REDUCING CRIME ONE TRAIL AT A TIME

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INTRODUCTION TO CPTED

» *What is CPTED?*

» Crime Prevention Through Environmental Design

» The **proper design** and **effective use** of the built environment can lead to the **reduction in the incidence** and fear of crime and thereby **improve the quality of life**.

» **Builds on 4 strategies:**

Natural Surveillance

Territorial Reinforcement

Natural Access Control

Maintenance

NATURAL SURVEILLANCE

» Design the space to allow visibility by legitimate users and keep possible intruders under observation

» Make the offender's behavior more easily noticeable

» Provide a good visual connection between trail and streets, common areas, parks, sidewalks, parking areas and alleys

EYES ON THE TRAIL

TERRITORIAL REINFORCEMENT

» Indicate transition

» Use design elements such as sidewalks, landscaping, and low fencing to help distinguish between public and private areas

» Gateway signage

» Help users exhibit signs of ownership that send "hands off" messages to would-be offenders

» **People take more interest in something they own or when they feel intrinsically involved**

NATURAL ACCESS CONTROL

» Use landscape elements to deny admission to a crime target and to create a perception among offenders that there is a risk in selecting the target.

» Use signs to direct visitors to appropriate buildings, entrances and parking.

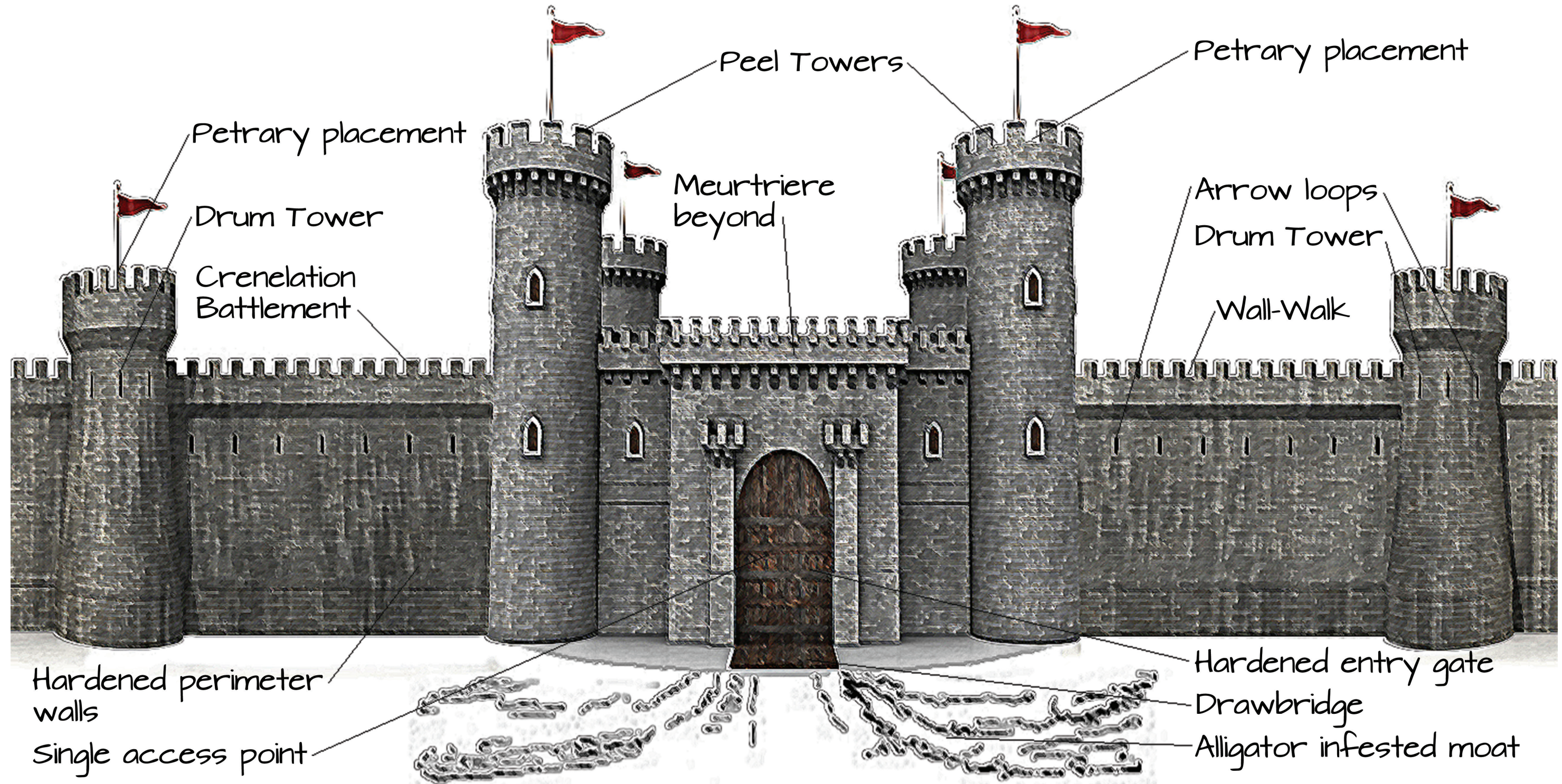» Limit access without completely disconnecting the use.

MAINTENANCE

» Cleaning, repairing, and landscaping needs to be performed routinely.

» Encourages use of the space for the intended purpose and discourages abnormal and criminal use.

» Maintenance sends a clean signal that someone cares about the space and is likely to defend it against intruders or vandalism.

» Keep shrubs trimmed to 2 feet and prune lower branches of trees up to 6 feet for open site lines.

» Keep all litter and trash picked up at all times.

CPTED FOR TRAILS

WHAT CPTED IS NOT

Petrary placement

Peel Towers

Petrary placement

Petrary placement

Drum Tower

Meurtriere beyond

Arrow loops

Drum Tower

Crenelation Battlement

Wall-Walk

Hardened perimeter walls

Hardened entry gate

Drawbridge

Single access point

Alligator infested moat

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REMEMBER...

» CPTED is fluid.

» It is not a checklist or easy fix for all situations.

» CPTED has no one-size-fits-all solution for public space.

» CPTED is affordable!

Good CPTED for one area may be completely inappropriate in another area.

In an age with advanced security technology, it should not be "ironic that one of the most logical, least expensive and most effective security initiatives is the oldest and the most often ignored: the built environment."
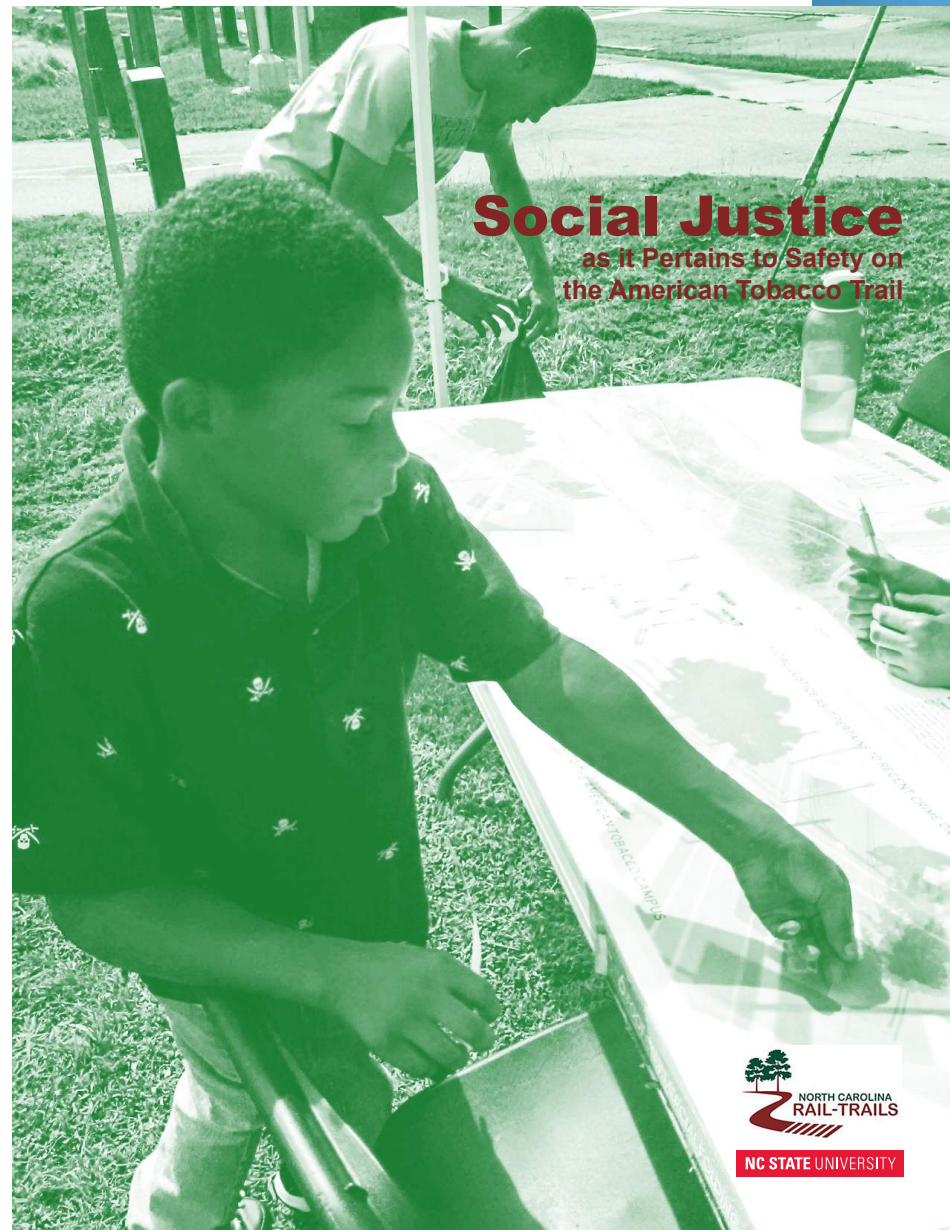
~ Jonathan Lusher, Journal of Property Management

CRIME PERCEPTION & TRAILS

» Fighting perception of crime is the hardest part.

» Trails are not immune to crime but they **are** community focal points.

» Perception must be fought **before and after** a trail is built.

CRIME PERCEPTION & TRAILS

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Social Justice
as it Pertains to Safety on
the American Tobacco Trail

NORTH CAROLINA
RAIL-TRAILS
NC STATE UNIVERSITY

3550
CRIMES IN AREA

14
CRIMES ON TRAIL

86
PERCENT FEEL
SAFE ON THE TRAIL

17
PERCENT FEEL
UNCOMFORT-
ABLE IN COMMERCIAL
AREAS

**MOST WANT LIGHTING
ON THE TRAIL**

Between 2012-2014 nearly 3550 violent crimes occurred in the 6 mile study area and 14 were on the trail. Pilot street was a cluster of trail crimes.

Crime locations were correlated with areas with open views and lack of vegetation; urban areas where the trail/community edges are poorly defined.

There were 642 survey responses. Most were white women who used the trail alone or with a friend. 86 percent feel safe on the trail, 88 percent prefer to see woods and vegetation, and 17 percent (highest response) feel uncomfortable in commercial areas and near main streets.

Workshop one participants identified numerous informal trail access points and the Pilot street intersection as an unsafe location. Workshop two was held at Pilot street. Participants perceived the trail as safe in daylight but desired lighting at night. Additional desires included seating, planting, and activities.

Urban design, Connectivity, the creation of cultural spaces, programming, and the use of improved technology could all enhance trail safety, use and perception.

Pilot street offers a short-term opportunity to test different community strategies.

GEOSPATIAL
ANALYSIS

COMMUNITY
SURVEY

COMMUNITY
WORKSHOPS

RECOMMENDATIONS

CRIME PERCEPTION & TRAILS

» Only **3% of the 372 trails studied** in the RTT study reported any type of major crime.

» FBI study of 36 Urban Trails surveyed covering 332 miles with 5 million estimated users: **rates of crimes were in the tenths to hundredths of a percent when compared to general urban area crime**.

» Evaluation of the Burke-Gilman Trail's Effect on Property Value and Crime, City of Seattle (1987) - "**The existence of the trail has little, if any, effect on crime and vandalism**..."

» The Effects of Greenways on Property Value and Public Safety, Colorado State Parks (1995) - **"No public safety issues could be directly linked to the trail."**

RAIL-TRAILS AND SAFE COMMUNITIES

THE EXPERIENCE ON 372 TRAILS

RAILS to TRAILS CONSERVANCY

CRIME PERCEPTION & TRAILS

» Greenways and Crime on Nearby Properties: An Investigation of Reported Crimes along Three Greenways, UNC Chapel Hill Master Thesis (2005) - "...**although the Lower Booker Creek Trail did not increase the crime rate in the surrounding area, crime may have fallen more had the trail not been present.**"

» Buncombe County Greenways and Trails Master Plan, Connect Bucombe (2012) - "An extended study explored recent crime rates along all 14 greenways in Mecklenberg County between 2011 and 2003. The data suggest that **greenway-adjacent properties do not incur greater risk of crime than other properties within the same neighborhood statistical area. On the contrary greenway-adjacent properties had lower crimes rates 75% of the time**."

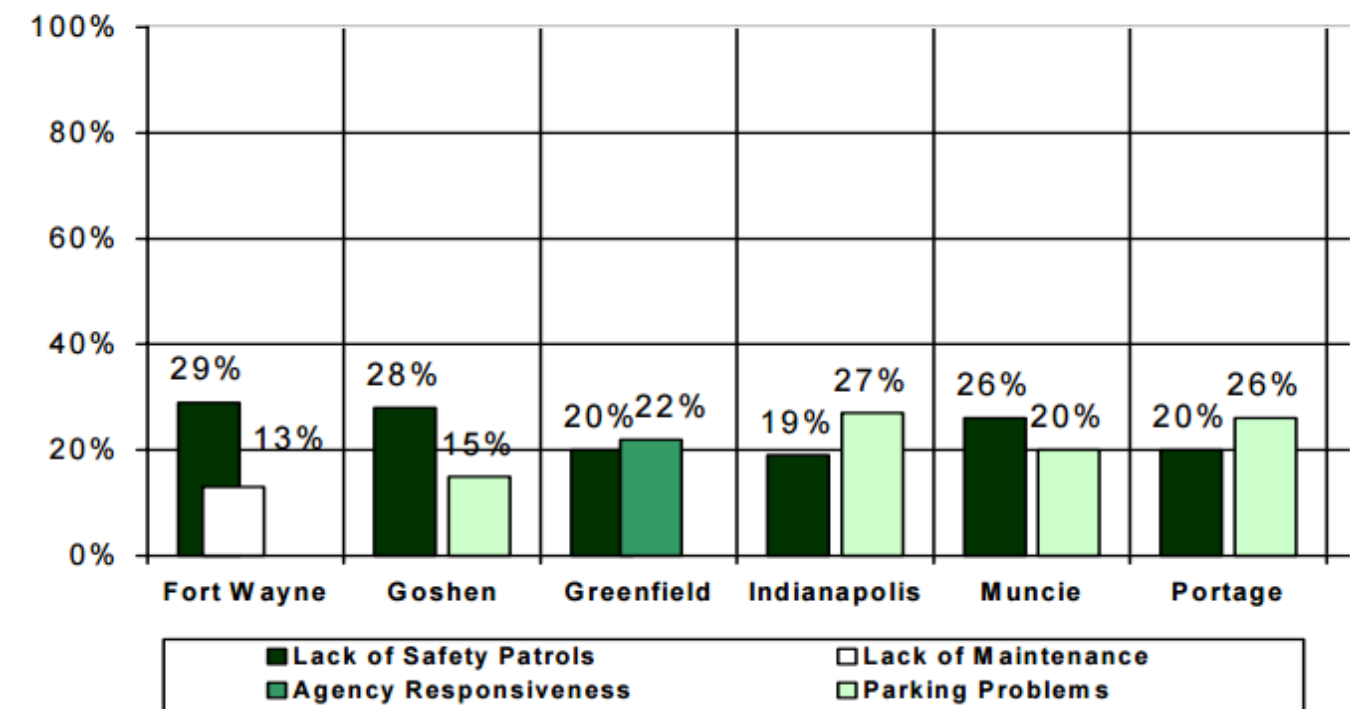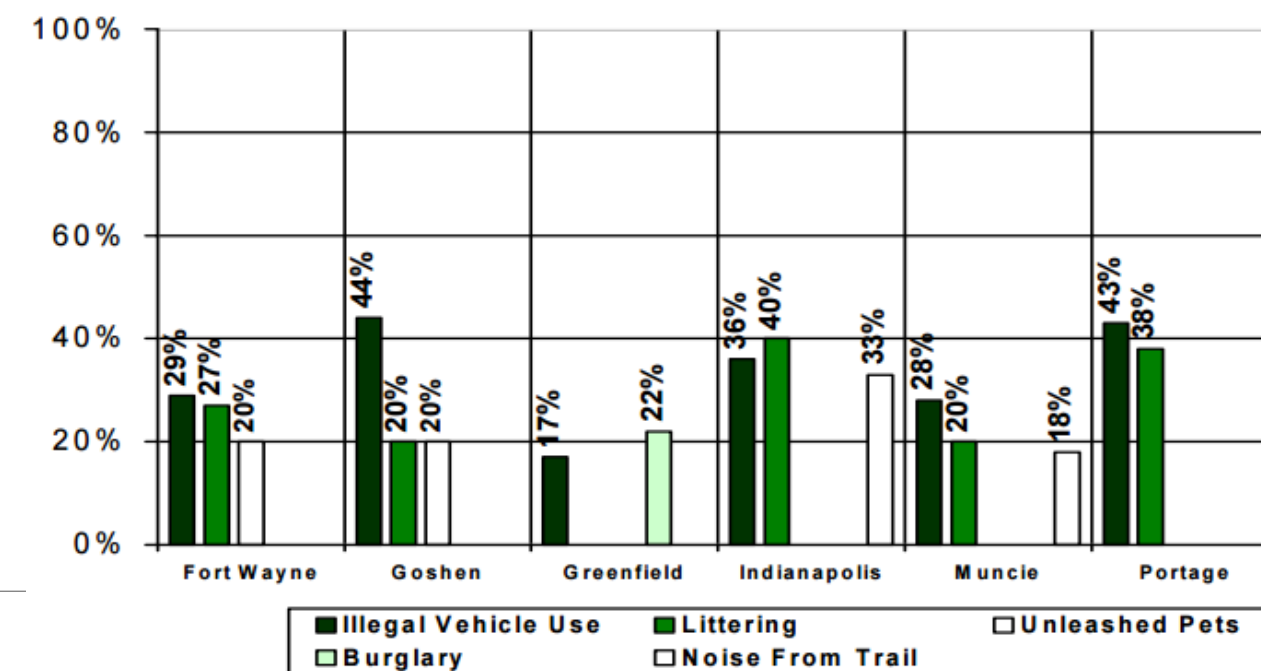**Chart 23: Factors Leading To Dissatsifaction of Trail Neighbors**

Legend: ■ Lack of Safety Patrols □ Lack of Maintenance ■ Agency Responsiveness □ Parking Problems

Chart 25: Most Frequent Problems Reported By Trail Neighbors

Legend: ■ Illegal Vehicle Use ■ Littering □ Unleashed Pets □ Burglary □ Noise From Trail
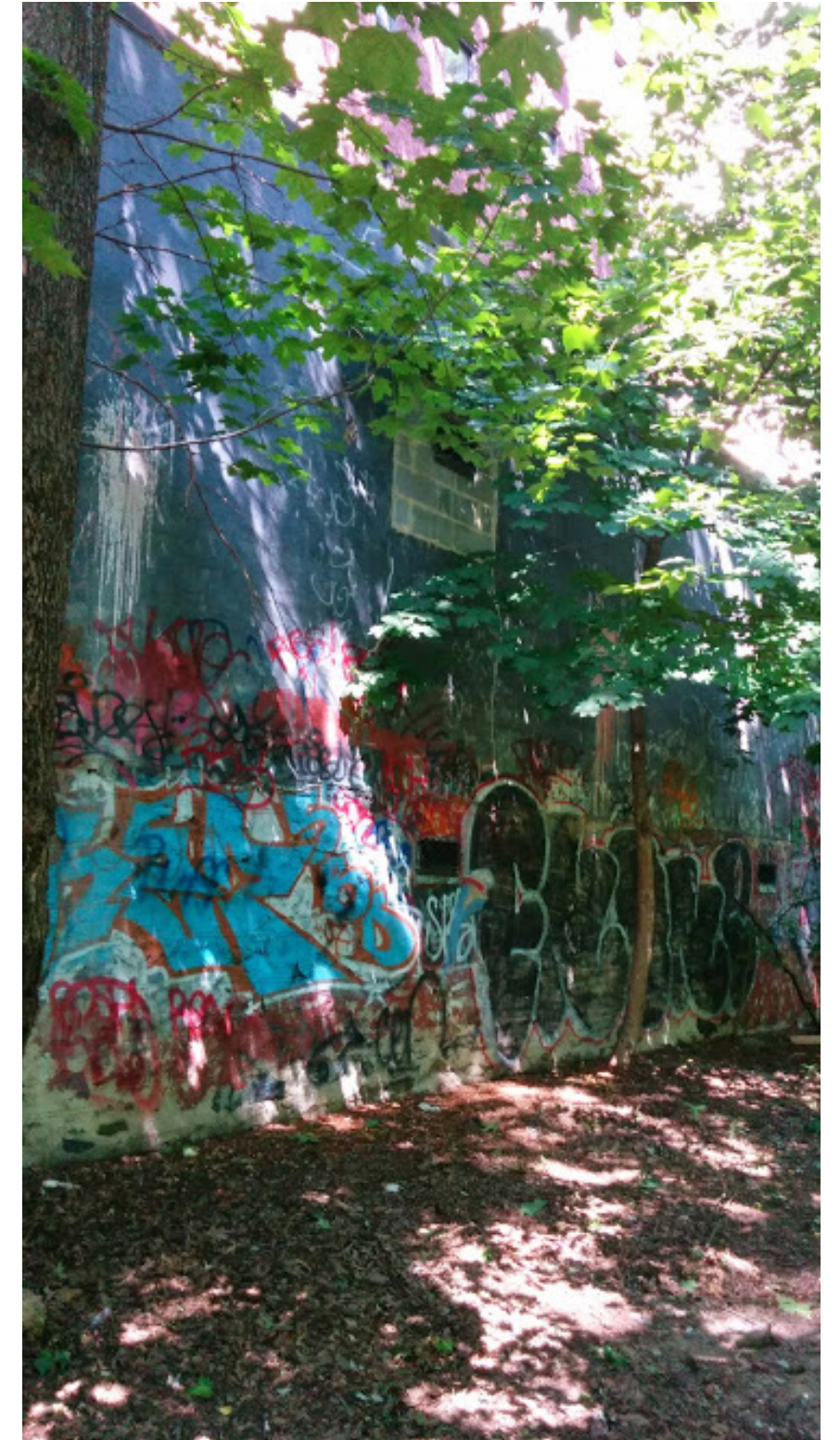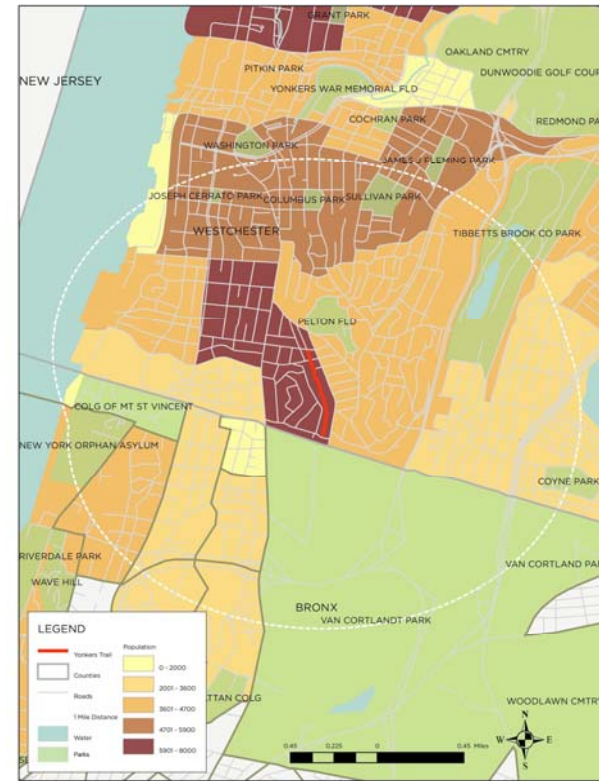
YONKERS RAIL TRAIL

YONKERS RAIL TRAIL

» Demographic and criminal analysis

» CPTED Professional does physical walk through of existing corridor

» Provides audit of existing conditions

» Recommendations for improvements

» Review of construction documents

According to the most recent census the current population of the city is 195,976, with a density of 10,827 people per square mile. Racially the city is predominantly white at 55.8% and 18.7% African American with the rest a mix of other races. Yonkers can be broken up into four neighborhood quarters; the Northeast, Northwest, Southeast, and Southwest.
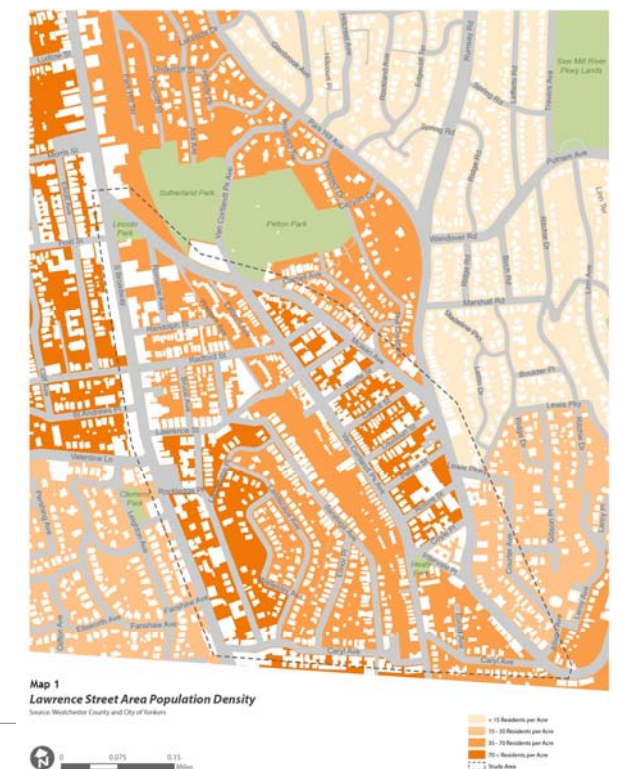
Situated between residents lining the Saratoga Ave. and Van Cortlandt Park Ave., just south of the Park Hill neighborhood and east of the Ludlow neighborhood, the site is now a brown field, a remnant of the previous rail line that ran through the area. Just north of the Van Cortlandt Park and Pelton Field, the rail line will create a trail opportunity between residents providing access to parks in the area.

Total Population	Under 19	Non-White	Workers over 16 with no Vehicle available	Families below poverty level in past 12 months
6,810	37%	68%	37.2%	40%

The area within a one-mile radius from the trail is half located in Westchester County and half in Bronx County. The total population within this boundary is 90,083 people. 68,047 people are located in Westchester County and 22,036 in Bronx County. The 68,047 people in Westchester County are made up 30,109 people who identify as white, 14,477 African Americans, 15,566 who identify as other and the remaining are a mixture of races. The 22,036 people in Bronx County are made up of 16,659 people who identify as white, 2,330 who identify as African American, 1,315 who identify as Asian, and 1,445 who identify as other.
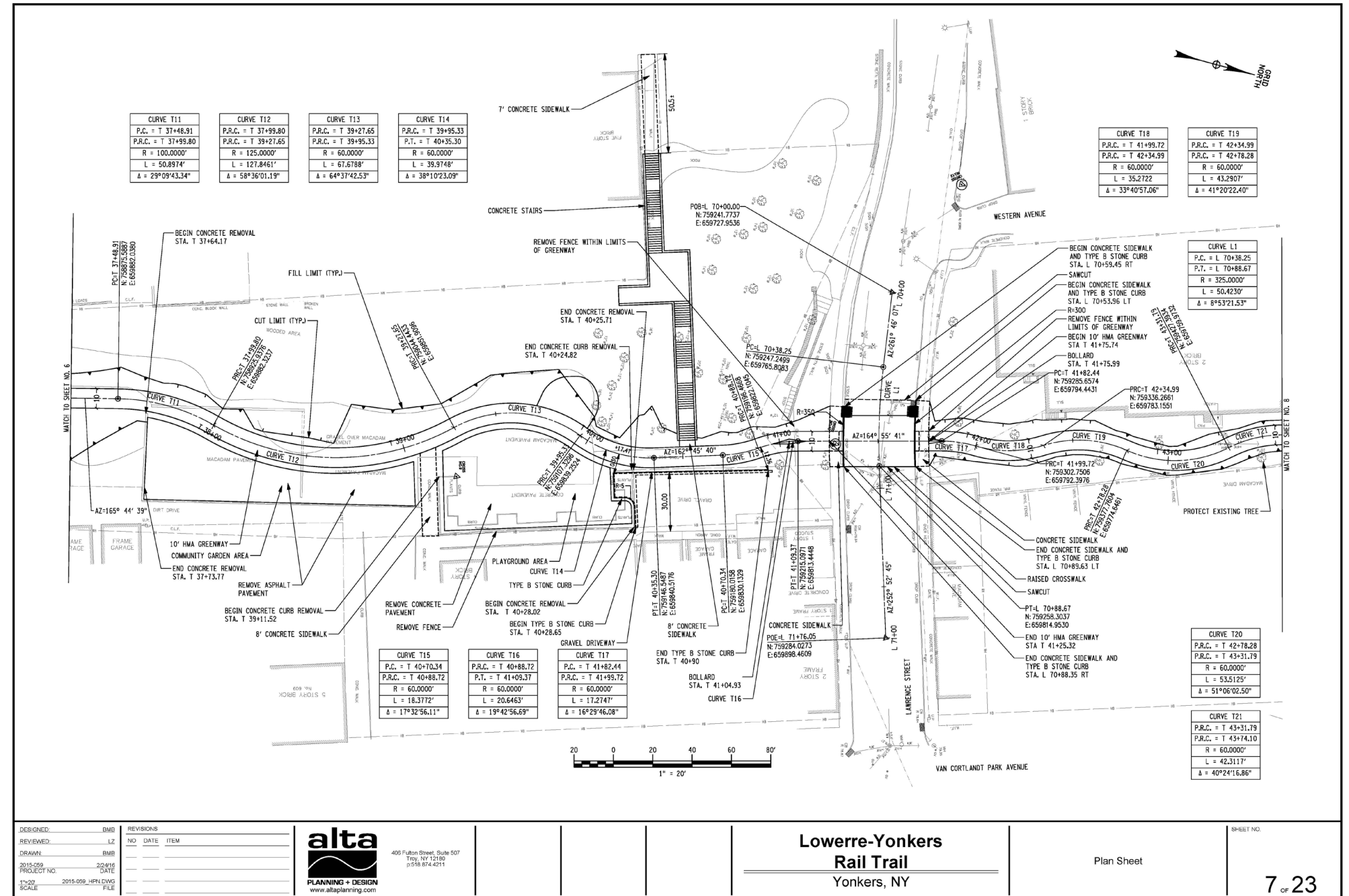
County	Total Population	Under 19		Non-White		Workers over 16 with no Vehicle available		Families below poverty level in past 12 months	
Westchester	68,047	20,662	30%	37,938	56%	20,198	30%	14,696	71%
Bronx	22,036	7,024	32%	5,862	27%	909	4%	1,211	17%
Both Counties	90,083	27,686	31%	43,800	49%	21,107	23%	15,907	57%

The population directly intersected by the trail is made up of 6,810 people. The population density within the Lawrence Street area is higher than the neighborhoods to the east, and similar to the population densities in the neighborhoods to the north and west. Approximately 2/3 of the study area has a population density between 35 and 70 residents per acre, and the remainder of the study area has a population density greater than 70 residents per acre. The map on this page, (right) offers a visualization. Demographically the study area is made up of 2,183 white; 1,674 African American and the rest a mixture of other races. With 37% under the age of 19 and 37.2% without access to a vehicle, a pedestrian transit route such as this will be heavily utilized.
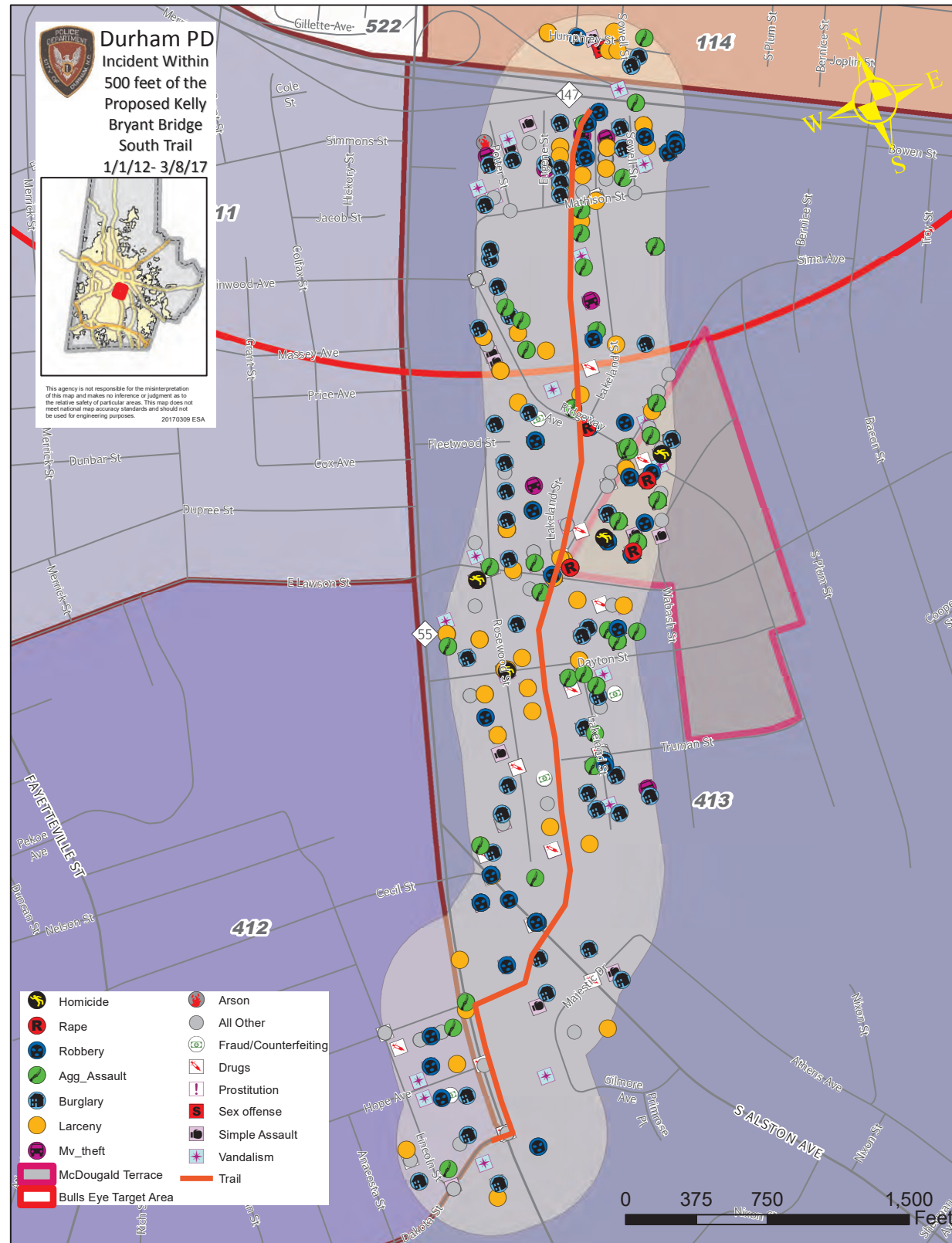
Map 1
Lawrence Street Area Population Density

YONKERS RAIL TRAIL

» Provide lighting

» Gateway and wayfinding signage

» Selective thinning of brushy undergrowth

» Community garden

» Worked with law enforcement

» Provide frequent access points along trail

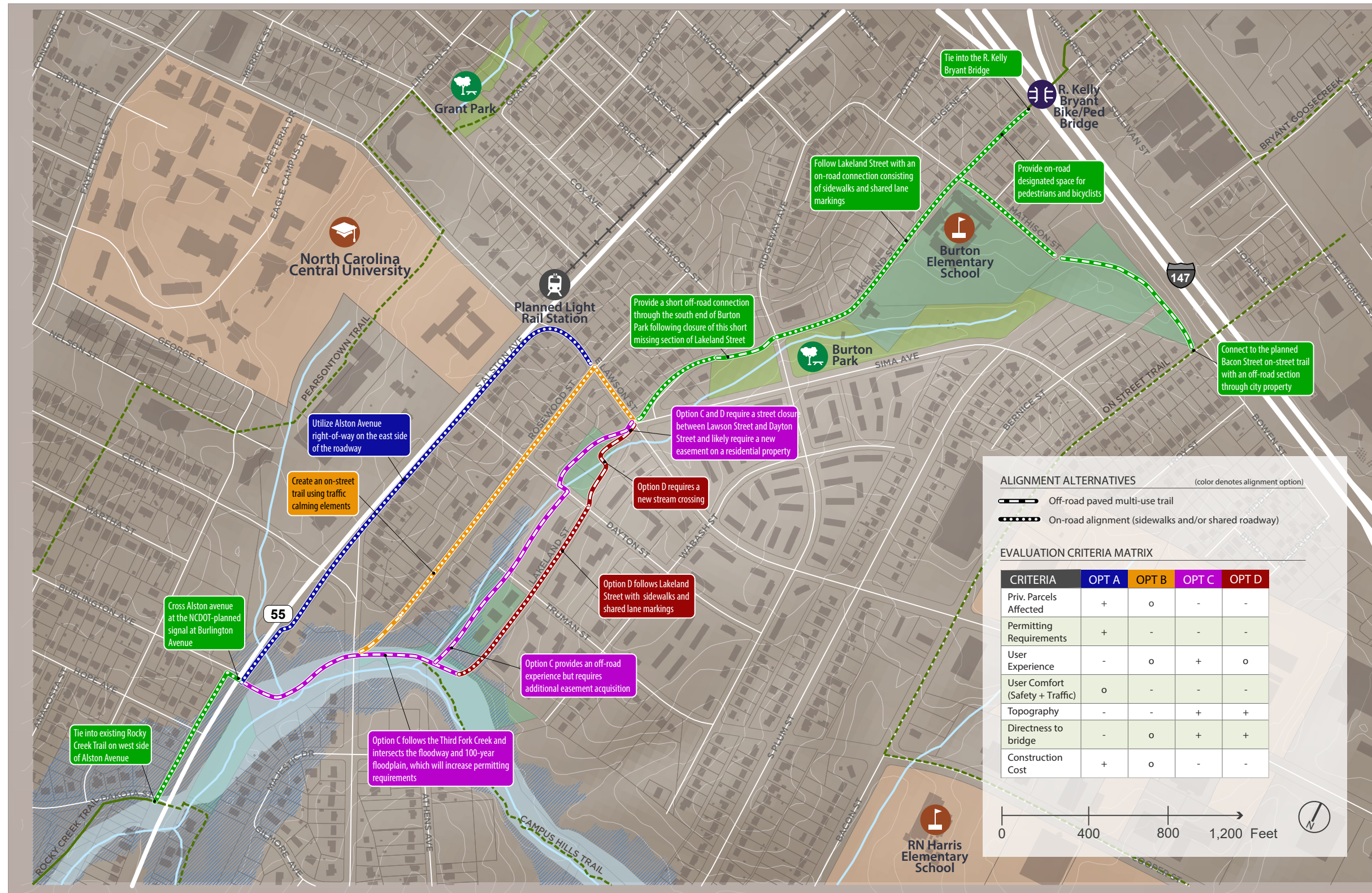# KBBS TRAIL: DURHAM

KBBS TRAIL: DURHAM

KBBS TRAIL: DURHAM

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Grant Park

Tie into the R. Kelly Bryant Bridge

R. Kelly Bryant Bike/Ped Bridge

Follow Lakeland Street with an on-road connection consisting of sidewalks and shared lane markings

Provide on-road designated space for pedestrians and bicyclists

Burton Elementary School

North Carolina Central University

Planned Light Rail Station

Provide a short off-road connection through the south end of Burton Park following closure of this short missing section of Lakeland Street

Burton Park

Connect to the planned Bacon Street on-street trail with an off-road section through city property

Utilize Alston Avenue right-of-way on the east side of the roadway

Option C and D require a street closure between Lawson Street and Dayton Street and likely require a new easement on a residential property

Create an on-street trail using traffic calming elements

Option D requires a new stream crossing

Option D follows Lakeland Street with sidewalks and shared lane markings

Cross Alston avenue at the NCDOT-planned signal at Burlington Avenue

Option C provides an off-road experience but requires additional easement acquisition

Tie into existing Rocky Creek Trail on west side of Alston Avenue

Option C follows the Third Fork Creek and intersects the floodway and 100-year floodplain, which will increase permitting requirements

RN Harris Elementary School

ALIGNMENT ALTERNATIVES   (color denotes alignment option)

Off-road paved multi-use trail

On-road alignment (sidewalks and/or shared roadway)

EVALUATION CRITERIA MATRIX

CRITERIA	OPT A	OPT B	OPT C	OPT D
Priv. Parcels Affected	+	o	-	-
Permitting Requirements	+	-	-	-
User Experience	-	o	+	o
User Comfort (Safety + Traffic)	o	-	-	-
Topography	-	-	+	+
Directness to bridge	-	o	+	+
Construction Cost	+	o	-	-

0   400   800   1,200 Feet

DESIGNING OUT CRIME

» Understand the community's history and demographics

» Engage local residents and neighbors of the trail

» Research crime statistics and crime analysis in the area

» Design is always specific to place

CPTED FOR TRAILS: LIGHTING

» Typically most appropriate for urban trails or commuter trails

» White metal halide provide best color rendering for CPTED

» Ensure tree canopy does not interfere with lighting fixture

» Always provide lighting in underpasses, day and night

» Work with qualified lighting engineer

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CPTED FOR TRAILS: PUBLIC ART

» Public art creates perception of ownership

» Art can act as "eyes on the trail"

» Engages community artists

CPTED FOR TRAILS: LANDSCAPE

» 6-foot, 2-foot rule for landscape

» Thin out brushy undergrowth to create permeability along corridor

» Prevent hiding areas

» Create access at strategic locations in forested trails

» Create vertical and horizontal clear zones for sight distance

CPTED FOR TRAILS: SIGNAGE

» Signage creates a sense of place

» Indicates the trail is maintained and "owned" (territorial reinforcement)

» Helps establish a sense of safety for users

» Mile markers can help law enforcement with co-locating in event of emergency

ENGAGE THE COMMUNITY

» When community takes ownership of a public space, crime cannot win

» The more a trail is used the less likely it will attract unwanted behavior

» During planning use proper public engagement
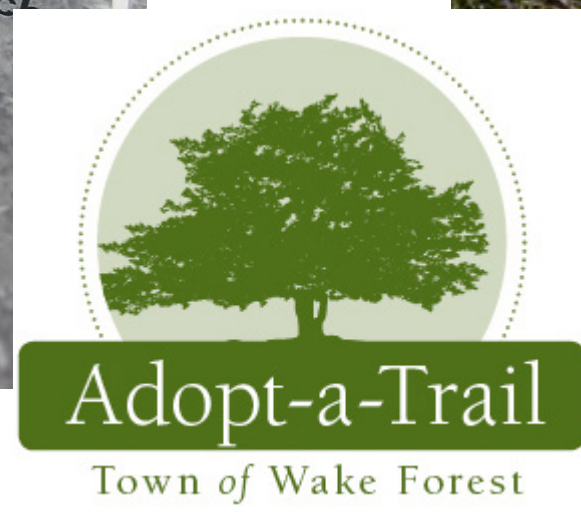
PARTNER WITH LAW ENFORCEMENT

» Communicate about the trail with local police

» Involve law enforcement during planning and design

» Invite police to public meetings to talk with residents about crime

» Understand local law enforcement resources and limitations
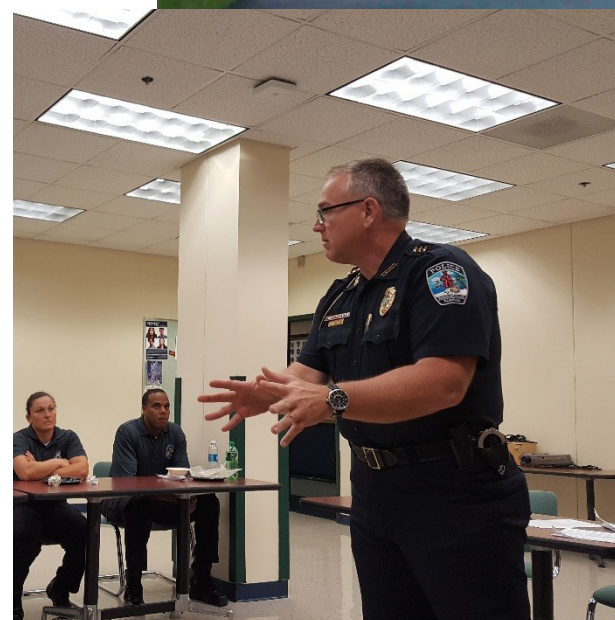
QUALITY MAINTENANCE

» Eliminate vandalism immediately

» Ensure vegetation is properly maintained to CPTED standards

» Maintain trail furnishings, lighting, tread, and structures
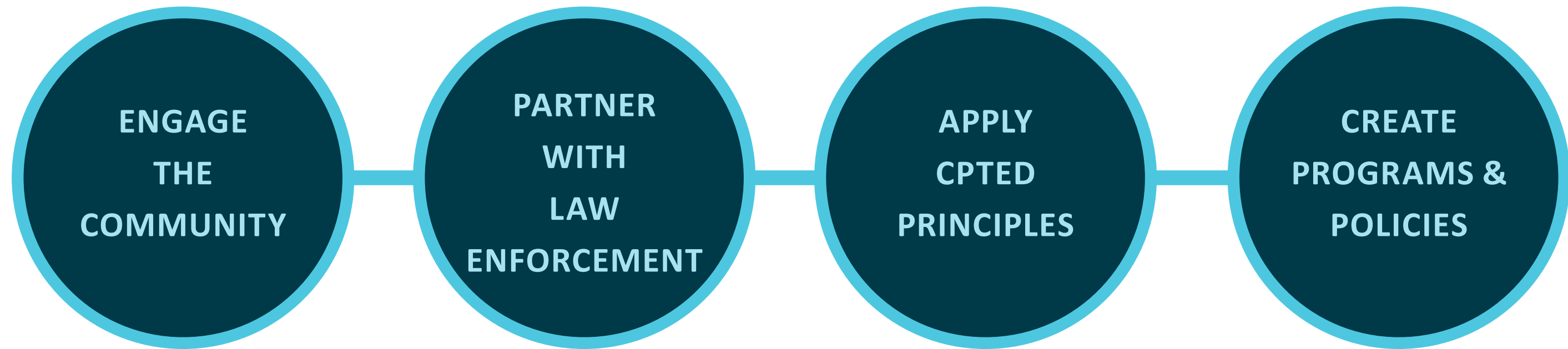
» Sends the message of territoriality
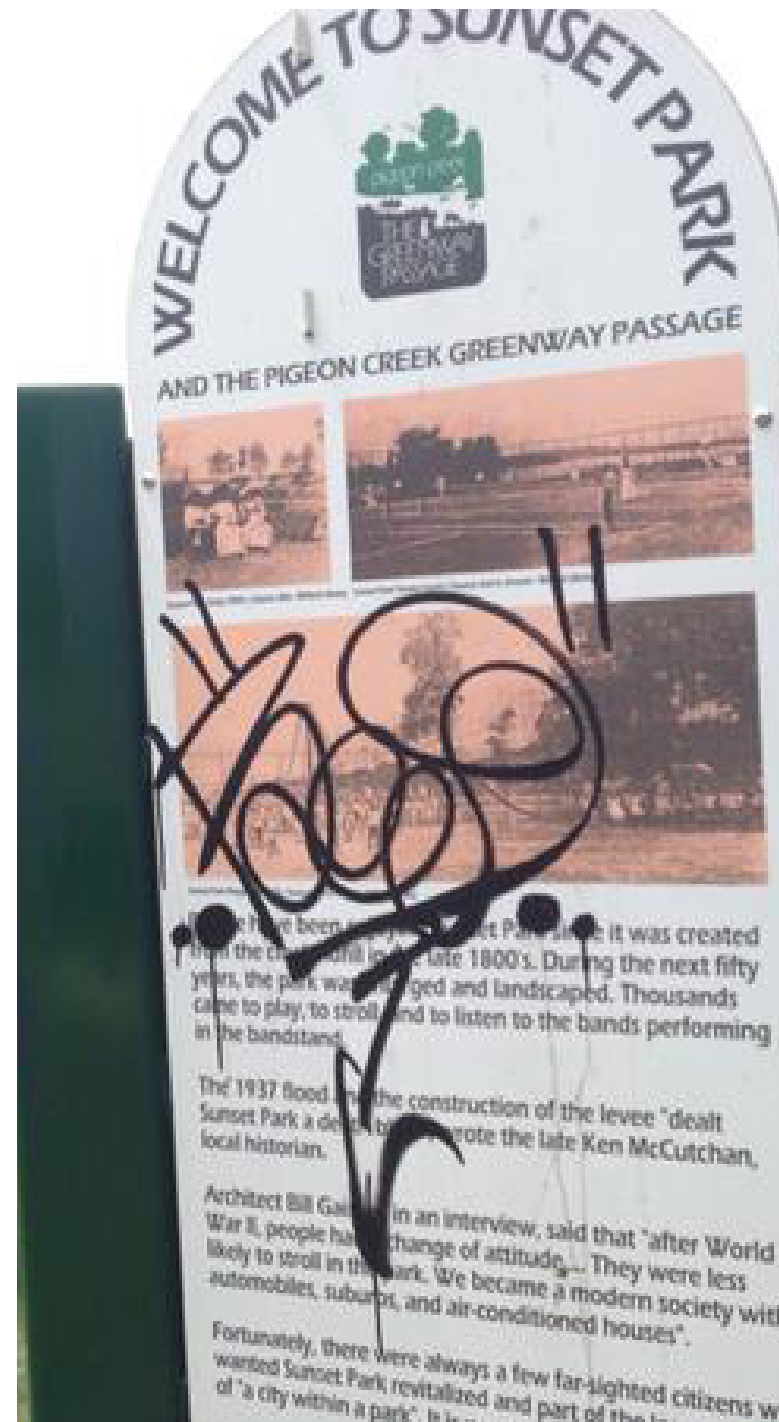
AMBASSADOR PROGRAMS

» Many are volunteer organizations

» Citizen group of "eyes and ears" for trails

» Effective for maintenance, safety, and patrolling

CPTED & SAFE TRAILS

ENGAGE THE COMMUNITY

PARTNER WITH LAW ENFORCEMENT

APPLY CPTED PRINCIPLES

CREATE PROGRAMS & POLICIES

"Crime occurs on roads, in schools, parking lots, office buildings, zoos and homes. However no one would rationally argue that we should not build any of the above because crime will occur there. The same should be true with trails."

~ From Rail Trails and Safe Communities publication, Rails Trails Conservancy

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INTERNATIONAL TRAILS SYMPOSIUM | 2017