

North Texas Alternative Futures

Imperviousness & Runoff

A key indicator for
comparing alternative future scenarios

This powerpoint presents:

- What is this key indicator ?
- How do the alternative future scenarios compare ?



Runoff Issues in our Region

- Disappearing water features and habitat



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- Erosion and degradation of natural streams



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- Flooding in new and old developed areas



Runoff Issues in our Region

- Disappearing water features and habitat
- Erosion and degradation of natural streams
- Flooding in new and old developed areas
- Storm water runoff quality regulated by state permits



Cause = Increased Imperviousness

Increased Imperviousness

Resulting Impacts

Leads to:

Flooding

**Habitat
Loss**

Erosion

**Channel
Widened**

**Stream
Altered**

Increased Amount of Flow

X

X

X

X

X

Increased Peak Flow

X

X

X

X

X

Increased Peak Duration

X

X

X

X

X

Decreased Base Flow

X

Sediment Loading

X

X

X

X

X



Who shoulders the burden?

- Local Governments
- Development Industry
- Pressure from:
 - Citizens
 - Texas Water Code
 - FEMA
 - USEPA
 - US Army Corps of Engineers
 - TCEQ



Imperviousness & Runoff

Region doubles the area of impervious surfaces, impacting stream quality and flooding, under Business As Usual

Scenarios Compared to Business As Usual



Connected Centers

+ Improves



Return on Investment

++ Improves Greatly



Diverse Distinct
Communities

+ Improves



Green Region

++ Improves Greatly



Connected Centers

This scenario envisions many human-scale, moderate intensity mixed use centers located throughout the region, similar to projects near DART light rail stations.



+Improves on Imperviousness & Runoff compared to Business As Usual

- Less paved areas and imperviousness with mixed use centers.
- More standard acceptable Best Management Practices would be used to reduce water quality/ flooding impacts.



Return on Investment

This scenario envisions that existing neighborhoods and business areas are maintained, and underutilized properties are revitalized, within the current urban service area through reinvestment in existing infrastructure.



++Improves Greatly on Imperviousness & Runoff compared to Business As Usual

- There would be more investment in current municipal infrastructure, including runoff –related.
- As an area redevelops, innovative approaches could be used to reduce runoff impacts that are now being felt.
- Cities would have more opportunities to be creative in meeting their state storm water discharge permits.



Diverse Distinct Communities

This scenario supports revitalization and investment in the downtowns of large and small communities around the region. It creates places with a mix of housing and jobs, with infrastructure efficiently clustered rather than extending to large areas of low intensity development.



+Improves on Imperviousness & Runoff compared to Business As Usual

- Clustering new development would help avoid floodplains, and thus reduce flood risks to business and home owners.
- There would be opportunities to use cost-effective Best Management Practices beyond standard approaches.



Green Region

This scenario begins with the preservation of important open spaces and environmental assets. It emphasizes the inclusion of natural areas in the development pattern of all parts of the region, supports green jobs, and reduces the region's carbon footprint.



++Improves Greatly on Imperviousness & Runoff compared to Business As Usual

- All new development would recognize the importance of minimizing imperviousness in a Green Region scenario.
- Very innovative approaches for addressing runoff would be explored as part of the green job initiative.
- Runoff would be seen as an asset not a liability – opportunities to supplement water supplies as an example.

