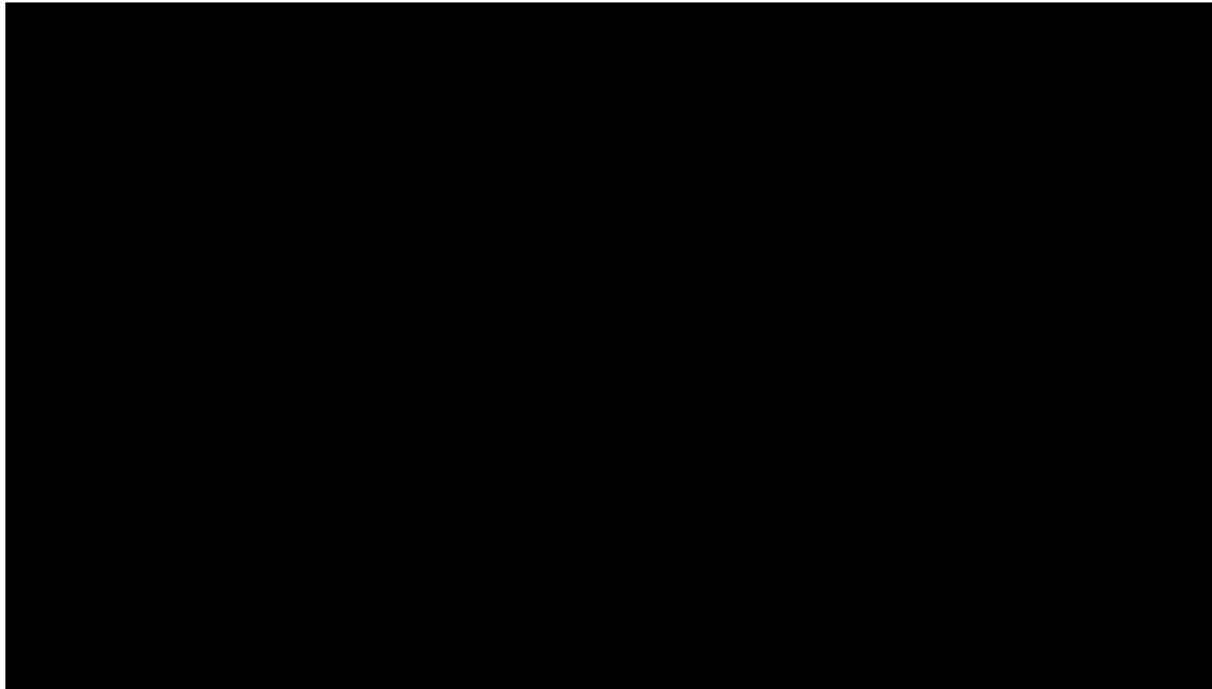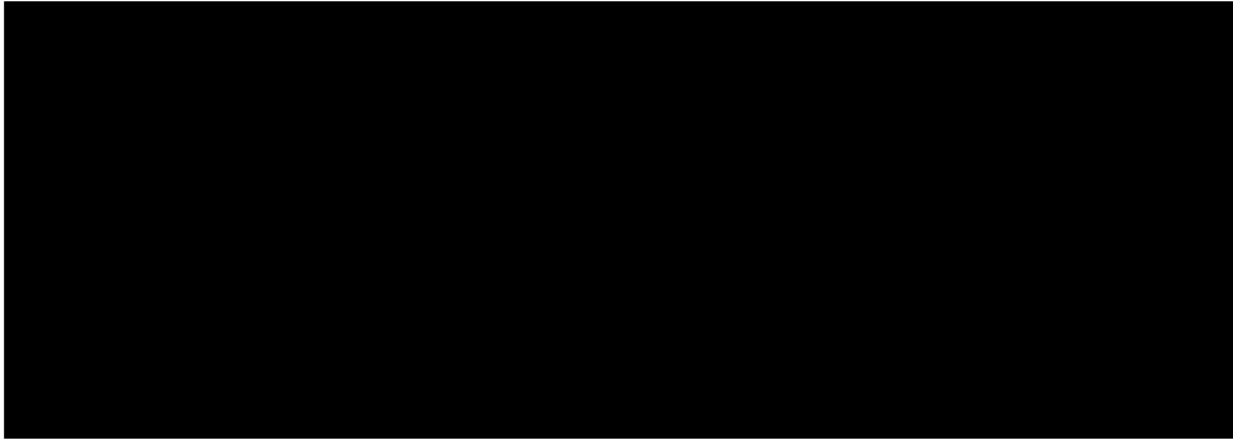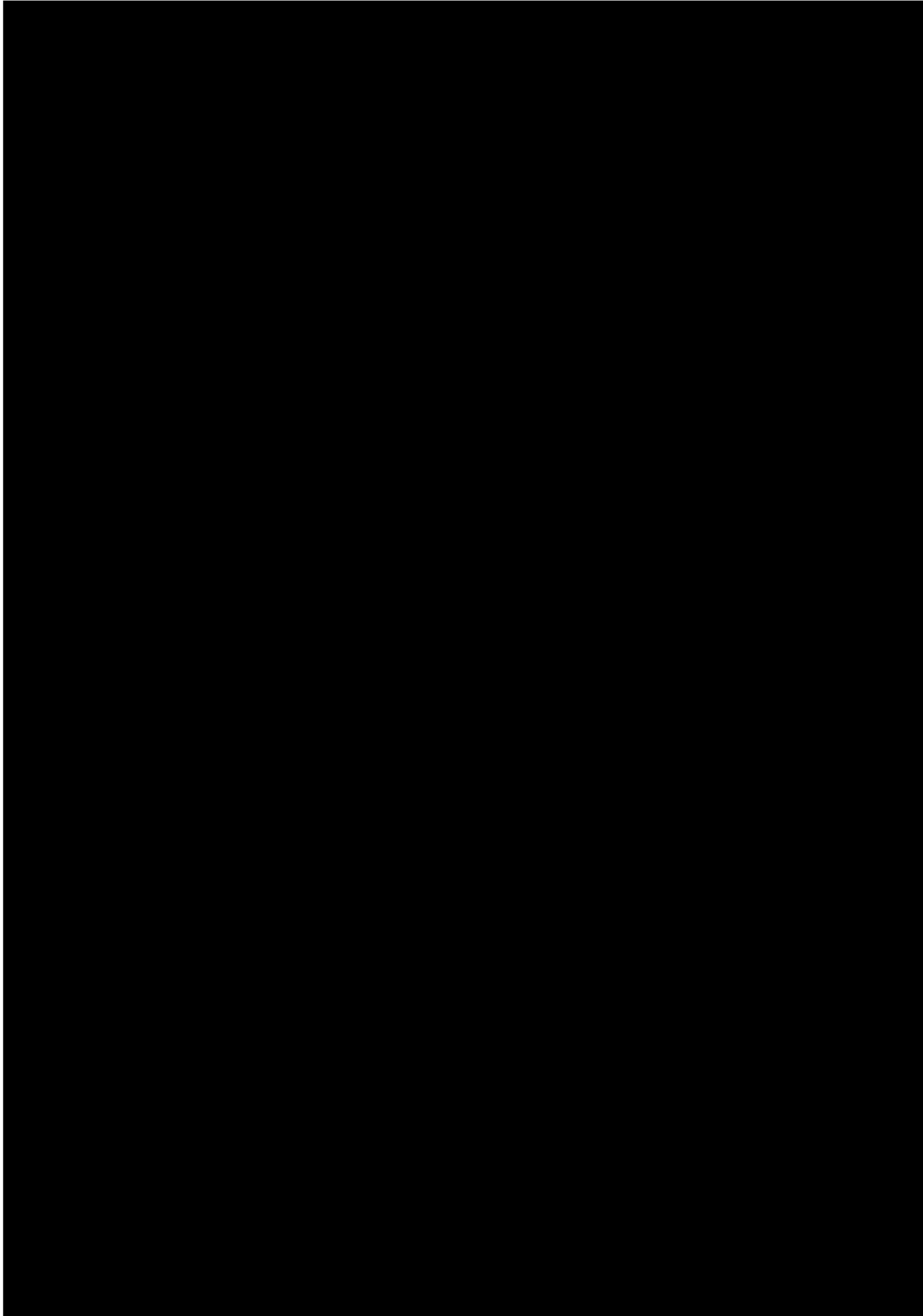# STATE OF TENNESSEE
MAPPING NARRATIVE

*Personnel Salaries: For each position allocated to the projects, provide a description of the position responsibilities, annual salary, and percentage of time dedicated to this project for Year 1 and Year 2. Please ensure that costs are clear for both Years 1 and 2, as opposed to both years cumulatively.*
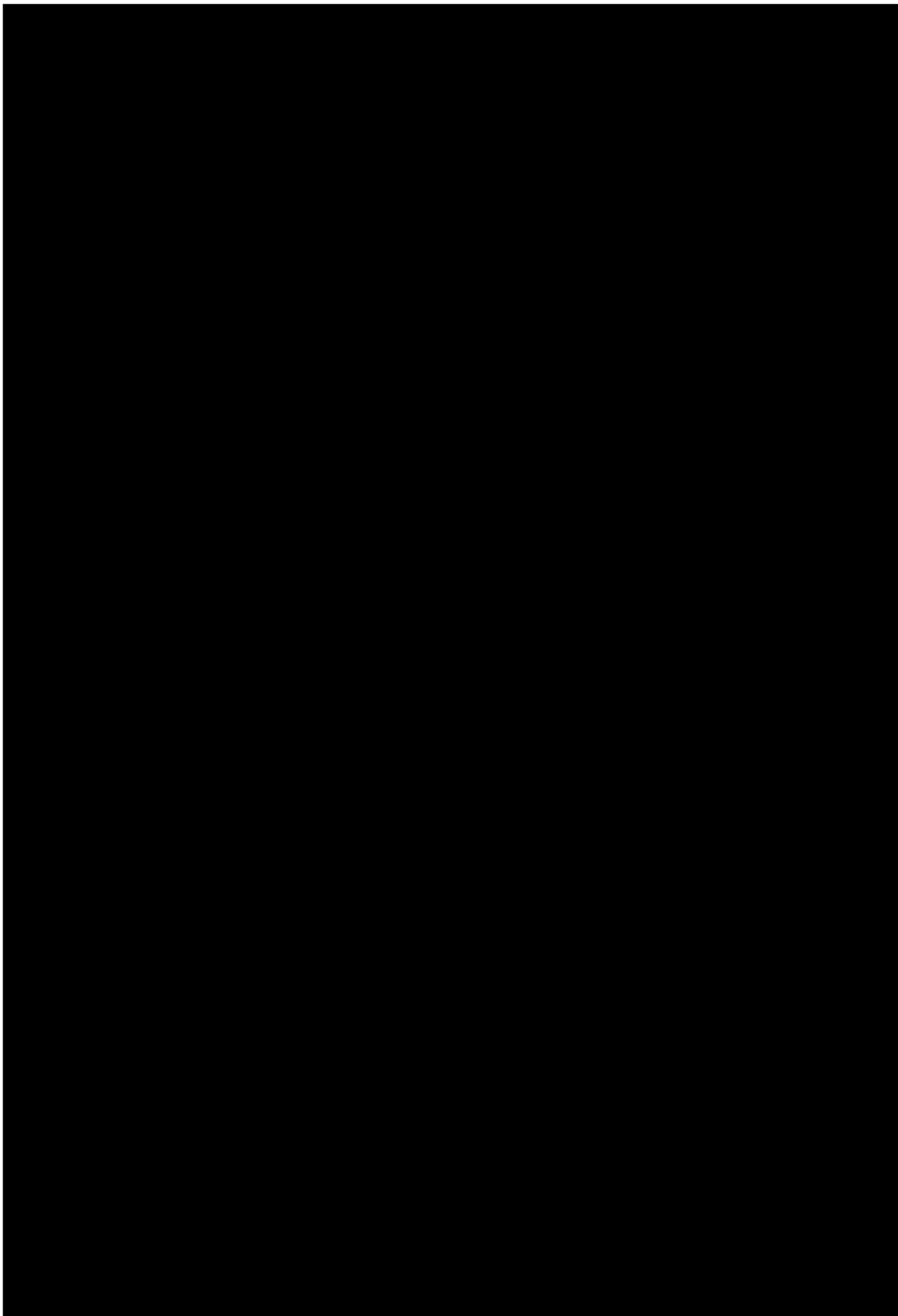
Personnel Salaries

Unless otherwise specifically stated, personnel costs are requested from federal sources.
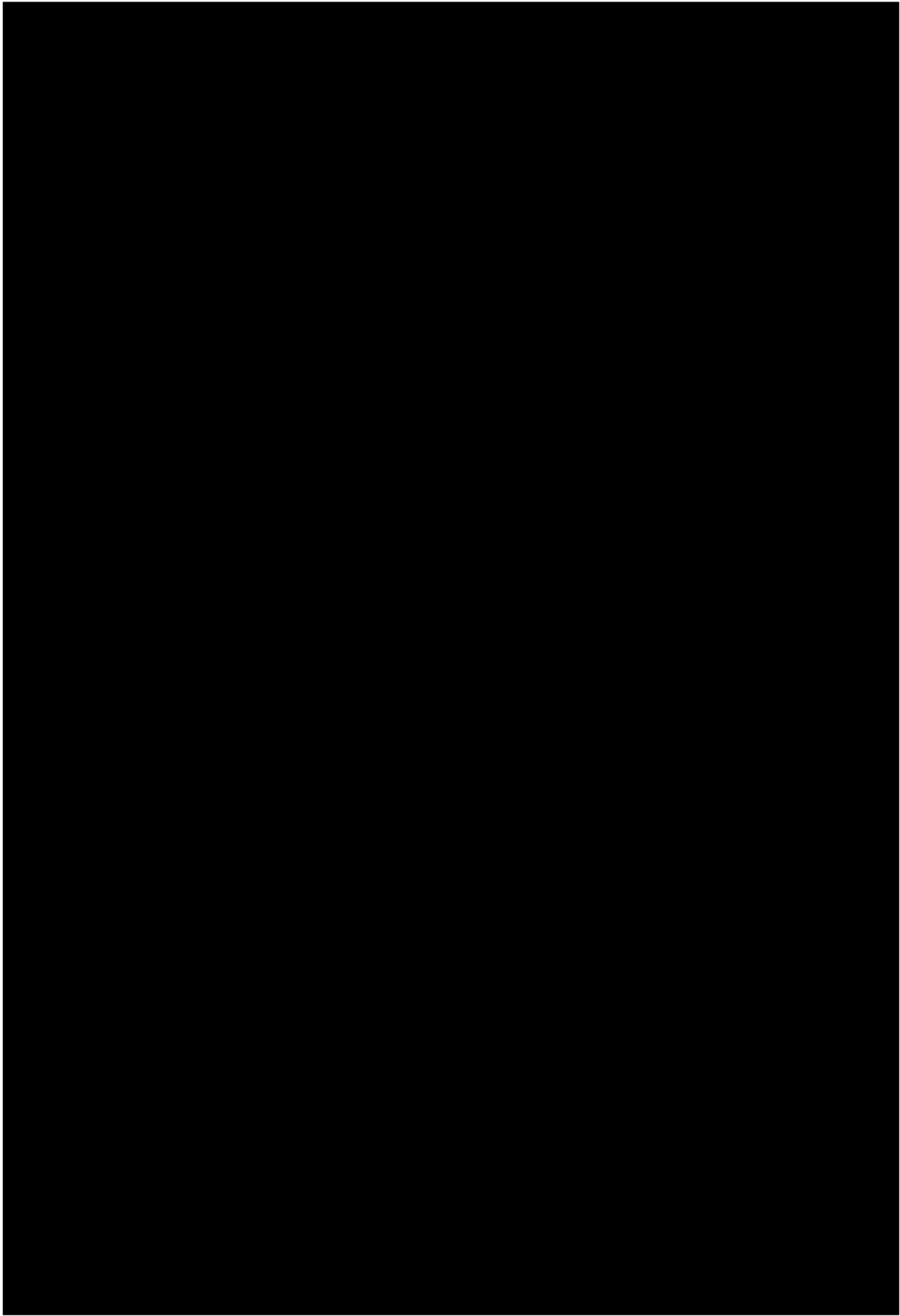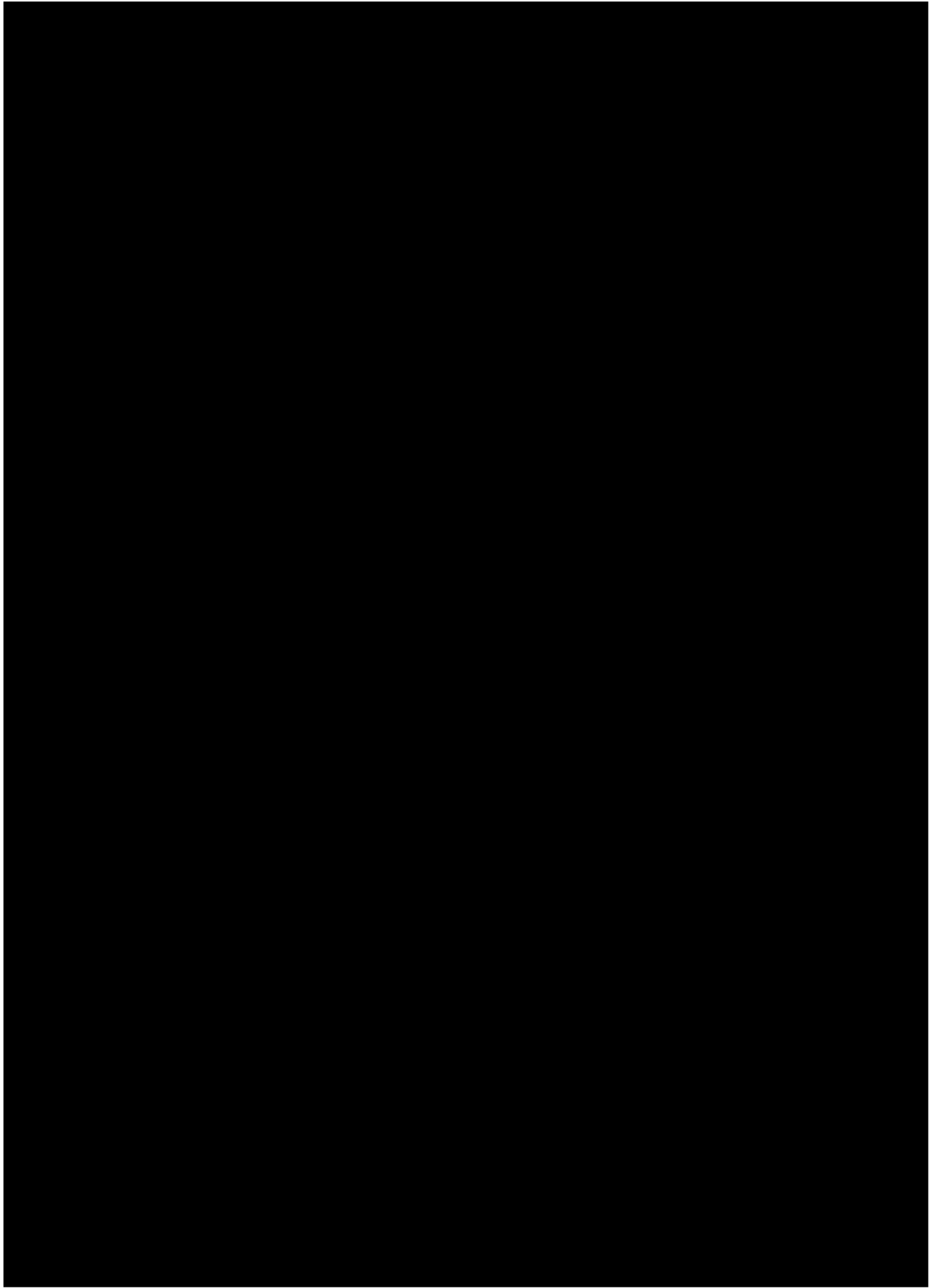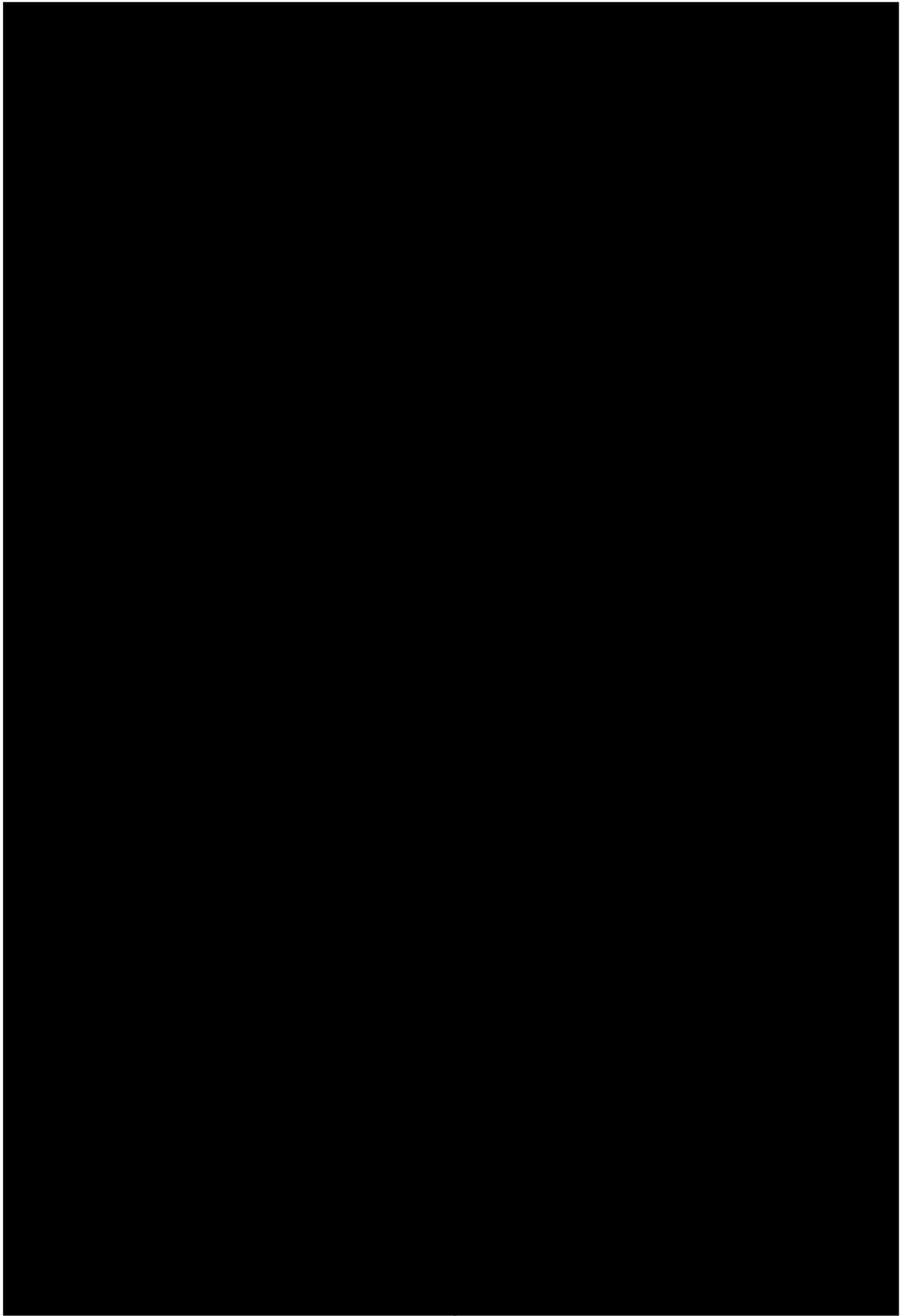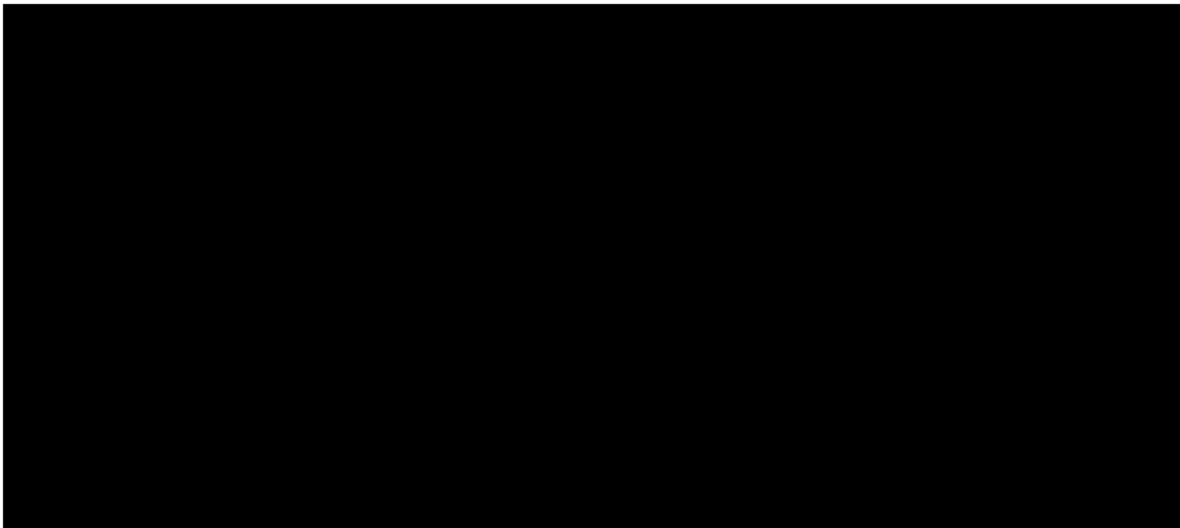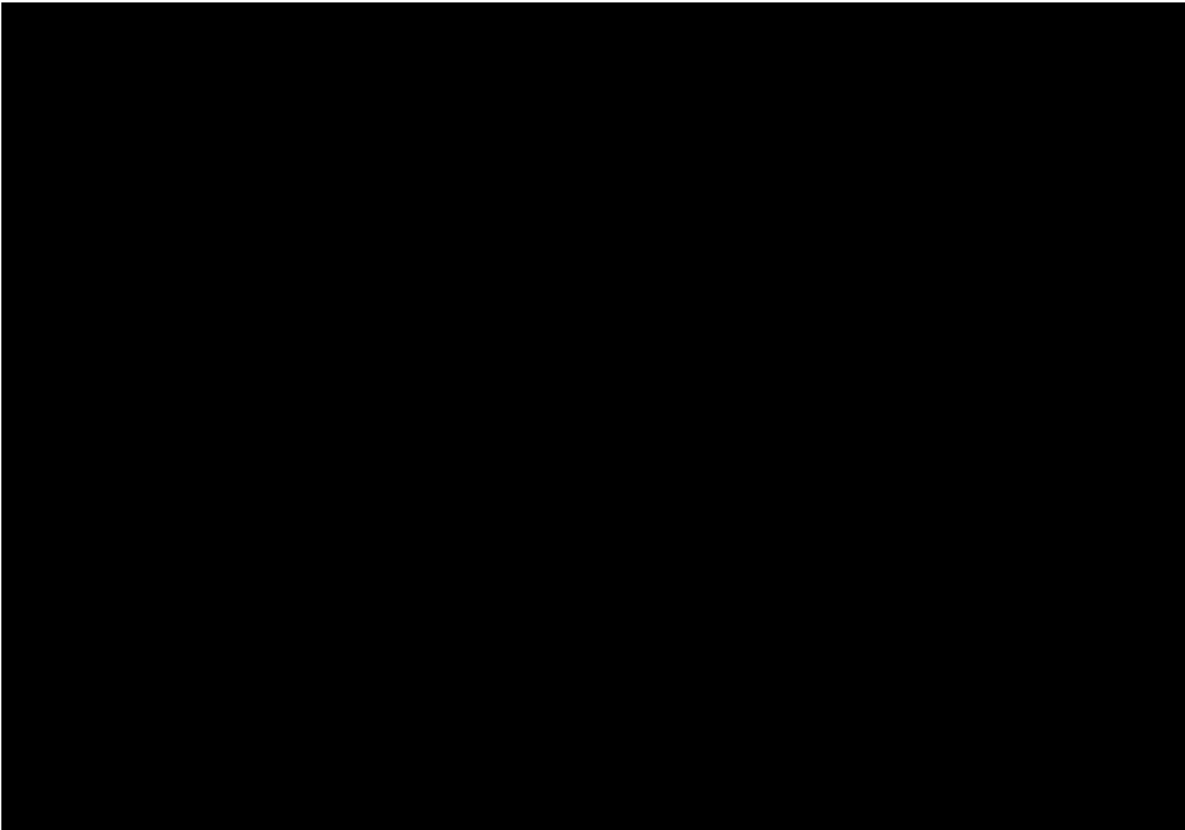
The total cost for personnel salaries for year 1 is $272,455. Of this amount, $47,401 is a cash match from the State of Tennessee and $225,054 is the requested federal share. Of the cash match from the State of Tennessee, $14,352 are pre-award costs calculated through 9/30/09. The total cost for personnel salaries for year 2 is $283,353. The entire portion of year 2 is requested from federal sources.

Connected Tennessee may utilize other employees as needed to fulfill the requirements of this project.

Personnel Fringe Benefits: For each position allocated to the projects, provide the cost for fringe benefits, if available.

Fringe Benefits

Fringe Benefits are projected as a percentage of the personnel's annual salary calculated as follows: Employer's FICA Tax (7.65%), Unemployment Tax (.5%), Health/Dental/Vision Insurance (5.7%), Disability & Life Insurance (.6%), Accrued Paid Time Off (3.6%), SIMPLE match (3%), Gym benefit (.1%), and Professional Development (.3%). The total projected percentage cost will be 21.45% of the personnel salaries. Projected fringe benefit cost for year 1 is $58,440. Of this amount, $10,166 is a cash match from the State of Tennessee. Of the cash match from the State of Tennessee, $3,072 are pre-award costs calculated through 9/30/09. Projected fringe benefit cost for and year 2 is $60,780.

Travel: Provide additional information such that the basis for all figures is clear. For example, if assuming airplane travel, provide an estimated cost for each roundtrip ticket and how many trips are expected. For mileage, provide an estimate of how many miles are expected and how many trips, etc.

Projected Travel Costs

The Tennessee travel costs consist of planned trips by 4 different categories of employees or consultants. Because of our Tennessee-based staff and Tennessee's proximity to Kentucky, it is estimated that no trips include airfare no trips include rental car usage. We expect the standard roundtrip mileage to be 150 miles per trip. While the individual trips may vary in cost and in form, it is anticipated that the total travel cost will approximate the grand total budgeted.
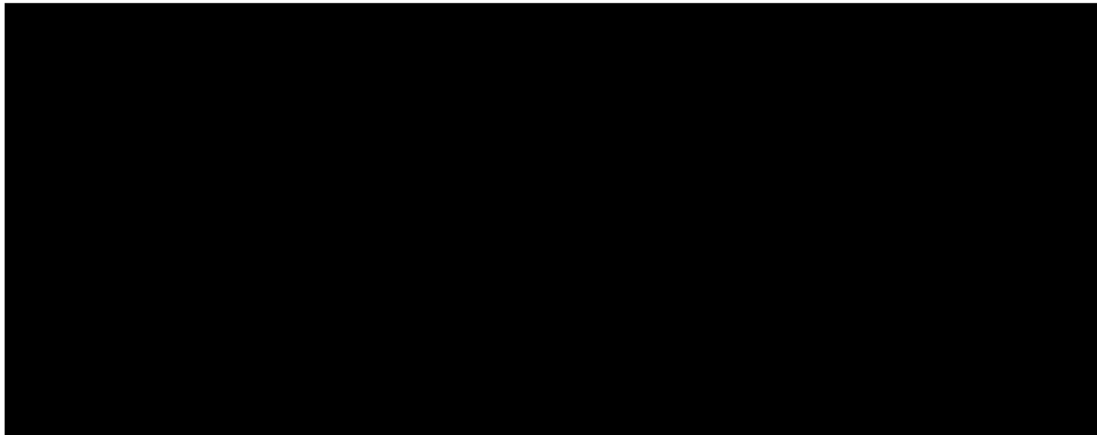
Hotel room cost is projected to be $200 per room with 13 nights' occupancy in year 1 for a total cost of $2,600 and with 13 nights' occupancy in year 2 for a total cost of $2,704. Per diem allowance for meals is projected at $45 per day based on the current standard federal per diem rate, with 142 days of travel in year 1 for a total cost of $6,390 and with 52 days of travel in year 2 for a total cost of $2,434. Mileage travel cost is projected at $.55 per mile, the current applicable standard federal rate, and average trips of 150 miles with 143 expected trips in year 1 for a total cost of $11,798 and 53 expected trips in year 2 for a total cost of

$4,547. Total expected travel cost for year 1 is $20,788. Of this amount, $5,198 is a cash match from the State of Tennessee and $15,590 is requested from federal sources. The requested federal share cost for travel for year 2 is $9,685.
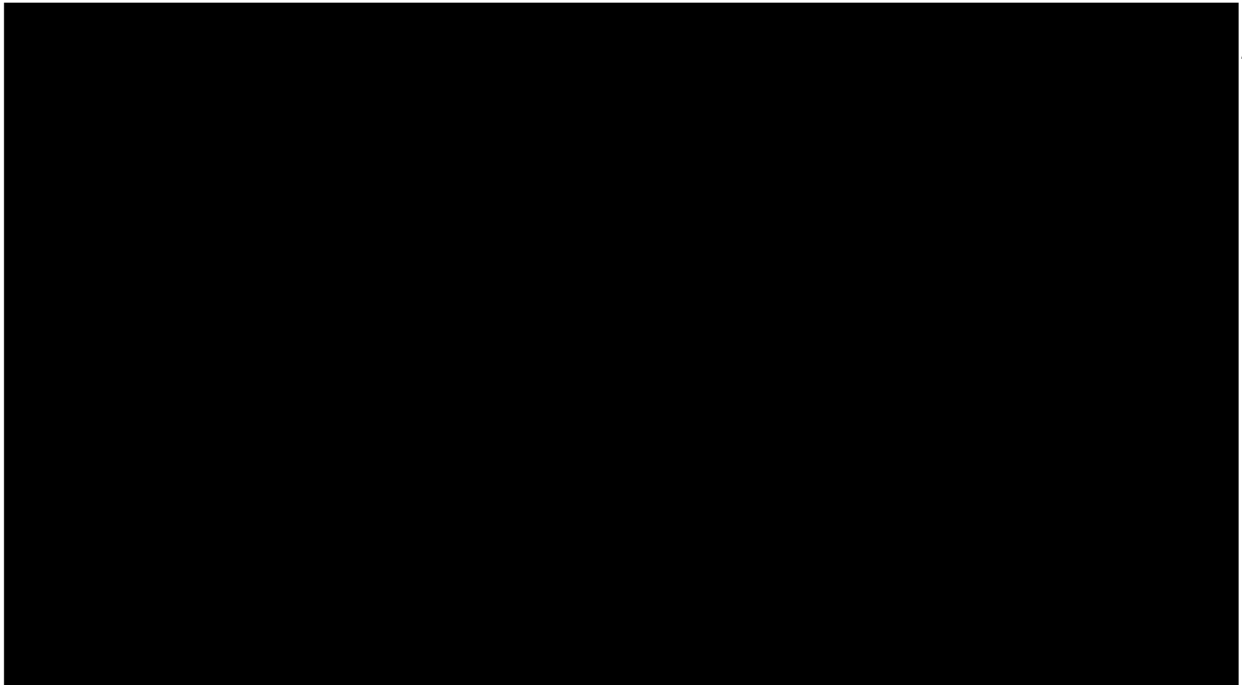
Connected Tennessee may incur additional travel expenses as needed to fulfill the requirements of this project.
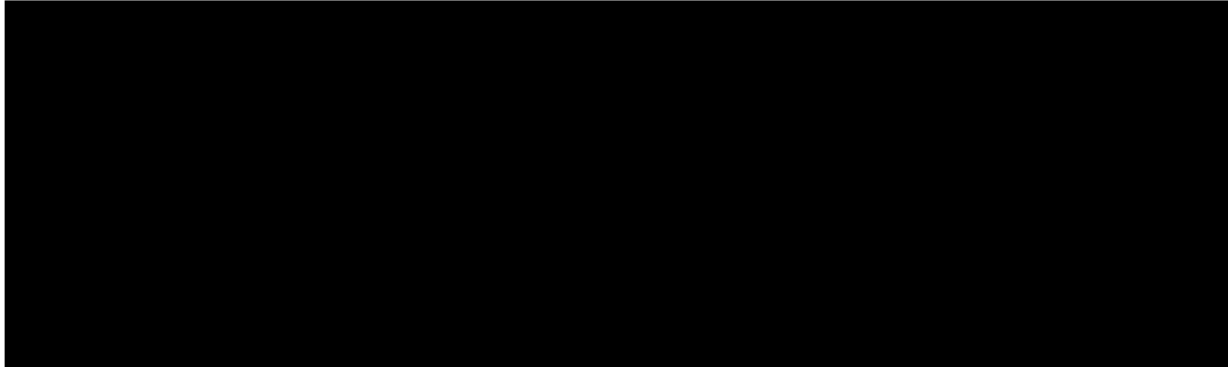
Equipment: For hardware costs, provide a detailed description of all equipment to be purchased, when it will be purchased in the first two years, and the basis for the figures used.

Equipment

BroadbandSTAT is the next generation in broadband mapping, providing a comprehensive mapping portal for states to manage broadband stimulus projects and activities through the ARRA. Using ESRI's ArcGIS Server and its API mapping technologies to incorporate broadband mapping and survey data with demographic and topographic data from ESRI, the Census Bureau, and other reputable data sources, BroadbandSTAT provides not only a user-friendly GIS viewer to understand and track broadband deployment over time, it also provides an analytical tool for prioritizing unserved and underserved areas, evaluating and tracking stimulus projects, and enabling taxpayers with full transparency and accountability of broadband stimulus funding in their state. BroadbandSTAT empowers states to:
- Leverage the best-of-class, geographic informatics for broadband decision-making
- Build and evaluate scenarios to help score and prioritize broadband proposals
- Provide data-based support for effective grant-making
- Facilitate project investment tracking over time
- Provide access-based tools that are relevant and meaningful for specific audiences, including government agencies, consumers, community leaders, broadband providers, and media

Connected Tennessee may purchase other equipment as needed to fulfill the requirements of this project.

Materials/Supplies:
- *For software costs, provide a detailed description of all equipment to be purchased, when they will be purchased in the first two years, and the basis for the figures used.*
- *For all supplies expected to be purchased, please provide the information such that the basis for figures is clear.*
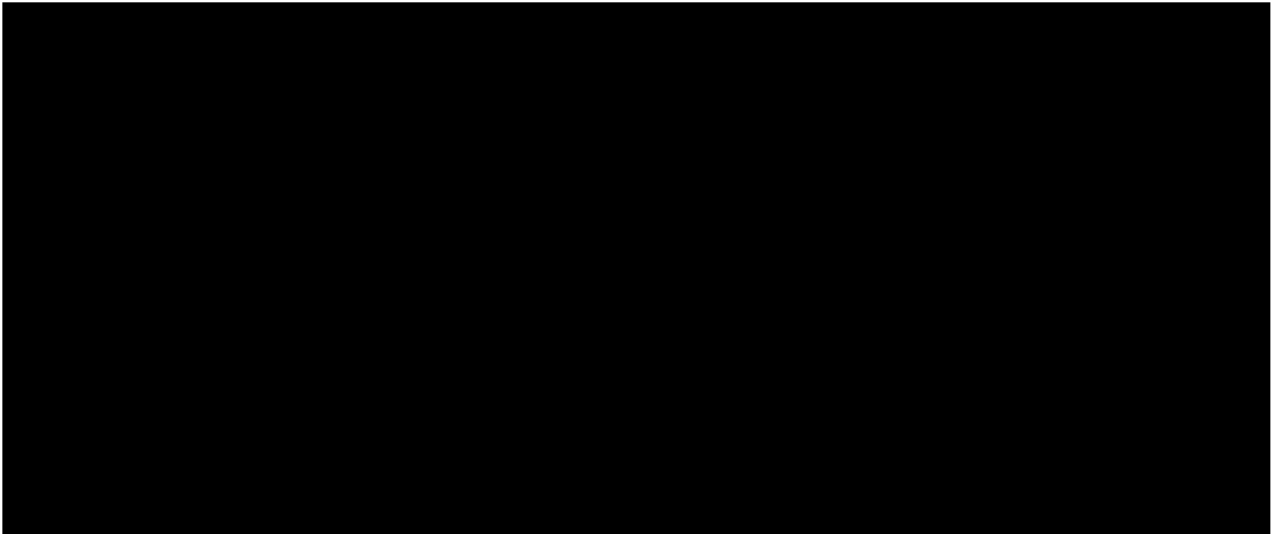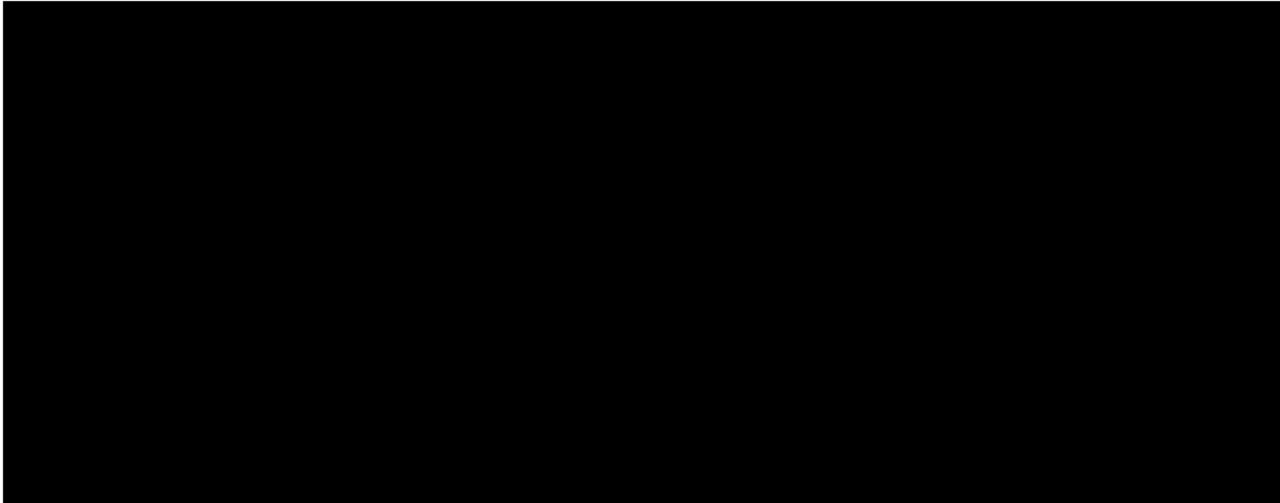
Through 9/30/09, CN has incurred pre-award costs for materials and supplies totaling $495, all paid from state sources.

Connected Tennessee may purchase other materials and supplies as needed to fulfill the requirements of this project.

Subcontracts: For any significant subcontract, please provide the cost allocation in a format similar to the one listed directly above. Your current contractor budget only allocates personnel hours. If the contractor will be purchasing any equipment, performing any travel, etc. that should be clearly delineated.

Subcontracts
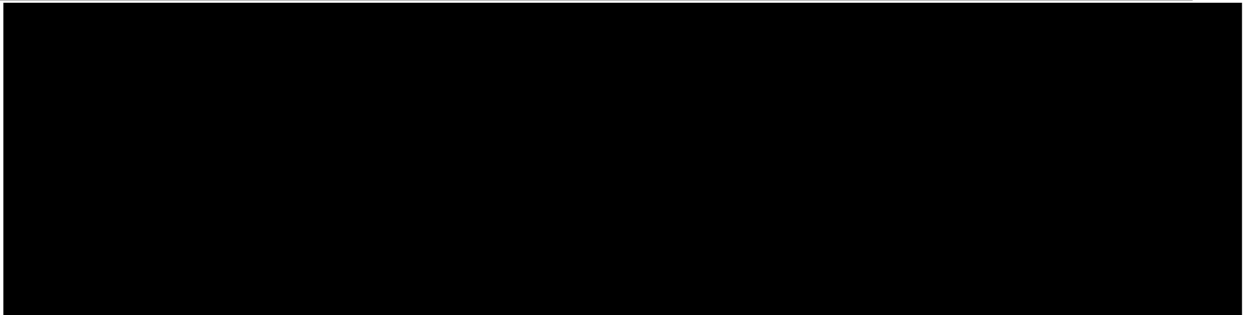
Connected Tennessee may engage other subcontractors as needed to fulfill the requirements of this project.

Other

Connected Tennessee will create an outreach campaign for the primary purpose of verification of data. CN will target media outlets in Tennessee that can reach the greatest number of individuals in an outreach effort to drive them to Tennessee's interactive maps and speed test tools. We plan to target 8 outlets in year 1 and 4 outlets in year 2 with a total cost of $20,000 and $10,400 respectively, all requested from federal sources. The costs for year 2 reflect a 4% inflation adjustment.

Connected Tennessee will contribute its datasets related to the current Tennessee maps. The estimated fair market value of the datasets comprising the Tennessee broadband maps is $634,703.

Indirect

Indirect costs are included at a rate of 30%. These indirect costs in year 1 are $496,202 with $30,000 paid by the state, 279,001 contributed in-kind, and $187,201 requested from federal sources. Connected Tennessee has incurred pre-award indirect costs totaling $10,863, of which $10,692 will be paid by the state and $171 was contributed in-kind. Total indirect

Other

The Statewide Steering Committee Meetings will bring together leaders throughout the state to participate in the guiding and developing of the strategic broadband plan for the state. The attendance is approximately 30 individuals with quarterly meetings lasting approximately three hours. The hourly rate per individual is approximated at $52 per hour during year 1 for a total in-kind contribution of $18,720. The cost for years 2 through 5 reflect a 4% inflation adjustment for a total in-kind contribution of $19,469, $20,248, $21,057 and $21,900, respectively. Sign-in sheets will be maintained for each steering committee meeting to substantiate the time contributed.

Indirect

Indirect costs are included at a rate of 30%. While Connected Nation does not currently hold a federal indirect cost rate, CN has calculated its rate in anticipation of requesting an indirect cost rate from the Department of Commerce. Total indirect costs in year 1 are $39,792 with $8,023 paid by the state and $31,769 requested from federal sources. Total indirect costs for year 2 are $33,258 with $8,344 paid by the state and $24,914 requested from federal sources. Total indirect costs for year 3 are $38,475 with $8,678 paid by the state and $29,798 requested from federal sources. Total indirect costs for year 4 are $40,014 with $9,025 paid by the state and $30,990 requested from federal sources. Total indirect costs for year 5 are $41,446 with $9,386 paid by the state and $32,060 requested from federal sources.

Applicant Capacity, Knowledge, and Experience:

1. *As described in the NOFA, please provide a description of the knowledge and experience of the applicant and <u>associated project personnel</u>. If you have not yet hired for certain positions please provide a description of the qualifications and expected work activities for these positions.*
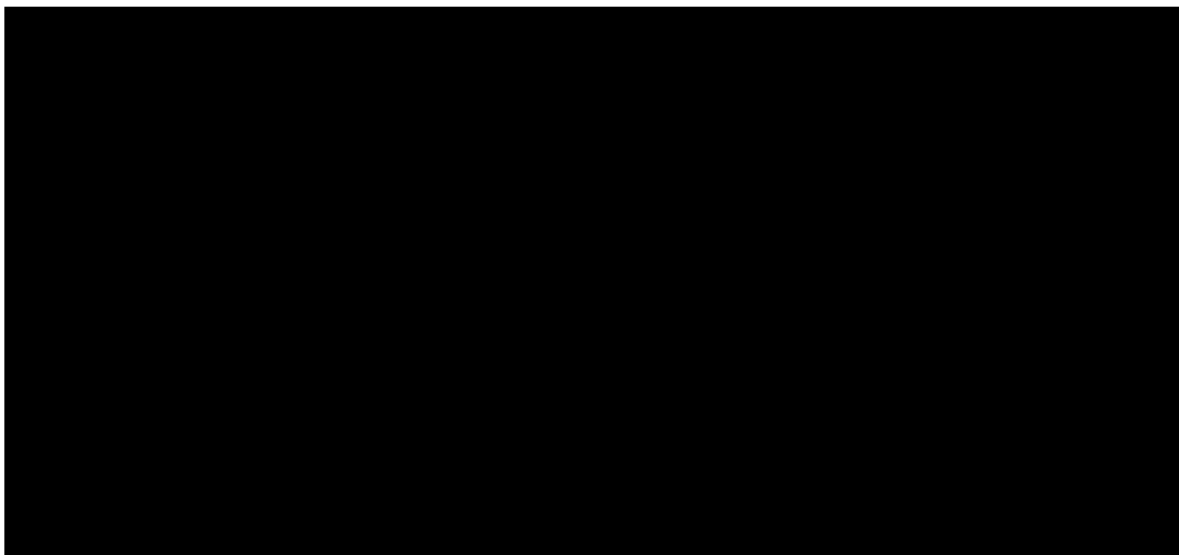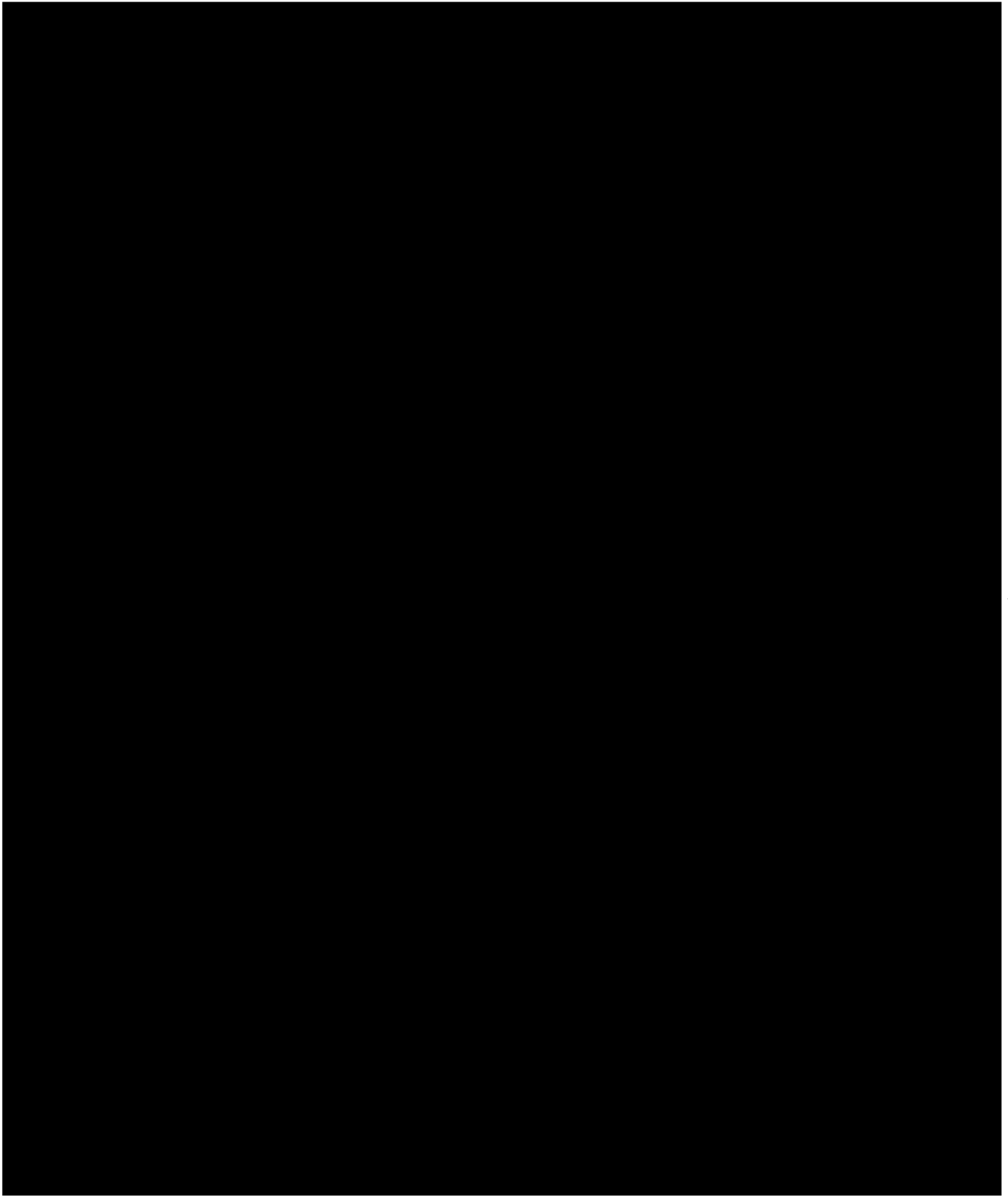
MAPPING VALUATION OF CURRENT TENNESSEE MAPS

Connected Nation has been widely recognized as setting the pace nationally for broadband mapping. Connected Nation's depth of experience, expertise and methodology in broadband mapping has been continually refined to improve the product and establish the benchmark standard to which all other similar such efforts has been held. First beginning such work in Kentucky in 2004, Connected Nation then began fielding multiple requests for similar mapping projects in other states having expanded broadband mapping operations to ten states by 2009. Specifically, Connected Nation has embarked upon a prior mapping initiative in the state of Tennessee as a part of the Connected Tennessee program. This grant application proposes to recognize and leverage the foresight of Tennessee leaders' investment in such an effort by dramatically expanding their broadband mapping program consistent with the federal SBDD opportunity.

In order to properly account for this early investment and apply it for the benefit of the state in securing the SBDD grant matching requirements, Connected Nation has employed a replacement cost approach to determine the fair market value of the state's rich set of existing broadband maps. Using this methodology, the current Tennessee mapping dataset is valued at $634,703.18.

To substantiate this replacement cost valuation, Connected Nation first began by evaluating cost centers involved in prior mapping projects. These budgeted areas for direct costs include: personnel, consultants, legal, equipment, software, supplies, travel and small equipment.

Personnel: Given the professional services nature of the mapping products, by far the greatest expense in creating a broadband map is personnel. Connected Nation maintains a highly detailed time allocation system that exactly accounts for staff time invested in a given project. This time tracking system reveals that twenty-three Connected Nation employees have been involved in the Tennessee mapping project to varying levels at present with the obvious majority of the time spent on this project resting with technical staff and key management within the company. The total amount of staff time devoted to the project was 3,788.83 hours. Each employee's external consultant hourly billing rate was then applied to this detailed accounting and aggregated to result in a personnel expense accurately attributable to the prior broadband mapping project. Specifically, the collective personnel expense derived by applying each employee's unique billing rate was $385,041.25. Therefore, this level of engagement and associated expenses were reasonable given the scope of the project and similar such scales of staff involvement across other states' mapping projects.

Consultants: Professional consultants are routinely engaged in mapping projects on an as-needed basis to expand staff capacity as peaks in demand for staff time occasionally occur. In the creation of the Tennessee maps, consultant engagement was limited as the ongoing, long-term nature of the project largely enabled ample planning for proper resource allocation, thus negating the need for outside consultants. As such, the total direct billed consulting expense to the Tennessee map creation was $0.

Legal: Legal expenses associated with the confidential data licensing and other intellectual property concerns associated with creating the broadband maps are significant. As the provider level, Connected Nation's outside Counsel will normally be engaged on an average of 1 billable hour per provider for initial agreement negotiations with a recurring involvement amounting to an average of 0.5 billable hours per provider. In the instance of the Tennessee map, however, legal expenses were not directly tracked to mapping costs but were otherwise accounted for as indirect and other similarly situated expenses. In an abundance of caution and because such expenses may have been accounted for otherwise in indirect costs, direct legal expenses were calculated at $0 for purposes of mapping valuation.

Equipment:

Software:

Supplies: Supply costs are directly billed as paper and other such office expenses directly used by the project in the production of maps. This modest directly billed cost was $57.84. While supply expenses to support personnel were clearly higher for a project of this magnitude, these expenses were applied to the indirect cost of overhead expense.

Travel: Travel expenses associated with mapping are high, relatively speaking. While much of the personnel work can be done from a central mapping center housed at Connected Nation, the high mapping standards employed and adhered to by Connected Nation necessitate that professional mapping technicians and engineers spend a large amount of time in the field documenting infrastructure and substantiating provider coverage claims. This resulted in a direct mapping expense of $1,540.75 inclusive of all updates.

Indirect Overhead Expense: Clearly the direct expenses outlined above are not inclusive of the total costs required to produce broadband maps of the caliber to which Connected Nation delivers. Common expenses that benefit multiple staff and indeed multiple projects generate economies of scale resulting in larger collective cost savings through these efficiencies. Expenses such as office rent, utilities, general supplies, etc. have been collapsed into a shared services allocation of expense based largely on the number of FTE's involved in a project. This presumes overhead expenses are driven by the number of employees who would consume such support expenses (like office space and utilities) in the production of maps. These expenses are

accounted for in a methodology acceptable in OMB guidelines and for purposes of valuation have resulted in a total overhead expense of $230,913.45.

DIRECT COSTS:	
Personnel	385,041.25
Consultants	-
Legal	-
Equipment	5,729.42
Software	11,420.47
Supplies	57.84
Travel	1,540.75
INDIRECT COSTS:	
Overhead Expense	230,913.45
TOTAL	**634,703.18**

In conclusion, these mapping costs, broken down by category and based largely on *direct expenses* associated with the production of the Tennessee maps provide a reliable means by which to properly recognize the state of Tennessee's investment toward in-kind satisfaction of the SBDD grant's matching requirement.

CONNECTED NATION.

State of Tennessee
Revised Planning Narrative
November 9, 2009

In 2007, the State of Tennessee began funding for a statewide program to improve computer ownership and broadband use through the public-private partnership of Connected Tennessee. While this program has yielded successful results in its initial two years, federal funding for continued broadband planning is critical to continue the efforts underway, ensuring ongoing and relevant strategic planning across Tennessee as the state builds upon its existing broadband mapping and planning programs.

The State of Tennessee has worked closely with Connected Nation, through its subsidiary Connected Tennessee, to develop a proposal for broadband planning, based on the specific planning needs within Tennessee. Meanwhile Connected Nation has been working closely with 9 other states to understand their specific broadband planning needs. In the course of these discussions, Connected Nation found that although each state is unique in the specific state players involved in the planning opportunity, there are three core planning needs that are consistent across states, including Tennessee:

(1) The need for better supply-side and demand-side data to inform broadband planning discussions,

(2) The need for a user-friendly analytical framework for decision-making, empowering a state to make the best use of the mapping data for planning purposes in relation to other datasets, including consumer market data, demographic data, and existing state GIS data, and

(3) The need for coordinated human resources to prepare and facilitate research-based and data-driven planning discussions among relevant state and local officials/leaders, capture the collective recommendations and decisions of the state through the preparation and production of a strategic plan, and assist the state in the implementation of its strategic plan.

According to the NOFA, page 33, lines 696 through 703, "In addition to inclusiveness and collaboration, proposals including planning components will be evaluated based on how well the proposed planning process will identify service availability gaps, analyze problems and opportunities related to broadband deployment, and determine priorities as well as resolve conflicting priorities. Planning proposals must present the following: (1) the BDIA-related purpose as listed in footnote 6; (2) the problem(s) to be addressed; (3) the proposed solution; (4) the anticipated outcomes of the project; and (5) the cost of such proposal in light of the previous factors."

Through the State of Tennessee's proposal for broadband planning, Connected Tennessee has formed collaborative partnerships with many agencies within Tennessee State Government to carry out the work of the broadband mapping and planning project. A core team has been assembled to ensure maximum collaboration and planning for broadband work including:

Tennessee Office of Information Resources
Mark Bengel, Tennessee State Chief Information Officer
Tennessee Department of Economic & Community Development
Dan Hawk, Administrator of Community Development
Paul VanderMeer, Director of Administrative Services
LaMont Price, Director of Internal Audit
Mark Drury, Assistant Commissioner of Communications and Creative Services

Connected Tennessee will meet regularly with the team to provide program updates and seek input into the project execution.

In addition to the core team discussed above, a larger Broadband Subcommittee of Tennessee's Recovery Act Management Team will work closely with Connected Tennessee to ensure maximum success of broadband mapping in Tennessee. Connected Tennessee will employ the use of the BroadbandSTAT tool to help the Subcommittee analyze existing broadband coverage and visualize proposed broadband infrastructure projects. Members of the Subcommittee include:

Tennessee Department of Economic & Community Development
Secretary of State
Office of Information Resources
Department of Finance and Administration
University of Tennessee
Tennessee Board of Regents
Tennessee Department of Safety
Tennessee's Comptroller's Office
Oak Ridge National Laboratory
Connected Tennessee

The agencies and team listed above will work collaboratively with Connected Tennessee to implement a planning program to achieve a number of the BDIA-related purposes, listed below. The program will develop data-driven analysis on the problems and opportunities related to broadband deployment and adoption, establish priorities through the development of an ongoing strategic plan, to be updated as priorities evolve, and ultimately serve as the basis for implementation of program priorities, as dictated by the State of Tennessee. The primary analytical tool for the program will be BroadbandSTAT, a GIS analytics solution developed jointly by Connected Nation and ESRI to provide the next generation in broadband mapping and decision-making. For a detailed description of the BroadbandSTAT platform see responses to *Section c. Accessibility* as described in Tennessee's initial SBDD application.

Specifically, the recommended planning program will:

(1) <u>Address the following BDIA-related purposes as listed in footnote 6 of the NOFA[1]</u>:

    a. To develop and provide a baseline assessment of broadband deployment in the state;
    b. To identify and track the areas with low levels of broadband deployment, and, via statistical survey research, the rate at which residential and business users adopt broadband service and other related information technology services, and possible suppliers of such services;
    c. To identify via statistical survey research barriers to the adoption of broadband service and information technology services;
    d. To collaborate with broadband service providers and information technology companies to encourage deployment and use;
    e. To collect and analyze detailed market data concerning use and demand for broadband service; and
    f. To facilitate information exchange regarding use and demand for broadband services between public and private sector users.

(2) <u>Address the following problems:</u>

    a. The current lack of analysis and understanding regarding the statewide broadband landscape – in particular, which geographic areas are in greatest need of support and/or subsidy;
    b. The current lack of analysis and understanding regarding i) the barriers to broadband deployment in specific unserved and underserved areas, and ii) the specific opportunities for achieving increased broadband deployment based on the market conditions and geographic/demographic variables of each area;
    c. The current lack of analysis and understanding regarding the barriers to increased broadband adoption and computer ownership in order to develop effective programs for improving information technology use;
    d. The currently uptapped potential for coordination across both public and private sectors, including state agencies and broadband providers, to achieve increased broadband deployment and improved broadband adoption and computer ownership.

(3) <u>Propose a solution by:</u>

    a. Establishing a program of ongoing market based survey research to identify Internet technology use and barriers to broadband adoption among residents and businesses. This survey research effectively captures a state's need for demand-side

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[1] This list accounts for six of the ten BDIA-related purposes as listed in footnote 6 of the NOFA. The four purposes not included in this list are those that fall well outside the budget of the $500,000 (county-level local technology planning teams and computer ownership programs) and the two purposes that are already accounted for within the scope of the NOFA requirements for data collection (identification of available broadband speeds and creation of a geographic inventory map of broadband service).

data (in addition to the supply-side mapping data) to support and inform decision-making. In an effort to make most efficient use of planning dollars, Tennessee is proposing to use the data verification surveys already proposed through the mapping program to enable a richer dataset for broadband planning purposes. To this end, Tennessee has proposed to insert additional survey questions in the proposed surveys that will be conducted to verify mapping data. This consumer research will produce statistically significant data across demographics on broadband adoption rates, computer ownership rates, barriers to broadband and computer use, and specific online applications use. This research will inform data-driven decision-making for statewide broadband expansion by using current, state-specific market data, enabling targeted and cost-effective broadband programs focused on particular segments of the population, based on the areas of greatest need. This statistical survey data is married with the rich empirical data of the mapping program and other state-specific data to produce highly unique inputs to the BroadbandSTAT decision support system.

b. **Establishing BroadbandSTAT as Tennessee's broadband decision support system (DSS) to drive an effective and efficient means for consumption and analysis of supply-side and demand-side broadband data, in tandem, for research-based decision-making on broadband policy and programs.** The ESRI/Connected Nation developed BroadbandSTAT application represents the nexus of Tennessee's mapping and planning efforts. In conjuncture with the research effort underwritten by these same planning monies, the underpinning data becomes inherently unique to Tennessee and offers those stakeholders a platform that grows with them as their broadband supply and adoption challenges evolve. The value of the toolset continues to produce return well beyond the initial analysis as the incorporation of subsequent survey research efforts, mapping updates and/or state-provided data layers provides the feedback loop necessary to make informed broadband planning decisions.

c. **Building a collaborative broadband planning team, made up of human resources from the State of Tennessee and Connected Nation.** To assist the state, Connected Nation will provide project management and technical assistance staff to work directly with the State of Tennessee. The explicit activities that result from investment in the proposed planning program would be developed in close collaboration with the state sponsor in the form of a strategic plan that advances the mission of an existing state broadband initiative or effectuates the vision of a new state program. Activities of Connected Nation human resources include:
   2. Preparation and facilitation of research-based and data-driven planning discussions among relevant state and local officials/leaders, as overseen by and in coordination with the State of Tennessee.
   3. Capturing the collective recommendations and decisions of the State of Tennessee through the preparation and production of a strategic plan, and

4. Assisting the state in the implementation of its strategic plan, as directed.

(4) Produce the following anticipated outcomes:

    a. Increased coordination and collaboration among Tennessee's various private and public sector stakeholders to achieve increased broadband deployment and adoption.

    b. Data-driven decision-making for state policymakers and local leaders to effectuate an information-based environment, including the efficient use of supply-side and demand-side data in tandem, for effective broadband policy and program development.

    c. Collaborative creation and maintenance of the State of Tennessee's strategic plan for increased broadband deployment and adoption, particularly in unserved and underserved areas and among vulnerable populations. The strategic plan will include specific program recommendations, to be continually informed by the ongoing broadband mapping and survey research, resulting in a dynamic and continually relevant statewide broadband plan.

    d. Effective implementation of the State of Tennessee's evolving strategic plan for sustainable broadband deployment and adoption, in light of Tennessee's specific broadband needs and regional/demographic characteristics, as identified during the planning process.

This planning proposal would meet all requirements of the SBDD NOFA, while directly targeting the evaluation criteria for the planning component of the SBDD grant. Ultimately, the Tennessee broadband planning program would enable and drive targeted opportunities for demand-side programs, such as computer ownership programs and local planning teams, as well as supply-side infrastructure opportunities. The result would be a broadband planning framework for the state of Tennessee that empowers data-driven, research-based analytics to maximize and coordinate broadband stimulus funding across all federal grant/loan programs.