Exhibit E - Soundness of Approach

City of Tuscaloosa, Alabama

File Name: ExhibitESoundnessOfApproach

Understanding that each community is unique and that each group or subgroup within a community is equally unique means the way resilience manifest itself plays out differently in our 3 unique areas (all within the MID-URN target area); areas that are unique and separate but will be fully connected through a coordinated project; areas impacted by severe storms but also devastated by economic depression, susceptible to flooding/water management issues, and yet surrounded by hope. Whether its families that lost the house they called home, the businessman that invested all he had into a business that closed because the neighboring factory shut down, or the neighborhood that feels trapped due to its isolation from everything necessary to meet basic human needs – this SMART Proposal brings hope through a comprehensive resilience approach. According to 100 Resilient cities, "improving the individual systems that make up a city will increase the resilience of the city overall. Resilient systems withstand, respond to, and adapt more readily to shocks and stresses to emerge stronger after tough times, and live better in good times." This proposal will incorporate the improvement of a number of individual systems which once in service will decrease risk to vulnerabilities and will make this city a model resilient City. This proposal was developed and is consistent with the Consolidated Plan and the Mitigation Plan. The housing discussed within this plan is consistent with the housing provisions established within the Consolidated Plan making the top priority provision of housing assistance to low-income renters and homeowners to foster and maintain affordable housing (Attachment C). Additionally, this proposal is consistent with the 2014 Tuscaloosa County Multi-Hazard Mitigation Plan. During the Phase I application the City identified specific risks that would be addressed (See Phase I application). These risks are consistent with the risks and mitigation strategy identified in the Mitigation Plan. (Attachment C).

Developing the very basics of this plan meant beginning with a process of engagement within the 3 unique areas to develop the dialogue and understanding necessary to ultimately develop a framework to utilize in developing our proposal. The Phase I application clearly set out the process to comprehensively address collaboration, outreach and communication to stakeholders (Phase I Response page 37-39). After understanding the uniqueness of each area we expanded the engagement beyond those areas as well as integrating the 3 areas to understand the similarities and unique attributes. Learning from the vulnerable and those that live among the most vulnerable in our community about the risks and threats they face, brought about a process and framework that describes the fundamental attributes of a resilient city. Understanding the vulnerabilities we began to engage community and local, state and federal experts and technical stakeholders including but not limited to engineers, architects, planners, healthcare providers, and research and development professionals (Attachment D) that could assist in fully developing the framework to address the unmet needs of the qualified disaster and the vulnerabilities through flexible, easily phased and integrated activities. While this proposal includes multiple disciplines through a comprehensive approach, it is made up of standalone activities, allowing for a phased, scalable approach that, on its own would have substantial value to the applicant, the city and the region. The SMART proposal provides a preferred prioritized blueprint for development of 50 activities with an enormous amount of financial commitment from the community in the form of project leverage. The complete list of these activities is included in Attachment B and includes activity total, leverage committed, requested funding, planning and administration. The complete project as well as any portion of the project that is funded will provide a minimum 200% leverage ratio regardless of the phasing of the project. With an award matching the total funding request, it is obvious that every component of the plan across all areas

and addressing all the identified threats and weaknesses will be implemented. The strength of the SMART Proposal is the strategic planning that results in at least portions of every area and a segment of each vulnerable population being addressed as well, assuming a phased base project award of $100 million. This is also true beyond the base project award amount regardless of how the overall project may be phased due to the proportional distribution of proposed infrastructure, social support programs, economic development drivers, and environmental resource reclamation and development throughout the plan area.

Through conversations with several City of Tuscaloosa departments (Planning and Development Services, Office of the City Attorney, Engineering, Resilience and Innovation, Department of Transportation and Water Department), we discussed infrastructure, technology and programs that could help support this proposal. Additionally, the City and the West Region of the Alabama Department of Transportation (ALDOT) have been in numerous meetings for the last six months regarding the opportunities for drastically improving traffic congestion and connectivity throughout the County. The discussions have also included the adjacent City of Northport, Chamber of Commerce, Tuscaloosa County, and numerous members of the local state legislative delegation.

The SMART proposal takes 3 unique areas within the qualified disaster and comprehensively establishes a proposal made up of activities that address the vulnerabilities and bring about a resilience value – protecting from the effects of future/repeat disaster; environmental value – improving water management/quality; social value – benefit to low and moderate income persons and/or households; economic revitalization – strong development of a vital workforce. The City has taken strides to reduce the effects of future/repeat disaster by establishing long term commitments that are incorporated within this proposal and application (Exhibit G - pg XX).

Water Quality and Transportation Management Activities. Through the water quality and transportation management activities within this proposal there will be a reduction in the effects associated with flooding which is often associated with large scale weather events and numerous benefits associated with enhanced transportation infrastructure. These water quality activities include improvements to the **Brookhaven Storm Drainage** which will consist of buyouts of 7-8 firm structures located in the floodway as well as the enlargement of culverts that are currently undersized serving new and existing development. The area of this activity has suffered two floods in one year that lead to property damage and road closure. The enlargement of these culverts will reduce/eliminate this threat. The stream bank stabilization will lead to a restored streambed with associated habitat revitalization. This activity will reshape the flood hazard areas to minimize the impact to homes in the area. The **Cypress Creek Drainage** is an area where many homes are in danger of foundations being damaged due to the severe erosion and channel cutting. The neighborhood entrance is the only way in/out for many people and businesses and is in danger of collapsing in a severe flood event.

Sanitary Sewer Activities. Various sanitary sewer activities are being proposed to significantly reduce sewer overflows and spills and to add capacity to support residential and commercial development with the expected upgrade to carry the estimated flow for over 20 years out.

Water Distribution activities that are a part of this proposal will provide additional water pressure and fire water pressure to neighborhoods and will provide additional capacity to the neighborhoods served for an indefinite period of time.

Roadway Activities. The roadway activities will significantly strengthen the local economy, provide access to jobs and commerce from the region to the City core, and reduce congestion and the associated environmental impacts. In addition to the critical water quality/management

infrastructure activities this proposal contains a number of roadway activities in partnership with ALDOT. Along with these proposed Authority driven activities, ALDOT has committed to final design and construction of even more projects that will provide the same benefits to even more areas of the County. See attached Exhibit B for breakdown of all water quality/management, sewer, water distribution and roadway activities.

Unmet Needs: While these activities are more traditional infrastructure projects, they support development in the MID-URN target area and address unmet housing and economic development needs and will be the basic elements needed to become a model resilient city.

Vulnerable Populations: Providing critical services – basic human needs is the foundation for any resilience plan. The City has identified a number of vulnerable populations within our Phase I proposal. Recognizing that some of the most vulnerable (low income residents) live in flood prone areas or areas where infrastructure such as sewer and water mains are is often aged or inadequate to support any new development, it was important for the City to consider these activities to support resilience among the most vulnerable. The placement of this critical infrastructure will allow for the creation of economic development as well as increased or improved housing opportunities, thus making those vulnerable become more resilient.

Future Risk: The enlargement of culverts will reduce/eliminate future flooding events. Enlarging culverts and stream bank stabilization will armor the banks to minimize future erosion and protect home foundations. Both of these activities are similar in nature and will reduce and possibly eliminate flooding of roadways, homes, and low-lying area. They will reduce the risk of loss of life, damage to property, and time/cost to the public and the City due to temporary road closures. Sewer improvements will reduce/eliminate infiltration and inflow issues. Roadway

projects will create a more connected community and will create alternate means of transportation during future events.

Measuring: The UA will establish an integrated approach for assessing and managing natural disasters from a public project perspective, through the identification of critical success factors (CSFs). These CSFs will be combined with project life cycle analysis, risk assessment theory, social vulnerability and supply chain resilience concepts to determine a Disaster Vulnerability Index value under different conditions. The index value is envisioned as a means of prioritizing mitigation, preparedness and response strategies and will measure the resilience value protecting from the effects of future/repeat disasters. The defined water, sewer and storm water management activities are not only a part of our resilience value to reduce the effect of future/repeat disasters but also a part of a larger project that has been identified as the Noah's Ark project which created long term solutions to the management of storm water through a comprehensive plan, all addressing the environmental value. Measuring the environmental value through water quality will be achieved through the reduction of runoff quantity and improves water quality through both a net reduction of impervious area and enhanced infiltration of storm water discharges. The success of the post-construction storm water management program will be shown through a documented reduction in impervious cover and the continued promotion of storm water capture, infiltration and reuse.

City Walk Activities (including technology and asset management). Through the idea of a connected core within this SMART Proposal specifically the construction of a shared use path, referred to within this proposal as the City Walk, will not only physically connect people to resources but will also provide co-benefits by putting critical technology in place as well as

serving as the conduit for underground utilities. Data collection in the form of asset management will provide much needed documentation for Tuscaloosa to become a data driven city.

Unmet Needs: The City Walk and the associated technology aspects of this activity will connect homes to businesses as well as other critical services. This will allow the City to address unmet housing and economic needs. The creation of greenspace along the path will also provide the City with the opportunity to replant trees, meeting an unmet environmental need. Each area will benefit from increasing economic opportunity and neighborhood connectivity through new commercial activity, the birth of residential neighborhoods, and increased social infrastructure.

Vulnerable Populations: Whether it was through discussions with school officials who demonstrated that low income children who lacked access to technology were at a disadvantage in the classroom with test scores being the clear indicator of this in most instances or if it was recognizing that low income residents that lacked access to basic services and lacked social cohesiveness were at a disadvantage in becoming active members of the workforce community; the team was able to see that opportunities to connect neighborhoods through shared use paths that carried the fiber and technology to provide access to broadband technology, improvement to water management and placing utilities underground was an activity that could not be ignored.

Measuring the benefits will specifically be demonstrated through social and equity benefits providing social value as well as environmental values. Understanding that "connectivity" could take on many different meanings it was critical to explore as many connectivity opportunities as possible and to also determine which activity allowed for co-benefits to be enjoyed.

Burying electrical power lines appears to be a straight forward approach to improving the resiliency of a community to adverse weather. Yet electric utilities are frequently hesitant due to the perception of increased cost. Through the UA research efforts we will develop a best

practices guide based on interviews, surveys and literature review, to determine under what conditions it is beneficial and recommended to bury power lines.

Future Risk: Communities that have social cohesiveness will be more resilient and creating that social cohesiveness through connectivity is the foundation to accomplish this. A community that is resilient will be better able to respond to future risks and will have developed a since of community that will yield the greatest impact. Management of assets through technology will be critical in minimizing the effects of future disaster as well in typical events across the city.

We have described above, two aspects of our proposal and demonstrated how the activities of the City Walk and Water Management will make this community more resilient but to become the model resilient City that Tuscaloosa strives to be, it takes more than just controlling water and shared use paths. If we walked away after describing these two significant portions of our proposal we would have omitted how it all comes together – how individuals that share common vulnerabilities need access to critical services, economic opportunities and resources to protect from the effects of future/repeat disasters. A resilient City, region and state take partnerships. The City formed a number of partnerships and not only did we ask that our partners participate in the brainstorming to come up with solutions but we also asked that they be a part of the solution. In doing so we recognized that the City could create activities that addressed today- tomorrow's infrastructure but it was the social infrastructure that would give strength and sound resilience to our community and beyond. It's this social infrastructure that will ensure that Ms. Booker who became a first time homeowner and lives within a community that has little access to critical services would be able to thrive and could benefit from the City Walk that is under construction on her neighborhood street – giving her access to the critical services set out within this proposal.

Within this SMART Proposal, the team built upon the Phase I application and identified activities that, partnered with the activities above, support the resilience of this city/region/state. Health and Education in the heart of the City that reaches the most rural communities of the region must be addressed if the most vulnerable and at risk populations were to be resilient.

Women's Center. This Center will provide housing, healthcare, counseling, employment and educational opportunities to unwed mothers. Utilizing local healthcare providers as well as educational professionals this center will allow women to leave the facility with the ability to continue to move their life forward and to not face certain levels of uncertainty that would be associated with becoming a young unwed mother.

Druid City Hospital (DCH), The expansion of DCH hospital will provide a much needed resource to this region through the addition of patient care services/facilities to serve 11 West Central Alabama counties. DCH, located in the MID-URN target area, serves a number of surrounding rural counties as the regional health care provider and is an economic catalyst in the region. This expansion will be constructed with a safe room structure to protect patients and staff during future threats.

Unmet Needs: This activity will have a regional impact but will provide an economic benefit to the MID-URN target area and will address unmet economic development needs. We are excited about these solutions that not only reduce vulnerabilities and risks within the target area, but also address a national unmet need associated with providing reliable, accessible, rural healthcare services. This project addresses housing unmet needs as described in Exhibit D - pg XX.

Vulnerable Populations: Through vulnerable population workshops with organizations such as Lifeline Children Services and Tuscaloosa's One Place, we discussed the need for housing of unwed, single mothers (a large vulnerable population in West Alabama). From this discussion,

the City proposes to fund a women's center for these women to seek refuge, get counseling and educate themselves. DCH will be able to provide much needed healthcare to our low income and rural citizens also among our most vulnerable. These activities serve vulnerable population within Tuscaloosa County and the State of Alabama.

Future Risks: The DCH expansion will provide greater opportunity for rural healthcare and be constructed with a safe room structure to protect patients and staff during future threats. As a non-profit healthcare provider, DCH will be able to meet the ever increasing indigent care needs.

Tuscaloosa City Schools (TCS) and the City have a long history of working together to meet the needs of the area students. In discussions regarding resiliency with area citizens, it quickly became obvious that without a strong elementary and secondary education system, the potential weakening of the economic and social fibers of the community would likely occur. To counter this threat, the City and TCS have partnered to fund Pre-K education in the low income areas of the City. The City also provides earmarked funding for TCS use across the financing need spectrum. To build on the past successes, the current plan for developing the model resilient City includes significant upgrades to technology access from the classroom to the home as well as further construction of tornado shelters at three new schools located in three different areas of the community. These projects are a part of the investment of over $140,000,000 in new school facilities, equipment, and curriculum by TCS that will place students in the City of Tuscaloosa in a position to receive an exceptional education. Understanding that education is the key to the future, the TCS, all of which are located within the MID-URN target area, conducted a comprehensive facility plan process which collected and analyzed data, and engaged citizens. The goal was to make TCS an even stronger school system by providing students access to the same opportunities – access to computer labs, playgrounds and gym, art, science labs, and music.

Additionally, providing outdoor classrooms located in conjunction with the storm water projects described above, centered on storm water management will serve this community as an educational venue to promote and continually strive for resilience through education educate the coming generations of children about the challenges associated with a changing climate.

Unmet Needs: Through these activities the proposal will address environmental unmet needs through the educational outdoor classrooms and will facilitate addressing unmet housing and economic development needs. While investing in the education of many students, the ability to couple education with the needs within a community can have a far reaching impact. This activity will create jobs and will have a sustainable impact on this community for many years. Through conversations with private developers (such as Allied Realty, Monfore Group, Inc., Progressive Properties), the City has become aware of economic development opportunities and housing needs throughout our City. The City proposes to work with developers to relocate the current train station and construct a parking deck with shared-use paths traversing the area and also construct a $30 million mixed-use development to provide these housing and economic opportunities in deprived areas. Through partnerships, the development of a housing plan that addresses the unmet housing needs of this community is critical to this proposal.

Alberta Mixed Use Development, Habitat for Humanity and the Model Neighborhood which will all be located at the heart of the most severely impacted area and will function in support of each other. Through this blended project there will be a development of a truly resilient neighborhood. This neighborhood will include market rate affordable housing, housing provided by our non-profit partner – Habitat for Humanity Tuscaloosa, and the model development which will include housing as well as replicable water management features. This blended project will be adjacent to a newly constructed school – The Alberta School of

Performing Arts and will be bordered by a newly developed commercial corridor. The inclusion of the **8th Street Streetscape** project will provide for smaller block size, limited and controlled vehicle access points, sidewalks and trees that will over time create an environment that supports walking as a form of transportation throughout this neighborhood and beyond. This blended project will be accented by a **train station** that will create a new level of connectivity allowing residents an alternate means of travel across the region and will be an opportunity for job creation as well as addressing a land use barrier – the railroad tracks – and creating a positive impact rather than the negative connotation of the "wrong side of the tracks".

Unmet Needs: These blended activities will address unmet housing, economic development, infrastructure and environmental needs.

Vulnerable Populations: Creating a mixed use of housing and economic development in an underserved area is expected to bring with it much needed critical services. Through these blended activities the Alberta(the heart of the most impacted and distressed area) area will begin to experience revitalization and give low income residents a community that can serve its needs.

Future Risks: Communities that have social cohesiveness will be more resilient and creating that social cohesiveness through connectivity is the foundation to accomplish this. A community that is resilient will be better able to respond to future risks and will have developed a since of community that will yield the greatest impact.

Tuscaloosa Housing Authority (THA) has demonstrated a proven track record for creating resilient housing following the 2011 disaster and will continue to support the unmet housing needs of the most vulnerable populations of this area. This proposal includes the construction of 80 units of housing that will be constructed in partnership with the Alabama Housing Finance

Authority and will be constructed using green building standards. These units will be single-family and will consist of two-bedroom and three-bedroom dwelling units.

Vulnerable Populations: Vulnerable groups such as veterans, elderly, mentally challenged, homeless, unwed mothers, AIDS/HIV victims, students, LMI, minorities, and limited-English speaking population were consulted and helped shape our project proposal. Through conversations with Tuscaloosa VA Medical Center, Continuum of Care Program, Habitat for Humanity, THA and West Alabama AIDS Outreach (WAAO), we examined how to eliminate barriers, create sustainable environments and eliminate homelessness in regard to veterans and the mentally challenged or ill. From this discussion, the City proposes to fund THA to build a public housing facility.

Unmet Needs: This activity will address unmet housing needs.

Future Risk: Through this activity we will address insufficient affordable housing.

Center of Resilience. Understanding that local government has a significant role in supporting the overall resilience of a community the City recognized the need for a Center of Resilience which will support the overall mission of the Office of Resilience and Innovation more particularly described in Exhibit G - pg XX. This facility is planned to be constructed along the banks of the Black Warrior River.

Unmet Needs: This project will address unmet infrastructure needs and will certainly support a more resilient model city.

Vulnerable Population: This activity continues resilience throughout the City, region and the state. Staff will be working across discipline to address vulnerable populations and the risks.

Future Risks: The primary focus of this Center is to address vulnerabilities and future risks.

Parks. The City has also had conversations with the Tuscaloosa County Park and Recreation Authority (PARA) to design and implement improvements to green space in the Alberta area. Understanding the value that a park has on a neighborhood in regard to housing and economic development led the team to understand the importance of a sustainable park system and the desire to ensure that underserving parks were rejuvenated. Within this proposal we address two parks both located in the Alberta area– Jaycee Park and Alberta Park. These projects will include green infrastructure as well as recreation and wellness benefits.

Vulnerable Population: While addressing the needs of the most vulnerable, understanding the quality of life and ensuring that parks that are located among the most vulnerable should be made inviting and beneficial to the neighborhoods that it serves is important. These parks will serve low income residents and improve the quality of life for the Alberta residents.

Through conversations with The West Alabama Chamber of Commerce (which serves 6 counties other than Tuscaloosa), Industrial Development Authority (IDA), Alabama Industrial Development Training (AIDT), West Alabama Works, Ellis Architects and Shelton State Community (which serves 5000 students a year from Tuscaloosa and surrounding counties), the City has identified the need for more industry and training opportunities in our area. The City proposes a partnership with the organizations listed above to develop a world-class **Workforce Training Center** where employees can be properly trained, which will recruit new industry. The Region 3 Workforce Development Council, in partnership with the Chamber, formed **West Alabama Works** to lead workforce development efforts throughout West Alabama. The regional workforce development system facilitates and implements a comprehensive, coordinated, seamless workforce development system for the region and supports workforce training activities. With a mission to promote economic prosperity throughout West Alabama by

providing support services to business, industry and job seekers, West Alabama Works serves as the region's central hub for workforce development efforts and training. Through West Alabama Works, business and industry leaders have been able to create a workforce development system that supports all levels of development and serves to benefit both employers and job seekers. Five industry clusters have been developed to address the needs of individual industry sectors. Those five clusters are: automotive, health care, construction, manufacturing and professional and business services. Leaders of each sector work together to minimize duplication of services and maximize potential of each provider by communicating key workforce needs in the seven-county region through both urban and rural outreach programs. Through these activities in conjunction with the **SMP Industry activity**, unmet economic development needs throughout the MID-URN target area will be met. Incorporating **economic development incentive programs** within the most severely distressed areas will be necessary to give neighborhoods the ability to thrive.

Unmet Needs: Creating an economic benefit value through a workforce training center and West Alabama Works will address unmet economic revitalization needs. These activities will address economic unmet needs and will be the catalyst to the redevelopment of blighted neighborhoods.

Vulnerable Population: Providing workforce training will benefit LMI residents of this region.

Future Risks: The risks (economic collapse) associated with an untrained workforce is one that has been a focus of this community and with these activities will be addressed.

FOCUS on Senior Citizens, a non-profit organization for seniors 50 and older, we discussed issues on capital improvements of their administrative offices so they could better serve the aging population.The City, in an effort to ensure facilities for our non-profits play a critical role in our City and serve vulnerable populations, determined it was important for the team to ensure

that Focus on Senior Citizens has adequate facilities to serve its members and to ensure that the facility supports the most needed services. Also the **Boys and Girls Club** which serves many of our children throughout the year by providing after school programs – ensuring a safe environment and providing educational opportunities in the MID-URN area was necessary.

Unmet Needs: Each of these facilities is expected to address housing and economic development unmet needs.

Vulnerable Populations: The Focus activity will address the senior population.

City Safe Rooms. These safe rooms will be located in areas that will not only protect lives but will also protect valuable fiber infrastructure that is critical to governmental operations by running all traffic signals, internet services and security cameras for the City. These safe rooms will be constructed in accordance with FEMA 361 standards. These combined structures will offer protection for over 300 people and will be furnished with an existing emergency generator that is protected to FEMA 361. This activity will serve residential and commercial properties.

Vulnerable Populations: Through conversation with the Holy Spirit Hispanic Ministry, UA students, low-income populations and other vulnerable populations, it was evident that more storm shelters are needed. From University students from out-of-state not knowing where to go on campus to a Hispanic family not knowing what a tornado siren means or where to go for shelter, the City became aware of the need and proposes to build a City Safe room.

Unmet Needs: This project will address unmet infrastructure needs.

Future Risks: This project will provide protection for human life during future disasters.

In summary, this SMART proposal will result in the City of Tuscaloosa becoming a Model Resilient City.

Measuring Resilience: In measuring the resilience, environmental, social and economic revitalization outcomes that will result from the implementation of this proposal, measuring the reliability will be a metric certainly worthy of tracking. Reliability to our stakeholders is described as the likelihood that the infrastructure and programs effectiveness will be maintained over an extended period of time and the probability that it will be available at least at some level during the entire design life of the proposal. Through conversations with UA (more specifically the Engineering Department), the City has been able to discuss resilience projects and needs within the Tuscaloosa area, best practices, current research involving more resilient communities and the capacity to measure resilience efforts. The outcome of these conversations is a partnership between UA and the City of Tuscaloosa to design model neighborhoods that can withstand the force of future wind events, as well as other sustainable infrastructure. UA has also committed to running outdoor classrooms to educate school-age children about storm systems and fresh water qualities. Through this partnership a number of research projects will be implemented which will evaluate/measure all activities undertaken as a part of this proposal to ensure they satisfy City quality standards related to achieving the dimensions (technical, organizational, social and economic) and properties (robustness, redundancy, resourcefulness, and rapidity) of resilience (MCEER 200). A uniform resiliency analysis will be created to periodically evaluate each activity executed to ensure they are implemented within the overall framework of the City's civil infrastructure resiliency goals. The UA has committed to measuring the effectiveness of these programs through outreach and teaching program using new classrooms (3 identified in spreadsheet) and community senior programs as well as going to selected schools (Tuscaloosa and Surrounding Counties) to discuss the critical role of water supply, treatment, and wastewater treatment in community health and in recovering from and

preparing for natural disasters and climate change. Multimedia presentations would be developed, hands-on activities and supplies would be provided, and take home talking points for parents will be developed. Follow up interviews and surveys would help judge effectiveness of the program. Results would be written up in best practices academic articles and coupled with developed video presentations would be transferred broadly across the region utilizing the secondary school systems in Alabama. Materials would be developed in year 1, presented in year 2-3, and written up and disseminated at end of year 3.

The City considered a number of alternatives as well as funding opportunities. The City explored partnerships with a number of nonprofits across the City to ensure that each had the capacity in regard to activities to assist individuals to access the things that were critical to their everyday life. It was clear that low income housing alone would not make a neighborhood sustainable. The City evaluated all the demographic data available for each of the 3 unique areas and found that prior to the qualified disaster, in two of the areas there are neighborhoods and large areas that were supported only by low to moderate income residents. Therefore, there were inadequate services to support basic human needs – grocery stores, medical services, educational support services, etc. In order to address the issues that had faced these areas and recognizing the opportunity created through the destruction and now the blank slate, the City began to seek developers and partners that understood the issues faced by the areas and had an interest in seeing a community revitalized. Analysis of the pre-disaster data was evaluated and it was determined a project that tied a shared use path with critical social infrastructure as noted above was viable and would certainly bring life to an area previously hindered by crime and poverty. In many areas, the shared use path will be the necessary infrastructure to make those connections, but in other areas the proposed project will address infrastructure needs including

water, sewer, drainage and roadway improvements. The team determined that in all cases, capitalizing on all the co-benefits of a project would be critical. The proposal and each activity included within will meet a **national objective** through low to moderate income benefit (Attachment F). The activities will become a catalyst, stimulating economic revitalization addressing environmental obstacles, providing safe housing, and addressing infrastructure within our 3 unique areas by addressing an unmet recovery need related to the qualified disaster. The areas will be highlighted with new public/private investment demonstrated through a variety of partnerships (Attachment A). These areas continue to demonstrate unmet housing needs that without a plan and significant public/private investment likely will not recover. Thus, creating robust social infrastructure that will play a significant role in the everyday lives of individuals who without this investment struggle to find the spirit to make a difference is critical to not only meeting the existing unmet housing needs but will also address unmet economic revitalization needs and environmental degradation creating resilience across the MID-URN area and the region. A recent poll conducted by the Associated Press-NORC Center for Public Affairs Research confirmed that neighborhoods that lacked social cohesion and trust generally had a more difficult time recovering following a disaster or extreme event. (Meghan Barr, "AP-NORC Poll: Friends, Kin Key to Sandy Survival," Associated Press, June 24, 2013). Additionally, in 1995 during the heat wave in Chicago, 739 people died in mostly low-income African American neighborhoods. However, one neighborhood with the same racial and income demographics fared better than even more affluent neighborhoods in the City during the heat wave. It turns out that residents of this particular neighborhood participated in block clubs and church groups, in addition to socializing at grocery stores and diners. In short, the neighborhood banded together; during the heat wave, the block clubs checked in on elderly and sick neighbors to ensure their

safety. (Klineberg, "Adaptation.") Through the connecting of neighborhoods addressing the social values through the use of shared use paths the results will bring about social cohesiveness as well as addressing the environmental and economic values.

The City has a strong **Section 3** program that has been highlighted by HUD at recent training events. This program, Tuscaloosa Builds, employs mechanisms to connect Section 3 persons and businesses with economic opportunities through educational and training programs geared solely toward them. The program has a dedicated full-time staff member that maintains this program and the benefits associated. Through project/activity notifications provided through voice, text, and email communications each Section 3 individual/business is made aware of opportunities available through the City of Tuscaloosa, agencies, non-profit or business that receives any financial benefit from the City. This programs effect on activities funded through NDRC will improve the resources/opportunities for Section 3 individuals and businesses.

While this proposal was designed to meet the unmet needs of the City it is certainly a proposal with activities that could be **replicated** in other communities. Because this proposal includes **scalable** activities it allows opportunity for other communities that have needs less than or greater than those of the City to develop similar projects/activities in accordance with their needs. The proposal is designed to address vulnerabilities that likely exist across many communities in the state and nation. Using this plan in conjunction with the TFP brings about continuity among the community and a cohesiveness that is due to be replicated across this county. While the TFP was developed for limited areas, this SMART Project exceeds beyond the boundaries of the Tuscaloosa Forward Plan and brings big ideas of the TFP and moves them across the MID-URN target area and the region. Because this SMART Proposal is made up of a number of activities all of which can function independently of each other it is a proposal that

could be replicated in part or in whole. This SMART Proposal could and will serve as a guiding development tool toward a model resilient city. The ability to model any activity is clearly demonstrated in the project list attached which reflects each activity.

The SMART plan is progressive yet practical and comprehensive yet scalable. It is also absolutely feasible. The City of Tuscaloosa and all of the proposed partners, clearly demonstrated in Exhibit C - pg XX are capable of implementing all of the proposed actions and activities to provide the maximum benefits of the investment all while meeting a national objective. In a majority of the cases, these same partnerships have facilitated numerous other successful public works projects and programs. This masterplan for the community is built on the experience and capabilities of these relationships, but includes more excitement, preparation, and creativity than ever before to take the citizens of Tuscaloosa from strong to resilient. Every project scope was developed considering how to protect specific vulnerable populations of the community from future threats and hazards, including those associated with climate change. Minimizing impact to personal life as well as protecting property will be key elements demonstrated within this proposal as well as through the long term commitments.

Due to the initial planning efforts and proposed focus on comprehensive resilient design, the expected useful life of all of the projects after completion is up to 100 years. While the past 100 years has shown us that times surely change and that you cannot predict the future, we do know that if designed and constructed according to the anticipated standards, all of the projects can serve the citizens of Tuscaloosa for a century with proper maintenance. All of the projects will be designed according to the appropriate technical standards that include but are not limited to the local building codes for all structures, AASHTO Green book for all street and highway design, AASHTO Guide for the Development of Bicycle Facilities, the American with

Disabilities Act Standards for Accessible Design, etc. The infrastructure projects/activities will be operated and maintained by the City and numerous other partners. A major maintenance element of the plan will be for the numerous streets and highways. When operational, these routes will be key to sustained connectivity and they will be maintained by the City and ALDOT with existing maintenance crews and within existing budgets. Other building facilities would be maintained by the current facilities departments of the TCS, DCH, Lifeline, FOCUS, and PARA. There will not be any significant hiring or equipment purchases needed to be performed by any of these entities that already have substantial resources to be maintained.

In summary, in additional to the phasing options noted, this proposal is also strategically broken into **scalable** components within this same list by including different portions of activities divided by geographical areas and has assumed a phased base project award of $100 million. The City Walk, regardless of percent completion, will provide enhanced connectivity of lower income citizens, students, senior citizens, and others to and from their homes, businesses, amenities, and civic resources. The more of these activities constructed, the greater the impact, yet each segment can stand alone with logical termini and access provided. Likewise, the needed economic programs, technology infrastructure, educational demonstration opportunities, and social support programs for those most in need are distributed throughout the plan to allow for a logically scaled project as necessary.

Completing the flexibility within the SMART plan is the grouping of activities within certain areas that will allow the City to provide a replicable example to other parts of the City that may not be immediately funded, along with other communities around the state, region, and country. With a completed, resiliently planned and constructed core, the adjacent communities of the City and nearby region will have a blueprint for expansion of the same concepts and principals. With

the replication and multiplication of the same benefits associated with the documentation, publication, and promotion of cutting edge resilient approaches by UA to a "SMARTer" City development, the nation and world can cumulatively claim a victory and reverse the impacts that are threatening our environment.

Schedule. To ensure timely development of each activity, the SMART schedule has been developed with continued analysis of potential activity feasibility based on required tasks and environmental review levels. Even potential quality leverage bearing partnerships developed through community input and planning were identified and ultimately not included in the SMART plan due to a lack of such feasible implementation. The final SMART proposal activity list exclusively includes only those that can be developed and completed according to the attached schedule including the anticipated NEPA process. In order to maintain the scalability of the overall plan and to allow phased implementation, most of the activities are planned to be developed with individual purpose and need statements, alternative analysis, and ultimate documentation. The public involvement process may be combined for a number of the activities based on being located within certain areas of the community and in order to accommodate this final citizen input prior to completion of the documentation and construction of the activities. As the overall goal of the plan is to achieve model city resiliency, the public outreach goal of the City of Tuscaloosa will continue to be insisting that the storm impacted citizens and other residents drive the planning until the pedestrians and bicyclist hit the City Walk, the elementary age student accesses the high speed broadband from her home to the school, and the elderly, neglected, and youth of the community obtain the full array of social services needed to move from surviving to "thriving". The schedule provides a detailed list of the anticipated dates for the noted completed tasks. A waiver with substantial justification for request can be found at

Attachment G. The City and its partners have extensive experience in management of projects including phases of planning, environmental, design, acquisition, bid, construction, and closeout. As different potential funding scenarios were considered, the activities were strategically scoped and schedules developed assuming activities of varying sizes and complexities are distributed within the plan. The City is confident in the timelines provided and specifically with the environmental allotments of time included.

Budget. Through our partnerships we have developed a supporting SMART budget as noted above and included in the attached Sources and Use Statement which identifies all the proposed activities budgets and all direct leverage by source. These budgets were determined by the City and its partners via project scope review, determination of preliminary quantities, and comparison of recent similarly bid public projects. Walker Associates, Stantec, the Tuscaloosa Office of City Engineer, the City Office of Resiliency and Innovation, Ward Scott Architects, and Ellis Architects all worked to develop the budgets provided. Another benefit of the scalable nature of the activities as currently listed is the benefits associated with activities likely to attract a number of bidders based on the City's past experience. To the extent that certain larger activities may still be a little larger in size compared to these past benchmark budget brackets, further phasing of certain activities will be recommended after evaluation of the developing design documents. With billions of dollars in construction in the last decade in the Tuscaloosa area, there is no anticipated inflated cost factor that is assumed to be associated with a full award amount. All required sources and uses statements are included in Attachment B.

The Benefit Cost Analysis (BCA) developed in accordance with Appendix H of the NOFA is provided as Attachment F of the application. The narrative report summarizes the preparation and development of proposal costs and benefits; outlines baseline community risks; and

identifies specific proposal uncertainties and challenges. Detailed calculations of the life cycle costs and benefits over the design life of the projects are provided with the narrative report and table.

The proposed projects provide significant benefits across the four identified categories: resilience, environmental, social and economic. Resilience benefits include reduction in future property damage from flooding and protection of human health and life through provision of tornado shelters and safe rooms. Environmental benefits cross a broad spectrum including improved water quality, habitat restoration, vehicle emissions reductions, and heat island mitigation. Social benefits are at the core of the proposal and focus on improving quality of life and resilience of low income neighborhoods through increased connectivity, access to green space, restoration of damaged neighborhoods, and community support programs. Finally, the economic benefits were tabulated including increased property value from added green space and park lands and the economic impacts associated with increased employment enabled by implementation of this proposal.

The analysis demonstrates that the proposal will result in significantly more benefits (both monetized and qualitative) than the expected project life cycle costs.

ACTIVITY NAME	Duration	Start	Finish
Program Administration and Comp Planning	**1740 days**	**Mon 2/1/16**	**Fri 9/30/22**
Alberta Mixed Use Development, Schools Facilities Plan, Alberta Elem. School Outdoor Classroom, 8th Street Streetscape, Train Station/Parking Deck with Citywalk, Model Neighborhood, Habitat for Humanity, Alberta Park	**1069 days**	**Tue 3/1/16**	**Fri 4/3/20**
Procurement and Contracting	66 days	Tue 3/1/16	Tue 5/31/16
Environ. Review w/FONSI and RROF Ad	154 days	Wed 6/1/16	Mon 1/2/17
Design Phase	261 days	Tue 1/3/17	Tue 1/2/18
Property / Right-of-Way Acquisition	107 days	Wed 1/3/18	Thu 5/31/18
Bid Phase/Contractor Procure/Contracting	89 days	Fri 6/1/18	Wed 10/3/18
Construction Phase	392 days	Thu 10/4/18	Fri 4/3/20
Economic Revitilization Program - Alberta, West End, Greensboro and 10th	**1292 days**	**Wed 6/1/16**	**Thu 5/13/21**
Procurement and Contracting	66 days	Wed 6/1/16	Wed 8/31/16
Environ. Review w/FONSI and RROF Ad	900 days	Thu 9/1/16	Wed 2/12/20
Design Phase	900 days	Thu 9/1/16	Wed 2/12/20
Property / Right-of-Way Acquisition	900 days	Thu 9/1/16	Wed 2/12/20
Bid Phase/Contractor Procure/Contracting	900 days	Thu 9/1/16	Wed 2/12/20
Construction Phase	900 days	Fri 12/1/17	Thu 5/13/21
Technology-Alberta Digital District, Technology - West End Digital District, Technology - Forest Lake Digital District, Asset Management	**1028 days**	**Wed 6/1/16**	**Fri 5/8/20**
Procurement and Contracting	66 days	Wed 6/1/16	Wed 8/31/16
Environ. Review w/FONSI and RROF Ad	131 days	Thu 9/1/16	Thu 3/2/17
Design Phase	261 days	Fri 3/3/17	Fri 3/2/18

ACTIVITY NAME	Duration	Start	Finish
Property / Right-of-Way Acquisition	133 days	Mon 3/5/18	Wed 9/5/18
Bid Phase/Contractor Procure/Contracting	89 days	Thu 9/6/18	Tue 1/8/19
Construction Phase	348 days	Wed 1/9/19	Fri 5/8/20
Citywalk (Alberta Ph 2, University Blvd, McFarland Blvd, 15th Street, Hargrove Road, 10th Ave, 35th Street, MLK Blvd, Hellen Keller, Riverwalk Connection, Hillard Drive	**1094 days**	**Tue 3/1/16**	**Fri 5/8/20**
Procurement and Contracting	66 days	Tue 3/1/16	Tue 5/31/16
Environ. Review w/FONSI and RROF Ad	131 days	Wed 6/1/16	Wed 11/30/16
Design Phase	305 days	Thu 12/1/16	Wed 1/31/18
Property / Right-of-Way Acquisition	241 days	Thu 2/1/18	Thu 1/3/19
Bid Phase/Contractor Procure/Contracting	89 days	Fri 1/4/19	Wed 5/8/19
Construction Phase	437 days	Thu 5/9/19	Mon 1/11/21
Roadway Projects - McWrights Ferry Road, Roadway Projects - ALDOT, Roadway Projects - Highway 69 South, San Sewer - Pier Replacements, San Sewer - Lift Sta 55 Improvements, San Sewer - Lift Sta 3 Improvements, Water Tank Improvement,Water Dist Improvement	**1524 days**	**Tue 3/1/16**	**Fri 12/31/21**
LEVERAGE PROJECTS	1524 days	Tue 3/1/16	Fri 12/31/21
Roadway Project - McFarland Blvd	**1094 days**	**Wed 6/1/16**	**Mon 8/10/20**
Procurement and Contracting	66 days	Wed 6/1/16	Wed 8/31/16
Environ. Review w/FONSI and RROF Ad	175 days	Thu 9/1/16	Wed 5/3/17
Design Phase	261 days	Thu 5/4/17	Thu 5/3/18
Property / Right-of-Way Acquisition	197 days	Fri 5/4/18	Mon 2/4/19
Bid Phase/Contractor Procure/Contracting	89 days	Tue 2/5/19	Fri 6/7/19

ACTIVITY NAME	Duration	Start	Finish
Construction Phase	306 days	Mon 6/10/19	Mon 8/10/20
Tuscaloosa Housing Authority, City Safe Room, Cypress Crk Restoration, Brookhaven Stream Restoration, Railroad Crk Restoration, FOCUS on Senior Citizens, Boys & Girls Club, Jaycee Park, Workforce Center, Center of Resilience, Womens Center, DCH Hospital	**1028 days**	**Wed 6/1/16**	**Fri 5/8/20**
Procurement and Contracting	66 days	Wed 6/1/16	Wed 8/31/16
Environ. Review w/FONSI and RROF Ad	196 days	Thu 9/1/16	Thu 6/1/17
Design Phase	261 days	Fri 6/2/17	Fri 6/1/18
Property / Right-of-Way Acquisition	155 days	Mon 6/4/18	Fri 1/4/19
Bid Phase/Contractor Procure/Contracting	89 days	Mon 1/7/19	Thu 5/9/19
Construction Phase	261 days	Fri 5/10/19	Fri 5/8/20
SMP Industry - IDA-AIDT-SSCC Leverage and West Alabama Works Training	**610 days**	**Tue 3/1/16**	**Mon 7/2/18**
Procurement and Contracting	44 days	Tue 3/1/16	Fri 4/29/16
Environ. Review w/FONSI and RROF Ad	44 days	Mon 5/2/16	Thu 6/30/16
Workforce Training	522 days	Fri 7/1/16	Mon 7/2/18
Warner Pkwy (Gboro to Gwood)	**850 days**	**Wed 6/1/16**	**Tue 9/3/19**
Procurement and Contracting	66 days	Wed 6/1/16	Wed 8/31/16
Environ. Review w/FONSI and RROF Ad	129 days	Thu 9/1/16	Tue 2/28/17
Design Phase	261 days	Wed 3/1/17	Wed 2/28/18
Property / Right-of-Way Acquisition	108 days	Thu 3/1/18	Mon 7/30/18
Bid Phase/Contractor Procure/Contracting	89 days	Tue 7/31/18	Fri 11/30/18
Construction Phase	197 days	Mon 12/3/18	Tue 9/3/19