees were also encouraged to complete comment forms and visit the project website at [www.dot.tucsonaz.gov/elpaso](http://www.dot.tucsonaz.gov/elpaso). Overall, the attendees expressed a large amount of support for the project.

### **Team Attendance**

- **Davis Bilingual Elementary Magnet School**
  - **City of Tucson:** Fred Gray, Tom Thivener
  - **Drachman Institute, University of Arizona:** Katie Gannon, Yennifer Perry
  - **Gordley Design Group:** Lucy Amparano, Melissa Anguiz, Adriana Prieto
  - **Kimley-Horn and Associates:** Sandy Bolduc, Rebeca Field
  - **Structural Grace, Inc.:** Dave Dobler, Francina Sosa
  - **Wood Patel & Associates:** Jesse Schultz



- **Quincie Douglas Library**
  - **City of Tucson:** Tom Thivener
  - **Drachman Institute, University of Arizona:** Katie Gannon, Yenniffer Perry
  - **Gordley Design Group:** Lucy Amparano, Melissa Anguiz, Adriana Prieto
  - **Kimley-Horn and Associates:** Sandy Bolduc, Rebeca Field
  - **Pima Association of Governments/Regional Transportation Authority:** Gabe Thum
  - **Structural Grace, Inc.:** Claudia Perchinelli
  - **Wood Patel & Associates:** Pat Marum, Jesse Schultz
- **Santa Rosa Neighborhood Center**
  - **City of Tucson:** Julie Parizek, Tom Thivener, Peg Weber
  - **City of South Tucson:** Joel Gastelum, Mick Jensen
  - **Drachman Institute, University of Arizona:** Katie Gannon, Yenniffer Perry
  - **Greenway Coalition:** Daphne Madison
  - **Gordley Design Group:** Melissa Anguiz, Jan Gordley, Adriana Prieto
  - **Kimley-Horn and Associates:** Sandy Bolduc, Rebeca Field
  - **Structural Grace, Inc.:** Dave Dobler, Claudia Perchinelli
  - **Wood Patel & Associates:** Pat Marum, Jesse Schultz

#### Public Attendance

- **Davis Bilingual Elementary School**
  - Public attendance: 36
  - Comment forms received: 13
- **Quincie Douglas Library**
  - Public attendance: 6
  - Comment forms received: 1
- **Santa Rosa Neighborhood Center**
  - Public attendance: 18
  - Comment forms received: 7

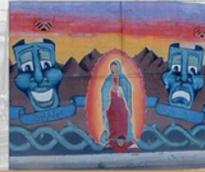
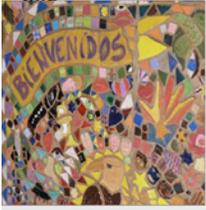
#### Materials (in English and Spanish)

- Agenda
- Comment form
- Project fact sheet
- Drainage fact sheet
- Safety fact sheet
- Sign-in sheet





## BARRIO ANITA



- IMPORTANCE OF COMMUNITY
- MEXICAN HERITAGE & THE SPANISH LANGUAGE
- EL ARROYO
- BASEBALL & RECREATION



EL PASO & SOUTHWESTERN GREENWAY



## DUNBAR SPRING



- AFRICAN-AMERICAN HERITAGE
- INNOVATION & SUSTAINABLE DESIGN
- NATIVE PLANTS OF THE SONORAN DESERT
- COMMUNITY ART



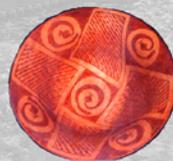
EL PASO & SOUTHWESTERN GREENWAY



## EL PRESIDIO



- PRESIDIO SAN AGUSTIN DEL TUCSON
- HOHOKAM CULTURE
- THE RAILROAD
- SPANISH-MEXICAN HERITAGE



EL PASO & SOUTHWESTERN GREENWAY





# BARRIO VIEJO



- CARRILLO GARDENS
- EL TIRADITO
- BRIGHT COLORS & FLOWERS
- MEXICAN HERITAGE & MUSIC



EL PASO & SOUTHWESTERN GREENWAY



# BARRIO SANTA ROSA



- GATEWAYS & HOPE
- BRIGHT, COLORFUL TILEWORK
- CULTURAL DIVERSITY
- LOCAL ARTISTS & BUILDING MATERIALS



EL PASO & SOUTHWESTERN GREENWAY



# BARRIO OCHOA



- IRON-WORK
- RELIGION
- TOHONO O'ODHAM CULTURE
- EDUCATION

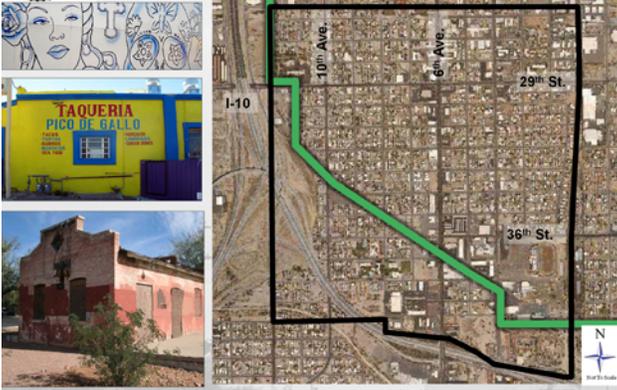


EL PASO & SOUTHWESTERN GREENWAY





# CITY OF SOUTH TUCSON



- IMPORTANCE OF COMMUNITY
- MEXICAN HERITAGE & THE SPANISH LANGUAGE
- NATIVE AMERICAN CULTURE
- INDEPENDENCE



EL PASO & SOUTHWESTERN GREENWAY



# SOUTH PARK



- AFRICAN-AMERICAN HERITAGE
- COMMUNITY SPIRIT
- COMMUNITY ART



EL PASO & SOUTHWESTERN GREENWAY



# LAS VISTAS & WESTERN HILLS II



- MUSIC & CULTURE
- RIPARIAN SANCTUARY
- RECREATION



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# Station 5 - Benefits Display Boards

EL PASO & SOUTHWESTERN GREENWAY

## SAFETY BENEFITS OF TRAILS AND GREENWAYS

**Crime Prevention Through Environmental Design (CPTED)** A multi-disciplinary approach to deterring criminal behavior through environmental design.



**CPTED Principle #1: Natural Surveillance:** "See and Be Seen" includes use of Lighting and Landscape to create spaces with open visibility to deter criminal behavior.



**CPTED Principle #2: Natural Access Control:** Use of walkways, fences, lighting, signage and landscape to clearly guide people to and from proper entrances. Directs the flow of people to decrease the opportunity for crime.



**CPTED Principle #3: Territorial Reinforcement:** Create/extend a "Sphere of Influence" through design elements such as pavement treatment, landscaping and signage to develop a sense of proprietorship which discourages potential trespassers.



**CPTED Principle #4: Maintenance:** Development of a formal CPTED based maintenance plan creates safer neighborhoods by discouraging neglected properties seen as breeding grounds for criminal activity.






EL PASO & SOUTHWESTERN GREENWAY

## HEALTH BENEFITS OF TRAILS AND GREENWAYS

**Active Community Environments**

- Support & Promote physical activity for people of all ages and abilities
- Feature Sidewalks, Bikeways, Trails, Parks and Recreational Facilities
- Located near where people Live and Work
- Easily Accessible



**Potential Health Benefits of Trail Use**

- Reduced Obesity, Increased Activity
- Control Hypertension
- Reduce development of Non-Insulin Dependent Diabetes
- Improved symptoms of Mild-to-Moderate Depression and Anxiety
- Reduce Arthritis Pain
- Reduce Osteoporosis

Source: CDC, 2004



**Costs of Managing Healthcare**

- US spent \$1.7 Trillion on Healthcare in 2003
- 15% of our Gross Domestic Product (GDP)
- 4.3 Times amount spent on National Defense

Source: National Coalition on Health Care, 2005



**Healthy Trails = Healthy People**

- Surgeon General asks American Communities to install Trail Systems
- President's Council on Physical Fitness: "Build More Trails"
- Correlation between Trails, Health and Wellness
- National Trails Day: Thousands of American Communities Participate





EL PASO & SOUTHWESTERN GREENWAY

## ECONOMIC BENEFITS OF TRAILS AND GREENWAYS

**"Smart Conservation"** is just as important as smart growth. . . We need to think of open space as a form of infrastructure. . . preserved through a public investment. . . as a connected, contiguous system. . . Ed McMahon, Urban Land Institute, 2005



**Residential properties** will realize a 10-20% gain in value the closer they are located to greenspace. National Homebuilders Association



**Corporate Support** Greenways attract Corporations looking to locate business offices and headquarters in a community. "We wanted the jogging trails." Steve Brechbiel, spokesperson Reichold Chemical on their decision.



**Grand Forks Greenway, ND** attracted more than 50,000 tourists downtown for Greenway Day in 2004. The Greenway, consisting of 2,200 acres along the Red and Red Lake Rivers, features hiking, walking, rollerblading, biking, birding, canoeing, fishing and golf. It obtains revenue from many of these activities.



**Greenway systems** generate millions of dollars in tourism revenue each year. many systems will return \$3 in revenue for every \$1 in expenditure invested. Examples include the KATY Trail, MO; Little Miami Trail, OH; and Augusta Riverwalk, GA.

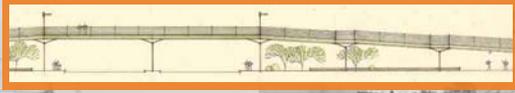
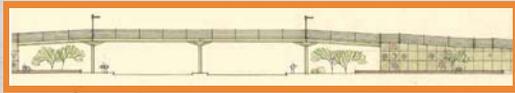




## BRIDGE CHARACTER STUDIES



Union Pacific Railroad Crossing Study



Overpass Character Studies



## SIGNAGE STUDIES



Railroad Plaza Interpretive Sign



Interpretive Kiosk



Neighborhood Marker



Art Opportunity

Greenway Marker

Examples of Wayfinding Signs



El Paso & Southwestern Greenway

# Public Notification





**CITY OF TUCSON**



**MEDIA RELEASE**

**FOR IMMEDIATE RELEASE**

**Contact:** Melissa Anguiz  
Gordley Design Group  
520-327-6077

**Date:** Jan. 11, 2011  
**TDD:** 520-791-4371

**El Paso & Southwestern Greenway  
Draft Master Plan  
Open Houses**

The City of Tucson will hold three open houses to present the Draft Master Plan for the El Paso & Southwestern Greenway, a six-mile multiuse path for bicyclists and pedestrians. The public is invited to view the Greenway alignment and comment on the Draft Master Plan. Community input and support is vital to making the project a success.

**Thursday, Jan. 20**  
**Davis Bilingual Elementary School**  
**500 W. St. Mary's Road**  
**Tucson, AZ 85701**

**Tuesday, Jan. 25**  
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**Thursday, Jan. 27**  
**Santa Rosa Neighborhood Center**  
**1080 S. 10th Ave.**  
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**Each open house is from 5:30 to 7 p.m.; welcome and introductions at 6 p.m.**

The Greenway alignment begins in the vicinity of Main Avenue and University Boulevard and passes along the west edge of downtown, east of Interstate 10, and continues south to cross 22nd Street. The Greenway enters the City of South Tucson at approximately 29th Street and proceeds to the vicinity of the Greyhound Park where it exits. It then travels generally east and ends at the Kino Sports Complex.

The goal of the project is to provide a low-stress bicycle and pedestrian facility that has minimal interactions with automobiles, while celebrating the railroad's history and the character of the neighborhoods. The Greenway will also serve as a recreational link between downtown and South Tucson residents. The culture and activities of this corridor will act as a catalyst, drawing in the greater Tucson community.

The estimated cost for planning, design, right-of-way acquisition, pathway improvements and crossing improvements is \$10 million.

For more information, or to submit comments, the public may contact Melissa Anguiz, City of Tucson consultant for community relations, at [melissa@gordleydesign.com](mailto:melissa@gordleydesign.com) or 520-327-6077, or visit the project website at [www.dot.tucsonaz.gov/elpaso](http://www.dot.tucsonaz.gov/elpaso).

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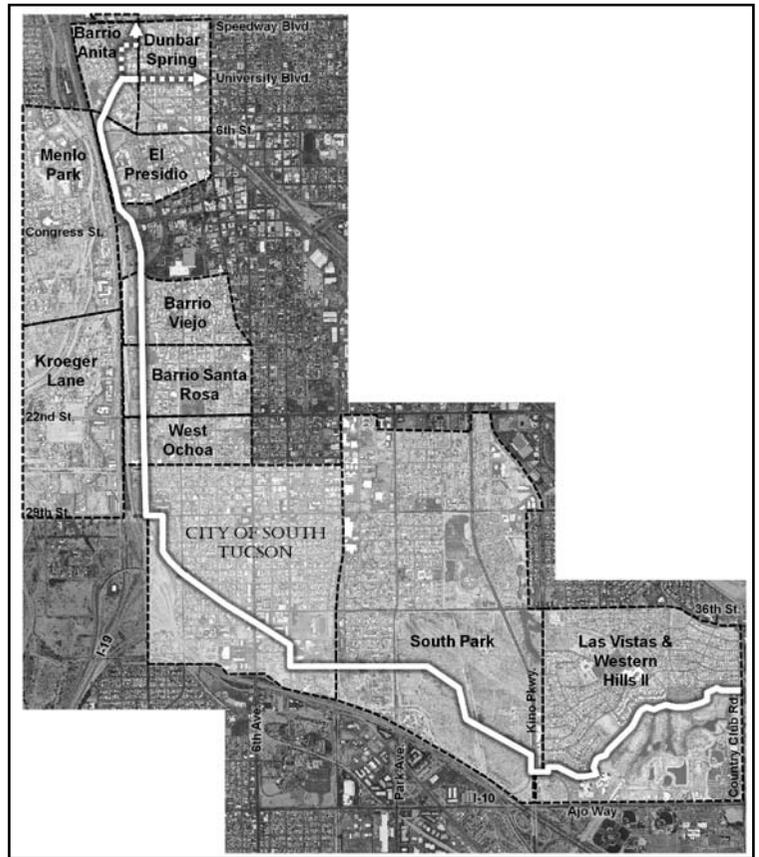


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The El Paso & Southwestern Greenway alignment begins near the western terminus of the University Bikeway, near Main Avenue and University Boulevard. It travels south and passes along the west edge of downtown, parallel to Interstate 10, and continues south crossing St. Mary's Road, Congress Street and 22nd Street. The Greenway enters the City of South Tucson at approximately 29th Street and briefly continues south before turning on a southeast angle along the old railroad corridor. It crosses South 4th Avenue and proceeds east, where it exits the City of South Tucson as it crosses the Nogales railroad spur. The Greenway then travels generally east, across Park Avenue, then southeast to cross Kino Boulevard, ending at the Kino Sports Complex/Ajo Detention Basin. A small piece of the Greenway has already been constructed with the Fire Central Project.



Community input and support is vital to making the Greenway project a success. Many of you participated in reviewing the preliminary alignment in late 2008. You are now encouraged to view the final alignment and provide additional comments.

**For accommodations, materials in accessible formats, foreign language interpreters, and/or materials in a language other than English, please contact Adriana Prieto, Gordley Design Group, 520-327-6077 or 520-791-2639 for a Telecommunication Device for the Deaf (TDD) at least five business days in advance of this scheduled event.**

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# PROYECTO DE SENDERO DE AREAS VERDES EL PASO Y SUROESTE

## CASAS ABIERTAS

**Las casas abiertas se llevarán a cabo de las 5:30 a las 7 p.m.**  
**La bienvenida y las introducciones se inician a las 6 p.m.**

### Jueves 20 de enero

Davis Bilingual Elementary  
Magnet School  
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### Martes 25 de enero

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1585 E. 36th St.  
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### Jueves 27 de enero

Santa Rosa  
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*¡Los Invitamos!* La Ciudad de Tucson y la Autoridad de Transporte Regional llevará a cabo tres eventos abiertos al público en los que se presentará el plan maestro preliminar del sendero de áreas verdes El Paso y suroeste (proyecto Greenway), una ruta verde de usos múltiples de seis millas de longitud para ciclistas y peatones, a lo largo de lo que antes era un corredor ferroviario. Le invitamos cordialmente a participar en las discusiones respecto a cada segmento, y a ver exhibiciones del trazado del proyecto en general.

El trazado del proyecto Greenway inicia cerca del extremo oeste de University Bikeway, próximo a Main Avenue y

University Boulevard, siguiendo hacia el sur y pasando a lo largo del borde al oeste del centro de la ciudad, paralelo a la Carretera Interestatal 10 y siguiendo al sur, cruzando St. Mary's Road, Congress Street y 22nd Street. El sendero entra en la Ciudad de South Tucson aproximadamente en 29th Street y sigue brevemente hacia el sur antes de desviarse al sureste a lo largo del antiguo corredor ferroviario. Cruza en South 4th Avenue y sigue hacia el este, donde sale de la Ciudad de South Tucson al pasar el ramal del ferrocarril de Nogales. A continuación, la ruta sigue principalmente hacia el este, cruzando Park Avenue, para luego viajar hacia el sureste cruzando Kino Boulevard, terminando en el Complejo Deportivo Kino/Cuenca de Ajo. Una pequeña sección de esta ruta verde ya se construyó junto con el Proyecto Fire Central.

Las opiniones y el apoyo de la comunidad son de importancia vital para que este proyecto sea todo un éxito. Muchos de ustedes participaron en la revisión del trazado preliminar a fines del año 2008. Ahora les pedimos que vengan a ver el trazado final y nos dejen saber sus comentarios.

**Para acomodaciones, materiales con formatos accesibles, interpretes de otras lenguas y materiales en otro lenguaje, por favor de llamar a Adriana Prieto, Gordley Design Group, 520-327-6077 o al 520-791-2639 para un aparato de telecomunicación para los sordos (TDD) a lo menos cinco días de negocio antes del evento.**

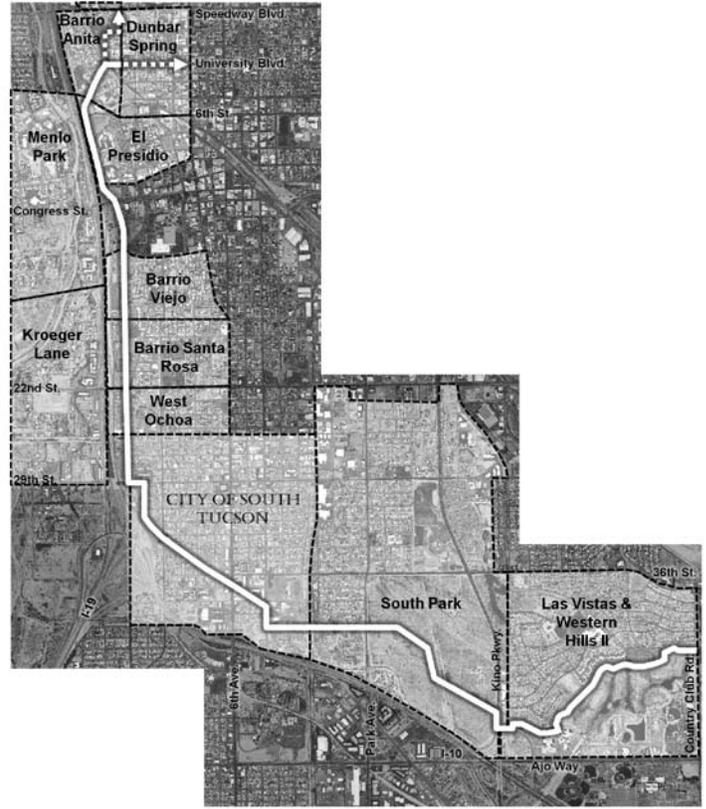


# EL PASO & SOUTHWESTERN GREENWAY PROYECTO DE SENDERO DE AREAS VERDES EL PASO Y SUROESTE

*You're Invited to  
our Open House!*



*¡Los Invitamos  
a Nuestras Casas  
Abiertas!*



c/o Community Relations  
2540 N. Tucson Blvd.  
Tucson, AZ 85716



PRSRT STD  
U.S. POSTAGE  
**PAID**  
TUCSON, AZ  
PERMIT NO. 3341

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El Paso & Southwestern Greenway

# Comment Transcriptions and Destination Chart Results





## EL PASO & SOUTHWESTERN GREENWAY PROJECT

January 2011 – Open Houses  
Comment Transcription

1. **Have you heard about the El Paso & Southwestern Greenway project before?**
  - Yes (13)
  - No (4)
  
2. **What neighborhood do you live in?**
  - Barrio Anita (2)
  - Barrio Centro (1)
  - Barrio El Hoyo (1)
  - Barrio Libre (1)
  - Barrio Santa Rosa (1)
  - Barrio Viejo (3)
  - Country Club and Glenn (1)
  - Dunbar Spring (7)
  - East side Downtown (1)
  - Ochoa West (2)
  - South Tucson (1)
  - Speedway and Silverbell (1)
  - Rita Ranch (1)
  
3. **Do you currently walk or bike in your neighborhood?**
  - Yes (20)
  - No (1)
    - **If no, why not?**
      - Too dark
      - Heavy traffic
  
4. **Where do you go when you walk or bike?**
  - School (7)
  - Bus stop (3)
  - Neighbor's or friend's house (11)
  - Work (10)
  - Hardware store (5)
  - Park (7)
    - Community Garden
    - Dunbar Spring Park
    - Himmel Park
    - Oury Park (2)
    - Playground
    - Reid Park (2)
    - San Cosme
    - Loop
  - Grocery Store (12)
  - Restaurants (13)



- Other (14)
  - 4th Avenue
  - Bus depot
  - Church
  - Downtown (3)
  - Exercise
  - “Just getting out of the barrio”
  - Movie theater
  - Pharmacy
  - Pima County libraries
  - Target
  - University of Arizona

**5. Which of the above places would the Greenway make it easier for you to access?**

- All except for school and grocery store
- Live far from it – however consider it would promote pedestrian traffic towards downtown and warehouse district
- South Tucson – restaurants and Food City – Food Bank Farmer’s Market
- Work – west of I-10, south of St. Mary’s
- Grocery store, restaurants, and just getting out of the barrio
- Downtown
- Another destination: small museum between El Tiradito and Carrillo School, La Pilita
- School, other parks
- I don’t live within the boundary, no direct effect
- Downtown historic sites
- Work (TCC)
- Work – shoot up University Boulevard to University of Arizona
- Retail and dining near 4th Avenue and the University
- Home-work-home, and everything in between
- Work
- Grocery store
- Downtown from Julian Wash

**6. What aspects of the Draft Master Plan do you like best? Why?**

- Building bike infrastructure is good for the community
- Connectivity
- See a lot of potential at ADOT retention basin. The availability of land makes the site candidate for a bigger project than just a mere “picnic area.” Potential outdoor theater? Public pool? (These are just ideas.) Maybe a theme park e.g. Navy Pier Chicago relate to historic
- Avoids crossing I-10, safely crosses railroad tracks
- Vegetation, walking paths
- Inside the barrios, it will have more lighting and the walk path will look very nice
- Increased access, safety
- Pocket parks along route encourage short trips for pure recreation
- Separate from roadways wherever possible, separate bike/pedestrian paths, connectivity with existing/planned bike routes. So much to love!!
- It serves areas that do not have other comparable places that people can use to exercise or commute by bike
- The greenway path on the mile post at 34th and 9th Avenue, because my home is right there and I walk downtown.



- That it exists
- The path the master plan is taking
- Safety due to fewer cars

**7. What aspects of the Draft Master Plan would you like to see changed? Why?**

- Incorporate more rainwater harvesting features and more sustainable aspects to plan.
- If any overpasses do not have any zigzag ramps. Make it a faster, straighter ramp style.
- I actually prefer at-grade crossings – they make us (users) more visible to auto driver...overpasses are sometimes a deterrent – the scale of such infrastructure doesn't really fit in.
- I'm concerned about the overpasses (understand budget issues.) However, can become potential blank, not un-used spaces, bring litter or bands "gangs" it depends on the execution, design and the adjacent intersections and sites around them.
- My main concern is the St. Mary's and Interstate 10 crossing.
- In crossing the St. Mary's, the traffic will be backed up, a bridge would be the right solution
- More activities along the way.
- East – jog at St. Mary's – inconvenient... an exception to signal distance should be made to allow a straight through crossing. Cyclists are not second-class users of roadways!
- Possible future connection to Aviation Highway bike path via Country Club?
- On the plan, change the trees in the alley to be a wall (I'll be putting up), change the trees bordering the wash (that is my property) into an ocotillo fence, and make the wash granite
- Need to figure out crossing Congress, 22nd, 6th
- More passage for pedestrians
- Connect to Julian Wash and Liberty

**8. How has the El Paso & Southwestern Railroad been part of your family's life?**

- Not from Tucson
- This type of project is in other cities and we love. Used on vacations and want to see it in Tucson
- I grew up in the downtown area, the sound of train passing through is my life.
- Grandfathers on both sides of family worked at both railroads and also uncle worked on railroad.
- I like to hear the horn and although is loud I can sleep peacefully. It's like living in the country downtown.
- Live next to it.
- It divides my neighborhood in half. "Barrio Viejo."
- It has not.
- No.
- My family has lived/owned my house ("family house") for over 65 years. We love the neighborhood and the house. Many stories. Too many.
- Most of my friends live in this area.
- N/A

**9. What is a special story about your neighborhood's history?**

- Barrio Centro is connected to current Union Pacific Railroad line.
- We love trees – over 1,200 planted. I had a dream of a community garden and neighbors made the dream come true.
- Flattening pennies on the tracks.
- So many can't say just one or maybe when the circus came to town late at night they would stop by Oury Park and you hear the animals and unfortunately their smells too!
- I live in the house that we built in 1938 and have had ghost stories but have not experienced any.
- Historic neighborhood family has build there for three generations over 100 years.
- Property transfers to generation/generation.



- The destruction of the Barrio by the TCC.
- The House of Neighborly Service has been around forever. My aunt, uncles, mom grew up swimming in the pool that is no longer there. Plus the fiestas they have, etc.
- City knocked most of it down.
- We at Ochoa West have Santa Cruz Channel.

**10. If you had a park nearby, what amenities or activities would you like to see?**

- Trees/shade (16)
  - Irrigation with passive harvested rainwater
- Benches (13)
- Swimming pool (6)
- Skate park (6)
- Yoga classes (7)
- Splash pad (4)
- Ball fields (6)
- Murals/art (8)
- Desert park (7)
- Community garden (9)
- Exercise stations (6)
- Bathrooms (8)
- Walking paths/sidewalks (14)
- Night lighting (11)
  - No!
  - Dark sky compliant only
- Neighborhood events (10)
- Garden classes (7)
- Cooking classes (3)
- Wayfinding signage (7)
- Playgrounds (8)
- Picnic area (6)
- Drinking fountains (13)
- Dog park (7)
- BMX park (3)
- Decorative fountains (3)
  - No!
- Other
  - Water conservation should trump decorative fountains. Tucson dark sky should be preserved.
  - Basketball courts
  - Rock climbing
  - Passive water harvesting, organic mulch instead of gravel

**11. What are the top three things you would enjoy most when the Greenway is completed?**

- Connectivity; traffic-free zones; landscaping, trees/shade and wildflowers
- Car-free transportation options, connectivity
- Shade/nature, connectivity
- Bike without sharing with cars, Food City at 6th Avenue near Interstate 10, healthy/safely walking with friends and dogs
- A place to go exercise
- Gardens, information kiosks about the neighborhoods, art



- Walking paths, garden classes, desert park
- Splash pad, fountains, playgrounds
- Bicycling without cars, using the parks, using it as part of the larger urban path
- Running, cycling
- Convenience, health, safety
- Access, safety
- More lights, more recreational facilities, more exercise
- Connection to downtown, smog reduction

**12. What are the top three concerns you have regarding future access and use of the Greenway?**

- Cost, time to complete
- Maintenance, safety, completion lighting
- Safety, maintenance
- Ugly art will be used
- Strangers in neighborhood
- Safety
- St. Mary's Road I-10 crossing, old railroad station, skateboarders
- Vandalism, safety
- Crossing railroad tracks at Barrio Anita
- Overpass, intersections, too much park and no interesting destination
- Connectivity to other paths, corridors, etc.
- Connectivity, traffic-free zones (bypass)
- Crossing major streets, St. Mary's/29<sup>th</sup>
- Lack of established participation from all neighborhoods in this project. Revenues, where are they coming from, cost per household, and how do we generate new income? Describe community revenue, base and total dollars?

**13. How do you envision using the Greenway?**

- a) Walking, bicycling and/or jogging for recreation, health and/or fitness (15)
- b) Walking or bicycling to a grocery store, restaurant or friend's home (8)
- c) Commuting by bicycle or walking to work, school or for other purposes (9)
- d) As a connection to local bus stops (3)
- e) As a connection to a nearby park, community center or other public building (12)
- f) Other
  - Health
  - Walking, exercise

**14. What are other priorities that should be considered during the development of the Greenway?**

- Work on getting the connection to University Boulevard first priority. If it is an easy direct path to the University with no traffic it will be used by everyone that works in the University area.
- If Union Pacific Railroad crossing is unworkable, terminate Barrio Anita segment in Oury Park and use Davis/create path on west side of Main Avenue. Right of way can be acquired by replacing planned SBD bike lane on Main Avenue regarding road.
- Strangers sleeping in park – single person
- Contzen and Hughes, people will come around from Contzen, will not see the bikers going across.
- Neighborhood input. Thank you!
- Noise calming throughout. Bus autos will not, should not be allowed. Electric gas.
- Transformation – bus stops – light railroad
- It would be great if we could make car-free connections from it heading west (under I-10, over Santa Cruz River)



- From Brad Lancaster. Add signage for each arroyo/drainage the greenway crosses. For each neighborhood identify arroyo watershed, it belongs to, possibly with a map of the watershed, identify all other neighborhoods sharing the arroyo as their watershed. This creates a common element connecting neighborhoods to one another and (hopefully) a sense of community and connectedness.
- Linkages to more routes. Maximize the hub.
- Initiate tree planting ASAP!
- Access to Loop and Liberty

**15. Do you have any additional comments, questions or concerns?**

- Would like to see it completed soon!
- I don't want to see anymore storm water drainage plans. Instead, I want to see rainwater and storm water harvesting plans emphasizing many small-scale, low-impact development. Style strategies throughout the watershed, water-harvesting, traffic-calming strategies are just one example.
- Historic side – how to reinforce the connection besides the signage change on grade, offset, etc.
- Thank you for making this happen no matter the challenges
- For Dunbar Spring neighborhood – architecture bungalows with front porches are peppered throughout the neighborhood. I have one.
- See if a partnership could be established with the owner of the old railroad station for a possible art café meeting place and the railroad museum.
- I do like the idea of the Greenway and would cooperate in keeping the walk path clean.
- Involve a link north on 13th Avenue to Estevan Park/Barrio Blue Moon. Please use only plants for landscaping that are native to the Tucson basin. Utilize passive rainwater harvesting!
- This is a fantastic idea and is well deserved. Find it! Build it! Make Tucson more fit and healthy.
- I am really excited about the project as a whole, but I think the pedestrian skyways are a bad idea, especially the one near Main. I think they're fantastically expensive, they're too big for the surrounding environment, and I think they'll be unused. I suggest thinking instead about a Toucan across Main and integrated with the street fabric in this area, especially since this is already a major bicycle connection with Davis/3rd Street. A road diet on Main, an improved Union Pacific crossing, and this would mesh well together and fix a lot of the issues here; a skyway would just add unnecessary infrastructure and avoid the problem. Thanks!
- Request a road diet on Main Avenue. Request at Main Avenue and University build same kind of crossing that is in place at Stone Avenue and University Boulevard. Coordinate comprehensive plan to STOP train noise in the downtown area. Coordinate comprehensive plan called Building Bridges. Thank you for your consideration.
- Please move along
- Since this project seems to incorporate a city with a 1.2 acre city, what is their responsible cost in this project? With our city budget in such a state, where is this project in the city's table?



**EL PASO & SOUTHWESTERN  
GREENWAY PROJECT**

**January 2011 – Open Houses  
Destination Chart Results**

<b>Destination</b>	<b>Davis Bilingual Elementary School Thursday, Jan. 20, 2011</b>	<b>Quincie Douglas Public Library Tuesday, Jan. 25, 2011</b>	<b>Santa Rosa Neighborhood Center Thursday, Jan. 27, 2011</b>
The U of A	2	1	6
El Rio Golf Course	0	0	0
Oury Park	0	0	2
Estevan Park	0	0	1
De Anza Park	0	0	0
Davis Bilingual School	1	0	0
Olli (school)	0	0	0
Aikido of Tucson	1	0	0
Bicas Bicycle	5	0	2
Bike Sanctuary	0	0	1
Center of Desert Archeology	0	0	0
Z Mansion	0	0	1
Manning House	0	1	2
Sculpture Garden	1	0	0
El Presidio Park	2	1	2
Garden of Gethsemene	2	1	0
Veinte de Agosto Park	0	1	0
La Placita Park	1	0	1
Fox Theater	4	0	0
Downtown Tucson	8	3	4
Tucson Museum of Art	4	0	0
Old Town Artisans	2	0	3
Greyhound Bus depot	0	0	1
El Paso and Southern Depot	0	0	1
TCC	2	0	1
Rio Nuevo	0	0	0
Gem show exhibits	1	0	0
El Tiridito	1	0	2
El Minuto/San Cosme/Elysian Grove	4	0	0
Carrillo Intermediate School and Swimming Pool	0	0	1
Flint Oil Building	0	0	0
Armory Senior Citizen Center	0	1	0
Military Plaza Park	0	1	0

**EL PASO & SOUTHWESTERN  
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Five Points Park	0	1	0
Santa Rosa Park	1	0	2
Ormsby Park	0	0	0
Drachman School	0	1	1
Centro Del Sur Community Center	0	0	0
Santa Rosa Learning Library	0	1	0
City of South Tucson	0	1	1
Carmelin Castro Children's Park	0	0	0
Pima County Julian Wash Linear Park	2	0	0
Las Artes	0	0	0
John C. Valenzuela Youth Center	1	0	0
Sam Lena Library	0	1	0
La Frontera	0	0	0
City of South Tucson City Hall	0	0	2
Mission View Elementary School	0	0	0
Ochoa Elementary School	0	0	1
Nellie P. Covert School	0	0	1
Tucson Urban League	0	0	0
Tucson Greyhound Park	0	0	0
Street Scene Park	1	0	0
Tucson Marketplace Development including Costco and U of A Science Center	1	0	0
Quincie Douglas Library	0	3	0
Sam Lena Recreation Area	0	0	0
Community Food Bank	1	0	
James Thomas Park	0	0	0
Pueblo Grande Park	0	0	0

## **COMMENTS ON EP&SW GREENWAY OPEN HOUSE MAPS**

January 2011

### **UNIVERSITY BLVD. TO ST. MARY'S ROAD**

- Include link/spur to Barrio Blue Moon and many destinations north via alley west of Main, then continue north on 13<sup>th</sup> Ave, cross Estevan Park, cross Speedway at existing overpass with a contra lane, enter Barrio Blue Moon, and connect with the bike route on N. Fairview Ave via 14<sup>th</sup> Ave north, left (west) on W. Alto Pl, Right (north) on N. 15<sup>th</sup> Ave, then left on N. Fairview Ave. *(Note: Comment had a secondary comment of 'Yes!!' next to it.)*
- Bike Signal *(pointing to University & Main)*
- Consider Underpass Here *(pointing to UPRR crossing)*
- At-grade crossing please! Or Underground *(pointing to UPRR crossing)*
- Widen at-grade crossing on Main Ave so there is a wheel chair, baby carriage, pedestrian, bicycle section. Could create a non-motorized path on east side of main Ave & cross at existing crossing made wider toward the east.
- If UPRR crossing is unworkable, terminate Barrio Anita segment in Oury Park and use Davis / create path on west side of main. ROW can be acquired by replacing planned SBD bike lane on Main Ave. Re: Main Ave Road diet plan proposed by Dunbar Spring Neighborhood. Cross Main Ave. w/ Tocan signal. Add traffic circle at Anita/Davis w/ 4-way yield.
- Connection to Univ. Blvd should be high on list. Greenway would be used hourly not just daily; Univ. of A area would use it all the time.
- *(Property southeast of closed Davis alignment is labeled as 'Millstone.')*
- This is crazy. Negotiate an exception with ADOT or put in an Overpass *(pointing to at-grade St. Mary's Crossing)*
- Overpass?? *(pointing to at-grade St. Mary's Crossing)*

### **ST. MARY'S ROAD TO CONGRESS**

- Daylight the Wash! *(pointing to Arroyo Chico)*
- Daylight all of arroyo & make bike/ped path along it & going under I-10.
- Work w/ Mied Mier at PAG to have signs identifying all arroyos and the watershed boundaries/ridgelines of all those arroyos.
- Connect thru tunnels to W Side *(pointing to Arroyo Chico crossing)*

- Re-direct to avoid (*refers to re-directing path along Arroyo Chico east to Granada and continuing south on Granada to Alameda to avoid Millstone Property, Inn Suites, La Entrada & the Manning House*); 12' path (*suggested for this re-directed route*)
- Narrow to 12' (*pointing to Greenway R.O.W. west of Millstone Property and to R.O.W. west of La Entrada*)
- Bicycle-pedestrian access on Franklin from El Presidio Neighborhood (EPN) is critical. EPN used to be a "Riverside" neighborhood. This project is the best prospect to re-store to EPN access to a "greenway".
- Would be great to have formal connection to Santa Cruz Park & thus to Rillito. Could greenway be diverted W of I-10 along Santa Cruz in the "trouble zone" between St. Mary's and Alameda?
  - Could highlight site of old St. Augustine Mission & Tumamoc Hill (*pointing to two potential underpass locations – 1 at Alameda and 1 at Congress*)

### **CONGRESS TO 22nd**

- RR Sta. part of Greyhound / Small Sun Tran Transit Ctr. (*pointing to historic depot*)
- Old RR Station - What can we do with it? It's vacant right now. Can it be used? (*pointing to historic depot*)
- Modern St. Car (*route marked on plan*)
- (*Route to nearby rail office marked on plan, note that rail office no longer exists*)
- Please raise all pathways & sink all adjoining planting areas to passively harvest rainfall & stormwater runoff as close as possible to source. Then use this harvested water in soil to sustainably irrigate more native shade trees. Also, use more organic mulch and less gravel/ decomposed granite under & around plantings.
- When highlighting what makes each neighborhood special include the name(s) of the arroyos running through them and/or the name of the arroyo(s) they drain to – Use these watershed boundaries as linkages between neighborhoods as many neighborhoods make up the watersheds of these waterways/corridors.
- Connect resources (*pointing to potential connection between Greenway and wide strip of what appears to be landscaped ADOT R.O.W. immediately south of Simpson*)
- Rail transit connection between transp. museum and Old EP & SW Passenger Station (*pointing to existing track just south of 17<sup>th</sup> Street*)
- Connect Greenway to 18<sup>th</sup> St. underpass as another greenway branch connecting to Santa Cruz River park/path.
- Extend width of greenway (*pointing to vacant area south of 18<sup>th</sup> St.*)

- *(Parcel east of drainage and west of Osborne Ave. immediately north of 22<sup>nd</sup> marked as 'Dog Park' – appears to be a suggestion)*
- *(Railroad spur towards west marked on plan; note that remnant tracks no longer exist)*
- *Underpass w/ 22<sup>nd</sup> Street Project instead of Bridge (pointing to 22<sup>nd</sup> St. crossing)*

### **22<sup>nd</sup> TO 6<sup>th</sup> Ave.**

- *Transportation Museum (label in area south of 22<sup>nd</sup> between Greenway and ADOT R.O.W.; includes Roundhouse)*
- *Outdoor Amphitheatre for concerts/plays etc would be GREAT! (pointing to ADOT detention area)*
- *BMX Park would be great! (pointing to ADOT detention area)*
- *(General location of railroad tracks into Roundhouse marked)*
- *Possible future Streetcar connection downtown to Kino Sports Complex (pointing to path east of ADOT detention area)*
- *('One way' with arrow pointing north is written on 11<sup>th</sup> Ave.)*
- *Look at alternate alignment via ADOT I-19 right-a-way (connects back to current alignment at historic bridge)*
- *Tunnel, Trouble Spot (pointing to intersection of alley between 33<sup>rd</sup> and 34<sup>th</sup> and Greenway alignment west of 9<sup>th</sup> Ave.)*
- *Future Wall (pointing to south edge of alley between 33<sup>rd</sup> and 34<sup>th</sup> west of 9<sup>th</sup> Ave.)*
- *Ocotillo Fencing (pointing to north edge of Greenway alignment between intersection of alley between 33<sup>rd</sup> and 34<sup>th</sup> and 9<sup>th</sup> Ave.)*
- *Art (pointing to intersection of alley between 33<sup>rd</sup> and 34<sup>th</sup> and Greenway alignment west of 9<sup>th</sup> Ave.)*
- *(Label showing location of Santa Cruz Church)*
- *(Label suggesting playground in vicinity of Church)*
- *The scheme has the possibility to integrate diverse / points can be more entertaining (sic) such as: promote urban garden, sen (sic) areas/gardens, grown up playgrounds/exercise areas – besides the picknik (sic) areas & typical playgrounds. Skateboard yards? Maybe? In addition to take or make a connection w/ the historic properties. What about have overpass structure*

house some other activity – such as a public pool or retail (commerce?) I’m not that familiar w/ the nuts & bolts of the project just ideas. What would be the relation to downtown links?

- Pelican crossings? *(general note on sheet)*

### **6<sup>th</sup> Ave. TO ADOT DETENTION BASIN**

- Alt. Alignment *(marked on historic railroad alignment through Borderlands to Nogales Spur)*
- Connect Greenway to all points south by directing a spur along tracks and under I-10 going under existing bridge/overpass. This can also connect to a proposed greenway south of I-10. *(pointing to path traveling south along west edge of Bridges, east of the Nogales Spur)*
- The entire Sinclair parcel (purchased by Sinclair Oil Co waaaay (sic) Back) was, prior, the original Tucson municipal airport (note where runways used to be) - - - it would be nice to preserve this heritage via signage or “Aero” (sic) stuff (since those behind the big box commercial site seem to have no intent). *(pointing to area north of drainage west of Kino)*
- Consider an underpass here where roadway is raised already *(pointing to a suggested route that runs west of Kino to south and crosses Kino at the Ajo Connection ramp. Route then heads east through vacant flood area and along north edge of Juvenile Center)*
- Private Rehab Facility *(labels area north of Duvall Vista alignment between Kino & Campbell)*
- *(Suggested route drawn along Duvall Vista alignment west of Kino and south on Campbell – utilizes Campbell pavement and existing pedestrian path)*
- Flood area *(marked along Campbell Ave., Jason Vista and alley north of Jason Vista)*
- Flood area *(marked running west from detention area, north of Juvenile Center, through small vacant detention area, north on Campbell to drainage west of Kino)*
- Connect to Ajo Road *(pointing to Campbell Ave.)*
- Build a Park *(pointing to small vacant detention area between Jason Vista and Ajo Connection ramp)*
- Security? users to residents *(pointing to alley north of Jason Vista)*
- (Existing) Pima County Park | Clubhouse | 2 soccer fields | Ramada | + 1 more Ramada | Restrooms | Future BBall Court | *(Referring to Hidalgo Park)*
- *(Cabbot Elementary& Magnet School location noted)*
- Traffic from Campbell up Hidalgo to School
- Is it planned to align this w/ the park(s) in the UA Bio Tech Park?

El Paso & Southwestern Greenway

# Completed Comment Forms





Comment Form  
El Paso & Southwestern Greenway Project  
Open Houses

Davis Bilingual Elementary School  
Thursday, Jan 20, 2011

Quincie Douglas Library  
Tuesday, Jan. 25, 2011

Santa Rosa Neighborhood Center  
Thursday, Jan. 27, 2011

The City of Tucson is interested in your ideas and concerns regarding this project. Please take a moment to note any comments you have regarding conceptual alignment for the El Paso & Southwestern Greenway. Please print clearly.

1. Have you heard about the El Paso & Southwestern Greenway project before? Yes \_\_\_ No \_\_\_

2. What neighborhood do you live in? DUNBAR / SPRING

3. Do you currently walk or bike in your neighborhood? Yes  No \_\_\_

If no, why not? \_\_\_\_\_

4. Where do you go when you walk or bike? (Circle all that apply)

School

Work

Grocery store

Bus stop

Hardware store

Restaurants

Neighbor's or friend's house

A park (please specify) \_\_\_\_\_

Other \_\_\_\_\_

5. Which of the above places would the Greenway make it easier for you to access?

\_\_\_\_\_

6. What aspects of the Draft Master Plan do you like best? Why?

\_\_\_\_\_

\_\_\_\_\_

7. What aspects of the Draft Master Plan would you like to see changed? Why?

IF ANY OVERPASSES DO NOT HAVE ANY ZIG ZAG RAMP STYLE. MAKE IT A FASTER, STRAIGHTER RAMP STYLE

8. How has the El Paso & Southwestern Railroad been part of your family's life?

\_\_\_\_\_

\_\_\_\_\_

9. What is a special story about your neighborhood's history?

We are in the Tucson

10. If you had a park nearby, what amenities or activities would you like to see? (Circle all that apply)

- Trees/shade
- Benches
- Swimming pool
- Skate park
- Yoga classes
- Splash pad
- Other
- Ball fields
- Murals/art
- Desert park
- Community garden
- Exercise stations
- Bathrooms
- Walking paths/sidewalks
- Night lighting
- Neighborhood events
- Garden classes
- Cooking classes
- Wayfinding signage
- Playgrounds
- Picnic areas
- Drinking fountains
- Dog park
- BMX park
- Decorative fountains

*circled w/ passive harvested rainwater*

*dark sky plant only*

Other ~~tree~~ PASSIVE WATER HARVESTING, ORGANIC MULCH INSTEAD OF GRAVEL

11. What are the top three things you would enjoy most when the Greenway is completed?

12. What are the top three concerns you have regarding future access and use of the Greenway?

13. How do you envision using the Greenway? (Circle all that apply)

- a) Walking, bicycling and/or jogging for recreation, health and/or fitness
- b) Walking or bicycling to a grocery store, restaurant or friend's home
- c) Commuting by bicycle or walking to work, school or for other purposes
- d) As a connection to local bus stops
- e) As a connection to a nearby park, community center or other public building
- f) Other

14. What are other priorities that should be considered during the development of the Greenway?

Linkages to more routes. Make Maximize the hub.

15. Do you have any additional comments, questions or concerns?

I DON'T WANT TO SEE ANYMORE STORMWATER DRAINAGE PLANS. INSTEAD I WANT TO SEE RAINWATER + STORMWATER HARVESTING PLANS EMPHASIZING MANY SMALL-SCALE, LOW-IMPACT-DEVELOPMENTS

Name: BRAD LANCASTER Address: 813 N. 9TH AVE City: TUCSON, AZ State: AZ ZIP: 85705  
 Phone: \_\_\_\_\_ E-mail: \_\_\_\_\_

Please include me on the mailing list to receive future information concerning this project.



Please leave your comment forms in the comment box or return to:  
Melissa Anguiz, City of Tucson Community Relations  
c/o Gordley Design Group, 2540 N. Tucson Blvd., Tucson, AZ 85716

E-mail: melissa@gordleydesign.com, Phone: 520-327-6077, Fax: 520-327-4687



www.dot.tucsonaz.gov/elpaso

STYLE STRATEGIES THROUGHOUT THE WATERSHED, WATER-HARVESTING TRAFFIC-CALMING STRATEGIES ARE JUST ONE EXAMPLE



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The City of Tucson is interested in your ideas and concerns regarding this project. Please take a moment to note any comments you have regarding conceptual alignment for the El Paso & Southwestern Greenway. Please print clearly.

1. Have you heard about the El Paso & Southwestern Greenway project before? Yes \_\_\_ No \_\_\_

2. What neighborhood do you live in? \_\_\_\_\_

3. Do you currently walk or bike in your neighborhood? Yes \_\_\_ No \_\_\_

If no, why not? \_\_\_\_\_

4. Where do you go when you walk or bike? (Circle all that apply)

School

Work

Grocery store

Bus stop

Hardware store

Restaurants

Neighbor's or friend's house

A park (please specify) \_\_\_\_\_

Other \_\_\_\_\_

5. Which of the above places would the Greenway make it easier for you to access?

\_\_\_\_\_

6. What aspects of the Draft Master Plan do you like best? Why?

\_\_\_\_\_

\_\_\_\_\_

7. What aspects of the Draft Master Plan would you like to see changed? Why?

\_\_\_\_\_

\_\_\_\_\_

8. How has the El Paso & Southwestern Railroad been part of your family's life?

\_\_\_\_\_

\_\_\_\_\_

9. What is a special story about your neighborhood's history?

\_\_\_\_\_

\_\_\_\_\_

10. If you had a park nearby, what amenities or activities would you like to see? (Circle all that apply)

- |               |                   |                         |                      |
|---------------|-------------------|-------------------------|----------------------|
| Trees/shade   | Ball fields       | Walking paths/sidewalks | Playgrounds          |
| Benches       | Murals/art        | Night lighting          | Picnic areas         |
| Swimming pool | Desert park       | Neighborhood events     | Drinking fountains   |
| Skate park    | Community garden  | Garden classes          | Dog park             |
| Yoga classes  | Exercise stations | Cooking classes         | BMX park             |
| Splash pad    | Bathrooms         | Wayfinding signage      | Decorative fountains |
| Other _____   |                   |                         |                      |

11. What are the top three things you would enjoy most when the Greenway is completed?

\_\_\_\_\_

12. What are the top three concerns you have regarding future access and use of the Greenway?

\_\_\_\_\_

13. How do you envision using the Greenway? (Circle all that apply)

- a) Walking, bicycling and/or jogging for recreation, health and/or fitness
- b) Walking or bicycling to a grocery store, restaurant or friend's home
- c) Commuting by bicycle or walking to work, school or for other purposes
- d) As a connection to local bus stops
- e) As a connection to a nearby park, community center or other public building
- f) Other \_\_\_\_\_

14. What are other priorities that should be considered during the development of the Greenway?

FROM BRAD LANCASTER. Add signage for each arroyo/  
 drainage the greenway crosses. For each neighborhood

15. Do you have any additional comments, questions or concerns?

identify arroyo watershed  
 it belongs to, possibly with a map of the watershed,  
 identify all other neighborhoods sharing the arroyo  
 as their watershed. This creates a common element

Name: \_\_\_\_\_ Address: \_\_\_\_\_ City: \_\_\_\_\_ State: \_\_\_\_\_ ZIP: \_\_\_\_\_  
 Phone: \_\_\_\_\_ E-mail: \_\_\_\_\_  
 Connecting neighborhoods to one another and  
 (hopefully) a sense of community & connectedness.

Please include me on the mailing list to receive future information concerning this project.



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 c/o Gordley Design Group, 2540 N. Tucson Blvd., Tucson, AZ 85716  
 E-mail: melissa@gordleydesign.com, Phone: 520-327-6077, Fax: 520-327-4687



www.dot.tucsonaz.gov/elpaso

— Thankyou —



**Comment Form  
El Paso & Southwestern Greenway Project  
Open Houses**

Davis Bilingual Elementary School  
Thursday, Jan. 20, 2011

Quincie Douglas Library  
Tuesday, Jan. 25, 2011

Santa Rosa Neighborhood Center  
Thursday, Jan. 27, 2011

The City of Tucson is interested in your ideas and concerns regarding this project. Please take a moment to note any comments you have regarding conceptual alignment for the El Paso & Southwestern Greenway. Please print clearly.

1. Have you heard about the El Paso & Southwestern Greenway project before? Yes  No

2. What neighborhood do you live in? DUNBAR SPRING

3. Do you currently walk or bike in your neighborhood? Yes  No

If no, why not? \_\_\_\_\_

4. Where do you go when you walk or bike? (Circle all that apply)

- School
- Work
- Grocery store
- Bus stop
- Hardware store
- Restaurants
- Neighbor's or friend's house
- A park (please specify) \_\_\_\_\_
- Other DOWNTOWN

5. Which of the above places would the Greenway make it easier for you to access?

All except for school + grocery store

6. What aspects of the Draft Master Plan do you like best? Why?

connectivity!

7. What aspects of the Draft Master Plan would you like to see changed? Why?

I actually prefer AT-grade crossings - they make us (users) more visible to auto drivers... overpasses are <sup>sometimes</sup> a deterrent ← the scale of such infrastructure

8. How has the El Paso & Southwestern Railroad been part of your family's life? doesn't really fit in

9. What is a special story about your neighborhood's history?

\_\_\_\_\_

10. If you had a park nearby, what amenities or activities would you like to see? (Circle all that apply)

- |                     |                         |                                |                           |
|---------------------|-------------------------|--------------------------------|---------------------------|
| <u>Trees/shade</u>  | Ball fields             | <u>Walking paths/sidewalks</u> | <u>Playgrounds</u>        |
| <u>Benches</u>      | <u>Murals/art</u>       | <u>Night lighting</u>          | <u>Picnic areas</u>       |
| Swimming pool       | Desert park             | <u>Neighborhood events</u>     | <u>Drinking fountains</u> |
| <u>Skate park</u>   | <u>Community garden</u> | <u>Garden classes</u>          | <u>Dog park</u>           |
| <u>Yoga classes</u> | Exercise stations       | Cooking classes                | <u>BMX park</u>           |
| <u>Splash pad</u>   | <u>Bathrooms</u>        | <u>Wayfinding signage</u>      | Decorative fountains      |
- Other \_\_\_\_\_

11. What are the top three things you would enjoy most when the Greenway is completed?

car-free transportation options connectivity \_\_\_\_\_

12. What are the top three concerns you have regarding future access and use of the Greenway?

connectivity to other paths, corridors, etc. \_\_\_\_\_

13. How do you envision using the Greenway? (Circle all that apply)

- a) Walking, bicycling and/or jogging for recreation, health and/or fitness
- b) Walking or bicycling to a grocery store, restaurant or friend's home
- c) Commuting by bicycle or walking to work, school or for other purposes
- d) As a connection to local bus stops
- e) As a connection to a nearby park, community center or other public building
- f) Other \_\_\_\_\_

14. What are other priorities that should be considered during the development of the Greenway?

It would be great if we could make car-free connections from  
if heading west (under I-10, over Santa Cruz River)

15. Do you have any additional comments, questions or concerns?

\_\_\_\_\_  
 \_\_\_\_\_

Name: \_\_\_\_\_ Address: \_\_\_\_\_ City: \_\_\_\_\_ State: \_\_\_\_\_ ZIP: \_\_\_\_\_

Phone: \_\_\_\_\_ E-mail: \_\_\_\_\_

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 c/o Gordley Design Group, 2540 N. Tucson Blvd., Tucson, AZ 85716  
 E-mail: melissa@gordleydesign.com, Phone: 520-327-6077, Fax: 520-327-4687





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1. Have you heard about the El Paso & Southwestern Greenway project before? Yes \_\_\_ No x

2. What neighborhood do you live in? EAST SIDE (10 MIN. DOWNTOWN)

3. Do you currently walk or bike in your neighborhood? Yes x No \_\_\_

If no, why not? \_\_\_

4. Where do you go when you walk or bike? (Circle all that apply)

- School, Work, Grocery store, Bus stop, Hardware store, Restaurants, Neighbor's or friend's house, A park (please specify) \_\_\_, Other Pharmacy, Movie Theater, Church.

5. Which of the above places would the Greenway make it easier for you to access?

I LIVE FAR FROM IT - HOWEVER CONSIDER IT WOULD PROMOTE PEDESTRIAN TRAFFIC TOWARDS DOWNTOWN & WAREHOUSE DISTRICT

6. What aspects of the Draft Master Plan do you like best? Why?

SEE LOT OF POTENTIAL @ BADOT RETENTION BASIN. THE AVAILABILITY OF LAND

MAKES THE SITE CANDIDATE FOR A BIGGER PROJECT THAN JUST A MERE "PICNIC AREA"

POTENTIAL - OUTDOOR THEATER? PUBLIC POOL? (THIS ARE JUST IDEAS) MAYBE A THEME PARK (EG. NAYY PIER)

I'M CONCERNED ABOUT THE OVERPASSES (UNDERSTAND BUDGET ISSUES) CHICAGO REIMATE TO HISTORIC

HOWEVER, CAN BECOME POTENTIAL BLANK, UNUSED SPACES, BRING LITER OF BANDS "GANGS"

IT DEPENDS ON THE EXECUTION, DESIGN & THE ADJACENT INTERSECTIONS & SITES AROUND

8. How has the El Paso & Southwestern Railroad been part of your family's life? THEM.

NOT FROM TUCSON

9. What is a special story about your neighborhood's history?

\_\_\_

10. If you had a park nearby, what amenities or activities would you like to see? (Circle all that apply)

- |                            |                         |                            |                           |
|----------------------------|-------------------------|----------------------------|---------------------------|
| <u>Trees/shade</u>         | Ball fields             | Walking paths/sidewalks    | Playgrounds               |
| Benches                    | Murals/art              | <u>Night lighting</u>      | Picnic areas              |
| Swimming pool              | Desert park             | <u>Neighborhood events</u> | <u>Drinking fountains</u> |
| <u>Skate park</u>          | <u>Community garden</u> | Garden classes             | Dog park                  |
| <u>Yoga classes</u>        | Exercise stations       | Cooking classes            | BMX park                  |
| Splash pad                 | Bathrooms               | Wayfinding signage         | Decorative fountains      |
| Other <u>Rock climbing</u> |                         |                            |                           |

11. What are the top three things you would enjoy most when the Greenway is completed?

SHADE/NATURE                      CONNECTIVITY                      \_\_\_\_\_

12. What are the top three concerns you have regarding future access and use of the Greenway?

OVERPASS                      \_\_\_\_\_ INTERSECTIONS                      \_\_\_\_\_  
TO MUCH PARK & NO INTERESTING DESTINATION

13. How do you envision using the Greenway? (Circle all that apply)

- a) Walking, bicycling and/or jogging for recreation, health and/or fitness
- b) Walking or bicycling to a grocery store, restaurant or friend's home
- c) Commuting by bicycle or walking to work, school or for other purposes
- d) As a connection to local bus stops
- e) As a connection to a nearby park, community center or other public building
- f) Other \_\_\_\_\_

14. What are other priorities that should be considered during the development of the Greenway?

TRANSPORTATION — BUS STOPS — LIGHT RAILROAD

15. Do you have any additional comments, questions or concerns?

HISTORIC SIDE = HOW TO REINFORCE THE CONNECTION BESIDES THE SIGNAGE  
CHANGE ON GRADE, OFFSET ETC...

Name: Alex Fuente                      Address: 1949 N. EUBANK RD. #13                      City: TUCSON                      State: AZ                      ZIP: 85712  
 Phone: \_\_\_\_\_                      E-mail: alefuent@email.arizona.edu.

Please include me on the mailing list to receive future information concerning this project.



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 c/o Gordley Design Group, 2540 N. Tucson Blvd., Tucson, AZ 85716  
 E-mail: melissa@gordleydesign.com, Phone: 520-327-6077, Fax: 520-327-4687





10. If you had a park nearby, what amenities or activities would you like to see? (Circle all that apply)

Trees/shade

Ball fields

Walking paths/sidewalks

Playgrounds

Benches

Murals/art

Night lighting

Picnic areas

Swimming pool

Desert park

Neighborhood events

Drinking fountains

Skate park

Community garden

Garden classes

Dog park

Yoga classes

Exercise stations

Cooking classes

BMX park

Splash pad

Bathrooms

Wayfinding signage

Decorative fountains

Other \_\_\_\_\_

11. What are the top three things you would enjoy most when the Greenway is completed?

Bike without sharing  
w/ cars

Food City @ 6th Ave  
near I-10

Healthy/safely walking  
w/ friends + dogs

12. What are the top three concerns you have regarding future access and use of the Greenway?

Crossing RR Tracks @ Arriva  
Anita

Thank you for making this happen  
no matter the challenges

13. How do you envision using the Greenway? (Circle all that apply)

- a) Walking, bicycling and/or jogging for recreation, health and/or fitness
- b) Walking or bicycling to a grocery store, restaurant or friend's home
- c) Commuting by bicycle or walking to work, school or for other purposes
- d) As a connection to local bus stops
- e) As a connection to a nearby park, community center or other public building
- f) Other Health Health

14. What are other priorities that should be considered during the development of the Greenway?

Noise calming throughout

Bus Autos will not should not be allowed  
ELECTRIC - GAS

15. Do you have any additional comments, questions or concerns?

Name: Susan Hutzler Address: 901N 9th Ave City: Tucson State: AZ ZIP: 85705  
Phone: \_\_\_\_\_ E-mail: susanhutzler@hotmail.com

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1. Have you heard about the El Paso & Southwestern Greenway project before? Yes  No

2. What neighborhood do you live in? Dunbar Springs

3. Do you currently walk or bike in your neighborhood? Yes  No

If no, why not? \_\_\_\_\_

4. Where do you go when you walk or bike? (Circle all that apply)

School

Work

Grocery store

Bus stop

Hardware store

Restaurants

Neighbor's or friend's house

A park (please specify) \_\_\_\_\_

Other 4th Ave, Downtown

5. Which of the above places would the Greenway make it easier for you to access?

work - west of I-10, south of St. Mary's

6. What aspects of the Draft Master Plan do you like best? Why?

vegetation, walking paths

7. What aspects of the Draft Master Plan would you like to see changed? Why?

-

8. How has the El Paso & Southwestern Railroad been part of your family's life?

I grew up in the downtown area, the sound of train passing through is my life.

9. What is a special story about your neighborhood's history?

flattening pennies on the tracks.

10. If you had a park nearby, what amenities or activities would you like to see? (Circle all that apply)

- |                    |                          |                                |                           |
|--------------------|--------------------------|--------------------------------|---------------------------|
| <u>Trees/shade</u> | Ball fields              | <u>Walking paths/sidewalks</u> | Playgrounds               |
| <u>Benches</u>     | Murals/art               | <u>Night lighting</u>          | Picnic areas              |
| Swimming pool      | Desert park              | Neighborhood events            | <u>Drinking fountains</u> |
| Skate park         | Community garden         | Garden classes                 | Dog park                  |
| Yoga classes       | <u>Exercise stations</u> | Cooking classes                | BMX park                  |
| Splash pad         | Bathrooms                | <u>Wayfinding signage</u>      | Decorative fountains      |
| Other _____        |                          |                                |                           |

11. What are the top three things you would enjoy most when the Greenway is completed?

a place to go exercise \_\_\_\_\_

12. What are the top three concerns you have regarding future access and use of the Greenway?

vandalism, safety \_\_\_\_\_

13. How do you envision using the Greenway? (Circle all that apply)

- a) Walking, bicycling and/or jogging for recreation, health and/or fitness
- b) Walking or bicycling to a grocery store, restaurant or friend's home
- c) Commuting by bicycle or walking to work, school or for other purposes
- d) As a connection to local bus stops
- e) As a connection to a nearby park, community center or other public building
- f) Other \_\_\_\_\_

14. What are other priorities that should be considered during the development of the Greenway?

Neighborhood input. Thank you! \_\_\_\_\_

15. Do you have any additional comments, questions or concerns?

For the Dunbar Spring neighborhood - architecture  
Bungalows w/ front porches are peppered through-  
out the neighborhood. I have one :)

Name: Leticia Bermudez Address: 129W. 2nd St City: Tucson State: AZ ZIP: 85705  
Phone: \_\_\_\_\_ E-mail: letty85745@yahoo.com

Please include me on the mailing list to receive future information concerning this project.



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1. Have you heard about the El Paso & Southwestern Greenway project before? Yes \_\_\_ No \_\_\_

2. What neighborhood do you live in? Basco Unit Neighborhood

3. Do you currently walk or bike in your neighborhood? Yes [X] No \_\_\_

If no, why not? \_\_\_\_\_

4. Where do you go when you walk or bike? (Circle all that apply)

School

Work

Grocery store

Bus stop

Hardware store

Restaurants

Neighbor's or friend's house

A park (please specify) \_\_\_\_\_

Other \_\_\_\_\_

5. Which of the above places would the Greenway make it easier for you to access?

6. What aspects of the Draft Master Plan do you like best? Why? PODs this answer is for question #8

Grandfathers on both sides of family worked at both railroads and also ~~uncle~~ worked on rail road.

7. What aspects of the Draft Master Plan would you like to see changed? Why?

My main concern is the St. Mary's and I-10 Crossing

8. How has the El Paso & Southwestern Railroad been part of your family's life?

9. What is a special story about your neighborhood's history?

So many can't say just one or maybe when the Circus came to town late at night they would stop by Oury Park and you hear the animals and unfortunately their smells too!

10. If you had a park nearby, what amenities or activities would you like to see? (Circle all that apply)

- |                      |                         |                         |                      |
|----------------------|-------------------------|-------------------------|----------------------|
| Trees/shade          | Ball fields             | Walking paths/sidewalks | Playgrounds          |
| <u>Benches</u>       | Murals/art              | Night lighting          | Picnic areas         |
| <u>Swimming pool</u> | Desert park             | Neighborhood events     | Drinking fountains   |
| Skate park           | <u>Community garden</u> | Garden classes          | Dog park             |
| Yoga classes         | Exercise stations       | Cooking classes         | BMX park             |
| Splash pad           | Bathrooms               | Wayfinding signage      | Decorative fountains |
| Other _____          |                         |                         |                      |

11. What are the top three things you would enjoy most when the Greenway is completed?

Gardens      Info & \$ to about the neighborhoods      art & ~~fit~~

12. What are the top three concerns you have regarding future access and use of the Greenway?

St. Mary's Rd 1-10 Crossing      Ad B/R Station      State borders

13. How do you envision using the Greenway? (Circle all that apply)

- a) Walking, bicycling and/or jogging for recreation, health and/or fitness
- b) Walking or bicycling to a grocery store, restaurant or friend's home
- c) Commuting by bicycle or walking to work, school or for other purposes
- d) As a connection to local bus stops
- e) As a connection to a nearby park, community center or other public building
- f) Other \_\_\_\_\_

14. What are other priorities that should be considered during the development of the Greenway?

\_\_\_\_\_

\_\_\_\_\_

15. Do you have any additional comments, questions or concerns?

See if a partnership could be established with the owner of the  
Ad B/R Station for a possible art / cafe, meeting place  
and B/R Museum.

Name: D. Estela Dalton      Address: Tucson      City: Tucson      State: AZ.      ZIP: 85705-7508

Phone: 632 n. Anita Ave      E-mail: 622-3404

Please include me on the mailing list to receive future information concerning this project.



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1. Have you heard about the El Paso & Southwestern Greenway project before? Yes  No

2. What neighborhood do you live in? Barris Anita

3. Do you currently walk or bike in your neighborhood? Yes  No

If no, why not? \_\_\_\_\_

4. Where do you go when you walk or bike? (Circle all that apply)

School

Work

Grocery store

Bus stop

Hardware store

Restaurants

Neighbor's or friend's house

A park (please specify)

Owry Park

Other just getting out of the

5. Which of the above places would the Greenway make it easier for you to access? Barris

6. What aspects of the Draft Master Plan do you like best? Why?

Inside the Barris, it will have more  
lighting, and the walk path will look very nice

7. What aspects of the Draft Master Plan would you like to see changed? Why?

The crossing on St. Mary's, the traffic  
will be back-ups, a bridge would be the right solution

8. How has the El Paso & Southwestern Railroad been part of your family's life?

I like to hear the how and although is how  
I can sleep peacefully. It's like living in the country  
down town.

9. What is a special story about your neighborhood's history?

I live in a house that was built in 1938 and have heard  
ghost stories but have not experienced any.

10. If you had a park nearby, what amenities or activities would you like to see? (Circle all that apply)

- |               |                   |                         |                      |
|---------------|-------------------|-------------------------|----------------------|
| Trees/shade   | Ball fields       | Walking paths/sidewalks | Playgrounds          |
| Benches       | Murals/art        | Night lighting          | Picnic areas         |
| Swimming pool | Desert park       | Neighborhood events     | Drinking fountains   |
| Skate park    | Community garden  | Garden classes          | Dog park             |
| Yoga classes  | Exercise stations | Cooking classes         | BMX park             |
| Splash pad    | Bathrooms         | Wayfinding signage      | Decorative fountains |
| Other _____   |                   |                         |                      |

11. What are the top three things you would enjoy most when the Greenway is completed?

walking paths      Cooking classes      Desert Park

12. What are the top three concerns you have regarding future access and use of the Greenway?

\_\_\_\_\_

13. How do you envision using the Greenway? (Circle all that apply)

- a) Walking, bicycling and/or jogging for recreation, health and/or fitness
- b) Walking or bicycling to a grocery store, restaurant or friend's home
- c) Commuting by bicycle or walking to work, school or for other purposes
- d) As a connection to local bus stops
- e) As a connection to a nearby park, community center or other public building
- f) Other walking, exercise

14. What are other priorities that should be considered during the development of the Greenway?

Contzen + Hughes, people will come around  
from Contzen, will not see the bikers going across.

15. Do you have any additional comments, questions or concerns?

I do like the idea of the Greenway and would  
co-operate in keeping the walk path clean

Name: DORA TORRES      Address: 772 N. CENTER AVE. T/A      City: \_\_\_\_\_      State: 85705      ZIP: \_\_\_\_\_  
 Phone: \_\_\_\_\_      E-mail: \_\_\_\_\_

Please include me on the mailing list to receive future information concerning this project.



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1. Have you heard about the El Paso & Southwestern Greenway project before? Yes  No

2. What neighborhood do you live in? Dunbar Springs

3. Do you currently walk or bike in your neighborhood? Yes  No

If no, why not? \_\_\_\_\_

4. Where do you go when you walk or bike? (Circle all that apply)

School

Work

Grocery store

Bus stop

Hardware store

Restaurants

Neighbor's or friend's house    A park (please specify) \_\_\_\_\_    Other \_\_\_\_\_

5. Which of the above places would the Greenway make it easier for you to access?

Downtown

6. What aspects of the Draft Master Plan do you like best? Why?

\_\_\_\_\_  
\_\_\_\_\_

7. What aspects of the Draft Master Plan would you like to see changed? Why?

\_\_\_\_\_  
\_\_\_\_\_

8. How has the El Paso & Southwestern Railroad been part of your family's life?

live next to it

9. What is a special story about your neighborhood's history?

Historic neighborhood family has lived there for 3 generations - over 100 years

10. If you had a park nearby, what amenities or activities would you like to see? (Circle all that apply)

- |               |                   |                         |                      |
|---------------|-------------------|-------------------------|----------------------|
| Trees/shade   | Ball fields       | Walking paths/sidewalks | Playgrounds          |
| Benches       | Murals/art        | Night lighting          | Picnic areas         |
| Swimming pool | Desert park       | Neighborhood events     | Drinking fountains   |
| Skate park    | Community garden  | Garden classes          | Dog park             |
| Yoga classes  | Exercise stations | Cooking classes         | BMX park             |
| Splash pad    | Bathrooms         | Wayfinding signage      | Decorative fountains |
| Other _____   |                   |                         |                      |

11. What are the top three things you would enjoy most when the Greenway is completed?

\_\_\_\_\_

12. What are the top three concerns you have regarding future access and use of the Greenway?

Safety \_\_\_\_\_

13. How do you envision using the Greenway? (Circle all that apply)

- a) Walking, bicycling and/or jogging for recreation, health and/or fitness
- b) Walking or bicycling to a grocery store, restaurant or friend's home
- c) Commuting by bicycle or walking to work, school or for other purposes
- d) As a connection to local bus stops
- e) As a connection to a nearby park, community center or other public building
- f) Other \_\_\_\_\_

14. What are other priorities that should be considered during the development of the Greenway?

\_\_\_\_\_  
\_\_\_\_\_

15. Do you have any additional comments, questions or concerns?

\_\_\_\_\_  
\_\_\_\_\_

Name: Address: City: State: ZIP:

Phone: E-mail:

Please include me on the mailing list to receive future information concerning this project.



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Open Houses

Davis Bilingual Elementary School
Thursday, Jan. 20, 2011

Quincie Douglas Library
Tuesday, Jan. 25, 2011

Santa Rosa Neighborhood Center
Thursday, Jan. 27, 2011

The City of Tucson is interested in your ideas and concerns regarding this project. Please take a moment to note any comments you have regarding conceptual alignment for the El Paso & Southwestern Greenway. Please print clearly.

1. Have you heard about the El Paso & Southwestern Greenway project before? Yes \_\_\_ No \_\_\_

2. What neighborhood do you live in? \_\_\_\_\_

3. Do you currently walk or bike in your neighborhood? Yes \_\_\_ No \_\_\_

If no, why not? \_\_\_\_\_

4. Where do you go when you walk or bike? (Circle all that apply)

- School Work Grocery store
Bus stop Hardware store Restaurants
Neighbor's or friend's house A park (please specify) Other

5. Which of the above places would the Greenway make it easier for you to access?

Another destination: Small museum between El Finadito & Carillo School.

6. What aspects of the Draft Master Plan do you like best? Why?

LA PILITA

7. What aspects of the Draft Master Plan would you like to see changed? Why?

8. How has the El Paso & Southwestern Railroad been part of your family's life?

9. What is a special story about your neighborhood's history?

**10. If you had a park nearby, what amenities or activities would you like to see? (Circle all that apply)**

- |               |                   |                         |                      |
|---------------|-------------------|-------------------------|----------------------|
| Trees/shade   | Ball fields       | Walking paths/sidewalks | Playgrounds          |
| Benches       | Murals/art        | Night lighting          | Picnic areas         |
| Swimming pool | Desert park       | Neighborhood events     | Drinking fountains   |
| Skate park    | Community garden  | Garden classes          | Dog park             |
| Yoga classes  | Exercise stations | Cooking classes         | BMX park             |
| Splash pad    | Bathrooms         | Wayfinding signage      | Decorative fountains |
| Other _____   |                   |                         |                      |

**11. What are the top three things you would enjoy most when the Greenway is completed?**

\_\_\_\_\_

**12. What are the top three concerns you have regarding future access and use of the Greenway?**

\_\_\_\_\_

**13. How do you envision using the Greenway? (Circle all that apply)**

- a) Walking, bicycling and/or jogging for recreation, health and/or fitness
- b) Walking or bicycling to a grocery store, restaurant or friend's home
- c) Commuting by bicycle or walking to work, school or for other purposes
- d) As a connection to local bus stops
- e) As a connection to a nearby park, community center or other public building
- f) Other \_\_\_\_\_

**14. What are other priorities that should be considered during the development of the Greenway?**

\_\_\_\_\_  
\_\_\_\_\_

**15. Do you have any additional comments, questions or concerns?**

\_\_\_\_\_  
\_\_\_\_\_

**Name:** \_\_\_\_\_ **Address:** \_\_\_\_\_ **City:** \_\_\_\_\_ **State:** \_\_\_\_\_ **ZIP:** \_\_\_\_\_

**Phone:** \_\_\_\_\_ **E-mail:** \_\_\_\_\_

Please include me on the mailing list to receive future information concerning this project.



Please leave your comment forms in the comment box or return to:  
Melissa Anguiz, City of Tucson Community Relations  
c/o Gordley Design Group, 2540 N. Tucson Blvd., Tucson, AZ 85716  
E-mail: melissa@gordleydesign.com, Phone: 520-327-6077, Fax: 520-327-4687



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1. Have you heard about the El Paso & Southwestern Greenway project before? Yes \_\_\_ No

2. What neighborhood do you live in? South Tucson

3. Do you currently walk or bike in your neighborhood? Yes \_\_\_ No

If no, why not? too dark

4. Where do you go when you walk or bike? (Circle all that apply)

School

Work

Grocery store

Bus stop

Hardware store

Restaurants

Neighbor's or friend's house

A park (please specify) Reid

Other \_\_\_\_\_

5. Which of the above places would the Greenway make it easier for you to access?

?

6. What aspects of the Draft Master Plan do you like best? Why?

7. What aspects of the Draft Master Plan would you like to see changed? Why?

8. How has the El Paso & Southwestern Railroad been part of your family's life?

9. What is a special story about your neighborhood's history?

Property Transfers to generation / generation

10. If you had a park nearby, what amenities or activities would you like to see? (Circle all that apply)

Trees/shade

Ball fields

Walking paths/sidewalks

Playgrounds

Benches

Murals/art

Night lighting

Picnic areas

Swimming pool

Desert park

Neighborhood events

Drinking fountains

Skate park

Community garden

Garden classes

Dog park

Yoga classes

Exercise stations

Cooking classes

BMX park

Splash pad

Bathrooms

Wayfinding signage

Decorative fountains

Other \_\_\_\_\_

11. What are the top three things you would enjoy most when the Greenway is completed?

\_\_\_\_\_

12. What are the top three concerns you have regarding future access and use of the Greenway?

strangers in neighbor

13. How do you envision using the Greenway? (Circle all that apply)

- a) Walking, bicycling and/or jogging for recreation, health and/or fitness
- b) Walking or bicycling to a grocery store, restaurant or friend's home
- c) Commuting by bicycle or walking to work, school or for other purposes
- d) As a connection to local bus stops
- e) As a connection to a nearby park, community center or other public building
- f) Other \_\_\_\_\_

14. What are other priorities that should be considered during the development of the Greenway?

strangers sleeping in Park - single Person

15. Do you have any additional comments, questions or concerns?

\_\_\_\_\_

Name: T. Santa Cruz Address: 415 W 29th City: Tucson State: AZ ZIP: 85713  
 Phone: 520-884-9514 E-mail: \_\_\_\_\_

Please include me on the mailing list to receive future information concerning this project.



Please leave your comment forms in the comment box or return to:  
 Melissa Anguiz, City of Tucson Community Relations  
 c/o Gordley Design Group, 2540 N. Tucson Blvd., Tucson, AZ 85716  
 E-mail: melissa@gordleydesign.com, Phone: 520-327-6077, Fax: 520-327-4687





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1. Have you heard about the El Paso & Southwestern Greenway project before? Yes  No

2. What neighborhood do you live in? Barrio Viejo/membrillo

3. Do you currently walk or bike in your neighborhood? Yes  No

If no, why not? \_\_\_\_\_

4. Where do you go when you walk or bike? (Circle all that apply)

Davis School would w/ been way Work Grocery store  
Bus stop Hardware store Restaurants  
Neighbor's or friend's house A park (please specify) san cosme Other \_\_\_\_\_

5. Which of the above places would the Greenway make it easier for you to access?

School, OTHER PARKS

6. What aspects of the Draft Master Plan do you like best? Why?

\_\_\_\_\_

7. What aspects of the Draft Master Plan would you like to see changed? Why?

more activities along the way.

8. How has the El Paso & Southwestern Railroad been part of your family's life?

It divides my neighborhood in half.  
"Barrio Viejo"

9. What is a special story about your neighborhood's history?

The destruction of the Barrio by the TCC.

10. If you had a park nearby, what amenities or activities would you like to see? (Circle all that apply)

Trees/shade

Ball fields

Walking paths/sidewalks

Playgrounds

Benches

Murals/art

Night lighting

Picnic areas

Swimming pool

Desert park

Neighborhood events

Drinking fountains

Skate park

Community garden

Garden classes

Dog park

Yoga classes

Exercise stations

Cooking classes

BMX park

Splash pad

Bathrooms

Wayfinding signage

Decorative fountains

Other \_\_\_\_\_

*(best ball courts)*

11. What are the top three things you would enjoy most when the Greenway is completed?

splash pad

fountains

playgrounds  
*w/ BBC courts*

12. What are the top three concerns you have regarding future access and use of the Greenway?

ugly art will be used

13. How do you envision using the Greenway? (Circle all that apply)

- a) Walking, bicycling and/or jogging for recreation, health and/or fitness
- b) Walking or bicycling to a grocery store, restaurant or friend's home
- c) Commuting by bicycle or walking to work, school or for other purposes
- d) As a connection to local bus stops
- e) As a connection to a nearby park, community center or other public building
- f) Other \_\_\_\_\_

14. What are other priorities that should be considered during the development of the Greenway?

15. Do you have any additional comments, questions or concerns?

Name: Michele Ream Address: 609 W. mesa st City: Tucson State: AZ ZIP: 85701  
 Phone: 401-1671 E-mail: swirliest@yahoo.com

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1. Have you heard about the El Paso & Southwestern Greenway project before? Yes  No

2. What neighborhood do you live in? Speedway Silverdale

3. Do you currently walk or bike in your neighborhood? Yes  No

If no, why not? \_\_\_\_\_

4. Where do you go when you walk or bike? (Circle all that apply)

School

Work

Grocery store

Bus stop

Hardware store

Restaurants

Neighbor's or friend's house

A park (please specify) \_\_\_\_\_

Other

exercise

5. Which of the above places would the Greenway make it easier for you to access?

As I don't live within the boundary, no direct effect

6. What aspects of the Draft Master Plan do you like best? Why?

increased access, safety

7. What aspects of the Draft Master Plan would you like to see changed? Why?

\_\_\_\_\_  
\_\_\_\_\_

8. How has the El Paso & Southwestern Railroad been part of your family's life?

\_\_\_\_\_  
\_\_\_\_\_

9. What is a special story about your neighborhood's history?

\_\_\_\_\_

**10. If you had a park nearby, what amenities or activities would you like to see? (Circle all that apply)**

- |               |                   |                         |                      |
|---------------|-------------------|-------------------------|----------------------|
| Trees/shade   | Ball fields       | Walking paths/sidewalks | Playgrounds          |
| Benches       | Murals/art        | Night lighting          | Picnic areas         |
| Swimming pool | Desert park       | Neighborhood events     | Drinking fountains   |
| Skate park    | Community garden  | Garden classes          | Dog park             |
| Yoga classes  | Exercise stations | Cooking classes         | BMX park             |
| Splash pad    | Bathrooms         | Wayfinding signage      | Decorative fountains |
| Other _____   |                   |                         |                      |

**11. What are the top three things you would enjoy most when the Greenway is completed?**

\_\_\_\_\_

**12. What are the top three concerns you have regarding future access and use of the Greenway?**

\_\_\_\_\_

**13. How do you envision using the Greenway? (Circle all that apply)**

- a) Walking, bicycling and/or jogging for recreation, health and/or fitness
- b) Walking or bicycling to a grocery store, restaurant or friend's home
- c) Commuting by bicycle or walking to work, school or for other purposes
- d) As a connection to local bus stops
- e) As a connection to a nearby park, community center or other public building
- f) Other \_\_\_\_\_

**14. What are other priorities that should be considered during the development of the Greenway?**

\_\_\_\_\_  
\_\_\_\_\_

**15. Do you have any additional comments, questions or concerns?**

\_\_\_\_\_  
\_\_\_\_\_

**Name:** \_\_\_\_\_ **Address:** \_\_\_\_\_ **City:** \_\_\_\_\_ **State:** \_\_\_\_\_ **ZIP:** \_\_\_\_\_

**Phone:** \_\_\_\_\_ **E-mail:** \_\_\_\_\_

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1. Have you heard about the El Paso & Southwestern Greenway project before? Yes  No

2. What neighborhood do you live in? COUNTRY CLUB / GLENN (NOT A DIRECT NEIGHBOR OF PROJECT)

3. Do you currently walk or bike in your neighborhood? Yes  No

If no, why not? \_\_\_\_\_

4. Where do you go when you walk or bike? (Circle all that apply)

School

Work

Grocery store

Bus stop

Hardware store

Restaurants

Neighbor's or friend's house

A park (please specify) \_\_\_\_\_

Other \_\_\_\_\_

5. Which of the above places would the Greenway make it easier for you to access?

Downtown Historic Sites

6. What aspects of the Draft Master Plan do you like best? Why?

Pocket Parks along route encourage short trips for pure recreation

7. What aspects of the Draft Master Plan would you like to see changed? Why?

8. How has the El Paso & Southwestern Railroad been part of your family's life?

9. What is a special story about your neighborhood's history?

10. If you had a park nearby, what amenities or activities would you like to see? (Circle all that apply)

- |               |                   |                         |                      |
|---------------|-------------------|-------------------------|----------------------|
| Trees/shade   | Ball fields       | Walking paths/sidewalks | Playgrounds          |
| Benches       | Murals/art        | Night lighting          | Picnic areas         |
| Swimming pool | Desert park       | Neighborhood events     | Drinking fountains   |
| Skate park    | Community garden  | Garden classes          | Dog park             |
| Yoga classes  | Exercise stations | Cooking classes         | BMX park             |
| Splash pad    | Bathrooms         | Wayfinding signage      | Decorative fountains |
| Other _____   |                   |                         |                      |

11. What are the top three things you would enjoy most when the Greenway is completed?

\_\_\_\_\_

12. What are the top three concerns you have regarding future access and use of the Greenway?

\_\_\_\_\_

13. How do you envision using the Greenway? (Circle all that apply)

- a) Walking, bicycling and/or jogging for recreation, health and/or fitness
- b) Walking or bicycling to a grocery store, restaurant or friend's home
- c) Commuting by bicycle or walking to work, school or for other purposes
- d) As a connection to local bus stops
- e) As a connection to a nearby park, community center or other public building
- f) Other \_\_\_\_\_

14. What are other priorities that should be considered during the development of the Greenway?

\_\_\_\_\_  
\_\_\_\_\_

15. Do you have any additional comments, questions or concerns?

\_\_\_\_\_  
\_\_\_\_\_

Name: \_\_\_\_\_ Address: \_\_\_\_\_ City: \_\_\_\_\_ State: \_\_\_\_\_ ZIP: \_\_\_\_\_

Phone: \_\_\_\_\_ E-mail: \_\_\_\_\_

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c/o Gordley Design Group, 2540 N. Tucson Blvd., Tucson, AZ 85716  
E-mail: melissa@gordleydesign.com, Phone: 520-327-6077, Fax: 520-327-4687



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El Paso & Southwestern Greenway Project  
Open Houses

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BY: \_\_\_\_\_

Davis Bilingual Elementary School  
Thursday, Jan. 20, 2011

Quincie Douglas Library  
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Santa Rosa Neighborhood Center  
Thursday, Jan. 27, 2011

The City of Tucson is interested in your ideas and concerns regarding this project. Please take a moment to note any comments you have regarding conceptual alignment for the El Paso & Southwestern Greenway. Please print clearly.

1. Have you heard about the El Paso & Southwestern Greenway project before? Yes  No

2. What neighborhood do you live in? Barrio Centro

3. Do you currently walk or bike in your neighborhood? Yes  No

If no, why not? \_\_\_\_\_

4. Where do you go when you walk or bike? (Circle all that apply)

School U.A. Library

Work

Grocery store

Bus stop

Hardware store

Restaurants

Neighbor's or friend's house

A park (please specify) Reid Park

Other Pima County Libraries

Target

5. Which of the above places would the Greenway make it easier for you to access?

N/A

6. What aspects of the Draft Master Plan do you like best? Why?

Building Bike Infrastructure is good for the community.

7. What aspects of the Draft Master Plan would you like to see changed? Why?

Incorporate more rain water harvesting features and more sustainable aspects to plan.

8. How has the El Paso & Southwestern Railroad been part of your family's life?

N/A

9. What is a special story about your neighborhood's history?

Barrio Centro is connected to current Union Pacific RR Line.

10. If you had a park nearby, what amenities or activities would you like to see? (Circle all that apply)

- |               |                   |                         |                      |
|---------------|-------------------|-------------------------|----------------------|
| Trees/shade   | Ball fields       | Walking paths/sidewalks | Playgrounds          |
| Benches       | Murals/art        | Night lighting          | Picnic areas         |
| Swimming pool | Desert park       | Neighborhood events     | Drinking fountains   |
| Skate park    | Community garden  | Garden classes          | Dog park             |
| Yoga classes  | Exercise stations | Cooking classes         | BMX park             |
| Splash pad ?  | Bathrooms         | Wayfinding signage      | Decorative fountains |
- Other \_\_\_\_\_

11. What are the top three things you would enjoy most when the Greenway is completed?

connectivity      traffic-free zones      landscaping <sup>trees/shrub</sup>  
<sub>wildflower</sub>

12. What are the top three concerns you have regarding future access and use of the Greenway?

connectivity      traffic-free zones (by pass)

13. How do you envision using the Greenway? (Circle all that apply)

- a) Walking, bicycling and/or jogging for recreation, health and/or fitness
- b) Walking or bicycling to a grocery store, restaurant or friend's home
- c) Commuting by bicycle or walking to work, school or for other purposes
- d) As a connection to local bus stops
- e) As a connection to a nearby park, community center or other public building
- f) Other The greenway will add a loop ride from Barrio Centro.

14. What are other priorities that should be considered during the development of the Greenway?

~~unknown~~ initiate tree planting ASAP!

15. Do you have any additional comments, questions or concerns?

would like to see it completed soon!

Name: German Quiroga      Address: 1808 S. Winmor Ave. Tucson      City: Tucson      State: AZ      ZIP: 85713  
 Phone: 520-343-5641      E-mail: torlugawerx@yahoo.com

Please include me on the mailing list to receive future information concerning this project.



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1. Have you heard about the El Paso & Southwestern Greenway project before? Yes [X] No

2. What neighborhood do you live in? Dunbar Spring

3. Do you currently walk or bike in your neighborhood? Yes [X] No

If no, why not?

4. Where do you go when you walk or bike? (Circle all that apply)

- School, Bus stop, Neighbor's or friend's house, Work, Hardware store, Grocery store, Restaurants, A park (please specify) Gory, Himmel, Reid, Other BUS DEPOT

5. Which of the above places would the Greenway make it easier for you to access? WORK (TCC)

6. What aspects of the Draft Master Plan do you like best? Why? SEPARATE FROM ROADWAYS WHEREVER POSSIBLE, SEPARATE BIKE/PED PATHS, CONNECTIVITY W/ EXISTING/PLANNED BIKE ROUTES. SO MUCH TO LOVE!!

7. What aspects of the Draft Master Plan would you like to see changed? Why? East - Jog at St. Mary's - inconvenient... an exception to signal distance should be made to allow a straight through crossing. Cyclists are not second-class users! ROADWAYS

8. How has the El Paso & Southwestern Railroad been part of your family's life? It has not

9. What is a special story about your neighborhood's history?

10. If you had a park nearby, what amenities or activities would you like to see? (Circle all that apply)

- |               |                   |                           |                                 |
|---------------|-------------------|---------------------------|---------------------------------|
| Trees/shade   | Ball fields       | Walking paths/sidewalks   | Playgrounds                     |
| Benches       | Murals/art        | Night lighting <i>No!</i> | Picnic areas                    |
| Swimming pool | Desert park       | Neighborhood events       | Drinking fountains              |
| Skate park    | Community garden  | Garden classes            | Dog park                        |
| Yoga classes  | Exercise stations | Cooking classes           | BMX park                        |
| Splash pad    | Bathrooms         | Wayfinding signage        | Decorative fountains <i>No!</i> |
- Other Water conservation should trump decorative fountains. Tucson's dark sky should be preserved

11. What are the top three things you would enjoy most when the Greenway is completed?

Bicycling without cars!      Using the Parks      Using it as part of the larger urban path loc

12. What are the top three concerns you have regarding future access and use of the Greenway?

\_\_\_\_\_

13. How do you envision using the Greenway? (Circle all that apply)

- a) Walking, bicycling and/or jogging for recreation, health and/or fitness
- b) Walking or bicycling to a grocery store, restaurant or friend's home
- c) Commuting by bicycle or walking to work, school or for other purposes
- d) As a connection to local bus stops
- e) As a connection to a nearby park, community center or other public building
- f) Other \_\_\_\_\_

14. What are other priorities that should be considered during the development of the Greenway?

IF UPRR crossing is unworkable, terminate Barrio Anita segment in our park and use Davis/Cicero Park on W. side of Main Ave. R.O.W. can be acquired by replacing planned SBD bike lane on Main Ave RE: Road diet proposed by Dunbar Springs neighborhood Assn. Cross main Ave w/TOCAN. Add traffic circle w/4-way

15. Do you have any additional comments, questions or concerns?

Include a link North on 13th Ave to Estrella Park/Barrio Blue moon.  
Please use <sup>only</sup> plants for landscaping that are native to the Tucson Basin. Utilize passive rainwater harvesting!

Name: IAN FRITZ      Address: 903 N 10th Ave      City: Tucson      State: \_\_\_\_\_      ZIP: 85705  
 Phone: 628-4318      E-mail: sprocket@riseup.net

Please include me on the mailing list to receive future information concerning this project.



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1. Have you heard about the El Paso & Southwestern Greenway project before? Yes \_\_\_ No \_\_\_

2. What neighborhood do you live in? Vicjo

3. Do you currently walk or bike in your neighborhood? Yes  No \_\_\_

If no, why not? \_\_\_\_\_

4. Where do you go when you walk or bike? (Circle all that apply)

School

Work

Grocery store

Bus stop

Hardware store

Restaurants

Neighbor's or friend's house

A park (please specify) \_\_\_\_\_

Other \_\_\_\_\_

5. Which of the above places would the Greenway make it easier for you to access?

Work - foot up Univ. Blvd to UA.

6. What aspects of the Draft Master Plan do you like best? Why?

\_\_\_\_\_  
\_\_\_\_\_

7. What aspects of the Draft Master Plan would you like to see changed? Why?

\_\_\_\_\_  
\_\_\_\_\_

8. How has the El Paso & Southwestern Railroad been part of your family's life?

\_\_\_\_\_  
\_\_\_\_\_

9. What is a special story about your neighborhood's history?

\_\_\_\_\_

10. If you had a park nearby, what amenities or activities would you like to see? (Circle all that apply)

- |   |  |   |  |
|---|--|---|--|
| <input checked="" type="checkbox"/> Trees/shade | <input checked="" type="checkbox"/> Ball fields      | <input checked="" type="checkbox"/> Walking paths/sidewalks | <input checked="" type="checkbox"/> Playgrounds        |
| <input checked="" type="checkbox"/> Benches     | <input checked="" type="checkbox"/> Murals/art       | <input checked="" type="checkbox"/> Night lighting          | Picnic areas   |
| Swimming pool                                   | Desert park  | <input checked="" type="checkbox"/> Neighborhood events     | <input checked="" type="checkbox"/> Drinking fountains |
| Skate park                                      | <input checked="" type="checkbox"/> Community garden | <input checked="" type="checkbox"/> Garden classes          | <input checked="" type="checkbox"/> Dog park           |
| Yoga classes                                    | Exercise stations                                    | Cooking classes   | BMX park   |
| <input checked="" type="checkbox"/> Splash pad  | <input checked="" type="checkbox"/> Bathrooms        | <input checked="" type="checkbox"/> Wayfinding signage      | Decorative fountains                                   |
| Other _____                                     |  |   |  |

11. What are the top three things you would enjoy most when the Greenway is completed?

\_\_\_\_\_

12. What are the top three concerns you have regarding future access and use of the Greenway?

safety \_\_\_\_\_ maintenance \_\_\_\_\_

13. How do you envision using the Greenway? (Circle all that apply)

- a) Walking, bicycling and/or jogging for recreation, health and/or fitness
- b) Walking or bicycling to a grocery store, restaurant or friend's home
- c) Commuting by bicycle or walking to work, school or for other purposes
- d) As a connection to local bus stops
- e) As a connection to a nearby park, community center or other public building
- f) Other \_\_\_\_\_

14. What are other priorities that should be considered during the development of the Greenway?

work on getting the connection to University Blvd 1st priority. If it is an easy direct path to the University w/ no traffic it will be used by everyone that works in the University area.

15. Do you have any additional comments, questions or concerns?

\_\_\_\_\_  
\_\_\_\_\_

Name: \_\_\_\_\_ Address: \_\_\_\_\_ City: \_\_\_\_\_ State: \_\_\_\_\_ ZIP: \_\_\_\_\_

Phone: \_\_\_\_\_ E-mail: \_\_\_\_\_

Please include me on the mailing list to receive future information concerning this project.



Please leave your comment forms in the comment box or return to:  
Melissa Anguiz, City of Tucson Community Relations  
c/o Gordley Design Group, 2540 N. Tucson Blvd., Tucson, AZ 85716  
E-mail: melissa@gordleydesign.com, Phone: 520-327-6077, Fax: 520-327-4687





Comment Form  
El Paso & Southwestern Greenway Project  
Open Houses

Davis Bilingual Elementary School  
Thursday, Jan. 20, 2011

Quincie Douglas Library  
Tuesday, Jan. 25, 2011

Santa Rosa Neighborhood Center  
Thursday, Jan. 27, 2011

The City of Tucson is interested in your ideas and concerns regarding this project. Please take a moment to note any comments you have regarding conceptual alignment for the El Paso & Southwestern Greenway. Please print clearly.

1. Have you heard about the El Paso & Southwestern Greenway project before? Yes  No

2. What neighborhood do you live in? BARRIO SANTA ROSA

3. Do you currently walk or bike in your neighborhood? Yes  No

If no, why not? \_\_\_\_\_

4. Where do you go when you walk or bike? (Circle all that apply)

- School
- Work
- Grocery store
- Bus stop
- Hardware store
- Restaurants
- Neighbor's or friend's house
- A park (please specify) \_\_\_\_\_
- Other \_\_\_\_\_

5. Which of the above places would the Greenway make it easier for you to access?  
RETAIL AND DINING NEAR 4TH AVENUE AND THE UNIVERSITY

6. What aspects of the Draft Master Plan do you like best? Why?  
IT SERVES AREAS THAT DO NOT HAVE OTHER COMPARABLE PLACES THAT PEOPLE CAN USE TO EXERCISE OR COMMUTE BY BIKE

7. What aspects of the Draft Master Plan would you like to see changed? Why?  
\_\_\_\_\_  
\_\_\_\_\_

8. How has the El Paso & Southwestern Railroad been part of your family's life?  
No  
\_\_\_\_\_  
\_\_\_\_\_

9. What is a special story about your neighborhood's history?  
\_\_\_\_\_

10. If you had a park nearby, what amenities or activities would you like to see? (Circle all that apply)

- |               |                   |                         |                      |
|---------------|-------------------|-------------------------|----------------------|
| Trees/shade   | Ball fields       | Walking paths/sidewalks | Playgrounds          |
| Benches       | Murals/art        | Night lighting          | Picnic areas         |
| Swimming pool | Desert park       | Neighborhood events     | Drinking fountains   |
| Skate park    | Community garden  | Garden classes          | Dog park             |
| Yoga classes  | Exercise stations | Cooking classes         | BMX park             |
| Splash pad    | Bathrooms         | Wayfinding signage      | Decorative fountains |
| Other _____   |                   |                         |                      |

11. What are the top three things you would enjoy most when the Greenway is completed?

RUNNING

CYCLING

12. What are the top three concerns you have regarding future access and use of the Greenway?

13. How do you envision using the Greenway? (Circle all that apply)

- a) Walking, bicycling and/or jogging for recreation, health and/or fitness
- b) Walking or bicycling to a grocery store, restaurant or friend's home
- c) Commuting by bicycle or walking to work, school or for other purposes
- d) As a connection to local bus stops
- e) As a connection to a nearby park, community center or other public building
- f) Other \_\_\_\_\_

14. What are other priorities that should be considered during the development of the Greenway?

15. Do you have any additional comments, questions or concerns?

THIS IS A FANTASTIC IDEA AND IS WELL DESIGNED

FIND IT! BUILD IT! MAKE TUCSON MORE FIT AND HEALTHY!

Name: SCOTT SIMONSON Address: 901 S. MEYER AVE City: TUCSON State: AZ ZIP: 85701  
Phone: \_\_\_\_\_ E-mail: SCOTT.SIMONSON@QUARLES.COM

Please include me on the mailing list to receive future information concerning this project.



Please leave your comment forms in the comment box or return to:  
Melissa Anguiz, City of Tucson Community Relations  
c/o Gordley Design Group, 2540 N. Tucson Blvd., Tucson, AZ 85716  
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Open Houses

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The City of Tucson is interested in your ideas and concerns regarding this project. Please take a moment to note any comments you have regarding conceptual alignment for the El Paso & Southwestern Greenway. Please print clearly.

1. Have you heard about the El Paso & Southwestern Greenway project before? Yes \_\_\_ No [X]

2. What neighborhood do you live in? BARRIO EL HOYO

3. Do you currently walk or bike in your neighborhood? Yes [X] No \_\_\_

If no, why not? \_\_\_\_\_

4. Where do you go when you walk or bike? (Circle all that apply)

- School, Work, Grocery store, Bus stop, Hardware store, Restaurants, Neighbor's or friend's house, A park (please specify), Other

5. Which of the above places would the Greenway make it easier for you to access?

All

6. What aspects of the Draft Master Plan do you like best? Why?

\_\_\_\_\_

7. What aspects of the Draft Master Plan would you like to see changed? Why?

POSSIBLE FUTURE CONNECTION TO AVIATION HWY BIKE PATH VIA COUNTRY CLUB?

8. How has the El Paso & Southwestern Railroad been part of your family's life?

Ø

9. What is a special story about your neighborhood's history?

Ø

**10. If you had a park nearby, what amenities or activities would you like to see? (Circle all that apply)**

- |               |                   |                         |                      |
|---------------|-------------------|-------------------------|----------------------|
| Trees/shade   | Ball fields       | Walking paths/sidewalks | Playgrounds          |
| Benches       | Murals/art        | Night lighting          | Picnic areas         |
| Swimming pool | Desert park       | Neighborhood events     | Drinking fountains   |
| Skate park    | Community garden  | Garden classes          | Dog park             |
| Yoga classes  | Exercise stations | Cooking classes         | BMX park             |
| Splash pad    | Bathrooms         | Wayfinding signage      | Decorative fountains |
| Other _____   |                   |                         |                      |

**11. What are the top three things you would enjoy most when the Greenway is completed?**

\_\_\_\_\_

**12. What are the top three concerns you have regarding future access and use of the Greenway?**

\_\_\_\_\_

**13. How do you envision using the Greenway? (Circle all that apply)**

- a) Walking, bicycling and/or jogging for recreation, health and/or fitness
- b) Walking or bicycling to a grocery store, restaurant or friend's home
- c) Commuting by bicycle or walking to work, school or for other purposes
- d) As a connection to local bus stops
- e) As a connection to a nearby park, community center or other public building
- f) Other \_\_\_\_\_

**14. What are other priorities that should be considered during the development of the Greenway?**

\_\_\_\_\_  
\_\_\_\_\_

**15. Do you have any additional comments, questions or concerns?**

\_\_\_\_\_  
\_\_\_\_\_

**Name:** \_\_\_\_\_ **Address:** \_\_\_\_\_ **City:** \_\_\_\_\_ **State:** \_\_\_\_\_ **ZIP:** \_\_\_\_\_

**Phone:** \_\_\_\_\_ **E-mail:** \_\_\_\_\_

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Comment Form  
**El Paso & Southwestern Greenway Project**  
 Open Houses

Davis Bilingual Elementary School  
 Thursday, Jan. 20, 2011

Quincie Douglas Library  
 Tuesday, Jan. 25, 2011

Santa Rosa Neighborhood Center  
 Thursday, Jan. 27, 2011

The City of Tucson is interested in your ideas and concerns regarding this project. Please take a moment to note any comments you have regarding conceptual alignment for the El Paso & Southwestern Greenway. Please print clearly.

1. Have you heard about the El Paso & Southwestern Greenway project before? Yes  No

2. What neighborhood do you live in? Barrio Libre

3. Do you currently walk or bike in your neighborhood? Yes  No  Sometimes

If no, why not? \_\_\_\_\_

4. Where do you go when you walk or bike? (Circle all that apply)

- School  Work  Grocery store
- Bus stop  Hardware store  Restaurants
- Neighbor's or friend's house  A park (please specify) \_\_\_\_\_ Other \_\_\_\_\_

5. Which of the above places would the Greenway make it easier for you to access?

Home-work-home, and everything in between

6. What aspects of the Draft Master Plan do you like best? Why?

The greenway path on the railroad at 34<sup>th</sup> & 9<sup>th</sup> Avenue, because my home is right there and I work downtown.

7. What aspects of the Draft Master Plan would you like to see changed? Why?

On the plan, change the trees in the alley to a wall (I'll be putting up); change the trees bordering the wash (that is my property) into a ocotillo fence, and make the wash ~ 300 ft (?)

8. How has the El Paso & Southwestern Railroad been part of your family's life?

My family has lived/owned my house ("the family house") for over 65 yrs. We love the neighborhood and the house. Many stories. Too many.

9. What is a special story about your neighborhood's history?

The House of Neighbaly Service has been around forever. My Aunt, uncles, mom grew up swimming in the pool that is no longer there. Plus the friends they have., etc.

10. If you had a park nearby, what amenities or activities would you like to see? (Circle all that apply)

- |               |                   |                         |                      |
|---------------|-------------------|-------------------------|----------------------|
| Trees/shade   | Ball fields       | Walking paths/sidewalks | Playgrounds          |
| Benches       | Murals/art        | Night lighting          | Picnic areas         |
| Swimming pool | Desert park       | Neighborhood events     | Drinking fountains   |
| Skate park    | Community garden  | Garden classes          | Dog park             |
| Yoga classes  | Exercise stations | Cooking classes         | BMX park             |
| Splash pad    | Bathrooms         | Wayfinding signage      | Decorative fountains |
| Other _____   |                   |                         |                      |

11. What are the top three things you would enjoy most when the Greenway is completed?

convenience                      health                      safety

12. What are the top three concerns you have regarding future access and use of the Greenway?

maintenance                      safety                      completion  
lighting

13. How do you envision using the Greenway? (Circle all that apply)

- a) Walking, bicycling and/or jogging for recreation, health and/or fitness
- b) Walking or bicycling to a grocery store, restaurant or friend's home
- c) Commuting by bicycle or walking to work, school or for other purposes
- d) As a connection to local bus stops
- e) As a connection to a nearby park, community center or other public building
- f) Other \_\_\_\_\_

14. What are other priorities that should be considered during the development of the Greenway?

\_\_\_\_\_  
\_\_\_\_\_

15. Do you have any additional comments, questions or concerns?

\_\_\_\_\_  
\_\_\_\_\_

Name: S. Michelle Flores      Address: 2320 S. 9th Ave.      City: Tucson      State: AZ      ZIP: 85713  
Phone: 520 326 2154      E-mail: michelle@smflores.com

Please include me on the mailing list to receive future information concerning this project.



Please leave your comment forms in the comment box or return to:  
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c/o Gordley Design Group, 2540 N. Tucson Blvd., Tucson, AZ 85716  
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www.dot.tucsonaz.gov/elpaso

SOUTH TUCSON CONTACT



Comment Form  
El Paso & Southwestern Greenway Project  
Open Houses

Davis Bilingual Elementary School  
Thursday, Jan. 20, 2011

Quincie Douglas Library  
Tuesday, Jan. 25, 2011

Santa Rosa Neighborhood Center  
Thursday, Jan. 27, 2011

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1. Have you heard about the El Paso & Southwestern Greenway project before? Yes  No

2. What neighborhood do you live in? Barrio Viejo

3. Do you currently walk or bike in your neighborhood? Yes  No

If no, why not? \_\_\_\_\_

4. Where do you go when you walk or bike? (Circle all that apply)

- School
- Work
- Grocery store
- Bus stop
- Hardware store
- Restaurants
- Neighbor's or friend's house
- A park (please specify) \_\_\_\_\_
- Other \_\_\_\_\_

5. Which of the above places would the Greenway make it easier for you to access?

Work

6. What aspects of the Draft Master Plan do you like best? Why?

That it exists

7. What aspects of the Draft Master Plan would you like to see changed? Why?

need to figure out crossing Congress, 22nd, 6th

8. How has the El Paso & Southwestern Railroad been part of your family's life?

N/A

9. What is a special story about your neighborhood's history?

City knocked most of it down

10. If you had a park nearby, what amenities or activities would you like to see? (Circle all that apply)

- |               |                   |                         |                      |
|---------------|-------------------|-------------------------|----------------------|
| Trees/shade   | Ball fields       | Walking paths/sidewalks | Playgrounds          |
| Benches       | Murals/art        | Night lighting          | Picnic areas         |
| Swimming pool | Desert park       | Neighborhood events     | Drinking fountains   |
| Skate park    | Community garden  | Garden classes          | Dog park             |
| Yoga classes  | Exercise stations | Cooking classes         | BMX park             |
| Splash pad    | Bathrooms         | Wayfinding signage      | Decorative fountains |
| Other _____   |                   |                         |                      |

11. What are the top three things you would enjoy most when the Greenway is completed?

access                      safety                      \_\_\_\_\_

12. What are the top three concerns you have regarding future access and use of the Greenway?

cost                      time to complete                      \_\_\_\_\_

13. How do you envision using the Greenway? (Circle all that apply)

- a) Walking, bicycling and/or jogging for recreation, health and/or fitness
- b) Walking or bicycling to a grocery store, restaurant or friend's home
- c) Commuting by bicycle or walking to work, school or for other purposes
- d) As a connection to local bus stops
- e) As a connection to a nearby park, community center or other public building
- f) Other \_\_\_\_\_

14. What are other priorities that should be considered during the development of the Greenway?

\_\_\_\_\_  
 \_\_\_\_\_

15. Do you have any additional comments, questions or concerns?

\_\_\_\_\_  
 \_\_\_\_\_

Name: Prescott Vandervoort      Address: 445 S. Otero      City: Tucson      State: \_\_\_\_\_      ZIP: 85701  
 Phone: \_\_\_\_\_      E-mail: plv79@yahoo.com

Please include me on the mailing list to receive future information concerning this project.



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 Melissa Anguiz, City of Tucson Community Relations  
 c/o Gordley Design Group, 2540 N. Tucson Blvd., Tucson, AZ 85716  
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**Comment Form  
El Paso & Southwestern Greenway Project  
Open Houses**

Davis Bilingual Elementary School  
Thursday, Jan. 20, 2011

Quincie Douglas Library  
Tuesday, Jan. 25, 2011

Santa Rosa Neighborhood Center  
Thursday, Jan. 27, 2011

The City of Tucson is interested in your ideas and concerns regarding this project. Please take a moment to note any comments you have regarding conceptual alignment for the El Paso & Southwestern Greenway. Please print clearly.

1. Have you heard about the El Paso & Southwestern Greenway project before? Yes \_\_\_ No

2. What neighborhood do you live in? Ochoa West

3. Do you currently walk or bike in your neighborhood? Yes  No \_\_\_

If no, why not? traffic very heavy

4. Where do you go when you walk or bike? (Circle all that apply)

- |  |  |   |
|--|--|---|
| <input checked="" type="checkbox"/> School                       | <input type="checkbox"/> Work                          | <input checked="" type="checkbox"/> Grocery store |
| <input checked="" type="checkbox"/> Bus stop                     | <input type="checkbox"/> Hardware store                | <input type="checkbox"/> Restaurants              |
| <input checked="" type="checkbox"/> Neighbor's or friend's house | <input type="checkbox"/> A park (please specify) _____ | <input type="checkbox"/> Other _____              |

5. Which of the above places would the Greenway make it easier for you to access?

Grocery store

6. What aspects of the Draft Master Plan do you like best? Why?

The path the master plan is taking

7. What aspects of the Draft Master Plan would you like to see changed? Why?

more passage for pedestrians

8. How has the El Paso & Southwestern Railroad been part of your family's life?

most of my friends live in this area

9. What is a special story about your neighborhood's history?

We at Ochoa West have Santa Cruz ch

10. If you had a park nearby, what amenities or activities would you like to see? (Circle all that apply)

Trees/shade

Ball fields

Walking paths/sidewalks

Playgrounds

Benches

Murals/art

Night lighting

Picnic areas

Swimming pool

Desert park

Neighborhood events

Drinking fountains

Skate park

Community garden

Garden classes

Dog park

Yoga classes

Exercise stations

Cooking classes

BMX park

Splash pad

Bathrooms

Wayfinding signage

Decorative fountains

Other \_\_\_\_\_

11. What are the top three things you would enjoy most when the Greenway is completed?

more lights

more recreational facilities

more shade

12. What are the top three concerns you have regarding future access and use of the Greenway?

\_\_\_\_\_

13. How do you envision using the Greenway? (Circle all that apply)

- a) Walking, bicycling and/or jogging for recreation, health and/or fitness
- b) Walking or bicycling to a grocery store, restaurant or friend's home
- c) Commuting by bicycle or walking to work, school or for other purposes
- d) As a connection to local bus stops
- e) As a connection to a nearby park, community center or other public building
- f) Other \_\_\_\_\_

14. What are other priorities that should be considered during the development of the Greenway?

\_\_\_\_\_  
\_\_\_\_\_

15. Do you have any additional comments, questions or concerns?

\_\_\_\_\_  
\_\_\_\_\_

Name: M. Hernandez Address: 1211 S. 9th City: TUCSON, ARIZ State: \_\_\_\_\_ ZIP: 85713  
 Phone: \_\_\_\_\_ E-mail: \_\_\_\_\_

Please include me on the mailing list to receive future information concerning this project.



Please leave your comment forms in the comment box or return to:  
 Melissa Anguiz, City of Tucson Community Relations  
 c/o Gordley Design Group, 2540 N. Tucson Blvd., Tucson, AZ 85716  
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Comment Form  
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Thursday, Jan. 20, 2011

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1. Have you heard about the El Paso & Southwestern Greenway project before? Yes  No

2. What neighborhood do you live in? Far East side - Rita Ranch

3. Do you currently walk or bike in your neighborhood? Yes  No

If no, why not? \_\_\_\_\_

4. Where do you go when you walk or bike? (Circle all that apply)

- School
- Work
- Grocery store
- Bus stop
- Hardware store
- Restaurants
- Neighbor's or friend's house
- A park (please specify) Loop
- Other \_\_\_\_\_

5. Which of the above places would the Greenway make it easier for you to access?  
down town from Julian Wash.

6. What aspects of the Draft Master Plan do you like best? Why?  
safety due to fewer cars

7. What aspects of the Draft Master Plan would you like to see changed? Why?  
connect to Julian Wash & Liberty

8. How has the El Paso & Southwestern Railroad been part of your family's life?  
\_\_\_\_\_  
\_\_\_\_\_

9. What is a special story about your neighborhood's history?  
\_\_\_\_\_  
\_\_\_\_\_



10. If you had a park nearby, what amenities or activities would you like to see? (Circle all that apply)

- |                      |                          |                                |                           |
|----------------------|--------------------------|--------------------------------|---------------------------|
| <u>Trees/shade</u>   | <u>Ball fields</u>       | <u>Walking paths/sidewalks</u> | Playgrounds               |
| <u>Benches</u>       | Murals/art               | <u>Night lighting</u>          | Picnic areas              |
| <u>Swimming pool</u> | Desert park              | Neighborhood events            | <u>Drinking fountains</u> |
| Skate park           | Community garden         | Garden classes                 | <u>Dog park</u>           |
| Yoga classes         | <u>Exercise stations</u> | Cooking classes                | BMX park                  |
| Splash pad           | Bathrooms                | Wayfinding signage             | Decorative fountains      |
| Other _____          |                          |                                |                           |

11. What are the top three things you would enjoy most when the Greenway is completed?

connection to downtown smog reduction

12. What are the top three concerns you have regarding future access and use of the Greenway?

crossing major streets st. Marys 29th

13. How do you envision using the Greenway? (Circle all that apply)

- a) Walking, bicycling and/or jogging for recreation, health and/or fitness
- b) Walking or bicycling to a grocery store, restaurant or friend's home
- c) Commuting by bicycle or walking to work, school or for other purposes
- d) As a connection to local bus stops
- e) As a connection to a nearby park, community center or other public building
- f) Other \_\_\_\_\_

14. What are other priorities that should be considered during the development of the Greenway?

access to Loop & Liberty

15. Do you have any additional comments, questions or concerns?

please move along

Name: Roy Schoonover Address: \_\_\_\_\_ City: \_\_\_\_\_ State: \_\_\_\_\_ ZIP: \_\_\_\_\_  
 Phone: \_\_\_\_\_ E-mail: \_\_\_\_\_

Please include me on the mailing list to receive future information concerning this project.



Please leave your comment forms in the comment box or return to:  
 Melissa Anguiz, City of Tucson Community Relations  
 c/o Gordley Design Group, 2540 N. Tucson Blvd., Tucson, AZ 85716  
 E-mail: melissa@gordleydesign.com, Phone: 520-327-6077, Fax: 520-327-4687



**From:** Susan Hutzler <[susanhutzler@hotmail.com](mailto:susanhutzler@hotmail.com)>  
**Date:** February 8, 2011 9:11:14 AM GMT-07:00  
**To:** <[melissa@gordleydesign.com](mailto:melissa@gordleydesign.com)>  
**Subject:** RE: UPRR crossing near Davis Elementary

Please add my comments to Community Outreach RE EL PASO & SOUTHWESTERN GREENWAY PROJECT:

\*Request a road diet on Main Ave.

\*Request at Main Ave. and University build same kind of crossing that is in place at Stone Ave. and University Bld.

\*Coordinate comprehensive plan to STOP train noise in the downtown area.

\*Coordinate comprehensive plan called Building Bridges.

Thank you for your kind consideration,  
Susan Hutzler

**From:** "City of Tucson Web" <web@tucsonaz.gov>

**Date:** January 27, 2011 6:40:50 PM GMT-07:00

**To:** tdotbikes@tucsonaz.gov

**Subject:** Form submission from: El Paso Greenway Comments

Submitted on 01/28/2011 - 01:40

Submitted by anonymous user: [24.248.11.201]

Submitted values are:

Name: ian johnson

Address: 711 n. 11th ave

City: tucson

State: az

Zip Code: 85705

Neighborhood you belong to: Dunbar/Spring

Areas of any concern and why:

I'm really excited about the project as a whole, but I think the pedestrian skyways are a bad idea, especially the one near main. I think they're fantastically expensive, they're too big for the surrounding environment, and I think they'll be unused. I suggest thinking instead about a toucan across main and integrating with the street fabric in this area, especially since this is already a major bicycle connection with davis/3rd street. A road diet on main, an improved UP crossing, and this would mesh well together and fix a lot of the issues here; a skyway would just add unnecessary infrastructure and avoid the problem.

Has the El Paso and Southwestern Railroad been a part of your family's life? How?:

General comments: thanks!

Name: Elli Felix

Address: 1443 South 9th Ave

City: Tucson

State: AZ

Zip Code: 85713

Neighborhood you belong to: West Ochoa

Areas of any concern and why:

Main concerns for this project are:

Lack of establish participation from all neighborhoods in this project.

Revenues, where are they coming from, cost per household, and how do we

generate new income?

Describe community revenue, base and total dollars?

Has the El Paso and Southwestern Railroad been a part of your family's life?

How? N/A

General comments:

Since this project seems to incorporate a city with a 1.2 acre city, what is their responsible cost in this project?

With our city budget in such a state, where is this project in the city's table?

El Paso & Southwestern Greenway

# Meeting Materials Provided











## El Paso & Southwestern Greenway Project

Open Houses  
5:30 to 7:00 p.m.

Davis Bilingual Elementary School  
Thursday, Jan. 20, 2011

Quincie Douglas Library  
Tuesday, Jan. 25, 2011

Santa Rosa Neighborhood Center  
Thursday, Jan. 27, 2011

### AGENDA

#### 5:30 – 6:00 Open House Format with Information Stations

- Please visit the information stations. Project team members are available for questions.

#### 6:00 – 6:05 Welcome

- Tom Thivener, Project Manager, City of Tucson Department of Transportation

#### 6:05 – 6:15 Team Introductions and Brief Project Overview

- Sandy Bolduc, Consultant Project Manager, Kimley-Horn and Associates

#### 6:15 – 7:00 Discussions/Questions and Answers at Information Stations

- Station 1 – Alignment Map
  - Please write comments on the Alignment Map
- Station 2 – Destination Flip-Chart
  - Please place a green dot by the names of your three most favorite destinations
- Station 3 – Neighborhoods
  - Barrio Anita, Dunbar Spring, El Presidio and Downtown
  - City of South Tucson, Barrio Viejo, Barrio Santa Rosa and Ochoa West
  - South Park, Las Vistas and Western Hills II
- Station 4 – Historic Resources
- Station 5 – Benefits
- Station 6 – Comment Forms

**Comments:** Please write comments or requests on the Alignment Map and comment forms provided. This is one of the best ways to express your opinions and have them documented and shared with the project team.

*Thank you for joining us!*



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## PROYECTO DE SENDERO DE AREAS VERDES EL PASO Y SUROESTE

Abierto al Público  
5:30 a 7:00 p.m.

Davis Bilingual Elementary School  
Jueves 20 de enero de 2011

Quincie Douglas Library  
Martes 25 de enero de 2011

Santa Rosa Neighborhood Center  
Jueves 27 de enero de 2011

### ORDEN DEL DIA

#### **5:30 – 6:00 Formato Abierto al Público con Centros de Información**

- Por favor visite los centros de información. Miembros del proyecto están disponibles para responder a sus preguntas.

#### **6:00 – 6:05 Bienvenida**

- Tom Thivener, Gerente de Proyecto, Departamento de Transporte de la Ciudad de Tucson

#### **6:05 – 6:15 Presentación del Equipo y Breve Reseña del Proyecto**

- Sandy Bolduc, Gerente de Proyecto Consultora, Kimley-Horn and Associates

#### **6:15 – 7:00 Charlas/Ronda de Preguntas y Respuestas en los Centros de Información**

- Estación 1 – Mapa de Alineación
  - Por favor escriba comentarios en el Mapa de Alineación
- Estación 2 – Presentación del Destino
  - Coloque puntos verdes en sus tres destinos favoritos en el rotafolios de la presentación del destino
- Estación 3 – Barrios
  - Barrio Anita, Dunbar Spring, El Presidio y el Centro de la Ciudad
  - La Ciudad de South Tucson, Barrio Viejo, Barrio Santa Rosa y Ochoa West
  - South Park, Las Vistas y Western Hills II
- Estación 4 – Recursos Históricos
- Estación 5 – Beneficios
- Estación 6 – Formularios de Comentarios

**Comentarios:** Por favor escriba sus comentarios o solicitudes en el Mapa de Alineación y en los formularios de comentarios que le fueron entregados. Esta es una de las mejores maneras de expresar sus opiniones, tenerlas documentadas y compartirlas con el equipo del proyecto.

*¡Gracias por acompañarnos!*



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Comment Form  
**El Paso & Southwestern Greenway Project**  
Open Houses

Davis Bilingual Elementary School  
Thursday, Jan. 20, 2011

Quincie Douglas Library  
Tuesday, Jan. 25, 2011

Santa Rosa Neighborhood Center  
Thursday, Jan. 27, 2011

The City of Tucson is interested in your ideas and concerns regarding this project. Please take a moment to note any comments you have regarding conceptual alignment for the El Paso & Southwestern Greenway. Please print clearly.

1. **Have you heard about the El Paso & Southwestern Greenway project before?** Yes \_\_\_ No \_\_\_

2. **What neighborhood do you live in?** \_\_\_\_\_

3. **Do you currently walk or bike in your neighborhood?** Yes \_\_\_ No \_\_\_

If no, why not? \_\_\_\_\_

4. **Where do you go when you walk or bike? (Circle all that apply)**

School

Work

Grocery store

Bus stop

Hardware store

Restaurants

Neighbor's or friend's house

A park (please specify) \_\_\_\_\_

Other \_\_\_\_\_

5. **Which of the above places would the Greenway make it easier for you to access?**

\_\_\_\_\_

6. **What aspects of the Draft Master Plan do you like best? Why?**

\_\_\_\_\_

\_\_\_\_\_

7. **What aspects of the Draft Master Plan would you like to see changed? Why?**

\_\_\_\_\_

\_\_\_\_\_

8. **How has the El Paso & Southwestern Railroad been part of your family's life?**

\_\_\_\_\_

\_\_\_\_\_

9. **What is a special story about your neighborhood's history?**

\_\_\_\_\_

**10. If you had a park nearby, what amenities or activities would you like to see? (Circle all that apply)**

- |               |                   |                         |                      |
|---------------|-------------------|-------------------------|----------------------|
| Trees/shade   | Ball fields       | Walking paths/sidewalks | Playgrounds          |
| Benches       | Murals/art        | Night lighting          | Picnic areas         |
| Swimming pool | Desert park       | Neighborhood events     | Drinking fountains   |
| Skate park    | Community garden  | Garden classes          | Dog park             |
| Yoga classes  | Exercise stations | Cooking classes         | BMX park             |
| Splash pad    | Bathrooms         | Wayfinding signage      | Decorative fountains |
| Other         | _____             |                         |                      |

**11. What are the top three things you would enjoy most when the Greenway is completed?**

\_\_\_\_\_

**12. What are the top three concerns you have regarding future access and use of the Greenway?**

\_\_\_\_\_

**13. How do you envision using the Greenway? (Circle all that apply)**

- a) Walking, bicycling and/or jogging for recreation, health and/or fitness
- b) Walking or bicycling to a grocery store, restaurant or friend's home
- c) Commuting by bicycle or walking to work, school or for other purposes
- d) As a connection to local bus stops
- e) As a connection to a nearby park, community center or other public building
- f) Other \_\_\_\_\_

**14. What are other priorities that should be considered during the development of the Greenway?**

\_\_\_\_\_  
\_\_\_\_\_

**15. Do you have any additional comments, questions or concerns?**

\_\_\_\_\_  
\_\_\_\_\_

**Name:** \_\_\_\_\_ **Address:** \_\_\_\_\_ **City:** \_\_\_\_\_ **State:** \_\_\_\_\_ **ZIP:** \_\_\_\_\_

**Phone:** \_\_\_\_\_ **E-mail:** \_\_\_\_\_

Please include me on the mailing list to receive future information concerning this project.



Please leave your comment forms in the comment box or return to:  
Melissa Anguiz, City of Tucson Community Relations  
c/o Gordley Design Group, 2540 N. Tucson Blvd., Tucson, AZ 85716  
E-mail: melissa@gordleydesign.com, Phone: 520-327-6077, Fax: 520-327-4687





Formulario de Comentarios  
Proyecto El Paso & Southwestern Greenway  
Abierto al Público

Davis Bilingual Elementary School  
Jueves 20 de enero de 2011

Quincie Douglas Library  
Martes 25 de enero de 2011

Santa Rosa Neighborhood Center  
Jueves 27 de enero de 2011

La ciudad de Tucson se interesa en sus ideas y preocupaciones con respecto a este proyecto. Por favor tome un momento para escribir sus opiniones con respecto a la alineación conceptual de El Paso & Southwestern Greenway. Por favor escriba con claridad.

1. ¿Ha escuchado acerca del proyecto El Paso & Southwestern Greenway antes? Sí \_\_\_\_ No \_\_\_\_

2. ¿En qué barrio vive? \_\_\_\_\_

3. ¿Actualmente camina o anda en bicicleta en su barrio? Sí \_\_\_\_ No \_\_\_\_

Si no lo hace, ¿por qué? \_\_\_\_\_

4. ¿A dónde va cuando camina o anda en bicicleta? *(Circule todas las que apliquen)*

Escuela

Trabajo

Mercado

Parada de autobús

Ferretería

Restaurante

Casa de un vecino o amigo

Un parque (por favor especifique)

Otro \_\_\_\_\_

5. ¿A cuál de los lugares mencionados tendría más fácil acceso con el Greenway?

\_\_\_\_\_

6. ¿Cuál de los aspectos del borrador del plan maestro le gusta más? ¿Por qué?

\_\_\_\_\_

\_\_\_\_\_

7. ¿Cuál de los aspectos del borrador del plan maestro le gustaría cambiar? ¿Por qué?

\_\_\_\_\_

\_\_\_\_\_

8. ¿De qué manera han sido parte de su vida familiar las vías férreas de El Paso & Southwestern?

\_\_\_\_\_

\_\_\_\_\_

9. ¿Cuál es un relato especial acerca de la historia de su barrio?

\_\_\_\_\_

10. ¿Si usted tuviera un parque cerca, qué servicios le gustaría que tuviera? (Circule todas las que apliquen)

Árboles/sombra	Canchas	Pistas para caminar	Juegos infantiles
Bancas	Murales/arte	Alumbrado público	Áreas para picnic
Piscina	Parque desierto	Eventos del barrio	Bebedores de agua
Parque para patinar	Jardín comunitario	Clases de jardinería	Parque para perros
Clases de yoga	Estaciones de ejercicio	Clases de cocina	Parque para BMX
Plataforma de Splash	Baños	Señalamientos	Fuentes decorativas
Otros _____			

11. ¿Cuáles son las tres cosas que disfrutaría más una vez que se termine el Greenway?

\_\_\_\_\_

12. ¿Cuáles son sus tres mayores preocupaciones acerca del acceso y uso del Greenway?

\_\_\_\_\_

13. ¿Cómo se visualiza utilizando el Greenway? (Circule todas las que apliquen)

- a) Caminando, andando en bicicleta y/o trotando por recreación, salud o ejercicio
- b) Caminando o yendo en bicicleta al mercado, restaurante o casa de un amigo
- c) Trasladándose en bicicleta o caminando al trabajo, escuela u otros
- d) Como una conexión a la parada de autobús
- e) Como conexión a un parque cercano, centro comunitario u otro edificio público
- f) Otro \_\_\_\_\_

14. ¿Cuáles son otras prioridades que se deberían considerar durante el desarrollo del Greenway?

\_\_\_\_\_  
\_\_\_\_\_

15. ¿Tiene comentarios, preguntas o preocupaciones adicionales?

\_\_\_\_\_  
\_\_\_\_\_

Nombre: Dirección: Ciudad: Estado: C.P.:

Teléfono: E-mail:

Por favor inclúyanme en la lista de envíos de correo para recibir información acerca de este proyecto en el futuro.



Por favor deje su formulario de comentarios en la caja de comentarios o regrésela a:  
Melissa Anguiz, Relaciones públicas de la comunidad de Tucson  
c/o Gordley Design Group, 2540 N. Tucson Blvd., Tucson, AZ 85716  
E-mail: melissa@gordleydesign.com, Teléfono: 520-327-6077, Fax: 520-327-4687





## EL PASO & SOUTHWESTERN GREENWAY PROJECT FACT SHEET

The El Paso & Southwestern Greenway will be a six-mile multiuse path for bicyclists and pedestrians. The pathway will extend along the corridor that was once used by the railroad, from north of downtown Tucson, through the City of South Tucson, to the Kino Sports Complex. The new path will be car-free and will connect to other regional bikeways and to many of the nearby neighborhoods.

In 2005, a preliminary concept plan for the Greenway was developed by the Drachman Institute at the University of Arizona. That document provides guidance for the master planning process that is currently under way. Some of the objectives of the plan are to promote connectivity and recreation; coordinate with other active projects to ensure compatibility; reflect local/regional identity and character; celebrate local history; and serve as a catalyst for positive development.

The Greenway is documented in the City of Tucson Parks and Recreation Strategic Plan, City of Tucson General Plan, Downtown Infrastructure Plan, Regional Transportation Authority's (RTA) transportation plan, Eastern Pima County Trails Master Plan, City of Tucson Parks, Open Space and Trails (PROST) plan, and the Regional Bicycle Plan. The cost for planning, design, right-of-way acquisition, site improvements, traffic devices and construction is estimated to cost between \$8 and \$10 million.

### Location

The El Paso & Southwestern Greenway alignment begins near the western end of the University Bikeway, near Main Avenue and University Boulevard. It travels south along the west edge of downtown, parallel to Interstate 10, past St. Mary's Road, Congress Street and 22nd Street. The Greenway enters the City of South Tucson at approximately 29th Street and briefly continues south before diverting on a southeast angle along the old railroad corridor. It proceeds past the Greyhound Park, where it exits the City of South Tucson. The Greenway then travels generally east across Park Avenue, southeast to cross Kino Boulevard and ends at the Kino Sports Complex/Ajo Detention Basin.

### Recent Activity and Progress History

- 2006 – Pima County voters approved \$3.26 million as part of the RTA Plan to fund the development of the El Paso & Southwestern Greenway
- 2006 – City of Tucson was awarded a Federal Transportation Enhancement Grant for the construction of the Greenway from 22nd Street to Simpson Street
- 2007 – Consulting team, headed by SAGE Landscape Architecture & Environmental (now Kimley-Horn and Associates), was selected to design a master plan for the Greenway
- 2007 – The Bridges master-planned development committed to building the one-mile segment of the Greenway that will pass through their project
- 2009 – Completion of the first segment of the Greenway with the Fire Central project

### Contact Information

Tom Thivener, City of Tucson Department of Transportation, Project Manager, 520-837-6691

Sandy Bolduc, Kimley-Horn and Associates, Design Team Project Manager, 520-352-8644

Mick Jensen, City of South Tucson, Planner, 520-792-2424

Melissa Anguiz, Gordley Design Group, Community Outreach, 520-327-6077





## PROYECTO DE SENDERO DE AREAS VERDES EL PASO Y SUROESTE (Proyecto Greenway)

### HOJA DE DATOS

El Proyecto El Paso & Southwestern Greenway será un sendero de usos múltiples de seis millas de longitud para ciclistas y peatones, que se extenderá a lo largo de un corredor que en un tiempo fue utilizado por el ferrocarril, desde el norte del centro de Tucson, pasando por la Ciudad de South Tucson hasta el Complejo Deportivo Kino. El sendero nuevo estará libre de tráfico vehicular y conectará con otros senderos de ciclismo regionales y con muchos de los barrios por los que pasará.

En 2005 el Instituto Drachman de la Universidad de Arizona desarrolló un plan para el concepto preliminar del Proyecto Greenway. Este documento proporciona las directrices para el proceso del plan maestro que ya está elaborándose. Algunos de los objetivos del plan son promover la conectividad y la recreación, coordinar con otros proyectos activos para asegurar su compatibilidad, reflejar la identidad y el carácter local/regional, celebrar la historia local y servir como catalizador para el desarrollo positivo.

El Proyecto Greenway está documentado en el Plan Estratégico de Parques y Recreación de la Ciudad de Tucson, el Plan General de la Ciudad de Tucson, el Plan de Infraestructura del Centro, el plan de transportación de la Autoridad del Transporte Regional (RTA), el Plan Maestro de Senderos del Condado del este de Pima, el Plan de Parques, Espacios Abiertos y Senderos (PROST) de la Ciudad de Tucson y el plan Regional de Ciclismo. Se calcula que el costo de la planificación, diseño, adquisición del derecho de vía, mejoras del sitio, dispositivos para el tráfico y construcción será de entre 8 y 10 millones de dólares.

#### Ubicación

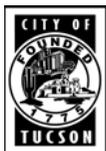
El trazado del Proyecto Greenway inicia cerca del extremo oeste de University Bikeway cerca de Main Avenue y University Boulevard, siguiendo hacia el sur y pasando a lo largo del borde al oeste del centro de la ciudad, paralelo a la Carretera Interestatal 10 y siguiendo al sur, cruzando St. Mary's Road, Congress Street y 22nd Street. El sendero entra en la Ciudad de South Tucson aproximadamente en 29th Street y sigue brevemente hacia el sur antes de desviarse al suroeste a lo largo del antiguo corredor ferroviario. Continúa pasando por Greyhound Park por donde sale de la Ciudad de South Tucson. El Proyecto Greenway luego continúa en general hacia el este, cruzando Park Avenue, luego va hacia el sureste, cruzando Kino Boulevard y terminando en el Complejo Deportivo Kino/Cuenca de Retención Ajo.

#### Actividad Reciente e Historia de los Avances

- 2006 – Los votantes del Condado de Pima aprobaron 3.26 millones de dólares como parte del Plan de RTA para financiar el desarrollo del Proyecto El Paso y Southwestern Greenway.
- 2006 – A la Ciudad de Tucson se le otorgó un Subsidio Federal para la Mejora del Transporte (TE) para la construcción del Greenway desde 22nd Street a Simpson Street.
- 2007 – El equipo de consultores, encabezado por SAGE Landscape Architecture & Environmental, (hoy Kimley-Horn and Associates) fue seleccionado para diseñar un plan maestro para el Proyecto Greenway.
- 2007 – La urbanización con plan maestro 'The Bridges' se compromete a construir una milla del Greenway que cruzará su proyecto.
- 2009 – Terminación del primer segmento del Greenway con el proyecto de Fire Central.

#### Información de Contacto

Tom Thivener, Departamento de Transporte de la Ciudad de Tucson, Gerente de Proyecto, 520-837-6691  
Sandra Bolduc, Kimley-Horn and Associates, Gerente de Proyecto del Equipo de Diseño, 520-352-8644  
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## EL PASO & SOUTHWESTERN GREENWAY PROJECT

### SAFETY FACT SHEET

People and businesses that own land along the proposed Greenway corridor are an important part of the El Paso & Southwestern Greenway Project. The enhanced corridor will not only beautify the surrounding properties, it will also build community pride. As with any linear park or greenway project, safety is a concern among not only those who live or work along it, but also for the users of the pathway. Listed below are some ways the City of Tucson and the Greenway Team are working to make the Greenway a safe and attractive transportation and recreation corridor for residents and visitors.

#### Security Plans

- Use of the “Crime Prevention Through Environmental Design” guidelines throughout the design process.
- Inclusion of Tucson Police Department staff on the project’s Technical Advisory Committee.
- Maintenance of the Greenway by City of Tucson Parks and Recreation Department. Places that are regularly maintained deter criminal activity. Increased public activity along the corridor results in increased interest, awareness and intolerance of criminal activities.
- Evaluation of lighting and landscaping for appropriate placement in strategic locations along the corridor. These amenities play an important part in crime prevention.
- Clear guidance to access points along the Greenway.
- Use of a Divided Urban Pathway (DUP), where space allows. The DUP consists of an 8-foot soft path for pedestrians and a 12-foot asphalt path for bikers and skaters, with a landscape buffer in between. This design helps to reduce conflicts between the different users.

#### Contact Information

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## PROYECTO DE SENDERO DE AREAS VERDES EL PASO Y SUROESTE (Proyecto Greenway)

### HOJA DE DATOS DE SEGURIDAD

Las personas y negocios que son propietarios de terrenos a lo largo del Greenway propuesto constituyen un grupo importante dentro del Proyecto de El Paso & Southwestern Greenway. Este corredor mejorado no solamente embellecerá las propiedades circundantes, sino que será un motivo de orgullo para la comunidad. Al igual que con cualquier proyecto de parque lineal o Greenway, la seguridad siempre es una preocupación no sólo para quienes viven o trabajan a lo largo del mismo, sino también para los usuarios finales del sendero. A continuación se enumeran algunas formas en que la Ciudad de Tucson y el Equipo del Greenway trabajan para conseguir que el Proyecto Greenway sea un corredor de transporte y recreación seguro y atractivo para residentes y visitantes.

#### Planes de Seguridad

- Uso de las directrices de “Prevención de Delitos a Través del Diseño Ambiental” (CPTED) a lo largo del proceso de diseño.
- Se incluirá al personal del Departamento de Policía de Tucson (TPD) en el comité consultivo técnico del proyecto.
- El mantenimiento del Greenway será llevado a cabo por el Departamento de Parques y Recreación de la Ciudad de Tucson. Las áreas recibirán mantenimiento constante con el fin de desalentar las actividades criminales. Una mayor actividad del público a lo largo del corredor tiene como resultado un mayor interés, conciencia e intolerancia en cuanto al crimen.
- La iluminación y el diseño de jardines se evaluarán para su colocación apropiada en lugares estratégicos a lo largo del corredor. Estas amenidades juegan un papel importante en cuanto a la prevención de delitos.
- Orientaciones claras hacia los puntos de acceso a lo largo del Greenway.
- Uso de un Sendero Urbano Dividido (DUP) donde el espacio lo permita. Un DUP consiste en un sendero de tierra de 8 pies para peatones y un sendero asfaltado de 12 pies para ciclistas y personas en patines, con una zona intermedia de ajardinado entre ambos. Este diseño ayuda a reducir los conflictos entre los diferentes usuarios.

#### Información de Contacto

Tom Thivener, Departamento de Transporte de la Ciudad de Tucson,  
Gerente de Proyecto, 520-837-6691  
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## EL PASO & SOUTHWESTERN GREENWAY PROJECT

### DRAINAGE FACT SHEET

The El Paso & Southwestern Greenway project is subject to runoff from more than 17 square miles of Tucson's urban areas, which drain northerly and westerly towards the Santa Cruz River. These drainage areas were evaluated during the Tucson Stormwater Management Study and include the West University Wash, Tucson Arroyo, Downtown Watershed, Cushing Street Wash, 18th Street Wash and Mission View Wash. During a 100-year storm event, the peak rate of runoff from those drainage areas ranges from as little as a few cubic feet per second (cfs) to over 8,000 cfs at the Tucson Arroyo. Pertaining to a variety of projects, there are several recent and planned drainage improvements affecting the runoff that approaches the Greenway alignment, including the following:

#### Recently Completed – Drainage Improvements

- Army Corps of Engineers/Pima County/City of Tucson
  - Detention basins at Cherry Field
- Arizona Department of Transportation
  - Storm drain at Fire Central
  - Interstate 10 Stormwater Detention Basin at 29th Street
- Pima County
  - Mission View Wash Regional Flood Control Stormwater Detention Basin
- City of Tucson
  - Detention basins at Quincie Douglas Park
  - Detention basins at Sam Lena Park

#### Underway – Drainage Projects

- Culvert improvements at channels attendant to the widening of I-10 north of Prince Road do not affect the El Paso & Southwestern Greenway project.

#### Planned – Drainage Projects

- Tucson Arroyo Detention Basins at Park Avenue
- Storm drains associated with the 22nd Street improvements
- Storm drains associated with the various downtown improvements
- Storm drains associated with the Tucson Convention Center Hotel improvements
- Fiesta Wash Stormwater Detention Basin associated with residential development at The Bridges

#### Contact Information

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## PROYECTO DE SENDERO DE AREAS VERDES EL PASO Y SUROESTE (Proyecto Greenway)

### HOJA DE DATOS DE DRENAJE

El Proyecto El Paso & Southwestern Greenway está expuesto a escurrimientos en más de 17 millas cuadradas, procedentes de las áreas urbanas de Tucson, que bajan en dirección norte y oeste hacia el Río Santa Cruz. Estas áreas de drenaje fueron evaluadas por el Estudio de Manejo del Agua Pluvial de Tucson e incluyen Arroyo West University, Arroyo Tucson, Cuenca de Drenaje del Centro de la Ciudad, Arroyo Cushing Street, Arroyo 18th Street y Arroyo Mission View. Durante los eventos de tormenta que se han presentado en los últimos 100 años, el flujo pico de estas áreas de drenaje va desde tan poco como unos cuantos pies cúbicos por segundo (cfs) hasta más de 8,000 cfs en el Arroyo Tucson. Como parte de una variedad de proyectos, existen varias mejoras al drenaje recientes y planificadas que afectan las bajantes que desalojan hacia el alineamiento del Greenway, incluyendo las siguientes:

#### Mejoras a Drenajes Completadas Recientemente

- Cuerpo de Ingenieros del Ejército/Condado Pima/Ciudad de Tucson
  - Cuencas de retención en Cherry Field
- Departamento de Transporte de Arizona
  - Desagüe de agua de tormenta en el Fire Central
  - Cuencas de retención de Agua Pluvial en la 29th Street
- Condado Pima
  - Cuenta de retención regional para el control de inundaciones en caso de tormenta en Mission View
- Ciudad de Tucson
  - Cuencas de retención en el Parque Quincie Douglas
  - Cuencas de retención en el Parque Sam Lena

#### Proyectos de Drenaje que se Encuentran en Ejecución

Mejoras en los canales asociadas con el ensanchamiento de la I-10 al norte de Prince Road que no afectan al Proyecto Greenway.

#### Proyectos de Drenaje Planificados

- Cuencas de retención del Arroyo Tucson en Park Avenue
- Drenajes para agua de tormenta relacionados con las mejoras en 22nd Street
- Drenajes para agua de tormenta relacionados con diversas mejoras en el área del centro
- Drenajes para agua de tormenta relacionados con las mejoras en el Hotel del Centro de Convenciones de Tucson
- Cuenca de retención de aguas de tormenta del Arrollo Fiesta relacionadas con los desarrollos residenciales en The Bridges

#### Información de Contacto

Tom Thivener, Departamento de Transporte de la Ciudad de Tucson,  
Gerente de Proyecto, 520-837-6691  
Sandra Bolduc, Kimley-Horn and Associates,  
Gerente de Proyecto del Equipo de Diseño, 520-352-8644  
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El Paso & Southwestern Greenway

# Completed Sign-In Sheets





Sign-In Sheet  
**El Paso & Southwestern Greenway  
 Open House**  
 Davis Bilingual Elementary Magnet School  
 Thursday, Jan. 20, 2011



Completion of this sign-in sheet is completely voluntary and helps the project team keep an accurate record of meeting attendees. Under state law, any identifying information provided below will become part of the public record and, as such, must be released to any individual upon request. **Please print clearly.**  
 Lenando esta forma es algo completamente voluntario y nos ayuda mantener una lista de las personas que asistieron a esta reunión. Según la ley estatal, la información proveída en esta forma es parte de la documentación pública del proyecto y se tiene que compartir con cualquier persona que hace una solicitud por esta información. **Por favor escriba claramente.**

Printed Name Nombre con letra de imprenta	Organization Organización	Address and ZIP Code Dirección y Código Postal	Phone Teléfono	E-mail Correo Electrónico
DARA L. TORREALBA	Donna Guita President	772 N. COFFMAN AVE	204-6513	
Al Dotala Dotala	Blm	632 N. Anita Ave	622-3404	
Milini Simms	Planning Program	737 N. EUCLID AVE	480-282-7793	msimms1@email.arizona.edu
Michele Ream	Barrio Viejo MEMBRIO PRESIDENT	1009 W. MESA ST	401-1671	swirliest@yahoo.com
Alexandra Fuente	U of A	1449 N. SWAN RD #13	520-4455481	alefuent@email.arizona.edu
Michelle Millstone		6831 E. BAKER ST. 85710	520-296-9948	mmillstone@cox.net
Steven Derks		801 N. MAJ. AVE	520-376-1216	Sgderks@msc.com
STUART WOLFF	NORTHSTAR/	CANTRAPA CIRCLE	885-8590	Northstar99@Quwest.net
Allison Kennedy	Drachman Institute	1040 N. OLIVE RD. BOX 210015 TUCSON 85721	626-3811	kennedyal@email.arizona.edu
BRAD LANCKFER	DUNBAR/ SPRING	813 N. 9TH AVE 85705	882-9443	bradlanck@psnet.com
MARIALE GARZA	DUNBAR/ SPRING	833 N 11TH AVE	624-5820	



Sign-In Sheet  
**El Paso & Southwestern Greenway**  
**Open House**  
 Davis Bilingual Elementary Magnet School  
 Thursday, Jan. 20, 2011



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*Lenando esta forma es algo completamente voluntario y nos ayuda mantener una lista de las personas que asistieron a esta reunión. Según la ley estatal, la información proveida en esta forma es parte de la documentación pública del proyecto y se tiene que compartir con cualquier persona que hace una solicitud por esta información. Por favor escriba claramente.*

Printed Name Nombre con letra de imprenta	Organization Organización	Address and ZIP Code Dirección y Código Postal	Phone Teléfono	E-mail Correo Electrónico
Kerilyn Beach	UA Graduate Student	20 W Yvan Dr Tucson		wtngcat@email.arizona.edu
Luis Flores		1902 E Jason Vista	294-6271	
Fabian Schwabe	Teacher/parent	291 S. Park Ave.	798 333 -	
Barry Steinbrucher	University of Arizona	2570 W. Blaine Ct.	990-8674	beep2@email.arizona.edu
R. Brooks JEFFERY	U of A	P.O. Box 210075	621-2991	rbjeffer@u.arizona.edu
Ra Shyla	Parent			
Victor Ruzoh		2080 W. Medway #2161	792-4724	
Cheryl Gault	Davis parent	2009 E Renner	881-7427	cheryl@desert.net
Desiree Smith	U of A	2501 E 5th St.	(480) 490-5271	dms3@email.arizona.edu
Robert Suarez		74 DARLA LK	624 4103	rdms1925@hotmail.com
Abraham Hoegge		6031 E 17 ST	743 6398	<del>ah</del> KHoegge@pho.com



Sign-In Sheet  
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 Davis Bilingual Elementary Magnet School  
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Printed Name Nombre con letra de imprenta	Organization Organización	Address and ZIP Code Dirección y Código Postal	Phone Teléfono	E-mail Correo Electrónico
Tem Santa Cruz	resident	415 W 29th St	—	—
A. H. JOHNSON	resident	230 N. Ashbury		goodnews1@dakota.com.net
Emily Yetman	"	711 N 11th 85705		egy@email.arizona.edu
Leticia Bermudez	resident	129 W. 2nd St. (05)		letty85745@yahoo.com
Mary CALLESEN	"	8701 S. Kolb Rd		barrymary@juno.com
Froy Sebastian	"	'1		BSC17002823@AOL
Greg Solares	"	4546 N. Tortolite Rd.		



Sign-In Sheet  
**El Paso & Southwestern Greenway**  
**Open House**  
 Davis Bilingual Elementary Magnet School  
 Thursday, Jan. 20, 2011



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Printed Name Nombre con letra de imprenta	Organization Organización	Address and ZIP Code Dirección y Código Postal	Phone Teléfono	E-mail Correo Electrónico
Josie Bejarano		770 N. Anita Ave. 85705	940-78778	jobejarano@hotmail.com
HELEN ERICKSON	VA	P.O. Box 57249 Tucson 85732		hbeeemail.arizona.edu
David Chumley	VA	809-1 W. Thurber Rd	520 561-7335	chumser@gmail.com
Joe Millstone	self	68316 S. Peck St.	520-506-8028	joe.jtehill@stivestore.com
Sherry Shen	self/VA			sshenn@email.arizona.edu
Susan Hutler	self	901 N 9th Ave	5208848847	Susan.hutler@hotmail.com
FRANK PEREZ	SELF	1920 N. Westridge Ave 45		FRANK@TUCSONCOE.NET

# El Paso and Southwestern Greenway Team and TAC Sign-In Sheet

## Open House

Davis Bilingual Elementary School

Thursday, Jan. 20, 2011, 5:30 to 7 p.m.

Initial Name	Agency and Address	Phone and Fax	E-mail
STEVE ANDERSON	Pima County Natural Resources 3500 W RIVER RD TUCSON, AZ 85741	Phone 877-6206 x _____ Fax 877-6277	Steve.Anderson@parks.pima.gov
LINDA ANDERSON-MCKEE	Urban Trails Coalition 7850 S RINCON VALLEY RANCH RD VAIL, AZ 85641	Phone _____ Fax _____	mkcee1980@gmail.com
MELISSA ANTOL	City of Tucson PO BOX 27210 TUCSON, AZ 85726	Phone 520-837-6693 Fax _____	melissa.antol@tucsonaz.gov
MELISSA BENTON	Gordley Design Group 2540 N TUCSON BLVD TUCSON, AZ 85716	Phone 520-327-6077 Fax _____	melissa@gordleydesign.com
SANDY BOLDUC <i>SAB</i>	Kimley-Horn and Associates, Inc. 2210 E FT LOWELL RD STE 200 TUCSON, AZ 85719	Phone 520-352-8644 Fax 520-615-9292	sandra.bolduc@kimley-horn.com
SGT. STEVE CULBERTSON	TUCSON POLICE DEPARTMENT 1310 W MIRACLE MILE TUCSON, AZ 85701	Phone 520-837-7255 Fax _____	steve.culbertson@tucsonaz.gov

# El Paso and Southwestern Greenway Team and TAC Sign-In Sheet

Open House

Davis Bilingual Elementary School

Thursday, Jan. 20, 2011, 5:30 to 7 p.m.

Initial Name	Agency and Address	Phone and Fax	E-mail
JAMES "JIM" DEGROOD	Pima Association of Governments 177 N CHURCH AVE SUITE 405 TUCSON, AZ 85701	Phone 770-9410 x481  Fax 620-6891	jdegrood@pagnet.org
DAVE DOBLER 	Structural Grace, Inc. 1430 E FT LOWELL RD STE 200 TUCSON, AZ 85719	Phone 320-0156  Fax	ddobler@structuralgrace.com
JENNIFER DONOFRIO	City of Tucson 201 N STONE AVE 6TH FLOOR TUCSON, AZ 85701	Phone 837-6721  Fax	jennifer.donofrio@tucsonaz.gov
HOWARD DUTT	City of Tucson Parks & Recreation 900 S RANDOLPH WAY TUCSON, AZ 85716	Phone 837-8040  Fax	howard.dutt@tucsonaz.gov
REBECA FIELD 	Kimley-Horn and Associates, Inc. 2210 E FT LOWELL RD #200 TUCSON, AZ 85719	Phone 520-352-8657  Fax 520-615-9292	rebeca.field@kimley-horn.com
CHUCK FLINK	Greenways Incorporated 5850 FAYETTEVILLE RD SUITE 211 DURHAM, NC 27713	Phone 919-484-8448  Fax	chuck.flink@greenways.com

# El Paso and Southwestern Greenway Team and TAC Sign-In Sheet

Open House

Davis Bilingual Elementary School

Thursday, Jan. 20, 2011, 5:30 to 7 p.m.

Initial Name	Agency and Address	Phone and Fax	E-mail
FERNANDO GALVEZ P.E.	Monrad Engineering 1926 E FORT LOWELL RD STE 200 TUCSON, AZ 85719-2391	Phone 884-0045 Fax 884-0048	Fernandogaivez@monradengineeringinc.com
 KATIE GANNON	University of Arizona 819 E FIRST ST TUCSON, AZ 85721	Phone 626-2713 Fax 626-1792	kgannon@u.arizona.edu
JOEL GASTELUM	City of South Tucson 1601 S 6TH AVE TUCSON, AZ 85713	Phone 792-2424 Fax	jgastelum@southtucson.org
MARIA GAYOSSO	City of Tucson PO BOX 2710 TUCSON, AZ 85726	Phone 520-837-6972 Fax	maria.gayosso@tucsonaz.gov
THOMAS GETTINGS	Wood Patel & Associates 2730 E BROADWAY STE 250 TUCSON, AZ 85716	Phone 325-7333 Fax 325-7338	tgettings@woodpatel.com
JIM GLOCK P.E.	City of Tucson PO BOX 27210 TUCSON, AZ 85726	Phone 520-791-4371 Fax 520-791-5641	jim.glock@tucsonaz.gov

# El Paso and Southwestern Greenway Team and TAC Sign-In Sheet

Open House

Davis Bilingual Elementary School

Thursday, Jan. 20, 2011, 5:30 to 7 p.m.

Initial Name	Agency and Address	Phone and Fax	E-mail
JAN GORDLEY	Gordley Design Group 2540 N TUCSON BLVD TUCSON, AZ 85716	Phone 520-327-6077 x101 Fax 520-327-4687	jan@gordleydesign.com
MICK JENSEN	City of South Tucson 1601 S 6TH AVENUE TUCSON, AZ	Phone 664-6441 Fax	mjensen@southtucson.org
DR. JONATHAN MABRY	City of Tucson P O BOX 27210 TUCSON, AZ 85726	Phone 791-4505 x 147 Fax	Jonathan.Mabry@tucsonaz.gov
DAPHNE MADISON	GREENWAY COALITION 445 S ELIAS AVE TUCSON, AZ 85701	Phone 882-3733 Fax	tgreen9@cox.net
PAT MARUM	Wood Patel & Associates 2730 E BROADWAY STE 250 TUCSON, AZ 85716	Phone 325-7333 x Fax 325-7338	pmarum@woodpatel.com
ANDY MCGOVERN	City of Tucson PO BOX 27210 TUCSON, AZ 85726	Phone 837-6626 Fax 791-4239	andrew.mcGovern@tucsonaz.gov

**El Paso and Southwestern Greenway  
Team and TAC Sign-In Sheet**

Open House

Davis Bilingual Elementary School

Thursday, Jan. 20, 2011, 5:30 to 7 p.m.

Initial Name	Agency and Address	Phone and Fax	E-mail
TRIP MCGRATH	Compusult, Inc. 5923 E PIMA ST TUCSON, AZ 85712	Phone 520-882-4044 Fax 520-323-0544	TripM@aol.com
IRENE OGATA	City of Tucson PO BOX 27210 TUCSON, AZ 85726	Phone 791-4505 Fax	irene.ogata@tucsonaz.gov
JULIE PARIZEK	City of Tucson 900 S RANDOLPH WAY TUCSON, AZ 85716	Phone (520) 791-4873 x222 Fax (520) 791-4008	julie.parizek@tucsonaz.gov
CLAUDIA PERCHINELLI P.E.,	Structural Grace, Inc. 1430 E FORT LOWELL RD STE 200 TUCSON, AZ 85719	Phone 320-0156 x Fax 320-0157	cperchinelli@structuralgrace.com
YENNIFER PERRY 	University of Arizona 819 E FIRST ST. TUCSON, AZ 85721	Phone Fax	yperry@email.arizona.edu
ADRIANA PRIETO 	Gordley Design Group 2540 N TUCSON BLVD TUCSON, AZ 85716	Phone 520-390-0624 Fax	adriana@gordleydesign.com

# El Paso and Southwestern Greenway Team and TAC Sign-In Sheet

Open House

Davis Bilingual Elementary School

Thursday, Jan. 20, 2011, 5:30 to 7 p.m.

Initial Name	Agency and Address	Phone and Fax	E-mail
PAT QUINN	City of Tucson 300 W FIRE CENTRAL PLACE TUCSON, AZ 85701	Phone 791-3236  Fax 791-5346	Pat.Quinn@tucsonaz.gov
BRYAN REED	Terracon 355 SOUTH EUCLID AVE STE 107 TUCSON, AZ 85719	Phone 770-1789  Fax 792-2539	bwreed@terracon.com
JIM ROSSI	City of Tucson 201 N STONE AVE 6TH FLOOR TUCSON, AZ 85701	Phone 520-837-6718  Fax	jim.rossi@tucsonaz.gov
JESSIE SANDERS	DEPARTMENT OF TRANSPORTATION 201 N STONE AVE TUCSON, AZ 85701	Phone  Fax	jessie.sanders@tucsonaz.gov
JESSE SCHULTZ 	Wood Patel & Associates 2730 E BROADWAY STE 250 TUCSON, AZ 85716	Phone 325-7333  Fax 325-7338	jschultz@woodpatel.com
FRANCINE SOSA 	Structural Grace, Inc. 1430 E FT. LOWELL RD STE 200 TUCSON, AZ 85719	Phone  Fax	FSosa@structuralgrace.com

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Initial Name	Agency and Address	Phone and Fax	E-mail
ALICE TEMPLETON	Gordley Design Group 2540 N TUCSON BLVD TUCSON, AZ 85716	Phone 520-327-6077 Fax _____	alice@gordleydesign.com
THOMAS (TOM) THIVENER	City of Tucson PO BOX 27210 TUCSON, AZ 85726-7210	Phone 520-791-4371 Fax 520-791-5902	tom.thivener@tucsonaz.gov
GABE THUM	Pima Association of Governments 177 N CHURCH AVE STE 405 TUCSON, AZ 85701	Phone 792-1093 Fax 620-6981	gthum@pagnet.org
ROBERTO VILLASENOR	City of Tucson 270 S STONE AVE TUCSON, AZ 85701	Phone 791-4444 Fax _____	roberto.villasenor@tucsonaz.gov
PEG WEBER	City of Tucson 900 S RANDOLPH WAY TUCSON, AZ 85716	Phone 791-4873 x128 Fax 791-4008	peg.weber@tucsonaz.gov
GARY WITTWER	City of Tucson PO BOX 27210 TUCSON, AZ 85726-7210	Phone 520-791-5100 Fax 520-791-4239	gary.wittwer@tucsonaz.gov

Fred Gray  
Luis Amadorano  
COT Parks to Rec  
Gordley Design Group



Sign-In Sheet  
**El Paso & Southwestern Greenway**  
**Open House**  
 Quincie Douglas Library  
 Tuesday, Jan. 25, 2011



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Printed Name Nombre con letra de imprenta	Organization Organización	Address and ZIP Code Dirección y Código Postal	Phone Teléfono	E-mail Correo Electrónico
Charles L. Belin	Western Hills Resident	2157 E. Granito Vista	(520) 622-8386	_____
<i>[Signature]</i> Fabian Caballer		3122 E. Terra Alta Blvd		
Betty West-Shute		2226 E. Wiser	818 8190	
Kenx REHM	UA School Arch.	3019 E. BLACKLIDGE DR 1808 S. Winmor Ave.	325.9711 343-5641	REHMxdp2@EMAIL.ARIZONA.EDU
German Quirgo	Barrio Centro	2727 E. BERRY DRIVE		
LEA PIERCE	ARMODCTICO NATION ASSN	85746	520-319-8872	les_p_pierce@azhwa.com

# El Paso and Southwestern Greenway Team and TAC Sign-In Sheet

Open House  
Quincie Douglas Library  
Tuesday, Jan. 25, 2011, 5:30 to 7 p.m.

Initial Name	Agency and Address	Phone and Fax	E-mail
STEVE ANDERSON	Pima County Natural Resources 3500 W RIVER RD TUCSON, AZ 85741	Phone 877-6206 x _____ Fax 877-6277	Steve.Anderson@parks.pima.gov
LINDA ANDERSON-MCKEE	Urban Trails Coalition 7850 S RINCON VALLEY RANCH RD VAIL, AZ 85641	Phone _____ Fax _____	mckee1980@gmail.com
MELISSA ANTOL	City of Tucson PO BOX 27210 TUCSON, AZ 85726	Phone 520-837-6693 Fax _____	melissa.antol@tucsonaz.gov
MELISSA BENTON	Gordley Design Group 2540 N TUCSON BLVD TUCSON, AZ 85716	Phone 520-327-6077 Fax _____	melissa@gordleydesign.com
SANDY BOLDUC	Kimley-Horn and Associates, Inc. 2210 E FT LOWELL RD STE 200 TUCSON, AZ 85719	Phone 520-352-8644 Fax 520-615-9292	sandra.bolduc@kimley-horn.com
SGT. STEVE CULBERTSON	TUCSON POLICE DEPARTMENT 1310 W MIRACLE MILE TUCSON, AZ 85701	Phone 520-837-7255 Fax _____	steve.culbertson@tucsonaz.gov

**El Paso and Southwestern Greenway  
Team and TAC Sign-In Sheet**

Open House

Quincie Douglas Library

Tuesday, Jan. 25, 2011, 5:30 to 7 p.m.

Initial Name	Agency and Address	Phone and Fax	E-mail
JAMES "JIM" DEGROOD	Pima Association of Governments 177 N CHURCH AVE SUITE 405 TUCSON, AZ 85701	Phone 770-9410 x481 Fax 620-6891	jdegrood@pagnet.org
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JENNIFER DONOFRIO	City of Tucson 201 N STONE AVE 6TH FLOOR TUCSON, AZ 85701	Phone 837-6721 Fax	jennifer.donofrio@tucsonaz.gov
HOWARD DUTT	City of Tucson Parks & Recreation 900 S RANDOLPH WAY TUCSON, AZ 85716	Phone 837-8040 Fax	howard.dutt@tucsonaz.gov
REBECA FIELD RF	Kimley-Horn and Associates, Inc. 2210 E FT LOWELL RD #200 TUCSON, AZ 85719	Phone 520-352-8657 Fax 520-615-9292	rebeca.field@kimley-horn.com
CHUCK FLINK	Greenways Incorporated 5850 FAYETTEVILLE RD SUITE 211 DURHAM, NC 27713	Phone 919-484-8448 Fax	chuck.flink@greenways.com

# El Paso and Southwestern Greenway Team and TAC Sign-In Sheet

Open House

Quincie Douglas Library

Tuesday, Jan. 25, 2011, 5:30 to 7 p.m.

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 KATIE GANNON	University of Arizona 819 E FIRST ST TUCSON, AZ 85721	Phone 626-2713 Fax 626-1792	kgannon@u.arizona.edu
JOEL GASTELUM	City of South Tucson 1601 S 6TH AVE TUCSON, AZ 85713	Phone 792-2424 Fax	jpgastelum@southtucson.org
MARIA GAYOSSO	City of Tucson PO BOX 2710 TUCSON, AZ 85726	Phone 520-837-6972 Fax	maria.gayosso@tucsonaz.gov
THOMAS GETTINGS	Wood Patel & Associates 2730 E BROADWAY STE 250 TUCSON, AZ 85716	Phone 325-7333 Fax 325-7338	tgettings@woodpatel.com
JIM GLOCK P.E.	City of Tucson PO BOX 27210 TUCSON, AZ 85726	Phone 520-791-4371 Fax 520-791-5641	jim.glock@tucsonaz.gov

# El Paso and Southwestern Greenway Team and TAC Sign-In Sheet

Open House  
Quincie Douglas Library  
Tuesday, Jan. 25, 2011, 5:30 to 7 p.m.

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JAN GORDLEY	Gordley Design Group 2540 N TUCSON BLVD TUCSON, AZ 85716	Phone 520-327-6077 x101  Fax 520-327-4687	jan@gordleydesign.com
MICK JENSEN	City of South Tucson 1601 S 6TH AVENUE TUCSON, AZ	Phone 664-6441  Fax	mjensen@southtucson.org
DR. JONATHAN MABRY	City of Tucson P O BOX 27210 TUCSON, AZ 85726	Phone 791-4505 x 147  Fax	Jonathan.Mabry@tucsonaz.gov
DAPHNE MADISON	GREENWAY COALITION 445 S ELIAS AVE TUCSON, AZ 85701	Phone 882-3733  Fax	tgreen9@cox.net
PAT MARUM	Wood Patel & Associates 2730 E BROADWAY STE 250 TUCSON, AZ 85716	Phone 325-7333 x  Fax 325-7338	pmarum@woodpatel.com
ANDY MCGOVERN	City of Tucson PO BOX 27210 TUCSON, AZ 85726	Phone 837-6626  Fax 791-4239	andrew.mcgobern@tucsonaz.gov

# El Paso and Southwestern Greenway Team and TAC Sign-In Sheet

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Tuesday, Jan. 25, 2011, 5:30 to 7 p.m.

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TRIP MCGRATH	Compusult, Inc. 5923 E PIMA ST TUCSON, AZ 85712	Phone 520-882-4044 Fax 520-323-0544	TripM@aol.com
IRENE OGATA	City of Tucson PO BOX 27210 TUCSON, AZ 85726	Phone 791-4505 Fax	irene.ogata@tucsonaz.gov
JULIE PARIZEK	City of Tucson 900 S RANDOLPH WAY TUCSON, AZ 85716	Phone (520) 791-4873 x222 Fax (520) 791-4008	julie.parizek@tucsonaz.gov
CLAUDIA PERCHINELLI P.E., <i>cdp</i>	Structural Grace, Inc. 1430 E FORT LOWELL RD STE 200 TUCSON, AZ 85719	Phone 320-0156 x Fax 320-0157	cperchinelli@structuralgrace.com
YENNIFFER PERRY <i>Y.P.</i>	University of Arizona 819 E FIRST ST. TUCSON, AZ 85721	Phone Fax	yperry@email.arizona.edu
ADRIANA PRIETO <i>AP</i>	Gordley Design Group 2540 N TUCSON BLVD TUCSON, AZ 85716	Phone 520-390-0624 Fax	adriana@gordleydesign.com

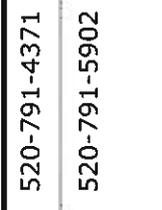
**El Paso and Southwestern Greenway  
Team and TAC Sign-In Sheet**

Open House  
Quincie Douglas Library  
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BRYAN REED	Terracon 355 SOUTH EUCLID AVE STE 107 TUCSON, AZ 85719	Phone 770-1789 Fax 792-2539	bwreed@terracon.com
JIM ROSSI	City of Tucson 201 N STONE AVE 6TH FLOOR TUCSON, AZ 85701	Phone 520-837-6718 Fax	jim.rossi@tucsonaz.gov
JESSIE SANDERS	DEPARTMENT OF TRANSPORTATION 201 N STONE AVE TUCSON, AZ 85701	Phone Fax	jessie.sanders@tucsonaz.gov
JESSE SCHULTZ 	Wood Patel & Associates 2730 E BROADWAY STE 250 TUCSON, AZ 85716	Phone 325-7333 Fax 325-7338	jschultz@woodpatel.com
FRANCINE SOSA	Structural Grace, Inc. 1430 E FT. LOWELL RD STE 200 TUCSON, AZ 85719	Phone Fax	FSosa@structuralgrace.com

# El Paso and Southwestern Greenway Team and TAC Sign-In Sheet

Open House  
Quincie Douglas Library  
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THOMAS (TOM) THIVENER 	City of Tucson PO BOX 27210 TUCSON, AZ 85726-7210	Phone 520-791-4371  Fax 520-791-5902	tom.thivener@tucsonaz.gov
GABE THUM 	Pima Association of Governments 177 N CHURCH AVE STE 405 TUCSON, AZ 85701	Phone 792-1093  Fax 620-6981	gthum@pagnet.org
ROBERTO VILLASENOR	City of Tucson 270 S STONE AVE TUCSON, AZ 85701	Phone 791-4444  Fax _____	roberto.villasenor@tucsonaz.gov
PEG WEBER	City of Tucson 900 S RANDOLPH WAY TUCSON, AZ 85716	Phone 791-4873 x128  Fax 791-4008	peg.weber@tucsonaz.gov
GARY WITTWER	City of Tucson PO BOX 27210 TUCSON, AZ 85726-7210	Phone 520-791-5100  Fax 520-791-4239	gary.wittwer@tucsonaz.gov

*Mary Ambarino*



Sign-In Sheet  
**El Paso & Southwestern Greenway**  
**Open House**  
 Santa Rosa Neighborhood Center  
 Thursday, Jan. 27, 2011



Completion of this sign-in sheet is completely voluntary and helps the project team keep an accurate record of meeting attendees. Under state law, any identifying information provided below will become part of the public record and, as such, must be released to any individual upon request. **Please print clearly.**  
 Llenando esta forma es algo completamente voluntario y nos ayuda mantener una lista de las personas que asistieron a esta reunión. Según la ley estatal, la información proveída en esta forma es parte de la documentación pública del proyecto y se tiene que compartir con cualquier persona que hace una solicitud por esta información. **Por favor escriba claramente.**

Printed Name Nombre con letra de imprenta	Organization Organización	Address and ZIP Code Dirección y Código Postal	Phone Teléfono	E-mail Correo Electrónico
LESPIERE	<del>City of Tucson</del>	<del>2727 EAST GENESEE AVE</del>	<del>319 8892</del>	<del>les-p@az-ken-shash@y2kno.com</del>
Tom Gorman	Old Pueblo Trolley	PO Box 1373	326,0377	
Mick Jensen	City of South Tucson			
S. Michelle Stokes		2320 S. 9th Ave. Tucson, AZ 85713	520 326 2154	michelle@stufonei.com
DAVID ANDERS		122 E. 5th St. TUCSON	977-4710	ANDRZ@GMAIL.COM
<del>DAVID</del>	<del>City Parks &amp; Rec</del>	<del>900 S. Broadway</del>	<del>837 8050</del>	<del>peg.welbeck@tucsonaz.gov</del>
WALKER SMITH		2825 E. KENNEDY	326 2692	camerante2@aol.com
Greg Collins	ward 5	4300 S Park Ave	(602) 643-8923	gcollin@email.az.gov
GREG COLE		508 W 17TH ST	360-8233	GLCINGVL@YAHOO.COM
TAYLOR GREEN		445 S. ELIAS AVE		
JUDY DARE	EPNA	425 W. Paseo Redondo #500 85701	624-9892	jadare@g.com





Sign-In Sheet  
**El Paso & Southwestern Greenway**  
**Open House**  
 Santa Rosa Neighborhood Center  
 Thursday, Jan. 27, 2011



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Printed Name Nombre con letra de imprenta	Organization Organización	Address and ZIP Code Dirección y Código Postal	Phone Teléfono	E-mail Correo Electrónico
MANNY FERNANDEZ <i>Manny Fernandez</i>	Old Pueblo Trolley	1211 S. 9th Ave	—	—
<i>[Signature]</i>		1425 N. Hidden Glen Rd.		camwoodgm@juno.com
<i>[Signature]</i>				
KATHLEEN <i>Kathleen</i>	Drachman			<i>[Signature]</i>
DAPHNE WILSON <i>Daphne Wilson</i>		445 S. FIAS AVE	882-5733	fgreen9@cox.net
IAN FRITZ <i>Ian Fritz</i>	Douglas Springs Neighborhood Assn.	903 N 10th Ave	628-4318	Sprockel@cox.net
TIM O'GRADY <i>Tim O'Grady</i>		928 S. 8th Ave	240-0300	
DICK BASYC <i>Dick Basyk</i>	Pima Assn of Taxpayers	2649 E. Cyster St		
		85776		

# El Paso and Southwestern Greenway Team and TAC Sign-In Sheet

Open House  
Santa Rosa Neighborhood Center  
Thursday, Jan. 27, 2011, 5:30 to 7 p.m.

Initial Name	Agency and Address	Phone and Fax	E-mail
	STEVE ANDERSON Pima County Natural Resources 3500 W RIVER RD TUCSON, AZ 85741	Phone 877-6206 x _____ Fax 877-6277	Steve.Anderson@parks.pima.gov
	LINDA ANDERSON-MCKEE Urban Trails Coalition 7850 S RINCON VALLEY RANCH RD VAIL, AZ 85641	Phone _____ Fax _____	mckee1980@gmail.com
	MELISSA ANTOL City of Tucson PO BOX 27210 TUCSON, AZ 85726	Phone 520-837-6693 Fax _____	melissa.antol@tucsonaz.gov
✓	MELISSA BENTON Gordley Design Group 2540 N TUCSON BLVD TUCSON, AZ 85716	Phone 520-327-6077 Fax _____	melissa@gordleydesign.com
✓	SANDY BOLDOC Kimley-Horn and Associates, Inc. 2210 E FT LOWELL RD STE 200 TUCSON, AZ 85719	Phone 520-352-8644 Fax 520-615-9292	sandra.bolduc@kimley-horn.com
	SGT. STEVE CULBERTSON TUCSON POLICE DEPARTMENT 1310 W MIRACLE MILE TUCSON, AZ 85701	Phone 520-837-7255 Fax _____	steve.culbertson@tucsonaz.gov

# El Paso and Southwestern Greenway Team and TAC Sign-In Sheet

Open House

Santa Rosa Neighborhood Center

Thursday, Jan. 27, 2011, 5:30 to 7 p.m.

Initial Name	Agency and Address	Phone and Fax	E-mail
JAMES "JIM" DEGROOD	Pima Association of Governments 177 N CHURCH AVE SUITE 405 TUCSON, AZ 85701	Phone 770-9410 x481  Fax 620-6891	jdegrood@pagnet.org
DAVE DOBLER	Structural Grace, Inc. 1430 E FT LOWELL RD STE 200 TUCSON, AZ 85719	Phone 320-0156  Fax	ddobler@structuralgrace.com
JENNIFER DONOFRIO	City of Tucson 201 N STONE AVE 6TH FLOOR TUCSON, AZ 85701	Phone 837-6721  Fax	jennifer.donofrio@tucsonaz.gov
HOWARD DUTT	City of Tucson Parks & Recreation 900 S RANDOLPH WAY TUCSON, AZ 85716	Phone 837-8040  Fax	howard.dutt@tucsonaz.gov
REBECA FIELD	Kimley-Horn and Associates, Inc. 2210 E FT LOWELL RD #200 TUCSON, AZ 85719	Phone 520-352-8657  Fax 520-615-9292	rebeca.field@kimley-horn.com
CHUCK FLINK	Greenways Incorporated 5850 FAYETTEVILLE RD SUITE 211 DURHAM, NC 27713	Phone 919-484-8448  Fax	chuck.flink@greenways.com

# El Paso and Southwestern Greenway Team and TAC Sign-In Sheet

Open House  
Santa Rosa Neighborhood Center  
Thursday, Jan. 27, 2011, 5:30 to 7 p.m.

Initial Name	Agency and Address	Phone and Fax	E-mail
	FERNANDO GALVEZ P.E. Monrad Engineering 1926 E FORT LOWELL RD STE 200 TUCSON, AZ 85719-2391	Phone 884-0045 Fax 884-0048	Fernandogalvez@monradengineeringinc.com
✓	KATIE GANNON University of Arizona 819 E FIRST ST TUCSON, AZ 85721	Phone 626-2713 Fax 626-1792	kgannon@u.arizona.edu
✓	JOEL GASTELUM City of South Tucson 1601 S 6TH AVE TUCSON, AZ 85713	Phone 792-2424 Fax	jpgastelum@southtucson.org
	MARIA GAYOSSO City of Tucson PO BOX 2710 TUCSON, AZ 85726	Phone 520-837-6972 Fax	maria.gayosso@tucsonaz.gov
	THOMAS GETTINGS Wood Patel & Associates 2730 E BROADWAY STE 250 TUCSON, AZ 85716	Phone 325-7333 Fax 325-7338	tgettings@woodpatel.com
	JIM GLOCK P.E. City of Tucson PO BOX 27210 TUCSON, AZ 85726	Phone 520-791-4371 Fax 520-791-5641	jim.glock@tucsonaz.gov

# El Paso and Southwestern Greenway Team and TAC Sign-In Sheet

Open House

Santa Rosa Neighborhood Center

Thursday, Jan. 27, 2011, 5:30 to 7 p.m.

Initial Name	Agency and Address	Phone and Fax	E-mail
JAN GORDLEY 	Gordley Design Group 2540 N TUCSON BLVD TUCSON, AZ 85716	Phone 520-327-6077 x101  Fax 520-327-4687	jan@gordleydesign.com
MICK JENSEN 	City of South Tucson 1601 S 6TH AVENUE TUCSON, AZ	Phone 664-6441  Fax	mjensen@southtucson.org
DR. JONATHAN MABRY	City of Tucson P O BOX 27210 TUCSON, AZ 85726	Phone 791-4505 x 147  Fax	Jonathan.Mabry@tucsonaz.gov
DAPHNE MADISON 	GREENWAY COALITION 445 S ELIAS AVE TUCSON, AZ 85701	Phone 882-3733  Fax	tgreen9@cox.net
PAT MARUM 	Wood Patel & Associates 2730 E BROADWAY STE 250 TUCSON, AZ 85716	Phone 325-7333 x  Fax 325-7338	pmarum@woodpatel.com
ANDY MCGOVERN	City of Tucson PO BOX 27210 TUCSON, AZ 85726	Phone 837-6626  Fax 791-4239	andrew.mcgovern@tucsonaz.gov

# El Paso and Southwestern Greenway Team and TAC Sign-In Sheet

Open House

Santa Rosa Neighborhood Center

Thursday, Jan. 27, 2011, 5:30 to 7 p.m.

Initial Name	Agency and Address	Phone and Fax	E-mail
	TRIP MCGRATH Compusult, Inc. 5923 E PIMA ST TUCSON, AZ 85712	Phone 520-882-4044 Fax 520-323-0544	TripM@aol.com
	IRENE OGATA City of Tucson PO BOX 27210 TUCSON, AZ 85726	Phone 791-4505 Fax	irene.ogata@tucsonaz.gov
	JULIE PARIZEK City of Tucson 900 S RANDOLPH WAY TUCSON, AZ 85716	Phone (520) 791-4873 x222 Fax (520) 791-4008	julie.parizek@tucsonaz.gov
	CLAUDIA PERCHINELLI P.E., Structural Grace, Inc. 1430 E FORT LOWELL RD STE 200 TUCSON, AZ 85719	Phone 320-0156 x Fax 320-0157	cperchinelli@structuralgrace.com
	YENNIFFER PERRY University of Arizona 819 E FIRST ST. TUCSON, AZ 85721	Phone Fax	yperry@email.arizona.edu
	ADRIANA PRIETO Gordley Design Group 2540 N TUCSON BLVD TUCSON, AZ 85716	Phone 520-390-0624 Fax	adriana@gordleydesign.com

# El Paso and Southwestern Greenway Team and TAC Sign-In Sheet

Open House

Santa Rosa Neighborhood Center

Thursday, Jan. 27, 2011, 5:30 to 7 p.m.

Initial Name	Agency and Address	Phone and Fax	E-mail
PAT QUINN	City of Tucson 300 W FIRE CENTRAL PLACE TUCSON, AZ 85701	Phone 791-3236 Fax 791-5346	Pat.Quinn@tucsonaz.gov
BRYAN REED	Terracon 355 SOUTH EUCLID AVE STE 107 TUCSON, AZ 85719	Phone 770-1789 Fax 792-2539	bwreed@terracon.com
JIM ROSSI	City of Tucson 201 N STONE AVE 6TH FLOOR TUCSON, AZ 85701	Phone 520-837-6718 Fax	jim.rossi@tucsonaz.gov
JESSIE SANDERS	DEPARTMENT OF TRANSPORTATION 201 N STONE AVE TUCSON, AZ 85701	Phone Fax	jessie.sanders@tucsonaz.gov
JESSE SCHULTZ	Wood Patel & Associates 2730 E BROADWAY STE 250 TUCSON, AZ 85716	Phone 325-7333 Fax 325-7338	jschultz@woodpatel.com
FRANCINE SOSA	Structural Grace, Inc. 1430 E FT. LOWELL RD STE 200 TUCSON, AZ 85719	Phone Fax	FSosa@structuralgrace.com

# El Paso and Southwestern Greenway Team and TAC Sign-In Sheet

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Santa Rosa Neighborhood Center

Thursday, Jan. 27, 2011, 5:30 to 7 p.m.

Initial Name	Agency and Address	Phone and Fax	E-mail
	Gordley Design Group 2540 N TUCSON BLVD TUCSON, AZ 85716	Phone 520-327-6077  Fax _____	alice@gordleydesign.com
✓ THOMAS (TOM) THIVENER	City of Tucson PO BOX 27210 TUCSON, AZ 85726-7210	Phone 520-791-4371  Fax 520-791-5902	tom.thivener@tucsonaz.gov
	Pima Association of Governments 177 N CHURCH AVE STE 405 TUCSON, AZ 85701	Phone 792-1093  Fax 620-6981	gthum@pagnet.org
	City of Tucson 270 S STONE AVE TUCSON, AZ 85701	Phone 791-4444  Fax _____	roberto.villasenor@tucsonaz.gov
✓ PEG WEBER	City of Tucson 900 S RANDOLPH WAY TUCSON, AZ 85716	Phone 791-4873 x128  Fax 791-4008	peg.weber@tucsonaz.gov
	City of Tucson PO BOX 27210 TUCSON, AZ 85726-7210	Phone 520-791-5100  Fax 520-791-4239	gary.wittwer@tucsonaz.gov



# C.O.S.T. CAFECITO REPORT



## El Paso & Southwestern Greenway

### City Of South Tucson Community Outreach

#### DESCRIPTION

Several outreach events were held with residents of the City of South Tucson to attain community input on the design of the El Paso and Southwestern Greenway. Each event was conducted at a unique venue, using a variety of methods to gain input, including surveys, focus group discussions, a field trip, and other exercises. Information received from the community directly influenced the planning and design of the El Paso and Southwestern Greenway through South Tucson.

#### OUTREACH SUMMARY

VENUE	DATE	PARTICIPANTS	METHODS
National Night Out	Tuesday, 8/3/10, 5-8pm	15 South Tucson residents, various ages	<ul style="list-style-type: none"> <li>• Booth: one-on-one discussion</li> <li>• Boards: route &amp; history</li> <li>• Survey: 9 questions</li> </ul>
John C. Valenzuela Youth Center and Greenway site	Thursday, 9/23/10, 5:30-8pm	7 middle school students	<ul style="list-style-type: none"> <li>• Site visit/night walk</li> <li>• Round table discussion</li> <li>• Survey: 13 questions</li> </ul>
John C. Valenzuela Youth Center	Friday, 9/24/10, 2-4pm	18 elementary school students (3 <sup>rd</sup> – 5 <sup>th</sup> grade)	<ul style="list-style-type: none"> <li>• Round table discussion</li> <li>• Route mapping exercise</li> <li>• Drawing exercise</li> </ul>
Mission View Elementary School	Friday, 11/19/10, 8:30-10:30am	15 parents of elementary-aged children	<ul style="list-style-type: none"> <li>• Cafecito: informal discussion &amp; presentation</li> <li>• Survey: 10 questions</li> </ul>

## Summary Findings

- Few City of South Tucson residents had already heard of the El Paso & Southwestern Greenway project, though most are familiar with the raised bed/ alignment that run through the community between South 6<sup>th</sup> and 10<sup>th</sup> Avenues.
- The majority of residents currently walk or bike within the community.
- Traffic speed was cited as a concern when walking or biking by nearly all respondents (7 of 7 youth respondents and 12 of 15 parent respondents).
- 13 of 15 parents at Mission View Elementary School identified stray dogs as their biggest concern when outside.
- Homeless people and strangers walking through the community were frequently cited by both youth and parents as a safety concern.
- Youth suggested several features along the greenway, including graffiti walls as privacy screens in areas where backyards directly abut the greenway; seating areas and night lighting were also requested.
- Though outside the scope of the greenway project, most children and several youth mentioned a desire for a public swimming pool within the community.
- Parents and community members identified trees, walking paths and sidewalks, benches and drinking fountains as improvements they would most like to see.
- Facilities most favored by residents and parents included playgrounds, a community garden, a swimming pool, and exercise circuits.
- All youth indicated an interest in bicycling, including bike clubs and bike repair classes.
- Trees and shade were identified as an important amenity that would encourage walking.

## Design Implications

The EP&SW Greenway crosses diagonally through the City Of South Tucson, providing access to and from many of the City's streets. Four major access points to the EP&SW Greenway are suggested: 4<sup>th</sup> Avenue, 6<sup>th</sup> Avenue, 8<sup>th</sup> Avenue, and 10<sup>th</sup> Avenue. A Gateway City Plaza is suggested as a central gathering area for the community and visual focal point along the busy 6<sup>th</sup> Avenue commercial corridor, the main commercial between Taqueria Pico de Gallo and Discount Tire.

The character of the neighborhood and the activities and customs of survey respondents suggested creating a linear park along the alignment. Respondents suggested a design suitable for small daily gatherings rather than a strict focus on transportation usages such as walking, biking, or rollerblading. Ideas included placitas with seating, trees and vegetation, and where spatial dimensions permit, play areas for different age groups. Survey results highlighted the importance of night lighting to extend the use of the EP&SW Greenway beyond daylight hours, especially in the summer, when the desert weather is more suitable for walking or talking.

Respondents suggested that small exercise stations of various types could be located along the greenway in places with spatial constraints. Areas with more available space could contain larger exercise stations that could host small-group activities such as dancing or yoga classes. A community garden was cited as a popular amenity. Bike racks are suggested, at the minimum, on all main entries and main gathering areas. At minimum one restroom station and two water fountains should be located along the greenway between 10<sup>th</sup> and 6<sup>th</sup> Avenues.

**OUTREACH ACTIVITIES****Place: Mission Elementary School Cafecito**

Date: Friday, November 19, 2010

Participants: 15 parents

**Methods:** Cafecito invitation flyers were sent to parents of students of Mission Elementary School one week before the date of the event. Signage was posted on entry doors the day of the Cafecito meeting so that attendees were able to locate the room in which the meeting was held. The Cafecito meeting started with informal roundtable discussions. A large-scale aerial photograph of South Tucson was posted to acquaint parents with the proposed route of the El Paso and Southwestern Greenway through the community. A five-minute introduction was made, with the balance of time for discussion, questions, comments, and suggestions. Upcoming open houses were mentioned so residents would be expecting the invitations that would be mailed to them in January.

**Observations:** Parents (all mothers or grandmothers) were very participative, engaged, and excited about the project. They discussed current walking patterns and customary outdoor activities and the kinds of open spaces they desire. Many participants visit existing parks but they indicated that these parks are somewhat far and insufficient for many types of uses. Existing parks function solely as playgrounds and do not provide enough activities for parents or young adults. Fitness circuits, walking loops, and gathering areas were of high interest to participants.



Presentation of EP&SW Greenway at Mission Elementary School Cafecito.

Survey Results

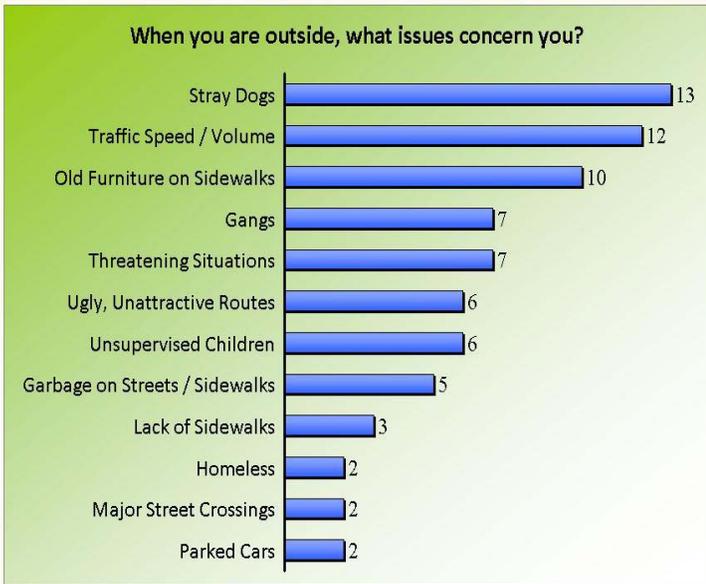
Mission Elementary School



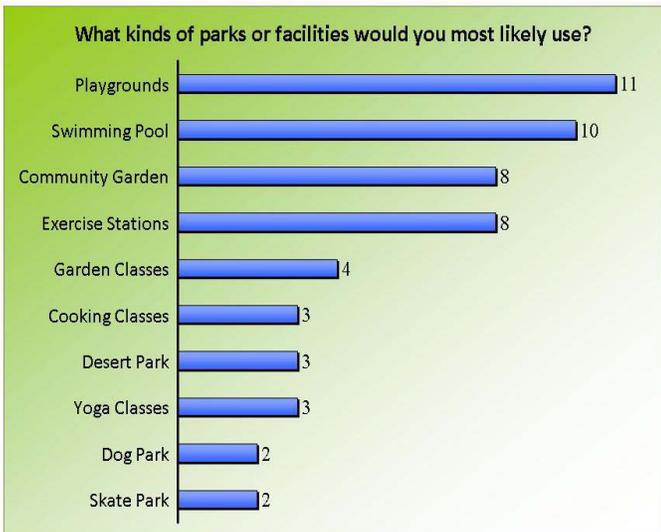
The survey of mothers and grandmothers with children enrolled at Mission View Elementary school indicate that 67%, or 10 out of 15 respondents, currently walk or bike within the City of South Tucson.



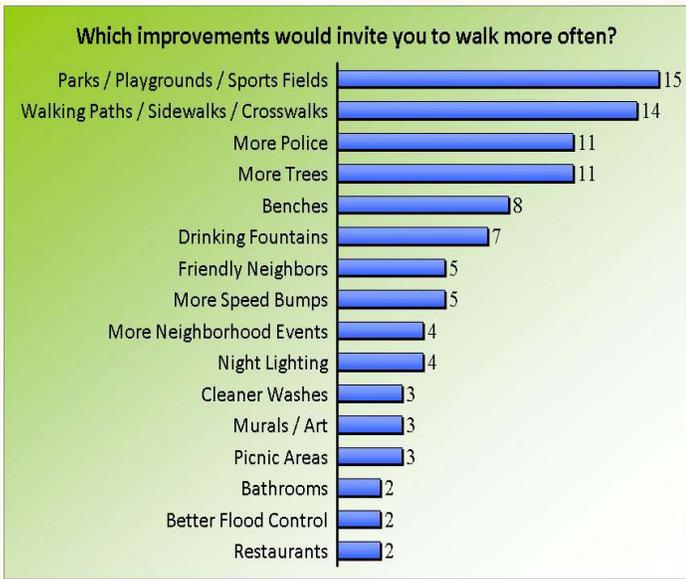
Mission View Elementary School was cited by 11 out of 15 respondents as the most frequent walking destination. Less than half the respondents walk to other local destinations.



Safety was a big concern for parents/grandmothers and was a topic of much interest and discussion. Fear of stray dogs was identified by 86% of the respondents as a major concern. 80% identified traffic speed and/or traffic volume as concerns when outside in the neighborhood. In addition, junk and obstruction of sidewalks was listed as a concern by 66% of respondents. Transient and gang activity were also of concern when it came to walking and being outside in the neighborhood.



Surveys results show support for playgrounds, parks and sports fields in the community. Community gardens and fitness circuits were of interest to over half the respondents.



In addition to parks playgrounds and sports fields, walking paths, sidewalks and crosswalks were identified as the most important facilities to invite walking within the community of South Tucson. 73% of respondents requested additional police presence, and 73% requested more trees within the community.

**Place:** John Valenzuela Youth Center Visit

**Date:** Friday, September 24, 2010

**Participants:** 18 elementary school students (3<sup>rd</sup> – 5<sup>th</sup> grade)

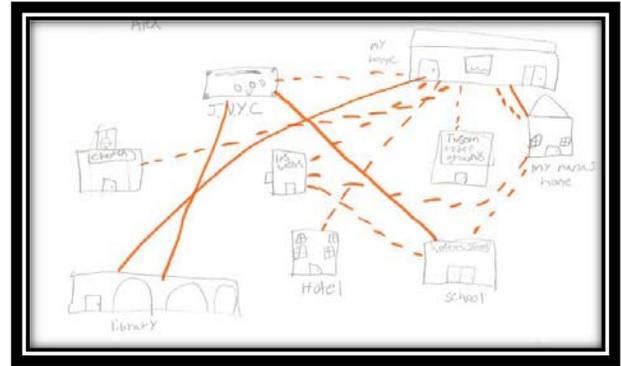
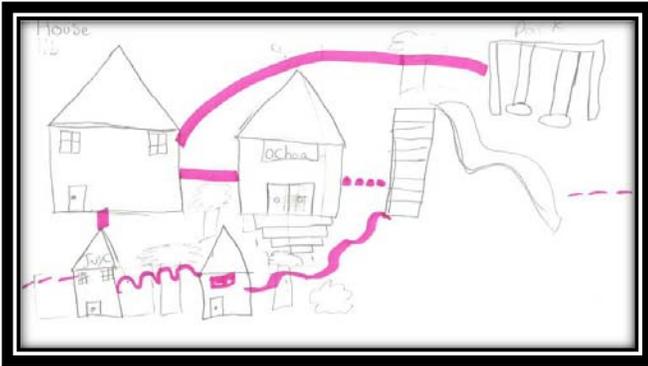
**Methods:** A meeting at the John Valenzuela Youth Center was scheduled during its after school program. The visit entailed several activities intended to raise awareness about the Greenway project and to obtain input and ideas about the types of amenities residents would like to see along the greenway. The first activity was a brief discussion about outside recreational activities and how they are beneficial for both physical and mental health. Children were encouraged to share their own ideas about play and physical activity. The next activity was a mapping exercise. Using colored markers and different line styles to indicate transportation modes (biking, driving, or walking), participants were asked to map routes and modes they utilize to reach local destinations on a regular basis. A brief introduction to the EP&SW Greenway project was presented using a large aerial map. Children pointed out where they live in relation to the greenway route and made drawings of all the things that they would like to have on the greenway.

**Observations:** The kids were generous and suggested many ideas. Many ideas, such as a swimming pool, do not fit within the scope of the greenway project, but all ideas provided important perspectives that contributed to the design process and provide a sense of participation to potential users of the facility.

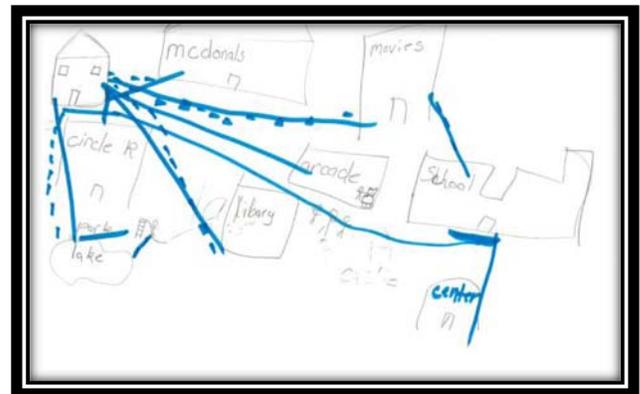
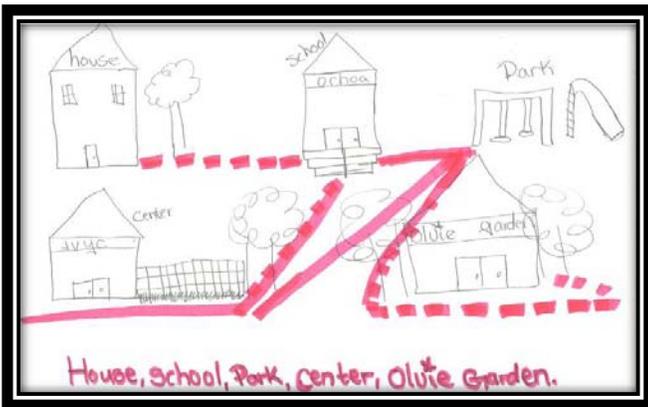


John Valenzuela Youth Center Visit with elementary students.

Sample drawings: where kids go on a typical day and how they travel (bike, walk, car).

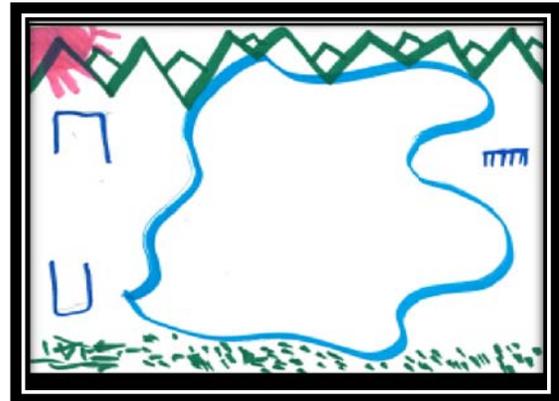
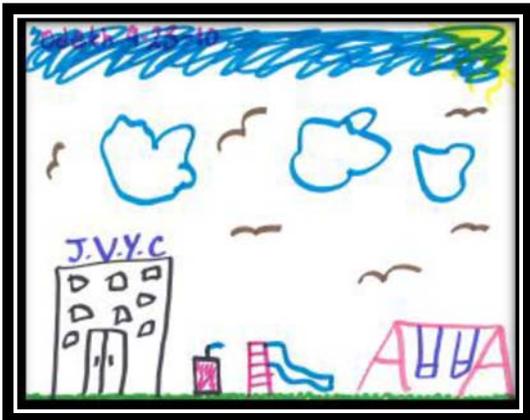


These renderings were drawn by elementary school children from the John Valenzuela Youth Center. This mapping activity was used to identify where children travel within the City of South Tucson, and what modes of transportation they use to get to these destinations.

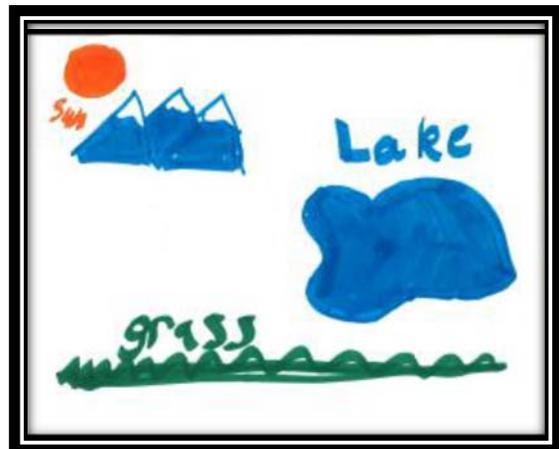


—	Indicates Walking
~~~~~	Indicates Bicycling
-----	Indicates Automobile Travel

Sample drawings: features kids would like to see along the greenway.



These sample drawings are of features that children said they would like to see along the greenway. Children desire features such as green open spaces, playgrounds, parks, and other similar outdoor recreational uses. There also is a strong interest in uses that incorporate water, such as splash parks and swimming pools. Although outdoor areas with water are outside the scope of the greenway, ideas such as splash parks should be kept in consideration for future development.



**Place:** John Valenzuela Youth Center Visit

**Date:** Thursday, September 23, 2010

**Participants:** 7 middle school students

**Approach:** An evening meeting with high school students was scheduled at the John Valenzuela Youth Center. A brief introduction to the EP&SW Greenway project was followed by a field trip to the greenway site with a short walk back and forth along the greenway route. Flash lights were provided to each participant. Two to three small groups were formed during the walk along the greenway route with discussion facilitated by a member of the Drachman team. The meeting concluded with a questionnaire.

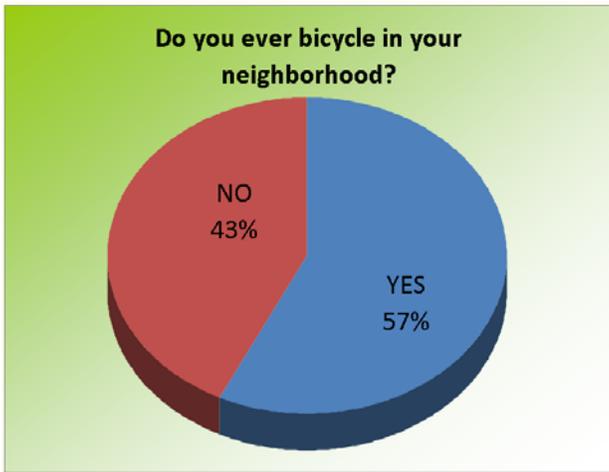
**Observations:** The students responded very well to the greenway project making numerous suggestions. Graffiti and vandalism were discussed in some detail. The students suggested a graffiti wall along the greenway as both a privacy screen for adjacent properties and a legitimate outlet for artistic tagger-types. They admitted they admired good graffiti and felt a dedicated graffiti wall might reduce the amount of unwanted graffiti within the community. A graffiti wall may also potentially reduce vandalism because kids would be proud of the wall and have more respect for greenway facilities. They all expressed the need for seating, gathering areas, and places to “hang out” with their friends. They indicated that night use would be very desirable and would require night lighting. They also requested a drinking fountain and restroom in the vicinity.



Middle School students from the John C. Valenzuela Youth Center on an evening walk along the greenway route in South Tucson.

Survey Results

John Valenzuela Youth Center middle school students.

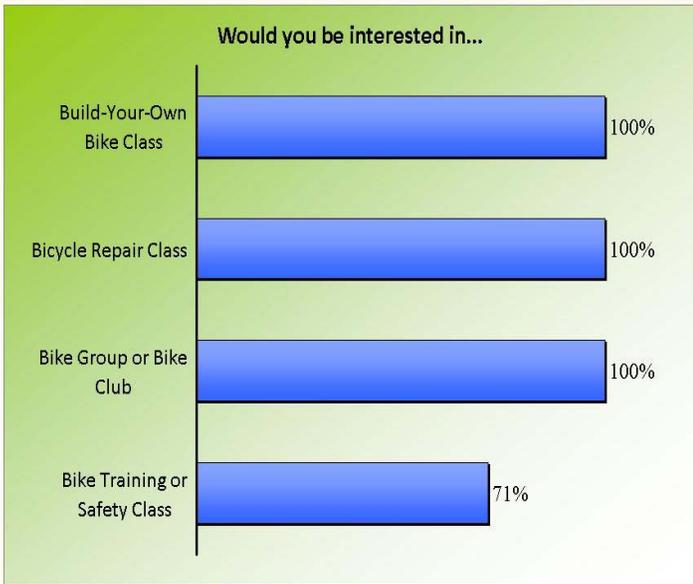


Survey answers demonstrate a strong presence of bicycle use within the City of South Tucson community. Even greater than those that currently use a bicycle, all the youth indicated they wanted to be able to bike within the community.

The youth at John C. Valenzuela youth center stated that when they walk or bike they typically go see friends or go to destinations such as the Youth Center or a store. Their biggest concern about being out and about in their neighborhood is gang activity.



Survey responses indicate these middle school students, when outside, do not feel comfortable around busy streets and fast traffic. Criminal activities and transient populations also contribute to a feeling of discomfort.



Strong interest was shown for educational opportunities about bicycle's and bicycle maintenance

**Place:** Annual National Night Out

**Date:** Tuesday, August 3, 2010

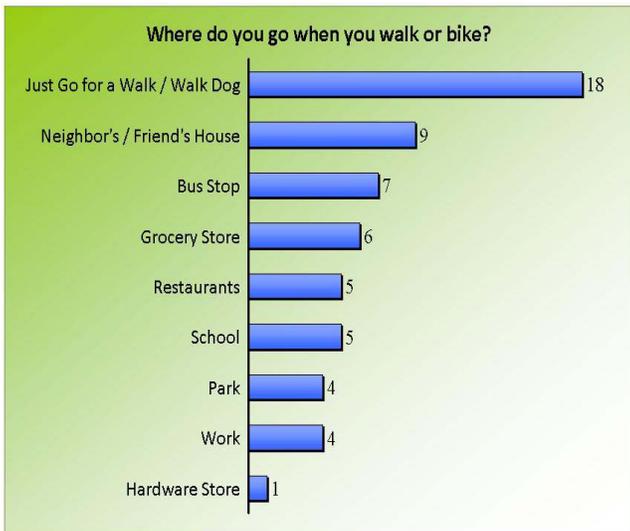
**Participants:** 14 residents of varying ages

**Approach:** A table with an informal and inviting atmosphere was set up for National Night Out. This event was held outdoors at the City of South Tucson Town Hall-Sam Lena Public Library complex. Boards from phase one of the EP&SW Greenway process were displayed on easels. Surveys were offered to people who were interested and wanted to know more about the EP&SW Greenway project. The event atmosphere provided a good opportunity for one-on-one discussion.

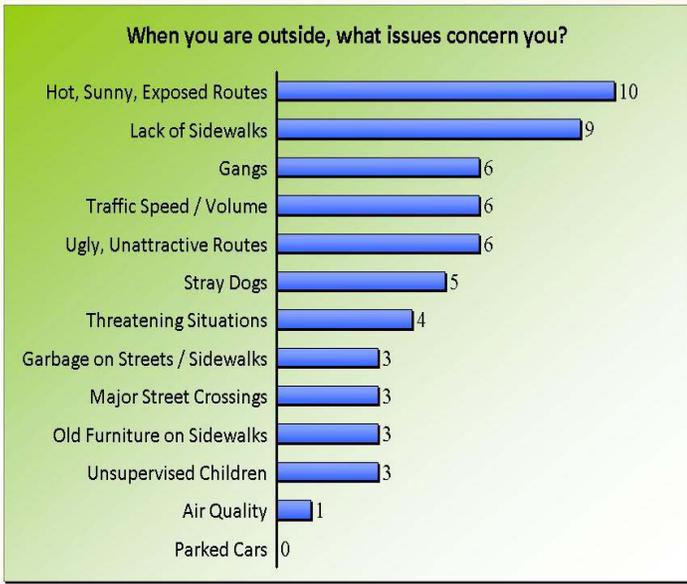
**Observations:** Many people asked questions and made comments about how the use of the alignment has changed over time. They were excited about the idea of having additional open space in their community and were optimistic that the project would also clean up the image of the vacant and abandoned land that the corridor has become.

**Survey Results**

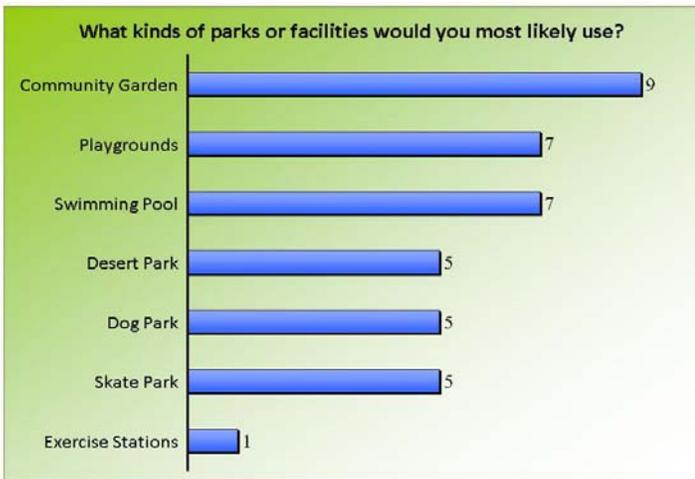
**Annual Night Out Outreach**



Surveys collected from National Night Out indicate that respondents typically walk or bike for leisure and recreation activities.



Exposure to the hot sun, especially in the summer, and a lack of sidewalks, were of most concern to survey respondents.



Active public spaces received the most positive feedback. Spaces such as community gardens, parks, and playgrounds were identified as types of facilities that would be most useful.

# TRAFFIC REPORT

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# El Paso and Southwestern Greenway

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## Transportation, Access and Circulation Study

Prepared for:

**Wood-Patel and Associates, Inc.**  
**3499 N. Campbell Avenue**  
**Tucson, Arizona 85719**

Prepared by:



**May 13, 2011**

# El Paso and Southwestern Greenway Transportation, Access and Circulation Study

Prepared for:

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Prepared by:

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May 13, 2011

NOTICE

This study has been prepared using available traffic data and forecasts, as well as limited field data collected specifically for this study. It is intended for use in making a determination regarding the transportation infrastructure needs of the study area. It is not intended for use as a design document, nor does it represent a standard or specification. The document is copyrighted by Curtis Lueck & Associates, 5460 W. Four Barrel Court, Tucson, AZ 85743, telephone 520-743-8748. All rights are reserved pursuant to United States copyright law. The document may not be reproduced digitally or mechanically, in whole or in part, without the prior written approval of CLA, except as noted in the following. (1) Limited quotations may be made, for technical purposes only, as long as proper citation to the authors is provided. (2) Governmental agencies to which this report is submitted for review may make limited copies for internal use or to fulfill public requests under the Freedom of Information Act.

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## **1. Introduction and Summary of Key Findings**

### **Project Overview**

The El Paso and Southwestern Greenway is a proposed 6-mile long multi-use trail along the old El Paso and Southwestern Railroad Corridor. It is intended to accommodate pedestrians, bicyclists, and joggers. The Greenway would connect west side Tucson neighborhoods and the City of South Tucson to downtown Rio Nuevo redevelopment and to each other. It will extend from Barrio Anita, north of Saint Mary's Road, through downtown Tucson to the Kino Sports Complex, east of Kino Parkway.

The Greenway was envisioned in part to help to revitalize low income areas through which it will pass, provide a recreational multi-use path, and serve an alternative commuter corridor for bicyclists. The project would link nine historic neighborhoods/barrios in downtown Tucson. The Greenway is intended to follow the original alignment of the old railroad corridor.

Exhibit 1 shows the Greenway alignment within the jurisdictions and neighborhoods.

### **Purpose of Report**

In 2005, the Drachman Institute, a community outreach unit within the UA College of Architecture and Landscape Architecture, presented a concept to the City of Tucson for the Greenway. This presentation included design concepts for the trails and recommended intersection concepts for where the Greenway would cross major roads.

The purpose of this transportation study is to revisit the transportation design concepts, and provide recommendations that may support the original intersection concepts for the Greenway or identify additional alternative intersection concepts.

### **Safety Considerations**

The safe design of the trail and the crossings should be of utmost importance. The locations of the crossings and the ease with which the Greenway users are able to cross the more important streets will be critical to having a safe and well used Greenway trail. Although this is a long-range plan which will be implemented as opportunities arise, Tucson Department of Transportation Traffic Engineering staff should be a major contributor to this project at the earliest stages of planning and design.

At some locations, the Greenway may need to deviate from the railroad right-of-way, or conceptual alignment, in order to direct the users to the best crossing location. At some locations, concepts could include trail use diverted to intersections with existing traffic signals rather than cross at the alignment locations at major streets. However, expecting some users to walk or bike hundreds of feet along a roadway to use an existing traffic signal may not be realistic. More than likely, they will cross the roadway at the point where the Greenway intersects the roadway, at their risk and at the risk of crossroad users (motor vehicle drivers, bicyclists and pedestrians). For some crossings, the path itself could be routed to the nearby signalized location in advance of its intersection with the cross street.

However, pedestrians and bicyclists are treated differently than motor vehicle drivers by statutes. For instance, it is usually illegal to route bikes down a sidewalk unless the rider dismounts. Therefore, solutions that support crossing at the Greenway location, **whenever practicable**, may be the most effective solution to promote flow and continuity of the Greenway

Exhibit 1 Project Location



There are several resources available to apply safe crossing approach and intersection design. These include the following:

- *Manual on Uniform Traffic Control Devices (MUTCD)*
- *Transportation Access Management Guidelines for the City of Tucson, Arizona*
- *Guide for the Development of Bike Facilities (AASHTO)*
- *Designing Sidewalks and Trails for Access (FHWA)*
- *The Effects of Traffic Calming Measures on Pedestrian and Motorist Behavior (FHWA)*
- *Urban Bikeway Design Guide (NACTO)*

## Trail Crossings

There are many locations along the Greenway where public or private roads or pathways will be crossed. For each of these crossings, it will be necessary to design the approaches and intersections on the Greenway and on the cross streets or paths to optimize safe crossing. Rails-to-Trails Conservancy is a nonprofit organization working with communities to preserve unused rail corridors by transforming them into trails, enhancing the health of America's environment, economy, neighborhoods and people. The Rails to Trails Conservancy<sup>1</sup> provides information on crossing design based on existing design guidelines from the American Association of State Highway and Transportation Officials (AASHTO):

A good first resource for crossings is the *Guide for the Development of Bicycle Facilities*, produced by the American Association of State Highway and Transportation Officials (AASHTO), which provides guidelines for traffic engineers designing bicycle facilities (see "Additional Resources" box to the right for more information). It includes a section on intersections and crossings. The AASHTO guide addresses three types of crossings: midblock, adjacent path and complex. These crossings can include public roadways, private driveways and railroads.

**Midblock crossings:** This type of crossing is the simplest and most common, and it involves a trail crossing a roadway or railroad when there are no other adjacent intersections or crossings. There are two types of midblock crossings: perpendicular crossings, which occur when the trail and the roadway intersect at right angles, and skewed crossings, which occur most often when the trail and the roadway intersect at an angle. Skewed crossings usually require a swerve in the trail path so that the trail crossing itself is perpendicular to the roadway.

**Adjacent path crossings:** These crossings occur most often when a trail, running parallel to a roadway, crosses an existing roadway intersection. Due to the presence of turning vehicles, this type of crossing presents more challenges than a midblock crossing. Appropriate signage, traffic signals and distance between the roadway intersection and the trail crossing often play important roles in the design of adjacent path crossings.

**Complex crossings:** This category acts as a catch-all for most crossings that cannot be categorized as midblock or adjacent path crossings. Due to the nonstandard challenges these crossings often present, the AASHTO guide instructs engineers to treat these crossings on a case-by-case basis.

One of the advantages of using a trail is that it provides a dedicated right-of-way that minimizes interactions with vehicles and signalized intersections. An important consideration to remember when designing a trail crossing is that many trail users, especially cyclists desiring to maintain momentum,

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<sup>1</sup> From the Rails-to-Trails Conservancy website, "Rails-to-Trails Conservancy is a nonprofit organization working with communities to preserve unused rail corridors by transforming them into trails, enhancing the health of America's environment, economy, neighborhoods and people."  
<http://www.railstotrails.org/>

may have a low tolerance for long delays at crossings. In addition, children using the trail may not be aware of traffic rules. Crossings should also be ADA-accessible so they can be used by all trail users. When planning a crossing, be sure to design with these considerations in mind.<sup>2</sup>

## **Crossings**

Because the Greenway will be crossing various roadway or path types, there will not be a simple treatment that can be used for each crossing. The following describe what will be encountered on the Greenway.

### *1. Physical barriers (railroad tracks, interchange).*

There are two locations where the Greenway alignment will cross the active Union Pacific Railroad (UPRR) tracks; one at the north terminus at University Boulevard, and the other between 4<sup>th</sup> Avenue and Park Avenue where it crosses the Nogales Spur tracks. There is also a crossing at Kino Parkway where an underpass or overpass may be necessary.

These barriers will require a grade separation, or diversion from the Greenway alignment to an at-grade crossing.



*Underpass along Aviation Parkway in Tucson, Arizona*

### *2. Major Streets*

The Greenway must cross several major streets and many of these are four or five lane arterials. These are:

- St. Mary's Road
- Congress Street
- 22<sup>nd</sup> Street
- 29<sup>th</sup> Street
- 10<sup>th</sup> Avenue
- 6<sup>th</sup> Avenue
- 4<sup>th</sup> Avenue
- Park Avenue

<sup>2</sup> [http://www.railstotrails.org/whatwedo/trailbuilding/technicalassistance/toolbox/20080908\\_crossings.html](http://www.railstotrails.org/whatwedo/trailbuilding/technicalassistance/toolbox/20080908_crossings.html)

Several of the crossing locations are near existing or planned traffic signals, either at street intersections, or mid-block pedestrian signals. Options for crossing along the Greenway at these major streets can be include providing a non-signalized crossing area (typical or specialized crosswalk; i.e. Zebra), a signalized pedestrian crossing (HAWK, Pelican, or Toucan), routing Greenway users to existing traffic signal locations, or providing a grade separation (overpass, underpass).

### *3. Local Streets*

The Greenway will cross through several neighborhoods, and thus will cross local, or neighborhood streets. The Greenway will also skirt several streets, especially between 22<sup>nd</sup> Street and 29<sup>th</sup> Street where an access point, or trailhead, rather than a crossing at the Greenway will be located. Intersection Ahead, Yield and/or Stop signs can be provided along the Greenway in advance of these cross streets.

## **General Design Considerations for Crossings**

Several items must be considered in the design of the Greenway trail crossings. Some of these include:

- At unsignalized intersection crossings, motorists many times do not expect to see bicyclists and pedestrians.
- Along the Greenway, most of the roadways to be crossed have light to moderate traffic volumes, and there is good visibility on the trail users' and roadway users' approaches. However, some of the crossings will be at roadways that carry (or will carry) over 15,000 vpd.
- The alignment of the Greenway right-of-way as shown in the conceptual plan show many of the trail crossings aligned at a skew to the roadways they cross. Skewed alignments extend crossing distances and make the design treatments more difficult to implement. Efforts should be made to align crossings so that the crossings are made at 90 degree angles to the roadways.
- The crossing treatments should consider traffic speed, street width, traffic volumes, line of sight, and trail user profile (age distribution, destinations).
- A traffic study should be completed for roadway crossings as a part of the preliminary design phase for each segment as it moves toward implementation to determine the most appropriate and safe design features. Initial crossing design concepts can be refined during the design and construction document stages.

Proposed crossing treatments are based on established standards, preliminary evaluation of the available data, and experience on similar existing facilities.

The goals of determining crossing treatments include:

- Reducing conflicts commensurate to the users of the Greenway and the crossroads. Signalized crossings would not be recommended at low volume roadways in most cases, but may be recommended where Greenway users would encounter high traffic volumes or complicated crossing conditions.
- Providing a cost effective crossing that maintains safe conditions for all who encounter the Greenway intersection.
- Recognizing that grade-separated crossings may be necessary to ensure the safety of the Greenway user. These would occur at existing railway crossings and at locations where Greenway crossers would experience great risks crossing the roadway.

For each of the crossing treatments, established regulatory and warning and signing and accompanying pavement markings will be necessary at the approaches to the crossings and to establish the right-of-way hierarchy for users at the Greenway intersections.

For this study, three crossing categories are used:

**Type I** – Type I crossings (unsignalized, but possibly with other traffic control devices) are recommended where vehicles travel at speeds of less than 35 mph and are used by fewer than 10,000 vehicles per day. Other traffic control devices may include high visibility crosswalks, signing, curb extensions and pedestrian refuges. Most of the crossings along the Greenway will be Type I crossings.



*Type I Crossing Location*

**Type II** – signalized crossings are recommended for crossings where posted speeds are 35 mph and above and/or ADT exceeds 15,000 vehicles, and where it is recommended that trails receive a high level of crossing protection. Each crossing, regardless of traffic speed or volume, requires additional review by a registered engineer to identify sight lines, potential impacts on traffic progression, timing with adjacent signals, capacity, and safety.

Trail signals are normally activated by push buttons, but also may be triggered by motion or loop detectors. Minimum crossing times should be determined by the width of the street, trail user profile, or other factors determined by the jurisdiction. Trail signals should be supplemented by standard advanced warning and regulatory signs.

Many of the trail crossings that would fit the Type II crossing criteria are close to existing signalized intersection. Some of these crossings may be better provided at these existing signalized intersections. .



*Type II Crossing Location*

**Type III** – grade-separated crossings may be needed when a physical barrier can not be relocated (railroad track), and/or based on high traffic volumes and with the posted speed over 40 mph. Personal safety may be a concern with overcrossings and undercrossings when trail users may be temporarily out of sight from public view and may have poor visibility themselves. Type III crossings are recommended at the railroad crossings; one west of Main/University, and the other at the Nogales Spur, east of 4<sup>th</sup> Avenue. Other Type III crossings are recommended at Congress Street, 22<sup>nd</sup> Street and Kino Boulevard.

Design and operational measures are available which can address these trail user safety concerns. For example, an undercrossing can be designed to be spacious and well-lit, equipped with emergency phones at each end, and completely visible for its entire length prior to entering.



*Type III Crossing Location (Rillito Bike Path under La Cholla Boulevard)*

## Signage and Pavement Marking Guidelines

A variety of signs should be used along the Greenway based on the specific locations, crossings, and guidance needs. For instance near the downtown venues, informational signs should be provided to direct Greenway users to specific uses. Several resources can be used to guide trail and cross street designers in determining the best signing and pavement markings for this project.

Monument Entry or Gateway Sign – These should identify a main entrance point to the Greenway. These signs can be constructed typically like other roadway signs, or artistically if the City wishes to promote a specific theme for the Greenway. A Greenway project logo should be provided on the sign, along with a map of the entire Greenway, or a map of a segment of the gateway near the entry.

Wayfinding or Directional Sign - These signs can be provided with a map of the Greenway path alongside, showing the user's position within the length of the Greenway path. The sign should identify the Greenway and perhaps upcoming locations.

Regulatory, Warning and Informational Signs – These signs may inform users of upcoming conflicts, specific trail conditions, regulatory use of the path and other information relevant to the users. These signs should be erected whenever necessary along the Greenway. The size and shape of the signs will vary depending on the type of sign. The *Manual of Uniform Traffic Control Devices* (MUTCD) and the *NACTO Urban Bikeway Design Guide* provide guidance and standards for regulatory, warning and informational signs.

Pavement Markers – Pavement markings such as white/yellow striping that delineate path usage and direction can accompany regulatory and warning signing (i.e., where passing is restricted, stopping is regulated).

## Signal Guidelines

At some Greenway crossings, a pedestrian signal is recommended to manage access at the trail/cross street intersections where high traffic volumes are experienced. Pedestrian signals are located throughout the Tucson region, typically at mid-block locations where pedestrians would not walk to the closest signalized intersection. The City of Tucson has installed a variety of pedestrian signals including the HAWK, PELICAN and TOUCAN.

HAWK signals are single phase signals that stop vehicular traffic on the street for pedestrians to cross from curb side to curb side of the street. Pedestrians or bicyclists push the pedestrian call button to initiate the yellow light for traffic on the main street. The light then turns red for the major street traffic, and then flashing red. While the signal is solid red for major street traffic, the pedestrian has the Walk indication for this interval. When the light on the major street is flashing red, drivers on the major street must stop, look to ensure the pedestrian or bicyclist is out of the crosswalk, and then proceed. Pedestrians see the flashing "Don't Walk" with a countdown timer during this interval.

PELICANs are two-stage signalized pedestrian crossings that stop traffic on the major street, one direction at a time. A second pedestrian call is necessary to cross to the other side of the street from the median refuge area. There is usually an offset in the walking path at a PELICAN crossing. PELICANs use the standard red-yellow-green pattern for traffic on the major street.

TOUCAN systems are placed at locations of heavy bicycle and pedestrian crossing activity and along roadways that are prioritized for non-motorized uses, sometimes known as "Bike Boulevards." An added benefit to the TOUCAN signal system is that motorized traffic is not allowed to proceed through these signals, decreasing the number of cars on neighborhood streets, and enhancing the neighborhood's quality of life.

## 2. Greenway Crossing Recommendations

Exhibit 2 is a list of all local and major roadway crossings along the Greenway as currently conceived.

**Exhibit 2 List of Greenway Crossing Locations**

Roadway Crossing Locations	ADT	Posted Speed	Recommendation
Main Avenue	11,000 (2005)	30 mph	Ped Signal
University	1,000 vpd (2005)	25 mph	Grade Separation
Van Alstine Street	< 1000 vpd	25 mph	Grade Separation
Anita Avenue	< 1000 vpd	25 mph	Sign/Stripe approaches
Oury/Kitchen Street	< 1000 vpd	25 mph	Sign/Stripe approaches
Hughes Street	< 1000 vpd	25 mph	Sign/Stripe approaches
St Mary's	22,500 vpd (2004, 2005)	35 mph	Ped Signal ( <b>Part of Downtown Links Project</b> )
Manning House Road (merge?)	NP	NP	Merge in Road
Congress Street	36,384 vpd (2006)	30 mph	Grade Separation
Granada/Cushing	4,441 vpd (2007)	30 mph	Ped Signal ( <b>Part of Modern Streetcar Project</b> )
Simpson Street	< 1000 vpd	25 mph	Sign/Stripe approaches
17th Street	< 1000 vpd	25 mph	Entrance
18th Street	< 1000 vpd	25 mph	Entrance
22nd Street	29,939 vpd (2007)	35 mph	Grade Separation
25th Street	< 1000 vpd	25 mph	Entrance
26th Street	< 1000 vpd	25 mph	Entrance
27th Street	< 1000 vpd	25 mph	Entrance
Silverlake Road/29th Street (Along)	11,931 vpd (2007)	35 mph	Along north side of 29th Street to a ped signal crossing west of 11th
11th Avenue (Along)	< 1000 vpd	25 mph	
30th Street	< 1000 vpd	25 mph	No Change - Trail Signs
31st Street	< 1000 vpd	25 mph	Existing Bridge
10th Avenue	6,347 vpd (2007)	35 mph	Sign/Stripe approaches
8th Avenue	< 1000 vpd	25 mph	Sign/Stripe approaches
6th Avenue	21,365 vpd (2005)	35 mph	Traffic Study to Determine
5th Avenue	< 1000 vpd	25 mph	Sign/Stripe approaches
4th Avenue (Along)	3,970 vph (2007)	25 mph	Ped Signal
UPRR	< 1000 vpd		Grade Separation
Park Avenue	20,660 vpd (2006)	35 mph	Ped Signal ( <b>Part of The Bridges Project</b> )
Kino Parkway (and WB I-10 On Ramp)	33,121 vpd (2007)	40 mph	Grade Separation

The following section describes the major and local crossings along the proposed Greenway alignment. The discussion begins with crossings beginning at the northwest terminus of the alignment.

**University Boulevard Connection**

From University Boulevard, the Greenway alignment crosses the existing UPRR tracks. Currently, bicyclists use Main Avenue from University Boulevard to Davis Street, then Davis Street to St. Mary’s Road. For the ultimate condition, a grade separation is recommended for the Greenway at the railroad tracks. This grade separation would create a gateway setting for the beginning of the Greenway.



*Looking west along the University Avenue alignment east of Main Avenue. An underpass at the railroad tracks (on the west side of Main Avenue) is the long term recommendation.*



*Looking east along the University Avenue alignment from west of the railroad tracks. A grade separation at the railroad tracks is the long term recommendation*

### **University Boulevard to St. Mary's Road**

With the ultimate condition of a grade separation at the railroad, the Greenway then would cross three streets between University Boulevard and St. Mary's Road. These streets are all local roads with speed limits of 25 mph that serve the Barrio Anita neighborhood. The Greenway would cross Van Alstine Street, Anita Avenue and Oury Street before following along the Hughes Street alignment to St. Mary's Road. Van Alstine Street is very close to the railroad tracks, so the Greenway may even cross over this road in addition to crossing over the railroad with the proposed grade separation. Stop signs and other traffic control devices should be located on the Greenway on the approaches to each of the cross streets. Greenway theme signs should be located on the cross streets identifying them as access points to the Greenway.



*Looking west along the Greenway alignment from east of Anita Avenue. Signs and striping on the cross streets and the Greenway will be needed.*

### **St. Mary's Road Connection**

The Greenway alignment follows Hughes Street and is shown to cross St. Mary's Road approximately 300 feet east of the I-10 westbound frontage road. A "PELICAN" pedestrian signal will be installed at St. Mary's Road as part of the Downtown Links project, and the Greenway alignment will cross St. Mary's at this PELICAN.

#### *St. Mary's Road to Congress Street*

No existing local streets cross the Greenway alignment between St. Mary's Road and Congress Street. The Greenway alignment is shown through several privately owned properties including the Inn Suites Hotel, La Entrada Apartments and the Manning House.

### **Congress Street Crossing**

The ultimate crossing for this location should be a grade separation of the path with Congress Street.



*Looking southwest along the Greenway alignment on Hughes Street, north of St. Mary's Road.*

#### ***Congress Street to Cushing Street/Granada Road***

This section of the Greenway will provide access to the downtown area. The Greenway may experience the highest traffic in this location as it can also serve as a commuter corridor for downtown employees who bike to work. The plan for access to adjacent land uses should be incorporated into the Greenway alignment and design plans.

#### **Cushing Street/Granada Road Crossing**

The Greenway alignment continues south and crosses at the Cushing Street/Granada Avenue intersection. As the Greenway reaches Granada Ave. it intersects with the planned route for the Tucson Modern Street Car. The street car project includes a 12' wide paved area that will direct Greenway users west along the north side of Granada Ave. towards a signalized crossing marked with a 6' wide crosswalk and two 4' wide 'Portland Green' bike lanes. The crossing is directly aligned with the existing asphalt pathway that is a part of the Fire Central Greenway alignment.

#### ***Cushing Street/Granada Road to 22<sup>nd</sup> Street***

There are three streets that cross (or meet) the Greenway alignment along this section. Simpson Street, 17<sup>th</sup> Street and 18<sup>th</sup> Street would connect to the Greenway. There is also a pedestrian connection envisioned along the La Paz Street alignment (between 20<sup>th</sup> Street and 21<sup>st</sup> Street) for access to Santa Rosa Park on the east side of 10<sup>th</sup> Avenue. Stop signs and other traffic control devices should be located on the Greenway on the approaches to each of the cross streets. Greenway theme signs should be located on the cross streets identifying them as access points to the Greenway.

The first section of the Greenway has already been constructed as part of the new Downtown Fire Station campus, which was recently opened. This site plan for this is shown in Exhibit 3.

#### **22<sup>nd</sup> Street Crossing**

The recommended crossing at this high volume location should be a grade separation of the Greenway with 22<sup>nd</sup> Street.

**Exhibit 3 Downtown Fire Station with Greenway Shown**



Source: WSM Architects.

**22<sup>nd</sup> Street to Silverlake Road/29<sup>th</sup> Street**

South of 22<sup>nd</sup> Street, the Greenway follows the Osborne Avenue alignment to the west. There are streets that cross (or meet) the Greenway alignment along this section. 23rd Street, 25<sup>th</sup> ½ Street, 26<sup>th</sup> Street and 27<sup>th</sup> Street could connect directly to the Greenway. It is also recommended that 25th 1/2 St. be closed prior to its intersection with Interstate 10 to reduce traffic volumes at the Greenway crossing and to provide for a seamless connection to South Tucson and a future community park. This closure would also facilitate the design for the renovation of the Railroad Roundhouse, a facility that the City is hoping to acquire from the existing owners. This historic building would be a thematic feature with interpretive uses.

Stop signs and other traffic control devices should be located on the Greenway on the approaches to the cross streets along this section. Greenway theme signs should be located on the cross streets identifying them as access points to the Greenway.

**29<sup>th</sup> Street Crossing**

The conceptual alignment of the Greenway turns east along 29<sup>th</sup> Street and continues south on 11<sup>th</sup> Avenue. A signalized pedestrian crossing just west of 11<sup>th</sup> Avenue is recommended.

The continuation of the Greenway alignment along 29<sup>th</sup> Street has some challenges. 29<sup>th</sup> Street has sidewalks and a striped shoulder for bike use on each side of the road. Additional right-of-way would need to be purchased if a separated two-way path along the north side of 29<sup>th</sup> Street is desired. Existing buildings may be too close to the roadway for this to be feasible. Otherwise, bicyclists would need to dismount and walk their bikes along the sidewalk toward 11<sup>th</sup> Avenue.





*Looking south along 11<sup>th</sup> Avenue from 29<sup>th</sup> Street*

#### *29<sup>th</sup> Street to 10<sup>th</sup> Avenue*

After crossing 29th St., the Greenway travels east along the south side of the road. A traffic study is recommended to determine the best circulation at this point. One option would be to provide a 6' wide asphalt pathway on the south side of the sidewalk within the 29th St. right-of-way for users traveling west while the existing bike lane handles bicyclists traveling east.

The Greenway then heads south along 11th Ave. Discussions with South Tucson regarding the alignment have included the option of converting 11<sup>th</sup> Ave. to a one-way northbound street and narrowed to 18 feet. This could provide for a cross-section within the existing right-of-way to include a 12' wide asphalt path on the west side of 11<sup>th</sup> Avenue, with a 3' landscape buffer between the asphalt path and sidewalk, and a 5' buffer between the sidewalk and the street.

South of 31<sup>st</sup> Street, the path would cross an historic twelve-foot wide bridge, continuing along a southeast alignment to its intersection with 10<sup>th</sup> Avenue. Stop signs and other traffic control devices should be located on the Greenway on the approaches to each of the cross streets. Greenway theme signs should be located on the cross streets identifying them as access points to the Greenway.



*Looking south along 11<sup>th</sup> Avenue at 30<sup>th</sup> Street*



*Bridge Crossing south of 33<sup>rd</sup> Avenue*

### **10<sup>th</sup> Avenue and 11<sup>th</sup> Avenue Crossings**

The Greenway alignment is shown to cross 10<sup>th</sup> Avenue, just south of 33<sup>rd</sup> Street. The Greenway would cross at a ninety degree angle to 10<sup>th</sup> Avenue and 11<sup>th</sup> Avenue as shown in the alignment plans. 10<sup>th</sup> Avenue has a 3-lane cross section and is along a Sun Tran bus route. It is also shown on the Tucson Bike Map as a road “for experienced riders”.



*At 10<sup>th</sup> Avenue Greenway Crossing*

*10<sup>th</sup> Avenue to 6<sup>th</sup> Avenue*

Between 10<sup>th</sup> Avenue and 6<sup>th</sup> Avenue, the Greenway would continue on a raised rail bed through South Tucson. The existing rail bed continues to 8<sup>th</sup> Avenue where existing guardrail sections are on both sides of the road. On the east side of 8<sup>th</sup> Avenue, the rail bed grade is reduced until it continues at-grade with the surrounding area. The alignment continues through to 6<sup>th</sup> Avenue. On its approach to 6<sup>th</sup> Avenue, there are options for continuing the alignment. These options include continuing the Greenway between the Pico de Gallo restaurant on the north and Discount Tires on the south; diverting to the north so users would cross at 36<sup>th</sup> Street, or diverting to the south at South 37<sup>th</sup> Street so users would cross at an existing marked crosswalk.



*Looking east along Greenway alignment, east of 8<sup>th</sup> Avenue*



*Looking west toward 8<sup>th</sup> Avenue*



*Looking east toward 6<sup>th</sup> Avenue*

### **6<sup>th</sup> Avenue Crossing**

The Greenway alignment is shown to cross 6<sup>th</sup> Avenue, a major corridor through the City of Tucson and South Tucson. The Pima Association of Governments traffic volumes map show 21,000 vehicles per day in 2005 on 6<sup>th</sup> Avenue. A transportation study should be conducted for this phase to determine the best location for this crossing.



*View of Greenway alignment from east of 6<sup>th</sup> Avenue. Note parking areas within Greenway ROW*



*Looking west at 37<sup>th</sup> Street crosswalk on 6<sup>th</sup> Avenue*

*6<sup>th</sup> Avenue to 4<sup>th</sup> Avenue*

East of 6<sup>th</sup> Avenue, the Greenway continues along its southeast alignment north of the Salvation Army Center, and parallel to the Old Vail Highway. The Greenway then crosses 5<sup>th</sup> Avenue, a local street and continues along an existing paved road that serves the Madera Business Park on the north side of the Greenway to its intersection with 4<sup>th</sup> Avenue.



*Looking southeast along Greenway between 6<sup>th</sup> and 5<sup>th</sup> Avenues*

#### **4<sup>th</sup> Avenue Crossing**

The Greenway alignment is shown to continue to 4<sup>th</sup> Avenue and then continue south where it crosses 4<sup>th</sup> Avenue 200 feet south of 40<sup>th</sup> Street. A signalized pedestrian crossing is recommended. It is recommended that 4<sup>th</sup> Avenue be narrowed to allow for the placement of a 12' wide asphalt path and landscape buffer on the west side of 4<sup>th</sup> Avenue. The existing decorative sidewalk can remain in-place and function as the Greenway's pedestrian corridor leading south.



*Looking east across 4<sup>th</sup> Avenue toward continuation of Greenway ROW*

#### **4<sup>th</sup> Avenue to Park Avenue**

East of 4<sup>th</sup> Avenue, the Greenway continues along an east-west alignment to its intersection with the UPRR Nogales Spur tracks. There is an existing underpass at the railroad tracks, although it appears to serve drainage purposes. On the east side of the tracks, the alignment continues along an unpaved trail just south of an

existing residential neighborhood, with a connection to Euclid Avenue, until its intersection with Park Avenue. An overpass is recommended at the railroad crossing.



*Looking east along Greenway ROW, east of 4<sup>th</sup> Avenue*



*Looking south along 11<sup>th</sup> Avenue from 29<sup>th</sup> Street*

### **Park Avenue Crossing**

As part of a large mixed-use project called “The Bridges” between Park Avenue and Kino Boulevard, a PELICAN crossing will be provided on Park Avenue. This crossing was recommended for pedestrian and bicycle access between The Bridges and the residential neighborhood on the west side of Park. The Greenway crossing is shown at this location. The PELICAN is to be provided as part of the roadway improvement on Park Avenue that will be constructed because of the additional site traffic associated with The Bridges.



*Looking west along Greenway ROW, west of Park Avenue*



*Looking south along Park Avenue future Greenway crossing*

*Park Avenue to Kino Boulevard*

The Greenway alignment will follow the trail path developed within The Bridges project. The Bridges planned area development (PAD) was documented in February 2007 and included a concept of the Greenway alignment (see Exhibit 4). The following excerpt from the PAD document describes the Greenway through The Bridges:

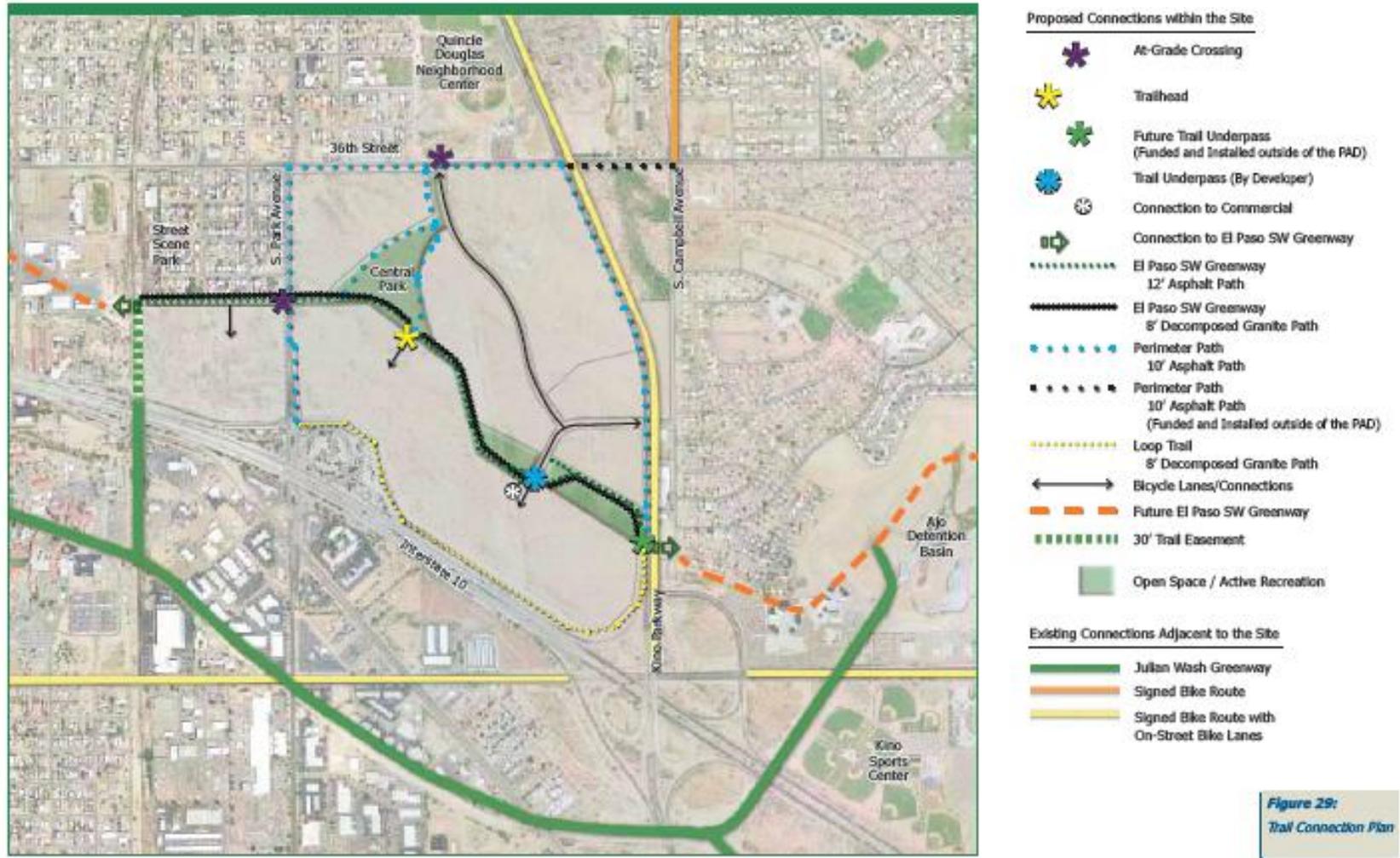
A combination 12' wide asphalt paved and an 8' wide meandering decomposed granite pathway consistent with the Pima County Divided Urban Pathway model will extend the Greenway from the railroad tracks west of Park Avenue east to Kino Parkway. A minimum 50' wide corridor will be provided for the Greenway. The Greenway will cross Park Avenue at-grade by way of a "HAWK" crossing. This

“HAWK” crossing will follow TDOT standards and will be constructed as part of the improvements of Park Avenue. The Greenway will cross under the Commercial Spine Road (Public) via an underpass to be constructed by the Developer in conjunction with the construction of the Commercial Spine Road (Public). In areas where the Greenway approaches/enters areas of Significant Vegetative Habitat, the Greenway will be sited to minimize disturbance to the area.... The Greenway’s extension beyond The Bridge’s eastern boundary at Kino Parkway may be achieved by a future pedestrian underpass that will be installed and funded outside of this PAD. The El Paso and Southwestern Greenway will eventually provide a connection to the Ajo Detention Basin Park east of the Site.

Trailhead: A trailhead for the Greenway will be provided for general public access and will be located approximately at the midpoint of the Central Park, accessed from the commercial site. The trailhead will include signage indicating the trail and designated parking, and an asphalt path connecting the parking lot to the regional trail. The designated parking available at the trailhead will not be for exclusive use for the trail, but any nearby unused spaces in the parking lot may be occupied by trail users. Additional Greenway connections to the commercial area will be provided at the Commercial Spine Road (Public) bridge, where the Greenway meets grade on either side.

It should be noted that the PAD document recommended a HAWK crossing, but a PELICAN crossing is now planned.

Exhibit 4 The Bridges Trail Connection Plan



Source: The Bridges, Planned Area Development document, February 2007



### **Kino Boulevard Crossing**

Although the Bridges PAD document indicates that the Greenway will continue through an underpass at Kino Boulevard, it is recommended that a pedestrian overpass be constructed due to its proximity to the I-10/Kino interchange. In either case, the grade separation will need to consider access from Kino Boulevard to the Greenway.



*Looking west along Greenway ROW, east of Kino Boulevard. The Greenway would likely continue through an underpass under Kino Boulevard.*

### *Kino Boulevard to Eastern Terminus*

The Greenway alignment is shown to continue east of Kino Boulevard, to Hidalgo Vista, a residential street. The trail continues to its terminus at a recreational path at Sam Lena Park.

### **Roadway Improvements**

Planned and programmed improvements in Tucson and South Tucson will affect the Greenway. These include the following projects that are listed in the FY 2011-2015 Pima Association of Governments Transportation Improvement Program:

- 22<sup>nd</sup> Street: I-10 to Tucson Boulevard – Widen to 6 lanes
- El Paso & Southwestern Greenway: 22<sup>nd</sup> to Cushing – Construct New Bike Path
- El Paso & Southwestern Greenway: Ajo/Kino to Speedway/Main – Shared Use Path and Trail
- 36<sup>th</sup> Street: East City (South Tucson) Limit to 4<sup>th</sup> Avenue – Reconstruct pavement, walk, curb, add lighting
- South 10<sup>th</sup> Avenue Rehabilitation: 22<sup>nd</sup> Street to 44<sup>th</sup> Street – Mill and Overlay
- South 4<sup>th</sup> Avenue: I-10 to 40<sup>th</sup> Street – Reconstruct Pavement, Add Safety and Aesthetic Features
- South 4<sup>th</sup> Avenue Rehabilitation: 40<sup>th</sup> Street to 25<sup>th</sup> Street – Mill & Overlay
- South Tucson Bike Lane/Greenway: South 6<sup>th</sup> to South 10<sup>th</sup> – Purchase RR RW for New Bike Lane
- Downtown Links: Broadway to 6<sup>th</sup> (east side of tracks) – Construct new 4 lane Roadway



*Looking east along Greenway ROW (alleyway south of Jason Vista)*



*Looking west at Greenway alignment from Sam Lena Recreational Area jogging path*

# STRUCTURE CONCEPT MEMO



*Structural  
Grace, Inc*

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## TRANSMITTAL SHEET

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TO:  
Sandy Bolduc, RLA, LEED AP  
COMPANY:  
Kimley-Horn and Associates, Inc.

DATE:  
September 16, 2011  
FROM:  
Dave D. Dobler, Architect

RE:  
EL Paso & Southern Greenway Project  
FINAL Structure Concept Memo

CC:  
File

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URGENT     FOR REVIEW     PLEASE COMMENT     PLEASE REPLY     PER YOUR REQUEST

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NOTES/COMMENTS:

Sandy,

Please find our FINAL Structure Concept Memo attached for inclusion in your full report.  
If you have any questions, please do not hesitate to call.

Thank you

1430 E. Ft. Lowell Rd, Suite 200  
Tucson, Arizona 85719  
(520) 320-0156  
Fax (520) 320-0157  
[www.structuralgrace.com](http://www.structuralgrace.com)

808 North First Street  
Phoenix, Arizona 85004  
(602) 437-2551  
Fax (602) 437-7244

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**STRUCTURE CONCEPT MEMO**  
**for the**  
**El Paso and Southwestern Greenway Project**

**1. EXECUTIVE SUMMARY**

This structure concept memo documents preliminary structural analysis and approximate costs of the five (5) crossings that will be required for the El Paso and Southwestern Greenway Project. The preliminary layout of each crossing including the required ramp structures is shown in Appendix A.

The El Paso and Southwestern Greenway (Greenway) is a multi-use path project located in the City of Tucson and the City of South Tucson in Pima County, Arizona. The majority of the multi-use path is located along the El Paso & Southwestern Railroad (EP&SW) historic railway alignment, running south from University Boulevard near Main, along the west side of downtown Tucson, southeast through the City of South Tucson, and east to the Ajo Detention Basin. This memo should be used in conjunction with the project Master Plan submitted by Kimley Horn & Associates.

The crossings from North to South are:

- 1) University Blvd at UPRR Overpass
- 2) Congress Street Overpass
- 3) 22<sup>nd</sup> Street Overpass
- 4) Nogales Spur Overpass
- 5) Kino Pkwy Overpass

Only overpass crossings were considered at each location due to safety issues associated with low observability, potentially insufficient lighting levels and additional maintenance requirements. The cost implications presented by underpass crossings influenced the decision to consider only overpasses. Substantial additional width to increase the safety of an underpass, drainage concerns given that underpass structures would be below grade, the length of underpasses at the two UPRR crossings (given the assumption that the underpass structure would need to be the full length of UPRR right of way) and the cost of the retaining walls required were the primary cost impactors influencing the decision.

This structure selection memo considers the following site-specific constraints and parameters:

- Geotechnical Factors – a geotechnical investigation has been performed and the bearing capacities range from 2500 to 4000 psf at 2 ft and 3 ft below finished grade respectively. Therefore, spread footings have been recommended. There may be site specific cases where excavation limits require the use of drilled shafts. This can be determined at the final design phase.
- Geometry- existing grades are estimated by Pima County GIS, final grades to be determined during final design. Minimum vertical clearances are 17 ft over roadways and 23'-4" over railroad. All ramps slopes to be 1:16, per Americans with Disabilities Act (ADA) requirements. All required handrails will be ADA compliant. Path width on structure is 14 ft clear between handrails.
- Live Load – Pedestrian Live Load or H-5 (10,000 lb.) vehicle with no vehicle impact load per AASHTO Guide Specifications for Design of Pedestrian Bridges.
- Bridge Architecture – The goal of the design of the appearance of the pedestrian bridges is to create a "light weight", minimally intrusive and contextually sensitive response to the built historic, residential and multi-use environment in which the bridges are to be built. Future design considerations should include response to perpendicular linkages that may exist and need to pass under the structures; Final design should respond to existing view-shed; and, design to minimize the "mass" of the new structures to help mitigate "out of scale" impact on the bridge sites.

Structure types considered for these crossings include:

For structure over roadway and railroad:

1. Steel plate girder with concrete deck.

For ramp structure:

1. Retaining walls for ramp structure in which an elevated structure is not required.
2. Steel plate girder with concrete deck in which an elevated structure is required.

## **2. LOCATION, GEOMETRY and STRUCTURE TYPE**

### **2.1 General**

All crossings provide a 14 ft clear path width and meet American with Disabilities Act (ADA) requirements. When feasible, due to economy, ramp structure types will be retained fill (concrete retaining walls). Structures crossing roadway or railroad tracks will have a 12'-8" pedestrian fence per ADOT standard detail SD-1.05, at all other locations the pedestrian rail will be 4'-6" per AASHTO Standard Specifications to accommodate pedestrians and bicyclists.

The superstructure types considered for this conceptual design include the following:

For structure crossing roadway or railroad:

- 75 ft spans (typ.) of steel plate girder with concrete deck; structure depth of 2 ft
- 50 ft back spans at Nogales Spur, steel girder with non-composite concrete deck; structure depth of 2 ft
- 116 ft main span with back spans of approximately 32 ft and 49 ft at University/UPRR, steel girder with non-composite concrete deck; structure depth of 2.5 ft at main span and 2 ft at back spans

For ramp structures:

- CIP Concrete Retaining walls for ramp structures in which an elevated structure is not required
- 40 ft spans of steel plate girder with non-composite concrete deck; structure depth of 2 ft for ramp structures in which an elevated structure is required.

## **2.2 University Blvd at UPRR Overpass**

The crossing is located at the terminus of University Boulevard as it runs west from the University of Arizona and ends at the UPRR mainline. This crossing is the northern most crossing of the greenway, just north of downtown Tucson straddling the Dunbar Springs and Barrio Anita neighborhoods. The bridge structure runs primarily in the east-west direction. The ramp structure to the east is contained within an elevated roof structure that reflects local building forms. This would be an open structure with a rectilinear “helical” ramp contained within its footprint. The helical ramp structure is 360 ft long and has both 120ft and 40 ft long ramp sections at a 1:16 slope with 10 ft long landings in accordance with ADA requirements. The east structure also has 180 ft of elevated transfer deck to get the pedestrian or bicyclist to the bridge structure. The ramp structure to the west is also contained within an elevated roof structure that reflects local building forms. This as well would be an open structure with a rectilinear helical ramp contained within its footprint. The elevated helical ramp structure is 700 ft long and has both 120ft and 40 ft long ramp sections at a 1:16 slope with 10 ft long landings in accordance with ADA requirements. The bridge structure over the UPRR is a three-span 197 ft steel plate girder with concrete deck. The main span is approximately 116 feet and back spans of approximately 32 ft and 49 ft.

See Appendix A, Sheet S-1.01 for plan elevation and typical section of this crossing

## **2.3 Congress Street Overpass**

The crossing is located along the alignment at Congress St just east of I-10 in downtown Tucson and runs in the north-south direction. The ramp structure to the north is retained fill with concrete walls (retaining walls). This ramp structure is 374 ft

long and has 40 ft long ramp sections at a 1:16 slope with 10 ft long landings in accordance with ADA requirements. The structure over Congress St is a two-span 150 ft steel plate girder with concrete deck. The ramp structure to the south is a total of 332 ft with 240 ft elevated structure and 92 ft section of retained fill and has 40 ft long ramp sections at a 1:16 slope with 10 ft long landings in accordance with ADA requirements. The Elevated Ramp Structure consists of 40 ft spans of steel plate girders with a concrete deck. It was determined that the southern ramp structure should be an elevated structure to preserve as much open transparent view of the Historic EP&SW Depot to the east as is practicable.

See Appendix A, Sheet S-1.02 for plan elevation and typical section of this crossing

#### **2.4 22<sup>nd</sup> Street Overpass**

The crossing is located along the alignment at 22<sup>nd</sup> Street just east of I-10 and adjacent to Osborne Avenue and runs in the north-south direction. The ramp structure to the north is retained fill with concrete walls (retaining walls). This ramp structure is 432 ft long and has 40 ft long ramp sections at a 1:16 slope with 10 ft long landings in between in accordance with ADA requirements. The structure over 22<sup>nd</sup> Street is a two-span 150 ft steel plate girder with concrete deck. The ramp structure to the south is retained fill with concrete walls (retaining walls). This ramp structure is 290 ft and has 40 ft long ramp sections at a 1:16 slope with 10 ft long landings in between in accordance with ADA requirements.

See Appendix A, Sheet S-1.03 for plan, elevation and typical section of this crossing.

#### **2.5 Nogales Spur Overpass**

The crossing is located along the alignment at the Union Pacific Railroad's (UPRR) Nogales Spur just north of I-10 and between 4<sup>th</sup> Ave and South Park Avenue. The Nogales Spur runs in the north-south direction and the crossing runs east-west. The ramp to the east of the crossing turns 90 degrees after leaving UPRR Right-of-Way and runs north for approximately 300 ft then dog-legs east. The ramp to the west of the crossing runs in a north-west/ south-east alignment. The ramp structure to the west and the east are both retained fill with concrete walls (retaining walls). The ramp structure to the west due to existing grades and 23'-4" min clear over the railroad is 695 ft long and has 40 ft long ramp sections at a 1:16 slope with 10 ft long landings in between in accordance with ADA requirements. At this early stage of design development, it is anticipated that the elevated bridge structure will need to clear the entire UPRR Right of Way. Therefore, the structure over the railroad is a three-span 175 ft steel plate girder with concrete deck. The main span is 75 ft and the back spans are 50 ft each. In addition, the piers are placed such that they are 25 ft clear from existing tracks and 25 ft from a future second track that is anticipated

to be placed to the east of the existing track (yet to be confirmed by UPRR). The ramp structure to the east is 479 ft and has 40 ft long ramp sections at a 1:16 slope with 10 ft long landings in between in accordance with ADA requirements.

See Appendix A, Sheet S-1.04 for plan, elevation and typical section of this crossing.

It should be noted that an existing drainage underpass/trestle exists in this location. This drainage underpass is approximately 17 ft long. Further studies for this crossing may want to examine utilizing this underpass for the path alignment if it can be determined that the underpass length does not have to be extended to clear the existing railroad right of way. This will greatly reduce the ramp lengths since only approximately 12 ft clear would be needed for pedestrian access in the underpass.

In addition, this location may be subject to unsupervised remote use and vandalism and considerations regarding these issues should be factored into the final design.

## **2.6 Kino Parkway Overpass**

The crossing is located along the alignment at Kino Parkway just North of the I-10 Entrance/Exit Ramps and runs in the east-west direction. The ramp structure to the west and the east are both elevated steel structures with the exception of the last 126 ft of the west ramp and the last 92 ft of the east ramp. These sections will be retained fill. Most of the ramp structure is elevated creating as much “transparency” (least visual impact) for the structure as possible due to adjacent open space natural areas and near-by commercial uses requiring visual identification.

The ramp structure to the west is 516 ft long due to existing grades and has 40 ft long ramp sections at a 1:16 slope with 10 ft long landings in between in accordance with ADA requirements. The ramp structure to the east is 332 ft long and has 40 ft long ramp sections at a 1:16 slope with 10 ft long landings in between in accordance with ADA requirements. The structure over Kino Parkway is a two-span 150 ft steel plate girder with concrete deck.

See Appendix A, Sheet S-1.05 for plan, elevation and typical section of this crossing.

## **3. ARCHITECTURAL CONSIDERATIONS**

The bridge concepts illustrated in this report are intended to provide a design guideline for actual bridge design in future design phases of this project. Important “Architectural” design considerations for the bridge structures should include: Design of lightweight and transparent structures as are reasonably economical and practical;

Minimal impact due to structure mass/size, The ability for existing “pathways/linkages” to pass under or through the structures so as not to create barriers to free movement or sever existing paths; Contextual sensitivity even though there will be givens of definite changes in “scale” with the structure’s surroundings; Use of materials and colors that “Fit” within the existing built context; Maintenance and safety considerations to preclude and/or assist in the mitigation of vandalism, vagrancy and miss-use; Standardization of bridge components and similarity in design vocabulary to ensure a cohesive and unified appearance of all of the bridges of the greenway; and creation of opportunities for public art.

#### 4. CONSTRUCTION and COSTS

Falsework will not be required for erection of the steel plate girders. The construction of the reinforced concrete deck will require stay-in-place forms.

The following estimate was used to determine approximate cost of each crossing:

Pedestrian–Bicycle Bridge Cost – approximately \$160 per square foot of horizontal deck area

Typical Elevated Steel Structure Cost – approximately \$160 per square foot of horizontal ramp area

Elevated Steel Structure Cost at University Blvd. – approximately \$130 per square foot of horizontal ramp area

Retained Fill (CIP Concrete Retaining Walls with Earthwork) – approximately \$65 per square foot of vertical wall area

Pedestrian Fence - approximately \$100 per lineal foot

Bike/Pedestrian ADA Handrail – approximately \$75 per lineal foot

Roofed Structure Cost (at University Blvd) – approximately \$50 per square foot, (including structural frame cost)

*Approximate Cost Estimate – See Appendix B for detail*

<i>Crossing</i>	<i>Main Structure Construction Cost</i>	<i>Ramp Structure Construction Cost</i>	<i>Total Construction Cost</i>
<i>University at UPRR</i>	<i>\$543,720</i>	<i>\$3,6020,200</i>	<i>\$4,163,920</i>
<i>Congress Street</i>	<i>\$414,000</i>	<i>\$1,308,940</i>	<i>\$1,722,940</i>
<i>22<sup>nd</sup> Street</i>	<i>\$414,000</i>	<i>\$1,168,840</i>	<i>\$1,582,840</i>
<i>Nogales Spur</i>	<i>\$483,000</i>	<i>\$2,685,576</i>	<i>\$3,168,576</i>
<i>Kino Parkway</i>	<i>\$414,000</i>	<i>\$1,867,530</i>	<i>\$2,281,530</i>

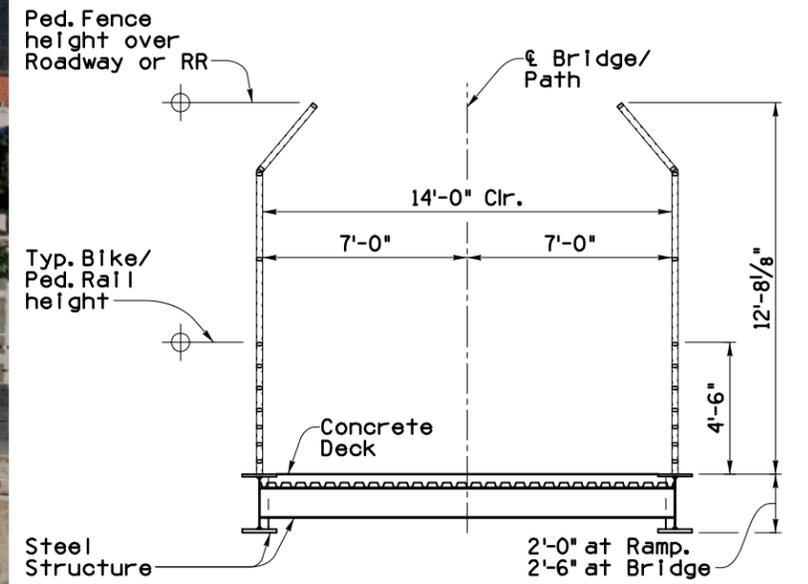
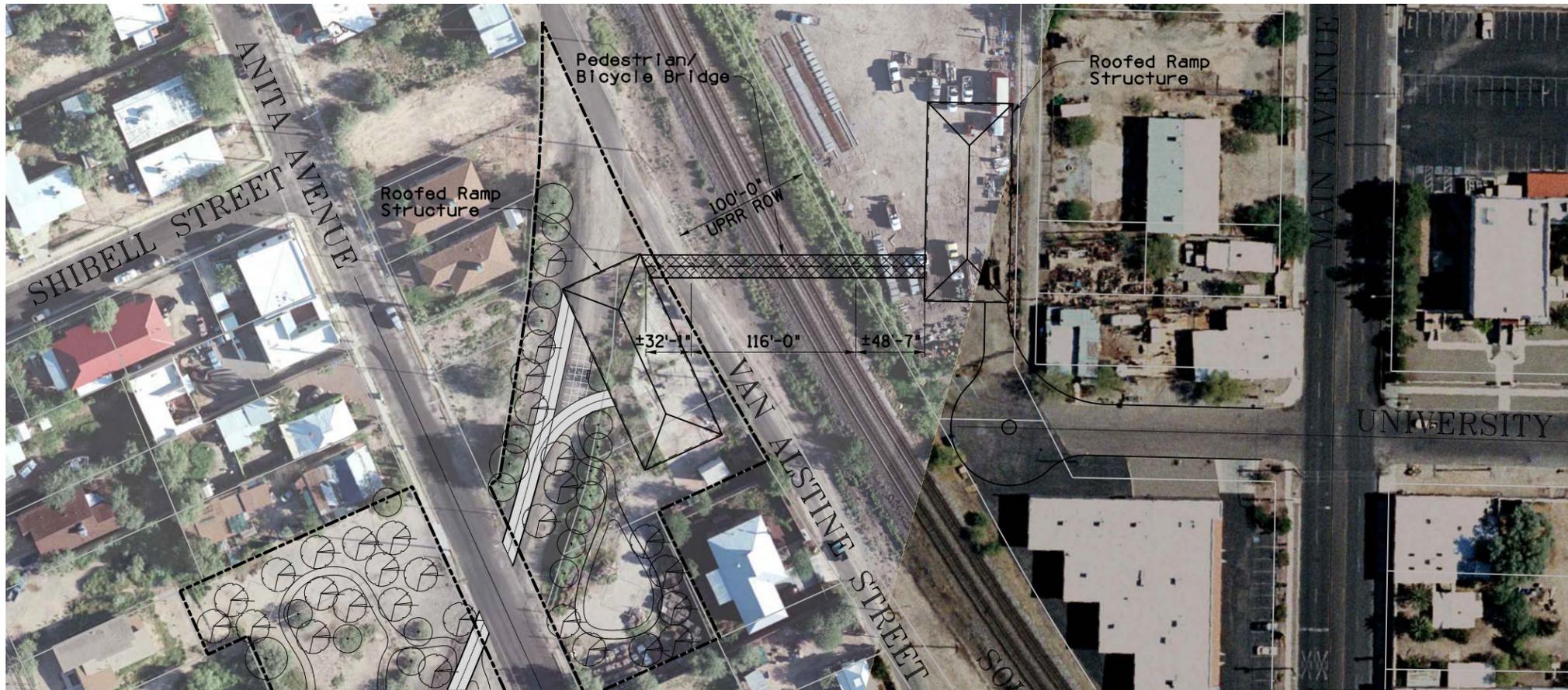
## **5. SUMMARY**

This report should be considered a feasibility study structural memo as final grades have not been determined, final alignments of roadways and greenway as well as UPRR requirements are yet to be determined, certain development plans are in the works that may affect crossing type, size and location, and ROW acquisition could affect bridge location and alignment.

Although ramp structure length seems extreme, comfortable grades for the pedestrian or bicyclist should be designed to preclude the ped/bicyclist avoiding the structure altogether due to difficult in negotiating the gradients and using unapproved at grade street crossings potentially causing serious safety concerns.

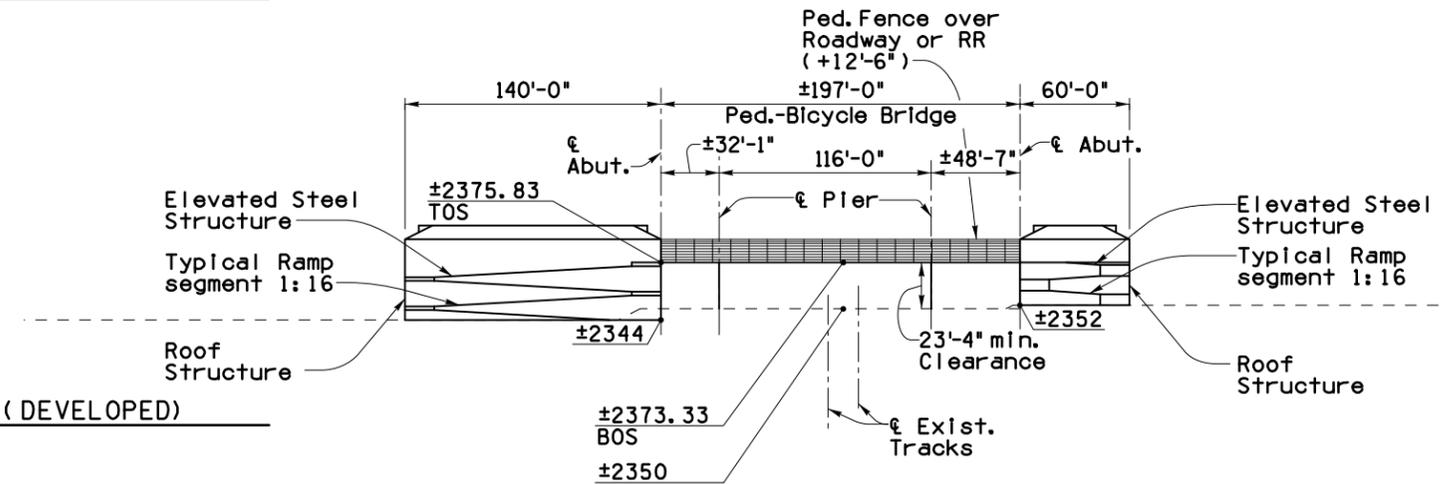
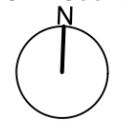
Elevated structure versus retained fill/concrete wall structure recommendations found in this report are merely suggestions for consideration given available data at the time of the production of this report. Adjacent needs determined during design phases of this project will affect decision making regarding the appearance and type of structures ultimately designed and built.

**APPENDIX A**  
**- PLANS -**

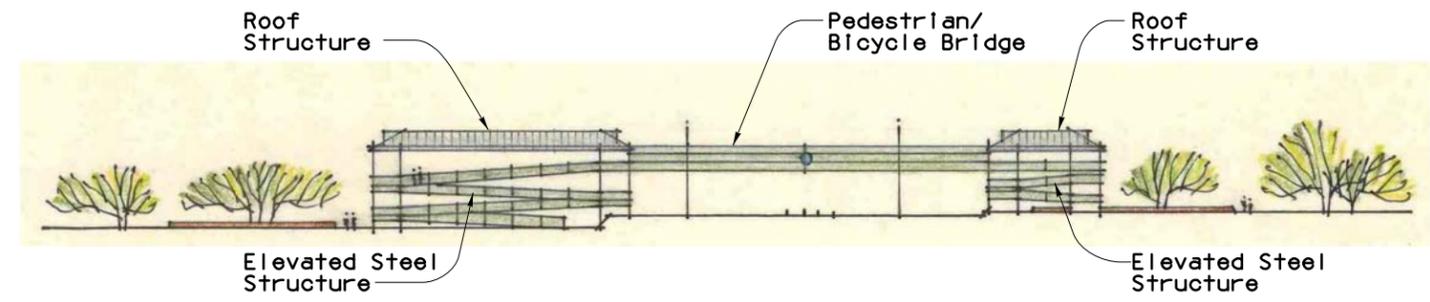


TYPICAL SECTION @ BRIDGE/  
ELEVATED STEEL STRUCTURE  
3/8" = 1'-0"

PLAN  
1" = 100'-0"



ELEVATION (DEVELOPED)  
1" = 100'-0"



ARCHITECTURAL ELEVATION (DEVELOPED)  
1" = 100'-0"

Notes:  
1. TOS equals Top of Deck.

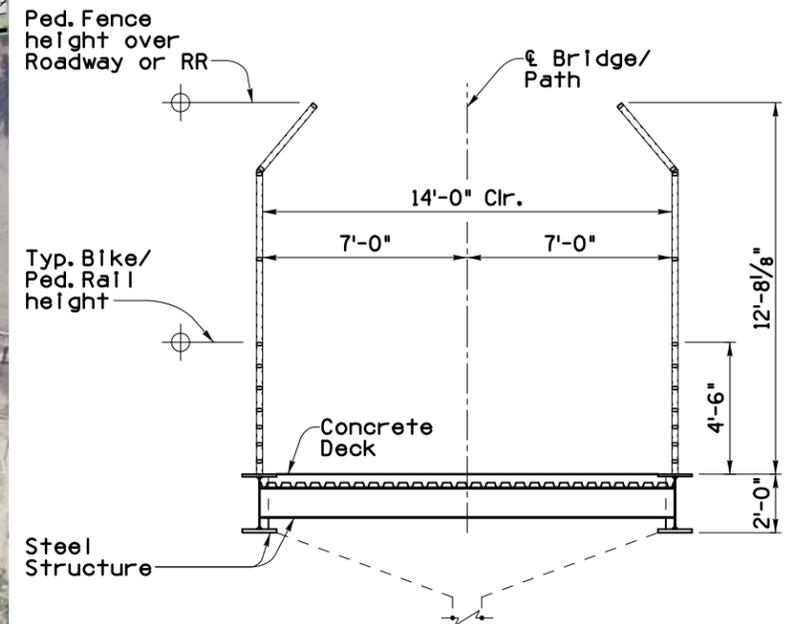
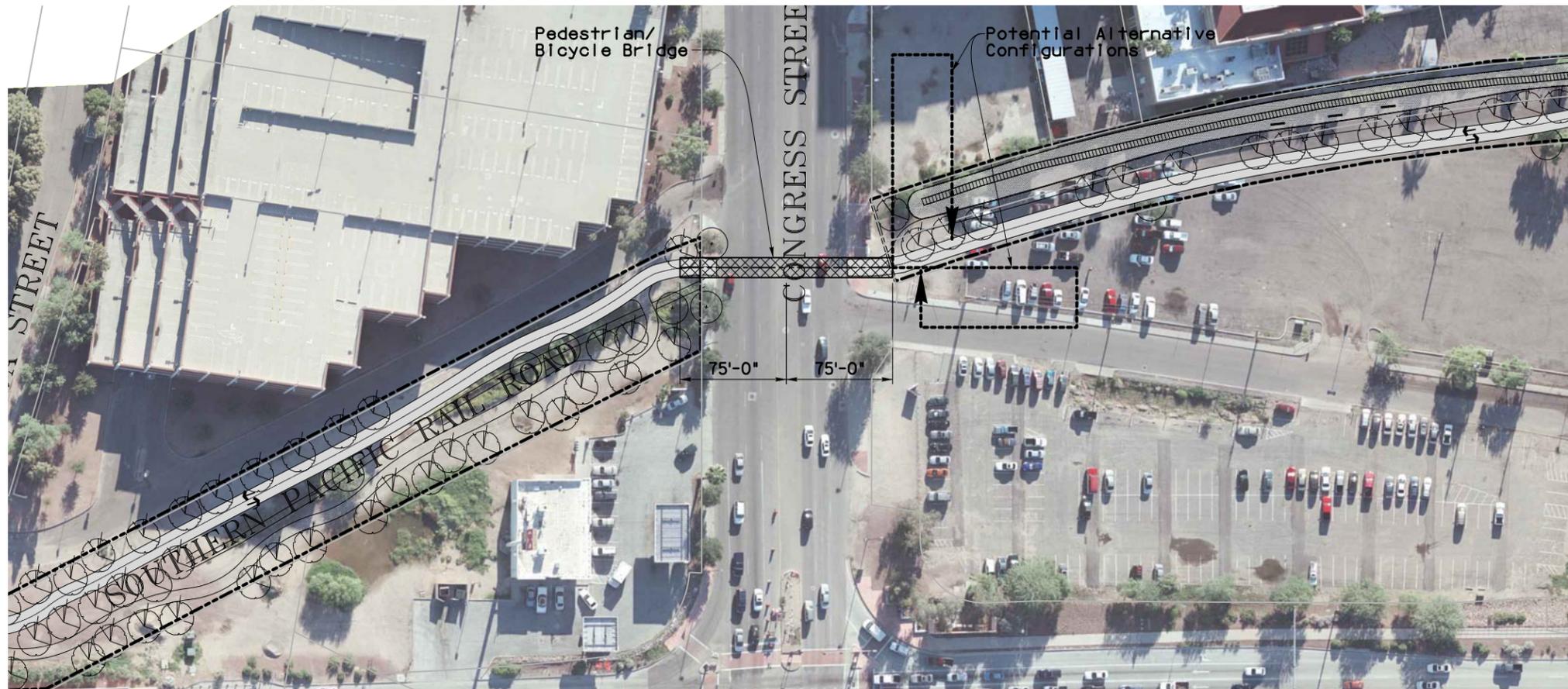
Plan, Elevations &  
Typical Section

S-1.01 of S-1.05



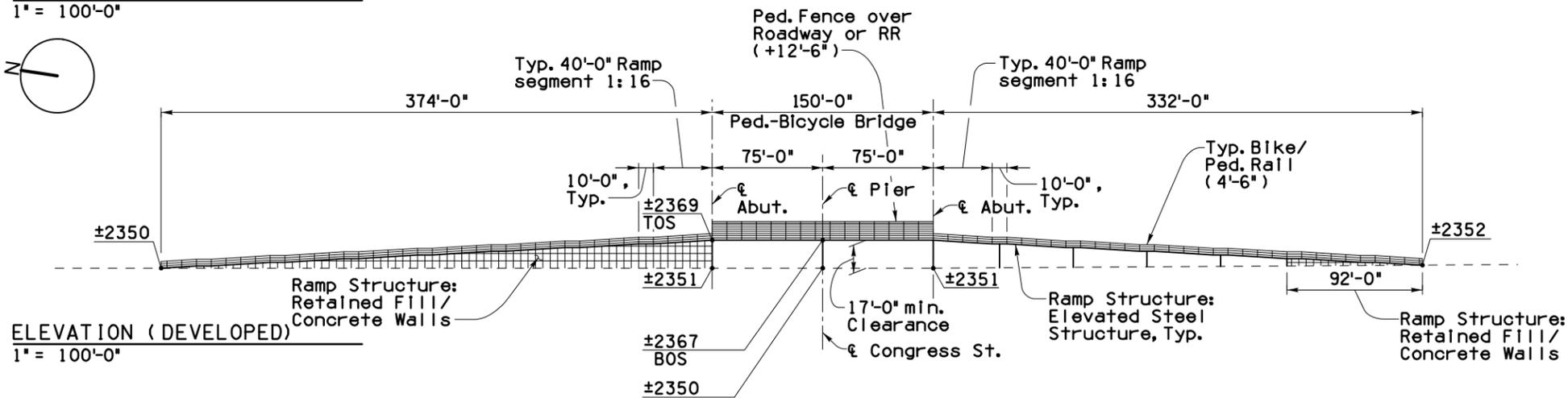
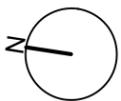
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Not for Construction or Recording		UNIVERSITY BLVD./UPRR PEDESTRIAN-BICYCLE OVERPASS					
April 2011		CITY OF TUCSON		DRWN. BY MJL 2-11		REF. SCALE: As Noted	
				DSGN. BY DDD 2-11			
				CHKD. BY CGP 2-11		PLAN NO.	

NO.	DATE	REVISION	BY	CHKD.	APPR.
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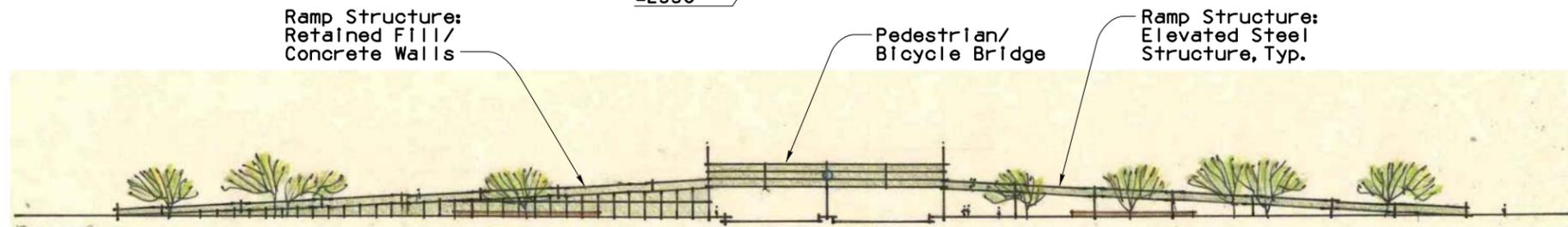
TYPICAL SECTION @ BRIDGE/  
ELEVATED STEEL STRUCTURE  
1/8" = 1'-0"

PLAN  
1" = 100'-0"



ELEVATION (DEVELOPED)  
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ARCHITECTURAL ELEVATION (DEVELOPED)  
1" = 100'-0"

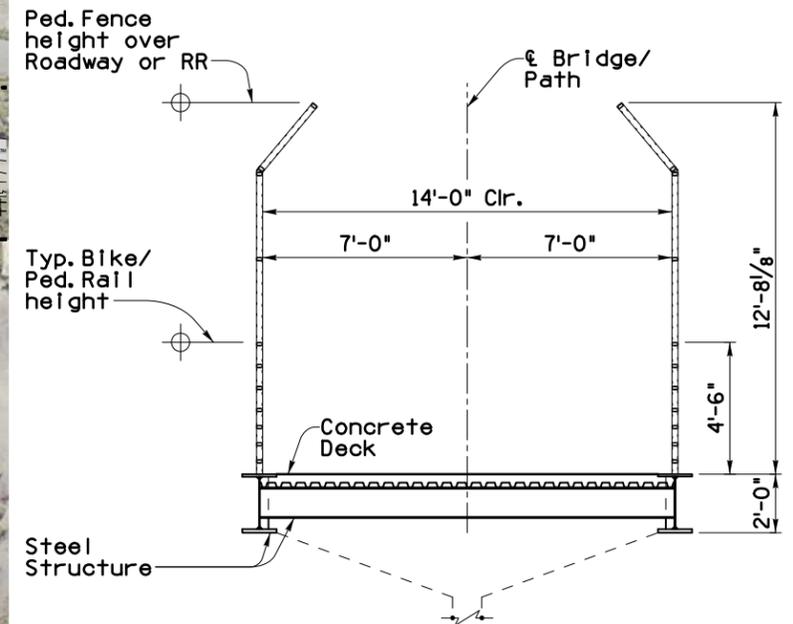
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Typical Section

S-1.02 of S-1.05



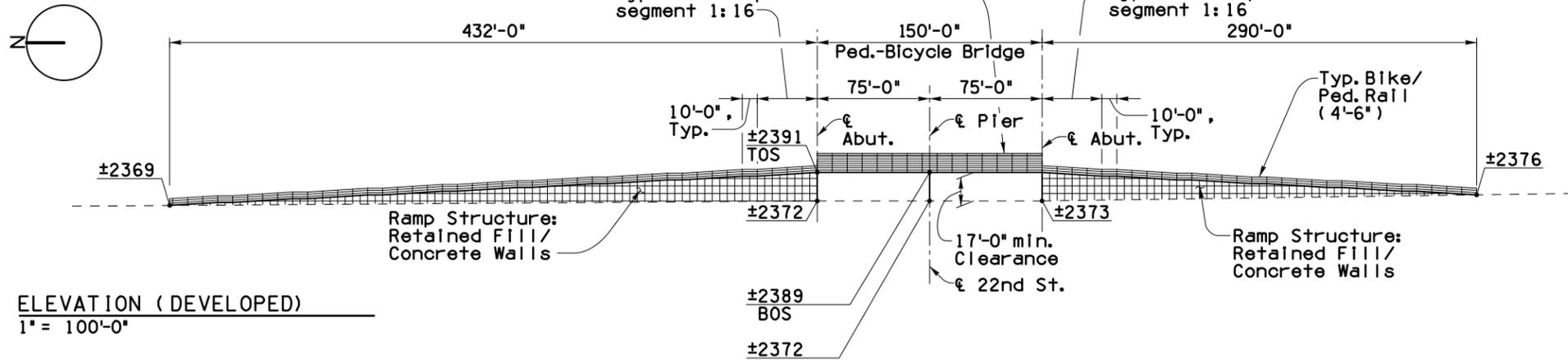
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Preliminary 30% Review Not for Construction or Recording April 2011	DRWN. BY MJL 2-11 DSGN. BY DDD 2-11 CHKD. BY CGP 2-11	REF. _____ SCALE: As Noted PLAN NO. _____

NO.	DATE	REVISION	BY	CHKD.	APPR.



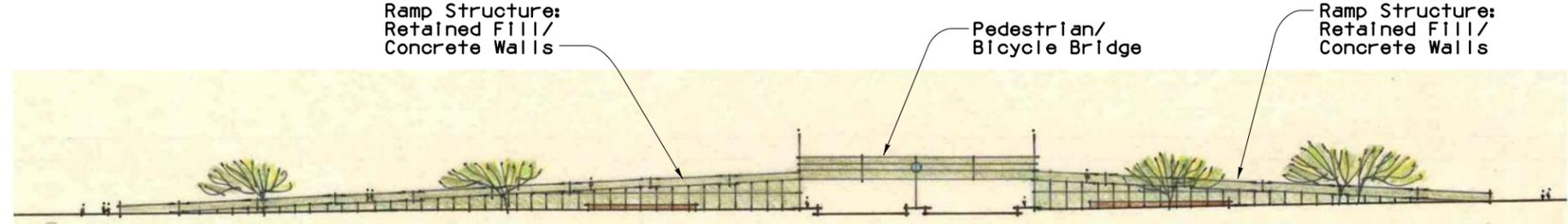
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ELEVATION (DEVELOPED)  
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ARCHITECTURAL ELEVATION (DEVELOPED)  
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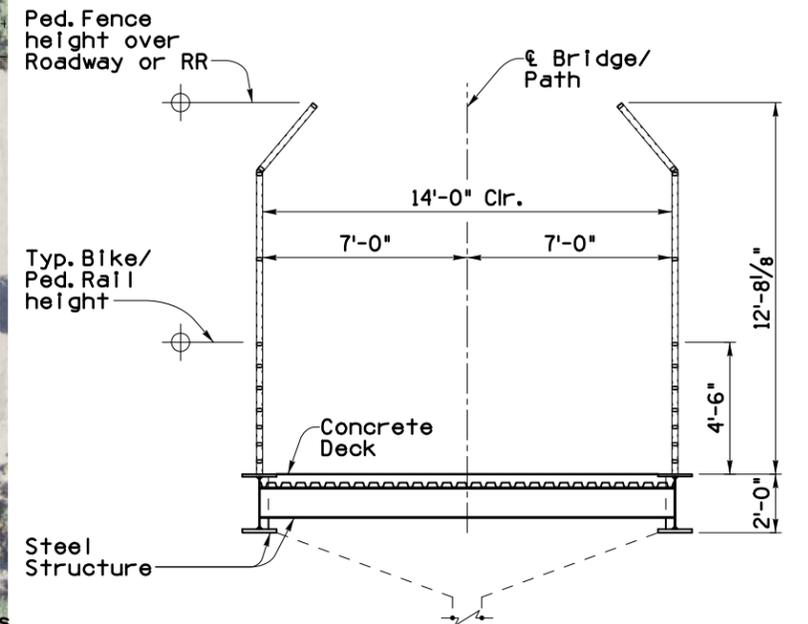
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S-1.03 of S-1.05



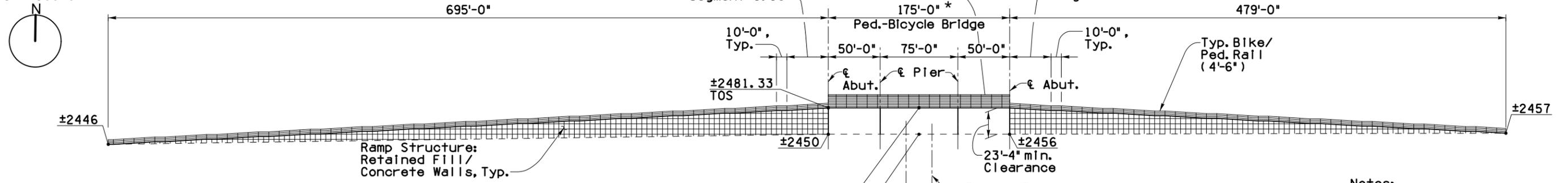
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	DRWN. BY MJL DSGN. BY DDD CHKD. BY CGP	2-11 2-11 2-11	REF. _____ SCALE: As Noted
	CITY OF <b>TUCSON</b>	PLAN NO. _____	

NO.	DATE	REVISION	BY	CHKD.	APPR.



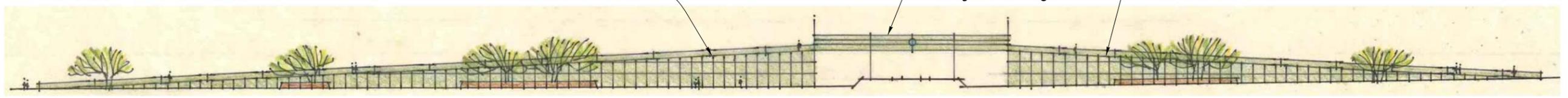
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1" = 100'-0"

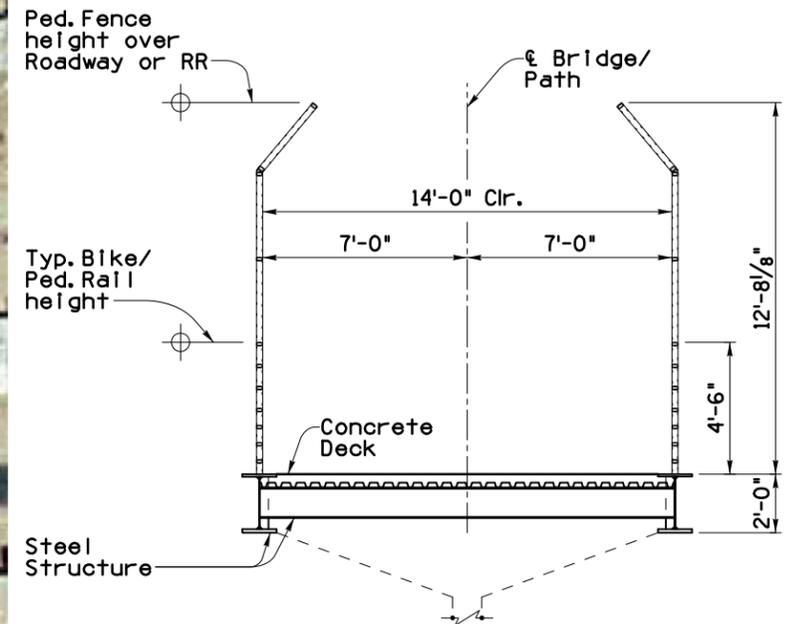
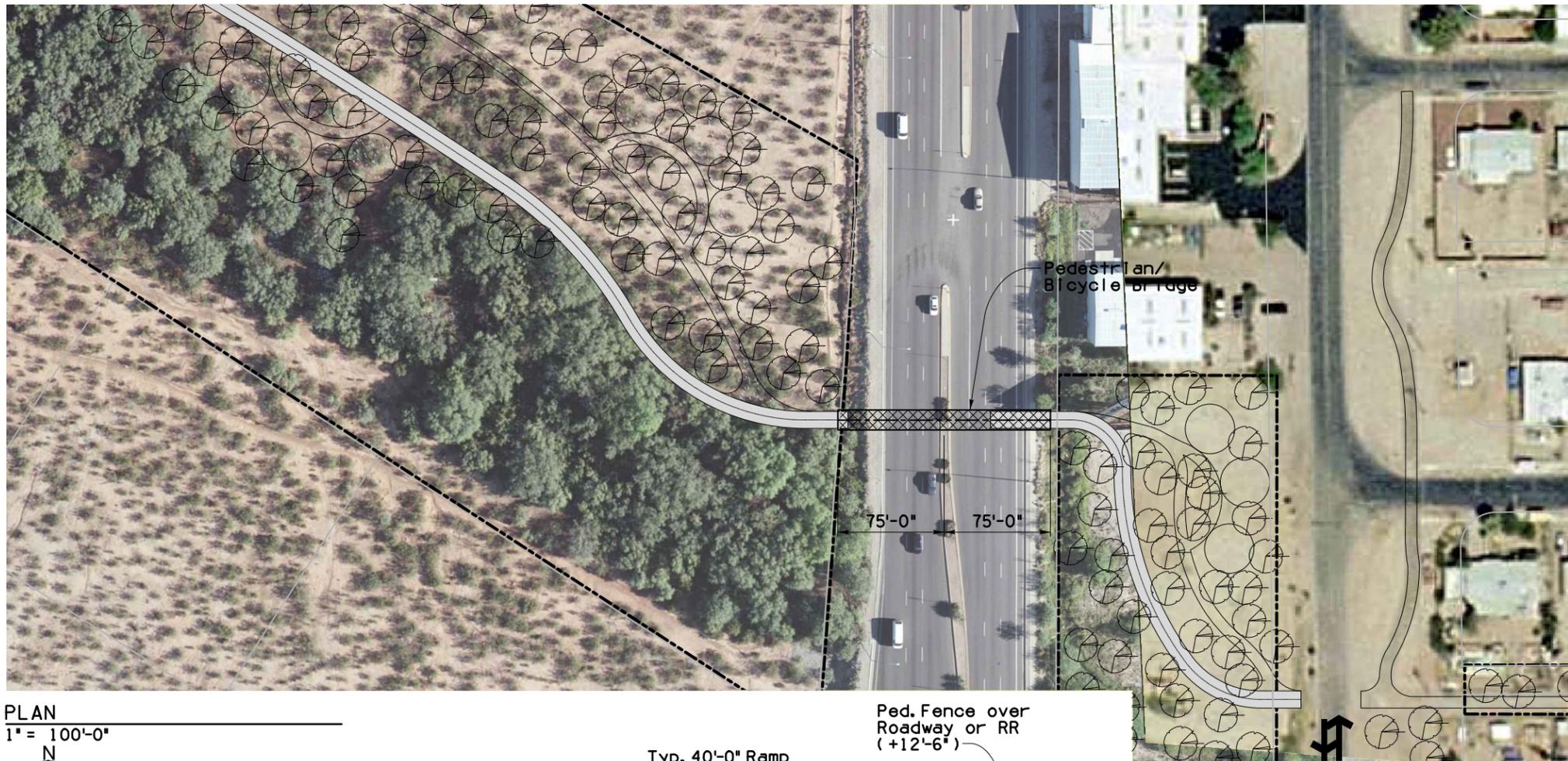
\* UPRR will accept a minimum clearance of 150'.

Plan, Elevations & Typical Section

Preliminary 30% Review  
Not for Construction or Recording  
April 2011

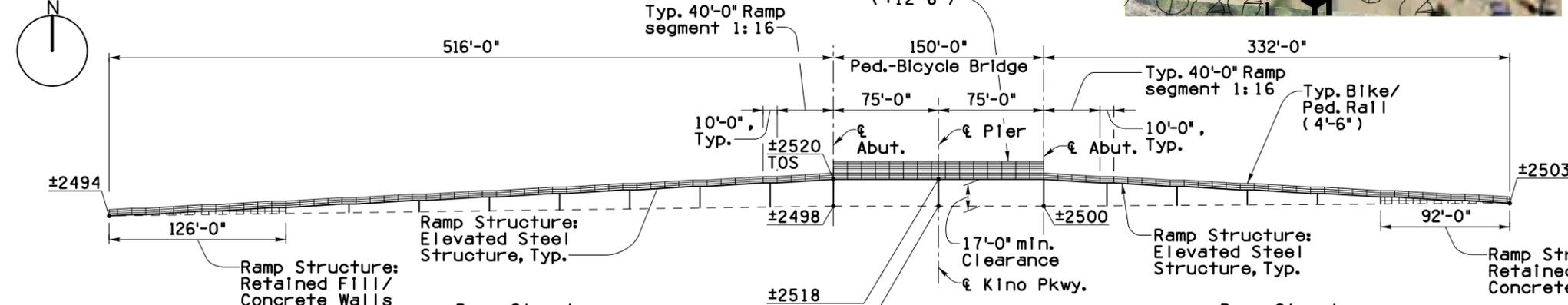
DEPARTMENT OF TRANSPORTATION/ENGINEERING DIVISION EL PASO & SOUTHWESTERN GREENWAY PROJECT NOGALES SPUR PEDESTRIAN-BICYCLE OVERPASS		S-1.04 of S-1.05	
DRWN. BY MJL DSGN. BY DDD CHKD. BY CGP	2-11 2-11 2-11	REF. _____ SCALE: As Noted	OF _____ PLAN NO. _____

NO.	DATE	REVISION	BY	CHKD.	APPR.

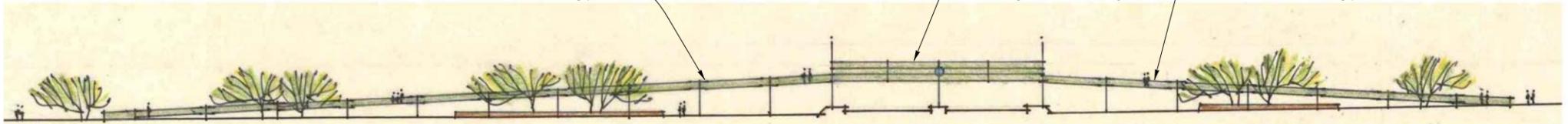


TYPICAL SECTION @ BRIDGE/  
ELEVATED STEEL STRUCTURE  
3/8" = 1'-0"

PLAN  
1" = 100'-0"



ELEVATION (DEVELOPED)  
1" = 100'-0"



ARCHITECTURAL ELEVATION (DEVELOPED)  
1" = 100'-0"

Notes:  
1. TOS equals Top of Deck.

Plan, Elevations &  
Typical Section

S-1.05 of S-1.05



Preliminary  
30%  
Review  
  
Not for  
Construction  
or Recording  
  
April 2011

DEPARTMENT OF TRANSPORTATION/ENGINEERING DIVISION		OF
EL PASO & SOUTHWESTERN GREENWAY PROJECT		
KINO PARKWAY PEDESTRIAN-BICYCLE OVERPASS		
DRWN. BY MJL	2-11	REF. SCALE: As Noted
DSGN. BY DDD	2-11	
CHKD. BY CGP	2-11	PLAN NO.

NO.	DATE	REVISION	BY	CHKD.	APPR.

**APPENDIX B  
- COST ESTIMATES -**

## I. UNIVERSITY BLVD. / UPRR OVERPASS COST ESTIMATE

El Paso Greenway

City of Tucson

<i>El Paso &amp; Southern Greenway - University Blvd. / UPRR Overpass</i>					
DESCRIPTION	UNIT	UNIT COST	QUANTITY	COST	
<b>MAIN SPAN</b>					
PEDESTRIAN-BICYCLE BRIDGE	SF	\$160.00	3,152	\$504,320	
PEDESTRIAN FENCE	L FT	\$100.00	394	\$39,400	
MAIN SPAN SUBTOTAL:				\$543,720	
<b>RAMP STRUCTURE</b>					
ELEVATED STEEL STRUCTURE	East End	SF	\$130.00	8,640	\$1,123,200
ROOFED STRUCTURE (INC. FRAME)	East End	SF	\$50.00	8,500	\$425,000
ELEVATED STEEL STRUCTURE	West End	SF	\$130.00	11,200	\$1,456,000
ROOFED STRUCTURE (INC. FRAME)	West End	SF	\$50.00	8,600	\$430,000
BIKE/PEDESTRIAN RAIL		LF	\$75.00	2,480	\$186,000
RAMP STRUCTURE SUBTOTAL:				\$3,620,200	
TOTAL COST:				\$4,163,920	
TOTAL COST/SF:				\$181.10	

TOTAL COST:	\$4,163,920
MAIN STRUCTURE COST/SF:	\$172.50
RAMP STRUCTURE COST/SF:	\$182.47
TOTAL COST/SF:	\$181.10

Structure Name: **El Paso & Southern Greenway - University Blvd. / UPRR Overpass**  
 Superstructure Type: **Steel Girder with Steel Framing Ramps and Roof Structures**  
 Substructure Type:  
 Foundation Type:  
 No. of Spans: **3**  
 Main Span Lengths (ft): **32,116,49**  
 Skew (deg): **0**  
 Bridge Length (ft): **197.00**  
 Total Length (ft): **1437.00**  
 Width (Out to Out) (ft): **16.00**  
 Area (sq ft): **22,992.00**

## II. CONGRESS ST OVERPASS COST ESTIMATE

El Paso Greenway

City of Tucson

<i>El Paso &amp; Southern Greenway - Congress Street Overpass</i>					
DESCRIPTION		UNIT	UNIT COST	QUANTITY	COST
<b>MAIN SPAN</b>					
PEDESTRIAN-BICYCLE BRIDGE		SF	\$160.00	2,400	\$384,000
PEDESTRIAN FENCE		L. FT	\$100.00	300	\$30,000
MAIN SPAN SUBTOTAL:					\$414,000
<b>RAMP STRUCTURE</b>					
RETAINED FILL (CIP WALLS WITH FILL)	North End	SF	\$65.00	8,228	\$534,820
ELEVATED STEEL STRUCTURE	South End	SF	\$160.00	3,840	\$614,400
RETAINED FILL (CIP WALLS WITH FILL)	South End	SF	\$65.00	828	\$53,820
BIKE/PEDESTRIAN RAIL		L. FT	\$75.00	1,412	\$105,900
RAMP STRUCTURE SUBTOTAL:					\$1,308,940
TOTAL COST:					\$1,722,940
TOTAL COST/SF:					\$125.80

<b>TOTAL COST:</b>	<b>\$1,722,940</b>
<b>MAIN STRUCTURE COST/SF:</b>	<b>\$172.50</b>
<b>RAMP STRUCTURE COST/SF:</b>	<b>\$115.88</b>
<b>TOTAL COST/SF:</b>	<b>\$125.80</b>

Structure Name:	<b>El Paso &amp; Southern Greenway - Congress Street Overpass</b>		
Superstructure Type:	<b>Steel Girder with Ramp Structures</b>		
Substructure Type:			
Foundation Type:		Bridge Length (ft):	150.00
No. of Spans:	2	Total Length (ft):	856.00
Main Span Lengths (ft):	75, 75	Width (Out to Out) (ft):	16.00
Skew (deg):	0	Area (sq ft):	13,696.00

### III. 22ND STREET OVERPASS COST ESTIMATE

El Paso Greenway

City of Tucson

<i>El Paso &amp; Southern Greenway - 22nd Street Overpass</i>					
DESCRIPTION	UNIT	UNIT COST	QUANTITY	COST	
<b>MAIN SPAN</b>					
PEDESTRIAN-BICYCLE BRIDGE	SF	\$160.00	2,400	\$384,000	
PEDESTRIAN FENCE	L FT	\$100.00	300	\$30,000	
MAIN SPAN SUBTOTAL:				\$414,000	
<b>RAMP STRUCTURE</b>					
RETAINED FILL (CIP WALLS WITH FILL) North End	SF	\$65.00	9,936	\$645,840	
RETAINED FILL (CIP WALLS WITH FILL) South End	SF	\$65.00	6,380	\$414,700	
BIKE/PEDESTRIAN RAIL	L FT	\$75.00	1,444	\$108,300	
RAMP STRUCTURE SUBTOTAL:				\$1,168,840	
TOTAL COST:				\$1,582,840	
TOTAL COST/SF:				\$113.45	
TOTAL COST:				\$1,582,840	
MAIN STRUCTURE COST/SF:				\$172.50	
RAMP STRUCTURE COST/SF:				\$101.18	
TOTAL COST/SF:				\$113.45	

Structure Name:	El Paso & Southern Greenway - 22nd Street Overpass				
Superstructure Type:	Steel Girder with Ramp Structures				
Substructure Type:					
Foundation Type:					
No. of Spans:	2	Bridge Length (ft):	150.00		
Main Span Lengths (ft):	75, 75	Total Length (ft):	872.00		
Skew (deg):	0	Width (Out to Out) (ft):	16.00		
		Area (sq ft):	13,952.00		

#### IV. NOGALES SPUR OVERPASS COST ESTIMATE

El Paso Greenway

City of Tucson

<i>El Paso &amp; Southern Greenway - Nogales Spur Overpass</i>					
DESCRIPTION	UNIT	UNIT COST	QUANTITY	COST	
<b>MAIN SPAN</b>					
PEDESTRIAN-BICYCLE BRIDGE	SF	\$160.00	2,800	\$448,000	
PEDESTRIAN FENCE	L FT	\$100.00	350	\$35,000	
MAIN SPAN SUBTOTAL:				\$483,000	
<b>RAMP STRUCTURE</b>					
RETAINED FILL (CIP WALLS WITH FILL)	East End	SF	\$65.00	14,051	\$913,293
RETAINED FILL (CIP WALLS WITH FILL)	West End	SF	\$65.00	24,557	\$1,596,183
BIKE/PEDESTRIAN RAIL		L FT	\$75.00	2,348	\$176,100
RAMP STRUCTURE SUBTOTAL:				\$2,685,576	
TOTAL COST:				\$3,168,576	
TOTAL COST/SF:				\$146.80	

TOTAL COST:		\$3,168,576
MAIN STRUCTURE COST/SF:		\$172.50
RAMP STRUCTURE COST/SF:		\$142.97
TOTAL COST/SF:		\$146.80

Structure Name: **El Paso & Southern Greenway - Nogales Spur Overpass**  
 Superstructure Type: **Steel Girder with Ramp Structures**  
 Substructure Type:  
 Foundation Type:  
 No. of Spans: **3**  
 Main Span Lengths (ft): **50, 75, 50**  
 Skew (deg): **0**

Bridge Length (ft): **175.00**  
 Total Length (ft): **1349.00**  
 Width (Out to Out) (ft): **16.00**  
 Area (sq ft): **21,584.00**

## V. KINO PARKWAY OVERPASS COST ESTIMATE

El Paso Greenway

City of Tucson

<i>El Paso &amp; Southern Greenway - Kino Parkway Overpass</i>					
DESCRIPTION		UNIT	UNIT COST	QUANTITY	COST
<b>MAIN SPAN</b>					
PEDESTRIAN-BICYCLE BRIDGE		SF	\$160.00	2,400	\$384,000
PEDESTRIAN FENCE		L. FT	\$100.00	300	\$30,000
MAIN SPAN SUBTOTAL:					\$414,000
<b>RAMP STRUCTURE</b>					
ELEVATED STEEL STRUCTURE	East End	SF	\$160.00	3,840	\$614,400
RETAINED FILL (CIP WALLS WITH FILL)	East End	SF	\$65.00	828	\$53,820
ELEVATED STEEL STRUCTURE	West End	SF	\$160.00	6,240	\$998,400
RETAINED FILL (CIP WALLS WITH FILL)	West End	SF	\$65.00	1,134	\$73,710
BIKE/PEDESTRIAN RAIL		L. FT	\$75.00	1,696	\$127,200
RAMP STRUCTURE SUBTOTAL:					\$1,867,530
TOTAL COST:					\$2,281,530
TOTAL COST/SF:					\$142.88

TOTAL COST:	\$2,281,530
MAIN STRUCTURE COST/SF:	\$172.50
RAMP STRUCTURE COST/SF:	\$137.64
TOTAL COST/SF:	\$142.88

Structure Name:	El Paso & Southern Greenway - Kino Parkway Overpass		
Superstructure Type:	Steel Girder with Ramp Structures		
Substructure Type:			
Foundation Type:			
No. of Spans:	2	Bridge Length (ft):	150.00
Main Span Lengths (ft):	75, 75	Total Length (ft):	998.00
Skew (deg):	0	Width (Out to Out) (ft):	16.00
		Area (sq ft):	15,968.00

# THE BRIDGES AGREEMENT MEMO



May 16, 2011

Sandra Tolley-Bolduc, RLA  
KIMLEY-HORN & ASSOCIATES, INC.  
2210 E. Fort Lowell Road  
Suit # 200  
Tucson, AZ 85719

**RE: EL PASO & SOUTHWESTERN GREENWAY  
Routing and Trail Provisions at The Bridges Planned Area Development**

Dear Ms. Tolley-Bolduc:

Thanks for meeting with myself and Pat Marum of Wood-Patel and allowing us to learn more about your firm's larger masterplanning effort for the El Paso & Southwestern Greenway regional trail.

Per your request, I am forwarding this letter which summarizes the Greenway elements that were contemplated within the approved Planned Area Development (PAD) for The Bridges so that you can reference this particular segment of the larger trail in your formal masterplan report. For more detailed information, I would also refer you to the approved PAD under City of Tucson rezoning Case No. C9-06-32, which is available in its complete form on the COT Planning and Development Services Department's (PDS's) web-based archive.

As mentioned, the approved Bridges PAD already contemplated the needs of the Greenway during the formulation of the PAD document. This was done in close coordination with representatives from the City of Tucson Parks & Recreation Department, as well as from the Pima County Department of Natural Resources, Parks and Recreation (PCDNRPR).

To summarize the Greenway provisions that were made within the context of the PAD, it is best to view the trail in three particular on-site segments:

1. **Union Pacific Railroad (UPRR) to Park Avenue.** This ½-mile segment of the Greenway traverses the westernmost portion of the PAD property. A 50' wide corridor has already been dedicated for it via the recorded block plat for The Bridges (Bk. 65 @ Pg. 2) so as to accommodate the required multi-use and walking-path components of the trail. This particular segment will lie adjacent to

a new residential subdivision as prescribed by the PAD and will be linked to a pedestrian trail and “pocket park” located therein. The developer is responsible for the construction of the trail at the time of the first residential subdivision plat. Maintenance of the trail elements is the on-going responsibility of the Master Property Owners Association (MPOA) of The Bridges, which has already been formed and is an operating legal entity. The trail will cross Park Avenue via a signalized “hawk” crossing which has been designed in conjunction with the new street improvement project for the roadway. Park Avenue will be upgraded to a four-lane arterial with landscaped median and continuous bike lanes. The central median will provide a refuge opportunity for Greenway users as they cross Park Avenue via the aforementioned hawk configuration.

2. **Park Avenue to Tucson Marketplace Boulevard.** This approximately one (1) mile segment of the Greenway traverses the central portion of the PAD property. To the south of the trail, a regional shopping center containing one (1) million square feet of retail space is planned and is currently in the initial stages of development. To the north of the trail lies one of the PAD’s major open-space areas, this being a 22-acre multi-use site that has been designed as a regional flood control basin, but one that will also be fully landscaped and serve as a future public park containing athletic fields, children’s play equipment, and a series of pedestrian paths. Phase II of the shopping center is ready to commence and this particular segment of the Greenway will be constructed within the next year in conjunction with it. The master conceptual site plan contemplated by the commercial developer features several small retail pads along the trail alignment, which they hope to populate with small restaurants, coffee shops, etc. that will provide desirable stopping points for bicyclists and trail users. Construction of the actual park improvements on the north side of the trail are triggered by the first residential subdivision located adjacent to the park site. Upon completion of the commercial and park elements, we envision this as being one of the most interesting and popular “activity nodes” along the entire El Paso & Southwestern Greenway. Once again, maintenance of the above trail elements is the on-going responsibility of the Master Property Owners Association (MPOA) of The Bridges. The trail will cross Tucson Marketplace Boulevard in at-grade fashion, and will therein also provide links to dual bike lanes located within the street.
3. **East of Tucson Marketplace Boulevard to Kino Parkway.** This segment, as originally contemplated in the PAD, would simply continue eastward (along the north side of the commercial development) to a terminus point at Kino Parkway. Provisions for crossing Kino Parkway were declared as being outside the scope of the PAD document and not the responsibility of The Bridges project. In our recent conversations with your office, you’ve indicated a desire to examine an

alternative routing of the Greenway for this segment of the trail. Specifically, you described a potential alignment through the open space parcel lying north of the shopping center which would accommodate not only the Greenway trail elements, but also the landing area for a potential trail bridge spanning Kino Parkway. The parcel in question is owned by Pima County (specifically, the Regional Flood Control District) and is used for drainage conveyance as well as for open-space and riparian preservation. The placement of any new bridge structure within it would have to maintain and accommodate these existing functions and, of course, be fully coordinated with the Regional Flood Control District. We would assist in this coordination and would also respectfully request that we be included in all future planning discussions regarding this segment so that we can properly represent and protect the needs of our adjacent commercial and residential land uses.

I hope all of the above provides you with a helpful characterization of the El Paso & Southwestern Greenway through The Bridges property. Please let me know if you have any questions or require additional information.

Best Regards:  
PROJECTS INTERNATIONAL, INC.

A handwritten signature in black ink, appearing to read 'J. Portner', with a stylized flourish at the end.

Jim Portner, Principal

cc: Eric Davis, Retail West Development (Commercial Developer at The Bridges)  
Janelle Speake, 5151 East, LLC (Residential Developer at The Bridges)  
Kevin Tarbox, 5151 East, LLC (Residential Developer at The Bridges)  
Pat Marum, Wood-Patel & Associates (Project Engineer)  
Stacey Weak, Norris Design (Project Landscape Architect/Planners)

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**From:** JIM PORTNER [mailto:jportner@projectsintl.com]

**Sent:** Tuesday, May 31, 2011 10:15 AM

**To:** Bolduc, Sandra (Tolley)

**Cc:** Tom Thivener

**Subject:** Re: El Paso & Southwestern Greenway

*Hi Sandy:*

*This is just a quick addendum to my prior email of 29 May. Your sketch also shows the asphalt multi-use path and a CONCRETE 8' pedestrian path. It's always been our understanding, per the County's adopted regional trail cross-section, that the 8' path is decomposed granite. I am adding this to my other comments on the sketch (see below) and ask that you revise accordingly. Thanks.*

*jp*

Hi Sandy:

I am responding to your email (below), as well as cc'ing the owners and forwarding them your original message with the sketch attachment.

The Greenway, as discussed in original my letter, is already designed along the northern boundary of Tucson Marketplace and will have an at-grade crossing (striped crossing lanes) at Tucson Marketplace Boulevard (TMP Blvd). No one from the ownership side will have any objection if it is your intention to, at that point, direct Greenway users to cross the bridge on TMP Blvd and then ultimately proceed eastward on the north side of the existing Greyhound Wash (through the property that is owned by Pima County).

As mentioned in my letter and as I'm reiterating here, we would of course like to be involved in the future design process of this segment, especially if a Kino Parkway overpass structure is being contemplated. We therefore very much appreciate that our ownership participation in this design process will be formally written into your Master Plan report for the Greenway. This is critical for two reasons:

1) We've spent alot of time and dollars on designing an overall aesthetic, landscape, and architectural theme for the Bridges and have an established Design Review Committee (DRC) that has reviewed every aspect of development at the site so as to insure conformance and consistency. It would be important that any overpass structure is designed with a consideration for our project's visibility and in recognition of our established design guidelines, and ...

2) Even though the property in question is now owned by Pima County, there are clear requirements in The Bridges Planned Area Development (PAD) pertaining to this property and the various elements (existing drainage, preserved vegetative habitat) that must be recognized and accommodated with any trail alignment. For example, our satisfaction of the City's NPPO requirements for the entire Bridges project rests upon, in part, the preservation of designated and mapped tree specimens within the County property. Any impact upon them, obviously, clearly impacts us and affects our NPPO status. Joint discussions with your design team, our ownership reps, and with Pima County RFCD during the trail design process will insure that all such issues are properly vetted and accommodated.

A few detailed comments on your attached sketch: 1) "Duvall Vista" should not be used as the name for the street; it is Tucson Marketplace Boulevard; and 2) it'd be better if you could use an updated aerial photo for the base, since TMP Boulevard and the Costco site are now physically constructed and in place (I believe Pat Marum may be able to provide).

jp



**El Paso & Southwestern Greenway Interface with the Tucson Bridges Project  
February 2012**

PHASED STATEMENT OF  
PROBABLE COST



# El Paso & Southwestern Greenway

## Master Plan Estimate

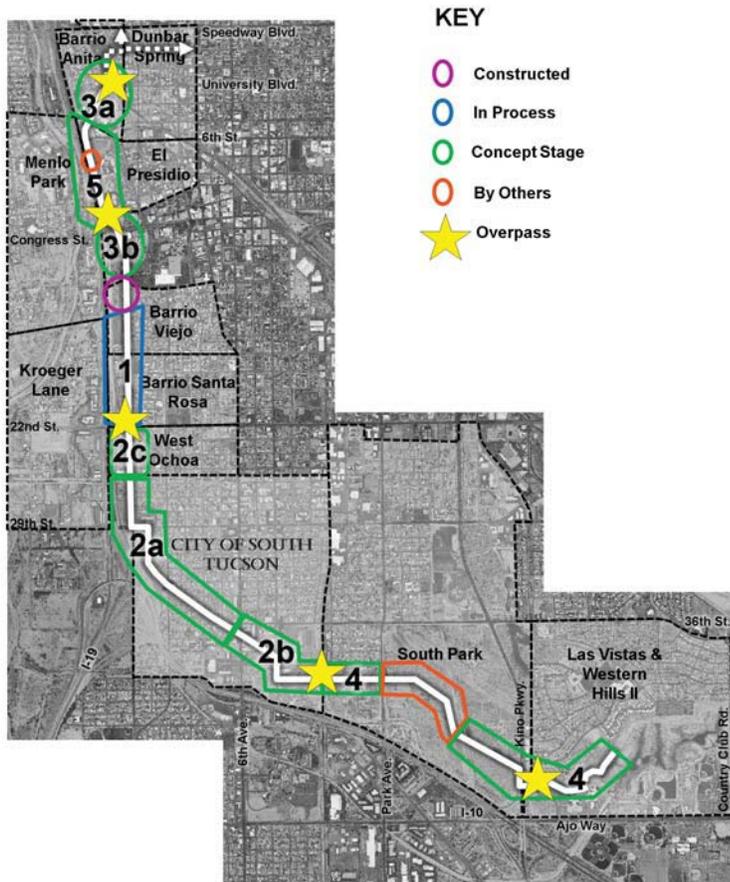
### Tucson, Arizona

May, 2012

#### Project Summary by Phase

	Direct Costs		Total Costs*	
	Core	Ultimate	Core	Ultimate
Phase 1 - Transportation Enhancement Simpson to 22nd Street	\$0.00	\$276,157.55	\$0.00	\$383,527.94
Phase 2a - 25th Street to 6th Avenue	\$1,486,621.70	\$2,659,466.70	\$2,064,622.03	\$3,693,470.60
Phase 2b - 6th Avenue to Nogales Spur	\$3,725,108.35	\$3,744,308.35	\$5,173,435.02	\$5,200,100.01
Phase 2c - 22nd Street to 25th Street	\$1,949,071.95	\$3,345,173.45	\$2,706,873.50	\$4,645,780.97
Phase 3a - University Boulevard to St. Mary's Road	\$262,644.05	\$4,582,084.35	\$364,760.38	\$6,363,604.34
Phase 3b - Congress Street to Granada Avenue	\$2,047,478.00	\$2,055,628.00	\$2,843,539.95	\$2,854,858.68
Phase 4 - Nogales Spur to Ajo Detention Basin	\$3,547,627.90	\$3,661,352.40	\$4,926,949.96	\$5,084,890.68
Phase 5 - St. Mary's Road to Congress Street	\$372,671.85	\$399,325.85	\$517,567.12	\$554,584.23
<b>TOTAL</b>	<b>\$13,391,223.80</b>	<b>\$20,723,496.65</b>	<b>\$18,597,747.96</b>	<b>\$28,780,817.44</b>

\* Includes Design, Insurance, Tax, etc.



PHASING MAP

#### Estimate Executive Summary

Costs are shown for the 'Core' Greenway and the 'Ultimate' Greenway. The 'Core' Greenway assumes the use of the designated Greenway right-of-way ONLY and does not include amenities on adjacent parcels of interest. The 'Core' Greenway assumes the minimum number of required site amenities. The 'Ultimate' Greenway shows the complete cost of the Greenway as presented in the Master Plan.

All costs shown in the individual phases are based on current market conditions without escalation. Each phase shows direct costs for subcontractors and then adds markups associated with a General Contractor or Construction Manager managing the project. All labor rates are non-Davis Bacon wages (non-prevailing wage). All play equipment or furnishings and ball field equipment is excluded. No "soft" costs (design fees, land costs, construction administration, construction contingency, etc.) are included.

Phase 1 - Transportation Enhancement - Simpson to 22nd Street

Item	Core Quantity	Ultimate Total Quantity	Unit	Unit Cost	Total - Core	Total - Ultimate
Asphalt Pathway	0	230	S.Y.	\$17.55	\$0.00	\$4,036.50
Landscape Grading	0	7585	S.Y.	\$0.75	\$0.00	\$5,688.75
Decomposed Granite (Stabilized)	0	948	S.Y.	\$4.50	\$0.00	\$4,266.00
Trees - 15 Gal.	0	40	Each	\$42.00	\$0.00	\$1,680.00
Trees - 24" Box	0	22	Each	\$148.00	\$0.00	\$3,256.00
Shrub (Ground Cover/Vine) - 1 Gal.	0	220	Each	\$8.00	\$0.00	\$1,760.00
Shrub - 5 Gal.	0	660	Each	\$12.00	\$0.00	\$7,920.00
Pruning Existing Trees and Shrubs	0	12	MHR	\$16.90	\$0.00	\$202.80
Pedestrian Bridge	0	1	L.S.	\$98,520.00	\$0.00	\$98,520.00
Irrigation System	0	1	L.S.	\$9,790.00	\$0.00	\$9,790.00
Rock Mulch (scattered) (2" to 4")	0	7585	S.Y.	\$7.50	\$0.00	\$56,887.50
Neighborhood Marker	0	1	Each	\$4,500.00	\$0.00	\$4,500.00
Ramada	0	4	Each	\$12,100.00	\$0.00	\$48,400.00
Litter Receptacle	0	3	Each	\$500.00	\$0.00	\$1,500.00
Bicycle Rack	0	1	Each	\$350.00	\$0.00	\$350.00
6' Bench	0	5	Each	\$1,200.00	\$0.00	\$6,000.00
Picnic Table	0	4	Each	\$1,600.00	\$0.00	\$6,400.00
Grill	0	4	Each	\$900.00	\$0.00	\$3,600.00
Electrical Service Pedestal w/Breaker	0	4	Each	\$1,500.00	\$0.00	\$6,000.00
Ramada Light	0	4	Each	\$500.00	\$0.00	\$2,000.00
Ramada Receptacle	0	4	Each	\$100.00	\$0.00	\$400.00
Ramada Panel	0	4	Each	\$750.00	\$0.00	\$3,000.00

	Core	Ultimate
<b>A. TOTAL DIRECT COSTS Phase 1</b>	<b>\$0.00</b>	<b>\$276,157.55</b>
B. Design Contingency (15% of Line A)	\$0.00	\$41,423.63
C. General Conditions (8% of Line A+B)	\$0.00	\$25,406.49
D. Contractor's Fee (3.5% of Line A+B+C)	\$0.00	\$12,004.57
E. Bonds & Insurance (2 % of Line A+B+C+D)	\$0.00	\$7,099.84
<b>F. Subtotal Phase 1</b>	<b>\$0.00</b>	<b>\$362,092.09</b>
G. Gross Receipts Tax (5.92% of Line F)	\$0.00	\$21,435.85
<b>H. Total Construction Cost Phase 1</b>	<b>\$0.00</b>	<b>\$383,527.94</b>



Phase 2a - 25th Street to 6th Avenue

Item	Core Quantity	Ultimate Total Quantity	Unit	Unit Cost	Total - Core	Total - Ultimate
Fill	400	400	C.Y.	\$9.50	\$3,800.00	\$3,800.00
24" Storm Drain	80	80	L.F.	\$55.00	\$4,400.00	\$4,400.00
Headwall	8	8	Each	\$2,500.00	\$20,000.00	\$20,000.00
Concrete Spillway	200	200	S.F.	\$8.00	\$1,600.00	\$1,600.00
Rip Rap	200	200	S.Y.	\$45.00	\$9,000.00	\$9,000.00
HAWK/PELICAN Crossing	2	2	Each	\$80,000.00	\$160,000.00	\$160,000.00
Handrail	500	500	L.F.	\$55.00	\$27,500.00	\$27,500.00
Concrete Vertical Curb	760	760	L.F.	\$15.00	\$11,400.00	\$11,400.00
Asphalt Pathway	7137	7137	S.Y.	\$17.55	\$125,254.35	\$125,254.35
Landscape Grading	39614	74166	S.Y.	\$0.75	\$29,710.50	\$55,624.50
Decomposed Granite (Stabilized)	3844	4957	S.Y.	\$4.50	\$17,298.00	\$22,306.50
Trees - 15 Gal.	234	420	Each	\$42.00	\$9,828.00	\$17,640.00
Trees - 24" Box	78	140	Each	\$148.00	\$11,544.00	\$20,720.00
Shrub (Ground Cover/Vine) - 1 Gal.	104	185	Each	\$8.00	\$832.00	\$1,480.00
Shrub - 5 Gal.	312	560	Each	\$12.00	\$3,744.00	\$6,720.00
Pruning Existing Trees and Shrubs	24	24	MHR	\$16.90	\$405.60	\$405.60
Playfield	0	49500	S.F.	\$1.25	\$0.00	\$61,875.00
Concrete Paving	999	5255	S.Y.	\$58.50	\$58,441.50	\$307,417.50
Specialty Concrete Paving	152	399	S.Y.	\$76.50	\$11,628.00	\$30,523.50
Irrigation System	1	1	L.S.	\$45,400.00	\$45,400.00	\$45,400.00
Rock Mulch (scattered) (2" to 4")	39614	74166	S.Y.	\$7.50	\$297,105.00	\$556,245.00
Neighborhood Marker	1	1	Each	\$4,500.00	\$4,500.00	\$4,500.00
Ramada	2	9	Each	\$12,100.00	\$24,200.00	\$108,900.00
Parking Lot	0	2017	S.Y.	\$22.00	\$0.00	\$44,374.00
Interpretive Track (Major Restoration)	122	122	L.F.	\$133.00	\$16,226.00	\$16,226.00
Interpretive Track Bed	381	381	S.Y.	\$20.25	\$7,715.25	\$7,715.25
Decorative Crosswalks	2587	2587	S.F.	\$8.50	\$21,989.50	\$21,989.50
Interpretive Signage	3	3	Each	\$1,500.00	\$4,500.00	\$4,500.00
Litter Receptacle	0	8	Each	\$500.00	\$0.00	\$4,000.00
Bicycle Rack	0	6	Each	\$350.00	\$0.00	\$2,100.00
6' Bench	0	12	Each	\$1,200.00	\$0.00	\$14,400.00
Picnic Table	0	12	Each	\$1,600.00	\$0.00	\$19,200.00
Grill	0	12	Each	\$900.00	\$0.00	\$10,800.00
Electrical Service Pedestal w/Breaker	6	6	Each	\$1,500.00	\$9,000.00	\$9,000.00
Electrical Service Conduit 2.5"C	600	600	L.F.	\$10.00	\$6,000.00	\$6,000.00
30A Branch Circuits	14500	14500	L.F.	\$12.00	\$174,000.00	\$174,000.00
Light poles - Bicycle Path	122	122	Each	\$1,500.00	\$183,000.00	\$183,000.00
Light poles - Pedestrian Path	144	144	Each	\$1,000.00	\$144,000.00	\$144,000.00
Interpretive Feature Light Fixture	12	12	Each	\$750.00	\$9,000.00	\$9,000.00
Interpretive Sign Light Fixture	6	6	Each	\$750.00	\$4,500.00	\$4,500.00
Ramada Light	2	9	Each	\$500.00	\$1,000.00	\$4,500.00
Ramada Receptacle	2	9	Each	\$100.00	\$200.00	\$900.00
Ramada Panel	2	9	Each	\$750.00	\$1,500.00	\$6,750.00
Drinking Fountain	2	4	Each	\$3,200.00	\$6,400.00	\$12,800.00
Parking Light Poles	0	6	Each	\$2,000.00	\$0.00	\$12,000.00
Picnic Area Light Poles	0	12	Each	\$1,500.00	\$0.00	\$18,000.00
Recreation Area Light Poles	0	16	Each	\$2,000.00	\$0.00	\$32,000.00
Auction House Restoration	0	1	Each	\$250,000.00	\$0.00	\$250,000.00
Restroom	0	1	Each	\$25,000.00	\$0.00	\$25,000.00
Plaza Light Fixtures	10	10	Each	\$2,000.00	\$20,000.00	\$20,000.00



	Core	Ultimate
<b>A. TOTAL DIRECT COSTS Phase 2a</b>	<b>\$1,486,621.70</b>	<b>\$2,659,466.70</b>
B. Design Contingency (15% of Line A)	\$222,993.26	\$398,920.01
C. General Conditions (8% of Line A+B)	\$136,769.20	\$244,670.94
D. Contractor's Fee (3.5% of Line A+B+C)	\$64,623.45	\$115,607.02
E. Bonds & Insurance (2 % of Line A+B+C+D)	\$38,220.15	\$68,373.29
<b>F. Subtotal Phase 2a</b>	<b>\$1,949,227.75</b>	<b>\$3,487,037.95</b>
G. Gross Receipts Tax (5.92% of Line F)	\$115,394.28	\$206,432.65

Phase 2b - 6th Avenue to Nogales Spur

Item	Core Quantity	Ultimate Total Quantity	Unit	Unit Cost	Total - Core	Total - Ultimate
Fill	8300	8300	C.Y.	\$9.50	\$78,850.00	\$78,850.00
Concrete Spillway	600	600	S.F.	\$8.00	\$4,800.00	\$4,800.00
Rip Rap	600	600	S.Y.	\$45.00	\$27,000.00	\$27,000.00
Signs	8	8	Each	\$250.00	\$2,000.00	\$2,000.00
Concrete Vertical Curb	300	300	L.F.	\$15.00	\$4,500.00	\$4,500.00
Nogales Spur Overpass	1	1	Each	\$3,168,576.00	\$3,168,576.00	\$3,168,576.00
Asphalt Pathway	2253	2253	S.Y.	\$17.55	\$39,540.15	\$39,540.15
Landscape Grading	10250	10250	S.Y.	\$0.75	\$7,687.50	\$7,687.50
Decomposed Granite (Stabilized)	890	890	S.Y.	\$4.50	\$4,005.00	\$4,005.00
Trees - 15 Gal.	78	78	Each	\$42.00	\$3,276.00	\$3,276.00
Trees - 24" Box	25	25	Each	\$148.00	\$3,700.00	\$3,700.00
Shrub (Ground Cover/Vine) - 1 Gal.	25	25	Each	\$8.00	\$200.00	\$200.00
Shrub - 5 Gal.	77	77	Each	\$12.00	\$924.00	\$924.00
Pruning Existing Trees and Shrubs	8	8	MHR	\$16.90	\$135.20	\$135.20
Concrete Paving	1070	1070	S.Y.	\$58.50	\$62,595.00	\$62,595.00
Bicycle Boulevard Development	1067	1067	L.F.	\$25.00	\$26,675.00	\$26,675.00
Irrigation System	1	1	L.S.	\$7,892.00	\$7,892.00	\$7,892.00
Rock Mulch (scattered) (2" to 4")	10250	10250	S.Y.	\$7.50	\$76,875.00	\$76,875.00
Neighborhood Marker	1	1	Each	\$4,500.00	\$4,500.00	\$4,500.00
Ramada	0	1	Each	\$12,100.00	\$0.00	\$12,100.00
Decorative Crosswalks	3515	3515	S.F.	\$8.50	\$29,877.50	\$29,877.50
Litter Receptacle	0	1	Each	\$500.00	\$0.00	\$500.00
Bicycle Rack	0	1	Each	\$350.00	\$0.00	\$350.00
6' Bench	0	2	Each	\$1,200.00	\$0.00	\$2,400.00
Picnic Table	0	1	Each	\$1,600.00	\$0.00	\$1,600.00
Grill	0	1	Each	\$900.00	\$0.00	\$900.00
Electrical Service Pedestal w/Breaker	2	2	Each	\$1,500.00	\$3,000.00	\$3,000.00
Electrical Service Conduit 2.5"C	200	200	L.F.	\$10.00	\$2,000.00	\$2,000.00
30A Branch Circuits	4000	4000	L.F.	\$12.00	\$48,000.00	\$48,000.00
Light poles - Bicycle Path	41	41	Each	\$1,500.00	\$61,500.00	\$61,500.00
Light poles - Pedestrian Path	37	37	Each	\$1,000.00	\$37,000.00	\$37,000.00
Ramada Light	0	1	Each	\$500.00	\$0.00	\$500.00
Ramada Receptacle	0	1	Each	\$100.00	\$0.00	\$100.00
Ramada Panel	0	1	Each	\$750.00	\$0.00	\$750.00
Bridge Lighting	1	1	Each	\$20,000.00	\$20,000.00	\$20,000.00

	Core	Ultimate
<b>A. TOTAL DIRECT COSTS Phase 2b</b>	<b>\$3,725,108.35</b>	<b>\$3,744,308.35</b>
B. Design Contingency (15% of Line A)	\$558,766.25	\$561,646.25
C. General Conditions (8% of Line A+B)	\$342,709.97	\$344,476.37
D. Contractor's Fee (3.5% of Line A+B+C)	\$161,930.46	\$162,765.08
E. Bonds & Insurance (2 % of Line A+B+C+D)	\$95,770.30	\$96,263.92
<b>F. Subtotal Phase 2b</b>	<b>\$4,884,285.33</b>	<b>\$4,909,459.98</b>
G. Gross Receipts Tax (5.92% of Line F)	\$289,149.69	\$290,640.03
<b>H. Total Construction Cost Phase 2b</b>	<b>\$5,173,435.02</b>	<b>\$5,200,100.01</b>



Phase 2c - 22nd Street to 25th Street

Item	Core Quantity	Ultimate Total Quantity	Unit	Unit Cost	Total - Core	Total - Ultimate
Fill	1100	1100	C.Y.	\$9.50	\$10,450.00	\$10,450.00
22nd Street Overpass	1	1	Each	\$1,582,840.00	\$1,582,840.00	\$1,582,840.00
Asphalt Pathway	1673	1673	S.Y.	\$17.55	\$29,361.15	\$29,361.15
Landscape Grading	9316	18878	S.Y.	\$0.75	\$6,987.00	\$14,158.50
Decomposed Granite (Stabilized)	1037	1037	S.Y.	\$4.50	\$4,666.50	\$4,666.50
Trees - 15 Gal.	57	107	Each	\$42.00	\$2,394.00	\$4,494.00
Trees - 24" Box	19	36	Each	\$148.00	\$2,812.00	\$5,328.00
Shrub (Ground Cover/Vine) - 1 Gal.	25	50	Each	\$8.00	\$200.00	\$400.00
Shrub - 5 Gal.	76	140	Each	\$12.00	\$912.00	\$1,680.00
Pruning Existing Trees and Shrubs	12	12	MHR	\$16.90	\$202.80	\$202.80
Concrete Paving	0	583	S.Y.	\$58.50	\$0.00	\$34,105.50
Specialty Concrete Paving	0	2159	S.Y.	\$76.50	\$0.00	\$165,163.50
Irrigation System	1	1	L.S.	\$11,587.00	\$11,587.00	\$11,587.00
Rock Mulch (scattered) (2" to 4")	9316	18878	S.Y.	\$7.50	\$69,870.00	\$141,585.00
Neighborhood Marker	2	2	Each	\$4,500.00	\$9,000.00	\$9,000.00
Parking Lot/New Drive Areas	0	1896	S.Y.	\$22.00	\$0.00	\$41,712.00
Interpretive Track (Major Restoration)	183	183	L.F.	\$133.00	\$24,339.00	\$24,339.00
Interpretive Track Bed	550	550	S.Y.	\$20.25	\$11,137.50	\$11,137.50
Interpretive Track (Minor Restoration)	918	918	L.F.	\$15.00	\$13,770.00	\$13,770.00
Decorative Crosswalks	358	358	S.F.	\$8.50	\$3,043.00	\$3,043.00
Interpretive Signage	4	4	Each	\$1,500.00	\$6,000.00	\$6,000.00
Litter Receptacle	0	3	Each	\$500.00	\$0.00	\$1,500.00
Bicycle Rack	0	1	Each	\$350.00	\$0.00	\$350.00
6' Bench	0	8	Each	\$1,200.00	\$0.00	\$9,600.00
Electrical Service Pedestal w/Breaker	2	2	Each	\$1,500.00	\$3,000.00	\$3,000.00
Electrical Service Conduit 2.5"C	100	100	L.F.	\$10.00	\$1,000.00	\$1,000.00
30A Branch Circuits	5000	5000	L.F.	\$12.00	\$60,000.00	\$60,000.00
Light poles - Bicycle Path	31	31	Each	\$1,500.00	\$46,500.00	\$46,500.00
Light poles - Pedestrian Path	20	20	Each	\$1,000.00	\$20,000.00	\$20,000.00
Interpretive Feature Light Fixture	4	4	Each	\$750.00	\$3,000.00	\$3,000.00
Interpretive Sign Light Fixture	8	8	Each	\$750.00	\$6,000.00	\$6,000.00
Drinking Fountain	0	1	Each	\$3,200.00	\$0.00	\$3,200.00
Parking Light Poles	0	6	Each	\$2,000.00	\$0.00	\$12,000.00
Recreation Area Light Poles	0	22	Each	\$2,000.00	\$0.00	\$44,000.00
Roundhouse Restoration	0	1	Each	\$1,000,000.00	\$0.00	\$1,000,000.00
Bridge Lighting	1	1	Each	\$20,000.00	\$20,000.00	\$20,000.00

	Core	Ultimate
<b>A. TOTAL DIRECT COSTS Phase 2c</b>	<b>\$1,949,071.95</b>	<b>\$3,345,173.45</b>
B. Design Contingency (15% of Line A)	\$292,360.79	\$501,776.02
C. General Conditions (8% of Line A+B)	\$179,314.62	\$307,755.96
D. Contractor's Fee (3.5% of Line A+B+C)	\$84,726.16	\$145,414.69
E. Bonds & Insurance (2 % of Line A+B+C+D)	\$50,109.47	\$86,002.40
<b>F. Subtotal Phase 2c</b>	<b>\$2,555,582.99</b>	<b>\$4,386,122.52</b>
G. Gross Receipts Tax (5.92% of Line F)	\$151,290.51	\$259,658.45
<b>H. Total Construction Cost Phase 2c</b>	<b>\$2,706,873.50</b>	<b>\$4,645,780.97</b>



Phase 3a - University Boulevard to St. Mary's Road

Item	Core Quantity	Ultimate Total Quantity	Unit	Unit Cost	Total - Core	Total - Ultimate
University Boulevard/UPRR Overpass	0	1	Each	\$4,163,920.00	\$0.00	\$4,163,920.00
Asphalt Pathway	1767	2048	S.Y.	\$17.55	\$31,010.85	\$35,942.40
Landscape Grading	6041	9878	S.Y.	\$0.75	\$4,530.75	\$7,408.50
Decomposed Granite (Stabilized)	787	1144	S.Y.	\$4.50	\$3,541.50	\$5,148.00
Trees - 15 Gal.	53	103	Each	\$42.00	\$2,226.00	\$4,326.00
Trees - 24" Box	18	35	Each	\$148.00	\$2,664.00	\$5,180.00
Shrub (Ground Cover/Vine) - 1 Gal.	20	25	Each	\$8.00	\$160.00	\$200.00
Shrub - 5 Gal.	71	75	Each	\$12.00	\$852.00	\$900.00
Pruning Existing Trees and Shrubs	8	8	MHR	\$16.90	\$135.20	\$135.20
Concrete Paving	198	485	S.Y.	\$58.50	\$11,583.00	\$28,372.50
Specialty Concrete Paving	72	111	S.Y.	\$76.50	\$5,508.00	\$8,491.50
Bicycle Boulevard Development	145	1491	L.F.	\$25.00	\$3,625.00	\$37,275.00
Irrigation System	1	1	L.S.	\$10,302.50	\$10,302.50	\$10,302.50
Rock Mulch (scattered) (2" to 4")	6041	9878	S.Y.	\$7.50	\$45,307.50	\$74,085.00
Neighborhood Marker	2	2	Each	\$4,500.00	\$9,000.00	\$9,000.00
Ramada	0	2	Each	\$12,100.00	\$0.00	\$24,200.00
Interpretive Track (Major Restoration)	89	89	L.F.	\$133.00	\$11,837.00	\$11,837.00
Interpretive Track Bed	195	195	S.Y.	\$20.25	\$3,948.75	\$3,948.75
Interpretive Track (Minor Restoration)	109	109	L.F.	\$15.00	\$1,635.00	\$1,635.00
Decorative Crosswalks	1562	1562	S.F.	\$8.50	\$13,277.00	\$13,277.00
Interpretive Signage	1	1	Each	\$1,500.00	\$1,500.00	\$1,500.00
Litter Receptacle	0	2	Each	\$500.00	\$0.00	\$1,000.00
Bicycle Rack	0	2	Each	\$350.00	\$0.00	\$700.00
6' Bench	0	2	Each	\$1,200.00	\$0.00	\$2,400.00
Picnic Table	0	2	Each	\$1,600.00	\$0.00	\$3,200.00
Grill	0	2	Each	\$900.00	\$0.00	\$1,800.00
Electrical Service Pedestal w/Breaker	2	2	Each	\$1,500.00	\$3,000.00	\$3,000.00
Electrical Service Conduit 2.5"C	100	100	L.F.	\$10.00	\$1,000.00	\$1,000.00
30A Branch Circuits	2500	2500	L.F.	\$12.00	\$30,000.00	\$30,000.00
Light poles - Bicycle Path	25	25	Each	\$1,500.00	\$37,500.00	\$37,500.00
Light poles - Pedestrian Path	24	24	Each	\$1,000.00	\$24,000.00	\$24,000.00
Interpretive Feature Light Fixture	4	4	Each	\$750.00	\$3,000.00	\$3,000.00
Interpretive Sign Light Fixture	2	2	Each	\$750.00	\$1,500.00	\$1,500.00
Ramada Light	0	2	Each	\$500.00	\$0.00	\$1,000.00
Ramada Receptacle	0	2	Each	\$100.00	\$0.00	\$200.00
Ramada Panel	0	2	Each	\$750.00	\$0.00	\$1,500.00
Drinking Fountain	0	1	Each	\$3,200.00	\$0.00	\$3,200.00
Bridge Lighting	0	1	Each	\$20,000.00	\$0.00	\$20,000.00

	Core	Ultimate
<b>A. TOTAL DIRECT COSTS Phase 3a</b>	<b>\$262,644.05</b>	<b>\$4,582,084.35</b>
B. Design Contingency (15% of Line A)	\$39,396.61	\$687,312.65
C. General Conditions (8% of Line A+B)	\$24,163.25	\$421,551.76
D. Contractor's Fee (3.5% of Line A+B+C)	\$11,417.14	\$199,183.21
E. Bonds & Insurance (2 % of Line A+B+C+D)	\$6,752.42	\$117,802.64
<b>F. Subtotal Phase 3a</b>	<b>\$344,373.47</b>	<b>\$6,007,934.61</b>
G. Gross Receipts Tax (5.92% of Line F)	\$20,386.91	\$355,669.73
<b>H. Total Construction Cost Phase 3a</b>	<b>\$364,760.38</b>	<b>\$6,363,604.34</b>



Phase 3b - Congress Street to Granada Avenue

Item	Core Quantity	Ultimate Total Quantity	Unit	Unit Cost	Total - Core	Total - Ultimate
Handrail	390	390	L.F.	\$55.00	\$21,450.00	\$21,450.00
Congress Street Overpass	1	1	Each	\$1,722,940.00	\$1,722,940.00	\$1,722,940.00
Asphalt Pathway	1654	1654	S.Y.	\$17.55	\$29,027.70	\$29,027.70
Landscape Grading	5508	5508	S.Y.	\$0.75	\$4,131.00	\$4,131.00
Decomposed Granite (Stabilized)	1005	1005	S.Y.	\$4.50	\$4,522.50	\$4,522.50
Trees - 15 Gal.	38	38	Each	\$42.00	\$1,596.00	\$1,596.00
Trees - 24" Box	12	12	Each	\$148.00	\$1,776.00	\$1,776.00
Shrub (Ground Cover/Vine) - 1 Gal.	15	15	Each	\$8.00	\$120.00	\$120.00
Shrub - 5 Gal.	45	45	Each	\$12.00	\$540.00	\$540.00
Pruning Existing Trees and Shrubs	12	12	MHR	\$16.90	\$202.80	\$202.80
Irrigation System	1	1	L.S.	\$3,932.00	\$3,932.00	\$3,932.00
Rock Mulch (scattered) (2" to 4")	5508	5508	S.Y.	\$7.50	\$41,310.00	\$41,310.00
Neighborhood Marker	2	2	Each	\$4,500.00	\$9,000.00	\$9,000.00
Interpretive Track (Major Restoration)	490	490	L.F.	\$133.00	\$65,170.00	\$65,170.00
Interpretive Track Bed	1040	1040	S.Y.	\$20.25	\$21,060.00	\$21,060.00
Interpretive Track (Minor Restoration)	680	680	L.F.	\$15.00	\$10,200.00	\$10,200.00
Interpretive Signage	4	4	Each	\$1,500.00	\$6,000.00	\$6,000.00
Litter Receptacle	0	2	Each	\$500.00	\$0.00	\$1,000.00
Bicycle Rack	0	1	Each	\$350.00	\$0.00	\$350.00
6' Bench	0	3	Each	\$1,200.00	\$0.00	\$3,600.00
Electrical Service Pedestal w/Breaker	1	1	Each	\$1,500.00	\$1,500.00	\$1,500.00
Electrical Service Conduit 2.5"C	100	100	L.F.	\$10.00	\$1,000.00	\$1,000.00
30A Branch Circuits	2000	2000	L.F.	\$12.00	\$24,000.00	\$24,000.00
Light poles - Bicycle Path	27	27	Each	\$1,500.00	\$40,500.00	\$40,500.00
Light poles - Pedestrian Path	10	10	Each	\$1,000.00	\$10,000.00	\$10,000.00
Interpretive Feature Light Fixture	2	2	Each	\$750.00	\$1,500.00	\$1,500.00
Interpretive Sign Light Fixture	8	8	Each	\$750.00	\$6,000.00	\$6,000.00
Drinking Fountain	0	1	Each	\$3,200.00	\$0.00	\$3,200.00
Bridge Lighting	1	1	Each	\$20,000.00	\$20,000.00	\$20,000.00

	Core	Ultimate
<b>A. TOTAL DIRECT COSTS Phase 3b</b>	<b>\$2,047,478.00</b>	<b>\$2,055,628.00</b>
B. Design Contingency (15% of Line A)	\$307,121.70	\$308,344.20
C. General Conditions (8% of Line A+B)	\$188,367.98	\$189,117.78
D. Contractor's Fee (3.5% of Line A+B+C)	\$89,003.87	\$89,358.15
E. Bonds & Insurance (2 % of Line A+B+C+D)	\$52,639.43	\$52,848.96
<b>F. Subtotal Phase 3b</b>	<b>\$2,684,610.98</b>	<b>\$2,695,297.09</b>
G. Gross Receipts Tax (5.92% of Line F)	\$158,928.97	\$159,561.59
<b>H. Total Construction Cost Phase 3b</b>	<b>\$2,843,539.95</b>	<b>\$2,854,858.68</b>



Phase 4 - Nogales Spur to Ajo Detention Basin

Item	Core Quantity	Ultimate Total Quantity	Unit	Unit Cost	Total - Core	Total - Ultimate
Fill	4200	4200	C.Y.	\$9.50	\$39,900.00	\$39,900.00
Rip Rap	3300	3300	S.Y.	\$45.00	\$148,500.00	\$148,500.00
PELICAN Crossing	1	1	Each	\$80,000.00	\$80,000.00	\$80,000.00
Kino Parkway Overpass	1	1	Each	\$2,281,530.00	\$2,281,530.00	\$2,281,530.00
Asphalt Pathway	4405	4405	S.Y.	\$17.55	\$77,307.75	\$77,307.75
Landscape Grading	46433	46433	S.Y.	\$0.75	\$34,824.75	\$34,824.75
Decomposed Granite (Stabilized)	1588	1695	S.Y.	\$4.50	\$7,146.00	\$7,627.50
Trees - 15 Gal.	122	221	Each	\$42.00	\$5,124.00	\$9,282.00
Trees - 24" Box	41	74	Each	\$148.00	\$6,068.00	\$10,952.00
Shrub (Ground Cover/Vine) - 1 Gal.	55	116	Each	\$8.00	\$440.00	\$928.00
Shrub - 5 Gal.	163	350	Each	\$12.00	\$1,956.00	\$4,200.00
Pruning Existing Trees and Shrubs	16	16	MHR	\$16.90	\$270.40	\$270.40
Concrete Paving	1698	2712	S.Y.	\$58.50	\$99,333.00	\$158,652.00
Bicycle Boulevard Development	1835	1835	L.F.	\$25.00	\$45,875.00	\$45,875.00
Irrigation System	1	1	L.S.	\$24,756.00	\$24,756.00	\$24,756.00
Rock Mulch (scattered) (2" to 4")	46433	46433	S.Y.	\$7.50	\$348,247.50	\$348,247.50
Neighborhood Marker	5	5	Each	\$4,500.00	\$22,500.00	\$22,500.00
Ramada	1	2	Each	\$12,100.00	\$12,100.00	\$24,200.00
Decorative Crosswalks	1047	1047	S.F.	\$8.50	\$8,899.50	\$8,899.50
Litter Receptacle	0	5	Each	\$500.00	\$0.00	\$2,500.00
Bicycle Rack	0	2	Each	\$350.00	\$0.00	\$700.00
6' Bench	0	4	Each	\$1,200.00	\$0.00	\$4,800.00
Picnic Table	0	7	Each	\$1,600.00	\$0.00	\$11,200.00
Grill	0	7	Each	\$900.00	\$0.00	\$6,300.00
Electrical Service Pedestal w/Breaker	5	5	Each	\$1,500.00	\$7,500.00	\$7,500.00
Electrical Service Conduit 2.5"C	300	300	L.F.	\$10.00	\$3,000.00	\$3,000.00
30A Branch Circuits	6250	6250	L.F.	\$12.00	\$75,000.00	\$75,000.00
Light poles - Bicycle Path	81	81	Each	\$1,500.00	\$121,500.00	\$121,500.00
Light poles - Pedestrian Path	37	37	Each	\$1,000.00	\$37,000.00	\$37,000.00
Interpretive Feature Light Fixture	10	10	Each	\$750.00	\$7,500.00	\$7,500.00
Ramada Light	1	2	Each	\$500.00	\$500.00	\$1,000.00
Ramada Receptacle	1	2	Each	\$100.00	\$100.00	\$200.00
Ramada Panel	1	2	Each	\$750.00	\$750.00	\$1,500.00
Drinking Fountain	0	1	Each	\$3,200.00	\$0.00	\$3,200.00
Picnic Area Light Poles	20	20	Each	\$1,500.00	\$30,000.00	\$30,000.00
Bridge Lighting	1	1	Each	\$20,000.00	\$20,000.00	\$20,000.00

	Core	Ultimate
<b>A. TOTAL DIRECT COSTS Phase 4</b>	<b>\$3,547,627.90</b>	<b>\$3,661,352.40</b>
B. Design Contingency (15% of Line A)	\$532,144.19	\$549,202.86
C. General Conditions (8% of Line A+B)	\$326,381.77	\$336,844.42
D. Contractor's Fee (3.5% of Line A+B+C)	\$154,215.38	\$159,158.99
E. Bonds & Insurance (2 % of Line A+B+C+D)	\$91,207.38	\$94,131.17
<b>F. Subtotal Phase 4</b>	<b>\$4,651,576.62</b>	<b>\$4,800,689.84</b>
G. Gross Receipts Tax (5.92% of Line F)	\$275,373.34	\$284,200.84
<b>H. Total Construction Cost Phase 4</b>	<b>\$4,926,949.96</b>	<b>\$5,084,890.68</b>



Phase 5 - St. Mary's Road to Congress Street

Item	Core Quantity	Ultimate Total Quantity	Unit	Unit Cost	Total - Core	Total - Ultimate
Fill	1100	1100	C.Y.	\$9.50	\$10,450.00	\$10,450.00
Handrail	280	280	L.F.	\$55.00	\$15,400.00	\$15,400.00
Asphalt Pathway	3083	3083	S.Y.	\$17.55	\$54,106.65	\$54,106.65
Landscape Grading	5792	8048	S.Y.	\$0.75	\$4,344.00	\$6,036.00
Decomposed Granite (Stabilized)	1187	1299	S.Y.	\$4.50	\$5,341.50	\$5,845.50
Trees - 15 Gal.	46	67	Each	\$42.00	\$1,932.00	\$2,814.00
Trees - 24" Box	16	22	Each	\$148.00	\$2,368.00	\$3,256.00
Shrub (Ground Cover/Vine) - 1 Gal.	21	20	Each	\$8.00	\$168.00	\$160.00
Shrub - 5 Gal.	62	60	Each	\$12.00	\$744.00	\$720.00
Pruning Existing Trees and Shrubs	8	8	MHR	\$16.90	\$135.20	\$135.20
Concrete Paving	69	69	S.Y.	\$58.50	\$4,036.50	\$4,036.50
Irrigation System	1	1	L.S.	\$6,762.00	\$6,762.00	\$6,762.00
Rock Mulch (scattered) (2" to 4")	5792	8048	S.Y.	\$7.50	\$43,440.00	\$60,360.00
Neighborhood Marker	2	2	Each	\$4,500.00	\$9,000.00	\$9,000.00
Interpretive Track (Minor Restoration)	732	732	L.F.	\$15.00	\$10,980.00	\$10,980.00
Decorative Crosswalks	584	584	S.F.	\$8.50	\$4,964.00	\$4,964.00
Interpretive Signage	1	1	Each	\$1,500.00	\$1,500.00	\$1,500.00
Litter Receptacle	0	3	Each	\$500.00	\$0.00	\$1,500.00
Bicycle Rack	0	2	Each	\$350.00	\$0.00	\$700.00
6' Bench	0	3	Each	\$1,200.00	\$0.00	\$3,600.00
Electrical Service Pedestal w/Breaker	3	3	Each	\$1,500.00	\$4,500.00	\$4,500.00
Electrical Service Conduit 2.5"C	200	200	L.F.	\$10.00	\$2,000.00	\$2,000.00
30A Branch Circuits	5000	5000	L.F.	\$12.00	\$60,000.00	\$60,000.00
Light poles - Bicycle Path	66	66	Each	\$1,500.00	\$99,000.00	\$99,000.00
Light poles - Pedestrian Path	27	27	Each	\$1,000.00	\$27,000.00	\$27,000.00
Interpretive Feature Light Fixture	4	4	Each	\$750.00	\$3,000.00	\$3,000.00
Interpretive Sign Light Fixture	2	2	Each	\$750.00	\$1,500.00	\$1,500.00

	Core	Ultimate
<b>A. TOTAL DIRECT COSTS Phase 5</b>	<b>\$372,671.85</b>	<b>\$399,325.85</b>
B. Design Contingency (15% of Line A)	\$55,900.78	\$59,898.88
C. General Conditions (8% of Line A+B)	\$34,285.81	\$36,737.98
D. Contractor's Fee (3.5% of Line A+B+C)	\$16,200.05	\$17,358.69
E. Bonds & Insurance (2 % of Line A+B+C+D)	\$9,581.17	\$10,266.43
<b>F. Subtotal Phase 5</b>	<b>\$488,639.65</b>	<b>\$523,587.83</b>
G. Gross Receipts Tax (5.92% of Line F)	\$28,927.47	\$30,996.40
<b>H. Total Construction Cost Phase 5</b>	<b>\$517,567.12</b>	<b>\$554,584.23</b>



# DEVELOPMENT WHITE PAPER

# **The Economic Benefits of the El Paso & Southwestern Greenway**

Tucson, Arizona

Prepared by:  
Charles A. Flink, FASLA  
President, Greenways Incorporated  
May 2011

## **A. Overview**

The El Paso & Southwestern Greenway will provide numerous benefits to the residents of Tucson and the City of South Tucson. One of the most important of the benefits is the economic return on investment. This paper profiles many of the economic benefits that have been realized by trails and greenways throughout the United States.

*Trails, Greenways and Open Space yield a 3:1 return on every dollar invested to local economies.*

--Trust for Public Land Benefits Study, April 2010

*New emerging high tech, creative and entrepreneurial careers may flourish...needing a better skilled and educated population. Both these trends suggest the need to create quality communities.*

--Richard Florida and others

## **B. Creating Value and Generating Economic Activity**

There are many examples, both nationally and locally, that affirm the positive connection between greenspace, greenways, trails and property values (1). Residential properties nearby the El Paso & Southwestern Greenway will realize a greater gain in value, particularly if they are adjacent to the Greenway. According to a 2002 survey of new homebuyers, by the National Association of Home Realtors and the National Association of Home Builders, trails ranked as the second most important community amenity out of a list of eighteen choices (2). Additionally, the study found that 'trail availability' outranked sixteen other options including security, ball fields, golf courses, parks, and access to shopping or business centers. Findings from the Trust for Public Land's Economic Benefits of Parks and Open Space, and the Rails-to-Trails Conservancy's Economic Benefits of Trails and Greenways illustrate how this value is realized in property value across the country.

### **Greenspace Increases Real Property Values Across the United States:**

**Apex, NC:** The Shepard's Vineyard housing development added \$5,000 to the price of 40 homes adjacent to the greenway as a premium price to similar lots throughout the subdivision ---and those homes were the first to sell (3).

**Front Royal, VA:** A developer who donated a 50-foot-wide, seven-mile-long easement along a popular trail sold all 50 parcels bordering the trail in only four months.

**Salem, OR:** Land adjacent to a greenbelt was found to be worth about \$1,200 an acre more than land only 1000 feet away.

**Oakland, CA:** A three-mile greenbelt around Lake Merritt, near the city center, was found to add \$41 million to surrounding property values.

**Seattle, WA:** Homes bordering the 12-mile Burke-Gilman trail sold for six percent more than other houses of comparable size.

**Brown County, WI:** Lots adjacent to the Mountain Bay Trail sold faster for an average of nine percent more than similar property not located next to the trail.

**Dayton, OH:** Five percent of the selling price of homes near the Cox Arboretum and park was attributable to the proximity of that openspace.

In **metro-Denver**, 73% of real estate agents and 57% of homeowners living adjacent to a trail perceived the trailside location as an asset and priced the homes higher.

Conclusion: Proximity to trails and open space increases property values and marketability of homes.

### **C. Greenway Tourism Creates Economic Opportunity**

Tourism and recreation-related revenues from parks, open space, and trails come in several forms. They create opportunities in construction and maintenance, recreation rentals (such as bicycles, kayaks, and canoes), recreation services (such as shuttle buses and guided tours), historic preservation, restaurants and lodging.

For example, the 35-mile-long Missouri River State Trail saw the addition of 61 businesses along the trail after just one season of operation. Many business owners indicated that they had made a conscious choice to locate their business along the river trail and most reported that the *“trail was having a positive effect on their businesses”*

-- American Hiking Society, 2004 and 2010. Michigan Study of Trail Economic Benefits

**Leadville, CO:** In the months following the opening of the Mineral Belt Trail, the city reported a 19 percent increase in sales tax revenues.

**The Outer Banks, NC:** Bicycling is estimated to have an annual economic impact of \$60 million and support for 1,407 jobs from the 40,800 visitors for whom bicycling

was an important reason for choosing to vacation in the area. The annual return on bicycle facility development in the Outer Banks is approximately ten times higher than the initial investment (4).

**Damascus, VA:** At the Virginia Creeper Trail, a 34-mile trail in southwestern Virginia, locals and non-locals spend approximately \$2.5 million annually related to their recreation visits. Of this amount, non-local visitors spend about \$1.2 million directly in the Washington and Grayson County economies (5).

**Morgantown, WV:** The 45-mile Mon River trail system is credited by the Convention and Visitors Bureau for revitalizing an entire district of the city, with a reported \$200 million in private investment as a direct result of the trail (6).

**Tallahassee, FL:** The Florida Department of Environmental Protection Office of Greenways & Trails estimate an economic benefit of \$2.2 million annually from the 16-mile St. Marks Rails-to-Trails project (8).

**San Antonio, TX:** Riverwalk Park, created for \$425,000, has surpassed the Alamo as the most popular attraction for the city's \$3.5-billion tourism industry (7).

**Allegheny Passage, PA:** The direct economic impact of the rails-to-trails project exceeded \$14 million a year, encouraging the development of several new businesses and a rise in property values in the first trailhead town.

**Dallas, TX:** The 20-mile Mineral Wells to Weatherford Rails-to-Trails project attracts 300,000 people annually and generates local revenues of \$2 million.

*Outdoor recreation is a \$ 750 Billion industry employing 6 million.*

*--Sally Jewell, CEO REI, Inc.*

#### **D. Greater Opportunities for Bicycle and Pedestrian Transportation**

The sprawling nature of many land development patterns often leaves residents and visitors with no choice but to drive, even for short trips. In fact, two-thirds of all car trips made in the U.S. are for a distance of five miles or less. Surveys by the Federal Highway Administration show that Americans are willing to walk as far as two miles to a destination and bicycle as far as five miles. The El Paso & Southwestern Greenway will be an important future component of the local transportation system in Tucson and South Tucson, and will offer effective transportation alternatives for residents connecting homes, workplaces, schools, parks, the downtown, and cultural attractions.

Residents who live adjacent or near the Greenway will be able to walk or bike downtown or to other business destinations for work. Residents will be able to access the Greenway in a safe, efficient, and fun way: walking or biking to local shopping, restaurants and local friend's homes. Residents will be able to move freely along the trail without paying increasingly high gas prices and sitting in

traffic. Last but not least, regional connectivity will be achieved once other trails in Tucson and South Tucson are completed and linked to the El Paso & Southwestern Greenway.

### **E. Improving Health through Active Living**

A network of parks, open space, and trails in Tucson and South Tucson will contribute to the overall health of residents by offering people attractive, safe, accessible places to bike, walk, hike, jog, and skate. In short, parks, open space, and trails create better opportunities for active lifestyles. The design of our communities—including towns, subdivisions, transportation systems, parks, trails, and other public recreational facilities—affects people’s ability to reach the recommended 30 minutes each day of moderately intense physical activity (60 minutes for youth). According to the Centers for Disease Control and Prevention (CDC), *“Physical inactivity causes numerous physical and mental health problems, is responsible for an estimated 200,000 deaths per year, and contributes to the obesity epidemic”* (9).

In identifying a solution, the CDC determined that by creating and improving places in our communities to be physically active, there could be a 25 percent increase in the percentage of people who exercise at least three times a week (10). This is significant considering that for people who are inactive, even small increases in physical activity can bring measurable health benefits (11). Additionally, as people become more physically active outdoors, they make connections with their neighbors that contribute to the health of their community. The El Paso & Southwestern Greenway will become an important Active Community Environment as recommended by the CDC.

Many public agencies across the nation are teaming up with foundations, universities, health care providers and private companies to launch a new kind of health campaign that focuses on improving people’s options instead of reforming their behavior. A 2005 Newsweek Magazine feature, *Designing Heart-Healthy Communities*, cites the goals of such programs: *“The goals range from updating restaurant menus to restoring mass transit, but the most visible efforts focus on making the built environment more conducive to walking and cycling.”* (italics added) (12). Clearly, the connection between health and trails is becoming common knowledge. The Rails-to-Trails Conservancy puts it simply: “Individuals must choose to exercise, but communities can make that choice easier.”

*Access to trails can promote physical health and fitness through regular exercise.*

-- U.S. Centers for Disease Control

*A few minutes a day of exposure to greenways spaces improves mental health*

-- USA Today May 2010

*Trails and Greenways add a 9-Fold return on investment to local economies*

-- Jim Wood Florida Office of Greenways and Trails

## **F. Enhancing Cultural Awareness and Community Identity**

Parks, trails, and open space can serve as connections to local heritage by preserving historic places and by providing access to them. They provide a sense of place and an understanding of past events by drawing the public to historic and cultural sites. Trails often provide access to historic features such as battlegrounds, bridges, buildings, and canals that otherwise would be difficult to access or interpret. Tucson and the city of South Tucson have their own unique histories, their own features and destinations, and their own beautiful landscapes. By recognizing, honoring, and connecting these features, the combined result could serve as major attraction for those outside of the region. Being aware of the historical and cultural context when naming parks and trails and designing features will further enhance the overall trail- and park-user experience.

Trails and greenways are one of the least costly forms of recreational improvements to build and maintain.

## **G. Eight ways Trails and Green Infrastructure Builds Better Economies**

1. Livable Communities Attract Businesses and Quality Employees
2. Attract, Enhance Dining and Lodging Businesses
3. Increase Real Estate Values and Sales
4. Increase Outdoor Recreation Equipment and Apparel Sales
5. Promotes Health and Fitness Lifestyles Helping to Reduce Medical Costs
6. Increase Fiscal Revenues through Healthier Tax Base
7. Construction Jobs/O&M Jobs/Youth Employment
8. Save Money....Live Better

## **H. Case Studies:**

### **American Tobacco Trail, Durham, North Carolina**

The American Tobacco Trail (ATT) is a 22-mile-long rails-to-trails project located in the Research Triangle region of North Carolina. The route crosses through the City of Durham; Durham, Chatham, and Wake counties; the planning jurisdictions of the Towns of Cary and Apex; and passes through the Jordan Lake project lands of the U.S. Army Corps of Engineers. The former Norfolk Southern railroad corridor on which the American Tobacco Trail is being built was originally developed as the New Hope Valley Railroad.

The American Tobacco Trail has helped to spur economic growth and development along its entire 22-mile length as local communities have worked to establish connections to the spine route with connecting trails, bikeways, open space and park projects.

Most of the significant economic transformation has occurred in downtown Durham, North Carolina, in part attributable to the development of the ATT. The

new Durham Bulls baseball stadium (one of the most successful minor league franchises in the United States) serves as a terminal point for the northern end of the ATT. Adjacent to the stadium is the American Tobacco District and former processing plant of the American Tobacco Manufacturing Plant, where tobacco was processed into a variety of smoking and smokeless products for the more than 100 years. With the decline of the tobacco industry in the United States, the manufacturing plant had been abandoned and was slated for demolition. James Goodmon, envisioned an anchor mixed-use retail, service, office and residential development that has transformed downtown Durham into a modern destination. The American Tobacco Trail is part and parcel of this economic transformation.

South of Downtown Durham, the economic transformation of the City continues. One of the most successful suburban mixed-use developments is Sutton Station, home to restaurants, retail businesses, offices and luxury condominiums. The presence of the ATT supported the developers desire to build this high-density mixed use development project.

South of Sutton Station is one of North Carolina's most successful suburban shopping malls, the Streets of Southpoint. The ATT extends through the middle of the shopping complex. The City of Durham and North Carolina Department of Transportation are currently finalizing construction documents to construct a bicycle and pedestrian bridge that will span Interstate 40, linking the northern sections of the ATT to the southern, more rural sections. This will also improve the economic viability of the trail and community, linking residential areas north of the interstate to the shopping mall.

### **Virginia Creeper Trail, Southwestern, Virginia**

The Virginia Creeper Trail (VCT) is a 34-mile long rail-trail project located in southwestern Virginia. The towns of Abingdon, Whitetop Station and Damascus serve as trailheads. Damascus is known as "trail town" due to the fact that five major trails intersect within the community

The VCT attracts thousands of people from all over the world who travel to the towns along the Virginia Creeper Trail to experience an outdoor adventure comprised of biking, hiking, birding, fishing. The local communities offer an array of dining, lodging and shopping opportunities in the area. The VCT is THE major economic force for these communities and provides an economic benefit that exceeds \$3.9 million annually.

The Virginia Creeper is a converted Norfolk and Western Railroad line that was abandoned and transformed in 1977 into a recreation and non-motorized transportation trail. An economic impact analysis completed in 2004 showed that more than 130,000 people used the trail, with 53% of visitors coming from other parts of the eastern United States.

The annual economic benefit compares favorably with other rails-to-trails projects that have been examined, including the St. Marks Rail-Trail in Florida and the Lafayette-Moraga Trail in California. The St. Marks Trail provides an annual economic benefit of more than \$10.6 million, while the Lafayette-Moraga generates \$2.3 million in benefit.

Breaking down the economic benefit of the VCT, the 2004 study showed that business licenses and tax revenues have improved steadily, even during the worst years of the American Recession. For example, tax revenues from business development were \$23,000 in 2003 and grew to \$55,000 by 2009. Tourism-related revenue also increased during the same period by more than 60%.

**‘Benefits’ Footnotes:**

1 American Planning Association. (2002). How Cities Use Parks for Economic Development.

2 National Association of Realtors and National Association of Home Builders. (2002). Consumer’s Survey on Smart Choices for Home Buyers.

3 Rails to Trails Conservancy. (2005). Economic Benefits of Trails and Greenways.

4 NCDOT and ITRE. (2006). Bikeways to Prosperity: Assessing the Economic Impact of Bicycle Facilities.

5 Virginia Department of Conservation. (2004). The Virginia Creeper Trail: An Assessment of User Demographics, Preferences, and Economics.

6 Rails to Trails. (Danzer, 2006). Trails and Tourism.

7 American Planning Association. (2002). How Cities Use Parks for Economic Development.

8 Rails to Trails. (Danzer, 2006). Trails and Tourism.

9 U.S. Department of Health and Human Services, Centers for Disease Control and Prevention. (1996). Physical Activity and Health: A Report of the Surgeon General.

10 U.S. Department of Health and Human Services, Centers for Disease Control and Prevention. (2002). Guide to Community Preventive Services.

11 Rails-to-Trails Conservancy. (2006) Health and Wellness Benefits.

12 Newsweek Magazine. (10/3/2005). Designing Heart-Healthy Communities.

13 Federal Emergency Management Agency. (2005) Building Stronger: State and Local Mitigation Planning.

# FUNDING WHITE PAPER

# **Funding the El Paso and Southwestern Greenway Project**

Tucson, Arizona

May, 2011

Prepared by  
Charles A. Flink, FASLA  
President, Greenways Incorporated

## **Overview**

The purpose of this White Paper is to provide an overview of potential sources of funding for the El Paso and Southwestern Greenway in Tucson, Arizona. Fundamentally, this project is a rails-to-trails conversion project, and as such most of the funding used to construct the trail will come from federal, state and local transportation funding sources. The project also contains unique historic and cultural landscapes, and it extends through a variety of residential and central business district neighborhoods that may qualify for other type of federal, state and local funding. This White Paper addresses a variety of possible sources of funding to support future project construction and recommends project development activities that are most likely to be supported by these specific funding sources.

## **Federal Funding**

### **SAFE, ACCOUNTABLE, FLEXIBLE, EFFICIENT, TRANSPORTATION EQUITY ACT**

(SAFETEA-LU) (U.S. Department of Transportation Federal Highway Administration)

This program is the successor to TEA-21, the Transportation Equity Act for the 21st Century (1998), which was the successor to the Intermodal Surface Transportation Efficiency Act (ISTEA) in 1992. ISTEA is now viewed as the Federal Act that initiated a major policy shift in federal funding priorities making federal funds much more accessible for state and local bicycling and walking facilities and programs. SAFETEA-LU continues and strengthens this new emphasis on improving conditions for bicycling and walking. The SAFETEA-LU bill was intended as a six-year funding bill signed into law on August 10, 2005. Funding will be available for obligation until September 30, 2012. Features of the bill include: Authorization of \$244.1 billion in federal gas-tax revenue and other federal funds for all modes of surface transportation. Includes highways, bus, rail transit, bicycling, and walking. Funds can be dedicated for solely for bicycle or pedestrian facilities or programs.

#### **1) Surface Transportation Program (STP)**

This is the largest single program within the legislation from a funding point of view, with \$32.5 billion committed over the five-year life of the legislation. Of particular interest to bike, pedestrian and greenway projects, 10 percent of the funding has been set aside for Transportation Enhancements (TE) activities. Historically, a little more than half of the TE funds have been used nationally to support

bicycle/pedestrian/trail projects. Approximately, \$1.625 billion has been spent on these projects under SAFETEA-LU.

## 2) Congestion Mitigation and Air Quality (CMAQ)

Under SAFETEA-LU, approximately \$8.6 billion was set aside to address congestion mitigation and air quality improvements in non-attainment areas of the nation. Historically, about five percent of these funds were used to support bicycle/pedestrian/trail projects. This would equal about \$430 million under SAFETEA-LU. The Tucson MPO is a non-attainment area is therefore eligible community for this type of funding. The El Paso and Southwestern Greenway project is an eligible project to be funded by CMAQ.

## 3) Highway Safety Improvement Program (HSIP)

SAFETEA-LU funded this program at approximately \$5 billion per year. Historically, bicycle and pedestrian projects have accounted for one percent of this program, or about \$50 million under SAFETEA-LU. Some of the eligible uses of these funds included traffic calming, bicycle and pedestrian safety improvements, and installation of crossing signs.

## 4) Recreational Trails Program (RTP)

The Recreational Trails Program is specifically set up to fund both motorized and non-motorized trail development. Under SAFTEA-LU funding is established at \$370 million during the term of the legislation. Approximately 30% of these funds are to be spent on non-motorized trails, or an estimated \$110 million. The State of Arizona operates a grant program to distribute to this funding to local governments.

## 5) Safe Routes to School Program (SR2S)

The Safe Routes to School (SR2S) program is a new program under SAFETEA-LU, with \$612 million in funding during the term of the legislation. STRS can be paired with a variety of health and wellness programs, to increase funding for access to the outdoors for children. Each state, including Arizona, has received no less than \$1 million in funding, with 10% to 30% of the funds allocated to non-infrastructure activities.

## 6) Federal Transit Administration Programs

The Federal Transit Administration provides stewardship of combined formula and discretionary programs totaling more than \$10B to support a variety of locally planned, constructed, and operating public transportation systems throughout the nation, including buses.

### 1. Urbanized Area Formula Grants (49 USC 5307)

An urbanized area is an incorporated area with a population of 50,000 or more. Capital is available to improve bicycle and pedestrian access to transit facilities and vehicles, including bike stations.

2. Urbanized Area Formula Grants Transportation Enhancements Set-Aside (49 USC 5307(k))  
1% set aside of section 5307 funds for areas with populations over 200,000 for 9 specific activities included in the definition of Transit Enhancement Activities. Eligible activities include improving pedestrian and bicycle access, bicycle storage facilities, and installing equipment to transport bicycles on mass transportation vehicles.

### 7) Transportation Investment Generating Economic Recovery (TIGER) Discretionary Grants

On February 17, 2009, the President of the United States signed the American Recovery and Reinvestment Act (ARRA) to, among other purposes, preserve and create jobs, promote economic recovery, and invest in transportation infrastructure. ARRA appropriated \$1.5B in discretionary grant funds to the Department of Transportation for capital investment in surface transportation infrastructure. The Department refers to these grants as TIGER Discretionary Grants. Two rounds of grants were distributed in 2009 and 2010. It is not yet known whether a third round of TIGER grants will be made available. Prior funding indicates that the El Paso and Southwestern Greenway would be an eligible project for TIGER funding.

Eligible projects include public transportation projects eligible under Chapter 53 of Title 49 United States Code. These include bicycle and pedestrian improvements. TIGER Discretionary Grants may be used for up to 100% of project costs, but priority will be given to those projects for which federal funding will be required to complete an overall financing package that includes non-federal sources. Additionally, priority is given to projects that can be completed by November, 2012. No more than 20% of the total funds may be awarded to projects in any one state.

*Current Status of Reauthorization: Authorization of a new federal surface transportation bill, to succeed SAFETEA-LU, will likely occur in 2011 or 2012. Indications are that a new transportation bill will be oriented toward "livability" with all transportation modes considered in addition to automobile travel. There are many programs within the enacted SAFETEA-LU that have supported bicycle, pedestrian and greenway project development during the past six years and therefore deserve mention. The following provides a summary of how this federal funding can be used to support certain elements of the El Paso and Southwestern Greenway project.*

*Recommendation: The City of Tucson should consider all of the eligible categories listed to support construction funding of the El Paso and Southwestern Trail. The majority of this funding requires the City to work with the local MPO and the Arizona DOT to apply for funding and to supply a local financial match of at least 20% of requested funds.*

### **National Highway Traffic Safety Administration (NHTSA) State and Community Highway Safety Program**

More commonly referred to as “Section 402 Funds,” these grants exist to assist eligible entities in carrying out specific programs that will have a direct impact in reducing the number of collisions and traffic-related fatalities and injuries. Each year, Arizona receives approximately \$\_M in Section 402 funds from the NHTSA (USDOT). The Arizona Department of Public Safety is tasked with the administration of the state program. Eligible areas of funding include the development, implementation and evaluation of educational and enforcement programs that will enhance pedestrian safety. These funds support, in general, non-construction activities.

*Recommendation: The City of Tucson should explore the use of NHTSA funding for future construction of the El Paso and Southwestern Greenway. This will require the City to contact the Arizona Department of Public Safety to determine which elements of project development are eligible for NHTSA funds. A local financial match of at least 20% will be required.*

### **Urban Revitalization and Liveable Communities Act (Pending Legislation)**

The Urban Revitalization and Livable Communities Act, introduced on November 16, 2009, would assist communities in developing and maintaining community parks in many of the nation’s urban and suburban centers. Specifically, the measure would provide federal grants for communities to rehabilitate existing and develop new urban parks and recreational infrastructure. Grants could also be used to maintain parks to keep them vibrant for many years to come. States and localities would be required to provide matching funds. Under the legislation, the Secretary of Housing and Urban Development (HUD) would give priority to projects that connect children and other community members to the outdoors for physical activity; connect to public transportation; and contain safe biking and walking trails or routes. Notably, eligible projects should also use environmentally beneficial features such as “sustainable landscape features,” tree canopy coverage, improved stormwater management practices, and increased green infrastructure. The measure also encourages and provides grants for community involvement and planning opportunities.

*Current Status: H.R. 3734 was referred to the Referred to the House Education and Labor Subcommittee on Healthy Families and Communities where it is awaiting further action.*

*Recommendation: This is pending legislation. If this program is authorized by Congress, it could provide a major source of funding for the El Paso and Southwestern Greenway project. The City should work with local congressional offices to determine support for this legislation and to define funding that can support future trail development.*

### **Community Development Block Grants (CDBG)**

The Community Development Block Grants through the Department of Housing and Urban Development (HUD), provide funds for community-based projects. Examples of these types of funded projects are:

- Commercial district streetscape improvements;
- Sidewalk improvements;
- Safe routes to school; and
- Neighborhood-based bicycling and walking facilities that improve local transportation options or help revitalize neighborhoods.

*Recommendation: CDBG funding has been used to build greenway projects throughout the United States. The El Paso and Southwestern Greenway extends through areas of the community that are eligible for funding. This funding can support the eligible categories defined above. CDBG grants require a local match of at least 50%.*

### **Environmental Protection Agency (EPA)**

The EPA funds a program that enables communities to clean up polluted properties. Grant funding considers the following factors:

- Needy communities fare better in competition
- High unemployment rates, high poverty rates, loss of jobs population, minority or other sensitive populations.
- Mention any unusually high health concerns in the area. Can any of these be tied to the site(s)?
- Present the environmental, economic, social and health impacts of brownfields on the community
- Environmental Justice concerns
- Focus on the environmental and health impacts of your project.
- “Climate Showcase Communities”

The goal of the program is to create replicable models of sustainable community action that generate cost-effective and persistent greenhouse gas reductions while improving the environmental, economic, public health, or social conditions in a community. The grant awards include a maximum of \$500,000 and a 50% match requirement.

*Recommendation: EPA funding can be used to support specific activities of the El Paso and Southwestern Greenway project. The City of Tucson should explore the use of these funds where applicable.*

### **US Department of Energy (DOE) Energy Efficiency and Conservation Block Grant Program**

This program, authorized in the Energy Independence and Security Act of 2007, exists to assist eligible entities in implementing energy efficiency and conservation strategies to reduce fossil fuel emissions, total energy use, and to improve energy

efficiency in the transportation sector. Specifically, funds are available for transportation infrastructure: bike lanes/pathways, pedestrian walkways, and synchronized traffic signals. The total annual appropriation is \$2B, and DOE will develop a formula for allocating \$1.36B (68%) of the block grants among cities and counties. Approximately \$560M (28%) will be passed to the states and each state will decide how to award these funds among its cities and counties. \$40M (2%) is available in a competitive program to non-formula cities/counties, and the final \$40M (2%) is appropriated under a tribal program.

*Recommendation: The DOE funding can be used to fund eligible aspects of the El Paso and Southwestern Greenway project. The City should explore the use of these funds where applicable.*

### **Historic Preservation Tax Credit Program**

The historic rehabilitation tax credit is the nation's largest federal incentive promoting urban and rural revitalization through private investment in reusing historic buildings. The credit allows the owner of a certified historic structure to receive a federal income tax credit equal to 20% of the amount spent on qualified rehabilitation costs. There is also a 10% credit for older, non-historic buildings. Since it was enacted in 1976, the credit has been widely used as an effective tool for transforming vacant and underutilized buildings into safe, decent, and – in many cases – affordable places to live and do business.

## **State of Arizona Funding**

Within the State of Arizona, there are several sources of funding that could be used to construct the El Paso and Southwestern Greenway project. The majority of these funding programs are supported by federal funding sources. Unfortunately, due to the recent deep recession, several of the state funding programs have suspended distributions. Listed below are the programs that still provide funding support for trail facility development.

### **Arizona Department of Transportation – SAFETEA-LU Funding**

#### **Transportation Enhancements Program**

The Transportation Enhancement (TE) program provides funding for projects in any one of the 12 activities related to surface transportation. The items listed here are the only items eligible for funding. Non-eligible elements can be included in a project if they are identified as separate in the cost estimate, and a funding source other than the TE is identified and used. TE projects are considered Federal-aid reimbursement activities, which means that sponsors receive funding after expenditures have been made. The federal government provides 80 percent of the funds, and the municipalities need to contribute a 20 percent match. The federal

government gives final approval to the projects and distributes the funds directly to the municipalities or nonprofits.

Activity 1: Includes walkways, pedestrian bridges, multi-use pathways, sidewalks, and support facilities for pedestrian and bicyclist use.

Activity 2: Covers enhancements such as safety displays and educational activities related to surface transportation. The activities must have a broad and preferably regional target audience.

Activity 3: Supports the acquisition of property to protect scenic views or historic sites associated with surface transportation. The properties acquired should possess significant aesthetic, natural, visual, or open space values. Historic properties must be eligible or listed in the National Register of Historic Places. (Note: Activity 3 projects will not be eligible in Arizona for funding.)

Activity 4: In addition to the TE Program, separate grant funding is available for projects on state-designated scenic or historic roads under the ADOT Parkways, Historic and Scenic Roads program. Tourist and Welcome Centers are fundable if they are located on or within two miles of a state-designated Parkway, Scenic or Historic road. The facility must relate to the scenic, historic, cultural, archaeological, recreational, or natural qualities that contribute to the highway's designation as a scenic road.

Activity 5: Is intended for landscaping activities. Funding is also included for site furniture such as benches, trash receptacles, etc. Maintenance of landscaping does not qualify under this program.

Activity 6; Any work under this activity must have a strong surface transportation link and result in a project that retains its National Register of Historic Places eligibility.

Activity 7: Is for projects such as the rehabilitation of historic highway maintenance facilities, train depots, and bridges.

Activity 8: The rails-to-trails concept is an appropriate use of this funding activity

Activity 9: Removal of outdoor advertising can improve the aesthetic quality of a roadway.

Activity 10: Is intended for projects to plan and implement archaeological research related to surface transportation routes.

Activity 11: May include treatment for highway runoff, or the construction of wildlife underpasses, bridges or fences.

Activity 12: Transportation museums established using TE funds must meet the following definition of a museum. The facility must:

- Be a legally organized not-for-profit institution or part of a not-for-profit institution or government-entity
- Be essentially educational in nature
- Have a formally stated mission
- Have one full-time paid professional staff member who has museum knowledge and experience and is delegated authority and - allocated financial resources sufficient to operate the museum effectively
- Present regularly scheduled programs and exhibits that use and interpret objects for the public according to accepted standards
- Have a formal and appropriate program of documentation, care, and use of collections and/or tangible objects
- Have a formal and appropriate program of presentations and maintenance of exhibits.

#### Arizona Bicycle and Pedestrian Program

The vision of the Arizona Bicycle and Pedestrian Program is to improve the accommodation of non-motorized modes of transportation within Arizona's multi-modal transportation system. To accomplish this vision, the program is undertaking a diverse set of action steps including:

- Developing a State Highway Bicycle Safety Action Plan to reduce the frequency of bicycle involved crashes, fatalities, and injuries on the state highway system.
- Support the development of a statewide bicycle and pedestrian networks for transportation, recreation, health and tourism-based economic development.
- Preparation of a Statewide Bicycle and Pedestrian Plan that provides a long-term strategy for a system of shared roadways and bicycle and pedestrian facilities for the ADOT State Highway System. The Plan guides ADOT in making transportation decisions, which impact bicycling and pedestrian activities, and improves the accommodation of these non-motorized modes of transportation within Arizona's transportation system. In addition, the Plan recommends policies, design, and maintenance guidelines for consideration by all implementing agencies in Arizona.

#### Arizona Safe Routes to School Program

The Safe Routes to School Program (SRTS) was created by the U.S. Congress as part of SAFETEA-LU. The primary reason for developing this program is to address the growing epidemic of childhood obesity and diabetes. This national epidemic is the result of children's inability to get physical activity, such as biking and walking to school, due to the lack of safe and convenient ways to do so. The SRTS program accomplishes this by providing funds for schools and communities to implement infrastructure projects (such as sidewalk improvements, trails, and traffic calming) and non-infrastructure programs (such as education campaigns, law enforcement efforts, and prize giveaways).

Infrastructure projects involve construction and capital improvements to encourage children to walk and bicycle to school.

**Eligible Activities:**

Projects include the planning, design, and construction of infrastructure-related projects that will substantially improve the ability of students to walk and bicycle to school, including

- Sidewalk improvements.
- Traffic calming and speed reduction improvements.
- Pedestrian and bicycle crossing improvements.
- On-street bicycle facilities.
- Off-street bicycle and pedestrian facilities.
- Secure bicycle and pedestrian facilities.
- Traffic diversion improvements in the vicinity of schools.

Given the general guidelines established in the legislation, each state Department of Transportation will be responsible for determining the specific types of infrastructure projects that are eligible for this program. Below is a list of potential infrastructure projects that some states have used for existing Safe Routes to School or related programs. This list is not intended to be comprehensive; other types of projects that are not on this list may also be eligible if they meet the objectives of reducing speeds and improving pedestrian and bicycle safety and access.

- Sidewalk improvements; new sidewalks, sidewalk widening, sidewalk gap closures, sidewalk repairs, curbs, gutters, and curb ramps.
- Traffic calming and speed reduction improvements: roundabouts, bulb-outs, speed humps, raised crossings, raised intersections, median refuges, narrowed traffic lanes, lane reductions, full- or half-street closures, automated speed enforcement, and variable speed limits.
- Pedestrian and bicycle crossing improvements: crossings, median refuges, raised crossings, raised intersections, traffic control devices (including new or upgraded traffic signals, pavement markings, traffic stripes, in-roadway crossing lights, flashing beacons, bicycle-sensitive signal actuation devices, pedestrian countdown signals, permanent vehicle speed feedback signs, and pedestrian activated signal upgrades), and sight distance improvements.
- On-street bicycle facilities: new or upgraded bicycle lanes, widened outside lanes or roadway shoulders, geometric improvements, turning lanes, channelization and roadway realignment, traffic signs, and pavement markings.
- Off-street bicycle and pedestrian facilities: exclusive multi-use bicycle and pedestrian trails and pathways that are separated from a roadway.
- Secure bicycle parking facilities: bicycle parking racks, bicycle lockers, designated areas with safety lighting, and covered bicycle shelters. Traffic diversion improvements: separation of pedestrians and bicycles from

vehicular traffic adjacent to school facilities, and traffic diversion away from school zones or designated routes to a school.

Planning, design, and engineering expenses, including consultant services, associated with developing eligible infrastructure projects are also eligible to receive infrastructure funds.

*Recommendation: This is the most likely source of funding for the El Paso and Southwestern Greenway project. The City of Tucson should work with the MPO and Arizona Department of Transportation to program funding from these categories and sources for future project construction.*

### **Arizona State Parks**

The Grants Section of Arizona State Parks is responsible for managing eight Grant Programs administered by the Arizona State Parks Board. More than \$32 million has traditionally been available annually to Arizona communities, resource managers and agencies to preserve and enhance Arizona's significant natural open space, cultural and recreational resources.

Programs include three components of the **Arizona State Parks Heritage Fund**: The Historic Preservation (HP) Grant Fund Program, the Trails Grant Fund Program and the Local, Regional and State Parks (LRSP) Grant Fund Program. In addition to the Heritage Fund Programs, the Grants Section also manages the **Land and Water Conservation Fund (LWCF) Grant Program**, the **Recreational Trails Grant Program (RTP)**, the **State Lake Improvement Fund (SLIF) Grant Program**, the **Law Enforcement Boating Safety Fund (LEBSF) Grant Program**, and the **Growing Smarter State Trust Land Acquisition Grant Fund Program**. Due to budget constraints, the only actively funded programs as of this white paper are the Federally funded Recreational Trails Program, the Growing Smarter State Trust Land Acquisition Program.

All grant programs operate on a reimbursement basis. Reimbursements to grantees are made according to the percentage specified in the participant agreement for eligible expenditures included within the project's approved scope of work. Grant administration is accomplished through the development of application guidelines and a priority rating system, the execution of Participant Agreements and Preservation Conservation Easement Deeds with grantees, and the subsequent monitoring of administrative compliance, expended funds, and project work. To assist with this responsibility, the Grants staff works with the following advisory committees: the Historic Preservation Advisory Committee (HPAC), the Arizona Outdoor Recreation Coordinating Commission (AORCC), the Off-Highway Vehicle Advisory Group (OHVAG), the Arizona State Committee on Trails (ASCOT), and the Conservation Acquisition Board (CAB) to develop policies and criteria that enable the competitive, equitable distribution of grant funds. The advisory committees also review eligible project applications and make recommendations for grant funding levels for consideration and final action by the Arizona State Parks Board.

Contact: Robert Baldwin (602) 542-7130, [rbb2\(at\)azstateparks.gov](mailto:rbb2@azstateparks.gov)

### Recreational Trails Program

Federal Recreational Trails Program (RTP) funds are allocated to States for recreational trails projects through the Surface Transportation Act. The current act is called SAFETEA-LU. (The 109th Congress enacted the *Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users* (SAFETEA-LU) It authorizes the RTP federal aid program and codifies it in Federal statutes under section 206 of title 23, US Code). This federal-assistance program is administered by Arizona State Parks in partnership with the Arizona Department of Transportation (ADOT) and Federal Highway Administration (FHWA). Approximately \$600,000 is available per year through Arizona State Parks to eligible applicants for competitive motorized grants.

The State Parks Board conducts an annual competitive grant process to award motorized trail recreation monies to eligible applicants. Eligible applicants include cities, towns, counties, tribal governments, state and federal agencies, and non-profit organizations. Proposed projects are rated according to criteria developed to fund projects that meet the needs identified in the Arizona Trails Plan. Applicants are encouraged to partner with the user community in designing and developing their projects. The State Parks Board may also provide funds, when available, to land managing entities (such as the National Forest Service, National Park Service, Bureau of Land Management, and State Land Department) by entering into interagency agreements to accomplish the mission of the state program. State Parks, in partnership with land managing agencies and trail user groups, use a portion of the Trail Recreation Fund to launch a successful education outreach.

Examples of eligible projects include, but are not limited to: development, construction, enhancement and operation of off-highway vehicle recreation facilities, use areas and trails; mitigation of damages to land caused by vehicles, trailheads, restrooms, access improvements, signing, picnic and camping areas, route inventories, and brochure production.

*Recommendation: This is the another likely source of funding for the El Paso and Southwestern Greenway project. The City of Tucson should work with the grants coordinator to determine the amount of available funding from these categories.*

### **Arizona State Historic Preservation Office**

The Arizona State Historic Preservation Office: SHPO, a division of Arizona State Parks, assists private citizens, private institutions, local governments, tribes, and state and federal agencies in the identification, evaluation, protection, and enhancement of historic and archaeological properties that have significance for local communities, the State of Arizona, or the Nation. The role and function of the SHPO is defined in both state law (Arizona Historic Preservation Act) and federal law (National Historic Preservation Act, as amended). Activities of the SHPO include:

- Statewide survey to identify and evaluate historic structures and archaeological sites;
- Nomination of eligible historic and archaeological properties to the National Register of Historic Places;
- Review of federal and state actions that may affect historic and archaeological properties;
- Technical assistance to owners of historic properties;
- Technical assistance to Certified Local Governments/local preservation commissions;
- Public education and awareness programs;
- Assistance through matching grants; and assistance to property owners seeking tax credits and incentives.

For more information contact:  
 SHPO Administrative Assistant  
 Arizona State Parks  
 1300 W. Washington Street  
 Phoenix, AZ 85007

## **Local Government Funding**

There are many examples of communities creating revenue streams to improve conditions for bicycling and walking. Common approaches include: general fund appropriations, special bond issues, dedicating a portion of local sales taxes, and use of the annual capital improvement budgets of Public Works and/or Parks agencies.

### Tucson and South Tucson Capital Improvements Program

The cities of Tucson and South Tucson will need to appropriate funds from its Capital improvements Program or General Fund to provide matching funding for eligible grant funding.

### Bond Funds or Special Funding

Other funding may come from bonding or specific funding accounts, either in conjunction with roadway transportation projects, as park development projects, or as stand alone trail or bicycle improvement projects. Trails can be implemented using bond funds alone or as the local match in grant applications. Bonds can be used as the local match in applying for reimbursement grants offered by the Federal Highway Administration through AZDOT. Several bonding opportunities exist that include, Revenue Bonds, General Obligation Bonds and Special Assessment Bonds

### Special Districts

Several kinds of special districts can help fund land bikeway and walkway improvements, acquisition or maintenance. Special assessment districts are separate units of government that manage specific resources within defined boundaries. Districts vary in size, encompassing a single community or business district. They can be established by the local government or by voter initiative,

depending on state laws and regulations. As self-financing legal entities, these districts have the ability to raise a predictable stream of money (through taxes, user fees, or bonds) directly from the people who benefit from the services—often parks and recreation. Special districts are helping protect and maintain parkland throughout the country.

#### Local Businesses and Partnerships

There is increasing corporate and business involvement in trail and conservation projects. Employers recognize that creating places to bike and walk is one way to build community and attract a quality work force. Bicycling and outdoor recreation businesses often support local projects and programs. Partnership engenders a spirit of cooperation, civic pride and community participation. Name recognition for corporate partners could be accomplished through signage and naming rights. For further details and tips for accessing the corporate and business community contact the Trails and Greenways Clearinghouse at the Rails-to-Trails Conservancy: 1-877-GRNWAYS (476-9297).

#### Local Trail Sponsors

A sponsorship program for trail amenities allows smaller donations to be received from both individuals and businesses. Cash donations could be placed into a trust fund to be accessed for certain construction or acquisition projects associated with the greenways and open space system. Some recognition of the donors is appropriate and can be accomplished through the placement of a plaque, the naming of a trail segment, and/or special recognition at an opening ceremony. Types of gifts other than cash could include donations of services, equipment, labor, or reduced costs for supplies.

#### Volunteer Work

It is expected that many citizens will be excited about the development of a greenway corridor or a new park or canoe access point. Individual volunteers from the community can be brought together with groups of volunteers from church groups, civic groups, scout troops and environmental groups to work on greenway development on special community workdays. Volunteers can also be used for fund-raising, maintenance, and programming needs. Many State grant programs recognize these local efforts and assign a dollar value as in-kind services towards a local match requirement.

## **Private Sector Funding**

### **Private Foundations and Corporations**

Many communities have solicited trail and greenway funding assistance from private foundations and other conservation-minded benefactors. Below are examples of private funding opportunities available nationwide and in Arizona.

#### **American Greenways Eastman Kodak Awards**

The Conservation Fund's American Greenways Program has teamed with the Eastman Kodak Corporation and the National Geographic Society to award small grants (\$250 to \$2,000) to stimulate the planning, design and development of greenways. These grants can be used for activities such as mapping, conducting ecological assessments, surveying land, holding conferences, developing brochures, producing interpretive displays, incorporating land trusts, and building trails. Grants cannot be used for academic research, institutional support, lobbying or political activities. For more information visit The Conservation Fund's website at: [www.conservationfund.org](http://www.conservationfund.org).

#### **Bikes Belong Coalition**

Bikes Belong formed in 1999 when U.S. bicycle companies recognized an exceptional opportunity to work together to maximize bike funding in TEA-21 – the multi-year transportation bill of the time. The initial goal was to ensure funding for new bicycle facilities that would increase riding, boost public health and enjoyment, and strengthen the bike business. In the intervening years, Bikes Belong has successfully harnessed the collective power of the U.S. bicycle industry. They have steadily expanded their efforts, but remain focused on creating safe places to ride so more people will bike, and bike more by:

- Working with the federal government to maximize federal funding for bicycling
- Awarding grants to help create more and better places to ride
- Sponsoring programs to help cities and towns become more bike-friendly
- Cultivating cooperation throughout the bike industry

The Bikes Belong Grants Program funds important and influential projects that leverage federal funding. These projects include bike paths, lanes, routes, as well as bike parks, mountain bike trails, BMX facilities, and large-scale bicycle advocacy initiatives. Since 1999, Bikes Belong has awarded 186 grants in 45 states, investing nearly \$1.5M in bicycling projects and leveraging close to \$500M in federal, state, and private funding.

Bikes Belong will accept requests for funding up to \$10,000 for project construction. They do not require a specific match, but will not consider grant requests in which they are the sole funder – they look for existing funding partnerships. Priority is given to bicycle organizations, coalitions, and associations that have not received Bikes Belong funding in the past.

Applications are reviewed on a quarterly basis, and typically 15-20% of the received applications are approved.

#### Active Living by Design

Active Living by Design was established in 2001 as a national program office of the Robert Wood Johnson Foundation. Based in Princeton, New Jersey, the mission of the Robert Wood Johnson Foundation is to improve the health and health care of all Americans. Active Living by Design works with local and national partners to build a culture of active living by pursuing a “5P Approach.” Active Living by Design has focused on five strategies to promote physical activity: preparation, promotions, programs, policies, and physical projects.

Active Living by Design’s approach to grant making is “high touch, low dollar” and is demonstrated by modest financial contributions to the community partnerships – just \$200,000 over five years for each site – but providing generous support in the form of high-quality technical assistance to build capacity in the communities.

Active Living by Design can be reached at  
University of North Carolina at Chapel Hill School of Public Health  
400 Market Street, Suite 205  
Chapel Hill, NC 27516-4028  
(919) 843-2523

#### General Mills Foundation

The General Mills Foundation was created in 1954 to focus on the Company’s philanthropic resources on community needs. The Foundation’s mission is to provide financial assistance to nonprofit organizations that create sustainable community improvement in the areas of youth nutrition and fitness, social services, education and arts and culture. Based in the General Mills World Headquarters in Minneapolis, the Foundation has awarded over \$400M to nonprofits since its inception. In fiscal 2008, the Foundation contributed \$21M in grants.

Among the Foundation’s four grant categories, the Champions for Healthy Kids grant program is most relevant to the Bicycle and Pedestrian Master Plan. Under this category, the Foundation awards 50 grants per year of \$10,000 each to community-based groups that develop creative ways to help youth adopt a physically active lifestyle. The grant cycle begins in November when applications are made available. Grant checks are mailed to recipients in May. The Foundation may be reached at [Community.ActioQA@genmills.com](mailto:Community.ActioQA@genmills.com) . (763) 764-2211. [www.generalmills.com/corporate/index.aspx](http://www.generalmills.com/corporate/index.aspx).

#### Surdna Foundation

Surdna is a New York-based family foundation established in 1917 to pursue philanthropic purposes. The foundation makes grants to non-profit organizations in the areas of environment, community revitalization, effective citizenry, the arts and the non-profit sector, with annual grantmaking of approximately \$37M. Applicants

are asked to first submit a letter of inquiry to request funding. Due to the large number of requests Surdna receives, applicants are asked to send full proposals only when requested by the foundation following a successful review of the letter of inquiry.

Within the context of the Bicycle and Pedestrian Master Plan, the following information describes the relevant grant programs:

- Build support for programs to stabilize climate change at the local, state, and national level. This includes accelerating energy efficient solutions to conserve energy, reduce emissions and promote a “green” economy.
- Improve transportation systems and patterns of land use across metropolitan areas, working landscapes, and intact ecosystems. Specifically, this grant category seeks to ensure the implementation of demonstration projects that will improve patterns of land use and transportation systems in metropolitan areas, enhance community sustainability, and enhance regional green infrastructure.

•  
The Surdna Foundation can be reached at:  
330 Madison Avenue, 30th Floor  
New York, NY 10017  
(212) 557-0010

#### The Robert Wood Johnson Foundation

The Robert Wood Johnson Foundation was established as a national philanthropy in 1972 and today it is the largest U.S. foundation devoted to improving the health and health care of all Americans. Grant making is concentrated in four areas:

- To assure that all Americans have access to basic health care at a reasonable cost
- To improve care and support for people with chronic health conditions
- To promote healthy communities and lifestyles
- To reduce the personal, social and economic harm caused by substance abuse: tobacco, alcohol, and illicit drugs

For more specific information about what types of projects are funded and how to apply, visit <http://www.rwjf.org/applications/>.

# GEOTECHNICAL REPORT

# Geotechnical Engineering Report

For Structures Selection Report  
El Paso and Southwestern Railroad Greenway  
Historic Railroad Alignment  
From Main Avenue and University Boulevard to  
Kino Sports Complex  
Tucson, Arizona

April 1, 2011

Terracon Project No. 63085143

**Prepared for:**

Kimley-Horn Associates, Inc.  
Tucson, Arizona

**Prepared by:**

Terracon Consultants, Inc.  
Tucson, Arizona



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Geotechnical ■ Environmental ■ Construction Materials ■ Facilities

April 1, 2011

Kimley-Horn and Associates, Inc.  
2210 E. Fort Lowell Road  
Tucson, Arizona 85719

Attn: Sandra (Tolley) Bolduc, RLA, LEED AP  
P: [520] 352 8644  
F: [520] 615-9292  
E: [sandra.bolduc@kimley-horn.com](mailto:sandra.bolduc@kimley-horn.com)

Re: Geotechnical Engineering Report  
For Structures Selection Report  
El Paso and Southwestern Railroad Greenway  
Historic Railroad Alignment  
From Main Avenue and University Boulevard to Kino Sports Complex  
Tucson, Arizona  
Terracon Project No. 63085143

Dear Ms. Bolduc:

Terracon Consultants, Inc. (Terracon) has completed the geotechnical engineering services for the above referenced project. These services were performed in general accordance with our proposal; number D6308226 dated December 15, 2008. This geotechnical engineering report presents the results of the subsurface exploration and provides geotechnical recommendations concerning the design and construction of foundations for the pedestrian crossings to be constructed for the proposed project.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning this report, or if we may be of further service, please contact us.

Sincerely,  
**Terracon Consultants, Inc.**



Bryan W. Reed, P.E.  
Project Manager



Oleg B. Lysyj, P.E.  
Principal

N:\Projects\2008\63085143\63085143.structures selection report.doc

Copies to: Addressee (1 via email, 1 via mail)

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Expires 03/31/2012

**GEOTECHNICAL ENGINEERING REPORT  
FOR STRUCTURES SELECTION REPORT  
EL PASO AND SOUTHWESTERN RAILROAD GREENWAY  
HISTORIC RAILROAD ALIGNMENT  
FROM MAIN AVE. AND UNIVERSITY BLVD. TO  
KINO SPORTS COMPLEX  
TUCSON, ARIZONA**

**Terracon Project No. 63085143**

**EXECUTIVE SUMMARY**

A geotechnical investigation has been performed for the proposed pedestrian crossings to be constructed as part of the El Paso and Southwestern Railroad Greenway in Tucson, Arizona. Crossings will be located at the pathway's intersection with: Congress Street, 22<sup>nd</sup> Street, and Kino Parkway. Terracon performed 6 borings, designated B-1 through B-6, to depths of approximately 51½ feet below the existing ground surface. This report specifically addresses the recommendations for the proposed pedestrian crossings. Terracon previously prepared a Preliminary Geotechnical Engineering Report along the alignment dated March 17, 2009.

Based on the information obtained from our subsurface exploration the site can be developed for the proposed project. The following geotechnical considerations were identified:

- We recommend the proposed bridges be supported on drilled shaft foundations. Recommended design parameters for the foundations are provided in Section 4.3 of this report. Minor structural elements, such as ramps and stairs, may be supported on shallow spread footing foundations, however due to presence of near surface collapsible soils these structures should be supported on engineered fill.
- The Acceleration Coefficient, as determined by the 2008 Seismic Hazard maps is 0.04358. The AASHTO Site Coefficient, based on the soil profile encountered is Type II.
- Close monitoring of the construction operations discussed herein will be critical in achieving the design subgrade support. We therefore recommend that the Terracon be retained to monitor this portion of the work.
- This summary should be used in conjunction with the entire report for design purposes. It should be recognized that details were not included or fully developed in this section, and the report must be read in its entirety for a comprehensive understanding of the items contained herein. The section titled **GENERAL COMMENTS** should be read for an understanding of the report limitations.

**GEOTECHNICAL ENGINEERING REPORT  
FOR STRUCTURES SELECTION REPORT  
EL PASO AND SOUTHWESTERN RAILROAD GREENWAY  
HISTORIC RAILROAD ALIGNMENT  
FROM MAIN AVE. AND UNIVERSITY BLVD. TO  
KINO SPORTS COMPLEX  
TUCSON, ARIZONA**

**Terracon Project No. 63085143**

## **1.0 INTRODUCTION**

This report presents the results of our geotechnical engineering services performed for the El Paso and Southwestern Railroad Greenway Historic Railroad Alignment to extend from the intersection of University Boulevard and Main Avenue to Kino Sports Complex in Tucson, Arizona. Specifically, a pedestrian crossing will be required at each of three intersections of the proposed path. These crossings are located at Congress Street, 22<sup>nd</sup> Street, and Kino Parkway. The purpose of these services is to provide information and geotechnical engineering recommendations for the Structures Selection Report relative to:

- subsurface soil conditions
- earthwork
- seismic considerations
- groundwater conditions
- foundation design and construction
- lateral earth pressure

Our geotechnical engineering scope of work for this project included the advancement of 6 test borings, 2 at each crossing location, to depths of approximately 51½ feet below existing site grades.

Logs of the borings along with Site Plan and Boring Locations Diagrams (Exhibit A-1 thru A-3), are included in Appendix A of this report. The results of the laboratory testing performed on soil samples obtained from the site during the field exploration are included in Appendix B of this report. Descriptions of the field exploration and laboratory testing are included in their respective appendices.

## 2.0 PROJECT INFORMATION

### 2.1 Project Description

Item	Description
Site layout	Refer to the Site Plan and Boring Locations Diagrams (Exhibit A-1 thru A-3 in Appendix A).
Structures	We expect the pedestrian crossings will each consist of a single span bridge.
Maximum loads	Assumed Abutment Gravity Load – 1000 kips Assumed Miscellaneous Ramp and Stair Loads – 40 kips
Maximum allowable settlement	1-inch (assumed)
Grading	We expect that minimal site grading (less than 2 feet) will be required.
Retaining walls	We do not anticipate any retaining wall will be constructed as part of this project.

### 2.2 Site Location and Description

Item	Description
Location	Three crossing sites: East of the intersection of Interstate-10 and Congress Street East of the intersection of Interstate-10 and 22 <sup>nd</sup> Street North of the intersection of Interstate-10 and Kino Parkway
Existing site features	There are five travel lanes (2 in each direction and a center turn-lane) at the Congress Street and 22 <sup>nd</sup> Street Crossings. There are 6 travel lanes (3 in each direction) and a landscaped median at the Kino Parkway Crossing
Surrounding developments	The Congress and 22 <sup>nd</sup> Street crossings are surrounded by retail developments and government buildings. The Kino crossing is currently undeveloped on the west side but we understand a planned development may soon begin construction.
Current ground cover	Mix of pavement, and bare soil.
Existing topography	The Congress Site is relatively flat and level. The 22 <sup>nd</sup> Street site is generally flat and level; however a drainage channel crosses under 22 <sup>nd</sup> Street, adjacent to the proposed crossing. At Kino there is a wash located to the south of the crossing that flows beneath the roadway. In addition, the embankment for the Kino/I-10 interchange begins just north of the proposed crossing location.

### 3.0 SUBSURFACE CONDITIONS

A cursory review of published geologic information was provided in our preliminary report, dated March 17, 2009.

#### 3.1 Typical Subsurface Profile

Specific conditions encountered at each boring location are indicated on the individual boring logs. Stratification boundaries on the boring logs represent the approximate location of changes in soil types; in-situ, the transition between materials may be gradual. Details for each of the borings can be found on the boring logs included in Appendix A of this report. Based on the results of the borings, subsurface conditions on the project site can be generalized as follows:

Congress Street Crossing:

Description	Approximate Depth to Bottom of Stratum (feet)	Material Encountered	Consistency/Density
Stratum 1	19	Sandy Lean Clay	Stiff
Stratum 2	28	Silty Sand with Gravel	Medium Dense
Stratum 3	34	Clayey Sand with Gravel	Medium Dense
Stratum 4	51½	Lean Clay with Sand	Very Stiff

22<sup>nd</sup> Street Crossing:

Description	Approximate Depth to Bottom of Stratum (feet)	Material Encountered	Consistency/Density
Stratum 1	8	Clayey Sand with Gravel	Loose
Stratum 2	29	Lean Clay	Stiff
Stratum 3	43	Poorly Graded Sand with Gravel	Dense
Stratum 4	51½	Clayey Sand with Gravel	Medium Dense

Kino Parkway Crossing:

Description	Approximate Depth to Bottom of Stratum (feet)	Material Encountered	Consistency/Density
Stratum 1	18	Clayey Sand With Gravel	Medium Dense
Stratum 2	51½	Sandy Lean Clay	Hard

The sandy lean clay and clayey sand soils have plasticities in the low to medium range. The subsurface poorly graded sand with gravel soils is non-plastic.

Laboratory tests were conducted on selected soil samples and the test results are presented in Appendix B. Laboratory test results indicate that the subsoils at shallow depth exhibit low to moderate compression at in-situ moisture contents. The soils show a significant tendency for hydro-compaction when elevated in moisture content. Hydro-compactive soils, sometimes referred to as collapsible soils, are capable of supporting typical building loads at natural moisture contents, these same materials however, undergo volume decrease (settlement/consolidation) when subjected to increases in moisture content under constant load.

### **3.2 Groundwater**

Groundwater was not observed in any test boring at the time of field exploration. These observations represent groundwater conditions at the time of the field exploration and may not be indicative of other times, or at other locations. Groundwater conditions can change with varying seasonal and weather conditions, and other factors.

## **4.0 RECOMMENDATIONS FOR DESIGN AND CONSTRUCTION**

### **4.1 Geotechnical Considerations**

The site appears suitable for the proposed construction based upon geotechnical conditions encountered in the test borings. We recommend the bridges be supported on drilled shaft foundations. Minor structures, such as ramps and stairs, may be supported on spread footing systems; however potentially compressible soils, which show significant tendency for hydro-compaction when elevated in moisture content, will require particular attention in the design and construction of shallow foundations. Hydro-compactive soils, sometimes referred to as collapsible soils, are capable of supporting typical building loads at natural moisture contents, these same materials however, undergo volume decrease, including settlement and consolidation, when subjected to increases in moisture content under constant load. Due to the potential for hydro-compaction in the near surface soils, spread footings bearing on engineered fill are recommended for support of minor structures. On-site soils should be suitable for use as engineered fill beneath the foundations.

Estimated movements described in this report are based on effective drainage for the life of the structure and cannot be relied upon if effective drainage is not maintained. Exposed ground, extending less than 10 feet from the perimeter of the structure, should be sloped a minimum of 5% away to provide positive drainage away from the structure. Grades around the structure should be periodically inspected and adjusted as part of the structure's maintenance program.

Geotechnical engineering recommendations for foundation systems and other earth connected phases of the project are outlined below. The recommendations contained in this report are

based upon the results of field and laboratory testing (which are presented in Appendices A and B), engineering analyses, and our current understanding of the proposed project.

## **4.2 Earthwork**

The following recommendations include site preparation, excavation, subgrade preparation and placement of engineered fills on the project. The recommendations presented for design and construction of foundations, are contingent upon following the recommendations outlined in this section.

Earthwork on the project should be observed and evaluated by Terracon. The evaluation of earthwork should include observation and testing of engineered fill, subgrade preparation, foundation bearing soils, and other geotechnical conditions exposed during the construction of the project.

### **4.2.1 Site Preparation**

Strip and remove existing vegetation, debris, pavements, and other deleterious materials from proposed structure areas.

Stripped materials consisting of vegetation and organic materials should be wasted from the site, or used to revegetate landscaped areas or exposed slopes after completion of grading operations. If it is necessary to dispose of organic materials on site, they should be placed in non-structural areas, and in fill sections not exceeding 5 feet in height.

Areas where shallow foundations will be located should be initially graded to create a relatively level surface to receive fill, and provide for a relatively uniform thickness of fill beneath the proposed structures.

If fill is placed in areas of the site where existing slopes are steeper than 5:1 (horizontal:vertical), the area should be benched to reduce the potential for slippage between existing slopes and fills. Benches should be wide enough to accommodate compaction and earth moving equipment, and to allow placement of horizontal lifts of fill.

Although evidence of fills or underground facilities such as septic tanks, cesspools, basements, and utilities was not observed during the site reconnaissance, such features could be encountered during construction. If unexpected fills or underground facilities are encountered, such features should be removed and the excavation thoroughly cleaned prior to backfill placement and/or construction.

## 4.2.2 Excavation

It is anticipated that excavations for the proposed construction can be accomplished with conventional earthmoving equipment.

Depending upon seasonal conditions, groundwater may be encountered in excavations on the site. Pumping from sumps may be utilized to control water within excavations. Well points may be required for significant groundwater flow, or where excavations penetrate groundwater to a significant depth.

On-site soils may pump or become unworkable at high water contents. Workability may be improved by scarifying and drying. Overexcavation of wet zones and replacement with granular materials may be necessary. Lightweight excavation equipment may be required to reduce subgrade pumping.

The use of biaxial geogrid may be considered to stabilize the soils and to reduce the amount of overexcavation that may otherwise be required. Use of lime, fly ash, kiln dust or cement could also be considered as a stabilization technique. Laboratory evaluation is recommended to determine the effect of chemical stabilization on subgrade soils prior to construction.

## 4.2.3 Subgrade Preparation

Due to the presence of hydrocompactive soils, shallow foundations should bear on engineered fill as follows:

Foundation Type	Depth Of Fill Below Footing	Lateral Extent Of Fill Beyond the Edge of Footing
Column	24 inches for footings 48 inches wide or less.	24 inches for footings 36 inches wide or less.
	1/2 the width of the footing for footings larger than 48 inches wide.	2/3 width of footings larger than 36 inches wide.
Wall	24 inches for footings 24 inches wide or less.	24 inches for footings 24 inches wide or less.
	Width of the footing for footings larger than 24 inches wide	2/3 width of the footings larger than 24 inches wide.

Exposed areas which will receive fill, once properly cleared and benched where necessary, should be scarified to a minimum depth of 10 inches, moisture conditioned, and compacted per the compaction requirements in Section 4.2.4.

Areas of loose soils may be encountered at foundation bearing depths. When such conditions exist beneath planned footing areas the subgrade soils should be surficially compacted prior to placement of the foundation system. If sufficient compaction cannot be achieved in-place the loose soils should be removed and replaced as engineered fill. The excavation should be widened laterally at least 8 inches for each 12 inches of fill placed below footing base elevations.

**4.2.4 Fill Materials and Placement**

All fill materials should be inorganic soils free of vegetation, debris, and fragments larger than 6 inches in size. Pea gravel or other similar non-cementitious, poorly-graded materials should not be used as fill or backfill without the prior approval of the geotechnical engineer.

Clean on-site soils or approved imported materials may be used as fill material for the following:

- general site grading
- foundation areas
- foundation backfill

Imported soils for use as fill material within proposed building and structure areas should conform to low volume change materials as indicated in the following specifications:

<u>Gradation</u>	<u>Percent Finer by Weight (ASTM C 136)</u>
6" .....	100
3" .....	70-100
No. 4 Sieve .....	50-100
No. 200 Sieve .....	60 (max)
■ Liquid Limit .....	40 (max)
■ Plasticity Index .....	20 (max)
■ Maximum expansive potential (%)* .....	1.5

\*Measured on a sample compacted to approximately 95 percent of the ASTM D698 maximum dry density at about 3 percent below optimum water content. The sample is confined under a 100 psf surcharge and submerged/inundated.

Engineered fill should be placed and compacted in horizontal lifts, using equipment and procedures that will produce recommended moisture contents and densities throughout the lift. Fill lifts should not exceed 10 inches loose thickness.

#### 4.2.5 Compaction Requirements

Recommended compaction and moisture content criteria for engineered fill materials are as follows:

Material Type and Location	Per the Standard Proctor Test (ASTM D 698)		
	Minimum Compaction Requirement (%)	Range of Moisture Contents for Compaction	
		Minimum	Maximum
On-site granular or approved imported fill soils:			
Beneath foundations:	95	-3%	+3%
Miscellaneous backfill:	95	-3%	+3%

#### 4.2.6 Grading and Drainage

Positive drainage should be provided during construction and maintained throughout the life of the development. Infiltration of water into utility trenches or foundation excavations should be prevented during construction. Planters and other surface features which could retain water in areas adjacent to the structure should be sealed or eliminated. In areas where sidewalks or paving do not immediately adjoin the structure, we recommend that protective slopes be provided with a minimum grade of approximately 5 percent for at least 10 feet from the structure. Backfill against footings, and in utility and sprinkler line trenches should be well compacted and free of all construction debris to reduce the possibility of moisture infiltration. We recommend a minimum horizontal setback distance of 10 feet from the perimeter of any structure and the high-water elevation of the nearest storm-water retention basin.

Deck drainage should discharge into splash blocks or extensions when the ground surface beneath such features is not protected by exterior slabs or paving. Sprinkler systems and landscaped irrigation should not be installed within 5 feet of foundations.

#### 4.2.7 Slopes

For permanent slopes in compacted fill areas, recommended maximum configurations for on-site materials are as follows:

Maximum Slope Configuration	
Inclination (horizontal:vertical)	Slope Treatment
5:1 to less steep than 2:1	Re-vegetate
2:1 to less steep than 1.5:1	Rip-rap over filter fabric
Steeper than 1:1.5	Stability analysis or structural retaining wall required

We expect slopes with this configuration to be resistant to erosion and stable against circular failure. The face of all slopes should be compacted to the minimum specification for fill embankments. Alternately, fill slopes can be over-built with compacted material and trimmed to final configurations.

#### 4.2.8 Corrosion Potential

Results of soluble sulfate testing at the Congress Street and 22<sup>nd</sup> Street Crossing indicate that ASTM Type V, or modified Type II, portland cement should be specified for all project concrete on and below grade. Foundation concrete should be designed for moderate sulfate exposure in accordance with the provisions of the ACI Design Manual, Section 318 Chapter 4.

Soluble sulfate testing performed at the soils at the Kino Crossing indicates that ASTM Type I/II portland cement are suitable for all concrete on and below grade. Foundation concrete should be designed for low sulfate exposure in accordance with the provisions of the ACI Design Manual, Section 318 Chapter 4.

Refer to Summary of Laboratory Results contained in Appendix B for the complete results of the various corrosivity testing conducted on the site soils in conjunction with this geotechnical exploration.

#### 4.2.9 Construction Considerations

It is anticipated that excavations for the proposed construction can be accomplished with conventional earthmoving equipment.

Depending upon seasonal conditions, groundwater may be encountered in excavations on the site. Pumping from sumps may be utilized to control water within excavations. Well points may be required for significant groundwater flow, or where excavations penetrate groundwater to a significant depth.

Based upon the subsurface conditions determined from the geotechnical exploration, subgrade soils exposed during construction are anticipated to be relatively workable. However, the workability of the subgrade may be affected by precipitation, repetitive construction traffic or other factors. If unworkable conditions develop, workability may be improved by scarifying and drying. Overexcavation of wet zones and replacement with granular materials may be necessary. Lightweight excavation equipment may be required to reduce subgrade pumping.

The use of biaxial geogrid may be considered to stabilize the soils and to reduce the amount of overexcavation that may otherwise be required. Use of lime, fly ash, kiln dust or cement could also be considered as a stabilization technique. Laboratory evaluation is recommended to determine the effect of chemical stabilization on subgrade soils prior to construction.

Individual contractors are responsible for designing and constructing stable, temporary excavations. Excavations should be sloped or shored in the interest of safety following local, and federal regulations, including current OSHA excavation and trench safety standards.

### 4.3 Foundations

We recommend the bridge structure be supported on drilled shaft foundations. Minor structures, such as ramps and stairways, can be supported by shallow, spread footing foundation systems. Foundation excavations, drilled shaft construction, and bearing soils should be observed by the geotechnical engineer. If the soil conditions encountered differ significantly from those presented in this report, supplemental recommendations will be required.

#### 4.3.1 Drilled Shaft Foundation Design Recommendations

Description	Recommendation
<b>Structures</b>	Pedestrian Bridges
<b>Minimum Dimensions</b>	Minimum shaft diameter of 36 inches. Straight sided shafts are recommended.
<b>Minimum Embedment Depth Below Finished Grade</b>	22 feet (to avoid punching failure at Congress Crossing) 10 feet at 22 <sup>nd</sup> Street & Kino Crossing
<b>Total Estimated Settlement</b>	1/2- inch

Axial capacities for various drilled shaft diameters versus depth are shown on the charts in Appendix C for each bridge location. The drilled shaft foundation analysis is based on procedures outlined in AASHTO (2010) & FHWA NHI-09.

The following table presents the additional geotechnical engineering parameters that should be used for the lateral analysis of the design of the foundations at each proposed crossing:

Crossing Location	Depth to Bottom of Layer (ft.)	Soil Type	Unit Weight (pcf)	Modulus of Deformation <sup>1</sup>	Shear Strength <sup>2</sup>	Rankine Earth Pressure Coef. or Uniform Passive Pressure
Congress Street	0 – 3	Cohesive	95	--	--	--
	3 – 10	Cohesive	95	0.005	1500	500 (psf)
	10 – 19	Cohesive	95	0.005	1500	500 (psf)
	19 – 28	Cohesionless	100	25	30	2.5
	28 – 34	Cohesionless	115	50	40	4.5
	34 – 40	Cohesive	110	0.005	2500	750 (psf)
22 <sup>nd</sup> Street	0 – 3	Cohesionless	95	--	--	--
	3 – 8	Cohesionless	95	150	45	5.8
	8 – 29	Cohesive	110	0.005	1500	750 (psf)
	29 – 40	Cohesionless	125	225	45	5.8
Kino Parkway	0 – 3	Cohesionless	100	--	--	--
	3 – 18	Cohesionless	100	50	30	3.0
	18 – 40	Cohesive	125	0.005	300	750 (psf)

Notes:

<sup>1</sup> Modulus of Deformation value provided is  $K_v$  (pci) for cohesionless soils and  $\epsilon_{50}$  for cohesive soils.

<sup>2</sup> Shear Strength is either friction angle ( $\phi$ , degrees) for cohesionless soils or  $C_u$  (psf) for cohesive soils.

The passive pressures are ultimate values; therefore, appropriate factors of safety, or shaft deflection limits, should be applied in the shaft design. The above parameters assume the groundwater level is below the maximum depth of the drilled shaft. The load capacities provided are based only on the stresses induced in the supporting soils; the structural capacity of the shafts should be checked to assure that they can safely accommodate the combined stresses induced by axial and lateral forces. The response of the drilled shaft foundations to lateral loads is dependent upon the soil/structure interaction as well as the shaft's actual diameter, length, stiffness, and "fixity" (fixed or free-head condition). When designing to resist uplift forces, the effective weight of the shaft and structure (divided by an appropriate factor of safety) and the allowable skin-friction values provided above should be used.

Based on criteria outlined in Section 4.6.5.6.1.4 of AASHTO (1996), drilled shafts may be considered to act individually under lateral loading where the center-to-center shaft spacing is greater than 2.5 diameters in the direction normal to loading, and where the center-to-center shaft spacing is greater than 8 diameters in the direction parallel to loading. For shaft layouts not conforming to these criteria, the effect of shaft interaction should be considered in the design. The effect of group action for center-to-center spacing less than 8 diameters in the direction of loading may be considered using the following criteria indicated by the ADOT Geotechnical Design Group in their memorandum of January 13, 1998:

Ratio of Resistance of Shaft in Group to Single Shaft Resistance		
Boundary Condition	Center to Center Shaft Spacing	
	3 Diameters	8 Diameters
Pipe Cap/Footing in intimate contact with soil	0.8	1.0
Pipe Cap/Footing not in intimate contact with soil	0.6	1.0

Notes:

1. Applies to parallel loading only.
2. Efficiency factors are to be applied to all shafts in a group regardless of pile arrangement.
3. Efficiency factors shall be linearly interpolated between diameters of 3D and 8D.
4. Other portions of AASHTO Section 4.6.5.6 are applicable.

We recommend that all drilled shaft installations be observed on a full-time basis by an experienced geotechnical engineer in order to confirm that soils encountered are consistent with the recommended design parameters.

### 4.3.2 Shallow Foundation Design Recommendations

Description	Recommendation
<b>Structures</b>	Minor structures, such as ramps and stairs
<b>Bearing Material</b>	Engineered fill as prepared in the earthwork section of this report
<b>Allowable Bearing Pressure</b>	2,000 psf at 18-inches 2,500 psf at 24-inches 4,000 psf at 36-inches
<b>Minimum Dimensions</b>	Columns: 24 inches Walls: 16 inches
<b>Minimum Embedment Depth Below Finished Grade</b>	18 inches
<b>Total Estimated Settlement</b>	1 inch
<b>Estimated Differential Settlement</b>	1/2-inch

Finished grade is defined as the lowest adjacent grade within 5 feet of the foundation.

The allowable foundation bearing pressures may include dead loads plus design live-load conditions. The design bearing pressure may be increased by one-third when considering total loads that include wind or seismic conditions. The weight of the foundation concrete below grade may be neglected in dead-load computations.

Total and differential settlements should not exceed predicted values, provided that:

- foundations are constructed as recommended, and
- essentially no changes occur in water contents of foundation soils.

Additional foundation movements could occur if water from any source infiltrates the foundation soils; therefore, proper drainage should be provided in the final design and during construction.

Footings and foundations should be reinforced as necessary to reduce the potential for distress caused by differential foundation movement.

### **4.3.3 Construction Considerations**

Temporary casing will likely be required during shaft excavation to prevent caving in the granular soils. Temporary casing should also be used whenever shafts are installed adjacent to existing structures or improvements, to reduce potential ground loss and movement due to drilled shaft excavation.

Shaft concrete should be placed immediately after completion of drilling and cleaning. We expect dry construction methods will be used but if water is encountered it should be removed from the shaft excavation prior to concrete placement. If shaft concrete cannot be placed in dry conditions a tremie should be used for concrete placement. Shaft concrete should have a relatively high fluidity when placed in cased holes or through a tremie; concrete with slump in the range of 6 to 8 inches is recommended. Temporary casing should be withdrawn in a slow continuous manner maintaining a sufficient head of concrete inside the casing to counteract earth and any hydrostatic pressures outside the casing. An insufficient head of concrete inside the case can cause “necking” of the shaft, resulting in a reduced shaft capacity. Due to potential sloughing and raveling, foundation concrete quantities may exceed calculated geometric volumes.

If downhole inspection or cleanout is required we recommend:

- Casing be installed for the full shaft depth;

- The contractor should check for oxygen deficiency and harmful gases;
- All necessary monitoring and safety precautions as required by OSHA, state, or local codes, should be strictly enforced.

We recommend that all drilled shaft installations be observed on a full-time basis by an experienced geotechnical engineer in order to confirm that soils encountered are consistent with the recommended design parameters.

Engineered fill should extend below proposed footings for minor structures a depth equal to the width of individual wall footings, and a depth equal to half the width of column footings; however, a minimum of 2 feet of engineered fill is recommended below all footings. The subgrade soils should be removed to a minimum depth of 24 inches and a minimum of 24 inches horizontally beyond the edge of footings. The engineered fill should extend laterally an additional distance of 8 inches for each additional 12 inches of excavation beyond the 24-inch minimum depth. The soils should be replaced as engineered fill, conditioned to near optimum moisture content and compacted. If engineered fill is placed beneath the entire building, it should extend horizontally a minimum distance of 5 feet beyond the outside edge of perimeter footings.

#### 4.4 Seismic Considerations

The Acceleration Coefficient with 90 percent probability of not being exceeded in 50 years as determined by the 2008 Seismic Hazard maps is 0.044g. The AASHTO Site Coefficient, based on the soil profile encountered, is Type II.

#### 4.5 Lateral Earth Pressures

The lateral earth pressure recommendations herein are applicable to the design of resistance of shallow foundations to lateral loading. These recommendations are not applicable to the design of geogrid-reinforced-backfill walls. Recommendations covering these types of wall systems are beyond the scope of services for this assignment; however, we would be pleased to develop recommendations for the design of such wall systems upon request.

For soils above any free water surface, recommended equivalent fluid pressures for unrestrained foundation elements are:

ITEM	VALUE <sup>1</sup>
Active Case	35 psf/ft
Passive Case	350 psf/ft
At-Rest Case	45 psf/ft

ITEM	VALUE <sup>1</sup>
Coefficient of Base Friction	0.45 <sup>2</sup>

<sup>1</sup>Note: The values are based on the on-site soils used as backfill.

<sup>2</sup>Note: The coefficient of base friction should be reduced to 0.30 when used in conjunction with passive pressure.

The lateral earth pressures herein do not include any factor of safety and are not applicable for submerged soils/hydrostatic loading. Additional recommendations may be necessary if such conditions are to be included in the design.

Fill against foundation and retaining walls should be compacted to densities specified in the Earthwork section of this report. Compaction of each lift adjacent to walls should be accomplished with hand-operated tampers or other lightweight compactors.

## 5.0 GENERAL COMMENTS

Terracon should be retained to review the final design plans and specifications so comments can be made regarding interpretation and implementation of our geotechnical recommendations in the design and specifications. Terracon also should be retained to provide observation and testing services during grading, excavation, foundation construction and other earth-related construction phases of the project.

The analysis and recommendations presented in this report are based upon the data obtained from the borings performed at the indicated locations and from other information discussed in this report. This report does not reflect variations that may occur between borings, across the site, or due to the modifying effects of construction or weather. The nature and extent of such variations may not become evident until during or after construction. If variations appear, we should be immediately notified so that further evaluation and supplemental recommendations can be provided.

The scope of services for this project does not include either specifically or by implication any environmental or biological (e.g., mold, fungi, bacteria) assessment of the site or identification or prevention of pollutants, hazardous materials or conditions. If the owner is concerned about the potential for such contamination or pollution, other studies should be undertaken.

This report has been prepared for the exclusive use of our client for specific application to the project discussed and has been prepared in accordance with generally accepted geotechnical engineering practices. No warranties, either express or implied, are intended or made. Site safety, excavation support, and dewatering requirements are the responsibility of others. In the event that changes in the nature, design, or location of the project as outlined in this report are planned, the conclusions and recommendations contained in this report shall not be considered

**Geotechnical Engineering Report**

Structure Selection Report ■ El Paso and Southwestern Railroad Greenway  
Tucson, Arizona ■ Terracon Project No. 63085143



valid unless Terracon reviews the changes and either verifies or modifies the conclusions of this report in writing.

**APPENDIX A**  
**FIELD EXPLORATION**

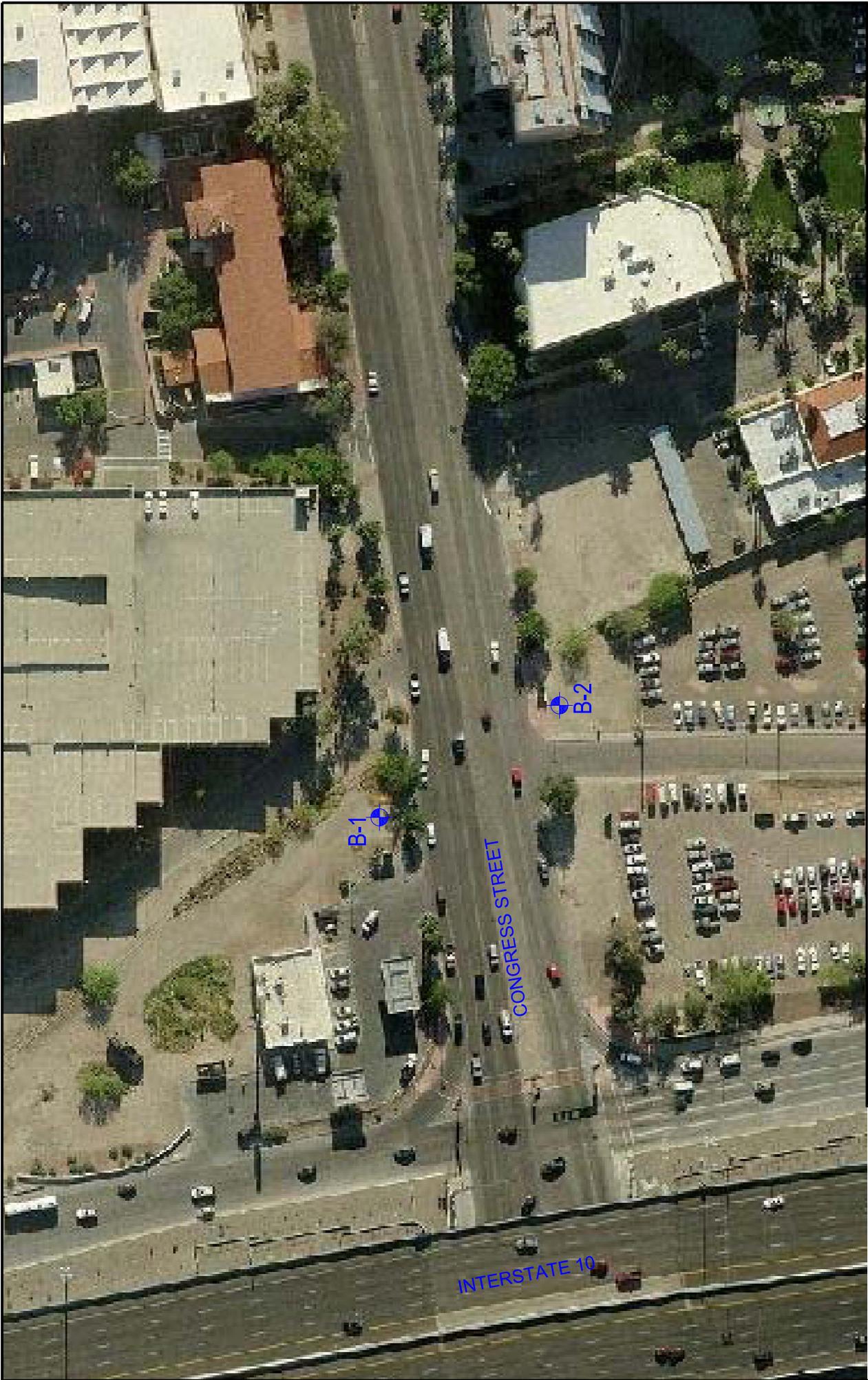


EXHIBIT  
**A-1**

**SITE PLAN & BORING LOCATIONS DIAGRAM**  
 KIMLEY-HORN AND ASSOCIATES  
**EL PASO AND SOUTHWESTERN RAILROAD GREENWAY**  
 CONGRESS STREET CROSSING  
 PIMA COUNTY ARIZONA

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Project No. 6308143  
 Scale: 1"=100'  
 File No. 63085143.DWG  
 Date: 03/16/2011

Project Mgr: BWR  
 Drawn By: BWR  
 Checked By: OBL  
 Approved By: OBL

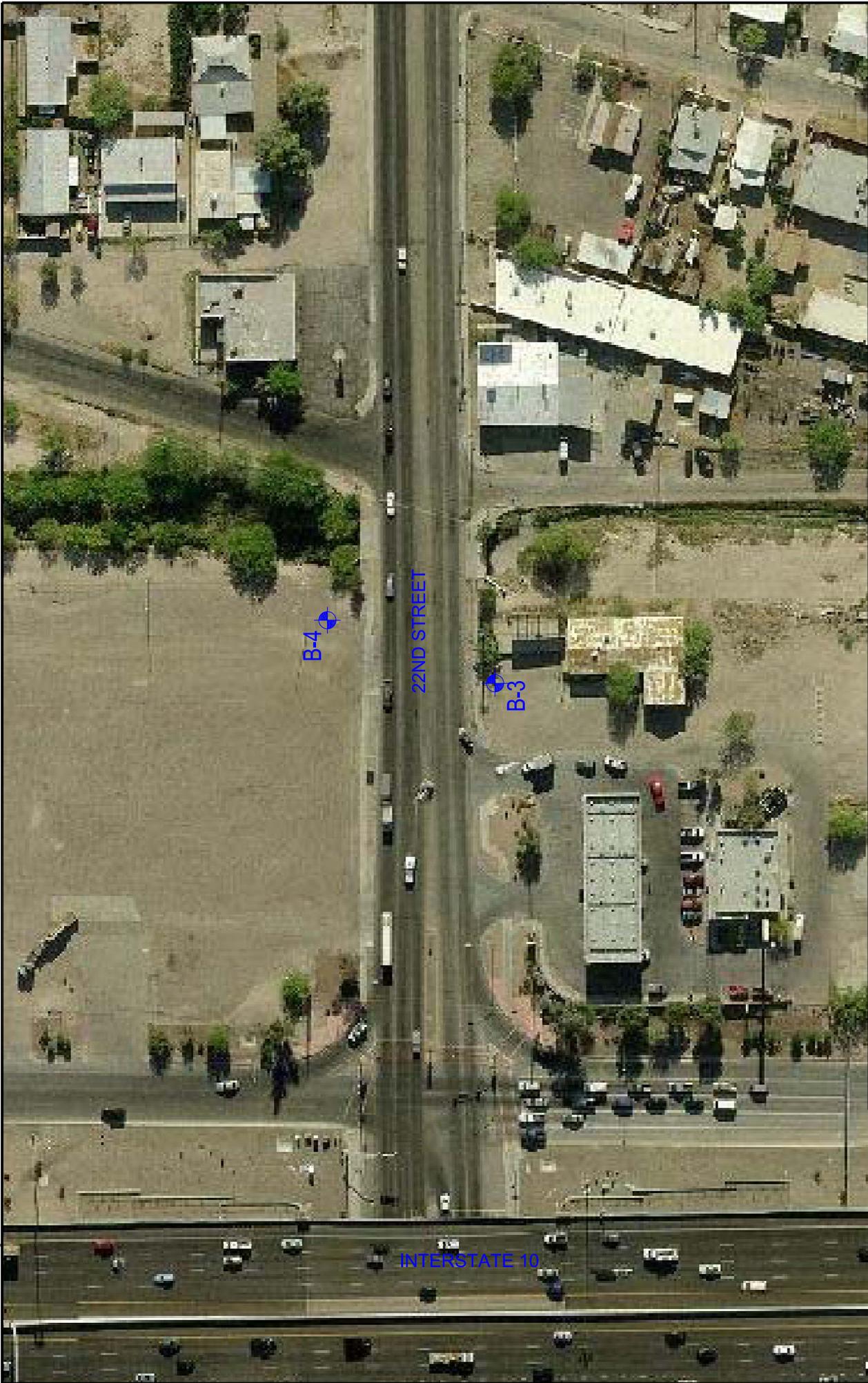
0 25 50 100  
 SCALE IN FEET  
  
 APPROXIMATE BORING LOCATION

INTERSTATE 10

CONGRESS STREET

B-1

B-2



EXHIBIT

A-2

SITE PLAN & BORING LOCATIONS DIAGRAM

KIMLEY-HORN AND ASSOCIATES

EL PASO AND SOUTHWESTERN RAILROAD GREENWAY

22ND STREET CROSSING

PIMA COUNTY

ARIZONA

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Project No. 6308143

Scale: 1"=100'

File No. 63085143.DWG

Date: 03/16/2011

Project Mgr: BWR

Drawn By: BWR

Checked By: OBL

Approved By: OBL

SCALE IN FEET

APPROXIMATE BORING LOCATION



EXHIBIT  
**A-3**

**SITE PLAN & BORING LOCATIONS DIAGRAM**  
 KIMLEY-HORN AND ASSOCIATES  
**EL PASO AND SOUTHWESTERN RAILROAD GREENWAY**  
 KINO PARKWAY CROSSING  
 PIMA COUNTY ARIZONA

**Terracon**  
 Consulting Engineers and Scientists  
 355 S EUCLID, SUITE 107 TUCSON, AZ 85719  
 PH: (520) 770-1788 FAX: (520) 792-3549

Project No. 6308143  
 Scale: 1"=100'  
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 SCALE IN FEET  
 APPROXIMATE BORING LOCATION

## Field Exploration Description

A total of 6 test borings were drilled at the site on February 17 & 18, 2011. The borings were drilled to depths of approximately 51-1/2 feet below the ground surface at the approximate locations shown on the attached Site Plan and Boring Locations Diagrams, Exhibit A-1 through A-3. The test borings were located as follows:

<b>Borings</b>	<b>Location</b>
B-1 & B-2	Congress Street Crossing
B-3 & B-4	22 <sup>nd</sup> Street Crossing
B-5 & B-6	Kino Parkway Crossing

The test borings were advanced with a truck-mounted CME-75 drill rig utilizing 8-inch diameter hollow-stem augers.

The borings were located in the field by using the proposed site plan, an aerial photograph of the site, and measuring from existing property lines. The accuracy of boring locations should only be assumed to the level implied by the method used. Elevations at boring locations were determined by interpolation from topographic maps provided by Pima County Geographic Information Systems.

Continuous lithologic logs of each boring were recorded by the field geologist during the drilling operations. At selected intervals, samples of the subsurface materials were taken by driving split-spoon or ring-barrel samplers. Bulk samples of subsurface materials were also obtained.

Penetration resistance measurements were obtained by driving the split-spoon and ring-barrel samplers into the subsurface materials with a 140-pound automatic hammer falling 30 inches. The penetration resistance value is a useful index in estimating the consistency or relative density of materials encountered.

Groundwater conditions were evaluated in each boring at the time of site exploration.

# LOG OF BORING NO. B-1

CLIENT  
**Kimley-Horn & Associates**

SITE  
**Historic Railroad Alignment  
Tucson, Arizona**

PROJECT  
**El Paso & Southwestern Railroad Greenway**

BORING Location: Congress Street Crossing.  
  
DESCRIPTION  
  
Approx. Surface Elev.: 2350 ft

**SANDY LEAN CLAY**; brown, medium stiff, slightly damp, medium plasticity.  
  
becomes stiff.  
  
becomes medium stiff.

**SILTY SAND**; brown, medium dense, slightly damp, non-plastic.

**SILTY SAND WITH GRAVEL**; brown, dense, slightly damp, non-plastic.  
  
becomes medium dense.

**CLAYEY SAND WITH GRAVEL**; brown, dense, damp, medium plasticity, occasional cobbles.  
**Continued Next Page**

DEPTH, ft.	USCS SYMBOL	INTERVAL	SAMPLE			TESTS				
			TYPE	PENETRATION TEST RESULTS (BLOWS/FT.)	WATER CONTENT, %	DRY DENSITY pct	LIQUID LIMIT	PLASTICITY INDEX	#200	
	CL	↑	BS					30	11	55
2	CL	↓	RS	8	12	78				
4										
6	CL	↓	RS	10	12	82				
8										
10	CL	↓	SS	8						
12										
14										
16	SM	↓	SS	20				NP	NP	37
18										
20	SM	↓	SS	38						
22										
24										
26	SM	↓	SS	16						
28										
30										

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

WATER LEVEL OBSERVATIONS, ft		
WL	None WD	▼
WL	▼	▼
WL	Backfilled Upon Completion	



BORING STARTED	2-17-11
BORING COMPLETED	2-17-11
RIG CME-75	FOREMAN OBL
APPROVED OBL	JOB # 63085143

BOREHOLE 2008 63085143.GPJ TERR2000.GDT 4/4/11

# LOG OF BORING NO. B-1

CLIENT <b>Kimley-Horn &amp; Associates</b>		PROJECT <b>El Paso &amp; Southwestern Railroad Greenway</b>										
SITE <b>Historic Railroad Alignment Tucson, Arizona</b>		PROJECT <b>El Paso &amp; Southwestern Railroad Greenway</b>										
GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLE			TESTS					
				INTERVAL	TYPE	PENETRATION TEST RESULTS (BLOWS/FT.)	WATER CONTENT, %	DRY DENSITY pcf	LIQUID LIMIT	PLASTICITY INDEX	#200	
34	<b>CLAYEY SAND WITH GRAVEL;</b> brown, dense, damp, medium plasticity, occasional cobbles.	32	SC	X	SS	30						
34		34										
48	<b>LEAN CLAY WITH SAND;</b> brown, very stiff, damp, medium plasticity.  becomes hard.	36	CL	X	SS	19						
48		38										
48		40	CL	X	SS	40			43	22	77	
48		42										
48		44										
48		46	CL	X	SS	27						
48		48										
51.5	<b>SILTY SAND;</b> light brown, dense, damp, non-plastic.	50	SM	X	SS	46						
51.5	<b>BOTTOM OF BORING.</b>											

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

**WATER LEVEL OBSERVATIONS, ft**

WL	▽	None WD	▽
WL	▽		▽
WL		Backfilled Upon Completion	



BORING STARTED		2-17-11	
BORING COMPLETED		2-17-11	
RIG	CME-75	FOREMAN	OBL
APPROVED	OBL	JOB #	63085143

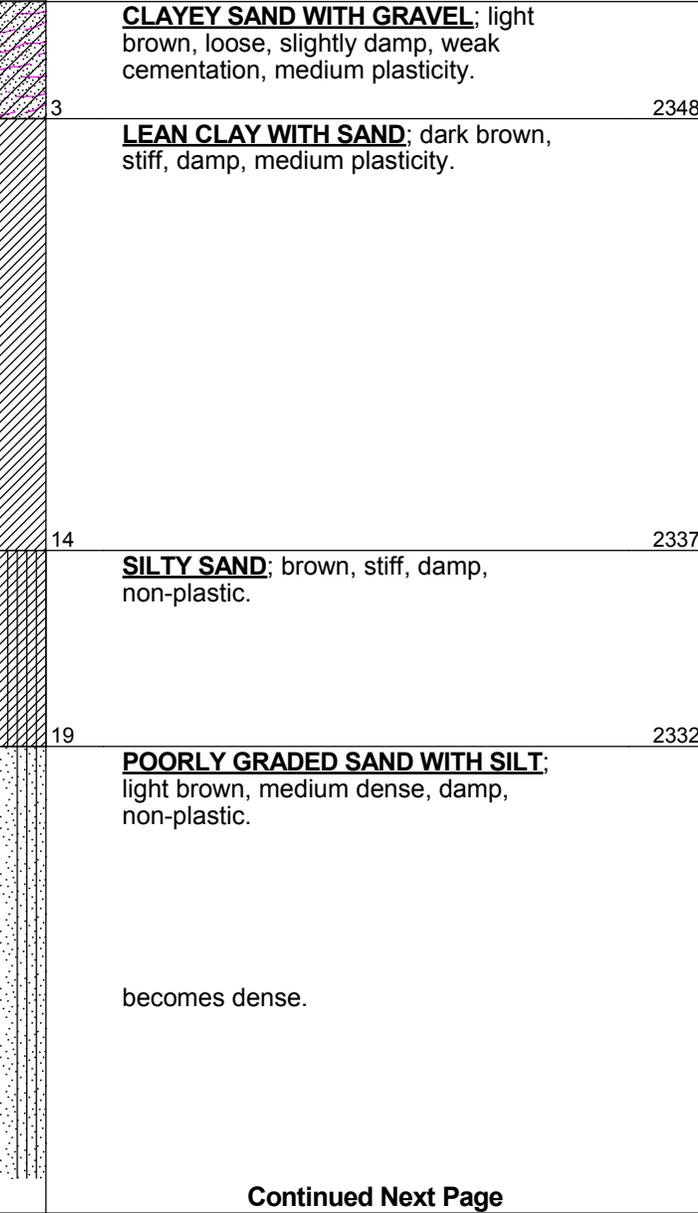
# LOG OF BORING NO. B-2

CLIENT  
**Kimley-Horn & Associates**

SITE  
**Historic Railroad Alignment  
Tucson, Arizona**

PROJECT  
**El Paso & Southwestern Railroad Greenway**

BORING Location: Congress Street Crossing.  
  
DESCRIPTION  
  
Approx. Surface Elev.: 2351 ft



DEPTH, ft.	USCS SYMBOL	INTERVAL	SAMPLE			TESTS			
			TYPE	PENETRATION TEST RESULTS (BLOWS/FT.)	WATER CONTENT, %	DRY DENSITY pcf	LIQUID LIMIT	PLASTICITY INDEX	#200
0-3	SC	BS							
3-4	SC	RS		16	13	95			
4-6	CL	SS		15					
6-10	CL	SS		9			40	16	83
10-14									
14-16	SM	RS		13	24	85			
16-19									
19-20	SP-SM	SS		14					
20-26									
26-30	SP-SM	SS		40					

Continued Next Page

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

WATER LEVEL OBSERVATIONS, ft		
WL	None WD	
WL		
WL	Backfilled Upon Completion	



BORING STARTED	2-17-11
BORING COMPLETED	2-17-11
RIG CME-75	FOREMAN OBL
APPROVED OBL	JOB # 63085143

BOREHOLE 2008 63085143.GPJ TERR2000.GDT 4/4/11

# LOG OF BORING NO. B-2

CLIENT <b>Kimley-Horn &amp; Associates</b>		PROJECT <b>El Paso &amp; Southwestern Railroad Greenway</b>									
SITE <b>Historic Railroad Alignment Tucson, Arizona</b>		PROJECT <b>El Paso &amp; Southwestern Railroad Greenway</b>									
GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	INTERVAL	TYPE	SAMPLE			TESTS		
						PENETRATION TEST RESULTS (BLOWS/FT.)	WATER CONTENT, %	DRY DENSITY pcf	LIQUID LIMIT	PLASTICITY INDEX	#200
33	<b>POORLY GRADED SAND WITH SILT;</b> light brown, medium dense, damp, non-plastic. becomes medium dense at 30'. <span style="float: right;">2318</span>	32	SP-SM	X	SS	15					
36	<b>CLAYEY SAND;</b> orange-brown, medium dense, damp, medium plasticity. <span style="float: right;">2315</span>	34	SC	X	RS	18	19	109			
51.5	<b>LEAN CLAY WITH SAND;</b> brown, hard, damp, medium plasticity. <span style="float: right;">2299.5</span>	36	CL	X	SS	60					
51.5	<b>BOTTOM OF BORING.</b>	40	CL	X	SS	73/11"					
51.5	<b>BOTTOM OF BORING.</b>	46	CL	X	SS	35					
51.5	<b>BOTTOM OF BORING.</b>	50	CL	X	SS						

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

**WATER LEVEL OBSERVATIONS, ft**

WL	▽	None WD	▽
WL	▽		▽
WL		Backfilled Upon Completion	



BORING STARTED		2-17-11	
BORING COMPLETED		2-17-11	
RIG	CME-75	FOREMAN	OBL
APPROVED	OBL	JOB #	63085143

# LOG OF BORING NO. B-3

CLIENT  
**Kimley-Horn & Associates**

SITE  
**Historic Railroad Alignment  
Tucson, Arizona**

PROJECT  
**El Paso & Southwestern Railroad Greenway**

BORING Location: 22nd Street Crossing.  
  
DESCRIPTION  
  
Approx. Surface Elev.: 2372 ft

**CLAYEY SAND WITH GRAVEL**; light brown, loose, slightly damp, medium plasticity.

becomes medium dense with weak cementation.

**LEAN CLAY**; green brown, stiff, damp, medium plasticity.

DEPTH, ft.	USCS SYMBOL	INTERVAL	SAMPLE			TESTS				
			TYPE	PENETRATION TEST RESULTS (BLOWS/FT.)	WATER CONTENT, %	DRY DENSITY pct	LIQUID LIMIT	PLASTICITY INDEX	#200	
1	SC	↑	BS					36	14	30
2	SC	↓	RS	14	9	91				
6	SC	↓	SS	9						
10	SC	↓	SS	10						
16	SC	↓	RS	24	11	106				
20	SC	↓	SS	11						
26	CL	↓	SS	11				43	17	91

**Continued Next Page**

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

WATER LEVEL OBSERVATIONS, ft		
WL	None WD	▼
WL	▼	▼
WL	Backfilled Upon Completion	



BORING STARTED	2-17-11
BORING COMPLETED	2-17-11
RIG CME-75	FOREMAN OBL
APPROVED OBL	JOB # 63085143

BOREHOLE 2008 63085143.GPJ TERR2000.GDT 4/4/11

# LOG OF BORING NO. B-3

CLIENT <b>Kimley-Horn &amp; Associates</b>		PROJECT <b>El Paso &amp; Southwestern Railroad Greenway</b>							
SITE <b>Historic Railroad Alignment Tucson, Arizona</b>		PROJECT <b>El Paso &amp; Southwestern Railroad Greenway</b>							
GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLE			TESTS		
				INTERVAL	TYPE	PENETRATION TEST RESULTS (BLOWS/FT.)	WATER CONTENT, %	DRY DENSITY pcf	LIQUID LIMIT
	<b>SAND WITH SILT AND GRAVEL;</b> red brown, very dense, damp, non-plastic.	32 34 36 38 40 42 44 46 48 50	SP-SM	RS	50/6"	8	109		
43	2329	36	SP-SM	SS	50/6"				
40	52	40	SP-SM	SS	52				
43	2329	46	SC	SS	34				
51.5	2320.5	50	SC	SS	33				
<b>BOTTOM OF BORING.</b>									

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

**WATER LEVEL OBSERVATIONS, ft**

WL	▽	None WD	▽
WL	▽		▽
WL	Backfilled Upon Completion		



BORING STARTED		2-17-11	
BORING COMPLETED		2-17-11	
RIG	CME-75	FOREMAN	OBL
APPROVED	OBL	JOB #	63085143

# LOG OF BORING NO. B-4

CLIENT  
**Kimley-Horn & Associates**

SITE  
**Historic Railroad Alignment  
Tucson, Arizona**

PROJECT  
**El Paso & Southwestern Railroad Greenway**

BORING Location: 22nd Street Crossing.  
  
DESCRIPTION  
  
Approx. Surface Elev.: 2372 ft

8	<p><b>CLAYEY SAND WITH GRAVEL</b>; light brown, loose to medium dense, slightly damp, medium plasticity.</p>	2364
18	<p><b>SANDY LEAN CLAY</b>; white-brown, very stiff, slightly damp, moderate cementation, medium plasticity.</p> <p style="text-align: center;">becomes hard.</p>	2354
18	<p><b>LEAN CLAY WITH SAND</b>; brown, very stiff, slightly damp, medium plasticity.</p>	2354
28	<p><b>POORLY GRADED SAND WITH SILT AND GRAVEL</b>; orange-brown, very dense, damp, non-plastic.</p>	2344

DEPTH, ft.	USCS SYMBOL	INTERVAL	SAMPLE			TESTS			
			TYPE	PENETRATION TEST RESULTS (BLOWS/FT.)	WATER CONTENT, %	DRY DENSITY pct	LIQUID LIMIT	PLASTICITY INDEX	#200
2	SC	↑	BS						
2	SC	↓	RS	19	12	83			
6	SC	X	SS	11					
10	CL	X	SS	27					
16	CL	X	SS	37					
20	CL	X	RS	38	19	98			
26	CL	X	SS	14					

**Continued Next Page**

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

WATER LEVEL OBSERVATIONS, ft		
WL	None WD	▼
WL	▼	▼
WL	Backfilled Upon Completion	



BORING STARTED		2-17-11	
BORING COMPLETED		2-17-11	
RIG	CME-75	FOREMAN	OBL
APPROVED	OBL	JOB #	63085143

BOREHOLE 2008 63085143.GPJ TERR2000.GDT 4/4/11

# LOG OF BORING NO. B-4

CLIENT <b>Kimley-Horn &amp; Associates</b>		PROJECT <b>El Paso &amp; Southwestern Railroad Greenway</b>										
SITE <b>Historic Railroad Alignment Tucson, Arizona</b>		PROJECT <b>El Paso &amp; Southwestern Railroad Greenway</b>										
GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	INTERVAL	TYPE	SAMPLE			TESTS			
						PENETRATION TEST RESULTS (BLOWS/FT.)	WATER CONTENT, %	DRY DENSITY pcf	LIQUID LIMIT	PLASTICITY INDEX	#200	
32	<p><b>POORLY GRADED SAND WITH SILT AND GRAVEL;</b> orange-brown, very dense, damp, non-plastic.</p> <p>becomes dense and dark brown.</p> <p>becomes very dense.</p>	32	SP-SM	X	SS	69						
34		36	SP-SM	X	SS	51			NP	NP	7	
38		40	40	SP-SM	X	SS	38					
42		44	46	SP-SM	X	SS	80					
48	49	49					2323					
50	51.5	50	CL	X	SS	24						
51.5						2320.5						
51.5						<b>BOTTOM OF BORING.</b>						

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

**WATER LEVEL OBSERVATIONS, ft**

WL	▽	None WD	▽
WL	▽		▽
WL	Backfilled Upon Completion		



BORING STARTED		2-17-11	
BORING COMPLETED		2-17-11	
RIG	CME-75	FOREMAN	OBL
APPROVED	OBL	JOB #	63085143

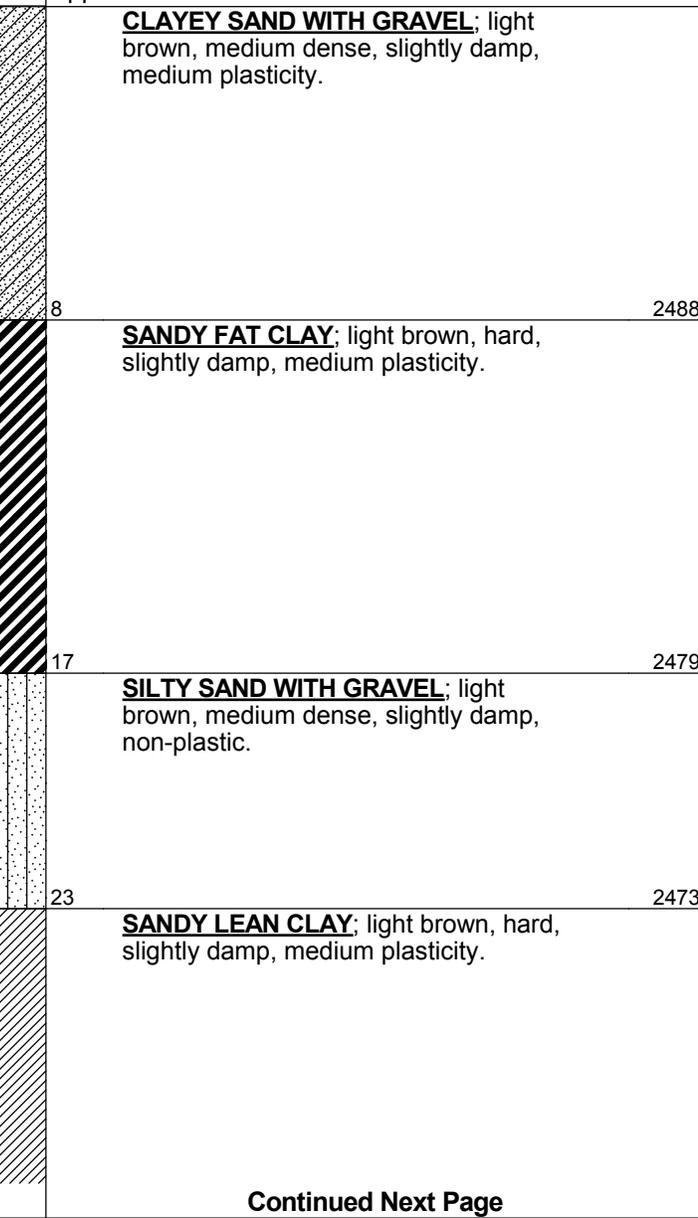
# LOG OF BORING NO. B-5

CLIENT  
**Kimley-Horn & Associates**

SITE  
**Historic Railroad Alignment  
Tucson, Arizona**

PROJECT  
**El Paso & Southwestern Railroad Greenway**

BORING Location: Kino Crossing.  
  
DESCRIPTION  
  
Approx. Surface Elev.: 2496 ft



**Continued Next Page**

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

**WATER LEVEL OBSERVATIONS, ft**

WL	None	WD	
WL			
WL	Backfilled Upon Completion		



BORING STARTED	2-18-11
BORING COMPLETED	2-18-11
RIG CME-75	FOREMAN JP
APPROVED OBL	JOB # 63085143

BOREHOLE 2008 63085143.GPJ TERR2000.GDT 4/4/11

# LOG OF BORING NO. B-5

CLIENT <b>Kimley-Horn &amp; Associates</b>		PROJECT <b>El Paso &amp; Southwestern Railroad Greenway</b>									
SITE <b>Historic Railroad Alignment Tucson, Arizona</b>											
GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	SAMPLE			TESTS					
			USCS SYMBOL	INTERVAL	TYPE	PENETRATION TEST RESULTS (BLOWS/FT.)	WATER CONTENT, %	DRY DENSITY pct	LIQUID LIMIT	PLASTICITY INDEX	#200
51.5	<b>SANDY LEAN CLAY</b> ; light brown, hard, slightly damp, medium plasticity.	32	CL	X	SS	52					
34											
36		CL	X	SS	56						
38											
40		CL	X	SS	50/6"						
42											
44											
46	CL	X	SS	50/6"							
48											
50	CL	X	SS	86							
51.5	<b>BOTTOM OF BORING.</b>	2444.5									

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

**WATER LEVEL OBSERVATIONS, ft**

WL	▽	None WD	▽
WL	▽		▽
WL	Backfilled Upon Completion		



BORING STARTED		2-18-11	
BORING COMPLETED		2-18-11	
RIG	CME-75	FOREMAN	JP
APPROVED	OBL	JOB #	63085143

# LOG OF BORING NO. B-6

CLIENT  
**Kimley-Horn & Associates**

SITE  
**Historic Railroad Alignment  
Tucson, Arizona**

PROJECT  
**El Paso & Southwestern Railroad Greenway**

BORING Location: Kino Crossing.  
  
DESCRIPTION  
  
Approx. Surface Elev.: 2498 ft

**SILTY CLAYEY SAND**; light brown, medium dense, damp, low to medium plasticity.  
  
becomes dense.

**LEAN CLAY WITH SAND**; light brown with white mottled cementation, hard, slightly damp, weak cementation, medium plasticity.  
  
becomes light brown.

DEPTH, ft.	USCS SYMBOL	INTERVAL	SAMPLE			TESTS				
			TYPE	PENETRATION TEST RESULTS (BLOWS/FT.)	WATER CONTENT, %	DRY DENSITY pcf	LIQUID LIMIT	PLASTICITY INDEX	#200	
1	SC-SM	↑	BS					23	5	39
2	SC-SM	↓	RS	28	5	93				
4										
6	SC-SM	↓	SS	49						
8										
10	CL	↓	SS	51						
12										
14										
16	CL	↓	RS	72						
18										
20	CL	↓	SS	45						
22										
24										
26	CL	↓	SS	40						
28										
30										

**Continued Next Page**

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

WATER LEVEL OBSERVATIONS, ft		
WL	None WD	▼
WL	▼	▼
WL	Backfilled Upon Completion	



BORING STARTED	2-18-11
BORING COMPLETED	2-18-11
RIG CME-75	FOREMAN JP
APPROVED OBL	JOB # 63085143

BOREHOLE 2008 63085143.GPJ TERR2000.GDT 4/4/11

# LOG OF BORING NO. B-6

CLIENT <b>Kimley-Horn &amp; Associates</b>		PROJECT <b>El Paso &amp; Southwestern Railroad Greenway</b>										
SITE <b>Historic Railroad Alignment Tucson, Arizona</b>												
GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	SAMPLE			TESTS						
			USCS SYMBOL	INTERVAL	TYPE	PENETRATION TEST RESULTS (BLOWS/FT.)	WATER CONTENT, %	DRY DENSITY pct	LIQUID LIMIT	PLASTICITY INDEX	#200	
	<p><b>LEAN CLAY WITH SAND;</b> ligh brown with white mottled cementation, hard, slightly damp, weak cementation, medium plasticity.</p>	32	CL	X	RS	80	9	91				
34												
36		CL	X	SS	54				39	17	80	
38												
40		CL	X	SS	51							
42												
44												
46	CL	X	SS	58								
48												
50	CL	X	SS	88								
51.5	<b>BOTTOM OF BORING.</b>		2446.5									

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

**WATER LEVEL OBSERVATIONS, ft**

WL	▽	None WD	▽
WL	▽		▽
WL	Backfilled Upon Completion		



BORING STARTED		2-18-11	
BORING COMPLETED		2-18-11	
RIG	CME-75	FOREMAN	JP
APPROVED	OBL	JOB #	63085143

## GENERAL NOTES

### DRILLING & SAMPLING SYMBOLS:

SS:	Split Spoon - 1- <sup>3</sup> / <sub>8</sub> " I.D., 2" O.D., unless otherwise noted	HS:	Hollow Stem Auger
ST:	Thin-Walled Tube - 2" O.D., 3" O.D. unless otherwise noted	PA:	Power Auger
RS:	Ring Sampler - 2.42" I.D., 3" O.D., unless otherwise noted	HA:	Hand Auger
DB:	Diamond Bit Coring - 4", N, B	RB:	Rock Bit
BS:	Bulk Sample or Auger Sample	WB:	Wash Boring or Mud Rotary

The number of blows required to advance a standard 2-inch O.D. split-spoon sampler (SS) the last 12 inches of the total 18-inch penetration with a 140-pound hammer falling 30 inches is considered the "Standard Penetration" or "N-value". For 3" O.D. ring samplers (RS) the penetration value is reported as the number of blows required to advance the sampler 12 inches using a 140-pound hammer falling 30 inches, reported as "blows per foot," and is not considered equivalent to the "Standard Penetration" or "N-value".

### WATER LEVEL MEASUREMENT SYMBOLS:

WL:	Water Level	WS:	While Sampling	N/E:	Not Encountered
WCI:	Wet Cave in	WD:	While Drilling		
DCI:	Dry Cave in	BCR:	Before Casing Removal		
AB:	After Boring	ACR:	After Casing Removal		

Water levels indicated on the boring logs are the levels measured in the borings at the times indicated. Groundwater levels at other times and other locations across the site could vary. In pervious soils, the indicated levels may reflect the location of groundwater. In low permeability soils, the accurate determination of groundwater levels may not be possible with only short-term observations.

**DESCRIPTIVE SOIL CLASSIFICATION:** Soil classification is based on the Unified Soil Classification System. Coarse Grained Soils have more than 50% of their dry weight retained on a #200 sieve; their principal descriptors are: boulders, cobbles, gravel or sand. Fine Grained Soils have less than 50% of their dry weight retained on a #200 sieve; they are principally described as clays if they are plastic, and silts if they are slightly plastic or non-plastic. Major constituents may be added as modifiers and minor constituents may be added according to the relative proportions based on grain size. In addition to gradation, coarse-grained soils are defined on the basis of their in-place relative density and fine-grained soils on the basis of their consistency.

#### CONSISTENCY OF FINE-GRAINED SOILS

<u>Unconfined Compressive Strength, Qu, psf</u>	<u>Standard Penetration or N-value (SS) Blows/Ft.</u>	<u>Consistency</u>
< 500	0 - 1	Very Soft
500 - 1,000	2 - 4	Soft
1,000 - 2,000	4 - 8	Medium Stiff
2,000 - 4,000	8 - 15	Stiff
4,000 - 8,000	15 - 30	Very Stiff
8,000+	≥ 30	Hard

#### RELATIVE DENSITY OF COARSE-GRAINED SOILS

<u>Standard Penetration or N-value (SS) Blows/Ft.</u>	<u>Ring Sampler (RS) Blows/Ft.</u>	<u>Relative Density</u>
0 - 3	0-6	Very Loose
4 - 9	7-18	Loose
10 - 29	19-58	Medium Dense
30 - 50	59-98	Dense
≥ 50	≥ 99	Very Dense

#### RELATIVE PROPORTIONS OF SAND AND GRAVEL

<u>Descriptive Term(s) of other constituents</u>	<u>Percent of Dry Weight</u>
Trace	< 15
With	15 - 29
Modifier	> 30

#### GRAIN SIZE TERMINOLOGY

<u>Major Component of Sample</u>	<u>Particle Size</u>
Boulders	Over 12 in. (300mm)
Cobbles	12 in. to 3 in. (300mm to 75 mm)
Gravel	3 in. to #4 sieve (75mm to 4.75 mm)
Sand	#4 to #200 sieve (4.75mm to 0.075mm)
Silt or Clay	Passing #200 Sieve (0.075mm)

#### RELATIVE PROPORTIONS OF FINES

<u>Descriptive Term(s) of other constituents</u>	<u>Percent of Dry Weight</u>
Trace	< 5
With	5 - 12
Modifier	> 12

#### PLASTICITY DESCRIPTION

<u>Term</u>	<u>Plasticity Index</u>
Non-plastic	0
Low	1-10
Medium	11-30
High	> 30

# UNIFIED SOIL CLASSIFICATION SYSTEM

Criteria for Assigning Group Symbols and Group Names Using Laboratory Tests<sup>A</sup>

			Soil Classification			
			Group Symbol	Group Name <sup>B</sup>		
Coarse Grained Soils More than 50% retained on No. 200 sieve	Gravels More than 50% of coarse fraction retained on No. 4 sieve	Clean Gravels Less than 5% fines <sup>C</sup>	$Cu \geq 4$ and $1 \leq Cc \leq 3^E$	GW	Well-graded gravel <sup>F</sup>	
			$Cu < 4$ and/or $1 > Cc > 3^E$	GP	Poorly graded gravel <sup>F</sup>	
	Sands 50% or more of coarse fraction passes No. 4 sieve	Gravels with Fines More than 12% fines <sup>C</sup>	Fines classify as ML or MH		GM	Silty gravel <sup>F,G,H</sup>
			Fines classify as CL or CH		GC	Clayey gravel <sup>F,G,H</sup>
		Clean Sands Less than 5% fines <sup>D</sup>	$Cu \geq 6$ and $1 \leq Cc \leq 3^E$	SW	Well-graded sand <sup>I</sup>	
			$Cu < 6$ and/or $1 > Cc > 3^E$	SP	Poorly graded sand <sup>I</sup>	
Sands with Fines More than 12% fines <sup>D</sup>	Fines classify as ML or MH	SM	Silty sand <sup>G,H,I</sup>			
	Fines Classify as CL or CH	SC	Clayey sand <sup>G,H,I</sup>			
Fine-Grained Soils 50% or more passes the No. 200 sieve	Silts and Clays Liquid limit less than 50	inorganic	$PI > 7$ and plots on or above "A" line <sup>J</sup>	CL	Lean clay <sup>K,L,M</sup>	
			$PI < 4$ or plots below "A" line <sup>J</sup>	ML	Silt <sup>K,L,M</sup>	
		organic	$\frac{\text{Liquid limit - oven dried}}{\text{Liquid limit - not dried}} < 0.75$	OL	Organic clay <sup>K,L,M,N</sup>	
					Organic silt <sup>K,L,M,O</sup>	
	Silts and Clays Liquid limit 50 or more	inorganic	$PI$ plots on or above "A" line	CH	Fat clay <sup>K,L,M</sup>	
			$PI$ plots below "A" line	MH	Elastic Silt <sup>K,L,M</sup>	
		organic	$\frac{\text{Liquid limit - oven dried}}{\text{Liquid limit - not dried}} < 0.75$	OH	Organic clay <sup>K,L,M,P</sup>	
					Organic silt <sup>K,L,M,O</sup>	
Highly organic soils	Primarily organic matter, dark in color, and organic odor		PT	Peat		

<sup>A</sup>Based on the material passing the 3-in. (75-mm) sieve

<sup>B</sup>If field sample contained cobbles or boulders, or both, add "with cobbles or boulders, or both" to group name.

<sup>C</sup>Gravels with 5 to 12% fines require dual symbols: GW-GM well-graded gravel with silt, GW-GC well-graded gravel with clay, GP-GM poorly graded gravel with silt, GP-GC poorly graded gravel with clay.

<sup>D</sup>Sands with 5 to 12% fines require dual symbols: SW-SM well-graded sand with silt, SW-SC well-graded sand with clay, SP-SM poorly graded sand with silt, SP-SC poorly graded sand with clay

$$^E Cu = D_{60}/D_{10} \quad Cc = \frac{(D_{30})^2}{D_{10} \times D_{60}}$$

<sup>F</sup>If soil contains  $\geq 15\%$  sand, add "with sand" to group name.

<sup>G</sup>If fines classify as CL-ML, use dual symbol GC-GM, or SC-SM.

<sup>H</sup>If fines are organic, add "with organic fines" to group name.

<sup>I</sup>If soil contains  $\geq 15\%$  gravel, add "with gravel" to group name.

<sup>J</sup>If Atterberg limits plot in shaded area, soil is a CL-ML, silty clay.

<sup>K</sup>If soil contains 15 to 29% plus No. 200, add "with sand" or "with gravel," whichever is predominant.

<sup>L</sup>If soil contains  $\geq 30\%$  plus No. 200 predominantly sand, add "sandy" to group name.

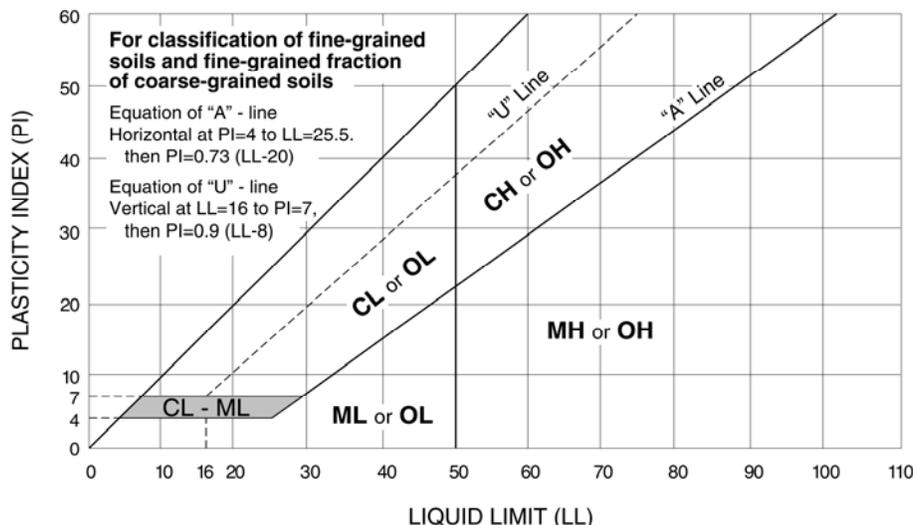
<sup>M</sup>If soil contains  $\geq 30\%$  plus No. 200, predominantly gravel, add "gravelly" to group name.

<sup>N</sup> $PI \geq 4$  and plots on or above "A" line.

<sup>O</sup> $PI < 4$  or plots below "A" line.

<sup>P</sup> $PI$  plots on or above "A" line.

<sup>Q</sup> $PI$  plots below "A" line.



**APPENDIX B**  
**LABORATORY TESTING**

## **Laboratory Testing**

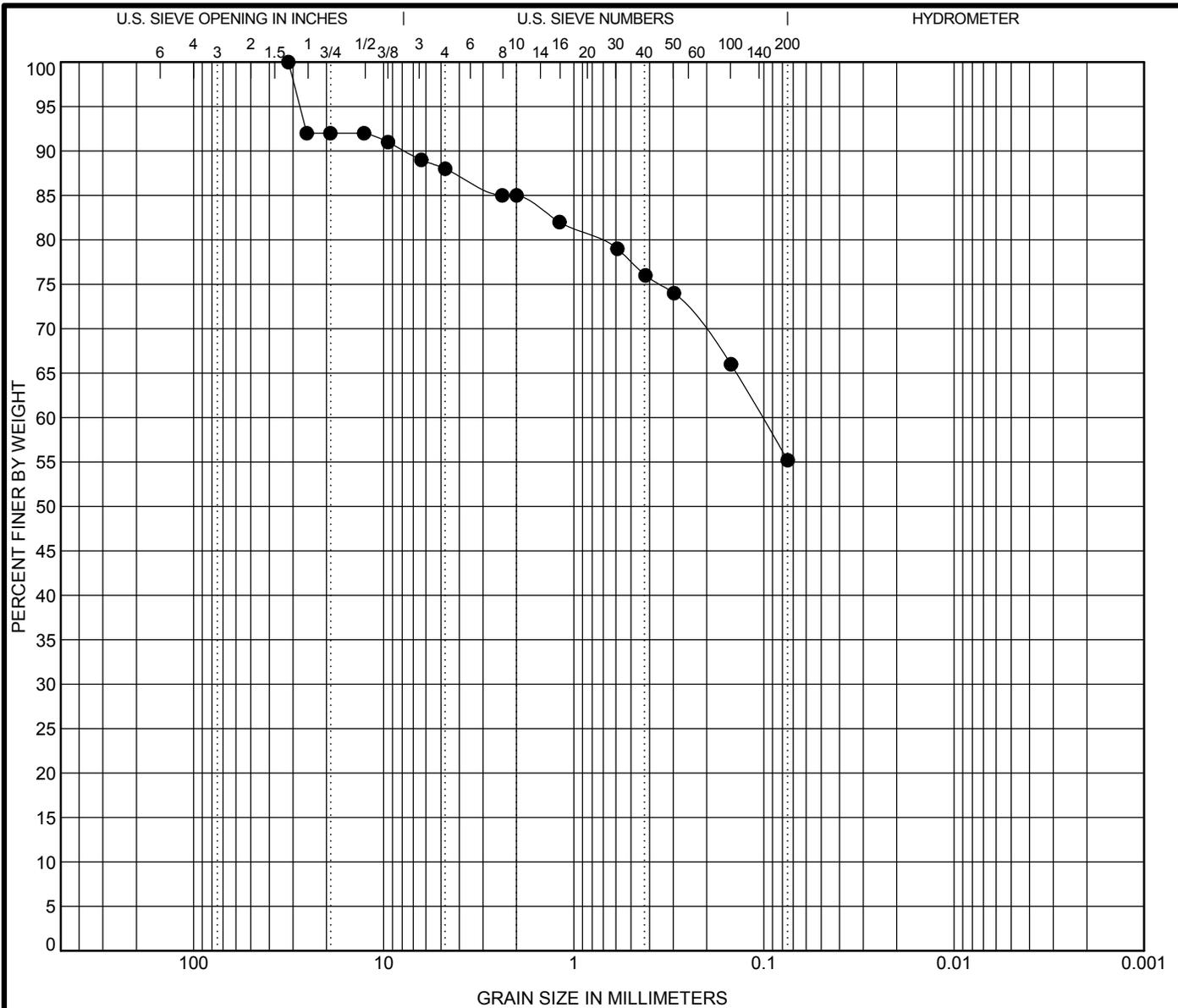
Samples retrieved during the field exploration were taken to the laboratory for further observation by the project geotechnical engineer and were classified in accordance with the Unified Soil Classification System (USCS) described in Appendix A. At that time, the field descriptions were confirmed or modified as necessary and an applicable laboratory testing program was formulated to determine engineering properties of the subsurface materials.

Laboratory tests were conducted on selected soil and bedrock samples and the test results are presented in this appendix. The laboratory test results were used for the geotechnical engineering analyses, and the development of foundation and earthwork recommendations. Laboratory tests were performed in general accordance with the applicable ASTM, local or other accepted standards.

Selected soil and bedrock samples obtained from the site were tested for the following engineering properties:

- Consolidation
- Sieve Analysis
- Atterberg Limits
- Direct Shear
- Soluble Chlorides
- In-situ Water Content
- In-situ Dry Density
- Soluble Sulfates





COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen Identification	USCS Soil Classification	LL	PL	PI	Cc	Cu
● B-1 0.0 ft	SANDY LEAN CLAY(CL)	30	19	11		

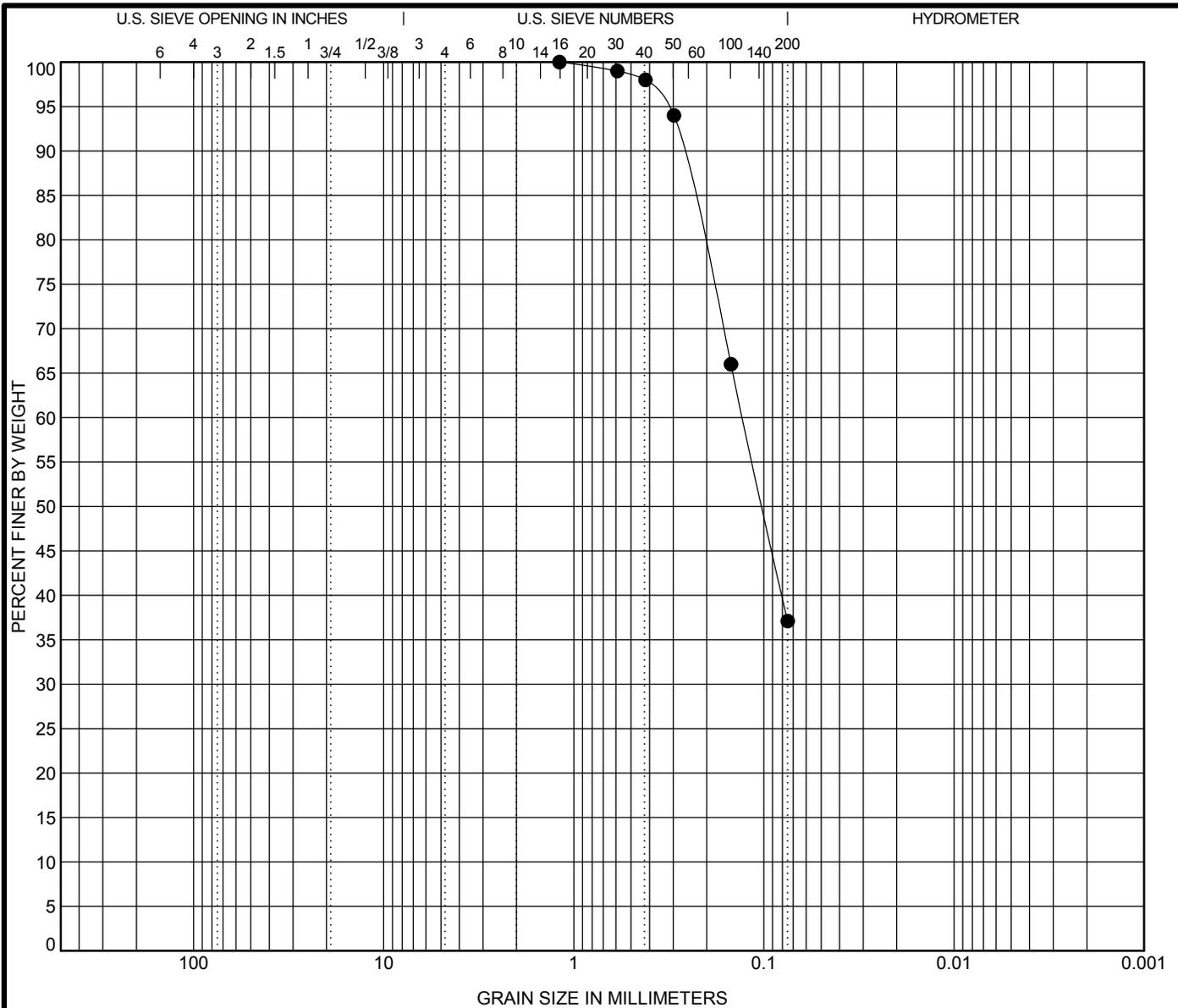
Specimen Identification	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● B-1 0.0 ft	31.75	0.102			12.0	32.8	55.2	

**GRAIN SIZE DISTRIBUTION**



Project: El Paso & Southwestern Railroad Greenway  
 Site: Historic Railroad Alignment Tucson, Arizona  
 Job #: 63085143  
 Date: 4-4-11

TC\_GRAIN\_SIZE\_63085143.GPJ\_TERRACON.GDT\_4/4/11



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen Identification	USCS Soil Classification					LL	PL	PI	Cc	Cu
● B-1 15.0 ft	SILTY SAND(SM)					NP	NP	NP		

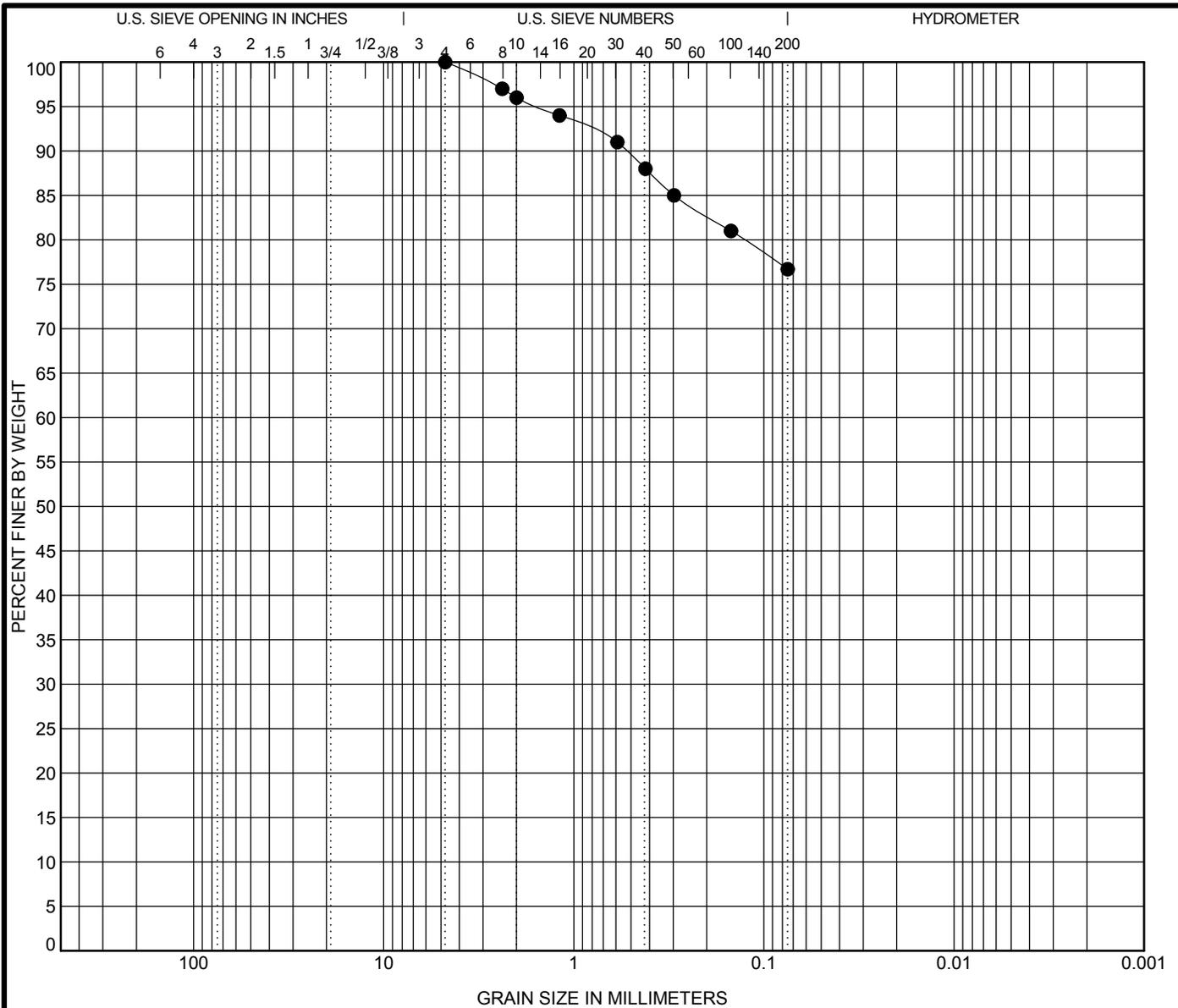
Specimen Identification	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● B-1 15.0 ft	1.19	0.129			0.0	62.9	37.1	

**GRAIN SIZE DISTRIBUTION**



Project: El Paso & Southwestern Railroad Greenway  
 Site: Historic Railroad Alignment Tucson, Arizona  
 Job #: 63085143  
 Date: 4-4-11

TC\_GRAIN\_SIZE\_63085143.GPJ\_TERRACON.GDT\_4/4/11



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen Identification	USCS Soil Classification					LL	PL	PI	Cc	Cu
● B-1 40.0 ft	LEAN CLAY with SAND(CL)					43	21	22		

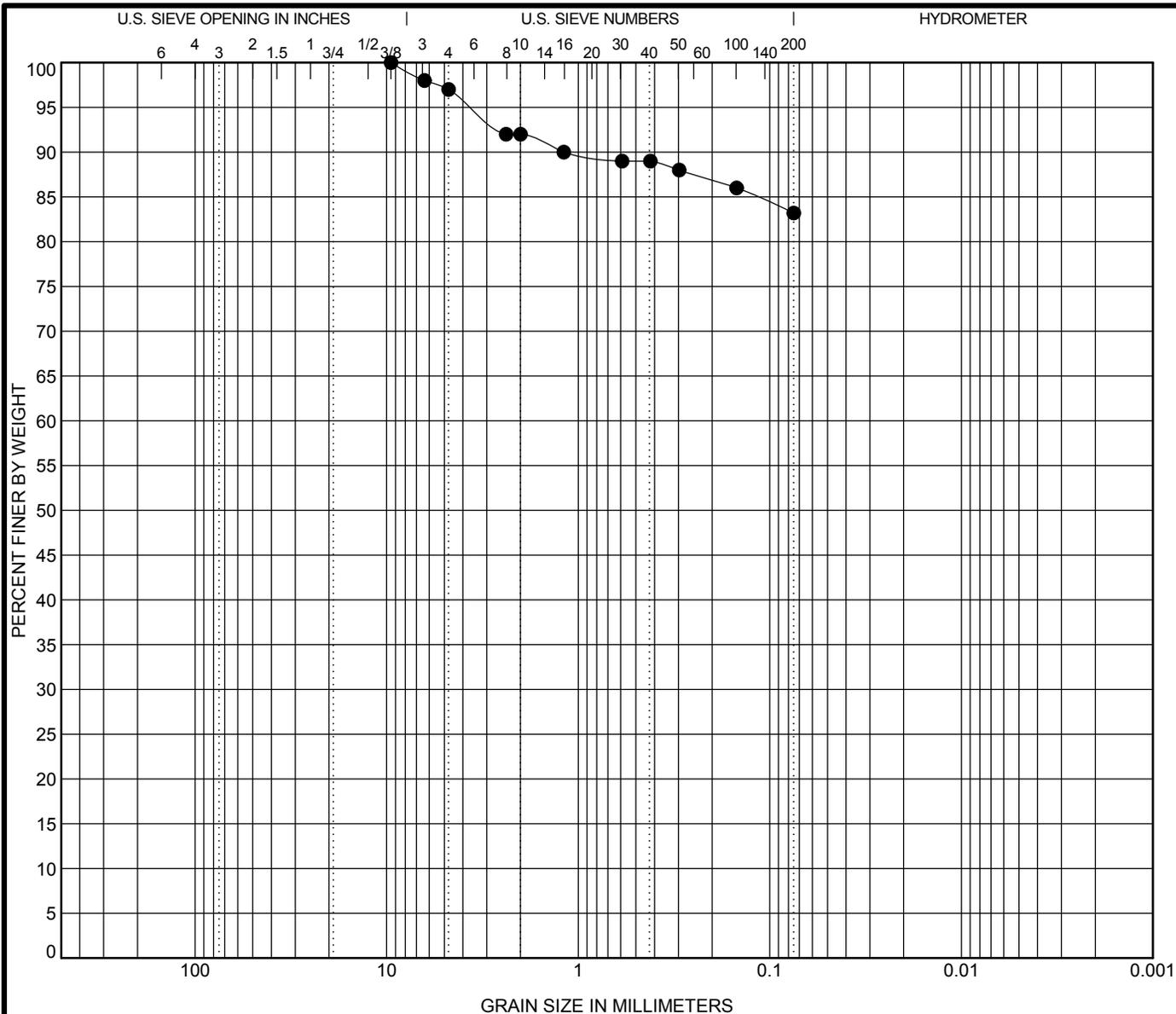
Specimen Identification	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● B-1 40.0 ft	4.75				0.0	23.3	76.7	



**GRAIN SIZE DISTRIBUTION**

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 Site: Historic Railroad Alignment Tucson, Arizona  
 Job #: 63085143  
 Date: 4-4-11

TC\_GRAIN\_SIZE\_63085143.GPJ\_TERRACON.GDT\_4/4/11



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen Identification	USCS Soil Classification	LL	PL	PI	Cc	Cu
● B-2 10.0 ft	LEAN CLAY with SAND(CL)	40	24	16		

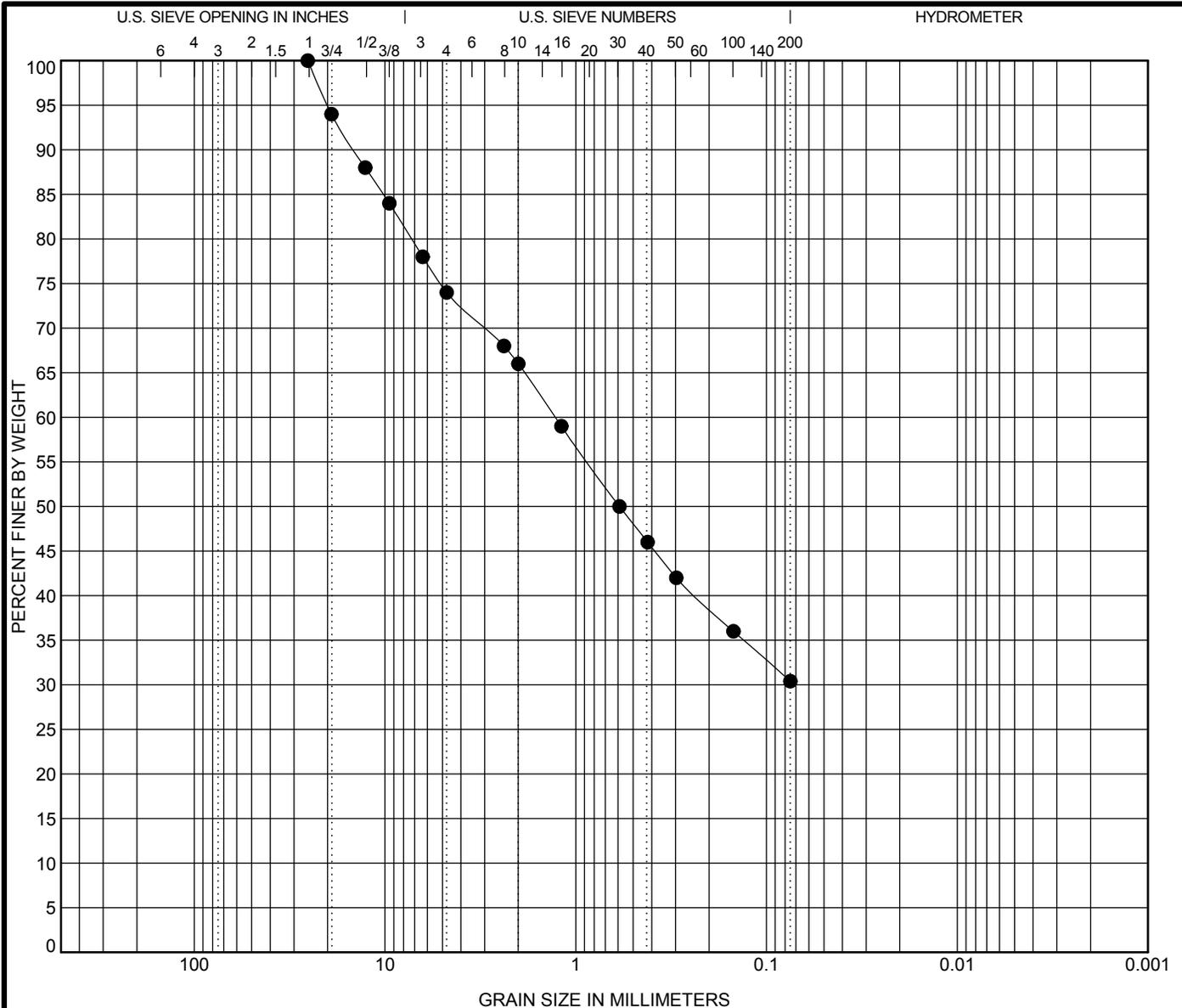
Specimen Identification	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● B-2 10.0 ft	9.5				3.0	13.8	83.2	



**GRAIN SIZE DISTRIBUTION**

Project: El Paso & Southwestern Railroad Greenway  
 Site: Historic Railroad Alignment Tucson, Arizona  
 Job #: 63085143  
 Date: 4-4-11

TC\_GRAIN\_SIZE\_63085143.GPJ\_TERRACON.GDT\_4/4/11



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

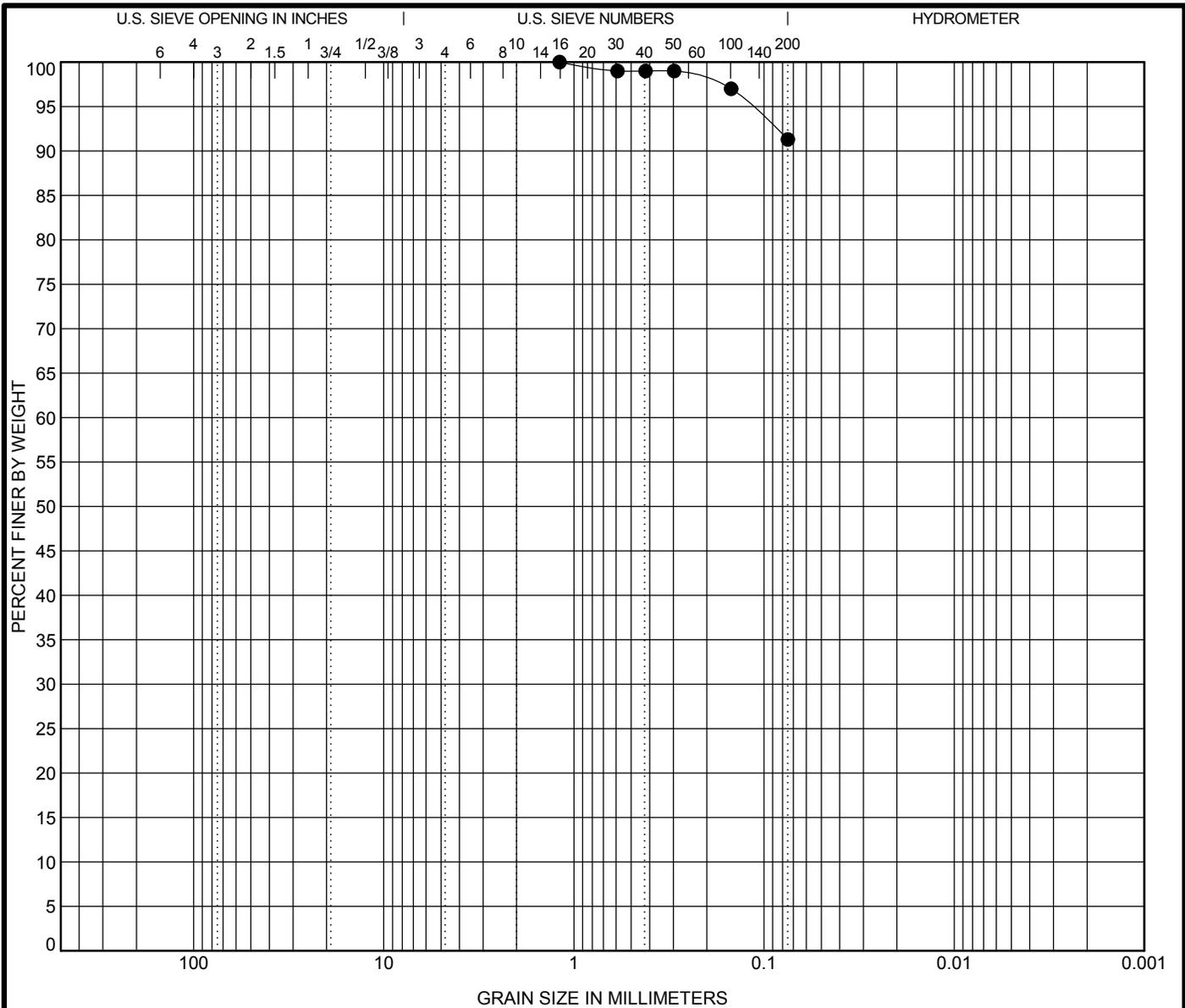
Specimen Identification	USCS Soil Classification	LL	PL	PI	Cc	Cu
● B-3 0.0 ft	CLAYEY SAND with GRAVEL(SC)	36	22	14		

Specimen Identification	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● B-3 0.0 ft	25.4	1.282			26.0	43.6	30.4	

### GRAIN SIZE DISTRIBUTION



Project: El Paso & Southwestern Railroad Greenway  
 Site: Historic Railroad Alignment Tucson, Arizona  
 Job #: 63085143  
 Date: 4-4-11



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen Identification	USCS Soil Classification					LL	PL	PI	Cc	Cu
● B-3 25.0 ft	LEAN CLAY(CL)					43	26	17		

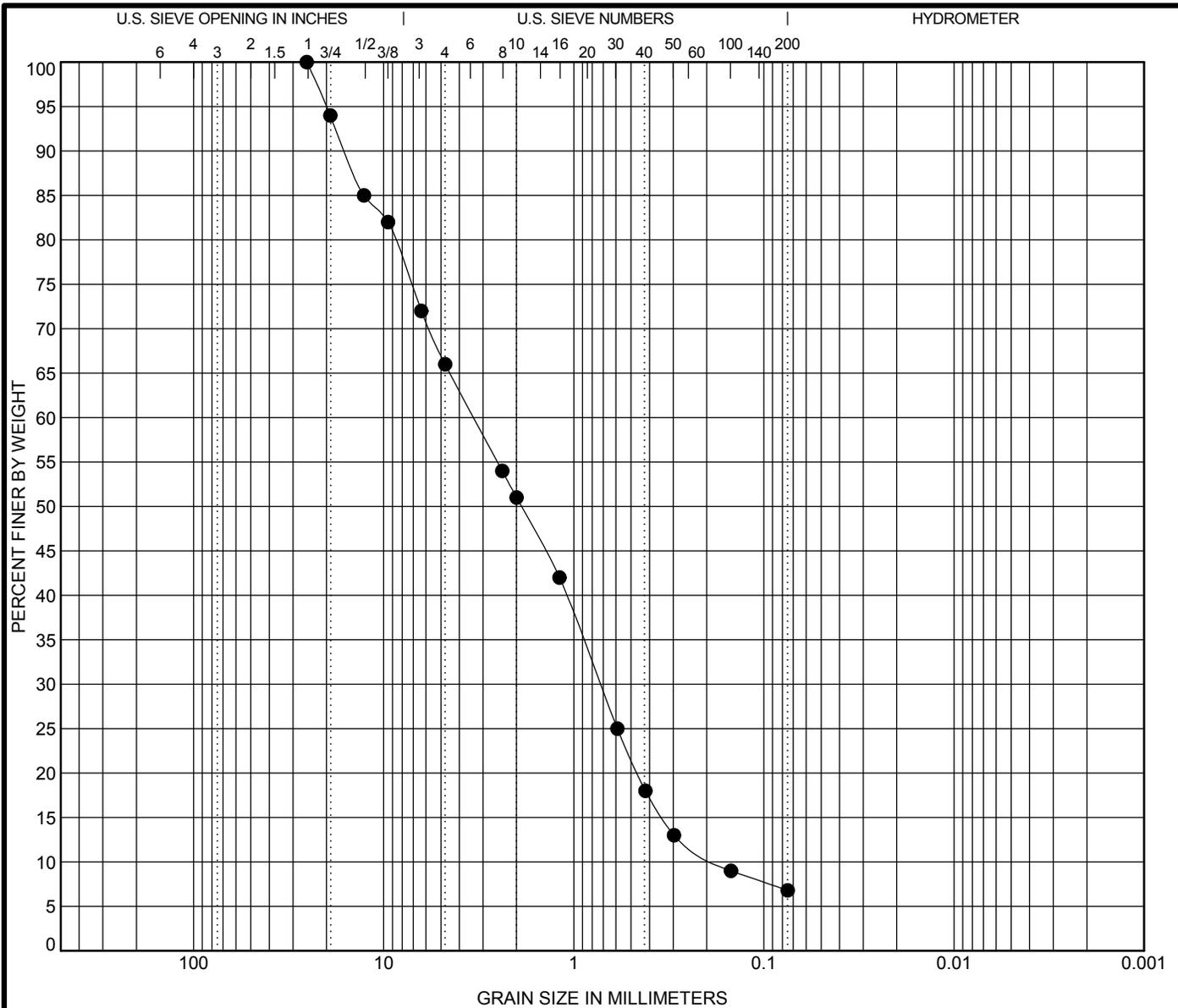
Specimen Identification	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● B-3 25.0 ft	1.19				0.0	8.7	91.3	

Terracon

### GRAIN SIZE DISTRIBUTION

Project: El Paso & Southwestern Railroad Greenway  
 Site: Historic Railroad Alignment Tucson, Arizona  
 Job #: 63085143  
 Date: 4-4-11

TC\_GRAIN\_SIZE\_63085143.GPJ\_TERRACON.GDT\_4/4/11



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen Identification	USCS Soil Classification					LL	PL	PI	Cc	Cu
● B-4 35.0 ft	POORLY GRADED SAND with SILT and GRAVEL(SP-SM)					NP	NP	NP	0.9	19.0

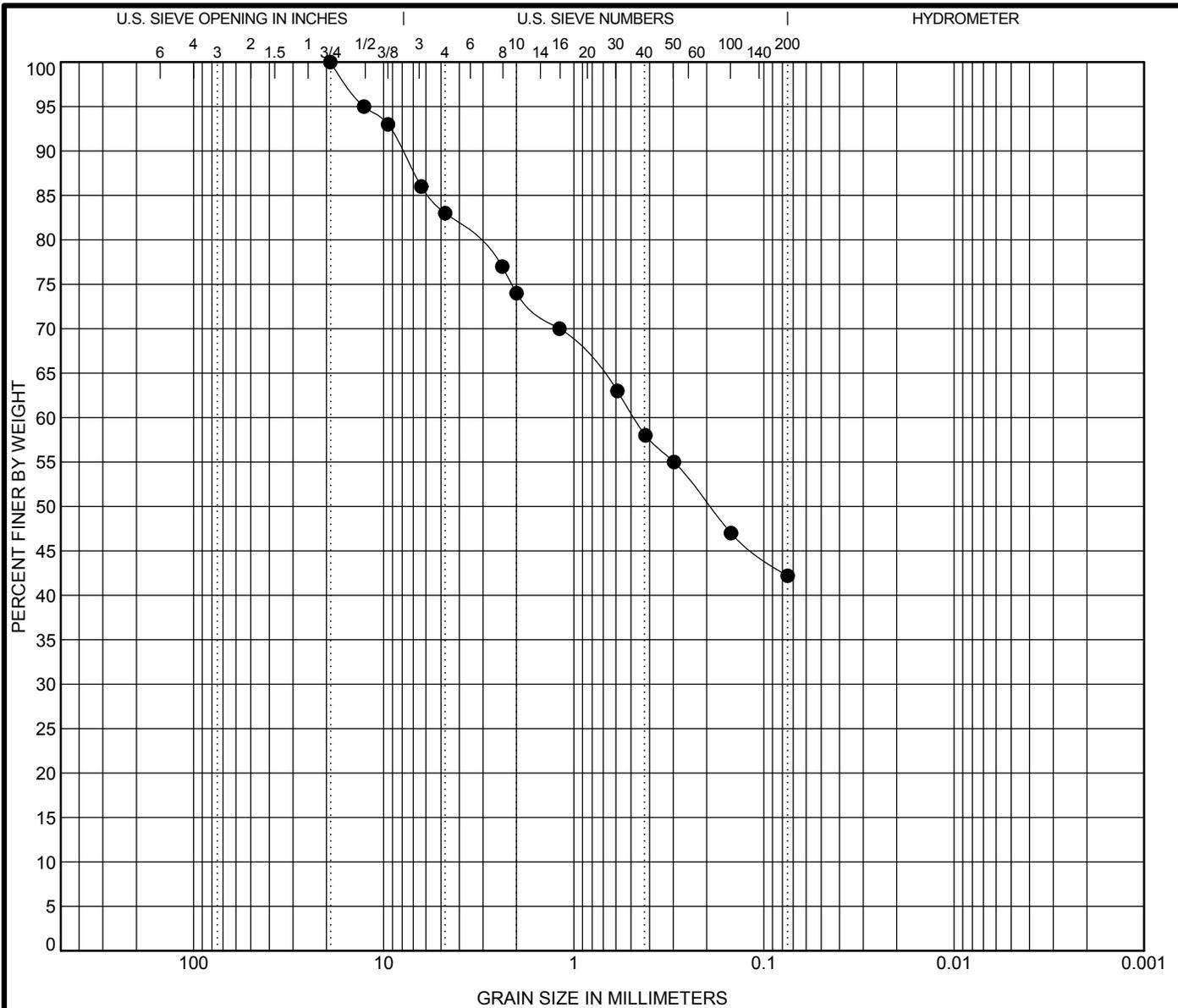
Specimen Identification	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● B-4 35.0 ft	25.4	3.362	0.725	0.177	34.0	59.2	6.8	

**GRAIN SIZE DISTRIBUTION**

Project: El Paso & Southwestern Railroad Greenway  
 Site: Historic Railroad Alignment Tucson, Arizona  
 Job #: 63085143  
 Date: 4-4-11



TC\_GRAIN\_SIZE\_63085143.GPJ\_TERRACON.GDT\_4/4/11



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen Identification	USCS Soil Classification	LL	PL	PI	Cc	Cu
● B-5 5.0 ft	CLAYEY SAND with GRAVEL(SC)	31	20	11		

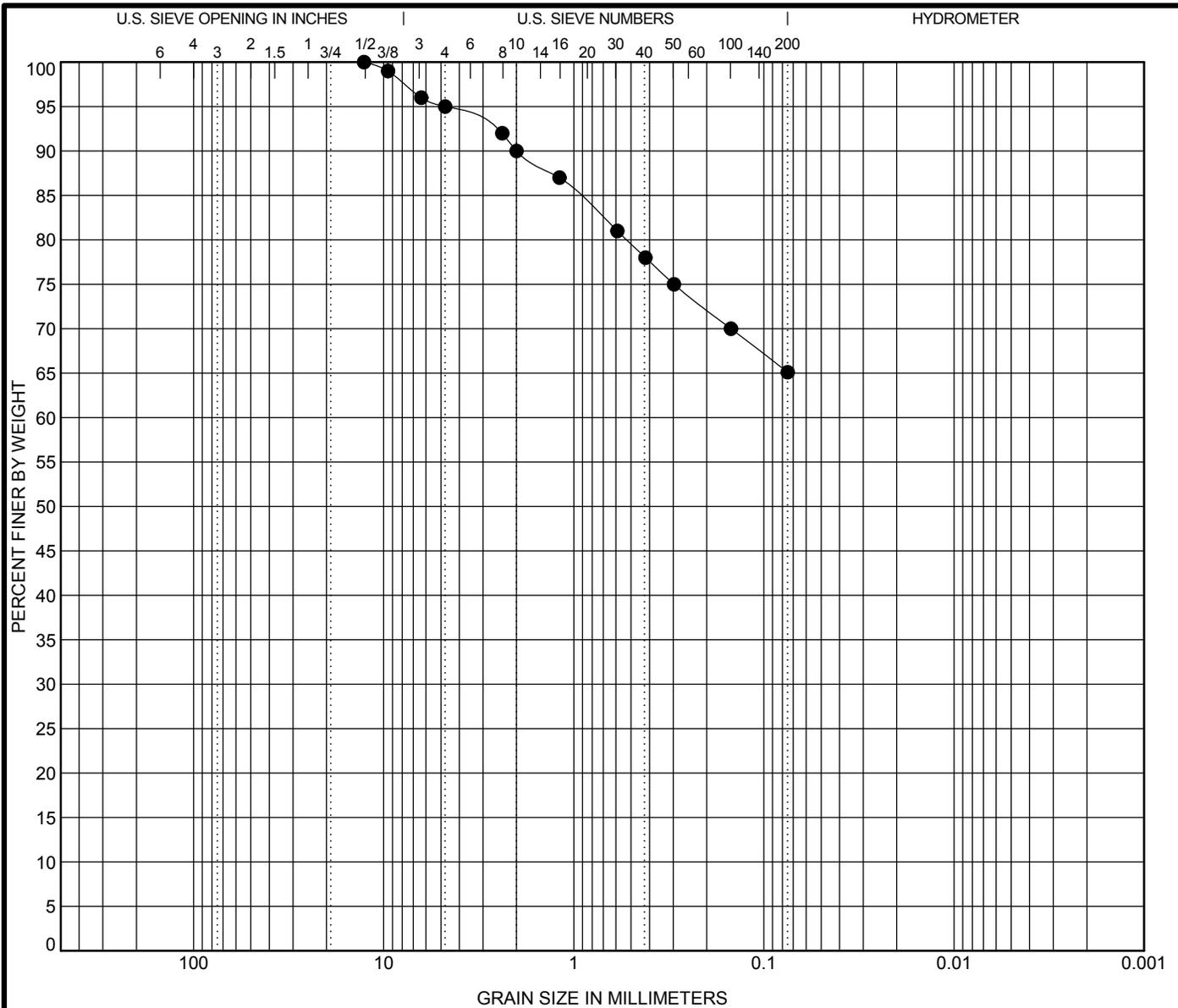
Specimen Identification	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● B-5 5.0 ft	19.1	0.481			17.0	40.8	42.2	

**GRAIN SIZE DISTRIBUTION**



Project: El Paso & Southwestern Railroad Greenway  
 Site: Historic Railroad Alignment Tucson, Arizona  
 Job #: 63085143  
 Date: 4-4-11

TC\_GRAIN\_SIZE\_63085143.GPJ\_TERRACON.GDT\_4/4/11



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen Identification	USCS Soil Classification	LL	PL	PI	Cc	Cu
● B-5 10.0 ft	SANDY FAT CLAY(CH)	51	25	26		

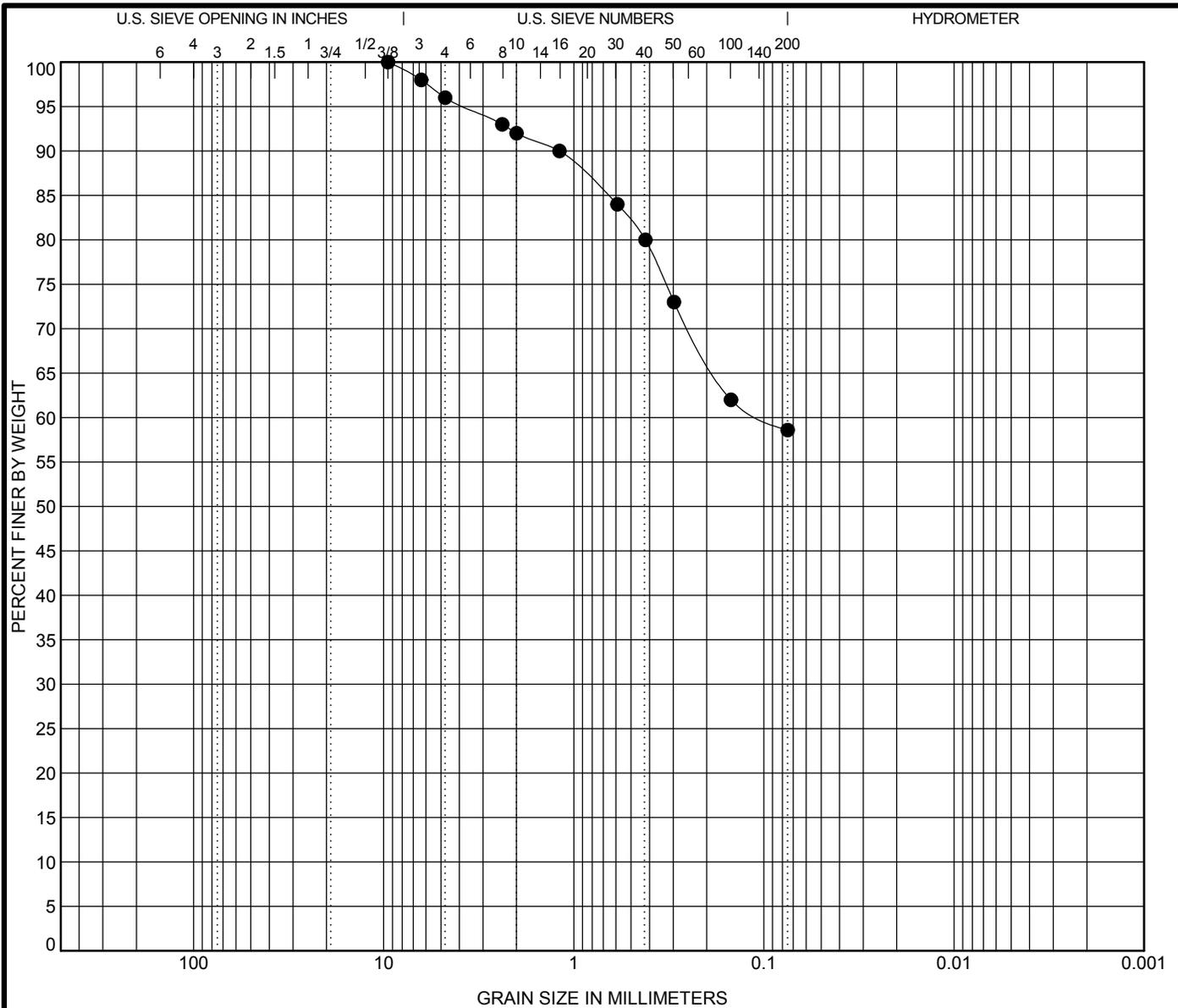
Specimen Identification	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● B-5 10.0 ft	12.7				5.0	29.9	65.1	



**GRAIN SIZE DISTRIBUTION**

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 Site: Historic Railroad Alignment Tucson, Arizona  
 Job #: 63085143  
 Date: 4-4-11

TC\_GRAIN\_SIZE\_63085143.GPJ\_TERRACON.GDT\_4/4/11



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen Identification	USCS Soil Classification	LL	PL	PI	Cc	Cu
● B-5 25.0 ft	SANDY LEAN CLAY(CL)	35	18	17		

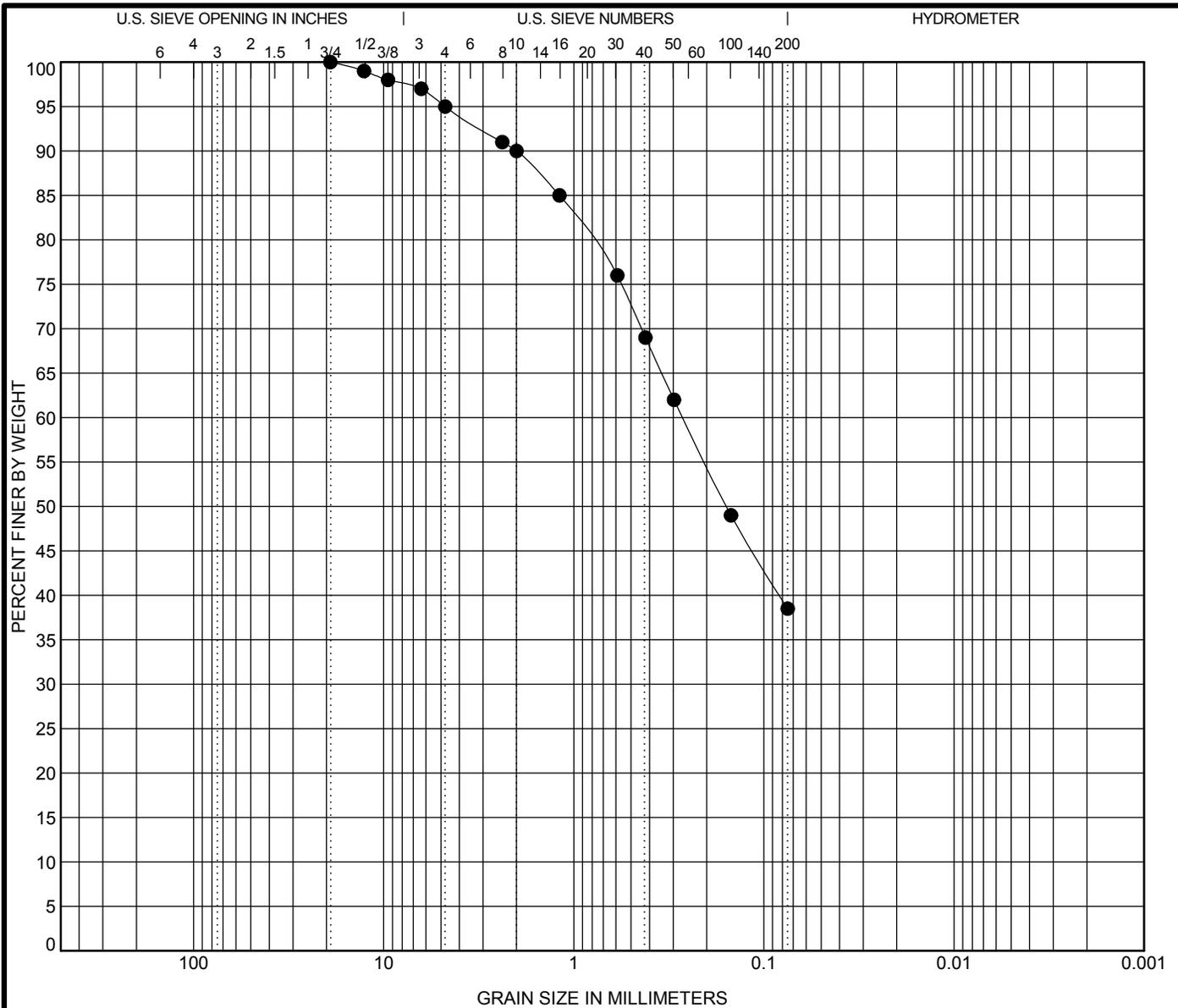
Specimen Identification	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● B-5 25.0 ft	9.5	0.099			4.0	37.4	58.6	



**GRAIN SIZE DISTRIBUTION**

Project: El Paso & Southwestern Railroad Greenway  
 Site: Historic Railroad Alignment Tucson, Arizona  
 Job #: 63085143  
 Date: 4-4-11

TC\_GRAIN\_SIZE\_63085143.GPJ\_TERRACON.GDT\_4/4/11



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen Identification	USCS Soil Classification	LL	PL	PI	Cc	Cu
● B-6 0.0 ft	SILTY, CLAYEY SAND(SC-SM)	23	18	5		

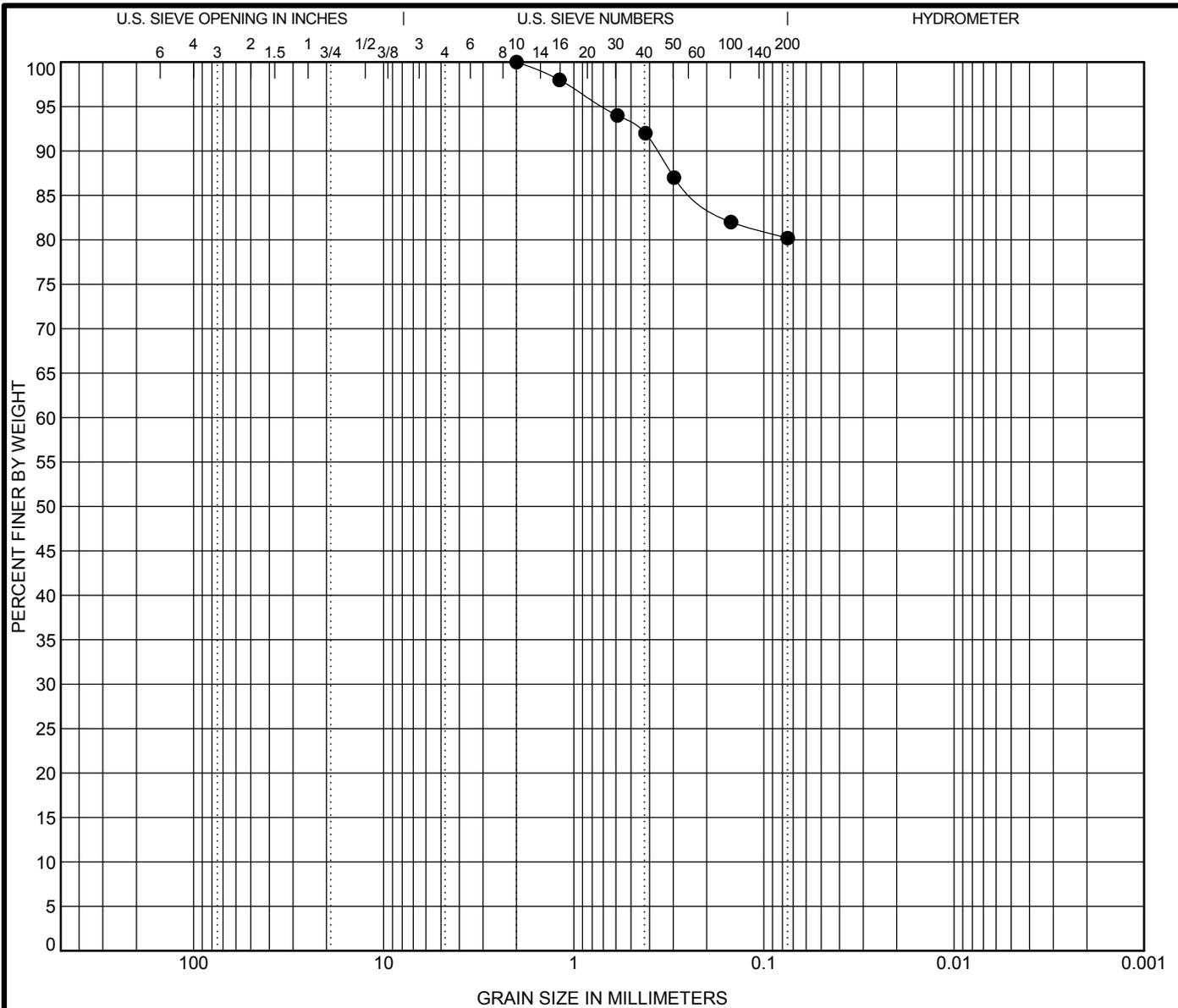
Specimen Identification	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● B-6 0.0 ft	19.1	0.267			5.0	56.5	38.5	



**GRAIN SIZE DISTRIBUTION**

Project: El Paso & Southwestern Railroad Greenway  
 Site: Historic Railroad Alignment Tucson, Arizona  
 Job #: 63085143  
 Date: 4-4-11

TC\_GRAIN\_SIZE\_63085143.GPJ\_TERRACON.GDT\_4/4/11



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen Identification	USCS Soil Classification	LL	PL	PI	Cc	Cu
● B-6 35.0 ft	LEAN CLAY with SAND(CL)	39	22	17		

Specimen Identification	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● B-6 35.0 ft	2				0.0	19.8	80.2	

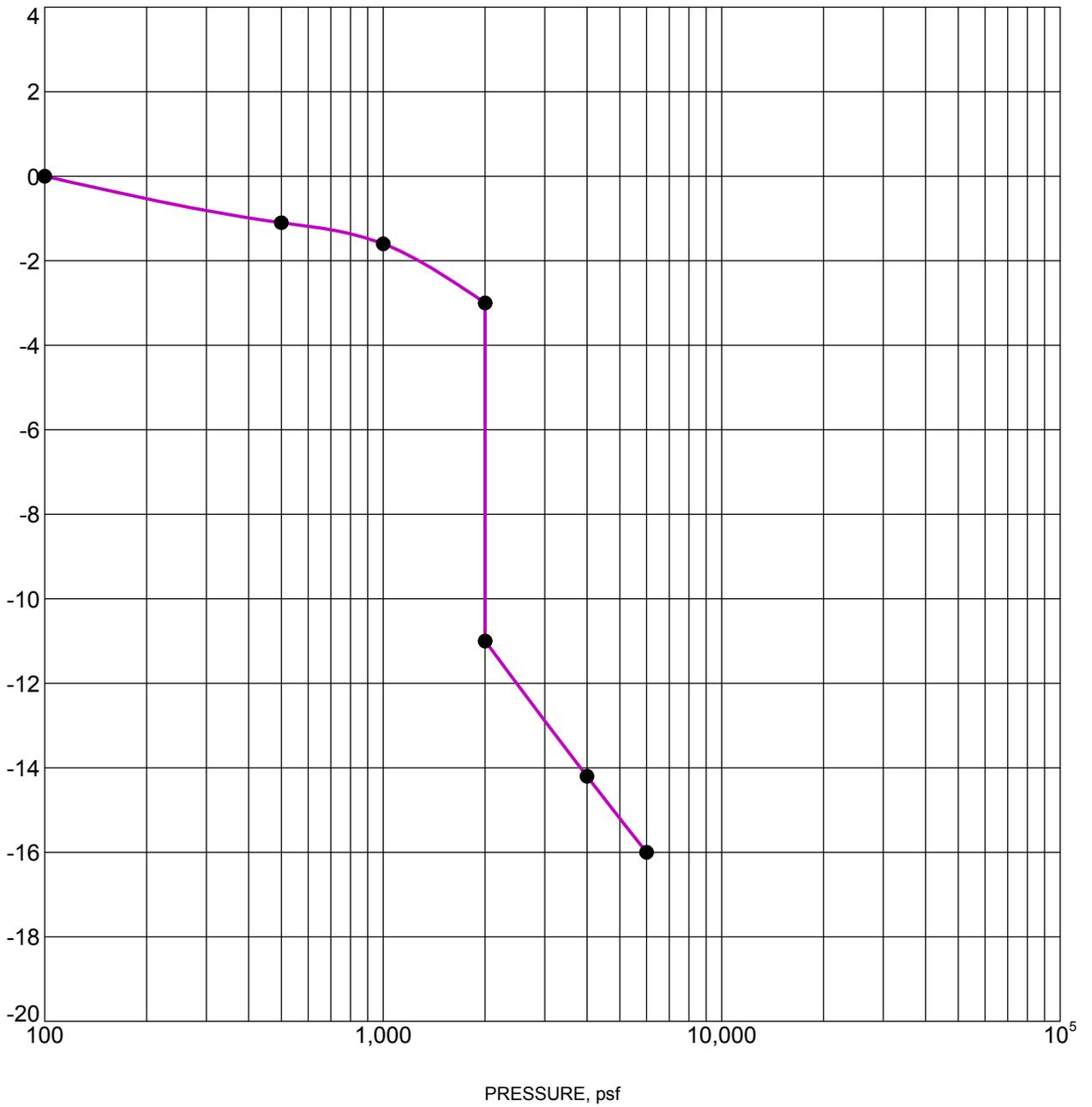


**GRAIN SIZE DISTRIBUTION**

Project: El Paso & Southwestern Railroad Greenway  
 Site: Historic Railroad Alignment Tucson, Arizona  
 Job #: 63085143  
 Date: 4-4-11

TC\_GRAIN\_SIZE\_63085143.GPJ\_TERRACON.GDT\_4/4/11

AXIAL STRAIN, %



Specimen Identification	Classification	$\gamma_d$ , pcf	WC, %
● B-1      5.0ft	SANDY LEAN CLAY (CL)	82	12

Water added at 2,000 psf

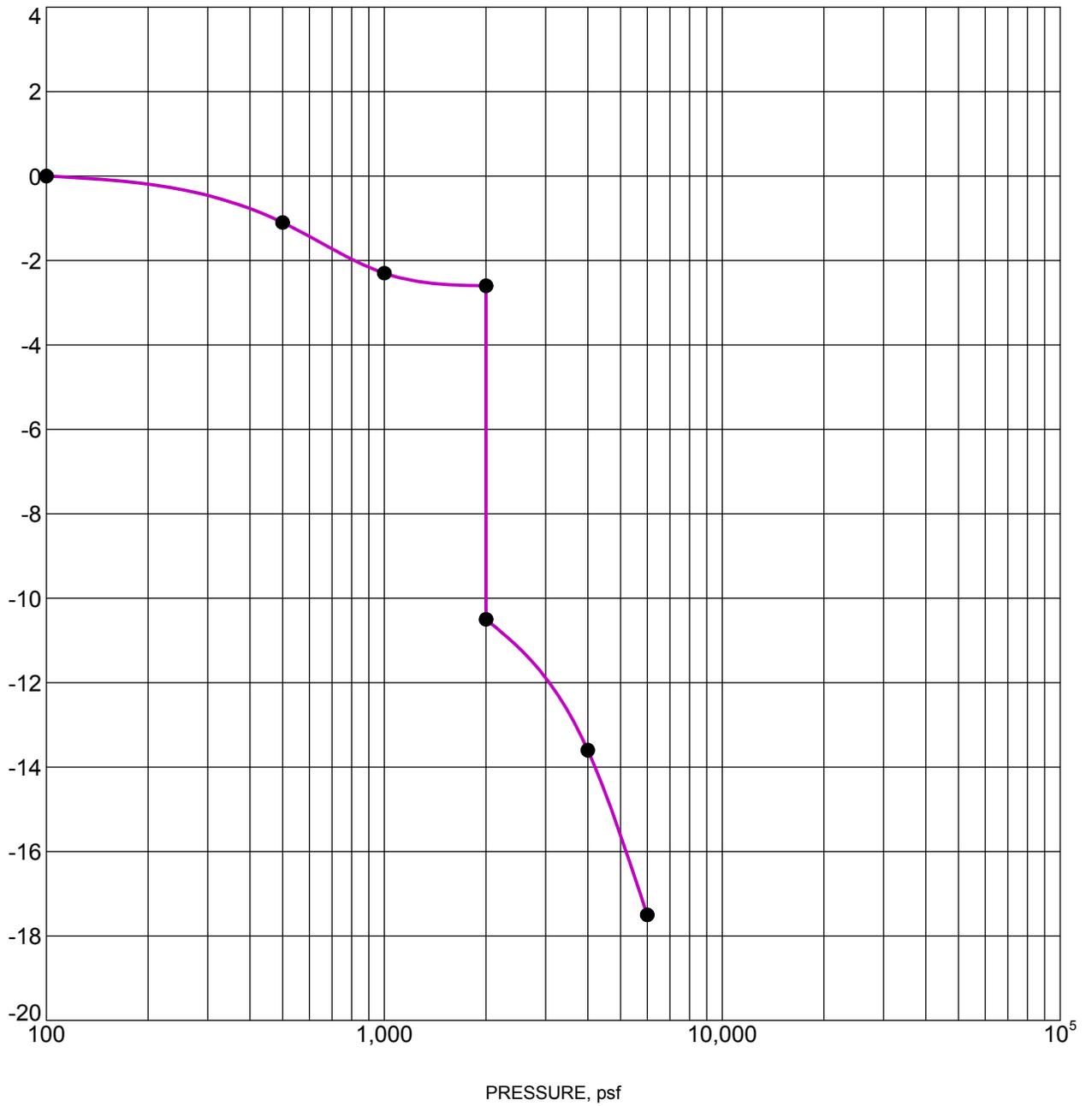
TC\_CONSOL\_STRAIN\_63085143.GPJ TERRACON.GDT 4/4/11



### CONSOLIDATION TEST RESULTS

Project: El Paso & Southwestern Railroad Greenway  
 Site: Historic Railroad Alignment Tucson, Arizona  
 Job #: 63085143  
 Date: 4-4-11

AXIAL STRAIN, %



Specimen Identification	Classification	$\gamma_d$ , pcf	WC, %
● B-4      2.0ft	CLAYEY SAND WITH GRAVEL (SC)	83	12

Water added at 2,000 psf

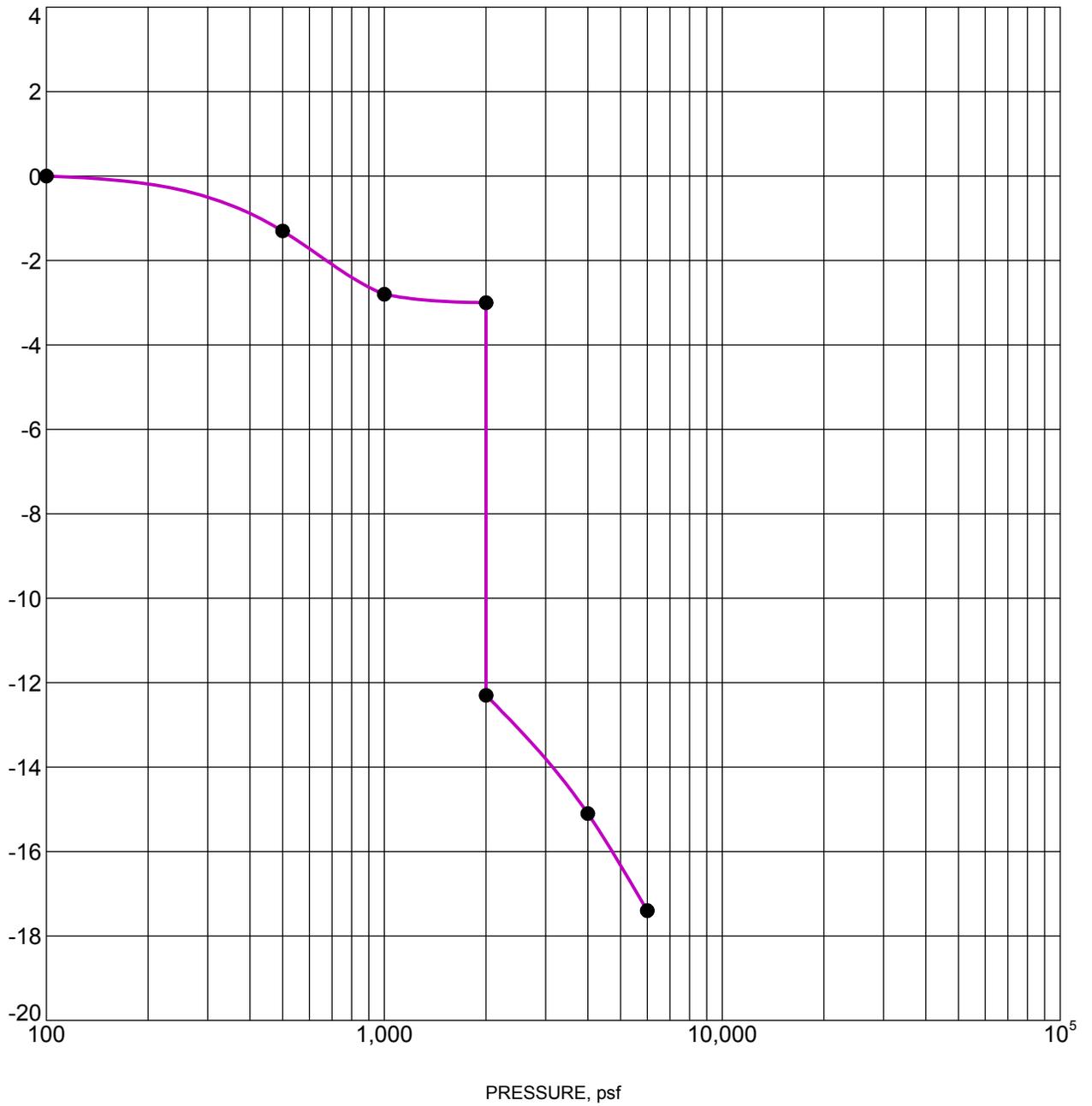
TC\_CONSOL\_STRAIN\_63085143.GPJ\_TERRACON.GDT\_4/4/11



### CONSOLIDATION TEST RESULTS

Project: El Paso & Southwestern Railroad Greenway  
 Site: Historic Railroad Alignment Tucson, Arizona  
 Job #: 63085143  
 Date: 4-4-11

AXIAL STRAIN, %



Specimen Identification	Classification	$\gamma_d$ , pcf	WC, %
● B-6      2.0ft	SILTY CLAYEY SAND (SC-SM)	93	5

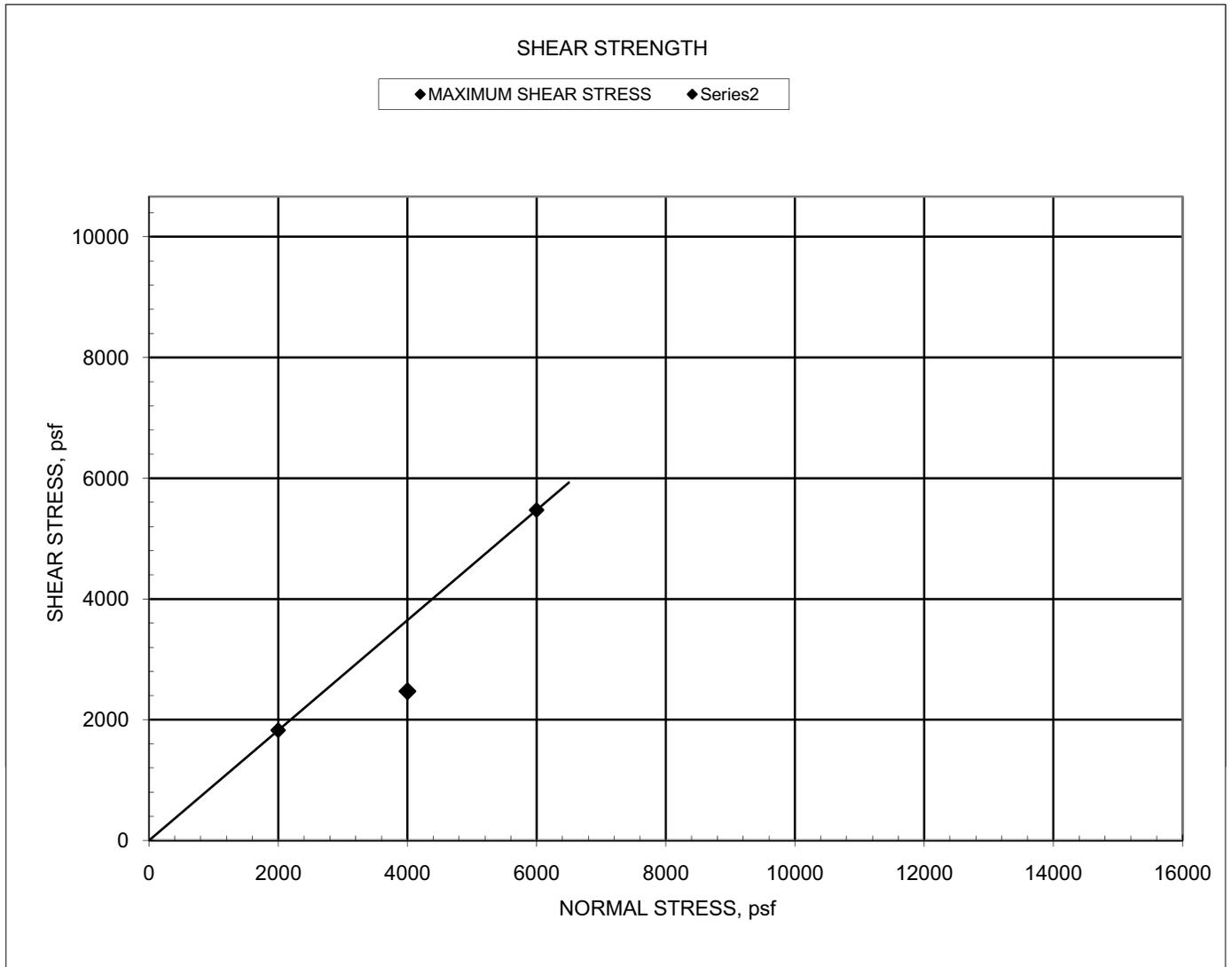
Water added at 2,000 psf



### CONSOLIDATION TEST RESULTS

Project: El Paso & Southwestern Railroad Greenway  
 Site: Historic Railroad Alignment Tucson, Arizona  
 Job #: 63085143  
 Date: 4-4-11

**DIRECT SHEAR TEST OF SOILS UNDER CONSOLIDATED DRAINED CONDITIONS  
ASTM D3080**



AT MAXIMUM SHEAR STRESS		FRICITION ANGLE	COHESION	NORMAL STRESS, psf	NORMAL STRESS, psf	NORMAL STRESS, psf
		42.4 deg	0 psf	2000	4000	6000
INITIAL AREA, in2	4.584	INITIAL MOISTURE, %		18.7	18.7	18.7
INITIAL LENGTH, in	1.000	INITIAL DRY DENSITY, pcf		105.2	107.0	114.5
SPECIFIC GRAVITY	2.68	INITIAL SATURATION, %		85	89	109
SG ASSUMED	X	INITIAL VOID RATIO		0.59	0.56	0.46
SG TESTED		FINAL MOISTURE, %		18.7	18.7	18.7
LIQUID LIMIT		FINAL SATURATION, %		95	92	129
PLASTIC LIMIT		FINAL VOID RATIO		0.53	0.55	0.39
PLASTICITY INDEX		MAXIMUM SHEAR STRESS, psf		1824	2472	5472
SAMPLE TYPE	UNDISTURBED	RATE OF LOADING, in/min		0.0200	0.0200	0.0200
DESCRIPTION						

PROJECT NAME: \_\_\_\_\_

BORING NO.           B-2          

LOCATION:           EL PASO GREENWAY          

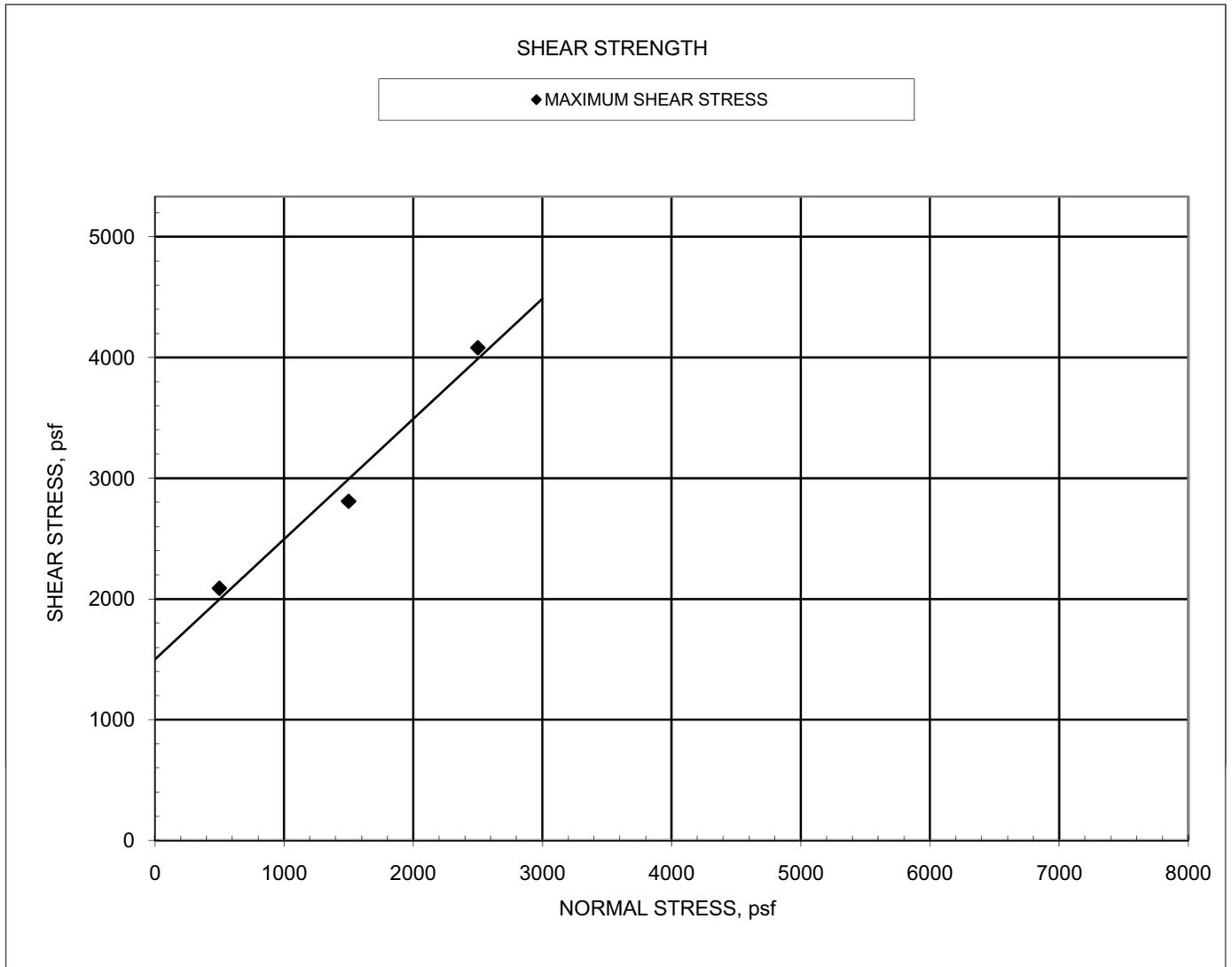
SAMPLE NO.           @          

JOB NO.:           63085143          

DEPTH, feet           35 TO 35.5          

DATE:           3/7/2011

**DIRECT SHEAR TEST OF SOILS UNDER CONSOLIDATED DRAINED CONDITIONS  
ASTM D3080**



AT MAXIMUM SHEAR STRESS		FRICITION ANGLE	COHESION	NORMAL STRESS, psf	NORMAL STRESS, psf	NORMAL STRESS, psf
		44.9 deg	1498 psf	500	1500	2500
INITIAL AREA, in <sup>2</sup>	4.584	INITIAL MOISTURE, %		11.2	11.2	11.2
INITIAL LENGTH, in	1.000	INITIAL DRY DENSITY, pcf		108.0	109.3	100.8
SPECIFIC GRAVITY	2.68	INITIAL SATURATION, %		55	56	45
SG ASSUMED	X	INITIAL VOID RATIO		0.55	0.53	0.66
SG TESTED		FINAL MOISTURE, %		11.2	11.2	11.2
LIQUID LIMIT		FINAL SATURATION, %		77	71	54
PLASTIC LIMIT		FINAL VOID RATIO		0.39	0.42	0.55
PLASTICITY INDEX		MAXIMUM SHEAR STRESS, psf		2088	2808	4080
SAMPLE TYPE	UNDISTURBED	RATE OF LOADING, in/min		0.0200	0.0200	0.0200
DESCRIPTION						

PROJECT NAME: EL PASO GREENWAY

BORING NO. B-3

LOCATION: \_\_\_\_\_

SAMPLE NO. @

JOB NO.: 63085143

DEPTH, feet 15 TO 15.5

DATE: 3/4/2011



March 01, 2011

Bryan Reed  
Terracon, Inc.  
355 S. Euclid Ave., Ste. 107  
Tucson, AZ 85719

TEL (520) 770-1789  
FAX (520) 792-2539

RE: Soil Samples

Work Order No.: 11B0615  
Order Name: El Paso Greenway  
63085143

Dear Bryan Reed,

Turner Laboratories, Inc. received 3 sample(s) on 02/25/2011 for the analyses presented in the following report.

All results are intended to be considered in their entirety, and Turner Laboratories, Inc. is not responsible for use of less than the complete report. Results apply only to the samples analyzed. Samples will be disposed of 30 days after issue of our report unless special arrangements are made.

The pages that follow may contain sensitive, privileged or confidential information intended solely for the addressee named above. If you receive this message and are not the agent or employee of the addressee, this communication has been sent in error. Please do not disseminate or copy any of the attached and notify the sender immediately by telephone. Please also return the attached sheet(s) to the sender by mail.

Please call if you have any questions.

Respectfully submitted,

Turner Laboratories, Inc.  
ADHS License AZ0066

Terri Garcia  
Technical Director

**Client:** Terracon, Inc.  
**Project:** Soil Samples  
**Work Order:** 11B0615  
**Date Received:** 02/25/2011

**Order:** El Paso Greenway 63085143

**Work Order Sample Summary**

---

<b>Lab Sample ID</b>	<b>Client Sample ID</b>	<b>Matrix</b>	<b>Collection Date/Time</b>
11B0615-01	5143 B-2 0-5	Soil	02/23/2011 1000
11B0615-02	5143 B-4 0-5	Soil	02/23/2011 1000
11B0615-03	5143 B-5 0-5	Soil	02/23/2011 1000

**Client:** Terracon, Inc.  
**Project:** Soil Samples  
**Work Order:** 11B0615  
**Date Received:** 02/25/2011

**Case Narrative**

---

The Arizona Department of Health Services does not license laboratories for the determination of resistivity, chloride, sulfate, or sulfide in a soil matrix.

All soil, sludge, and solid matrix determinations are reported on a wet weight basis unless otherwise noted.

ND Not Detected at or above the PQL

PQL Practical Quantitation Limit

DF Dilution Factor

**Client:** Terracon, Inc.  
**Project:** Soil Samples  
**Work Order:** 11B0615  
**Lab Sample ID:** 11B0615-01

**Client Sample ID:** 5143 B-2 0-5  
**Collection Date/Time:** 02/23/2011 1000  
**Matrix:** Soil  
**Order Name:** El Paso Greenway 63085143

<b>Analyses</b>	<b>Result</b>	<b>PQL</b>	<b>Qual</b>	<b>Units</b>	<b>DF</b>	<b>Prep Date</b>	<b>Analysis Date</b>	<b>Analyst</b>
<b>Anions by Ion Chromatography-E300</b>								
Chloride	150	10		mg/Kg	1	02/28/2011 0900	02/28/2011 1300	JM
Sulfate	1600	500		mg/Kg	10	02/28/2011 0900	02/28/2011 1432	JM

**Client:** Terracon, Inc.  
**Project:** Soil Samples  
**Work Order:** 11B0615  
**Lab Sample ID:** 11B0615-02

**Client Sample ID:** 5143 B-4 0-5  
**Collection Date/Time:** 02/23/2011 1000  
**Matrix:** Soil  
**Order Name:** El Paso Greenway 63085143

<b>Analyses</b>	<b>Result</b>	<b>PQL</b>	<b>Qual</b>	<b>Units</b>	<b>DF</b>	<b>Prep Date</b>	<b>Analysis Date</b>	<b>Analyst</b>
<b>Anions by Ion Chromatography-E300</b>								
Chloride	71	10		mg/Kg	1	02/28/2011 0900	02/28/2011 1318	JM
Sulfate	990	500		mg/Kg	10	02/28/2011 0900	02/28/2011 1451	JM

**Client:** Terracon, Inc.  
**Project:** Soil Samples  
**Work Order:** 11B0615  
**Lab Sample ID:** 11B0615-03

**Client Sample ID:** 5143 B-5 0-5  
**Collection Date/Time:** 02/23/2011 1000  
**Matrix:** Soil  
**Order Name:** El Paso Greenway 63085143

<b>Analyses</b>	<b>Result</b>	<b>PQL</b>	<b>Qual</b>	<b>Units</b>	<b>DF</b>	<b>Prep Date</b>	<b>Analysis Date</b>	<b>Analyst</b>
<b>Anions by Ion Chromatography-E300</b>								
Chloride	ND	10		mg/Kg	1	02/28/2011 0900	02/28/2011 1337	JM
Sulfate	ND	50		mg/Kg	1	02/28/2011 0900	02/28/2011 1337	JM



SOIL PROPERTIES 63085143.GPJ TERR2000.GDT 4/4/11

Borehole No.	Depth (ft.)	USCS Soil Class.	In-Situ Properties		Classification			Expansion Testing					Corrosivity			Remarks	
			Dry Density (pcf)	Water Content (%)	Passing #200 Sieve (%)	Atterberg Limits			Dry Density (pcf)	Water Content (%)	Surcharge (psf)	Expansion (%)	Expansion Index EI <sub>50</sub>	pH	Resistivity (ohm-cm)		Sulfates (ppm)
						LL	PL	PI									
B-1	0	CL			55	30	19	11									
B-1	2	CL	78	12													1, 2
B-1	5	CL	82	12													1, 2
B-1	15	SM			37	NP	NP	NP									
B-1	40	CL			77	43	21	22									
B-2	0	SC														1600	2
B-2	2	SC	95	13													1, 2
B-2	10	CL			83	40	24	16									
B-2	15	SM	85	24													1, 2
B-2	35	SC	109	19													1, 2
B-3	0	SC			30	36	22	14									
B-3	2	SC	91	9													1, 2
B-3	15	SC	106	11													1, 2
B-3	25	CL			91	43	26	17									
B-3	30	SP-SM	109	8													1, 2
B-4	0	SC														990	2
B-4	2	SC	83	12													1, 2
B-4	20	CL	98	19													1, 2
B-4	35	SP-SM			7	NP	NP	NP									
B-5	0	SC														0	2
B-5	2	SC	100	6													1, 2
B-5	5	SC			42	31	20	11									
B-5	10	CH			65	51	25	26									
B-5	15	CH	94	6													1, 2
B-5	25	CL			59	35	18	17									

**REMARKS**

1. Dry Density and/or moisture determined from one or more rings of a multi-ring sample.
2. Visual Classification.
3. Submerged to approximate saturation.
4. Expansion Index in accordance with ASTM D4829-95.
5. Air-Dried Sample

**SUMMARY OF LABORATORY RESULTS**



Project: El Paso & Southwestern Railroad Greenway  
 Site: Historic Railroad Alignment Tucson, Arizona  
 Job #: 63085143  
 Date: 4-4-11

Borehole No.	Depth (ft.)	USCS Soil Class.	In-Situ Properties		Classification			Expansion Testing					Corrosivity			Remarks	
			Dry Density (pcf)	Water Content (%)	Passing #200 Sieve (%)	Atterberg Limits			Dry Density (pcf)	Water Content (%)	Surcharge (psf)	Expansion (%)	Expansion Index EI <sub>50</sub>	pH	Resistivity (ohm-cm)		Sulfates (ppm)
						LL	PL	PI									
B-6	0	SC-SM			39	23	18	5									
B-6	2	SC-SM	93	5													1, 2
B-6	30	CL	91	9													1, 2
B-6	35	CL			80	39	22	17									

**REMARKS**

1. Dry Density and/or moisture determined from one or more rings of a multi-ring sample.
2. Visual Classification.
3. Submerged to approximate saturation.
4. Expansion Index in accordance with ASTM D4829-95.
5. Air-Dried Sample

**SUMMARY OF LABORATORY RESULTS**

Project: El Paso & Southwestern Railroad Greenway  
 Site: Historic Railroad Alignment Tucson, Arizona  
 Job #: 63085143  
 Date: 4-4-11



Borehole No.	Depth (ft.)	USCS Soil Class.	In-Situ Properties		Classification			Corrosivity					Remarks	
			Dry Density (pcf)	Water Content (%)	Passing #200 Sieve (%)	Atterberg Limits			pH	Resistivity (ohm-cm)	Water Soluble			
						LL	PL	PI			Salts (ppm)	Sulfates (ppm)		Chlorides (ppm)
B-2	0	SC								150	1600	150	2	
B-4	0	SC								71	990	71	2	
B-5	0	SC								0	0	0	2	

**REMARKS**

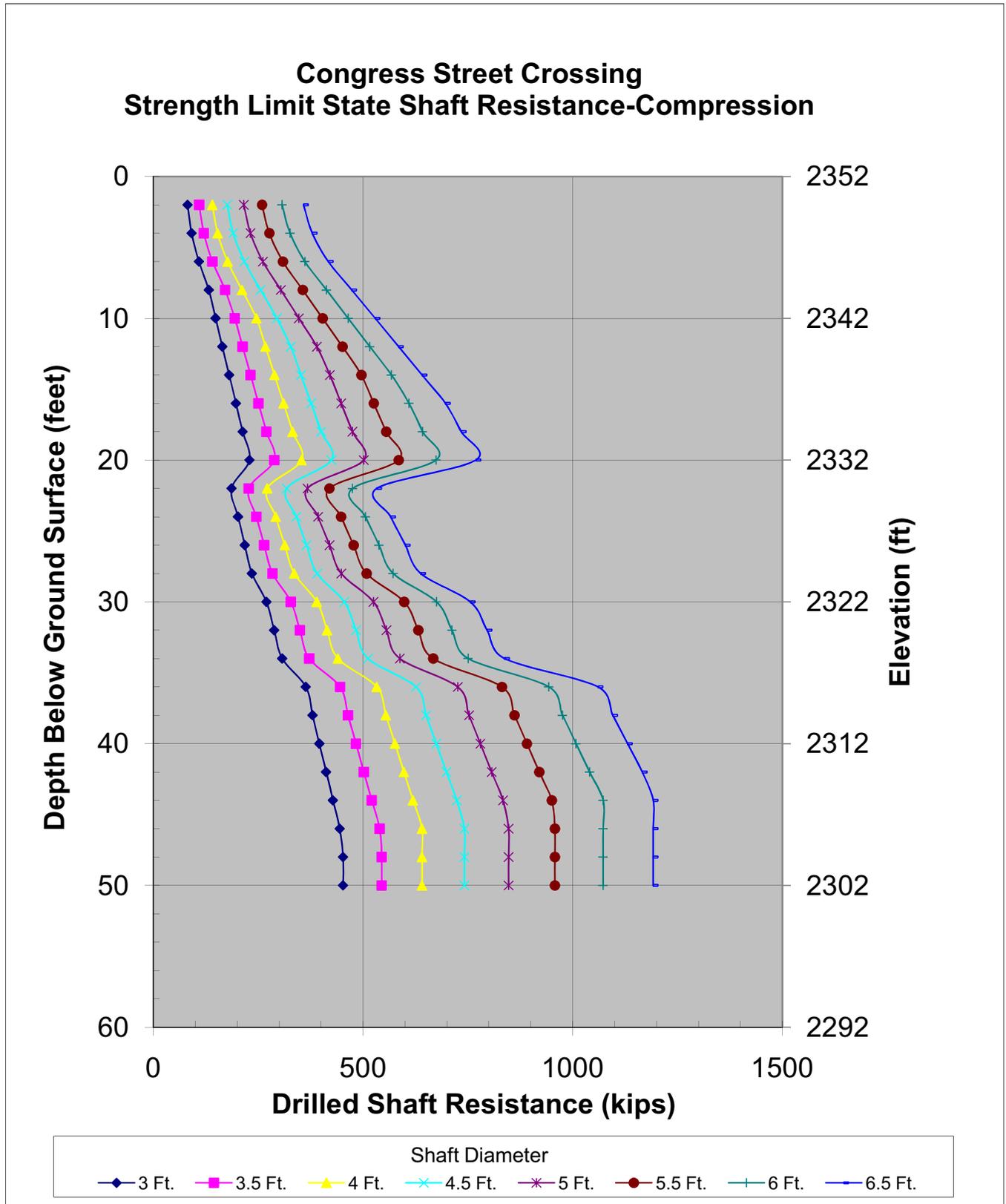
1. Dry Density and/or moisture determined from one or more rings of a multi-ring sample.
2. Visual Classification.
3. Submerged to approximate saturation.



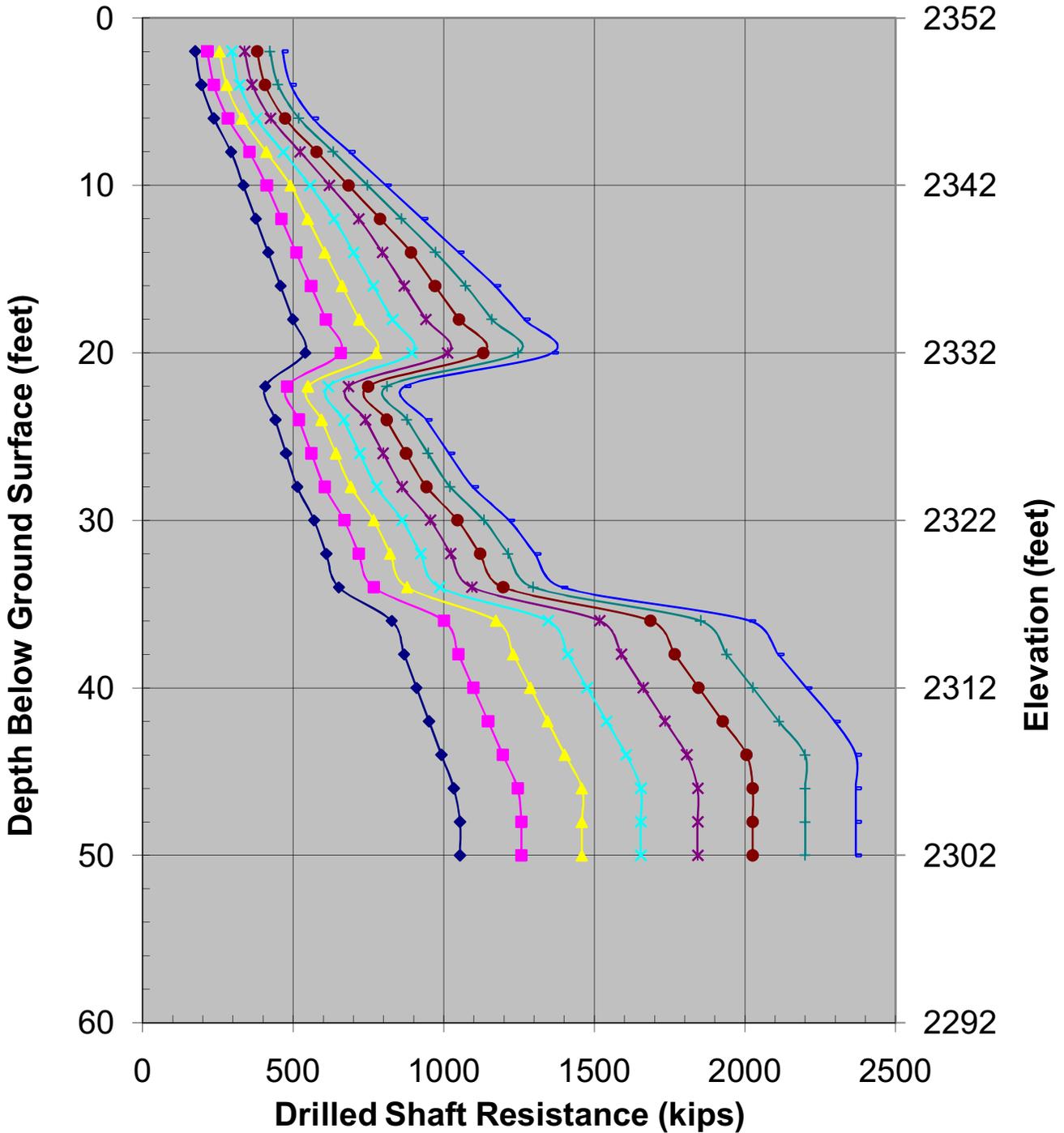
**SUMMARY OF LABORATORY RESULTS**

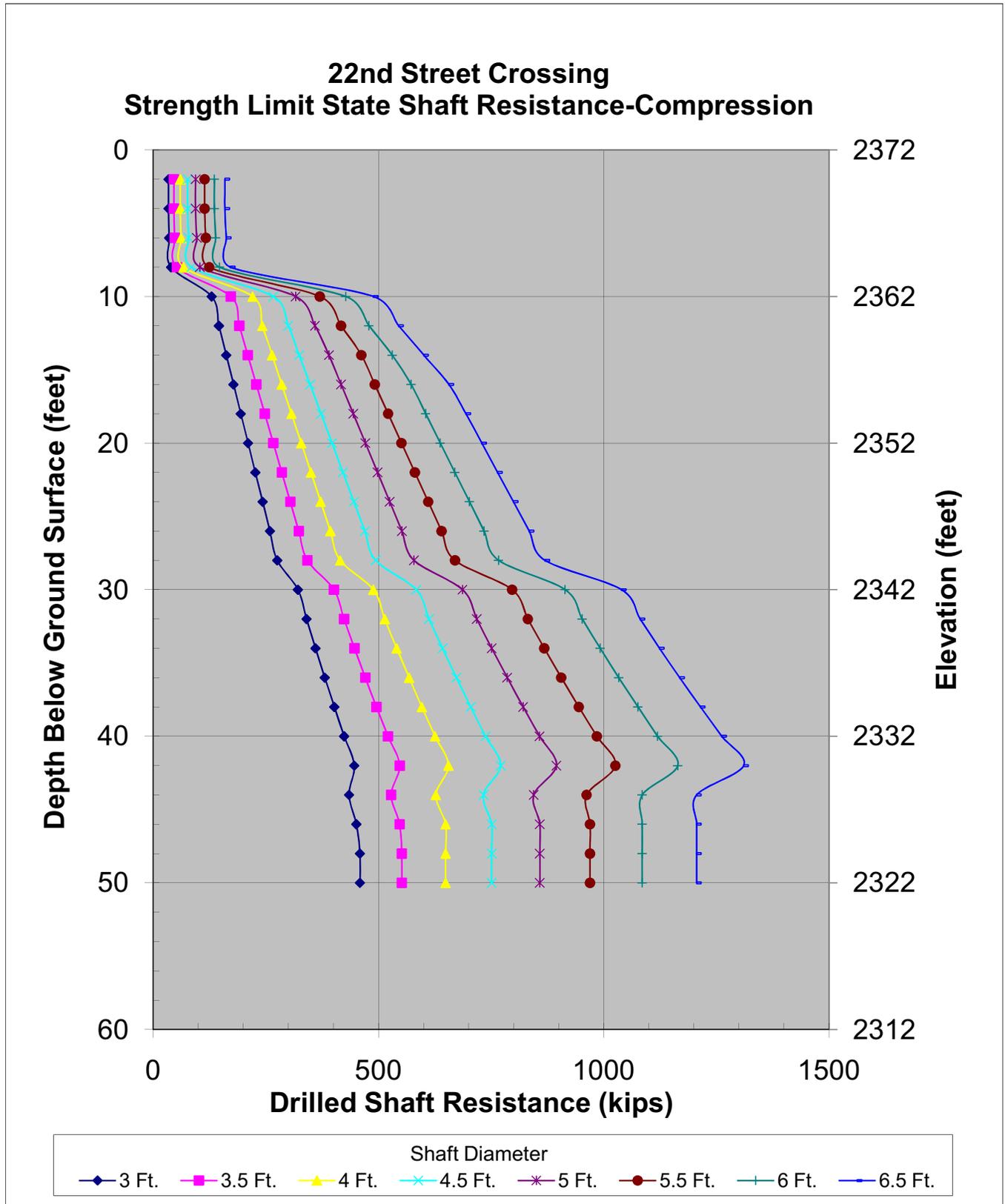
Project: El Paso & Southwestern Railroad Greenway  
 Site: Historic Railroad Alignment Tucson, Arizona  
 Job #: 63085143  
 Date: 4-4-11

**APPENDIX C**  
**DRILLED SHAFT CAPACITY CHARTS**

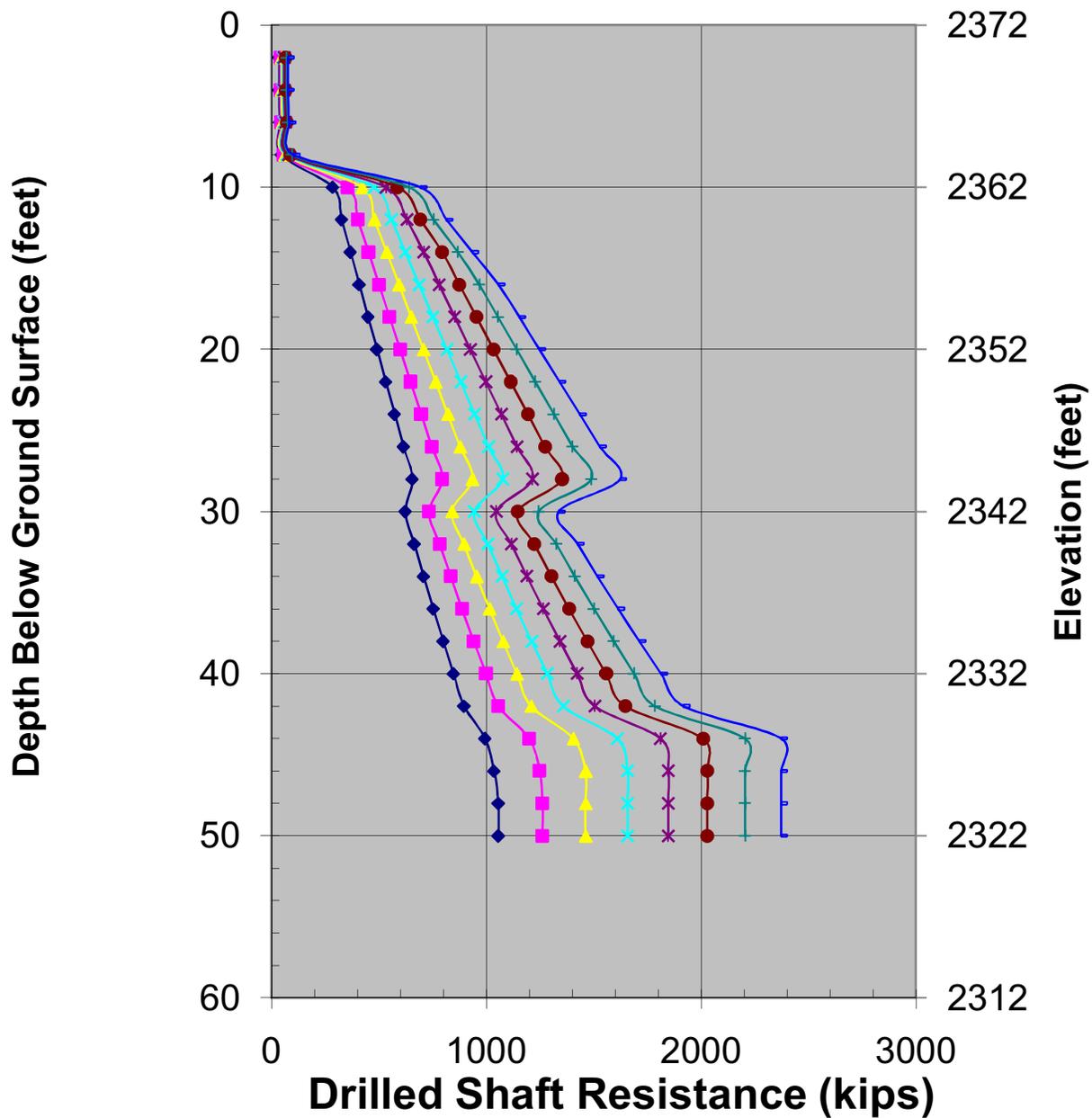


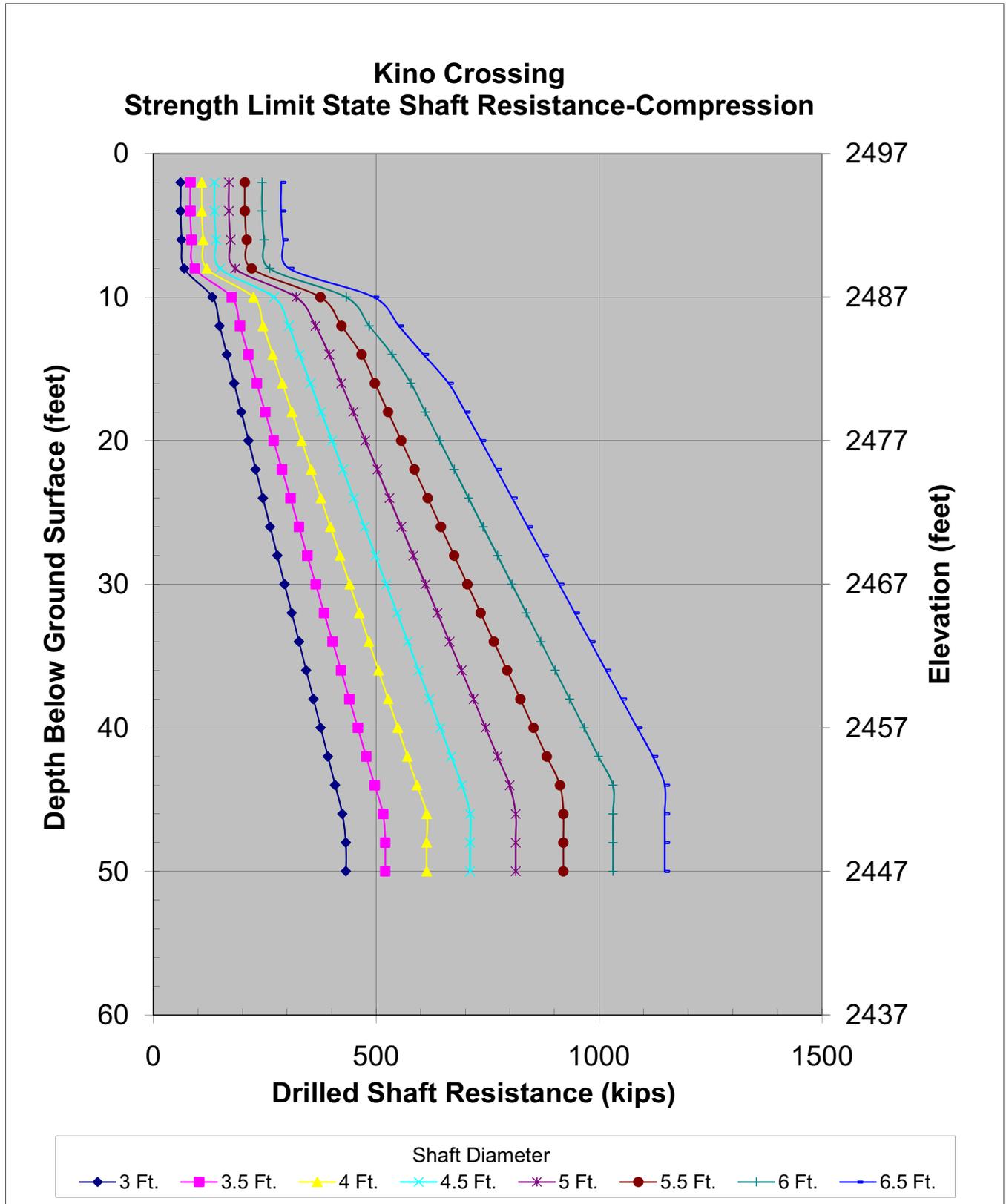
### Congress Street Crossing Service Limit Shaft Resistance-Compression Analysis for Settlement = 0.5 inches





### 22nd Street Crossing Service Limit Shaft Resistance-Compression Analysis for Settlement = 0.5 inches





**Kino Crossing**  
**Service Limit Shaft Resistance-Compression**  
 Analysis for Settlement = 0.5 inches

