REGIONAL GOAL #6

EFFICIENT INFASTRUCTURE

We must maximize the efficiency and value of our current infrastructure investment and keep operating and maintenance costs low.

WHY IS IT IMPORTANT?

Infrastructure, which includes things like water lines, sewage treatment plants, and roads, is expensive both to build and maintain. Installation must be efficient, and maintenance must be regular.

IF GROWTH CONTINUES IN ITS CURRENT PATTERN, 50-60,000 ACRES OF NEW DEVELOPMENT WILL NEED WATER AND SEWER LINES, AND 70,000 ACRES WILL NEED NEW STREETS.

WHAT'S AT STAKE?

Expected growth in East Tennessee will put more demand on our existing infrastructure—more houses and businesses will need utility hook-ups, and more cars will crowd local roads. Funding the maintenance of existing systems will ensure resources last as long as possible, reducing future costs and preventing serious service disruptions.

The form of future development will have the largest impact on the need for new infrastructure. If the region continues to develop in a dispersed pattern, costs to build and maintain infrastructure systems will far outpace our ability to pay for them.

ADEQUATELY MAINTAIN OUR EXISTING SYSTEMS

Fund the maintenance of roads, water lines, sewers and other infrastructure to maximize their life cycle.

EI1 » INCREASE PUBLIC AWARENESS ABOUT THE NEED TO ADEQUATELY FUND MAINTENANCE

WHO? Local Government • Utility Providers | **TIMEFRAME** Short

EI2 » REQUIRE A MAINTENANCE PLAN AS PART OF ANY CAPITAL PROJECT

WHO? Local Government • Utility Providers | **TIMEFRAME** Medium

EI3 » REDUCE THE USE OF WATER, WASTEWATER, AND OTHER UTILITIES TO EXTEND THE LIFE OF DELIVERY SYSTEMS

WHO? Individuals • Families | **TIMEFRAME** Short

EI4 » MINIMIZE THE COST OF MAINTAINING UTILITY EASEMENTS BY PLANTING APPROPRIATE VEGETATION

WHO? Individuals • Families | **TIMEFRAME** Medium

EI5 » INSPECT CONNECTIONS TO UTILITY SYSTEMS AND THEIR OWN EQUIPMENT

WHO? Individuals • Families| **TIMEFRAME** Short

EI6 » REPORT DEFICIENT CONNECTIONS AS SOON AS POSSIBLE

WHO? Individuals • Families | **TIMEFRAME** Short

EI7 » MAINTAIN THEIR ENDS OF THE SYSTEMS THAT PROVIDE THESE UTILITIES

WHO? Individuals • Families | **TIMEFRAME** Short

EI8 » CONSIDER SOLAR PHOTOVOLTAIC SYSTEMS TO CONTRIBUTE ENERGY BACK INTO THE SYSTEM

WHO? Individuals • Families | **TIMEFRAME** Short

EI9 » DEVELOP OR UPGRADE AN APPROPRIATE MAINTENANCE STRATEGY SUCH AS TIME-BASED MAINTENANCE, RISK-BASED MAINTENANCE, RELIABILITY-CENTERED MAINTENANCE, OR PERFORMANCE-BASED MAINTENANCE

WHO? Local Government • Utility Providers | **TIMEFRAME** Medium

EI10 » ACCOUNT FOR LIFE CYCLE COSTS IN EXISTING SYSTEMS

WHO? Local Government • Utility Providers | **TIMEFRAME** Short

EI11 » INCREASE MONITORING OF PHYSICAL INFRASTRUCTURE SYSTEMS

WHO? Local Government • Utility Providers | **TIMEFRAME** Short

EI12 » ASSURE THAT ADEQUATE STAFF AND SKILLED EMPLOYEES ARE AVAILABLE

WHO? Local Government • Utility Providers | **TIMEFRAME** Short

EI13 » ASSURE EASY MAINTENANCE WHEN BUILDING NEW INFRASTRUCTURE SYSTEMS

WHO? Local Government • Utility Providers | **TIMEFRAME** Short

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EXTEND INFRASTRUCTURE INCREMENTALLY

Avoid leapfrog extensions of infrastructure by extending systems in steps from the core facilities outward.

EI14 » USE INCENTIVES TO ENCOURAGE REDEVELOPMENT ALONG EXISTING INFRASTRUCTURE LINES

WHO? Local Government • Utility Providers | **TIMEFRAME** Short

EI15 » SUPPORT THE CONCEPT THAT DEVELOPMENT SHOULD PAY FOR THE INCREMENTAL COSTS OF INFRASTRUCTURE NECESSARY FOR ITS SUPPORT

WHO? Local Government • Utility Providers | **TIMEFRAME** Short

EI16 » COMPLETE A CAPITAL IMPROVEMENT PLAN

WHO? Local Government • Utility Providers| **TIMEFRAME** Medium

EI17 » EDUCATE THEMSELVES ON THE LOCATIONAL EFFICIENCIES OF WHERE THEY CHOOSE TO LIVE

WHO? Individuals • Families | **TIMEFRAME** Short

EI18 » REDUCE EXPECTATIONS ABOUT INFRASTRUCTURE DELIVERY IN RURAL AREAS

WHO? Individuals • Families | **TIMEFRAME** Short

EI19 » SUPPORT AN INFRASTRUCTURE PRICING SYSTEM THAT REFLECTS LOCATION SUCH AS CONGESTION PRICING OF ROADWAYS AND VARIABLE PRICING OF ELECTRIC POWER

WHO? Individuals • Families | **TIMEFRAME** Short

EI20 » COORDINATE THE TIMING OF INFRASTRUCTURE IMPROVEMENTS WITH DEVELOPMENT PRESSURES

WHO? Local Government • Utility Providers | **TIMEFRAME** Medium

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COORDINATE ACROSS JURISDICTIONAL BOUNDARIES

Share information and work together to provide support and backup in times of emergency or need.

EI21 » DEVELOP A REGIONAL MASTER PLAN FOR ROAD AND INFRASTRUCTURE IMPROVEMENTS

WHO? Local Governments | **TIMEFRAME** Long

EI22 » CONVENE REGULARLY TO SHARE INFORMATION

WHO? Local Governments | **TIMEFRAME** Short

EI23 » PARTICIPATE IN EFFORTS TO CONVENE REGIONAL INTERESTS IN INFRASTRUCTURE SYSTEMS

WHO? Local Government • Utility Providers | **TIMEFRAME** Short

EI24 » DEVELOP ADVANCED TRAFFIC MANAGEMENT SYSTEMS SUCH AS TRAFFIC SIGNALS MONITORING AND COMMUNICATIONS THAT ARE COORDINATED ACROSS JURISDICTIONS

WHO? Local Government • Utility Providers | **TIMEFRAME** Medium | **POTENTIAL PARTNERS** Knoxville Regional TPO, TDOT

EI25 » IMPROVE BROADBAND ACCESS THROUGHOUT THE REGION

WHO? Local Government • Economic Development Agencies • Businesses • Utility Providers | **TIMEFRAME** Medium

EI26 » IDENTIFY MAJOR DEMANDS IN THE REGION SUCH AS SCHOOLS, SHOPPING AND JOB CENTERS

WHO? Local Government • Economic Development Agencies • Businesses • Utility Providers | **TIMEFRAME** Short
POTENTIAL PARTNERS Knoxville Regional TPO, TDOT

EI27 » ASSURE COORDINATION THROUGH TDOT TRANSPORTATION MANAGEMENT CENTER AND OTHER REGIONAL STAKEHOLDERS

WHO? Local Government • Economic Development Agencies • Businesses • Utility Providers | **TIMEFRAME** Short
POTENTIAL PARTNERS Knoxville Regional TPO, TDOT

CONSERVE WATER AND ENERGY RESOURCES

Conserve water and energy to extend the life of our resources and avoid the cost of upgrading our systems.

EI28 » ESTABLISH A REGIONAL COORDINATING ORGANIZATION FOR INFRASTRUCTURE DEVELOPMENT TO COORDINATE PLANNING INVESTMENT AND DEVELOPMENT

WHO? Local Government • Economic Development Agencies • Businesses • Utility Providers | **TIMEFRAME** Short

EI29 » ESTABLISH INCENTIVES FOR WATER AND ENERGY CONSERVATION SUCH AS REBATES, RATE REDUCTIONS AND VARIABLE RATE PRICING TO EASE PEAK DEMANDS

WHO? Local Government • Utility Providers | **TIMEFRAME** Medium

LOCAL IMPLEMENTATION EXAMPLE: WAMPLER SAUSAGE AND ENERGY INDEPENDENCE

Wampler's Farm Sausage has been a staple in the South for generations, and the company continues to push limits and impress through efforts to become energy independent. Led by President Ted Wampler Jr., the company has championed solar technology since 2009 when a 30-kilowatt solar technology system was first installed. In 2011 Wampler's invested in a 500kW voltaic system, the largest in the state at the time.

The company also has invested in water purification and bio energy. Partnering with ARiES Energy, Wampler's will be an integrator of a biomass-to-energy gasification system, the first commercial application in the world. This project uses locally-grown switchgrass as feedstock to produce megawatts of power from the hydrogen-on-demand system.

Wampler's continues to act as a role model for the regional business community and nation with its efforts in energy independence, economic development, and environmental stewardship.

Ted Wampler shares his model within and outside Loudon County and has motivated several other Loudon businesses to install solar systems. Wampler's Farm Sausage is raising the bar for all by becoming net-zero grid-connected: producing clean, renewable energy for all of their electrical needs.

EI30 » ENCOURAGE LOW-IMPACT DEVELOPMENT PATTERNS

WHO? Local Government • Utility Providers | **TIMEFRAME** Short - Medium | **POTENTIAL PARTNERS** TDOT, Knoxville Regional TPO

EI31 » UPDATE BUILDING CODES TO REFLECT MINIMAL ENERGY-EFFICIENCY STANDARDS

WHO? Local Government • Utility Providers | **TIMEFRAME** Medium

EI32 » EDUCATE THEMSELVES ABOUT THE VARIETY OF METHODS TO SAVE WATER AND ENERGY

WHO? Individuals • Familes | **TIMEFRAME** Long

AVOID DEVELOPMENT THAT IS NOT SUPPORTED BY INFRASTRUCTURE

Recognize that building with inadequate infrastructure is not safe and costs us more money in the long run.

EI33 » ORGANIZE LOCAL EVENTS TO PROMOTE CONSERVATION OF WATER AND ENERGY RESOURCES

WHO? Neighborhood & Community Organizations | **TIMEFRAME** Short

EI34 » STOP THE PRACTICE OF RELYING ON NEW DEVELOPMENT TO PAY FOR EXISTING INFRASTRUCTURE MAINTENANCE AND REPLACEMENT

WHO? Local Government • Utility Providers | **TIMEFRAME** Long

EI35 » CONSIDER ADEQUATE PUBLIC FACILITIES REQUIREMENTS TO ASSURE THAT INFRASTRUCTURE CAPACITY IS AVAILABLE PRIOR TO DEVELOPMENT

WHO? Local Government • Utility Providers | **TIMEFRAME** Short

EI36 » INVEST IN INFRASTRUCTURE IMPROVEMENTS WHERE NEW DEVELOPMENT IS DESIRED

WHO? Local Government • Utility Providers | **TIMEFRAME** Long

EI37 » DEVELOP PUBLIC PRIVATE PARTNERSHIPS TO UTILIZE EXISTING INFRASTRUCTURE CAPACITY

WHO? Local Government • Utility Providers | **TIMEFRAME** Medium