



State of New Hampshire Department of Revenue Administration

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John T. Beardmore
Commissioner

June 24, 2013

Her Excellency Margaret Wood Hassan, Governor
and The Honorable Council
State House
Concord, NH 03301

Sole Source

REQUESTED ACTION

Authorize the Department of Revenue Administration to enter into a **SOLE SOURCE** agreement with the University of New Hampshire Technology Transfer Center (T²) through the University of New Hampshire Office of Sponsored Research (vendor # 177867), Durham, NH for a fee not to exceed \$958,460 in a two year period, to procure maintenance for the Department of Revenue Administration's Mosaic Parcel Map and Equalization System, which updates and improves the means by which DRA collects and processes data from the municipalities to develop municipal property tax rates. Effective upon Governor and Council approval through June 30, 2015. 100% General Funds.

FUNDING

Funding is contingent on the passing of the 2014-2015 Operating Budget and will be available in the following account:

01-84-84-841010-5413 Department of Revenue Appraisal Services

	<u>FY2014</u>	<u>FY2015</u>
024-500230 Software License/Maintenance	\$468,973	\$489,487

EXPLANATION

The reason for the sole source is that T² possesses the unique knowledge, as the architects of the mosaic parcel map and the property tax equalization system, to maintain the parcel data. Each year approximately 30% of the data will need significant modification and the municipalities will be making

TDD Access: Relay NH 1-800-735-2964

Individuals who need auxiliary aids for effective communication in programs and services of the Department of Revenue Administration are invited to make their needs and preferences known to the Department.

STATE OF NH
DEPT OF JUSTICE
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adjustments to the structure and type of data that require alterations or total rebuilds of the spatial processors. The processors will require annual maintenance to account for data changes, modification, linkage checks and error resolution updates. As part of the agreement T² will also provide training and technical support to all DRA and DRA supported users of the system. Departments currently relying on the GIS system for critical information are the Department of Environmental Services, Department of Transportation, Department of Safety (including Homeland Security, Emergency Management and E911 group), Department of Administrative Services, the National Guard, DRED and the office of the Adjutant General. There are nine regional planning commissions throughout the State. DRA provides access for these commissions to information contained within our GIS system. Prior to the distribution of our statewide data, the commissions had to purchase data from private sources, or from the individual communities. This maintenance agreement allows for an improved administration of Real Estate Transfer Taxes through electronic filing of transaction forms and tracking of transfer tax data, which is a substantial benefit to DRA and therefore the State.

This agreement is being requested retroactive as the funds necessary to procure maintenance of this system were contingent upon the passage of the State's FY14/15 biennial budget (HB1). With the passage of its operating budget, DRA is in a position to place this agreement on the Governor & Council's agenda for approval at the next regularly scheduled meeting.

DRA entered into a sole source agreement with T² for a fee not to exceed \$823,452 (100% Capital Funds) for development of a sustainable statewide mosaic parcel map. The agreement was approved by Governor and Council on April 14, 2010 (item #25).

Please be advised that the Department of Information Technology has approved this request. The approval letter is attached.

Sincerely,

A handwritten signature in black ink, appearing to read 'John T. Beardmore', written in a cursive style.

John T. Beardmore
Commissioner



STATE OF NEW HAMPSHIRE
DEPARTMENT OF INFORMATION TECHNOLOGY
27 Hazen Dr., Concord, NH 03301
Fax: 603-271-1516 TDD Access: 1-800-735-2964
www.doit.nh.gov

Peter C. Hastings
Commissioner

June 13, 2013

Commissioner John T. Beardmore
Department of Revenue Administration
109 Pleasant Street
Concord, NH 03301

Dear Commissioner Beardmore,

This letter represents formal notification that the Department of Information Technology (DoIT) has approved your agency's request enter into a contract with the University of New Hampshire Technology Transfer Center (T2) of Durham, NH, as described below and referenced as DoIT No.2014-029.

This is a request to procure maintenance for the Department of Revenue Administration's ("DRA") Mosaic Parcel Map and Equalization System, which updates and improves the means by which DRA collects and processes data from the municipalities to develop municipal property tax rates. Contract funding is \$958,460 and the contract shall become effective upon Governor and Executive Council approval through June 30, 2015. This project is part of the "Granite to Green," DRA Modernization Initiative.

A copy of this letter should accompany the Department of Revenue Administration's submission to Governor and Executive Council for approval.

Sincerely,

A handwritten signature in black ink that reads "Peter C. Hastings".

Peter C. Hastings
Commissioner

PCH/ltn
2014-029

COOPERATIVE PROJECT AGREEMENT

between the

STATE OF NEW HAMPSHIRE, **Department of Revenue Administration**

and the

University of New Hampshire of the UNIVERSITY SYSTEM OF NEW HAMPSHIRE

- A. This Cooperative Project Agreement (hereinafter "Project Agreement") is entered into by the State of New Hampshire, **Department of Revenue Administration**, (hereinafter "State"), and the University System of New Hampshire, acting through **University of New Hampshire**, (hereinafter "Campus"), for the purpose of undertaking a project of mutual interest. This Cooperative Project shall be carried out under the terms and conditions of the Master Agreement for Cooperative Projects between the State of New Hampshire and the University System of New Hampshire dated November 13, 2002, except as may be modified herein.
- B. This Project Agreement and all obligations of the parties hereunder shall become effective on the date the Governor and Executive Council of the State of New Hampshire approve this Project Agreement ("Effective date") and shall end on **6/30/15**. If the provision of services by Campus precedes the Effective date, all services performed by Campus shall be performed at the sole risk of Campus and in the event that this Project Agreement does not become effective, State shall be under no obligation to pay Campus for costs incurred or services performed; however, if this Project Agreement becomes effective, all costs incurred prior to the Effective date that would otherwise be allowable shall be paid under the terms of this Project Agreement.
- C. The work to be performed under the terms of this Project Agreement is described in the proposal identified below and attached to this document as Exhibit A, the content of which is incorporated herein as a part of this Project Agreement.

Project Title: **Mosaic Parcel Map Project**

- D. The Following Individuals are designated as Project Administrators. These Project Administrators shall be responsible for the business aspects of this Project Agreement and all invoices, payments, project amendments and related correspondence shall be directed to the individuals so designated.

State Project Administrator

Name: Mary Tanguay
Address: NH Dept of Revenue Administration
109 Pleasant St.
Concord, NH 03301
Phone: 603-230-5007

Campus Project Administrator

Name: Dianne Hall
Address: University of New Hampshire
Sponsored Programs Administration
51 College Rd. Rm 116
Durham, NH 03824
Phone: 603-862-1942

- E. The Following Individuals are designated as Project Directors. These Project Directors shall be responsible for the technical leadership and conduct of the project. All progress reports, completion reports and related correspondence shall be directed to the individuals so designated.

State Project Director

Name: Stephan Hamilton
Address: NH Dept of Revenue Administration
109 Pleasant St.
Concord, NH 03301
Phone: 603 230 5960

Campus Project Director

Name: Charles Goodspeed III
Address: UNH Civil Engineering Dept.
33 College Rd.
Durham, NH 03824
Phone: 603 862-1443

- F. Total State funds in the amount of **\$958,460** have been allotted and are available for payment of allowable costs incurred under this Project Agreement. State will not reimburse Campus for costs exceeding the amount specified in this paragraph.

Check if applicable

Campus will cost-share _____ % of total costs during the term of this Project Agreement.

Federal funds paid to Campus under this Project Agreement are from Grant/Contract/Cooperative Agreement No. _____ from _____ under CFDA# _____. Federal regulations required to be passed through to Campus as part of this Project Agreement, and in accordance with the Master Agreement for Cooperative Projects between the State of New Hampshire and the University System of New Hampshire dated November 13, 2002, are attached to this document as Exhibit B, the content of which is incorporated herein as a part of this Project Agreement.

G. Check if applicable

Article(s) **18** of the Master Agreement for Cooperative Projects between the State of New Hampshire and the University System of New Hampshire dated November 13, 2002 is/are hereby amended to read:

The State shall hold all ownership, title, and rights in any Custom Software developed in connection with performance of obligation under the Contract, or modification to the Software, and their associated Documentation including any and all performance enhancing operational plans and Vendors' special utilities. The State shall have sole right to produce, publish, or otherwise such Software, modifications, and Documentation developed under the Contract and to authorize others to do so. The State shall not sell or otherwise commercialize the Software to third parties without permission of the University of New Hampshire. The State shall not sell or otherwise commercialize the Software to third parties without permission of the University of New Hampshire.

In no event shall the University of New Hampshire be precluded from developing for itself, or for others, materials that are competitive with, or similar to Custom Software, modifications developed in connection with performance of obligations under the Contract. In addition, the University of New Hampshire shall be free to use its general knowledge, skills, experience, and any other ideas, concepts, know-how, and techniques that are acquired or used in the course of its performance under this agreement.

- H. State has chosen **not to take** possession of equipment purchased under this Project Agreement.
 State has chosen **to take** possession of equipment purchased under this Project Agreement and will issue instructions for the disposition of such equipment within 90 days of the Project Agreement's end-date. Any expenses incurred by Campus in carrying out State's requested disposition will be fully reimbursed by State.

This Project Agreement and the Master Agreement constitute the entire agreement between State and Campus regarding this Cooperative Project, and supersede and replace any previously existing arrangements, oral or written; all changes herein must be made by written amendment and executed for the parties by their authorized officials.

IN WITNESS WHEREOF, the University System of New Hampshire, acting through the **University of New Hampshire** and the State of New Hampshire, **Department of Revenue Administration** have executed this Project Agreement.

**By An Authorized Official of:
University of New Hampshire**

Name: Karen M. Jensen
 Title: Manager, Sponsored Programs Administration
 Signature and Date:

[Handwritten Signature] 5/16/13

**By An Authorized Official of: the New
Hampshire Office of the Attorney General**

Name: *Michael K. Brown*
 Title: *Sen. Asst. AG*
 Signature and Date:

Mike Brown 4/25/13

**By An Authorized Official of:
Department of Revenue Administration**

Name: Margaret Fulton
 Title: Assistant Commissioner
 Signature and Date:

[Handwritten Signature] 5/20/13

**By An Authorized Official of: the New
Hampshire Governor & Executive Council**

Name:
 Title:
 Signature and Date:

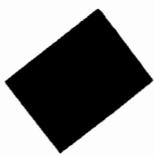


EXHIBIT A

A. Project Title: Mosaic Parcel Map Project

B. Project Period: 7/1/2013-6/30/2015

C. Objectives: The University of New Hampshire Technology Transfer Center (T2) proposes to continue the development and operation of the New Hampshire Mosaic (Mosaic) for the period of July 1, 2013 through June 30, 2015. Mosaic is a multifaceted project that utilizes the first continually sustained composite land base. Mosaic has three major components; Mosaic Parcel Map, Property Tax Equalization and Real Estate Transfer Form E-File. Each component is summarized below:

Mosaic Parcel Map: The Mosaic Parcel Map (Mosaic) is a compilation of municipal parcel maps and CAMA data statewide. The system brings together data from 235 taxing jurisdictions (234 municipalities + unincorporated locations), into a single, common format. Currently New Hampshire is the first state in the Country to develop a sustainable, regularly updated, statewide parcel map. Data for Mosaic is collected, standardized, and compiled using software custom built by T2. To date, 3 million records have been processed through the system. Mosaic is served out to DRA users via a secure web-based searching and reporting software system. DRA has made Mosaic available to other state agencies that execute a Memorandum of Understanding (MOU) drafted by DRA. The MOU requires partner agencies adhere to data privacy and confidentiality restrictions placed on the data by DRA. Mosaic has been featured in international trade journals and conferences, regional publications, and was designated a "Bright Idea" by the Harvard Kennedy School of Government, Ash Center for Democratic Governance.

Property Tax Equalization: The Mosaic Property Tax Equalization System (Mosaic EQ) is a web-based, .net platform that allows state and municipal users to access real estate transaction information to conduct the Property Tax Equalization Process. Mosaic EQ ingests information from the Mosaic CAMA database, the ten county registries of deeds and the Real Estate Transfer Tax (RETT) forms (PA-34, CD-57S, CD-57P). The system was designed to replace the previous DOS based solution that was being provided to DRA and municipalities by a third party contractor. The new system allows for direct data import of transactional data from the ten county registries of deeds (on a weekly or daily basis), in addition to real time data access to RETT tax form data.

Real Estate Transfer Form E-File: The Real Estate Transfer Tax E-file process was designed to replace the existing paper process previously in use at DRA by leveraging Adobe LiveCycle software. The new, dynamic PDF form allows users to electronically file all RETT forms from a single entry point. This eliminates the need for duplicate data entry (common fields between forms) and results in significant timesaving for filers and DRA personnel.

D. Scope of Work: A detailed scope of work is provided in the proposal titled "Mosaic Parcel Map Project", dated April, 25 2013, and is incorporated by reference. Specific tasks include:

Task 1: Mosaic Parcel Map

- Data Solicitation, Collection and Processing
- Maintenance of Mosaic Distribution Systems
- Development of Sharing Pool
- GIS and Technical Services

-Mosaic Training and Technical Support

Task 2: Property Tax Equalization

- Collection and Processing of County Registry Data
- Processing of RETT Form Data
- Maintenance and Updates to Software
- EQ Training and Technical Support

Task 3: Real Estate Transfer Tax E-File

- Form Modifications
- Integration with RETT scanned documents
- Transition period data integration
- LiveCycle workflow management

Task 4: Third Party 2D Barcode Validation

- Test case development
- Form validation
- Error documentation and resolution

E. Deliverables Schedule: Timing of deliverables is outlined in the schedule attached to the proposal titled "Mosaic Parcel Map Project", dated April, 25 2013, and is incorporated by reference.

Mosaic Parcel Map Maintenance

- 1 Collect 235 Parcel Map Data Sets (Approximately 600,000 records)*
- 2 Collect 235 CAMA Data Sets (Approximately 680,000 records)*
- 3 Process 235 Parcel Map Data Sets (Approximately 600,000 records)*
- 4 Process 235 CAMA Data Sets (Approximately 680,000 records)*
- 5 Correlate Local Land Use Codes to State Land Use Codes (Greater than 90% Correlation)
- 6 Generation of Additional Land Base Data
- 7 Development of Sharing Pool

Mosaic Parcel Map Distribution Systems

- 8 Maintain software and systems for DRA Web GIS
- 9 Maintain software and systems for DRA Web GIS (DRA backup server at UNH)
- 10 Maintain software and systems for DRA Web GIS (Located at 27 Hazen Drive)
- 11 Maintain software and system for Web Mapping Service (Located at UNH)
- 12 Maintain software and systems for Sharing Pool Web Application (Located at UNH)
- 13 Update data weekly on DRA Web GIS
- 14 Update data weekly on DRA Web GIS (DRA backup server at UNH)
- 15 Update data weekly on DRA Web GIS (Located at 27 Hazen Drive)
- 16 Update data weekly to Web Mapping Service
- 17 Update data weekly for Sharing Pool
- 18 Base map data updates (as data is available and necessary)
- 19 Technical support for DRA users
- 20 Technical support for sharing pool users

Property Tax Equalization System Maintenance

- 21 Collection/Processing/Integration of 10 County Registry of Deeds indexes on a weekly/daily basis

- 22 Collection/Processing/Integration of RETT data (PA-34, CD-57S, CD-57P)
- 23 Integration of Mosaic CAMA database (as updates dictate)
- 24 Technical support for DRA users
- 25 Technical support for 235 municipal "users" (~500 individual accounts)
- 26 Training for municipal users (web, phone, in-person)
- 27 Maintenance and support of EQ software
- 28 Updates and upgrades to EQ software (as dictated by DRA and requested by municipalities)
- 29 Development of GIS layers derived from EQ data

Real Estate Transfer Tax (RETT) E-file System Maintenance

- 30 Support versioning of "RETT Single Entry Point"
- 31 Modifications and updates to RETT E-file forms (as dictated by DRA)
- 32 Modification and updates to RETT E-file LiveCycle process (backend)
- 33 Support Adobe LiveCycle network architecture as it pertains to RETT forms

GIS and Technical Services

- 34 200 Hours of custom GIS services (as dictated by DRA)
- 35 Geolocation of Meals and Rooms license database
- 36 Identification of feasibility to geolocate low and moderate filers

Third Party 2D Barcode Validation for DRA High Speed Scanning

- 37 Test case specification and verification
- 38 1D Bar code verification (3rd party vendor submitted)
- 39 2D Bar code verification (3rd party vendor submitted)
- 40 Error notification
- 41 Error resolution notification

F. Budget and Invoicing Instructions:

Budget items	Total
Salaries and Wages	\$587,771
Fringe Benefits	\$ 47,625
Travel	\$ 12,985
Supplies and Services	\$ 50,000
Subcontractors	\$ 72,000
F&A Costs	\$188,079
Total	\$ 958,460

Campus will submit invoices to State on regular Campus invoice forms no more frequently than monthly and no less frequently than quarterly. Invoices will be based on actual project expenses incurred during the invoicing period, and shall show current and cumulative expenses by major cost categories. State will pay Campus within 30 days of receipt of each invoice. Campus will submit its final invoice not later than 60 days after the Project Period end date.

G. Other:

Funding Credit: All materials produced for public distribution shall be reviewed and approved by the State Project Director prior to distribution and shall include a citation that funding was provided by the New Hampshire Department of Revenue Administration (DRA) with the DRA logo.

Mosaic Parcel Map Project

*Mosaic Parcel Map
Property Tax Equalization
RETT E-File Maintenance
2D Barcode Smart Form Validation*



UNH Technology Transfer Center
Dr. Charles Goodspeed
David Salzer
Patrick Santoso

April 25, 2013

Contents

Overview	3
Project History	3
Project Systems	4
Mosaic Parcel Map	4
Property Tax Equalization	5
Real Estate Transfer Form E-file System	5
Proposed Project Tasks and Deliverables	6
MOSAIC PARCEL MAP	6
Data Maintenance and Management	6
System Maintenance	7
New Services	9
Property Tax Equalization System	10
Data Maintenance and Management	10
System Maintenance	11
Real Estate Transfer Tax (RETT eZ-File) E-file System Maintenance	12
Data Maintenance and Management	12
System Maintenance	13
Third Party 2D Barcode Validation for DRA High Speed Scanning	13
New Services	13
Deliverables Table	15
Key Personnel	17
Personnel	17
Costs	17
Schedule	18

Overview

The Mosaic Parcel Map Project is a cooperative initiative between the New Hampshire Department of Revenue Administration (DRA) and the UNH Technology Transfer Center (T²). The resultant Mosaic data set is being shared and utilized by state and local government statewide. The project has three elements:

1. **Mosaic Parcel Map**-Annually collect and compile a composite GIS parcel map for all of New Hampshire with a linked 40 field per parcel attribute database, derived from municipal assessment data.
2. **Property Tax Equalization**-Maintain and operate the Property Tax Equalization system including integration of all associated Real Estate Transfer Tax Forms, and collection of transactional data from the 10 county registries of deeds.
3. **Real Estate Transfer Form E-file System**-Maintain the E-file process for the Real Estate Transfer Tax (RETT) forms (PA-34, CD-57S, CD-57P).

Project History

The Mosaic Parcel Map Project began in December of 2009 with a 20 municipality pilot project. The goal of the pilot project was to determine the feasibility of compiling a mosaic parcel map and linked Computer Assisted Mass Appraisal (CAMA) data set from a variety of taxing jurisdictions around the state. The pilot project collected, processed, and combined over 115,000 CAMA records, showing the feasibility of a statewide mosaic parcel map project.

During the pilot DRA identified the need to update its Property Tax Equalization (EQ) software, which relies on current property information that is abstracted from the registries of deeds and municipal CAMA databases. DRA identified that the data compiled for Mosaic could also fuel a new EQ system. During the Mosaic Parcel Map Pilot Project DRA assessed the feasibility of T2 redeveloping the EQ system. The legacy EQ system was a DOS based program, with limited functionality and reporting capabilities that was provided by a third party to DRA.

In April of 2010, DRA and T2 entered into a full-scale Mosaic Parcel Map Project agreement that would continue until October 1, 2012. The agreement required that T2 build two editions of Mosaic (2010, 2011 editions) in addition to the development of the new Mosaic EQ system. In June of 2011, T2 completed the first edition of Mosaic with data voluntarily submitted from 177 municipalities (570,335 CAMA records and 389,704 parcel records). In June of 2012, T2 completed the second edition of Mosaic with 225 municipalities voluntarily participating (666,502 CAMA records and 560,723 parcel records).

The new Mosaic EQ system was launched on August 15, 2012, as it was scheduled to run in tandem with the legacy system for one year. Municipalities were invited to utilize the new system in 2012 and notified that its use would be mandatory in 2013. In the first year 200, municipalities chose to move to the new Mosaic EQ system rather than work with the legacy system. During that year, municipal users verified 12,729 of the 18,548 eligible real estate transactions in the new Mosaic EQ system.

In December of 2011, DRA and T2 agreed to terms on a project to develop an E-file system for the Real Estate Transfer Forms (RETT), to go through June 30, 2013. The goal of the project was to develop an E-file solution for the PA-34 and CD-57 forms that are filed within 30 days of the transfer of real estate. The E-file project leverages the existing Adobe LiveCycle software that DRA has already procured as well as the assessment data collected for Mosaic. In addition to the development of the E-file solution, DRA contracted with T2 to build a third edition of Mosaic (2012), which would encompass data from all 235 taxing jurisdictions.

Project Systems

Mosaic Parcel Map

The Mosaic Parcel Map (Mosaic) is a compilation of municipal parcel maps and CAMA data statewide. The system brings together data from 235 taxing jurisdictions (234 municipalities + unincorporated locations), into a single, common format. Currently New Hampshire is the first state in the Country to develop a sustainable, regularly updated, statewide parcel map. Other states are now following New Hampshire's lead including Wyoming, Idaho, Minnesota, and New Mexico.

Data for Mosaic is collected, standardized, and compiled using software custom built by T2. To date, 3 million records have been processed through the system. Mosaic is served out to DRA users via a secure web-based searching and reporting software system. The system allows DRA to search and locate properties based on the attributes that are maintained for each parcel in the state. The web-based system also allows DRA to export data directly to MS Excel. This functionality enables DRA to perform rapid disaster assessment through the use of selection tools and property damage assessment reports. The servers and software that run the DRA system are currently housed at the DRA offices in Concord, as well as at 27 Hazen Drive. An additional backup server is located at the DRA collocated rack at the UNH data center.

DRA has made Mosaic available to other state agencies that execute a Memorandum of Understanding (MOU) drafted by DRA. The MOU requires that partner agencies adhere to data privacy and confidentiality restrictions placed on the data by DRA. DRA provides partner agencies with two methods to utilize Mosaic. The first is a web-based system identical to the one in place at DRA that is housed at DoIT headquarters on Hazen Drive. The second method for accessing data is a Web Mapping Service (WMS). The WMS allows users who have GIS desktop software (ESRI ArcMap, Map Window, etc.) to utilize Mosaic information alongside their own data. The following agencies are currently utilizing Mosaic: Department of Transportation, Department of Safety (E911 and EOC), Department of Environmental Services, Department of Economic and Resource Development, Department of Fish and Game, Department of Administrative Services, New Hampshire National Guard, and the 9 regional planning commissions (Rockingham, Strafford, Nashua, Central, Lakes Region, Upper Valley/Lake Sunapee, Southern, South West, and North Country Council).

Mosaic has been featured in International trade journals, regional publications, and was designated *Bright Idea* by the *Harvard Kennedy School of Government, Ash Center for Democratic Governance*.

Property Tax Equalization

The Mosaic Property Tax Equalization System (Mosaic EQ) is a web-based, .net platform that allows state and municipal users to access real estate transaction information to conduct the Property Tax Equalization Process. Mosaic EQ ingests information from the Mosaic CAMA database, the ten county registries of deeds and the Real Estate Transfer Tax (RETT) forms (PA-34, CD-57S, CD-57P). The system was designed to replace the previous DOS based solution that was being provided to DRA and municipalities by a third party contractor. The new system allows for direct data import of transactional data from the ten county registries of deeds (on a weekly or daily basis), in addition to real time data access to RETT tax form data.

The Mosaic EQ system allows municipal users to view, search, and export all real estate transactions occurring within their jurisdiction. New transactions are uploaded and made available to municipal users on a weekly basis. Municipal users may also view any PA-34 forms associated with the transaction. Mosaic EQ also promotes workflow management by allowing municipal users to validate transactions as they occur throughout the year reducing seasonal workloads. Innovative new features for the EQ system include: The ability for towns to manage their own users and credentials, ability for multi-town assessors to maintain one user account, ability to attach related documents to each transaction, export of all data and reports to excel, PDF or word, and improved time-trend and ratio study modules.

Real Estate Transfer Form E-file System

The Real Estate Transfer Tax E-file process was designed to replace the existing paper process previously in use at DRA by leveraging Adobe LiveCycle software. The new, dynamic PDF form allows users to electronically file all RETT forms from a single entry point. This eliminates the need for duplicate data entry (common fields between forms) and results in significant timesaving for filers and DRA personnel. Users have the ability to “pre-link” their transaction to a known records in the Mosaic database through a custom property lookup tool. This means the users do not have to enter the detailed parcel information manually, and additionally that each RETT form is pre-linked to the Mosaic system before it is even filed. The result is the ability to view property transactions on the map in near real time.

Pre-linking the RETT forms, which are also pre-links to the deed transaction data by the book and page number allows all elements of the transaction to be automatically associated with the Mosaic map and consequently with each municipalities assessment databases. The project team has been working with CAMA vendors in New Hampshire to develop a system whereby municipalities can validate pre-linked data within the Mosaic EQ system, and import it into their CAMA systems. This process will eliminate redundant sales validation, which is currently done in both the CAMA and EQ systems.

Proposed Project Tasks and Deliverables

T2 proposes to continue the Mosaic Parcel Project (all components) for a two year period from July 1, 2013 through June 30, 2015. The project deliverables are broken by component; Mosaic Parcel Map, Property Tax Equalization, Real Estate Transfer Tax (RETT eZ-File) E-file System Maintenance and Third Party 2D Barcode Validation for DRA High Speed Scanning. For each component the deliverables are broken into three categories; System Maintenance, Data Maintenance and Management and New Services.

MOSAIC PARCEL MAP

Data Maintenance and Management

Parcel Data

T2 will continue to manage the solicitation, collection and processing of the critical data for Mosaic and Equalization. Currently Mosaic data consist of; parcel data, computer assisted mass appraisal (CAMA) data and supporting geographic information systems data provided by numerous third parties.

Annually, T2 collects parcel data from 235 taxing jurisdictions that are maintained by 35 separate entities (private companies, RPC's, municipalities, residents). This is approximately 600,000 parcel records. The data is transmitted in a variety of formats, including GIS, AutoCAD, various image formats, and paper. T2 has worked extensively to eliminate paper maps from Mosaic; currently 8 towns utilize paper parcel maps. Each parcel map data set must be spatially processed prior to primary processing with CAMA data. Each taxing jurisdiction has a data specific, geospatial processing model that requires annual maintenance. Some municipalities maintain data types (AutoCAD sheet maps) that require an extensive amount of work each year be put into compiling and referencing the data. There are approximately 10 taxing jurisdictions with this type of parcel data.

Supporting Parcel Data Sourced from Municipalities

When possible, T2 attempts to collect additional municipal data including; hydrography (streams, rivers, water bodies, building footprints, road right of way, and annotation; parcel numbers, dimensions). Approximately 150 taxing jurisdictions provide the project team with supporting GIS parcel data following direct solicitation.

CAMA Data

T2 will continue to collect CAMA data from taxing jurisdictions at a minimum annually, but in most instances CAMA data is collected and processed 3-4 times per year. A single statewide CAMA data collection yields approximately 680,000 records. Taxing jurisdictions have an incentive to provide data more regularly through the EQ process. Having current CAMA in the system ensures them minimal data entry. Due to this, some taxing jurisdictions are providing

their data 4-5 times per year. The result is the project team collecting and processing approximately 1,000,000 CAMA records annually.

Base Data

Parcel and CAMA data is the star of the Mosaic GIS system at DRA, but the collection and maintenance of additional “supporting” data is critical for a highly leveraged, multi-faceted GIS. This data includes; Ortho photography, road centerline data, national wetlands, point data (schools, hospitals, police and fire stations), hydrography, FEMA flood plains, town boundaries, RPC boundaries, state and federal parks. The data must be sourced and checked to ensure accuracy. This data is sourced from multiple locations.

Mosaic Derived Data

Numerous data sets can be derived from Mosaic. The primary data set is state owned land. This layer provides parcel boundary and CAMA information for parcels that are owned by the State of New Hampshire. This is considered the most complete inventory of state owned land. The second most critical data set derived from Mosaic is the “ratio layer”. Following the EQ process each year, parcels that have transacted are associated with the information that is generated through the EQ process. This data is compiled annually and converted into a searchable GIS layer which is available to DRA employees and will be available to municipal staff through the sharing pool.

System Maintenance

Municipal Specific Spatial Processors

Each taxing jurisdiction has a specific “Spatial Processor” that pre-processes the submitted parcel data for use in the “Municipal Specific Mosaic Processor”. This process is constructed using a python framework utilized through ESRI ArcMap. These processors are tailored to the specific type and format of data that is expected to be submitted by each individual taxing jurisdiction. Each year approximately 30% of the parcel data has a significant modification (remap, format change, renumbering). Each year municipalities are making adjustments to the structure and type of data that require alterations or total rebuilds of the spatial processors.

Municipal Specific Mosaic Processors

Each taxing jurisdiction has a specific “Mosaic Processor” which standardizes and cross-references the parcel map and CAMA data. This 18 step process ensures that the CAMA data is standardized for use in the composite data set. The data is put through a 4 step process to ensure linkage (link errors). Each unlinked parcel is identified and flagged. Processors require annual maintenance to account for data changes, modification, linkage checks and error resolution algorithm updates. For Mosaic 2013, DRA has requested numerous changes to the type of CAMA data exports that are currently submitted by municipalities. This will require extensive modification to approximately 130 Mosaic Processors.

GIS Compilation Process

Following 235 specific Mosaic Processes, each parcel (or parcel supporting) data set is compiled into the global mosaic parcel layer. This process is constructed using a python framework utilized through ESRI ArcMap. This process requires compiling tools be maintained for the following data layers; parcels, parcel lines (AutoCAD parcel maps), road right of way, water features (line and polygon) and building footprints. The tools are designed to compile the 235 standardized databases, then check and repair any incorrect geometry.

CAMA Compilation Process

Following the taxing jurisdiction specific “Mosaic Process”, each CAMA data set is compiled into the global Mosaic CAMA database. This process requires that standardization tools be maintained to allow for the correct alignment of 680,000 records, sourced from 235 separate entities. The process also extracts and aligns data from previous year’s data submissions to create a “historical” picture of each record.

CAMA Land Use Code Correlation Process

Following the creation of the composite CAMA database, each of the separate local land use codes (LUC) must be correlated to the state standard. This 22 step process aligns the ~25,000 individual municipal LUC’s to the 28 DRA standard codes. The processor currently correlates records with a success rate of 95.5%. This process requires extensive review and maintenance as taxing jurisdictions modify, add and remove LUC’s each year.

Mosaic Distribution Systems

Mosaic data is utilized in numerous distribution systems. The primary system is a web based, GIS searching and reporting tool that is referred to as “DRA Web GIS”. The system is developed at UNH (on development server) and is hosted to DRA users via the server installs at DRA (Medical and Surgical Building) and 27 Hazen Drive. An additional server is being brought online at the UNH data center as part of DRA’s backup array. Each server installation requires software maintenance (Integrator, MapGuide, Coldfusion, and SQL) and system upgrades. Data must be packaged, loaded and configured on each of these servers on a bi-weekly basis (or as updated data is available).

Modifications to queries and reports must be made to the user interfaces as requested by DRA. Currently T2 manages all aspects of the DRA Web GIS platform including user credentials management, query management, report management (including Cold Fusion reports). DRA has made the system available to other state agencies, which requires setup and support time from T2 to make functional

Web Mapping Service

T2 will continue to maintain and support the Web Mapping Service (WMS) located on a server at UNH. WMS data allows users who have desktop GIS applications (like ArcMap) to interact with Mosaic data in concert with their own information. T2 manages the spatial and CAMA processors that are required to prepare the data for the WMS generation. T2 will continue to

maintain the WMS conversion processor which combines and converts the Mosaic data into the 6 separate WMS layers.

Training and Technical Support

T2 will provide training and technical support to all DRA, and DRA supported users for Web-GIS and WMS. Technical support is executed through in person meetings, web meetings, phone and email. Training is provided to all DRA and DRA supported users via in person meetings, web meetings and recorded videos.

New Services

Sharing Pool

T2 will develop the “Municipal Sharing Pool”, which is a municipal data sharing initiative. The sharing pool is a mechanism for municipalities to view each other’s information via a version of DRA Web-GIS. This application will allow participating taxing jurisdictions to view other participating taxing jurisdictions parcel map and CAMA data. This information is extremely useful for municipal valuations of rare or complicated properties.

T2 proposes to solicit, and manage the data release records for participating municipalities. Following the determination of participating municipalities, T2 will compile the necessary data to build a sharing pool parcel map and CAMA database. Following the development of the sharing pool data, it will be loaded into a dedicated server that houses the Web Application. T2 will manage the server, software and data. T2 will also manage the technical support and training for the Sharing Pool users.

Advanced Data Integration

T2 will, where possible, integrate “advanced” parcel data, including but not limited to; easements, parcel annotation, lidar and other data where available.

GIS and Technical Services

T2 will provide GIS and technical services to DRA not to exceed 200 hours (over the duration of the contract). GIS services include the development of DRA specific layers, and geocoding DRA data including but not limited to: Assessment Review and Monitoring tools, Meals and Room Licenses (~6,000), Business Locations, and Low and Moderate filer locations. Specific GIS tasks will be assigned by DRA. A quarterly report of hours utilized will be provided by T2.

Property Tax Equalization System

Data Maintenance and Management

Registry of Deeds Data

Registry of deeds transactional data is transmitted from 9 of the 10 County registries on a weekly basis, with the exception of Rockingham County which transmits transactions nightly and tax stamps weekly. All data transmission is via secure FTP with the exception of Rockingham's tax stamp records which are transmitted via e-mail weekly. Data checks are performed on a weekly basis to ensure that all data has been transferred by each County. Further checks are performed to determine if data is present for each business day. If days are missing from a particular county data set they are notified via e-mail. Correctional data sets are often transmitted from the county within 6 hours, rectifying the situation.

Registry data is sent in two separate files. The first data set contains the information regarding the parties and identification numbers of the transactions (deeds). A second file is transmitted that contains each transactions unique identification number and the amount of Real Estate Transfer Tax that was paid by each party (stamps). These files are combined, checked and flagged for pre-exclusion.

PA-34 Form Data

Currently PA-34 data and images are transmitted weekly from a third party vendor. The data is processed using Extract Transform Load (ETL) methodology to prepare it to be accepted by the target database. The target database schema is formatted to accept the revised PA-34 form to be completed summer 2013. Form data captured by the third party's process is minimal. The future process will capture data submitted by the RETT E-file system (RETT eZ-File), as well as data processed through the DRA smart scanning processes. Prior to being inserted into the database, PA-34 data is scrubbed for duplicates. Many filers submit multiple revisions of PA-34's and only the most recent is applicable for equalization.

CD-57 Form Data

CD-57 form data is currently not integrated into the system because it is not being processed by DRA electronically. The data is anticipated to be received electronically through the RETT eZ-File system, and DRA smart scanning processes due to launch in the summer of 2013. This data accepts duplicates as there are expected to be at least two records per transaction.

Municipal CAMA Data

Municipal CAMA databases may be uploaded through the equalization system at the town's discretion. This data is retrieved and manually reviewed prior to automated processing (discussed in detail in the mosaic parcel map section above) to ensure that the export is in the correct format and does not contain any extraneous fields or information. As the database update can be extensive it is done in batches during off-peak hours (typically at 7AM EST Monday, Wednesdays, and Fridays).

T2 additionally process bulk assessed value updates for towns who participate in rolling validation. This enables towns to validate their sales throughout the equalization year then provide final assessed values for all transacted real estate which are uploaded to a temporary table and provided to the town for review and approval. Subsequent to approval the final assessments are written to the real estate record prior to submission to DRA.

Equalization GIS Files

T2 will generate EQ GIS data (ratio layers) to support DRA and municipal assessing officials. Equalization GIS files will include individual sales ratios joined with associated parcels, as well as overall progress maps including ratios as they are finalized on a per-town basis for performance monitoring. Additionally T2 will provide information each month to DRA including the number of transactions, valid transactions, and foreclosures occurring per month, by county.

System Maintenance

County Deeds Processors

Registry of deeds data is first processed on a county basis. Each County has an individual processor that standardizes the data and combines the separate deed and stamp files. Preliminary processing creates a master transaction record (for each real estate transactions) with associated grantor/grantee index. Each record is then run through a series of QA checks to identify transactions with no tax stamp, transactions with incomplete data, transactions without complete grantor/grantee data, and duplicate data. Records which fail the QA checks are removed and remedial action is taken to repair the data prior to inclusion into the master deeds data set.

Deed Compilation Process

After each individual county deeds data set is processed, the records are combined and checked in a composite process. This is the final process prior to inclusion in the Equalization production database. The first step is to compile the 10 individual data sets into a single, standard composite data set. Records are checked for duplicates and missing grantor/grantee information. A tertiary process verifies that town numbers have been correctly assigned to all records. Each batch of deeds updates are written to a "pipe delimited" export and archived as they are inserted into the production database. An automated process assigned a "verno" transaction number to each record (Verno 1 is the first sale of the equalization period for each town).

Certain deeds do not have a specific town associated with them per registry data management practices. T2 maintains a list of these records and conducts deeds research to determine appropriate town, or towns which should be assigned the transaction. T2 staff then utilizes the manual deed assignment tool within Mosaic Equalization to associate the orphan records with the correct municipality.

Prior to inclusion into the Mosaic Equalization program all records are processed through the pre-exclusion matrix which identifies records which should not be considered for the equalization study. This pre-exclusion matrix includes deeds which have no consideration (\$0) or minimum transfer tax paid (\$40). Additionally the following deed types are pre-excluded (note deed types in registry coding): CEM DEED, COLL DEED, COMMISNRS DEED, CON EASE, CONFIRM DEED, CONFIRM DEED ETC, CONFIRM FORECLOSE, CONFIRM QUIT, CONSRVATN EASEMENT, CORR DEED, CORR FID DEED ETC, CORR FORECLOSE, CORR MFG HOUSING, CORR QUIT, CORR QUIT ETC, CORR QUITCLAIM, CORR WTY, CORRECT QUITCLAIM, CORRECT WARRANTY, DEED RELEASE, DEED/UN MTGE, EASE, EASEMENT, EASEMENT & AGREE, EASEMENT AGRT, EASEMENT DECLARATN, EASEMENT ETC, EASEMENT RELEASE, EXR DEED, FID & QUIT, FID & QUIT ETC, FID DEED, FID DEED ETC, FIDUCIARY, FORCLSRE, FORE DEED, FORECLOSE, FORECLOSE ETC, LICENSE, NOTICE CONDEMN, NOTICE LEASE, NOTICE OF LEASE, NOTICE OF TRANSFER, R OF WAY, REFUND NOTICE, REL DEED, RELEASE DEED, R ELEASE EASEMENT, RELEASE R O W, REVENUE NOTICE, RIGHT & EASEMENT, SELECTMAN DEED, TAX DEED, TAX LIEN, TAX REDMT, TR DEED, TRUSTEES DEED.

Equalization

T2 will make modifications and updates to the EQ software as necessary throughout the duration of the contract. Updates may be to rectify newly identified errors or to address performance issues. They may also be suggestions from municipal or state users for improvements to the software to increase production rates. All suggested improvements will be made with prior approval from the Director of the Property Appraisal division. System modifications are not to exceed approximately 130 programming hours annually.

Technical Support

T2 will provide technical support to DRA and (235) taxing jurisdictions over the phone, in-person, and through web meetings. To combat the high turnover in municipal equalization officials T2 will, in combination with DRA, provide ongoing web and live training sessions. T2 has piloted and will deploy an integrated online helpdesk to manage user issues and provide a portal for high quality responsive technical support.

Real Estate Transfer Tax (RETT eZ-File) E-file System Maintenance

Data Maintenance and Management

RETT- eZ File Form Changes

Alterations will be made to the PDF smart-form as necessary to meet statutory requirements. Help text will be updated to reflect the needs of the taxpayers, and to address commonly confused elements. Significant alternations are not anticipated; however changes to functionality will be made to address user difficulties, and to remedy bugs.

Integration with Scanned RETT Form Data

RETT eZ-File data will be monitored to ensure successful integration with scanned data. Prior to inclusion in equalization data set RETT form data will be scrubbed for duplicates indicating that the filers e-filed and submitted paper copies. This data will remain in the production form database but not be transferred to the equalization data set.

Integration with Old Forms during Transition Period

Data from legacy forms will be processed to fit the new database format and prepared for inclusion in the RETT form database. On a monthly basis the legacy form data will be imported. It is anticipated that legacy form data may be accepted for a period of up to 6 months after deployment of RETT eZ-File system.

System Maintenance

Data Submission LiveCycle Process

The existing data submission process will be monitored and modified as necessary to address any bugs, or to address new DRA needs for the data. The LiveCycle process may also need to be adjusted with respect to data mapping to reflect changes in the forms.

Workflow Processes for DRA Users

Additional processes may be created to route the data to appropriate DRA users for review as requested by DRA.

Technical Support

T2 will provide technical support to DRA and as needed to taxpayers. T2 will maintain a library of technical support documents, including web based video training for use by taxpayers and DRA staff.

Third Party 2D Barcode Validation for DRA High Speed Scanning

New Services

The 1D and 2D validation procedures will ensure that the barcodes follow the proper industry specifications and that their payloads include the required data in the proper order as specified by documentation prepared and approved by the DRA.

The 1D barcode structure will be validated against the linear barcode specification (ANSI/AIM and USS Code 39). The barcode structure validation will ensure that the 1D barcodes can be read during the scanning process. This validation encompasses the physical dimensions of the barcode (length and height) as well as the mandated whitespace, or “quiet zone”, around the barcode. The structural validation will also ensure that the requirements for proper narrow bar width, inter-character separation, and wide-to-narrow ratio have been met. The data contained

within the 1D barcode (the “payload”) will be validated against the DRA’s 1D specification. The payload validation will ensure that the vendor-submitted barcode contains the required start/stop characters and the correct data.

The 2D barcode structure will be validated against the PDF417 specification (ISO 15438). This structural validation will ensure that the barcode meets the requirements for mandated quiet zones, proper start/stop patterns, proper row indicators, suitable code-word dimensions, and that the encoding and error-correction methods (if present) adhere to the ISO 15438 and base 929 standards.

The 2D barcode payloads will be validated against the DRA’s 2D specification. This payload validation will ensure that the field delimiter has been properly configured and that the required data fields are present and in the required order. The payload validation will also ensure that no illegal/improper characters have been included.

Feedback for each individual vendor submission will include identifying information for the unique submission and the results from both the 1D and 2D validations for the submission. If the barcodes fail validation, detailed feedback will be given to facilitate communication of any necessary changes between the DRA and the vendors. Feedback contents will be based on the best available interpretation of the validation results, as it may not always be possible to determine the exact reason that a barcode failed to generate properly when the generation process’ source-code is not available.

Records will be kept for each vendor submission, including the date received, the date validated, the validation outcome(s), and the validation feedback as well as the original vendor submissions and the corresponding extracted data evaluated during the validation process.

Security & IT Considerations

It should be noted that all elements of this contract represent fully operational systems completed under previous agreements, each with their own security considerations section. This proposal consists primarily of data building and maintenance for these in place systems. An abridged security section is provided for clarity and to document protocols.

Mosaic Parcel Map

Mosaic parcel map data is entirely comprised of public data. All municipalities have previously provided copies of their data to the project. All new data is in the form of updates only. Municipalities or their agents/vendors create extracts from their source data and transmit them via secure FTP, email, or hard disk/CD. All data is virus scanned (Microsoft Security Essentials and Gmail Antivirus), archived and processed locally for integration into the DRA GIS Application (mPower Integrator & Autodesk MapGuide – already installed).

Processed data is compressed and archived prior to uploading. The processed data is transferred via FTP to the development GIS server at UNH where it is integrated and tested. Once verified the data is then uploaded to DRA’s internal GIS server (At DRA Computer Room), and DRA’s Shared GIS Server (27 Hazen

Dr.) via FTP and updated in the same manner (GIS files uploaded through MapGuide Administrator web page, database updated via SQL backup)

Data is only available to State of NH Users, or registered municipal users via password protected, read only GIS website (mPower Integrator). Failover is handled by re-directing users to another server until the failed server can be restored. There is no possibility of data loss as data within the system is static and backed up in multiple locations regularly. Disaster recovery consists of re-deploying using archived data and settings. Because of the multiple installs, downtime of up to 5 working days is acceptable for any given system.

Property Tax Equalization

Property Tax Equalization system is fully deployed and operational on a web server at the University of New Hampshire. It was deployed in August 2012. Continued operation involves regular data updates of deeds data, PA-34 form data, and Municipal CAMA data.

Deeds office data is received via FTP, security scanned, archived and processed locally. Processed data is deployed into a test database platform for testing, and then is appended production database in batches. Records of all files loaded in each batch are maintained, and the database is backed up to an external server nightly. Copies of the entire web directory are compressed and backed up offsite weekly. Failover is not required as the system may be down for up to 48 hours without major disruptions to DRA or municipal operations. Disaster recovery consists of re-deploying the application, and restoring the database from the previous evening. DRA has determined that a 24 hour data loss is acceptable in a disaster recovery scenario.

Real Estate Transfer Tax Forms

Forms utilize Adobe security technology for protecting form content within PDF document. Data is transmitted to existing Adobe LiveCycle Architecture via Adobe Web Services. The Adobe process writes the data to a stage database, where it may be reviewed and batched into the production database environment. Production application servers are clustered, as are SQL servers for failover. The stage environment provides disaster recovery capability. All Adobe architecture and security documentation have been reviewed by DoIT and Adobe for completeness.

Third Party Barcode Verification

This task takes place locally with vendors uploading form images via FTP to an existing DRA ftp site. DRA is responsible for managing submissions and making them accessible to T2 for testing.

Deliverables Table

Mosaic Parcel Map Maintenance	
1	Collect 235 Parcel Map Data Sets (Approximately 600,000 records)*
2	Collect 235 CAMA Data Sets (Approximately 680,000 records)*
3	Process 235 Parcel Map Data Sets (Approximately 600,000 records)*
4	Process 235 CAMA Data Sets (Approximately 680,000 records)*

5	Correlate Local Land Use Codes to State Land Use Codes (Greater than 90% Correlation)
6	Generation of Additional Land Base Data
7	Development of Sharing Pool
Mosaic Parcel Map Distribution Systems	
8	Maintain software and systems for DRA Web GIS
9	Maintain software and systems for DRA Web GIS (DRA backup server at UNH)
10	Maintain software and systems for DRA Web GIS (Located at 27 Hazen Drive)
11	Maintain software and system for Web Mapping Service (Located at UNH)
12	Maintain software and systems for Sharing Pool Web Application (Located at UNH)
13	Update data weekly on DRA Web GIS
14	Update data weekly on DRA Web GIS (DRA backup server at UNH)
15	Update data weekly on DRA Web GIS (Located at 27 Hazen Drive)
16	Update data weekly to Web Mapping Service
17	Update data weekly for Sharing Pool
18	Base map data updates (as data is available and necessary)
19	Technical support for DRA users
20	Technical support for sharing pool users
Property Tax Equalization System Maintenance	
21	Collection/Processing/Integration of 10 County Registry of Deeds indexes on a weekly/daily basis
22	Collection/Processing/Integration of RETT data (PA-34, CD-57S, CD-57P)
23	Integration of Mosaic CAMA database (as updates dictate)
24	Technical support for DRA users
25	Technical support for 235 municipal "users" (~500 individual accounts)
26	Training for municipal users (web, phone, in-person)
27	Maintenance and support of EQ software
28	Updates and upgrades to EQ software (as dictated by DRA and requested by municipalities)
29	Development of GIS layers derived from EQ data
Real Estate Transfer Tax (RETT) E-file System Maintenance	
30	Support versioning of "RETT Single Entry Point"
31	Modifications and updates to RETT E-file forms (as dictated by DRA)
32	Modification and updates to RETT E-file LiveCycle process (backend)
33	Support Adobe LiveCycle network architecture as it pertains to RETT forms
GIS and Technical Services	
34	200 Hours of custom GIS services (as dictated by DRA)
35	Geolocation of Meals and Rooms license database
36	Identification of feasibility to geolocate low and moderate filers
Third Party 2D Barcode Validation for DRA High Speed Scanning	
37	Test case specification and verification
38	1D Bar code verification (3 rd party vendor submitted)
39	2D Bar code verification (3 rd party vendor submitted)
40	Error notification
41	Error resolution notification

* Where data is available. T2 does not have the authority to demand data from municipalities. Municipalities that refuse to submit data will be referred to DRA for further action.

Key Personnel

Personnel

Successful project completion is contingent on regular and effective communication and planning between the DRA and UNH project team, and their availability to participate in these activities. The personnel outlined below are considered vital to the success of the project and will be regularly updated on project status and will be directly involved in planning and decision making through the duration of the project. Compensation of key UNH Staff shall be in accordance with USNH policy and is anticipated under category Senior, Professional, Administrative & Technical Services, Sub Classification 02767 or 01994. It is anticipated that additional personnel may be identified and will be involved as required.

DRA: Key state personnel should be available to provide the necessary support to ensure successful project completion and delivery. Key state personnel include:

- Brian Pace, Director of Project Management and Network Architecture
- Stephan Hamilton, Director Municipal Services & Property Appraisal
- Christiana Goodwin, DoIT Manager
- David Cornell, Asst. Director Municipal Services & Property Appraisal

UNH: Key UNH Personnel critical to project completion will be available to ensure execution of all work items and timely project delivery and deployment

- David Salzer, Project Manager
- Patrick Santoso, Project Manager
- Justin Lowe, Project Engineer

Costs

Item	FY 2014	FY 2015	2 Year Cost
Base Cost	\$380,410	\$389,971	\$770,381
Facilities & Administration (26%)	\$96,047	\$92,032	\$188,079
Total Cost	\$476,457	\$482,003	\$958,460

Schedule

The project schedule is on the following page. The projects anticipated start date is July 1, 2013. Any modifications to the start date will affect the schedule accordingly.

ID	Task Name	Duration	Start	Qtr 3, 2013			Qtr 4, 2013			Qtr 1, 2014			Qtr 2, 2014			Qtr 3, 2014			Qtr 4, 2014			Qtr 1, 2015			Qtr 2, 2015		
				Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
1	Mosaic	522 days	Mon 7/1/13																								
2	Data Collection	522 days	Mon 7/1/13																								
3	2013 Parcel Data Collection	197 days	Mon 7/1/13																								
4	2014 Parcel Data Collection	260 days	Thu 4/3/14																								
5	2013 Primary CAMA Collection	87 days	Mon 9/2/13																								
6	2013 CAMA Update Collection	173 days	Wed 1/1/14																								
7	2014 Primary CAMA Collection	88 days	Mon 9/1/14																								
8	2014 CAMA Update Collection	129 days	Thu 1/1/15																								
9	Data Processing	517 days	Mon 7/8/13																								
10	2013 Parcel Data Processing	192 days	Mon 7/8/13																								
11	2014 Parcel Data Processing	255 days	Thu 4/10/14																								
12	2013 Primary CAMA Processing	87 days	Mon 9/2/13																								
13	2013 CAMA Update Processing	173 days	Wed 1/1/14																								
14	2014 Primary CAMA Processing	88 days	Mon 9/1/14																								
15	2014 CAMA Update Processing	129 days	Thu 1/1/15																								
16	Sharing Pool	517 days	Mon 7/8/13																								
17	Sharing Pool Development	90 days	Mon 7/8/13																								
18	Sharing Pool Maintenance	427 days	Mon 11/11/13																								
19	State Land Use Code Correlation	517 days	Mon 7/8/13																								
20	Additions and Modifications to Base Map	517 days	Mon 7/8/13																								
21	Distribution System	522 days	Mon 7/1/13																								
22	Software and Systems Maintenance	522 days	Mon 7/1/13																								
23	DRA Web GIS	522 days	Mon 7/1/13																								
24	DRA Web GIS (DRA backup server at UNH)	522 days	Mon 7/1/13																								
25	DRA Web GIS (Located at 27 Hazen Drive)	522 days	Mon 7/1/13																								
26	Web Mapping Service (Located at UNH)	522 days	Mon 7/1/13																								
27	Sharing Pool Web Application (Located at UNH)	522 days	Mon 7/1/13																								
28	Weekly Data Updates	517 days	Mon 7/8/13																								
29	DRA Web GIS	517 days	Mon 7/8/13																								
30	DRA Web GIS (DRA backup server at UNH)	517 days	Mon 7/8/13																								
31	DRA Web GIS (Located at 27 Hazen Drive)	517 days	Mon 7/8/13																								
32	Web Mapping Service (Located at UNH)	517 days	Mon 7/8/13																								
33	Sharing Pool Web Application (Located at UNH)	517 days	Mon 7/8/13																								
34	Base Map Data Updates	517 days	Mon 7/8/13																								
35	Technical Support	522 days	Mon 7/1/13																								
36	DRA Users	522 days	Mon 7/1/13																								
37	Municipal Sharing Pool Users	522 days	Mon 7/1/13																								
38	Equalization	523 days	Mon 7/1/13																								
39	County Registry Deeds Data	522 days	Mon 7/1/13																								
40	Collection	522 days	Mon 7/1/13																								

Project Mosaic_14_15_Schedule.mpp Task Progress Summary External Tasks Deadline

Date Mon 4/1/13 Split Milestone Project Summary External Milestone

Page 1

ID	Task Name	Duration	Start	3																											
				Qtr 3, 2013	Qtr 4, 2013	Qtr 1, 2014	Qtr 2, 2014	Qtr 3, 2014	Qtr 4, 2014	Qtr 1, 2015	Qtr 2, 2015	Qtr 3, 2015	Qtr 4, 2015																		
				Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul		
41	Processing	522 days	Mon 7/1/13	[Redacted]																											
42	Integration of RETT Data	522 days	Mon 7/1/13	[Redacted]																											
43	Integration of Mosaic CAMA	522 days	Mon 7/1/13	[Redacted]																											
44	System Modifications 2013	45 days	Mon 7/1/13	[Redacted]																											
45	System Modifications 2014	88 days	Thu 5/1/14	[Redacted]																											
46	System Modifications 2015	44 days	Fri 5/1/15	[Redacted]																											
47	Technical Support	522 days	Mon 7/1/13	[Redacted]																											
48	Municipalities	522 days	Mon 7/1/13	[Redacted]																											
49	DRA	522 days	Mon 7/1/13	[Redacted]																											
50	Training	522 days	Mon 7/1/13	[Redacted]																											
51	Municipalities	522 days	Mon 7/1/13	[Redacted]																											
52	DRA	522 days	Mon 7/1/13	[Redacted]																											
53	Development of EQ Derived GIS	321 days	Tue 4/1/14	[Redacted]																											
54	EQ 2013	60 days	Tue 4/1/14	[Redacted]																											
55	EQ 2014	60 days	Wed 4/1/15	[Redacted]																											
56	RETT E-File System Maintenance	522 days	Mon 7/1/13	[Redacted]																											
57	Support versioning of 'RETT Single Entry Point'	522 days	Mon 7/1/13	[Redacted]																											
58	Modifications and updates to RETT E-file forms (as dictated by DRA)	522 days	Mon 7/1/13	[Redacted]																											
59	Modification and updates to RETT E-file LiveCycle process (backend)	522 days	Mon 7/1/13	[Redacted]																											
60	Support Adobe LiveCycle network architecture as it pertains to RETT forms	522 days	Mon 7/1/13	[Redacted]																											
61	GIS & Technical Service	522 days	Mon 7/1/13	[Redacted]																											
62	2013	522 days	Mon 7/1/13	[Redacted]																											
63	2014	522 days	Mon 7/1/13	[Redacted]																											
64	2D Barcode Testing	381 days	Mon 9/2/13	[Redacted]																											
65	Tax Year 2013	120 days	Mon 9/2/13	[Redacted]																											
66	Test case specification and verification	30 days	Mon 9/2/13	[Redacted]																											
67	1D Bar code verification (3rd party vendor submitted)	90 days	Mon 10/14/13	[Redacted]																											
68	2D Bar code verification (3rd party vendor submitted)	90 days	Mon 10/14/13	[Redacted]																											
69	Error notification	90 days	Mon 10/14/13	[Redacted]																											
70	Error resolution notification	90 days	Mon 10/14/13	[Redacted]																											
71	Tax Year 2014	120 days	Tue 9/2/14	[Redacted]																											
72	Test case specification and verification	30 days	Tue 9/2/14	[Redacted]																											
73	1D Bar code verification (3rd party vendor submitted)	90 days	Tue 10/14/14	[Redacted]																											
74	2D Bar code verification (3rd party vendor submitted)	90 days	Tue 10/14/14	[Redacted]																											
75	Error notification	90 days	Tue 10/14/14	[Redacted]																											
76	Error resolution notification	90 days	Tue 10/14/14	[Redacted]																											