Exhibit D – Unmet Need

City of Tuscaloosa, Alabama

File Name: ExhibitDUnmetNeed

Tuscaloosa County (City of Tuscaloosa) was previously determined by HUD to be a MID county (Exhibit B – pg. X). While all of Tuscaloosa County was determined as MID, it is notable that the area with the most significant unmet needs exist in the City of Tuscaloosa. The specific geography in which the City of Tuscaloosa's proposed NDRC project will be carried out is the MID-URN area as identified in our threshold response; however, the activities (see Attachment F for specific census tracts/block groups for activities) will provide benefit to the county and region especially in regard to economic revitalization, infrastructure, and healthcare.

In a matter of minutes, the April 27, 2011 tornado left its mark of destruction on over 12 ½% of the City and as an example destroyed a 345,000 sq. ft. public facility that housed 6 departments and trapped dozens of people, Mr. Carney's 25 year old local business and livelihood, and Ms. Riley's, an elderly widow, home where she cared for and housed her children and grandchildren. The largest percentage of housing destruction was low-income rental housing at over 5,000 units. According to the Chamber of Commerce of West Alabama, 575 businesses were destroyed/damaged with another 75 experiencing economic injury; 7,000 people were immediately unemployed. The Phase II threshold requirements have been updated (Exhibit B – pg. X); however, the City has identified unmet needs in the city, county, and region exceeding those in the threshold requirement - $64.7 million (housing); $629.7 million (infrastructure supporting housing and economic revitalization); and $227.8 million (economic revitalization) which will be invested in activities (Exhibit E – pg. X) that will benefit the City and greater region.

According to the National Climatic Data Center, Tuscaloosa County sees an average of 3.4 tornadoes and over $118 billion in property damages per year. As noted in our Phase I response, the climatic factors such as severe heat and storms that contribute to tornadic activity are present

in the region; however, according to climatologist the effect of climate change on tornadic activity is inconclusive. There is a great probability that Tuscaloosa County will encounter over $593 billion in the next 5 years in property damages alone -the economic and social damages accounting for much more -so efforts should be made now to safeguard and inform against future threats. Additionally, the U.S. National Climate Assessment reports that the Southeast region has been affected by more billion dollar disasters than any other region and the State of Alabama alone has encountered between 35-44 weather and climate event over the last 30 years that have cost more than a billion dollars in damages. Outside of tornadoes, resilient measures against the following threats and hazards are addressed across economic, housing, infrastructure, and environmental activities in this proposal – flooding, severe storms, extreme heat/drought, economic decline, hazardous material/rail accidents, winter storms, terrorism, and dam failure.

There are investments proposed within the project that if implemented prior to the qualified disaster would have increased the City's resilience and limited the direct and indirect effects. Based on data from The University of Alabama's Alabama Center for Real Estate (ACRE) and Engineering department, 5,144 housing units (owner, rental, public housing) in the MID-URN area were impacted by the qualified disaster and the total costs to rebuild/repair is estimated to be at a minimum figure of $250-300 million based on real estate comparable market data and the median value of homes to be approximately $108,500. The average estimated cost to repair significantly damaged homes is approximately 60% of the cost for new construction ($108,500 baseline) and the cost to repair habitable (repairs needed) homes is 20% of the cost of new construction. Under commission from NSF, UA and several other universities determined that 85% of the storm affected area experienced wind speeds at or less than 135 mph. Coastal design codes and construction practices resist wind speeds of 135 mph to prevent damage from

hurricanes. 85% of the homes in the City could have been saved if Tuscaloosa employed these building practices. Homes designed to hurricane standards costs approximately $1 more per square foot than standard construction. Based on a 1500 sq. ft. home that is an additional $1500 for construction. Adoption of this building code standard would only cost the City $94,000 annually for the additional inspections needed. The disaster in our MID-URN area (City of Tuscaloosa) affected the area through 1240 completely destroyed, 1412 significantly damaged, and 2492 habitable (repairs needed) housing units, and cost individuals $280,537,640, local government $2,646,479.50, insurance $183,134,876 ($178 million greater than average of 2010 and 2012), state government $3,470,000, and federal government $26,120,899. If this building code standard was implemented prior to the qualified disaster, our MID-URN area would have been affected through 186 completely destroyed, 212 significantly damaged, and 374 habitable (repairs needed) housing units, and cost individuals $42,080,646, local government $396,972, insurance $27,470,231, state government $520,500, and federal government $3,918,134. FEMA and City sources were used to determine the cost effects on local, state, and federal government while Alabama Insurance Center data was used to determine insurance costs.

Another action that could have limited the effects of the disaster is burying utilities. Using data provided from Alabama Power, the City was able to determine costs associated with damage as a result of downed overhead power lines and the cost/cost savings in regard to a policy that requires underground utilities for all public infrastructure activities and housing developments. The disaster in our MID-URN area affected the community through 83,000 homes without power, 4 day power outage (on average), and inefficient emergency response and cost individuals $1,118,601 (Alabama Power lost revenues), local government $0, insurance $0 (Alabama Power is self-insured), state government $0, and the federal government $0. If these

utilities were underground prior to the disaster, our MID-URN area would have been affected through 0 downed power lines, 3 hour power outage (on average), and minimal delay in emergency response and cost individuals $34,956 (lost revenues) and $54.6 million (cost to bury utilities), local government $0, insurance $0, state government $0, and federal government $0. Lost revenue was based on an average of 1200kwh usage a day and a rate of 0.084232 per kwh. The cost to bury utilities was based off of cost to bury transmission lines ($8M/ mile) and distribution lines ($1.1M/mile) and the six mile diameter of the City. Alabama Power does not receive assistance from the local, state, or federal government so no monetary value can be assigned.

If the resilient investment of increased building codes were implemented an additional estimated $972,000/year for residential structures and $936,000/year for commercial structures would be needed. Using City of Tuscaloosa permit data for the last 9 months, verified by the Chief Building Official, 54 residential permits were issued per month (equates to 648/yr.) with an average valuation of $211,279.36. Using a 1500 sq. ft. home as a baseline this equates to $972,000/yr. based on $1 more per sq. ft. than standard construction costs. There are 42,000 existing residential structures; with retrofit the cost would be $63 million. For commercial structures the same process was used to determine the issuance of 312 permits/yr.; using a 3000 sq. ft. structure. There is no substantial scientific data to quantify a dollar amount per square foot for implementation of higher building standards. However, according to UA experts, it can be reasonably expected that commercial structures will cost more than the additional $1 more per sq. ft. for higher building standards for residential structures. Therefore, using a 3,000 sq. ft. commercial structure as a baseline this equates to $936,000/yr at a minimum. In regard to a resilient investment of underground utilities, the Tuscaloosa County Hazard Mitigation Plan data

reveals that $297 million would be needed to safeguard against loss of electrical power facilities. Additionally, a state highway administration study states that a community that suffered from tornado damage, of similar size to Tuscaloosa, spent more than twice the amount yearly on maintenance for overhead utilities than underground. The yearly maintenance amount for underground utilities was $3,804,000 which would be comparable to the maintenance cost in Tuscaloosa. Implementation of these resilience efforts would considerably decrease the damages in the event of future threats. As stated before, resilient building structures would protect 85% of the residential and commercial structures in the City; therefore, protecting the lives of citizens, decreasing the financial burden to individuals, insurance, and government for replacement and repairs and allowing businesses to remain in operation. Investment in underground utilities will increase the likelihood of power to remain in service and more efficient restoration of power to homes and businesses. As discussed later in this narrative, Tuscaloosa is the hub for regional commerce. Historical patterns have shown that if Tuscaloosa is affected by a storm, other areas in the region generally are too. If businesses have power and remain in operation following an event they will be able to provide services and resources to citizens throughout the region.

Our project seeks to address housing, infrastructure, and economic needs while simultaneously addressing environmental, social, and resilience needs to equip the MID area and the greater region to withstand threats and hazards based on data. The benefits and costs associated with the project that address the needs in this exhibit are reflected in the BCA (Attachment F). UA's Culverhouse College of Commerce recently performed housing and business needs analysis of Tuscaloosa. Multifamily housing represents 32.2 % of all housing units and data suggests that by 2019 there will be an undersupply in regard to low-income housing and 2,337 homes will be needed. As referenced in Exhibit B – pg. X, thousands are still struggling to secure, affordable

safe housing or repair remaining damage to their homes. Data reveals that 32% of households within the MID area have an income of less than $15,000 and that 36% of families fall below the poverty line. The American Census Survey (ACS) suggests the same for Tuscaloosa County; 28.5% fall within the HUD income limits for a 1 person household and 17.5% fall below the poverty level. Additionally, 45.7 % of the population spends 35% or more of their income on housing. According to ACS, 36.4% of homes in Tuscaloosa County and 61% of homes in the MID area are rental; the Center for American Progress confirms that nearly 2/3 of low-income renters spend 50% or more of their income on housing. In regional terms, the average per capital income for the 7 counties is $18,743. One of the primary reasons that low income people are disproportionately affected by extreme weather and other threats is quality of housing; when the low income population spends a large amount of income on housing there is no disposable income to provide for other basic needs and quality of life. As mentioned before, 5,000 low income units were destroyed in the qualified disaster in the MID area alone; to date an estimated 430 have been rebuilt. Therefore, due to a lack of affordable, quality housing, the LMI population is forced with three options – pay for market rate housing, live with family/friends, or move from the area. The local housing authority will leverage over $11 million in tax credits with an activity proposed in Exhibit E to provide additional low income units in the MID area. The City is proposing a housing activity as part of its proposal that will address unwed mothers across the region. According to the U.S. Department of Health and Human Services and the Alabama Department of Public Health, in the State of Alabama 42.6% of births annually are to unwed mothers; 49.2% of births annually are to unwed mothers in West Alabama. 69.8% of all births were to unmarried African American mothers. In most occasions, all unwed mothers were from predominantly low-income households and not equipped with the proper healthcare,

education, employment opportunities, and counseling to provide a sustainable life for themselves and their child. In 2013, 4,532 were in the foster care system at some point due to insufficient resources or maltreatment. Further, the partner organization that will provide the housing, healthcare, education, counseling, and employment opportunities reports that they receive on average 9 calls per week from the region in regard to these services.

In terms of business needs, regionally, the unemployment rate is at 7.5% with Tuscaloosa County's unemployment rate at 6.8%. According to a UA study, the City is underperforming in revenues compared to the available total demand – the population is forced outside of the West Alabama region for the purchase of goods not available in Tuscaloosa. It should be noted that Tuscaloosa serves as the main area for the entire region to purchase goods and services. If these goods and services were available in Tuscaloosa, there would be an upside for $250 - $300 million in added annual revenues. In conjunction with the area's commercial real estate community and the City, the Chamber is actively recruiting new to the market retail to address this shortage in part with annual funding; in Exhibit E an activity will be proposed to be used in conjunction with this leverage to benefit economic revitalization of the region.

According to the Region 3 workforce development agency West Alabama Works, there is a need to bring 1500 new employees to the market within the year based on the new industry coming to region. Additionally, a UA study revealed that by 2030 there will be a deficit of 14,000 jobs across the State due to the lack of workforce development resources in conjunction with the emergence of new industry. There is also a great need to develop curriculum for K-12 students to prepare the workforce, data shows that in the next 10 years 65-75% of all jobs will require a 2 year degree or certificate. To adequately address the workforce development needs for now and the future across the region, an activity will be proposed in Exhibit E that will be leveraged

against existing annual funding for training and resources. Currently, over 170 MBE/WBE/DBE firms have expressed interest in the City's inclusion program for access to resources and training on building their business and successfully securing work. The Chamber, State DOT, and Stillman University (predominately African American) all have similar programs and work in unison with the City, but are likely to have firms that are outside of the City's database. According to SBA, the average cost for a small business start-up is $30,000; based off of the City's database and knowledge of the MBE/WBE/DBE interest approximately 157 firms need financial resources to successfully implement their business which would be a $4.7 million need. Resilient infrastructure is needed to ensure our physical, social, environmental, and economic resiliency against future threats. Water and sewer lines in the City are aging (most over 60 years old), improvements to two large drainage systems are needed to reduce flooding in neighborhoods, and stream restoration and erosion reduction are critical to the railroad systems that run adjacent. In order to provide the capacity needed for the growing population, redundancy in event of line failure that will continue service, reduce flooding along roadways and neighborhoods, and continued operation of two major rail lines, over $35 million in infrastructure needs have been identified. However, the City will leverage over $24 million for these activities which will leave a remaining unmet need for water and sewer related activities at $11 million in this proposal. Also, these activities serve a portion of the County and will substantially improve the service to these areas. Roadway projects, including redundancy and street reconstruction (substantially from debris removal and rebuild), and pedestrian friendly shared use paths to increase connectivity and support economic and housing needs for the City, county, and region have been identified in excess of $344 million. Through a partnership with the State DOT, State and City funds (over $213 million) are being leveraged (leaving an

estimated $130 million need) to serve the greater region with improved access and to increase the capacity of transportation needs of the West Alabama population; the Tuscaloosa County population alone is expected to increase by 27.9% by 2040. Additional infrastructure needs for activities such as green space and facilities that provide services to underserved populations throughout the region will support economic and housing development and has been identified in excess of $250 million. However, through partnerships approximately $172 million of that need has been fulfilled. The argument for housing, economic development, and infrastructure needs are further supported in the Comprehensive Economic Development Strategy report released by the West Alabama Regional Commission that outlines established trends within the region – out-migration, low education level, predominantly low income population, deficit of low skilled jobs, improvements needed to water and system to increase capacity, prolonged state of economic decline, and shortage of quality low-income housing.

As described earlier in this narrative, low-income individuals are a large portion of the households within the MID-URN target area, county and region as a whole. Data reveals that 32% of households within the MID area have an income of less than $15,000 and that 36% of families fall below the poverty line. The American Census Survey (ACS) suggests the same for Tuscaloosa County; 28.5% fall within the HUD income limits for a 1 person household and 17.5% fall below the poverty level. In regional terms, the average per capital income for the 7 counties is $18,743. Low-income people are particularly vulnerable to threats and hazards due to their economic stability, poor housing, and poor environmental conditions. Within the LMI population, there are vulnerable populations that are disproportionately affected even further based on their race, age, physical and mental abilities, language, and other factors; using ACS data, income characteristics of these populations within the MID URN area were identified.

African Americans comprise 31% of the population; 26.9% fall below the poverty level. 17% of disabled individuals (veterans, physically, mentally) between the ages of 20 to 64 were identified as falling below the poverty level. As discussed earlier, unwed mothers are a particularly vulnerable population with little means to support their children; 82.6% are classified as low-income. 2.5% of the elderly population fall below the poverty level; however, 21.3% of grandparents responsible for grandchildren are classified as low-income. Based on individual data, 8.2% of unemployed persons qualify as falling below the poverty line; however, of those that were able to secure part-time work 14.7% were classified as below the poverty level. 3.6% of the population speaks Spanish, but no income data was available for this demographic. However, it is reasonable to expect that this vulnerable population would be qualified as low-income due to the difficulties surrounding employment in a 96% English speaking population.

Globally, unmet needs for LMI individuals are the likelihood to live in neighborhoods with poor housing quality and failing infrastructure, lack of insurance, housing insecurity, and poor health. Specifically in the MID URN (same as qualified disaster) area, isolated neighborhoods with inadequate infrastructure (streets, water and sewer, connectivity, greenspace) are disproportionately affecting the low-income population; an investment of $157 million will improve the connectivity of these neighborhoods to other areas of the City, job opportunities, and education as well as promote social cohesion and promotion of community morale. Additionally, the incorporation of green spaces will increase quality of life and community involvement among all demographics and income levels. Research has shown that the LMI population relies heavily on public transportation. In the event of a threat or hazard, evacuation through the City's limited public transportation system will be detrimental to the LMI population; incorporation of shared use paths (addressed through investment above) will provide individuals with a safe

alternative to public transportation while promoting health and wellness. Lack of transportation and adequate public infrastructure presents a particularly difficult situation for those with accessibility issues (on average 35-45% of the population) to not only access healthcare, shelter, and food after extreme weather events and other threats, but also on a daily basis. Again, incorporation of shared use paths and other public infrastructure will improve the safety and connectivity of transportation for these individuals. Individuals with disabilities are likely to encounter some of the same challenges; however, additional challenges such as limited verbal capabilities, response to simple commands and inability to identify relatives or phone numbers puts them at risk to themselves and others that may be trying to help. Extensive research has revealed that the most effective way to decrease the government funding of these individuals and make them a functioning, productive contribution to society is through early intervention implemented and monitored through behavioral analysts. Currently Tuscaloosa County has one behavioral analyst that travels the region. Based on the demand for these services at least four more are needed ($226,140).

In addition to the lack of affordable housing (Exhibit B – pg. X) ,the LMI homeowner population lives in older, lower cost homes and lack resources to make upgrades to protect themselves physically as well as from loss-reduction; an estimated $2,000 is needed to retrofit a saferoom and $8,000 for resilient building materials. The LMI population that lives in rental units are dependent on the public housing agency or landlord to safeguard their home. Based on the local housing authority's 1200 housing units, an estimated $12 million would be needed to provide these protective measures. Generally, LMI homeowners do not carry property insurance primarily because they cannot afford it and they may live in a family home without a mortgage and are not required to carry insurance by a lien holder. Furthermore, traditional homeowner and

renter insurance policies do not provide flood damage coverage. Property owners in flood areas are required to purchase additional flood insurance which is already expensive and is expected to increase by up to 25% (thousands of dollars per policy); this presents a financial impact on LMI homeowners/renters and homeowners across all income brackets. In terms of businesses that employ lower income households, Tuscaloosa County has a 6.8% unemployment rate and the region has a 7.5% rate. A large percentage of this unemployment is due to the loss of businesses from the qualified disaster (it should be noted that a substantial percentage of the region commutes to Tuscaloosa for work); many of these were retail/restaurant businesses that are generally lower paying jobs. Since lower wage workers depend on each paycheck and have little to no savings, perhaps that most important tool each business can have is a disaster response plan which dictates how the business will recover quickly to ensure their workers get back to work quickly. Development of these plans is a vital need no matter what sector of the industry a business is in. Failing infrastructure and lack of redundant infrastructure also make it difficult for rebuilding and access to these businesses once in operation which can significantly impact performance and; therefore, availability of jobs. The region's workforce development agency verifies that the region is trending a deficit of over 14,000 jobs by 2030 as well as the need for 1500 new to the market employees next year. As new industry moves into the area, specific skills and training are needed and the responsibility falls on the region to identify and train employees to fulfill the industry's need. Therefore, there is a substantial need for training through workforce development for these jobs which are generally lower paying jobs. Additionally, demographic trends indicate that the State population will increase by 16.9% in 2040 and that Tuscaloosa County will increase by 27.9% in 2040. In order to support these population increases, we have to implement the sufficient infrastructure, housing, and workforce solutions for needs to ensure

capacity for transportation, connectivity, shelter, economic viability and much more. Implementation of these actions will safeguard our community, region, and state in the future and lessen impacts across all populations but significantly on vulnerable populations.

The floodway presents a barrier to disaster recovery and resilience in the MID-URN area. The floodway traverses the entire pathway of qualified disaster which makes it difficult to build back. Additionally, there are many homes and businesses still existing in the floodways and the City has inadequate funds to initiate a floodway buy-out program for all of the properties. From a regional aspect, the workforce deficit as detailed earlier in this narrative is and will continue to affect the economic vitality and resilience of the area unless sufficient resources are allocated to address specific training needs. It is reasonable to say that if the region is not equipped to provide the workforce, industry and businesses will no longer locate to West Alabama.

In our Phase I proposal, the City's overarching concept was connectivity through physical means, to job opportunities, education, technology, healthcare, and financing. Community engagement has led citizens and the City to a deep understanding that while there is a significant need for immediate transformation, there is equally a need for maintenance and support of long-lasting investments that will achieve multiple recovery, resiliency, and community development objectives. Based on community input and stakeholder conversations with the region's workforce development agency, chamber of commerce, and technical college, economic development, especially in the severely depressed areas of region and MID-URN area, is one of the optimal CDBG-NDR eligible activities to implement. Based on data, there is an existing and future need for jobs (in excess of 14,000) in the region. Economic revitalization programs such as workforce development and a revolving loan fund for business creation and improvement are the activity types most likely to improve both recovery and resilience inside the MID-URN area

using CDBG-NDR and leverage funds and in the region using supporting leverage funds. Investment in economic revitalization activities will create jobs and better wages for individuals across all income brackets, particularly low-income. The tax revenues created from these jobs and overall business performance in the market will create additional capital funds to be reinvested in the development of resilient infrastructure to support the capacity needs of the growing population through redundant streets, water and sewer improvements, shared use paths, and development of green space to improve storm water drainage and lessen flooding as well as provide areas for recreation, education and habitat as well as the operations and maintenance of this infrastructure. Additionally, these dollars will help to close the gap of affordable housing options through the funding of the local housing authority that will leverage funds for tax credit dollars. An ineligible action that is the optimal choice to improve resilience in the project area is the purchase of an interoperable communications system which is considered emergency response. Currently, the county and the City's neighboring community, Northport, have equipped their public safety and emergency response teams with a communication system that will allow communication with each other should all other means fail. The City does not currently have the $13 million system and should all outside lines of communication fail would be unable to ask for assistance through personnel or resources and vice versa should the county or Northport need City resources. Additionally, there are areas within the MID area that do not classify as low-income and do not meet a national objective of slum and blight or urgent need. Currently, the overall benefit of 50% LMI cannot be waived; however, in order to ensure that all facets and areas of the City are resilient to future threats and hazards equal opportunity and resources need to be applied despite the income.