

# Low Impact Development Design Competition

## Urban Redevelopment Design Challenge

### Northern Crossing West



### Program

The NCX project consists of an approximately 115 acre site with 56 acres that are developable and undeveloped and another 20 acres of land that has been set aside for wetland mitigation and detention. The neighborhood is located almost halfway between downtown Fort Worth and Alliance at the southeast corner of the North Freeway (I-35 W) and I-820. The property is located in the Fossil Creek drainage area. Approximately 25 acres of the site has been developed with office warehouse buildings with a total of 408,000 square feet. The challenge is to design a new 'green' mixed-use development and interior bike/ped system that incorporates Low Impact Development techniques, reduces impervious cover, promotes infiltration, reduces stormwater pollution through bio-filtration or other means, and reduces long term maintenance costs.

- Project limits are three sites and the mitigation/detention area:
  - Site 1 being the approximately 15 acres bounded by Northern Cross to the north, Melody Hills to the south, Sylvania to the east, and the I 35 service Road to the west; and
  - Site 2 being the approximately 25 acres bounded by Northern Cross Blvd. on the south, I 35 on the west and north and a channelized drainage/mitigation area on the east; and
  - Site 3 being the approximately 14 acres bounded by channelized drainage/mitigation areas on the east and west, I 820 on the north and the developed property to the south; and
  - An area of approximately 25 acres of mitigation/detention area south of Northern Cross Boulevard directly south of the developed site.
  
- Planned Land Use:
  - Site 1
    - Approximately 17 to 25 residential units per acre or mixed use urban residential/retail. The development will include an approximate two acre pad site at the corner of Northern Cross and the I-35 service road.
  - Site 2
    - Efficient tilt-wall two to three story office buildings with three 60,000 to 90,000 square foot buildings. The development will include an approximate 2 acre pad site at the corner of Northern Cross and the service road of I-35 for a restaurant or retail use.
  - Site 3
    - Four small light industrial buildings of approximately 25,000 square feet each. The site will include two entrances at the service road with a driveway that connects the four separate sites.

## Criteria

All project submittals should be designed in accordance with the following guidelines.

### General

- Design in accordance with the City's development regulations (Chapter 51A) except for Storm Water Quality, Detention, and LID/iSWM criteria
- The I Zoning for this site should be referenced, but changes are expected to accommodate the residential component. Any PDD can be made if so noted in submittal
- Submissions should define proposed maintenance requirements and identify techniques utilized to ultimately reduce maintenance costs
- All Ped/Bike paths should integrate the three sites, the mitigation area and the previously developed site, and ultimately should connect to public transportation stops. It is acceptable to establish new proposed public transportation stops.

### Stormwater Management Design

- Projects must utilize LID features and practices as the predominant stormwater infrastructure system.
- Planning, analysis and design of the stormwater management system / LID features and practices shall be in accordance with applicable sections of the *integrated* Stormwater Management (iSWM™) Technical Manual, which may be accessed at <http://iswm.nctcog.org/>. LID practices from other manuals may be used if adapted for North Central Texas conditions (include references in project submittals and presentations).
- The post-development stormwater runoff characteristics (flow, volume, and velocity) must be below the pre-development characteristics for the 1-yr, 25-yr, and 100-yr storm events. The pre-development hydrograph and associated assumptions are included in the project specific details.
- Use iSWM *integrated* Site Design Practices to the greatest extent practicable to preserve environmentally sensitive areas and riparian buffers, reduce imperviousness, and maintain infiltrative capacity of soils.
- Use iSWM Stormwater Controls to provide at least 80% TSS removal for the first 1.5" of stormwater runoff volume (iSWM Water Quality Protection Volume).
- The following iSWM Stormwater Controls are considered to be LID practices:
  - Bioretention Areas
  - Enhanced Swales
  - Grass Channels
  - Filter Strips
  - Planter Boxes
  - Downspout Drywell
  - Infiltration Trenches
  - Soakage Trenches
  - Green Roofs
  - Modular Porous Pavement
  - Porous Concrete
  - Rain Barrels

*Other iSWM Stormwater Controls not listed (i.e. Wet Ponds, Stormwater Wetlands, etc.) may be used as supplemental controls if necessary.*

- Submissions and presentations must include a discussion of the Hydrologic Model used and reasons for selecting.
- Discuss maintainability, marketability, and acceptance by the public of the design submitted.
- Present an economic evaluation comparing the project's LID-focused design versus a conventional design for this development.

**Supporting Documents**

- Aerial View
- Zoning and map and floodplain information
- Trinity River Balanced Vision Plan
- Trinity River Comprehensive Land Use Plan
- Planned Development District 800
- LIDAR Contours
- Soils
- Current City of Fort Worth standard roadway details
- Predevelopment Hydrograph and related assumptions
- Survey/Plat
- Current City of Dallas standard roadway details (Paving Design Manual and Draft Complete Streets Manual, if available)
- City of Fort Worth Bike Plan
- Belleview Connector conceptual plan