

# Knoxville's Greening Economy

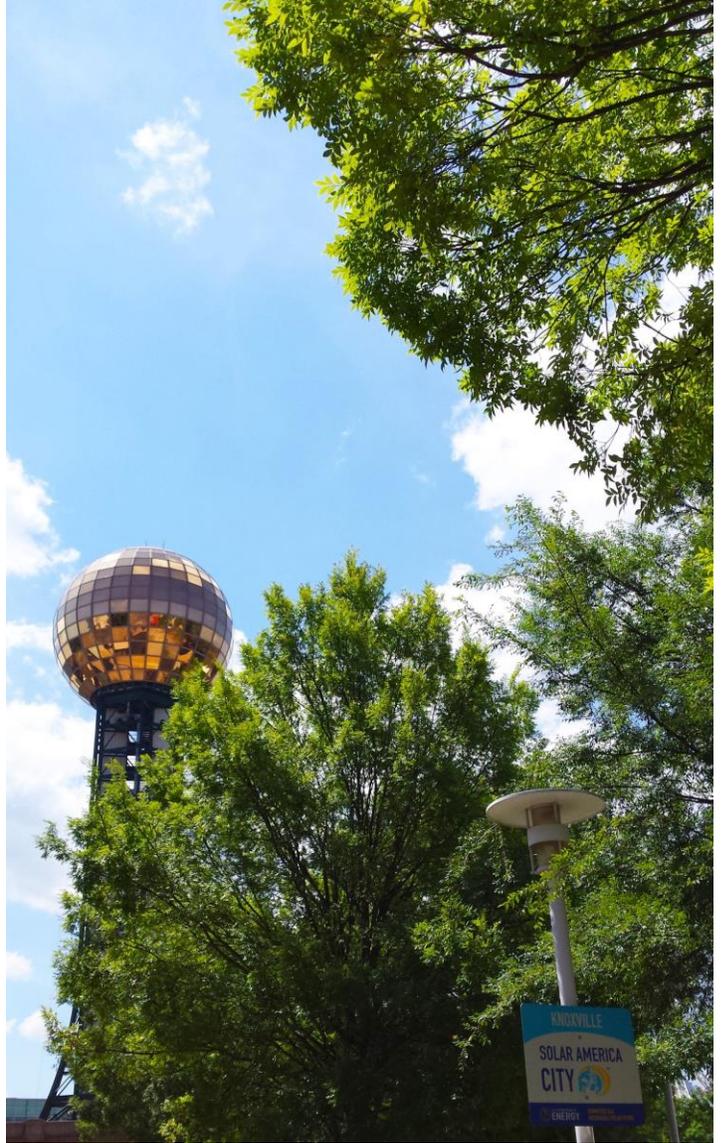
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<https://greeneconomy.utk.edu/>

This report includes data from  
Knoxville's Second Green Economy Forum  
in October 2015 and research conducted by UTGI.



Sponsored by: The University of Tennessee Department of Sociology, City of Knoxville, University of Tennessee College of Arts and Sciences, University of Tennessee Institute of Agriculture, The Bredeesen Center for Interdisciplinary Research, and East Tennessee Quality Growth

## **I. EXECUTIVE SUMMARY UPDATE: KNOXVILLE'S 2<sup>ND</sup> GREEN ECONOMY (GE) FORUM**

The University of Tennessee's Green Economy Initiative (UTGI) is an Organized Research Unit (ORU) funded by the UT Office of Research and Engagement to promote research on and engagement with the Knoxville area's "greening" economy. This greening economy includes efforts of various stakeholders who gathered in 2013 for the first GE Forum. This Forum came about due to increasing attention on Knoxville's potential for sustainable economic growth as a way to address the twin problems of environmental degradation and deindustrialization. Interest around Knoxville's sustainability potential and green job opportunities also arose after a Brookings' Institute (2010) *Green Jobs Assessment Report* that identified Knoxville as one of the fastest growing green economies in the country. The chart below outlines major findings from the 2013 GE Forum and updates those with new findings from the 2015 GE Forum.

The 2015 GE Forum had participation from over 60 local GE leaders and included a base of seven stakeholder groups in areas of:

- Social and Economic Development
- Government
- Workforce Development
- Construction
- Agriculture
- Transportation
- Waste Management

The one-day event began with a presentation of results from UTGI's prior stakeholder group research, for which it conducted over 80 participant interviews and focus groups over a period of several months in 2015; summaries of this research are presented in Appendix A. A plenary discussion followed UTGI's presentation, and then stakeholders attended small group break-out sessions for the remaining day. UTGI recorded and analyzed major findings, which are presented in this report as part II: Cross-Stakeholder Themes. Highlights from the individual stakeholder break-out sessions are presented in Appendix B.

## GE Coordination

2013 Forum Findings	2015 Forum Update
The local green economy must diversify beyond energy without ignoring strengths in the energy area	<b>The local green economy now includes seven main stakeholder groups who have identified needs for working together to develop multi-dimensional, aligned strategies and action plans.</b>
Multiple dimensions of economic growth require coordination	<b>UTGI continues to fill a crucial gap in coordination of seven stakeholder groups in a flexible, yet somewhat structured local/regional GE coalition.</b>
Goals of diverse sectors need some alignment	<b>Before alignment of stakeholders can happen in a meaningful way, a comprehensive coalition strategy is needed and it should include bottom-up perspectives in a systematic way.</b>

## GE Community

2013 Forum Findings	2015 Forum Update
We must make a more green community to attract the green economy	<b>A green community exists in the form of an evolving stakeholder coalition which recognizes the need for a cohesive branding effort in order to attract and retain a wider GE community.</b>
Education is crucial	<b>Although still identified as a weakness overall, ongoing efforts exist through apprentice/training, school/classroom programs; local universities and community colleges have strengths and experience to share in sustainability education.</b>
Needs of specific communities must be addressed, including the poor and business communities	<b>Attendance of diverse stakeholders at the 2015 Forum provides evidence for a strong sense of community around greening Knoxville's regional economy, although more needs to be done to include bottom-up approaches to creating this community.</b>

Media must play a more active role	<b>Each stakeholder group could do more to engage the media in its greening efforts, but media can also be engaged through a regional GE branding identity, which will require greater coalition coordination.</b>
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**Government**

<b>2013 Forum Findings</b>	<b>2015 Forum Update</b>
Strong governmental leadership is required at all levels	<b>City Government continues to be perceived as a leading stakeholder in institutionalizing GE friendly practices through codes, zoning, policies, and funding projects/programs.</b>
Regulations are crucial; coding, mandates, etc. create markets, change values, and provide possibilities of punishing non-compliance	<b>Regulations, coding, mandates, etc. are not only crucial but are actively supporting Knoxville’s greening efforts; for example, the South Waterfront development has sustainable building requirements.</b>
Governments provide necessary grants, subsidies, and incentives	<b>Government financial support is particularly needed to incentivize builders/home buyers to opt for more sustainable construction (which is more expensive up front) and include low income constituents in greening projects.</b>
Collaboration among governmental leaders is necessary, despite political differences	<b>Collaboration across political lines continues to be necessary for a unifying strategy to be possible, which should be inclusive of all constituents and citizens.</b>
From bricks and mortar and beyond, to infrastructure and retrofitting, to grants for projects to setting standards, governments play indispensable roles	<b>Governments continue to be crucial leaders for local, regional, and statewide greening efforts, especially when engaging the state legislature is needed (as for PACE program approval).</b>

## Role of University of Tennessee-Knoxville

2013 Forum Findings	2015 Forum Update
UT must take the lead in educating citizens to sustainable values, students and others in new job skills and career options, and industry about research and commercialization possibilities	<b>UT is still considered a leader in GE education/training and can leverage partnerships with other institutions that have strengths in these areas, including Maryville College and the community colleges in the area.</b>
UT must serve as convoker and coordinator of very different constituencies involved in the local green economy	<b>UT continues to explore multiple approaches to fostering a local green economy and UTGI is facilitating coalition-centered research, information sharing, and interpersonal interactions.</b>
UT must serve as an information gatherer and clearinghouse	<b>UTGI is currently serving this function through research initiatives aimed at mapping the local GE, maintaining coalition contacts, and facilitating information sharing among stakeholders.</b>
UT must forge a variety of partnerships with actors both internal and external to the institution	<b>UTGI fosters external and internal partnerships to promote green economy coordination across diverse sectors.</b>

### Other Actions Needed

2013 Forum Findings	2015 Forum Update
Continue mapping the full breadth of Knoxville's Green Economy	<b>UTGI identified a need for a Blueprint to showcase a roadmap of stakeholders and activities that are "greening" the local/regional economy.</b>
Talk further with UT stakeholders in environmental research	<b>UTGI is building relationships that foster institutional coordination across UT for green initiatives.</b>
Form Advisory Council from industry and community actors active in March 1 forum	<b>An Advisory Council needs to be revived based on increased participation in a growing stakeholder coalition and shifting priorities.</b>

Continue research on other local green economies, and on universities' roles in economic development	<b>UTGI has extensive research underway comparing other local green economy initiatives and roles universities can play.</b>
Consult with City of Knoxville regarding how UT can complement the City's efforts	<b>UTGI has provided evaluative research to support City initiatives in sustainable development and continues to foster this connection.</b>
Talk to UT administrators about institutionalizing the Green Initiative	<b>UTGI is sustained partially through UT institutional support until 2017.</b>

## **II. CROSS-STAKEHOLDER THEMES OF THE 2015 FORUM**

The following are major cross-cutting themes that emerged from UTGI's stakeholder research of over 80 participant interviews and focus groups before the Forum, and then discussed at the Forum in seven stakeholder break-out sessions and a plenary session in October 2015.

### **GE Stakeholder Leaders Identified**

- Various sustainability efforts have been underway for a long time in the Knoxville area, and now they are being coordinated through in-person gatherings (2013 and 2015 Forums). Through the first Forum, various leaders of the greening economy came together and began a dialogue. This was supplemented with research done by UTGI that identified a wider group of green economy leaders and divided them into stakeholder groups. These groups came back together at the 2015 Forum to discuss findings of UTGI's research, identify gaps, and opportunities for further collaboration.
- Knoxville's current GE coalition is an assembly of stakeholder groups UTGI has so far identified as leaders in greening the economy. It includes seven main sectors (listed in order of greatest number in attendance at break-out sessions): Social and Economic Development, Government, Workforce Development, Construction, Agriculture, Transportation, and Waste Management.
- Although stakeholder groups have some clarity around ways their work contributes to greater sustainability for Knoxville, there is less clarity around a common strategy they can pursue together in a coordinated way.
- The GE coalition needs to proceed in a way that is more inclusive of grass-roots approaches to GE development. Greening strategies need to make sense for marginalized groups like the working poor, uneducated, workers, and all ages and abilities.
- In order for GE efforts to be truly progressive, the coalition needs to include voices of dissent as well as support. Otherwise we are preaching to the choir and not bringing about widespread improvements.

### **UT's Role**

- UT (and UTGI) has been identified by most stakeholder groups as a leader in fostering stakeholder coordination to grow a local GE. Local government has also been identified as a leader in progressing greening efforts.
- How can UT help foster the GE? "Well, I think number one, having us have the conversations, the whole issue of raising awareness and really pushing an agenda like this, that's key... You can inform us with your research on how to do it better. What are we missing? What do we need to be doing better? Push us...what are the possibilities? Where can we push a little harder and let's talk about it. Is now the right time to do it?" – Knoxville Mayor's Office

- UT-backed initiatives give legitimacy to greening efforts of the coalition.

### **Government Role**

- Stakeholders continue to identify government as a necessary leader in greening economy efforts. Governments at local, regional, and state levels connect constituencies and underpin green economy progress with supportive legislation, codes, regulations, policies, subsidies, and grants. In Knoxville, City government is enacting three phases for urban agriculture promotion. First, zoning regulations are permitting gardening for profit on city lots. Second, these lots can be leased and farmed. Third, there is an animal agriculture component to include things like backyard chickens and beekeeping. On a larger, more commercial side, the City is supporting Brown Field Redevelopment projects.
- Regarding building codes and regulations, stakeholders affected by these see them as necessary in order to get compliance for greener construction (energy efficiency and sidewalks, for example are easier to do when building than afterwards); however, these should not be overly restrictive either.
- One government perspective is: “A greener Knoxville includes jobs, government services, healthcare, healthy environment, a higher quality of life. All that are done in a way that is sustainable, that we don't use the resources up today and have nothing left for the future.” – Knoxville Mayor’s Office
- Transportation is crucial, but “It just takes subsidies to support mass transit. You just have to look at mass transit as the same as parks and recreation; same as police and fire. It's a public service. Not everyone uses it, but it's good for our economy and social structure.” –Transportation Stakeholder Participant

### **Economic Viability + Sustainability**

- Stakeholders see value in opportunities where greening activities make economic sense too; it’s an easier sell to the public/consumers and helps insulate them from “boom and bust” funding cycles that are typical of grant-type funding or other external funding dependencies.
- “Studies showed that for every \$1 million that you invest in energy efficiency, you produce 17 jobs, which, comparatively to other sectors, that’s pretty good. And they’re good paying jobs, too. So we’re working in East Tennessee to try to get ongoing financing for energy efficiency upgrades. And that means that utilities can go ahead and pay for the upgrades for the residents. And then they’ll repay them back through their monthly payments through their savings. So it’s really, annually, no money out of pocket. So that means it’s accessible to people of any income. So it produces jobs, and it actually makes our economy, our region, more efficient.” –Social and Economic Development Stakeholder
- The more stakeholders can pursue economically viable efforts, the less reliant they are on external funding. One strategy here is to present greening efforts with investment needs that eventually pay for themselves, thus shifting ideas that sustainability costs too much.

- “The bottom line there is how do you support the funding? Where do you find the money to sustain a program that can build out so that you can really address the need there but at the same time it’s a job creation opportunity? At first we’re talking about energy efficiency but in the long run we’re talking about renewable energy, solar projects and such, so anyway there are some models out there for funding these finance models that basically have to do with – and I’ve seen it work in other cities – basically look at the economics of saving money on your utility bill as a way to pay for those projects.” -Construction Stakeholder Participant
- There is a growing entrepreneurial sense among stakeholders in terms of approaching greening projects in innovative ways that are also economically viable. For example, Maryville College is experimenting with using local farms to provide produce to the college, including an educational component the farmers can share with students and faculty. The Knox Knoxville Food Policy Council is also conducting a Food Hub study which could feed efforts of local farms to collectively provide produce to institutions in the area.

### **Regional Scope Needs to Include East Tennessee**

- Geographic focus should include the East Tennessee Region- this requires greater coordination within the region. The region has a common biosphere and cultural melding so it makes sense to band together around these commonalities.
- The region includes small urban centers and rural communities with different needs and cultures.
- Natural capital of East Tennessee provides opportunities for the region; for example eco-tourism, agro-tourism, weather patterns bring rainfall that provides storm water as a form of natural capital.
- Considering GE from a regional perspective opens up conversations about interconnectivity of the region to other parts of Tennessee and the country. For example, a discussion about light rail transit connecting Knoxville to Nashville and Memphis fits here in a regional dialogue.
- Considering GE from a regional perspective facilitates forming a unified front to influence policy on higher levels (for example, the PACE program – Property Assessed Clean Energy - needs state legislature authorization).

### **Need for Unified Communication Platform**

- The coalition identified a need to define a communication platform for sustainability and green economy efforts that are authentic and non-neutral; however they should also be culturally appropriate for this area and include voices of workers/low income residents/locals, not just innovators/business and government leaders. Perhaps there should be some discussion about doing away with the “green” language as it might polarize certain populations and cause a resistant reaction to work that is meant to benefit everyone.

- Within this effort, less obvious “green” efforts should be included so they can be acknowledged as such. These fall through the cracks otherwise. For example, from a workforce development perspective:

“The fact is, a lot of work can be done in situations that promote the green economy, like driving a bus that is using energy-efficient fuels or operating a bicycle repair shop contributes to the green economy. There can be opportunities all along a continuum of workers and workforce needs that fit into a green economy. Sometimes we get stuck thinking about the green economy in one way, but if we cast a broader net when we think about the green economy and look at any jobs that contribute positively to the green economy, whether that’s a green job or job done in an environment which contributes to the green economy. Then, that introduces more opportunities for workers and we can think about a lot of middle skills kinds of jobs that provide opportunities for people from impoverished environments to move into opportunities along that continuum.” –Workforce Development Stakeholder Participant

“People who work in a sort facility, do they know that they have green jobs? Does the chamber know that they have green jobs? Or the mayor, or the county commission? And, to me, that’s a critical factor. Is that, we have people working in the lowest of low, the garbage handling jobs, and these are green jobs. And, I don’t think it’s perceived that way, they think they’re brown jobs, or something. The shit jobs.”

– Waste Management Stakeholder Participant

- The communication platform should be consistent for the entire East Tennessee region and sensitive to all voices while also providing a wide umbrella for sustainability activities that connect back to an increased quality of life for current and future generations: “What we need to have is to build an economy, a community where people know, when they go to Tennessee, they know what the message is. And so I’ve been trying to get us to promote Tennessee where energy begins so there’s a clear messaging... what we have to do is get our community to move in unity. And it’s a common message that it’s all going to grow because it makes sense to do those things here” –Social + Economic Development Stakeholder
- From Mayor Rogero: “When I started five years ago campaigning, one of the things from the very beginning we focused on was saying that one of our goals was to be a more sustainable, a greener Knoxville – a principle that we established early on and have continued it.”
- A larger, longer-term GE vision should include multiple viewpoints and then stakeholders can decide how best to align their own agendas with the larger vision.

### **Education + Training High Priority Need**

- Education/training about GE related concepts and behaviors is the most frequently identified need across sectors.

- GE education/training opportunities center around various foci: youth, higher education, adult education, consumer behaviors, worker training, policy-maker, collective consciousness, etc.
- Experiential learning approaches are happening to reconnect people with nature and this is seen not only in terms of well-being but can translate into knowledge that can foster a greening economy. “We've got two projects right now in various stages of completion, retrofitting those campuses [an elementary school and middle school in Blount County] from an ecological point of view. In other words, we got a landscape architect trained in ecological principles – and just finding one that's specially trained. They're few and far between. And so we're retrofitting the school's campus so the entirety of the campus now becomes a living laboratory. You're not just teaching environmental principles. You're basically teaching the child how to learn.”-Agriculture Stakeholder Participant
- Coordination is improving among service-learning efforts at UT, Pellissippi State, Tennessee College of Applied Technology, and other regional institutions to develop an East Tennessee apprenticeship network that matches training with employer needs. Maryville College also has a strong outdoor studies/tourism program and an interest in leading regional efforts in these areas. However, there is still a disconnect between student knowledge about green career path options at universities and the existence of these. They do exist, but people are not widely aware of them. We can “teach people that there are career paths in agriculture that aren't just driving a tractor.” – Agriculture Stakeholder Participant
- A cultural shift can be fostered through education/training to demystify popular misconceptions about sustainability (i.e. that it is too expensive, not cost effective, only a fad, only a politically liberal value, etc.).
- There are educational efforts that are less obvious such as the need to re-design home appraisals so they account for energy efficiency upgrades. “Appraisals are something we've heard for years now contractors screaming about. They just don't get fair appraisals and the house or the work they're doing is just going unnoticed.” –Construction Stakeholder Participant
- Educating people about their individual potential for more sustainable behaviors is still needed. For example, an Energy Star certified home will not be energy efficient if the homeowners leave windows open, leave lights on, or wash clothes in hot water. This can also take the form of farmers educating the public about healthy foods and sustainable growing practices and Knox County supporting the School Garden Program. Another example is that people do not know the true costs of throwing away garbage; there are long term environmental costs to that which are hidden. “People, I think they make decisions about waste from kind of a gut reaction, a gut feeling, without knowing – because people say recycling's not worth it, because you have to haul it. Well, we have to haul all the garbage the same way.” -Waste Management Stakeholder Participant

- “I’ve seen progress, but we do still have a long way to go. There’s still too many people that aren’t a part of – we have a growing green economy but there’s still too many people that aren’t a part of that.” –Knoxville Mayor’s Office

#### **Attract + Retain GE stakeholders**

- There is an opportunity for GE stakeholders to attract and retain green sector organizations for the entire region, but it is also important to balance this with needs of native Tennesseans, securing good paying jobs for locals, and protection of natural assets of the area.
- Small scale operations (farms and businesses, for example) are likely allies for the GE effort as they take a more context-specific approach that can fit local needs. The opposite is true of larger operations such as Aramark, who is resistant to using local produce because it claims there is too much inconsistency in supply to fit their model.
- East Tennessee can market itself as an attractive place for economic investment.

### III. NEXT STEPS

Although GE stakeholders are becoming increasingly coordinated and have suggested a common strategy be developed, it is yet unclear what this strategy should be or who should devise it. It is possible a coalition is emerging from this stakeholder group, however it may be premature to define it as such. Feedback from the 2015 Forum centered around a few main points that might suggest a way forward in taking next steps:

- A broader strategy needs to be decided before tasks are undertaken by various stakeholder groups. This strategy should align with a regional identity and be sure to include a diversity of voices in defining that so the identity is as accurate and inclusive as possible (e.g. marginalized groups as well as GE leaders should be in this dialogue). Perhaps this regional effort can be coordinated from urban centers (Knoxville, Oak Ridge, Sevierville, etc.) that fan out into rural areas. From this, the GE coalition can build a strategy/vision for greening the region and stakeholder tasks can align with this as they see fit to do so. A common “brand” or “declaration” can be articulated externally by the coalition in a consistent way. Media can be more easily engaged through this common identify, branding efforts can be crafted, policy efforts can be aligned, education/training efforts can be consistent, and long term goals can be set that engage a multitude of stakeholders all moving in the same direction.
- Within the effort toward a greater strategy, there needs to be dialogue to determine a communication platform including a common language around efforts that are authentic without being polarizing. It should be crafted using well defined language around greening/sustainable concepts, and consistently articulated through a unified “declaration” or “branding” campaign. It will also be easier to engage the media and policy makers around a unified identity and messaging.
- UTGI’s evaluative research should continue to inform green economy efforts. Stakeholder constituencies need to be engaged to ensure greening measures are consistent with their needs and that their behaviors are changing due to GE coalition efforts. This provides ways to measure success and have easily articulated success points to disseminate through media and to policy makers. Case studies could be useful here to illustrate quantifiable data.
- Grass roots perspectives need to be strengthened. Any GE Strategy should be inclusively informed, culturally acceptable, and situated within a regional and historical context. This vision will filter into stakeholder priorities and tasks, and attract additional partners from within and outside of the region who are aligned from the ground up in a long-term greening effort for all of East Tennessee.
- Most stakeholder groups agree there is a cultural shift underway in the East Tennessee region that is increasingly friendly toward sustainability. Individual stakeholder groups can take advantage of this shift to gain momentum for their education/outreach/training activities. This cultural shift is something all stakeholders can feed into in an ongoing way, even before the common regional

vision is determined. It can be done as stakeholders make efforts to share their greening efforts with those around them. For example:

“At TVA, what we’re doing, we’re having this great, big brain initiative. We’re telling our story to all of our employees because we’ve got 11,000 employees. So who better to be your brain ambassadors? Our goal is to have them go out to the community; tell their neighbors; tell their friends; tell their civic groups, et cetera. So that’s going to create even more ambassadors. So if you start internally, then grow it externally.” –Government Stakeholder

GE stakeholders are well positioned to ride this wave, however, they can do so more effectively by first devising a regional strategy and then ensuring local/individual priorities contribute in some way to the larger, longer term, wider vision. “We should be fearless leaders but we shouldn’t be reckless. We should be strategic. So where can we strategically lead in a way that we can move this forward? I think strategy is the key thing. Talk about it, use the bully pulpit, educate and then strategically figure out where you can make a move and what order you have to do certain things.” –Knoxville Mayor’s Office

- Re-engage an Advisory Board who can help think through the best way to come up with the broad, regional strategy, which was expressed as an immediate need by coalition feedback at the Forum.
- The role of UT and the UTGI seems to be evolving organically to include two main tasks of:
  - Providing information/research to stakeholders
  - Organizing stakeholders toward greater coordination (through future Forums)

While there have been some local and regional efforts to assess sustainability activities and potential, such as PlanET, Nine Counties One Vision, Innovation Valley, and others, there is still a need for greater coordination of a larger vision specific to green development. UTGI is positioned to assist with this task by creating a clearinghouse of such efforts and providing greater access to UT’s GE experts for stakeholder groups. The value of this role was articulated during the Forum and continues to be echoed in months since:

“I think what you all have been doing with this forum from the start to the finish with the interviews and collecting all that stuff and bringing all of these people together and getting those cross views, I mean, this, to me, has been the only thing that I’ve seen in economic development for the environmental movement of green whatever you want to do, this is the only thing that I’ve seen that’s attempted to bring all facets together. So I think this is a huge asset, this collective study and group.”

– Social & Economic Development Stakeholder

## **APPENDIX A**

### **STAKEHOLDER SUMMARIES**

The following seven summaries derive from an interview research project UTGI completed in 2015. Over 70 interviews were conducted and common themes identified among stakeholders. UTGI researchers presented these findings at the 2015 Green Economy Forum and summaries were also given to stakeholder attendees; they had the opportunity to comment on findings during small group break-out sessions. Although there were minor discrepancies in attitudes and thoughts about the summaries, it should be noted that the interview participants and Forum attendees were not always the same. In some cases they were, but not all. For this reason we have tried to fairly give voice to the entire mix of participant viewpoints instead of choosing one over another. Although there may be conflicting or contradictory statements in some of the data, we think this is a useful finding that confirms the main conclusion of the analysis UTGI has conducted from the interviews and Forum participation: A clear common strategy does not exist yet within each stakeholder group or across GE stakeholders. These strategies on both levels are needed.

## **SOCIAL & ECONOMIC DEVELOPMENT**

### **What is needed to grow a local and regional Green Economy (GE) that brings good jobs with good wages, benefits, and secure careers?**

- More coordination is needed among GE leaders. Many are unaware of the work being conducted within or across sectors. As a result, there is an inconsistency in goals and counterproductive efforts. This thwarts collaboration.
- Knoxville needs to position itself as an industrial locale known for its interest in and action toward sustainability. Although considerable gains have been made, especially through City efforts (e.g., becoming a Solar American Cities partner, adopting the 2012 International Green Construction Code, implementing single-stream recycling, and more), the area lacks a recognizable “brand.” This is consistent with findings that show Knoxville, despite considerable strengths, lacks recognizable industry clusters.

### **What current strategies address these needs?**

- The UT, ORNL, and TVA nexus provides a hub of creativity and energy, especially in the fields of advanced manufacturing, agriculture, energy, transportation, and medicine. Continuing to grow recognizable clusters in green industries will attract related businesses and skilled workforces.
- Innovation Valley is a partnership of eight agencies managed by the Knoxville Chamber of Commerce to implement Blueprint 2.0, which is its second five-year plan to regionally grow four industrial clusters (i.e., advanced technology and manufacturing, corporate services, creative media services, and transportation). They also have the mission of branding the area as “Innovation Valley.”
- NAI Knoxville and others are working to establish a Knoxville Chapter of the Urban Land Institute (ULI), which is a worldwide research and education organization focused on sustainable development and supported by over 36,000 members that facilitates the exchange of ideas, information, and experiences among members.
- The South Waterfront Development may be considered as Knoxville’s first “eco-district.” Built into its code are several environmentally-friendly requirements, including permeable pavement, reflective roofs, and pollution-mitigating street lights. The district is also strategically located near the Urban Wilderness project, which is a preservation initiative led by Legacy Parks Foundation that manages 40 miles of trails, 10 parks, four Civil War sites, and a variety of other outdoor activities.

### **Assets- what other current activity can be leveraged to support specific strategies in place?**

- Several assets contribute to an attractive business climate: high quality of life, low taxes, low energy costs, and the “three-legged-stool” of UT, ORNL, and TVA. The area is also centrally located between two major highways and near Charleston Port.
- Knoxville has several natural attractions, including but not limited to: close access to the Smoky Mountains, the Tennessee River, over 86 miles of paved greenway, over 5,000

acres of forest, farm, and parkland, the Urban Wilderness project, which trail's connect to Ijams Nature Center, Ross Marble and Mead's Quarries, Forks of the River Wildlife Management Area, and more. Over the last year, Knoxville also hosted a national marathon, as well as a mountain bike and paddleboard race. Such assets improve quality of life, attract millennials, and support green business growth (e.g., sporting good stores, farmers markets, eco-hotels, and locally-sourced restaurants).

### **Obstacles- what keeps these assets from being more successfully pursued at this time?**

- There is a shortage of land available for industrial development. Although land scarcity and progressive planning is driving brownfield development, strong intra-regional cooperation will be necessary to accommodate future industry growth.
- Despite the UT-ORNL-TVA nexus, the area has a tough time attracting and retaining a young and high-skilled workforce. Brain drain is perceived as an especially plaguing problem. Additionally, there is a large segment of the existing population that is not being brought up to its potential. There is a need for more and accessible training in growing fields, especially for new workforce entrants and the rural/urban poor.
- Several of the area's rural communities do not have cell phone or high-speed Internet access. This prevents a large segment of the population from fully participating in the economy, green or not.
- Low taxes, although contributing to a favorable business climate, leave many public services, such as public education, underfunded. The regressive tax also disproportionately affects low-income residents.

### **What are some suggested strategies?**

- Support the East Knox County Business Park and push developers to adopt green standards. The proposed park would help address the lack of land available for industrial development and is projected to create over 2,000 jobs.
- To address brain drain, offer more robust mentorship opportunities to young researchers and professionals exiting the University. Stronger university-industry partnerships would not only contribute to the area's skilled workforce but also to local and regional innovation.
- Leverage natural resources to strengthen the area's eco-tourism industry. Many eco-tourists traveling to the Smoky Mountains pass through Knoxville, and boosting the area's industry may entice them to visit for a while. A stronger eco-tourism industry would also promote outdoor activity and environmental awareness among local and regional residents, as well as attract millennial workers.

## GOVERNMENT

### **What is needed to grow a local and regional Green Economy (GE) that brings good jobs with good wages, benefits, and secure careers?**

- There is a need for greater recognition and institutionalization of government efforts that can green economies. Government has the ability to influence sustainability agendas across public and private sectors, as well as strengthen the area's culture of sustainability. Through internal integration of sustainability, in particular, approaches across departments, the city, and the county, can promote a holistic strategy for municipal services and thereby make incremental, long-term improvements toward greener infrastructures.
- Strong government leadership is needed to grow a GE, as well as a public culture where sustainable thinking, innovation, and practices are the norm, not the exception. Spending nearly \$600 million a year, the City government alone has a large purchasing power that can drive green jobs growth and promote sustainability goals.
- Consistent funding streams are needed that support sustainability efforts. This requires a long-term mindset, holistic approach, and balance between small, incremental steps and larger leaps toward a GE.

### **What current strategies address these needs?**

- Although lacking a clear definition, for terms like “green economy” and “sustainability,” there is a growing sense across sectors that these concepts include the interconnection of three pillars: economic viability, environmental responsibility, and social equity. Although not everyone working within the GE address all three at all times, there is a growing understanding that sustainability means more than just having environmental benefits; there's a fuller picture we're working toward.
- Governments are starting to fund permanent sustainability director positions, moving away from dependence on terms of office or political affiliations. This demonstrates a longer-term approach to sustainability across regional governments.
- Grants are being leveraged/combined to build partnerships and enhance sustainability. Although this does not solve funding challenges, it enables a broader reach for sustainability work.

### **Assets- what other current activity can be leveraged to support specific strategies in place?**

- The City has a strong sustainability agenda and is on the lookout for additional ways to support GE initiatives.
- Although cities in our region approach sustainability differently, they are aligned in some key ways, particularly through development-based goals that align green projects with taxpayer savings and networks like the Urban Sustainability Directors Network and the

Southeast Sustainability Directors Network. As collaboration through such networks increases, governments can share grant opportunities, best practices, and lessons learned.

- Public-private partnerships and other funding opportunities are available to cities to get additional support outside of their own budgets. Although short-term and inconsistent funding presents challenges, it provides stepping-stones for future sustainability work.

### **Obstacles- what keeps these assets from being more successfully pursued at this time?**

- The role of Sustainability Director is complex, somewhat experimental, especially in the Southeast, and varies in scope and practice depending on locale. There is not a “one-size-fits-all” model. Because of demands of the job, there is a high turnover rate, making long-term goals hard to realize.
- Overall, there is a lack of qualitative and quantitative data on social and economic challenges to guide sustainability efforts. Without documented and quantifiable data, it is difficult to make a strong case for funding needs or measures of effectiveness tied to funding requirements and opportunities.
- Although government sustainability activities rely heavily on partnerships with niche organizations or activist groups focused on particular aspects of the GE, it is challenging to work with them because they are sometimes unwilling to compromise or consider other driving priorities (outside of their narrow goals) for a collaborative project. This impedes progress, creates tension, and builds frustration. Competing priorities abound among partners and conflicts of interest can present real challenges. For example, energy efficiency is a higher priority for energy producers, but for energy distributors efficiency might take a back seat to delivery concerns.

### **What are some suggested strategies?**

- Governments can benefit from more people working with a systems-thinking mindset, specifically to communicate, organize, and synthesize information from specialists across the GE. With so many different stakeholders, it would be helpful to operate in a way that identified stakeholder strengths, and then utilized those strengths by assigning tasks that require them for grant or other opportunities.
- Governments could collaborate more on sustainability plans, strategies, and public awareness campaigns. They could, for example, work together on regional agriculture initiatives that feed into GE development. They could share costs and benefits of gathering data that could guide their sustainability priorities.
- Develop language around GE concepts and sustainability that is locale-appropriate and resonates with citizens. This language could incorporate messages about the ways greening the economy translates into taxpayer savings (i.e., literally and in broader senses, such as more livable cities, preservation of resources, higher wages, etc.)

## WORKFORCE DEVELOPMENT

### **What is needed to grow a local and regional Green Economy (GE) that brings good jobs with good wages, benefits, and secure careers?**

- There is a need for greater knowledge and awareness about what the GE is, what qualifies as a green job, and why it is important. Due to the lack of knowledge, job seekers are not asking for green jobs training, and workforce developers are not offering training specific to green jobs. As a result, there is a misalignment between green markets and green jobs.
- The cycle of funding for green jobs needs to move away from a boom and bust tendency. For example, a surge of funding in 2008 from both ARRA and TVA led to a boom in green energy-related training (e.g., solar installation and weatherization), which consequently led to a bust in 2012 when funding dried up. Boom and bust funding creates unstable markets and unsecure jobs.
- There is a need for stronger labor participation. There are plenty of unions and members, but they do not have a strong voice.

### **What current strategies address these needs?**

- Several workforce developers are teaming up with each other and industry to better align training with employer needs. For example, CAC Workforce Connections, Pellissippi State Technical Community College, Chattanooga State Community College, and Roane State Community College recently teamed up to apply for a U.S. Department of Labor grant to develop an E. Tennessee apprenticeship network.
- Initiatives like the Smarter Cities Challenge, KUB's Round It Up, and TVA's Extreme Makeover are ramping up jobs in construction (i.e., weatherization). This work will promote awareness about energy efficiency (and even climate change), particularly among the least educated and most vulnerable populations. However, many of these programs are funded with one-time grant money, and there is concern this will contribute to the boom and bust cycle. KUB's Round It Up program and its sustainable funding stream was praised as an exception.

### **Assets- what other current activity can be leveraged to support specific strategies in place?**

- There are a variety of training providers: STEM and magnet academies offer career paths and provide project-based learning for 8<sup>th</sup>-12<sup>th</sup> graders; training centers offer adults several employment services, such as occupational skills training, resume-building workshops, and job search assistance; community colleges offer workforce development programs and provide employment-related services to both students and businesses; and, universities provide more advanced skills training and educational opportunities.
- The 2015 Workforce Innovation and Opportunities Act (WIOA) entered into force this summer. WIOA is less restrictive, in terms of age and income, than it's

predecessor, the Workforce Investment Act, resulting in a larger segment of the population eligible for training services. WIOA also mandates trainers to demonstrate career pathways, pushing core agencies, such as the Department of Education, Job Corps, Families First, and several others, to better align interests and goals. There is also a greater emphasis placed on business engagement and on-the-job training (e.g., apprenticeships).

- The State's Drive to 55 is creating more opportunities to develop a skilled workforce and drive economic growth through three initiatives: (1) TN Promise offers two years of tuition-free community or technical college to recent high-school graduates, as well as dual enrollment and credit for those still in school; (2) TN Reconnect provides continuing education for adults; and, (3) TN LEAP provides grant money to workforce developers and industry to form "alignment groups" that address skill gaps.

### **Obstacles- what keeps these assets from being more successfully pursued at this time?**

- Overall, there is a lack of training specific to green jobs. However, workforce developers are motivated to learn, because they see its value and green is marketable.
- Perhaps because of the large number of trainers, there is redundancy in services provided. There is no formal assessment of who is providing what services, and there is no measure for consistency among or effectiveness of the various programs. This makes it difficult for jobseekers to know where to go for what services.
- Despite the number of initiatives set to ramp up jobs, particularly in construction (described above), there is concern the jobs will not go to local residents. Furthermore, there is concern that those that do will not be sustaining, because most are funded with one-time money.

### **What are some suggested strategies?**

- Increase awareness of green jobs by strengthening the link between GE and STEM jobs. STEM has already successfully done a lot of boundary work, and the GE would benefit from aligning efforts. Many local and regional organizations have already partnered with STEM academies.
- Develop a green jobs aptitude test and/or curriculum to help training facilities assess jobseekers propensity for green jobs. This would educate both trainers and jobseekers and aid in conformity among training programs.
- Develop a database of jobseekers and employers to better match up the two. This would raise awareness among jobseekers about the opportunities available, especially in the trade industries like construction and manufacturing.
- Increase local and regional employment by creating provisions (e.g., in grants) that prioritize work by local residents.

# CONSTRUCTION

## **What is needed to grow a local and regional Green Economy (GE) that brings good jobs with good wages, benefits, and secure careers?**

- There is a need for greater political and cultural commitment to energy efficiency and green building. Area leaders need to bolster advocacy, especially to raise awareness among consumers.
- There is a need for a stable incentive structure that prioritizes local and regional green jobs. Green jobs, especially in solar installation and weatherization, have been characterized by a boom and bust tendency, which creates unstable markets and unsecure employment. For example, a surge of funding in 2008 from both ARRA and TVA led to a boom in green energy-related jobs, which consequently led to a bust in 2012 when funding dried up.
- As newer and greener codes are adopted, a wide variety of stakeholders must be trained and educated. This includes: developers, owners, architects, engineers, consultants, builders, commissioners, and codes officials.
- There is an unfilled demand for skilled workers. Many paid apprenticeships continue to go unfilled. This is especially true for masonry but also for electric and carpentry.

## **What current strategies address these needs?**

- The City of Knoxville spearheaded the adoption of the 2012 International Green Construction Code, pushing forward safe and sustainable building standards. Other important City initiatives include: becoming a DOE Better Buildings Challenge Partner and pledging to reduce the City's energy consumption by 20 percent by 2020; partnering with Pathway Lending to provide \$10 million for business energy-efficiency projects; winning an IBM Smarter Cities grant to study reducing emergency utility bills through weatherization and education; and, winning a \$15 million TVA Extreme Energy Makeover Award to weatherize approximately 1,300 low-income homes.
- KUB's new Round It Up program, an outcome of the City's Smarter Cities project, provides a sustainable fund for low-income weatherization. The program, implemented earlier this spring, rounds KUB customers' bills up to the nearest dollars and uses the funds to improve the area's aging housing stock. Customers can opt-out, but even if 50 percent do, an estimated \$600,000 will be generated annually.
- Working with the City of Knoxville, the E. Tennessee Chapter of the U.S. Green Building Council (USGBC) organized a series of education lunch events and a half-day seminar to help the adoption of the 2012 International Green Construction Code. The purpose of the events is to raise awareness through discussion and collaboration and to provide industry workers with strategies to get more information.

**Assets- what other current activity can be leveraged to support specific strategies in place?**

- The City provides significant leadership in energy efficiency (see strategies above), which could address some local business needs with sufficient planning. There is concern that resultant jobs will not go to local residents, and because many of these programs are funded with one-time grant money, they will contribute to the boom and bust cycle.
- Several area leaders are setting examples and raising awareness about the importance of energy efficiency by constructing green buildings. For example, at UT, new constructions and renovations that cost more than \$5 million must meet the minimum requirements of LEED. Some argue that area leaders could bolster leadership by not just meeting LEED standards but also by earning the certification; the certification serves a symbol of their dedication and leadership.

**Obstacles- what keeps these assets from being more successfully pursued at this time?**

- The boom and bust incentive structure creates unstable markets and unsecure jobs. This leaves little room for concrete planning within the industry.
- Compliance with continuously updated green building standards is difficult. Architects, engineers, contractors and others have to provide additional services often with little or no additional fees. Developers, owners, and buyers are resistant to price increases due to greener standards, and codes officials have to be trained to check for additional specs. Uneven compliance and enforcement creates liabilities for all parties involved.
- Green building materials, although decreasing in price overall, are often expensive and have a low return on investment over the short-term. Consumers tend to focus on short-term benefits and have limited knowledge about the multiple and often long-term benefits of energy efficiency.

**What are some suggested strategies?**

- Prioritize green building and certifications in new developments, especially those at UT, the City, and Knox County (e.g., East Knox County Business Park, Cherokee Farm Innovation Campus, and the Cumberland Avenue Corridor Project).
- Increase awareness among consumers by: showcasing energy efficient systems in buildings (e.g., LED signs that depict energy/water savings); including energy scores on real estate listings; and, implementing marketing campaigns that focus on the apolitical benefits of green building, such as the E. Tennessee Chapter of the USGBC's successful Green School Initiative, which centered on health benefits.
- Hire additional codes officials who specialize in green construction codes. This would alleviate many of the area code officials who are overburdened by having to learn and enforce additional specs.

# AGRICULTURE

## **What is needed to grow a local and regional Green Economy (GE) that brings good jobs with good wages, benefits, and secure careers?**

- A greater public awareness is needed of the connections between: food and health, sustainable agriculture and a clean environment, and green businesses and a healthy economy.
- Knoxville and surrounding areas need to expand access to healthy and sustainably-produced food. Knox County has 20 or so “food deserts,” many of which are located in low-income areas where residents have difficulties obtaining the transportation needed to shop at healthy markets and groceries.
- Farm-retail relationships need to be strengthened. Because local produce is often seasonal and subjected to weather changes, farmers have difficulty consistently supplying products, which complicates retailers’ ability to plan.

## **What current strategies address these needs?**

- Knoxville’s Market Square Farmers’ Market and many periphery markets are connecting local farms to the public. For several years now, markets have been growing along with consumer shifts towards local and sustainable agriculture. Consumers are increasingly interested in the sources of their food and understanding the long-term impacts of agricultural practices. During the season, at least one market is open every day.
- Overall, there is a supportive political and business climate fostered in large part by the City administration. Rezoning efforts have supported urban agriculture initiatives like backyard chickens and community gardens. Residents in all income brackets are gaining easier access to healthy, fresh foods.

## **Assets- what other current activity can be leveraged to support specific strategies in place?**

- The UT Extension, an outreach unit of the Institute of Agriculture, provides research-based information to local farmers and community members looking to learn more about farming and organizational management. The Extension has become a pipeline for skilled and talented farmers and a great community resource.
- As the first of its kind, the Knoxville-Knox County Food Policy Council has served as a model for nearly 200 subsequent food policy councils across the nation. The Council is instrumental in maintaining a network active in food sustainability, and, along with UT Extension, Plan ET, and others, has conducted numerous local studies, examining important issues, such as land use, economic impacts, and food costs.

- There is increasing entrepreneurial activity that aligns profit-seeking small farming operations with GE principles. The Farm-to-Table and Slow Food movements, for example, are impacting the local restaurant and food truck industry. Also, younger generations are increasingly interested in becoming farmers, which is helping meet growing consumer demands.

**Obstacles- what keeps these assets from being more successfully pursued at this time?**

- Several popular sentiments among residents present challenges to industry growth: the expectation that food should be cheap; lack of knowledge about connections between human/environmental health and agricultural practices; and, the notion that sustainable agriculture is elitist.
- Sustainable farmers do not always have the time or skills for managing and marketing a business. While this work could be outsourced, it often too expensive. Although business support is available through organizations like the Knoxville Chamber of Commerce and the Knoxville Entrepreneur Center, there is a lack of awareness about these services or how to access them.
- Once sustainable agriculture businesses are established, it is often difficult to maintain them. Reasons include difficulties in: getting products into local retailers; gaining a loyal customer base; gaining profit with higher priced goods; and, providing training sufficient for the next generations of farmers.

**What are some suggested strategies?**

- Knoxville has a growing eco-tourism industry, which if leveraged, could help grow agro-tourism in the area. Resident's simultaneous interest in urban revitalization and local farming also provides opportunities to connect people to outdoor recreation and sustainable agriculture.
- Farming operations could boost revenue and alleviate food deserts by partnering with food trucks to provide low-income populations (where transportation is often an obstacle) access to healthy and fresh foods. SNAP benefits could be aligned with such an effort.
- There are several important services, which if institutionalized, would benefit the area. Three of perhaps the most important include: (1) building a USDA inspected slaughterhouse, which could substantively contribute to the area's economy by enabling animals to be slaughtered locally; (2) implementing a citywide composting program (only limited services are currently available to industry and residents); and, (3) start a food hub to improve efficiency and create market opportunities.
- To help food access, urban revitalization, and small business growth, the City could lease vacant lots to community groups to grow both food and ornamental gardens for either sale or personal use. Such a program would also allow prospective farmers (who can't yet afford their own land) to grow on empty city-owned lots for a contract period, thereby "greening" the space until the City has other plans for it.

## TRANSPORTATION

### **What is needed to grow a local and regional Green Economy (GE) that brings good jobs with good wages, benefits, and secure careers?**

- Transportation should keep pace with other economic development. This is necessary for transportation of both goods and workers. Public transportation should be integral to City and County development projects and be widely accessible (e.g., by walking, biking, and carpooling).
- An increase in access and availability of public transportation is necessary in order to address a variety of social, environmental, and economic concerns. Among these are: reducing reliance on fossil fuels, improving air quality, desolating pockets of poverty, reconnecting racial divides, and improving mobility for populations who do not have access to private vehicles (e.g., the youth, low-income, and elderly).
- Alternate fuels should be utilized more for public transportation needs. Municipal service providers have the opportunity to demonstrate strong leadership by adopting progressive attitudes and strategies. Fleets of public, alternative-fuel vehicles would symbolize the area's commitment to sustainability. UT, ORNL, and TVA, in particular, could build alternative-fuel fleets.

### **What current strategies address these needs?**

- There is a growing commitment to integrate public transportation into the GE. For example, the City recently hired an alternate transportation engineer to spearhead new efforts, as well as converted the transportation director position from a contractor to a permanent city-funded role. Also, the Knoxville Regional Transportation Planning Organization (TPO) has several GE-related initiatives, including car-pooling incentives, "placemaking" efforts, and an "open streets" initiative, which converts streets into places for a variety of activities like socializing, bicycling, walking, and more.
- The City recently applied to Smart Growth America and was granted technical assistance in implementing transit-oriented development (TOD). TOD is a type of community development that encourages the integration of amenities into neighborhoods through mixed-use zoning. Through a site visit and numerous formal and informal conversations, several suggestions were given: coordinate future development with transit expansion; work with the public and private sector to implement work; and, work towards incremental improvements while considering possible leaps forward.
- Public transportation providers are actively seeking to increase access and quality of services: Knoxville Area Transit (KAT) is adding Sunday services and additional routes; KAT is currently seeking public input on reconfiguring trolley routes; and, the Knoxville-Knox County CAC Transit is actively working with KAT to provide transportation services to underserved populations.

**Assets- what other current activity can be leveraged to support specific strategies in place?**

- The City is supportive of innovative transportation strategies. There is a willingness to experiment with new ideas, such as in the “Open Streets” event and that took place earlier this month, and the Smart Growth America study on TOD.
- Political cooperation across city, county, and regional roles is increasing, forming a hospitable climate for sustainable planning alignments in the region. For example, the Tennessee Region Roundtable is spearheading planning efforts and partnerships, such as the one between the TPO and the Knox County Health Department, and is bringing a holistic approach to planning efforts. The Regional Mayors Caucus also recently expanded from 5 to 16 counties and began tracking key indicators using the shared resource of the ETindex database.

**Obstacles- what keeps these assets from being more successfully pursued at this time?**

- Local culture is often resistant to planning initiatives and public transportation. Although this seems to be changing, it is a slow shift. This makes it hard, especially for City and County efforts, to push and justify projects that lack public support.
- Public transportation lacks consistent funding. Compared to other publicly funded services, public transportation has a history of being cut first. Once transportation is lagging behind other economic development components, it’s hard to catch up.
- Although various experts are actively working to improve public transportation, they tend to operate in silos, with limited connections to each other and other departments who could add input. This results in duplication of work, misaligned efforts, and missed opportunities for cooperation.
- There is a lack of best practices that can be applied to Knoxville. Few case studies have been done on cities this size, resulting in few examples Knoxville can model itself after.

**What are some suggested strategies?**

- If public transportation were user-friendlier, demand might increase. Suggestions include: more consistent bus times, a smart-pass system, tax benefits for riders, employee incentive programs, structural improvements to bus stops, and Wi-Fi connections. Some also suggesting using public instead of school buses to socialize youth to public transit.
- Greater regional cooperation could result in a long-term and cohesive transportation plan that may include airport service and routes between regional cities. Public transportation could be considered as a driver of intra-regional economic growth.
- Improvements should continue for pedestrian/bike friendly/bus accessible zones and routes. As TOD suggests, such access boosts ridership, revenue, and development.

# WASTE MANAGEMENT

## **What is needed to grow a local and regional Green Economy (GE) that brings good jobs with good wages, benefits, and secure careers?**

- A cultural shift is needed to: recognize that improper waste management not only harms the environment but is also detrimental to human health; increase the consumer-base for improved waste disposal practices; and, to view waste not as disposable but as valuable materials that could be turned into revenue.
- Waste management teams need to diversify and include experts across a variety of fields (e.g., engineering, geology, chemistry, and logistics). They also need to include generalists able to synthesize resultant information into well-informed, executable, and measurable strategies.
- The area would benefit from a citywide composting program. Currently, only limited services are available to industry and residents. Such a program would not only divert waste from the landfill but also produce a valuable product for the agricultural industry.

## **What current strategies address these needs?**

- In 2011, the City of Knoxville won a federal grant and contracted with Waste Connections of Tennessee, Inc. to implement what is now a very successful household curbside single stream recycling program. For those not participating in the program, the City, working with Kroger, Goodwill, Waste Connections, and RockTenn Recycling, offers several recycling drop-off supercenters where residents can recycle plastics, aluminum cans, paper, glass, and more. The City also sponsors yearly events that offer free recycling for hard-to-recycle items, such as computers, televisions, and medications.
- For Knox County residents, Waste Connections offers subscription curbside recycling. Residents can also recycle at one of seven drop-off centers operated by the County's Solid Waste administration. The County also hosts several yearly recycling events, and they also offer "green event planning," which has helped events, such as Earth Fest, Brewers Jam, and the Market Square Farmers' Market, reduce their ecological footprint.
- Several innovative partnerships are being forged between private waste management companies and industry to improve waste flows. More attention is being paid to how byproducts from one industry can be used as raw materials by another. Because this approach is fiscally and socially responsible, it is an attractive option for industries looking to profit from their waste or needing to comply with increasing standards.

## **Assets- what other current activity can be leveraged to support specific strategies in place?**

- Standards put forth in the International Organization for Standardization (ISO) 14000 series are elevating sustainability awareness among industries with waste streams to manage. Introduced in 1996 and often updated, ISO 14000 is a series

of voluntary environmental management standards for organizations looking to improve waste flows.

- Mirroring national trends, area municipalities are experiencing a generational shift in leadership. As younger generations, which grew up in a culture with a greater environmental awareness, continue to move into civil services, an integrated sustainability ethic is becoming more pervasive across government departments.
- The area has several material processing centers, such as RockTenn, Shamrock Industries, and 5R processors. These centers create a hub a recycled material stock that is increasingly valuable to green businesses and eco-preneurs.

**Obstacles- what keeps these assets from being more successfully pursued at this time?**

- Because land is cheap in the Southeast, it costs little to send waste to landfills, perpetuating a “throw-away” mentality. This is especially problematic when municipalities own landfills, because there is little incentive to explore alternative waste streams.
- Among area residents, there is resistance to recycling, which prevents full participation in the recycling opportunities offered. Additionally, when residents do not properly sort their waste, recycling supplies are polluted, requiring extra labor to remove the items that don’t belong. This raises the costs of recycling, making services more expensive.
- Financial success for many waste management companies is tied to commodity markets. When commodities like cardboard are down, this negatively affects bottom-lines and increases risk.

**What are some suggested strategies?**

- Many of the area’s waste could be captured and repurposed for revenue. Funds could be used to provide subsidies to keep recycling operations afloat during low commodity markets. This would ensure a steady flow of recycled material, which is necessary to attract and retain businesses that rely on such stock. This could position Knoxville to more aggressively market itself as a hub of recycled materials.
- Next year is critical in defining what waste collection in Knoxville will look like for the next five years. Green waste (e.g., brush, trees, and other organic matter), recycling, and municipal solid waste collection will all get rebid. Although the City is actively looking for ways to improve waste flows, greater public support may push leaders to institutionalize more sustainable waste management practices.
- Private business and public services could think more creatively about how sustainable practices can improve bottom-lines. For example, long-term cost reductions often come from making energy efficiency upgrades, contracting with local businesses, and investing in a skilled and educated workforce.

## **APPENDIX B**

### **STAKEHOLDER BREAK OUT GROUP REPORTS FROM 2015 FORUM**

The following stakeholder groups attended the 2015 GE Forum and included representation from these organizations:

1. Social and Economic Development
  - TVA
  - Highlander Center
  - SOCM
  - Appalachian Voices
  - GreenVillageGreen.com
  - Sustainable Future
  - ARIES
  - East Tennessee Quality Growth
  - UT Service Learning
  - UT Research and Engagement
2. Government
  - City of Knoxville, Office of Sustainability
  - UT Sociology/UTGI
  - Contractors
3. Workforce Development
  - Knoxville Leadership Foundation
  - CAC AmeriCorps
  - SOCM
  - LMN Stem Academy
  - Knox County Oak Ridge Labor Council
4. Construction
  - Tennessee Renewable Energy and Economic Development
  - KEAP Green Jobs
  - Home Builders Association of Greater Knoxville
  - Appalachian Renewable Resources
  - US Green Building Council
  - CAC Housing and Energy Services
5. Agriculture
  - Blount County Soil Conservation District
  - Maryville College/Mountain Challenge LLC
  - ETPRI
  - UT College of Agricultural and Natural Resources
  - Knoxville Knox County Food Policy Council
  - Knoxville Permaculture Guild
6. Transportation
  - Knox Regional Transportation Planning Organization
  - UT Bredesen Center

## 7. Waste Management

- County Mayor's Office: Knox County Solid Waste
- UT Agriculture/Economics Department
- Waste Connections, Division Sales

Using the stakeholder summaries in Appendix A as a baseline for discussions, participants at the 2015 Green Economy Forum attended small stakeholder groups. Facilitators guided discussion of participants in order to complete worksheets. This appendix includes completed worksheet reports from those sessions.

## Stakeholder Breakout Group Worksheet: Social and Economic Development

<b>Strategy</b>	<b>Resources Needed</b>	<b>Obstacles</b>	<b>Assets</b>
<i>What would help grow the local and/or regional GE?</i>	<i>What is needed to execute the strategy?</i>	<i>What are the issues to work through?</i>	<i>What could be leveraged to support the strategy?</i>
<p>Regional identity exploration which would include a variety of voices, focusing on workers in particular. Special consideration must be given to the uniqueness of the E. TN biosphere. This would include sharing strengths and opportunities for the future.</p>	<p>Education (public, regionally, at the university level, voters)</p> <p>Meeting space</p> <p>Media</p> <p>Leadership</p> <p>UT Green Economy</p> <p>Local partners</p> <p>Clearinghouse database</p> <p>Funding</p> <p>New businesses</p>	<p>Attracting new businesses and business expansion without merely offering tax incentives and low wages</p> <p>Resistance to change within business culture</p>	<p>A listen-first mentality among participants</p> <p>Clean energy jobs study from Vanderbilt</p> <p>Research out of ORNL</p> <p>Knowledge of Green Economy participants</p> <p>Local cultural assets</p> <p>Regional natural assets</p>

## Action Plan

<b>Strategy</b>	<b>Tasks</b>	<b>Success Criteria</b>	<b>Commitment</b>
<i>In what order should the strategies be pursued?</i>	<i>What are the steps to implementing the strategy?</i>	<i>How should the success of each task be measured?</i>	<i>Who is going to do it? You? Others?</i>
<p>Regional identity exploration which would include a variety of voices, focusing on workers in particular. Special consideration must be given to the uniqueness of the E. TN biosphere. This would include sharing strengths and opportunities for the future.</p>	<p>Bringing partners together.</p> <p>Learn from the experiences of 9 counties &amp; Plan ET</p> <p>Cultivate and support candidates for office who support this vision</p>	<p>Numbers (how many participants, diversity of participants)</p> <p>Dissenters show up</p> <p>Establishing an idea of what folks think they need in their local economy</p> <p>Not a laundry list, but rather an identity</p>	<p>UT</p> <p>Green Economy initiative</p> <p>The larger regional community</p> <p>Chambers of commerce</p> <p>Unions</p> <p>Churches</p>

## Stakeholder Breakout Group Worksheet: Government

<b>Strategy</b>	<b>Resources Needed</b>	<b>Obstacles</b>	<b>Assets</b>
<i>What would help grow the local and/or regional GE?</i>	<i>What is needed to execute the strategy?</i>	<i>What are the issues to work through?</i>	<i>What could be leveraged to support the strategy?</i>
Caution against developing a neutral language to convey what a sustainability and green economy means. The “spirit” of the language must be authentic.		Avoid jargon  Prevent confusion  Help people from all backgrounds understand the necessity of greening the economy	
Demystify false beliefs about the economy and sustainability  Improve education on the subject  Work from a systems-thinking mindset, communicating, organizing, and synthesizing information from specialists across the GE.	More government collaboration on sustainability plans and public awareness.  Get government to bring actors to the table to extract information and needs. Have them to be willing to help in raising awareness.	Government, ourselves, business, etc.	Do some of what we’ve already been doing. Partner with the likes of TVA, KUB, the city, “across the valley,” etc. Also, listen to what stakeholders have to say.  Better communicate with some of the groups and organizations left out of the conversation.

<p>Aid in developing new technology.</p> <p>Look to other cities and state to how they utilize tax incentives for GE and sustainability. Austin and Georgia and how they are incentivizing rain water collection (rain water abatement). New dorm rooms on campus utilizing rain water.</p> <p>The PACE (Property Assessed Clean Energy) Program is useful in the tax regard. Research on how we can get PACE to work here in Knoxville. This would be a long-term strategy. This will be an important one to continue researching.</p>	<p>Use taxes to incentivize contractors and builders to use green technology. It's expensive, so what other reasons would builders have if they can't sell these things. So, give tax incentive to those buying the house, not building it.</p>		<p>The PACE (Property Assessed Clean Energy) Program is useful in the tax regard. Research on how we can get PACE to work here in Knoxville. This would be a long-term strategy.</p>
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<p>Get everyone, from “citizens” to “customers” to want to do something sustainable every day. Getting them to understand why it’s important is necessary.</p> <p>General agreement that Government is far ahead on these matters, at least in Knoxville, than businesses and the public.</p>			
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## Action Plan

<b>Strategy</b>	<b>Tasks</b>	<b>Success Criteria</b>	<b>Commitment</b>
<i>In what order should the strategies be pursued?</i>	<i>What are the steps to implementing the strategy?</i>	<i>How should the success of each task be measured?</i>	<i>Who is going to do it? You? Others?</i>
<p>Long term versus short term. Things like the PACE effort, tax incentives, and educational measures are all things that can be worked on in the long term, but begin in the short term.</p>	<p>Right now, the government is doing a better job than business to ensure the progression of the green economy and sustainability.</p> <p>There should be better communication between those in Oak Ridge and those in Knoxville since that's where many of the GE actors are. There is little dialog between GE actors in the two areas.</p> <p>TV, Radio, etc. can all be used to spread messages.</p> <p>KUB, TVA, etc. energy fairs for promotion.</p> <p>Incentivize training and education, especially for lower-wage workers. Try to get the integrated into the GE effort.</p>	<p>Public opinion surveys. We could "aggregate" some of this data from a national sample and "disaggregate" some to the state level. It might provide us with a baseline. Research shows people will go green, especially if there is a financial reason to do so.</p> <p>Focus groups could be helpful with assessment.</p> <p>Take different approaches with business versus the public.</p> <p>Have ambassadors similar to those of TVA's. Have them go out into the community and inform people on these things. Jon Shefner references the KEEM workshops here.</p> <p>Try to get follow up evaluations from the public as well.</p>	<p>There are already efforts pushing the PACE strategy forward. The City of Knoxville is already pushing it as well.</p> <p>University a good option for seeking public opinion via surveys and focus groups. Also playing their role in education. Find the money to help the university do these things.</p>

## Stakeholder Breakout Group Worksheet: Workforce Development

<b>Strategy</b>	<b>Resources Needed</b>	<b>Obstacles</b>	<b>Assets</b>
<i>What would help grow the local and/or regional GE?</i>	<i>What is needed to execute the strategy?</i>	<i>What are the issues to work through?</i>	<i>What could be leveraged to support the strategy?</i>
<p>Building awareness of what “green economy “ is to diverse audiences/stakeholders (workers vs. employees, industry, gov. etc. )</p> <p>Renaming “green” jobs -it seems like trends -they are jobs/careers -labeling jobs as green can be problematic (language) and polarizing</p> <p>Grassroots (ground up not top down)</p> <p>Appropriate branding</p>	<p>Shared understanding between all stakeholders Need a space for outreach and education Marketing plan Employers Workers Career centers and places for training Extension officers (knows the community, offer recourses for job seekers)</p>	<p>Shared understanding between all stakeholders Access language/ vocabulary Funding/ Programmatic (many diff. agendas)/ Cultural (diversity) silos Lack of outreach for training Money Lack of adequate advertising of training opportunities</p>	<p>Training availability</p>

Increase Service learning/ Apprenticeship/ mentorship opportunities -improve partnership between private sector and k-12 and others with limited education background	Willingness to collaborate (mentors, employers) Matching Platform/databases communicating	Limited Number of opportunities	Broad range of community organization Tennessee work ethic University resources
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### Action Plan

<b>Strategy</b>	<b>Tasks</b>	<b>Success Criteria</b>	<b>Commitment</b>
<i>In what order should the strategies be pursued?</i>	<i>What are the steps to implementing the strategy?</i>	<i>How should the success of each task be measured?</i>	<i>Who is going to do it? You? Others?</i>
Building awareness	Need a champion Continued networking Outreach to communities More forums like this	Participation from diverse audiences /stakeholders	Everyone CAC AmeriCorps Labor movement Educators (K-grey) Community organizations SOCM Workforce development boards/staff
Increase Service learning/ Apprenticeship/ mentorship opportunities	Identifying schools and other places where participants will come from identify employers and mentors	Increasing participation and job success	Employers Universities and colleges in the area TCAT Secondary schools AmeriCorps and government entities Educators (k-grey)

	Creating the communication platform		
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### Stakeholder Breakout Group Worksheet: Construction

<b>Strategy</b>	<b>Resources Needed</b>	<b>Obstacles</b>	<b>Assets</b>
<i>What would help grow the local and/or regional GE?</i>	<i>What is needed to execute the strategy?</i>	<i>What are the issues to work through?</i>	<i>What could be leveraged to support the strategy?</i>
Improving/Expanding Knoxville's Round it Up Program and/or additional programs for weatherization	<p>More funding—funding dries up/need to recapitalize funding</p> <p>Local foundations who can contribute program costs/contribute to their mission of creating jobs</p> <p>Community education with help from non-profits</p> <p>Education about long-term savings associated with weatherization</p>	<p>How can we raise awareness among working poor/low income individuals?</p> <p>Loan payments are difficult to manage. How many people will take advantage?</p> <p>KUB not willing to continue/expand program</p>	<p>Leveraging stakeholders to expand these programs beyond simply energy reduction and helping pay utility bills</p> <p>PACE Financing</p> <p>TVA Weatherization program w/Federal money</p> <p>E SCORE Programs</p>
Development of a training center in Knoxville/Tennessee to provide weatherization training and certifications	<p>Homebuilding associations that would assist in hiring the folks with training/certifications</p> <p>Standardization of requirements in all areas of Knoxville/TN</p> <p>Need to incentive the training and continued education of builders/contractors</p>	<p>Training is great, but not without jobs</p> <p>Some certifications are not required in order build/upgrade</p> <p>Create the jobs before/simultaneously as you train workers</p> <p>Different municipalities have</p>	<p>National certifications that can be used state by state</p> <p>Insurance companies</p> <p>Need consistency across the board regarding building requirements</p>

		<p>their own codes</p> <p>Not enough individuals to conduct the tests/energy audits. Big corporations garnering the contracts to conduct the tests</p>	
Increasing awareness about energy efficiency.			
<p>UT as an exemplar of green jobs/ sustainable development/energy efficiency</p> <p>Switching to solar energy—less emphasis on coal burning power plants</p>	Illustrating the benefits of green development to UT	Board of Regents not placing enough emphasis of sustainable building and development	

## Action Plan

<b>Strategy</b>	<b>Tasks</b>	<b>Success Criteria</b>	<b>Commitment</b>
<i>In what order should the strategies be pursued?</i>	<i>What are the steps to implementing the strategy?</i>	<i>How should the success of each task be measured?</i>	<i>Who is going to do it? You? Others?</i>
Consolidating requirements for energy efficiency/standardization of certifications	<p>Reducing the bureaucratization of the industry</p> <p>Make it easier to play ball with TVA</p>	<p>State laws that make dealing with TVA easier</p> <p>Having organizations working under the same umbrella</p>	<p>Study other successful incentives. Lobbying from a statewide perspective, an apolitical perspective—both in terms of green/sustainable dialogue.</p> <p>Collection of all the stakeholders—getting everyone on the same course.</p>
Changing the political and cultural commitment.	Need to change the political and cultural commitment of a variety of different spheres—legislature, KUB, individuals, etc.	Promoting businesses that utilize energy efficiency from a marketing standpoint (in addition to tax credits etc.)	

## Stakeholder Breakout Group Worksheet: Agriculture

<b>Strategy</b>	<b>Resources Needed</b>	<b>Obstacles</b>	<b>Assets</b>
<i>What would help grow the local and/or regional GE?</i>	<i>What is needed to execute the strategy?</i>	<i>What are the issues to work through?</i>	<i>What could be leveraged to support the strategy?</i>
<p>Grow business skills</p> <p>Training program</p> <p>Keep books, accounting, etc.</p> <p>Factual data on a small scale</p>	<p>Extension Service</p> <p>Identify, publicize, create a means for business rudiments</p> <p>Pipeline Ed. (Literacy in Urban/Rural areas)</p> <p>Teach about career paths in Ag</p> <p>Teaching staff in primary and secondary schools need training</p> <p>Scholarships</p>	<p>When there is business training, do they know about it, do they take advantage of it?</p> <p>Everything runs on champions, when the champion goes away everything goes away.</p> <p>Separation between STEM and Ag</p>	<p>Ag in the Classroom</p> <p>School Garden Program</p> <p>College fairs</p> <p>Vols Teach Program</p>
<p>Building off of the public interest that is focused on this theme “right now”</p> <p>Want to buy food from local sources</p>	<p>Need to hunt for local farms</p> <p>Get the farm or grower to be an educator</p> <p>Leverage against the corporate model of cheap foods</p>	<p>Push back from Aramark, said it couldn’t be done (local food)</p> <p>When we think public we usually think individual or family (need to shift to meso-level)</p> <p>Misinformation</p>	<p>Food hub study (how to aggregate food from little farms to the institutional level)</p>

<p>Connection of this kind of food/activities to physical health, rates of obesity</p>	<p>Kids will eat food/vegies when they grow them themselves</p> <p>Self-financing schools with food?</p> <p>Legislation for small farms to be small scale slaughterhouses.</p> <p>City leasing small/abandoned lots for community gardens.</p> <p>Edible Landscape/food forests/ also for animal consumption</p> <ul style="list-style-type: none"> <li>- Native grasses, rain water collection</li> <li>- Education Ideals</li> </ul>	<p>Primary and Secondary schools (may not?) be able to buy directly from these small farms</p> <p>No slaughterhouses within 150 miles of Knox.</p> <p>Tennessee goes by federal standards.</p> <p>Soil contamination/ testing is staggeringly expensive</p> <p>Not wanting to cut trees</p> <ul style="list-style-type: none"> <li>- Who pays for it and how?</li> </ul>	<p>Local producers who want to supply beef</p> <p>Milk/crop/meat share for younger people to help and work</p> <p>Apprentice program</p> <p>Investigate Urban Ag rules</p> <p>Need for centers of excellence</p>
<p>Agro-tourism</p>	<p>Monthly events</p> <p>Field Trips</p> <p>Farm City Day</p> <p>Botanical Gardens</p> <p>Educating the Educator (K-12)</p>	<p>Zoning issues</p> <p>Schools under pressure to provide funding (even for bus tickets)</p> <p>Attendance declines because of no money to attend</p> <p>Do teachers have the time in their curriculum to incorporate this?</p>	<p>Turning a campus into a living laboratory</p> <p>Hire an outdoor educator</p>

## Action Plan

<b>Strategy</b> <i>In what order should the strategies be pursued?</i>	<b>Tasks</b> <i>What are the steps to implementing the strategy?</i>	<b>Success Criteria</b> <i>How should the success of each task be measured?</i>	<b>Commitment</b> <i>Who is going to do it? You? Others?</i>
Building off of the public interest	Building the champions  Smaller private high schools  Small colleges	Number of farms selling local increases  Increase in local purchase of this food  Surveying the restaurants on local food purchases  What percent of the food in your diet comes from this?	Maryville College  ETPRI
Growing Business skills	UT Extension Services  Needs to be more of a connection/marriage between these efforts  Local commercial banks could play a role in helping to get local clients involved	Growth in bank business for local farms  Increase in grad/cert rates	UT Extension Services  Small regional farmer coops (10 mile area groups/associations)  Farm Bureau

<p>Connecting to physical/mental health</p>	<p>Edible and/or native school yards</p> <p>Food not lawns</p> <p>Edible Streets /landscaping</p> <p>Urging kids to get outside</p> <p>Build on the coolness factor</p>	<p>Number of school gardens</p> <p>Reduction in obesity rates</p> <p>Local Health departments track?</p>	<p>Knox County Food Council</p> <p>Ben Epperson</p> <p>Knoxville Permaculture Guild</p> <p>Maryville College (outdoor studies and tourism)</p> <p>No child left indoors</p> <p>UT Environmental Landscape Design Lab</p>
<p>Agro-Tourism</p>	<p>Set criteria for what this is</p> <p>Farm to Table</p> <p>Regional Branding</p> <ul style="list-style-type: none"> <li>- Ride your bike to breweries and restaurants</li> </ul> <p>Specific branding of greater Knox (Blount County, etc.)</p> <p>Including other countries and doing a regional branding (East TN)</p> <p>Develop Truffles</p>	<p>Coming up with a name that brands the whole area and is not Knox specific.</p> <p>Becoming a gourmet food capital.</p> <p>Increasing the variety of activities for people to do.</p>	<p>Slow Food</p> <p>Farm Bureau Women's Association</p> <p>Farmer's Markets</p>

### Stakeholder Breakout Group Worksheet: Transportation

<b>Strategy</b>	<b>Resources Needed</b>	<b>Obstacles</b>	<b>Assets</b>
<i>What would help grow the local and/or regional GE?</i>	<i>What is needed to execute the strategy?</i>	<i>What are the issues to work through?</i>	<i>What could be leveraged to support the strategy?</i>
Improvements to existing infrastructure; ex. GPS on buses	<p>Changes to ordinances, laws ex. Changes to language in policy</p> <p>Changes to cultural understandings of public transportation</p> <p>People needed: policy-makers on board; elected officials; municipal staff; business community</p> <ul style="list-style-type: none"> <li>- Well-designed technology</li> <li>- Good branding/marketing strategy</li> </ul>	<p>Cost</p> <p>Current policy</p> <p>Laws on all levels (local, state, federal)</p> <p>Policies of institutions</p> <p>Cultural and social barriers</p>	<p>Support for these initiatives in appropriate areas</p> <p>Support from allies in gov't</p>
Real model of what green economies, sustainable development involve			

Change to people-oriented development and land use policies			
Changes to state laws – across sectors to support Green Economy issues			

## Action Plan

<b>Strategy</b>	<b>Tasks</b>	<b>Success Criteria</b>	<b>Commitment</b>
<i>In what order should the strategies be pursued?</i>	<i>What are the steps to implementing the strategy?</i>	<i>How should the success of each task be measured?</i>	<i>Who is going to do it? You? Others?</i>
Infrastructure improvements	Changing zoning ordinances  Mixed-use ordinances  Promote good examples; partner with communities have expressed support  Well-designed tech and infrastructure; sustainable tech processes	Changes actually happening	Coalitions of various stakeholders

## Stakeholder Breakout Group Worksheet: Waste Management

<b>Strategy</b>	<b>Resources Needed</b>	<b>Obstacles</b>	<b>Assets</b>
<i>What would help grow the local and/or regional GE?</i>	<i>What is needed to execute the strategy?</i>	<i>What are the issues to work through?</i>	<i>What could be leveraged to support the strategy?</i>
<p>Behavior strategy: Pay as you throw: In most communities, trash is unlimited. You pay your taxes and trash gets taken away. With PaYT, you fill up a cart, and then you have to pay only. This increases diversion from landfills.</p>	<p>Requires votes by legislative bodies.</p> <p>Treat waste like a metered disposal; a certain number of bags are free, and then after these bags there is a charge.</p> <p>Volume/waste based pricing, like power, gas, Internet, and water.</p>	<p>Packaging issues; it is not always the fault of the consumer how items are packaged/how much waste is involved.</p> <p>Cultural resistance to charging more for waste. Customers have been lost to Waste Connection in places like Chattanooga because of this resistance.</p> <p>Cultural resistance: the term can be perceived as a negative for people who believe garbage should be free.</p>	<p>We have curbside pickup.</p> <p>“Cart contents” can be a more positive phrase, meaning you fill up the cart.</p>
<p>Larger, broader economic strategy: Waste management is an expensive commodity. Not paying for how much you use is an issue. People do not pay for how much they use, like electricity or water. It’s out of balance.</p>	<p>The actual cost of all of this needs to be more widely known (generating, moving, separating, burning, burying trash). The value of the material, people who touch it and handle it and move it.</p>	<p>No incentives for reducing waste; people who put out less waste are treated the same as those who waste more. We pay the same in property taxes.</p> <p>Cultural barriers; resistance to recycling, and sorting with</p>	<p>We have a large amount of data to look at who uses more.</p> <p>Frequency of pickup, size of container for commercial businesses gives incentive to reduce waste. This is not available for residential areas.</p>

	<p>Waste reduction: the only way to save on hauling. Cultural shift: recycling as a cultural shift must be triggered through emotions.</p> <p>More education for recycling options. Information being attached to monthly bills.</p> <p>One truck instead of multiple driving through neighborhoods.</p>	<p>recycling.</p> <p>Companies may go out of business if they aren't large enough to compete.</p> <p>Many businesses are not willing to provide the same service under the same conditions (Example: Automated side-load trucks. Not all companies want to switch to this because it is cheaper to have workers on the back, outside the truck)</p> <p>Large industrial companies will not do business with downstream companies if ISO 14000(example: Volkswagon will not buy from CTA in Kentucky unless CTA will show a sustainability program that has legs). Culture at the corporate level not translating to the local.</p> <p>No clear labels to let consumers know when they are buying recycled goods. Labels that do exist can be tricky.</p>	<p>The large company that does win creates jobs. Outcome should ultimately be an increase in recycling and decrease in waste. If you had to pay for waste, you'd figure out a way to decrease it. It's not economically viable now.</p> <p>Sorted recyclables have economic value. They're commodities (at the end of the sort facility).</p>
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<p>Tree, storm wood and tree wood should be handled. This is a solid waste that can be repurposed in a multitude of ways.</p>	<p>Private sector invested in higher value (or perceived higher value) materials.</p>	<p>Somebody needs to pay for this.</p>	<p>City of Knoxville spends roughly \$1,000,000 per year picking this wood up. It gets reused as mulch.</p> <p>Waste-to-energy is being considered.</p>
<p>Franchising of waste management: creates zones, and all people in those areas would use one company in that area.</p>	<p>Votes by legislative bodies.</p> <p>One large truck driving through a community, as opposed to three or four.</p> <p>Tax dollars support the actual companies (contracted by the companies).</p>	<p>Perceptions that it may be a threat to companies already operating.</p> <p>Anti-government mentality about not wanting people to make rules about who they have to use for trash pickup.</p>	<p>Franchising could benefit those already operating by giving them limited space to work within.</p> <p>Doing this cuts down on trucks driving through areas which would then help alleviate wear and tear on roads. It has an effect on driver wages and fuel as well.</p> <p>Example: City of Knoxville; this is franchised, and you can use this as a model. Example of County Franchising: Rural Metro ambulance and fire. It's not something that everyone has to pay for, but if you want to pay for it, that's the one you get.</p> <p>We have the means to do this; we have the businesses.</p>

## Action Plan

<b>Strategy</b> <i>In what order should the strategies be pursued?</i>	<b>Tasks</b> <i>What are the steps to implementing the strategy?</i>	<b>Success Criteria</b> <i>How should the success of each task be measured?</i>	<b>Commitment</b> <i>Who is going to do it? You? Others?</i>
<p>General economic issue (mixes with the cultural)</p>	<p>Starting Point: Education: give people information on choices. Start at children.</p> <p>Education: what things really cost, what they are really worth (example: glass is worth nothing, cardboard is worth a lot, but they're not treated in this way)</p> <p>Incentivize people to increase recycling and decrease waste through financial incentives.</p> <p>Increase networking between recyclable material processors, downstream industrial users and manufacturers to facilitate the reuse of recyclable goods.</p> <p>We need to know who is buying and using recyclable materials. Distribute this information to consumers so they know who to buy from.</p>	<p>We can look towards other types to see what they have done: Rural Metro, City of Knoxville.</p> <p>When recycling frequencies are more than garbage frequencies, you know it's working.</p> <p>If you're recycling more products than you are throwing away. This will involve both a cultural shift and an economic incentive shift.</p> <p>On a household level, there isn't much we can do. At the community level, we have good numbers and measures of what tons go where. We have the data for this.</p> <p>Clarification: we would like to reduce total waste (including recycling). If we can move waste to recycling, that's good,</p>	<p>Consumers, local business people, industrialists, academia. Everybody needs to work together.</p> <p>Consumers need to commit to buying from companies that recycle goods.</p> <p>Waste Connections community partners with many events to educate people on the importance of recycling to facilitate this cultural shift.</p> <p>Waste Connections can also commit to speaking events at schools to facilitate education and a cultural shift.</p>

		but it's better to reduce total waste.	
Franchising (pathway to recycling)	<p>Increase availability of recycling.</p> <p>Reduce the duplication of services (where now we currently have multiple people operating in one area)</p>	<p>When recycling frequencies are more than garbage frequencies, you know it's working.</p> <p>If you're recycling more products than you are throwing away. This will involve both a cultural shift and an economic incentive shift.</p> <p>Reduction in rate of the cost of waste services.</p> <p>Reduction of redundancy.</p>	<p>Individuals have to let their county commissioners know that they support this and that they will vote for it. Politically, it won't happen if votes don't happen.</p>
Pay as you throw	<p>Education; much the same as the general economic issue.</p>	<p>Look to cities who have done this before.</p> <p>Reduction of waste. Increase in recycling.</p>	<p>Academics and educators must begin teaching people young about the importance of recycling and waste reduction.</p>