

OAK RIDGE NATURAL ASSETS GUIDEBOOK



**Legacy
Parks**
FOUNDATION

Conserve. Create. Connect.

2020

**CITY OF
OAK RIDGE,
ROANE &
ANDERSON
COUNTY,
TENNESSEE**

Photo by Adventure Anderson



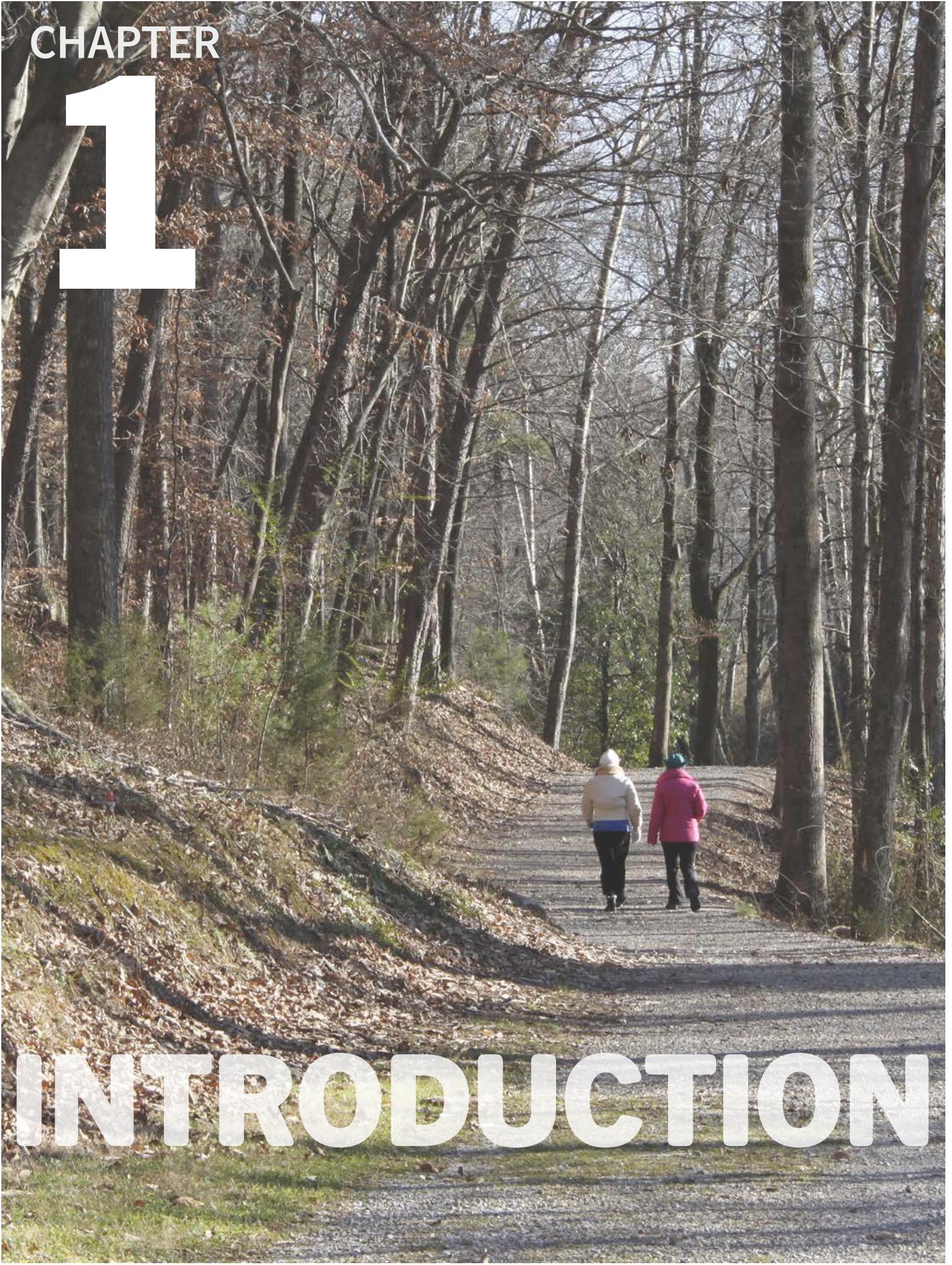
Photo by Legacy Parks Foundation

TABLE OF CONTENTS

CHAPTER 1 INTRODUCTION	1	APPENDICES	42
THE GUIDEBOOK	2	APPENDIX A: SUMMARY OF RELEVANT PLANS	42
THE VISION	3	APPENDIX B: NATURAL ASSETS SUMMARY	58
GUIDING PRINCIPLES OF THIS PLAN.....	5	APPENDIX C: THE CASE FOR INVESTMENT	65
CHAPTER 2 OAK RIDGE NATURAL ASSET DISTRICTS	22	APPENDIX D: WAYFINDING EXAMPLES	74
THREE BENDS DISTRICT	24	PROJECT TEAM	78
WEST RIDGE DISTRICT	26		
PINE RIDGE DISTRICT	28		
COPPER RIDGE DISTRICT	30		
CENTRAL CITY DISTRICT	32		
WATERFRONT DISTRICT	34		
CHAPTER 3 ADDITIONAL ASSETS	36		
UT ARBORETUM	37		
BIG TURTLE PARK	37		
MANHATTAN PROJECT NATIONAL PARK	38		
CHAPTER 4 SUMMARY OF OPPORTUNITIES	39		
OPPORTUNITIES MATRIX	40		

CHAPTER

1



INTRODUCTION



THE GUIDEBOOK

This Guidebook was created at the request of the City of Oak Ridge, Roane County, and Anderson County civic and business leaders in response to recommendations from the Oak Ridge Blueprint Plan that urged the exploration of both recreational opportunities and enhancement of the area's natural assets. The Guidebook is intended to be a living, working document that will serve as a philosophical and practical set of guidelines for how to maximize the area's natural assets so that they provide a sustainable foundation to engage residents, promote wellness, attract tourism, and increase economic development.

While this Guidebook identifies natural assets and related opportunities across the whole of public land within Oak Ridge, including Department of Energy land, it does not consider future uses of that land for mission-related or growth purposes.

The Guidebook is intended to be a shared document that encourages and facilitates collaboration. Multiple partners can participate in land management and the development of amenities and access, including:

- Department of Energy (DOE)
- Anderson County
- Roane County
- City of Oak Ridge
- Oak Ridge Reservation
- Tennessee Wildlife Resource Agency
- Tennessee Valley Authority
- Tennessee State Parks
- Tennessee Department of Environment & Conservation (TDEC)
- Legacy Parks Foundation
- Clinch Valley Trail Alliance
- University of Tennessee
- Community Reuse Organization of East Tennessee (CROET)
- National Park Service

This Guidebook made possible by grants to Legacy Parks Foundation from:



THE VISION

THE VISION DRIVING THE GUIDEBOOK IS TO ASSURE THAT OAK RIDGE'S NATURAL ASSETS ARE PERPETUALLY VALUED AND APPROPRIATELY UTILIZED AS ECONOMIC DRIVERS FOR THE COMMUNITY.

There are many who can benefit from valuing the natural assets of the city and the region:

THOSE WHO LIVE HERE.

Those who live here will experience an improved quality of life, health, sense of place, and economic vitality. Access to recreation assets and the natural world creates community and social connection, is a social determinant on health, and is a major draw for younger generations when they are deciding where to live.

THOSE WHO WORK, SPEND, & INVEST HERE.

Access to natural assets and recreation is proven to spur economic investment. National and Tennessee trends show that businesses consider recreation and natural assets when locating their businesses. Companies, especially those with a younger workforce, are seeking a high quality of life with the complete package of 'live, work, and play'. There is a significant return on economic investment, with new jobs, company startups, and supporting industries that thrive off the outdoor industry.

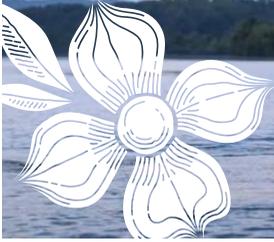
THOSE WHO PLAY HERE.

Opportunity for play is easily accessible and available for residents. Access to recreation starts at the front doors of residents and visitors, with less dependence on motorized vehicles. The region can become a regional and national draw because of the abundant opportunities to play.



SUMMARY OBSERVATIONS CONFIRM
THAT THERE IS INCREDIBLE POTENTIAL:

Oak Ridge is not known for its **NATURAL ASSETS** but should be – they *are enviable*.



Oak Ridge is not known for its **RECREATIONAL ASSETS** but should be – they *are abundant*.

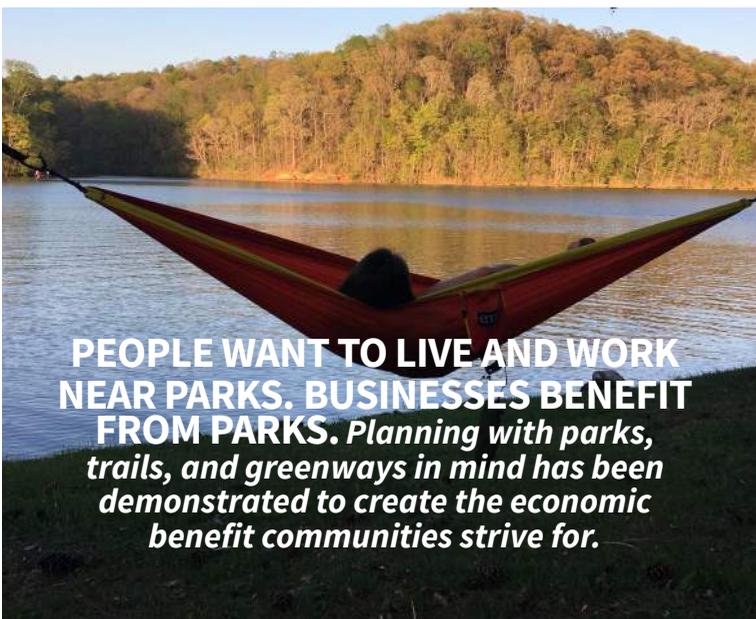


Some **DEPARTMENT OF ENERGY LAND** provides potential unique and *integrated natural, recreational, and economic benefits*.



Oak Ridge's natural assets **COMPLEMENT** those found in adjacent counties and region – they *can be a key driver of a regional identity*.

PEOPLE WANT TO LIVE AND WORK NEAR PARKS. BUSINESSES BENEFIT FROM PARKS. *Planning with parks, trails, and greenways in mind has been demonstrated to create the economic benefit communities strive for.*



CONTINUE TO IMPLEMENT THE PLANS THAT FURTHER CONNECTIVITY.

ONGOING MAINTENANCE is a critical element to ensure continued market appeal, citizen use and enjoyment, and return on investment.



GUIDING PRINCIPLES OF THIS PLAN

RECOMMENDATIONS IN THIS
GUIDEBOOK ARE GUIDED BY
FOUR PRINCIPLES:



1. STEWARDSHIP



2. REGIONAL & NATIONAL IMPACT



3. DISTRICT IDENTITY



4. CONNECTIVITY



1 STEWARDSHIP IS THE REQUIRED APPROACH.

The whole of our natural assets, if they are to be perpetuated, must have intentional care – they require stewardship. The underlying assumption is that our natural assets be managed, maintained, and respected, in perpetuity, while assuring that future generations have the same opportunities which now exist, as well as enhanced opportunities that will be made available as a result of embracing this stewardship approach.

An important element of the stewardship approach is the introduction of economic development activities, properly scaled, located and managed, that will drive well-planned growth within this conservation context.

This Guidebook is prepared and presented with the concept of stewardship as an overarching principle.

With that as our guiding principle, recommendations will recognize that there is a range of potential benefits from our natural assets including:

- Open space that serves as important habitat and corridors for wildlife or recreational fields;
- Ridges that provide exceptional views and exceptional hikes; and
- Waterways which provide for energy, recreation and personal use.

Access to natural assets like these can be managed in ways that provide integrated experiences and optimize their value in multiple ways.



THE THREE BENDS DISTRICT CURRENTLY SEES A GREAT DEAL OF STEWARDSHIP TO MAINTAIN ITS ECOLOGICAL HEALTH



2 REGIONAL AND NATIONAL IMPACT IS POSSIBLE.

The City of Oak Ridge, Anderson County, and Roane County are the primary local communities that are the focus of the Natural Assets Guidebook. Anderson and Roane Counties include incorporated areas of a few hundred people to approximately 30,000 people. Anderson and Roane counties, together, comprise approximately 128 square miles, with current populations, respectively, of 76,000 and 53,000 – a combined 129,000 people.

Beyond Anderson and Roane are contiguous counties, including Blount, Loudon, and Knox, which have a total (approximate) combined current population of 625,000, with a greater metropolitan area of more than 860,000.

The general demographic data does not sufficiently describe the primary focus area. The globally significant Oak Ridge National Laboratory, the national defense mission at Y-12, the environmental cleanup mission, and the work of affiliated organizations, both public and private, draw upon talent throughout the world. An intellectually and culturally diverse workforce enriches the range of talent and life experiences within the Anderson and Roane communities, and far beyond. The national investment in the Oak Ridge area is nearing its ninth decade, with native and later arriving residents entering fourth, fifth and sixth (and now beyond) generations.

An expanded view of the focus area reflects public and private organizations, institutions, corporations and small businesses, including the University of Tennessee

main campus in Knoxville, growing community colleges, the headquarters of the Tennessee Valley Authority, and major employers in the healthcare, automotive, service, technology, and manufacturing industries.

The primary natural area attraction is the Great Smoky Mountains National Park, which draws more than 12 million annual visits. A variety of family entertainment attractions, primarily in Sevier County, adds to the regional year-round draw of visitors and employment.

The area benefits from the confluence of Interstates 40 and 75, serving as a significant part of the national highway distribution system, and it is further augmented by the rail distribution system.

The McGhee Tyson Airport in Blount County continues to expand, now serving over two million passengers annually. The Airport has recently completed a new 10,000-foot-long runway that will accommodate most commercial aircraft.

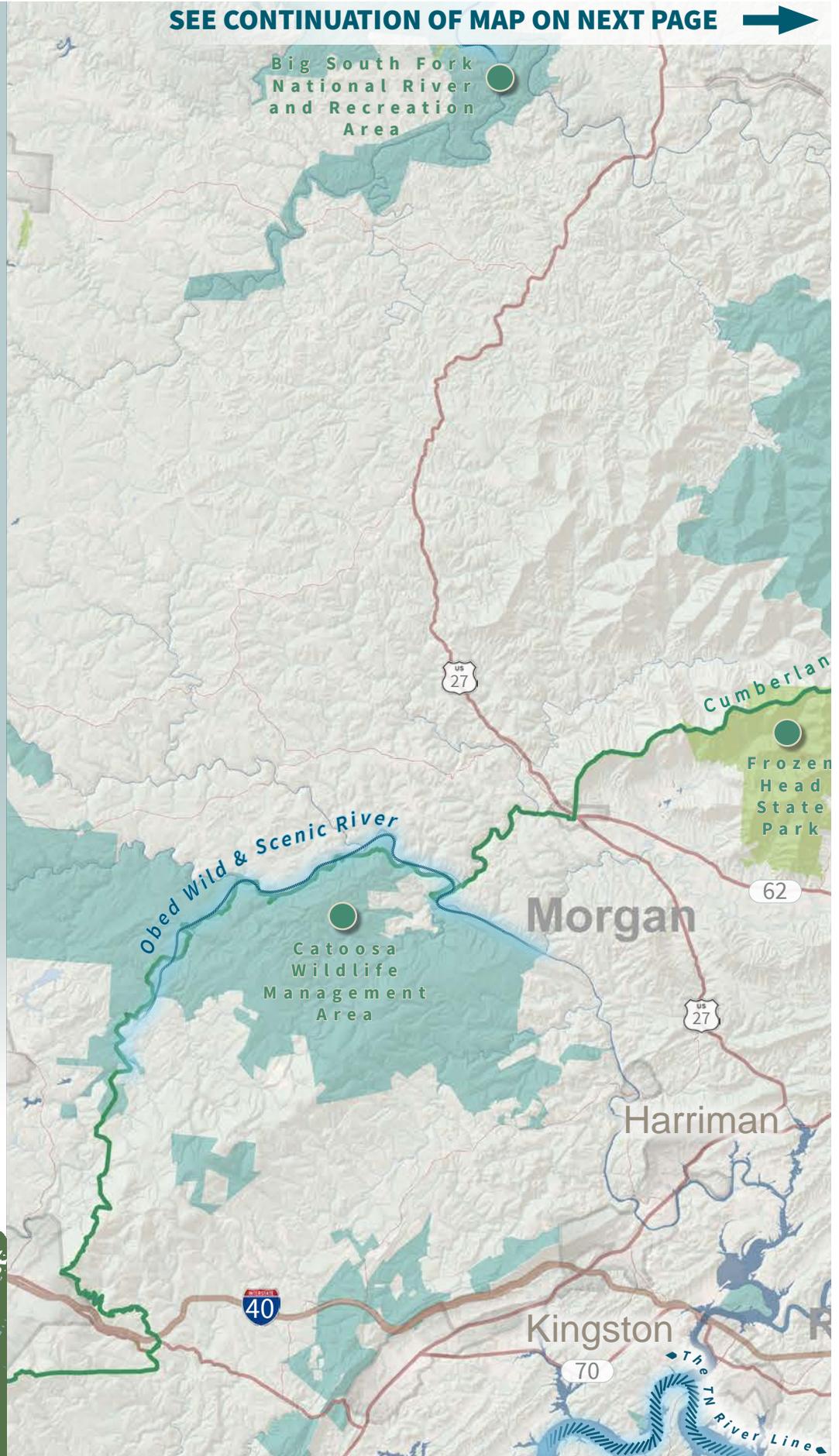
A summary overview of the region reflects a population nearing 900,000, very significant investment and employment in a diverse economy, highly ranked and respected higher education programs, and a superior transportation crossroads position. All of this is located within a region which contains captivating natural areas, including those within the immediate Oak Ridge/Anderson and Roane County areas.

THIS REGION HAS AN INCREDIBLE OPPORTUNITY TO BECOME ONE OF THE GREATEST NATURAL ASSET AND RECREATION HUBS IN THE EAST. IT IS CENTRALLY LOCATED IN A REGION RICH WITH ASSETS.

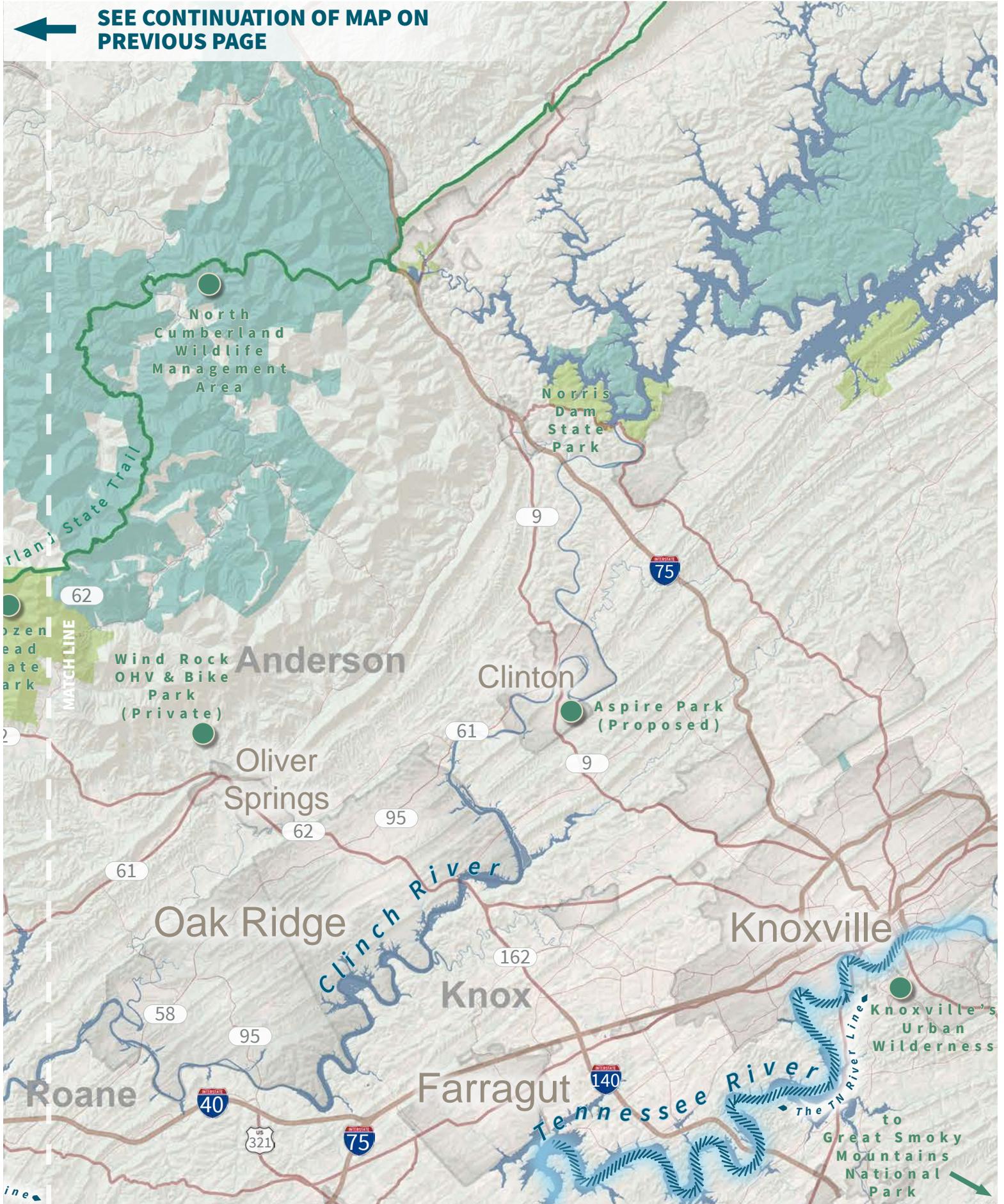
REGIONAL
**RECREATION
ASSETS**
MAP



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NATIONAL CONTEXT

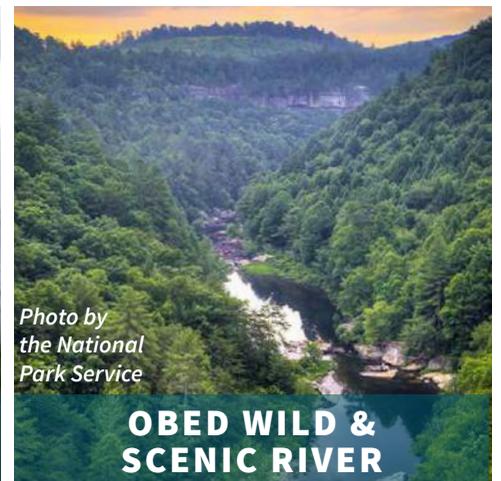
The Oak Ridge region sits in the center of an incredible array of natural assets and public lands, positioning itself to become a regional and national draw for communities that are gateways to the outdoors.

The map to the right shows the massing of public lands and the region's centralized location.



THE OAK RIDGE REGION IS LOCATED IN THE CENTER OF ONE OF THE GREATEST HUBS OF NATURAL ASSETS IN THE U.S.—AN ADVANTAGE THAT CAN BE FULLY CAPITALIZED UPON

REGIONAL ATTRACTIONS



PROPOSED REGIONAL ATTRACTIONS

THE TENNESSEE RIVERLINE

This concept, led by the University of Tennessee and many partners, envisions a continuous system of hiking, biking, and on-water experiences along the 652-mile reach of the Tennessee River from Tennessee to Kentucky.

652 miles

4,000 square mile watershed

of the most biodiverse regions globally

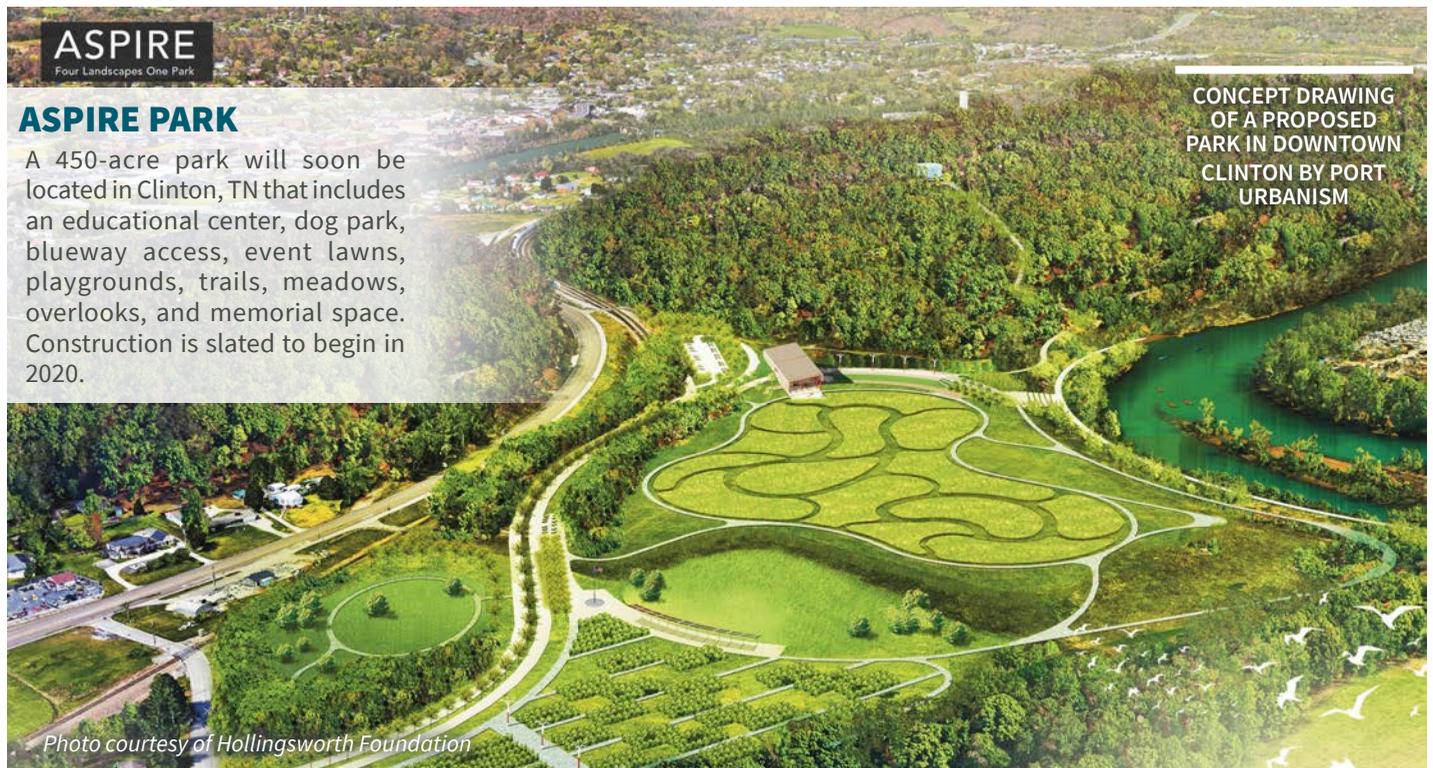
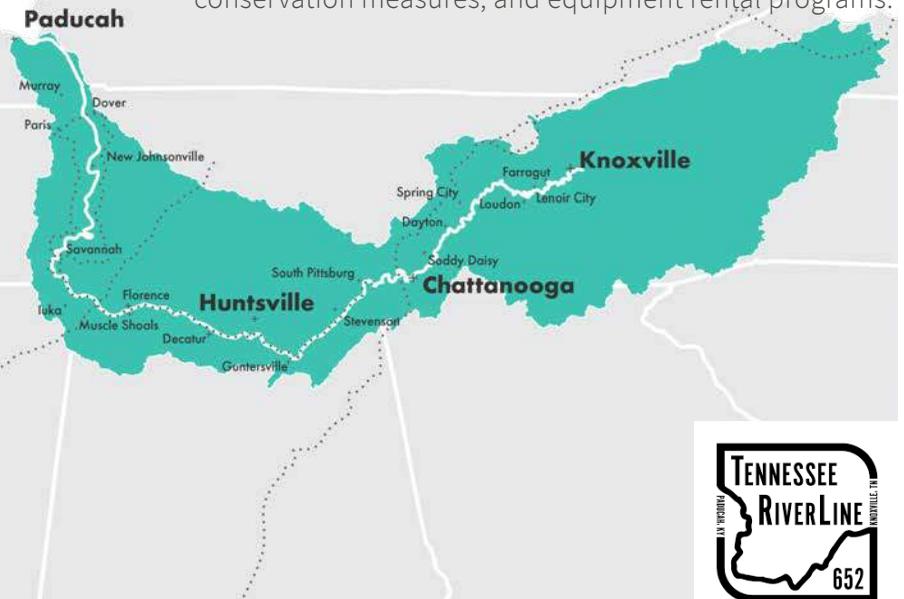
91 main-channel dams

1.17 million acres

between on-river reservoirs + TVA undeveloped recreation lands + state and federally-protected lands immediately adjacent to the river

ROANE COUNTY PROJECTS

Roane County is currently pursuing greenway connectivity and a comprehensive park and trails plan to identify new opportunities through a formal Master Planning Process. The county is a pilot community for the Tennessee RiverLine. The community has actively promoted paddle events, triathlons, and riverside concerts that engage the river. The county has also shown enthusiasm for investment in developing local infrastructure for regional multi-modal trail development. These proposed infrastructure improvements include waterfront parks, river access, shoreline improvements, natural resource conservation measures, and equipment rental programs.





3 DISTRICTS REFLECT COLLECTIVE ASSETS OF DISTINCT AREAS OF THE CITY.

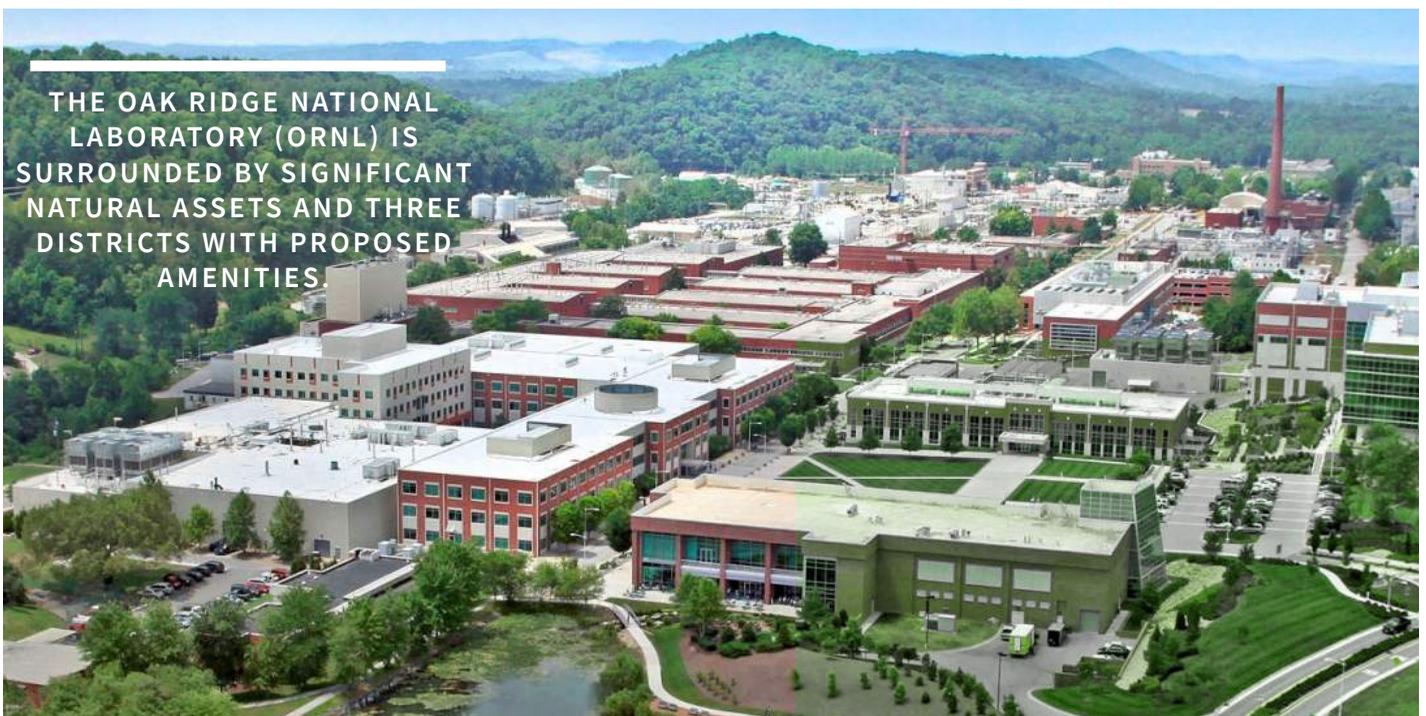
The geologic features (ridges, valleys), the resulting geographic dispersion of development opportunities consistent with the geologic pattern, the relative low densities of population within the urban areas, the transportation patterns, and the restricted areas within the overall area all support an approach which can focus on the unique character of each area and allow them to be viewed as unique destinations or districts.

DISTRICT OPPORTUNITIES. The value to the community, and to the broader range of users, will be enhanced by providing a variety of activities, spaces, and uses within and between each of the districts, so that the impact of regular usage may be dispersed, while offering some activities at multiple locations. The scope and scale of users within each district will dictate the required infrastructure, from minimal to substantial.

The set of activities and experiences available will vary from district to district, but many will have some overlap (e.g., hiking, biking, water access) of resources and activities.

Commitment to and consistency in a robust system of coordinated wayfinding techniques will contribute to the sense of an organized and cohesive outdoor system, with the intent of making the whole much greater than the sum of the parts.

THE CHARACTER OF DISTRICTS. District boundaries have a “soft edge” as they will be defined by the natural assets, recreational amenities and opportunities, and character of the land and associated neighborhoods, businesses, or activities, and not defined by hard perimeters. The districts should be consciously and visibly connected and/or overlapping to encourage connectivity within, between, and among the districts.

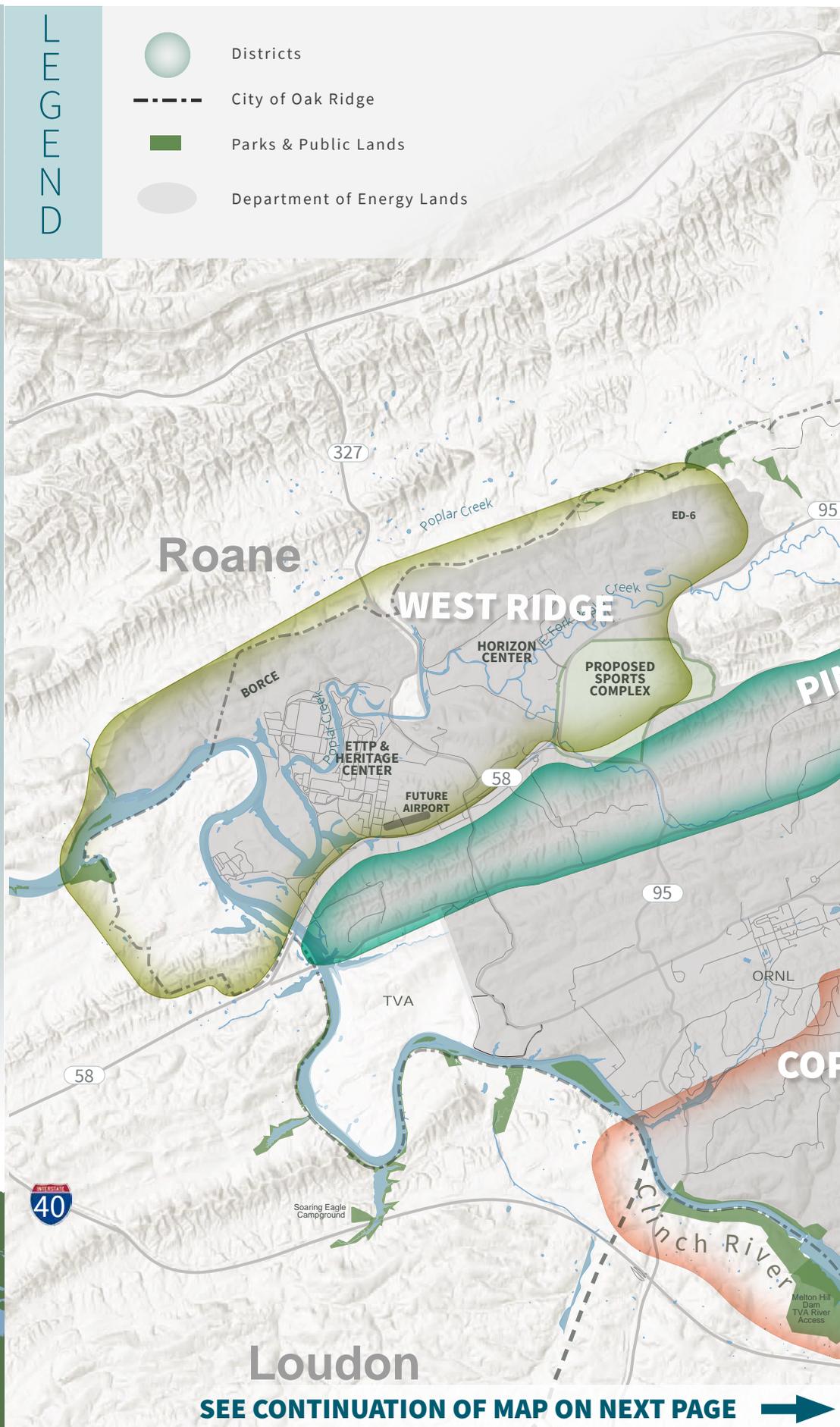


LEGEND

-  Districts
-  City of Oak Ridge
-  Parks & Public Lands
-  Department of Energy Lands



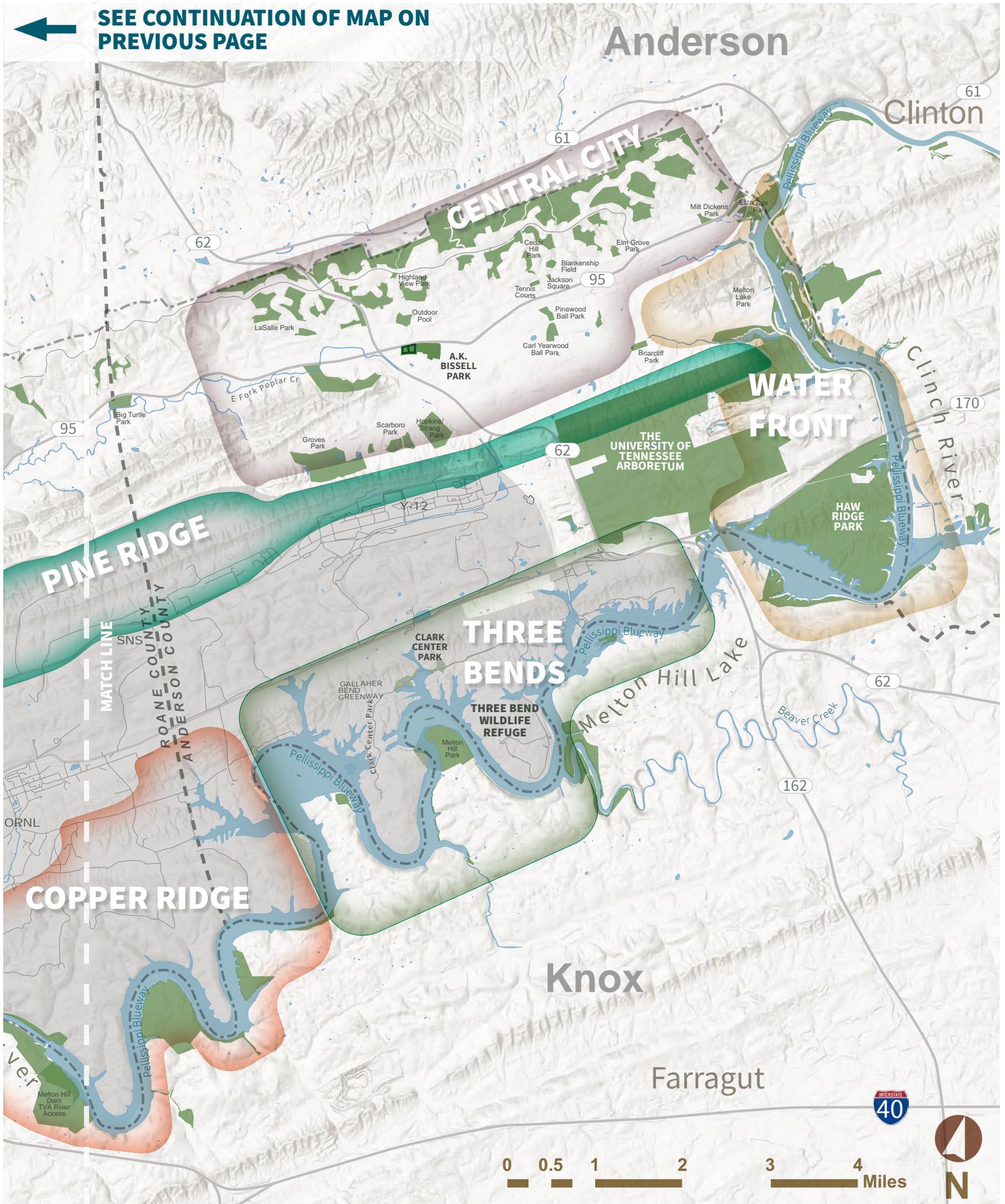
OAK RIDGE REGION
**OVERVIEW OF
 DISTRICTS**
 MAP



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THE DISTRICTS



WEST RIDGE



PINE RIDGE



CENTRAL CITY



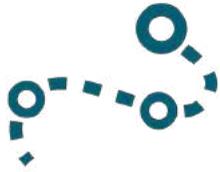
WATERFRONT



COPPER RIDGE



THREE BENDS



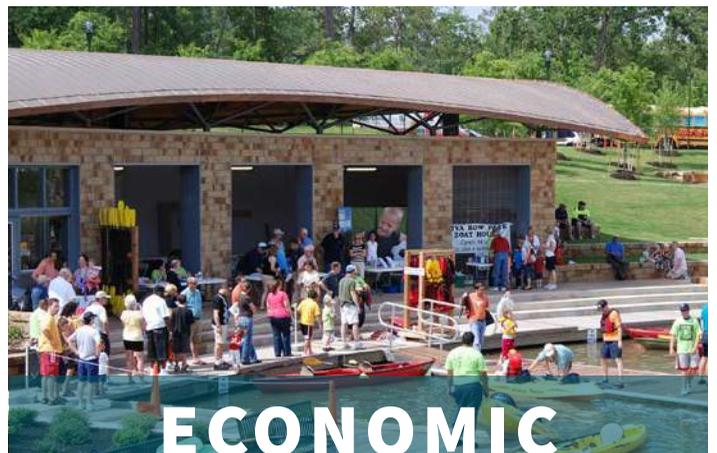
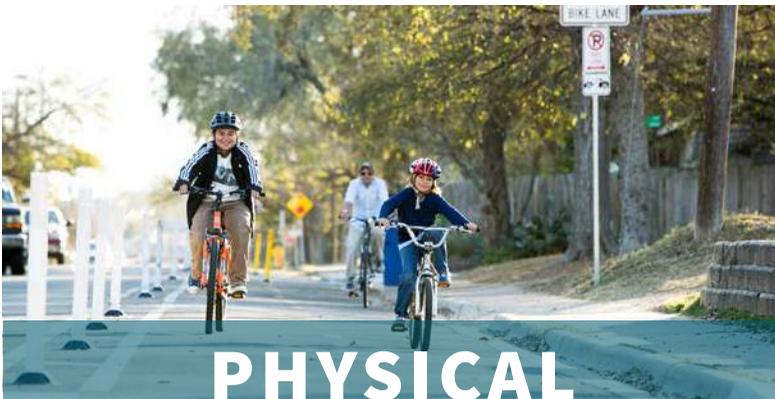
4 CONNECT IN NEW WAYS.

Connectivity as a concept is key to optimizing the full use of the region and all that it has to offer. The majority of existing recreational destinations are located on the periphery of Oak Ridge, largely disconnected from each other. Deliberate connections encourage visitors and residents alike to visit multiple destinations with distinct offerings and, in doing so, create richer and more diverse experiences and a new set of users.

Connectivity should be:

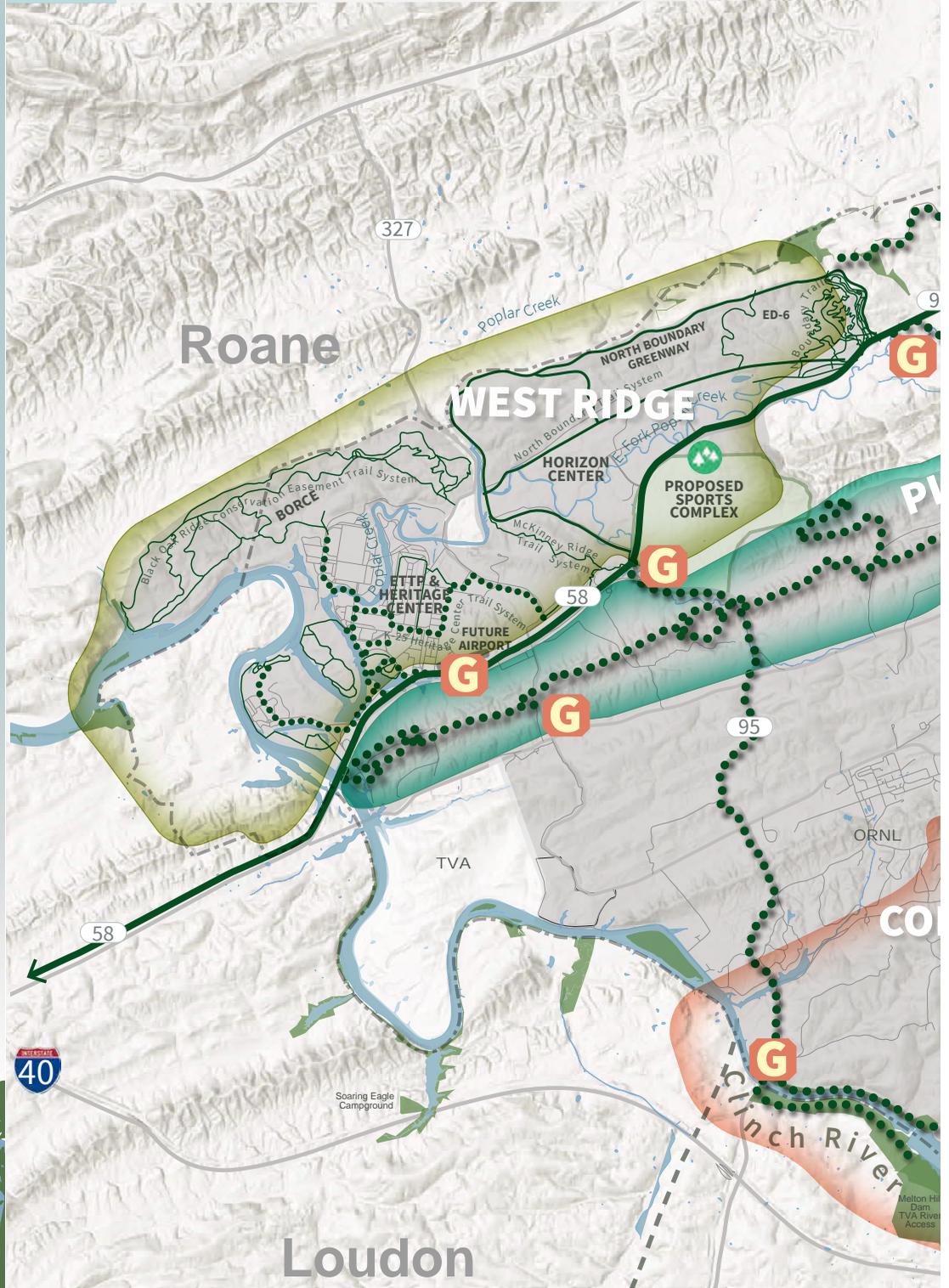
- **Physical** – trails, greenways, blueways, sidewalk and bike lanes
- **Visual** – green corridors, green enhancement as well as wayfinding, branding, and signage
- **Economic** – recreational amenities that drive shared regional use such as sports venues and regional parks, and invite longer stays
- **Emotional** – establishing identities around unique history, natural areas, geography, functions, and neighborhoods with the districts

TYPES OF CONNECTIVITY



LEGEND

- Districts
- City of Oak Ridge
- Existing Connections
- Proposed/Planned Connections
- Department of Energy Lands
- Parks & Public Lands
- P Proposed or Upgraded Parks
- G Gateways

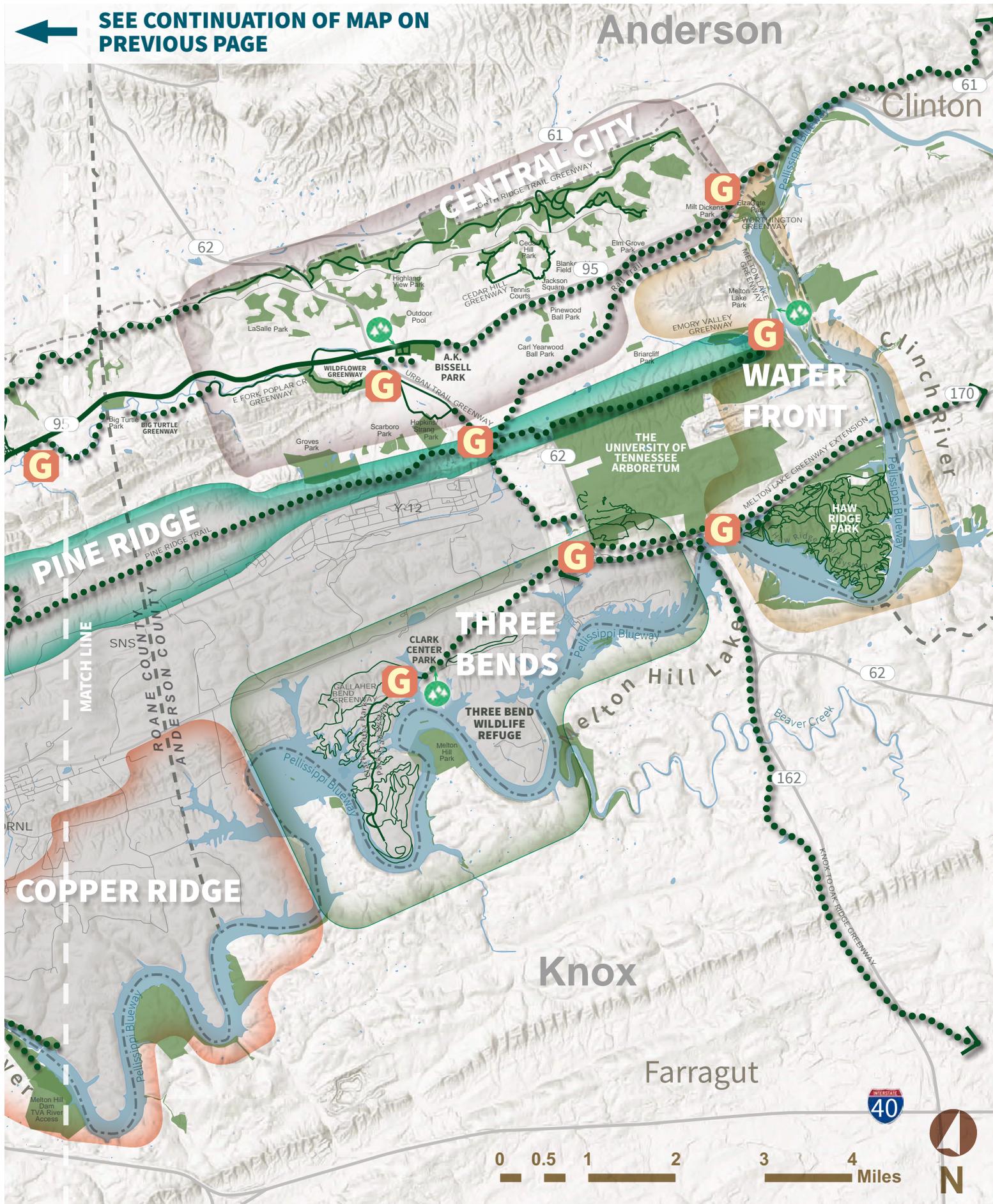


OAK RIDGE REGION
CONNECTIVITY
MAP



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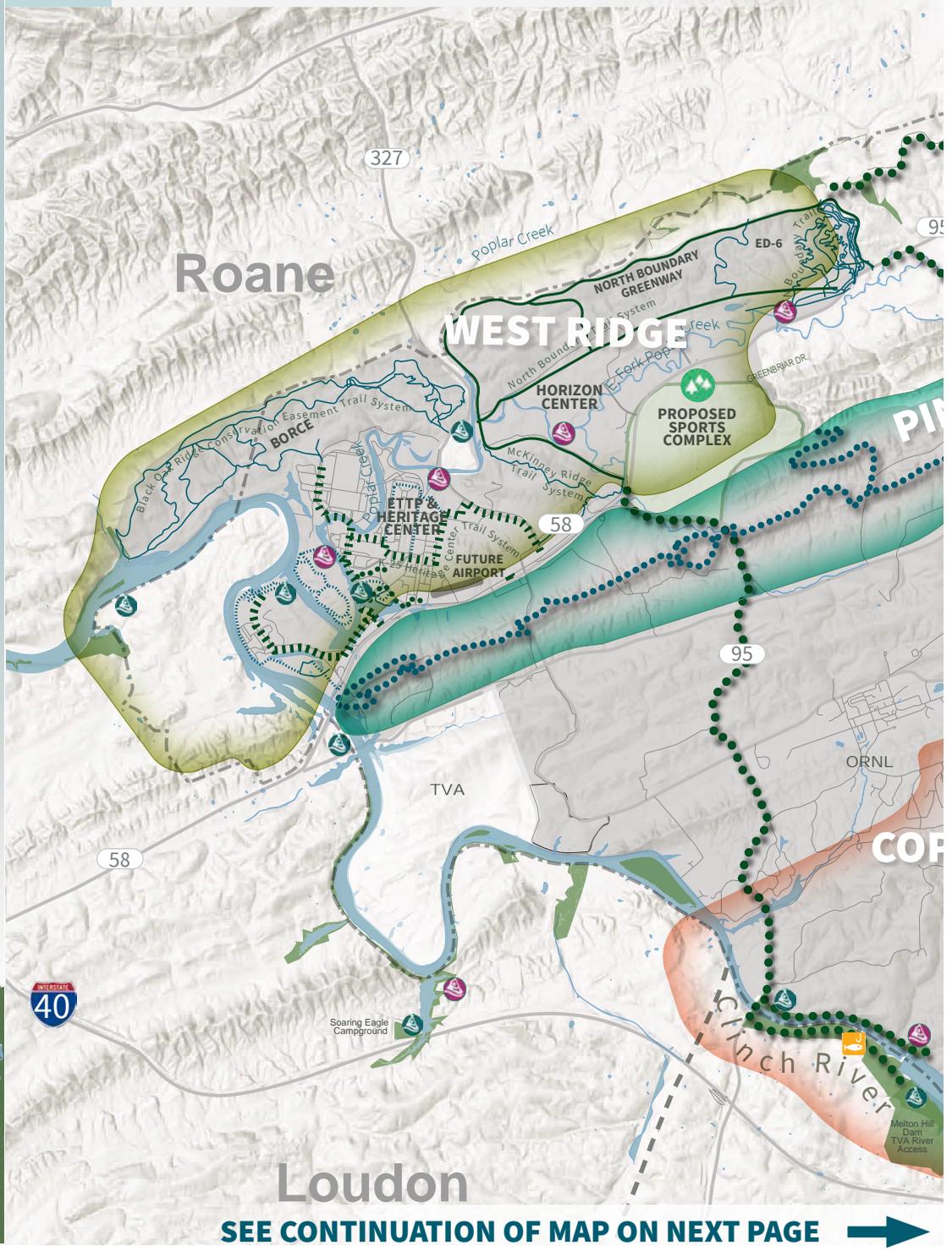
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LEGEND

- City of Oak Ridge
- _____ Existing Trails
- Planned Trails
- Proposed Trails
- Existing Bike Lane
- Proposed Bike Lane
- Existing Greenways
- Planned Greenways
- Proposed Greenway
- Department of Energy Lands
- Parks & Public Lands
- Districts
- Proposed or Upgraded Parks
- Blueway Access / Proposed Blueway A
- Fishing Access
- Marina

OAK RIDGE REGION
DISTRICT
CONNECTIVITY
 MAP

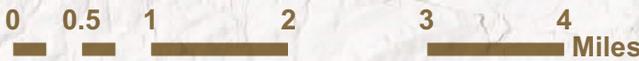
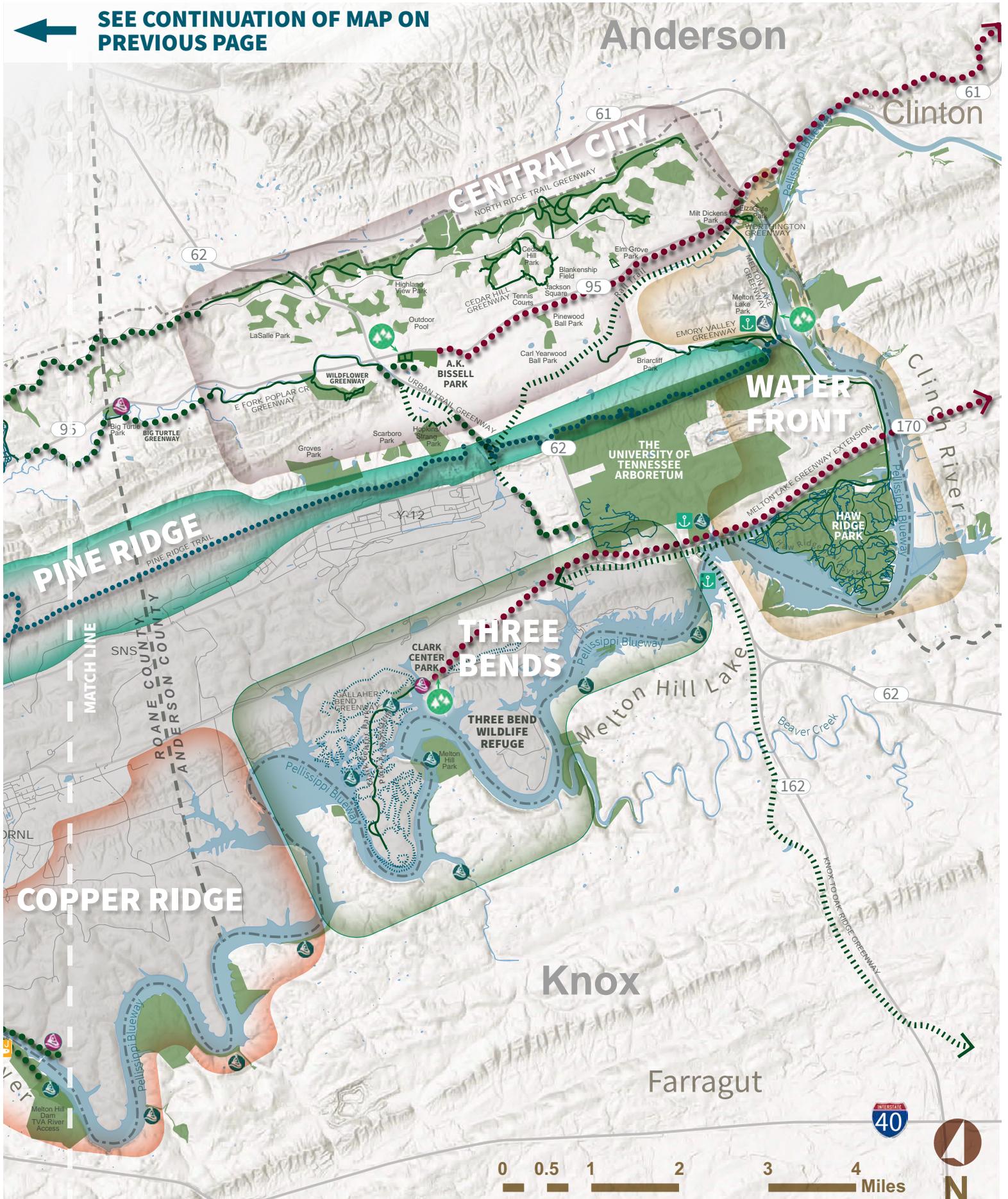


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TYPES OF PHYSICAL CONNECTIVITY



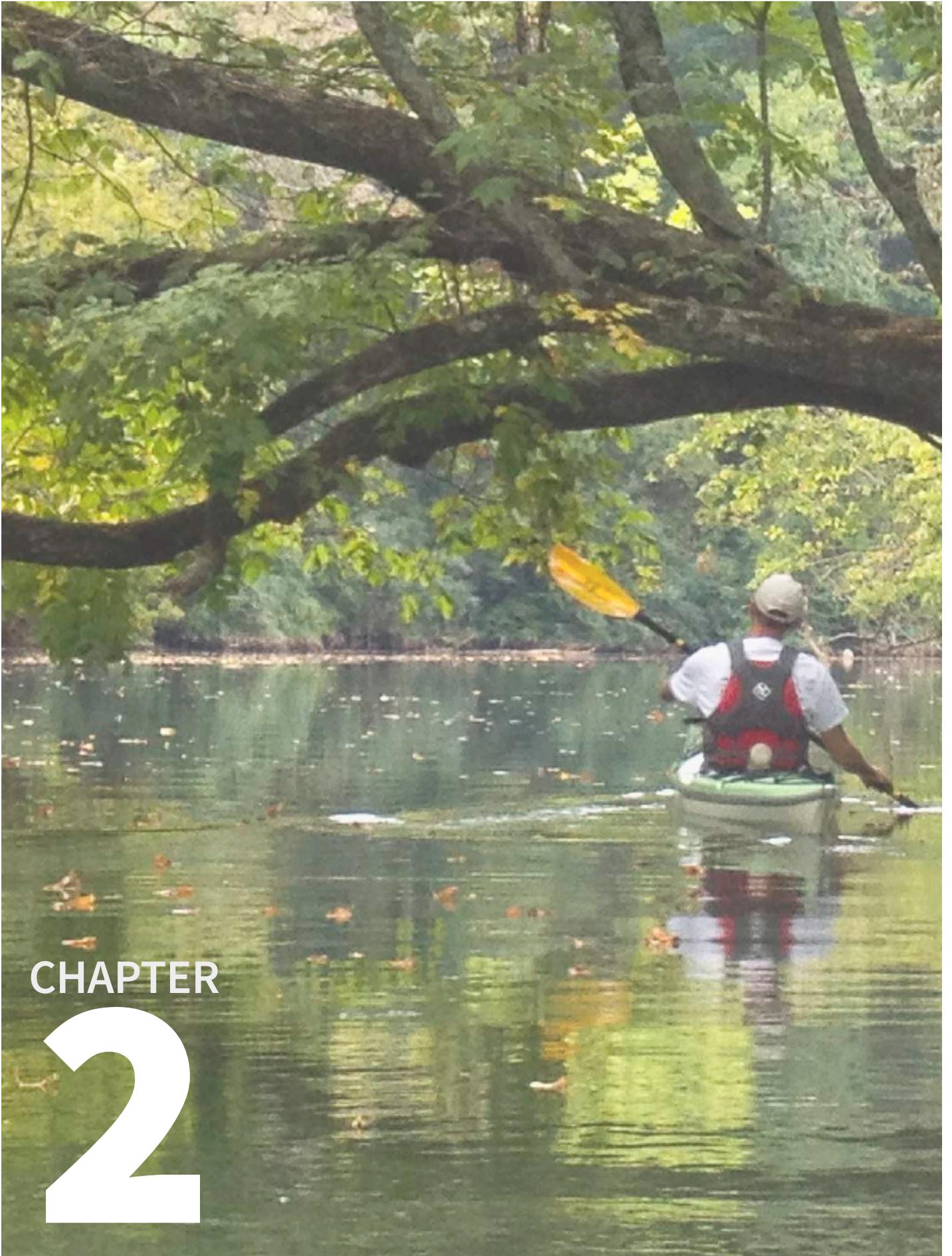
..... **GREENWAYS**



..... **BIKE LANES**

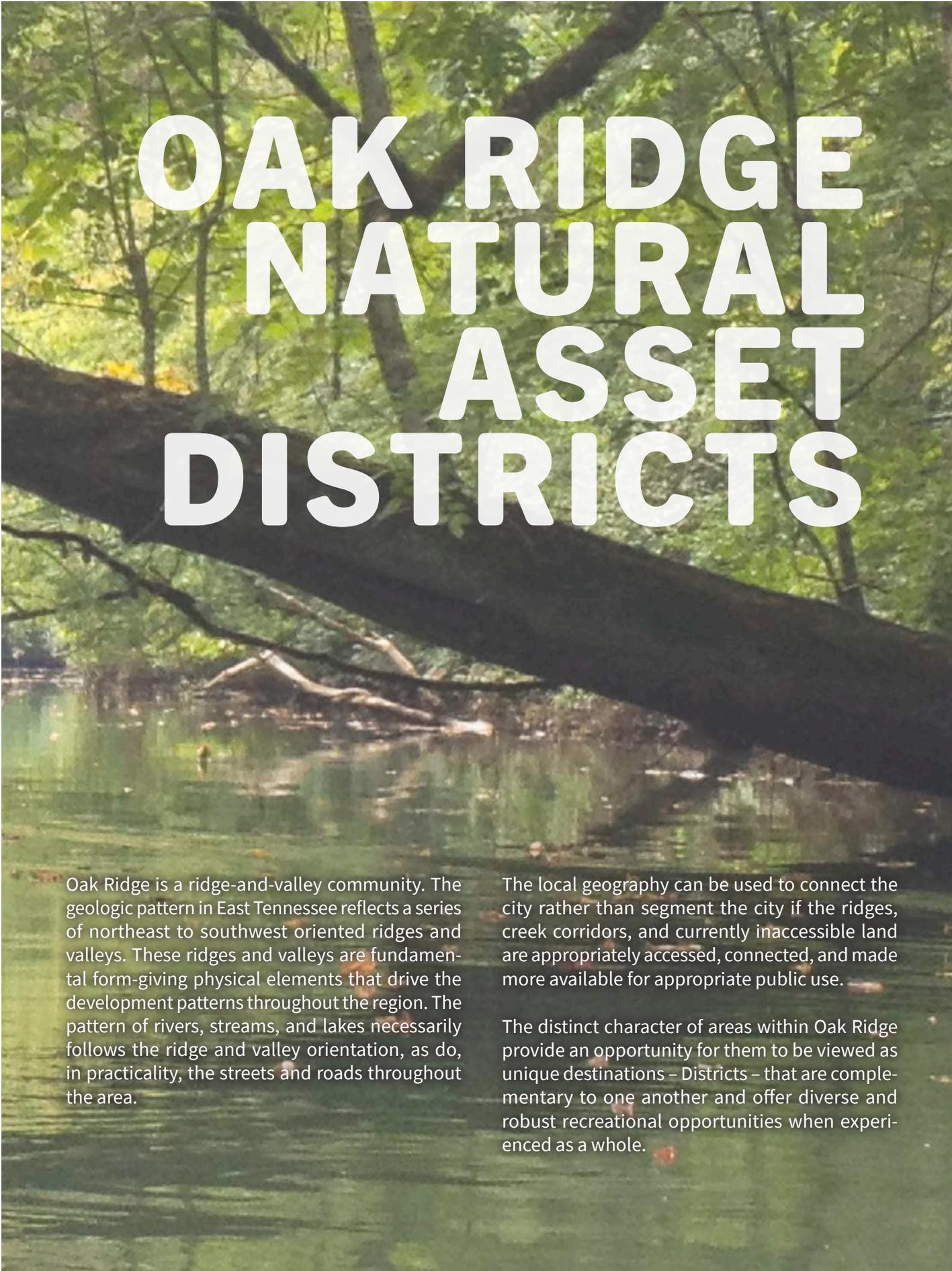


..... **TRAILS**



CHAPTER

2



OAK RIDGE NATURAL ASSET DISTRICTS

Oak Ridge is a ridge-and-valley community. The geologic pattern in East Tennessee reflects a series of northeast to southwest oriented ridges and valleys. These ridges and valleys are fundamental form-giving physical elements that drive the development patterns throughout the region. The pattern of rivers, streams, and lakes necessarily follows the ridge and valley orientation, as do, in practicality, the streets and roads throughout the area.

The local geography can be used to connect the city rather than segment the city if the ridges, creek corridors, and currently inaccessible land are appropriately accessed, connected, and made more available for appropriate public use.

The distinct character of areas within Oak Ridge provide an opportunity for them to be viewed as unique destinations – Districts – that are complementary to one another and offer diverse and robust recreational opportunities when experienced as a whole.

THREE BENDS DISTRICT

CURRENT CHARACTER

Located in the southeast quadrant of the city, this district contains the Three Bends Scenic and Wildlife Management Refuge Area, an over 3,000-acre publicly managed series of bends on Melton Hill Lake. These bends include Freels, Gallaher, and Solway Bends. Tennessee Wildlife Resource Agency (TWRA) manages wildlife and habitat areas for game species while DOE oversees management of the forested area. The District encompasses approximately ten miles of Melton Hill Lake shoreline. Walker Branch, Scarboro Creek, and Bearden Creek each flow through the District. There is some public access for the Gallaher Greenway and Clark Park, but otherwise the District is managed largely for hunting, and to maintain and improve the natural habitat. The refuge is also used as an outdoor laboratory and education facility.

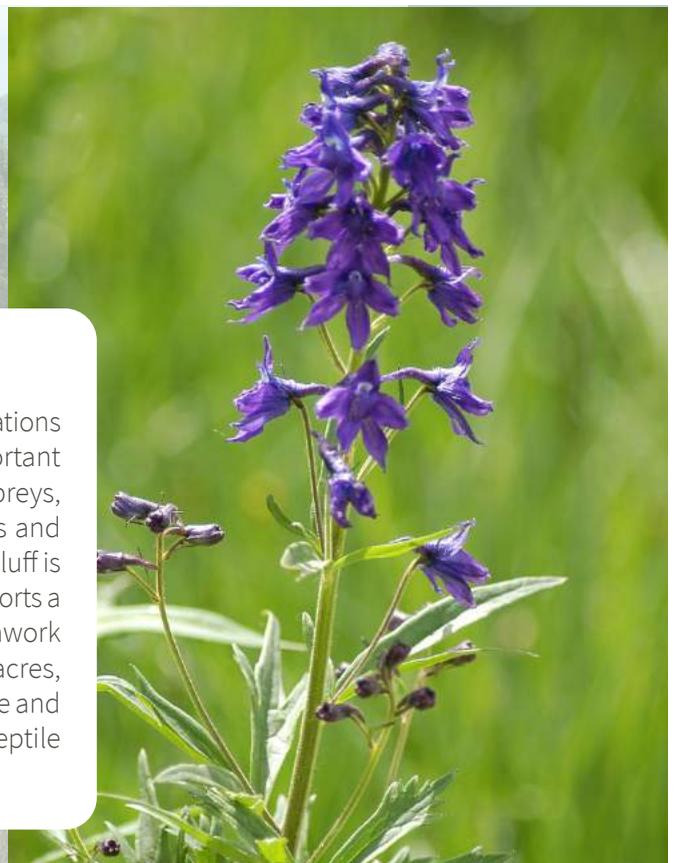
Clark Center Park (formerly known as Carbide Park) is an 80-acre parcel under consideration by DOE for possible transfer from federal ownership. The park includes a swimming area along Melton Hill Lake, and incorporates two picnic areas, a playground, restrooms, a boat ramp, two ball fields, and access to the Gallaher Bend Greenway.

The 4.7-mile Gallaher Bend Greenway is a natural surface trail/road on DOE property that extends nearly the length of Gallaher Bend and currently allows for pedestrian and bicycle access. With the exception of the greenway, Gallaher Bend is not currently open for public recreation.



UNIQUE NATURAL ASSETS

The Three Bends District has one of the world's largest populations of a rare wildflower, the tall larkspur. The District is an important area for numerous listed species, including bald eagles, ospreys, and migrant song birds. There are several notable barrens and wetlands in this area that support state-listed species. Bull Bluff is a steep sheer limestone cliff overlooking the lake, which supports a variety of rare and interesting plants. Freels Bend has a patchwork of variably sized wetland complexes totaling around 11 acres, much of which is maintained as habitat for the Canada goose and other waterfowl. Freels Bend supports certain state-listed reptile and amphibian species.





MELTON HILL LAKE
AND WETLANDS AT
FREELS BEND

OPPORTUNITIES



IMPROVE CLARK CENTER PARK INTO A REGIONAL PARK

• While the majority of Three Bends is devoted to research and wildlife and habitat management, Clark Center Park, Gallaher Bend and the 10 miles of shoreline provide the ideal location for a regional-scale park, offering a mix of uses to a variety of users. Clark Center Park is situated in one of the most beautiful lakefront coves, accessible to a rapidly growing population in West Knox County, Anderson County, and Roane County. Passive recreation amenities within Clark Center Park – including individual and group picnic facilities, a pavilion, and open spaces – can replace the ball fields, making the park ideal for gatherings and events.

INCREASE TRAILS • Travelers to and through the region on I-40 are only 30 miles/25 minutes from the park.



Expansion of the trail system on Gallaher Bend, and the permitting of more extensive mountain biking, would make a full-day experience and destination for hikers and mountain bikers.

BLUEWAY ACCESS • Clark Center Park could serve as a key access point in a Melton Hill Lake Blueway System that would include new access within the Copper Ridge District and Poplar Creek.



PROVIDE FREELS BEND ACCESS • While access to Freels



Bend is currently restricted, consideration should be made to offer controlled or periodic access to this bend. Freels Bend offers spectacular views, high conservation experience, and is home to The

Freels Bend Cabin, built in 1844 and listed on the National Historic Register. Hike-in access to the Freels Bend Cabin and wetlands could provide excellent opportunity to experience the current grassland prairie restoration, prime birding opportunities, and naturalists' excursions.

CONSTRAINTS

Land use restrictions currently prohibit complementary retail and commercial development close to the park.

WEST RIDGE DISTRICT

CURRENT CHARACTER

Located in the northwest quadrant of Oak Ridge, this district is composed of the East Tennessee Technology Park (ETTP)/Heritage Center, the Horizon Center, the entirety of the Black Oak Ridge Conservation Easement (BORCE), portions of Happy Valley, and Campbell Bend. Five miles of the Clinch River are within this district, the entirety of which is located within Roane County.

The Black Oak Ridge Conservation Area (BORCE) is 2,966 acres, owned by DOE, and protected by a conservation easement. It is comprised of the Black Oak Ridge and the nearly 6-miles of East Fork Poplar Creek, which has a significant forested wetland surrounding it. Tennessee Wildlife Resource Agency (TWRA) is responsible for habitat and natural resources management of the BORCE. The easement restricts most uses other than reuse of the current road systems for trails and a limited number of new trail or blueway access points. Additionally, areas surrounding the Horizon Center are protected by easement and managed by DOE as part of the 609-acre East Fork (Poplar Creek) floodplain natural area.

The Horizon Center is a 1,000-acre industrial park that includes potential sites for research and development, light manufacturing, and office facilities. The business park boasts 500 acres of green space and conservation areas as well as the oldest Sycamore tree in East Tennessee.

The ETTP/Heritage Center is a 2,200-acre site which was once home to a complex of facilities that enriched uranium as a part of the World War II Manhattan Project. The facilities

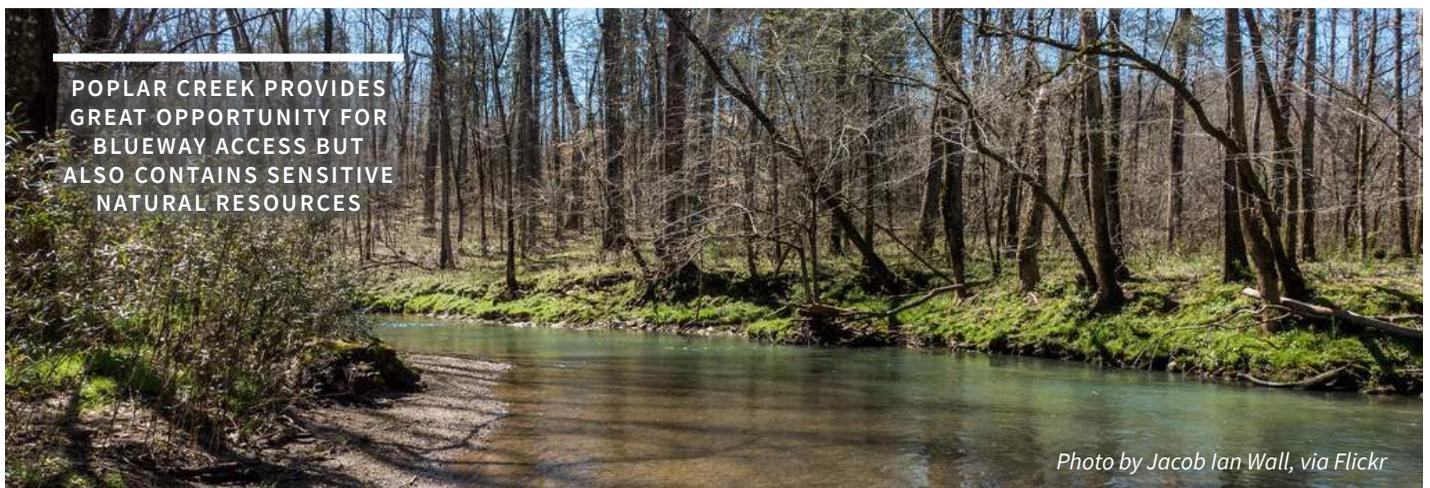
stopped enriching uranium in 1987, and site cleanup and remediation has since been underway. The site is transforming into a private sector industrial park as site cleanup is nearing completion, with the last buildings being demolished in 2020. Several parcels within the ETTP/Heritage Center have already been transferred to CROET, which is tasked with managing the park.

Located on the Department of Energy Reservation, the 12.7-mile North Boundary Greenway passes through ridge-top woodlands, karst bluffs covered in mountain laurel, and creek-side habitats. A variety of wildlife and native plants as well as remnants of pre-Manhattan Project settlements are present.

UNIQUE NATURAL ASSETS

Some of the more ecologically sensitive areas exist in the limestone cliff bluffs surrounding East Fork Poplar Creek and Poplar Creek. The eastern portion of the BORCE has one of the largest contiguous interior forest blocks in the Oak Ridge Reserve, supporting incredible biodiversity.

On the west shore of the Clinch River, Campbell Bend Barrens and Crowder Cemetery Barrens, totaling 50-acres, are held in conservation easement by the state and have limited public access. These areas protect a rare barrens community, which consists of exposed limestone and open fields with a grassland community that is surrounded by hardwoods.



POPLAR CREEK PROVIDES GREAT OPPORTUNITY FOR BLUEWAY ACCESS BUT ALSO CONTAINS SENSITIVE NATURAL RESOURCES

Photo by Jacob Ian Wall, via Flickr



Photo by Legacy Parks Foundation

OPPORTUNITIES



EXPAND ACCESS & WAYFINDING • There is sufficient existing trail mileage within this district to make the area a trail destination, as it remains the most easily accessed system from Roane County and I-40. Expanded parking, enhanced signage/wayfinding, and additional linkages will improve the experience. Commercial development – restaurants, breweries, convenience stores – will extend the length of stay and economic activity by trail users. This development would be expected when the airport is constructed.



BLUEWAY ACCESS • Blueway access points – both on Poplar Creek and the Clinch River – can be the signature outdoor amenity in this district. Additionally, those access points can provide attractive features to both the Horizon and Heritage Centers business parks. Roane County’s participation in the Tennessee RiverLine creates future opportunities for integrating these creek access points into the larger Tennessee River blueway system. DOE’s BORCE Management Plan allows for and anticipates new blueway access for Poplar Creek, however Poplar Creek may not become actively used as a blueway until tree/debris obstructions are cleared. Building a volunteer base and some type of cooperative management structure to maintain the blueway would increase chances for success.



A SPORTS COMPLEX • A multi-field sports complex is recommended on the Self-Sufficiency Parcel 2, the 850-acre site located immediately south of the Horizon Center. This complex could be jointly marketed with the facility currently proposed for Knox County, creating a strong economic connection. The study associated with the Knox County complex recommends the development of a nearby smaller complex (with a minimum of ten sports fields) to accommodate and be marketable to large, national events. The Oak Ridge complex would also serve local needs during the balance of the year. Self Sufficiency Parcel 2 was identified as the best location for the complex because of its quick transportation access, utility access, and the lower natural resource values of the majority of the site. The complex could serve as a gateway to the BORCE and Pine Ridge Trail.



CONNECT REGIONALLY • Roane County is developing a 10-year park and greenway master plan. Connecting the extensive waterway amenities, trails, and greenways (located through the rest of the county) to these assets within the city, will strengthen the recreational, commercial, and residential opportunities for the entirety of Roane County.

CONSTRAINTS

The highly conserved nature of the ridges limits trail expansion. The BORCE and Horizon Center’s easement restrictions further minimize the possibility for much of any new recreation beyond blueway access.

PINE RIDGE DISTRICT

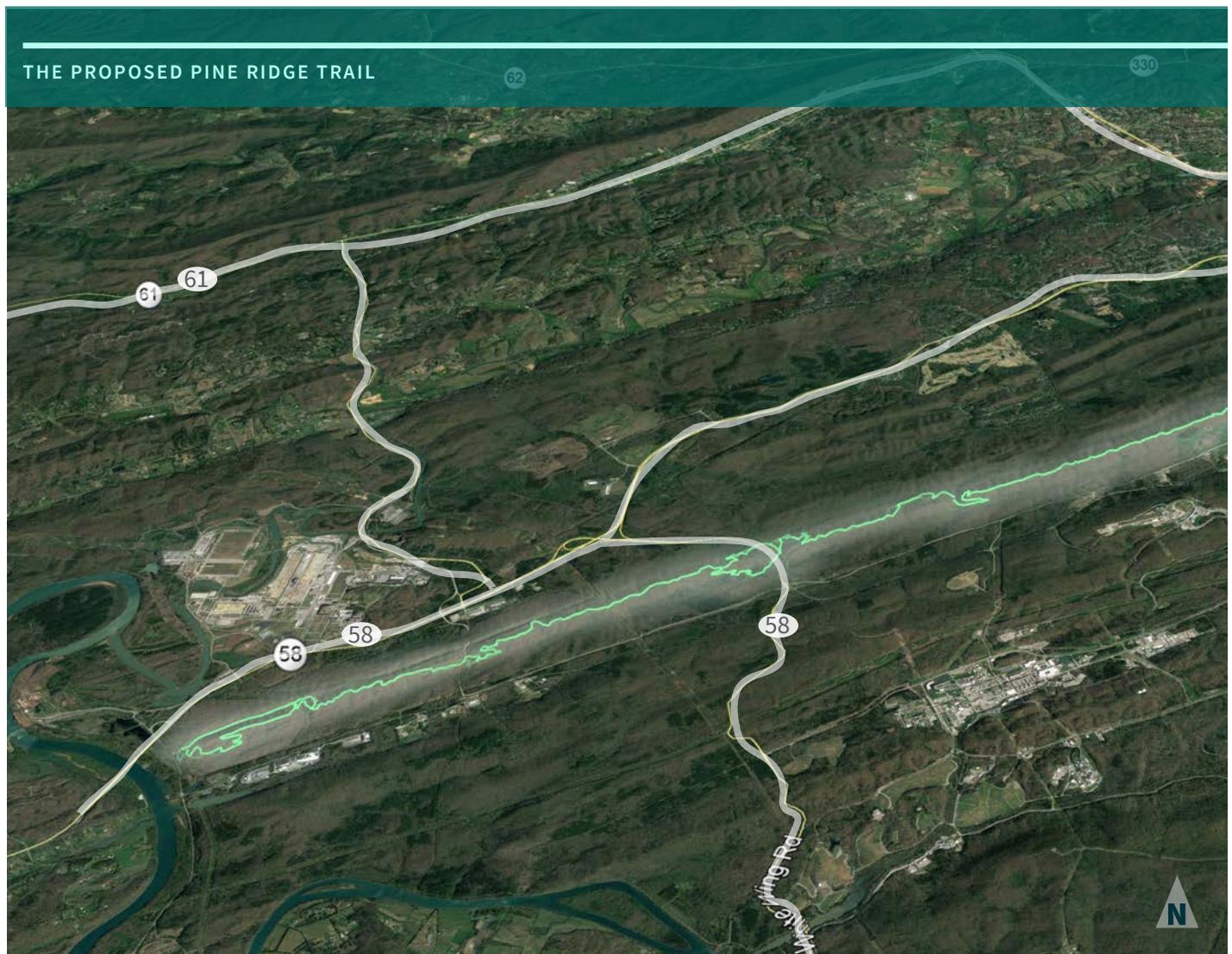
CURRENT CHARACTER

This district spans the length of the nearly 14-mile Pine Ridge, with largely unfragmented old-growth forest bisecting the Oak Ridge region. It is mostly undeveloped, managed by DOE, and has public access restrictions.

The University of Tennessee Forest Resources Center and Arboretum lies within the Pine Ridge District, with approximately 3 miles of Pine Ridge ridgeline on their land.

UNIQUE NATURAL ASSETS

The ridgeline has a high concentration of natural resources, but less concentration of listed species compared to the creek valleys below, especially Bear Creek Valley just south of the ridge. DOE named a significant portion of the ridge the Pine Ridge Mature Forest Natural Area, and it has become an important landscape for research. It consists primarily of a mixed-age beech-mountain laurel community.



OPPORTUNITIES

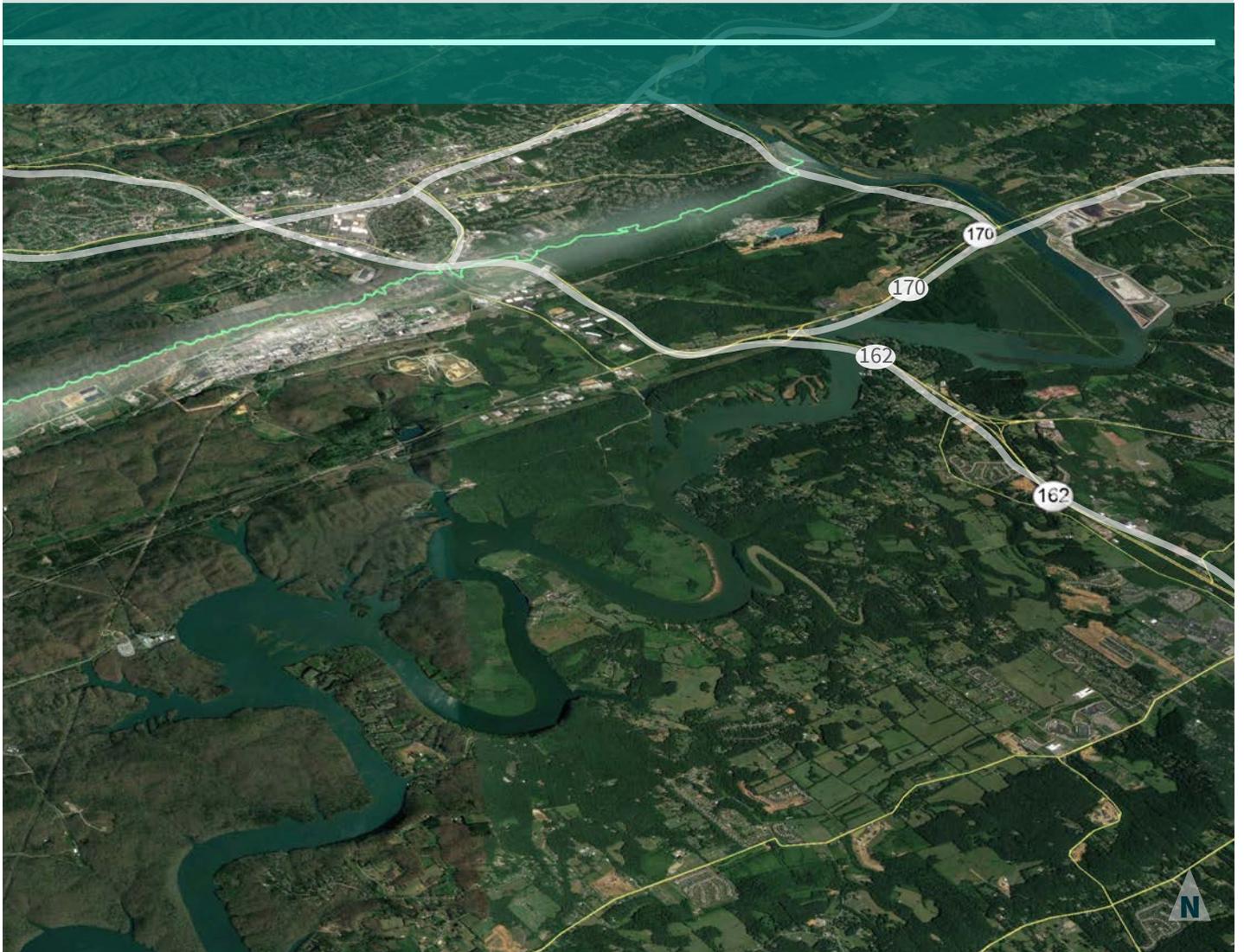
A TRAIL THE LENGTH OF THE THE CITY • Pine Ridge provides a site on which more than twenty miles of hiking and biking trails can be created, extending the length of the entire city. Major trailheads can be established at Happy Valley's Roane County Visitor Center and Melton Hill Greenway, with additional trail access points along the system, that offer both connectivity to adjacent trails and greenways, as well as shorter hiking/biking experiences. The central ridge can serve as the main spine for a trail system connecting all the districts.



Given the extensive length of the trail, there is great potential for camping and hut-to-hut hiking/biking, with proper management.

CONSTRAINTS

The proximity to the Y-12 facility may require that the trail be routed at the base of the ridge in the area adjacent to the facility.



COPPER RIDGE DISTRICT

CURRENT CHARACTER

This district, located in the southwestern area of the Oak Ridge Reservation, is largely managed by DOE and currently the public is restricted from access. The district encompasses Melton Hill (the highest point in the Oak Ridge Reservation), Melton Hill Dam, several river bends (including Hickory Creek Bend), Melton Branch, Greenway Road, and both sides of Melton Hill Lake. Nearly seven miles of Melton Hill Lake lie within this district, and the shoreline is dotted with many river bluffs.

The Oak Ridge National Laboratory, proposed TVA Breeder Reactor Site, and Central Training Facility are all located within this district.

UNIQUE NATURAL ASSETS

This district has diverse forest community types, interesting geologic features, wet ravines, springs, seeps, forested wetlands, and one of the largest contiguous interior forest blocks in the Oak Ridge Reservation. The District is also noteworthy for a significant number of caves. Copper Ridge Cave, the largest cave within the Oak Ridge Reservation, is a unique habitat that supports listed species. Additionally, Flashlight Heaven Cave and Dry River Bluffs and Caves have several documented state- and federally- listed species.



OPPORTUNITIES

The relatively remote and undeveloped nature of the Copper Ridge District provides the opportunity for a back country experience within a few miles of a metropolitan area – a truly unique character. Good access to Highway 95 creates a singular entry while the rugged nature of the forests are maintained.

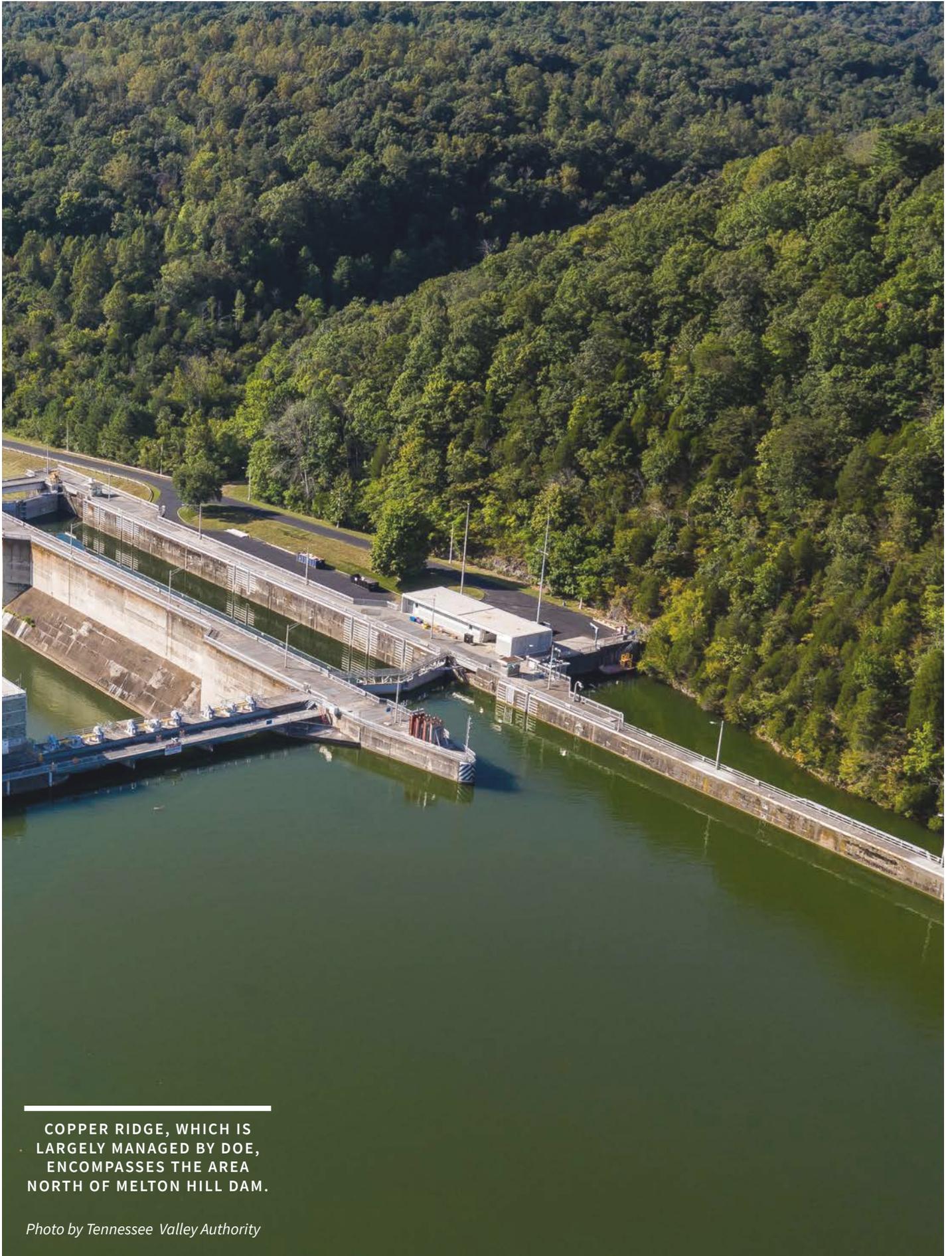
TRAILS • A system of hiking and biking trails could provide measured access to the rich geologic features, especially the caves. Equestrian trails should be considered to complement the Roane State Community College Equestrian Center. Roane County is currently creating a vision for equestrian trails associated with the Center. Identifying Copper Ridge as a close-by destination could strengthen Roane County’s position as a destination for this type of equestrian use.



BLUEWAY • Access to Melton Hill Lake, within the seven miles of shoreline, would help establish a navigable waterway for most recreational users. Close boat access already exists at the TVA boat ramp and Clark Center Park.

CONSTRAINTS

There is limited interior access to the majority of the property. Additionally, a significant buffer may be required around the Oak Ridge National Laboratory (ORNL).



COPPER RIDGE, WHICH IS
LARGELY MANAGED BY DOE,
ENCOMPASSES THE AREA
NORTH OF MELTON HILL DAM.

Photo by Tennessee Valley Authority

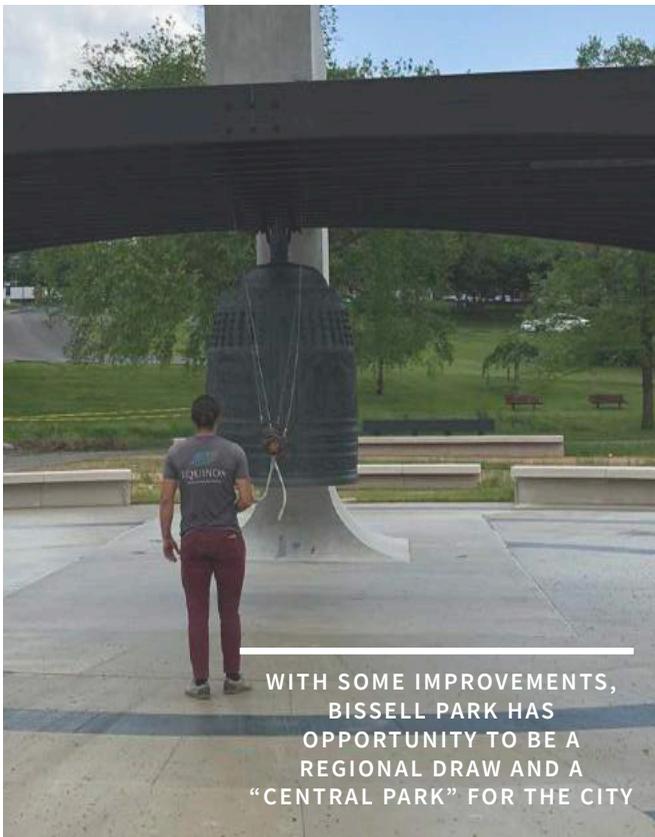
CENTRAL CITY DISTRICT

CURRENT CHARACTER

This district is the most urbanized of the districts, containing a major portion of the City of Oak Ridge. The District includes the eastern portion of Black Oak Ridge and much of the city's green belt lands. These lands were preserved consistent with the original City of Oak Ridge Master Plan. The city manages and maintains these lands through ordinances that allow for city-approved recreation, trails, accepted forestry practices, and non-commercial gardens.

UNIQUE NATURAL ASSETS

The Oak Ridge Barrens is a registered state natural area found within city limits. A remnant of the historic prairies occupies parts of the site. A small and inherently rare habitat supports at least three state listed plants and is managed under a cooperative agreement between the state, the city, and Tennessee Citizens for Wilderness Planning (TCWP). The East Fork Poplar creek winds around the south west side of the Central City District and connects to additional natural assets throughout the Oak Ridge area.



WITH SOME IMPROVEMENTS, BISSELL PARK HAS OPPORTUNITY TO BE A REGIONAL DRAW AND A "CENTRAL PARK" FOR THE CITY

OPPORTUNITIES

CONNECTIVITY & INFILL • Oak Ridge would benefit greatly by cultivating an area that would act as a hub to connect people to the regional amenities and natural assets of the area. Bissell Park would operate as a nexus from which these cultural and recreational activities would emanate. It is recommended to improve walking and biking opportunities to and from the Central City to the rest of Oak Ridge with upgraded pedestrian street crossings, widened sidewalks, additional bike lanes, and enhanced greenways. Bissell Park should be connected to the adjacent areas with safe walkable streets and dedicated pedestrian crossings along the Oak Ridge Turnpike, South Illinois Avenue, North Tulane Ave and ORAU Way. Infill development for both commercial and residential building types should be promoted in the area.



BISSELL PARK IMPROVEMENTS • Overall park circulation could be unified by creating a trail and a festival lawn with a large amphitheater. This unified trail would connect Bissell Park to the proposed Wilson Street project with a new intersection, and safe pedestrian crossing elements. A widened sidewalk, street trees, and landscaping would improve the edge of the boundary.

The park's watershed and creek system could be redesigned to mitigate negative storm events and to provide a strong ecological footprint. The existing amphitheater needs better seating elements and pathway circulation.

The Peace Bell could be showcased with additional landscape elements such as a grove of trees. A fountain element located in this area would balance the activity of the site and would mask the noise of the adjacent traffic. The trail connection to the Art Museum would benefit from sculptural elements that reflect Oak Ridge and regional communities that are connected to the park.

CONSTRAINTS

This area of downtown Oak Ridge is defined by excessive surface parking, empty store fronts, lack of available housing, and large bisecting roadways. Rehabilitating urban spaces can be expensive, time intensive, and disruptive.

The Oak Ridge Main Street Plan amendments envision transforming Wilson Street into the city's new downtown. The proximity to Bissell Park offers the opportunity to develop a master plan for the combined spaces and ensures a beautiful and desirable destination for living, working, shopping dining and recreating.



Wilson Street & Bissell Park

GREENVILLE, SOUTH CAROLINA'S FALLS PARK IS AN EXCELLENT EXAMPLE OF HOW CENTRAL PARK DESTINATIONS CAN REVITALIZE A CITY.

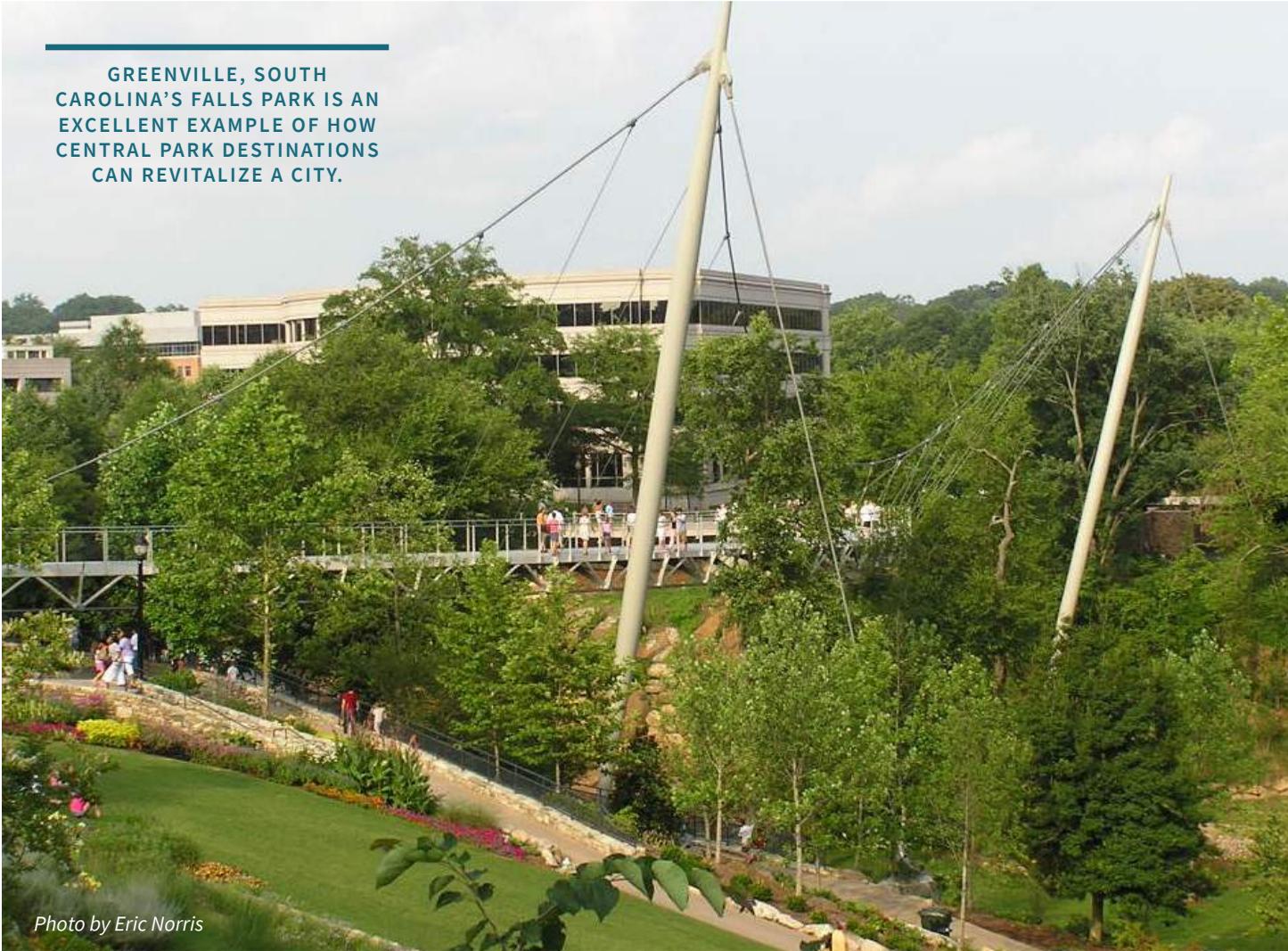


Photo by Eric Norris

WATERFRONT DISTRICT

CURRENT CHARACTER

This district encompasses a seven-mile stretch of the more urbanized Oak Ridge waterfront on Melton Hill Lake. The district includes an assemblage of private and public lands like Haw Ridge Park, Melton Lake Greenway, Melton Lake Park, Elza Gate Park, the city-owned Centennial Golf Course, and TVA lands.

UNIQUE NATURAL ASSETS

TVA has several management areas bordering the lake for the purpose of managing habitat for listed species and protection of biodiversity. These management areas include bluff and riverfront properties bordering both sides of Melton Lake Drive and some of the stream impoundments coming from the lake.

TVA manages some shoreline edges at Haw Ridge Park, and has zoned them for Developed Recreation. The area northeast of the park (encompassed by Old Edgemoor and Edgemoor Roads) is zoned as Sensitive Resource Management. Just north of Melton Lake Park is the Worthington Cemetery Cedar Barrens, jointly managed by TVA and the city, zoned for Sensitive Resource Management. To the west of the park is an embayment Habitat Protection Area that is zoned by TVA as both a Sensitive Resource Management and Natural Resource Conservation zone. The embayment is known for having abundant wildlife including beavers, turtles, and wading birds, as well as habitat for listed species. To the east and downstream of Melton Lake Park is a series of islands managed by TVA that are zoned as Sensitive Resource Management.

OPPORTUNITIES

REBRANDING & PLACEMAKING •



This area needs to be rebranded with its image and identity representative of the natural assets found along the water. As a linear park with multiple amenities along its route these areas need improved access with better signage and infrastructure to create a true

riverfront park experience. This includes improving the parking at important locations, additional wayfinding devices, and additional traffic calming and/or pedestrian crossings at the roadway intersections along Melton Lake Drive. Elza Gate Park, as identified in the Waterfront Plan, could serve as a historic gateway into the northeastern part of Oak Ridge.



MELTON LAKE PARK IMPROVEMENTS •

Improved recreation and signage facilities could elevate Melton Lake Park as a gateway. The park edge needs a strong landscaped buffer along the roadway with a rhythmic

and systematic approach to create interest and spaces for relaxing and overlooking the river. This would include upgraded lighting, new fencing, planting and materials, and coordinated signage that would provide legibility along its roughly four miles. The area designated for the Oak Ridge Rowing Association needs to be upgraded. These upgrades would include relocating the volleyball court, providing permanent stepped seating for event viewing, a pavilion/picnic shelter, splash pad, enhanced playground, redesigned areas for events and groups of people to gather, additional landscape elements to promote the scenic views and screen unwanted elements, and developing additional activity areas and playgrounds for people of all ages. An arched pedestrian bridge for connectivity and spectator viewing at Melton Hill Lake Park is also proposed in the Waterfront Plan. Additionally, Melton Hill Lake is becoming a destination for game fishing and improvements should accommodate this growing segment of park users.

Support for this increased activity should include the development of additional commercial areas and/or food hubs. With its proximity to the adjacent residential neighborhoods this area would embody the attitude and spirit of the “live, work, play” ethos.

CONSTRAINTS

Land use restrictions occur along some the TVA owned property along the Clinch River and areas zoned for conservation.

WATERFRONT DISTRICT ASSETS



Photo by the City of Oak Ridge



Photo by the Legacy Parks Foundation



Photo by Explore Oak Ridge

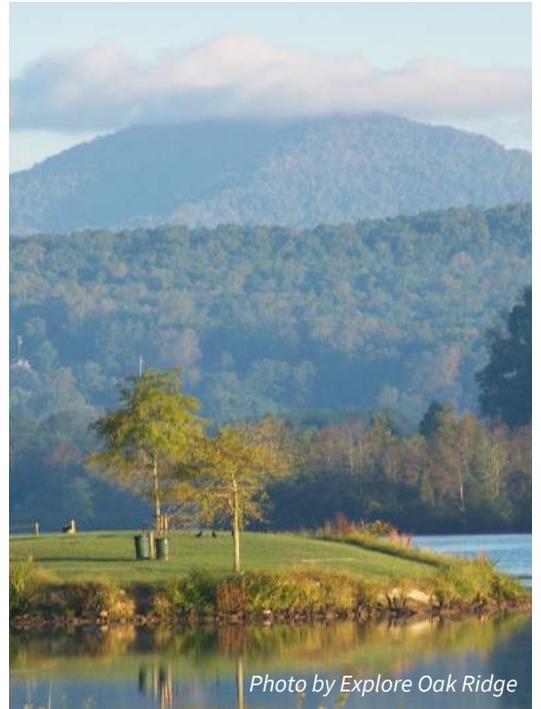


Photo by Explore Oak Ridge



Photo by Explore Oak Ridge

CHAPTER

3



ADDITIONAL ASSETS



UT ARBORETUM

CURRENT CHARACTER

The UT Arboretum, with 250 acres dedicated to research and education, holds a unique position within the Oak Ridge community. It is part of the 2,204-acre Oak Ridge Forest with also includes the UT Forest Resources AgResearch and Education Center. The Arboretum property includes numerous plant specimens, an official Wildlife Observation Area, and a NOAA weather station. The active UT research and programs add to the unique nature of this property. The property also includes a Visitor Center and office, a festival and event auditorium (made available for event rental), a pavilion, and a research and education facility. The location of the Arboretum at the “front door” of Oak Ridge provides good visibility to the highway.

OPPORTUNITIES

The location at the entrance to the City of Oak Ridge adds importance to the future activities scheduled at this facil-

ity. The Arboretum wayfinding signage can be integrated, thematically, to be complementary with City gateway signage. The continuation of current research, education, and property activities will be an important complementary resource for a natural assets initiative.

The site location and facilities included at the UT Arboretum offer opportunities for an increasingly important activity center along with the connective links of the proposed rails-to-trails, Freels Bend area, Haw Ridge Park, Melton Hill Park, and overall connection to the Oak Ridge Greenway system.

CONSTRAINTS

Research and teaching are the primary functions of this site, therefore unrestricted access to the property is not possible. Additionally, the volume and speed of traffic on the highway are of concern in maintaining safe ingress and egress to the property.



BIG TURTLE PARK

CURRENT CHARACTER

The Big Turtle Park area is connected to the East Fork Poplar Creek, a dog park, ball fields, a pavilion and playground, and is in close proximity to developed urban natural assets (Oak Ridge Country Club and golf course). Additionally, turnpike bike lanes, wetlands, and flood plains are in the area. The variety of outdoor opportunities in the area serve as one of the comfortable “way stations” along the northern connection of assets.

OPPORTUNITIES

The variety of opportunities already existing in this area create an attraction for individuals and small groups to enjoy a range of outdoor experiences within a relatively quieter natural area. It occupies an important connective

link on the northern periphery of the City, and with a range of upgrades, can be more important in that connective role. The improvements might include restrooms, parking, lighting as appropriate, pavilions, improved access points, additional trail systems, a major access point for the proposed East Fork Poplar Creek Greenway, and an additional planned and organized space specifically designed for outdoor wellness and related activities.

CONSTRAINTS

Making improvements to Big Turtle Park a priority - given the number of proposed and existing park/greenway/trail expansion projects – is the greatest challenge for this asset.

MANHATTAN PROJECT NATIONAL PARK

CURRENT CHARACTER

The Manhattan Project National Historical Park is a unique creation, done as part of a national effort to recognize the history of the three communities (Oak Ridge, Los Alamos, Hanford) which were originally involved in the Manhattan Project. Significant factors in the creation of this National Park include: the inclusion of the entirety of the City of Oak Ridge in the Park delineation; the formal relationship established between the City and the National Park Service; the authority afforded to the NPS in allocating resources to the designated Park area; the ongoing partnership opportunities embodied due to the establishment of the Park; and the related NPS responsibilities within the region, including Big South Fork and the Obed areas.

OPPORTUNITIES

While the park is not typical in being a singular urban destination or facility, the status associated with a national park creates the opportunities for identifying natural areas and recreational destinations within Oak Ridge that can merit inclusion as a component of the

Manhattan Project National Park. For example, the 50-foot designated natural buffer around the K-25 footprint will provide an integration opportunity for people who want to visit the National Park but also recreate. This area also has connectivity to the Black Oak Ridge Conservation Area. Additionally, the opportunity to program national park staff-led activities in Oak Ridge parks and venues opens up regional and national awareness and marketing for those destinations through their affiliation with the NPS.

CONSTRAINTS

The available National Park Service resources are not unlimited. It will be important to expand relevant resources with local/regional public and volunteer personnel and financial support, and to identify specific shared responsibilities.



CHAPTER

4



SUMMARY OF OPPORTUNITIES

**B
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OPPORTUNITIES

THREE BENDS

					☀️	Expand multi-use trails in Gallaher Bend
	☀️					Connect Gallaher Bend to Clark Center Park through wayfinding and programming
☀️		☀️	☀️			Convey Clark Center Park to the city, county or state and redesign as a passive, outdoor recreational destination 
☀️	☀️					Brand Clark Center Park as a key access point for Oak Ridge/Melton Hill Lake Blueway System
				☀️		Celebrate the research/ecological reputation of Freels Bend through programming and periodic public access 

WEST RIDGE

	☀️					Clearly identify existing - and create new - gateways to recreational destinations to encourage multiple experiences within the district 
		☀️				Leverage airport development to help recruit restaurants and retail that will serve recreational users
			☀️			Build mid-size multi-field sports complex for local use and jointly marketed nationally with Knox County proposed sports complex
☀️						Establish Poplar Creek as a blueway with multiple access points
☀️						Create a key river access point for Oak Ridge/Melton Hill Lake Blueway System
	☀️					Integrate branding, wayfinding and programming with Roane County anticipated expanded trail system

PINE RIDGE

					☀️	Establish a main spine for a trail system connecting all districts with connection into and across Pine Ridge
					☀️	Construct 20-plus miles of natural trails extending the length of the city 
		☀️				Consider hut-to-hut or camping experiences to attract extended-stay visitors

COPPER RIDGE

					☀️	Brand Copper Ridge as offering a backcountry experience within the city limits
					☀️	Explore equestrian trails as an amenity to enhance Roane County Equestrian Center
☀️						Create a key river access point for Oak Ridge/Melton Hill Lake Blueway System

INCLUDED HERE IS A SUMMARY OF ALL OPPORTUNITIES SUGGESTED FOR EACH OF THE DISTRICTS.



OPPORTUNITIES

CENTRAL CITY

			★		★
					★
		★		★	
		★			
		★			★
					★

Establish Bissell Park as the “Central Park” hub of community

Improve walking and biking opportunities to and from the Central City to the rest of Oak Ridge

Unify the overall park circulation to create a festival lawn with a large amphitheater to better host regional events

Promote infill development to park users and provide a benefit to residents of those developments

Improve the edge of the park boundary with a widened sidewalk, street trees, and landscaping

Create a master plan for the footprint of Bissell Park and the proposed Wilson Street project



WATERFRONT

★					
	★				★
		★			
		★	★		
		★	★	★	★
		★			

Enhance wayfinding and branding to better represent a true waterfront park experience

Improve parking, traffic calming and pedestrian crossings to allow better opportunity to fully experience multiple destinations

Improve landscaping to buffer Melton Lake Drive and create interest and spaces for overlooking the river

Redesign to create spaces for events and public gatherings

Add amenities and activities areas that accommodate all ages and all users

Add commercial areas and/or food hubs



UT ARBORETUM

					★
★					
		★			

Addition of trails on Pine Ridge

Enhanced wayfinding for adjacent district to better identify the Arboretum as an outdoor destination

Upgrade of amenities



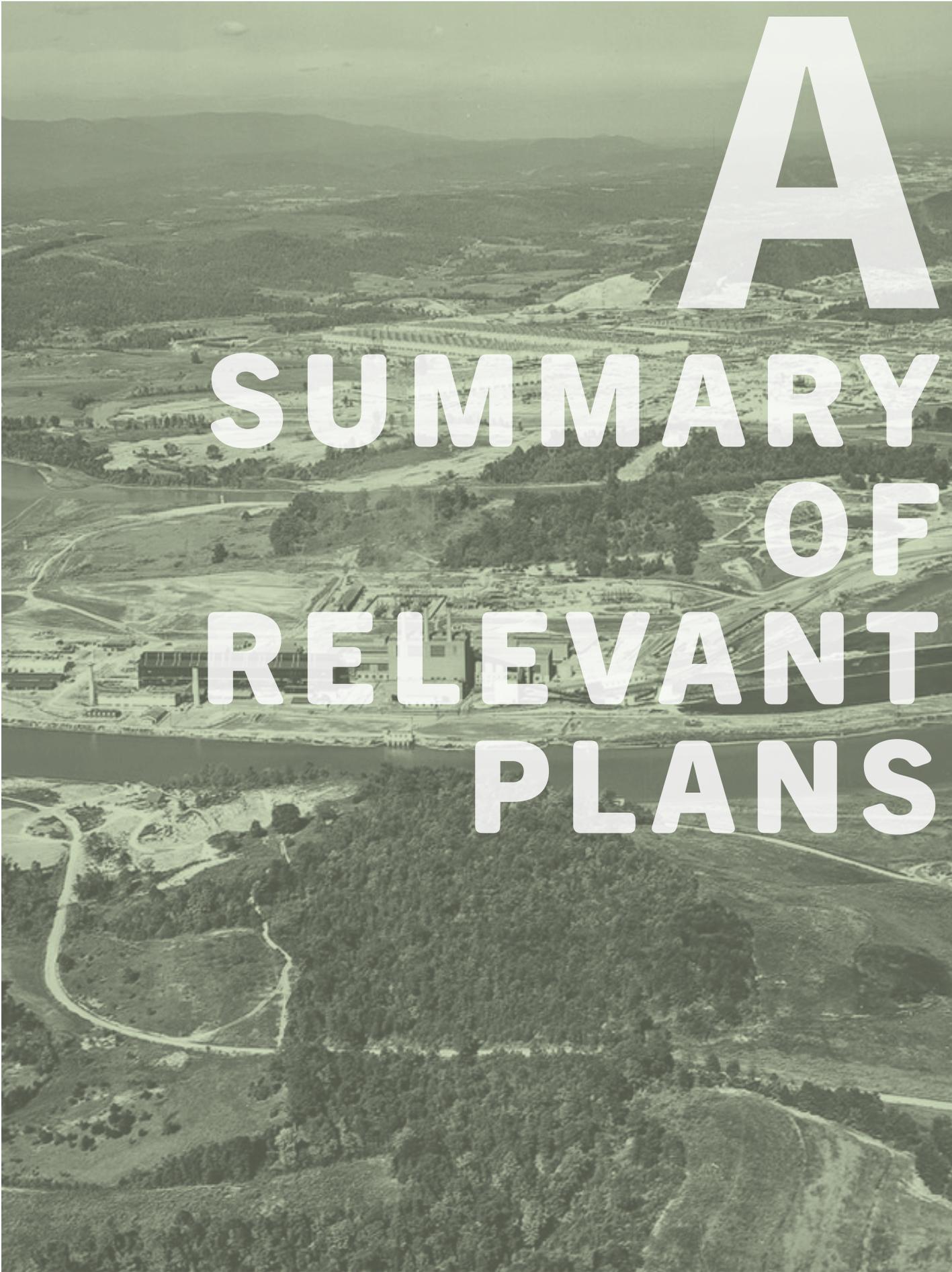
BIG TURTLE PARK

					★
				★	
				★	

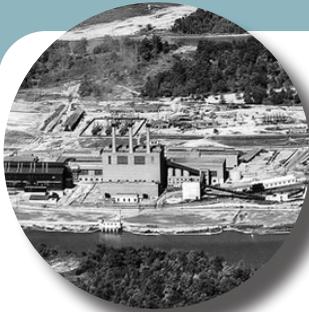
Create a trail connection to North Ridge trails

Certify selected Oak Ridge outdoor destinations as components of the National Park

Invite National Park staff-led programming into city/county outdoor venues



A SUMMARY OF RELEVANT PLANS



1948

OAK RIDGE NEW TOWN MASTER PLAN

Overview of the Plan: *During World War II, the Skidmore, Owings, & Merrill (SOM) firm was tasked to plan and develop from scratch, a city that would support the World War II effort and the development of the nuclear bomb. Their plan laid out the foundational structure of what Oak Ridge is today. The plan conceived a well-orchestrated network of roads lined with designated areas for prefabricated homes, dormitories, schools, open-space, and stores. The plan was in the style of the garden city movement — a style of urban planning where communities are self-contained with proportionate areas designated for residences, industry, and agriculture. The movement, and subsequent SOM New Town Master Plan (1948), that was created when the city transitioned from government town to local self rule following the war, emphasized maintaining greenbelts in, and along the outskirts of the city.*



1988

OAK RIDGE COMPREHENSIVE PLAN

Overview of the Plan: This 1985 plan included the update made in 1988. It is a long-term guiding document for the future of Oak Ridge, addressing topics such as population and housing, economic development, land use development, transportation, municipal facilities & utilities, parks & recreation, and quality of life.

Proposed Assets/Projects. The following opportunities were proposed:

REDEVELOPMENT/LAND USE/ECONOMIC DEVELOPMENT

- Create a dominant city center with redevelopment of major public gathering spaces, pedestrian & bicycle paths, and landscaping.
- The City, Chamber, and local businesses should work on a campaign to attract more residents and business using the proposed park & transportation improvements and newly proposed gateways. Create a dominant city center with redevelopment of major public gathering spaces, pedestrian & bicycle paths, and landscaping.
- Develop a permanent public linear open space along East Fork Poplar Creek.
- Improve access to the city's greenbelt.
- The purpose of these improvements are to develop quality of life/recreation opportunities that will attract employers by providing them with a community that is a desirable place to work and play.

PARKS/NATURAL ASSETS

- Create parks within reasonable walking distance of all residents.
- Haw Ridge Park will be held for recreation (camping, hiking, nature interpretation, picnics, etc.) as will the Marina site for long-term water access use.
- Maintain and expand a city greenbelt system.
- Parks proposed in the plan:
 - Elm Grove Park (at Elm Grove Elementary School), Cedar Hill Park (at Cedar Hill Elementary School), West Ridge Park, Pinhook Park, Braircliff Valley Park, Oak Hills Park, Southwest Quadrant Park, and A.K. Bissell Park expansion
- Preserve wooded slopes and hilltops, protect and preserve floodplains, drainage ways, and river shoreline.
- The City will operate a park system that meets a diversity of needs. All new residential neighborhoods will require dedicated land for parks. Parks will be located within ½ mile to most residential neighborhoods.

TRANSPORTATION

- Replace sidewalks in need of repair.
- Invest in a bicycle system linking major destinations.



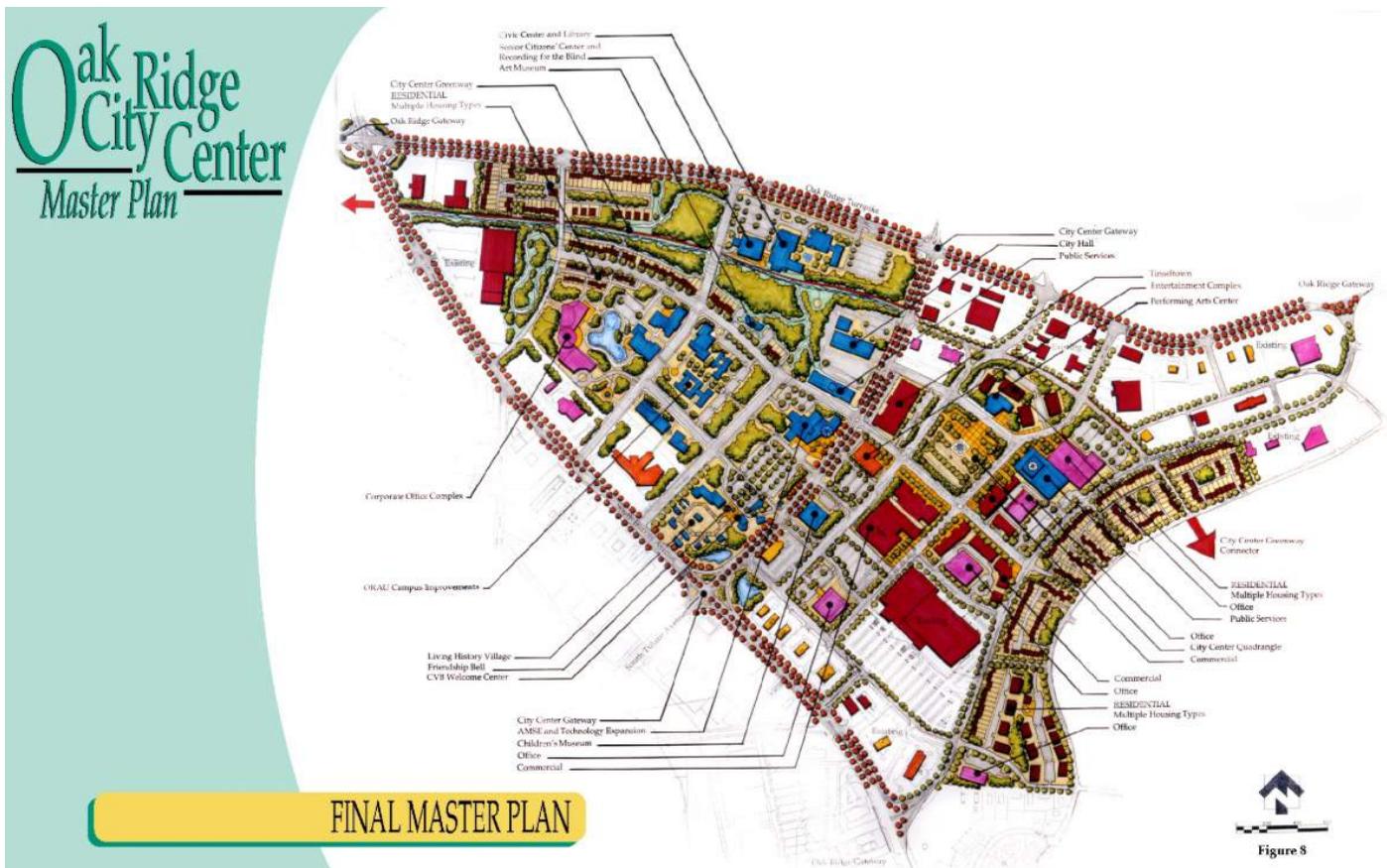
2000

OAK RIDGE CITY CENTER MASTER PLAN

Overview of the Plan: Through a visioning process, the revitalization of downtown Oak Ridge was prioritized as the main component of this master plan. The plan proposed the redesign of the community core with goals to improve the economy, to improve livability, to bring in new residents, and to spur tourism.

Proposed Assets/Projects. The following opportunities were proposed:

- Create new proposed gateways, including one at the Oak Ridge Turnpike and South Illinois Avenue.
- Improve vehicular and pedestrian/bicycle circulation.
- Create new and more dense housing options.
- Build a new greenway in the city center.





2005

BLACK OAK RIDGE CONSERVATION EASEMENT (BORCE) MANAGEMENT PLAN

Overview of the Plan: *The management plan specifies goals of cooperative management of three agencies; Tennessee Department of Environment and Conservation (TDEC), Tennessee Wildlife Resources Agency (TWRA), and Department of Energy (DOE). The BORCE is a Wildlife Management Area, which put TWRA in the lead for resource management. The plan addresses ways that roads, fences, cemeteries, quarries, and public access should be managed. It also identifies goals for monitoring, interpretation, invasive species control, promotion of the significance of the natural assets, and increased public access.*

Existing Assets. The plan highlights many existing assets, including:

- 18.5 miles of road will remain open to public access, whether as trails, greenways or hunting access.
- The East Black Oak Ridge (EBOR) portion of the BORCE was proposed as a State Natural Area in the plan and TDEC will provide additional management overview of the EBOR.
- TWRA is the principal manager of the entire BORCE.
- The BORCE should be maintained in accordance with the Tennessee Natural Areas Preservation Act of 1971 and the Rules for Management of Tennessee Natural Resource Areas.
- Prohibited uses include horseback riding, camping, and new trails.

Proposed Assets/Projects. The following potential recreation assets are mentioned in the plan:

- Opportunities for more trail development is allowed using existing roads, but new trails or new mountain bike trails are not permitted.
- Passive recreation use, like birding is allowed, but off-trail use is not allowed without permit.
- New access for parking, blueways, or trails may be considered but must be reviewed against more detailed conditions of the easement.
- East Fork Poplar Creek blueway is called out, specifically saying “that a canoe trail on East Fork Poplar Creek and Polar Creek is a long-term goal”.



2007

OAK RIDGE RESERVATION (ORR) WILDLIFE MANAGEMENT PLAN

Overview of the Plan: *This plan outlines management strategies for the flora and fauna within the entire 33,114-acre DOE reservation. The main goals of the plan are to preserve wildlife populations and habitat; maintain and enhance biodiversity; integrate research, recreation, and stewardship; and minimize wildlife damage and threats to the public. The plan identifies priority wildlife management, which is listed below in the proposed assets.*

Existing Assets. The plan highlights the extreme importance of the study area as a major habitat hub for the larger region. Some of the highlights of this include:

- 17 recorded state and federal listed species that are threatened or endangered.
- 20 additional state and federal listed species that have habitat in the ORR.
- 11 of the 16 birds species that are listed as a top priority in the ORR.
- The ORR has extensive intact interior forests which are critical for neotropical birds whose presence indicates broader ecological health.

Proposed Assets/Projects. The following potential management strategies are listed in the plan:

- Manage for game species, specifically the white-tailed deer, wild turkey, and the Canada goose.
- Manage for target species, including the wood duck, the four-toed salamander, the grasshopper sparrow, the bald eagle, the northern bobwhite, woodland bats, and neotropical birds.
- The Three Bend Scenic and Wildlife Management Refuge Area is specifically called out in the plan, with recommendations for the following management activities:
 - Manage (Freels Bend identified) for native grasslands, using seeding, mowing and prescribed burns
 - Manage Canada goose and duck hunting (60 acres are actively managed on Freels Bend)
 - Training and research
 - Summer outdoor education and community nature walks

(Note: The Grasslands Ecosystem Management Plan (2018) for the ORR also identifies Freels Bend and the priority area for grassland restoration that will target increased habitat for pollinators.)



2009

WATERFRONT PLAN

Overview of the Plan: *This plan identifies park improvements that can occur in the Elza Gate/Melton Hill Lake Park area. Improvement upon and suggestion of new amenities addressed the needs of the communities and stakeholder groups.*

Proposed Assets/Projects. The following assets are proposed:

- Elza Gate Park Entrance, trailhead, and historic gateway, which would serve as an interpretive area and trailhead parking for Melton Hill Lake Greenway
- Elza Gate picnic facility with picnic tables, a passive recreation area, and multi-use recreation field
- Lakefront park with a large outdoor pavilion, a picnic shelter, and increased nature viewing trails
- Arched pedestrian bridge and circular walking trail connecting two peninsulas in the marina embayment area
- Splash pad and enhanced playground
- Rowing course improvements, including an additional 8th rowing lane added
- Associated bike, pedestrian, and boardwalk trails, including a nature boardwalk near the Flatwater Grille
- Day-use fishing area
- Boathouse improvements and rental space, with food service (dining) options
- Restrooms/dressing facilities
- Seating for events (amphitheater)
- Widen Melton Lake Drive for pedestrian/bike improvements
- Comprehensive branding for the Melton Lake waterfront area, with unifying architectural themes

(Note: The plan suggests improvements projects should be LEED certified, which requires all site facilities to be designed to the highest level of sustainability standards.)



Image courtesy of City of Oak Ridge



2010

CITY OF OAK RIDGE CLIMATE CHANGE PLAN

Overview of the Plan: *This plan includes measures that will help the City of Oak Ridge become more sustainable. The primary focus is on identifying measures that have potential to increase energy efficiency, thereby mitigating the impacts of climate change.*

Proposed Assets/Projects. The following goals and/or opportunities are proposed:

- Increase energy efficiency in all city facilities, including transportation facilities (traffic lights) and schools.
- Reduce waste.
- Implement a bicycle and pedestrian plan.
- Revitalize existing environment.
- Purchase efficient vehicles for the city.
- Increase carbon offsets by developing a conservation program or tree planting program (target 50 trees a year).
- Improve efficiency of water conveyance.
- Reduce/address light pollution.
- Increase and promote renewable energy consumed by the city/locally.
- Promote a local economy, where local goods are both created and consumed.
- Develop a community garden.



Image courtesy of Knox Outdoors



2011 OAK RIDGE PED-BIKE PLAN

Overview of the Plan: This plan assesses the current state of active transportation (walking & bicycling) in Oak Ridge and develops a new plan identifying projects that will improve the system in years to come.

Existing Assets. The plan highlights many existing assets, including:

- Emory Valley/Melton Hill Greenway
- Cedar Hill Greenway

Proposed Assets/Projects. The following assets are proposed:

GREENWAYS:

- Melton Hill Greenway connection to A.K. Bissell Park through expansion along Emory Valley Road
- South Illinois Avenue to Knox County (Knox to Oak Ridge) Greenway
- DOE Reservation Greenway
- Tuskegee Drive Greenway
- Mississippi Creek Greenway
- East Fork Poplar Greenway
- Knox to Oak Ridge Greenway connection

BIKE LANES:

- Oak Ridge Turnpike
- East-West bicycle route
- Emory Valley Road
- Illinois Avenue
- Edgemoor Road
- West Outer Drive



Image by Legacy Parks



2017

KNOX TO OAK RIDGE GREENWAY

Overview of the Plan: This greenway feasibility study analyzed the best route for a greenway to connect Knox County greenways, and ultimately Knoxville greenways, to the City of Oak Ridge. The proposed 13-mile greenway parallels much of the Pellissippi Parkway — one of the main gateways into Oak Ridge. The greenway would connect major destinations like Discovery, Inc., Pellissippi State Community College, commercial hubs, and Oak Ridge. The planned corridor ends just north of the Solway Bridge, the major bridge crossing over Melton Hill Lake into Oak Ridge.

Proposed Assets/Projects. The following opportunities are proposed:

- A pedestrian bridge attachment to the Solway Bridge that separates greenway users from Pellissippi Parkway traffic
- A ramp from the bridge coming into Oak Ridge

(Note: Further study is needed to investigate how the greenway would connect to the proposed greenway on Edgemoor Road that ultimately connects to Melton Lake Greenway and Haw Ridge Park.)



THE PROPOSED
PELLISSIPPI GREENWAY
NEAR SOLWAY

Image by Equinox



2017 HERITAGE CENTER REVITALIZATION PLAN

Overview of the Plan: This master plan for the East Tennessee Technology Park has the primary goal of developing a revitalization plan that looks at industrial redevelopment, infrastructure, potential use of a General Aviation facility, and a preservation/interpretation museum about the Manhattan Project. This site was originally part of the center for operations of the Manhattan Project. The total acreage studied is 2,200 acres. The plan looked at options for major warehouses, technology parks, and a hub for climate change studies.

Destination Recreation & Heritage Strategy. As part of the strategy to redevelop the 2,200 acres, highlighting the historic significance of the site and exploring opportunities to bring in recreation that would attract business are two major themes. Recreation opportunities that were explored include:

- Multi-use soccer fields, football, or baseball complexes, golf, or other larger scale destination recreation
- Water-based recreation (white water, etc.)
- Hotel rooms, resorts, retail
- Heritage tourism
- An interim land-banking strategy
- Multi-use, natural surface, and multi-modal facilities on Oak Ridge Turnpike





2018

SPORTS FACILITY STUDY & RECOMMENDATIONS

Overview of the Plan: This study analyzes existing sports venues for areas of improvement by identifying strengths, opportunities, and threats, and suggests marketing strategies for venues. The study also identifies where there are gaps in the market and suggests what types of new facilities could attract more visitors. The report suggests the region does not have an abundance of tournament quality sports venues. The largest traveling sport tournaments are fast pitch softball, soccer, and youth baseball. The 80-acre Rocky Top Sports World in Gatlinburg is a top regional competition and world class sports venue, and it is 1.5 hours from Oak Ridge. In 2018 it was announced that the venue, a joint venture between Sevier County and Gatlinburg, had made a \$45.7 million impact on the local economy for one fiscal year.

Proposed Projects. The following opportunities for sports venues were suggested for the region:

- Large scale soccer/lacrosse (12-field) venues are needed for bigger competitive events.
- Utilizing large warehouses or other types of re-purposed space for court events could be useful because sports events using courts have to compete with convention centers for space.
- A multi-use sports field complex would help the region compete against other major regional areas for events.
- BMX competitions can attract large numbers (one is planned in the Knoxville Urban Wilderness, but if not built, could be a major draw elsewhere).



ROCKY TOP SPORTS
WORLD SOCCER FIELDS IN
GATLINGBURG

Image courtesy of Rocky Top Sports World



2019

CITY OF CLINTON DOWNTOWN VISION

Overview of the Plan: *This downtown plan, led by the Anderson County Chamber of Commerce, envisions ways to revitalize the downtown into a more vibrant and economically thriving area. Major themes of this include revitalization via infill and redevelopment into mixed-use commercial and residential, improving pedestrian and bicycle infrastructure, and improving downtown's relationship and access to the Clinch River.*

Proposed Projects. The following opportunities are proposed:

- The redevelopment of the Magnet Mills industrial site
- Design and construction of a new US 25 Bridge (currently underway) with new sidewalks and bicycle lanes, as well as a re-envisioned public park space surrounding the bridge
- Downtown improvements to streetscapes including planted medians and traffic calming
- Clinch River redevelopment of multi-story mixed-use development with commercial fronting the river
- An increase of sidewalks and bike lanes





2019

OAK RIDGE BLUEPRINT

Overview of the Plan: *This citizen-supported, visionary plan for future growth and development is a long-term guiding document for the future of Oak Ridge. It addresses topics such as economic vitality and sustainable growth, housing and healthy neighborhoods, recreation and natural assets, land use and infrastructure, transportation and mobility, livability and community vibrancy.*

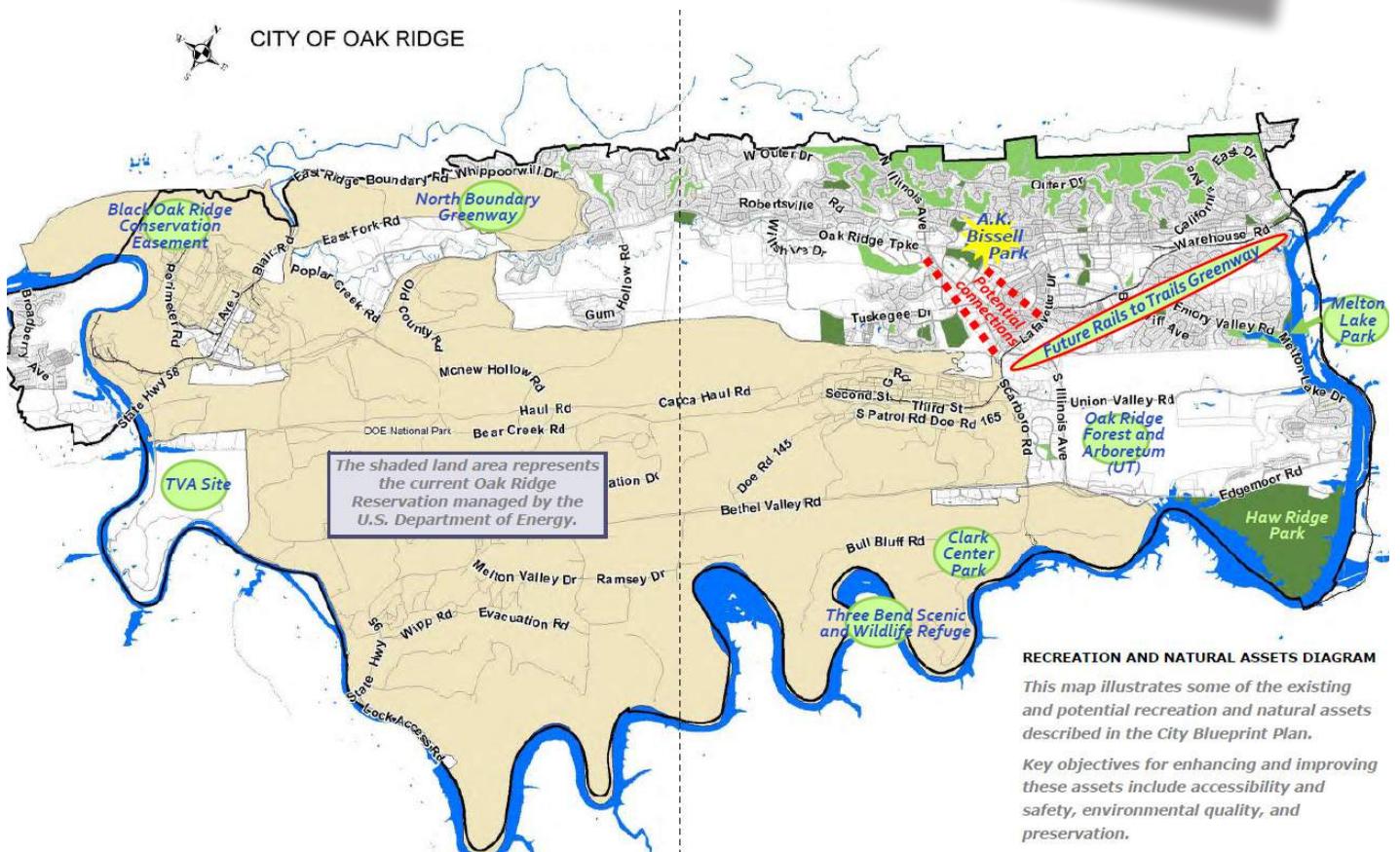
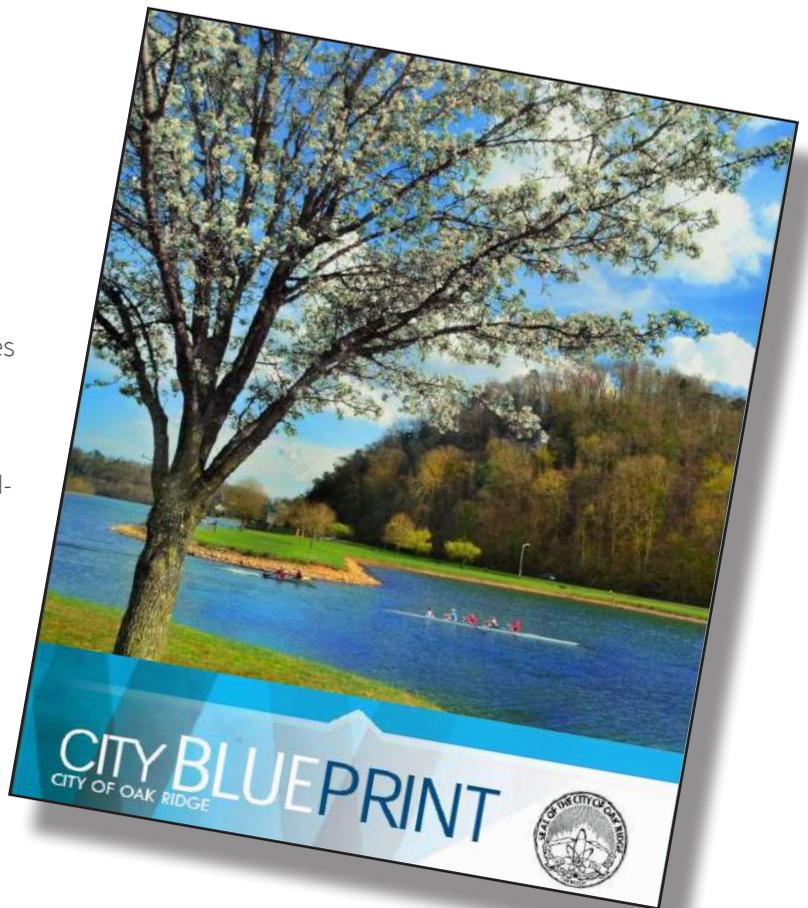
Existing Assets. The plan highlights many existing assets, including:

- 150 miles of shoreline on the Clinch River and its reservoirs
- 89 miles of greenway, which includes 9 miles of paved trails, 32 miles of gravel Department of Energy (DOE) patrol roads, 13 miles of dirt hiking trails, and 35 miles of biking trails, including Haw Ridge Park
- University of Tennessee's Oak Ridge Forest (2,024 acres), which includes the Arboretum (250 acres)
- Three Bends Scenic Wildlife Management Area (3,000 acres and managed by TWRA), which includes a historic cabin and is not open to the public
- Black Oak Ridge Conservation Easement (managed by TWRA), which is used by hikers and bikers
- North Boundary Greenway
- Grassy Creek (1,200 acres managed by TVA)
- North Ridge Trail

Proposed Assets/Projects. The following opportunities are proposed:

- Rail-to-Trail (design to be completed in 2020) through the center of Oak Ridge, 4.85 miles proposed
- Urban Trail (will connect to Rail-to-Trail, city-center, and Bissell Park)
- Market Oak Ridge as an outdoor destination
- Consider hiring a recreation & business or special events manager to promote outdoor recreation competitive events
- AK Bissel Park-restore the ecosystem
- Melton Lake Park-Boathouse and multi-purpose facility, which could include:
 - A boathouse and multi-purpose facility
 - Boat rentals
 - Restrooms
 - Outdoor amphitheater near marina
 - Pedestrian bridge (to watch rowing competitions)

- Natural Asset Plan
- Coordinate with Department of Energy (DOE) lands, general coordination with other agencies on natural resources management
- Two new greenways proposed:
 - East Fork Poplar Creek Trail with proposed mixed-use redevelopment, trail would connect to Rail-with-Trail
 - Develop trail in existing greenbelt
- Knox-to-Oak Ridge Greenway
- The DOE's Patrol Road as a trail
- Wilson Street Bike Lanes (associated with proposed mixed-use development)





2020

ROANE COUNTY PARKS & RECREATION MASTER PLAN

Overview of the Plan: *This 10-year master plan will guide Roane County and its cities in prioritizing future needs, improvements to existing facilities and programs, and financing strategies to maintain and improve their parks and recreation resources. An extensive public process was initiated in the early stages of the plan, and the county elected to expand the planning process and invite the cities in the county to participate. The recommendations of this plan have the overall goal of maintaining and improving parks and recreational facilities to provide leisure time and active recreation across the county.*

Proposed Projects. The following recommendations are grouped into two categories:

PHYSICAL IMPROVEMENTS:

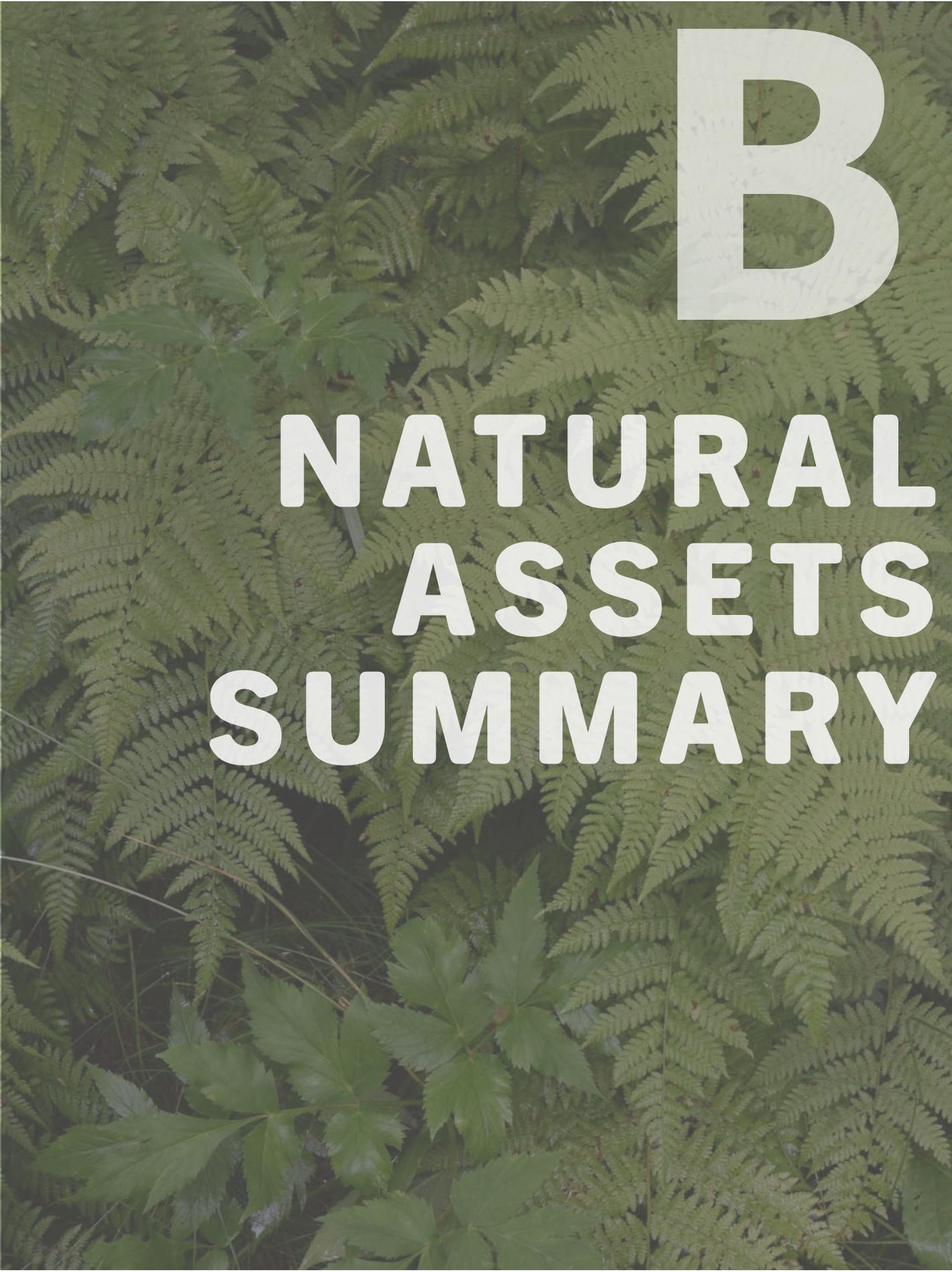
- ADA compliance & improved accessibility at all parks to improve community health
- Upgrades to existing parks
- Expansion of existing parks
- Continue active participation in new regional planning initiatives
- Explore connection to the Cumberland Trail State Park

PROGRAMMING, ORGANIZATIONAL, & LONG-TERM MAINTENANCE:

- Benchmarking
- Formalize joint use agreements
- Explore the creation of a county-wide “Sports Foundation”
- Update of websites and wayfinding
- Investigate a Native American heritage memorial



Image courtesy of Roane County



B

NATURAL ASSETS SUMMARY

OAK RIDGE'S NATURAL ASSETS IN A REGIONAL, STATE AND NATIONAL CONTEXT

Overview. Tennessee is one of the most biodiverse states in the nation, with a wealth of terrestrial and aquatic species and habitats. A cornerstone in the state's natural assets, the Oak Ridge region in Roane and Anderson counties is an important ecological hub that connects to other major hubs. The region's primary assets are the Clinch River and its many tributaries, as well as large tracts of relatively undisturbed land comprising the 33,114-acre Oak Ridge Reservation (ORR), which is owned and managed by the Department of Energy (DOE). Over 70% of the ORR is forested, with extensive undisturbed interior forests that are home to high numbers and unique concentrations of flora and fauna, including numerous rare species and imperiled natural communities. This region serves as a major resting stop in the travel corridor for migrating birds, including neotropical species whose presence in the ORR is a positive indicator of good overall ecological health. The natural assets described below are critical to the region's health, providing ecosystem services such as clean drinking water, clean air, opportunities for recreation, and their resulting economic benefits.

METHOD FOR EVALUATING THE NATURAL ASSETS

Overview. The following is a narrative of the natural asset values of each district. In general, it summarizes unique and sensitive resources contained within a given district, and details the types of protection those areas are afforded. The following list describes the layers of information analyzed to inform this narrative, including management recommendations and associated implications:

Management Plans: DOE natural resource management plans were analyzed to understand current management goals, restrictions on recreation use, natural assets within the districts, and presence/absence of important species. Plans analyzed include the Forest Management Plan for the DOE Oak Ridge Reservation (2015), the Wildlife Management Plan for the Oak Ridge Reservation (2007), the Black Oak Ridge Conservation Easement Final Management Plan (2005), and the Grassland Ecosystem Management Plan for the Oak Ridge Reservation (2018). These plans identify and prioritize natural areas and management strategies.

State Listed Species / State Natural Heritage Program Data (2019): This information was provided by the Tennessee Department of Environment and Conservation (TDEC) to inform this analysis. The data includes locational information on the presence of rare plants, animals, and ecological communities. Species are listed through state and/or federal designation and assigned a priority status based on their rarity. Habitat for species on this list have a very high conservation value. Each district description details occurrences of these listed species.

State Natural Heritage Program Management Areas: The Oak Ridge region has a broad network of public partners managing and sometimes co-managing natural resource areas. DOE, TDEC, TWRA (Tennessee Wildlife Resource Agency), and TVA (Tennessee Valley Authority) are all actively managing lands within the region. Each district narrative details more about the managers and their management objectives.

The Tennessee Wildlife Action Plan (2015): Each state in the U.S. is mandated by Congress to develop a Wildlife Action to prevent wildlife from declining to the point of endangerment. Tennessee’s plan was led by TWRA in concert with many partners. The Nature Conservancy partnered with TWRA to develop a GIS-based model that defines - at a very granular level - where the highest areas of conservation values exist statewide. As a whole, the Oak Ridge area has some of the highest conservation values regionally and statewide. The model looks at prime terrestrial and aquatic habitat. This model also includes listed species occurrences, discussed previously. Each district’s natural resource values are described as having very high, medium, or low conservation values. These descriptors are generalized to define the average for each district.

TVA Land Management: TVA has a specific land use management plan for Melton Hill Lake that defines allowed use and management objectives. The Waterfront and Copper Ridge Districts contain most of the lands which are zoned and regulated by TVA. More detailed

descriptions of the zones are discussed in the two district narratives mentioned. The following zones occur in these districts:

Project Operations Zone: Land adjacent to dams or facilities. The zone allows for public works projects, as well as, developed and dispersed recreation use. This zone is only found immediately north of the dam in the Copper Ridge District.

Sensitive Resource Management Zone: This land is managed primarily for protection and enhancement of sensitive resources. Hunting, wildlife observation, and primitive camping may be allowed but the overriding focus is protecting and enhancing habitat.

Natural Resource Conservation Zone: This is land managed for the enhancement of natural resources for human use and appreciation. Management of resources is the primary focus of this zone. Hunting, timber management, wildlife observation, primitive camping, light boat access, riverside trails, and interpretive activities are allowed.

NATURAL ASSETS BY DISTRICT

WEST RIDGE DISTRICT

Overview. *This district is composed of the Heritage Center, the Horizon Center, the entirety of the Black Oak Ridge Conservation Easement (BORCE), portions of Happy Valley, and Campbell Bend. The entirety of the district is located within Roane County.*

The BORCE. *This area is a publicly protected conservation easement. It is comprised of the Black Oak Ridge, and the nearly 6 miles of East Fork Poplar Creek which has a significant forested wetland surrounding it. There are 6.2 miles of Poplar Creek (which runs through both the BORCE and Heritage Center). Poplar Creek’s riparian forest has a much higher level of human impact. A small stretch of Poplar Creek bisects Black Oak Ridge. Some of the more*

Image courtesy of the Department of Energy



East Fork Poplar Creek is one of the most environmentally sensitive areas of the West Ridge District. This stream has been studied over 70 years, and according to DOE, it is one of the longest stream studies in the world, with the hopes to remediate mercury contamination.

ecologically sensitive areas exist in the limestone cliff bluffs surrounding the two creeks. Vegetation above the floodplain is predominantly mixed hardwood (different types of oak) and some pine plantations. Special habitat exists for hemlocks, rhododendrons, and associated rare plants. A handful of caves occur along Poplar Creek. The eastern portion of the BORCE has one of the largest contiguous interior forest blocks in the ORR, supporting incredible biodiversity. The BORCE is composed of a 2,966-acre easement that restricts most uses, other than reuse of the current road systems for use of trails and limited new trail or blueway access. Sites within the BORCE were proposed to be entered into the TN Natural Areas Registry program.



Image courtesy of KnoxOutdoors

Existing trail within the BORCE

The Horizon Center. The area surrounding the Horizon Center is predominantly floodplain forest and boasts patches of giant cane. Portions of this area also contain rare plant communities. Areas surrounding the Horizon Center are protected by easement and managed by DOE as part of the 609-acre East Fork (Poplar Creek) floodplain natural area.

The Heritage Center. The Heritage Center and DOE are actively working to restore areas surrounding the Clinch River and Poplar Creek. This District encompasses five miles of the Clinch River. Natural resources are more heavily impacted in the Heritage Center, providing great opportunity for natural community restoration.

Campbell Bend. A portion of Campbell Bend has become a private development and Marina. The majority of the bend outside of this development has very high natural resource value. This includes the Campbell Bend Barrens and Crowder Cemetery Barrens Designated State Natural Areas, totaling 50 acres. These areas are held in conservation easement by the state and have limited public access. These areas protect a rare barrens community, which consists of exposed limestone and open fields with a grassland community that is surrounded by hardwoods.

Site South of the Horizon Center. At the western end of East Fork Ridge, just across the Oak Ridge Turnpike from the Horizon Center, is a DOE-owned property with open fields. This area generally has low natural resource values and no recorded listed species.

PINE RIDGE DISTRICT

Overview. This district spans the length of the nearly 14-mile Pine Ridge, with largely unfragmented forests bisecting the Oak Ridge region and touching both ends of the Clinch River. It is mostly undeveloped, managed by DOE, and has public access restrictions. The district includes the base of the ridge as well as many gaps and hollows with headwaters (of Bear and Grassy Creeks) that run into many wetlands, seeps, and marshes. The ridge line has a high concentration of natural resources but



The Pine Ridge Water Treatment plant, located on Pine Ridge, serves the Oak Ridge National Laboratory.

Image courtesy of the Department of Energy

less concentration of listed species compared to the creek valleys below, especially Bear Creek Valley just south of the ridge. DOE named a significant portion of the ridge the Pine Ridge Mature Forest Natural Area, and it has become an important landscape for research. It consists of mixed-age, primarily beech-mountain laurel community.

Bear Creek Forested Wetland/Hembree March/McNew Hollow. This is a large forested wetland downstream of the Pine Ridge/Bear Creek Water Gap in the McNew Hollow area. Several rare species live within this complex. Both the Bear Creek and Hembree Marshes are Registered State Natural Areas. While this area is just outside of the district, the headwaters come directly from the ridge.

COPPER RIDGE DISTRICT

Overview. This district, located in the southwestern area of the ORR, is largely managed by the DOE, and currently, the public is restricted. The district encompasses Melton Hill (the highest point in the ORR), Melton Hill Dam, several riverbends (including Hickory Creek Bend), Melton Branch, Greenway Road, and both sides of Melton Hill Lake. The district encompasses nearly seven miles of Melton Hill Lake that has many river bluffs. There are two named creeks, White Oak Creek and Melton Branch. The western portion of the district has very high natural resource values as well as several occurrences of listed species. The bends adjacent to the Clinch River have medium to high natural resource value and limited findings of listed species. This district has diverse forest community types, interesting geologic features, wet ravines, springs, seeps, and forested wetlands, and one of the largest contiguous interior forest blocks in the ORR.

ORR Areas of note within this district include:

Copper Ridge Cave. This is the largest cave within the ORR. It is noted as having a unique habitat that supports listed species.

Flashlight Heaven Cave. Located in the western portion of the district near Highway 95, this cave has some discovered listed species.

Dry River Bluffs and Caves. This area runs along Melton Hill Lake in the west-central part of the district and has several documented listed species. Its forest community includes oak-hickory-ash limestone woodlands with some pines and cedars. There are several caves, sink holes, outcrops, river bluff cliffs, and forested wetlands.

Hickory Creek Bend Bluffs and Melton Lake Bluffs. These bluffs on and adjacent to Hickory Bend have some recorded listed species. The forest community is tulip tree-mixed hardwood with some pine.

Land on the southern side of Melton Hill Lake is mostly private with a patchwork of TVA owned land. Some of the land has special designation due to high value natural resource areas. The TVA-managed land lying just north of Melton Hill Dam is zoned by TVA as Project Operations.

THREE BENDS DISTRICT

Overview. This district contains the Three Bends Scenic and Wildlife Management Refuge Area, an over 3,000-acre publicly managed series of bends on Melton Hill Lake. The refuge is managed by TWRA through a cooperative agreement. TWRA manages wildlife and habitat areas



View of the Copper Ridge District
(North of Melton Hill Lake)

Image courtesy of Tennessee Valley Authority



DOE and TWRA occasionally do controlled burns in the three bend areas to maintain grasslands, enhance wildlife habitat, encourage native plant growth, and reduce risk of wildfires.

Image courtesy of the Department of Energy

for game species while DOE oversees management of the forested area. The district encompasses approximately a 10-mile stretch of Melton Hill Lake. These bends include Freels, Gallaher, and Solway Bends. Walker Branch, Scarborough Creek, and Bearden Creek flow through the district. There is some public access for the Gallaher Greenway and Clark Center Park, but otherwise it is managed largely for hunting and to maintain and improve the natural resources which include a series of large wetland complexes, grasslands, and hardwood forests. The refuge is also used as an outdoor laboratory and education facility. This district has one of the world's largest populations of a rare wildflower. The district is an important area for numerous listed species, bald eagles and ospreys, and migrant song birds. It has high, to very high, natural resource value and has some concentration of interior forests. The following areas within this district have significance:

Walker Branch/Cedar Ridge Area. Walker Branch passes through Haw Ridge and into an embayment of Melton Hill Lake where Clark Center Park sits. There are several areas surrounding Walker Branch that have high natural resource values and listed species. Two barrens, Walker Branch Embayment and McCoy Embayment Barrens, have been proposed to be Registered State Natural Areas. The Chestnut Ridge area is a mix of oaks and is fairly unfragmented. There are several other barrens and some wetlands in the area that are of note for listed species.

Haw Ridge. This ridge supports oak-hickory-ash limestone woodland. It has steep slopes, rock outcrops, and is a mature forest. It does support some listed species.

Bull Bluff. This bluff is a steep sheer limestone cliff overlooking the lake that supports a variety of rare and interesting plants. The land surrounding Bull Bluff has very high conservation value.

Freels Bend. This bend has a patchwork of variably sized wetland complexes totaling around 11 acres, much of which is maintained as habitat for the Canada goose and other waterfowl. Some listed reptiles and amphibian species also occur in Freels Bend. TWRA and DOE are maintaining much of the open areas for warm season grasses, with the idea of eventually converting the southeastern portion of the bend to a native grassland prairie. Rain Knob on the east side of Freels Bend is an area that contains numerous listed species and a sinkhole/cave near the bluffs on the lake. It has very high conservation value.

Solway Bend. The bend has a mesic forest, open fields, a steep bluff, and some listed species. The bend is part of the refuge, is bisected by Pump House Road, and has less significant natural resources compared to the rest of the refuge, with some high, and more predominately medium to low conservation value.



The Freels Cabin, the oldest structure in the Oak Ridge areas, was built in 1844. It is located on Freels Bend.

Image by Equinox

WATERFRONT DISTRICT

Overview. This district encompasses a seven-mile stretch of the more urbanized Oak Ridge waterfront on Melton Hill Lake. The district includes a patchwork of private and public lands like Haw Ridge Park, Melton Lake Greenway and Melton Lake Park, and TVA lands. TVA has several management areas bordering the lake for the purpose of managing habitat for listed species or areas that are very biodiverse. These include bluff and riverfront properties bordering both sides of Melton Lake Drive as well as some of the stream impoundments coming from the lake.



Melton Lake Greenway and
Melton Hill Lake

Image courtesy of the
City of Oak Ridge

Haw Ridge Park. The southern edge of Haw Ridge Park has medium-high conservation value, with most of the higher value resources concentrated in the southern tip of Haw Ridge. There are a few patches of wetlands within the park, of which some listed species occur. TVA manages some shoreline edge at Haw Ridge Park and has zoned them for Developed Recreation. The area northeast of the park (encompassed by Old Edgemoor and Edgemoor Roads) is zoned as Sensitive Resource Management.



Trails at Haw Ridge Park

Image courtesy of KnoxOutdoors

Melton Lake Park Area. Some lands within the neighborhood of Melton Lake Park are being managed for natural resources. Just north of the park is the Worthington Cemetery Cedar Barrens, jointly managed by TVA and the city, zoned for Sensitive Resource Management. To the west of the park is an embayment Habitat Protection Area that is zoned by TVA as both a Sensitive Resource Management and Natural Resource Conservation zone. The embayment is known for having abundant wildlife including beavers, turtles, and wading birds as well as habitat for listed species. To the east and downstream of Melton Lake Park is a series of islands managed by TVA that is zoned as Sensitive Resource Management.

CENTRAL CITY DISTRICT

Overview. This district is the most urbanized of the districts with much of the City of Oak Ridge contained within. This district includes the eastern portion of Black Oak Ridge where much of the city’s green belt lands lie. These lands were preserved as part of the original City of Oak Ridge’s master plan and original development. The City manages and maintains these areas through ordinance that allows for city-approved recreation, trails, accepted forestry practices, and non-commercial gardens. Some listed species have been found to occur in the green belt. This district has limited conservation value, with exception of the green belts which have medium-high conservation value. The Oak Ridge Barrens is a registered state natural area found within city limits. A remnant of the historic prairies that occupied parts of the site, the small and inherently rare habitat supports at least three state listed plants and is managed under a cooperative agreement between state, the city, and Tennessee Citizens for Wilderness Planning (TCWP).

The streams within this district are East Fork Poplar Creek and Brushy Fork. East Fork Poplar Creek has a history of mercury contamination and remediation for some portions of the creek. As East Fork Poplar Creek reaches the urbanized core of town, its riparian buffer greatly diminishes, including where it parallels Highway 62, as well as a half-mile branch of the tributary of the creek that runs through the Oak Ridge Civic Center and A.K. Bissell Park.



The Oak Ridge Barrens

Image courtesy of Tennessee
Citizens for Wilderness Planning



C

THE
CASE FOR
INVESTMENT

THE CASE FOR INVESTMENT IN THE REGION'S NATURAL ASSETS & OUTDOOR RECREATION

Outdoor Recreation is Economic Development and a Boost to the Tax Base

Overview of the Economic Impact of Outdoor Recreation in Tennessee. *The Oak Ridge region sits within a core of public lands and natural assets, and positions itself to gain tremendous impact from the outdoor recreation economy that has grown to be one of the biggest national economic sectors with \$887 billion spent annually.*

Within Tennessee, the outdoor industry grosses \$21.6 billion annually (Outdoor Industry Association, Annual Report, 2019). It provides more jobs than the automobile manufacturing industry, with nearly 200,000 employed. The outdoor recreation economy is growing at a rapid 3.9% rate compared to the overall US Economy that is growing at a 2.4% rate (US Bureau of Economics, 2017-2019 data). In Tennessee communities, one of the biggest factors for economic health and growth is investment in outdoor public spaces and outdoor recreation destinations.

WORKFORCE AND BUSINESS RECRUITMENT

OUTDOOR RECREATION ATTRACTS A SKILLED WORKFORCE AND YOUNGER GENERATIONS.

Outdoor recreation and fitness is a major focus for the millennial generation. Outdoor recreation, paired with communities that have a more urban and walkable/bikeable core, is a huge factor in attracting younger generations. Millennials make up 50% of the national workforce but are only 28% of the population. A young and skilled workforce is attracted to communities rich in outdoor recreation, especially high intensity (trail running, mountain biking, etc.) and group recreation.

Communities that have a high percentage of natural assets, including outdoor public spaces and outdoor recreation destinations, have significant economic gains compared to those with fewer natural assets (*Headwater Economics, Recreation Counties Attracting New Residents and Higher*



Incomes, 2015). Communities that are rich in recreation opportunities and open space see gains in:

- Higher net migration (21% migration vs. -15% loss for counties with fewer natural assets). People are more likely to move to natural asset rich counties, particularly in rural places.
- Faster growth in earnings (4% growth vs. 1.4% growth for counties with fewer natural assets).
- The average household moving into a county with natural assets has \$8,700 more in income than the average household moving into a county with fewer natural assets.

OUTDOOR RECREATION ATTRACTS BUSINESS.

Corporations looking to relocate often site quality of life for employees as a key factor in deciding on where to locate their headquarters. Studies have found that research and development companies, technology companies, and corporate headquarters are more likely to prioritize quality-of-life and cultural amenities when deciding to locate or relocate (*Salvesen, D. & Renski, H. The Importance of Quality-of-life in the Location Decisions of New Economy Firms, 2003*)

CASE STUDIES:

A TALE OF TWO BREWERIES

New Belgium Brewery and Deschutes Brewery were both looking to add east coast brewery and distribution facilities. Both had common factors in criteria for site selection, including a requirement for the brewery to be located on a greenway or bike path for employee benefit. An eastern US search of sites (which included the Blount County, Tennessee region for New Belgium) analyzed and compared multiple sites. Asheville, North Carolina (New Belgium Brewery) and Roanoke, Virginia (Deschutes Brewery) won out in part because they could offer this type of amenity. New Belgium partnered with the City of Asheville to provide and manage a half-mile greenway segment which will be part of a regional trail system. The brewery brought 140 new jobs and a \$140 million investment into the community (*Dahl, Why Did New Belgium Brewing Pick Asheville, 2015*).

USING GREENSPACE TO BRING IN THE GREEN (\$) IN EAST TENNESSEE

Blount County's Chamber of Commerce is leading the charge in advocating for the completion of greenways in partnership with communities, local businesses, Legacy Parks Foundation, and others. These partners are championing the Maryville to Townsend Greenway connecting the Great Smoky Mountains National Park to Knoxville. The Chamber of Commerce supports this greenway because it has seen business recruited due to the existing greenway and greenspace.

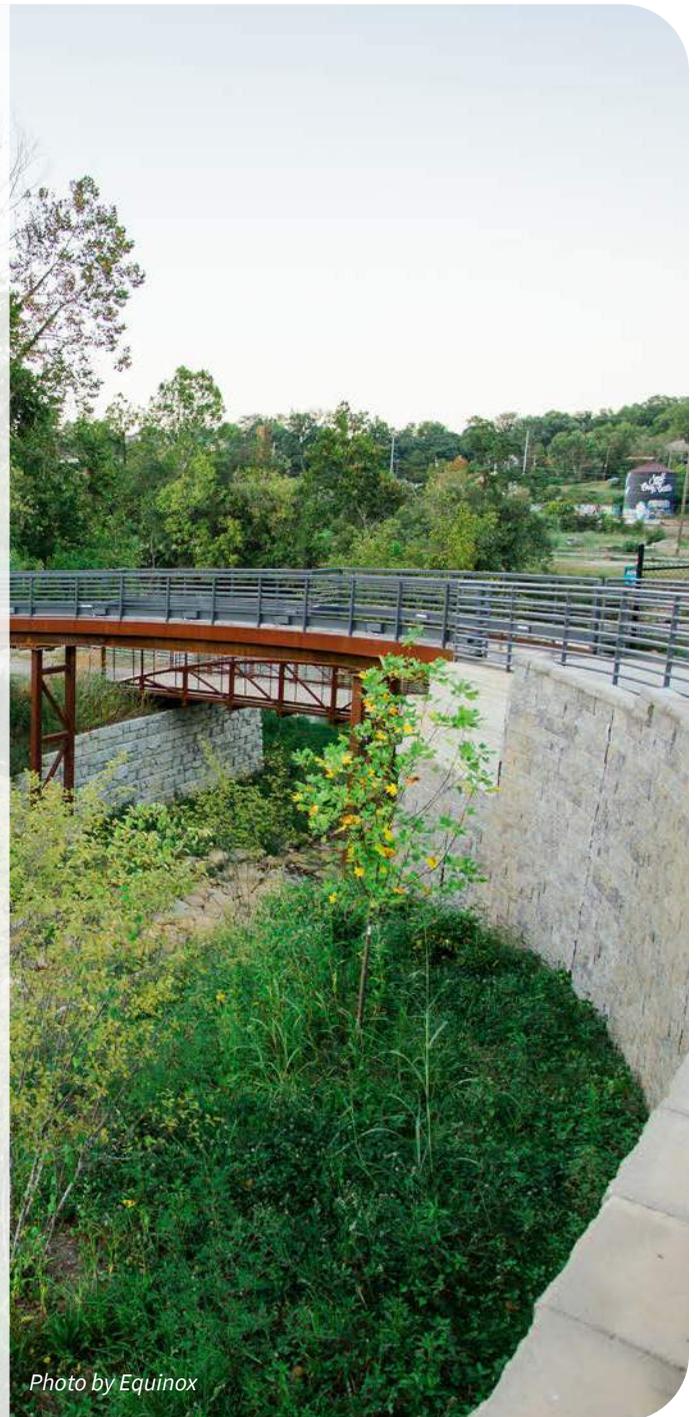


Photo by Equinox

LAND VALUE AND TAX INCREASE FOR “OUTDOOR-BASED” COMMUNITIES.

Parks, trails, and open space are proven to increase the land value of adjacent properties, especially those within walking distance. On average, studies have found a 10% increase of the sale price of properties near one of these amenities. The Knox to Oak Ridge Greenway Study confirmed with the Knox County Realtor Association that realtors in Knox County, on average, are seeing the same increase.

Natural assets can be a catalyst for an increase in new business, sales tax, and property values, all which have a direct

impact on a community's tax base. In one study, Washington DC was estimated to see an additional \$1.2 million in tax revenue from properties adjacent to parks versus properties located further from parks (*Trust for Public Land, Measuring the Economic Value of a Park System, 2009*).



THE CASE FOR INVESTMENT

\$ 8 8 7
B I L L I O N
SPENT ANNUALLY

MAKING OUTDOOR RECREATION ONE OF THE NATION'S LARGEST GROWING ECONOMIC SECTORS

TENNESSEE GROSSES A WHOPPING **\$21.6 BILLION**

IN OUTDOOR INDUSTRY, PROVIDING MORE JOBS THAN THE AUTOMOBILE MANUFACTURING INDUSTRY



Home buyers will pay 10% more for a house located near a park or open space



The percent of US residents that identify proximity to parks, trails, & open space as a key factor in deciding where to live



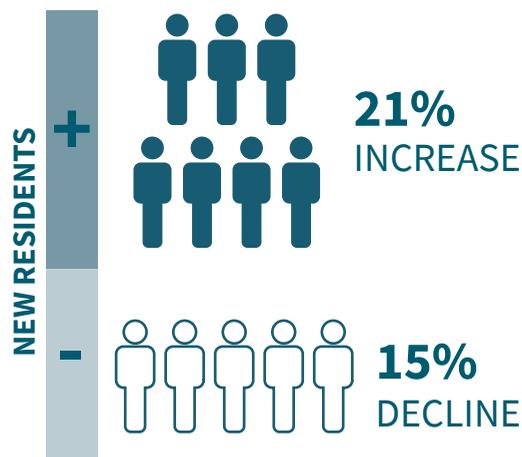
The Tennessee Valley Authority estimates an annual economic impact of \$1 million per shoreline mile for managed waterways in the Tennessee River Valley

o u t d o o r RECREATION

IS ECONOMIC DEVELOPMENT & A BOOST TO THE TAX BASE



ECONOMIC GROWTH 2017-2019



NATURAL ASSET RICH COUNTIES

CAPITALIZING ON NATURAL ASSETS IN COMMUNITY DESIGN

OPEN SPACE AND TRAILS, THE #1 DESIRED AMENITY BY HOME BUYERS.

According to the National Realtors Association, open space and trails are one of the top desired amenities for home buyers nationally. Nearly 85% of U.S. residents identify proximity to parks, playgrounds, open space, or recreation centers as an important factor in making a decision on where to live (National Recreation and Park Association, “Americans’ Engagement with Parks Survey,” March 13, 2018). Master planned communities are increasingly becoming termed “active communities”, providing for open space, trails, and opportunities for fitness that celebrate the natural assets of

the site. Tennessee has become a hot spot particularly for master planned “adult active living” because of the state’s tax friendly laws. Most of these communities tout their top amenities as trails and open space that are under conservation easement.

PARKS REVITALIZE COMMUNITIES.

Public open space is one of the most important factors in communities revitalizing their downtown core. The cities of Knoxville and Chattanooga’s recent success can be attributed to its investments in public space and restoration of blighted and polluted properties and natural resources.



CASE STUDIES:

CAN’T SHOOT A CANNON ANYMORE

The Greenville, South Carolina downtown used to be known as being so vacant, that locals joked you could shoot a cannon down Main Street and not hit a soul. Times have changed, due to the concerted and long-term efforts of the city to partner in public-private investments centered on the platform of public open space. Because of this, the city has seen an 11% increase in population since 2010 and over 16,700 new jobs. Greenville also boasts one of the highest levels of foreign capital investments nationally and continues to see new corporate relocations.

Though the city used a variety of revitalization tools (brownfield development, partnering on public and private buildings, parking, etc), one of its most celebrated tools was public space investment. This included a redesigned streetscape, several public parks, and restoration of the Reedy River which runs through downtown. Renovations in the 1990’s of Greenville’s Falls Park on the Reedy, combined with other public investments, leveraged \$170 million in public investments with over a half billion private dollars reinvested on riverfront hotels, housing, offices, and retail space. Revitalization also occurred through environmental restoration. The water quality of the Reedy River, polluted from many years of dumping of dyes into the river from nearby textile mills, was cleaned up. The city upgraded walking and biking facilities, for which it has received national awards. In 2010, an old rail line that connected into downtown was converted into the Swamp Rabbit Trail. The trail has been a tremendous economic success, spurring many new businesses and tourism, with an estimated \$6.7 million annual impact (Smart Growth America, Amazing Places: Six Cities Using the New Recipe for Economic Development, 2016).



Photo by the Tennessee Valley Authority

The Case for Investment in Recreation

WATER-BASED RECREATION

THE ECONOMIC IMPACT OF WATERSPORTS IN THE TENNESSEE VALLEY

According to the US Bureau of Economics, watersports are the top grossing recreation type in the outdoor economy sector. This includes both motorized and non-motorized water-based recreation. The City of Oak Ridge is already realizing a significant benefit from water-based recreation on the Clinch River and Melton Hill Lake. The City of Oak Ridge estimates that rowing on the Clinch River has a nearly \$2 million annual impact. Chattanooga sees a nearly \$5

million impact from its regatta boat events. The Iron Man race utilizes the Tennessee River and Tennessee Riverwalk greenway for the swimming and running portions, and provides an estimated \$20 million impact annually.

A 2017 Tennessee Valley Authority (TVA) study found waterways in the Tennessee River Valley's managed river system had \$11.9 billion of annual economic impact — the equivalent of \$1 million per shoreline mile. Tennessee Valley waterways were estimated to receive 65 million visitors annually (Poudyal and Caplenor, University of Tennessee Institute of Agriculture, 2017).



Photo by Richard Simms

CASE STUDIES:

FISH IN RHEA ECONOMIC IMPACT

Rhea County, Tennessee has seen an incredible economic turnaround and much of that is a result of two natural assets, Lake Chickamauga, an impoundment of the Tennessee River, and the largemouth bass. Just an hour south of Oak Ridge, Dayton had record unemployment in the early 2000's. In 2011, local leaders noticed that tourism was increasing due to anglers as well as well-publicized record-breaking fish catches. Leaders began to think big, positioning themselves to ultimately become one of the “bass capitals of the world”. The “Fish Dayton” brand was developed and fishing tournaments, including top world tournaments, were recruited. Leaders knew more infrastructure was needed so they began to partner with TVA and others to make approximately \$800,000 in investments in water access and dock facilities.

- As a result, Rhea County has seen \$15 million in private investment and hundreds of new jobs. Some of the major impacts include:
- Three new hotels and five restaurants were constructed or upgraded.
- Dayton's lodging tax collections have grown 34.5% since 2014.
- Lodging tax revenues in 2017 were \$227,407, a 19% increase over 2016. The new Blue Water Lodge and Sleep Inn that opened in early in 2017 contributed to this increase.
- Dayton has seen the creation of more than 107 new full-time jobs linked to the new lodging and restaurants.
- Property tax collections are up more than \$160,000 annually, and the city's sales tax collections reflect more than \$33 million new gross sales.

To learn more visit: <https://www.tn.gov/ruraltaskforce/best-practices/tourism-enhancement-grant/fish-dayton.html>

TRAILS AND GREENWAYS

Trails and greenways are economic catalysts and are the park and recreation amenities most desired by the public. Long distance trails (of 20 or more miles) paired with open space can be major tourism attractions and can stimulate new business.



Photo by Equinox

CASE STUDIES:

KNOXVILLE'S URBAN WILDERNESS BRINGS NEW LIFE AND MONEY TO THE CITY

Knoxville's Urban Wilderness (KUW) has become one of the crown jewels of the urban park system, located just south of downtown. KUW stands apart from many major cities' recreation offerings, because of its variety of recreation opportunities and world-class trail system. Over 1,000 acres of parks and open space are connected by over 50 miles of trails and greenways, including the 12.5-mile South Loop that connects many of the best assets of the system. KUW has purpose-built mountain biking trails, making it a national attraction for mountain biking and competitions.

Knoxville's Urban Wilderness currently brings in about \$14 million annually. It is projected to bring in \$26-51 million as it becomes a regional and national draw (*Baker Center, Economic Potential of South Knoxville's Urban Wilderness, 2015*). Around \$6 million of real estate transactions have occurred on lands bordering open space and trails of KUW, increasing the demand for real estate in the area.

OTHER TRAILS

Studies of the American Tobacco Trail (ATT) in NC and the Swamp Rabbit Trail in SC show that long distance trails are more heavily used than shorter disconnected fragments, and they become destinations themselves. The ATT is a 22-mile rail-to-trail conversion and in 2014 received 508,000 annual users of which 29% were visitors and the remaining were local users (*ITRE, Evaluating the Economic Impact of Shared Use Paths in North Carolina, 2018*). The Swamp Rabbit Trail is approximately 20 miles long. In its 3rd year after completion in 2013, it had 501,000 annual users, 25% of which were visitors (*Reed, Greenville Health System Swamp Rabbit Trail, Year 3 Findings, 2013*).

SPORTS COMPLEXES AND TOURNAMENTS

Sports competitions are increasingly being used as an economic development strategy. As mentioned previously, communities like Chattanooga and Rhea County have learned to capitalize on their natural assets, recruiting competitive sports that have brought in millions of dollars. The Oak Ridge region is beginning to reap benefits of sports competitions, including hosting the 2019 USA Cycling Professional Road National Championship as well as several Haw Ridge mountain biking competitions.

Tennessee is positioned to become a national leader in sports competitions because of its geographic adjacency to many metropolitan areas, accessibility via the interstate, scenic beauty, accommodating year-round weather, and cutting-edge facilities. Based on a study commissioned by the Visit Knoxville Sports Commission (DSA Sports, LLC, Sports Facility Study and Recommendations, 2018), more sports complexes in east Tennessee may be viable and needed, even in addition to the Rocky Top Sports Complex (see case study below). This study estimates a new sports complex, with proper programming and scheduling of events and competitions and a minimum of ten-rectangular fields, could bring in \$15-20 million a year from an initial investment of around \$20 million.

CASE STUDIES:

ROCKY TOP SPORTS WORLD, A MEGA-SPORTS COMPLEX IN THE MOUNTAINS

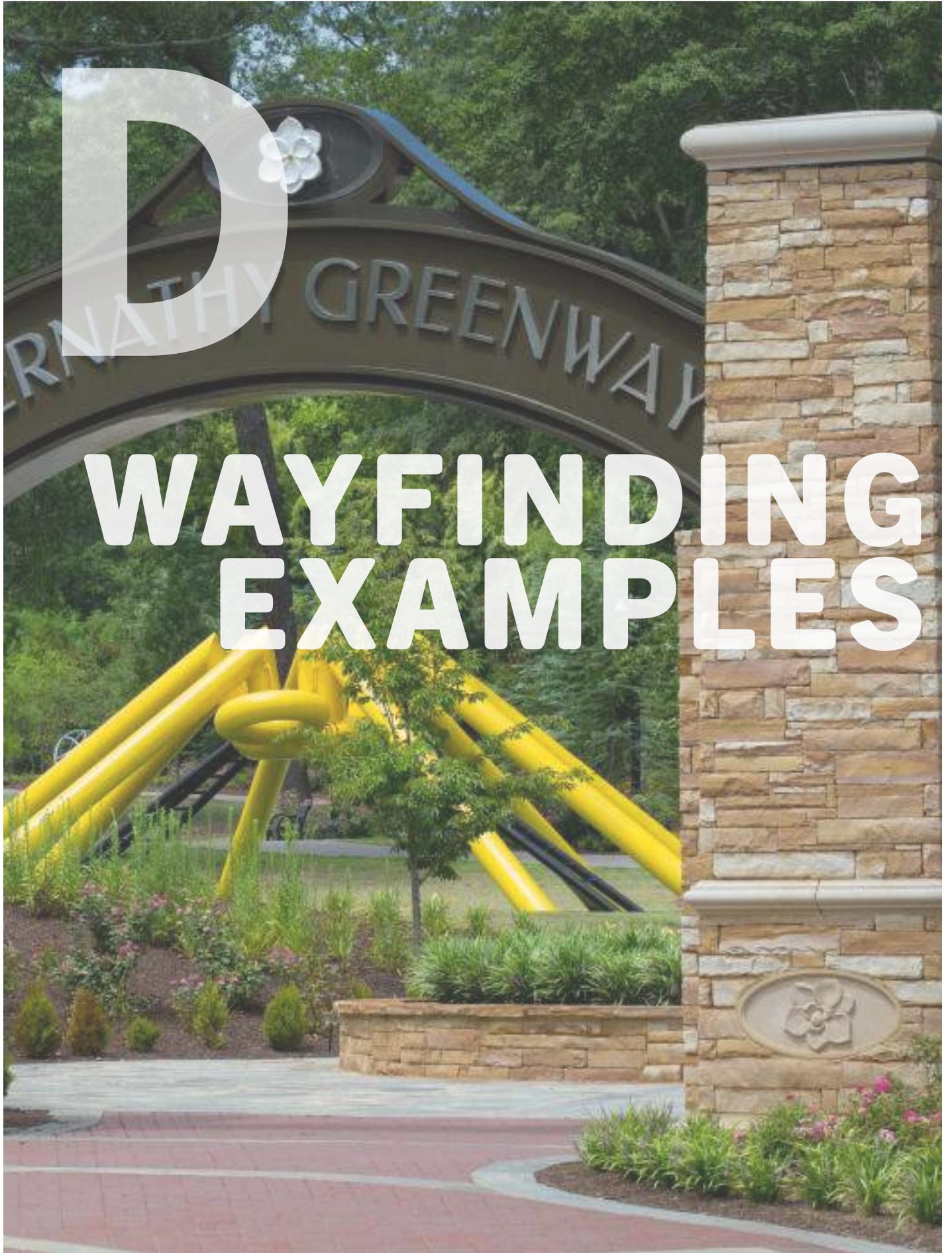
Rocky Top Sports World is an 80-acre sports campus that hosts sports competitions and camps in Gatlinburg, Tennessee. It is ranked as one of the best sports venues in the nation. It offers seven outdoor fields, a stadium field, indoor courts, a restaurant, and promotes the Great Smoky Mountains National Park, and Gatlinburg, as part of its attraction. Rocky Top estimated that it had a \$45.7 million impact in 2017-2018 with over 120,000 athletes and spectators visiting.

MURFREESBORO'S SPRING FLING

Murfreesboro has branded itself as the sports capital of Tennessee. Its Spring Fling is an annual event that utilizes all its publicly owned world-class sports facilities. Baseball, soccer, softball, track and field, and tennis competitions are all held the same week. The local convention and visitor bureau estimates an annual impact of \$3.5 million from this event alone, according to several news sources that interviewed the bureau.

Photo by Rocky Top Sports World





WAYFINDING EXAMPLES

MATERIAL FAMILY A

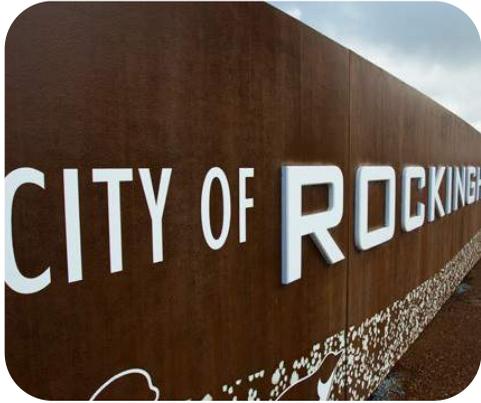
Cor-Ten, Bold,Elemental

SCALE

DISTRICT

SITE

PEDESTRIAN / BIKE



MATERIAL FAMILY B

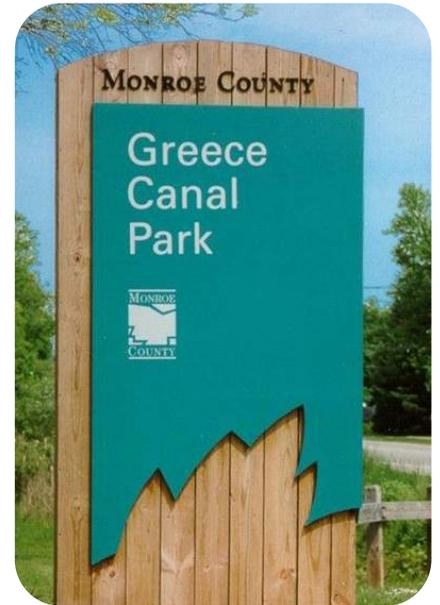
Wood, Metal, Color

SCALE

DISTRICT

SITE

PEDESTRIAN / BIKE



MATERIAL FAMILY C

Concrete, Historic, Subtle

SCALE

DISTRICT

SITE

PEDESTRIAN / BIKE



OAK RIDGE NATURAL ASSET PLAN STEERING COMMITTEE

David Adler

Deputy Designated Federal Officer
DOE Environmental Management

Mike Beard

Parks & Recreation Director
Roane County Parks & Recreation
Roane County

Chad Becker

ORAU Facilities & Transportation Director
Oak Ridge Associated Universities

Kevin Ironside

Reindustrialization Manager
UCOR | An AECOM-led partnership with Jacobs

Wade Creswell

UT-Battelle Protocol & Community Relations Specialist
Oak Ridge National Laboratory

Jon Hetrick

Director of Recreation & Parks
City of Oak Ridge

Gene Patterson

CNS Government & Community Outreach
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Stephanie Wells

Director, Anderson County Tourism
Anderson County

GUIDEBOOK DEVELOPMENT TEAM



Carol Evans & Don Parnell
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Ackermann Marketing & PR



Mike Fowler & Aaron Shugart-Brown
Ross/Fowler Landscape Architecture



Kim Williams & David Tuch
Equinox

