

Countywide Address Management (CAMS)

Project Charter

PRE-APPROVAL DRAFT

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Revision History

Version	Date	Name	Description
Version 0.1	7/8/08	Mark Greninger	First draft for stakeholder review
Version 0.2	3/20/2009	DRP, Mark Greninger	Added DRP project Background
Version 0.3	5/1/09	Mark Greninger	Final Draft, initial names

Project Overview

The County of Los Angeles Registrar/Recorder County Clerk, Department of Public Works, and Internal Service Division (the County) in collaboration with the cities and other jurisdictions in the County have identified the need to develop and maintain a single, authoritative source for addresses in the County of Los Angeles.

Project Background

Starting in 2001, the County began using the Thomas Brothers Transaction Updating System (TUS) to maintain street centerlines and street addresses to a higher accuracy than provided by Thomas Brothers. These street centerlines and addresses are used to precinct voters, create maps, support dispatch operations, and do geospatial analysis throughout the County. Cities that also license Thomas Brothers data are able to receive this data from the County and use it for their internal operations as well.

TUS was based upon a command-line system built upon ESRI's Arc/Info technology circa 1999. It did not support remote, multi-user editing, advanced modeling of addresses, individual address points, and workflow management. This limited the user community to County staff only, requiring the County to maintain addresses out of their jurisdiction, increasing the workload for the County and limiting the ability to keep addresses current.

County of Los Angeles Registrar/Recorder County Clerk was awarded an Infrastructure Technology Grant (ITF) to develop a modern maintenance environment. This project resulted in the development of the Countywide Address Management System (CAMS) which included the development of a new address model along with software to maintain addresses.

For more detail, see Exhibit A.

Project Goals and Objectives

The goal of the CAMS project is to expand the use of the CAMS systems and software to those cities and staff creating and maintaining addresses, such as Engineering and Planning departments. This project will develop workflow, quality control, distribution, and reporting systems to ensure the highest level of accuracy within the system. The County of Los Angeles and the jurisdictions that are participants in this project will see:

- Improved address spatial and name quality;
- Improved timeliness of address updates;
- Faster and more reliable access to address information;
- Improved and streamlined work processes across the multiple jurisdictions and agencies that create addresses;
- Contemporary technologies providing enhanced information management and service delivery;
- Reduction in the cost of address maintenance.

Guiding Principles

The following guiding principles have been established for the Countywide Address Management System:

1. CAMS will become an authoritative source for address information countywide, with web-based services to provide access to address-based functionality (geocoding, address verification, etc) along with data download.
2. Address maintenance responsibility will be in the hands of the jurisdiction that creates the address.
3. If possible, address information will be available for the public domain.
4. County will assume responsibility for integrating countywide addresses for jurisdictions that cannot use CAMS for address management.

Project Scope

The CAMS project has three types of participant:

- Participants who edit address directly within CAMS, who will:
 - Maintain addresses directly in the CAMS system;
 - Respond to address work orders in agreed upon timeframes.
 - Access address information and functionality from agreed upon locations and sources.
- Participants who provide addresses for inclusion into CAMS, who will:
 - Provide address updates to the County in predefined, standard formats, where the County will integrated these updates into CAMS in agreed-upon timeframes;
 - Respond to address work orders in agreed upon timeframes;
 - Access address information from agreed upon locations and sources.
- Participants who provide address change requests
 - Users will provide address change requests via the CAMS work order system.
 - County will respond to work orders in agreed upon timeframes.

Critical Success Factors

The following factors are critical to the success of the CAMS Project:

1. Commitment from participants to maintain addresses in agreed upon timeframes.
2. Agreement that CAMS will be based upon a shared database to minimize data duplication.
3. Participant assignment of a single point of contact for addressing issues.
4. Commitment to assign and train staff to support agreed upon maintenance timeframes.

Project Authority and Milestones

Funding Authority

Funding for address maintenance is internal, based upon the assignment of staff resources within participant jurisdictions to meet timeframes and workloads.

Project Oversight

The CAMS Project oversight will be provided by a Steering Committee comprised of the participating jurisdictions. This Steering Committee will serve as the collective group of executive sponsors responsible for setting the overall project direction, resolving project issues, securing funding as necessary, and assigning project resources.

The Steering Committee will be supported by a Technical Advisory Group (TAG) comprised of technical representatives from participants. The Technical Advisory Group is responsible for steering the technical direction of the project and oversight of the Technical Team, including the development of address standards, designing data distribution mechanisms, managing CAMS software enhancements, and specifying address-based functions and web services to be developed. The TAG will be responsible for identifying and escalating issues requiring updates and enhancements to the Steering Committee for resolution.

Major Milestones

Initial CAMS software development has been completed by the County, including the development of an address model, database, and software development. The next milestones focus on implementation and use of the CAMS software and the development of agreements for address maintenance and the deployment of access tools and address-based functionality. These are specifically to:

1. Develop address maintenance agreements with participants, including data standards and workflow timeframes.
2. Develop and deploy web-based access tools, including download and web-based address functionality.

CAMS development	Complete
Phase 1 – Establish CAMS Project	
<i>Establish Project Charter</i>	<i>June 1, 2009</i>
<i>Develop Address Maintenance and Workflow Agreements</i>	<i>July 30, 2009</i>
<i>Provide Training and begin Maintenance</i>	<i>July 30, 2009</i>
Phase 2 – Develop Access Tools	
<i>Develop download and access tool standards</i>	<i>September 30, 2009</i>
<i>Complete Address tool development</i>	<i>December 1, 2009</i>

Project Organization

The project organization for a multi-jurisdiction project such as the Countywide Address Management must provide a clear delineation of roles and responsibilities to facilitate input from participating jurisdictions, as well as the escalation and resolution of issues. Additionally, the project organization must also facilitate project communications, decision making and implementation.

Project Structure

The CAMS project organization has three tiers –the Steering Committee, the Technical Advisory Group, and the Technical Team.

The Steering Committee convenes on a quarterly basis to provide project oversight and direction, as well as address issues that are escalated by the Technical Advisory Group. Members can be added to this committee as necessary to ensure project success. Steering Committee members are listed in Appendix A.

The Technical Advisory Group is responsible for the technical aspects of the CAMS project, including the development of address standards, designing data distribution mechanisms, and specifying address-based functions to be developed. Members can be added to this committee as necessary to ensure project success. Members are listed in Appendix B

The Technical Team is responsible for the implementation of the requirements developed by the TAG. Currently the Technical team is made up of County staff and contractors, which will be enhanced as required.

Roles and Responsibilities

The table below summarizes the roles and responsibilities of the CAMS Project organization:

<i>Role</i>	<i>Responsibility</i>
Steering Committee	<ul style="list-style-type: none">• Provide executive sponsorship commitment of resources (staff and funding)• Oversee contracts as necessary.• Provide project direction and oversight.• Address issues escalated by the Project Management Team and Technical Advisory Group.
Technical Advisory Group	<ul style="list-style-type: none">• Develops project plan.• Develop address standards.• Develop functional and technical requirements .• Manage the implementation of changes to CAMS.• Identify, resolve and escalate issues to the Steering Committee, as necessary.
Technical Team	<ul style="list-style-type: none">• Implement changes as specified by the Technical Advisory Group.• Notify the TAG of issues.• Provide technical expertise.• Work with the staff implementing changes.

Attachment B: Technical Advisory Group

Name and Title	Agency
Daryl Quinn	County of Los Angeles Department of Public Works
Peter Fonda-Bonardi	County of Los Angeles Internal Services Division
Brian Sims	City of Pasadena
Luis Montemayor	City of Los Angeles
Raul Virgen (alt)	
Nathan Neumann (alt)	
	City of Culver City
Todd Zagurski	County of Los Angeles Department of Regional Planning

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Exhibit A - Street Data Licensing, Ownership, and Maintenance Overview

Background

The County of Los Angeles Geographic Information Officer (GIO), the Department of Registrar-Recorder/County Clerk (RR/CC), and the Department of Regional Planning (DRP) have identified the need for revised licensing or a transfer of ownership of street data in the County. Departmental representatives are currently negotiating several options with Thomas Brothers (TB) Maps® (a division of Rand McNally & Company) regarding their street layer for Los Angeles County. Should those negotiations prove unsuccessful, the County will consider pursuing alternative sources for street centerlines, such as TIGER, TeleAtlas, or Navteq.

Any discussion of street data issues must include the ongoing maintenance of County street and address information, which is currently performed by CAMS, the Countywide Address Management System. CAMS is a multi-departmental project that allows for the redesign and expansion of existing address data maintenance models, and includes functionality for maintaining street vector data (i.e., street centerlines).

Present Status - Streets and Addresses

Street Centerlines

Since 1995, the Thomas Brothers data has been licensed to the County under LIC 100. This information consisted of relatively accurate spatial features in Geographic Information Systems (GIS) format along with tabular (attribute) data. The acronym TRNL (transportation line features) is used in reference to this dataset. In 2001, the County began using the Thomas Brothers Transaction Updating System (TUS) to maintain the TB street features and addresses in order to attain a higher degree of accuracy than originally provided by TB. This updated dataset is known as LACoTRNL, the acronym reflecting updates made by the County using TUS. The LACoTRNL layer is presently used to define voter precincts, support dispatch operations, conduct geospatial analysis, and create maps (for both hard copy output and web mapping applications). The County also sub-licenses and directly provides the TB data to local cities, allowing them to make use of this information for their own internal operations. Sub-licensing is also extended to private entities that conduct business with the County, such as consultants and non-profit organizations.

The County is currently examining its licensing agreement with TB and is considering whether to purchase a perpetual license or obtain outright ownership of the LACoTRNL layer. One major concern with the **present** annual licensing arrangement is the continuation of payment for access to a layer for which the owner (TB) provides little if anything in return. For the most part, the County performs all quality control and maintenance on this data layer. Thus, it is understandable for the County to question its continuance of an agreement that requires it to pay indefinitely for access.

When considering a **perpetual** license, the County has proposed making a one-time payment to Thomas Brothers of approximately \$200,000. However, this proposal has a major limitation: the County would be allowed to display the data on its websites, but the license would prohibit the data from being downloadable. This limitation has prompted the County to consider making every attempt to purchase full **ownership** rights from TB before considering a **perpetual** license agreement.

As of this writing, Thomas Brothers has unofficially forfeited its claim on derivative products (i.e., address points, edits made to LACoTRNL, and other street-referenced data). The County has been adamant that TB's claim on derivatives should be denied. If TB fully agrees to relinquish such claims without conditions, then licensing would be a more plausible option for the County. Without a new licensing agreement, the County would be ill-advised to relinquish the value-added data it has worked hard to compile (with little in return from TB).

One concession the County seeks as part of a revised contract is to have Thomas Brothers allow public and private organizations external to the County use the data. These entities would need to sub-license the data directly from TB. If issues such as these can be resolved, along with derivative ownership, the County can focus its concerns solely on pricing.

For various County departments, *ownership* and *control of data distribution* are key issues with regard to support of workflow integration with cities, states, and federal agencies. Having clear ownership would essentially eliminate the restrictions of any proposed licensing agreement. However, County ownership would likely make the LACoTRNL layer part of the public domain. Since the County might be forced to distribute the data directly to TB competitors via a Freedom of Information Act request (FOIA), it's highly doubtful that Thomas Brothers would ever sell full ownership rights. The same response would likely be encountered if County ownership was pursued with other data providers such as TeleAtlas or Navteq.

If TB is unwilling to sell the County complete ownership rights of LACoTRNL, but ownership rights remain a must for the County, an alternative option might be a conflation of LACoTRNL to the U.S. Census Bureau's Topologically Integrated Geographic Encoding and Referencing System (TIGER) files. TIGER files are worthy of consideration, given their substantial improvement in spatial quality and increased number of road segments (many not found in LACoTRNL). However, there remains a wide disparity in the attribute structure (or "schema") between LACoTRNL and TIGER, which presents a significant technical challenge for conflating the two together.

Countywide Address Management System (CAMS)

When discussing licensing and ownership issues regarding countywide street data, the ongoing maintenance of this data must be taken into consideration. Maintaining street data, along with County and city-created addresses and other street-based layers, is a major concern for many departments. Since receiving the TB license in 1995, the County has edited the TRNL layer primarily with ESRI's Arc/Info software, a command-line system for storing and processing spatial data using indexed binary files. Unfortunately, the "flat file" structure of this system does not support remote, multi-user editing, advanced modeling of addresses, or workflow management. For example, different names for the left and right sides of a street cannot be used, nor can multiple house numbering systems be associated with a single street. These types of limitations have long impacted the County's ability to keep streets and their associated attributes current.

In response, the County RR/CC obtained an Infrastructure Technology Fund grant to develop an application and support environment to improve the maintenance of this information. The project that resulted was the Countywide Address Management System (CAMS), which utilizes state-of-the-art geodatabase technology that supports distributed, multi-user maintenance of street centerlines. CAMS also expands the existing address data model by supporting a wider variety of location information, including address points and landmarks.

In the CAMS geo-database, the features in the street centerline layer are linked to an address data model consisting of several tables. The model uses a relational database (known as an object-oriented

data model), which allows assignment of address processing behaviors to street centerline features without the need for writing specialized code. The geodatabase also supports a CAMS point feature layer designed to store individual point addresses, which allow the system to capture multiple addresses for individual parcels. Also, CAMS provides the capability to store virtually any category of point location, including commonly known landmarks, intersections, parks, fire hydrants, etc.

Ultimately, the CAMS geodatabase will more accurately document and represent the location and characteristics of County streets, addresses, and other discreet locations in the real world. The goal of the RR/CC is to expand the use of this application to include County departments and local cities whose engineering and planning staffs are involved with creating and maintaining street and address data. The CAMS project features workflow, quality control, distribution, and reporting systems to promote and ensure high levels of accuracy. Thus far, project participants have reported improvements to both their maintenance workflows and the spatial and attribute quality of their street centerline data. Likewise, CAMS fosters more timeliness in updating addresses, and faster, more reliable access to address information. This has improved and streamlined multi-agency work processes and service delivery, resulting in an overall reduction in the cost of street and address maintenance.

CAMS has the potential to become the authoritative source for street centerline and address information countywide. It provides web-based services that provide access to address information and address-based functionality, such as geocoding and address verification. These services include data download functionality and permit address maintenance to be the responsibility of the jurisdiction that creates the address. Eventually, address information will be available for the public domain, and the County will assume responsibility for integrating countywide addresses for jurisdictions that cannot readily use CAMS for street centerline and address management.

For these reasons, the CAMS project is a good fit with strategies involving ownership of the LACoTRNL data layer. Moreover, CAMS represents an important justification to pursue the ownership option.

Issues Summary

The following points summarize the major issues regarding countywide streets and address data:

- The County pays an annual license fee to Thomas Brothers Maps to use their “TRNL” street data, but the company performs no update or maintenance of the data.
- Since 2001, the County has maintained and updated TRNL, thereby creating the derivative product known as LACoTRNL. The County does not have clear ownership of this derivative layer.
- Ownership of all additional derivative products has long been claimed by Thomas Brothers per its license agreement with the County. Recently, however, this claim has reportedly been forfeited.
- The County is considering a one-time payment to Thomas Brothers of approximately \$200,000 to obtain a perpetual license. However, this agreement would only allow the County to display the data on its websites, not additionally allow it to be downloadable. The County is seeking a concession on this issue wherein public and private organizations external to the County would sub-license the data directly from Thomas Brothers. Another consideration is the high cost of a perpetual license during an era of growing budget constraints.
- Ownership of the data is the alternative option being considered by the County. This would almost certainly result in the LACoTRNL layer becoming part of the public domain and being subject to the Freedom of Information Act. Data providers (Thomas Brothers, TeleAtlas, Navteq, et al) would most

likely not agree to sell the data since the County might be forced to distribute it directly to their competitors.

- Related to ownership, is the concept of conflating LACoTRNL with U.S. Census Bureau TIGER data. However, the two datasets differ in terms of attributes and geometry (i.e., the number, extent, and location of line segments). Resolving these differences would be technically difficult, thereby impeding address management, geocoding, and other vital workflows.
- The Registrar-Recorder / County Clerk created the Countywide Address Management System (CAMS) to leverage state-of-the-art geodatabase and web technology for managing countywide addresses, street centerlines, and related point features. CAMS is becoming the authoritative method and support environment for updating and maintaining the LACoTRNL layer.
- CAMS may be viewed as an important justification for the County to pursue ownership of LACoTRNL versus other strategies.

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