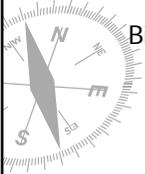


Environment & Infrastructure



Bill McDonald, Administrator,
Public Works

Infrastructure

► The City of Chattanooga maintains an extensive infrastructure network that includes streets, bridges, tunnels, sidewalks, parks and open space and urban forestry



STREETS

1,140 Miles



- *Principal and Minor Arterials*
Link businesses and/or population centers
Hixson Pike, Amnicola Hwy., Brainerd Rd
Germantown Rd., Ashland Terrace
- *Collector Streets*
Link local streets to arterials
Grubb Road, Talley Road
- *Local Streets*
Provide access to transportation network
from local neighborhoods
Tremont St., Ashford St.

BRIDGES



Constructed by the Tennessee Department of Transportation.
Future maintenance is the responsibility of the City of Chattanooga.

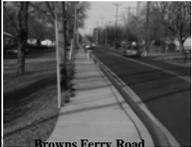
WILCOX TUNNEL



City of Chattanooga owns and maintains the Wilcox Tunnel. Currently underway is a project to repair some of the leaking joints. Need additional \$2.7 million to complete structural repairs, install new lighting, improve drainage, install a new reflective coating.

SIDEWALKS

Browns Ferry Road
Project completed March 2004



Browns Ferry Road

*Criteria for new sidewalks:
Proximity to schools,
greenways, parks,
recreation facilities, mass
transit stop, and special
needs (handicap access).*



Lkt. Valley Middle/High School



David at Adkins



Carmichael Street at Adkins

URBAN TREES



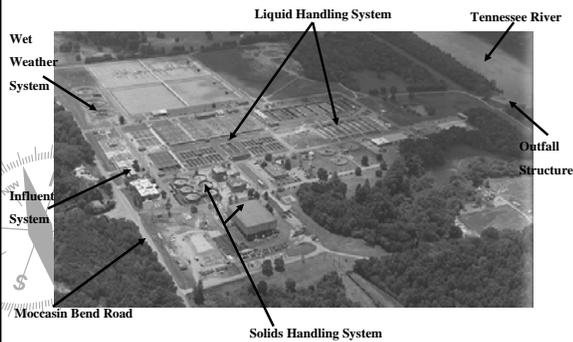
- ▶ Chattanooga designated as Tree City for 14th Year.
- ▶ City Tree Commission
7 member Commission
Citizens appointed by Mayor
Act as advisory board to Urban Forester
- ▶ Goal of 15% tree coverage
Presently 7%-8%



Sewers and Sewage Collection

- ▶ Own and maintain approximately 1,200 miles of sewer.
- ▶ Size from 8 inches in diameter to 90 inches in diameter.
- ▶ Age from new to 110 years old.
- ▶ Approximately 65 miles of combined sanitary sewers and storm drains in older parts of the City.
- ▶ There are 8 underground combined sewer overflow treatment structures some are as large as 2 football fields.
- ▶ Recently completed projects include North Chattanooga sewer replacement, MLK/Douglas detention facility, Hixson Marina subdivision sewer project and Market Street (4th to Ross' Landing).

Moccasin Bend Regional Treatment Plant



Moccasin Bend Treatment Plant

- ▶ Treats average of 68 million gallons of wastewater per day and generates 150,000 wet tons of biosolids per year currently disposed of in Rhea County landfill.
- ▶ Moccasin Bend is a regional facility that serves Chattanooga, parts of Hamilton County, parts of Walker, Catoosa and Dade counties and municipalities in both Georgia and Tennessee.
- ▶ In 2001 completed approximately \$34.7 million in improvements in liquid handling facilities to meet more stringent EPA treatment standards and expand capacity.
- ▶ In 2004 completed approximately \$36.3 million in improvements in solids handling facilities which is currently in the start up phase. This facility will generate 50% less biosolids and will generate Class "A" biosolids that will be beneficially used in lieu of landfill disposal.
- ▶ In February 2005 we will be evaluating proposals to beneficially use the Class "A" biosolids.

Interceptor Sewers and Collection Systems



SANITARY SEWER RATE CALCULATION

	Chattanooga	Hamilton County Wastewater Treatment Authority	Walker County
Wheelage & Treatment Rate Per 1000 gallons	\$0 .86	\$0.86	\$ 0.86
Local government collection system Rate Per 1000 gallons	\$3.18	\$2.78	\$2.36
Total Charges	\$4.04	\$3.64	\$3.22

Stormwater Management – Clean Water Act Compliance

- ▶ Ordinance passed in 1993 to meet National Pollutant Discharge Elimination System (NPDES) requirements of the Clean Water Act
- ▶ Permit covers 8 Major Watersheds with 524 miles of streams, approximately 2,200 miles of major drainage systems and approximately 75,000 stormwater structures.
- ▶ City monitors water quality at 10 stream monitoring locations.

Stormwater Management – Clean Water Act Compliance

- ▶ NPDES Permit Requires 151 activities
 - 94 one-time requirements completed
 - 43 annual requirements completed each year
 - 14 overdue requirements underway
- ▶ Notice of Violation from TDEC on June 12, 2004
 - Since June 2004, 11 permit requirements completed, with 11 in progress and 3 planned for the future. Non-compliance began in 1997 up to 2001
- ▶ Stormwater is working to meet 2008 deadline to complete As Found Inventory of 2,200 miles drainage system and 75,000 stormwater structures. This is the largest of the remaining NPDES Permit requirements.

Stream Testing

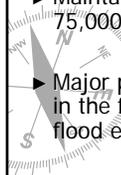


Cinco Creek

- ▶ Monitor Water Quality
 - pH
 - Dissolved Oxygen
 - Temperature
 - Electrical Conductivity
 - Turbidity
- ▶ Stormwater Fee established by 1993 Ordinance to fund Water Quality Program mandated by Federal Clean Water Act
- ▶ Common misconception that the fee is for solving local drainage problems

Stormwater Management Drainage and Flood Plain Management

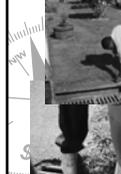
- ▶ Annually investigate approximately 200 flooding complaints and 1,450 drainage erosion service requests.
- ▶ Maintain 2,200 miles of drainage system and 75,000 stormwater structures.
- ▶ Major problem of homes and businesses were built in the flood plain, with floor elevations below base flood elevations.



Storm Sewer Structure



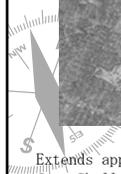
- ▶ Stormwater Management is responsible for the maintenance of stormwater infrastructure in the public Right-of-Way.
- ▶ Stormdrain stenciling promotes community awareness about stormwater runoff.
- ▶ Stencils remind citizens that whatever goes into the street and stormdrain directly affects the life of our creeks and rivers.



Brainerd Levee and Pump Station

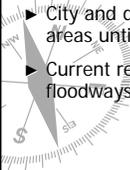


Extends approximately 4 miles
From Shallowford Road to I75.



Development in the Flood Plain

- ▶ Flood Plains naturally occur on all creeks and streams
- ▶ Base Flood Elevation (BFE) established by FEMA in 1980
- ▶ Not all Flood Plains have been mapped
- ▶ Many homes built near creeks prior to 1980 were below the BFE when constructed
- ▶ City and developers were not aware of the flood plain areas until 1980
- ▶ Current regulations do not allow the practice of building in floodways nor below base flood elevation in the floodplain.



Residential Flood Plain



Commercial District Flood Plain



Environment

- ▶ A clean environment is essential for a healthy city.
- ▶ City is responsible for essential services related to solid waste collection and disposal including: garbage, brush and leaf collection, refuse disposal centers, recycling and a municipal landfill.
- ▶ City maintains an extensive network of parks, greenways and open space that help to define the physical environment.
- ▶ The City also works closely with partners at the Federal and State level to protect the environment through the regulatory process.

Garbage Collection



- ▶ 51,000 tons collected Fiscal Year 03/04.
- ▶ Weekly service to residents and small businesses.
- ▶ Twice daily service to small downtown restaurants.

Brush Collection



- ▶ 20,660 tons brush collected in Fiscal Year 03/04.
- ▶ 2,800 tons leaves collected in Fiscal Year 03/04.
- ▶ Monthly service provided to residents.

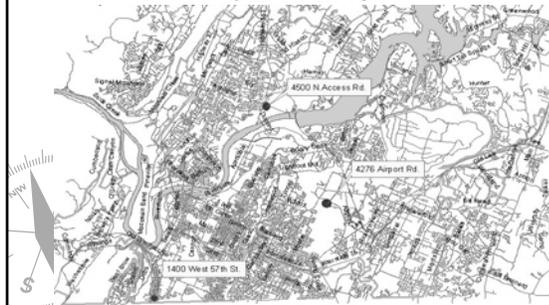
Trash Flash



▶ 33,689 requests for service in Fiscal Year 03/04

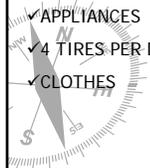
▶ Service to residents "on call" basis within 2 working days.

RESIDENTIAL REFUSE DISPOSAL CENTERS



Materials Accepted At Refuse Centers

- | | |
|------------------|-----------------------------|
| ✓MICROWAVES | ✓GRASS CLIPPINGS |
| ✓METAL | ✓LEAVES |
| ✓FURNITURE | ✓BRUSH |
| ✓BBQ GRILLS | ✓TVs AND VCRs |
| ✓APPLIANCES | ✓COMPUTERS |
| ✓4 TIRES PER DAY | ✓MATTRESSES AND BOX SPRINGS |
| ✓CLOTHES | |



Recycle Collection

- ▶ Collected 4,900 tons at curbside in Fiscal Year 03/04.
- ▶ Weekly service to residents
- ▶ 18% of residents participate
- ▶ Will change to enrollment program in March 2005.



Curbside Recycling Enrollment Program Beginning March 2005

What Can I Recycle?

Plastics - #1 and #2
 Newspaper (including glossy ad supplements)
 Mixed Paper
 Aluminum & Steel Cans



Material Not Accepted

NO GLASS
 Plastic Toys, Styrofoam,
 Waste Motor Oil, Antifreeze,
 Brake Fluid, Ceramics

How Can I Enroll?

Call the 311 Call Center
 or
 log on to www.chattanooga.gov

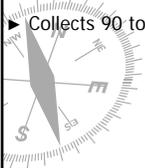
Orange Grove Recycling Center



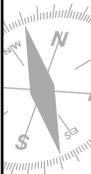
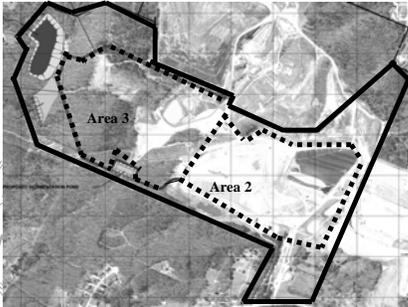
- ▶ Materials Recovery Facility
- ▶ Employs 100 developmentally challenged citizens.
- ▶ Orange Grove separates materials received from City's Curbside Recycling Service.
- ▶ Orange Grove training develops clients with skills needed to obtain employment.

Warner Park Recycle Center

- ▶ Manned drop off center operated by Orange Grove.
- ▶ Collects 90 tons per month.

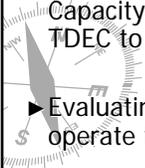


CITY LANDFILL Birchwood Pike



Landfill Operations

- ▶ Filling in Area 2 which is 33 acres in size. Remaining capacity 2 ½ years.
- ▶ Permitting Area 3 which is 50 acres in size. Capacity approximately 25-30 years. Expect TDEC to issue permit by March 2005.
- ▶ Evaluating proposal from contractors to operate the landfill.



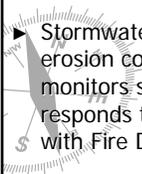
Environmental Regulations

- ▶ The City's Public Works Department and the Chattanooga/Hamilton County Air Pollution Control Bureau partner with the Environmental Protection Agency and Tennessee Department of Environment and Conservation to monitor and regulate air and water pollution in the city.



Environmental Regulations Water Pollution

- ▶ Waste Resources Division issues permits for industrial discharges into sewer system and monitors discharges for compliance.
- ▶ Stormwater Division monitors construction site erosion control, biological monitoring of streams, monitors streams for illegal industrial discharge and responds to chemical and fuel spills in conjunction with Fire Department.



Environmental Regulations

- ▶ Codes and Inspection Division conducts plan reviews and zoning violation investigations.
- ▶ Stormwater Division reviews development plans, issues permits, monitors erosion control during construction and performs final inspection of detention and drainage facilities at completion of construction.



Environmental Regulations Air Pollution

- ▶ Hamilton County Air Pollution Control Bureau issues permits to industrial and commercial facilities that emit air pollutants.
- ▶ Chattanooga/Hamilton County Air Control Bureau inspects facilities for compliance annually.
- ▶ Makes recommendations to local governments regarding air pollution control regulations and ensures compliance with Clean Air Act.



Building Code Enforcement



- ▶ Review plans and issue building, electrical, gas, mechanical, and plumbing permits.
- ▶ Perform inspections to insure compliance with codes.

Landfill Operations

- ▶ Filling in Area 2 which is 33 acres in size. Remaining capacity 2 ½ years.
- ▶ Permitting Area 3 which is 50 acres in size. Capacity approximately 25-30 years. Expect TDEC to issue permit by March 2005.
- ▶ Evaluating proposal from contractors to operate the landfill.



Parks and Greenways



Chattanooga has an extensive network of public parks, open space and greenways. We currently maintain 56 parks and greenways. That's approximately 800 Acres of park space available for passive and active recreation.

Benefits

- *Quality of Life*
- *Conservation*
- *Preservation*

Parks



City is undergoing a major expansion and enhancement of parkland as a result of three major projects:

1. ReCreate 2008
2. 21st Century Waterfront Plan
3. Enterprise South Redevelopment

ReCreate 2008

Brainerd Recreation Complex



Tatum Park



Warner Park Ballfields



ReCreate 2008 is a 10-year, \$65 million dollar plan to build and renovate city recreational facilities including parks, greenways, recreation centers, ballfields, tennis courts, zoo, and more.

We are entering our 7th year and on track towards meeting our completion year for this project.

21st Century Waterfront Parks Renaissance Park



The wetlands park within Renaissance Park will open in April 2005 with the remainder of the park scheduled for completion in August 2005. No General Funds used for this project.

- **Renaissance Park** is located on the northshore of the river next to the historic Market Street Bridge (adjacent to Coolidge Park). The city's acquisition of this 23 acre tract of land was a key component to the \$120 million downtown redevelopment project linking the community even more closely to its riverfront.

- Following focus groups, public meetings, and charettes (open community forums), the concept emerged to turn this property into an urban wetlands park.

21st Century Waterfront Parks Ross's Landing Park



Before



Once renovations are complete at **Ross's Landing Park**, it will feature:

- River Pier
- Marina
- Natural Amphitheatre
- The Chattanooga Green will provide a connection to the park across Riverfront Parkway. The space will be used for small festivals, concerts, and for park users to enjoy a great view of the river.

Ross's Landing Park will reopen in May 2005. No General Funds were spent on this project.

Enterprise South Passive Park



Partnership between the City of Chattanooga and Hamilton County to develop a passive park on 2800 acres of land adjacent to the Enterprise South Industrial Park.

Features will include opportunities for passive recreation such as hiking, biking, bird and other nature watching, picnics, and potential horse back riding trail.

This land represents the largest contiguous piece of park land owned by local government.

Neighborhood Parks



- City's largest parks include:
 1. Greenway Farm (180 Acres)
 2. Rivermont Park (61 Acres)
 3. Warner Park (53 Acres)
 4. Montague Park (45 Acres)

- Coolidge Park is both a neighborhood park for North Chattanooga and an award winning destination park for the entire region.



Neighborhood Parks



Two of the newest parks include:

- **Heritage Park** – 22-acre park featuring a 3200 ft walking track, picnic tables and grills, and bocce ball court in addition to the natural beauty of two creeks and acres of natural meadows. Future plans are to upgrade the house on site for community use.
- **DuPont Park** – City Park along the Tennessee River featuring the North River Soccer Complex with four fully lighted soccer fields and a concessions building, playground, restrooms, picnic pavilions, and drinking fountains. 95 acres of the property was donated by DuPont.

New

Neighborhood Parks



Murray Hills Park: Passive park opening in 2005 featuring a walking track and benches. Partnership between city and county.

Ridgedale Park: Opening in 2005, park features include a walking track, benches, playground, and covered pavilion.

St. Elmo Park: Opening in 2005 at the site of the old recreation center. Park is still in the design phase but features will include a walking track, playground, grills, picnic tables, and benches with an amphitheatre being considered for future construction.

Whiteside Park: Opening in 2005 in the 700 block of MLK Boulevard. Features will include a walking track, benches, site lighting, trees, landscaping and green space.

Greenways



The Greenways Master Plan was approved in 1996 and amended in 2002. The plan includes greenways to be constructed on Chattanooga Creek, Guild Trail, Mountain Creek Greenway, University Greenway, South Chickamauga Creek, North Chickamauga Creek and the Tennessee River

- **Guild Trail Greenway**, recently opened to the public, allows mountain bike riders access to Lookout Mountain along a civil war era military road and an abandoned trolley line that have been rehabilitated. Beginning in St. Elmo, trail length is approximately 5-miles.

Greenways



- **South Chickamauga Creek Greenway** is from Camp Jordan to Shallowford Road with plans to connect the greenway to the Tennessee Riverwalk. 13 miles when complete.

- **North Chickamauga Creek Greenway** is from the Chickamauga Dam extending north through Greenway Farm into Bethel Bible Village. Plans are to extend this trail south to Rivermont Park and north of the city.

- **Tennessee Riverwalk from Ross's Landing to Chickamauga Dam.** This newest section extends the trail length to 13 miles and is scheduled for completion in April 2005.

PAVEMENT MANAGEMENT PLAN

- ▶ Spend \$2 million annually repaving 30 – 35 miles of streets
- ▶ Contract with professional engineering firm to:
 - Evaluate condition of every street in City
 - Assign a condition index number to each street
 - Recommend method of rehabilitation based on condition
- ▶ **Goals:**
 - Employ a variety of street rehabilitation methods
 - Stretch funding dollars
 - Improve condition of streets
 - Extend life of streets



Traffic Control

- ▶ Cooperating with TDOT to develop intelligent transportation system for I-24, I-75, Hwy. #153 and Hwy., #27
 - 64 cameras connected to internet, emergency response agencies and media
 - Fully funded by State and Federal Highway Administration
- ▶ Currently converting all traffic signals from incandescent bulbs to state-of-the-art LED units (light emitting diodes)
 - Savings in electricity will pay back \$650,000 cost in 7 years.
 - LED units last about 15 years and are more visible than incandescent.

Public Works Monthly Performance Review

- ▶ 311 Calls and E-mails
 - ◆ Total December '04-----3,750
 - % Closed on time-----80.21%
 - ◆ Total Fiscal Year To date – 22,605
 - % Closed on time ----- 90.67%
- ▶ Example of work items measured

	Nov. 2004	Dec. 2004	% Change
◆ City streets swept (miles)	1,490	1,505	1.01%
◆ Garbage Collected (tons)	4,478	4,558	1.80%
- ▶ Plans Review and Inspections
 - ◆ 4,500 plan reviews annually
 - ◆ 34,000 building inspections annually

Challenges and Opportunities – First Six Months

- ▶ Market Street Bridge closure for renovation by Tennessee Department of Transportation will begin October 2005 for approximately 2 years.
- ▶ The Tennessee Department of Transportation has determined that it will be necessary to close Riverfront Parkway for 6 -9 months during the renovation of Market Street Bridge beginning October 2005.
- ▶ Continuation of sanitary sewer and storm sewer "As Found/Inventory" project to comply with NPDES Permit.
- ▶ Implementation of Hazard Mitigation Grant (Removal of 9 homes from flood plain that experience repeated flooding).

Challenges and Opportunities – First Six Months

- ▶ Complete design and enter into a construction contract for Eastgate/Airport pump station and sewer rehabilitation.
- ▶ Enter into a construction contract for sanitary sewer replacement in Tampa Street.
- ▶ Implementation of new building and fire codes.
- ▶ Implementation of Online Permitting System
- ▶ Renovation of City Hall

Challenges and Opportunities Long Term

- Capital needs for stormwater and sanitary sewer "As Found / Inventory" project through 2008.
- Floodplain modeling and mapping.
- Develop level of service policies regarding drainage on private property. Balancing financial resources with citizen expectations.
- Moccasin Bend Oxygen Generation Plant will need major renovation. Evaluating feasibility of oxygen being piped in from a private facility vs rebuilding the existing plant.

Challenges and Opportunities Long Term

- Past 10 years spent \$110 million building combined sewer overflow structure, building new liquids handling facilities, and renovating solids handling facilities.

➤ FOCUS FOR NEXT 10 YEARS

Will have limited capital funds available. Those funds must be directed toward rehabilitation of sewer collection system and not toward expansion into undeveloped areas.

Challenges and Opportunities Long Term

➤ FUTURE PROJECTS

Rehabilitation and replacement of aging and undersized sewer collection system

Elimination of sewer overflows

Replacement of aging pump stations

Continue to improve collection and treatment system to comply with changing EPA regulations.

Continue separation of combined sewers whenever it is feasible to do so.