<table>
<thead>
<tr>
<th>Page Range</th>
<th>Section</th>
</tr>
</thead>
<tbody>
<tr>
<td>379-381</td>
<td>INTRODUCTION</td>
</tr>
<tr>
<td>382-389</td>
<td>GOALS &amp; STRATEGIES</td>
</tr>
<tr>
<td>390-405</td>
<td>ACTION TABLE</td>
</tr>
<tr>
<td>406-413</td>
<td>CONTEXTS</td>
</tr>
<tr>
<td></td>
<td>a. selected city comparison</td>
</tr>
<tr>
<td></td>
<td>b. equity &amp; resiliency</td>
</tr>
<tr>
<td></td>
<td>c. health &amp; wellness</td>
</tr>
<tr>
<td></td>
<td>d. funding priorities</td>
</tr>
<tr>
<td></td>
<td>e. regionalism</td>
</tr>
<tr>
<td>414-419</td>
<td>GLOSSARY</td>
</tr>
<tr>
<td>420-421</td>
<td>SOURCES &amp; REFERENCES</td>
</tr>
</tbody>
</table>
Tulsa is the primary city within Green Country, which gets its name from the abundance of trees and water bodies that occupy the northeastern quadrant of Oklahoma. Being integrated into such a fertile and beautiful landscape, as well as being positioned beside the powerful Arkansas River, Tulsa has become a leader in the appreciation and the conservation of the natural environment. However, the conservation of Tulsa’s natural resources has not always been the priority. For decades, Tulsa’s livelihood depended nearly completely on the extraction and processing of oil and natural gas, and before that the land was largely used for ranching and farming. As the city developed over time, forests that had been removed began to grow back, and with it, valuable habitat for endemic species of Green Country. Improvement in the water quality of the Arkansas River and other streams, while still a concern today, has been dramatic as new sanitary forms of waste management have become standard practice.

Life Along a Prairie River

The Arkansas River and other water bodies in Tulsa create opportunities for residents to enjoy nature, but flooding remains a significant concern. Major flooding events in the 1980s, and most recently in 2019, have led to enormous investments in infrastructure and emergency preparedness. These investments have mitigated much of the localized flooding that occurred in the major floods of the 1980s, but there is little that can be done in the way of infrastructure as it relates to the flooding of the Arkansas River. Upstream from Tulsa, the Keystone Dam and Reservoir manages the flow of the Arkansas River to generate electrical power. In 2019, major rain events in the drainage basin of Keystone Lake led to significant dam releases, well above normal flow rates, and well beyond the lengths of time that existing levees are built to handle. The levee system survived this 500-year rain event, but another event of this magnitude could spell disaster for those land uses and residents of areas protected by the levee system. In addition to the flooding of the Arkansas River, these rain events caused tributaries like Bird Creek to overflow. This led to the inundation of abandoned landfills in Oxley Nature Center, scattering refuse across the nature preserve and polluting important habitat. Moreover, this imagery of waste from the 1960s littering our nature preserve in 2019 illustrates that the work to protect our natural places is not done, and the effect of decisions we make today in Tulsa will be felt by future generations.

Natural Habitats

The Arkansas River and stream corridors in Tulsa are not just pathways for water to flow through the community, but they provide some of the strongest natural habitats for the wide array of local wildlife. Tulsa has a wealth of bird species, including the Bald Eagle, an emblem American Bald Eagles congregate along the tree-lined shores and bluffs of the Arkansas River.
#001

Posted by Nancy Moran on 11/30/2022 at 4:59pm [Comment ID: 432] - Link

Agree: 4, Disagree: 0

I just want to thank everyone who worked on this! Great job! A huge lift! I hope each goal can be placed on a timeline!

#002

Posted by Barbara VanHanken on 02/13/2023 at 3:26pm [Comment ID: 930] - Link

Type: Suggestion

Agree: 1, Disagree: 0

Yet we have two legacy refineries that have been operating since 1907. The land and water near the two sites is saturated with hydrocarbons from the two refineries. Each refinery has a RCRA permit to pollute the Arkansas river on a regular daily basis with waste products from their operations today. There is also daily seepage of petroleum related substances that are entering the river now.
of the success of the Endangered Species Act, which can serve as a salient example of what can be done as a community if efforts are focused towards conservation.

Habitat is not strictly limited to the large undeveloped areas of the city; in fact, many areas of town have significant tree canopy that provides much needed habitat for birds, mammals, insects, and more. A well-developed urban tree canopy is of high importance to Tulsans, and, particularly in Oklahoma, is a major selling point for attracting new residents. Another benefit of a lush tree canopy is a reduced urban heat-island (UHI) effect, which helps mitigate against heat-related health risks. The impacts of extreme rain events are mitigated by trees, shrubs, grasses, and other flora that stabilize soils and uptake water, reducing erosion. Trees and other plants also improve local air quality, and many studies have shown that access to nature leads to improved mental health outcomes for residents. As the effects of global climate change continue to expand, the importance of a tree canopy likewise increases.

Concerns for natural environments arise regularly in discussions of new development—what will the impact be on plants and wildlife? These are important considerations in the development review process, and there are opportunities for conservation through recommendations in the comprehensive plan.

Pollution in All of Its Forms
Issues of air quality and other types of pollution have been identified as problems at all levels of government. Whether considering the impact of neighborhoods adjacent to busy highways or the remediation of properties polluted in past decades, where and how things are built has significant implications for the quality of life and health of Tulsans. Tulsa has historically been at the forefront of energy resource management. A city does not get labeled the “Oil Capital of the World” by sheer luck; early in its history, Tulsa positioned itself to be a processor of oil and gas, rather than simply focus on the extraction of the raw materials. This long-term approach to the energy industry ensured that, even after the wells dried up in the region, Tulsa’s relevance to the success of the industry persevered. However, the polluting effects of the oil boom are still felt today with soil contamination in areas where active wells no longer exist.

Remediation of brownfield sites is a priority for the City of Tulsa, both to reduce the risk of negative health outcomes in the community and to improve properties to facilitate economic development in needed locations. Similarly, efforts by community groups like Up With Trees have led to buffering of major transportation corridors with vegetation, reducing the risks associated with ground-level ozone and particulate matter. These approaches are among the many remediation and mitigation solutions available to address pollution concerns in Tulsa.

Sustainability Planning
Presently, the City of Tulsa has no dedicated staff to work on issues of sustainability, whether internal policies of the City of Tulsa or broader community-wide issues. In the past, the City has had an Office of Sustainability, which led to the development of the 2011 Sustainability Plan; however, that office transitioned into a different function, focused primarily on social resilience.
#003

Posted by Kent G. on 02/15/2023 at 9:44pm [Comment ID: 948] - Link
Type: Suggestion
Agree: 1, Disagree: -2

"P. 374 there is Serious lack of debate on global climate change causes. Advocates for another government Office of Sustainability creating even more layers of unelected bureaucrats implementing policies that are not law or a distortion thereof. SEE page 374.375, 394, 399, and 407. Creates another level of bureaucracy creating roadblocks to free enterprise and property rights. How many committees before it's the one that breaks the camel’s back?"

#004

Posted by Nancy Moran on 11/30/2022 at 4:25pm [Comment ID: 423] - Link
Type: Suggestion
Agree: 6, Disagree: -3

I am glad that climate was mentioned in relation to increasing our tree canopy. I would like to see mention made of the heat-trapping greenhouse gases generated by the oil and gas industry. The devastating effects of climate change are in the news daily. Children are dying of hunger at alarming rates due to climate change-related droughts and natural disasters which reduce water and food supplies. Our state is also in a drought and this has also affected our agricultural output as well. This past year was particularly bad for the number of ozone days due to the combination of excessive heat and fossil fuel-generated air pollution. CLIMATE CHANGE SHOULD HAVE ITS OWN SECTION!!!! IT IS CENTRAL TO THE VALIDITY AND RELEVANCY OF THIS DOCUMENT!! LET’S GIVE IT THE PROMINENCE IT DESERVES GIVEN THAT IT IS AN EXISTENTIAL THREAT!! We need a climate action that is robust! A citizen advisory committee should include those who have historically been most impacted by climate change, including those who are most vulnerable to adverse effects of climate change including teenagers, the elderly, the economically disadvantaged, and members of the BIPOC community.

#005

Posted by Barbara VanHanken on 02/13/2023 at 3:35pm [Comment ID: 931] - Link
Type: Suggestion
Agree: 3, Disagree: 0

There are many other species that are dependent on the flora and fauna along the Arkansas for their survival.
have many species of game fish including the endangered shovelnose sturgeon and an occasional paddlefish. Multiple species of birds besides the magnificent Bald Eagle call the Arkansas their home including the pelicans, least terns, migrating ducks and geese. We could have signage that would ask fisherman to not use lead weights that can poison many birds including the protected Bald Eagles. This would be a very helpful educational sign for the public and the eagles.

#006

Posted by Jay Pruett on 03/05/2023 at 4:56pm [Comment ID: 1133] - Link
Type: Suggestion
Agree: 0, Disagree: 0

Not all trees are good for wildlife habitat. Non-native, invasive species should not be planted - they out-compete native trees for resources such as sunlight and water and preferred by native wildlife for food. Non-native trees such as Bradford pears should not be planted and/or removed in native habitat areas. A informational list of invasive trees and other plants species is available for anyone to use at: https://www.okinvasives.org/plants-database.

Reply by Jay Pruett on 03/05/2023 at 4:59pm [Comment ID: 1134] - Link
Type: Suggestion
Agree: 0, Disagree: 0

and are NOT preferred by native wildlife for food.

#007

Posted by Mary Jackson on 03/05/2023 at 12:04pm [Comment ID: 1112] - Link
Type: Suggestion
Agree: 2, Disagree: 0

signage could also be added to remind people to properly dispose of their used fishing lines, another danger to both birds and other wildlife. This could be done in conjunction with a Leave No Trace Campaign (currently being implemented by River Parks at Turkey Mountain). The Corps of Engineers at one point even had containers placed up at Keystone Dam for fishermen to dispose of their lines.
and equity efforts. Both of these functions are important for achieving a more sustainable and equitable local government and community.

In order to have a consistent and focused approach to addressing sustainability concerns in Tulsa, dedicated staff and resources need to be re-established. An update to the 2011 Sustainability Plan is also needed to include issues that are missing in the current version of the plan, and to craft the plan in a way that is measurable, clear, and implementable.

Tulsa has a wealth of community members with a desire to address sustainability concerns who can provide excellent guidance on policy directions the City can take to be a successful steward of environmental resources, and to be prepared for issues related to climate change resiliency. Local organizations, such as Sustainable Tulsa, have laid the groundwork for the City of Tulsa to seamlessly join in with the community in addressing these issues to leave a better Tulsa for future generations.

KEY IDEAS

Subject Matter Experts
Tulsa Planning Office staff met with numerous subject matter experts in the fields of water and flooding, wildlife and habitats, energy resources, pollution, and sustainability. This included federal and state agencies, regional and local government staff, non-profits, private entities, and community organizations. Key ideas that were raised in these discussions to be addressed by plan recommendations include:

- Tulsa residents should be safe from and prepared for flooding events along the Arkansas River and other localized flooding.
- Existing wildlife and habitat should be protected and enhanced where possible.
- New forms of energy, such as solar and wind, as well as new transportation options like electric vehicles and buses, should be encouraged.
- Waste and pollution should be managed in ways that do not negatively impact residents or the environment.
- The City should update the 2011 Sustainability plan and set goals and metrics to monitor progress.

Community Members
Through numerous public engagement efforts, residents of Tulsa provided a great deal of input, much of which was in alignment with what was heard from subject matter experts. Key ideas heard through community engagement include:

- Pollinator populations (bees, butterflies, etc.) should be increased and maintained in both natural and urban spaces.
- The Arkansas River should be prioritized as a strong natural asset for the city.
- Tulsa should make efforts to use 100% renewable energy.
- Trees should be preserved and replaced if they are uprooted for development.
- Electric vehicles and EV infrastructure should be promoted more in Tulsa.
- Environmental stewardship education and training should be promoted and accessible for all Tulsans.
- Public transit should be promoted as a sustainable transportation option.
Please promote and support the Partners for a Cleaner Environment program better and more often.

https://www.cityoftulsa.org/PACE

Please promote the Stormwater Quality Save Our Streams program better and more often.

https://www.cityoftulsa.org/SOS

Please promote the Yard by Yard program better and more often.

https://www.okconservation.org/yardbyyard

Please promote the Crow Creek Community program better and more often.

https://www.facebook.com/CrowCreekCommunity

Please support the Blue Thumb program better and more often.

https://www.bluethumbok.com/
Has any thought been given to better utilizing or expanding the steam loop system within the downtown inner dispersal loop as a means to operate and meet energy demands more sustainably?


https://www.vicinityenergy.us/locations/tulsa


#011

Posted by Nancy Moran on 11/30/2022 at 4:32pm [Comment ID: 424] - Link

It is not enough to encourage new forms of energy. The City of Tulsa must set a goal to power all its electrical needs with clean renewable energy by 2035 and all other sectors by 2050. Given that scientists have been warning about climate change since 1986, it is clear that encouragement is not enough. We need a climate action plan!

#012

Posted by Green Country Sierra Club on 01/26/2023 at 8:29pm [Comment ID: 831] - Link

The refineries are awful - when will Tulsa face the fact that they are a barrier to the enjoyment the environment and imperil our health. When will the acid rain permits, RCRA, Superfund sites, discharges into the River be acknowledged?

#013

Posted by Kent G. on 02/15/2023 at 9:45pm [Comment ID: 949] - Link

P. 375 Tulsa should make efforts to use 100% renewable energy, and promotion of EV infrastructure in Tulsa. This is economically not feasible as even EIA of US energy Administration predicts at best 44% renewable by 2050.
If you are serious about this statement, "Existing wildlife and habitat should be protected and enhanced where possible. then you must oppose TNR for feral cats. In the United States alone, outdoor cats are responsible for the death of approximately 2.4 billion birds every year. Birds are wildlife. Domesticated cats are NOT wildlife. I believe the exclusion of Tulsa Audubon's advice concerning the devastating issues of TNR of feral cats is not rational, but emotional. Please remove emotion from decisions concerning the protection of our native wildlife.

Renewable energy is a pipe dream. Windmills are a joke. One windmill will never produce the amount of energy used in building it. It takes numerous acres for wind, or solar, power, and these industries are subsidized by the tax payers. If they could stand alone, they would not need to be subsidized. Though it sounds good, the reality is it's not feasible and is a huge waste of money.

This is false. Windmills typically generate 20-25 times the amount of power it took to produce them, and have a payback period of usually less than 3 years.

Renewable Energy must be and will be the energy of the future because electric grids must be carbon free by
2035 and all energy must be clean and renewable by 2050 to avoid the worst consequences of Climate Change.

Page 126 of Public Service Company of Oklahoma's latest operating plan shows that it will add 2100 MW of new Solar Power and 2800 MW of new Wind Power by 2031, and all but 750 MW of Solar Power will be added by 2025. You can access this report at https://drive.google.com/file/d/1to0dylfEZh9rwh1AjdNOjh1fby7vviTh/view?usp=sharing

#016

Posted by Polly Robinson on 01/08/2023 at 8:08pm [Comment ID: 686] - Link
Type: Suggestion
Agree: 1, Disagree: -5
On 14th St. from S. Peoria to S. Utica, there are 3 wide lanes and a parking lane. This is more street than is ever needed. If the southern most lane could be taken out and replaced by either green space / space for pollinator-friendly plants or mixed-use housing, it could reduce noise pollution and improve safety (by reducing speeding) while creating a more useful space. In addition, a crosswalk or light at 14th and S. Peoria would encourage people to cross safely to the Maple Park trail while also reducing the speed of cars, making this a more walkable area. Thank you for all your work on this incredible plan. I saw an article of how Boston placed their streets underground and made their city all green space. It is healthier for everyone. It gave me hope for Tulsa; if we can do even half of what your plan has in it, our city will make back the money, because people will want to visit here and make Tulsa their home! Thank you!

#017

Posted by Aaron Griffith on 12/13/2022 at 11:37am [Comment ID: 610] - Link
Type: Suggestion
Agree: 27, Disagree: -1
Tulsa should expand consultation, collaboration and coordination efforts with Tribal Conservation, Wildlife and Natural Resources officials with jurisdiction inside municipal boundaries and the Tulsa County Conservation Commission.

#018

Posted by Green Country Sierra Club on 01/26/2023 at 8:37pm [Comment ID: 832] - Link
Type: Suggestion
And it should be free to use

Yes! It is so important that we take inventory of our greenhouse gas emissions across sectors in order to effectively set goals and measure progress. I agreed that it is long overdue that dedicated staff and resources are established in order to make hopes and plans reality.
Goal 1

Tulsa is prepared for flooding events from the Arkansas River, other streams, and heavy rain events.

The Arkansas River and other streams in Tulsa have flooded many times throughout the city's history. Major infrastructure improvements were made after devastating floods in the 1980s, but the flooding in 2019 shows that there is still reason to be vigilant in the approach to flood mitigation in Tulsa. Effective coordination with the many agencies that contribute to emergency response will be critical in the mitigation of flooding effects and the prevention of loss of life.

Strategy 1.1
Maintain strong relationships with agencies associated with emergency response actions related to the Arkansas River flooding or other flooding events.

Strategy 1.2
Ensure that Tulsa’s Emergency Operations Center (EOC) and associated emergency response infrastructure is state-of-the-art and built to accommodate the needs of the Emergency Response team.

Strategy 1.3
Maintain the integrity of the shoreline of the Arkansas River to protect residents, businesses, and other community assets that are at risk of flooding and flood-related damages.

Strategy 1.4
Ensure a high-quality, informative, and accessible communications strategy to provide residents with the information they need to prepare for and respond to potential flood events.

Strategy 1.5
Work with the Army Corps of Engineers, the state’s federal delegation, and other stakeholders to ensure the long-term integrity of the levee system.
Without knowing everything about erosion, we know that development on the river will lead to harm.

Any addition or enhancement should be of local design.
Goal 2

Tulsa’s stormwater systems continue to be a model for cities around the globe because of innovative approaches to increase effectiveness and efficiency.

How the City of Tulsa addresses stormwater flow has major implications for the city’s ability to remain resilient during flooding events and heavy rains. Presently, the City of Tulsa is one of only two cities in the United States with a Class 1 rating by the National Flood Insurance Program, which grants residents some of the best rates for flood insurance in the country. New techniques and technologies will only help the City of Tulsa to enhance its position as a global leader in stormwater management.

Strategy 2.1
Identify and incorporate best practices into Tulsa’s system to continue to be a global leader in stormwater management.

Strategy 2.2
Continue to employ GIS to track assets, help inform decisions, and establish information and data sharing protocol with the Tulsa Planning Office and INCOG to better facilitate collaboration.

Strategy 2.3
Champion policy as part of the OneVoice regional legislative agenda to advocate for better support for the state’s stormwater program.

Strategy 2.4
Review and rewrite the stormwater ordinance to reflect current understanding, ensure maintenance and ownership of the system is adequately addressed, and provide clear policy for infill development.

Strategy 2.5
Incorporate elements of the Low Impact Development (LID) Manual into capital improvement projects.

Strategy 2.6
Continue to coordinate with Engineering Services on any project affecting the City’s stormwater infrastructure.

Strategy 2.7
Maintain strong working relationships between the City of Tulsa Streets & Stormwater department and other departments, authorities, and private vendors.
Utilize green infrastructure plantings particularly to decrease nutrient pollution to prevent harmful algae blooms. It is easier to address nitrogen through focused plantings, than phosphorus, which requires specific techniques and practices.

Perhaps this needs to be in Strategy 3

Would like to see Low Impact Development strategies required for all new large surface parking lots.

Residential customers pay a stormwater fee based on water usage, which doesn't really make sense. This fee should be based on the amount of impermeable surface area of each property (rooftops, parking lots, driveways, etc.) because this water will become runoff, which directly impacts the stormwater system. Customers could then get discounts if they use rain barrels, install permeable pavement, reduce the size of driveways, plant trees, etc.
Goal 3

Tulsa’s water resources are protected from environmental disruption and are managed in ways that promote conservation.

Tulsa has numerous water bodies, including the Arkansas River, streams, lakes, and reservoirs. Ensuring that these water bodies are uncontaminated and unobstructed will lead to reduced risks associated with pollution and flooding, as well as conserve wildlife habitat in the city.

Strategy 3.1
Promote educational opportunities to residents regarding best practices for managing water resources on their properties.

Strategy 3.2
Ensure that new development includes design considerations to reduce the amount and rate of runoff.

Strategy 3.3
Be proactive with approaches and technologies to identify sources of water pollution before streams become polluted.

Strategy 3.4
Ensure that the potential negative effects of construction and development in floodplains is mitigated through engineering guidance.

Strategy 3.5
Incorporate water quality features into all future flood management projects.

Strategy 3.6
Promote the importance of regional water bodies protection and public use, such as raft races, fishing, boating, and kayaking.
Strategy 3 is really important! Many sections of the Arkansas in Tulsa are already impaired. I think land owners could also benefit from information on best practices for fertilizer, as there is already a lot of phosphorus and other techniques could be used to make it available as opposed to applying more.

There are two legacy petroleum refineries operating daily. It is commonly know by many citizens that this is a massive source of air and water pollution. This must be a priority to shut down and clean up this dangerous source of contamination to the 7.32 miles of the Arkansas River where the public is being encouraged to recreate. It is also common knowledge that this will be another Super Fund site that will take decades to restore the land, water and air along the Arkansas. The federal government has approved two RCRA permits for these refineries to pollute the river daily! This is a tragic abuse of our prairie river which is absolutely beautiful in its natural state.

Education should also include the benefits of native plants which require less water and reduce runoff due to their deep root systems especially when compared to bermuda grass.

There is great concern that the segment of the Arkansas River flowing through Tulsa has unsafe levels of e-coli
bacteria. 

This means that it's very risky for people to engage in water recreation activities in the Arkansas River.

#029

Posted by pamela gotcher on 01/08/2023 at 7:57am [Comment ID: 682] - Link
Type: Suggestion
Agree: 13, Disagree: 0

Education should include significant information about the contaminants in our soils and watersheds and how to adopt practices to reduce those contaminants.

#030

Posted by pam gotcher on 01/08/2023 at 8:00am [Comment ID: 684] - Link
Type: Suggestion
Agree: 13, Disagree: 0

We need approaches that not only identify contaminants but be proactive in training, education and enforcement efforts to prevent contaminants

#031

Posted by pamela gotcher on 01/08/2023 at 7:58am [Comment ID: 683] - Link
Type: Suggestion
Agree: 11, Disagree: 0

and reduce the amount of contaminants

#032

Posted by Jay Pruett on 03/05/2023 at 5:05pm [Comment ID: 1135] - Link
Type: Suggestion
Agree: 1, Disagree: 0

Oklahoma has no natural lakes. All of our large water bodies are the result of dams having been built and are thus reservoirs.
Goal 4

Tulsa’s existing wildlife habitats are conserved and improved through enhanced stewardship and consideration during the development review process.

Many different species of wildlife call Tulsa their home. Whether species that are endemic to the region, or those that are passing through during a migration, Tulsa’s natural environment provides viable habitats. Existing habitats should be conserved and enhanced where possible, including through consideration in the development review process.

Strategy 4.1
Seek ways to maintain and increase Tulsa’s urban forest through programs and development guidance.

Strategy 4.2
Work with local partners to promote practices and standards that protect Tulsa’s wildlife species and their corresponding habitats.

Strategy 4.3
Support ongoing pollinator conservation efforts and develop pollinator-promoting initiatives and incentives.

Strategy 4.4
Encourage the planting of native plants throughout the city, and provide educational information to residents about harmful gardening and lawn management practices.
#033

Posted by Sue Lovelace on 11/24/2022 at 10:20am [Comment ID: 353] - Link

Agree: 0, Disagree: 0

Did you mean "thorough"??

#034

Posted by PS on 03/04/2023 at 3:24pm [Comment ID: 1109] - Link

Type: Suggestion

Agree: 7, Disagree: 0

If we are serious about protecting Tulsa's wildlife species, it's critical to recognize non-native, invasive species that are detrimental to our native species and need to be addressed responsibly, including working with other city depts including TAW.

#035

Posted by Barbara VanHanken on 02/13/2023 at 3:40pm [Comment ID: 932] - Link

Agree: 8, Disagree: 0

I believe educational signage could be a benefit to the public to identify what plants and animals they may be seeing and the importance of responsibly disposing of their trash.

#036

Posted by pam gotcher on 01/08/2023 at 8:04am [Comment ID: 685] - Link

Type: Suggestion

Agree: 25, Disagree: 0

engage with groups including Tulsa Audubon, Barred Owls of Midtown, and local wildlife and conservation supporters who can help provide information on practices and standards to better protect our native wildlife species and their habitats.

#037

Posted by Barbara VanHanken on 02/13/2023 at 3:41pm [Comment ID: 933] - Link
The City horticulture department could propose some pollinator gardens added to the area.

#038

Posted by **Jay Pruett** on **03/05/2023** at **2:37pm** [Comment ID: 1121] - Link
Type: Suggestion
Agree: 2, Disagree: 0

The planting of non-native, invasive species of plants should be avoided. Their reproduction can cause serious degradation to native habitats, both nearby and at some distance from the plantings. The Oklahoma Invasive Plant Council has an excellent list of invasive plants that should not be planted in OK, along with information on their recognition, negative impacts to habitats and control methods. This list is available to anyone at: https://www.okinvasives.org/plants-database. It is highly recommended that this database of invasive plants be consulted prior to decisions on plantings by COT.

#039

Posted by **Mary Jackson** on **03/05/2023** at **12:23pm** [Comment ID: 1114] - Link
Type: Suggestion
Agree: 3, Disagree: 0

City/County of Tulsa should implement a buyback program of invasive Bradford pear trees similar to what has been done in Kansas City.

#040

Posted by **Sheryl** on **12/05/2022** at **11:07am** [Comment ID: 508] - Link
Agree: 26, Disagree: 0

Move all city planting towards local native pollinator plants and away from non-natives which are useless to our wildlife. Reference Doug Tallemy for lots of knowledge and advice.

#041

Posted by **Sarah Kobos** on **01/29/2023** at **3:37pm** [Comment ID: 843] - Link
Type: Suggestion
Agree: 12, Disagree: 0
Tulsa's trees suffer because we have far too many UMGCs (unqualified guys with chainsaws) causing damage throughout the city. Incorrect trimming such as de-horning causes damage, fragile re-growth, and disease which makes trees more susceptible to future storms. Worse are the companies that specialize in fearmongering and removal of healthy trees in the name of "safety."

At a minimum, the COT should have a website dedicated to educating the public on tree health, tree selection, and proper trimming that includes a list of local certified arborists. This way, residents could be confident that the company they hire won't actually damage their trees.

Many cities also require anyone who performs tree trimming services to have a permit or certificate showing they have met specified requirements before working in the city. We could require tree trimmers to pass a test every 5 years to earn a certificate. Again, this could provide some assurance to consumers that the person they've hired has some knowledge of how to trim a tree safely and correctly. This could cut down on at least some of the butchering that leads to future tree death and the demise of healthy trees in our community.

Reply by Aaron Griffith on 02/02/2023 at 1:34pm [Comment ID: 860] - Link
Type: Suggestion
Agree: 13, Disagree: 0

PSO should be getting rid of all power lines on poles altogether and get everything rerouted underground to provide more reliable service, address the ever increasing impacts of more regularly occurring unpredictable climate induced severe weather patterns/fluctuations, like they should have been doing at every available opportunity since at least the ice storm of 2006.

#042

Posted by Green Country Sierra Club on 02/23/2023 at 7:59pm [Comment ID: 1044] - Link
Type: Suggestion
Agree: 2, Disagree: 0

Yard By Yard is a wonderful local program, partnered with Green Country Sierra Club, to install pollinator gardens in yards across green country.

#043
Yes! Yes! Bring Doug Tallemy back to speak again. Movement to reduce lawns and add native pollinator beds in every yard - contest? Try to be the most pollinator friendly city in the state? Engage with Master Gardeners.

#044

Seems like the Canada Goose population near the Downtown portions of the Arkansas River has gotten out of control. I have seen them menacing walkers and joggers along the trail, and their feces are nearly impossible to avoid stepping on. Can we include regular culling or relocation as strategies to keep them in check?

#045

The planting of non-native, invasive species of plants should be avoided. Their reproduction can cause serious degradation to native habitats, both nearby and at some distance from the plantings. The Oklahoma Invasive Plant Council has an excellent list of invasive plants that should not be planted in OK, along with information on their recognition, negative impacts to habitats and control methods. This list is available to anyone at: link. It is highly recommended that this database of invasive plants be consulted prior to decisions on plantings by COT.

#046

I believe implementing strategy 4 should emphasize partnerships and policies with Tulsa's park systems and public land management organizations. The City and County should be a model for the private sector.

#047
Engage Tulsa Garden Club members to assist with education efforts regarding 4.2, 4.3, 4.4.

Contact person: Kathi Blazer, President
kathiblazer@gmail.com

#048

It is not apparent that the local or migratory wildlife is being protected during the current massive construction project from 11th st. bridge to the 51st street bridge. There needs to be stronger voices representing both the wildlife and the environment during construction along this urban river.
Goal 5

Tulsa works collaboratively to expand the regional portfolio of energy production options and to manage the region’s carbon footprint.

In order to remain a leader in the energy industry into the next century, the Tulsa region will need to invest in renewable energy resources, much like it historically has with fossil fuels. Local energy production from renewable resources will lead to added economic and environmental benefits for Tulsa. As new efficient technologies are developed, the City should be well positioned to incorporate them into regulatory frameworks and public education campaigns.

Strategy 5.1
Seek ways to expand the utilization of renewable energy resources in the city, and work with state and private sector partners to reduce barriers and promote their deployment.

Strategy 5.2
Ensure that Tulsa is prepared for innovations in transportation by providing education and incentives to residents regarding electric vehicles (EV) and alternative fuels.

Strategy 5.3
Measure the City’s existing carbon footprint and establish a greenhouse gas emissions reduction target and strategy.

Strategy 5.4
Promote green buildings and energy efficiency.

Strategy 5.5
Adopt regulations, standards, and policies that lead to greater energy efficiency in the construction and operational lifespan of new buildings.
Green buildings could include windows that include the UV disrupters so to prevent bird collisions. Lights could be designed in a way that prevents light pollution.

P. 381 “incentives to residents regarding electric vehicles (EV) and alternative fuels”. Reverse discrimination creating inequity which is what they are advocating? Using city tax dollars for - government services. Is this legal?

See previous comments on enabling residential solar panel installation.

There are a variety ways the City of Tulsa can help its residents, businesses, and other organizations transition to clean renewable energy. See p. 48 of the RF100 Tulsa Action Brief, which contains numerous links to a variety of sources providing help to those who want to make this transition.
The American Council for an Energy Efficient Economy's Mayors' Toolkit for Energy Efficiency provides a number of ways cities can help itself and all energy consumers within its borders become much more energy efficient. See https://www.aceee.org/sites/default/files/pdfs/mayors_toolkit_2020.pdf

#054

Oklahoma is poised to be a growing leader in the Renewable Energy industry which is bringing stability to our economic environment with a cleaner future without the pollution that comes with the fossil fuel industry. We will be improving the quality of life and the health of our families with Renewable Energy leading our future.

#055

Thanks to efforts by PSO and others, it is feasible that by 2035 all electricity consumed in Tulsa will come from clean renewable sources. See https://drive.google.com/file/d/1EV VH6eFxvKn2tDwK EhMRSniMmY5yveaq/view

#056

Another strategy that has been overlooked is the addition of mass transportation in Tulsa. We are behind even Oklahoma City with our two express bus routes. We should be accommodating the elderly with easy access to their health and life needs.

#057
Mandate not promote. Energy efficiency, if fully employed to the highest degree possible could help reduce our carbon footprint by half. Any housing strategy must prioritize cost-saving energy efficiency. The inability to pay to heat or cool one's home contributes to evictions and homelessness. We need to have a better understanding of which areas of town have the highest per-square-foot energy costs to help us understand which of our Tulsa neighbors are most affected.

Requiring the construction industry to build structures based on energy efficiency would go a long way to reduce the housing and energy costs for our residents. We are behind the times in prioritizing this advancement in our housing community.
Goal 6

Residents are protected from pollution and hazardous materials, and areas of existing environmental contamination and pollution are rehabilitated so that they are clean, usable, and productive.

Pollution comes in many forms and originates from many sources. In Tulsa all efforts should be pursued to reduce the risk of residents being exposed to pollution. Whether air, water, soil, or other forms of pollution, funding and mitigation activities should be pursued to achieve public health and economic development goals. These efforts should seek to achieve environmental justice for areas that suffer disproportionately from pollution issues.

Strategy 6.1
Pursue external funding opportunities for brownfield site remediation.

Strategy 6.2
Promote the adaptive use of existing buildings, infill development, and brownfield development as effective sustainability practices that take development pressure off of undeveloped areas.

Strategy 6.3
Evaluate air quality, and develop collaborative approaches to reduce contributing factors.

Strategy 6.4
Reduce the risks associated with the transport of hazardous materials to and through Tulsa.

Strategy 6.5
Continue ongoing mitigation efforts to reduce harmful pollutants and emissions.
#060

Posted by Barbara VanHanken on 02/13/2023 at 4:01pm [Comment ID: 936] - [Link]
Type: Suggestion
Agree: 0, Disagree: 0

It is time to require energy efficient building practices by strengthening our building ordinances to conform to the National Green Building Standard and LEED certified building practices. Require renovations of any existing building to be up-to-date in the best and most energy efficient practices. Energy efficiency saves people money in their pockets and makes their homes healthier to live in.

#061

Posted by Aaron Griffith on 03/06/2023 at 1:59am [Comment ID: 1179] - [Link]
Type: Question
Agree: 3, Disagree: 0

From 4.8.6 4-73 - “The Risk Communication and Management Department of the Oklahoma DEQ provides information and technical support to citizens, local emergency planning committees (LEPCs), and industry concerning hazardous chemicals. The Tulsa County LEPC is working with INCOG on a commodity study to consider rerouting hazardous materials and minimize the population exposed. Results of this study will be incorporated into future updates of this plan.”


Considering recent events in East Palestine, Ohio regarding transportation hazards, is this being incorporated into this update?

#062

Posted by Brent M. on 02/20/2023 at 12:27pm [Comment ID: 1026] - [Link]
Type: Question
Agree: 0, Disagree: 0

This is a poorly-written strategy. "develop collaborative approaches to reduce contributing factors" says nothing. If you assume it means to develop collaborative approaches with polluters, it starts to sound like the intent is to put Tulsa's refineries on notice? Was that the thought?
Posted by Stacie on 11/22/2022 at 8:16pm [Comment ID: 311] - Link
Tags: busy street specific tree
Agree: 6, Disagree: 0
Roads are sources of microplastics, and there are specific tree species that are better at capturing particulate matter. This thinking could be applied to reduce particulate matter. Of course, there probably needs to be additional efforts.

Posted by Nancy Moran on 11/30/2022 at 4:51pm [Comment ID: 427] - Link
Agree: 2, Disagree: -1
We need to deploy PM 2.5 monitors throughout the city to determine which neighborhoods are most affected. We need to take odor nuisance more seriously. There are areas of the city that suffer greatly from odors generated by the refineries and waste water treatment center, including where I live in Brookside.

Posted by Barbara VanHanken on 02/13/2023 at 4:03pm [Comment ID: 937] - Link
Type: Suggestion
Agree: 0, Disagree: 0
Require air quality monitors throughout the city to identify problem areas and stop the pollution by cleaning up or shutting down the sites.

Posted by Barbara VanHanken on 02/13/2023 at 4:06pm [Comment ID: 938] - Link
Agree: 1, Disagree: 0
Remove all butane transloading sites in Tulsa that are volatile and dangerous to the surrounding neighborhoods. Start with the one located near the new BMW site near Greenwood district.

Posted by Gary Allison on 12/06/2022 at 4:03pm [Comment ID: 531] - Link
Agree: 7, Disagree: 0
It is important to evaluate air quality at many Tulsa locations because air pollution comes from many sources and migrates. As a consequence, some areas of Tulsa are much more exposed to dangerous air pollution than others. Use link below to see an Air Quality Sensor Placement Report that provides an example of how the City of Tulsa can determine air quality at many Tulsa locations. https://docs.google.com/document/d/18L2-PSZZrfZJNmJaYQRjfiwqRlApKa1vSLdifnK6k60/edit?usp=sharing

#068

Posted by Barbara VanHanken on 02/18/2023 at 2:39pm [Comment ID: 993] - Link

Agree: 3, Disagree: 0
This should be a community mandate!

#069

Posted by Sheryl on 12/05/2022 at 11:12am [Comment ID: 510] - Link

Tags: Good idea
Agree: 2, Disagree: 0
More pollutant collections days and sites around Tulsa for people who can't get to the Tulsa city site.
Goal 7

Tulsa develops inclusive sustainability planning efforts and creates dedicated offices and positions to facilitate implementation of sustainable practices.

Planning and collaboration are needed to establish and achieve goals and outcomes related to sustainability in Tulsa. Efforts should be taken to update past plans and to reestablish an Office of Sustainability to implement updated plans with a focus on equitable and inclusive processes and outcomes. Metrics from national organizations can help to benchmark Tulsa’s progress in years to come.

Strategy 7.1
Update the 2011 City of Tulsa Sustainability Plan.

Strategy 7.2
Establish an Office of Sustainability either internally at the City of Tulsa or regionally at INCOG.

Strategy 7.3
Work with community groups and Tulsa residents to evaluate progress toward the goals established in the City’s Sustainability Plan.

Strategy 7.4
Use metrics and standards developed by national organizations to evaluate Tulsa’s progress against peer cities across the country and the world.
I worked on this plan and it needs enforcement teeth.

It should be "elected" people who are accountable to the City of Tulsa voters, not "appointed" people.

We would love to participate in this project. We have a lot to contribute! Please contact us!

I dare say we will not be in the top ten cities, but we could be if we prioritize our actions for an active and healthy community for all Tulsa residents.

The American Council on an Energy Efficiency economy scorecard should be used
You can access this scorecard using the link below. https://drive.google.com/file/d/15-QPeonO2dzgts91uiKKyAWNAv9ASLGl/view?usp=sharing
**ACTION TABLE**

This table includes the goals and strategies outlined in the previous pages with specific actions that will help to achieve the intent of the goals and strategies. Each specific action includes what type of action it is and what parties should be involved in order to implement the action. All of these goals, strategies, and actions are derived from engagement with the Tulsa community and subject matter experts, past planning efforts conducted by the City of Tulsa and partner agencies, best practices from cities across the United States, and research and data analysis conducted by Tulsa Planning Office staff. Any action taken to implement a specific strategy or action included in this table or a policy recommended elsewhere in this chapter will be in accord with Oklahoma law.

<table>
<thead>
<tr>
<th>Action ID</th>
<th>Action Required</th>
<th>Action Type</th>
<th>Involved Parties</th>
</tr>
</thead>
<tbody>
<tr>
<td>EN 1</td>
<td>Tulsa is prepared for flooding events from the Arkansas River, other streams, and heavy rain events.</td>
<td>Strategy</td>
<td>Multiple</td>
</tr>
<tr>
<td>EN 1.1</td>
<td>Maintain strong relationships with agencies associated with emergency response actions related to the Arkansas River flooding or other flooding events.</td>
<td>Strategy</td>
<td>Multiple</td>
</tr>
<tr>
<td>EN 1.1.1</td>
<td>Continue to work closely with municipalities and counties in the region, the State, the Army Corps of Engineers, and the federal delegation to reduce risk associated with releases from the Keystone Dam.</td>
<td>Partnership</td>
<td>City of Tulsa</td>
</tr>
<tr>
<td>EN 1.1.2</td>
<td>Work with the Oklahoma Water Resources Board to identify dams that present a hazard for new and existing development.</td>
<td>Partnership</td>
<td>Engineering Services Streets &amp; Stormwater</td>
</tr>
<tr>
<td>EN 1.2</td>
<td>Ensure that Tulsa's Emergency Operations Center (EOC) and associated emergency response infrastructure is state-of-the-art and built to accommodate the needs of the Emergency Response team.</td>
<td>Strategy</td>
<td>Multiple</td>
</tr>
<tr>
<td>EN 1.2.1</td>
<td>Identify funding needs and sources to adequately budget for a modern EOC.</td>
<td>Capital</td>
<td>TAEMA Tulsa Fire Dept. Tulsa Police Dept.</td>
</tr>
</tbody>
</table>

**OVERARCHING GOAL**

**GENERAL STRATEGY**

**SPECIFIC ACTION**

**Chapter Abbreviation**

**Overarching Goal ID**

**General Strategy ID**

**Specific Action ID**
Include emergency responses to environmental disasters caused by nature and manmade train and truck wrecks carrying toxic and dangerous materials.
<table>
<thead>
<tr>
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<th>Action Type</th>
<th>Involved Parties</th>
</tr>
</thead>
<tbody>
<tr>
<td>EN 1.2.2</td>
<td>Replace the few remaining outdated sirens with modern fixtures that can interface with other technological components of the City of Tulsa emergency management response.</td>
<td>Capital</td>
<td>TAEMA</td>
</tr>
<tr>
<td>EN 1.3</td>
<td>Maintain the integrity of the shoreline of the Arkansas River to protect residents, businesses, and other community assets that are at risk of flooding and flood-related damages.</td>
<td>Strategy</td>
<td>Multiple</td>
</tr>
<tr>
<td>EN 1.3.1</td>
<td>Reduce the risks associated with erosion by strategically reinforcing the shoreline of the Arkansas River using approaches that are cost-effective, dependable, and have minimal environmental impacts.</td>
<td>Capital</td>
<td>Engineering Services</td>
</tr>
<tr>
<td>EN 1.3.2</td>
<td>Identify aged stormwater infrastructure that can be replaced or enhanced to more effectively convey water to the river.</td>
<td>Analysis</td>
<td>Streets &amp; Stormwater Engineering Services</td>
</tr>
<tr>
<td>EN 1.3.3</td>
<td>Continue to invest in sluice gates at stormwater outflows, particularly near high-density residential areas, to prevent backflow into the stormwater systems should the Arkansas River’s water levels rise.</td>
<td>Capital</td>
<td>Engineering Services</td>
</tr>
<tr>
<td>EN 1.4</td>
<td>Ensure a high-quality, informative, and accessible communications strategy to provide residents with the information they need to prepare for and respond to potential flood events.</td>
<td>Strategy</td>
<td>Multiple</td>
</tr>
<tr>
<td>EN 1.4.1</td>
<td>Ensure all emergency notifications and other related communications are multilingual.</td>
<td>Engagement</td>
<td>TAEMA Communications</td>
</tr>
<tr>
<td>EN 1.4.2</td>
<td>Ensure all emergency notifications and other related communications are accessible for those with physical, mental, cognitive, and learning disabilities.</td>
<td>Engagement</td>
<td>TAEMA Communications</td>
</tr>
<tr>
<td>EN 1.4.3</td>
<td>Provide a publicly-accessible and up-to-date mapping platform to increase awareness of areas of potential danger.</td>
<td>Engagement</td>
<td>TAEMA Communications OPSI</td>
</tr>
<tr>
<td>EN 1.4.4</td>
<td>Limit the information in public service announcements to only those scenarios that are most likely, so as to not overwhelm residents with too much information.</td>
<td>Policy</td>
<td>City of Tulsa</td>
</tr>
</tbody>
</table>
There should be a maintenance schedule created and checked to be more proactive with needed maintenance projects.
<table>
<thead>
<tr>
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<th>Involved Parties</th>
</tr>
</thead>
<tbody>
<tr>
<td>EN 1.5</td>
<td>Work with the Army Corps of Engineers, the state's federal delegation, and other stakeholders to ensure the long-term integrity of the levee system.</td>
<td>Strategy</td>
<td>City of Tulsa</td>
</tr>
<tr>
<td>EN 2</td>
<td>Tulsa’s stormwater systems continue to be a model for cities around the globe because of innovative approaches to increase effectiveness and efficiency.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EN 2.1</td>
<td>Identify and incorporate best practices into Tulsa’s system to continue to be a global leader in stormwater management.</td>
<td>Strategy</td>
<td>Multiple</td>
</tr>
<tr>
<td>EN 2.1.1</td>
<td>Work with other departments, agencies, municipalities, counties, tribal governments, and the State to identify best management practices nationwide that can be incorporated into the City of Tulsa stormwater management approach.</td>
<td>Analysis</td>
<td>Streets &amp; Stormwater Engineering Services</td>
</tr>
<tr>
<td>EN 2.1.2</td>
<td>Holistically evaluate identified best management practices in terms of upfront cost and long-term cost impact on the City's stormwater system.</td>
<td>Analysis</td>
<td>Streets &amp; Stormwater Engineering Services</td>
</tr>
<tr>
<td>EN 2.1.3</td>
<td>Proactively seek funding to implement identified best management practices and other projects too large to be funded through the sale of stormwater bonds.</td>
<td>Capital</td>
<td>Streets &amp; Stormwater Engineering Services, Finance</td>
</tr>
<tr>
<td>EN 2.2</td>
<td>Continue to employ GIS to track assets and to help inform decision making.</td>
<td>Strategy</td>
<td>Multiple</td>
</tr>
<tr>
<td>EN 2.2.1</td>
<td>Establish a data sharing agreement and procedures for collaboration with governmental and other entities.</td>
<td>Policy</td>
<td>Streets &amp; Stormwater OPSI</td>
</tr>
<tr>
<td>EN 2.2.2</td>
<td>Continuously update the stormwater atlas to ensure data is up-to-date to inform capital improvement projects and emergency management response and communications.</td>
<td>Policy</td>
<td>Streets &amp; Stormwater</td>
</tr>
<tr>
<td>EN 2.3</td>
<td>Champion policy as part of the OneVoice regional legislative agenda to advocate for better support for the state’s stormwater program.</td>
<td>Strategy</td>
<td>City of Tulsa</td>
</tr>
</tbody>
</table>
I do not believe that the OneVoice represents a consistent environmental voice. They should not dominate legislative action promoting good sustainable environmental policies.

The Corps of Engineers takes too much time to develop solutions to our flooding problems. This is their job and the rains keep coming in deluges.
<table>
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<tbody>
<tr>
<td>EN 2.4</td>
<td>Review and rewrite the stormwater ordinance to reflect current understanding, ensure maintenance and ownership of the system is adequately addressed, and to provide clear policy for infill development.</td>
<td>Strategy</td>
<td>Multiple</td>
</tr>
<tr>
<td>EN 2.4.1</td>
<td>Identify elements of the existing stormwater ordinance that meet desired standards, and incorporate them into the new ordinance.</td>
<td>Policy</td>
<td>Streets &amp; Stormwater Engineering Services</td>
</tr>
<tr>
<td>EN 2.4.2</td>
<td>Research stormwater ordinances from around the globe to find language to incorporate into the new ordinance.</td>
<td>Analysis</td>
<td>Streets &amp; Stormwater Engineering Services</td>
</tr>
<tr>
<td>EN 2.5</td>
<td>Incorporate elements of the Low Impact Development (LID) Manual into capital improvement projects.</td>
<td>Strategy</td>
<td>Multiple</td>
</tr>
<tr>
<td>EN 2.5.1</td>
<td>Promote the LID Manual through education campaigns for residents, builders, developers, architects, and government agencies that emphasize the purpose of LID and the ways in which different entities can begin to incorporate elements of the manual.</td>
<td>Engagement</td>
<td>Streets &amp; Stormwater Development Services Engineering Services Tulsa Planning Office</td>
</tr>
<tr>
<td>EN 2.5.2</td>
<td>Continue to develop projects to demonstrate the ways the LID manual can be used as a component of public infrastructure and facilities design.</td>
<td>Policy</td>
<td>Engineering Services</td>
</tr>
<tr>
<td>EN 2.5.3</td>
<td>Continue to include LID projects in the stormwater permit to maintain the present rating.</td>
<td>Policy</td>
<td>Streets &amp; Stormwater Engineering Services</td>
</tr>
<tr>
<td>EN 2.5.4</td>
<td>Establish a role in the Streets &amp; Stormwater Department dedicated to the promotion of the practices outlined in the LID Manual.</td>
<td>Personnel</td>
<td>Streets &amp; Stormwater</td>
</tr>
<tr>
<td>EN 2.6</td>
<td>Continue to coordinate with Engineering Services on any project affecting the City's stormwater infrastructure.</td>
<td>Strategy</td>
<td>Multiple</td>
</tr>
<tr>
<td>EN 2.6.1</td>
<td>Assess conditions and needs for underground and above-ground infrastructure including underground pipes, bar ditches, creeks, detention ponds, catch basins, control structures, and wetlands.</td>
<td>Analysis</td>
<td>Streets &amp; Stormwater Engineering Services</td>
</tr>
<tr>
<td>EN 2.6.2</td>
<td>Prioritize the improvement of aged underground stormwater facilities that were built without consideration of a fully built-out stormwater basin.</td>
<td>Capital</td>
<td>Streets &amp; Stormwater Engineering Services</td>
</tr>
</tbody>
</table>
Low Impact Development standards should be required on all new construction occurring within 303d impaired stream watersheds located inside the municipal limits, like Crow Creek, for example.


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<tbody>
<tr>
<td>EN 2.6.3</td>
<td>Ensure stormwater needs are assessed during the capital funding project identification phase.</td>
<td>Capital</td>
<td>Engineering Services Streets &amp; Stormwater</td>
</tr>
<tr>
<td>EN 2.7</td>
<td>Maintain strong working relationships between the City of Tulsa Streets &amp; Stormwater department and other departments, authorities, and private vendors.</td>
<td>Strategy</td>
<td>Multiple</td>
</tr>
<tr>
<td>EN 2.7.1</td>
<td>Coordinate long-term planning goals with the Tulsa Planning Office to align with Strategic Planning priorities.</td>
<td>Partnership</td>
<td>Streets &amp; Stormwater Tulsa Planning Office</td>
</tr>
<tr>
<td>EN 2.7.2</td>
<td>Continuously evaluate contracts for performance, potential efficiencies, and economies of scale.</td>
<td>Policy</td>
<td>Streets &amp; Stormwater</td>
</tr>
<tr>
<td>EN 2.7.3</td>
<td>Work with Tulsa Parks to identify flooding and erosion concerns on park property.</td>
<td>Partnership</td>
<td>Streets &amp; Stormwater Engineering Services Tulsa Parks</td>
</tr>
<tr>
<td>EN 2.7.4</td>
<td>Work with the Water &amp; Sewer department to mitigate their flooding and erosion concerns at water treatment facilities.</td>
<td>Partnership</td>
<td>Streets &amp; Stormwater Engineering Services Water &amp; Sewer</td>
</tr>
<tr>
<td>EN 2.7.5</td>
<td>Collaborate with the Asset Management department to prevent flooding events and control erosion for creeks that run through City properties not maintained with Stormwater crews.</td>
<td>Partnership</td>
<td>Asset Management Streets &amp; Stormwater</td>
</tr>
<tr>
<td>EN 3</td>
<td>Tulsa’s water resources are protected from environmental disruption and are managed in ways that promote conservation.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EN 3.1</td>
<td>Promote educational opportunities to residents regarding best practices for managing water resources on their property.</td>
<td>Strategy</td>
<td>Multiple</td>
</tr>
<tr>
<td>EN 3.1.1</td>
<td>Connect residents with the Oklahoma Water Resources Board workshops on the proper maintenance of wells.</td>
<td>Engagement</td>
<td>Tulsa Health Dept. Communications</td>
</tr>
<tr>
<td>EN 3.1.2</td>
<td>Promote the use of the LID Manual to residents and developers, focusing on the environmental benefits and improvement of water quality.</td>
<td>Engagement</td>
<td>Streets &amp; Stormwater Engineering Services Development Services Tulsa Planning Office</td>
</tr>
</tbody>
</table>
#080

Posted by Stacie on 11/22/2022 at 8:22pm [Comment ID: 312] - Link
Type: Suggestion | Tags: Refer to LID Manual
Agree: 1, Disagree: 0
Many sand filter solutions can be clogged with clay sediment- might be worth considering areas of town biofiltration systems would work best in, or promote understanding of potential replacement needs

#081

Posted by Barbara VanHanken on 02/18/2023 at 3:14pm [Comment ID: 1000] - Link
Agree: 2, Disagree: 0
Somewhere there needs to be a definite policy limiting the amount of non-pervious surfaces allowed per building lot, either commercial or residential.
<table>
<thead>
<tr>
<th>Action ID</th>
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<th>Action Type</th>
<th>Involved Parties</th>
</tr>
</thead>
<tbody>
<tr>
<td>EN 3.2</td>
<td>Ensure that new development includes design considerations to reduce the amount and rate of runoff.</td>
<td>Strategy</td>
<td>Multiple</td>
</tr>
<tr>
<td>EN 3.2.1</td>
<td>Develop a program to implement green infrastructure improvements, starting with streets that contribute the highest rates of runoff volume and pollutants to the stormwater system.</td>
<td>Program</td>
<td>Streets &amp; Stormwater Engineering Services</td>
</tr>
<tr>
<td>EN 3.2.2</td>
<td>Continue to require stormwater solutions in new development and subdivisions that keep water on site, and provide natural habitat and recreational areas via easements and reserve areas.</td>
<td>Policy</td>
<td>Development Services Streets &amp; Stormwater Engineering Services</td>
</tr>
<tr>
<td>EN 3.2.3</td>
<td>Improve enforcement of construction stormwater management practices, such as silt fences for runoff control.</td>
<td>Policy</td>
<td>Development Services Streets &amp; Stormwater Engineering Services</td>
</tr>
<tr>
<td>EN 3.3</td>
<td>Be proactive with approaches and technologies to identify sources of water pollution before streams become polluted.</td>
<td>Strategy</td>
<td>Multiple</td>
</tr>
<tr>
<td>EN 3.3.1</td>
<td>Include information about animal waste and other point source pollutants in educational campaigns.</td>
<td>Engagement</td>
<td>Streets &amp; Stormwater Communications</td>
</tr>
<tr>
<td>EN 3.3.2</td>
<td>Compile a list of all known sources of local water pollution along with tools and techniques to identify and track each pollutant.</td>
<td>Analysis</td>
<td>Streets &amp; Stormwater</td>
</tr>
<tr>
<td>EN 3.3.3</td>
<td>Research best practices from around the country used for testing and tracking pollution sources.</td>
<td>Analysis</td>
<td>Streets &amp; Stormwater</td>
</tr>
<tr>
<td>EN 3.3.4</td>
<td>Work to implement tracking tools and techniques that improve efficiencies and provide cost savings where applicable.</td>
<td>Policy</td>
<td>Streets &amp; Stormwater</td>
</tr>
<tr>
<td>EN 3.4</td>
<td>Ensure that the potential negative effects of construction and development in floodplains is mitigated through engineering guidance.</td>
<td>Strategy</td>
<td>Multiple</td>
</tr>
<tr>
<td>EN 3.4.1</td>
<td>Provide leadership to other governments within the region by promoting stormwater standards that adequately mitigate the potential impact of new development on existing development, the stormwater system, and the natural environment.</td>
<td>Standards</td>
<td>Streets &amp; Stormwater Development Services Tulsa Planning Office</td>
</tr>
</tbody>
</table>
Are there any limitations to quantity of septic systems in an area?
<table>
<thead>
<tr>
<th>Action ID</th>
<th>Action Required</th>
<th>Action Type</th>
<th>Involved Parties</th>
</tr>
</thead>
<tbody>
<tr>
<td>EN 3.4.2</td>
<td>Develop regulations and stormwater management standards for alternative methods of development that better retain natural site drainage and reduce impervious surface coverage, such as low-impact development and green infrastructure.</td>
<td>Standards</td>
<td>Streets &amp; Stormwater Development Services</td>
</tr>
<tr>
<td>EN 3.5</td>
<td>Incorporate water quality features into all future flood management projects.</td>
<td>Strategy</td>
<td>Streets &amp; Stormwater Engineering Services</td>
</tr>
<tr>
<td>EN 3.6</td>
<td>Promote the importance of regional water bodies protection and public use, such as raft races, fishing, boating, and kayaking.</td>
<td>Strategy</td>
<td>Tulsa Parks Streets &amp; Stormwater</td>
</tr>
<tr>
<td>EN 3.6.1</td>
<td>Ensure proper communication to recreational users of regional water bodies during water pollutant events or other recreational restrictions.</td>
<td>Policy</td>
<td>Streets &amp; Stormwater Tulsa Parks</td>
</tr>
<tr>
<td>EN 4</td>
<td><strong>Tulsa’s existing wildlife habitats are conserved and improved through enhanced stewardship and consideration during the development review process.</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EN 4.1</td>
<td>Seek ways to maintain and increase Tulsa’s urban forest through programs and development guidance.</td>
<td>Strategy</td>
<td>Multiple</td>
</tr>
<tr>
<td>EN 4.1.1</td>
<td>Plant species that are diverse and resilient to storms, pests, and anticipated climate changes.</td>
<td>Policy</td>
<td>Tulsa Parks River Parks Authority Engineering Services Streets &amp; Stormwater</td>
</tr>
<tr>
<td>EN 4.1.2</td>
<td>Regularly update the Recommended and Prohibited Tree Species list to ensure tree canopy growth is sustainable.</td>
<td>Policy</td>
<td>Tulsa Planning Office</td>
</tr>
<tr>
<td>EN 4.1.3</td>
<td>Explore policies that will facilitate tree replacement when removal is necessary in public infrastructure projects and private development activities.</td>
<td>Policy</td>
<td>Engineering Services Streets &amp; Stormwater</td>
</tr>
<tr>
<td>EN 4.1.4</td>
<td>Evaluate the Tulsa Parks tree replacement policy to address canopy loss from storm damage.</td>
<td>Analysis</td>
<td>Tulsa Parks River Parks Authority</td>
</tr>
<tr>
<td>EN 4.1.5</td>
<td>Maintain <strong>Tree City USA</strong> status annually, and apply for Growth Awards.</td>
<td>Policy</td>
<td>Tulsa Parks</td>
</tr>
</tbody>
</table>
#083

Posted by Stacie on 11/22/2022 at 8:27pm [Comment ID: 314] - Link
Type: Suggestion
Agree: 4, Disagree: 0
Many species that are most adapted are likely to be found through the genetics of trees that have survived the flood of 2019, the ice of 2021, and the drought of 2022. There could be a plan to propagate Tulsa's "champion" native species, but there would need to be a tree nursery to do this.

#084

Posted by pam on 02/23/2023 at 4:30pm [Comment ID: 1038] - Link
Type: Suggestion
Agree: 3, Disagree: 0
You are missing a strategy. EN4 is focused on enhancing stewardship of wildlife habitats. Tulsa has valued, beneficial wide-ranging native wildlife, part of our natural ecosystem, that deserves more than a passing mention. What local wildlife and audubon groups have you worked with to address this? Will you include them in establishing strategies? Any new policies Tulsa adopts, including for habitat preservation and including animal welfare, need to be aligned with this stewardship.

#085

Posted by Sheryl on 12/05/2022 at 11:18am [Comment ID: 512] - Link
Type: Suggestion
Agree: 3, Disagree: 0
Definitely should put this kind of policy into place.

#086

Posted by Barbara VanHanken on 02/18/2023 at 3:21pm [Comment ID: 1001] - Link
Agree: 2, Disagree: 0
Public signage should be posted in public areas next to a water body that exceeds the bacteria limits for safe body contact. Those water bodies should have regular water tests with results posted to ensure exposure to the water is safe.
Posted by **Jay Pruett** on **03/05/2023** at **2:43pm** [Comment ID: 1124] - [Link]
Type: Suggestion
Agree: 2, Disagree: 0
The planting of non-native, invasive species of plants should be avoided. Their reproduction can cause serious degradation to native habitats, both nearby and at some distance from the plantings. The Oklahoma Invasive Plant Council has an excellent list of invasive plants that should not be planted in OK, along with information on their recognition, negative impacts to habitats and control methods. This list is available to anyone at: link. It is highly recommended that this database of invasive plants be consulted prior to decisions on plantings by COT.

Posted by **Sheryl** on **12/05/2022** at **11:17am** [Comment ID: 511] - [Link]
Type: Suggestion
Agree: 1, Disagree: 0
Didn't even know there was a policy!! Bring this into the public eye more often in multiple ways.

Posted by **Barbara VanHanken** on **02/18/2023** at **3:26pm** [Comment ID: 1002] - [Link]
Agree: 6, Disagree: 0
Do not allow mature trees to be cleared entirely from a building site. There should be a percentage allowed to be removed. Give some kind of "tree points" for saved trees.

Posted by **Jay Pruett** on **03/05/2023** at **2:42pm** [Comment ID: 1123] - [Link]
Type: Suggestion
Agree: 0, Disagree: 0
The planting of non-native, invasive species of plants should be avoided. Their reproduction can cause serious degradation to native habitats, both nearby and at some distance from the plantings. The Oklahoma Invasive Plant Council has an excellent list of invasive plants that should not be planted in OK, along with information on their recognition, negative impacts to habitats and control methods. This list is available to anyone at: link. It is highly recommended that this database of invasive plants be consulted prior to decisions on plantings by COT.
Some species of trees that are being recommended on the COT Recommended and Prohibited Tree Species list are on the list of non-native, invasive plants for Oklahoma, found (and available to any one at): https://www.okinvasives.org/plants-database.

Include information from the OK Invasive Plant Council's Database of Invasive Plant Species found at https://www.okinvasives.org/plants-database in decisions related to the Tulsa Parks Tree Replacement Policy.
<table>
<thead>
<tr>
<th>Action ID</th>
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<th>Involved Parties</th>
</tr>
</thead>
<tbody>
<tr>
<td>EN 4.1.6</td>
<td>Establish a citywide tree inventory, and develop a Street Tree Master Plan in coordination with Up With Trees.</td>
<td>Planning</td>
<td>Tulsa Parks Engineering Services Streets &amp; Stormwater Tulsa Parks Planning Office</td>
</tr>
<tr>
<td>EN 4.1.7</td>
<td>Formally establish the duties of the City Urban Forester to provide oversight for the maintenance of all trees in public spaces.</td>
<td>Personnel</td>
<td>Tulsa Parks Streets &amp; Stormwater</td>
</tr>
<tr>
<td>EN 4.2</td>
<td>Work with local partners to promote practices and standards that protect Tulsa’s wildlife species and their corresponding habitats.</td>
<td>Strategy</td>
<td>Multiple</td>
</tr>
<tr>
<td>EN 4.2.1</td>
<td>Comply with all state and federal regulations that protect endangered and migratory species and nesting birds.</td>
<td>Policy</td>
<td>City of Tulsa</td>
</tr>
<tr>
<td>EN 4.2.2</td>
<td>Apply integrated pest management (IPM) strategies to determine appropriate responses to tree pests and pathogens.</td>
<td>Policy</td>
<td>Tulsa Parks Streets &amp; Stormwater</td>
</tr>
<tr>
<td>EN 4.2.3</td>
<td>Preserve and protect as much Arkansas River corridor habitat as possible.</td>
<td>Policy</td>
<td>City of Tulsa</td>
</tr>
<tr>
<td>EN 4.2.4</td>
<td>Fully fund Oxley Nature Center, including naturalist positions and maintenance needs.</td>
<td>Personnel</td>
<td>Tulsa Parks</td>
</tr>
<tr>
<td>EN 4.2.5</td>
<td>Increase the amount of green space in Tulsa via conservation easements.</td>
<td>Policy</td>
<td>Engineering Services Tulsa Parks</td>
</tr>
<tr>
<td>EN 4.2.6</td>
<td>Promote a “Lights Out” campaign during peak bird migration periods to help prevent bird strikes.</td>
<td>Engagement</td>
<td>Communications</td>
</tr>
<tr>
<td>EN 4.2.7</td>
<td>Explore a safe window policy for any new commercial buildings in Tulsa to prevent future bird strikes.</td>
<td>Analysis</td>
<td>Tulsa Planning Office Development Services</td>
</tr>
<tr>
<td>EN 4.2.8</td>
<td>Appropriately locate nest boxes in City of Tulsa parks.</td>
<td>Policy</td>
<td>Tulsa Parks</td>
</tr>
</tbody>
</table>
Address inequities of canopy cover among Tulsa neighborhoods, if community agrees

Often, cavity trees are needed, and leaving trees dead and at risk for falling needs to be done carefully, but should be done.

And specialized exterior lights and specialized glass for new buildings

Sorry, just saw 4.2.7- this exists! There is a special glass. There are also applications that you can put on windows to prevent bird strikes.

Yes that we need to make this happen, but this sort of campaign requires much more coordination and collaboration than communication. Suburbs around Tulsa (Broken Arrow, Owasso, Sand Springs, etc.) would also need to get on
board, and multiple city departments have to coordinate which lights can be safely turned off and when. It's a whole thing, again, which can be done, but must be planned and coordinated appropriately across City departments as well as private sector.

#096

Posted by Mary Jackson on 03/05/2023 at 12:34pm [Comment ID: 1115] - Link
Type: Suggestion
Agree: 0, Disagree: 0
I thought Up with Trees had recently done a city wide tree inventory?

#097

Posted by pam on 02/23/2023 at 4:32pm [Comment ID: 1039] - Link
Type: Question
Agree: 1, Disagree: 0
How are you addressing the Least Tern and other ground-nesting birds? Did you engage with Tulsa Audubon?

#098

Posted by Mary Jackson on 03/05/2023 at 12:38pm [Comment ID: 1116] - Link
Type: Suggestion
Agree: 1, Disagree: 0
Adequately funding the City of Tulsa Parks department is necessary to be able to keep up tree maintenance. Compared to other cities Tulsa's park department is woefully underfunded.

#099

Posted by Jay Pruett on 03/05/2023 at 5:51pm [Comment ID: 1141] - Link
Type: Suggestion
Agree: 0, Disagree: 0
An important resource for this campaign would be Georgia Gibbs, a biologist at the U.S. Fish and Wildlife Service office in Tulsa. Please consult with her.

#100
Definitely. Duties and job description should already be in place. Urban Forester should be more in the public eye with policies and advice.

Reply by Ashley Bath on 12/13/2022 at 5:29pm [Comment ID: 614] - Link
Type: Suggestion
Agree: 15, Disagree: 0
We already had a Tulsa Parks staff member whose title is City Urban Forester. He's been in that position for years, but just doesn't have much staff or budget to do anything. Maybe we should look into developing that area more with dedicated funding and staff instead.

#101

Added, after Comply with all state and federal regulations, "and recommendations by local Audubon group, Tulsa Audubon Society and Barred Owls of Midtown" (since they are the local SMEs on beneficial local native and migratory birds and nesting birds).

#102

Some of that habitat for migratory birds consists of the sand bars in the Arkansas River, which is used by the interior least tern as their primary nesting habitat. The new dam being built in the river will permanently inundate the sandbars in that stretch of the river. What mitigation is being used to make up for this loss of native nesting habitat?

#103
The planting of non-native, invasive species of plants should be avoided. Their reproduction can cause serious degradation to native habitats, both nearby and at some distance from the plantings. The Oklahoma Invasive Plant Council has an excellent list of invasive plants that should not be planted in OK, along with information on their recognition, negative impacts to habitats and control methods. This list is available to anyone at: [link]. It is highly recommended that this database of invasive plants be consulted prior to decisions on plantings by COT.

#104

Posted by Sheryl on 12/05/2022 at 11:23am [Comment ID: 515] - [Link]
Type: Suggestion
Agree: 2, Disagree: 0
Yes! Again, make it well known. A contest? Get Oxley naturalist in the public eye as well as any entity involved with birding.

#105

Posted by Sheryl on 12/05/2022 at 11:21am [Comment ID: 514] - [Link]
Type: Suggestion
Agree: 2, Disagree: 0
Well certainly! Why is this not already funded??

#106

Posted by Jay Pruett on 03/05/2023 at 5:49pm [Comment ID: 1140] - [Link]
Type: Suggestion
Agree: 0, Disagree: 0
An excellent resource for this would be Dr. Scott Loss at OSU, who has done extensive research on this topic and is a national leader regarding such policies.

#107

Posted by Ashley Bath on 12/13/2022 at 5:34pm [Comment ID: 615] - [Link]
Type: Suggestion
Agree: 6, Disagree: 0
I would say this needs to be much broader than just Oxley Nature Center. Oxley's naturalists provide more of an educational role to the public that visits the center than consultation to the City and other partners. In addition to Oxley Nature Center staff, Tulsa Parks also has small horticulture, forestry and natural resources teams (all under-staff and funded) that do quite a bit of work tending and managing the wildlife species and habitats across it's 135 parks. In fact, this should include the other park systems' staff as well.

#108

Posted by Jay Pruett on 03/05/2023 at 2:50pm [Comment ID: 1127] - Link
Type: Suggestion
Agree: 0, Disagree: 0
This can have a significant positive conservation impact for birds for COT! And very positive PR for the City as well!
<table>
<thead>
<tr>
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<th>Involved Parties</th>
</tr>
</thead>
<tbody>
<tr>
<td>EN 4.3</td>
<td>Support ongoing pollinator conservation efforts and develop pollinator-promoting initiatives and incentives.</td>
<td>Strategy</td>
<td>Multiple</td>
</tr>
<tr>
<td>EN 4.3.1</td>
<td>Set measurable goals for an increase in pollinator-friendly spaces.</td>
<td>Policy</td>
<td>Tulsa Parks</td>
</tr>
<tr>
<td>EN 4.3.2</td>
<td>Pursue designation as a pollinator-friendly city through programs like Bee City USA.</td>
<td>Policy</td>
<td>Tulsa Parks</td>
</tr>
<tr>
<td>EN 4.3.3</td>
<td>Designate vacant City-owned land as community gardens or pollinator gardens.</td>
<td>Policy</td>
<td>Tulsa Parks Asset Management</td>
</tr>
<tr>
<td>EN 4.3.4</td>
<td>Incorporate pollinator-conscious practices into City policies and plans.</td>
<td>Planning</td>
<td>Tulsa Parks Office, Tulsa Parks Streets &amp; Stormwater</td>
</tr>
<tr>
<td>EN 4.3.5</td>
<td>Host pollinator awareness events.</td>
<td>Engagement</td>
<td>Tulsa Parks</td>
</tr>
<tr>
<td>EN 4.4</td>
<td>Encourage the planting of native plants throughout the city, and provide educational information to residents about harmful gardening and lawn management practices.</td>
<td>Strategy</td>
<td>Multiple</td>
</tr>
<tr>
<td>EN 4.4.1</td>
<td>Promote native plants through proclamations and educational outreach.</td>
<td>Engagement</td>
<td>Tulsa Parks City Council</td>
</tr>
<tr>
<td>EN 4.4.2</td>
<td>Work with electric and pipeline companies to encourage native wildflower planting along their rights-of-way.</td>
<td>Partnership</td>
<td>Tulsa Parks INCOG Environment</td>
</tr>
<tr>
<td>EN 4.4.3</td>
<td>Educate residents, homeowners associations, and other relevant groups about the benefits of polyculture vegetation, safer lawn options, and residential water management features, such as rain chains.</td>
<td>Engagement</td>
<td>Tulsa Parks Streets &amp; Stormwater Communications</td>
</tr>
<tr>
<td>EN 4.4.4</td>
<td>Develop messaging to reduce rates of over-fertilization of lawns in the city.</td>
<td>Engagement</td>
<td>Streets &amp; Stormwater Tulsa Parks Communications</td>
</tr>
</tbody>
</table>
Cities with Nature is an international group in the IUCN (international union of the conservation of nature and natural resources) that might be worth exploring.

Also work with growers to make sure plants are available through incentives, etc.

4.3.3 and to increase tree canopy in some areas.

Meadowlands in Canada could be a great resource.

definitely
Agree: 19, Disagree: 0
and drip irrigation. Water goes to roots rather than spraying all over plant. Conserves water and improves plant health.

#115

Agree: 3, Disagree: 0
Host educational workshops on raising NATIVE bees (not honeybees which are imported). No hive required, no honey produced. They only pollinate, don't sting unless touched, easily raised in a backyard. Contact me @ suelovelace@cox.net.

#116

Tulsa has been a participant in The National Wildlife Federation's Mayor's Monarch Pledge Program that has pollinator guidelines for cities and a recognition program. Enhanced participation in this program would be relatively easy.

#117

The planting of non-native, invasive species of plants should be avoided. Their reproduction can cause serious degradation to native habitats, both nearby and at some distance from the plantings. The Oklahoma Invasive Plant Council has an excellent list of invasive plants that should not be planted in OK, along with information on their recognition, negative impacts to habitats and control methods. This list is available to anyone at: link. It is highly recommended that this database of invasive plants be consulted prior to decisions on plantings by COT.

#118
Great Idea!

#119

The planting of non-native, invasive species of plants should be avoided. Their reproduction can cause serious degradation to native habitats, both nearby and at some distance from the plantings. The Oklahoma Invasive Plant Council has an excellent list of invasive plants that should not be planted in OK, along with information on their recognition, negative impacts to habitats and control methods. This list is available to anyone at: link. It is highly recommended that this database of invasive plants be consulted prior to decisions on plantings by COT.

#120

I don't see anything about neighborhood or community-wide composting

#121

Encourage local Lawn Services to incorporate healthy, non monoculture, pesticide and chemical free lawn services.
<table>
<thead>
<tr>
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<th>Action Type</th>
<th>Involved Parties</th>
</tr>
</thead>
<tbody>
<tr>
<td>EN 5</td>
<td>Tulsa works collaboratively to expand the regional portfolio of energy production options and to manage the region’s carbon footprint.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EN 5.1</td>
<td>Seek ways to expand the utilization of renewable energy resources in the city, and work with state and private partners to reduce barriers and promote their deployment.</td>
<td>Strategy</td>
<td>Multiple</td>
</tr>
<tr>
<td>EN 5.1.1</td>
<td>Increase municipal participation at the Oklahoma Corporation Commission to reduce regulatory barriers to renewable energy production.</td>
<td>Advocacy</td>
<td>City of Tulsa</td>
</tr>
<tr>
<td>EN 5.1.2</td>
<td>Work with State legislators to pass legislation that eases regulations that hinder the growth of the solar industry.</td>
<td>Advocacy</td>
<td>City of Tulsa</td>
</tr>
<tr>
<td>EN 5.1.3</td>
<td>Engage PSO to develop energy programs dedicated to renewable energy, energy efficiency, electric vehicles, battery storage, and microgrids.</td>
<td>Partnership</td>
<td>City of Tulsa</td>
</tr>
<tr>
<td>EN 5.1.4</td>
<td>Support PSO’s ongoing energy resource diversification and investment in wind energy.</td>
<td>Partnership</td>
<td>City of Tulsa</td>
</tr>
<tr>
<td>EN 5.2</td>
<td>Ensure that Tulsa is prepared for innovations in transportation by providing education and incentives to residents regarding electric vehicles (EV) and alternative fuels.</td>
<td>Strategy</td>
<td>Multiple</td>
</tr>
<tr>
<td>EN 5.2.1</td>
<td>Educate Tulsa residents and businesses about the Tulsa Clean Cities program and the incentives offered to alternative fuel vehicle drivers.</td>
<td>Engagement</td>
<td>INCOG Environment</td>
</tr>
<tr>
<td>EN 5.2.2</td>
<td>Modify building codes to include EV readiness criteria.</td>
<td>Code Changes</td>
<td>INCOG Environment</td>
</tr>
<tr>
<td>EN 5.2.3</td>
<td>Encourage electrification of non-road equipment used in City operations, such as golf carts, construction equipment, and landscaping equipment.</td>
<td>Policy</td>
<td>Asset Management Tulsa Parks Engineering Services</td>
</tr>
<tr>
<td>EN 5.2.4</td>
<td>Promote the use of low carbon and high fuel efficiency vehicles, as well as non-motorized transportation.</td>
<td>Engagement</td>
<td>INCOG Environment Communications</td>
</tr>
</tbody>
</table>
#122

Posted by Kent G. on 02/15/2023 at 9:55pm [Comment ID: 955] - Link
Type: Question
Agree: 0, Disagree: -1

“P. 394 Modify building codes to include EV readiness criteria. This is reverse discrimination for those who can't afford EVs and we who use gasoline are funding EVs in buildings accommodations now and EVs are not paying fuel taxes at the pumps. EVs are not paying the freight or its fair share underfunding the transportation system and burdening others. It’s a free lunch for EVs!

P 397 “Emphasize the recruitment employees that have demonstrated pollution mitigation approaches.” This is classic discrimination criteria and flies in the face of creating equity. This can even be stretched by dictatorial bureaucrats and result in suppressing freedom of speech and religious freedom and the expression thereof”, i.e. violates the First Amendment and employment discrimination.”

#123

Posted by Barbara VanHanken on 02/18/2023 at 3:41pm [Comment ID: 1005] - Link
Agree: 1, Disagree: 0

Please increase the quiet in our neighborhoods with electric lawn services.

#124

Posted by Gary Allison on 12/06/2022 at 5:30pm [Comment ID: 534] - Link
Agree: 1, Disagree: 0

The Oklahoma Corporation Commission's Net Metering Rules are a major barrier to the widespread develop and use of rooftop solar in Oklahoma. Net metering is the process that compensates customers with rooftop solar facilities by netting the energy produced by their rooftop solar facilities against the energy consumed at that location. The Oklahoma Corporation Commission allows rooftop solar owners receive compensation for the excess energy they produce. Unfortunately, the OCC sets the rate of compensation at the utility's avoided cost of energy, which is among the lowest rates in the nation. As a consequence, no Solar leasing company will do business in Oklahoma and Oklahoma's rooftop solar generation is very low https://www.chooseenergy.com/solar-energy/solar-energy-production-by-state/ even though Oklahoma has the 7th best solar resources. https://worldpopulationreview.com/state-rankings/sunniest-states. See the State of Net Metering in the United States. https://www.solarreviews.com/blog/the-state-of-net-metering-usa-2021
#125

Posted by **Barbara VanHanken** on **02/18/2023** at **3:37pm** [Comment ID: 1004] - [Link]

*Agree: 1, Disagree: 0*

This is an imperative. Oklahoma needs to have access to community solar energy.

#126

Posted by **Jay Pruett** on **03/05/2023** at **3:09pm** [Comment ID: 1130] - [Link]

*Type: Suggestion*  
*Agree: 0, Disagree: 0*

Development of renewable energy for Tulsa should be strongly encouraged to avoid construction of wind facilities in locations where they will be harmful to native local or migratory wildlife. There are interactive maps available from conservation organizations such as The Nature Conservancy (https://www.nature.org/en-us/what-we-do/our-priorities/tackle-climate-change/climate-change-stories/site-wind-right/) and The American Bird Conservancy (https://abcbirds.org/program/wind-energy-and-birds/wind-risk-assessment-map/) which show sensitive wildlife areas that should be avoided by renewable energy development. COT should insist that its providers of electric power have taken wildlife impacts into consideration in the siting of facilities from which the City will buy/receive its power supply.

#127

Posted by **Avery** on **11/24/2022** at **7:18pm** [Comment ID: 362] - [Link]

*Agree: 3, Disagree: 0*

Big yes on all of the 5.1 strategies! Creating pathways for increased renewable energy production has to be a major priority.

#128

Posted by **Nancy Moran** on **11/30/2022** at **4:55pm** [Comment ID: 429] - [Link]

*Agree: 3, Disagree: 0*

So glad you included this. It is paramount and should be prioritized!!
Revise to state that the City supports PSO's latest integrated resource plan to add 2100 MW of new solar power and 2400 MW of new wind power by 2031. See pp. 126-130 of the IRP using link below.
https://drive.google.com/file/d/1to0dylfEZh9rwh1AJdNOjh1fby7vviTh/view?usp=sharing

#130

Why have microgrids in any new public housing projects and for our schools?
<table>
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<tbody>
<tr>
<td>EN 5.3</td>
<td>Measure the City’s existing carbon footprint and establish a greenhouse gas emissions reduction target and strategy.</td>
<td>Strategy</td>
<td>Multiple</td>
</tr>
<tr>
<td>EN 5.3.1</td>
<td>Create an inventory of greenhouse gas emissions in Tulsa, and work with community partners to develop target reductions and corresponding strategies.</td>
<td>Planning</td>
<td>City of Tulsa</td>
</tr>
<tr>
<td>EN 5.3.2</td>
<td>Assess the feasibility of solar array installations and the use of PSO’s WindChoice program at municipal and municipally-owned buildings.</td>
<td>Analysis</td>
<td>Asset Management</td>
</tr>
<tr>
<td>EN 5.3.3</td>
<td>Work with utility providers to evaluate the feasibility of an off-site solar array.</td>
<td>Partnership</td>
<td>Asset Management</td>
</tr>
<tr>
<td>EN 5.3.4</td>
<td>Explore using the rooftops of public facilities and parking garages for renewable micro-power generation, such as solar and wind.</td>
<td>Policy</td>
<td>Asset Management</td>
</tr>
<tr>
<td>EN 5.3.5</td>
<td>Convert street lights across the city to more energy-efficient fixtures.</td>
<td>Analysis</td>
<td>Streets &amp; Stormwater</td>
</tr>
<tr>
<td>EN 5.3.6</td>
<td>Establish goals for renewable energy usage in Tulsa, and benchmark the goals and progress made against peer cities across the country.</td>
<td>Planning</td>
<td>INCOG Environment</td>
</tr>
<tr>
<td>EN 5.4</td>
<td>Promote green buildings and energy efficiency.</td>
<td>Strategy</td>
<td>Multiple</td>
</tr>
<tr>
<td>EN 5.4.1</td>
<td>Study and consider financial incentives to encourage home builders and home owners to install solar and other distributed generation technologies.</td>
<td>Incentives</td>
<td>TAEO Tulsa Planning Office INCOG Environment</td>
</tr>
<tr>
<td>EN 5.4.2</td>
<td>Focus education efforts for residents on improving energy efficiency first and then seeking renewable resources.</td>
<td>Engagement</td>
<td>INCOG Environment Communications</td>
</tr>
<tr>
<td>EN 5.4.3</td>
<td>Develop an environmental assessment handbook for property owners, developers, and planners.</td>
<td>Planning</td>
<td>INCOG Environment</td>
</tr>
<tr>
<td>EN 5.4.4</td>
<td>Promote the Oklahoma Commercial Property Assessed Clean Energy (C-PACE) program.</td>
<td>Policy</td>
<td>INCOG Environment</td>
</tr>
</tbody>
</table>
#131

Posted by Stacie on 11/22/2022 at 8:41pm [Comment ID: 323] - Link
Type: Suggestion
Agree: 0, Disagree: 0
Biochar may be an option to recapture some of the air pollution released through composting at the city mulch site.

#132

Posted by Barbara VanHanken on 02/18/2023 at 3:43pm [Comment ID: 1006] - Link
Agree: 1, Disagree: 0
This is a great idea! I would love to see solar panels on our public schools.

#133

Posted by Green Country Sierra Club on 02/23/2023 at 8:11pm [Comment ID: 1045] - Link
Agree: 1, Disagree: 0
Focus on updating the building codes to address energy-efficiency. They are a decade old.

#134

Posted by Jay Pruett on 03/05/2023 at 3:12pm [Comment ID: 1131] - Link
Type: Suggestion
Agree: 0, Disagree: 0
Development of renewable energy for Tulsa should be strongly encouraged to avoid construction of wind facilities in locations where they will be harmful to native local or migratory wildlife. There are interactive maps available from conservation organizations such as The Nature Conservancy (link) and The American Bird Conservancy (link) which show sensitive wildlife areas that should be avoided by renewable energy development. COT should insist that its providers of electric power have taken wildlife impacts into consideration in the siting of facilities from which the City will buy/receive its power supply.
<table>
<thead>
<tr>
<th>Action ID</th>
<th>Action Required</th>
<th>Action Type</th>
<th>Involved Parties</th>
</tr>
</thead>
<tbody>
<tr>
<td>EN 5.4.5</td>
<td>Conduct energy efficiency audits of public facilities, and encourage energy efficiency audits of commercially owned properties.</td>
<td>Policy</td>
<td>Asset Management</td>
</tr>
<tr>
<td>EN 5.5</td>
<td>Adopt regulations, standards, and policies that lead to greater energy efficiency in the construction and operational lifespan of new buildings.</td>
<td>Strategy</td>
<td>Multiple</td>
</tr>
<tr>
<td>EN 5.5.1</td>
<td>Create an advisory group of climate and economics experts to review data and make recommendations.</td>
<td>Analysis</td>
<td>INCOG Environment</td>
</tr>
<tr>
<td>EN 5.5.2</td>
<td>Adopt the 2020 International Energy Conservation Code (IECC) for new construction.</td>
<td>Code Changes</td>
<td>Development Services</td>
</tr>
<tr>
<td>EN 5.5.3</td>
<td>Increase building code enforcement and building inspector education opportunities to ensure compliance with energy efficiency requirements.</td>
<td>Policy</td>
<td>Development Services</td>
</tr>
<tr>
<td>EN 5.5.4</td>
<td>Explore an accelerated permitting process or other administrative incentives for buildings that are built to higher energy efficiency standards than the minimum code.</td>
<td>Analysis</td>
<td>Development Services</td>
</tr>
<tr>
<td>EN 5.5.5</td>
<td>Assess the feasibility of Leadership in Energy and Environmental Design (LEED) requirements on new construction and retrofits of municipal building projects.</td>
<td>Analysis</td>
<td>Asset Management Development Services</td>
</tr>
<tr>
<td>EN 5.5.6</td>
<td>Evaluate whether to cease opting out of PSO’s energy efficiency requirements.</td>
<td>Analysis</td>
<td>City of Tulsa</td>
</tr>
<tr>
<td>EN 5.5.7</td>
<td>Evaluate zoning and building code regulations to permit green roofs, vertical gardens, and other green building elements.</td>
<td>Code Changes</td>
<td>Tulsa Planning Office Development Services</td>
</tr>
<tr>
<td>EN 6</td>
<td>Residents are protected from pollution and hazardous materials, and areas of existing environmental contamination and pollution are rehabilitated so that they are clean, usable, and productive.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EN 6.1</td>
<td>Pursue external funding opportunities for brownfield site remediation.</td>
<td>Strategy</td>
<td>Multiple</td>
</tr>
<tr>
<td>EN 6.1.1</td>
<td>Seek grants and governmental incentives to cover or reduce the cost of assessing and cleaning up sites.</td>
<td>Incentives</td>
<td>TAEO</td>
</tr>
</tbody>
</table>
Zoning should require 7 contiguous property owners adjacent to the property that is proposed to be rezoned with unanimous approval on the zoning.
<table>
<thead>
<tr>
<th>Action ID</th>
<th>Action Required</th>
<th>Action Type</th>
<th>Involved Parties</th>
</tr>
</thead>
<tbody>
<tr>
<td>EN 6.1.2</td>
<td>Promote ODEQ brownfield programs, such as the Brownfields Certificate Program, the Targeted Brownfields Assessment Program, and the Brownfields Revolving Loan Fund.</td>
<td>Policy</td>
<td>TAEOWIN</td>
</tr>
<tr>
<td>EN 6.2</td>
<td>Promote the adaptive use of existing buildings, infill development, and Brownfield development as effective sustainability practices that take development pressure off of undeveloped areas.</td>
<td>Strategy</td>
<td>Multiple</td>
</tr>
<tr>
<td>EN 6.2.1</td>
<td>Create and maintain an inventory of publicly-owned brownfield properties.</td>
<td>Policy</td>
<td>TAEOWIN, City of Tulsa, Tulsa Planning Office</td>
</tr>
<tr>
<td>EN 6.2.2</td>
<td>Include brownfield site remediation in the budget for corridor capital improvements in areas where brownfield sites exist.</td>
<td>Policy</td>
<td>TAEOWIN, Tulsa Planning Office Engineering Services Streets &amp; Stormwater</td>
</tr>
<tr>
<td>EN 6.3</td>
<td>Evaluate air quality, and develop collaborative approaches to reduce contributing factors.</td>
<td>Strategy</td>
<td>Multiple</td>
</tr>
<tr>
<td>EN 6.3.1</td>
<td>Increase public funding for the development of shared multimodal transportation systems that reduce vehicle emissions.</td>
<td>Capital</td>
<td>City of Tulsa</td>
</tr>
<tr>
<td>EN 6.3.2</td>
<td>Encourage employers to reduce emissions over time.</td>
<td>Policy</td>
<td>TAEO INCOG Environment</td>
</tr>
<tr>
<td>EN 6.3.3</td>
<td>Promote the creation of an air quality non-profit organization in the Tulsa region to conduct community-based education and advocacy.</td>
<td>Policy</td>
<td>INCOG Environment</td>
</tr>
<tr>
<td>EN 6.3.4</td>
<td>Emphasize the recruitment of employers that have demonstrated pollution mitigation approaches.</td>
<td>Policy</td>
<td>TAEO INCOG Ec. Dev.</td>
</tr>
<tr>
<td>EN 6.3.5</td>
<td>Promote Ozone Alert and related programs through City of Tulsa platforms and events.</td>
<td>Engagement</td>
<td>INCOG Environment Communications</td>
</tr>
<tr>
<td>Action ID</td>
<td>Action Required</td>
<td>Action Type</td>
<td>Involved Parties</td>
</tr>
<tr>
<td>-----------</td>
<td>-----------------</td>
<td>-------------</td>
<td>------------------</td>
</tr>
<tr>
<td>EN 6.3.6</td>
<td>Support existing work with local industrial employers to determine ways to reduce hazardous emissions through the Sustainable Tulsa SCOR3CARD.</td>
<td>Policy</td>
<td>INCOG Environment TAEO INCOG Ec. Dev.</td>
</tr>
<tr>
<td>EN 6.4</td>
<td>Reduce the risks associated with the transport of hazardous materials to and through Tulsa.</td>
<td>Strategy</td>
<td>Multiple</td>
</tr>
<tr>
<td>EN 6.4.1</td>
<td>Enforce requirements under the Hazardous Materials Transportation Act to ensure transporters are complying with the EPA's Hazardous Waste Manifest System, properly handling hazardous waste discharge, and obeying applicable U.S. DOT hazardous waste regulations.</td>
<td>Policy</td>
<td>TAEMA</td>
</tr>
<tr>
<td>EN 6.4.2</td>
<td>As the Gilcrease Expressway is completed, evaluate designating it as a Hazardous Materials Route and prohibit the transportation of hazardous materials on the Inner Dispersal Loop (IDL).</td>
<td>Policy</td>
<td>City of Tulsa TAEMA</td>
</tr>
<tr>
<td>EN 6.5</td>
<td>Continue ongoing mitigation efforts to reduce harmful pollutants and emissions.</td>
<td>Strategy</td>
<td>Multiple</td>
</tr>
<tr>
<td>EN 6.5.1</td>
<td>Meet or exceed all industry standards for flue emissions in the range of 90% - 100% below allowable limits.</td>
<td>Policy</td>
<td>Asset Management Streets &amp; Stormwater</td>
</tr>
<tr>
<td>EN 6.5.2</td>
<td>Increase outreach efforts to promote the collection of hazardous materials through the Household Pollutant Collection Program, and evaluate for new pollutants to add to the program.</td>
<td>Engagement</td>
<td>Streets &amp; Stormwater Communications</td>
</tr>
<tr>
<td>EN 6.5.3</td>
<td>Discourage fertilizer use near bodies of water to protect from possible algal blooms and decreases of aquatic animals and organisms.</td>
<td>Policy</td>
<td>Streets &amp; Stormwater Water &amp; Sewer Communications</td>
</tr>
<tr>
<td><strong>EN 7</strong></td>
<td>Tulsa develops inclusive sustainability planning efforts and creates dedicated offices and positions to facilitate implementation of sustainable practices.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EN 7.1</td>
<td>Update the 2011 City of Tulsa Sustainability Plan.</td>
<td>Strategy</td>
<td>Multiple</td>
</tr>
<tr>
<td>EN 7.1.1</td>
<td>Coordinate with the INCOG Environment division to develop a project scope for updating the plan.</td>
<td>Partnership</td>
<td>City of Tulsa</td>
</tr>
</tbody>
</table>
#136

Posted by **Aaron Griffith** on **11/20/2022 at 10:24pm** [Comment ID: 280] - [Link](#)

*Type: Suggestion*

*Agree: 20, Disagree: 0*

Require mandatory compliance under penalty of law for emitter/polluter businesses and industries to cut or drastically decrease emissions on Ozone Alert days.

#137

Posted by **Robert M Harrington** on **01/16/2023 at 1:08pm** [Comment ID: 748] - [Link](#)

*Type: Suggestion*

*Agree: 13, Disagree: 0*

Stop letting commercial vehicles such as Loomis use residential streets to conduct their bank pick ups at 21st and Lewis.

Prohibit commercial semi trucks from using neighborhood streets after exiting highway 51 into Lewiston Gardens.

#138

Posted by **Aaron Griffith** on **11/20/2022 at 10:16pm** [Comment ID: 279] - [Link](#)

*Type: Suggestion | Tags: What is City's stance?*

*Agree: 19, Disagree: -1*

Relocate this dangerous butane transfer railroad facility far away from populated areas.


Don’t allow redevelopment like this project to proceed inside a worst case scenario zone, until and unless hazards like this facility are completely eliminated or mitigated to a point of providing a very low threat for loss of life in a worst case scenario.

Push for federal legislation to require railroads transporting hazardous materials to utilize alternate routes that avoid passing through environmentally sensitive or densely populated areas, like Tulsa’s urban core.
According to the 2022 American Lung Association Report, Tulsa got an "F" on Ozone! We need a better campaign to reduce air quality. Electrifying our lives will help reduce this poor rate for Tulsa. Also, we must reduce our levels of particulate matter that are too high. The important thing is to take action to have clean air!

Absolutely mandate this 100%.

<table>
<thead>
<tr>
<th>Action ID</th>
<th>Action Required</th>
<th>Action Type</th>
<th>Involved Parties</th>
</tr>
</thead>
<tbody>
<tr>
<td>EN 7.1.2</td>
<td>Allocate funding for plan development and implementation.</td>
<td>Planning</td>
<td>City of Tulsa</td>
</tr>
<tr>
<td>EN 7.1.3</td>
<td>Work closely with community groups that have consistently worked to promote sustainability in the community, with a focus on including perspectives from areas identified as needing environmental justice by the EPA.</td>
<td>Engagement</td>
<td>INCOG Environment</td>
</tr>
<tr>
<td>EN 7.2</td>
<td>Establish an Office of Sustainability either internally at the City of Tulsa or regionally at INCOG.</td>
<td>Strategy</td>
<td>Multiple</td>
</tr>
<tr>
<td>EN 7.2.1</td>
<td>Work with surrounding municipalities, counties, and tribal government partners to determine the feasibility of a regional Office of Sustainability, evaluating whether this approach would more effectively hold governments accountable to their sustainability goals.</td>
<td>Partnership</td>
<td>City of Tulsa INCOG Environment</td>
</tr>
<tr>
<td>EN 7.3</td>
<td>Work with community groups and Tulsa residents to evaluate progress toward the goals established in the City’s Sustainability Plan.</td>
<td>Strategy</td>
<td>Multiple</td>
</tr>
<tr>
<td>EN 7.3.1</td>
<td>Establish a committee or commission to meet regularly and engage with City staff working to achieve sustainability goals.</td>
<td>Program</td>
<td>City of Tulsa</td>
</tr>
<tr>
<td>EN 7.3.2</td>
<td>Develop public education initiatives to promote sustainable practices to residents.</td>
<td>Engagement</td>
<td>INCOG Environment Streets &amp; Stormwater Tulsa Parks</td>
</tr>
<tr>
<td>EN 7.4</td>
<td>Use metrics and standards developed by national organizations to evaluate Tulsa’s progress against peer cities across the country and the world.</td>
<td>Strategy</td>
<td>Multiple</td>
</tr>
<tr>
<td>EN 7.4.1</td>
<td>Annually update the intent for the American Council for an Energy-Efficient Economy (ACEEE) Scorecard.</td>
<td>Policy</td>
<td>INCOG Environment</td>
</tr>
<tr>
<td>EN 7.4.2</td>
<td>Work with Sustainable Tulsa to promote their SCOR3CARD to businesses and other organizations across the city.</td>
<td>Partnership</td>
<td>INCOG Environment</td>
</tr>
<tr>
<td>EN 7.4.3</td>
<td>Develop sustainability measures for City departments as a part of annual performance reporting.</td>
<td>Policy</td>
<td>City of Tulsa</td>
</tr>
</tbody>
</table>
#141

Posted by **Emily Vickers** on **01/26/2023** at **6:33pm** [Comment ID: 827] - [Link]

Type: Suggestion
Agree: 4, Disagree: 0

Tulsa's Ready for 100 Program (Green Country Sierra Club) has some great ideas! Please reach out to collaborate on this goal and action item!

#142

Posted by **Barbara VanHanken** on **02/18/2023** at **4:25pm** [Comment ID: 1009] - [Link]

Agree: 2, Disagree: 0

I suggest that the Green Country Sierra Club be included.

#143

Posted by **Kent G.** on **02/15/2023** at **9:47pm** [Comment ID: 950] - [Link]

Agree: 0, Disagree: -1

"P. 374 there is Serious lack of debate on global climate change causes. Advocates for another government Office of Sustainability creating even more layers of unelected bureaucrats implementing policies that are not law or a distortion thereof. SEE page 374.375, 394, 399, and 407. Creates another level of bureaucracy creating roadblocks to free enterprise and property rights. How many committees before it’s the one that breaks the camel’s back?"

#144

Posted by **Emily Vickers** on **11/25/2022** at **12:34am** [Comment ID: 365] - [Link]

Type: Suggestion
Agree: 1, Disagree: 0

I compiled all of our answers for the 2020/2021 ACEEE update. If you need the excel, please let me know. I was an intern with Tulsa Area Clean Cities at the time. I would be happy to help with the yearly update, as well.

#145
There is a lack of consideration for Tribes. You mention "community groups" but not Tribes. The City of Tulsa cannot stay in denial that Tulsa is within a reservation.

#146

TYPROS Sustainability Crew would love to help support these efforts!
**SELECTED CITY COMPARISON**

Tulsa Planning Office staff selected this set of 6 cities from the review of more than 30 comprehensive plans from across the United States. These cities were selected to represent a variety of environmental contexts, and many of the cities have exceptional plan recommendations related to extreme weather and climate change mitigation. The metrics chosen for this chapter include measures related to pollution, climate change awareness and impact, and readiness for technological innovations that may lead to positive outcomes related to environmental concerns.

<table>
<thead>
<tr>
<th>Metric</th>
<th>Units</th>
<th>Tulsa, OK</th>
<th>Bakersfield, CA</th>
<th>Portland, OR</th>
<th>Denver, CO</th>
<th>Minneapolis, MN</th>
<th>Louisville, KY</th>
<th>New Orleans, LA</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EV Charging Stations per Capita</strong></td>
<td>U/pop*10,000</td>
<td>0.62</td>
<td>0.64</td>
<td>1.83</td>
<td>1.87</td>
<td>1.44</td>
<td>0.71</td>
<td>0.54</td>
</tr>
<tr>
<td><strong>Air Quality</strong></td>
<td># of Unhealthy Air Days (3-year average 2019, 2020, 2021)</td>
<td>0.67</td>
<td>21.33</td>
<td>0.33</td>
<td>7.66</td>
<td>1.33</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Toxic Release</strong></td>
<td>RSEI Pounds</td>
<td>80</td>
<td>100</td>
<td>70</td>
<td>96</td>
<td>0</td>
<td>0</td>
<td>49</td>
</tr>
<tr>
<td><strong>Global Warming Awareness</strong></td>
<td>%</td>
<td>67%</td>
<td>71%</td>
<td>83%</td>
<td>82%</td>
<td>80%</td>
<td>72%</td>
<td>82%</td>
</tr>
<tr>
<td><strong>GHG Emissions</strong></td>
<td>Metric Tons of CO2 Equivalent</td>
<td>33</td>
<td>69</td>
<td>76</td>
<td>14</td>
<td>15</td>
<td>28</td>
<td>70</td>
</tr>
</tbody>
</table>
Metric for Global Warming Awareness. Furthers, the Left’s political propaganda that man is causing Climate Change. Lie that science is settled and that cannot debate or question without mocking or belittlement response by proponents. SEE The Truth about energy, Global Warming, and Climate Change by Jerome Corsi
FEATURED METRIC

Air Quality

Tulsa has one of the lowest numbers of unhealthy air days when compared to the selected cities. Unhealthy air days are a part of the American Lung Association’s Air Quality Index and are days when EPA federal air standards are exceeded. Unhealthy air days are determined by undesirable levels of ozone, smog, particulate pollution (tiny particles from ash, factories, vehicle exhaust, pollen, power plants, etc.), as well as other common air pollutants. Tulsa’s ozone alert days are forecasts of harmful air quality conditions and are one of the ways Tulsans can be informed and help mitigate the number unhealthy air days. Since the early 1990s Tulsa has maintained conformance with ozone concentration limits established by the EPA; however, the risk of non-attainment persists, and reductions in automobile air pollutants should continue.

Tulsa Area Ground-Level Ozone Trend

Electric Vehicle Charging Stations per Capita
Tulsa has one of the lowest levels of electric vehicle charging stations per capita when compared to the selected cities. Tulsa residents are not only dependent on individually-owned vehicles to travel from place to place but are also very fossil fuel dependent. Tulsa’s economy, both historically and presently, is dominated by the fossil fuel industry; however, as climate change concern spreads across the globe, alternative fuels will become more popular and more accessible. Over time, many Tulsans are making the choice to drive hybrid or fully electric vehicles, an important contribution toward lowering Tulsa’s carbon footprint.

Toxic Release
Tulsa is among the highest of the selected cities for toxic release. Toxic release is measured in Risk-Screening Environmental Indicators (RSEI) Pounds, which accounts for the size of a release and various chemicals’ toxicities. Mitigating pollution is key to protecting Tulsa’s natural resources and ensuring that the natural environment is enjoyed not only in the present but also by future generations.

Global Warming Awareness
The Tulsa Metropolitan Statistical Area (MSA) has the lowest global warming awareness when compared to the selected cities. Global Warming Awareness was measured in 2021 as the percentage of Adults who think global warming is happening. The issue of global warming has become more pressing in recent years, and more and more people are aware of it. Tulsans should be informed on how their daily choices can intensify or mitigate the harmful effects of global warming and how they can work as a community to improve local practices.

Greenhouse Gas (GHG) Emissions
The Tulsa MSA is among the lowest of the selected cities for GHG emissions per capita. This metric is measured as metric tons of carbon dioxide equivalent per person. GHG emissions contribute to dangerous levels of ozone. It is important that Tulsans make efforts to lessen their GHG emissions to serve as an example for other cities.
We must lead the way to close down the most polluting sites in Tulsa, the two legacy petroleum refineries. HF Sinclair must clean up these two sites. We will have a clean Arkansas River with those refineries operational.
EQUITY & RESILIENCE CONSIDERATIONS

NATURAL DISASTER AND EMERGENCY PREPAREDNESS
Oklahoma is well known for natural disasters. Tornadic events, flooding, ice storms, and earthquakes all occur with relative frequency, creating a culture that is accustomed to response and recovery. In order to maintain a resilient community in the face of acute stress events, communication between emergency response services and residents is critically important. To serve the diverse needs of Tulsa residents, emergency communications need to be delivered in consistent and predictable ways, utilizing technology to increase the breadth of communications. For residents for whom English is not their primary spoken language, as well as residents with physical and cognitive disabilities, there is an increased risk of danger during an emergency.

Recommendations

EN.ER.1 Enhance emergency communications by producing messaging in multiple languages, and distribute the messaging across a broad spectrum of media, including social media, websites, text messaging, television and print news reports, and in-person discussions.

EN.ER.2 Regularly upgrade the siren system in the region to be compatible with modern emergency management systems.

URBAN HEAT ISLAND/URBAN TREE CANOPY
Tulsa is located in the heart of Green Country, named for the lush forested landscape that covers the region. However, within the city limits the amount of tree canopy coverage is not consistent, with wealthier areas of the city having significantly more tree canopy coverage than lower-income areas. A lack of shade in urbanized areas exposes vast amounts of impervious surfaces such as pavement and rooftops, which absorb the sun’s heat and increase the localized risk of heat-related health problems such as heat stroke and heat exhaustion. Additionally, areas without tree canopy coverage require greater air conditioning to maintain cool indoor temperatures, increasing the cost burden on populations who may already be economically disadvantaged.

Recommendations

EN.ER.3 Strategically increase tree canopy coverage in areas of the city that are at a higher risk of exposure to heat.

EN.ER.4 Ensure City properties and parks have shelter and free water available to mitigate against heat-related illness.

EXPOSURE TO POLLUTION
Pollution can manifest in many different forms that all have potential harmful impacts on humans and animals. Water, soil, air, noise, and light pollution, as well as exposure to hazardous materials spills or explosions all present risks to residents. In Tulsa many residents live in areas that are exposed to particulate matter and ground-level ozone that emanate from the highways. Industrial uses along the Arkansas River and historic rail alignments have led to discussions about the disparate conditions faced by those residents in comparison to areas of the city not exposed to these pollutants. Impaired water bodies also present a risk for children and recreational users who may be exposed to toxic conditions without knowing the status of the water body’s quality.

Recommendations

EN.ER.5 Strategically place vegetative buffers between sources of pollution and vulnerable communities.

EN.ER.6 Distinguish between locations that are appropriate for non-industrial employment facilities and those that are suitable for more intense industrial purposes.

EN.ER.7 Identify pollution source, and remove or reduce them as possible.
Again, we have two over 100 years old refineries that are major pollutors. They have received two RCRA permits to allow them to dispose of their toxic waste into our Arkansas River. Stop this pollution!
**GEOGRAPHIC DISPARITIES**

The above map shows areas of the city with natural resources that support wildlife habitat, provide shade, and mitigate pollution, and infrastructure that supports more sustainable transportation choices. The map also incorporates areas at risk of flooding. Undeveloped areas of the city, such as the northwest, far east, far south, and Turkey Mountain, have the highest levels of environmental assets. There are pockets in the city, primarily in affluent areas, where environmental assets exist. Areas that lack environmental assets include downtown and surrounding neighborhoods and where I-44 and Highway 64 cross.

**INDICATORS USED IN MAP**

- Exposure to Floodplain
- Tree Canopy Coverage
- % Impervious Surface
- % in Proximity of a Highway
- # of EV Charging Stations

**RELEVANT EQUALITY INDICATORS**

No indicators in the Equality Indicator reports are related to environmental hazards. It is recommended that emergency preparedness, climate-related impacts, and exposure to pollution be added to evaluate environmental disparities.

**RELEVANT RESILIENT TULSA ACTIONS**

**ACTION 18:** Develop Resilience Hubs in Comanche Park and River West neighborhoods while ensuring proper hazard response information is disseminated to the public.

**ACTION 19:** Prepare small businesses to reduce disruptions in operations.

**ACTION 20:** Utilize Emergency Mobility Plan technology.

**VULNERABLE POPULATIONS**

- Residents who speak a language other than English
- Households in flood-prone areas
- Households in proximity of a highway
- Older adults
- Youth
- Persons with respiratory ailments
- Persons with physical and/or cognitive disabilities
- Low-income households

*Equality Indicator reports are issued annually by the City of Tulsa.

**Resilient Tulsa Strategy was adopted by the City of Tulsa in 2018.**

This map is generated using data from the Tulsa Planning Office’s Neighborhood Conditions Index (NCI).
HEALTH & WELLNESS CONSIDERATIONS

Hazardous Materials

<table>
<thead>
<tr>
<th>Health Impact</th>
<th>Associated Health Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exposure to hazardous chemicals and materials</td>
<td>Increase in behavioral abnormalities, cancer, genetic mutations, birth defects, physiological malfunctions (e.g. reproductive impairment, kidney failure, etc.)</td>
</tr>
</tbody>
</table>

Tulsa Context
In Tulsa, hazardous material spill sites are primarily located in established industrially-zoned areas, along highways, and along rail lines. In particular, the industrial uses along the west bank of the Arkansas River, the railroad that connects the airport, Dawson, and downtown Tulsa, as well as at the interchange of I-44 and the Broken Arrow Expressway represent significant pockets of Tier 2 hazardous material sites. Additionally, there is a higher concentration of sites in areas of Tulsa north of I-244. This represents an increased risk for exposure for the residents North Tulsa, particularly around the Comanche Park housing site and along Dawson Rd. Further north into Tulsa County, numerous hazardous material spill sites cluster along the Highway 75 corridor.

Policy Recommendations

EN.HW.1 Inform the general public of what to do when a hazardous materials incident has occurred.

EN.HW.2 Reroute the shipment of hazardous materials along highways with fewer required maneuvers than the Inner Dispersal Loop (IDL) to reduce the risk of vehicle collisions resulting in the spilling of hazardous materials.

Water Quality

<table>
<thead>
<tr>
<th>Health Impact</th>
<th>Associated Health Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exposure to water contaminants</td>
<td>Water-borne disease; habitat pollution and destruction; death of animal and plant populations</td>
</tr>
</tbody>
</table>

Tulsa Context
A significant portion of the streams in Tulsa, including the Arkansas River, are considered impaired due to contamination from various chemicals. In total, 65 miles of streams in all corners of the city are impaired. The most prevalent contaminants include cadmium, enterococci, and E. coli. The Mingo Creek watershed and streams are among the few non-impaired stream systems within the city limits. No lakes within the city limits are designated as impaired. The impairment of streams and water bodies can have devastating affects on wildlife and lead to the degradation of valuable habitat.

Policy Recommendations

EN.HW.3 Implement design recommendations from the Low-Impact Development Manual in streets projects and other public infrastructure projects.

EN.HW.4 Encourage low-impact development design features in development, such as pervious pavers and rain gardens.

EN.HW.5 Conduct research at wastewater treatment plants to determine any needs to increase treatment requirements for substances not currently tested (excess nutrients, pharmaceuticals, etc.).

EN.HW.6 Continue to promote responsible fertilizer use.

EN.HW.7 Continue to expand the sewer utility service area to convert properties presently using septic systems within the city limits.

EN.HW.8 Promote the usage of native plant species in landscaping.

EN.HW.9 Implement a water quality monitoring program for the Arkansas River and provide the findings to the public.
**Natural Areas Conservation**

<table>
<thead>
<tr>
<th>Health Impact</th>
<th>Associated Health Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decreased flooding incidents due to water carrying capacity</td>
<td>Reduction in property loss, injury, and death</td>
</tr>
<tr>
<td>Increased opportunity to interact with nature</td>
<td>Decrease in stress, anxiety, and depressive disorders; benefits of increased physical activity</td>
</tr>
</tbody>
</table>

**Tulsa Context**

Tulsa has many areas of natural habitat ranging from the urban wilderness at Turkey Mountain, to the Arkansas River, creeks and streams, and the undeveloped areas in the northwest, far east, and far north areas of the city. These locations serve as the habitat for numerous species of birds, mammals, insects, reptiles, amphibians, and fish. Additionally, these areas serve a recreational purpose for the residents of Tulsa, with opportunities for hiking, mountain biking, disc golf, fishing, and more. As development pressures approach these areas, there is little that can be done to prevent habitat destruction without specific considerations in the development review process. These areas should be protected to ensure Tulsans to have opportunities to interact with nature.

**Policy Recommendations**

*EN.HW.10* Consider the impact of development on natural areas in the development review process.

*EN.HW.11* Promote environmental stewardship through educational campaigns focused on littering, erosion, and wildlife interactions.

*EN.HW.12* Increase the urban tree canopy with a focus on contiguous canopy to support wildlife habitation.

**Urban Heat Island (UHI)**

<table>
<thead>
<tr>
<th>Health Impact</th>
<th>Associated Health Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exposure to higher temperatures</td>
<td>Increase in heat exhaustion, heat stroke, death</td>
</tr>
<tr>
<td>Increase in greenhouse gas emissions and other air pollution</td>
<td>Increase in asthma and other respiratory diseases</td>
</tr>
<tr>
<td>Increase in energy usage</td>
<td>Further harmful emissions, decrease in money for healthful choices</td>
</tr>
</tbody>
</table>

**Tulsa Context**

Tulsa’s vast urban area consists of significant areas of impervious surfaces such as streets, parking lots, and building roofs, with only 26% of the city being covered by tree canopy. When compared to surrounding rural areas, Tulsa’s average temperature is consistently higher, particularly in the summer months and in the evenings, with an average high in July that is 2° higher at mid-day and 4° higher in the evenings. The temperature differential is less pronounced in winter months.

**Policy Recommendations**

*EN.HW.13* Increase efforts to plant street trees and other vegetative elements in and around areas with high rates of impervious surfaces (shade trees, green walls, etc.).

*EN.HW.14* Incentivize the use of green roofs, cool roofs, and other LID practices in all areas and land uses.

*EN.HW.15* Promote the use of reflective and permeable pavement materials.

*EN.HW.16* Reduce vehicle emissions by investing in alternative transportation.

*EN.HW.17* Encourage community involvement in volunteer efforts, including demonstration projects, urban forestry programs, outreach and education programs, and awards.
#150

Posted by Aaron Griffith on 02/06/2023 at 11:22pm [Comment ID: 895] - Link
Type: Suggestion
Agree: 7, Disagree: 0

Tulsa needs to enact a extreme weather exposed worker safety and protection ordinance similar to what Austin has in place to protect employees who must work exposed to extreme temperatures/weather conditions.


https://www.austintexas.gov/department/rest-break-ordinance

#151

Posted by Jay Pruett on 03/05/2023 at 7:03pm [Comment ID: 1143] - Link
Type: Suggestion
Agree: 1, Disagree: 0

It is important to utilize native species of trees in trying to accomplish increased tree canopy coverage for the city. Recommended species of trees can be checked against the OK Invasive Plant Species Database at https://www.okinvasives.org/plants-database to determine if they pose a threat as an invasive species.
**Tulsa Context**
Across the entire city, Tulsa is 26% covered by tree canopy. Among over 400 census block areas, 20% had 3-15% canopy, 54% had 15-30% canopy, and 26% had over 30% tree canopy. Most of the heavily wooded areas of the city are in the undeveloped fringe areas in the northwest, southeast, and far east; however, Midtown and South Tulsa have significant tree canopies. In contrast, North Tulsa, East Tulsa, and West Tulsa have substantially less tree canopy.

**Policy Recommendations**

**EN.HW.18** Ensure tree benefits for future generations through a sustainable planting program that encourages planting the right tree in the right place.

**EN.HW.19** Incorporate urban forestry practices into the City’s stormwater management efforts by planting trees and installing bioswales and other green infrastructure in the right-of-way.

**EN.HW.20** Explore the development of a tree removal permitting system to track removals of trees in the public right-of-way.

**EN.HW.21** Create public outreach materials to define when tree removal permits are required.

**EN.HW.22** Train local commercial arborists and landscaping companies to recognize when a tree removal permit is required.

### Urban Tree Canopy

<table>
<thead>
<tr>
<th>Health Impact</th>
<th>Associated Health Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amount of tree canopy coverage</td>
<td>Increase in seasonal allergies; decrease in heat-related morbidity; increase in wildlife habitat</td>
</tr>
<tr>
<td>Improved air quality associated with greater tree canopy coverage</td>
<td>Decrease in asthma and other respiratory diseases</td>
</tr>
</tbody>
</table>
It is important to utilize native species of trees in trying to accomplish increased tree canopy coverage for the city. Recommended species of trees can be checked against the OK Invasive Plant Species Database at link to determine if they pose a threat as an invasive species.
FUNDING PRIORITIES

In order for Tulsa to be a resilient city in the face of natural disasters and climate change, consistent funding of capital improvements, operational funding, and dedicated personnel is critical. Significant capital needs include investment in flood mitigation efforts along the Arkansas River and other streams within the city limits. For the Arkansas River there are capital needs to reinforce the system of levees in partnership with Tulsa County, the State, and the federal delegation. Additionally, reinforcement of shorelines through the installation of rip-rap or other techniques is a significant capital need, particularly in locations of concern, such as the wastewater treatment facility near Turkey Mountain. If erosion is allowed to undermine the overflow pools or treatment pools, substantial environmental damage will occur to the Arkansas River, in addition to the damage done to the public facilities.

Another important capital need for resiliency is upgrades to emergency sirens. Presently the siren system includes several sirens that are obsolete, which limits Tulsa Area Emergency Management Authority (TAEMA) from utilizing all of the software available to better communicate emergency notifications. Upgrades to these sirens is a marginal cost compared to the costs associated with an increased risk of damage and loss of life.

Operational needs are primarily focused on the management of public facilities. Without adequate maintenance funding, as well as funding for energy-efficient upgrades to building components, costs are higher than necessary due to a reduced time frame for component replacement. Increased operational funding can move the City of Tulsa from a “Run-to-Fail” maintenance approach to one that is much more resilient over a longer time frame.

Dedicated funding is needed for personnel that focus on sustainability, both internal to the City of Tulsa and external in the community. By reestablishing an Office of Sustainability there will be substantial benefits to the environment, residents, and the City’s bottom line.

REGIONALISM CONSIDERATIONS

Natural disasters require a regional approach, and the resources for such events should be pooled collectively to address needs such as an Emergency Operations Center, sirens and other notification technology, and communications capacity.

Pollution, whether air, water, soil, or other forms, is best addressed at the regional level, as these impacts are not limited by political boundaries. Coordination with counties, tribal governments, INCOG, the State, and federal agencies offers the most efficient venue for addressing issues. In particular, impacts to the Arkansas River and sources of drinking water should be addressed through regional collaboration.

New forms of energy production would benefit from regional partnerships and public-private partnerships to tap existing wind and solar capacity. These partnerships could lead to a more unified approach to lobbying State lawmakers to incentivize alternative fuels, or to prevent additional anti-competitive restrictions from being made into statute. This approach would also be beneficial for electric vehicles, for which the Tulsa region is well-positioned to be a leader but cannot if State action precludes the economic incentivization needed.

In order to address sustainability in the Tulsa area, a regional approach in tandem with local efforts would be preferable to several disparate groups working independently. Contributing members of INCOG could support the creation of a regional office of sustainability to update sustainability plans and lead implementation efforts across the region.
#153

Posted by Kent G. on 02/15/2023 at 10:03pm [Comment ID: 956] - Link

Type: Suggestion

Agree: 0, Disagree: -1

"P. 407 “regional partnerships and public private partnerships to tap existing wind and solar capacity”. Government has shown that this track record results in massive waste of billions as with Obama solar energy funding failure. Regarding public private partnerships quote: “but cannot if State action precludes the economic incentivization needed.” There is a legislative prevention of this measure inplace, but this plan is advocating the need to pass legislation to allow public-private partnerships."

#154

Posted by Kent G. on 02/15/2023 at 9:50pm [Comment ID: 952] - Link

Agree: 0, Disagree: -1

"P. 374 there is Serious lack of debate on global climate change causes. Advocates for another government Office of Sustainability creating even more layers of unelected bureaucrats implementing policies that are not law or a distortion thereof. SEE page 374.375, 394, 399, and 407. Creates another level of bureaucracy creating roadblocks to free enterprise and property rights. How many committees before it’s the one that breaks the camel’s back?"

#155

Posted by Kent G. on 02/15/2023 at 9:48pm [Comment ID: 951] - Link

Type: Suggestion

Agree: 0, Disagree: -1

"P. 374 there is Serious lack of debate on global climate change causes. Advocates for another government Office of Sustainability creating even more layers of unelected bureaucrats implementing policies that are not law or a distortion thereof. SEE page 374.375, 394, 399, and 407. Creates another level of bureaucracy creating roadblocks to free enterprise and property rights. How many committees before it’s the one that breaks the camel’s back?"

#156
P. 381 “incentives to residents regarding electric vehicles (EV) and alternative fuels”. Reverse discrimination creating inequity which is what they are advocating? Using city tax dollars for - government services. Is this legal?
500-Year Flood - A flooding event with a 0.2% chance of happening in any given year.

Adaptive Use - Also known as adaptive reuse, which is the extensive alteration, restoration, and/or renovation of an existing building so that it will serve a new or modified purpose.

Algal Bloom - An occurrence where colonies of algae grow out of control and produce toxic or harmful effects on people, animals, and marine life.

Alternative Fuels - Fuels that are derived from sources other than petroleum, such as hydrogen, natural gas, propane, ethanol, and electricity.

American Council for an Energy-Efficient Economy (ACEEE) Scorecard - Analyzes the energy efficiency efforts of all 50 States by tracking their policies and programs to reduce energy use.

American Lung Association’s Air Quality Index - A system used to warn the public when air pollution is dangerous.

Army Corps of Engineers - A branch of the Army that specializes in engineering projects that oversee the nation’s aquatic resources.

Bar Ditch - A roadside channel, or ditch, dug for drainage purposes.

Bee City USA - A growing program in various communities to sustain pollinators, in particular the more than 3,600 species of native bees in this country, by increasing the abundance of native plants, providing nest sites, and reducing the use of pesticides.

Brownfield Sites - A property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant.

Brownfields Certification Program - A program for private parties and government entities to voluntarily investigate and clean up contaminated properties.

Capital Improvement Project - A project where additions, or improvements, to a permanent structure, are implemented to enhance the lifespan of said structure.

Carbon Footprint - The amount of carbon dioxide and other carbon compounds emitted due to the consumption of fossil fuels by a particular person, group, vehicle, etc.

Climate Change - The long-term change in the average weather patterns that have come to define Earth’s local, regional and global climates.

Community Garden - Plots of land, usually in urban areas, that are a shared, semi-public space where people in the surrounding neighborhood share the opportunity of maintaining a garden space to provide physical and social benefits.

Contiguous - Sharing a border, neighboring, e.g. the contiguous United States refers to the lower 48 states that share a border.

Control Structure - Engineered structures to provide defense against frequent flooding and coastal erosion.

Detention Pond - A pond, or also known as a stormwater basin, is a low-elevation area near rivers, creeks, or streams, that is designed to hold overflow water to protect areas surrounding it from flooding.

Dissolved Oxygen - Refers to the concentration of oxygen gas incorporated in water.

Drainage Basin - A site where water collects.

Electric Vehicle Infrastructure - The basic physical and organizational structures and facilities needed for the operation of electric vehicles (e.g. charging stations in buildings, supplies, personnel).

Endangered Species Act - The primary law in the United States to protect critically imperiled species from extinction, passed by Congress in 1973.

Endemic Species - Plants and animals that only exist in one geographic region.

Energy Resource Management - The use and management of energy resources through conservation.

Environmental Asset - The naturally occurring living and non-living components of Earth, and together constituting the bio-physical environment, which may provide benefits to humanity.

Environmental Justice - The fair treatment and meaningful involvement of all people, regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.

Environmental Stewardship - The responsible use and protection of the natural environment through conservation and sustainable practices.

Extreme Weather - Weather events that are considered on the upper or lower threshold of historical measurements.

Federal Delegation - A group of elected officials at the federal level representing a state.

Floodplain - A low-lying region adjacent to rivers or streams in which during times of flooding stretches beyond the banks of the river/stream channels.

Flue Emissions - The gas exiting to the atmosphere via a pipe or channel for conveying exhaust gases from a fireplace, oven, furnace, boiler, or steam generator.
Fossil Fuel - A natural, non-renewable, source of energy such as coal, petroleum, and natural gas.

Geographic Information Services (GIS) - A computer-based spatial tool used to store, visualize, analyze, and interpret geographic data.

Global Warming - The long-term warming of the planet’s overall temperature.

Green Buildings - A building that, in its design, construction or operation, attempts to reduce or eliminate negative impacts, and can create positive impacts, on our climate and natural environment.

Green Infrastructure - Ecological systems, both natural and engineered, that act as living infrastructure. Green Infrastructure elements are planned and managed primarily for stormwater control, but also exhibit social, economic and environmental benefits.

Green Roof - A layer of vegetation planted over a waterproofing system that is installed on top of a flat or slightly-sloped roof.

Greenhouse Gas Emissions - Gasses emitted by human activity (such as carbon dioxide, natural gas, or chlorofluorocarbons) that contribute to the trapping of heat in the atmosphere.

Ground-Level Ozone - Also known as Tropospheric Ozone, it is formed when pollutants emitted by cars, power plants, industrial boilers, refineries, chemical plants, and other sources chemically react in the presence of sunlight.

Growth Awards - Given to participating Tree City USA communities that demonstrate higher levels of tree care and community engagement during the calendar year.

Habitat - The natural home or environment of an animal, plant, or other organism.

Hazardous Materials (HAZMAT) - Substances or material that could adversely affect society, such as toxic chemicals, fuels, nuclear waste, biological, chemical, and radiological agents.

Hazardous Materials Route - Designated transportation route by which hazardous materials get transported, either by rail, sea, or road.

Hazardous Waste Manifest System - A system designed to track hazardous waste from the time it leaves the generator facility where it was produced, until it reaches the off-site waste management facility that will store, treat, or dispose of the hazardous waste.

Household Pollutant Collection Program - A program of the City of Tulsa’s Streets & Stormwater Department with a year-round collection facility for the disposal of hazardous household waste.

Hydroelectricity - A renewable energy resource that uses the energy of running water to produce energy.

Impervious Surface - Surfaces where water cannot get through or absorbed, and runs off. Roads, streets, sidewalks are considered impervious surfaces.

Infill Development - New construction in existing areas of the city, particularly older parts of the city.

Inner-Dispersal Loop (IDL) - The highway system that wraps around Tulsa’s downtown core.

Integrated Pest Management (IPM) - A science-based, common-sense approach for reducing populations of disease vectors and public health pests.

International Energy Conservation Code (IECC) - A model energy code that establishes and regulates the design and construction requirements for minimum energy conservation of new buildings.

Inundation - To be overwhelmed with water, e.g. floodwaters.

Keystone Dam - A engineering structure whose purpose is to control flooding of Keystone reservoir, provide hydroelectric energy, and recreation.

Leadership in Energy and Environmental Design (LEED) - A program for green building design, construction, operations, and performance to help building owners and operators to be as environmentally conscious as possible.

Levee - A man-made structure that runs parallel along the course of a river to keep the water within its banks.

“Lights Out” Campaign - A campaign to turn off lights in towns and cities to mitigate the threat to migratory birds that fly through the United States when they return each spring.

Low-Impact Development (LID) - A land planning and engineering design approach to manage stormwater runoff as part of green infrastructure, emphasizing conservation and use of on-site natural features to protect water quality. This includes green roofs, bioswales, rain gardens, permeable pavers, etc.

Materials Transportation Act - Also known as Hazardous Materials Transportation Act, it is a law regulating the transportation of hazardous materials to protect life and property.

Microgrid - A local energy grid with control capability, which means it can disconnect from the traditional grid and operate autonomously in times of crisis, like storms, or power outages.
GLOSSARY OF TERMS

**Micro-Power Generation** - Small-scale generation of heat and electric power by individuals, small businesses, and communities as an alternative to being connected to a centralized power grid.

**Mitigate** - To make something less harmful, or less severe and intense.

**Multi-Lingual** - In or using several languages.

**National Flood Insurance Program Class 1 Rating** - A classification based off of a community rating system (CRS) in which Class 1 receives a 45% premium discount on Flood Insurance policies based of public information, mapping and regulations, flood damage reduction, and warning and response.

**Native Plants** - Occurring naturally in a particular region, ecosystem, or habitat without human introduction.

**Naturalist** - A type of biologist who studies the impact of living species on each other and the environments in which they live.

**Non-Attainment** - Not meeting national standards for surrounding air quality.

**Ozone Alert** - Also called air pollution alerts, they are alerts that are activated on days when there is an unhealthy concentration of ozone pollution in the surrounding area.

**Particulate Matter** - All liquid and solid particles suspended in the air, many of which are hazardous.

**Pathogen** - An organism (such as bacteria or viruses) that causes disease.

**Point Source Pollutants** - Refers to pollution that occurs from a single identifiable source.

**Pollinator** - An insect or other agent that conveys pollen to a plant and so allows fertilization.

**Polyculture** - The practice of growing more than one crop species in the same space.

**Remediation** - The process of removing hazardous substances from the environment to lessen the effect it has on society.

**Renewable Energy** - Energy from a source that is not depleted when used, such as wind or solar power.

**Retrofit** - The process of modifying or improving an already existing structure.

**Rip-Rap** - A wall of rocky material to protect shoreline structures, bridge foundations, steep slopes from water, wave, and ice erosion.

**Risk-Screening Environmental Indicators (RSEI) Pounds** - Also called toxicity-weighted pounds, it is a result that accounts for the size of the release and the chemical’s toxicity relative to other chemicals.

**Run-to-Fail** - When capital assets belonging to the City do not receive maintenance funding and are replaced rather than repaired.

**SCOR3CARD** - An online tracking and assessment tool for Tulsa organizations who want to track and improve their sustainability plans provided by Sustainable Tulsa.

**Silt Fence** - A temporary sediment barrier made of porous fabric.

**Sluice Gates** - A sliding gate for controlling the flow of water, or to hold back water.

**Smog** - Fog or haze combined with smoke and other atmospheric pollutants.

**Solar Array** - A collection of solar panels where sunlight is collected and converted into electricity.

**Stormwater Atlas** - An inventory of maps, tables, various data relating to infrastructure, permits, floodplain mapping, and the geography of a city or county’s storm water layout.

**Stormwater Basin** - Excavated basins for the short term detention of stormwater runoff from a completed development area followed by controlled release from the structure at downstream, pre-development rates.

**Stormwater Bonds** - A form of public funding where an entity assumes debt through the sale of bonds from a dedicated revenue stream in order to advance payment for stormwater infrastructure.

**Stormwater Infrastructure** - Basic equipment and structures (roads, storm drains, pipes) that collect stormwater and carry it away from urban and suburban areas.

**Street Tree Master Plan** - A plan that focuses on policies and practices that reduced the tree canopies in city, and seeks to reverse the trend.

**Sustainability** - Managing resources to meet the needs of the present without compromising the ability of future generations to meet their own needs.

**Targeted Brownfields Assessment Program** - A program that helps states, tribes, and municipalities minimize the uncertainties of contamination often associated with brownfield sites.

**Treatment Pool** - A body of water that needs to be cleaned or treated for use.

**Tree Canopy** - The layer of leaves, branches, and stems of trees that cover the ground when viewed from above. In urban areas, tree canopy can refer to the amount of tree canopy coverage a city has.

**Tree City USA** - A designation for communities that meet minimum standards set by the Arbor Day Foundation for community forestry programs.
GLOSSARY OF TERMS

**Tributary** - Small streams or rivers feeding into a larger river system.

**Urban Forester** - A specialized branch of Forestry that deals with the cultivation and management of trees; From planting, maintenance, care and protection of trees in urban areas.

**Urban Heat-Island (UHI)** - A metropolitan area that is warmer than its rural surroundings.

**Vehicle Emissions** - Gasses emitted through a vehicle’s exhaust system.

**Vertical Gardens** - A garden that grows upward (vertically) using shelving, trellis, or another support system, to maximize grow space.

**Water Carrying Capacity** - Refers to the maximum capacity of resources a regional water system can offer.

**Wetlands** - An area of land that is saturated with water, e.g. swamps, bayous, marshes.
**RELEVANT CITY DEPARTMENTS, PROGRAMS, PLANS, AND EXTERNAL ORGANIZATIONS**

- **Asset Management Department** - A department of the City of Tulsa that manages and maintains City-owned facilities, fleet, and equipment.
- **Brownfields Revolving Loan Fund** - A program that encourages the reuse and redevelopment of blighted, contaminated lands so they can be returned to useful, tax producing properties that generate jobs, create sustainable community growth, and contribute to the local economy.
- **City of Tulsa Sustainability Plan (2011)** - A plan that focused on implementing sustainable practices throughout the City of Tulsa, such as reducing energy costs, increasing efficiencies, improving air quality and becoming a leader in sustainable government.
- **Communications Department** - A department of the City of Tulsa that aims to facilitate open and accountable access to city government for the citizens of Tulsa and assist in communicating the prioritized initiatives set by the administration and all other City departments.
- **Development Services Department** - A department of the City of Tulsa that promotes safety, livability, and economic growth through efficient and collaborative application of building and development codes.
- **Emergency Operations Center (EOC)** - The facility used to coordinate emergency and disaster response under the supervision of the Tulsa Area Emergency Management Agency (TAEMA).
- **Engineering Services Department** - A department of the City of Tulsa that plans, designs and inspects public improvement and capital projects, and provides and/or administers planning, engineering/architectural design and construction quality assurance services for projects involving water systems, wastewater systems, transportation, stormwater, parks, and all City departments.
- **Environmental Protection Agency (EPA)** - A federal government agency created to protect the environment and its impact on human health.
- **Finance Department** - A department of the City of Tulsa that maintains the finances of the City.
- **INCOG Community and Economic Development** - A department of INCOG that provides grant writing and administration services to local governments related to programs for public infrastructure improvements, housing, and economic development projects.
- **INCOG Environment** - A department of INCOG that works with state and federal governmental agencies to implement clean water, air quality, and energy programs for the region.
- **Low-Impact Development (LID) Manual** - A City of Tulsa resource to guide the design and implementation of systems and practices that use or mimic natural processes that result in the infiltration, evapotranspiration, or use or stormwater in order to protect water quality and associated aquatic habitats.
- **North Tulsa Brownfields Area-Wide Redevelopment Plan** - A City of Tulsa planning initiative to identify potential reuses for brownfield sites and to prioritize brownfield cleanup and redevelopment in North Tulsa.
- **Office of Performance Strategy and Innovation (OPSI)** - A City of Tulsa office that utilizes data to enhance and streamline City service distribution to residents.
- **Oklahoma Corporation Commission** - A regulatory agency for the State of Oklahoma that deals with the fuel, oil and gas, public utilities, and transportation industries.
- **Oklahoma Department of Environmental Quality (ODEQ)** - A State of Oklahoma environmental department that oversees environment-based activities, such as air quality, water quality, waste management, hazardous waste, radiation management, solid waste management, and hazardous materials.
- **Oklahoma Department of Transportation (ODOT)** - A State of Oklahoma transportation department that seeks to provide safe, economical, and effective transportation networks for the people, commerce and communities in Oklahoma.
- **Oklahoma Water Resources Board** - An entity that manages the state of Oklahoma’s water resources through water use appropriation and permitting, water quality monitoring and standards, financial assistance for water/wastewater systems, dam safety, floodplain management, water supply planning, technical studies and research, and water resource mapping.
- **OneVoice** - The legislative agenda of the Tulsa Regional Chamber of Commerce.
- **Oxley Nature Center** - A nature center located in Tulsa that promotes the conservation of wildlife and the natural environment.
- **Public Service Company of Oklahoma (PSO)** - Tulsa’s local electricity utility provider, and a division of the national company American Electric Power.
- **Recommended and Prohibited Tree Species List** - A guide for which species of trees satisfy the tree planting requirement of the Tulsa Zoning Code.
- **River Parks Authority** - An organization that aims to enhance community life through stewardship of parks and public spaces along the Arkansas River.
Streets & Stormwater Department - A City of Tulsa department responsible for stormwater and land management, street maintenance and right-of-way inspections, traffic control, and more.

Sustainable Tulsa - A nonprofit organization in Tulsa that provides education, tools, and resources to inform and engage businesses and individuals in social responsibility, economic vitality, and environmental stewardship.

Tulsa Area Emergency Management Authority (TAEMA) - A government agency that ensures Tulsa will have the right infrastructure and procedures to prepare, mitigate, and recovery from disasters.

Tulsa Authority for Economic Opportunity (TAEQ) - The merger of five public entities to create a single, independent organization to lead the City of Tulsa’s community and economic development efforts.

Tulsa Clean Cities Program - Tulsa’s representation in a coalition with Department of Energy Clean Cities program to increase energy security, reduce fleet operating costs, and improve the environment by working locally to advance affordable, domestic transportation fuels, energy efficient mobility systems, and other fuel-saving technologies and practices.

Tulsa Fire Department - A department of the City of Tulsa that provides fire safety and paramedic services to Tulsa residents.

Tulsa Metropolitan Statistical Area (MSA) - A geographical area that consists of Tulsa and the surrounding counties that are linked by social and economical factors.

Tulsa Parks - A department of the City of Tulsa that aims to create, provide, and preserve quality parks and recreation opportunities that meet community needs for the health and wellbeing and for all Tulsans.

Tulsa Planning Office - A department of INCOG that leads planning and zoning efforts for the City of Tulsa and unincorporated areas of Tulsa County.

Tulsa Police Department - A department of the City of Tulsa that provides law enforcement and safety services to Tulsa residents.

Water & Sewer Department - A department of the City of Tulsa that manages, operates, and maintains the City's water and wastewater systems.

WindChoice - WindChoice is a renewable energy option through the Public Service Company of Oklahoma to power homes, businesses throughout the state, using wind to generate electricity.

Working in Neighborhoods (WIN) Department - A department of the City of Tulsa that focuses on housing, neighborhood services, code enforcement and animal welfare.
**SOURCES AND REFERENCES**

**Subject Matter Experts**
- City of Tulsa Streets and Stormwater Department
- City of Tulsa Engineering Services Department
- City of Tulsa Water & Sewer Department
- INCOG Clean Cities Program
- INCOG Environment Division
- U.S. Army Corps of Engineers
- Sustainable Tulsa
- Oklahoma Water Resources Board
- Project Management Group (PMG)
- Tulsa Area Emergency Management Authority (TAEMA)
- Environmental Protection Agency (EPA)
- US Fish and Wildlife Services
- Audubon Society
- Oklahoma Conservation Commission
- Oxley Nature Center
- Up With Trees
- Oklahoma Department of Wildlife Conservation
- AEP/PSO
- State Corporation Commission
- Oklahoma Sustainability Network
- The M.E.T.
- Tulsa Health Department (THD)
- American Waste

**Community Engagement Activities**
- Resident Input Sessions
- Resident Input Survey
- Resident Input Emails and Phone Calls
- City Council-led Community Discussions Regarding Sustainability
- Sustainable Tulsa First Thursday Event
- OSU-Tulsa Environmental Sustainability Student Engagement

**Existing Plans Reviewed and Incorporated**
- North Tulsa Brownfields Area Wide Redevelopment Plan
- River Design Overlay
- Sustainable Tulsa Plan
- Tulsa and West Tulsa Levee Feasibility Study
- Tulsa Parks and Recreation Master Plan
- Turkey Mountain Master Plan
- Urban Forestry Master Plan
- Hazard Mitigation Plan
- Small Area Plans

**Selected City Metrics**
- https://www3.epa.gov/aircompare/
- https://www.climatechangecommunication.org/climate-change-opinion-map/

**Equity and Resilience Considerations & Health and Wellness Considerations**


#157

Posted by Jay Pruett on 03/05/2023 at 7:08pm [Comment ID: 1145] - Link
Type: Suggestion
Agree: 0, Disagree: 0
The appropriate name is 'Tulsa Audubon Society.'


Photos