

Application for Federal Assistance SF-424

Version 02

\* 1. Type of Submission:

- Preapplication
- Application
- Changed/Corrected Application

\* 2. Type of Application:

- New
- Continuation
- Revision

\* If Revision, select appropriate letter(s):

\* Other (Specify)

\* 3. Date Received:

08/13/2009

4. Applicant Identifier:

5a. Federal Entity Identifier:

\* 5b. Federal Award Identifier:

State Use Only:

6. Date Received by State:

7. State Application Identifier:

8. APPLICANT INFORMATION:

\* a. Legal Name:

Delaware Department of Technology and Information (DTI)

\* b. Employer/Taxpayer Identification Number (EIN/TIN):

516000279

\* c. Organizational DUNS:

133258801

d. Address:

\* Street1:

801 Silver Lake Blvd

Street2:

\* City:

Dover

County:

Kent County

\* State:

DE: Delaware

Province:

\* Country:

USA: UNITED STATES

\* Zip / Postal Code:

19904

e. Organizational Unit:

Department Name:

Division Name:

f. Name and contact information of person to be contacted on matters involving this application:

Prefix:

\* First Name:

James

Middle Name:

R.

\* Last Name:

Hultman

Suffix:

Title:

Team Leader

Organizational Affiliation:

\* Telephone Number:

302-739-9575

Fax Number:

302-677-7013

\* Email:

randy.hultman@state.de.us

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About

OMB Number: 4040-0004  
Expiration Date: 01/31/2009

**Application for Federal Assistance SF-424**

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**9. Type of Applicant 1: Select Applicant Type:**

A: State Government

Type of Applicant 2: Select Applicant Type:

Type of Applicant 3: Select Applicant Type:

\* Other (specify):

**\* 10. Name of Federal Agency:**

Department of Commerce

**11. Catalog of Federal Domestic Assistance Number:**

CFDA Title:

**\* 12. Funding Opportunity Number:**

0660-ZA29

\* Title:

Recovery Act - State Broadband Data and Development Grant Program

**13. Competition Identification Number:**

Title:

**14. Areas Affected by Project (Cities, Counties, States, etc.):**

**\* 15. Descriptive Title of Applicant's Project:**

Delaware Statewide Broadband Mapping and Planning

Attach supporting documents as specified in agency instructions.

Add Attachments

Delete Attachments

View Attachments



Application for Federal Assistance SF-424

Version 02

16. Congressional Districts Of:

\* a. Applicant

\* b. Program/Project

Attach an additional list of Program/Project Congressional Districts if needed.

Add Attachment

Delete Attachment

View Attachment

17. Proposed Project:

\* a. Start Date:

\* b. End Date:

18. Estimated Funding (\$):

* a. Federal	<input type="text" value="2,738,907.00"/>
* b. Applicant	<input type="text" value="2,077,366.00"/>
* c. State	<input type="text" value="0.00"/>
* d. Local	<input type="text" value="0.00"/>
* e. Other	<input type="text" value="0.00"/>
* f. Program Income	<input type="text" value="0.00"/>
* g. TOTAL	<input type="text" value="4,816,273.00"/>

\* 19. Is Application Subject to Review By State Under Executive Order 12372 Process?

- a. This application was made available to the State under the Executive Order 12372 Process for review on
- b. Program is subject to E.O. 12372 but has not been selected by the State for review.
- c. Program is not covered by E.O. 12372.

\* 20. Is the Applicant Delinquent On Any Federal Debt? (If "Yes", provide explanation.)

Yes  No

21. \*By signing this application, I certify (1) to the statements contained in the list of certifications\*\* and (2) that the statements herein are true, complete and accurate to the best of my knowledge. I also provide the required assurances\*\* and agree to comply with any resulting terms if I accept an award. I am aware that any false, fictitious, or fraudulent statements or claims may subject me to criminal, civil, or administrative penalties. (U.S. Code, Title 218, Section 1001)

\*\* I AGREE

\*\* The list of certifications and assurances, or an internet site where you may obtain this list, is contained in the announcement or agency specific instructions.

Authorized Representative:

Prefix:  \* First Name:   
 Middle Name:   
 \* Last Name:   
 Suffix:

\* Title:

\* Telephone Number:  Fax Number:

\* Email:

\* Signature of Authorized Representative:  \* Date Signed:

**Application for Federal Assistance SF-424**

Version 02

**\* Applicant Federal Debt Delinquency Explanation**

The following field should contain an explanation if the Applicant organization is delinquent on any Federal Debt. Maximum number of characters that can be entered is 4,000. Try and avoid extra spaces and carriage returns to maximize the availability of space.

Applicants should also review the instructions for certification included in the regulations before completing this form. Signature on this form provides for compliance with certification requirements under 15 CFR Part 28, 'New Restrictions on Lobbying.' The certifications shall be treated as a material representation of fact upon which reliance will be placed when the Department of Commerce determines to award the covered transaction, grant, or cooperative agreement.

**LOBBYING**

As required by Section 1352, Title 31 of the U.S. Code, and implemented at 15 CFR Part 28, for persons entering into a grant, cooperative agreement or contract over \$100,000 or a loan or loan guarantee over \$150,000 as defined at 15 CFR Part 28, Sections 28.105 and 28.110, the applicant certifies that to the best of his or her knowledge and belief, that:

- (1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
- (2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, 'Disclosure Form to Report Lobbying,' in accordance with its instructions.
- (3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure occurring on or before October 23, 1996, and of not less than \$11,000 and not more than \$110,000 for each such failure occurring after October 23, 1996.

**Statement for Loan Guarantees and Loan Insurance**

The undersigned states, to the best of his or her knowledge and belief, that:

In any funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this commitment providing for the United States to insure or guarantee a loan, the undersigned shall complete and submit Standard Form-LLL, 'Disclosure Form to Report Lobbying,' in accordance with its instructions.

Submission of this statement is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required statement shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure occurring on or before October 23, 1996, and of not less than \$11,000 and not more than \$110,000 for each such failure occurring after October 23, 1996.

As the duly authorized representative of the applicant, I hereby certify that the applicant will comply with the above applicable certification.

**\* NAME OF APPLICANT**

Delaware Department of Technology and Information (DTI)

**\* AWARD NUMBER**

0660-ZA29

**\* PROJECT NAME**

Delaware Statewide Broadband Mapping and Planning

**Prefix:****\* First Name:****Middle Name:**

James

R.

**\* Last Name:****Suffix:**

Hultman

**\* Title:** Team Leader**\* SIGNATURE:**

James Hultman

**\* DATE:**

08/13/2009

# DISCLOSURE OF LOBBYING ACTIVITIES

Complete this form to disclose lobbying activities pursuant to 31 U.S.C.1352

Approved by OMB

0348-0046

<b>1. * Type of Federal Action:</b> <input type="checkbox"/> a. contract <input checked="" type="checkbox"/> b. grant <input type="checkbox"/> c. cooperative agreement <input type="checkbox"/> d. loan <input type="checkbox"/> e. loan guarantee <input type="checkbox"/> f. loan insurance	<b>2. * Status of Federal Action:</b> <input checked="" type="checkbox"/> a. bid/offer/application <input type="checkbox"/> b. initial award <input type="checkbox"/> c. post-award	<b>3. * Report Type:</b> <input checked="" type="checkbox"/> a. initial filing <input type="checkbox"/> b. material change
--	--	--

**4. Name and Address of Reporting Entity:**

Prime     SubAwardee

\* Name: Delaware Department of Technology and Information

\* Street 1: 801 Silver Lake Blvd    Street 2: \_\_\_\_\_

\* City: Dover    State: DE: Delaware    Zip: 19904

Congressional District, if known: DE-1

**5. If Reporting Entity in No.4 is Subawardee, Enter Name and Address of Prime:**

<b>6. * Federal Department/Agency:</b> N/A	<b>7. * Federal Program Name/Description:</b> _____ CFDA Number, if applicable: _____
---	---

<b>8. Federal Action Number, if known:</b> N/A	<b>9. Award Amount, if known:</b> \$ _____
---	---

**10. a. Name and Address of Lobbying Registrant:**

Prefix: \_\_\_\_\_ \* First Name: N/A    Middle Name: \_\_\_\_\_

\* Last Name: N/A    Suffix: \_\_\_\_\_

\* Street 1: N/A    Street 2: \_\_\_\_\_

\* City: N/A    State: \_\_\_\_\_    Zip: \_\_\_\_\_

**b. Individual Performing Services** (including address if different from No. 10a)

Prefix: \_\_\_\_\_ \* First Name: N/A    Middle Name: \_\_\_\_\_

\* Last Name: N/A    Suffix: \_\_\_\_\_

\* Street 1: N/A    Street 2: \_\_\_\_\_

\* City: N/A    State: \_\_\_\_\_    Zip: \_\_\_\_\_

**11.** Information requested through this form is authorized by title 31 U.S.C. section 1352. This disclosure of lobbying activities is a material representation of fact upon which reliance was placed by the tier above when the transaction was made or entered into. This disclosure is required pursuant to 31 U.S.C. 1352. This information will be reported to the Congress semi-annually and will be available for public inspection. Any person who fails to file the required disclosure shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

\* Signature: James Hultman

\* Name: Prefix: \_\_\_\_\_ \* First Name: James    Middle Name: R. \_\_\_\_\_

\* Last Name: Hultman    Suffix: \_\_\_\_\_

Title: Team Leader    Telephone No.: 302-739-9575    Date: 08/13/2009

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Standard Form - LLL (Rev. 7-97)

## ASSURANCES - NON-CONSTRUCTION PROGRAMS

Public reporting burden for this collection of information is estimated to average 15 minutes per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the Office of Management and Budget, Paperwork Reduction Project (0348-0040), Washington, DC 20503.

**PLEASE DO NOT RETURN YOUR COMPLETED FORM TO THE OFFICE OF MANAGEMENT AND BUDGET. SEND IT TO THE ADDRESS PROVIDED BY THE SPONSORING AGENCY.**

**NOTE:** Certain of these assurances may not be applicable to your project or program. If you have questions, please contact the awarding agency. Further, certain Federal awarding agencies may require applicants to certify to additional assurances. If such is the case, you will be notified.

As the duly authorized representative of the applicant, I certify that the applicant:

1. Has the legal authority to apply for Federal assistance and the institutional, managerial and financial capability (including funds sufficient to pay the non-Federal share of project cost) to ensure proper planning, management and completion of the project described in this application.
2. Will give the awarding agency, the Comptroller General of the United States and, if appropriate, the State, through any authorized representative, access to and the right to examine all records, books, papers, or documents related to the award; and will establish a proper accounting system in accordance with generally accepted accounting standards or agency directives.
3. Will establish safeguards to prohibit employees from using their positions for a purpose that constitutes or presents the appearance of personal or organizational conflict of interest, or personal gain.
4. Will initiate and complete the work within the applicable time frame after receipt of approval of the awarding agency.
5. Will comply with the Intergovernmental Personnel Act of 1970 (42 U.S.C. §§4728-4763) relating to prescribed standards for merit systems for programs funded under one of the 19 statutes or regulations specified in Appendix A of OPM's Standards for a Merit System of Personnel Administration (5 C.F.R. 900, Subpart F).
6. Will comply with all Federal statutes relating to nondiscrimination. These include but are not limited to: (a) Title VI of the Civil Rights Act of 1964 (P.L. 88-352) which prohibits discrimination on the basis of race, color or national origin; (b) Title IX of the Education Amendments of 1972, as amended (20 U.S.C. §§1681-1683, and 1685-1686), which prohibits discrimination on the basis of sex; (c) Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. §794), which prohibits discrimination on the basis of handicaps; (d) the Age Discrimination Act of 1975, as amended (42 U.S.C. §§6101-6107), which prohibits discrimination on the basis of age; (e) the Drug Abuse Office and Treatment Act of 1972 (P.L. 92-255), as amended, relating to nondiscrimination on the basis of drug abuse; (f) the Comprehensive Alcohol Abuse and Alcoholism Prevention, Treatment and Rehabilitation Act of 1970 (P.L. 91-616), as amended, relating to nondiscrimination on the basis of alcohol abuse or alcoholism; (g) §§523 and 527 of the Public Health Service Act of 1912 (42 U.S.C. §§290 dd-3 and 290 ee- 3), as amended, relating to confidentiality of alcohol and drug abuse patient records; (h) Title VIII of the Civil Rights Act of 1968 (42 U.S.C. §§3601 et seq.), as amended, relating to nondiscrimination in the sale, rental or financing of housing; (i) any other nondiscrimination provisions in the specific statute(s) under which application for Federal assistance is being made; and, (j) the requirements of any other nondiscrimination statute(s) which may apply to the application.
7. Will comply, or has already complied, with the requirements of Titles II and III of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (P.L. 91-646) which provide for fair and equitable treatment of persons displaced or whose property is acquired as a result of Federal or federally-assisted programs. These requirements apply to all interests in real property acquired for project purposes regardless of Federal participation in purchases.
8. Will comply, as applicable, with provisions of the Hatch Act (5 U.S.C. §§1501-1508 and 7324-7328) which limit the political activities of employees whose principal employment activities are funded in whole or in part with Federal funds.

9. Will comply, as applicable, with the provisions of the Davis-Bacon Act (40 U.S.C. §§276a to 276a-7), the Copeland Act (40 U.S.C. §276c and 18 U.S.C. §874), and the Contract Work Hours and Safety Standards Act (40 U.S.C. §§327-333), regarding labor standards for federally-assisted construction subagreements.
10. Will comply, if applicable, with flood insurance purchase requirements of Section 102(a) of the Flood Disaster Protection Act of 1973 (P.L. 93-234) which requires recipients in a special flood hazard area to participate in the program and to purchase flood insurance if the total cost of insurable construction and acquisition is \$10,000 or more.
11. Will comply with environmental standards which may be prescribed pursuant to the following: (a) institution of environmental quality control measures under the National Environmental Policy Act of 1969 (P.L. 91-190) and Executive Order (EO) 11514; (b) notification of violating facilities pursuant to EO 11738; (c) protection of wetlands pursuant to EO 11990; (d) evaluation of flood hazards in floodplains in accordance with EO 11988; (e) assurance of project consistency with the approved State management program developed under the Coastal Zone Management Act of 1972 (16 U.S.C. §§1451 et seq.); (f) conformity of Federal actions to State (Clean Air) Implementation Plans under Section 176(c) of the Clean Air Act of 1955, as amended (42 U.S.C. §§7401 et seq.); (g) protection of underground sources of drinking water under the Safe Drinking Water Act of 1974, as amended (P.L. 93-523); and, (h) protection of endangered species under the Endangered Species Act of 1973, as amended (P.L. 93-205).
12. Will comply with the Wild and Scenic Rivers Act of 1968 (16 U.S.C. §§1271 et seq.) related to protecting components or potential components of the national wild and scenic rivers system.
13. Will assist the awarding agency in assuring compliance with Section 106 of the National Historic Preservation Act of 1966, as amended (16 U.S.C. §470), EO 11593 (identification and protection of historic properties), and the Archaeological and Historic Preservation Act of 1974 (16 U.S.C. §§469a-1 et seq.).
14. Will comply with P.L. 93-348 regarding the protection of human subjects involved in research, development, and related activities supported by this award of assistance.
15. Will comply with the Laboratory Animal Welfare Act of 1966 (P.L. 89-544, as amended, 7 U.S.C. §§2131 et seq.) pertaining to the care, handling, and treatment of warm blooded animals held for research, teaching, or other activities supported by this award of assistance.
16. Will comply with the Lead-Based Paint Poisoning Prevention Act (42 U.S.C. §§4801 et seq.) which prohibits the use of lead-based paint in construction or rehabilitation of residence structures.
17. Will cause to be performed the required financial and compliance audits in accordance with the Single Audit Act Amendments of 1996 and OMB Circular No. A-133, "Audits of States, Local Governments, and Non-Profit Organizations."
18. Will comply with all applicable requirements of all other Federal laws, executive orders, regulations, and policies governing this program.

<p>* SIGNATURE OF AUTHORIZED CERTIFYING OFFICIAL</p> <p>James Hultman</p>	<p>* TITLE</p> <p>Team Leader</p>
<p>* APPLICANT ORGANIZATION</p> <p>Delaware Department of Technology and Information (DTI)</p>	<p>* DATE SUBMITTED</p> <p>08/13/2009</p>

Standard Form 424B (Rev. 7-97) Back

## **Delaware Statewide Broadband Mapping and Planning Program Abstract**

To accomplish the goals set forth in the notice of funds availability (NOFA), the Delaware Department of Technology and Information (DTI) and its partner(s) will gather necessary data from each broadband service provider and other appropriate supplemental sources as necessary. The provider data will be standardized and verified for accuracy. DTI will leverage existing technology infrastructure and framework geospatial data used in the Delaware Geospatial Data Exchange, which is a relational spatial database under development that will be hosted at DTI.

DTI will geocode provider data using existing Delaware framework layers, including centerline, parcel, point address, and census data, and will then integrate the data into a comprehensive dataset that follows the technical requirements outlined in the NOFA. This dataset will be owned by the state and shared with the National Telecommunications and Information Administration (NTIA) within the U.S. Department of Commerce per the requirements of the NOFA. Data will be maintained on an ongoing basis through scheduled updates from providers and through periodic surveys to continually verify the validity of the data. Other techniques such as self-mapping and self-testing will also be employed to verify the data.

DTI will present the resulting information to the public and state and local governments in a clear, accessible, and informative statewide broadband map. Developing a live and updateable map using existing dynamic database models stored in the Geospatial Data Exchange will allow multipoint access and on-the-fly map generation. This will provide users access to a statewide views or maps of broadband availability for particular street addresses. The mapping technology will allow for integration of multiple data sources and for manual editing.

DTI has also developed a plan for collaboration with state-level agencies, local authorities, and other constituencies and has created a proposal for planning projects designed to identify and address broadband challenges in the state.

For more information on DTI's approach to broadband mapping and planning, please refer to the program narrative for Delaware's Statewide Broadband Mapping and Planning application.

# Delaware Statewide Broadband Mapping and Planning Program Narrative

## *I. Executive Summary*

The Broadband Data Improvement Act (BDIA) was passed with the intention of improving “data on the deployment and adoption of broadband service to assist in the extension of broadband technology across all regions of the United States” through the State Broadband Data and Development Grant Program (State Broadband Data Program or SBDD).<sup>1</sup>

In this SBDD application, the Delaware Department of Technology and Information (DTI) outlines how the state intends to gather comprehensive and accurate state-level broadband mapping data, develop state-level broadband maps, aid in the development and maintenance of a national broadband map, and implement statewide initiatives for broadband planning.

DTI’s comprehensive approach to broadband mapping will provide complete and accurate data that meet the SBDD requirements. Data will not be compromised and will meet the appropriate and applicable confidentiality requirements discussed later in this application. Establishing a workable and sustainable framework will allow DTI to maintain current, up-to-date data and to track and trend improvements in broadband service, availability, and coverage.

To foster effective implementation of these initiatives, DTI has developed reasonable and cost-efficient budgets. The DTI staff’s capacity, knowledge, and experience also ensure successful execution and ongoing maintenance and adherence to timelines for expedient data collection, analysis, and delivery.

## **DTI**

DTI is the state's central information technology organization chartered to (1) deliver core services to other state organizations and (2) exercise governance over the technology direction and investments of the state. DTI is primarily an internal service organization with only a few of its services directly touching the citizens or customers of the state. Rather, DTI provides enterprise services that enable other organizations to effectively fulfill their missions.

DTI's “customers” are all state organizations including the legislative, executive, and judicial branches, public schools, and the various agencies and quasi-agencies that serve the citizens of Delaware. DTI is committed to delivering high quality and cost-effective services that meet or exceed the customer's requirements. Balancing these objectives requires a strong bond between DTI and the customer and a mutual commitment to success.

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<sup>1</sup> 74 Fed. Reg. 32545-32565 (July 8, 2009).



DTI has been involved in several statewide initiatives that include broadband deployment and mapping technology. From 2001 to 2004, DTI partnered in one of the most comprehensive and robust broadband deployments in the United States. Other projects include the development of the Delaware Geospatial Data Exchange which will be an enterprise data repository for commonly shared geospatial data and will be hosted and maintained by DTI.

### **Eligibility**

DTI is eligible to receive a SBDD grant as an entity that is an (a)(i) agency or instrumentality of a state, or a municipality or other subdivision of a state and as a (b) single eligible entity in the state that has been designated by the state to receive a grant under the specified eligibility requirements outlined within the notice of funds availability (NOFA).<sup>2</sup> Please refer to the Letter of Designation attached to this application for more information.

### **Summary of Work Plan**

To accomplish the goals set forth in the NOFA, DTI and its partner(s) will gather necessary data from each broadband service provider and other appropriate supplemental sources as necessary. The provider data will be standardized and verified for accuracy. DTI will leverage existing technology infrastructure and framework geospatial data used in the Delaware Geospatial Data Exchange, which is a relational spatial database under development that will be hosted at DTI.

DTI will geocode provider data using existing Delaware framework layers, including centerline, parcel, point address, and census data, and will then integrate the data into a comprehensive dataset that follows the technical requirements outlined in the NOFA. This dataset will be owned by the state and shared with the National Telecommunications and Information Administration (NTIA) within the U.S. Department of Commerce per the requirements of the NOFA. Data will be maintained on an ongoing basis through scheduled updates from providers and through periodic surveys to continually verify the validity of the data. Other techniques such as self-mapping and self-testing will also be employed to verify the data.

DTI will present the resulting information to the public and state and local governments in a clear, accessible, and informative statewide broadband map. Developing a live and updateable map using existing dynamic database models stored in the Geospatial Data Exchange will allow multipoint access and on-the-fly map generation. This will provide users access to a statewide views or maps of broadband availability for particular street addresses. The mapping technology will allow for integration of multiple data sources and for manual editing.

DTI has also developed a plan for collaboration with state-level agencies, local authorities, and other constituencies and has created a proposal for planning projects designed to identify and address broadband challenges in the state.

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<sup>2</sup> 74 Fed. Reg. 32545-32565 (July 8, 2009). Eligibility Information V.A (a)(i) and (b).

## ***II. Underserved and Unserved Areas***

In the NOFA, NTIA defines an underserved area as an area that is composed of one or more contiguous census blocks that meet one or more criterion that measure the availability of broadband service and the level of advertised broadband speeds.<sup>3</sup>

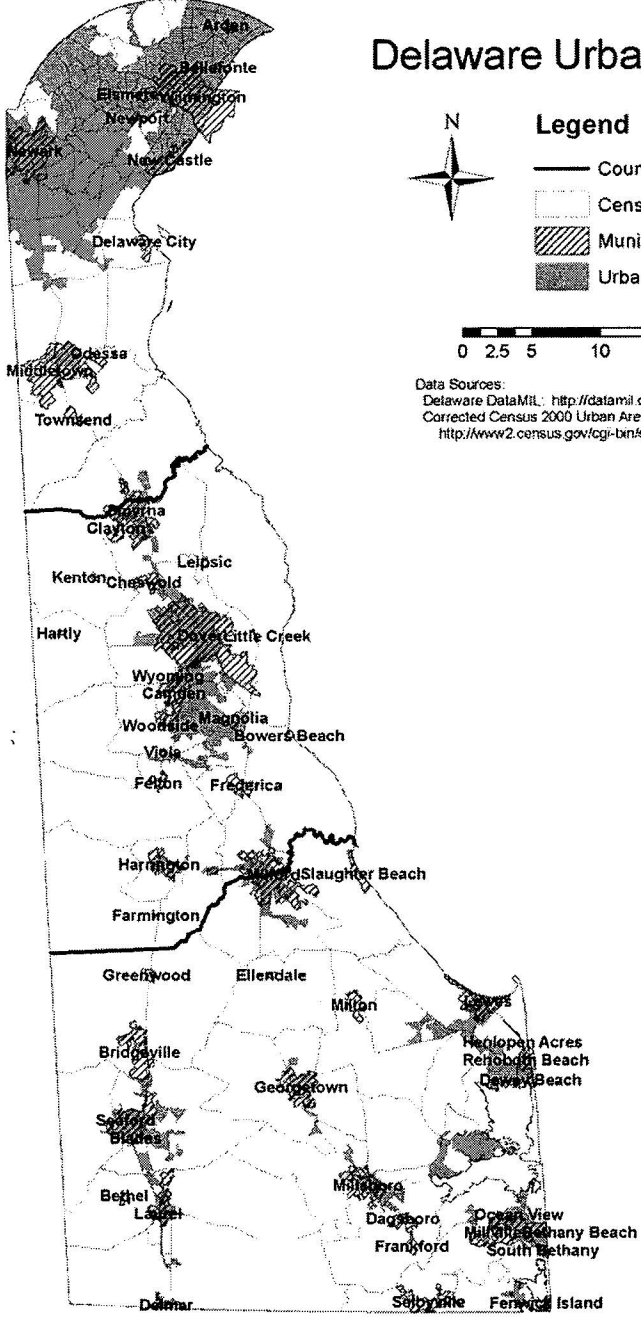
At the time of this application, DTI does not have comprehensive data to accurately determine which areas are served, underserved, and unserved. However, the state is largely rural (approximately 85 percent), and demographics of the rural populations indicate there are many potential barriers to broadband adoption. Further analysis on underserved and unserved areas will be conducted once broadband data are received from all providers.

The following maps illustrate the urban and rural areas in each of the three counties in Delaware.





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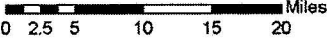
<sup>3</sup> 74 Fed. Reg. 32545-32565 (July 8, 2009). Definitions III.

# Delaware Urban Areas



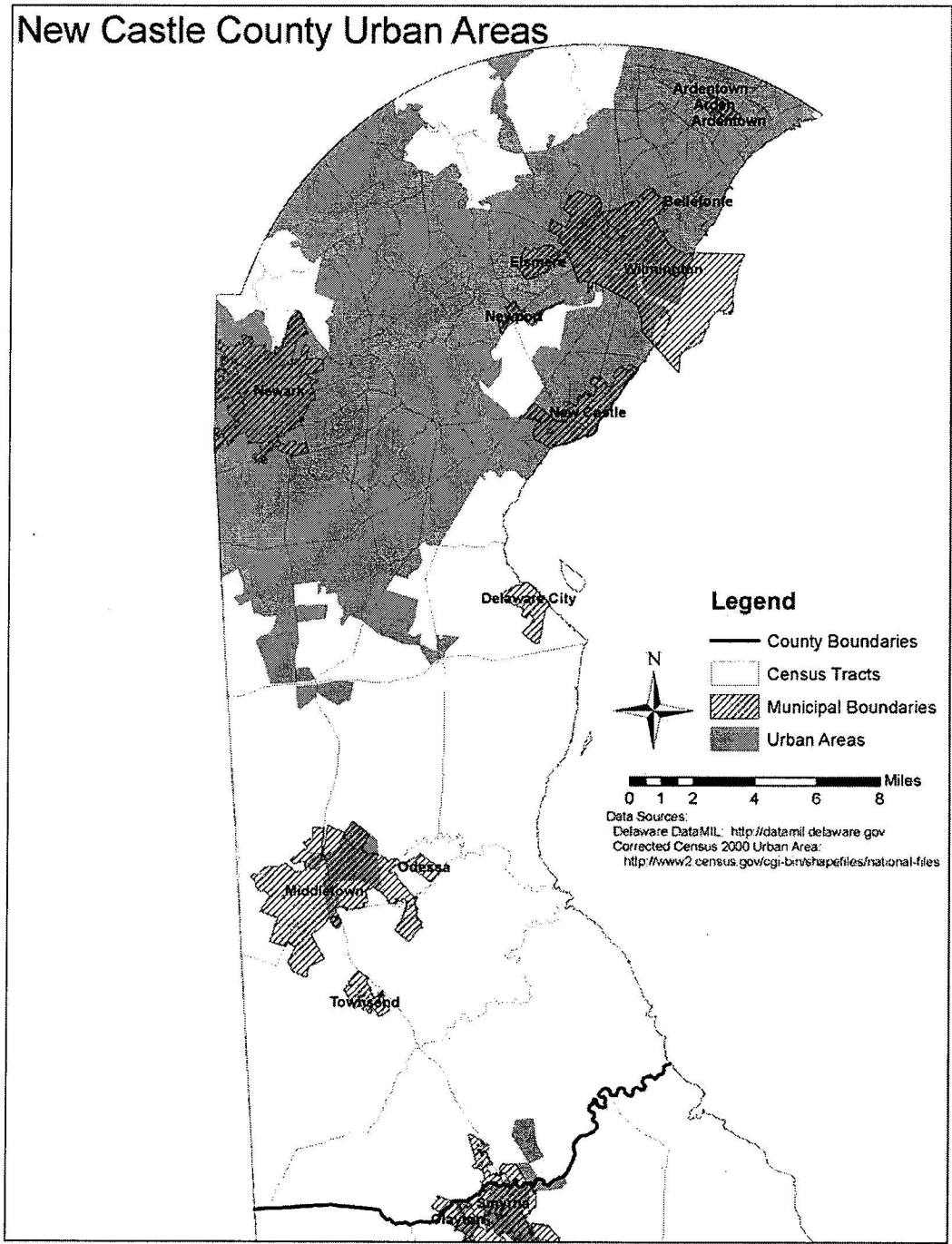
### Legend

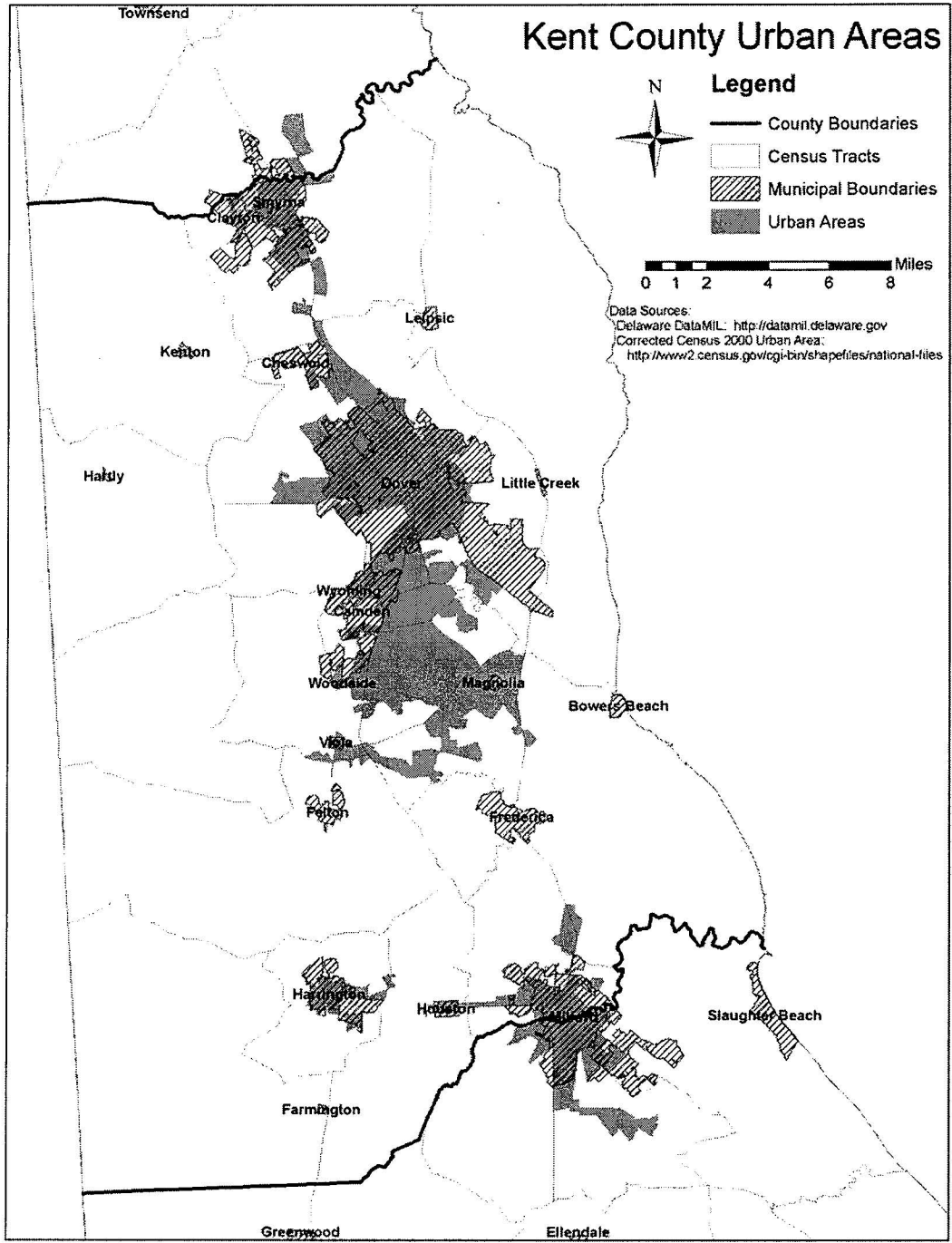
-  County Boundaries
-  Census Tracts
-  Municipal Boundaries
-  Urban Areas

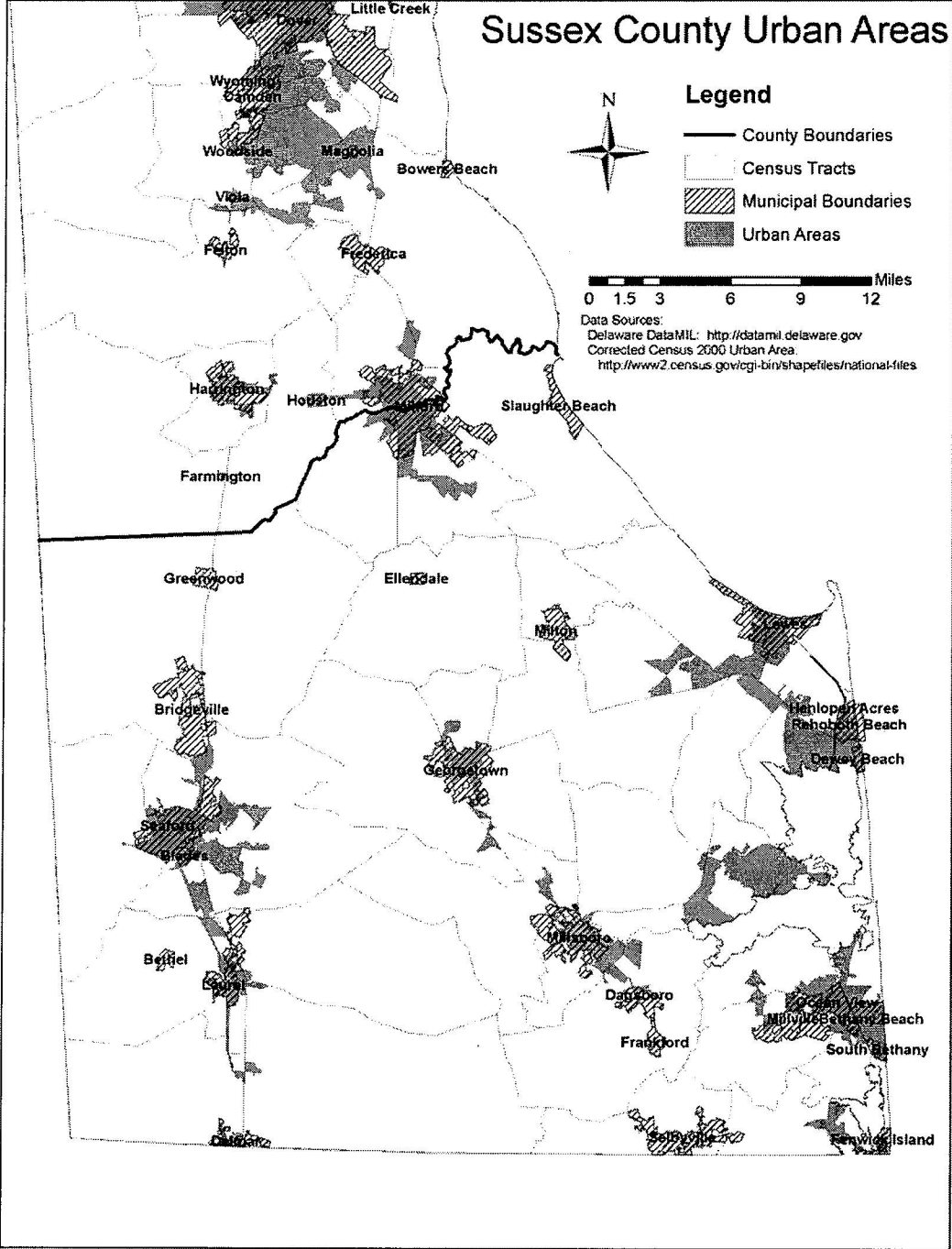


Data Sources:  
 Delaware DataMIL: <http://datamil.delaware.gov>  
 Corrected Census 2000 Urban Area:  
<http://www2.census.gov/cgi-bin/shapefiles/national-files>

# New Castle County Urban Areas







### **III. Five Review Criteria**

In this section, DTI outlines the tasks associated with the five NTIA-identified criteria for evaluating Delaware's broadband mapping project:

1. Data
2. Project feasibility
3. Expedient data delivery
4. Process for repeated data updating
5. Planning and collaboration

The NOFA for the SBDD grant encourages applicants' readiness to implement the mapping project, and DTI has already discussed this proposal with several interested vendors that can assist DTI with the execution of this project. However, so as to not violate Delaware purchasing laws, DTI will not pre-select vendors within this application. All parties involved are aware of the opportunities, pending start date, and DTI's ambitious timeline. Furthermore, DTI currently has an established statewide Professional Services Contract that includes vendors with whom DTI could contract for services to develop, implement, and maintain the Delaware statewide broadband map. DTI anticipates receiving competitive responses for services that are not available through or offered by another state organization or vendor on the state's Professional Services Contract if a Request for Proposal (RFP) is released. These relationships will be discussed later in this application.

#### **1. Data**

As required in the NOFA, Delaware and DTI agree to provide NTIA with the required broadband data from all commercial and public broadband service providers in the state. After initial data collection, DTI will maintain Delaware's live statewide broadband map to present the data stored in a spatial database. This mapping application will facilitate end users' accessibility, ensure data security, and allow for regular data updates.

The database will enable staff to manipulate data from multiple sources to ensure data standardization, integrity, and accuracy. The resulting statewide map will include full topology for the area as well as information on broadband infrastructure, service availability, and service characteristics for state-level access and street-level access, or as close to the address level as practicable considering the mapping technology and data available. The database will be editable and updateable, allowing DTI to maintain an up-to-date map of broadband services. Reviewing and trending the various data will allow DTI to assess where current infrastructure exists and does not exist on a street level.

DTI proposes the following steps to develop, implement, and maintain Delaware's statewide broadband map:

##### **a. Data Gathering**

DTI is familiar with the data requirements outlined within the NOFA and its Technical Appendix. To ensure that all required data are collected and sent to NTIA, DTI has structured the data gathering approach to include strategic project

management, Geographic Information Systems (GIS) services, hosting infrastructure, and software licensing.

In the following paragraphs, DTI outlines the steps necessary to:

- Identify broadband providers,
- Negotiate a nondisclosure agreement (NDA),
- Identify community anchor institutions,
- Collect the data,
- Ensure a standard format,
- Geocode the information, and
- Conduct analysis and create the broadband map.

### ***Broadband Service Providers***

DTI has already identified six broadband data providers in Delaware, which include cable, satellite, fiber, wireless, DSL, and telephone service providers. DTI will identify any additional, previously unidentified providers by reviewing regulatory data from the state, such as cable franchise information and licensing information from zoning authorities, trade groups, and local governments. Additionally, DTI will obtain information from the Federal Communications Commission (FCC) in relation to data collected from Form 477. The FCC uses Form 477 to describe the deployment of broadband infrastructure and to determine the extent of competition for local telecommunications services.<sup>4</sup> DTI expects this process to provide a comprehensive list of broadband providers in the state and define the general area(s), cities, towns, counties, etc. of the state in which each provider is offering service.

DTI believes a positive relationship already exists with these providers but will continue to collaborate in order to ensure that the providers fully understand NTIA's goals and the objectives of the SBDD, explain DTI's required deliverables for data collection and mapping, share established timelines, and solicit feedback. Fostering cooperation and collaboration will strengthen DTI's effectiveness when initiating the data gathering processes.

The expectation is that once nondisclosure agreements (NDAs) (discussed below) are in place, DTI will obtain the required data specified in the Technical Appendix from all commercial and public providers, as applicable, and DTI will be able to provide the data to NTIA.

In the initial round of data collection, DTI anticipates that the providers will submit their data by electronic email attachment, by compact disc, or by a file transfer protocol (FTP). Depending on the ease of the execution of the initial data collection, future updates may incorporate the use of an interface with the proposed broadband mapping application for data submission.

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<sup>4</sup> Frequently Asked Questions. <http://www.fcc.gov/form477>. Retrieved 3 August 2009.



### ***Nondisclosure Agreements***

As described in the NOFA and further explained during the Webinar on National Broadband Mapping Program administered by NTIA on July 24, 2009, DTI must provide NTIA with the required information listed in the Technical Appendix.

To ensure complete data collection, DTI will enter into a NDA with each of the providers to protect the proprietary and sensitive information that will be gathered and stored by DTI and sent to NTIA. The NDAs will be structured to restrict access to the data to as few entities as necessary (i.e., the state of Delaware, NTIA, and any partner(s) engaged by DTI that work directly with the data). Any partner(s) engaged by DTI will be required to enter into a NDA providing at least the same protections as afforded in the NDA between DTI and the provider. Additional language will give Delaware and DTI the ability to continue to request updated data over time in order to maintain the broadband map.

All NDAs will stipulate that the state of Delaware will own the data; however, DTI will respect the confidentiality that is specified in the NOFA. To this effect, DTI will agree to “treat any matter that is a trade secret, commercial or financial information, or privileged or confidential, as a record not subject to public disclosure except as otherwise mutually agreed to by the broadband service provider and [DTI].” These NDAs will not be more restrictive or include more limitations than the NTIA-specified confidential information.

### ***Community Anchor Institutions***

As mentioned in the NOFA, DTI will be responsible for collecting data from all broadband service providers and community anchor institutions. Community anchor institutions are schools, libraries, medical and healthcare providers, public safety entities, community colleges and other institutions of higher education, and other community support organizations and entities. DTI plans to engage a partner such as the Institute for Public Administration (IPA) within the University of Delaware to facilitate the collection of broadband utilization data from the community anchor institutions.

IPA already has existing relationships with many of the community anchor institutions from which data would need to be collected. These relationships ease the time and effort required for data collection. Key activities for this task include naming all of Delaware’s community anchor institutions, mapping these institutions on the statewide broadband map, and conducting mailed and in-person surveys to determine the use and status of broadband service at these facilities.

IPA will also collect supplementary information to assist with future planning activities, such as institution size, identification of specific broadband uses, existing service issues, self-assessments of future broadband demands and needs, number of computers for public and institutional use, service areas, demographic information, and hours for public availability where applicable.

### ***Data***

DTI's objective is to prepare a comprehensive and high-quality dataset to address the deliverables specified in the Technical Appendix of the NOFA. Should NTIA redefine or amend the deliverables specified in the Technical Appendix, DTI will subsequently amend the data reports to reflect the level of granularity that is required by NTIA and that is upheld by other states' best practices.

DTI will specify the file format that providers must use for data submission using the technical requirements that are defined in the Technical Appendix of the NOFA. In the event a provider is unable to provide data in the specified format or in the event that the provider does not have the data, DTI will pursue alternative means to obtain the data. For example, DTI may request digital boundary files to analyze. DTI also reserves the right to acquire data from the FCC using information that is collected on Form 477 from the providers.

DTI proposes to build a new broadband mapping application to support the accessibility requirements of the NOFA. This application will leverage the existing infrastructure design and data storage in the new Delaware Geospatial Data Exchange.

DTI projects that up to 5 percent of Delaware's population will access the online map application; this translates to 43,000 Delaware residents using the tool annually (Delaware's population in 2008 was 873,000<sup>5</sup>). DTI will ensure that the infrastructure can support several hundred daily users initially and will monitor usage to determine the need for additional capacity.

DTI will also collect various non-spatial data from providers to meet NTIA requirements. Deliverables will include last-mile connection points (physical locations) in a tab-delimited text file for facility-based providers, which will include remote terminals, wireless towers, WiFi "hot spots", or central offices. The data will be formatted using NTIA specifications and will accurately display all applicable facility codes. Additionally, DTI will collect middle-mile and backbone interconnection points from the providers, including points of interconnection enabling communications between a local office and the Internet or between a cable aggregation point and the Internet. The data will also be delivered in a tab-delimited text file.

The following table summarizes the data type and sources that will be utilized in DTI's broadband mapping solution that have been discussed in this section. Most of these data will be licensed from the data sources listed in this document; however, additional content will also come directly from the broadband providers.

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<sup>5</sup> 2008 Data. U.S. Census Bureau, Population Division. Retrieved 4 August 2009.

<b>Data</b>	<b>Source</b>	<b>Description/Use</b>
Delaware Point Addresses	Counties	Matched to provider's service area
High Resolution Imagery	State of Delaware	Spatial reference of any paper maps, verification of infrastructure, address existence, and location
Cadastral (Parcels)	Counties	Identify and verify address existence and locations
Centerline Data (with address ranges)	State of Delaware and TeleAtlas	Map production and address verification
Basemap/Framework Layers	State of Delaware Organizations, Local Governments and Municipalities	Map production
2000 Census	U.S. Census Bureau	For demographic information and analysis of served, underserved, and unserved areas

### ***Standardization***

Where available, DTI will request coordinate information (latitude and longitude, U.S. National Grid, etc.) that may be kept by providers. Providers will be required to submit this information following a format that meets the technical requirements of the NOFA. Requiring a specified, standard format for the data submission (1) reduces data processing time once DTI receives it, (2) ensures consistency to facilitate verification of data accuracy and completeness, (3) reduces ambiguity, (4) enable more efficient and accurate geocoding, and (5) allow DTI to accurately report collected data.

### ***Geocoding***

DTI will be responsible for summarizing the data and providing it to NTIA per the technical requirements in the NOFA. DTI's geocoding process will primarily be an automated one. Through geocoding, a street address or known alpha-numeric data point is matched to map data to accurately place its location on a street map using geographic coordinates. Placement of the data on the map may also include reverse geocoding or georeferencing as necessary. Addresses that are not automatically matched will be mapped manually using verification from aerial imagery and statewide parcels.

### ***Data Analysis and Mapping***

Following geocoding, data from the different providers will be combined to create a contiguous dataset.

DTI will use census block layers to summarize the data by census block; census data from 2000 will be mapped to overlay demographic information. Comparing broadband data against demographic information will allow DTI to best determine where improvements are needed, to assess barriers, and to facilitate prioritization of future broadband initiatives during the planning process.

The data collected through Delaware's broadband providers and other sources will be compiled into a tab-delimited flat file or an ESRI shapefile, as specified in the NOFA Technical Appendix. The service areas of individual providers will be aggregated with other providers of the same technology type to the extent possible, and the comprehensive dataset will include addresses and areas where broadband services are available, respective pricing and speed, last-mile connection points, middle-mile and backbone interconnection points, as well as locations of Delaware's community anchor institutions.

As discussed further below, DTI will incorporate the compiled datasets into an online application that members of the community and policymakers can access to view the statewide broadband map. This allows the general public to know which services are available to them and also enables the larger community to make informed conclusions when analyzing current infrastructure, prioritizing future goals and objectives, and developing and implementing those initiatives.

**b. Accuracy and Verification**

Data accuracy is extremely important and DTI will verify accuracy to the highest percentage practical. After collecting the data that is outlined within the Technical Appendix detailing serviceable areas, service levels, advertised and typical downstream and upstream speeds, DTI will cross-check that data for verification against actual, realized service availability and attributes by using multiple metrics for any given location.

Each method will be used to check a statistically significant sample of all addresses and a statistically significant sample of rural addresses. DTI will utilize scientifically valid random sampling techniques to verify consumers are receiving the typical speeds defined by the providers.

***Verification Metrics***

These metrics include:

1. User surveys
2. Spot checks
3. Speed tests
4. Wireless detectors
5. Other

***User Surveys***

The proposal for verifying the mapping data includes active solicitation of public input using on-the-ground verification. DTI may engage a partner to conduct door-to-

door and/or telephone surveys. These surveys will cross a statistically significant sample of addresses, subscribers, and potential subscribers.

These techniques not only verify carrier-reported data, the location and capability of local infrastructure, and whether such infrastructure could realistically serve a specific address, but also fill in information gaps and quickly identify underserved and unserved areas. Community anchor institution representatives will be similarly contacted concerning the transmission technologies used and transmission speeds achieved.

### *Spot Checks*

Knowing that system boundaries are often not well defined and do not always follow specified boundaries (such as municipalities or counties), DTI may engage a partner to conduct manual spot checks throughout the state to determine the accuracy of each provider's declared footprint or system boundaries. Spot checks include the inspection of both wireless infrastructure and wireless service levels.

In some cases, system boundaries can be determined by the existence or absence of infrastructure. This is the case with cable communications networks that provide cable modem services. In other cases, the mere existence or lack of infrastructure does not indicate whether broadband is available and if broadband is available at the speeds indicated by the provider.

For instance, telephone network based systems, such as DSL, may have infrastructure in place, but it cannot be assumed that broadband is available and, if so, what service levels are attainable at specific locations. DSL networks have a limited footprint and attainable speeds that, by the nature of the network, decrease with the distance from the central office, so the actual speed at a specific address may differ from the advertised speed.

Wireless systems utilizing towers in a specific area do not have hard physical boundaries. Wireless networks have many obstacles, in addition to distance from the tower, which will alter the availability of broadband as well as achievable service levels and up and down network speeds.

### *Speed Tests*

Delaware residents will be able to conduct self-service online speed tests from their home computer or a public computer in a community anchor institution. Several online applications that allow users to self-test the speed of their existing broadband network are readily available throughout the United States. Several states have already taken advantage of these systems, building map-based self-test web sites using publicly available and open APIs. Web site code and other tools to enable development of a site for Delaware are freely available from trusted sources in these states.

### *Wireless Detectors*

Delaware already has wireless availability detectors its emergency services vehicles. These detectors are built into the on-board computers and are able to measure signal strength while out on the street. They are automated and function much like the wireless detector on a laptop. A script could run to capture information automatically, and then broadband service and speed would be retrieved later. Officers and emergency personnel will not have access to the broadband content that is exchanged between users. Using wireless detectors allows DTI to take advantage of the wide area that the emergency services vehicles cover while on duty without requiring other DTI resources that would have otherwise gone into the field to measure manually.

### *Other*

If necessary, existing DTI aerial imagery and parcels can be used to confirm the existence of an address. It will be necessary to identify physical addresses in the event that the address from the provider is a post office box or if the address is not specific enough.

### *Quality Assurance*

After all data has been collected and has been verified, DTI will update the statewide inventory to reflect the new information. DTI will then build topology rules and domain values to guarantee that all spatial data are correctly entered into the final mapping deliverable and no errors exist in the data. These steps will ensure that the state of Delaware has a quality and ready-to-use dataset for the broadband map.

### **c. Accessibility**

Delaware's broadband map will be a public resource for Delaware residents, local and state governments, and the research community. Data will be made publicly accessible and clearly presented through the use of a new online broadband mapping application.

This application will be intuitive, visually appealing, and informational with data that will be clear and easy to understand. It will be transparent, with data sources that are easily identifiable. It is important that the application be detailed enough to engage and educate the general public about broadband availability in Delaware. Therefore, the application will also display icons of the selected features with informative boxes populated with vital data.

Users will also be able to submit information such as recommended data updates for DTI to review for inclusion on the state map and to submit surveys to report an individual's broadband coverage.

Users will be able to access the broadband map application through an Internet portal, which will be housed within the Delaware state government Web site. Users will be able to search for and locate specific addresses or will be able to zoom out to see statewide coverage. The map will indicate what broadband services are available for a particular area as well as the characteristics, and speed of available services. Through

the application, users will be able to print a copy of the results or a map for their records.

Additionally, the interactive broadband map will show coverage by served, unserved, and underserved areas and by single or multiple broadband providers. Different shapefiles will layer broadband adoption rates and the growth in broadband services and will codify barriers such as ethnicity, disability, age, and other socioeconomic factors. This will aid DTI and policymakers in evaluating and prioritizing grant funding requests during the planning and collaboration phase; the status of newly covered broadband areas will be labeled accordingly. Having a top-of-the line interactive broadband map will also ensure American Recovery and Reinvestment Act (ARRA), BDIA, and SBDD grant funding accountability and transparent reporting.

Without a secure login, public users will only see data that has been previously identified as public. DTI will not display any data deemed confidential per the requirements of the NOFA to the public unless the provider's consent is granted. Users who need additional access will have to meet established, secure user credentials; there will be different levels of access and security according to the type of user.

**d. Security and Confidentiality**

As mentioned in the NOFA, some data collected under the SBDD may be highly sensitive or confidential. DTI will ensure transparency of process and will protect collected data, including NTIA-defined confidential information, while fulfilling the other criteria listed in sections 1.a through 1.c. above.

The state of Delaware has an infrastructure capable of providing varying ranges of security for the data. A security model similar to that required for the broadband map was developed for Delaware's new Geospatial Data Exchange. The new broadband mapping application will leverage this model to meet the security requirements of the NOFA while also ensuring transparency. For example, broadband data will be classified within the application as public or confidential. The application will display the appropriate data to the current user based on certain criteria. A public user could access the application without having to login but would only see data deemed public. Any user who needs to see additional data not classified as public would have to provide user credentials.

DTI will also make certain that GIS data security mechanisms are in place while allowing updating from offices, remote sites, or mobile workforces in real-time. This will also be fully automated and consistent with the collaboration strategy, described later in this application, with broadband service providers. The process for assessment, creation, and regular updating of the GIS dataset will include (1) mechanisms that will allow DTI and designated stakeholders to continue to receive new information from broadband service providers and (2) the establishment of multi-level security protocols to insure data integrity and to control and limit access



to GIS data. The dataset will have the ability to display development by layer either separately or combined to indicate public and private ownership of types of broadband infrastructure.

## **2. Project Feasibility**

To foster effective execution of the mapping and planning initiatives discussed in the application, DTI has developed reasonable and cost-efficient budgets. Additionally, DTI staff's capacity, knowledge, and experience will ensure successful development and ongoing maintenance. Both of these topics are discussed further within this section.

### **a. Applicant Capabilities (Budget)**

DTI has identified four mapping activities in addition to its planning activity, which are discussed below. The mapping activities include:

1. Broadband and Spatial Data Collection
2. Data Verification and Validation
3. Broadband Mapping Application
4. Ongoing Updates

#### ***Activity 1: Broadband and Spatial Data Collection***

##### ***A. Program Description – Portion Requiring Federal Funding***

###### ***i. Data Collection from Service Providers***

In the Delaware broadband mapping project's first activity, DTI plans to contract with other partners and the Institute of Public Administration (IPA) at the University of Delaware to assist with data collection and mapping.

The other partners will be responsible for identifying all service providers in the state. For each provider, they will establish a collaborative and cooperative relationship while ensuring the providers understand the goals and objectives of the state of Delaware and the NTIA. They will make certain that the providers fully understand the process of information gathering that will need to take place and will work with the providers to establish aggressive yet realistic timelines. For each provider, this step will also require the development and negotiation of a NDA that meets NTIA's requirements. Once the data is collected, it will be converted to the format required by NTIA, following the steps outlined in the data narrative.

###### ***ii. Data Collection from Community Anchor Institutions***

The IPA will be responsible collecting and mapping broadband use data from community anchor institutions as defined and required by the NOFA. IPA has existing relationships with many of the schools, governments, public safety, higher education institutions, and community organizations from which data would need to be collected. These relationships could ease the time and effort required for data collection. Key tasks for this project include identifying Delaware's community anchor institutions, mapping these institutions, and



conducting mailed and in-person surveys to determine the state of broadband service and use at these facilities.

iii. Personnel

DTI is requesting funding for a Project and Program Manager (PM) for the life of the program. During Activity 1, the PM will oversee the activities of the project partners. The PM will be involved in all communication activities and any coordination required with other state organizations. The PM will also facilitate resolution of any issues and risks. DTI has a strong project methodology in place following Project Management Institute (PMI) methodology.

To determine project management costs, DTI estimated the number of PM hours per activity by taking a percentage of the total activity hours estimated by the partner and/or IPA, and applied the state’s standard project management rate of \$80 per hour. More detailed calculations are shown on the "Estimate Details – Mapping" spreadsheet within the Mapping Budget Narrative attachment.

*B. Program Description –Applicant Match Portion*

i. Data

The state of Delaware collects a myriad of data that can be used in the broadband mapping project, as outlined in the following table:

<b>Data</b>	<b>Source</b>	<b>Description/Use</b>
Delaware Point Addresses	Counties	Matched to provider’s service area
High Resolution Imagery	State of Delaware	Spatial reference of any paper maps, verification of infrastructure, address existence, and location
Cadastral (Parcels)	Counties	Identify and verify address existence and locations
Centerline Data (with address ranges)	State of Delaware and TeleAtlas	Map production and address verification
Basemap/Framework Layers	State of Delaware Organizations, Local Governments and Municipalities	Map production
2000 Census	U.S. Census Bureau	For demographic information and analysis of served, underserved, and unserved areas

For the purposes of the match, the state quantified the value of the centerline, and parcel data to be used for mapping during this phase of the project, for data verification, and for the public application and Web site development phase.

For **centerline data**, the state currently pays a contractor \$120,000 annually to collect and compile data provided by every county. If this data were unavailable to use for verification purposes, the state would be required to pay a contractor to collect it for this project annually. Therefore, costs are included for the first year during broadband and spatial data collection (Activity 1), and annually for the next four years as part of ongoing updates. The out-year costs are included under Activity 4.

The state is able to obtain data on 419,697 **parcels** from its three counties. If this data were unavailable to use for verification purposes, the state would need to obtain it from a vendor. The vendor informed DTI that the cost to collect this data ranges from \$0.50 to \$1.00 per parcel. Assuming a cost of \$0.75 per parcel, the cost to the state would be \$314,773 (419,697 \* \$0.75). This data is continually maintained and updated at an estimated cost of \$255,000 per year. Therefore, costs for data acquisition are included for the first year during Activity 1, and costs for four years of data maintenance and updates are included under Activity 4, ongoing updates.

ii. Ability to Secure Funding for Match

Most of the data being provided is routinely acquired by the state. Therefore, it is anticipated that the data will continue to be available for use by this project.

*C. Cost Summary for Activity 1: Broadband and Spatial Data Collection*

Table 1, “Cost Summary for Activity 1: Broadband and Spatial Data Collection,” provides a general overview of the costs for Activity 1. Please refer to the “Assumptions and Explanations” within the “Budget Detail – Mapping” spreadsheet within the Mapping Budget Narrative attachment for more details on cost calculations.

Note on Vendor Cost Estimates: The vendor from which DTI received bids for the various phases of this project is on the state-approved contractor list. This list consists of vendors that responded to a competitive bid for Professional Services. Each vendor is already on contract with the state to provide services at a negotiated rate. All references in the budget documents to a vendor or project partner refer to the same firm.

**Table 1. Cost Summary for Activity 1: Broadband and Spatial Data Collection**

<b>Grant Program Activities</b>	<b>Federal Funds</b>	<b>Match</b>
Provider Infrastructure and Subscriber Data Collection	\$ 131,128.00	\$ 0.00
Provider Infrastructure and Subscriber Data Mapping	\$ 84,658.00	\$ 0.00
Community Anchor Institutions Data Collection and Mapping	\$ 30,026.00	
Project and Program Manager	\$ 86,400.00	\$ 0.00
Provision of Centerline Data	\$ 0.00	\$ 120,000.00
Provision of Parcel Data	\$ 0.00	\$ 314,773.00
<b>Subtotals Activity 1</b>	<b>\$ 332,212.00</b>	<b>\$ 434,773.00</b>
<b>Total Activity 1 (federal funds plus match)</b>		<b>\$ 766,985.00</b>

***Activity 2: Data Verification and Validation***

***A. Program Description – Portion Requiring Federal Funding***

***i. Verification & Validation***

Per the requirements of the NOFA, data must be verified by multiple means. DTI’s partner will utilize scientifically valid random sampling techniques to verify customers are receiving the typical speeds defined by the providers. Broadband availability does not always follow set boundaries (such as a municipality or county), but is determined by the providers’ anticipated return on their investment required to build a network to offer broadband. Knowing that system boundaries are often not well defined, the vendor will physically perform spot checks throughout the state to determine the accuracy of each provider’s declared footprint or system boundaries.

Additionally, the vendor will perform random physical inspections of infrastructure networks to glean an overall understanding of the accuracy of the providers’ information related to its footprint. However, the mere existence of infrastructure does not define if broadband is available and if broadband is available at the speeds offered by the provider. Therefore, residents will be randomly interviewed to gain an understanding of actual availability of service as well as service levels and speeds. Community anchor institution representatives will be similarly contacted concerning the transmission technologies used and transmission speeds achieved. Data will also be verified using various topology rules to ensure no geometry errors or oversights.

ii. Personnel

DTI is requesting funding for a Project and Program Manager (PM) for the life of the program. During Activity 2, the PM will continue to oversee the activities of the project partners. The PM will also facilitate resolution of any issues and risks. DTI has a strong project methodology in place following Project Management Institute (PMI) methodology. The PM hourly rate is \$80. DTI estimated the number of PM hours per activity by taking a percentage of the total activity hours estimated by the partner and/or IPA. More detailed calculations are shown on the "Estimate Details – Mapping" spreadsheet within the Mapping Budget Narrative attachment.

*B. Cost Summary for Activity 2: Data Verification and Validation*

Table 2, "Cost Summary for Activity 2: Data Verification and Validation," provides a general overview of the costs for Activity 2. Please refer to the "Assumptions and Explanations" within the "Budget Detail – Mapping" spreadsheet within the Mapping Budget Narrative attachment for more details on cost calculations.

**Table 2. Cost Summary for Activity 2: Data Verification and Validation**

<b>Grant Program Activities</b>	<b>Federal Funds</b>	<b>Match</b>
Field Verification	\$ 55,493.00	\$ 0.00
Project and Program Manager	\$ 18,576.00	\$ 0.00
<b>Subtotals Activity 2</b>	<b>\$ 74,069.00</b>	<b>\$ 0.00</b>
<b>Total Activity 2 (federal funds plus match)</b>		<b>\$ 74,069.00</b>

*Activity 3: Broadband Mapping Application*

*A. Program Description – Portion Requiring Federal Funding*

i. Public Application and Web site Development

The partner would develop and deploy a user-friendly, visually appealing Web application that engages and educates the general public. The application would display detailed information that educates users on broadband availability in Delaware. It would contain many of the basic Web mapping tools, including zoom in and out and query, and would also display icons of the selected features, with informative boxes populated with vital data regarding the specific information needed. Additionally, the application would be designed to facilitate future data updates and the infrastructure planning process by incorporating demographic, infrastructure, and housing, commercial and institutional land uses.

ii. Public Awareness Campaign

DTI intends to contract with IPA to facilitate enhanced public and policymaker understanding of the current state of broadband in Delaware. Current use, service characteristics, and policy issues would be summarized in a brochure and policy report. Both documents would be made available to the public online and in hard copy. A policy forum would be convened to raise awareness about these issues and begin a conversation on a desirable path forward for broadband in Delaware.

iii. Hardware and Software to Support Public Application

The infrastructure required to support the application is based on a standard four-tier client server configuration including proxy server, Web server, application server and database server. The servers will be configured according to the system design, most likely using Windows Server and Microsoft .NET technology. DTI anticipates using Oracle for the database and SAN storage for data storage and disk space. Costs for hardware include servers required to support the anticipated use of the application, rack and data center resources (power) for the hardware, and software for the operating systems, application software (ESRI), database and all other support software such as backups and monitoring.

iv. Personnel

DTI is requesting funding for a Project and Program Manager (PM) for the life of the program. During Activity 3, the PM will continue to oversee the activities of the project partners. The PM will also facilitate resolution of any issues and risks. DTI has a strong project methodology in place following Project Management Institute (PMI) methodology. The PM hourly rate is \$80. DTI estimated the number of PM hours per activity by taking a percentage of the total activity hours estimated by the partner and/or IPA. More detailed calculations are shown on the "Estimate Details – Mapping" spreadsheet within the Mapping Budget Narrative attachment.

DTI is also requesting funding for Technical Support (Software Engineer) for Activity 3. The Software Engineer will work with the partners to develop requirements, design functionality, test the programming, liaise with the user community, conduct code reviews, and provide general technical support for the application during the system development lifecycle. DTI has a strong methodology in place for the System Development Life Cycle. The Software Engineer hourly rate is \$80. DTI estimated the number of Software Engineer hours per activity by taking a percentage of the total activity hours estimated by the partner and/or IPA. More detailed calculations are shown on the "Estimate Details – Mapping" spreadsheet within the Mapping Budget Narrative attachment.

*B. Program Description – Applicant Match Portion*

DTI will host the broadband mapping application in the state's data center. The match includes services and personnel time for resources necessary to build and support the infrastructure. While the partner is building the actual application, the DTI resources would be working on hardware and software acquisition, racking

and physical configuration of the hardware, installation of all operating and support software, and ultimately involved in the installation of the final application once completed by the partner. Hosting of the application will entail ongoing support from our Systems Administration (production support team), Systems Engineering (second level support) and Applications Delivery (software engineer for application support). Once the partner completes the application, support will be the sole responsibility of DTI. The partner will not have any access to the infrastructure and any application changes or maintenance will follow defined change control procedures.

Specific cost items included in this portion of the state's match are:

- **Systems Engineering** – This team is responsible for configuration and second level support of all client server, database and mainframe systems. The team must set up the servers and install the foundation software for the system. They also provide second level support of applications after they go live.
- **Telecomm Personnel** – Telecomm supports the network infrastructure for the state. They maintain the firewalls and all networking capability. They will be involved with the placement of the application in the correct de-militarized zone (DMZ), secure segment of the network blocked from other segments, establishment of the DMZ's and firewall rules and any other network infrastructure requirements.
- **Data Center Personnel and Operations** – The Data Center is a Class 7 facility that provides floor space for the rack and servers, power and redundant power, tape backups and offsite backups, fire protection, and other necessary components.
- **Security Office and Business Continuity Personnel** – The Security Office is responsible for maintaining cyber security. The Business Continuity group is responsible for continuity of operations. These groups will be involved in ensuring that the application meets all security requirements, and in defining the business continuity and disaster recovery plans for the application. They also will conduct ongoing disaster recovery preparedness exercises.

To project costs for each of the above program elements in the first year of Activity 3, DTI evaluated the project requirements and estimated the necessary work hours. Then, for each program element, the state's standard hourly rates were applied. More detailed calculations are shown on the "Estimate Details – Mapping" spreadsheet within the Mapping Budget Narrative attachment.

- C. *Cost Summary for Activity 3: Broadband Mapping Application*  
Table 3, "Cost Summary for Activity 3: Broadband Mapping Application," provides a general overview of the costs for Activity 3. Please refer to the "Assumptions and Explanations" within the "Budget Detail – Mapping" spreadsheet within the Mapping Budget Narrative attachment for more details on cost calculations.

**Table 3. Cost Summary for Activity 3: Broadband Mapping Application**

<b>Grant Program Activities</b>	<b>Federal Funds</b>	<b>Match</b>
Web site and Application Development	\$ 115,484.00	\$ 0.00
Public Awareness Campaign	\$ 29,210.00	\$ 0.00
Application Hardware	\$ 200,000.00	\$ 0.00
Application Software	\$ 210,000.00	\$ 0.00
Project and Program Manager	\$ 113,292.00	\$ 0.00
Technical Support	\$ 44,000	\$ 0.00
Systems Engineering	\$ 0.00	\$ 121,963.00
Telecomm Personnel	\$ 0.00	\$ 9,720.00
Data Center Personnel and Operations	\$ 0.00	\$ 1,350.00
Security Office and Business Continuity Personnel	\$ 0.00	\$ 9,560.00
<b>Subtotals Activity 3</b>	<b>\$ 711,986.00</b>	<b>\$ 142,593.00</b>
<b>Total Activity 3 (federal funds plus match)</b>		<b>\$ 854,579.00</b>

**Activity 4: Ongoing Updates**

**A. Program Description – Portion Requiring Federal Funding**

**i. Collect Updated Provider and Community Anchor Institution Data**

During this phase of the project, DTI and its partners would update the provider data bi-annually as defined in the requirements of the NOFA. DTI anticipates ongoing updates to be a collaboration of our partners, IPA, providers and potentially schools to aid in verification. Community anchor data will also be updated with supplemental information such as institution size, identification of broadband uses and exiting issues, self-assessments, terminal availability and usage statistics, and demographics.

**ii. Data and Mapping Maintenance**

Updates would include ongoing patches and maintenance of the public broadband application that may be provided by the partner, verification of any data updates from the providers, and the formatting of the data to send to NTIA. In addition, DTI is requesting funding to acquire updated aerial imagery data. The state has historically collected aerial imagery data every five years. The next planned update is in 2012, but the state is unsure of its ability to fund this update. The aerial imagery collected in 2007 included several by-products, such as land use and elevation, which are important not only for the mapping component of this project, but also for planning any future infrastructure improvements. This data

collection is a vital part of the state's geospatial framework. Therefore, updates of this data would be very valuable to the broadband mapping program and future planning. When this data was most recently collected in 2007, the total cost was \$637,027, of which the state contributed \$337,027 and the federal government \$300,000. Since the state is unsure it will have funding available for the next update, the grant request includes \$700,000 for the data collection in 2012. The requested cost is slightly greater than the 2007 cost in order to capture anticipated cost increases for this service.

iii. Ongoing Program and Application Support

In addition to the request for funding for ongoing project management oversight as described in Activities 1 and 2, DTI is also requesting funding for Technical Support Staff for Activity 4. To estimate support staff costs, DTI projected the number of support staff hours by taking a percentage of the total activity hours estimated by the program partners, and applied the state's standard rate for technical support staff of \$80 per hour. More detailed calculations are shown on the "Estimate Details – Mapping" spreadsheet within the Mapping Budget Narrative attachment.

*B. Program Description – Applicant Match Portion*

i. Provide Updated Data

As described in Activity 1, the state currently obtains centerline, parcel, and aerial imagery data that will be used for this project. The estimated costs of initially acquiring those data are included under Activity 1. The state will be providing out-year updates of these data as follows:

- The state pays a contractor \$120,000 annually to collect and compile **centerline data** provided by every county. The cost of annually updating this data for the four out-years of the program would be \$480,000.
- The state obtains data on 419,697 **parcels** from its three counties. This data is continually maintained and updated at an estimated cost of \$255,000 per year. The cost of annually updating this data for the four out-years of the program would be \$1,020,000.

*C. Cost Summary for Activity 4: Ongoing Updates*

Table 4, "Cost Summary for Activity 4: Ongoing Updates," provides a general overview of the costs for Activity 4. Please refer to the "Assumptions and Explanations" within the "Budget Detail – Mapping" spreadsheet within the Mapping Budget Narrative attachment for more details on cost calculations.



**Table 4. Cost Summary for Activity 4: Ongoing Updates**

<b>Grant Program Activities</b>	<b>Federal Funds</b>	<b>Match</b>
Collect Updated Data	\$ 244,640.00	\$ 0.00
Data and Mapping Maintenance	\$ 144,000.00	\$ 0.00
Provision of Updated Aerial Imagery Data	\$ 700,000.00	\$ 0.00
Project and Program Manager	\$ 84,000.00	\$ 0.00
Technical Support Staff	\$ 448,000.00	\$ 0.00
Provision of Updated Centerline Data	\$ 0.00	\$ 480,000.00
Provision of Updated Parcel Data	\$ 0.00	\$ 1,020,000.00
<b>Subtotals Activity 4</b>	<b>\$ 1,620,640</b>	<b>\$ 1,500,000</b>
<b>Total Activity 4 (federal funds plus match)</b>		<b>\$ 3,120,640</b>

***Mapping Budget Summary***

**Table 5. Budget Summary for Mapping Activities**

<b>Grant Program Activities</b>	<b>Federal Funds</b>	<b>Match</b>	<b>Total Costs</b>
Broadband Mapping and Spatial Data Collection	\$ 434,773.00	\$ 332,212.00	\$ 766,985.00
Data Verification and Validation	\$ 74,069.00	\$ 0.00	\$ 74,069.00
Broadband Mapping Application	\$ 711,986.00	\$ 142,593.00	\$ 854,579.00
Ongoing Updates	\$ 1,620,640.00	\$ 1,500,000.00	\$ 3,120,640.00
<b>Totals</b>	<b>\$ 2,738,907.00</b>	<b>\$ 2,077,366.00</b>	<b>\$ 4,816,273.00</b>
<b>Match as Percent of Federal Funds Requested:</b>			<b>76 %</b>

***Planning***

***A. Program Description – Portion Requiring Federal Funding***

***i. Planning Activities***

DTI will contract with partner(s) to provide planning activities. IPA will build a planning tool that will be integrated into the broadband mapping application. IPA will utilize this model to identify areas of improvement and work with the proposed broadband focus group and local technology planning teams to prioritize

projects based on assessed need. Planning activities will utilize the mapping and planning tool developed in Activity 3 in conjunction with local technology planning teams. These teams will include, but will not be limited to, members of agriculture, small business, and local government communities. Planning teams will typically continue for six to 18 months. DTI anticipates keeping some teams in place for the five year duration of the program to continue to reassess and identify opportunities and prioritize projects.

DTI will analyze the demographic information, infrastructure, housing, industrial, and commercial land uses to develop a planning model. The planning model will be used to identify locations of broadband improvements based on the overlap of availability and demographic and socio-economic conditions affecting broadband adoption. The broadband focus group will conduct a needs assessment and develop a strategic plan for the rollout of projects to improve the level of broadband service in the state of Delaware. The focus group will communicate with the service providers to deliver feedback from the local planning teams as well as convey information on proposed improvement projects. The focus group will also work with the planning teams to prioritize projects and communicate status as the project progresses.

#### ii. Personnel

DTI is requesting funding for a Project and Program Manager (PM) to oversee the activities of the project partners. The PM will be involved in all communication activities and any coordination required with other state organizations. The PM will also facilitate resolution of any issues and risks. DTI has a strong project methodology in place following Project Management Institute (PMI) methodology.

To determine project management costs, DTI estimated the number of PM hours needed by taking a percentage of the total activity hours estimated by the project partners and applied the state's standard project management rate of \$80 per hour. More detailed calculations are shown on the "Estimate Details – Planning" spreadsheet within the Planning Budget Narrative attachment.

DTI is also requesting funding for Technical Support Staff to work with the subcommittee and local planning teams. DTI estimated the number of support staff hours by taking a percentage of the total activity hours estimated by the program partners. The state's standard hourly rate for technical support staff is \$80. More detailed calculations are shown on the "Staffing Cost Details" spreadsheet within the Planning Budget Narrative attachment.

#### *B. Cost Summary for Planning*

Table 6, "Cost Summary for Planning," provides a general overview of planning costs. Please refer to the "Assumptions and Explanations" within the "Budget Detail – Planning" spreadsheet within the Planning Budget Narrative attachment for more details on cost calculations

**Table 6. Cost Summary for Planning**

<b>Grant Program Activities</b>	<b>Federal Funds</b>	<b>Match</b>
Planning Tool Development	\$ 63,782.00	\$ 0.00
Convene Technology Planning Teams	\$ 239,851.00	\$ 0.00
Yearly Planning Support	\$ 408,000	\$ 0.00
Project and Program Manager	\$ 60,480.00	\$ 0.00
Technical Support Staff	\$ 77,760.00	\$ 0.00
<b>Planning Subtotals</b>	<b>\$ 849,873.00</b>	<b>\$ 0.00</b>
<b>Planning Total (federal funds plus match)</b>		<b>\$ 849,873.00</b>

**b. Applicant Capacity, Knowledge, and Experience**

DTI has a great deal of experience conducting projects dealing with broadband or telecommunications technology, overseeing the projects that collect broadband or telecommunications-related data, and utilizing and managing GIS data.

**The Organization**

DTI is the state's central information technology organization chartered to (1) deliver core services to other state organizations and (2) exercise governance over the technology direction and investments of the state. DTI is primarily an internal service organization with only a few of its services directly touching the citizens or customers of the state. Rather, DTI provides enterprise services that enable other organizations to effectively fulfill their missions.

DTI's "customers" are all state organizations including the legislative, executive, and judicial branches, public schools, and the various agencies and quasi-agencies that serve the citizens of Delaware. DTI is committed to delivering high quality and cost-effective services that meet or exceed the customer's requirements. Balancing these objectives requires a strong bond between DTI and the customer and a mutual commitment to success.

**The Personnel**

Delaware's General Assembly and Governor created DTI in 2001 to replace the Office of Information Services. Staff are committed to providing leadership in the selection, development, and deployment of technology solutions throughout Delaware while establishing and maintaining strong relationships with its stakeholders.

Delaware Chief Information Officer and Secretary of DTI, Jim Sills, joined DTI in January 2009 and is committed to using technology as a catalyst for making government more accessible, affordable, and responsible for Delaware's citizens.

Secretary Sills' DTI staff include:

- Bill Hickox, Chief Operating Officer
  - Colleen Gause, Telecommunications Team Leader
  - Systems Engineering Team Leader (and team)
  - Data Center and Operations Team Leader (and team)
- Matt Payne, Chief Technology Officer
  - Applications Delivery Team Leader
    - Kim Cloud, GIS Developer
  - Project Management Team Leader
  - Change Management Team Leader
- Mike Hojnicky, Chief Customer Officer
  - Randy Hultman, Customer Care Team Leader
  - Service Desk
- Elayne Starkey, Chief Security Officer

**DTI's Experience**

In 2001 Delaware's DTI began one of the most comprehensive and robust broadband deployments in the nation. DTI partnered with Verizon Communications to install the Delaware State Transparent LAN Services (TLS) statewide initiative. The project concluded in 2004 after linking 200 of the state's 238 schools to the state's TLS network. Many of DTI's proposed management team members for the SBDD grant project are the same individuals who helped lead the statewide TLS initiative to successful completion.

DTI is currently in the midst of building the Delaware Geospatial Data Exchange application, which will be hosted maintained by DTI. The build phase is nearing completion and the hardware and software infrastructure was configured in July. The Technical Infrastructure Subcommittee of the Delaware Geographic Data Committee is currently conducting the first round of testing of the application.

DTI and its staff are heavily committed to the development, maintenance, and improvements for these statewide initiatives established to facilitate the use and sharing of geospatial data in Delaware.

**Mapping and Planning Responsibility Chart**

Activity	DTI	DAG	Third-Party Partner		Broadband Focus Group
			Vendor	UD-IPA State Org	
Negotiate NDAs					
Point of contact for data collection					
Collect data from providers					
Deliver data for processing					
Combine data files from					

Activity	DTI	DAG	Third-Party Partner		Broadband Focus Group
			Vendor	UD-IPA State Org	
different providers					
Generate text files and shapefiles per the NOFA requirements					
Gather information on community anchor institutions					
Collection of non-map deliverables such as last-mile, middle-mile, and backbone connection and interconnection points					
Data verification					
Data verification – field tests					
Data verification – customer and random surveys					
Wireless availability and service assessment					
Program and project management					
Build infrastructure to host application					
Develop application					
Planning model for prioritization of future projects, including hardcopy and online user guide.					
Policy report of current state of broadband.					
Online and printed brochure – <i>A Public Guide to Broadband in Delaware</i>					
Convene policy forum to raise public and policymaker awareness					
Host public application					
Oversee ongoing focus groups					
Broadband focus group coordination					
Convene planning teams					
Run planning model to identify opportunities and					

Activity	DTI	DAG	Third-Party Partner		Broadband Focus Group
			Vendor	UD-IPA State Org	
prioritize					
Needs assessments					
Strategic plan					
Communication with the providers and interested parties					
Collection of updated data from providers					
Compile updated data into map following the same steps defined in the initial data collection process					
Ongoing surveys for verification and validation					

### 3. Expedient Data Delivery

Automated and collaborative data collection is critical because, as indicated in the NOFA, DTI must provide NTIA with a substantially complete dataset by February 1, 2010.

A substantially complete dataset includes four different measurement parameters:

- 70 percent of providers.
- 80 percent of households in the state.
- 90 percent of households in rural areas (any area, as confirmed by the latest decennial census of the Bureau of the Census, which is not located within:
  - A city, town, or incorporated area that has a population of greater than 20,000 inhabitants; or
  - An urbanized area contiguous and adjacent to a city or town that has a population of greater than 50,000 inhabitants).
- 95 percent of community anchor institutions (schools, libraries, medical and healthcare providers, public safety entities, community colleges and other institutions of higher education, and other community support organizations and entities).

Although NTIA prefers to receive a substantially complete dataset by November 1, 2009, NTIA may agree on an alternative dataset for that deadline as stated in the NOFA. With this in mind, DTI proposes to provide NTIA with 25 percent to 35 percent complete dataset, at a minimum, on November 1, 2009.

The following timeline outlines DTI's proposed tasks and datasets:

#### Alternative Dataset by November 1, 2009

DTI will complete the following tasks prior to November 1:

- Comprehensive list of providers.
- NDAs with providers delivered and under negotiation.
- Information from smaller providers in the state – DTI anticipates that it will be easier to gather from this population and plans to have this data before November 1, 2009.
- Information on areas of the state already known to have limited or no service.
- Map of community anchor institution broadband data.

DTI will work to gather as much information as possible to enter into the database prior to the November 1, 2009 deadline so that DTI may present NTIA with 25 to 35 percent of Delaware’s data. All data provided at this time will be accurate as of June 30, 2009 or later.

**Substantially Complete Dataset by February 1, 2010**

Following the completion of the NDAs, DTI will continue to compile information and will provide NTIA with a substantially complete dataset by February 1, 2010. All data provided at this time will be accurate as of June 30, 2009 or later.

The public will be able to access the Delaware’s statewide broadband mapping application online by February 1, 2010. Additionally, DTI will implement its Planning Tool by January 31, 2010.

**Complete Dataset by March 1, 2010**

By March 1, 2010, DTI will submit a complete dataset that is accurate as of June 30, 2009 or later.

Based on the analysis of the data from the Planning Tool, DTI will initiate its Public Awareness Campaign between February 1, 2010 and March 31, 2010.

**Additional Datasets for Updates**

Broadband mapping data will be updated at least on March 1 of each year (by submitting data as of December 31 of the previous year) and at least September 1 of each year (by submitting data as of June 30 of that year). Because the initial data collection is due on February 1, 2010, the next update will be due on September 1, 2010 but will include data accurate as of both December 31, 2009 and June 30, 2010. After September 1, 2010, the collections will follow the schedule specified within the NOFA.

DTI acknowledges that the data will also be used in the development of the national broadband map that NTIA is required to create and make publicly available by February 17, 2011 under Section 6001(l) of the Recovery Act.

**Timeline**

Timeframe	Task
October 1, 2009	Project start date.
1 month	<ul style="list-style-type: none"> <li>▪ Comprehensive list of providers by November 1, 2009.</li> </ul>

Timeframe	Task
	<ul style="list-style-type: none"> <li>▪ NDAs with providers (delivered and under negotiation by November 1, 2009).</li> <li>▪ Information from smaller providers.</li> <li>▪ Information on areas of the state already known to have limited or no service.</li> <li>▪ 25 to 35 percent of data by November 1, 2009.</li> </ul>
1-3 months	<ul style="list-style-type: none"> <li>▪ Complete collection of data from the providers.</li> <li>▪ Migration of datasets into the format outlined in the technical requirements of the NOFA.</li> </ul>
2-4 months	Initial shapefiles and text files as outlined in the technical requirements of the NOFA.
2-7 months	Collection of non-map deliverables such as last-mile, middle-mile, and backbone interconnection points.
1 month	Collection and mapping of community anchor institution points.
5-7 months	Field assessments and surveys.
2-3 months	Wireless availability and service assessment.
1 month	Updated, fully verified dataset.
Ongoing	Web site for posting maps and other project information.
5-7 months	Publicly accessible application: Multi-level security protocols built into the application.
2 months	Planning model: Planning model for prioritization of future projects, including hard copy and online user guide.
February 1, 2010 – March 31, 2010	Public awareness: <ul style="list-style-type: none"> <li>▪ Policy report of current state of broadband.</li> <li>▪ Online and printed brochure – <i>A Public Guide to Broadband in Delaware</i>.</li> <li>▪ Convene policy forum to raise public and policymaker awareness.</li> </ul>
Ongoing	Ongoing updates: <ul style="list-style-type: none"> <li>▪ Collection of data from providers.</li> <li>▪ Compile into map following the same steps defined in the initial data collection process.</li> <li>▪ Potential use of application to submit updates.</li> <li>▪ Ongoing surveys for verification and validation.</li> </ul>

#### 4. Process for Repeated Data Updating

DTI acknowledges that the broadband landscape is rapidly changing, and both the state broadband maps and national broadband map must be able to reflect these changes. DTI proposes to use automation to provide for repeated updating of data on at least a semi-annual basis continuing for at least five years after the date of the initial collection.

After September 1, 2010, DTI's ongoing data collection will follow the NOFA-specified schedule: DTI will update Delaware's broadband mapping data by March 1 of each year (by submitting data as of December 31 of the previous year) and by September 1 of each year (by submitting data as of June 30 of that year), so as to coincide with the FCC's Form 477 data collections.



As defined in the NOFA, DTI acknowledges that an update is considered to be verification of existing data and a collection of any additional data reflecting the expansion or contraction of broadband availability since the previous data collection or update.

In order to successfully meet these requirements for processing repeated data updating, DTI will build workable and sustainable processes for updating the data for five years or longer. This allows DTI to collect and analyze data initially, standardize and geocode the data as needed, update the database with new information, manage historical data, and produce publication-quality maps that reveal trends and patterns in the underlying data.

The state online application will be easy to update, will allow DTI to distribute data regularly, and will serve as a resource for Delaware residents to self-report broadband availability and adoption. Additionally, the map data can be supplemented with, compared to, and verified by other data gathered. The strategy for updating the GIS dataset will include the following steps:

- Design an appropriate platform to ensure that GIS spatial data are easily accessible by appropriate personnel through secure, established networks.
- Design fully integrated workflow diagrams designating GIS dataset updating and maintenance procedures.
- Establish data quality assurance and quality control procedures.
- Document and archive geospatial data processing methodologies and workflows.
- Solicit data updates from the providers and conflate the information into a single dataset.
- Update the data within the application regularly.

## **5. Planning and Collaboration**

Collaboration enhances understanding and relevancy of the data to residents, businesses, and policymakers while facilitating the transition from broadband mapping to ongoing planning, including future broadband expansion project prioritization and selection.

### **a. Collaboration**

Collaboration is imperative for DTI's successful data collection and broadband mapping efforts. DTI believes community involvement will play a key part of the planning process; this initiative includes both new and existing partnerships. To that end, DTI proposes maintaining effective communication to facilitate the involvement of stakeholders in the community.

#### ***Communication***

DTI upholds the importance of effective communication and coordination to ensure that NTIA's technical specifications are met and that all data will be compatible with the nationwide inventory and map. DTI will collaborate with local governments, universities, and other public institutions in the development of the communication plan to ensure that all stakeholders are identified and mechanisms are established for stakeholders to have opportunities for comment and input.

Additionally, DTI will distribute information to the public to raise awareness of the services available. This will be accomplished through the use of brochures and workshops. Communication efforts also include Web-posted summaries to disseminate information to users, stakeholders, and partners. Feedback from stakeholders will be shared with Delaware's broadband providers to identify and share opportunities.

#### ***Delaware Broadband Focus Group***

The BDIA authorizes grants to "create and facilitate...local technology planning teams." This allows DTI to engage significant broadband user groups in Delaware in planning efforts to identify (1) broadband best practices for their communities, (2) issues affecting the deployment and full use of broadband, and (3) potential projects for expanding the use and deployment of broadband in these communities.

DTI envisions establishing a primary broadband focus group, including, but not limited to, representatives from Delaware's agriculture, local government, small business, education, private sector, and Indian communities as well as from the Delaware Geographic Data Committee (DGDC). This focus group will be responsible for identifying issues and current applications, reviewing and acting upon the results of the data analysis, prioritizing potential projects, and advising DTI regarding ongoing initiatives.

#### ***Other Partnerships***

Other collaboration efforts include the involvement of one or more partners that may have existing relationships with many of the state's broadband providers and community anchor institutions from which data would need to be collected. These existing relationships could ease the time and effort required for data collection.

Summaries of current DTI partners are included below:

- The DGDC was created through state legislation and is a collaborative group with over 400 members from all levels of government, the academic community, and the private sector. The group continually works together to improve the coordination and use of GIS tools and spatial data in the state.
- The Public Service Commission (PSC) has authority over regulated broadband providers. DTI will seek aid from the commission should there be resistance in acquiring data from Delaware's regulated broadband providers.
- The e911 Board consists of representatives from the Office of the Controller General, Office of the Budget, Governor's Office, PSC, Office of Telecommunication Management, and DTI. The board makes recommendations regarding the state's Enhanced 911 (e911) system. Among other duties, this group works closely with the state's public safety groups to ensure accurate data are available for mapping.
- Delaware's 800 MHz team consists of representatives from state, county, and municipal government agencies, fire and emergency medical services, and select number of federal agencies, working together to ensure statewide 800Mhz coverage.

- The eGovernment Committee is a collaboration of multiple levels of government to improve the citizens' experience in obtaining services from the state.
- The University of Delaware's Institute for Public Administration (IPA) has relationships with a wide variety of government, academic, and private sector entities. IPA has experience matching broadband information with demographics and interpreting the data to identify and prioritize opportunities for improvement.
- DTI also plans to involve organizations such as the Delaware Economic Development Office, Delaware Small Business Development Center, and the entrepreneurship program at Delaware Technical and Community College to convene a small business technology planning team.

**b. Planning**

Following the data gathering and mapping process, the data will be correlated to appropriate demographic and census data, infrastructure, and housing and commercial and institutional land uses in order to: (1) analyze where barriers of broadband adoption might exist, (2) determine which projects offer the most benefit and which best resolve barriers, and (3) prioritize areas for investment based on low deployment, low use, and high need.

While DTI's immediate priority is to develop and finalize the statewide broadband map to accurately identify underserved and unserved areas, the next priority will be to collect and analyze "demand-side" data so that DTI can quantify consumers' demand for broadband services.

***Anticipated Results***

DTI anticipates that prioritizing broadband development will initially increase broadband availability to the public and to community anchor institutions in underserved and unserved areas in most rural areas; however, DTI's ultimate goal is to achieve complete broadband access across the state.

Farmers are potentially among the most likely of Delaware's residents to live in an area unserved or underserved by broadband, and the most recent Census of Agriculture reported that the proportion of Delaware farmers using high-speed Internet connections is below average. This sub-project seeks to convene a group of agriculture community representatives and facilitate a process of identifying issues, current applications, and potential projects to expand broadband deployment and use in the agriculture community.

***Delaware Broadband Focus Group***

DTI envisions that the Delaware broadband focus group will work with DTI and the counties to leverage existing local efforts and knowledge to create county-level broadband planning teams. As mentioned previously, this focus group will consist of members representing cross-sections of the community. Each local community may have additional representatives that can aid with idea generation and problem solving. For example, local school districts are typically charged with establishing high-speed Internet services for schools throughout their districts.

DTI anticipates using performance metrics to monitor its success. These metrics include:

- Availability of broadband.
- Adoption of broadband.
- The goals and levels of achievement of grassroots efforts often related to demand-side goals – such as technology literacy, personal computer hardware supply programs, and workforce and job training.
- Unique goals established based on local community planning.

These goals include identifying and then building upon efforts already in progress, such that each of the local regions could move in a coordinated direction much faster than if starting from scratch. The Delaware broadband focus group will ensure the following attributes exist:

- Participation by local high-speed Internet stakeholders at the county level.
- Effective and comprehensive needs assessments that drive decision-making.
- Successful strategic planning with measurable outcomes.
- A comprehensive understanding of grassroots and other broadband initiatives locally and throughout the state.

DTI anticipates maintaining communication about these projects and their status through Web-posted summaries and press releases on the DTI Web site and through the online mapping application.

### ***Planning Tool***

The University of Delaware's IPA will build a planning tool that will be integrated into the broadband mapping application. IPA will utilize this model to identify areas of improvement and work with the proposed Delaware broadband focus group and local technology planning teams to prioritize projects based on assessed need.

DTI anticipates that this activity will include a public awareness campaign that consists of (1) the creation of an online and hardcopy policy report on the state of broadband deployment in Delaware, (2) an online and printed brochure *A Public Guide to Broadband in Delaware*, and (3) a policy forum to raise public and policymaker awareness.

**BUDGET INFORMATION - Non-Construction Programs**

OMB Approval No. 4040-0006  
Expiration Date 07/30/2010

**SECTION A - BUDGET SUMMARY**

Grant Program Function or Activity (a)	Catalog of Federal Domestic Assistance Number (b)	Estimated Unobligated Funds		New or Revised Budget		
		Federal (c)	Non-Federal (d)	Federal (e)	Non-Federal (f)	Total (g)
1. Delaware BTOP Mapping and Planning Funding Application	11.558	\$	\$	\$ 2,738,907.00	\$ 2,077,366.00	\$ 4,816,273.00
2.						
3.						
4.						
<b>5. Totals</b>		\$	\$	\$ 2,738,907.00	\$ 2,077,366.00	\$ 4,816,273.00

**SECTION B - BUDGET CATEGORIES**

6. Object Class Categories	GRANT PROGRAM, FUNCTION OR ACTIVITY				Total (5)
	(1)	(2)	(3)	(4)	
	Delaware BTOP Mapping and Planning Funding Application				
<b>a. Personnel</b>	\$ 936,861.00	\$	\$	\$	\$ 936,861.00
<b>b. Fringe Benefits</b>	0.00				
<b>c. Travel</b>	0.00				
<b>d. Equipment</b>	410,000.00				410,000.00
<b>e. Supplies</b>	0.00				
<b>f. Contractual</b>	834,639.00				834,639.00
<b>g. Construction</b>	0.00				
<b>h. Other</b>	2,634,773.00				2,634,773.00
<b>i. Total Direct Charges (sum of 6a-6h)</b>	4,816,273.00				\$ 4,816,273.00
<b>j. Indirect Charges</b>	0.00				\$
<b>k. TOTALS (sum of 6i and 6j)</b>	\$ 4,816,273.00	\$	\$	\$	\$ 4,816,273.00
<b>7. Program Income</b>	\$ 0.00	\$	\$	\$	\$

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SECTION C - NON-FEDERAL RESOURCES					
(a) Grant Program	(b) Applicant	(c) State	(d) Other Sources	(e) TOTALS	
8. <input style="width: 95%;" type="text"/>	\$ <input style="width: 95%;" type="text"/>	\$ <input style="width: 95%;" type="text"/>	\$ <input style="width: 95%;" type="text"/>	\$ <input style="width: 95%;" type="text"/>	
9. <input style="width: 95%;" type="text"/>	<input style="width: 95%;" type="text"/>	<input style="width: 95%;" type="text"/>	<input style="width: 95%;" type="text"/>	<input style="width: 95%;" type="text"/>	
10. <input style="width: 95%;" type="text"/>	<input style="width: 95%;" type="text"/>	<input style="width: 95%;" type="text"/>	<input style="width: 95%;" type="text"/>	<input style="width: 95%;" type="text"/>	
11. <input style="width: 95%;" type="text"/>	<input style="width: 95%;" type="text"/>	<input style="width: 95%;" type="text"/>	<input style="width: 95%;" type="text"/>	<input style="width: 95%;" type="text"/>	
<b>12. TOTAL (sum of lines 8-11)</b>	\$ <input style="width: 95%;" type="text"/>	\$ <input style="width: 95%;" type="text"/>	\$ <input style="width: 95%;" type="text"/>	\$ <input style="width: 95%;" type="text"/>	
SECTION D - FORECASTED CASH NEEDS					
	Total for 1st Year	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
13. Federal	\$ <input style="width: 95%;" type="text"/>	\$ <input style="width: 95%;" type="text"/>	\$ <input style="width: 95%;" type="text"/>	\$ <input style="width: 95%;" type="text"/>	\$ <input style="width: 95%;" type="text"/>
14. Non-Federal	\$ <input style="width: 95%;" type="text"/>	<input style="width: 95%;" type="text"/>	<input style="width: 95%;" type="text"/>	<input style="width: 95%;" type="text"/>	<input style="width: 95%;" type="text"/>
<b>15. TOTAL (sum of lines 13 and 14)</b>	\$ <input style="width: 95%;" type="text"/>	\$ <input style="width: 95%;" type="text"/>	\$ <input style="width: 95%;" type="text"/>	\$ <input style="width: 95%;" type="text"/>	\$ <input style="width: 95%;" type="text"/>
SECTION E - BUDGET ESTIMATES OF FEDERAL FUNDS NEEDED FOR BALANCE OF THE PROJECT					
(a) Grant Program	FUTURE FUNDING PERIODS (YEARS)				
	(b) First	(c) Second	(d) Third	(e) Fourth	
16. <input style="width: 95%;" type="text"/>	\$ <input style="width: 95%;" type="text"/>	\$ <input style="width: 95%;" type="text"/>	\$ <input style="width: 95%;" type="text"/>	\$ <input style="width: 95%;" type="text"/>	
17. <input style="width: 95%;" type="text"/>	<input style="width: 95%;" type="text"/>	<input style="width: 95%;" type="text"/>	<input style="width: 95%;" type="text"/>	<input style="width: 95%;" type="text"/>	
18. <input style="width: 95%;" type="text"/>	<input style="width: 95%;" type="text"/>	<input style="width: 95%;" type="text"/>	<input style="width: 95%;" type="text"/>	<input style="width: 95%;" type="text"/>	
19. <input style="width: 95%;" type="text"/>	<input style="width: 95%;" type="text"/>	<input style="width: 95%;" type="text"/>	<input style="width: 95%;" type="text"/>	<input style="width: 95%;" type="text"/>	
<b>20. TOTAL (sum of lines 16 - 19)</b>	\$ <input style="width: 95%;" type="text"/>	\$ <input style="width: 95%;" type="text"/>	\$ <input style="width: 95%;" type="text"/>	\$ <input style="width: 95%;" type="text"/>	
SECTION F - OTHER BUDGET INFORMATION					
21. Direct Charges: <input style="width: 95%;" type="text"/>	22. Indirect Charges: <input style="width: 95%;" type="text"/>				
23. Remarks: <input style="width: 95%;" type="text"/>					

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# Delaware Statewide Broadband Mapping and Planning Mapping Budget Narrative and Spreadsheet

DTI has identified four mapping activities which are discussed below. The mapping activities include:

1. Broadband and Spatial Data Collection
2. Data Verification and Validation
3. Broadband Mapping Application
4. Ongoing Updates

## *Activity 1: Broadband and Spatial Data Collection*

### **A. Program Description – Portion Requiring Federal Funding**

#### i. Data Collection from Service Providers

In the Delaware broadband mapping project's first activity, DTI plans to contract with other partners and the Institute of Public Administration (IPA) at the University of Delaware to assist with data collection and mapping.

The other partners will be responsible for identifying all service providers in the state. For each provider, they will establish a collaborative and cooperative relationship while ensuring the providers understand the goals and objectives of the state of Delaware and the NTIA. They will make certain that the providers fully understand the process of information gathering that will need to take place and will work with the providers to establish aggressive yet realistic timelines. For each provider, this step will also require the development and negotiation of a NDA that meets NTIA's requirements. Once the data is collected, it will be converted to the format required by NTIA, following the steps outlined in the program narrative.

#### ii. Data Collection from Community Anchor Institutions

The IPA will be responsible collecting and mapping broadband use data from community anchor institutions as defined and required by the NOFA. IPA has existing relationships with many of the schools, governments, public safety, higher education institutions, and community organizations from which data would need to be collected. These relationships could ease the time and effort required for data collection. Key tasks for this project include identifying Delaware's community anchor institutions, mapping these institutions, and conducting mailed and in-person surveys to determine the state of broadband service and use at these facilities.

#### iii. Personnel

DTI is requesting funding for a Project and Program Manager (PM) for the life of the program. During Activity 1, the PM will oversee the activities of the project partners. The PM will be involved in all communication activities and any coordination required with other state organizations. The PM will also facilitate



resolution of any issues and risks. DTI has a strong project methodology in place following Project Management Institute (PMI) methodology.

To determine project management costs, DTI estimated the number of PM hours per activity by taking a percentage of the total activity hours estimated by the partner and/or IPA, and applied the state's standard project management rate of \$80 per hour. More detailed calculations are shown on the "Estimate Details – Mapping" spreadsheet.

**B. Program Description –Applicant Match Portion**

**i. Data**

The state of Delaware collects a myriad of data that can be used in the broadband mapping project, as outlined in the following table:

<b>Data</b>	<b>Source</b>	<b>Description/Use</b>
Delaware Point Addresses	Counties	Matched to provider's service area
High Resolution Imagery	State of Delaware	Spatial reference of any paper maps, verification of infrastructure, address existence, and location
Cadastral (Parcels)	Counties	Identify and verify address existence and locations
Centerline Data (with address ranges)	State of Delaware and TeleAtlas	Map production and address verification
Basemap/Framework Layers	State of Delaware Organizations, Local Governments and Municipalities	Map production
2000 Census	U.S. Census Bureau	For demographic information and analysis of served, underserved, and unserved areas

For the purposes of the match, the state quantified the value of the centerline, and parcel data to be used for mapping during this phase of the project, for data verification, and for the public application and Web site development phase.

For **centerline data**, the state currently pays a contractor \$120,000 annually to collect and compile data provided by every county. If this data were unavailable to use for verification purposes, the state would be required to pay a contractor to collect it for this project annually. Therefore, costs are included for the first year during broadband and spatial data collection (Activity 1), and annually for the next four years as part of ongoing updates. The out-year costs are included under Activity 4.

The state is able to obtain data on 419,697 parcels from its three counties. If this data were unavailable to use for verification purposes, the state would need to obtain it from a vendor. The vendor informed DTI that the cost to collect this data ranges from \$0.50 to \$1.00 per parcel. Assuming a cost of \$0.75 per parcel, the cost to the state would be \$314,773 (419,697 \* \$0.75). This data is continually maintained and updated at an estimated cost of \$255,000 per year. Therefore, costs for data acquisition are included for the first year during Activity 1, and costs for four years of data maintenance and updates are included under Activity 4, ongoing updates.

ii. Ability to Secure Funding for Match

Most of the data being provided is routinely acquired by the state. Therefore, it is anticipated that the data will continue to be available for use by this project.

**C. Cost Summary for Activity 1: Broadband and Spatial Data Collection**

Table 1, “Cost Summary for Activity 1: Broadband and Spatial Data Collection,” provides a general overview of the costs for Activity 1. Please refer to the “Assumptions and Explanations” table for more details on cost calculations.

Note on Vendor Cost Estimates: The vendor from which DTI received bids for the various phases of this project is on the state-approved contractor list. This list consists of vendors that responded to a competitive bid for Professional Services. Each vendor is already on contract with the state to provide services at a negotiated rate. All references in the budget documents to a vendor or project partner refer to the same firm.

**Table 1. Cost Summary for Activity 1: Broadband and Spatial Data Collection**

<b>Grant Program Activities</b>	<b>Federal Funds</b>	<b>Match</b>
Provider Infrastructure and Subscriber Data Collection	\$ 131,128.00	\$ 0.00
Provider Infrastructure and Subscriber Data Mapping	\$ 84,658.00	\$ 0.00
Community Anchor Institutions Data Collection and Mapping	\$ 30,026.00	
Project and Program Manager	\$ 86,400.00	\$ 0.00
Provision of Centerline Data	\$ 0.00	\$ 120,000.00
Provision of Parcel Data	\$ 0.00	\$ 314,773.00
<b>Subtotals Activity 1</b>	<b>\$ 332,212.00</b>	<b>\$ 434,773.00</b>
<b>Total Activity 1 (federal funds plus match)</b>		<b>\$ 766,985.00</b>

## ***Activity 2: Data Verification and Validation***

### **A. Program Description – Portion Requiring Federal Funding**

#### **i. Verification & Validation**

Per the requirements of the NOFA, data must be verified by multiple means. DTI's partner will utilize scientifically valid random sampling techniques to verify customers are receiving the typical speeds defined by the providers. Broadband availability does not always follow set boundaries (such as a municipality or county), but is determined by the providers' anticipated return on their investment required to build a network to offer broadband. Knowing that system boundaries are often not well defined, the vendor will physically perform spot checks throughout the state to determine the accuracy of each provider's declared footprint or system boundaries.

Additionally, the vendor will perform random physical inspections of infrastructure networks to glean an overall understanding of the accuracy of the providers' information related to its footprint. However, the mere existence of infrastructure does not define if broadband is available and if broadband is available at the speeds offered by the provider. Therefore, residents will be randomly interviewed to gain an understanding of actual availability of service as well as service levels and speeds. Community anchor institution representatives will be similarly contacted concerning the transmission technologies used and transmission speeds achieved. Data will also be verified using various topology rules to ensure no geometry errors or oversights.

#### **ii. Personnel**

DTI is requesting funding for a Project and Program Manager (PM) for the life of the program. During Activity 2, the PM will continue to oversee the activities of the project partners. The PM will also facilitate resolution of any issues and risks. DTI has a strong project methodology in place following Project Management Institute (PMI) methodology. The PM hourly rate is \$80. DTI estimated the number of PM hours per activity by taking a percentage of the total activity hours estimated by the partner and/or IPA. More detailed calculations are shown on the "Estimate Details – Mapping" spreadsheet.

### **B. Cost Summary for Activity 2: Data Verification and Validation**

Table 2, "Cost Summary for Activity 2: Data Verification and Validation," provides a general overview of the costs for Activity 2. Please refer to the "Assumptions and Explanations" table for more details on cost calculations.

**Table 2. Cost Summary for Activity 2: Data Verification and Validation**

<b>Grant Program Activities</b>	<b>Federal Funds</b>	<b>Match</b>
Field Verification	\$ 55,493.00	\$ 0.00
Project and Program Manager	\$ 18,576.00	\$ 0.00
<b>Subtotals Activity 2</b>	<b>\$ 74,069.00</b>	<b>\$ 0.00</b>
<b>Total Activity 2 (federal funds plus match)</b>		<b>\$ 74,069.00</b>

***Activity 3: Broadband Mapping Application***

**A. Program Description – Portion Requiring Federal Funding**

**i. Public Application and Web site Development**

The partner would develop and deploy a user-friendly, visually appealing Web application that engages and educates the general public. The application would display detailed information that educates users on broadband availability in Delaware. It would contain many of the basic Web mapping tools, including zoom in and out and query, and would also display icons of the selected features, with informative boxes populated with vital data regarding the specific information needed. Additionally, the application would be designed to facilitate future data updates and the infrastructure planning process by incorporating demographic, infrastructure, and housing, commercial and institutional land uses.

**ii. Public Awareness Campaign**

DTI intends to contract with IPA to facilitate enhanced public and policymaker understanding of the current state of broadband in Delaware. Current use, service characteristics, and policy issues would be summarized in a brochure and policy report. Both documents would be made available to the public online and in hard copy. A policy forum would be convened to raise awareness about these issues and begin a conversation on a desirable path forward for broadband in Delaware.

**iii. Hardware and Software to Support Public Application**

The infrastructure required to support the application is based on a standard four-tier client server configuration including proxy server, Web server, application server and database server. The servers will be configured according to the system design, most likely using Windows Server and Microsoft .NET technology. DTI anticipates using Oracle for the database and SAN storage for data storage and disk space. Costs for hardware include servers required to support the anticipated use of the application, rack and data center resources (power) for the hardware, and software for the operating systems, application software (ESRI), database and all other support software such as backups and monitoring.

#### iv. Personnel

DTI is requesting funding for a Project and Program Manager (PM) for the life of the program. During Activity 3, the PM will continue to oversee the activities of the project partners. The PM will also facilitate resolution of any issues and risks. DTI has a strong project methodology in place following Project Management Institute (PMI) methodology. The PM hourly rate is \$80. DTI estimated the number of PM hours per activity by taking a percentage of the total activity hours estimated by the partner and/or IPA. More detailed calculations are shown on the "Estimate Details – Mapping" spreadsheet.

DTI is also requesting funding for Technical Support (Software Engineer) for Activity 3. The Software Engineer will work with the partners to develop requirements, design functionality, test the programming, liaise with the user community, conduct code reviews, and provide general technical support for the application during the system development lifecycle. DTI has a strong methodology in place for the System Development Life Cycle. The Software Engineer hourly rate is \$80. DTI estimated the number of Software Engineer hours per activity by taking a percentage of the total activity hours estimated by the partner and/or IPA. More detailed calculations are shown on the "Estimate Details – Mapping" spreadsheet.

#### **B. Program Description – Applicant Match Portion**

DTI will host the broadband mapping application in the state's data center. The match includes services and personnel time for resources necessary to build and support the infrastructure. While the partner is building the actual application, the DTI resources would be working on hardware and software acquisition, racking and physical configuration of the hardware, installation of all operating and support software, and ultimately involved in the installation of the final application once completed by the partner. Hosting of the application will entail ongoing support from our Systems Administration (production support team), Systems Engineering (second level support) and Applications Delivery (software engineer for application support). Once the partner completes the application, support will be the sole responsibility of DTI. The partner will not have any access to the infrastructure and any application changes or maintenance will follow defined change control procedures.

Specific cost items included in this portion of the state's match are:

- **Systems Engineering** – This team is responsible for configuration and second level support of all client server, database and mainframe systems. The team must set up the servers and install the foundation software for the system. They also provide second level support of applications after they go live.
- **Telecomm Personnel** – Telecomm supports the network infrastructure for the state. They maintain the firewalls and all networking capability. They will be involved with the placement of the application in the correct de-militarized zone (DMZ), secure segment of the network blocked from other segments, establishment of the DMZ's and firewall rules and any other network infrastructure requirements.

- **Data Center Personnel and Operations** – The Data Center is a Class 7 facility that provides floor space for the rack and servers, power and redundant power, tape backups and offsite backups, fire protection, and other necessary components.
- **Security Office and Business Continuity Personnel** – The Security Office is responsible for maintaining cyber security. The Business Continuity group is responsible for continuity of operations. These groups will be involved in ensuring that the application meets all security requirements, and in defining the business continuity and disaster recovery plans for the application. They also will conduct ongoing disaster recovery preparedness exercises.

To project costs for each of the above program elements in the first year of Activity 3, DTI evaluated the project requirements and estimated the necessary work hours. Then, for each program element, the state’s standard hourly rates were applied. More detailed calculations are shown on the "Estimate Details – Mapping" spreadsheet.

- C. **Cost Summary for Activity 3: Broadband Mapping Application**  
 Table 3, “Cost Summary for Activity 3: Broadband Mapping Application,” provides a general overview of the costs for Activity 3. Please refer to the “Assumptions and Explanations” table for more details on cost calculations.

**Table 3. Cost Summary for Activity 3: Broadband Mapping Application**

<b>Grant Program Activities</b>	<b>Federal Funds</b>	<b>Match</b>
Web site and Application Development	\$ 115,484.00	\$ 0.00
Public Awareness Campaign	\$ 29,210.00	\$ 0.00
Application Hardware	\$ 200,000.00	\$ 0.00
Application Software	\$ 210,000.00	\$ 0.00
Project and Program Manager	\$ 113,292.00	\$ 0.00
Technical Support	\$ 44,000	\$ 0.00
Systems Engineering	\$ 0.00	\$ 121,963.00
Telecomm Personnel	\$ 0.00	\$ 9,720.00
Data Center Personnel and Operations	\$ 0.00	\$ 1,350.00
Security Office and Business Continuity Personnel	\$ 0.00	\$ 9,560.00
<b>Subtotals Activity 3</b>	<b>\$ 711,986.00</b>	<b>\$ 142,593.00</b>
<b>Total Activity 3 (federal funds plus match)</b>		<b>\$ 854,579.00</b>

#### ***Activity 4: Ongoing Updates***

##### **A. Program Description – Portion Requiring Federal Funding**

###### **i. Collect Updated Provider and Community Anchor Institution Data**

During this phase of the project, DTI and its partners would update the provider data bi-annually as defined in the requirements of the NOFA. DTI anticipates ongoing updates to be a collaboration of our partners, IPA, providers and potentially schools to aid in verification. Community anchor data will also be updated with supplemental information such as institution size, identification of broadband uses and exiting issues, self-assessments, terminal availability and usage statistics, and demographics.

###### **ii. Data and Mapping Maintenance**

Updates would include ongoing patches and maintenance of the public broadband application that may be provided by the partner, verification of any data updates from the providers, and the formatting of the data to send to NTIA. In addition, DTI is requesting funding to acquire updated aerial imagery data. The state has historically collected aerial imagery data every five years. The next planned update is in 2012, but the state is unsure of its ability to fund this update. The aerial imagery collected in 2007 included several by-products, such as land use and elevation, which are important not only for the mapping component of this project, but also for planning any future infrastructure improvements. This data collection is a vital part of the state's geospatial framework. Therefore, updates of this data would be very valuable to the broadband mapping program and future planning. When this data was most recently collected in 2007, the total cost was \$637,027, of which the state contributed \$337,027 and the federal government \$300,000. Since the state is unsure it will have funding available for the next update, the grant request includes \$700,000 for the data collection in 2012. The requested cost is slightly greater than the 2007 cost in order to capture anticipated cost increases for this service.

###### **iii. Ongoing Program and Application Support**

In addition to the request for funding for ongoing project management oversight as described in Activities 1 and 2, DTI is also requesting funding for Technical Support Staff for Activity 4. To estimate support staff costs, DTI projected the number of support staff hours by taking a percentage of the total activity hours estimated by the program partners, and applied the state's standard rate for technical support staff of \$80 per hour. More detailed calculations are shown on the "Estimate Details – Mapping" spreadsheet.

##### **B. Program Description – Applicant Match Portion**

###### **i. Provide Updated Data**

As described in Activity 1, the state currently obtains centerline, parcel, and aerial imagery data that will be used for this project. The estimated costs of initially acquiring those data are included under Activity 1. The state will be providing out-year updates of these data as follows:

- The state pays a contractor \$120,000 annually to collect and compile **centerline data** provided by every county. The cost of annually updating this data for the four out-years of the program would be \$480,000.
- The state obtains data on 419,697 **parcels** from its three counties. This data is continually maintained and updated at an estimated cost of \$255,000 per year. The cost of annually updating this data for the four out-years of the program would be \$1,020,000.

**C. Cost Summary for Activity 4: Ongoing Updates**

Table 4, “Cost Summary for Activity 4: Ongoing Updates,” provides a general overview of the costs for Activity 4. Please refer to the “Assumptions and Explanations” table for more details on cost calculations.

**Table 4. Cost Summary for Activity 4: Ongoing Updates**

<b>Grant Program Activities</b>	<b>Federal Funds</b>	<b>Match</b>
Collect Updated Data	\$ 244,640.00	\$ 0.00
Data and Mapping Maintenance	\$ 144,000.00	\$ 0.00
Provision of Updated Aerial Imagery Data	\$ 700,000.00	\$ 0.00
Project and Program Manager	\$ 84,000.00	\$ 0.00
Technical Support Staff	\$ 448,000.00	\$ 0.00
Provision of Updated Centerline Data	\$ 0.00	\$ 480,000.00
Provision of Updated Parcel Data	\$ 0.00	\$ 1,020,000.00
<b>Subtotals Activity 4</b>	<b>\$ 1,620,640</b>	<b>\$ 1,500,000</b>
<b>Total Activity 4 (federal funds plus match)</b>		<b>\$ 3,120,640</b>



*Mapping Budget Summary*

**Table 5. Budget Summary for Mapping Activities**

<b>Grant Program Activities</b>	<b>Federal Funds</b>	<b>Match</b>	<b>Total Costs</b>
Broadband Mapping and Spatial Data Collection	\$ 434,773.00	\$ 332,212.00	\$ 766,985.00
Data Verification and Validation	\$ 74,069.00	\$ 0.00	\$ 74,069.00
Broadband Mapping Application	\$ 711,986.00	\$ 142,593.00	\$ 854,579.00
Ongoing Updates	\$ 1,620,640.00	\$ 1,500,000.00	\$ 3,120,640.00
<b>Totals</b>	<b>\$ 2,738,907.00</b>	<b>\$ 2,077,366.00</b>	<b>\$ 4,816,273.00</b>
<b>Match as Percent of Federal Funds Requested:</b>			<b>76 %</b>

		a.	b.	c.	d.	e.	f.	g.	h.
		Assumptions & Explanations (see below)							
Grant Program Activities		Personnel	Fringe Benefits	Travel	Equipment	Supplies	Contractual	Construction	Other
<b>1 Broadband &amp; Spatial Data Collection</b>									
Provider Infrastructure and Subscriber Data Collection	a	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 131,128.00	\$ -	\$ -
Provider Infrastructure and Subscriber Data Mapping	a	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 84,658.00	\$ -	\$ -
Community Anchor Institutions Data Collection & Mapping	b	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 30,026.00	\$ -	\$ -
Provision of Centerline Data	c	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 120,000.00
Provision of Parcel Data	d	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 314,773.00
Project and Program Manager	e	\$ 86,400.00	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
<b>Activity 1 Subtotal</b>		<b>\$ 86,400.00</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 245,812.00</b>	<b>\$ -</b>	<b>\$ 434,773.00</b>
<b>2 Data Verification &amp; Validation</b>									
Field Verification	f	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 55,493.00	\$ -	\$ -
Project and Program Manager	e	\$ 18,576.00	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
<b>Activity 2 Subtotal</b>		<b>\$ 18,576.00</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 55,493.00</b>	<b>\$ -</b>	<b>\$ -</b>
<b>3 Broadband Mapping Application</b>									
Web site/Application Development	g	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 115,484.00	\$ -	\$ -
Public Awareness Campaign	h	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 29,210.00	\$ -	\$ -
Application Hardware	i	\$ -	\$ -	\$ -	\$ 200,000.00	\$ -	\$ -	\$ -	\$ -
Application Software	i	\$ -	\$ -	\$ -	\$ 210,000.00	\$ -	\$ -	\$ -	\$ -
Project and Program Manager	e	\$ 113,292.00	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Technical Support Staff	q	\$ 44,000.00	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Systems Engineering	j	\$ 121,963.00	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Telecomm Personnel	k	\$ 9,720.00	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Data Center Personnel and Operations	l	\$ 1,350.00	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Security Office/Business Continuity Personnel	m	\$ 9,560.00	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
<b>Activity 3 Subtotal</b>		<b>\$ 299,885.00</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 410,000.00</b>	<b>\$ -</b>	<b>\$ 144,694.00</b>	<b>\$ -</b>	<b>\$ -</b>
<b>4 Ongoing Updates</b>									
Collect Updated Data	n	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 244,640.00	\$ -	\$ -
Data and Mapping Maintenance	o	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 144,000.00	\$ -	\$ -
Provision of Updated Aerial Imagery Data	p	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 700,000.00
Provision of Updated Centerline Data	c	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 480,000.00
Provision of Updated Parcel Data	d	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,020,000.00
Project and Program Manager	e	\$ 84,000.00	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Technical Support Staff	q	\$ 448,000.00	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
<b>Activity 4 Subtotal</b>		<b>\$ 532,000.00</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 388,640.00</b>	<b>\$ -</b>	<b>\$ 2,200,000.00</b>
<b>TOTALS</b>		<b>\$ 936,861.00</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 410,000.00</b>	<b>\$ -</b>	<b>\$ 834,639.00</b>	<b>\$ -</b>	<b>\$ 2,634,773.00</b>

Grant Program Activities	i.		j.		k.		Non-Federal Resources:	
	Total Direct Charges	Indirect Charges	TOTALS	Applicant Match	Federal Funds Needed			
<b>1 Broadband &amp; Spatial Data Collection</b>								
Provider Infrastructure and Subscriber Data Collection	\$ 131,128.00	\$ -	\$ 131,128.00	\$ -	\$ 131,128.00			
Provider Infrastructure and Subscriber Data Mapping	\$ 84,658.00	\$ -	\$ 84,658.00	\$ -	\$ 84,658.00			
Community Anchor Institutions Data Collection & Mapping	\$ 30,026.00	\$ -	\$ 30,026.00	\$ -	\$ 30,026.00			
Provision of Centerline Data	\$ 120,000.00	\$ -	\$ 120,000.00	\$ 120,000.00	\$ -			
Provision of Parcel Data	\$ 314,773.00	\$ -	\$ 314,773.00	\$ 314,773.00	\$ -			
Project and Program Manager	\$ 86,400.00	\$ -	\$ 86,400.00	\$ -	\$ 86,400.00			
<b>Activity 1 Subtotal</b>	<b>\$ 766,985.00</b>	<b>\$ -</b>	<b>\$ 766,985.00</b>	<b>\$ 434,773.00</b>	<b>\$ 332,212.00</b>			
<b>2 Data Verification &amp; Validation</b>								
Field Verification	\$ 55,493.00	\$ -	\$ 55,493.00	\$ -	\$ 55,493.00			
Project and Program Manager	\$ 18,576.00	\$ -	\$ 18,576.00	\$ -	\$ 18,576.00			
<b>Activity 2 Subtotal</b>	<b>\$ 74,069.00</b>	<b>\$ -</b>	<b>\$ 74,069.00</b>	<b>\$ -</b>	<b>\$ 74,069.00</b>			
<b>3 Broadband Mapping Application</b>								
Web site/Application Development	\$ 115,484.00	\$ -	\$ 115,484.00	\$ -	\$ 115,484.00			
Public Awareness Campaign	\$ 29,210.00	\$ -	\$ 29,210.00	\$ -	\$ 29,210.00			
Application Hardware	\$ 200,000.00	\$ -	\$ 200,000.00	\$ -	\$ 200,000.00			
Application Software	\$ 210,000.00	\$ -	\$ 210,000.00	\$ -	\$ 210,000.00			
Project and Program Manager	\$ 113,292.00	\$ -	\$ 113,292.00	\$ -	\$ 113,292.00			
Technical Support Staff	\$ 44,000.00	\$ -	\$ 44,000.00	\$ -	\$ 44,000.00			
Systems Engineering	\$ 121,963.00	\$ -	\$ 121,963.00	\$ 121,963.00	\$ -			
Telecomm Personnel	\$ 9,720.00	\$ -	\$ 9,720.00	\$ 9,720.00	\$ -			
Data Center Personnel and Operations	\$ 1,350.00	\$ -	\$ 1,350.00	\$ 1,350.00	\$ -			
Security Office/Business Continuity Personnel	\$ 9,560.00	\$ -	\$ 9,560.00	\$ 9,560.00	\$ -			
<b>Activity 3 Subtotal</b>	<b>\$ 854,579.00</b>	<b>\$ -</b>	<b>\$ 854,579.00</b>	<b>\$ 142,593.00</b>	<b>\$ 711,986.00</b>			
<b>4 Ongoing Updates</b>								
Collect Updated Data	\$ 244,640.00	\$ -	\$ 244,640.00	\$ -	\$ 244,640.00			
Data and Mapping Maintenance	\$ 144,000.00	\$ -	\$ 144,000.00	\$ -	\$ 144,000.00			
Provision of Updated Aerial Imagery Data	\$ 700,000.00	\$ -	\$ 700,000.00	\$ -	\$ 700,000.00			
Provision of Updated Centerline Data	\$ 480,000.00	\$ -	\$ 480,000.00	\$ 480,000.00	\$ -			
Provision of Updated Parcel Data	\$ 1,020,000.00	\$ -	\$ 1,020,000.00	\$ 1,020,000.00	\$ -			
Project and Program Manager	\$ 84,000.00	\$ -	\$ 84,000.00	\$ -	\$ 84,000.00			
Technical Support Staff	\$ 448,000.00	\$ -	\$ 448,000.00	\$ -	\$ 448,000.00			
<b>Activity 4 Subtotal</b>	<b>\$ 3,120,640.00</b>	<b>\$ -</b>	<b>\$ 3,120,640.00</b>	<b>\$ 1,500,000.00</b>	<b>\$ 1,620,640.00</b>			
<b>TOTALS</b>	<b>\$ 4,816,273.00</b>	<b>\$ -</b>	<b>\$ 4,816,273.00</b>	<b>\$ 2,077,366.00</b>	<b>\$ 2,738,907.00</b>			
								76%

Match as percent of federal funds requested:

**Assumptions & Explanations**

a	DTI received bids for provider infrastructure and subscriber data collection and mapping from an outside vendor and from the Institute of Public Administration (IPA) at the University of Delaware. The vendor from which DTI received bids for the various phases of this project is on the state-approved contractor list. This list consists of vendors that responded to a competitive bid for Professional Services. Each vendor is already on contract with the state to provide services at a negotiated rate. All cost estimates based on vendor bids are based on the bids from this vendor and IPA.
b	The IPA provided a bid for collecting and mapping community anchor institution data.
c	The state currently pays a contractor \$120,000 annually to collect and compile centerline data provided by every county. If this data was unavailable to use for verification purposes, the state would be required to pay a contractor to collect it for this project annually. Therefore, costs are assumed for each year of the project. Year 1 costs are recorded under Activity 1; year 2 through 5 costs are shown under Activity 4.
d	The state is able to obtain data on 419,697 parcels from its three counties. DTI was informed the private partner that the cost to collect this data would range from \$0.50 to \$1.00 per parcel. If this data was unavailable to use for verification purposes, the state would need to obtain it from a vendor. Assuming a cost of \$0.75 per parcel, the cost to the state to acquire this data for Activity 1 would be \$314,773 (419,697 * \$0.75). This data is continually maintained and updated. If the state would need to assume these ongoing costs, they are estimated to be \$255,000 annually, for out-year costs totaling \$1,020,000.
e	DTI is requesting funding for a Project and Program Manager (PM) for the life of the program. The PM hourly rate is \$80. DTI estimated the number of PM hours per activity by taking a percentage of the total activity hours estimated by the private partner and/or IPA. More detailed calculations are shown on the "Estimate Details - Mapping" spreadsheet.
f	DTI received a bid for field verification from a vendor that is on the state-approved contractor list (see Assumptions & Explanations "a" for note on the list). The vendor estimated that it would require 645 hours for field verification.
g	DTI received a bid for Web site / application development from a vendor that is on the state-approved contractor list (see Assumptions & Explanations "a" for note on the list). The vendor estimated that it would require 1,130 hours for Web site / application development.
h	The IPA provided a bid for conducting a public awareness campaign.
i	Hardware and software costs for the application were estimated by DTI based on costs it has incurred on previous projects for similar equipment.
j	DTI will provide Systems Engineering for Activity 3. The System Engineering hourly rate is \$97.50. DTI estimated 695 hours would be needed in year 1, and 20 percent of those hours would be needed in each of the out-years. More detailed calculations are shown on the "Estimate Details - Mapping" spreadsheet.
k	DTI will provide Telecomm Personnel for Activity 3. The hourly rate is \$100.00. DTI estimated 54 hours would be needed in year 1, and 20 percent of those hours would be needed in each of the out-years. More detailed calculations are shown on the "Estimate Details - Mapping" spreadsheet.
l	DTI will provide Data Center and Operations Personnel for Activity 3. The hourly rate is \$50.00. DTI estimated 15 hours would be needed in year 1, and 20 percent of those hours would be needed in each of the out-years. More detailed calculations are shown on the "Estimate Details - Mapping" spreadsheet.
m	DTI will provide Security Office and Business Continuity Personnel for Activity 3. The hourly rate is \$70.00. DTI estimated 75 hours would be needed in year 1, and 20 percent of those hours would be needed in each of the out-years. More detailed calculations are shown on the "Estimate Details - Mapping" spreadsheet.
n	The IPA provided a bid for biannual updating infrastructure and subscriber data, and for updating community anchor institution data. The estimate for each update is \$30,580. These costs would be incurred twice a year for the four out-years of the project. Therefore, the total cost for these services would be \$244,640.
o	DTI received a bid for data and mapping maintenance from a vendor that is on the state-approved contractor list (see Assumptions & Explanations "a" for note on the list). The vendor estimated that it would cost \$36,000 annually to conduct data and mapping maintenance. These costs would be incurred annually for four years, for total costs of \$144,000.
p	Historically, every five years the state has collected aerial imagery data. When this data was most recently collected in 2007, the total cost was \$637,027. Of this amount, the state contributed \$337,027 and the federal government \$300,000. Some of the state portion was counted as a match in a previous grant application so was not included as a match in this application. The state is anticipating collecting this data again in 2012 as part of ongoing updates, but funding availability for these updates is uncertain. Therefore, DTI is requesting federal funding for the updated aerial imagery data collection as part of its grant application. The requested cost is slightly greater than the 2007 cost in order to capture anticipated cost increases for this service.
q	DTI is requesting funding for Technical Support Staff for Activities 3 & 4. The hourly rate is \$80.00. DTI estimated the number of support staff hours by taking a percentage of the total activity hours estimated by the vendor and IPA. More detailed calculations are shown on the "Estimate Details - Mapping" spreadsheet.

	2009-2010	2011	2012	2013	2014	Out-year Totals	Project Totals
<b>Centerline Data</b>							
Activity 1	\$ 120,000.00	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 120,000.00
Activity 4	\$ -	\$ 120,000.00	\$ 120,000.00	\$ 120,000.00	\$ 120,000.00	\$ 480,000.00	\$ 480,000.00
<b>Total</b>	<b>\$ 120,000.00</b>	<b>\$ 120,000.00</b>	<b>\$ 120,000.00</b>	<b>\$ 120,000.00</b>	<b>\$ 120,000.00</b>	<b>\$ 480,000.00</b>	<b>\$ 600,000.00</b>

<b>Parcel Data (Act. 1 &amp; 4)</b>							
New Castle County Parcels	\$ 142,909.50	\$ 85,000.00	\$ 85,000.00	\$ 85,000.00	\$ 85,000.00	\$ 340,000.00	\$ 482,909.50
Kent County Parcels	\$ 74,403.00	\$ 85,000.00	\$ 85,000.00	\$ 85,000.00	\$ 85,000.00	\$ 340,000.00	\$ 414,403.00
Sussex County Parcels	\$ 97,460.25	\$ 85,000.00	\$ 85,000.00	\$ 85,000.00	\$ 85,000.00	\$ 340,000.00	\$ 437,460.25
<b>Total</b>	<b>\$ 314,772.75</b>	<b>\$ 255,000.00</b>	<b>\$ 255,000.00</b>	<b>\$ 255,000.00</b>	<b>\$ 255,000.00</b>	<b>\$ 1,020,000.00</b>	<b>\$ 1,334,772.75</b>
	Parcel Data	# Records		Cost Per Record		Total Cost	
	New Castle County	190,546		\$ 0.75		\$ 142,910	
	Kent County	99,204		\$ 0.75		\$ 74,403	
	Sussex County	129,947		\$ 0.75		\$ 97,460	
	<b>Totals</b>	<b>419,697</b>				<b>314,773</b>	

<b>Project and Program Manager (Activity 1)</b>							
Personnel	Hours	Cost					
Project Management (PM)	600	\$ 48,000.00	\$ 9,600.00	\$ 9,600.00	\$ 9,600.00	\$ 9,600.00	\$ 38,400.00
<b>Subtotal</b>	<b>600</b>	<b>\$ 48,000.00</b>	<b>\$ 9,600.00</b>	<b>\$ 9,600.00</b>	<b>\$ 9,600.00</b>	<b>\$ 9,600.00</b>	<b>\$ 38,400.00</b>
	Hourly Rate	\$ 80.00					
	2,000	◀ Hours from Partner Proposals					
	0.30	◀ Initial Multiplier (Year 1 PM hours per partner hour)					
	0.06	◀ Out-year Multiplier (Out-year PM hours per partner hour)					

<b>Project and Program Manager (Activity 2)</b>							
Personnel	Hours	Cost					
Project Management (PM)	129	\$ 10,320.00	\$ 2,064.00	\$ 2,064.00	\$ 2,064.00	\$ 2,064.00	\$ 8,256.00
<b>Subtotal</b>	<b>129</b>	<b>\$ 10,320.00</b>	<b>\$ 2,064.00</b>	<b>\$ 2,064.00</b>	<b>\$ 2,064.00</b>	<b>\$ 2,064.00</b>	<b>\$ 8,256.00</b>
	Hourly Rate	\$ 80.00					
	645	◀ Hours from Partner Proposals					
	0.20	◀ Initial Multiplier (Year 1 PM hours per partner hour)					
	0.04	◀ Out-year Multiplier (Out-year PM hours per partner hour)					

<b>Systems Engineering (Activity 3)</b>									
Personnel	Hours	Cost							
Database Engineering/Installation	38	\$ 3,705.00	\$ 730.00	\$ 730.00	\$ 730.00	\$ 730.00	\$ 730.00	\$ 730.00	\$ 2,920.00
Windows Server	40	\$ 3,900.00	\$ 780.00	\$ 780.00	\$ 780.00	\$ 780.00	\$ 780.00	\$ 780.00	\$ 3,120.00
Linux Servers	8	\$ 780.00	\$ 160.00	\$ 160.00	\$ 160.00	\$ 160.00	\$ 160.00	\$ 160.00	\$ 640.00
Virtual Servers	47	\$ 4,583.00	\$ 920.00	\$ 920.00	\$ 920.00	\$ 920.00	\$ 920.00	\$ 920.00	\$ 3,680.00
Web/Middleware	300	\$ 29,250.00	\$ 5,850.00	\$ 5,850.00	\$ 5,850.00	\$ 5,850.00	\$ 5,850.00	\$ 5,850.00	\$ 23,400.00
Cross-team coordination	72	\$ 7,020.00	\$ 1,400.00	\$ 1,400.00	\$ 1,400.00	\$ 1,400.00	\$ 1,400.00	\$ 1,400.00	\$ 5,600.00
Backup Requirements	30	\$ 2,925.00	\$ 590.00	\$ 590.00	\$ 590.00	\$ 590.00	\$ 590.00	\$ 590.00	\$ 2,360.00
Security	40	\$ 3,900.00	\$ 780.00	\$ 780.00	\$ 780.00	\$ 780.00	\$ 780.00	\$ 780.00	\$ 3,120.00
Establish Monitoring	20	\$ 1,950.00	\$ 390.00	\$ 390.00	\$ 390.00	\$ 390.00	\$ 390.00	\$ 390.00	\$ 1,560.00
Second Level Support	100	\$ 9,750.00	\$ 1,950.00	\$ 1,950.00	\$ 1,950.00	\$ 1,950.00	\$ 1,950.00	\$ 1,950.00	\$ 7,800.00
<b>Subtotal</b>	<b>695</b>	<b>\$ 67,763.00</b>	<b>\$ 13,550.00</b>	<b>\$ 13,550.00</b>	<b>\$ 13,550.00</b>	<b>\$ 13,550.00</b>	<b>\$ 13,550.00</b>	<b>\$ 13,550.00</b>	<b>\$ 54,200.00 \$ 121,963.00</b>
Hourly Rate		\$ 97.50							
Year 1 hours from DTI analysis of project needs									
0.20 ◀ Out-year Multiplier (Out-year Systems Engineering hours per year 1 project hour)									

<b>Telecomm Personnel (Activity 3)</b>									
Personnel	Hours	Cost							
System Functions	20	\$ 2,000.00	\$ 400.00	\$ 400.00	\$ 400.00	\$ 400.00	\$ 400.00	\$ 400.00	\$ 1,600.00
Server/System Communications	15	\$ 1,500.00	\$ 300.00	\$ 300.00	\$ 300.00	\$ 300.00	\$ 300.00	\$ 300.00	\$ 1,200.00
Network Communications	15	\$ 1,500.00	\$ 300.00	\$ 300.00	\$ 300.00	\$ 300.00	\$ 300.00	\$ 300.00	\$ 1,200.00
Security Requirements	4	\$ 400.00	\$ 80.00	\$ 80.00	\$ 80.00	\$ 80.00	\$ 80.00	\$ 80.00	\$ 320.00
<b>Subtotal</b>	<b>54</b>	<b>\$ 5,400.00</b>	<b>\$ 1,080.00</b>	<b>\$ 1,080.00</b>	<b>\$ 1,080.00</b>	<b>\$ 1,080.00</b>	<b>\$ 1,080.00</b>	<b>\$ 1,080.00</b>	<b>\$ 4,320.00 \$ 9,720.00</b>
Hourly Rate		\$ 100.00							
Year 1 hours from DTI analysis of project needs									
0.20 ◀ Out-year Multiplier (Out-year Telecomm hours per year 1 project hour)									

<b>Data Center Personnel and Operations (Activity 3)</b>									
Personnel	Hours	Cost							
Hardware Configuration/Installation	3	\$ 150.00	\$ 30.00	\$ 30.00	\$ 30.00	\$ 30.00	\$ 30.00	\$ 30.00	\$ 120.00
Ongoing Support	10	\$ 500.00	\$ 100.00	\$ 100.00	\$ 100.00	\$ 100.00	\$ 100.00	\$ 100.00	\$ 400.00
Change Control Process	2	\$ 100.00	\$ 20.00	\$ 20.00	\$ 20.00	\$ 20.00	\$ 20.00	\$ 20.00	\$ 80.00
<b>Subtotal</b>	<b>15</b>	<b>\$ 750.00</b>	<b>\$ 150.00</b>	<b>\$ 150.00</b>	<b>\$ 150.00</b>	<b>\$ 150.00</b>	<b>\$ 150.00</b>	<b>\$ 150.00</b>	<b>\$ 600.00 \$ 1,350.00</b>
Hourly Rate		\$ 50.00							
Year 1 hours from DTI analysis of project needs									
0.20 ◀ Out-year Multiplier (Out-year Data Center hours per year 1 project hour)									

<b>Security Office / Business Continuity Personnel (Activity 3)</b>									
Personnel	Hours	Cost							
Hardware Configuration/Installation	38	\$ 2,660.00	\$ 530.00	\$ 530.00	\$ 530.00	\$ 530.00	\$ 530.00	\$ 2,120.00	
Disaster Recovery/Business Continuit	38	\$ 2,660.00	\$ 530.00	\$ 530.00	\$ 530.00	\$ 530.00	\$ 530.00	\$ 2,120.00	
<b>Subtotal</b>	<b>75</b>	<b>\$ 5,320.00</b>	<b>\$ 1,060.00</b>	<b>\$ 1,060.00</b>	<b>\$ 1,060.00</b>	<b>\$ 1,060.00</b>	<b>\$ 1,060.00</b>	<b>\$ 4,240.00</b>	<b>\$ 9,560.00</b>
Hourly Rate		\$ 70.00							
Year 1 hours from DTI analysis of project needs									
0.20 ◀ Out-year Multiplier (Out-year Security Office hours per year 1 project hour)									

<b>Technical Support Staff (Activity 3)</b>									
Personnel	Hours	Cost							
Administration, Testing, Deployment	150	\$ 12,000.00	\$ 3,600.00	\$ 3,600.00	\$ 3,600.00	\$ 3,600.00	\$ 3,600.00	\$ 14,400.00	
Functional & Technical Specs Design	100	\$ 8,000.00	\$ 2,400.00	\$ 2,400.00	\$ 2,400.00	\$ 2,400.00	\$ 2,400.00	\$ 9,600.00	
<b>Subtotal</b>	<b>250</b>	<b>\$ 20,000.00</b>	<b>\$ 6,000.00</b>	<b>\$ 6,000.00</b>	<b>\$ 6,000.00</b>	<b>\$ 6,000.00</b>	<b>\$ 6,000.00</b>	<b>\$ 24,000.00</b>	<b>\$ 44,000.00</b>
Hourly Rate		\$ 80.00							
Year 1 hours from DTI analysis of project needs									
0.30 ◀ Out-year Multiplier (Out-year Technical Support hours per year 1 project hour)									

<b>Project and Program Manager (Activity 3)</b>									
Personnel	Hours	Cost							
Project Management (PM)	787	\$ 62,940.00	\$ 12,588.00	\$ 12,588.00	\$ 12,588.00	\$ 12,588.00	\$ 12,588.00	\$ 50,352.00	
<b>Subtotal</b>	<b>787</b>	<b>\$ 62,940.00</b>	<b>\$ 12,588.00</b>	<b>\$ 12,588.00</b>	<b>\$ 12,588.00</b>	<b>\$ 12,588.00</b>	<b>\$ 12,588.00</b>	<b>\$ 50,352.00</b>	<b>\$ 113,292.00</b>
Hourly Rate		\$ 80.00							
2,623 ◀ Hours from Partner Proposals									
0.30 ◀ Initial Multiplier (Year 1 PM hours per partner hour)									
0.06 ◀ Out-year Multiplier (Out-year PM hours per partner hour)									

<b>Project and Program Manager (Activity 4)</b>									
<b>Personnel</b>	<b>Hours</b>	<b>Cost</b>							
Project Management (PM)	350	\$ 28,000.00	\$ 14,000.00	\$ 14,000.00	\$ 14,000.00	\$ 14,000.00	\$ 14,000.00	\$ 14,000.00	\$ 56,000.00
<b>Subtotal</b>	<b>350</b>	<b>\$ 28,000.00</b>	<b>\$ 14,000.00</b>	<b>\$ 14,000.00</b>	<b>\$ 14,000.00</b>	<b>\$ 14,000.00</b>	<b>\$ 14,000.00</b>	<b>\$ 14,000.00</b>	<b>\$ 56,000.00</b>
	Hourly Rate	\$ 80.00							
	3,500	◀ Hours from Partner Proposals							
	0.10	◀ Initial Multiplier (Year 1 PM hours per partner hour)							
	0.05	◀ Out-year Multiplier (Out-year PM hours per partner hour)							

<b>Technical Support Staff (Activity 4)</b>									
<b>Personnel</b>	<b>Hours</b>	<b>Cost</b>							
Technical Support	1,400	\$ 112,000.00	\$ 84,000.00	\$ 84,000.00	\$ 84,000.00	\$ 84,000.00	\$ 84,000.00	\$ 84,000.00	\$ 336,000.00
<b>Subtotal</b>	<b>1,400</b>	<b>\$ 112,000.00</b>	<b>\$ 84,000.00</b>	<b>\$ 84,000.00</b>	<b>\$ 84,000.00</b>	<b>\$ 84,000.00</b>	<b>\$ 84,000.00</b>	<b>\$ 84,000.00</b>	<b>\$ 336,000.00</b>
	Hourly Rate	\$ 80.00							
	3,500	◀ Hours from Partner Proposals							
	0.40	◀ Initial Multiplier (Year 1 technical support hours per partner hour)							
	0.30	◀ Out-year Multiplier (Out-year technical support hours per partner hour)							



# Delaware Statewide Broadband Mapping and Planning Planning Budget Narrative and Spreadsheet

In addition to the four mapping activities previously discussed, DTI has developed broadband planning initiatives, which are discussed below.

## *Planning*

### A. Program Description – Portion Requiring Federal Funding

#### i. Planning Activities

DTI will contract with partner(s) to provide planning activities. IPA will build a planning tool that will be integrated into the broadband mapping application. IPA will utilize this model to identify areas of improvement and work with the proposed broadband focus group and local technology planning teams to prioritize projects based on assessed need. Planning activities will utilize the mapping and planning tool developed in Activity 3 in conjunction with local technology planning teams. These teams will include, but will not be limited to, members of agriculture, small business, and local government communities. Planning teams will typically continue for six to 18 months. DTI anticipates keeping some teams in place for the five year duration of the program to continue to reassess and identify opportunities and prioritize projects.

DTI will analyze the demographic information, infrastructure, housing, industrial, and commercial land uses to develop a planning model. The planning model will be used to identify locations of broadband improvements based on the overlap of availability and demographic and socio-economic conditions affecting broadband adoption. The broadband focus group will conduct a needs assessment and develop a strategic plan for the rollout of projects to improve the level of broadband service in the state of Delaware. The focus group will communicate with the service providers to deliver feedback from the local planning teams as well as convey information on proposed improvement projects. The focus group will also work with the planning teams to prioritize projects and communicate status as the project progresses.

#### ii. Personnel

DTI is requesting funding for a Project and Program Manager (PM) to oversee the activities of the project partners. The PM will be involved in all communication activities and any coordination required with other state organizations. The PM will also facilitate resolution of any issues and risks. DTI has a strong project methodology in place following Project Management Institute (PMI) methodology.

To determine project management costs, DTI estimated the number of PM hours needed by taking a percentage of the total activity hours estimated by the project partners and applied the state's standard project management rate of \$80 per hour.

More detailed calculations are shown on the "Estimate Details – Planning" spreadsheet.

DTI is also requesting funding for Technical Support Staff to work with the subcommittee and local planning teams. DTI estimated the number of support staff hours by taking a percentage of the total activity hours estimated by the program partners. The state’s standard hourly rate for technical support staff is \$80. More detailed calculations are shown on the "Staffing Cost Details" spreadsheet.

**B. Cost Summary for Planning**

Table 6, “Cost Summary for Planning,” provides a general overview of planning costs. Please refer to the “Assumptions and Explanations” table for more details on cost calculations

**Table 6. Cost Summary for Planning**

<b>Grant Program Activities</b>	<b>Federal Funds</b>	<b>Match</b>
Planning Tool Development	\$ 63,782.00	\$ 0.00
Convene Technology Planning Teams	\$ 239,851.00	\$ 0.00
Yearly Planning Support	\$ 408,000	\$ 0.00
Project and Program Manager	\$ 60,480.00	\$ 0.00
Technical Support Staff	\$ 77,760.00	\$ 0.00
<b>Planning Subtotals</b>	<b>\$ 849,873.00</b>	<b>\$ 0.00</b>
<b>Planning Total (federal funds plus match)</b>		<b>\$ 849,873.00</b>

		a.	b.	c.	d.	e.	f.	g.	h.	
	Grant Program Activities	Assumptions & Explanations (see below)	Personnel	Fringe Benefits	Travel	Equipment	Supplies	Contractual	Construction	Other
<b>Planning</b>										
	Planning Tool Development	a	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 63,782.00	\$ -	\$ -
	Convene Technology Planning Teams	b	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 239,851.00	\$ -	\$ -
	Yearly Planning Support	c	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 408,000.00	\$ -	\$ -
	Project and Program Manager	d	\$ 60,480.00	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	Technical Support Staff	e	\$ 77,760.00	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	<b>TOTALS</b>		<b>\$ 138,240.00</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 711,633.00</b>	<b>\$ -</b>	<b>\$ -</b>

Grant Program Activities	i.		j.		k.	
	Total Direct Charges	Indirect Charges	TOTALS	Non-Federal Resources: Applicant Match	Federal Funds Needed	
<b>Planning</b>						
Planning Tool Development	\$ 63,782.00	\$ -	\$ 63,782.00	\$ -	\$ 63,782.00	
Convene Technology Planning Teams	\$ 239,851.00	\$ -	\$ 239,851.00	\$ -	\$ 239,851.00	
Yearly Planning Support	\$ 408,000.00	\$ -	\$ 408,000.00	\$ -	\$ 408,000.00	
Project and Program Manager	\$ 60,480.00	\$ -	\$ 60,480.00	\$ -	\$ 60,480.00	
Technical Support Staff	\$ 77,760.00	\$ -	\$ 77,760.00	\$ -	\$ 77,760.00	
<b>TOTALS</b>	<b>\$ 849,873.00</b>	<b>\$ -</b>	<b>\$ 849,873.00</b>	<b>\$ -</b>	<b>\$ 849,873.00</b>	

Assumptions & Explanations

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a	DTI received a bid for planning tool development from the Institute of Public Administration (IPA) at the University of Delaware.
b	DTI received bids for convening technology planning teams from a vendor and IPA. The vendor from which DTI received bids for the various phases of this project is on the state-approved contractor list. This list consists of vendors that responded to a competitive bid for Professional Services. Each vendor is already on contract with the state to provide services at a negotiated rate. All cost estimates based on vendor bids are based on the bids from this vendor and IPA.
c	DTI received a bid for planning support from a vendor that is on the state-approved contractor list (see Assumptions & Explanations "b" for note on the list). The vendor estimated that it would cost \$102,000 per year to provide planning support. This support will be used in the out-years of the program once the technology planning teams have already been forms.
d	DTI is requesting funding for a Project and Program Manager (PM) for the planning process. The PM hourly rate is \$80. DTI estimated the number of PM hours by taking a percentage of the total hours estimated by the private partner and/or IPA. More detailed calculations are shown on the "Estimate Details - Mapping" spreadsheet.
e	DTI is requesting funding for a Technical Support Staff for the planning process. The hourly rate is \$80.00. DTI estimated the number of support staff hours by taking a percentage of the total hours estimated by the private partner and IPA. More detailed calculations are shown on the "Estimate Details - Mapping" spreadsheet.

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	2009-2010	2011	2012	2013	2014	Out-year Totals	Project Totals
<b>Project and Program Manager (Planning)</b>							
<b>Personnel</b>	<b>Hours</b>	<b>Cost</b>					
Project Manager (PM)	540	\$ 43,200.00	\$ 4,320.00	\$ 4,320.00	\$ 4,320.00	\$ 17,280.00	
<b>Subtotal</b>	<b>540</b>	<b>\$ 43,200.00</b>	<b>\$ 4,320.00</b>	<b>\$ 4,320.00</b>	<b>\$ 4,320.00</b>	<b>\$ 17,280.00</b>	<b>\$ 60,480.00</b>
Hourly Rate		\$ 80.00					
1,800		◀ Hours from Partner Proposals					
0.30		◀ Initial Multiplier (Year 1 PM hours per partner hour)					
0.03		◀ Out-year Multiplier (Out-year PM hours per partner hour)					
<b>Technical Support Staff</b>							
<b>Personnel</b>	<b>Hours</b>	<b>Cost</b>					
Technical Support	540	\$ 43,200.00	\$ 8,640.00	\$ 8,640.00	\$ 8,640.00	\$ 34,560.00	
<b>Subtotal</b>	<b>540</b>	<b>\$ 43,200.00</b>	<b>\$ 8,640.00</b>	<b>\$ 8,640.00</b>	<b>\$ 8,640.00</b>	<b>\$ 51,840.00</b>	<b>\$ 77,760.00</b>
Hourly Rate		\$ 80.00					
1,800		◀ Hours from Partner Proposals					
0.30		◀ Initial Multiplier (Year 1 technical support hours per partner hour)					
0.06		◀ Out-year Multiplier (Out-year technical support hours per partner hour)					

College of Education & Public Policy / 180 Graham Hall / University of Delaware / Newark, DE 19716-7380 / USA

***Proposal for:  
State Broadband Data and Development Assistance***

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To: Kim Cloud, Software Engineer  
State of Delaware  
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Period Covered: October 1, 2009 – June 30, 2010

Date of Proposal: August 3, 2009

## **INTRODUCTION**

At the request of the Delaware Department of Technology & Information (DTI), the Institute for Public Administration (IPA) of the College of Education & Public Policy at the University of Delaware is pleased to submit this proposal to assist with collecting broadband data and planning for the development of broadband in Delaware. This preliminary proposal outlines four main project areas which IPA could complete in FY 2010.

## **GENERAL QUALIFICATIONS TO PROVIDE ASSISTANCE**

IPA is a research and public service unit within the College of Education & Public Policy ([www.ipa.udel.edu](http://www.ipa.udel.edu)). A team of approximately 30 IPA faculty and professional staff provide direct staff assistance, research, policy analysis, training, and forums to state and local governments, nonprofit organizations, and public schools throughout Delaware and the surrounding region. Specific IPA program areas include comprehensive planning, economic development, geographic information systems, infrastructure and transportation policy, education management, and local government training.

IPA could offer particular value to Delaware broadband mapping and planning efforts by leveraging existing relationships and policy knowledge to bring context to the broadband data collection process—enhancing understanding and relevancy of the data to residents, businesses, and policymakers while facilitating the transition from broadband mapping to planning and, ultimately, project prioritization and selection. IPA's long-standing, coordination and contractual relationships with local governments, business and economic development officials, higher and secondary education representatives, and other research and public service units at the University could prove beneficial for building statewide collaboration in a broadband mapping and planning effort.

More particularly, IPA is leading a "Sussex Broadband" initiative similar in character to efforts at "sustainable broadband adoption" called for in other federal notices of funding availability for broadband projects. Through this work, IPA has developed significant broadband policy knowledge that is partly catalogued in the *Broadband Opportunities for Sussex County* report (<http://www.ipa.udel.edu/publications/SussexBroadband.pdf>). IPA hosted a workshop in Sussex County on July 17, 2009 that exposed the community to issues with broadband deployment and use. This workshop could serve as a model for relating to the general public, and specific, potential user groups, about the current state of broadband in Delaware and opportunities to develop projects that address issues related to deployment and use.

## **UNDERSTANDING OF THE PROPOSAL**

IPA proposes to provide assistance through the completion of four distinct projects: 1) Collect and Map Primary Broadband Data, 2) Develop Broadband Public Awareness and Planning Capability, 3) Convene Technology Planning Teams, and 4) Prepare Updates and Enhancements to Primary Broadband Data. Work on these projects is proposed to begin on October 1, 2009 and end on June 30, 2010. An October 1, 2009 start date is contingent upon IPA's receipt by 10/1/09 of all broadband provider data substantially



covering location and characteristics of service availability, wireless service area availability, service pricing and speed, and last-mile, middle-mile and backbone connection and interconnection points as specified in Appendix A of the *State Broadband Data and Development Grant Program* Notice of Funds Availability. Delay in receipt of this data may require amendments to the schedule proposed herein.

Information on these projects, and sub-projects, appears in the “Project Scope, Deliverables, Schedule, and Cost” section of this proposal. Detailed sub-project level budget information appears in the “Budget Data” Appendix to this proposal.

DRAFT

## PROJECT SCOPE, DELIVERABLES, SCHEDULE, AND COST

### Project 1: Collect and Map Primary Broadband Data—\$61,246

This project aims to complete the Delaware portion of a national broadband map. Sub-projects focus on collecting and mapping data on broadband service areas and community anchor institution access to broadband, respectively.

*Sub-Project 1A: Compile Broadband Provider Infrastructure, Service, and Subscribership Data—\$31,898*

#### Scope

This sub-project focuses on receiving, processing, and mapping data on broadband infrastructure, service availability, and service characteristics. IPA will receive data files from DTI as submitted from Delaware's broadband providers. These data will be processed into either tab-delimited text files or ESRI Shapefiles, as specified in Appendix A of the *State Broadband Data and Development Grant Program Notice of Funds Availability*. Service areas and other locations will be mapped using the WGS 1984 geographic coordinate system.

#### Deliverables

1. List of Delaware addresses at which broadband service is available, formatted as a tab-delimited text file
2. ESRI Shapefile format polygons depicting areas within which wireless broadband services are available to end users
3. List of residential broadband service pricing and speed characteristics by county and provider, as specified in Appendix A of the *State Broadband Data and Development Grant Program Notice of Funds Availability*
4. List of last-mile connection points and middle-mile and backbone interconnection points for and between providers, formatted as a tab-delimited text file

#### Schedule

October 1, 2009 – October 31, 2009

- **October 1, 2009:** Commence project and receive data substantially covering locations and characteristics of service availability, wireless service area availability, service pricing and speed, and last-mile, middle-mile and backbone connection and interconnection points as specified in Appendix A of the *State Broadband Data and Development Grant Program Notice of Funds Availability*
- **October 31, 2009:** Complete deliverables #1-4

*Sub-Project 1B: Collect and Map Community Anchor Institution Broadband Data—  
\$29,348*

Scope

This sub-project focuses on the collection of broadband use data from “Community Anchor Institutions” as defined and required by the State Broadband Data and Development Grant Program. IPA has existing relationships with many of the schools, governments, public safety, higher education institutions, and community organizations from whom data would need to be collected. These relationships could ease the time and effort required for data collection. Key tasks for this project include identifying Delaware’s Community Anchor Institutions, mapping these institutions, and conducting mailed and in-person surveys to determine the state of broadband service and use at these facilities.

Deliverables

1. List and map of Delaware’s “Community Anchor Institutions”
2. Tab-delimited text file of required broadband use data, for submission to NTIA
3. Shapefile and database format versions of required broadband use data

Schedule

October 1, 2009 – October 31, 2009

- **October 1, 2009:** Commence Project
- **October 4, 2009:** Deliverable #1 completed
- **October 8, 2009:** Mail survey sent
- **October 21, 2009:** Follow up calls and visits completed
- **October 31, 2009:** Deliverables #2 and #3 completed

**Project 2: Develop Broadband Public Awareness and Planning Capability—  
\$92,992**

This project aims to publicize and increase the policy relevance of findings from the broadband data collection and mapping activities of Project 1. Sub-projects focus on developing a publicly accessible map of broadband and a planning tool for broadband policy, and raising public awareness through the holding of a forum and dissemination of written material.

*Sub-Project 2A: Develop Publicly Accessible Map and Planning Tool—\$63,782*

Scope

IPA proposes to prepare a web-enabled and publicly accessible, state-level broadband map and planning tool. In concert with the purposes of the Broadband Data Improvement Act, the map and tool would assist in identifying barriers to the adoption of broadband service, share information about the use and demand for broadband services, and identify priority locations for investment based on areas of low deployment, low use, and high need. This project would build upon the initial mapping of broadband service,

infrastructure, and use by aggregating broadband data to a suitable geographic scale, compiling data on items such as demographics, infrastructure, housing, and commercial and institutional land uses at the same scale and preparing a web-enabled map and planning tool.

#### Deliverables

1. Shapefiles aggregated to appropriate geographic scales and consisting of broadband use and service areas, demographic and socioeconomic data indicative of a household's likelihood to adopt broadband (e.g., incomes, age, and educational attainment), and ancillary data inventorying the locations of existing development and infrastructure
2. Project website to house public broadband map and future public awareness activities
3. Interactive, web-enabled map of shapefiles noted above
4. Model that allows for prioritization of locations for broadband infrastructure and service improvements based on the overlap of broadband availability and use and demographic and socioeconomic conditions affecting broadband adoption
5. Hardcopy (25) and online version of "Broadband Planning Tool User's Guide"

#### Schedule

November 1, 2009 – January 31, 2010

- **November 1, 2009:** Commence sub-project
- **November 30, 2009:** Submit item #1 deliverables
- **December 15, 2009:** Complete deliverable #2
- **January 1, 2010:** Submit deliverable #3
- **January 31, 2010:** Complete sub-project and submit deliverables #4 and #5

*Sub-Project 2B: Public Awareness Campaign—\$29,210*

#### Scope

This sub-project proposes to facilitate enhanced public and policymaker understanding of the current state of broadband in Delaware. Current use, service characteristics, and policy issues would be summarized in brochure and policy report formats. A policy forum would be convened to raise awareness about these issues and begin a conversation on a desirable path forward for broadband in Delaware.

#### Deliverables

1. Online and hardcopy (60 copies) policy report on current state of broadband deployment, use, and service in Delaware, and opportunities and issues surrounding expansion of accessibility and use
2. Online and printed brochure (150 copies)—"A Public Guide to Broadband in Delaware"—summarizing broadband definitions, policy issues, and gaps in deployment and use in Delaware
3. Convene "Broadband in Delaware" policy forum to raise public and policymaker awareness of current issues surrounding deployment and use of broadband in Delaware

4. Written summary of forum attendance and discussion

Schedule

February 1, 2010 – March 31, 2010

- **February 1, 2010:** Commence sub-project and advertise policy forum
- **March 1, 2010:** Complete deliverable #1
- **March 15, 2010:** Complete deliverable #2
- **March 21, 2010:** Complete deliverable #3
- **March 31, 2010:** Complete sub-project and submit deliverable #4

**Project 3: Convene Technology Planning Teams—\$83,520**

The Broadband Data Improvement Act authorizes grants to “create and facilitate...local technology planning teams.” This project would engage three significant broadband user groups in Delaware—the local government, small business, and agriculture communities—in efforts to identify 1) broadband best practices for their communities, 2) issues affecting the deployment and full use of broadband, and 3) potential projects for expanding the use and deployment of broadband in these communities.

*Sub-Project 3A: Convene Agriculture Community Technology Planning Team—\$28,010*

Scope

Farmers are potentially among the most likely of Delaware’s residents to live in an area unserved or underserved by broadband, and the most recent Census of Agriculture reported that the proportion of Delaware farmers using high speed internet connections is below average. This sub-project seeks to convene a group of agriculture community representatives and facilitate a process of identifying issues, current applications, and potential projects to expand broadband deployment and use in the agriculture community. IPA would coordinate with Cooperative Extension at the University of Delaware to convene a technology planning team for the agriculture community.

Deliverables

1. Membership and stakeholder contact lists for agriculture community technology planning team
2. Web-posted agenda and summaries of technology planning team meetings
3. Web-posted whitepaper that summarizes identified broadband best practices, obstacles to full deployment and use, and projects that could expand deployment and use

### Schedule

January 1, 2010 – June 30, 2010

- **January 1, 2010:** Commence sub-project and advertise policy forum
- **February 15, 2010:** First planning team meeting held
- **March 1, 2010:** First meeting agenda and summary (initiate deliverable #2) posted online
- **June 30, 2010:**
  - Complete deliverable #2
  - Complete deliverable #3
  - Complete sub-project

*Sub-Project 3B: Convene Local Government Community Technology Planning Team—  
\$27,433*

### Scope

Local governments use a variety of communication technologies to carry out their daily operations, and broadband holds the potential to make these activities more effective and efficient. IPA would work closely with the counties and the Delaware League of Local Governments to convene a group of local government representatives and facilitate a process of identifying issues, current applications, and potential projects to expand broadband deployment and use in the local government community.

### Deliverables

1. Membership and stakeholder contact lists for local government community technology planning team
2. Web-posted agenda and summaries of technology planning team meetings
3. Web-posted whitepaper that summarizes identified broadband best practices, obstacles to full deployment and use, and projects that could expand deployment and use

### Schedule

January 1, 2010 – June 30, 2010

- **January 1, 2010:** Commence sub-project and advertise policy forum
- **February 15, 2010:** First planning team meeting held
- **March 1, 2010:** First meeting agenda and summary (initiate deliverable #2) posted online
- **June 30, 2010:**
  - Complete deliverable #2
  - Complete deliverable #3
  - Complete sub-project

*Sub-Project 3C: Convene Small Business Community Technology Planning Team—  
\$28,077*

### Scope

IPA would work closely with organizations such as the Delaware Economic Development Office, Delaware Small Business Development Center, and the

entrepreneurship program at Delaware Technical & Community College to convene a small business technology planning team.

#### Deliverables

1. Membership and stakeholder contact lists for small business community technology planning team
2. Web-posted agenda and summaries of technology planning team meetings
3. Web-posted whitepaper that summarizes identified broadband best practices, obstacles to full deployment and use, and projects that could expand deployment and use

#### Schedule

January 1, 2010 – June 30, 2010

- **January 1, 2010:** Commence sub-project and advertise policy forum
- **February 15, 2010:** First planning team meeting held
- **March 1, 2010:** First meeting agenda and summary (initiate deliverable #2) posted online
- **June 30, 2010:**
  - Complete deliverable #2
  - Complete deliverable #3
  - Complete sub-project

#### **Project 4: Prepare Updates and Enhancements to Primary Broadband Data—\$30,580**

This project serves to provide the first six-month update of broadband data compiled in Project 1. Sub-projects mimic the topics covered by Project 1's sub-projects.

#### *Sub-Project 4A: Collect Broadband Provider Infrastructure, Service, and Subscribership Data—\$14,908*

#### Scope

IPA will receive updated data files from DTI as submitted from Delaware's broadband providers. These data will be processed into either tab-delimited text files or ESRI Shapefiles, as specified in Appendix A of the *State Broadband Data and Development Grant Program Notice of Funds Availability*. Service areas and other locations will be mapped using the WGS 1984 geographic coordinate system.

#### Deliverables

1. List of Delaware addresses at which broadband service is available, formatted as a tab-delimited text file
2. ESRI Shapefile format polygons depicting areas within which wireless broadband services are available to end users
3. List of residential broadband service pricing and speed characteristics by county and provider, as specified in Appendix A of the *State Broadband Data and Development Grant Program Notice of Funds Availability*



4. List of last-mile connection points and middle-mile and backbone interconnection points for and between providers, formatted as a tab-delimited text file

#### Schedule

March 1, 2010 – April 30, 2010

- **March 1, 2010:** Commence sub-project and receive updated data
- **March 31, 2010:** Complete deliverables #1 and #2
- **April 15, 2010:** Complete deliverable #3
- **April 30, 2010:** Complete sub-project and submit deliverable #4

*Sub-Project 4B: Collect and Map Community Anchor Institution Broadband Data—  
\$15,672*

#### Scope

IPA will survey anchor institutions to update data on their broadband service and use. Additionally, recognizing the critical role anchor institutions can play in spurring broadband adoption and the need for comprehensive data in order to plan for service and infrastructure enhancements, IPA proposes to collect supplementary information. These data might include institution size, identification of specific broadband uses and existing service issues, self-assessments of future broadband demands and needs, number of terminals available for public use and hours of public availability (if applicable), public usage statistics, demographics of clientele served, and the number of terminals available for institutional use.

#### Deliverables

1. Updated list and map of Delaware's "Community Anchor Institutions"
2. Community Anchor Institution Broadband Use Survey
3. Tab-delimited text file of required broadband use data, for submission to NTIA
4. Shapefile and database format versions of required broadband use data
5. Shapefile and database format versions of supplementary broadband use data

#### Schedule

March 1, 2010 – April 30, 2010

- **March 1, 2010:** Commence Project
- **March 8, 2010:** Deliverable #1 completed
- **March 15, 2010:** Deliverable #2 completed and survey distributed
- **April 15, 2010:** Deliverable #3 completed
- **April 30, 2010:** Deliverables #4 and #5 completed



## OVERALL PROJECT COST

The total cost of this project will be \$268,338.

If the contract for services is not approved within 30 days of submission of this proposal, IPA reserves the right to amend the project scope, project staff commitment, and cost estimate accordingly.

## OVERALL PROJECT SCHEDULE

<b>IPA State Broadband Data and Development Assistance</b> <b>FY 2010</b> <b>October 1, 2009 – June 30, 2010</b> <b>Activities by Month</b>		October 2009	November 2009	December 2009	January 2010	February 2010	March 2010	April 2010	May 2010	June 2010
<b>Scope of Work:</b>										
<b>Project 1. Collect and Map Primary Broadband Data</b>		X								
<i>1A- Compile Broadband Provider Infrastructure, Service, and Subscriber Data</i>		X								
<i>1B- Collect and Map Community Anchor Institution Broadband Data</i>		X								
<b>Project 2. Develop Broadband Public Awareness and Planning Capability</b>			X	X	X	X	X			
<i>2A- Develop Publicly Accessible Map and Planning Tool</i>			X	X	X					
<i>2B- Public Awareness Campaign</i>						X	X			
<b>Project 3. Convene Technology Planning Teams</b>					X	X	X	X	X	X
<i>3A- Convene Agriculture Community Technology Planning Team</i>					X	X	X	X	X	X
<i>3B- Convene Local Government Community Technology Planning Team</i>					X	X	X	X	X	X
<i>3C- Convene Small Business Community Technology Planning Team</i>					X	X	X	X	X	X
<b>Project 4. Prepare Updates and Enhancements to Primary Broadband Data</b>							X	X		
<i>4A- Collect Broadband Provider Infrastructure, Service, and Subscriber Data</i>							X	X		
<i>4B- Collect and Map Community Anchor Institution Broadband Data</i>							X	X		

## PROJECT STAFF

Staff expertise and experience is available for review on personnel web pages listed below.

William DeCoursey, Policy Specialist II,  
<http://www.ipa.udel.edu/directory/homepages/decoursey.html>

Mark Deshon, Assistant Policy Scientist,  
<http://www.ipa.udel.edu/directory/homepages/deshon.html>

Andrew Homsey, Associate Policy Scientist,  
<http://www.ipa.udel.edu/directory/homepages/homsey.html>

Nicole Minni, Policy Specialist II,  
<http://www.ipa.udel.edu/directory/homepages/minni.html>

Troy Mix, Assistant Policy Scientist,  
<http://www.ipa.udel.edu/directory/homepages/mix.html>

Marcia Scott, Associate Policy Scientist,  
<http://www.ipa.udel.edu/directory/homepages/scott.html>

Doug Tuttle, Policy Scientist, <http://www.ipa.udel.edu/directory/homepages/tuttle.html>

## CONSIDERATIONS

**1) Extent of Contract:** This proposal is limited to the components defined above. Any additional or in-depth research will be negotiated independently at the request of the Delaware Department of Technology & Information and will be billed separately.

**2) Professional Legal Services:** This proposal does not include any professional legal services.

**3) Client Designated Contact:** At the start of this work, the Delaware Department of Technology & Information will designate by letter to IPA the person that IPA staff will correspond with as the primary contact person. The designee will be responsible for coordinating DTI's responsibilities involved in this agreement.

**APPENDIX. BUDGET DATA**

**Project 1: Collect and Map Primary Broadband Data—\$61,246**

*Sub-Project 1A: Compile Broadband Provider Infrastructure, Service, and Subscribership Data—\$31,898*

<b>Personnel Costs</b>	<b>\$18,039</b>
Professional Staff Salary	\$12,142
Graduate Research Assistant Salary	\$1,900
Professional Staff Fringe (32.3%)	\$3,922
Graduate Research Assistant Fringe (4%)	\$76
<b>Operating Expenses</b>	<b>\$6,126</b>
Travel Costs <sup>1</sup>	\$226
Materials and Supplies <sup>2</sup>	\$5,900
<b>Total Direct Costs</b>	<b>\$24,165</b>
<b>Indirect Cost (32%)</b>	<b>\$7,733</b>
<b>Total Direct &amp; Indirect Costs</b>	<b>\$31,898</b>

*Sub-Project 1B: Collect and Map Community Anchor Institution Broadband Data—\$29,348*

<b>Personnel Costs</b>	<b>\$21,582</b>
Professional Staff Salary	\$15,317
Graduate Research Assistant Salary	\$1,267
Professional Staff Fringe (32.3%)	\$4,947
Graduate Research Assistant Fringe (4%)	\$51
<b>Operating Expenses</b>	<b>\$1,329</b>
Travel Costs <sup>3</sup>	\$451
Materials and Supplies <sup>4</sup>	\$201
<b>Total Direct Costs</b>	<b>\$22,234</b>
<b>Indirect Cost (32%)</b>	<b>\$7,115</b>
<b>Total Direct &amp; Indirect Costs</b>	<b>\$29,348</b>

<sup>1</sup> Equivalent of five roundtrips to Dover from Newark

<sup>2</sup> ArcGIS Software Licensing, Server, DVDs for data backup and transmission

<sup>3</sup> Equivalent of 10 roundtrips to Dover from Newark

<sup>4</sup> Mailing and printing costs

**Project 2: Develop Broadband Public Awareness and Planning Capability—  
\$92,992**

*Sub-Project 2A: Develop Publicly Accessible Map and Planning Tool—\$63,782*

<b>Personnel Costs</b>	<b>\$42,884</b>
Professional Staff Salary	\$29,427
Graduate Research Assistant Salary	\$3,800
Professional Staff Fringe (32.3%)	\$9,505
Graduate Research Assistant Fringe (4%)	\$152
<b>Operating Expenses</b>	<b>\$5,436</b>
Travel Costs <sup>5</sup>	\$271
Materials and Supplies <sup>6</sup>	\$5,165
<b>Total Direct Costs</b>	<b>\$48,320</b>
<b>Indirect Cost (32%)</b>	<b>\$15,462</b>
<b>Total Direct &amp; Indirect Costs</b>	<b>\$63,782</b>

*Sub-Project 2B: Public Awareness Campaign—\$29,210*

<b>Personnel Costs</b>	<b>\$19,168</b>
Professional Staff Salary	\$11,878
Graduate Research Assistant Salary	\$2,533
Professional Staff Fringe (32.3%)	\$4,655
Graduate Research Assistant Fringe (4%)	\$101
<b>Operating Expenses</b>	<b>\$2,961</b>
Travel Costs <sup>7</sup>	\$361
Materials and Supplies <sup>8</sup>	\$2,600
<b>Total Direct Costs</b>	<b>\$22,129</b>
<b>Indirect Cost (32%)</b>	<b>\$7,081</b>
<b>Total Direct &amp; Indirect Costs</b>	<b>\$29,210</b>

<sup>5</sup> Equivalent of six roundtrips to Dover from Newark

<sup>6</sup> ArcGIS Software Licensing, Web Server, Domain Name, User's Guide printing costs

<sup>7</sup> Equivalent of eight roundtrips to Dover from Newark

<sup>8</sup> Forum costs including advertisement, printing costs

**Project 3: Convene Technology Planning Teams—\$83,520**

*Sub-Project 3A: Convene Agriculture Community Technology Planning Team—\$28,010*

<b>Personnel Costs</b>	<b>\$83,520</b>
Professional Staff Salary	\$12,386
Graduate Research Assistant Salary	\$3,800
Professional Staff Fringe (32.3%)	\$4,001
Graduate Research Assistant Fringe (4%)	\$152
<b>Operating Expenses</b>	<b>\$881</b>
Travel Costs <sup>9</sup>	\$271
Materials and Supplies <sup>10</sup>	\$610
<b>Total Direct Costs</b>	<b>\$21,219</b>
<b>Indirect Cost (32%)</b>	<b>\$6,790</b>
<b>Total Direct &amp; Indirect Costs</b>	<b>\$28,010</b>

*Sub-Project 3B: Convene Local Government Community Technology Planning Team—\$27,433*

<b>Personnel Costs</b>	<b>\$19,902</b>
Professional Staff Salary	\$12,056
Graduate Research Assistant Salary	\$3,800
Professional Staff Fringe (32.3%)	\$3,894
Graduate Research Assistant Fringe (4%)	\$152
<b>Operating Expenses</b>	<b>\$881</b>
Travel Costs <sup>11</sup>	\$271
Materials and Supplies <sup>12</sup>	\$610
<b>Total Direct Costs</b>	<b>\$20,782</b>
<b>Indirect Cost (32%)</b>	<b>\$6,650</b>
<b>Total Direct &amp; Indirect Costs</b>	<b>\$27,433</b>

<sup>9</sup> Equivalent of six roundtrips to Dover from Newark

<sup>10</sup> Advertising and printing costs

<sup>11</sup> Equivalent of six roundtrips to Dover from Newark

<sup>12</sup> Advertising and printing costs

*Sub-Project 3C: Convene Small Business Community Technology Planning Team—\$28,077*

<b>Personnel Costs</b>	<b>\$20,390</b>
Professional Staff Salary	\$12,425
Graduate Research Assistant Salary	\$3,800
Professional Staff Fringe (32.3%)	\$4,013
Graduate Research Assistant Fringe (4%)	\$152
<b>Operating Expenses</b>	<b>\$881</b>
Travel Costs <sup>13</sup>	\$271
Materials and Supplies <sup>14</sup>	\$610
<b>Total Direct Costs</b>	<b>\$21,271</b>
<b>Indirect Cost (32%)</b>	<b>\$6,807</b>
<b>Total Direct &amp; Indirect Costs</b>	<b>\$28,077</b>

<sup>13</sup> Equivalent of six roundtrips to Dover from Newark

<sup>14</sup> Advertising and printing costs

**Project 4: Prepare Updates and Enhancements to Primary Broadband Data—  
\$30,580**

*Sub-Project 4A: Collect Broadband Provider Infrastructure, Service, and  
Subscribership Data—\$14,908*

<b>Personnel Costs</b>	<b>\$11,204</b>
Professional Staff Salary	\$7,971
Graduate Research Assistant Salary	\$633
Professional Staff Fringe (32.3%)	\$2,575
Graduate Research Assistant Fringe (4%)	\$25
<b>Operating Expenses</b>	<b>\$90</b>
Travel Costs <sup>15</sup>	\$90
Materials and Supplies	\$0
<b>Total Direct Costs</b>	<b>\$11,294</b>
<b>Indirect Cost (32%)</b>	<b>\$3,614</b>
<b>Total Direct &amp; Indirect Costs</b>	<b>\$14,908</b>

*Sub-Project 4B: Collect and Map Community Anchor Institution Broadband  
Data—\$15,672*

<b>Personnel Costs</b>	<b>\$11,221</b>
Professional Staff Salary	\$7,984
Graduate Research Assistant Salary	\$633
Professional Staff Fringe (32.3%)	\$2,579
Graduate Research Assistant Fringe (4%)	\$25
<b>Operating Expenses</b>	<b>\$652</b>
Travel Costs <sup>16</sup>	\$451
Materials and Supplies <sup>17</sup>	\$201
<b>Total Direct Costs</b>	<b>\$11,873</b>
<b>Indirect Cost (32%)</b>	<b>\$3,799</b>
<b>Total Direct &amp; Indirect Costs</b>	<b>\$15,672</b>

<sup>15</sup> Equivalent of two roundtrips to Dover from Newark

<sup>16</sup> Equivalent of ten roundtrips to Dover from Newark

<sup>17</sup> Printing and mailing



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**DEPARTMENT OF TECHNOLOGY AND INFORMATION**  
 801 Silver Lake Blvd.  
 Dover, Delaware 19904

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<b>Synopsis:</b>	The goal of this policy is to enhance the State's ability to protect data and information through data classification.		
<b>Authority:</b>	Title 29, Delaware Code, §9004C - General powers, duties and functions of DTI "2) Implement statewide and interagency technology solutions, policies, standards and guidelines as recommended by the Technology Investment Council on an ongoing basis and the CIO, including, but not limited to, statewide technology and information architectures, statewide information technology plans, development life cycle methodologies, transport facilities, communications protocols, data and information sharing considerations, the technique of obtaining grants involving the State's informational resources and the overall coordination of information technology efforts undertaken by and between the various State agencies;"		
<b>Applicability:</b>	This Policy is applicable to all users of the State of Delaware communications and computing resources. DTI is an Executive Branch Agency and has no authority over the customers in Legislative and Judicial Branches, as well as School Districts, and other Federal and Local Government entities that use these resources. However, all users, including these entities, must agree to abide by all policies, standards promulgated by DTI as a condition of access and continued use of these resources.		
<b>Effective Date:</b>	03/01/2006	<b>Expiration Date:</b>	None
<b>POC for Changes:</b>	Elayne Starkey - Chief Security Officer		
<b>Approval By:</b>	Secretary Thomas M. Jarrett, Chief Information Officer		
<b>Approved On:</b>	03/01/2006		







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## I. Policy

### EXECUTIVE SUMMARY

This policy requires Data Stewards to classify all of the data used by their organization. It describes the roles and responsibilities of a Data Steward, the four types of data classifications and the minimum set of classifications. Generally, it lays the groundwork for the proper classification and handling of data used by the State. Further insight into this policy may be obtained through your organization's IRM (Information Resource Manager) or the DTI CRS (Customer Relationship Specialist) assigned to your organization.

This policy does not limit or redefine FOIA (Freedom of Information Act) laws or regulations. In case of any conflict, the law shall prevail.

### PURPOSE

This policy provides instruction for State organizations to better handle, secure, access, and use data. Sound business judgment and practices must be applied, and the State must comply with applicable Federal, State and Local laws and regulations, as well as any agency-specific guidelines then in effect. Examples of such are Federal HIPAA and Gramm-Leach-Bliley (GLB), Federal Information Security Management Act (FSMA), Privacy Act, PCI DSS, etc.<sup>1</sup> This policy will be reviewed

<sup>1</sup> HIPAA is the United States Health Insurance Portability and Accountability Act of 1996, PL 104-191. The Financial Modernization Act of 1999, also known as the "Gramm-Leach-Bliley Act" or GLB Act





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and revised periodically. However, the State is obligated to comply with new laws or regulations coming into effect between revisions.

This policy is expected to be referenced by other State policies and standards that will further define the implications of the data classification. As such, the actual data classification designations will have far-reaching effects on various aspects of Information Technology throughout the State.

The National Institute of Standards and Technology (NIST) has drafted a comprehensive approach to data classification and the risks that are associated with different levels of data classification. Specifically, it addresses the integrity and availability of data as well as confidentiality, which is the focal point of this policy. Over time, this policy will be influenced by NIST standards. The reading of the NIST draft 'Guide for Mapping Types of Information and Information Systems to Security Categories - SP 800-60' is encouraged.

#### **DATA OWNER and DATA STEWARD**

For various reasons, including legal considerations, the State's data is owned by the State of Delaware. At a practical level, each State organization (agency, Governor, Legislature, Judiciary and School District) generates or gathers data through various means. The head of each State organization is the primary Data Steward for all data controlled by the organization, but they may delegate the Data Steward role to another employee in the organization with appropriate knowledge and authority to carry out the responsibilities as defined in this policy. The CIO of the State of Delaware is to be notified in writing of such delegation. Refer to the Enterprise Standards and Policies and notably to the Delaware Information Security Policy for further insight.

#### **DATA CLASSIFICATIONS**

The Data Steward is responsible for classifying all data under the organization's control into one of the following classes.

**State of Delaware Public** – Information available to the general public; eligible for public access.

**State of Delaware Confidential** – Information covered by one or more laws. The disclosure of this information could endanger citizens, corporations, business partners and others. The types of information might be covered



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under non-disclosure agreements; or safeguarded by a general reference in law or best practices.

**State of Delaware Secret** – Information that, if divulged, could compromise or endanger the people, or assets of the State; such as Public Safety Information, Data that is specifically protected by law (e.g.. HIPAA).

**State of Delaware Top Secret** – Information that could, if divulged, expose the State’s citizens and assets to great risk.

The classifications stated herein are to be considered as **minimum classification levels** for the data. The Data Steward may not specify a lower classification.

These classifications are in line with the Federal Government data classifications found in Executive Order 13292. The exception is that the Federal Government has no consistent designation for Public data. In some cases, the term Unclassified is used to denote non-Confidential, non-Secret and non-Top Secret data. For clarity, the State of Delaware chose to use the term State of Delaware Public data rather than non-Confidential, non-Secret and non-Top Secret data. One core value that distinguishes a classification from another is the Risk of Harm. What is the risk that harm can result from the inappropriate disclosure or use of this information?

**Minimum Classifications**

The following data elements are examples of data that must be classified no lower than as shown regardless of the context in which they are represented.

<b>Data Element</b>	<b>Classification</b>
Social Security Number	State of Delaware Confidential
Employee ID	State of Delaware Confidential
Bank Account Number	State of Delaware Confidential
Credit Card Number	State of Delaware Confidential
Passwords for privileged accounts	State of Delaware Secret
Mother’s Name	State of Delaware Confidential
Father’s Name	State of Delaware Confidential





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Place of Birth	State of Delaware Confidential
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**PRIMARY RESPONSIBILITIES**

In addition to ensuring that data is properly classified, the Data Steward’s primary responsibility is to ensure that the data is appropriately protected. In this regard, Data Stewards will be required by this and other policies or standards to perform various tasks such as approving system and data access requests, communicating data classification and appropriate use throughout the organization, approving data exchange agreements, overseeing data usage, and participating in audits.

Each Data User is responsible to understand the classification of data to which they have access, and to ensure that they comply with all policies, standards and guidelines established to protect the data.

The statewide policies and standards pertaining to data protection can be found at the [DTI website](#). Local guidelines are established by the state organization itself. For a complete list, please contact your organization’s Information Resource Manager (IRM).

**SPECIFIC DUTIES**

The Data Steward will:

1. Analyze all computerized data for appropriate data classification at regular intervals as the data/databases are updated or changed. The Data Steward maintains a working knowledge of the data under their care and align the organization’s data classification selections with it.
2. Ensure, in conjunction with the organization’s Information Security Officer (ISO), the implementation and enforcement of appropriate security control procedures commensurate with the data classification.
3. Review and evaluate recommended protection requirements of computerized data with respect to both integrity and confidentiality.
4. Authorize Data User access to computerized data. This process is coordinated through the Information Security Officer (ISO) and the use of the Peregrine Automated Security Request System.
5. Evaluate and approve requests for data transfers to or from another party. The protocol mandates the Sending Data Steward (or equivalent if outside the State) to clearly communicate to the Receiving Data Steward (or equivalent if



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outside the State) the classification of the data to be transferred, and to obtain a written or otherwise binding document whereby the Receiving Data Steward agrees to treat the transmitted data according to the classification as declared by the Sending Data Steward. Upon transfer of the data, the Receiving Data Steward (or equivalent) bears the responsibility for the transmitted data. The State Data Steward must take into consideration the security issues involved in releasing this data outside of the State and, if deemed appropriate, may increase the data classification rating.

6. Ensure appropriate backups are taken and tested. Document retention periods for computerized data in the General Records Retention Schedule, and Agency Records Retention Schedule.
7. Select and approve appropriate security measures as recommended by DTI and the ISO to protect data against unauthorized modification, destruction, and disclosure.
8. Restrict computer applications and data access to authorized persons.
9. Establish and enforce Data Privacy rules as appropriate.
10. Provide data security training and security guidelines.

Data Stewards should be aware that data classification applies to all copies of the data regardless of form or media, especially backups. Full compliance will require a thorough examination of retention periods, numbers of copies, and proliferation of data.

#### **ENFORCEMENT and WAIVER**

DTI will enforce this policy during the course of normal business activities, including review of proposed projects and during the design, development or support of systems. This policy may also be enforced by others during the course of their normal business activities, including audits.

If any dispute arises regarding the minimum classifications of data contained in this policy, the waiver process will resolve the issue. If any disputes or questions arise from the Data Classification Guidelines, the data steward can present them to the State's Chief Security Officer for help in determining the proper classification.

#### **Failure to Comply**

Failure to comply with the policy is a serious matter whether through intentional act or negligence and may be grounds for discipline up to and including dismissal based



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on the Just Cause standard set forth by Merit Rules, or collective bargaining agreement, whichever is applicable to the subject employee. Exempt employees shall be subject to appropriate discipline without recourse, except as provided by law. While DTI has no authority to discipline employees of other agencies/organizations in the Executive, Legislative, or Judicial branches of government, it will take the appropriate steps to ensure any misconduct is appropriately addressed.

## II. Definitions

**Data** – Distinct pieces of information in digital (computer-readable) format that can be stored, read, manipulated, or transmitted.

**Dataset** – A Dataset is a collection of data elements in a structure that is its own unique entity and usually associated with a name. Examples include files, databases, etc. A Dataset’s classification must be at least as high as that of the highest data element contained therein (classification by association). This also applies to multiple Datasets when stored or transmitted together; the classification of the combined Datasets must be at least as high as that of the highest Dataset in the combination.

**Data Owner** – The Data Owner is that entity that has ultimate responsibility for how State data is used. For this policy, the Data Owner is considered to be the State of Delaware. Other entities, such as other states, the Federal Government, outside companies, and individuals are also considered owners of data that is under their control. This policy applies to data owned by the State of Delaware.

**Data Steward** – The head of a state organization, or an employee delegated by the head of the organization, with appropriate knowledge and authority to carry out the responsibilities of the Data Steward as defined in this policy. The following definitions apply when an organization sends data to or receives data from another entity within the State or outside the State.

- **Sending Data Steward** – The Data Steward (or equivalent if outside the State) of the source data being sent.
- **Receiving Data Steward** – The Data Steward (or equivalent if outside the State) of the data being received.

**Data User** - Individuals who access and use State data.

**Document vs. Data** - A **document** merges data and format together to assist the reader in understanding the context of the data. A document is usually a set of words that form sentences that can be understood in their form and context.





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**Data** usually does not contain syntax or grammar, leaving the letters and numbers without association beyond the database schema or data dictionary.

**Information Resource Manager (IRM)** – Those assigned the responsibility to act as the primary points of contact for appropriate communications between DTI and the organization.

**Information Security Officer (ISO)** – An individual in the organization designated by the organization’s management who is responsible for ensuring the security of the organization’s information.

**Personally Identifiable Information (PII)** – Information which can be used to identify or contact a person uniquely and reliably, including but not limited to name, address, telephone number, and email address.

**Personal Health Information (PHI)** – Individually identifiable health information that is maintained or transmitted in any form or medium.

**Personal Financial Information (PFI)** – Individually identifiable financial information that is maintained or transmitted in any form or medium.

**Privileged Account** – This type of account allows individuals to perform administrator or super-user functions within an IT system or environment.





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### III. Development and Revision History

Initial version established **03/01/2006**

Second version established **2/28/2008**

### IV. Approval Signature Block

<b>Name &amp; Title:</b> Cabinet Secretary - State Chief Information Officer	<b>Date</b>

### V. Other Documents

A Data Classification Guideline has been published and it is hereby noted. If there is any conflict between the Data Classification Guideline and this policy, the policy shall prevail. To obtain more information, please reference the Enterprise Standards and Policies and notably the Delaware Information Security Policy for further insight.



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Standard ID	<b>AR-SYSARCH-001</b>
Title	<b>Systems Architecture</b>
Domain	<b>Architecture</b>
Discipline	<b>Systems Design Architecture</b>
Date Adopted	<b>7/22/2008</b>
Revision #	<b>1</b>
Original Date	<b>3/19/2007</b>

## II. Authority, Applicability, and Purpose

- A. **Authority:** Title 29, Chapter 90C provides broad statutory authority to the Department of Technology and Information to implement statewide and interagency technology solutions, policy, standards and guidelines for the State of Delaware's technology infrastructure. "Technology" means computing and telecommunications systems, their supporting infrastructure and interconnectivity used to acquire, transport, process, analyze, store and disseminate information or data electronically. The term "technology" includes systems and equipment associated with e-government and Internet initiatives.
- B. **Applicability:** Applies to all State of Delaware communications and computing resources. DTI is an Executive Branch Agency and has no authority over the customers in Legislative and Judicial Branches, as well as School Districts, and other Federal and Local Government entities that use these resources. However, all users, including these entities, must agree to abide by all policies, standards promulgated by DTI as a condition of funding, and continued use of these resources.
- C. **Purpose** – This standard communicates how to construct IT solutions intended for production status. A good architecture builds into itself the ability to change not only in expected ways, but also in unexpected ways. This standard addresses systems from a high level, not specific bits, and bytes of a solution set. The approach is from the viewpoint of data and who is accessing a system why. This standard will continue to bring about a level-set of understanding of Systems Architecture within the State.

## II. SCOPE

- A. **Audience:** - Project Leaders, Application Developers, Systems Administrators, Network Administrators, IT Security Personnel, Computer Auditors, and their managers and application development contractors for the State are the intended audience. IT personnel are the only intended users of this document.
- B. **Applicability** –This standard will cover all systems installed or in use by the State. This standard will include installations owned by the State and housed by third-party contractors.

These standards are adopted by the Department of Technology and Information (DTI), through the Technology and Architecture Standards Committee (TASC), and are applicable to all Information Technology use throughout the State of Delaware. Any questions or comments should be directed to [dti\\_tasc@state.de.us](mailto:dti_tasc@state.de.us).

- C. **Environments** – All environments, including Client/Server and Mainframe are covered by this standard.

### III. PROCESS

- A. **Adoption** – The Department of Technology and Information (DTI) adopted these standards through the Technology and Architecture Standards Committee (TASC). They are applicable to all Information Technology use throughout the State of Delaware.
- B. **Revision** – Technology is constantly changing. It is the intent of the TASC to review each standard yearly. Your Information Resource Manager (IRM) will channel your suggestions and comments to the TASC.
- C. **Contractors** – DTI requires all contractors or other third parties to comply with these standards when proposing technology solutions to other state entities. Failure to do so could result in rejection by the Delaware Technology Investment Council. For further guidance, or to seek review of a non-rated component, contact the TASC at [dti\\_tasc@state.de.us](mailto:dti_tasc@state.de.us).
- D. **Contact us** – Please direct any questions or comments to [dti\\_tasc@state.de.us](mailto:dti_tasc@state.de.us).

### IV. DEFINITIONS / DECLARATIONS

#### A. DEFINITIONS

1. **2 factor Authentication** - Two-factor authentication is a security process in which the user provides two means of identification, one of which is typically a physical token, such as a card, and the other of which is typically something memorized, such as a security code. In this context, the two factors involved are sometimes spoken of as something you have and something you know.
2. **Application Isolation** – The audience interfaces (presentation layer) are separated from the business logic, and database layers.
3. **AS**- Application Server
4. **Audience** – The viewers / users of the presentation layer.
5. **Auditable Access**- The computer assets are physically protected by a locked door and all access is recorded by name, time-in, and time-out (at a minimum).
6. **AuthN** – authentication proving the person is who they say they are.
7. **AuthZ** – those things and only those things this authenticated person can do.
8. **BC** - Business Continuity
9. **Business Logic Isolation** – The programs (application) that contain the business rules are separated from both the presentation layer and the database layer.
10. **Data Base Isolation** – The data is separated from the both the presentation and business logic layers.
11. **Data Center Classification** – Reference the Data Center Policy on the Policy & Standards webpage. For purposes of this standard, three classifications are applicable. Detailed definitions are contained in the referenced policy.
  - a) **Level 1** – Basic Office Infrastructure

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- b) **Level 7 – Reliable**
- c) **Level 9 – Highly Reliable**

**12. Data Classification**

- a) **State of Delaware Public** – Information available to the general public; eligible for public access.
- b) **State of Delaware Confidential** – Information covered by one or more laws. The disclosure of this information could endanger citizens, corporations, business partners and others. The types of information might be covered under non-disclosure agreements; or safeguarded by a general reference in law or best practices.
- c) **State of Delaware Secret** – Information that, if divulged, could compromise or endanger the people, or assets of the State; such as Public Safety Information, Data that is specifically protected by law, (e.g. HIPAA).
- d) **State of Delaware Top Secret** – Information that could, if divulged, expose the State's citizens and assets to great risk.

**13. DB - Data Base Server**

- 14. DMZ - a firewall configuration for securing local area network (LANs).** Under a DMZ configuration, computers behind a firewall are protected from external threats. The firewall controls the connections between the secured network and external networks, thereby protecting the assets behind the firewall.

**15. DR - Disaster Recovery**

**16. DR/BCP Criticality Classifications <sup>1</sup>**

- a) **Critical (1)** – Loss of this business function threatens the ability for the state to operate. Loss of business function disrupts the security and well being of the state. Related business processes are generally defined as affecting statewide public safety or public health.
- b) **Significant (2)** – Loss of this business function significantly reduces the effectiveness of the states operations. Loss of business function has a negative citizen impact and affects the financial well being of the State. Related business processes are generally defined as affecting statewide financials or state's economic base.
- c) **Moderate (3)** – Loss of business function affects multiple state organizations and their ability to operate. Loss of business function has a negative citizen impact and impacts a state organization's mission critical business function. Related business processes are generally defined as mission critical at the department level.
- d) **Limited (4)** – Loss of business function is limited to only the person or state organization using the application. Loss of this business function has little or no effect on the state's ability to carry out business. Related business processes are business critical to the division or business unit.

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<sup>1</sup> DR/BCP Criticality Classifications

- e) **Minimal (5)** – Loss of business function does not have a direct impact on a state organization's ability to do business.
17. **EAL - The Evaluation Assurance Level (EAL1 through EAL7)** of an IT product or system is a numerical grade assigned following the completion of a Common Criteria security evaluation, an international standard in effect since 1999. The increasing assurance levels reflect added assurance requirements that must be met to achieve Common Criteria certification. The intent of the higher levels is to provide higher confidence that the system's principle security features are reliably implemented. The EAL level does not measure the security of the system itself, it simply states at what level the system was tested to see if it meets all the requirements of its Protection Profile.<sup>2</sup>
18. **Encryption** - Encryption is the conversion of data into a form, called a cipher text that cannot be easily understood by unauthorized people. The State of Delaware standard for encryption is AES. Note that at this time AES encryption is not available for all platforms in the State. As hardware and software are upgraded, encryption will be available where needed.
19. **Enterprise Server** – It is a new title used to describe the traditional IBM mainframe. The IBM mainframe supports two distinct types of servers; the traditional z/OS based LPARs and Linux on System z running under z/VM (also known as the z/Linux Facility).
20. **Host Based Firewall** – It is software that runs directly on a networked device and protects that device against attack from the network by controlling incoming and/or outgoing network traffic.<sup>3</sup>
21. **Integrity Virtual Machines** – Software partitioning and virtualization technology which enables the creation of multiple virtual servers or machines within a single HP Integrity server or nPartition. Integrity Virtual Machines is implemented by time slices and allows the sharing of I/O cards yet maintains a separation of “guest” operating systems instances. Integrity Virtual Machines currently support instances of HP-UX 11i, Microsoft Windows Server 2003 Enterprise or Datacenter OS Editions + SP1 or SP2 for 64 bit Itanium based systems, Red Hat Enterprise Linux Advanced Platform (RHEL AP) 4.4 and 4.5 for HP Integrity servers and Novell SUSE Linux Enterprise Server (SLES 10 update 1) for HP Integrity servers.
22. **LPAR (Logical Partition)** – It is a subset of a computer's hardware resources virtualized into one or more separate computers that are independent, isolated, and capable of running their own operating system. On IBM mainframes, LPARs are managed by a PR/SM facility. Modern IBM mainframes operate exclusively in LPAR mode, even when there is only one logical partition on a footprint. Multiple LPARs can form a Sysplex or Parallel Sysplex, whether on one footprint or spread across multiple footprints.
23. **Multitier** – The application is written and designed such that the presentation, application, and database tiers are independent and modular,
24. **Network Security Zone** – This is typically implemented as a DMZ.

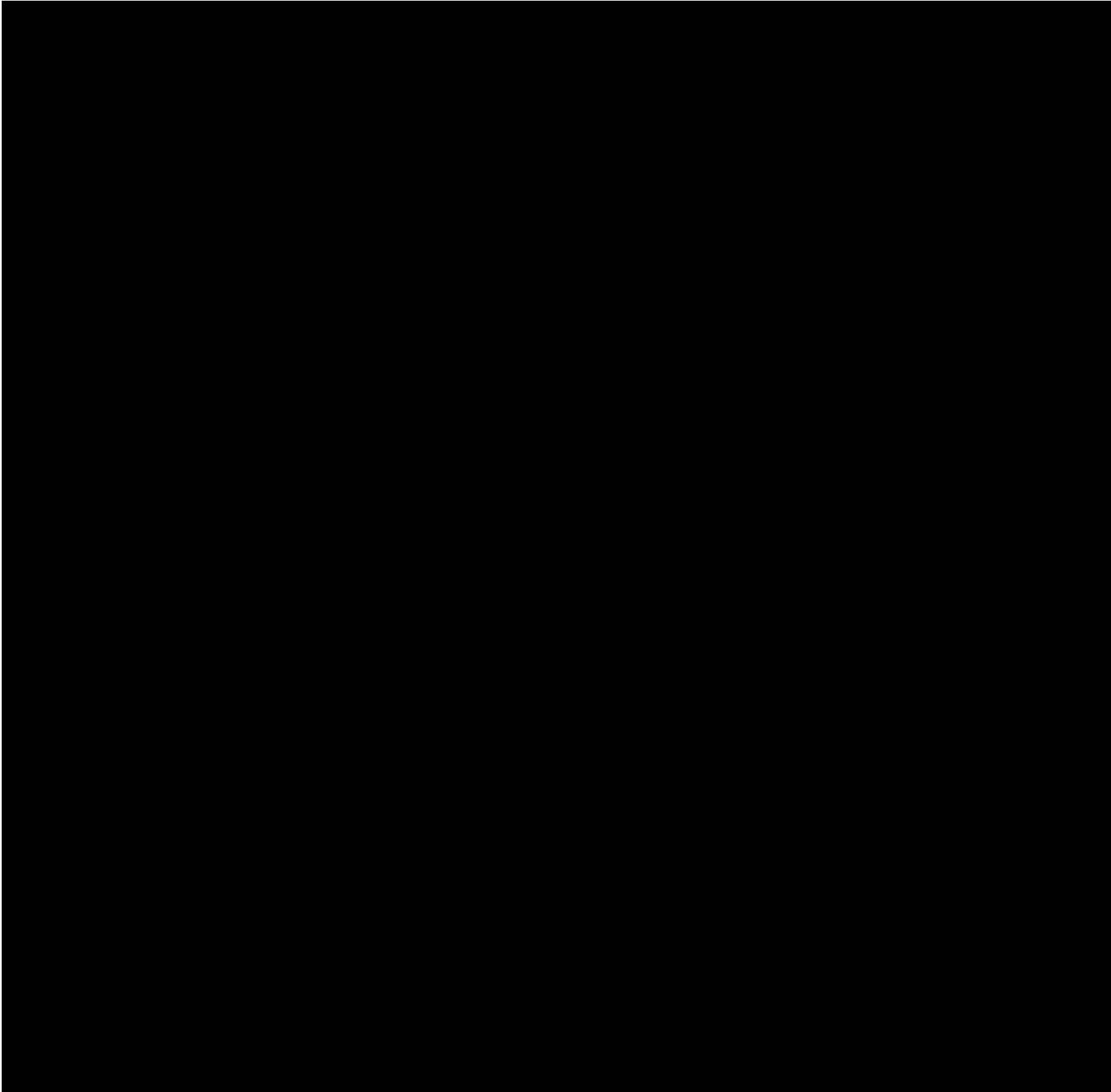
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<sup>2</sup> <http://www.niap-ccevs.org/cc-scheme/>

<sup>3</sup> <https://security.berkeley.edu/MinStds/Firewalls.html>

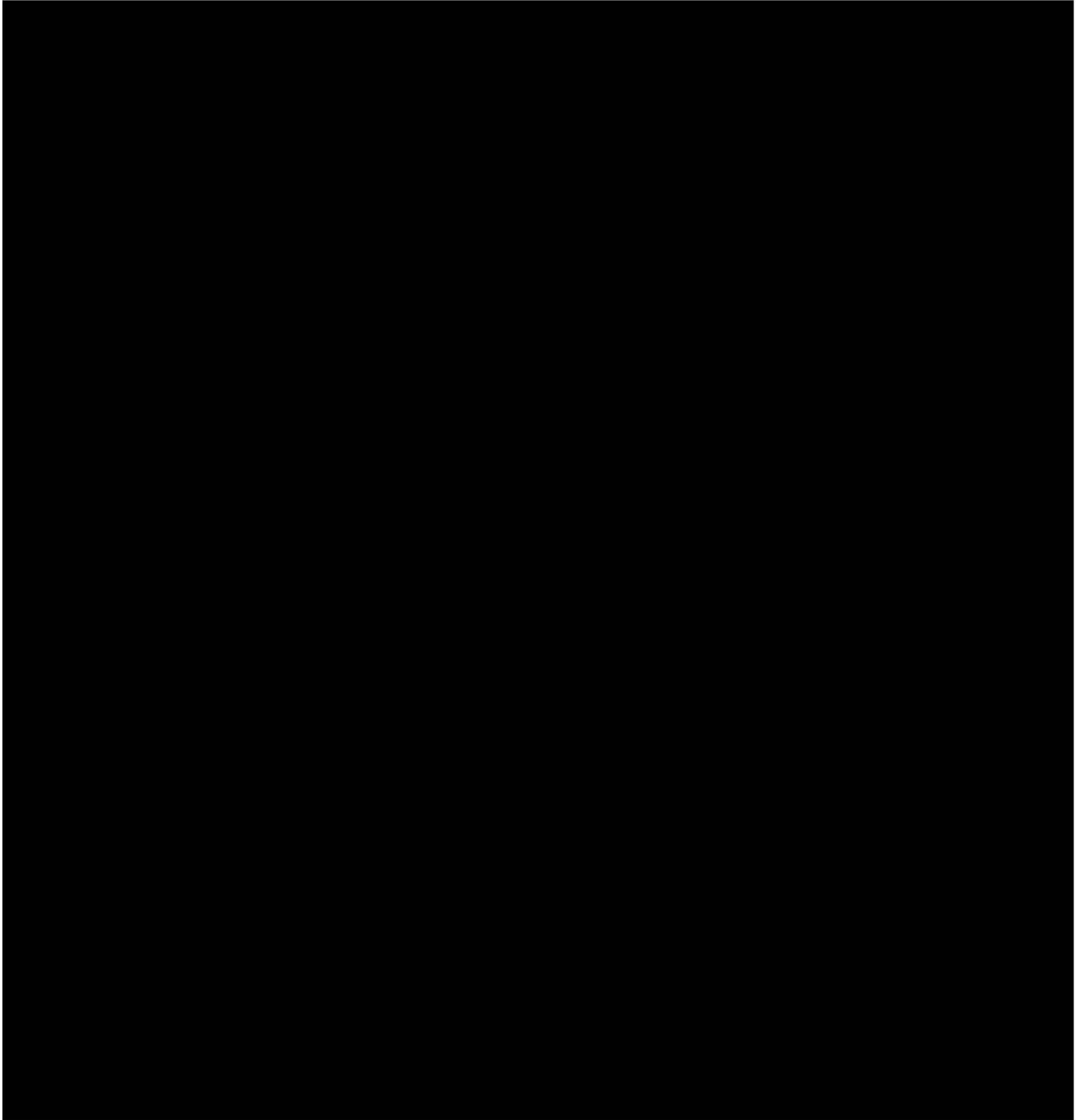
25. **nPartitions** – Hardware partitioning of HP’s Mid-range and High-end multi-processor servers that are designed using cell-based technology. This type of partitioning allows a single physical server to be divided logically and electrically into multiple operating system instances. This is achieved by grouping cell boards, cores, I/O cards and memory together to form hardware partitions. The hardware assigned to each hardware partition is only available to the operating system running in that partition.
26. **Platform** - A **platform** describes some sort of hardware architecture or software framework (including application frameworks), that allows software to run. Typical platforms include a computer’s architecture, operating system, utilities – including security, and related runtime libraries.
27. **Systems Administrator** – It refers to a person responsible for running and maintaining a computer system especially a mainframe, minicomputer, or local area network. System administrators, sometimes called network administrators, issue login names, maintain security fix failures, and advise management about hardware and software purchases.
28. **Tier** - A tier architecture is characterized by the functional decomposition of applications, service components, and their distributed deployment; providing improved scalability, availability, manageability, and resource utilization.
29. **Two-Person Integrity (TPI)** – It is a security concept based on the separation of duties. When applied to network or system security, TPI requires that two people, each from different organizational units, are required to create or edit a configuration. Neither person alone has the access or authority to completely perform this work. In some cases this may take the form of a change being made in a staging area by one person and promoted into active use by another person. In other cases each party must perform a portion of the work and only when both portions are complete can the configuration take effect.
30. **Virtualization** – Virtualization allows one hardware platform to share its resources across multiple operating systems.
31. **Virtual Machine Host** – A server utilizing software partitioning and virtualization technology which enables the creation of multiple virtual servers or machines within a single physical server. z/VM, VMware ESX server, and an HP Integrity server that is utilizing Integrity Virtual Machines are examples of a virtual machine host.
32. **vPars or Virtual Partitions** – Software partitioning of HP’s cell-based servers or nPartitions which provide functional but not electrical partitioning of servers at the processor core level. Virtual Partitions is implemented at the processing core level and maintains separation of CPU, memory and I/O cards between operating system instances. vPars only supports instances of HP-UX 11i operating system.
33. **z/VM (System z- Virtual Machine)** – It is an IBM operating system that can host other operating systems, including z/OS, z/Linux, and z/VM, so that each of the operating systems seems to have its own complete system of software and hardware resources (data storage, telecommunications, processor, and so forth). That is, VM gives each of these operating systems its own "virtual machine."

**B. DECLARATIONS**



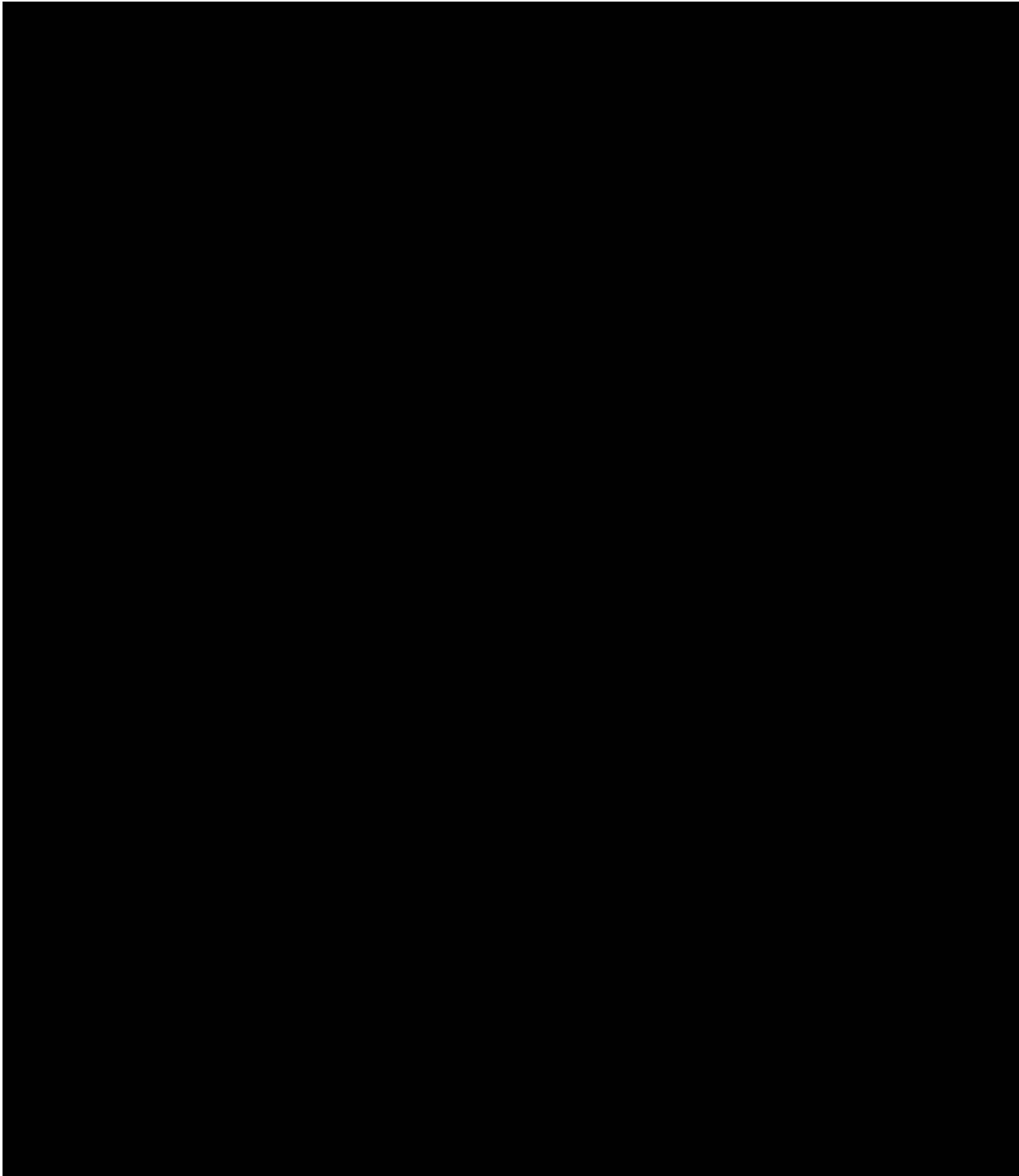
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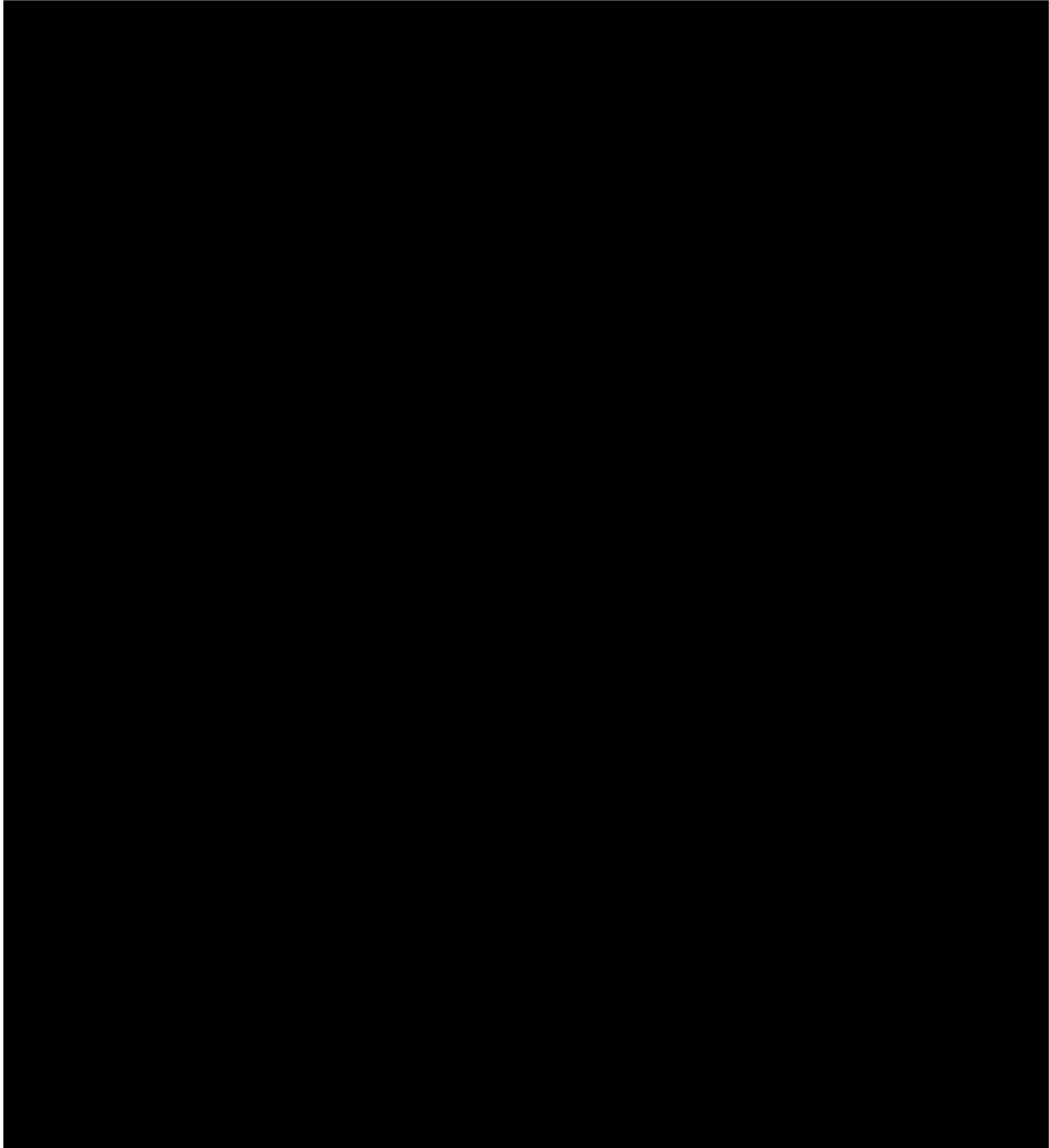
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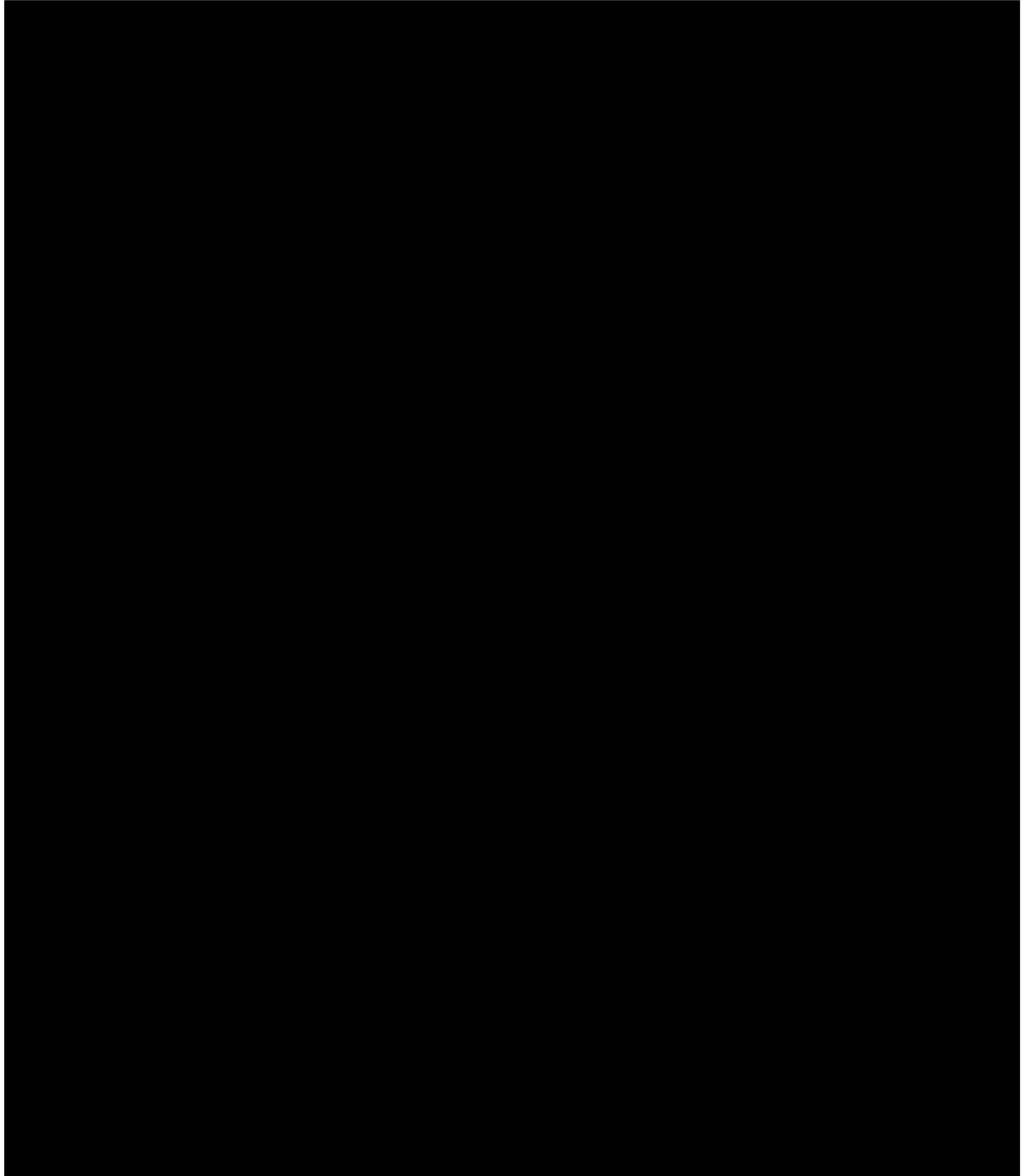
## DELAWARE STATE-WIDE INFORMATION TECHNOLOGY AND ARCHITECTURE STANDARDS

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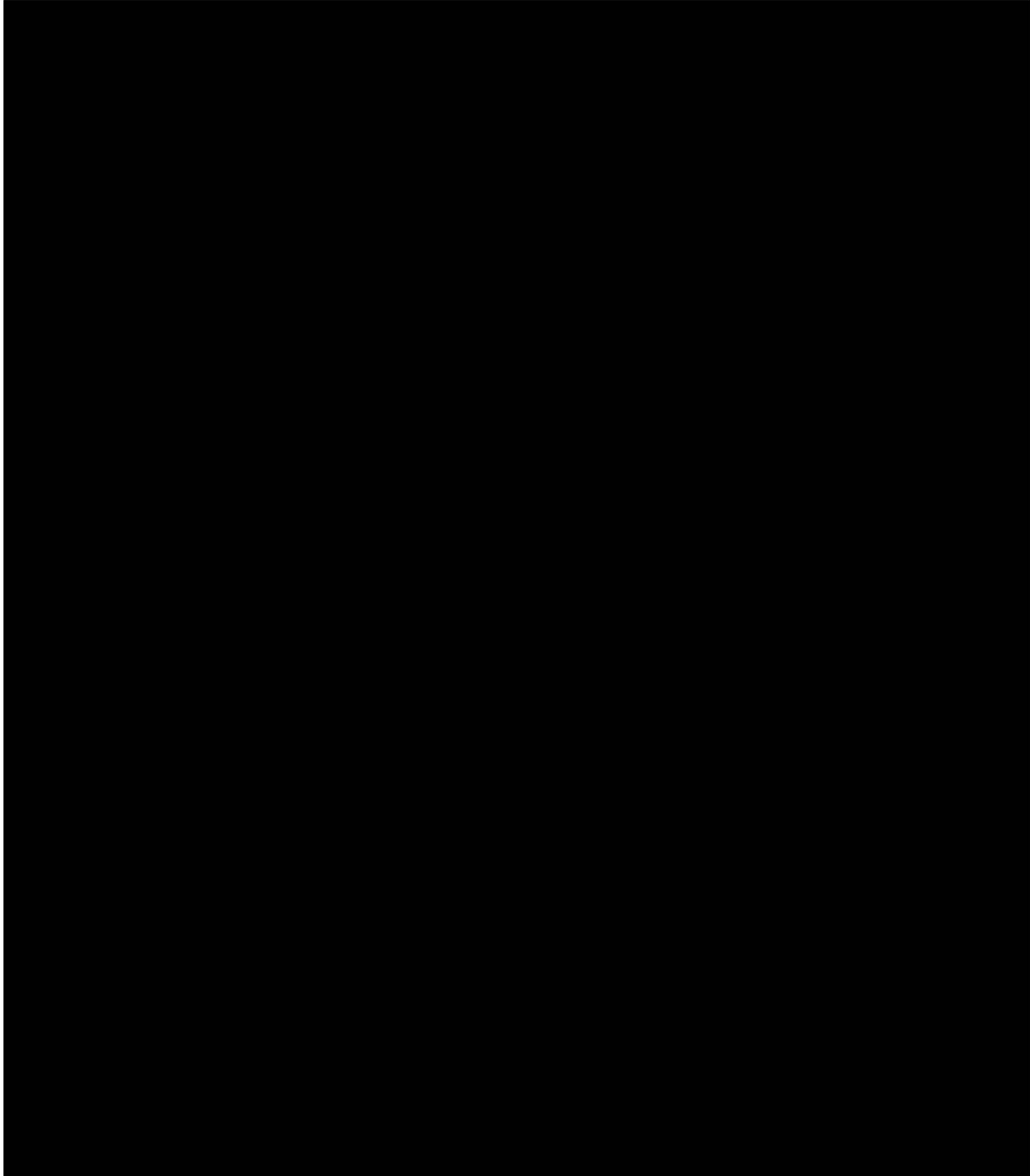


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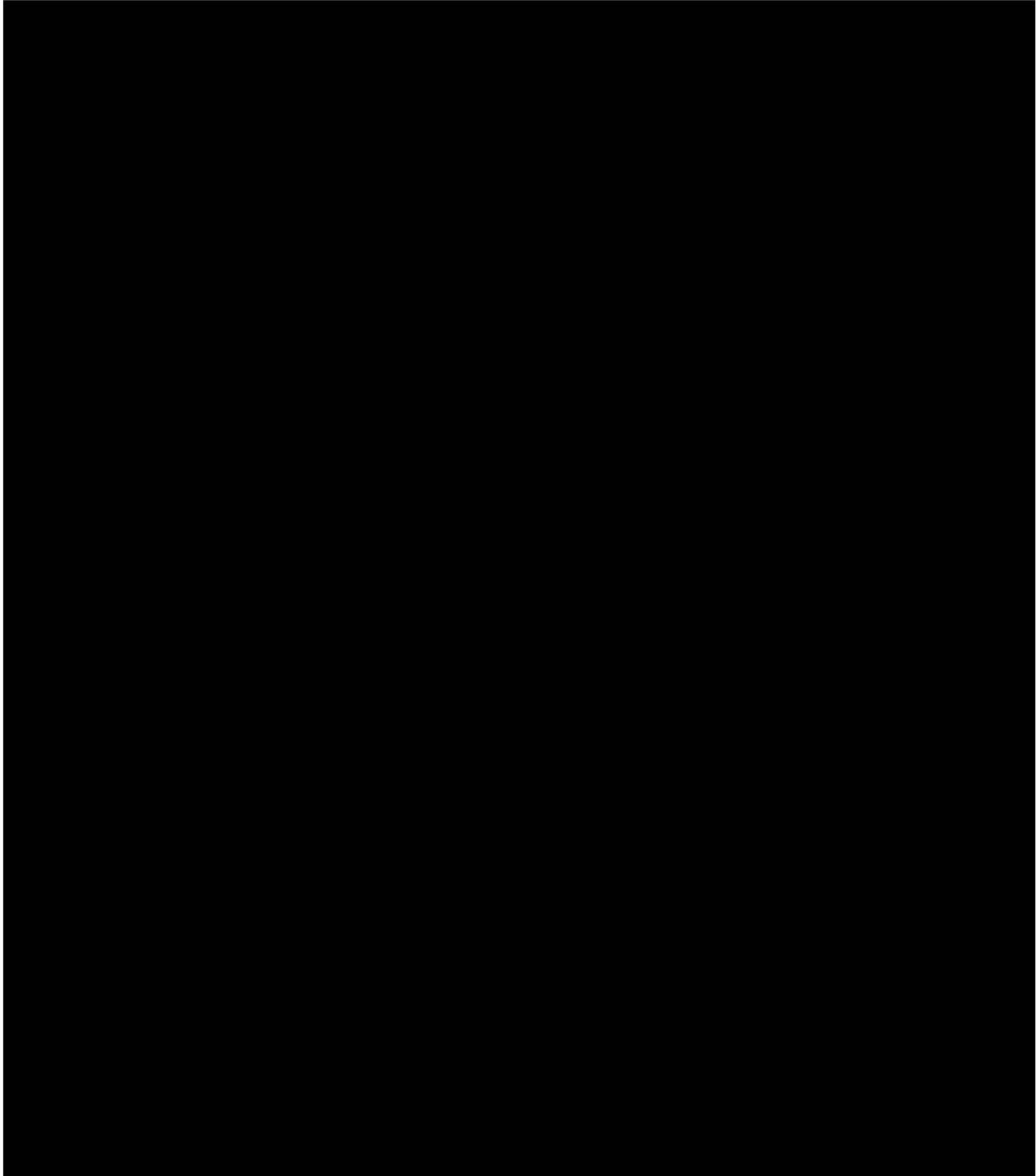


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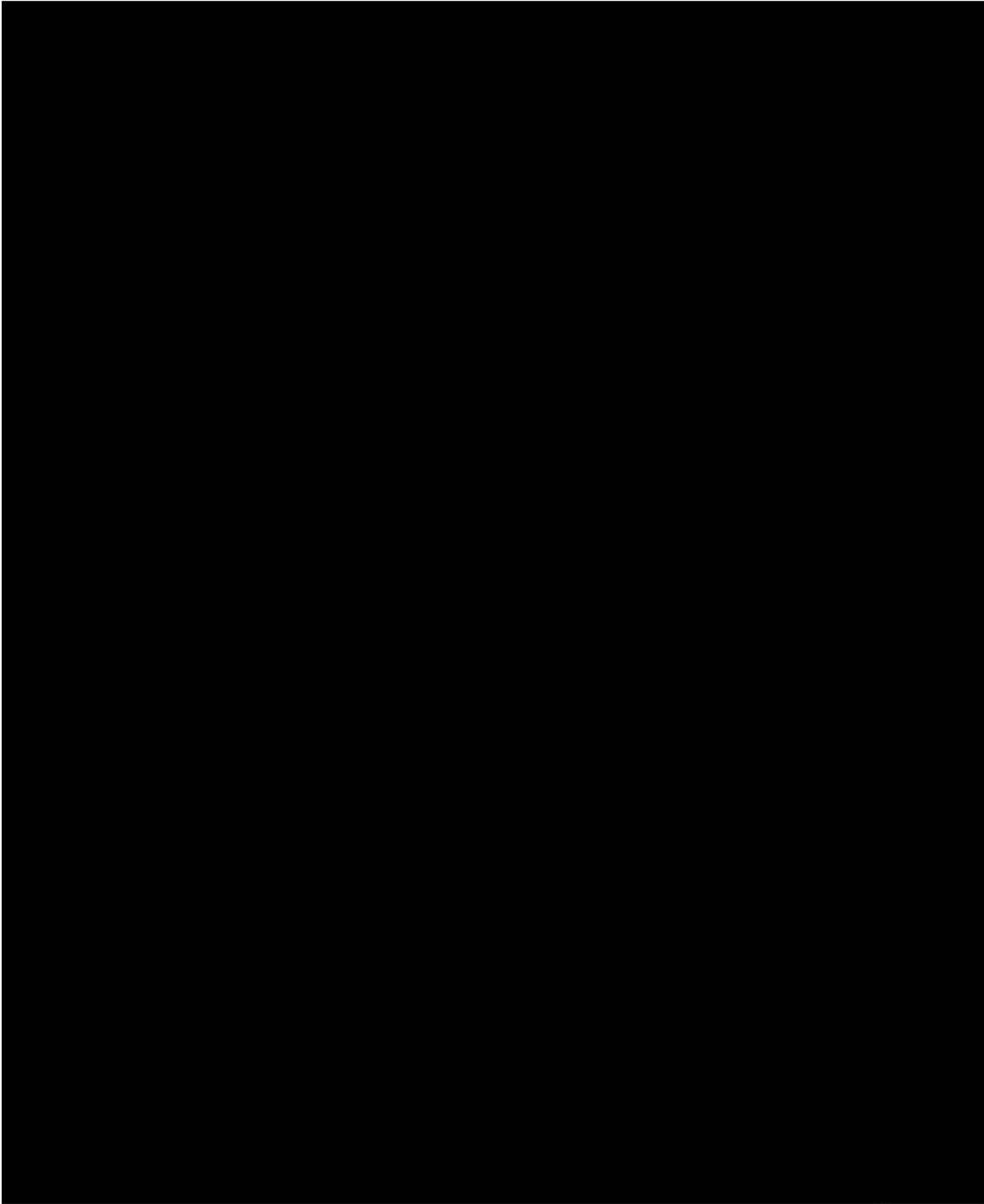


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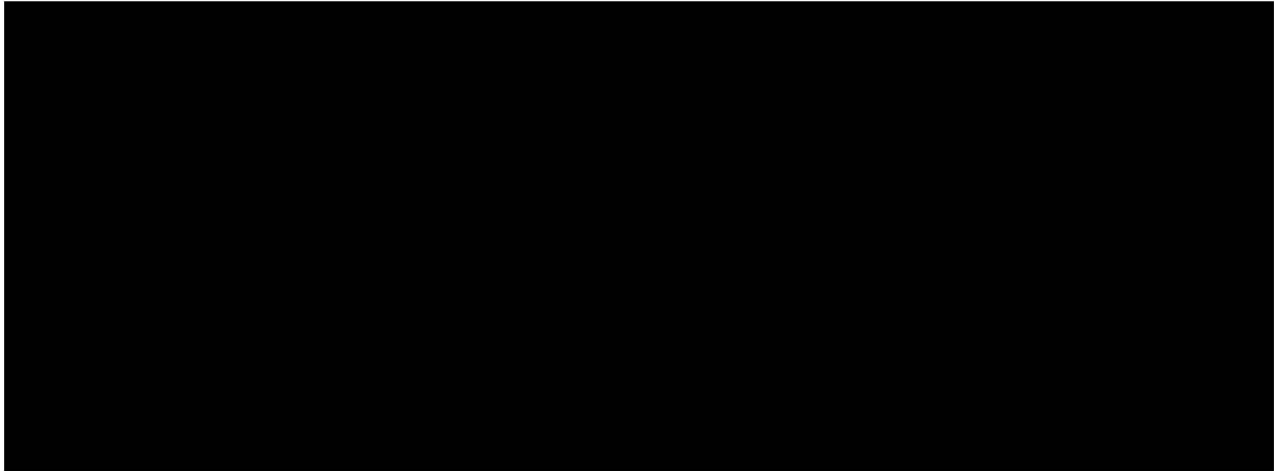
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