

Cherokee Boulevard

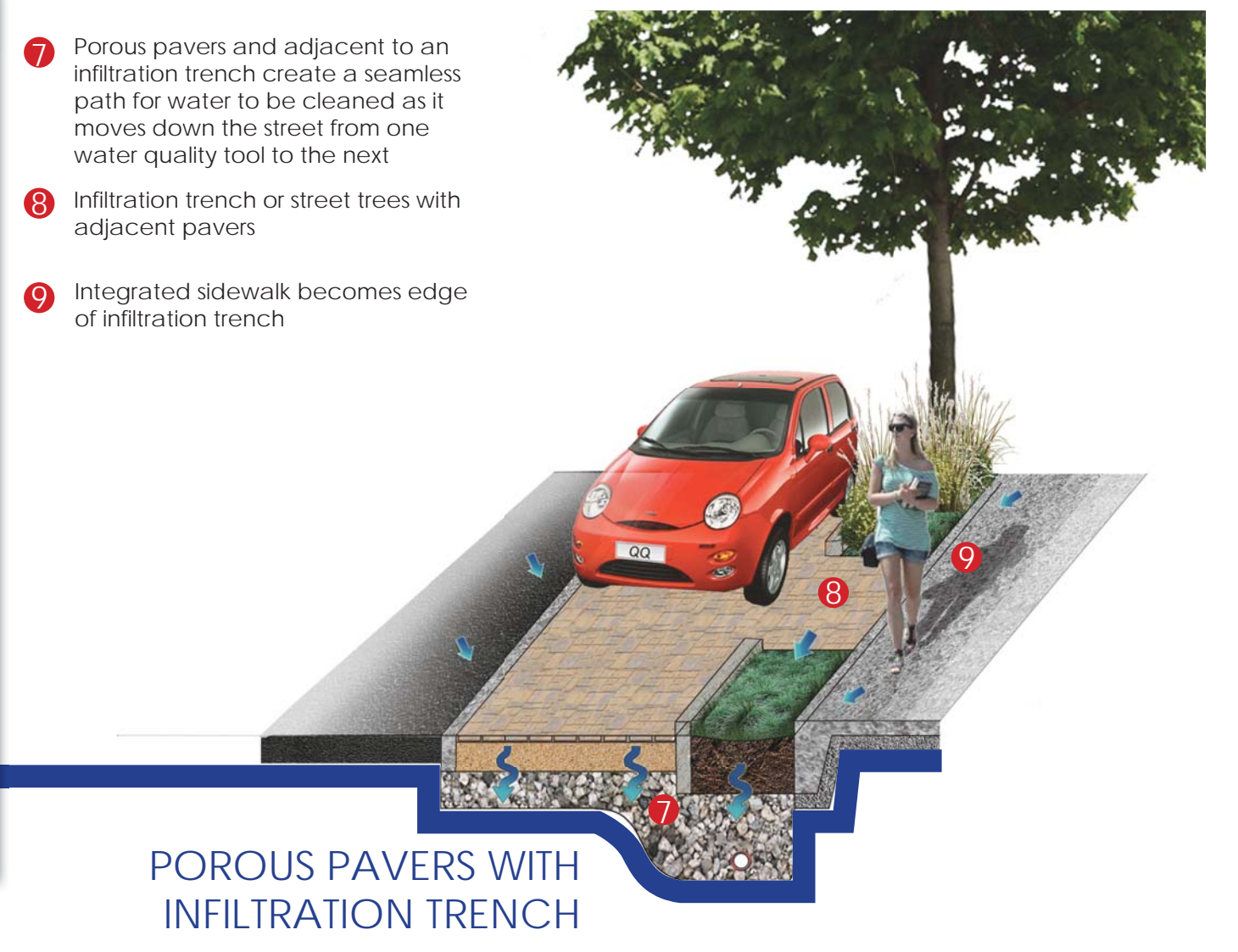
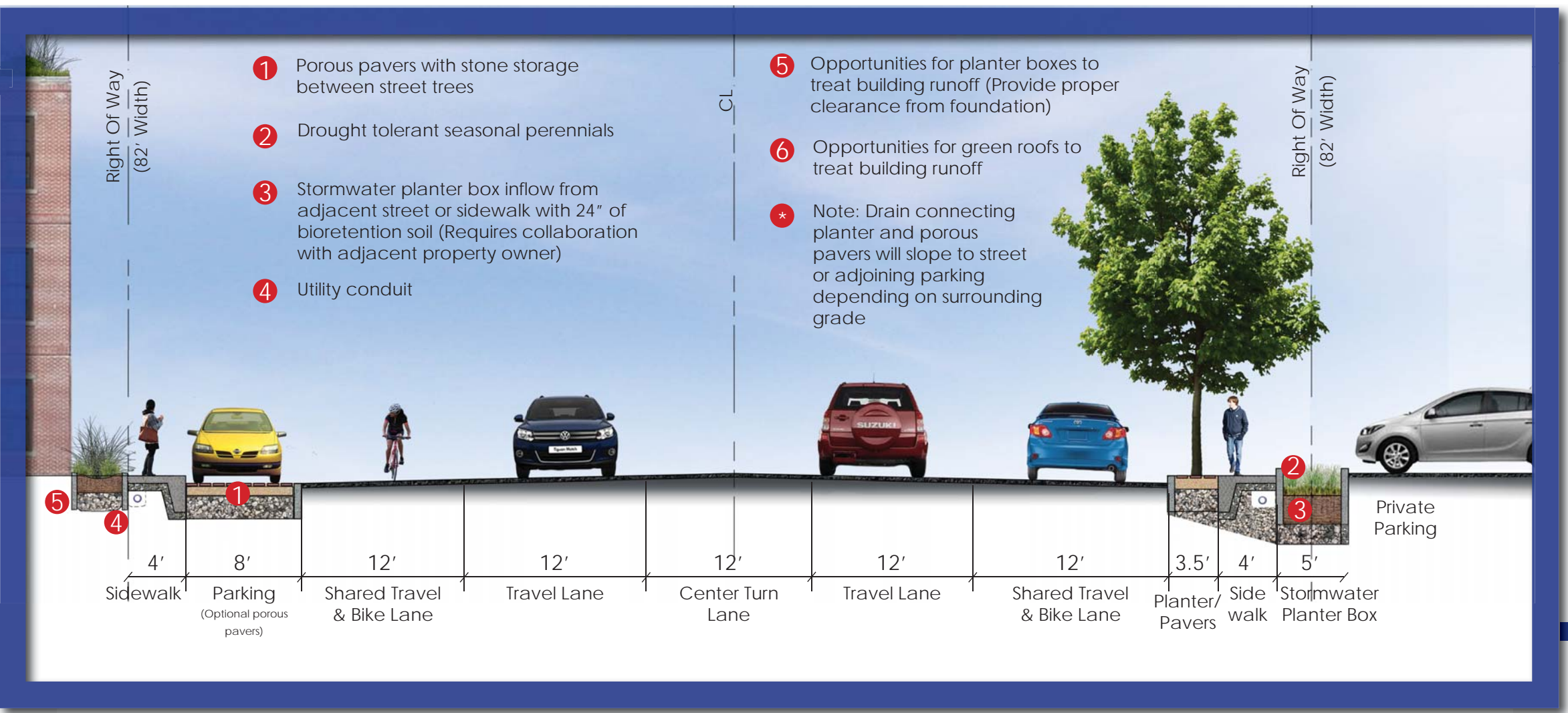
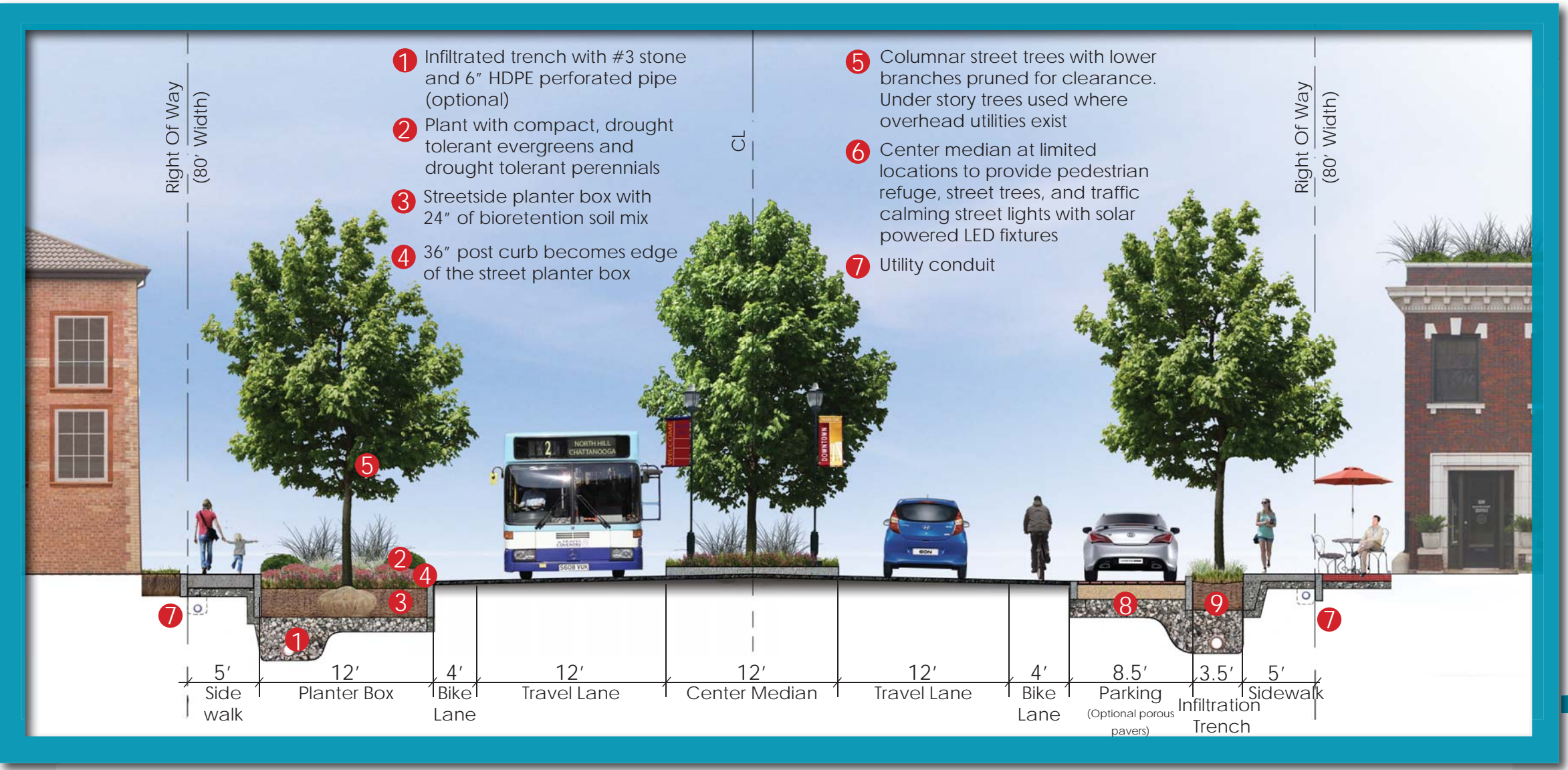
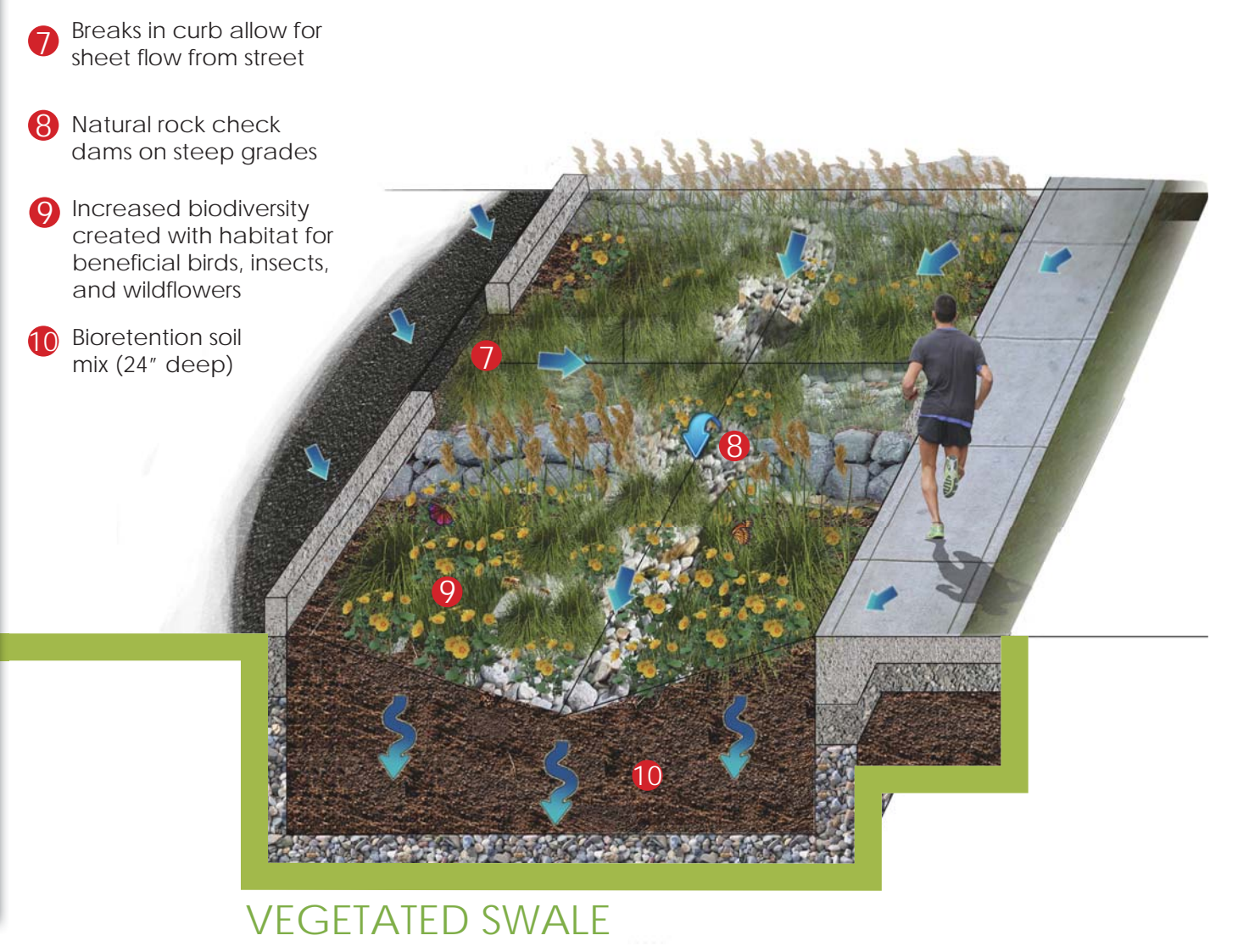
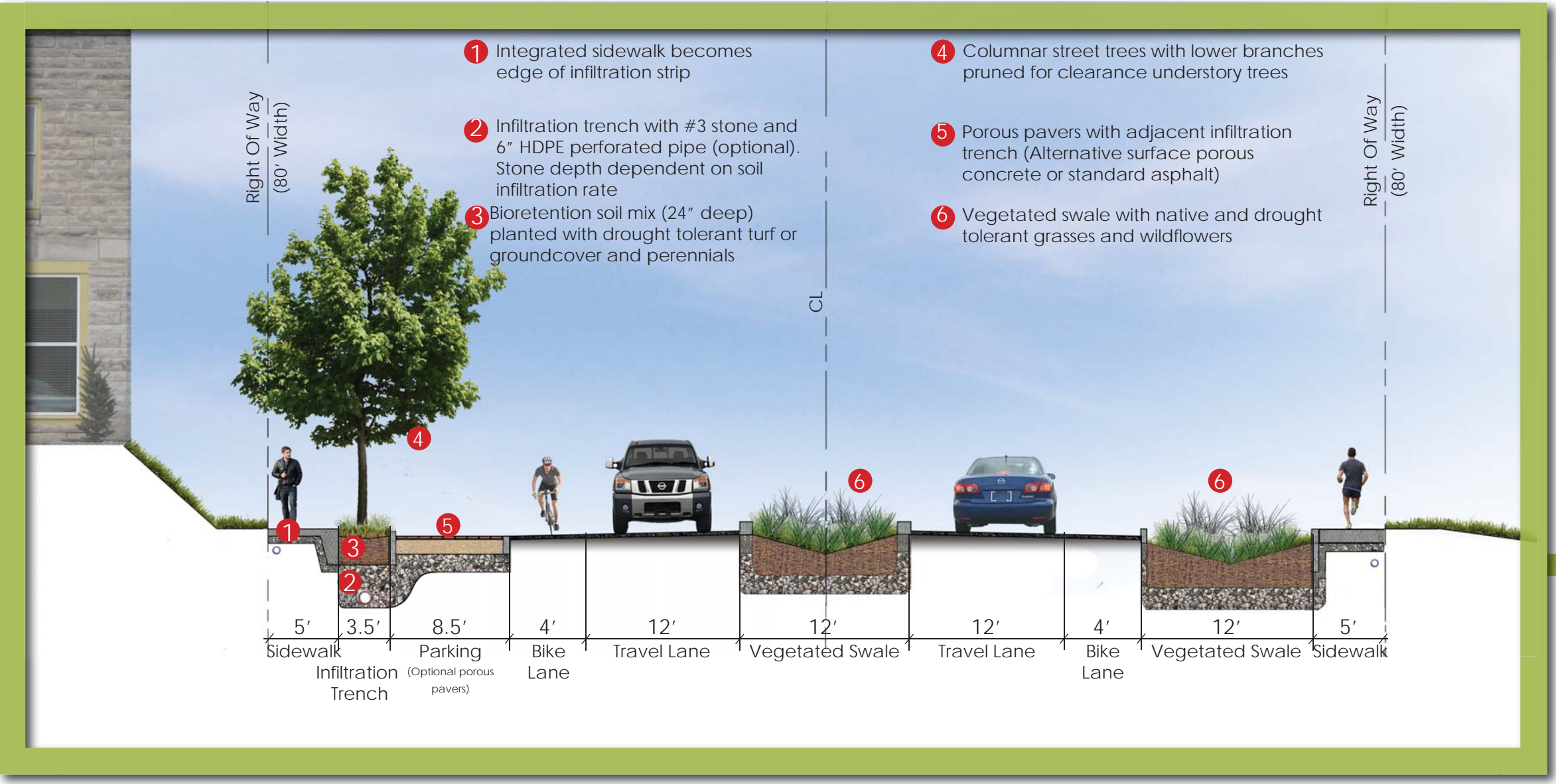
Chattanooga, Tennessee



TYPE 3 STREET DESIGN

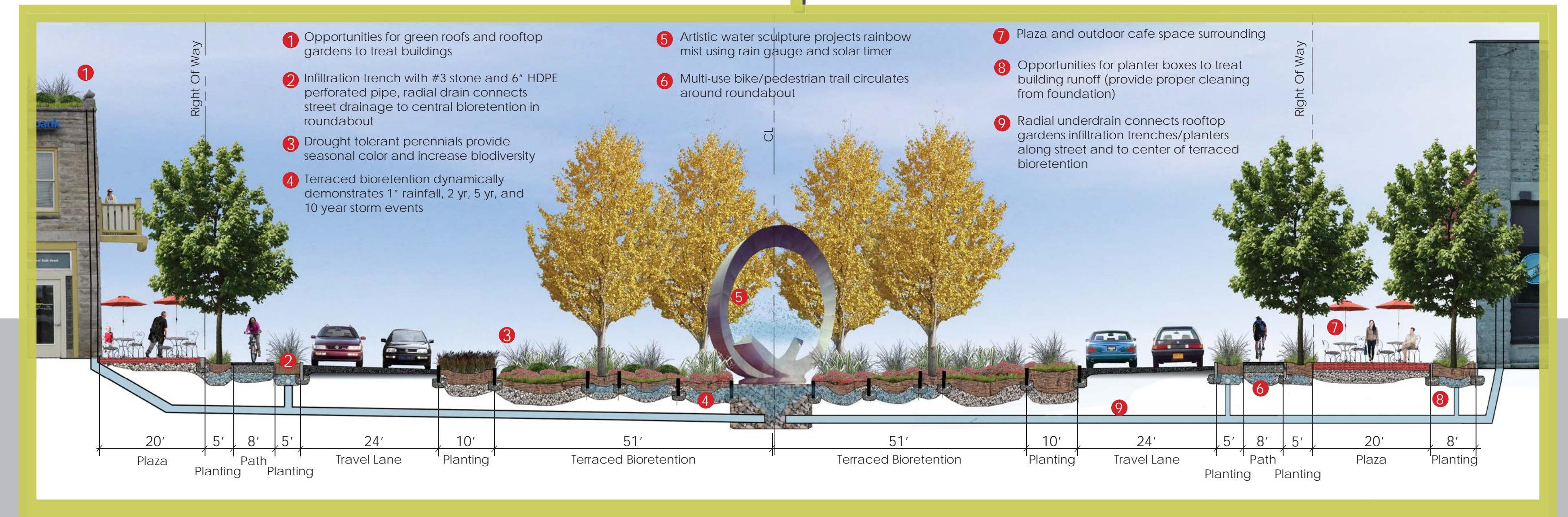
TYPE 2 STREET DESIGN

TYPE 1 STREET DESIGN



ROUNDBOUT WITH TERRACED BIORETENTION AND ARTISTIC WATER SCULPTURE

W BELL AVENUE POCKET PARK PERSPECTIVE



Cherokee Boulevard

Chattanooga, Tennessee

ROUNDAOBOUT DESIGN

The roundabout on Cherokee Blvd. becomes the public focal point of the Hill City / North Side Neighborhood with a large artistic water sculpture at its center. Terraced bioretention becomes a powerful tool to measure different levels of rainstorm events and communicates the impact of stormwater. Opportunities for economic development shape around the edge of the roundabout with the acquisition of vacant land on the north-west side of the existing intersection. Multiple story buildings with street side courtyards, lower level parking and rooftop gardens provide a mixture of high density uses on adjoining parcels. The roundabout design reshapes the current confusion of a six street intersection into a beautiful and functional transition point between type 1 street design to type 2 street design.



Roundabout (Redesign of 5 way intersection)

- Promotes clear and safe redirection of traffic
- Arts as transition from 4 travel lanes to 2 travel lanes

Bike/pedestrian path in median and bioretention

- Traffic calming
- Multi-modal transportation encouraged
- Medians become radial connection points for underground pipes directed toward center of roundabout.

Mixed use redevelopment opportunities with parking garage on lower levels

- Land value greatly increased
- Tax base revenue
- Dynamic spaces created for local retail and office development
- Higher density gets better return on infrastructure

Terraced bioretention and artistic water sculpture

- Large central bioretention creates a dynamic tool to educate public with water levels depicting different storm events
- Public art becomes focal point for Hill City/ Northside neighborhood with solar power rainwater mister integrated into sculpture
- Native and drought tolerant plants improve biodiversity

Cherokee Boulevard is a busy urban arterial street connecting the Hill City / Northside Neighborhood to the active economy and cultural excitement of the North Shore business district. The North Shore Land Use Plan and the Northside Neighborhood Plan envision this route to act as a transect between mixed commercial use and the surrounding residential neighborhood. By using a model of sustainable infrastructure for Cherokee Boulevard, we create a beautiful streetscape that achieves multiple functions including:

Management of storm water

431,072 Gallons Of Rainwater Cleaned
Treatment Of Entire Street & 50% Of Adjacent Buildings/Parking

Green infrastructure on Cherokee Blvd. moves stormwater through a series of tools, like porous pavers, swales, infiltration trenches and bioretention planters and basins. These water quality tools slow water down and filter it into pockets of soil, plants and stone. In the process, water temperature is cooled, water is cleaned of sediment and contaminants, and the impact of downstream flooding is reduced. Linking these tools together allows water to slowly move along a seamless path of biological systems. This greatly reduces the need for large inlets, pipes, and concrete gutters and channels.

Enhanced environmental quality

100% On-Site Treatment (1.0" Rainfall)
Additional Treatment Of Half Of Adjacent Building & Parking Lots Along Street Frontage

Integrating natural swales, rain gardens (bioretention), and rooftop gardens into the Cherokee Blvd. streetscape provides multiple benefits to the environment. Water and air are cleaned with biological systems. Temperature increases typically found in large urban settings (the urban heat island effect) are reduced because of shade and retained moisture. Biodiversity is greatly increased with habitat that provides a home for beneficial birds, insects, and soil micro-organisms.

Improved multi-modal transportation

10,530 L.F. Of Bike Lane & Pedestrian Way
Safer Ways To Travel

The multi-modal transportation design for Cherokee Blvd. creates comfortable and functional space for pedestrians, bicycles and mass transit connections as well as automobiles. Center medians and crosswalks add comfortable islands for pedestrians and opportunities for canopy trees and vegetative swales. Dedicated bike lanes encourage safe travel for bicycles. On street parking slows traffic and promotes a sense of commerce on the street. The roundabout at the Manning Street intersection provides a transition from 2 to 4 lanes of automobile traffic and creates a strong focal point for the community. Extension of bus routes with bus shelters and bicycle transit stations along Cherokee Blvd further connects the Hill City neighborhood with the North Shore and Downtown communities.

Promoting a sense of community and public education

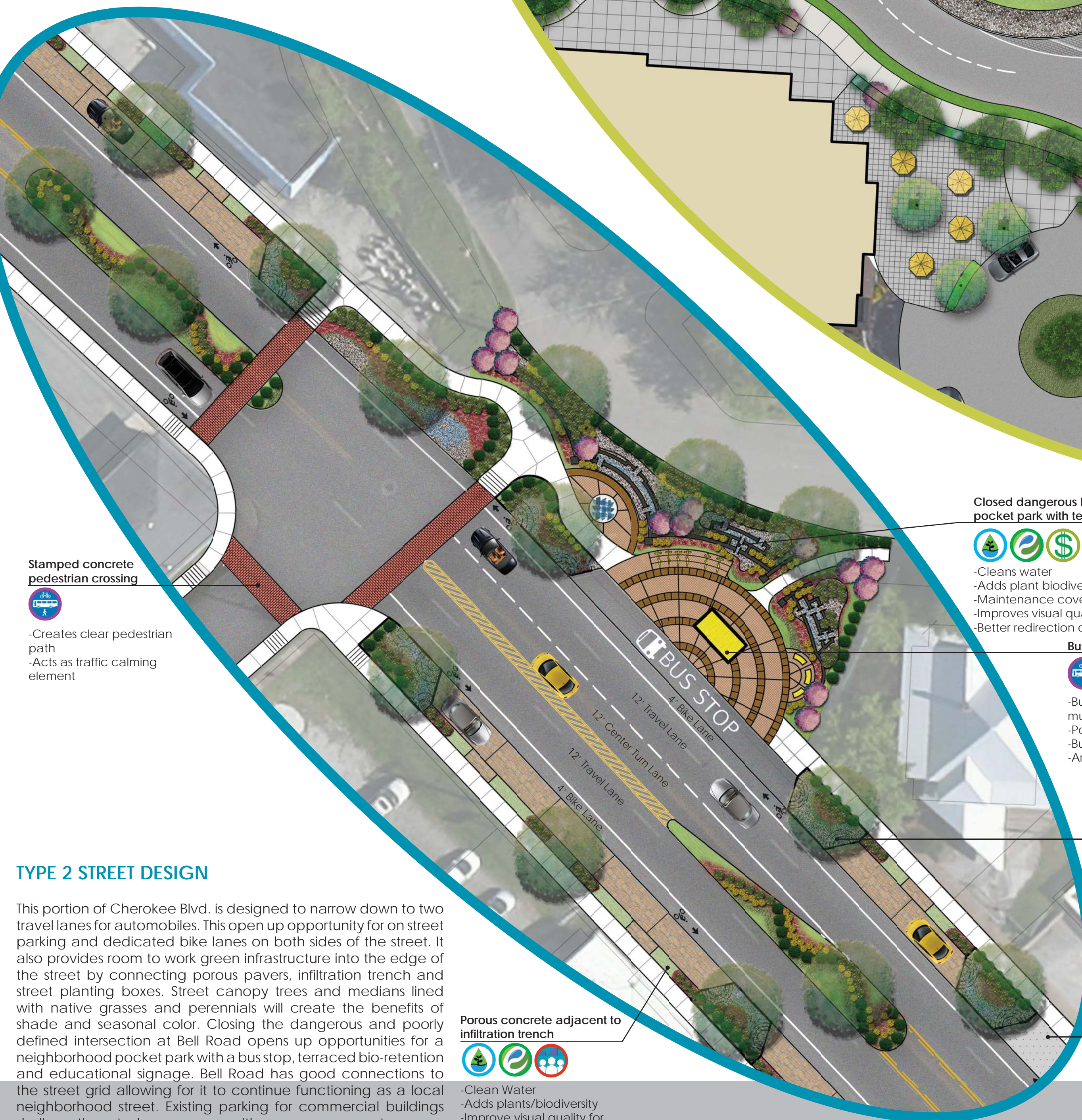
6 New Ways To Learn About Rain
Artistic Water Sculpture, Terrace Rain Garden, Infiltration Trench, Street Planter, Porous Pavers, & Vegetation Swale

Green infrastructure along Cherokee Blvd. creates comfort and beauty for the surrounding Hill City / Northside neighborhoods. Streetscapes that are designed to a human scale invite people to walk and bike in their neighborhoods adding health and recreational benefits. Green space and pocket parks also become opportunities for places of public art and environmental education.

Provides economic return

~650,000 S.F. Of New & Revitalized Buildings
Along Street Frontage

Investment in public sustainable infrastructure sets the stage for investment in private development and the renovation of existing neighborhoods. These investments in the private market in turn generate tax revenue for public benefit. Sustainable improvements along Cherokee Blvd. act as an artery of commerce to the surrounding community promoting a mixture of commercial and residential uses at a higher density along the arterial corridor. Residents from surrounding neighborhoods are provided opportunities to dine at restaurants and shop at local markets and retail establishments within walking distance of their homes. A public-private collaborative will be created for the Cherokee streetscape district to provide long term maintenance funds and reduced stormwater fees for participants.



TYPE 2 STREET DESIGN

This portion of Cherokee Blvd. is designed to narrow down to two travel lanes for automobiles. This opens up opportunity for on street parking and dedicated bike lanes on both sides of the street. It also provides room to work green infrastructure into the edge of the street by connecting porous pavers, infiltration trench and street planting boxes. Street canopy trees and medians lined with native grasses and perennials will create the benefits of shade and seasonal color. Closing the dangerous and poorly defined intersection at Bell Road opens up opportunities for a neighborhood pocket park with a bus stop, terraced bio-retention and educational signage. Bell Road has good connections to the street grid allowing for it to continue functioning as a local neighborhood street. Existing parking for commercial buildings shall continue to have access with a porous concrete apron. This allows for the storm drainage water quality trench to continue along the street without interrupting access to existing businesses. When frontage is redeveloped the concrete apron will be removed and a new green infrastructure pattern will be implemented.

Stamped concrete pedestrian crossing

- Creates clear pedestrian path
- Acts as traffic calming element

Porous concrete adjacent to infiltration trench

- Clean Water
- Adds plants/biodiversity
- Improve visual quality for community

Closed dangerous intersection and created pocket park with terraced bioretention gardens

- Cleans water
- Adds plant biodiversity
- Maintenance covered by streetscape association
- Improves visual quality
- Better redirection of traffic flow

Bus stop pavilion and public art

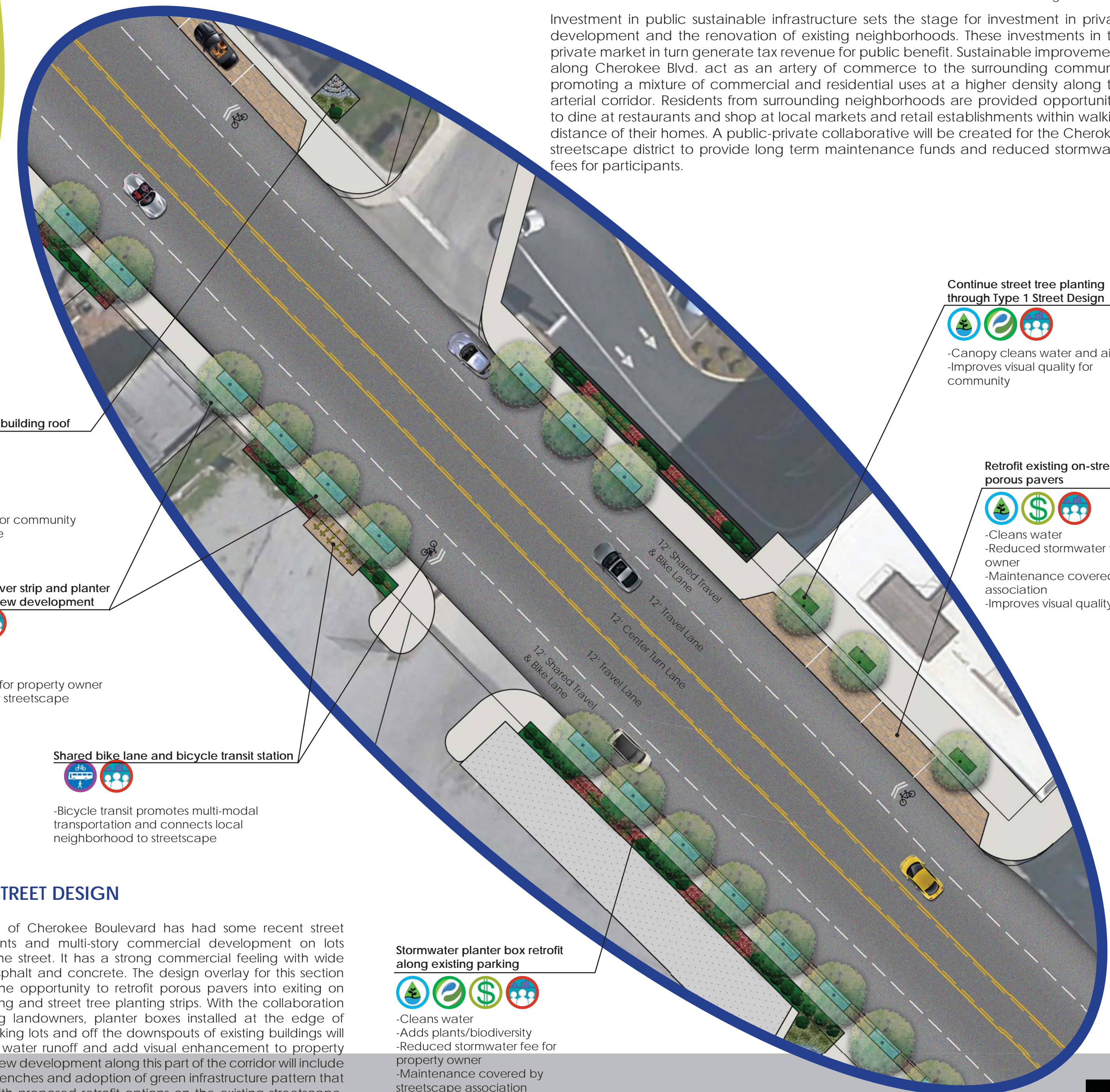
- Bus stop, bicycle transit, and sidewalks promotes multi-modal transportation
- Pocket park creates greenspace for neighborhood
- Bus stop promotes commerce
- Art creates visual enhancement

On-street parking with public education opportunity using street planter box

- Clean Water
- Reduced stormwater fee for property owner
- Maintenance covered by streetscape association
- Improves visual quality
- Planter boxes help with traffic calming

Porous concrete apron for existing parking access

- Cleans water and connects to infiltration trench
- Porous concrete is poured for access to existing parking allowing business owners to continue using for commerce
- When redevelopment occurs the porous paver, infiltration, planter box design pattern is applied



Planter box from existing building roof

- Cleans water
- Improved visual quality for community
- Reduced stormwater fee
- Adds plants/biodiversity

Street trees with porous paver strip and planter box at property edge for new development

- Cleans water
- Adds plants/ biodiversity
- Reduced stormwater fee for property owner
- Maintenance covered by streetscape association
- Improves visual quality

Shared bike lane and bicycle transit station

- Bicycle transit promotes multi-modal transportation and connects local neighborhood to streetscape

Stormwater planter box retrofit along existing parking

- Cleans water
- Adds plants/biodiversity
- Reduced stormwater fee for property owner
- Maintenance covered by streetscape association
- Improves visual quality

Continue street tree planting through Type 1 Street Design

- Canopy cleans water and air
- Improves visual quality for community

Retrofit existing on-street parking with porous pavers

- Cleans water
- Reduced stormwater fee for property owner
- Maintenance covered by streetscape association
- Improves visual quality for community

TYPE 1 STREET DESIGN

This portion of Cherokee Boulevard has had some recent street improvements and multi-story commercial development on lots adjoining the street. It has a strong commercial feeling with wide spans of asphalt and concrete. The design overlay for this section promotes the opportunity to retrofit porous pavers into existing street parking and street tree planting strips. With the collaboration of adjoining landowners, planter boxes installed at the edge of existing parking lots and off the downspouts of existing buildings will treat storm water runoff and add visual enhancement to property frontage. New development along this part of the corridor will include infiltration trenches and adoption of green infrastructure pattern that matches with proposed retrofit options on the existing streetscape. Clearly marking shared bike lanes and provision of a bicycle transit station will improve multimodal opportunities.