



City of Phoenix



Brownfields Planning Project



Del Rio Area Brownfields Planning Project

**Brownfields Visioning Workshop
August 16, 2011, 6 pm**

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Brownfields Project Manager
City of Phoenix

Agenda

- | | |
|----------------|----------------------------------|
| 6:00-6:15 pm | Brownfields Overview |
| 6:15-6:35 pm | Characterization Exercise |
| 6:35 - 7:00 pm | Visioning Exercise |
| 7:00-7:10 pm | <i>Break – refreshments</i> |
| 7:10-7:40 pm | Design Exercise |
| 8:00 pm | Recap & Next Steps |

What are Brownfields?

- **“Real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or *potential* presence of a hazardous substance, pollutant, or contaminant.”**
--EPA definition

Hazardous Substance Sites

Examples:

- Plating Shops
- Landfills
- Salvage Yards
- Dry Cleaners
- Mine-Scarred Lands
- Illegal Drug Labs



Petroleum Sites

Examples:

- Gas Stations
- Fuel Terminals
- Tank Farms
- Oil Fields



Why do Brownfields remain undeveloped?

- **Environmental conditions -- known & unknown**
- **Cost and time required to investigate and cleanup**
- **Liability concerns & cost of obtaining liability protections**
- **Higher cost of capital, financing for project**
- **Cost of obtaining insurance**
- **Higher level of community involvement**
- **Development considerations/constraints**

Why redevelop brownfields?

Create Opportunities for Communities

- **Est. 450,000-600,000 brownfields nationwide**
- **Promote economic development**
- **Create jobs**
- **Revitalize neighborhoods**
- **Increase property and sales tax revenues**
- **Protect health and the environment**
- **Improve quality of life**

Federal Brownfields Initiatives

- **EPA is leader in brownfields initiatives**
- **Awarded \$787.1 million in grants and loans, resulting in:**
- **\$16.3 billion in cleanup/redevelopment funding**
- **68,963 jobs in cleanup, construction, & redevelopment**



City of Phoenix

Phoenix Brownfields Land Recycling Program

- **1998: Program began with EPA grant**
- **City commitment: General & Bond funds**
- **Voters approved \$4 million brownfields bond funding in 2006**
 - Currently, \$3 million available July 1, 2012
 - \$1.6 million for grants to private sector for cleanup, infrastructure improvements, fees
 - \$1.3 million for city departments to use for acquisition, investigation, and cleanup.

RESULTS...



City of Phoenix

- **\$293 million Private sector investment**
- **275 acres of previously contaminated land restored**
- **3,000 jobs created or maintained**
- **Public sector investment has redeveloped:**
 - 21 sites for parks, museums, community centers.

The logo for the Del Rio Area features a stylized, glowing green and blue crescent shape on the left, resembling a river or a moon. To its right, the words "Del Rio Area" are written in a bold, green, sans-serif font.

Del Rio Area

Brownfields Planning Project

“A redevelopment plan that incorporates the community’s vision will likely garner greater community and political support for the project.”

-American Planning Association

Del Rio Area

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GOAL

- **Create a brownfields area plan that will:**
 - Guide the redevelopment of brownfield sites within the area
 - Prioritize sites for short-term vs. long-term cleanup and redevelopment potential
 - Inform assessment and cleanup
 - Integrate sustainable development and green building
 - Develop strategies for facilitating reuse of existing infrastructure
 - Identify resources and next steps needed to implement plan

Position brownfield sites for future EPA and other federal agency funding

Del Rio Area

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\$175,000 EPA Brownfields Area-Wide Planning Pilot Program Grant (Dec.2010-Dec. 2012)

- **City Team:**

- Office of Environmental Programs
- Planning
- Parks and Recreation
- Community and Economic Development
- Neighborhood Services



- **Community:**

- Residents, businesses within and surrounding project area
- Advisory Group (ad hoc, informal, volunteer)

- **Other Experts**

- Planning & Environmental Consultants

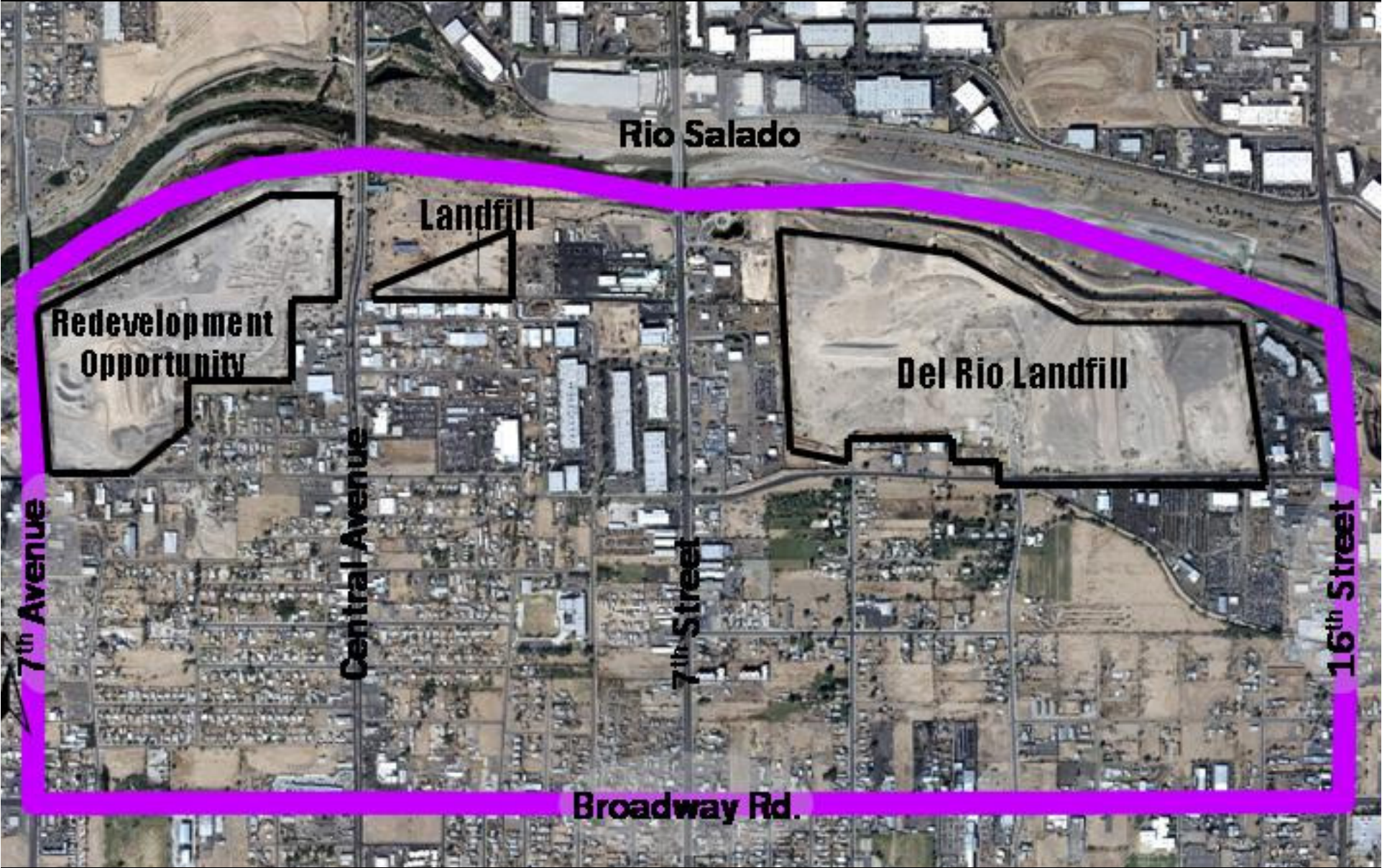
Del Rio Area

Brownfields Planning Project

- **Del Rio Area Brownfields Advisory Group**

- Joe Banks, III, Ironco Enterprises LLC
- Myla Bobrow, RFI Operating Group
- Dr. George Brooks, NXT Horizon Group
- Tim Drexler, Ace Asphalt
- Chadwic Gifford, Catalyst Holdings
- Stephen E. Glueck, South Mountain/Laveen Chamber of Commerce
- Monica Moreno, Moreno Welding
- Sarah Porter, Rio Salado Audubon Center
- Margarita P. Singh-Smith, Property Owner
- Victor Vidales, RE/MAX New Heights Realty
- George Young, South Mountain Villager

Project Area



What do we know about the 3 sites?

- **Del Rio Landfill**

- Owned by city of Phoenix
- Approx. 130 acres, 20 acres is not landfill (formerly Rio Salado Park)
- Landfill closed in 1980 in accordance with federal, state regulations.
- Soil cap was placed on site.
- Five groundwater wells are monitored on the Site
- Methane gas collection & discharge system is maintained at the Site



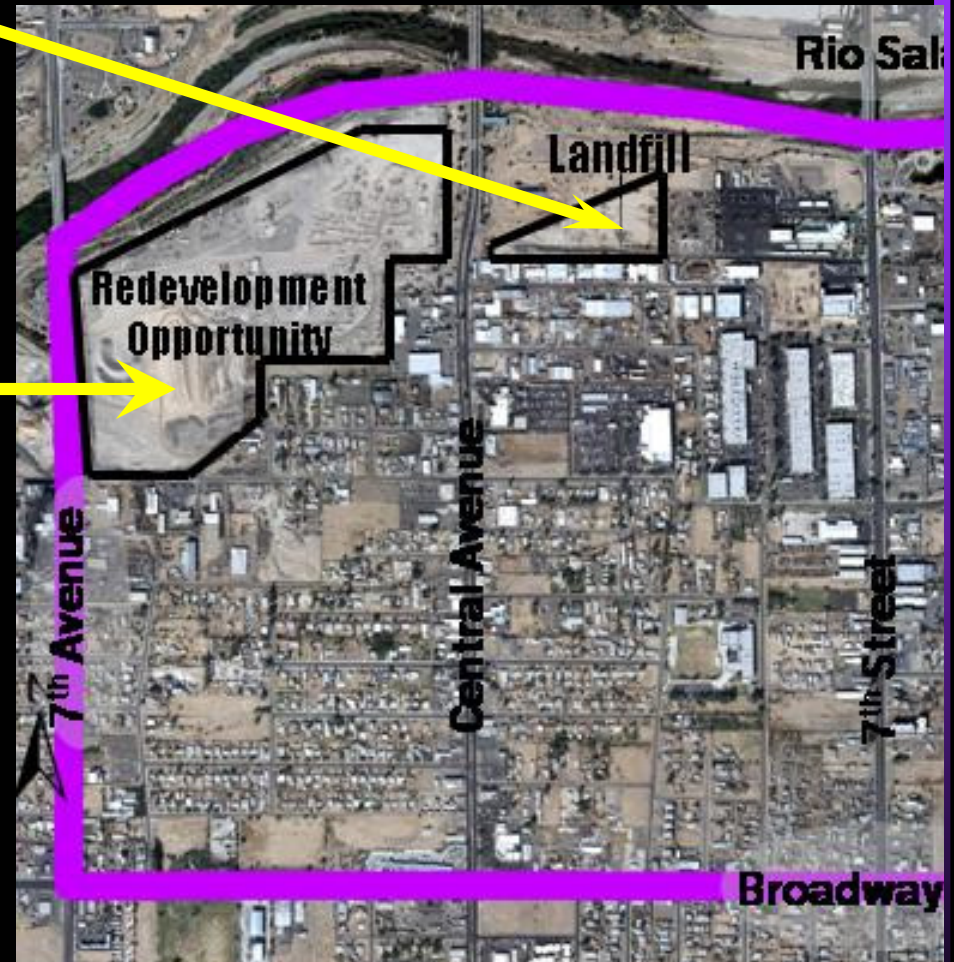
Del Rio Landfill

- **2009 - \$200,000 brownfields bond funds for**
 - Feasibility evaluation for redevelopment of landfill as a park.
 - Preliminary grading plan
 - Evaluation of stockpiled soil
 - Demolish park structures



What do we know about the 3 sites?

- **Site #1, east of Audubon Center**
 - Privately-owned property
 - Approx. 10 acres
 - Details of landfill unknown
- **Site #2, west of Central Ave.**
 - Privately-owned property
 - Approx. 70 acres
 - Sand and gravel mining site
 - Details of landfill unknown



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Brownfields Visioning Workshops

- **We want you to --**
 - Provide ideas and vision for reuse of three identified properties
 - Develop concepts, designs, themes for proposed uses.
- **Sept. 27 – Results Presented**



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Brownfields Planning Meetings

- **January – April 2012**
- **Develop brownfields plan:**
 - Preferred redevelopment alternatives
 - Prioritization of sites for short-term vs. long-term cleanup and redevelopment potential.
 - Integration of sustainable development and green building approaches.
 - Resources (financial and other) needed to promote cleanup and redevelopment.
 - Next steps needed to implement plan.

Public Input Needed!





Landfills Overview

Landfills...

- Est. 100,000 closed landfills in U.S.
- More than 6,000 have closed in past 20 years.
- Present opportunities for redevelopment.



Rio Salado Habitat Restoration Project

Landfill Redevelopment Challenges...

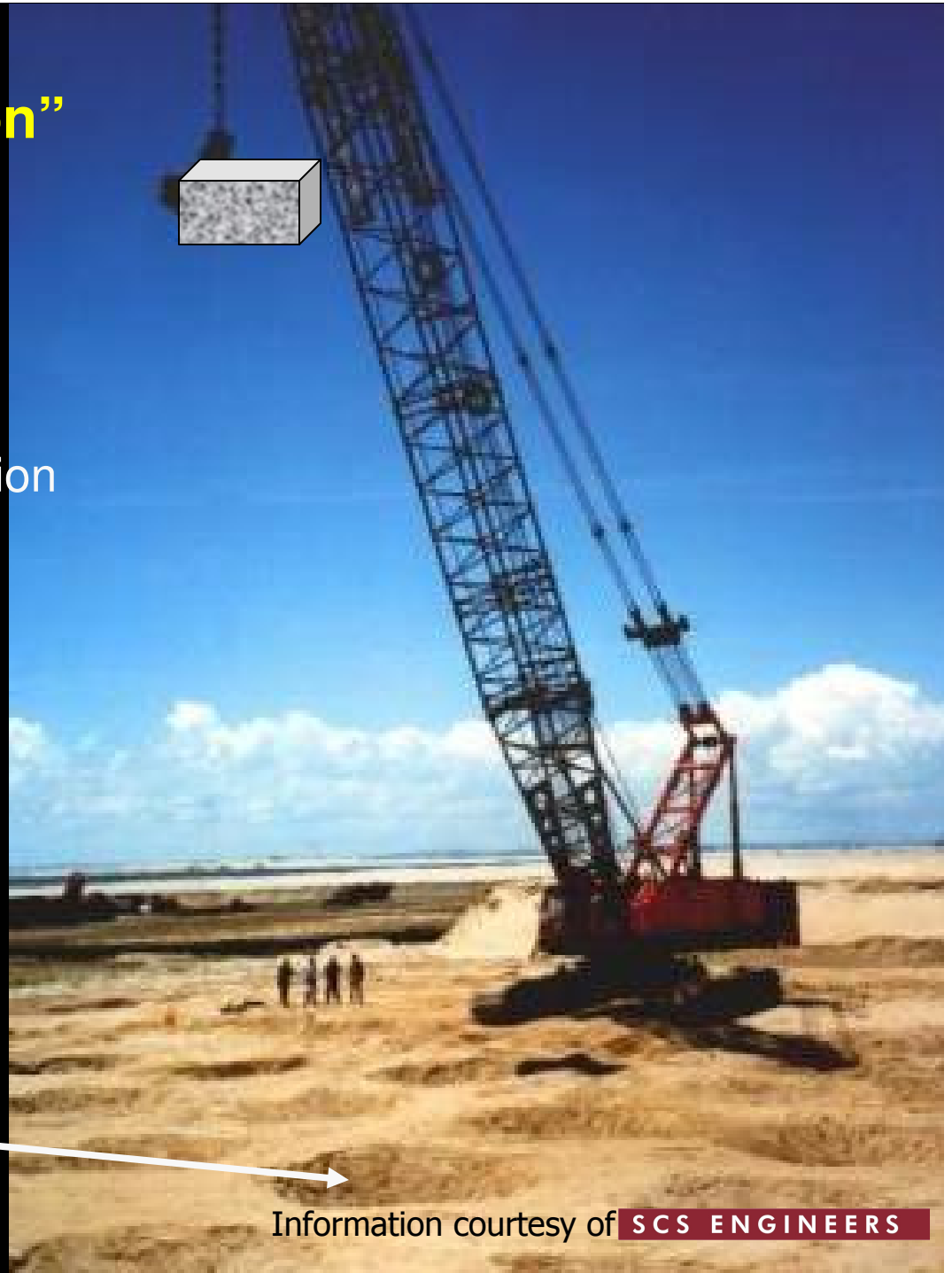
- **Landfill Gas (LFG)**
 - Methane and other gases
 - Migration, control and monitoring
 - Requires corrective action for safe use of site
- **Leachate**
 - Groundwater contamination
 - Contamination of surface water
 - Mitigation, control, monitoring
- **Geotechnical and Structural**
 - Compression due to waste decomposition
 - Construction unsuitability (requires studies)
 - Foundations
 - Settlement

Building Foundation & Utility Support Design Alternatives

- **Deep foundations (driven piles, drilled piers, grade beams, structural slabs)**
- **Reinforcement (geogrids, etc.)**
- **Ground improvement (surcharge, deep dynamic compaction)**
- **Waste removal and replacement with structural fill (partial or complete)**

“Deep Dynamic Compaction”

- Brute force approach
- Areas should be level
- Depth of improvement ~25 to 30 feet in MSW
- Good for near surface stabilization
- Difficult on slopes



Craters to be filled

Information courtesy of **SCS ENGINEERS**

Landfill Gas Mitigation

- **Type of development is important**
 - Any occupied structure must be protected
 - Commercial development may be more suited to active controls (maintenance infrastructure)
 - Residential development can be challenging
- **Nature of fill is important**
 - Small quantity of older fill, can still produce gas, but probably in small volumes

Construction over Landfills Costs More

- **Add \$12 to \$25 per square foot of building for**
 - Structural slabs and deep pile foundations for typical retail or office park development
- **Add \$2.50 to \$6.00 per square foot of building for**
 - Passive gas protection system
- **Add higher cost for maintenance of parking areas.**

Examples

- **Rio Salado Equestrian/Maintenance Facility, Phoenix, AZ**
 - Former landfill to recreational maintenance facility
- **19th Avenue/Greenway, Phoenix, AZ**
 - Former landfill to retail
- **Cave Creek Golf Course, Phoenix, AZ**
 - Former landfill to golf course
- **Rio Nuevo North, Tucson, AZ**
 - Former landfill to commercial office
- **Tempe Marketplace, Tempe, AZ**
 - Former landfill to destination shopping center
- **Tempe Center for the Performing Arts, Tempe, AZ**

Examples

- **Grijalva Park at Santiago Creek, Orange, CA**
 - 27 acre landfill to park , gym, aquatic center, skate park, community center (structures on 5 acre capped area)
- **Lakeside MarketPlace, Acworth, GA**
 - 36 acre landfill to big box retail
- **MathWorks Field on Oak Street , Natick, MA**
 - 22 acre landfill to park with baseball/soccer
- **King County Houghton Ballfields, King County, WA**
 - 40 acre landfill to athletic fields
- **LAKE ARCHWAY, Virginia Beach, Virginia**
 - 16 acre landfill to residential
- **Sai Tso Wan Recreation Ground, Hong Kong, China**
 - Recreational facility built on a restored landfill

Summary

- **Landfills have been developed for a wide range of land uses**
- **Challenges of settlement, foundation design and gas control can be resolved.**
- **Type of development guides mitigation.**
- **Costs of developing on landfills is higher.**
 - Each site is unique
 - Type of landfill (MSW,CD), age, location, proposed development, budget considerations

PLEASE REMEMBER...

- **Brownfields are properties that are not being developed because of environmental contamination**
- **Del Rio Project is a planning project only and is a great starting point towards cleanup and redevelopment**
- **We want you to continue to be a part of this project!**

STAY INVOLVED...

- **6 p.m., Sept. 27 – Results of Visioning Workshop Presented**
- **January 2012 – Planning meetings begin**
- **Keep up to date with the project by:**
 - Visiting website
 - Subscribe to electronic mail list
 - Give us your phone #, email, or mailing address
 - Talk with Advisory Group members
 - Call or email me!

Follow us on Twitter @phxenvironment

Project Contact

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