Enterprise Address Management Assessment

Recommendation

Submitted to City of Baton Rouge

In fulfillment of contract LA030008

April 26, 2011

Contents

Document Revisions		
V 0.1	Bruce Hall, Intergraph	Dec. 22, 2010
V 0.2	Bruce Hall, Intergraph	Jan 19, 2011
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Executive Summary

The scope of this project was to assess the need for improved civic addressing information within the City-Parish of Baton Rouge, Louisiana and to recommend improvements to the management and use of this important resource. Civic addressing is a central concept and data source that is used as a key data reference within the government and when dealing with companies and the public at large. The report provides an overview of:

- Participating organizations, departments and individuals
- Organizational improvements
- Workflow, standards and regulatory considerations
- Address management software and corresponding data model requirements

Intergraph has performed an assessment of the civic addressing needs across several City-Parish departments and surrounding municipalities. This assessment commenced on November 29, 2010 and included the review of the flow of data throughout the City-Parish and surrounding cities, workflows, standards and regulations, as well as associated data sets.

As a result of the onsite assessment and follow-up meetings, below are the recommended improvements to City-Parish addressing:

- Establish a Civic Address Authority – Responsible for the lifecycle of an address and system ownership
- Establish a Civic Addressing Committee – Review and acceptance of standards, workflows and addresses
- Define Civic Addressing Workflow Recommendations – Improvements in known processes and identification of key stakeholder involvement
- Create a Civic Address Guidelines Document – Document outlining generic data cases
- Define Civic Address Regulation Recommendations – Updates to the City-Parish Unified Development Code (UDC)
- Develop a Civic Address Management System – Software and data structure recommendations to manage the address data at the City-Parish

Adoption of the above noted improvements will provide the City-Parish with the below benefits:

1. Improved emergency response
2. Improved service delivery and inventory of locations in the region
3. Improved inter-agency and service company collaboration
4. Improved reliability of address data, with a single point of truth
5. Improved efficiency when dealing with the public
6. Organizational improvements to deal effectively and accurately with addressing issues
7. Clear guidelines and enforceable regulations to ensure data accuracy and consistency
8. Much-needed tools to manage the life-cycle of address data and integration with other core business systems at the City-Parish.

The City-Parish is well suited to realize these benefits due to the wealth of internal staff expertise, willingness to improve upon current processes, and a solid technology foundation. The next step for the City-Parish would be to formalize the Civic Address Committee and begin to document the Civic Address Guidelines, associated Regulations and plan for the development of a Civic Address Management System.

1. Introduction and Project Background

A complete, accurate and sustainable civic addressing record is a key asset for local governments. The City-Parish of Baton Rouge, the surrounding municipalities and other agencies in the Parish, are in need of the addressing asset to carry on business.

Intergraph conducted a series of interviews on-site at the City-Parish of Baton Rouge November 29, 2010 through December 2, 2010, to review the needs associated with improving and maintaining civic addressing. This document provides an overview of the findings and recommendations arising as a result of these meetings.

This document will provide recommendations associated with the following civic addressing areas:

- Authority
- Regulations and Guidelines
- Data Model
- Implementation

2. Workshop Participants

The following organizations and staff participated in the meetings at Baton Rouge:

Intergraph (Interviewers)

- Sherry Coatney, Project Manager
- Bruce Hall, Technical Lead

Planning Commission

- Troy Bunch, Planning Director
- Warren Kron, GIS Coordinator
- Justin Priola, Senior GIS Analyst

Information Services

- Bob Laughlin, Acting IS Director
- Ron Frebis, GIS Project Manager

Department of Public Works Permit and Inspection Division

- Carey Chauvin, Building Official
- Corey Phillips, Engineering Aide
- Randy French, Deputy Building Official

Department of Public Works 311 Call Center

- Barbara Bryant, Call Center Manager

Emergency Services

- Tammy Armand, Database Manager
- Paula Gieron, Police Department Communications
- Stacy Luckett, Police Department Communications

East Baton Rouge Parish Office of the Assessor

- Clayton Boudreaux, Deputy Assessor

Clerk of 19th Judicial District Court

- Greg MacMaster, CMIS Director

Registrar of Voters
- Brittany Reine, Administrative Coordinator IV
- Angela Gerald, Administrative Coordinator IV

City of Central
- Woodrow Muhammad, Land Use Planner / Environmental Specialist

City of Baker
- Jack Gleason, City Inspector

City of Zachary
- Hugh Engels, Code Compliance Officer

Homeland Security / EOC
- Eddie Watkins, Emergency Preparedness Coordinator

3. High-Level Findings

The points below summarize the key items that pertain to the Civic Addressing needs. The information obtained from the various individuals provides the foundation for this report. The key findings are:
- Civic addressing is recognized as a key asset for all involved
- Addresses are collected and managed by many different departments
- There is no consistent means of collecting and validating address data
- Many existing processes meet the needs of a very small community for very specific workflows
- There appears to be a desire and willingness among the individuals interviewed to work together toward a common goal
- Public Works has the workflow to create and validate address data associated with building permit requests
- A complete database of current addresses does not exist
- The City-Parish Planning Commission has the staff, workflow and datasets necessary to manage the unique road name and civic address point layer for the Parish
- Address data is validated by both the power and telephone companies as part of the permitting and E-911 systems, respectively

These findings were reviewed with the City during a follow-up meeting on February 3, 2011.

4. Current Civic Address Processes

The current addressing workflow is outlined below. The current workflow tracks the creation of addresses associated with the building permit process at the Department of Public Works.

4.1 Address Creation

An address is officially created in one of two ways:
- An approved subdivision final plat
- A “Flood Zone Determination Form” is submitted to the Department of Public Works as part of a building permit process.

The Planning Commission creates a unique road name database record to which the Department of Public Works will relate in the creation of a new address. The Planning Commission will also create a new address point in their GIS after the DPW creates the new address.

DPW staff updates a series of scanned hardcopy maps that act as a record of the addresses assigned.

An address is not created for vacant lots.

An address is only assigned to the primary public road address block. In the past, this has caused issues with complex condominiums and private streets for the E-911 system.

Validation:

A civic address is currently validated as part of two workflows at the City-Parish:

1.) An address is validated by the power companies ("Entergy" and "Demco") as part of the Department of Public Works Permitting workflow. The power corporation will often direct individuals and companies to the City-Parish to get a permit and associated address before they will connect power.
2.) An address is validated by the telephone company as part of the E-911 workflow. E-911 staff will provide updates back to the DPW.

4.2 Address Updates

An address is only updated by the Department of Public Works as part of two workflows:

- A new building permit
- Change of address

4.3 Address Retirement

An address is only relevant to the Department of Public Works as part of the permitting process and are not retired or maintained outside of the permitting process. The data in the Department of Public Works Permit System contains all data associated with building and demolition permit requests.

4.4 Address Requirements/Needs

A number of different needs were identified during the on-site assessment. An address is used by many different departments for many different purposes.

Due to various workflows and business processes, conflicting situations can occur, including:

- Out of sequence address numbers
- Multiple "official" road names for a given road segment
- Data conflicts between different systems at the City-Parish
- Annexations – merging of areas with potentially conflicting addressing
- Fire destroying an existing dwelling leaving the property vacant

4.4.1 Department of Public Works

The Department of Public Works has a need for address information associated with the building permitting process. The specific address requirements for this workflow include:

- Officially assigned or use an existing address in the building permit process

4.4.2 Department of Public Works / 311 Call Center

There is a need to have a system that can validate an address location using road alias information. There are occurrences that maintenance staff, as well as garbage collectors, cannot locate an address due to the location reference provided being a road alias.

If a common address is needed, an address will be created in the 311 system for reference purposes.

There is a need to locate an address by entering in the free-form text of a provided address.

There is a need to locate streets and buildings on streets that may be addressed to another street (i.e., Able Street Alley)

4.4.3 Public Safety Agencies

The E-911 system has a much greater need for:

- official addresses
- building numbers
- private streets
- road alias information
- common place names

There is a need to identify a routable network within a given building complex. Some complexes are connected by a series of parking lots. Developers need to define private streets to allow for navigation to a given building.

Due to the legacy application needs of the E-911 system, various data constraints need to be considered in a data sharing environment (e.g., attribute size limits, data types and values).

4.4.4 Mayor's Office of Homeland Security and Emergency Preparedness

Homeland Security needs to know the type of feature at a given location. They gather key location information from the Planning Commission. This information includes: schools, gas stations, etc. Homeland Security staff will also use the North American Industry Classification System Code (NAICS Code) information to assist in identifying key locations.

4.4.5 Registrar of Voters

The Registrar of Voters office has an extensive need for addressing information. They need to validate address information, including both official address as well as alias address information. They will validate this information in the field. Registrar staff makes extensive use of the current Web-based address system ("Internet Property Finder") at the City-Parish of Baton Rouge.

Registrar staff will validate and update their system (ERIN) based on information from various sources, including:

- DPW
- LA State Department of Motor Vehicles
- Canvassing/site visits
- Postal Services/Return Mail/Change of address forms

4.4.6 Property Assessor

The Property Assessor will capture the address in one field and will update based on the official address, as defined in the Department of Public Works system, if it is available.

There is a need for more complete coverage for all properties.

Property Appraisers provide an additional means of validating addresses for a given property.

The Homestead database is a good record of valid addresses.

Jurisdiction is also validated by abstract items, such as garbage collection, due to lack of clear data.

4.4.7 Power Companies

The power companies maintain their own address management systems. They will validate information from the City-Parish. If the data does not match up, they will notify the client and the City-Parish.

There is a need to better engage this important data validation source. New/updated and retired address information should be communicated to this source of validation.

4.4.8 Telephone Companies

The telephone companies maintain their own address management systems. They will validate information from the MSAG (Master Street Addressing Guide/E-911 system.) If the data does not match up, they will notify the client and the City-Parish.

There is a need to better engage this important data validation source. New/updated and retired address information should be communicated to this source of validation.

4.4.9 Residence and Local Business

There is a need to better engage this residence and local business as a validation source. New/Updated and retired address information should be communicated to these sources.

4.4.10 Other Municipalities in the Parish

The surrounding regions and related “Civic Address Management Areas” (see below) need to be engaged.

There is a need to ensure a consisted addressing standard is followed in order to accommodate:

- Government service delivery
- amalgamations
- E-911

There is a need to ensure that all jurisdictions are updated of any and all changes to addresses in the region.

There is a need for an addressing standard in the region, with clear examples to assist regions that may be over-burdened and under-staffed, to know what the correct addressing decision for a given situation is.

5. Recommendations

The below recommendations are based on the findings from the meetings outlined above, a review of various industry standards and Intergraph staff's past experiences on similar initiatives. The below information provides an outline of the components needed to maintain a civic addressing management system. This system needs to consider the following key components to ensuring a successful initiative:

1. People
2. Processes
3. Technology

Summary of recommendations:

- Civic Address Authority – Responsible for the lifecycle of an address
- Civic Addressing committee – Review and acceptance of standards, workflows and addresses
- Civic Addressing Workflow Recommendations – Document the process
- Civic Address Guidelines Document – New document needed with examples
- Civic Address Management System – New system is needed, with history/edit tracking, and secured system access for authorized users

5.1 Civic Address Authority

An authoritative source is required to take responsibility of an address. This authority needs to manage all aspects of an address:

- Creation
- Maintenance
- Retirement
- Reporting and notification of others

Addressing is a central part of many business processes within an organization and the authority must coordinate the management of address data with other organizations, due to the diverse needs and lifecycle of an address in related systems.

It is recommended that the "Planning Commission" be assigned the overall role of management and coordination of a civic address. This role is more appropriate for the Planning Commission given the targeted civic addressing workflow and scope of changes and their current system capacities (People, Processes and Technology).

Recommendation

Part of the funding received from the plat approval process and/or building permit process should be allocated to fund a civic addressing system.

The Planning Commission has been identified as the overall system owner (addressing "czar"). However, other departments play an essential role in the creation, authority and overall requirement for accurate and complete address data. Addresses cannot be managed without the input of key stakeholders, as outlined below, in the Civic Address committee.

5.2 Civic Address Committee

An address committee needs to be assembled to ensure that each address is managed in its entirety. Although the addressing authority will have the responsibility of managing the address data, key committee members will play a key role in the lifecycle of an address. Figure 1 below outlines the management of civic addresses.

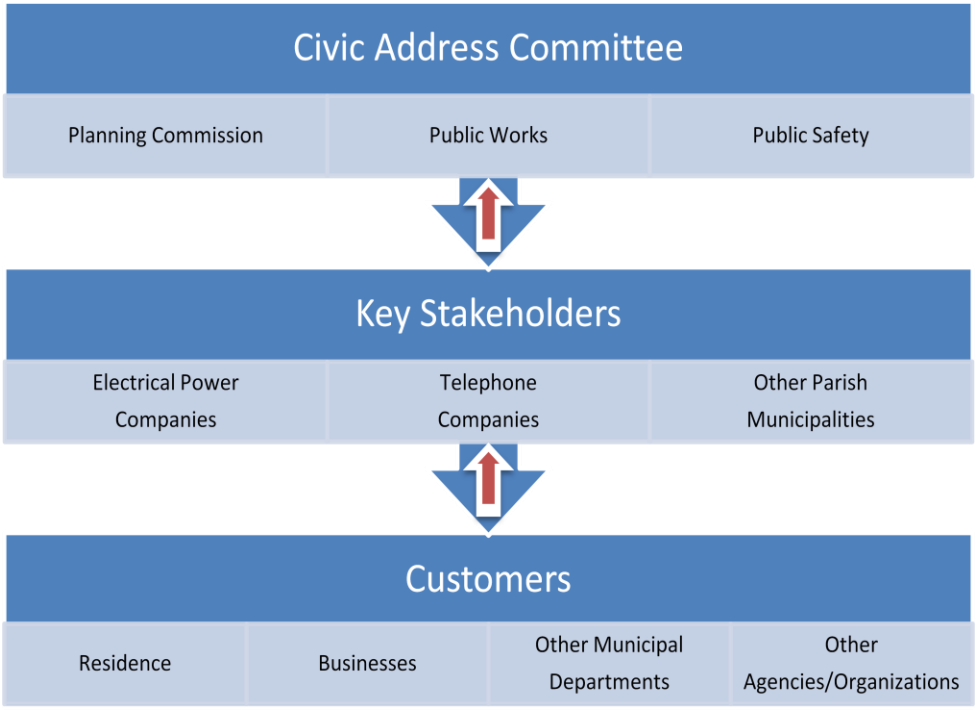


Figure 1: Civic Address Management Chart

The figure above shows the flow of address data in both directions among the various levels of users. As users request power or telephone connectivity, in many cases such requests will trigger actions by Public Works or Public Safety regarding civic address review and validation. Addresses may be created, updated or retired as part of the various workflows and this will affect all levels of users.

It is recommended that the **primary address committee** include:

1. Planning Commission
2. Department of Public Works
3. Emergency Response

Note: The primary address committee members will need to approve any and all new addresses before the new addresses can become officially recognized.

A secondary recommendation is that the address committee formally engages with key stakeholders, as follows:

1. Power Corporation
2. Telephone Company
3. Other Municipalities in the Parish (Cities of Central / Zachary / Baker)

The stakeholder committee members will provide validation of addresses and hopefully adopt the same standards as imposed by the addressing committee.

Other organizations, the general public and staff members may provide valuable input and updates to the data; however, it will be the responsibility of the primary address committee to accept any changes.

5.3 Civic Address Workflow Recommendations

A civic address needs to be managed through its entire lifecycle. This lifecycle management will expose address information earlier and allow for greater feedback on this important resource.

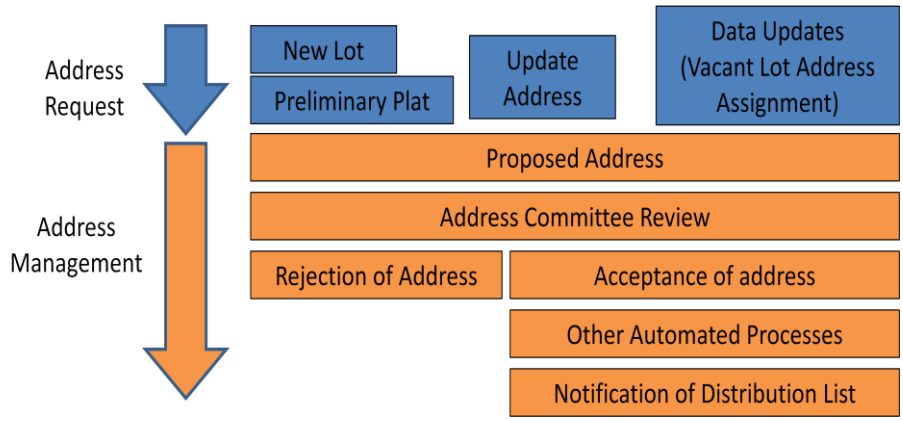
It is recommended that the address creation process be adjusted to allow for the assignment of an address on a plat before the plat is approved. This recommendation affects a number of workflows and business processes at the moment.

- **Approval process** – this would enable the address creation process to go through the approval process. This approval process needs to include the "civic address committee," as outlined above. This process should alleviate a number of current issues in related systems, especially the E-911 system.
- **Vacant Lots** – these lots will be given an address based on the "Road Address distance interval" methodology, as outlined below.

It is recommended that address management be extended to manage the status of an address as well as to leverage feedback from address validation sources (see below). The Planning Commission needs to engage key stakeholders in the validation and management of addressing data. A rich database model and Web-based system should be employed to address this recommendation (refer to the technology section below).

- **Approval process** – every address update would be subject to the standard civic address approval process. This approval process needs to include the "civic address committee," as outlined above. This process should alleviate a number of current issues in related systems, especially the E-911 system. Security considerations, notification and validations need to be engaged to manage this process.

The below diagram illustrates various address requests being processed. Address requests will be tracked in the system as proposed addresses. These addresses will then be reviewed by the addressing committee. If acceptable, the address will change status and various automated processes will be performed to record the history of the address changes as well as notify other systems and users.



A number of attributes should be tracked against each address (see below: civic address situs information.)

5.3.1 New Lot Address Workflow

- Preliminary plat
- CPPC digitizes the lot geometry and assigns Lot identification number into the GIS. CPPC adds street centerline and address ranges as well as assigns the address numbers and related

attributes (i.e., Lot identification number [LOT_ID] relationships, Assessment tax parcel number [PRONO]) into the address management system as a proposed address that is under review.
- Plat and address information references sent to addressing committee members for review and update (DPW and E-911).
- CPPC notified by the system once all committee members have approved or a predefined time has elapsed.
- CPPC to act on the notification (automated or manual process) to update the status of the address to approved/rejected based on committee findings.
- Distribution list is notified of the address change.

5.3.2 Existing Lots with no Address Workflow

- Existing lots will be assigned an address number based on the updated street centerline and associated "address distance interval".
    - All Lots that reside in the GIS database with "V" as the address number placeholder will be validated and assigned an address.
- Addresses are sent to addressing committee members for review and update (DPW and E-911, see above.)
- CPPC notified once all committee members have approved or a predefined time has elapsed.
- CPPC to act on the notification (automated or manual process) to update the status of the address to approved/rejected based on committee findings.
- Distribution list is notified of the address change.
- DPW issues building permit with the approved address number.
- CPPC downloads the permit data and updates the address number for that lot.

5.3.3 Change of Address Workflow

A valid address exists in the address management system.
- Applicant requests a change the address via the secured address management system.
- CPPC reviews the address change and recommends a new number where applicable.
- Addresses are sent to addressing committee members for review and update (DPW and E-911).
- CPPC notified once all committee members have approved or a predefined time has elapsed.
- CPPC to act on the notification (automated or manual process) to update the status of the address to approved/rejected based on committee findings.
- Distribution list is notified of the address change.
- Applicant is notified by DPW of the change. The address management system is updated accordingly.

6. Regulations and By-Law Enhancements

Regulations need to be incorporated into the Unified Development Code (UDC) to accommodate the addressing needs of the region. These regulations are required to accommodate the needs for emergency services and general working of the regional government. The areas of the code that need to be enhanced are:
- Chapter 4, Permits and Final Plat Approval
- Chapter 13, Streets and Sidewalks
- Chapter 16, Signs

These regulations will empower the Addressing Committee to act upon the identified requirements as well as enforce the associated regulations. One of the first action items for the Civic Addressing Committee will be to review and update the associated regulations in order to accommodate the overall needs and requirements of the system.

To assist the Addressing Committee, developers, and the public at large, it is highly recommended that a "Civic Address Standards and Guidelines" document be prepared. The below section outlines this document and provides some initial insight into the desired content.

6.1 Civic Address Standards and Guidelines Document

An authoritative standards document needs to be created to outline the rules and workflows associated with the management of addressing information. This document should be available for internal as well as public consumption.

The key components that will need to be defined and managed as part of a civic addressing system include:

1. Civic Address Management Areas
2. Road Name Information
3. Road Centerline Information
4. Civic Address Point locations
5. Civic Address Numbers
6. Civic Address Situs Information

The address standard should outline the various requirements for an address and the requirements associated with the management of an address. Examples of address types that should be defined include:

1. Single family dwellings
2. Condominium – multiple building complexes
3. Apartments and condominium apartments
4. Features that can receive an approved address (e.g., vacant lots, utility features, etc.)

Addressing standards should outline the various lifecycles and statuses associated with an address, as well as other properties, such as alias road names and numbers.

6.2 Civic Address Management Area or Community

Civic addressing management areas need to be defined to manage the various components of a civic address within a jurisdiction and under the control of a given civic addressing authority. Within each management polygon, the road name and associated civic address number need to be unique. No management polygons can overlap.

6.3 Road Name

Road name records need to be maintained within a Civic Address Management Area.

Rules and hierarchy need to be defined as to the correct primary road name vs. associated aliases.

As well as additional regulations outlined in Section 16 of the Unified Development Code, further items need to be added to the addressing standards document. The below outlines a number of the considerations that needed to be taken into account when dealing with road and/or street names associated with civic addressing.

6.3.1 Road name rules

Road name conventions need to be defined and enforced. Road names within a Civic Address Management Area need to be:

- Unique
- Not sound like another road name (First St. vs. First Av.)
- Not be interpreted as the same name (1 St vs. First St.)
- Private street names need to enforce the same rules

A unique road name needs to exist within each Management Area; however, each road may have many different road aliases. A road alias is an alternative name for the same segment(s) of roadway. The definition of a road alias will be based on the road name hierarchy.

6.3.2 Road hierarchy

Road hierarchy is defined in order of the importance of the road to the local jurisdiction. The official road name, as defined by the local authority, will act as the primary road name (i.e., Main St.) In general, the road hierarchy will indicate the importance of the road locally; thus a local road name may be used vs. a highway designation. For example, “Main St.” may be used as the primary local name over a State highway designation (S.H. 123). Other aliases, including highway name, will be ranked in accordance first with the local usage, and then with federal highway guidelines.

Road hierarchy will be defined, in general, based on its functional classification, as follows:

- Arterial
- Collector
- Local
- Unpaved
- Seasonal
- Non-essential
- Private Street

Highway naming prioritization will be based on the ascending order of route type and route numbers for any given road segment, in accordance with the federal highways primary naming convention:

- Interstate (i.e., ascending order… I-40, I-9)
- US Highway
- State Highway

6.3.3 Private Streets

A private street is a travel way that is not under the management authority of the civic addressing management area or jurisdiction. There are several addressing cases that need to be included under this category:

- Standard residential private street that provides access to multiple dwellings (two (2) or greater)
- Complexes (i.e., condominiums, manufacturing centers) and universities
- Mobile home parks
- Cottages (non-permanent residences)
- Campgrounds
- Parks and recreational areas

A private street should be addressed in the same fashion as a standard named road. Although the same rules would apply in the creation of the address and road names, it would not be flagged as an officially recognized road name or civic address.

This approach would accommodate the needs of the communities to support E-911 and address the various issues associated with roads that evolve from private streets to public roads.

6.3.4 Road Address Direction

The dominant direction of addresses along a road is defined as the direction of increasing address numbers. The address direction is determined by assessing the connectivity of the road network, in accordance with the following order of precedence:

- Travel from existing roads for new road construction (i.e., a new subdivision)
- Travel from a road of higher importance (Refer to the road hierarchy)
- Travel in a north-east direction

6.3.5 Road Address Numbering

The road address numbering convention is key to a consistent and sustainable addressing system. A road address number will be an integer number. A road centerline record will be assigned road address numbers at the beginning and end of each road segment to define a road address range.

6.3.6 Road Civic Address Number Ranges

A road civic address number range will provide a consistent range of base civic address numbers. This range will be applicable for a given road name in a civic address management area and will:

- be consecutive along a given series of road segments
- not overlap segment numbering
- be consistent with civic address numbering practices through the system
- allow for gaps due to other civic address management areas and highways
- allow for planning and validation of civic address point information (see below)
- comply with the address ranges for an area (i.e., block address numbers)

A road will be assigned civic address range numbers based on a standard Even-Odd convention.

6.3.7 Road Address Even-Odd Numbering Convention

A road will be assigned an even number on one side of the road and odd numbers on the other side of the road. Even numbers will be placed on the right side while odd numbers will be placed on the left side of the road, in accordance with the “Road Address Direction”.

6.3.8 Road Address Distance Interval

A road address distance interval is the distance measurement used to calculate the address number along a given road segment. The interval is the distance between consecutive civic address numbers.

This interval will allow for the interpretation of the road centerline to accurately define and validate civic address numbers.

A recommended road address distance interval is fifteen (15) feet. Given an overall long block distance of 1,500 feet would result in an allowance for 200 civic address numbers (Ref. Section 4.103 of Unified Development Code.)

The starting location of the interval is dependent upon the dominant direction of the road (see below). The starting location for civic address assignment is defined as the “Civic Address Point of Beginning”.

6.4 Civic Address

6.4.1 Civic Address Number

A civic address number uniquely identifies a location along a given roadway. To manage this location both internally as well as in the field, a number of factors need to be considered as outlined above.

Regulations

The below guidelines are recommended to meet this need (Ref: Unified Development Code, Section 16.)

1. A civic address number will be an Integer number (Arabic numerals 0 through 9.)
2. A civic address number will be sequential based on the defined civic direction of the roadway and follow the odd-even numbering convention.

6.4.2 Civic Address Point

A civic address point is a known civic address location. A civic address point location will be based upon a location along the road centerline, in accordance with the road address distance interval. A civic address point will be placed in accordance with:

- Driveway location leading to the primary building for a given property
- Front door/Primary entrance location

There are many different locations that need to be defined with a civic address to accommodate various workflows. Locations that should be given an assigned address include:

- Vacant lots
- Parks and recreational facilities

There are various requirements that dictate the need for other related attribute information associated to a given address point. This information is referred to as the situs information.

6.4.3 Civic Address Structure

A civic address structure is defined as a building or structure of significance on the defined lot. These structures will include:

- Condominium buildings that are part of a complex
- Trailers in a mobile home park
- Strip mall units
- Commercial buildings
- Electrical fixtures

Civic address structures will be assigned a civic address point if there is more than one civic address structure on a lot.

Regulations

The guidelines below are recommended to meet this need:

1. Civic address structures will be used to identify significant buildings on a lot.
2. Civic address structures may or may not exist on a lot.
3. Civic address structures do not include small outbuildings (sheds, small garages, etc.)

4. Civic address structures include structures powered by a separate electrical power source than other structures on the lot.
5. Civic address structures include structures that require separate telephone service for emergency response.
6. Civic address structures include structures that restrict the flow of people from one section to the other (i.e. a building divided by firewalls will be identified as two (2) civic address structures).
7. Civic address structures will reference a civic address number associated with the primary access address from this location.
8. Civic address structures will reference the same civic address number if the structure is part of a larger complex and the primary access to the structure is accessible from this location.
9. Civic address structures are considered significant if their foundation area is larger than 2,250 square feet.

Note: Significant structure size is based on a size larger than the minimum trailer lot size per Section 4.12 of the Unified Development Code.

6.4.4 Civic Address Unit Identifier

A civic address unit identifier will be a secondary identifier to the civic number. The unit identifier may include the following characters, (alphabetical characters both upper and lower case “A” through “Z” (a-z, A-Z), Arabic numerals 0 through 9, forward slash “/”).

The type of unit being identified should also be identified in the underlying database (i.e., apartment, condominium, townhouse, electrical building/fixture.)

Regulations

The guidelines below are recommended to meet this need (Ref: Unified Development Code, Section 16):

1. Civic address unit identifiers will be used to identify multiple buildings and/or units on a lot (townhomes, condominiums, strip mall units.)
2. Civic address unit identifiers are limited to the following characters: alphabetical characters both upper and lower case “A” through “Z” (a-z, A-Z), Arabic numerals 0 through 9, forward slash “/”.
3. Civic address unit identifiers will be assigned to all primary buildings on a lot if more than one primary building exists on the lot.

6.4.5 Civic Address Signage

To identify and manage locations, civic numbers need to be posted, visible, and based on a defined standard.

Signage will aid in E-911 routing which may include:

- Reporting of incidents (public works action items, waste pickup, animal control/removal)
- General communications with the public
- Physical location and validation of addresses (ref. inter-agency support)

Regulations

The below guidelines are recommended to meet this need (Ref: Unified Development Code, Section 16).

Civic number signage:
1. will be placed on the same side of the road that they relate (i.e. odd/even).
2. will be placed on either the civic address structure or a civic address post
3. will be placed on a civic address post by the associated roadway where the civic address structure more than fifty (50) feet away. Signage will be placed as close to the roadway as possible without encroaching on a roadway right-of-way.
4. will be visible to automobile traffic traveling in both directions on the associated roadway. The bottom of the sign will be posted at a minimum height of 4 feet and will face directly at the roadway.
5. will have clearly legible font (i.e. block font).
6. will contrast with the civic address structure and/or civic address post to ensure it is visible from the roadway.
7. may not be posted on trees, utility posts or other such objects.

Civic address unit signage:
1. will be placed on civic address structure or a civic address post within twenty (20) feet of the civic address structure. Within twenty (20) feet of primary entrance is the preferred location if applicable.
2. will have clearly legible font (i.e. block font).
3. will contrast with the civic address structure and or civic address post to ensure it is visible when approaching the building entrance.
4. may not be posted on trees, utility posts or other such objects.

6.4.6 Abnormal Civic Address

Civic addresses that exist within a jurisdiction that do not comply with the defined rules for the jurisdiction will be identified as an “abnormal civic address”.

This address may have been approved and used as the active address for a given location. When appropriate, this address should be retired and the standard address for the location used in the future. The retired abnormal address would act as an alias and be available for historical purposes.

The City-Parish should take the action to identify and flag these assigned addresses accordingly under a “grandfather clause” in the recommended regulations.

Regulations

The below guidelines are recommended to meet this need (Ref: Unified Development Code, Section 13).
1. Abnormal civic addresses are not permitted.
2. Abnormal civic addresses that have been approved before “date to be determined” based on the adoption of the changes in the Unified Development Code will be permitted under a “grandfather clause”.
3. Abnormal civic addresses, “grandfather clause”. This clause will allow an abnormal address until the property is sold or a building permit has been issued for the property.

6.4.7 Civic Address Situs Information

Civic address situs information includes information about a given location. A situs record needs to be related to a given address point. This record will include standard information about the address, including:

- Civic address number
- Civic address structure
- Civic address unit identifier
- Road name information
- Civic address management area information
- Relationship to the civic address point feature

The situs record will also include more advanced information associated with the address. This information should include:

- Feature type at the address (residential address, vacant lot, recreational area, etc.)
- Various flags to indicate the address status:
    - Approved address or an abnormal address (see below)
    - Assigned by the addressing authority
    - The lifecycle of an civic address:
        - Proposed Address;
        - Active Address
        - Retired Address
    - The validity of an civic address:
        - Valid Address
        - Invalid Address
    - An address may have many different flags:
        - Assigned Address
        - Posted Address
        - Corner Address

The situs data management is the most complex, as it contends with a variety of issues from multiple departments and business processes (see above for approval workflow recommendations.)

The addressing standard needs to define valid rules for various unique addressing situations, including:

- Standard new street (i.e., subdivision)
- Abnormal civic address
- Private streets
- Dead end streets
- Cul-de-sac and courts
- Crescent streets
- Meandering Roads
- Duplexes
- Apartment
- Highways – unique naming convention (will not change from community to community) – mile marker

Other situations for discussion include:

- Trails and recreational paths
- Train tracks
- Waterways (i.e., river and stream systems)

6.5 Civic Address Management System

It is recommended that a new system be developed to manage and present civic address data via a Web-based interface. The recommended system will provide secured read/write capabilities to allow users to log updates and correct data over the Web. The resulting system will be a “civic address management portal.”

6.5.1 Civic Address Management Portal

It is recommended that the City-Parish build and manage a Web-based address management portal, which would provide an authoritative address source that is inclusive and accessible. This portal will provide citizens, businesses, staff and other organizations access to addressing information. There are many sources of addressing information and means of validating this data.

System Access

1. System access controls need to be put in place allow for:
    a. New address requests
    b. Address corrections
    c. New Private Street name requests
    d. Identification of road alias sections
2. Primary committee members to review and assess new civic address requests and approve accordingly
3. Unique road name reviews

The roll-out of this portal should be completed in several phases:

- Phase 1 – Basic searching for a given situs address
- Phase 2 – Security, editing and notification of a given civic situs address record
- Phase 3 – Basic map and editing of road names and alias information
- Phase 4 – Advanced map with road alias and address placement

Civic Address Management Application Architecture

The civic address management application architecture needs to consider the people, processes and technology that the City-Parish currently has in place. The City already has a number of key technologies and people that understand these technologies as well as the processes involved.

It is recommended that the civic address management application be built using existing systems that include:

- Oracle Application Express
- GeoMedia WebMap
- Oracle database

The targeted application should reside on a rich data model that will meet the requirements as defined in this document.

6.5.2 Address Validation

Civic address validation should be extended to include the sources below:

1. Planning Commission
2. Building permits
3. Emergency Services / E-911
4. Electrical Power hookup
5. Telephone hookup

6. Occupational licenses
7. Property Assessment
8. Registrar of Voters
9. Residence and Business owners

7. Next Steps

The City-Parish needs to review and assess what recommendations they are willing to adopt and define associated timeframes. The City-Parish has a wealth of resources internally that can be leveraged to make the required changes to City-Parish processes and standards.

Key areas that allow for the City-Parish to move quickly on the above noted recommendations include:

- Strong business processes and competent staff in Public Works, Public Safety and the Planning Commission that understand the business processes and existing problems in their current workflows. The identified staff is willing to work toward a common goal to improve the overall operations of the region with their own existing departmental workflow needs.
- The technology and technicians employed by the Planning Commission and Information Technology Departments also complements the proposed system.

The recommended next steps, in sequence, are:

1. Formalize the Address Committee;
2. Develop an Civic Address Standards document
3. Review and adopt the regulations into the “Unified Development Code”
4. Develop a Civic Address Management System
5. Implement a Civic Address Management System

8. Summary

Intergraph has performed an assessment of the civic addressing needs across several City-Parish departments and surrounding areas. This assessment commenced on November 29, 2010 and included the review of the flow of data throughout the City and surrounding regions, workflows, standards and regulations as well as associated data sets.

As a result of the onsite assessment and follow-up meetings, below are the recommended improvements:

- Establish a Civic Address Authority – Responsible for the lifecycle of an address and system ownership
- Establish a Civic Addressing Committee – Review and acceptance of standards, workflows and addresses
- Define Civic Addressing Workflow Recommendations – Improvements in known processes and identification of key stakeholder involvement
- Create a Civic Address Guidelines Document –Document outlining generic data cases
- Define Civic Address Regulation Recommendations – Updates to the City-Parish Unified Development Code (UDC)
- Develop a Civic Address Management System – Software and data structure recommendations to manage the address data at the City-Parish

Adoption of the above noted improvements will provide the City-Parish with the below benefits:

1. Improved emergency response;
2. Improved service delivery and inventory of locations in the region;
3. Improved inter-agency and service company collaboration;
4. Improved reliability of address data with a single point of truth;

5. Improved efficiency when dealing with the public;
6. Organizational improvements to deal effectively and accurately with addressing issues;
7. Clear guidelines and enforceable regulations to ensure data accuracy and consistency;
8. Much needed tools to manage the life-cycle of address data and integration with other core business systems at the City-Parish.

The City-Parish is well suited to realize these benefits due to the wealth of internal staff expertise, willingness to improve upon current processes and a solid technology foundation. The next step for the City-Parish would be to formalize the Civic Address Committee and begin to document the Civic Address Guidelines, associated Regulations and plan for the development of a Civic Address Management System.

9. References

Unified Development Code, City-Parish Planning Commission, City of Baton Rouge and Parish of East Baton Rouge, http://brgov.com/dept/planning/udc/pdf/UDC_2011.pdf

United States Thoroughfare, Landmark, and Postal address Data Standard (Final draft), November, 2010

USA Postal Addressing Standards, Publication 28, July 2006

Navteq relational Database Format (RDF) Reference Guide, Version 2.2, Q1 2008

Civic Address Standards and Guidelines, Version 1.1, Prince Edward Island, Canada, June 2001

The Civic Addressing standard for Manitoba, Canada

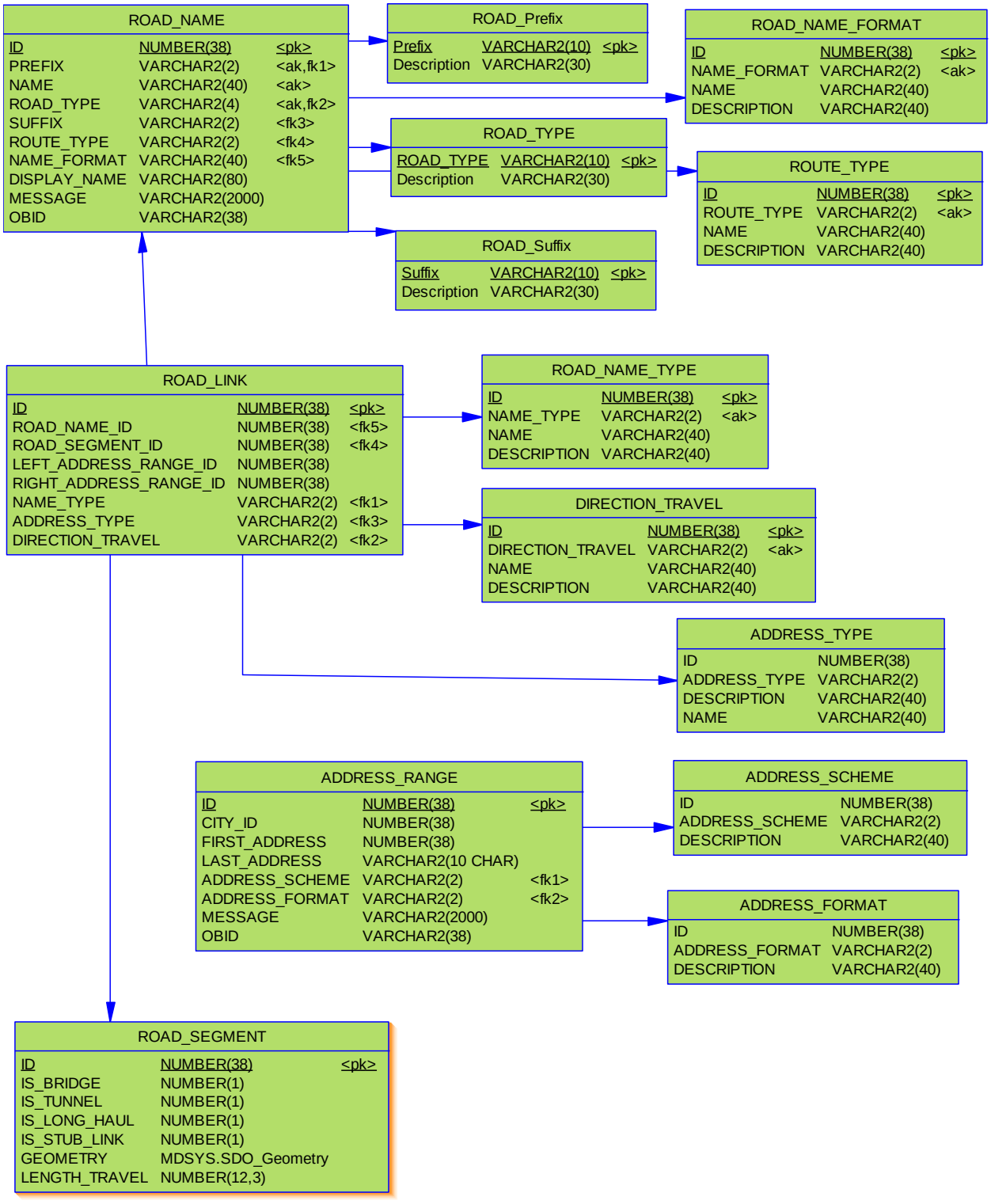
10. Approval Signatures

Signature by all parties listed below constitutes acceptance of this Document.

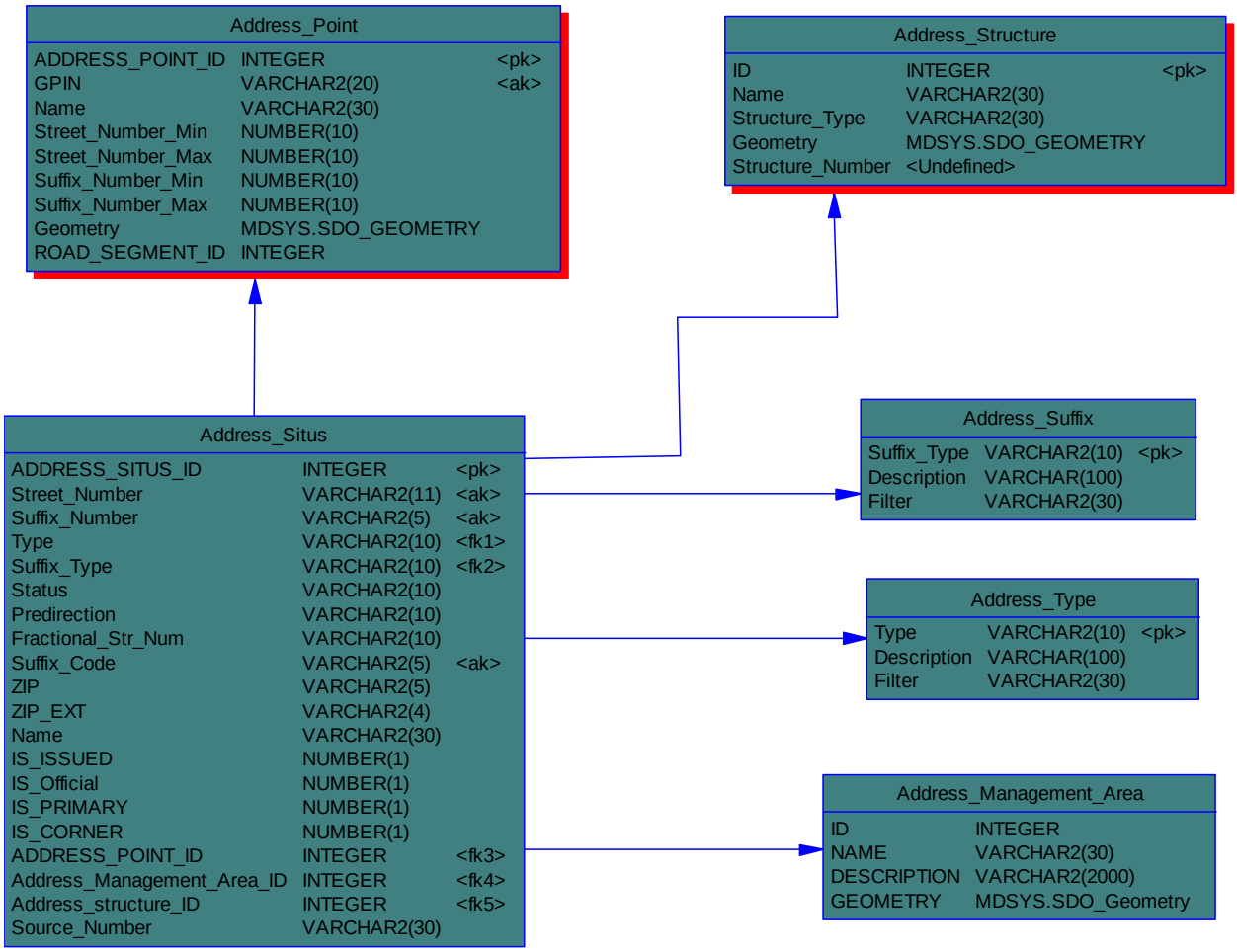
City of Baton Rouge	Intergraph Corporation
Approved by:	Approved by:
Baton Rouge Project Manager	Intergraph Project Manager
	Karin Goodwin
Printed Name	Printed Name
Date	Date

11. Appendix A – Data model

11.1 Road Data Model



11.2 Address Data Model



11.3 Data Model Descriptions

1 Table ADDRESS_FORMAT

1.1 Description of table ADDRESS_FORMAT

Name	ADDRESS_FORMAT
Comment	The addressing formatting methodology used. Identifies the masks to display data or accept input from the user. Identifies if the Road_Type is before or after name, considerations for French/English, etc...

1.2 Column ADDRESS_FORMAT of the table ADDRESS_FORMAT

1.2.1 Description of column ADDRESS_FORMAT of the table ADDRESS_FORMAT

Name	ADDRESS_FORMAT
Data Type	VARCHAR2(2)
Comment	

1.3 Column DESCRIPTION of the table ADDRESS_FORMAT

1.3.1 Description of column DESCRIPTION of the table ADDRESS_FORMAT

Name	DESCRIPTION
Data Type	VARCHAR2(40)
Comment	

1.4 Column ID of the table ADDRESS_FORMAT

1.4.1 Description of column ID of the table ADDRESS_FORMAT

Name	ID
Data Type	NUMBER(38)
Comment	

2 Table ADDRESS_RANGE

2.1 Description of table ADDRESS_RANGE

Name	ADDRESS_RANGE
Comment	The address range information for each side of the road

2.2 Column ADDRESS_FORMAT of the table ADDRESS_RANGE

2.2.1 Description of column ADDRESS_FORMAT of the table ADDRESS_RANGE

Name	ADDRESS_FORMAT
Data Type	VARCHAR2(2)
Comment	

2.3 Column ADDRESS_SCHEME of the table ADDRESS_RANGE

2.3.1 Description of column ADDRESS_SCHEME of the table ADDRESS_RANGE

Name	ADDRESS_SCHEME

Data Type	VARCHAR2(2)
Comment	The addressing methodology used, specific type of addressing or LRM used.

2.4 Column CITY_ID of the table ADDRESS_RANGE

2.4.1 Description of column CITY_ID of the table ADDRESS_RANGE

Name	CITY_ID
Data Type	NUMBER(38)
Comment	City code - Different City may be on Right and left of feature.

2.5 Column FIRST_ADDRESS of the table ADDRESS_RANGE

2.5.1 Description of column FIRST_ADDRESS of the table ADDRESS_RANGE

Name	FIRST_ADDRESS
Data Type	NUMBER(38)
Comment	

2.6 Column ID of the table ADDRESS_RANGE

2.6.1 Description of column ID of the table ADDRESS_RANGE

Name	ID
Data Type	NUMBER(38)
Comment	Auto incremented artificial primary key unique for this table maintained by BEFORE-INSERT trigger

2.7 Column LAST_ADDRESS of the table ADDRESS_RANGE

2.7.1 Description of column LAST_ADDRESS of the table ADDRESS_RANGE

Name	LAST_ADDRESS
Data Type	VARCHAR2(10 CHAR)
Comment	

2.8 Column MESSAGE of the table ADDRESS_RANGE

2.8.1 Description of column MESSAGE of the table ADDRESS_RANGE

Name	MESSAGE
Data Type	VARCHAR2(2000)
Comment	

2.9 Column OBID of the table ADDRESS_RANGE

2.9.1 Description of column OBID of the table ADDRESS_RANGE

Name	OBID
Data Type	VARCHAR2(38)
Comment	The system wide unique ID = GUID

3 Table ADDRESS_SCHEME

3.1 Description of table ADDRESS_SCHEME

Name	ADDRESS_SCHEME
Comment	The addressing methodology used, specific type of addressing. Even/Odd, Mixed, Up on left/down on right

3.2 Column ADDRESS_SCHEME of the table ADDRESS_SCHEME

3.2.1 Description of the column ADDRESS_SCHEME of the table ADDRESS_SCHEME

Name	ADDRESS_SCHEME
Data Type	VARCHAR2(2)
Comment	E-even, O-Odd, M- mixed

3.3 Column DESCRIPTION of the table ADDRESS_SCHEME

3.3.1 Description of column DESCRIPTION of the table ADDRESS_SCHEME

Name	DESCRIPTION
Data Type	VARCHAR2(40)
Comment	

3.4 Column ID of the table ADDRESS_SCHEME

3.4.1 Description of the column ID of the table ADDRESS_SCHEME

Name	ID
Data Type	NUMBER(38)
Comment	

4 Table ADDRESS_TYPE

4.1 Description of table ADDRESS_TYPE

Name	ADDRESS_TYPE
Comment	The address type methodology used. This will include: Civic address numbers, Highway mileage locations, Walking trail locations, Example: The same road segment may have a City address range as well as a highway begin and end milepost location.

4.2 Column ADDRESS_TYPE of the table ADDRESS_TYPE

4.2.1 Description of column ADDRESS_TYPE of the table ADDRESS_TYPE

Name	ADDRESS_TYPE
Data Type	VARCHAR2(2)
Comment	

4.3 Column DESCRIPTION of the table ADDRESS_TYPE

4.3.1 Description of column DESCRIPTION of the table ADDRESS_TYPE

Name	DESCRIPTION
Data Type	VARCHAR2(40)
Comment	

4.4 Column ID of the table ADDRESS_TYPE

4.4.1 Description of column ID of the table ADDRESS_TYPE

Name	ID
Data Type	NUMBER(38)
Comment	

4.5 Column NAME of the table ADDRESS_TYPE

4.5.1 Description of column NAME of the table ADDRESS_TYPE

Name	NAME
Data Type	VARCHAR2(40)
Comment	

5 Table Address_Management_Area

5.1 Description of table Address_Management_Area

Name	Address_Management_Area
Comment	

5.2 Column DESCRIPTION of the table Address_Management_Area

5.2.1 Description of column DESCRIPTION of the table Address_Management_Area

Name	DESCRIPTION
Data Type	VARCHAR2(2000)
Comment	Long descriptive name

5.3 Column GEOMETRY of the table Address_Management_Area

5.3.1 Description of column GEOMETRY of the table Address_Management_Area

Name	GEOMETRY
Data Type	MDSYS.SDO_Geometry
Comment	Geometry

5.4 Column ID of the table Address_Management_Area

5.4.1 Description of column ID of the table Address_Management_Area

Name	ID
Data Type	INTEGER
Comment	Unique ID for the Management Area

5.5 Column NAME of the table Address_Management_Area

5.5.1 Description of column NAME of the table Address_Management_Area

Name	NAME
Data Type	VARCHAR2(30)
Comment	The name of the area

6 Table Address_Point

6.1 Description of table Address_Point

Name	Address_Point
Comment	The point used to assoicated situs address information.

6.2 Column ADDRESS_POINT_ID of the table Address_Point

6.2.1 Description of column ADDRESS_POINT_ID of the table Address_Point

Name	ADDRESS_POINT_ID
Data Type	INTEGER
Comment	

6.3 Column GPIN of the table Address_Point

6.3.1 Description of column GPIN of the table Address_Point

Name	GPIN
Data Type	VARCHAR2(20)
Comment	The GPIN will be the base parcel GPIN value calculation.

6.4 Column Geometry of the table Address_Point

6.4.1 Description of column Geometry of the table Address_Point

Name	Geometry
Data Type	MDSYS.SDO_GEOMETRY
Comment	The spatial feature stored as a point.

6.5 Column Name of the table Address_Point

6.5.1 Description of column Name of the table Address_Point

Name	Name
Data Type	VARCHAR2(30)
Comment	A user definable reference name for the address point. May be a locally known as name, landmark

6.6 Column ROAD_SEGMENT_ID of the table Address_Point

6.6.1 Description of column ROAD_SEGMENT_ID of the table Address_Point

Name	ROAD_SEGMENT_ID
Data Type	INTEGER
Comment	road segment related to for address range.

6.7 Column Street_Number_Max of the table Address_Point

6.7.1 Description of column Street_Number_Max of the table Address_Point

Name	Street_Number_Max
Data Type	NUMBER(10)
Comment	The address range maximum value. Needed for planning Summary Information from situs.

6.8 Column Street_Number_Min of the table Address_Point

6.8.1 Description of column Street_Number_Min of the table Address_Point

Name	Street_Number_Min
Data Type	NUMBER(10)
Comment	The address range minimum value. Needed for planning

6.9 Column Suffix_Number_Max of the table Address_Point

6.9.1 Description of column Suffix_Number_Max of the table Address_Point

Name	Suffix_Number_Max
Data Type	NUMBER(10)
Comment	The address range maximum value. Needed for planning Summary Information from situs.

6.10 Column Suffix_Number_Min of the table Address_Point

6.10.1 Description of column Suffix_Number_Min of the table Address_Point

Name	Suffix_Number_Min
Data Type	NUMBER(10)
Comment	The address range minimum value. Needed for planning

7 Table Address_Situs

7.1 Description of table Address_Situs

Name	Address_Situs
Comment	This table models both the location of an address point as well as the information for mailing purposes. The table can be used for either or both purposes.

7.2 Column ADDRESS_POINT_ID of the table Address_Situs

7.2.1 Description of column ADDRESS_POINT_ID of the table Address_Situs

Name	ADDRESS_POINT_ID
Data Type	INTEGER
Comment	

7.3 Column ADDRESS_SITUS_ID of the table Address_Situs

7.3.1 Description of column ADDRESS_SITUS_ID of the table Address_Situs

Name	ADDRESS_SITUS_ID
Data Type	INTEGER
Comment	

7.4 Column Address_Management_Area_ID of the table Address_Situs

7.4.1 Description of column Address_Management_Area_ID of the table Address_Situs

Name	Address_Management_Area_ID
Data Type	INTEGER
Comment	

7.5 Column Address_structure_ID of the table Address_Situs

7.5.1 Description of column Address_structure_ID of the table Address_Situs

Name	Address_structure_ID
Data Type	INTEGER
Comment	

7.6 Column Fractional_Str_Num of the table Address_Situs

7.6.1 Description of column Fractional_Str_Num of the table Address_Situs

Name	Fractional_Str_Num
Data Type	VARCHAR2(10)
Comment	A sub-number to the Street_Number 1/2

7.7 Column IS_CORNER of the table Address_Situs

7.7.1 Description of column IS_CORNER of the table Address_Situs

Name	IS_CORNER
Data Type	NUMBER(1)
Comment	Is a corner address

7.8 Column IS_ISSUED of the table Address_Situs

7.8.1 Description of column IS_ISSUED of the table Address_Situs

Name	IS_ISSUED
Data Type	NUMBER(1)
Comment	Identifies if the address was issued by planning. This would indicate if access is available to the property at this address.

7.9 Column IS_Official of the table Address_Situs

7.9.1 Description of column IS_Official of the table Address_Situs

Name	IS_Official
Data Type	NUMBER(1)
Comment	Identifies the address as being an official address number. It may be As Posted or an Also Known As Address...

7.10 Column IS_PRIMARY of the table Address_Situs

7.10.1 Description of column IS_PRIMARY of the table Address_Situs

Name	IS_PRIMARY
Data Type	NUMBER(1)
Comment	The primary address for the parcel.

7.11 Column Name of the table Address_Situs

7.11.1 Description of column Name of the table Address_Situs

Name	Name
Data Type	VARCHAR2(30)
Comment	A user definable reference name for the address point. May be a locally known as name, landmark

7.12 Column Predirection of the table Address_Situs

7.12.1 Description of column Predirection of the table Address_Situs

Name	Predirection
Data Type	VARCHAR2(10)
Comment	The direction that represents the vector of a street. Example: E, W, S, N, NE, SE, NW, SW

7.13 Column Source_Number of the table Address_Situs

7.13.1 Description of column Source_Number of the table Address_Situs

Name	Source_Number
Data Type	VARCHAR2(30)
Comment	The instrument or recorded number as recorded. Or an internal DSC file number.

7.14 Column Status of the table Address_Situs

7.14.1 Description of column Status of the table Address_Situs

Name	Status
Data Type	VARCHAR2(10)
Comment	

7.15 Column Street_Number of the table Address_Situs

7.15.1 Description of column Street_Number of the table Address_Situs

Name	Street_Number
Data Type	VARCHAR2(11)
Comment	The street number or identifier Need to use a longer character field here to accommodate address ranges.

7.16 Column Suffix_Code of the table Address_Situs

7.16.1 Description of column Suffix_Code of the table Address_Situs

Name	Suffix_Code
Data Type	VARCHAR2(5)
Comment	For Multiple Assessment accounts with one address a /W will be applied. i.e. 400/W Main Street.

7.17 Column Suffix_Number of the table Address_Situs

7.17.1 Description of column Suffix_Number of the table Address_Situs

Name	Suffix_Number
Data Type	VARCHAR2(5)

Comment	Identifies the unique item at the address. Room/suite/Apartment/Unit

7.18 Column Suffix_Type of the table Address_Situs

7.18.1 Description of column Suffix_Type of the table Address_Situs

Name	Suffix_Type
Data Type	VARCHAR2(10)
Comment	

7.19 Column Type of the table Address_Situs

7.19.1 Description of column Type of the table Address_Situs

Name	Type
Data Type	VARCHAR2(10)
Comment	The abbreviation of the unique type or feature being addressed. Example: P B E

7.20 Column ZIP of the table Address_Situs

7.20.1 Description of column ZIP of the table Address_Situs

Name	ZIP
Data Type	VARCHAR2(5)
Comment	

7.21 Column ZIP_EXT of the table Address_Situs

7.21.1 Description of column ZIP_EXT of the table Address_Situs

Name	ZIP_EXT
Data Type	VARCHAR2(4)
Comment	

8 Table Address_Structure

8.1 Description of table Address_Structure

Name	Address_Structure
Comment	The key address structure The type of structure. Building; Electrical Box Electrical sub station

8.2 Column Geometry of the table Address_Structure

8.2.1 Description of column Geometry of the table Address_Structure

Name	Geometry
Data Type	MDSYS.SDO_GEOMETRY
Comment	The spatial feature stored as a point.

8.3 Column ID of the table Address_Structure

8.3.1 Description of column ID of the table Address_Structure

Name	ID
Data Type	INTEGER
Comment	

8.4 Column Name of the table Address_Structure

8.4.1 Description of column Name of the table Address_Structure

Name	Name
Data Type	VARCHAR2(30)
Comment	A user defined name for the structure

8.5 Column Structure_Number of the table Address_Structure

8.5.1 Description of column Structure_Number of the table Address_Structure

Name	Structure_Number
Data Type	<Undefined>
Comment	Identified for the structure

8.6 Column Structure_Type of the table Address_Structure

8.6.1 Description of column Structure_Type of the table Address_Structure

Name	Structure_Type
Data Type	VARCHAR2(30)
Comment	The type of structure, Building, Electrical Box/fixture

9 Table Address_Suffix

9.1 Description of table Address_Suffix

Name	Address_Suffix
Comment	Descriptive Words for: Apartment Unit Suite

9.2 Column Description of the table Address_Suffix

9.2.1 Description of column Description of the table Address_Suffix

Name	Description
Data Type	VARCHAR(100)
Comment	

9.3 Column Filter of the table Address_Suffix

9.3.1 Description of column Filter of the table Address_Suffix

Name	Filter
Data Type	VARCHAR2(30)
Comment	

9.4 Column Suffix_Type of the table Address_Suffix

9.4.1 Description of column Suffix_Type of the table Address_Suffix

Name	Suffix_Type
Data Type	VARCHAR2(10)
Comment	

10 Table Address_Type

10.1 Description of table Address_Type

Name	Address_Type
Comment	The type of address being placed. This could be for many different features and exposed in various views for presentation and symbolization. Driveway Building Roof Top Building Entrance Parcel Lot Landmark Recreational Facility (Field A)

10.2 Column Description of the table Address_Type

10.2.1 Description of column Description of the table Address_Type

Name	Description
Data Type	VARCHAR(100)
Comment	The unique type or feature being addressed. Example: Parcel Building Entrance

10.3 Column Filter of the table Address_Type

10.3.1 Description of column Filter of the table Address_Type

Name	Filter
Data Type	VARCHAR2(30)
Comment	

10.4 Column Type of the table Address_Type

10.4.1 Description of column Type of the table Address_Type

Name	Type

Data Type	VARCHAR2(10)
Comment	The abbreviation of the unique type or feature being addressed. Example: P B E

11 Table DIRECTION_TRAVEL

11.1 Description of table DIRECTION_TRAVEL

Name	DIRECTION_TRAVEL
Comment	The travel direction of the route.

11.2 Column DESCRIPTION of the table DIRECTION_TRAVEL

11.2.1 Description of column DESCRIPTION of the table DIRECTION_TRAVEL

Name	DESCRIPTION
Data Type	VARCHAR2(40)
Comment	Free Form Text Description of the record

11.3 Column DIRECTION_TRAVEL of the table DIRECTION_TRAVEL

11.3.1 Description of column DIRECTION_TRAVEL of the table DIRECTION_TRAVEL

Name	DIRECTION_TRAVEL
Data Type	VARCHAR2(2)
Comment	Unique meaningful road direction code

11.4 Column ID of the table DIRECTION_TRAVEL

11.4.1 Description of column ID of the table DIRECTION_TRAVEL

Name	ID
Data Type	NUMBER(38)
Comment	

11.5 Column NAME of the table DIRECTION_TRAVEL

11.5.1 Description of column NAME of the table DIRECTION_TRAVEL

Name	NAME
Data Type	VARCHAR2(40)
Comment	Short descriptive name

12 Table ROAD_LINK

12.1 Description of table ROAD_LINK

Name	ROAD_LINK
Comment	A many to many join to relate the aliased segments to the correct road alias. This allows for multiple addressing structures per segment. LRS vs street address.

12.2 Column ADDRESS_TYPE of the table ROAD_LINK

12.2.1 Description of column ADDRESS_TYPE of the table ROAD_LINK

Name	ADDRESS_TYPE
Data Type	VARCHAR2(2)
Comment	The address type methodology used. Address, LRS (Mileage, trail markers)

12.3 Column DIRECTION_TRAVEL of the table ROAD_LINK

12.3.1 Description of column DIRECTION_TRAVEL of the table ROAD_LINK

Name	DIRECTION_TRAVEL
Data Type	VARCHAR2(2)
Comment	Unique meaningful road direction code

12.4 Column ID of the table ROAD_LINK

12.4.1 Description of column ID of the table ROAD_LINK

Name	ID
Data Type	NUMBER(38)
Comment	

12.5 Column LEFT_ADDRESS_RANGE_ID of the table ROAD_LINK

12.5.1 Description of column LEFT_ADDRESS_RANGE_ID of the table ROAD_LINK

Name	LEFT_ADDRESS_RANGE_ID
Data Type	NUMBER(38)
Comment	

12.6 Column NAME_TYPE of the table ROAD_LINK

12.6.1 Description of column NAME_TYPE of the table ROAD_LINK

Name	NAME_TYPE
Data Type	VARCHAR2(2)
Comment	The type of road name, Alias, Abbreviation. A road may be aliased differently on different segments.

12.7 Column RIGHT_ADDRESS_RANGE_ID of the table ROAD_LINK

12.7.1 Description of column RIGHT_ADDRESS_RANGE_ID of the table ROAD_LINK

Name	RIGHT_ADDRESS_RANGE_ID
Data Type	NUMBER(38)
Comment	

12.8 Column ROAD_NAME_ID of the table ROAD_LINK

12.8.1 Description of column ROAD_NAME_ID of the table ROAD_LINK

Name	ROAD_NAME_ID
Data Type	NUMBER(38)
Comment	

12.9 Column ROAD_SEGMENT_ID of the table ROAD_LINK

12.9.1 Description of column ROAD_SEGMENT_ID of the table ROAD_LINK

Name	ROAD_SEGMENT_ID
Data Type	NUMBER(38)
Comment	

13 Table ROAD_NAME

13.1 Description of table ROAD_NAME

Name	ROAD_NAME
Comment	List of unique street names (made unique through a unique combination of suffix, prefix and class) Unique list of street names. These may also be alias names

13.2 Column DISPLAY_NAME of the table ROAD_NAME

13.2.1 Description of column DISPLAY_NAME of the table ROAD_NAME

Name	DISPLAY_NAME
Data Type	VARCHAR2(80)
Comment	Fully concatenated name

13.3 Column ID of the table ROAD_NAME

13.3.1 Description of column ID of the table ROAD_NAME

Name	ID
Data Type	NUMBER(38)
Comment	Auto incremented artificial primary key unique for this table maintained by BEFORE-INSERT trigger Navteq = STREET.FEATURE_ID

13.4 Column MESSAGE of the table ROAD_NAME

13.4.1 Description of column MESSAGE of the table ROAD_NAME

Name	MESSAGE
Data Type	VARCHAR2(2000)
Comment	Message from automated batch process to operator; can be "OK", or error message, or "to be checked", etc.

13.5 Column NAME of the table ROAD_NAME

13.5.1 Description of column NAME of the table ROAD_NAME

Name	NAME
Data Type	VARCHAR2(40)
Comment	Street name, with no suffixes or prefixes

13.6 Column NAME_FORMAT of the table ROAD_NAME

13.6.1 Description of column NAME_FORMAT of the table ROAD_NAME

Name	NAME_FORMAT

Data Type	VARCHAR2(40)
Comment	Does the ROAD_TYPE proceed or follow NAME.

13.7 Column OBID of the table ROAD_NAME

13.7.1 Description of column OBID of the table ROAD_NAME

Name	OBID
Data Type	VARCHAR2(38)
Comment	The system wide unique ID = GUID

13.8 Column PREFIX of the table ROAD_NAME

13.8.1 Description of column PREFIX of the table ROAD_NAME

Name	PREFIX
Data Type	VARCHAR2(2)
Comment	Unique meaningful name for street suffix/prefix for this lookup

13.9 Column ROAD_TYPE of the table ROAD_NAME

13.9.1 Description of column ROAD_TYPE of the table ROAD_NAME

Name	ROAD_TYPE
Data Type	VARCHAR2(4)
Comment	Unique meaningful street type: AV, HWY, CT, CL, etc..

13.10 Column ROUTE_TYPE of the table ROAD_NAME

13.10.1 Description of column ROUTE_TYPE of the table ROAD_NAME

Name	ROUTE_TYPE
Data Type	VARCHAR2(2)
Comment	Interstate vs. local road codes

13.11 Column SUFFIX of the table ROAD_NAME

13.11.1 Description of column SUFFIX of the table ROAD_NAME

Name	SUFFIX
Data Type	VARCHAR2(2)
Comment	Unique meaningful name for street suffix/prefix for this lookup

14 Table ROAD_NAME_FORMAT

14.1 Description of table ROAD_NAME_FORMAT

Name	ROAD_NAME_FORMAT
Comment	Road name formatting code The indicator on how to construct the address from the various parts of the address. i.e. Block address format, B (example B123) Hyphened, H (example 123-123) Numeric, N (example 123456)

14.2 Column DESCRIPTION of the table ROAD_NAME_FORMAT

14.2.1 Description of column DESCRIPTION of the table ROAD_NAME_FORMAT

Name	DESCRIPTION
Data Type	VARCHAR2(40)
Comment	Free Form Text Description of the record

14.3 Column ID of the table ROAD_NAME_FORMAT

14.3.1 Description of column ID of the table ROAD_NAME_FORMAT

Name	ID
Data Type	NUMBER(38)
Comment	

14.4 Column NAME of the table ROAD_NAME_FORMAT

14.4.1 Description of column NAME of the table ROAD_NAME_FORMAT

Name	NAME
Data Type	VARCHAR2(40)
Comment	Short descriptive name

14.5 Column NAME_FORMAT of the table ROAD_NAME_FORMAT

14.5.1 Description of column NAME_FORMAT of the table ROAD_NAME_FORMAT

Name	NAME_FORMAT
Data Type	VARCHAR2(2)
Comment	Unique meaningful road name format classification

15 Table ROAD_NAME_TYPE

15.1 Description of table ROAD_NAME_TYPE

Name	ROAD_NAME_TYPE
Comment	Road name type code, Base, Abbr, Alias

15.2 Column DESCRIPTION of the table ROAD_NAME_TYPE

15.2.1 Description of column DESCRIPTION of the table ROAD_NAME_TYPE

Name	DESCRIPTION
Data Type	VARCHAR2(40)
Comment	Free Form Text Description of the record

15.3 Column ID of the table ROAD_NAME_TYPE

15.3.1 Description of column ID of the table ROAD_NAME_TYPE

Name	ID
Data Type	NUMBER(38)
Comment	

15.4 Column NAME of the table ROAD_NAME_TYPE

15.4.1 Description of column NAME of the table ROAD_NAME_TYPE

Name	NAME
Data Type	VARCHAR2(40)
Comment	Short descriptive name

15.5 Column NAME_TYPE of the table ROAD_NAME_TYPE

15.5.1 Description of column NAME_TYPE of the table ROAD_NAME_TYPE

Name	NAME_TYPE
Data Type	VARCHAR2(2)
Comment	Unique meaningful road namce type classification

16 Table ROAD_Prefix

16.1 Description of table ROAD_Prefix

Name	ROAD_Prefix
Comment	The street name prefix identifiers.

16.2 Column Description of the table ROAD_Prefix

16.2.1 Description of column Description of the table ROAD_Prefix

Name	Description
Data Type	VARCHAR2(30)
Comment	

16.3 Column Prefix of the table ROAD_Prefix

16.3.1 Description of column Prefix of the table ROAD_Prefix

Name	Prefix
Data Type	VARCHAR2(10)
Comment	

17 Table ROAD_SEGMENT

17.1 Description of table ROAD_SEGMENT

Name	ROAD_SEGMENT
Comment	Road segment is key to the tracking of features and events along the network. ROAD_SEGMENT_ID = NAVTEQ.LINK_ID

17.2 Column GEOMETRY of the table ROAD_SEGMENT

17.2.1 Description of column GEOMETRY of the table ROAD_SEGMENT

Name	GEOMETRY
Data Type	MDSYS.SDO_Geometry
Comment	Oracle Spatial Geometry Data - True Arcs

17.3 Column ID of the table ROAD_SEGMENT

17.3.1 Description of column ID of the table ROAD_SEGMENT

Name	ID
Data Type	NUMBER(38)
Comment	Auto incremented artificial primary key unique for this table maintained by BEFORE-INSERT trigger

17.4 Column IS_BRIDGE of the table ROAD_SEGMENT

17.4.1 Description of column IS_BRIDGE of the table ROAD_SEGMENT

Name	IS_BRIDGE
Data Type	NUMBER(1)
Comment	Is a bridge feature

17.5 Column IS_LONG_HAUL of the table ROAD_SEGMENT

17.5.1 Description of column IS_LONG_HAUL of the table ROAD_SEGMENT

Name	IS_LONG_HAUL
Data Type	NUMBER(1)
Comment	Is suitable for long haul trucking.

17.6 Column IS_STUB_LINK of the table ROAD_SEGMENT

17.6.1 Description of column IS_STUB_LINK of the table ROAD_SEGMENT

Name	IS_STUB_LINK
Data Type	NUMBER(1)
Comment	I suitable for long haul trucking and the first road off of the long haul route.

17.7 Column IS_TUNNEL of the table ROAD_SEGMENT

17.7.1 Description of column IS_TUNNEL of the table ROAD_SEGMENT

Name	IS_TUNNEL
Data Type	NUMBER(1)
Comment	Is a tunnel feature.

17.8 Column LENGTH_TRAVEL of the table ROAD_SEGMENT

17.8.1 Description of column LENGTH_TRAVEL of the table ROAD_SEGMENT

Name	LENGTH_TRAVEL
Data Type	NUMBER(12,3)
Comment	The actual/true travel distance.

18 Table ROAD_Suffix

18.1 Description of table ROAD_Suffix

Name	ROAD_Suffix
Comment	The street name suffix identifiers. Name Standard

	Abbreviation Description and Stipulations Alley ALY Alleys are public servitudes which generally run behind lots and provide service to homes and businesses, or are otherwise short streets narrower than the standard width. This suffix is generally not used for new streets except in exceptional circumstances. Avenue AVE A road or thoroughfare that serves through traffic, or ingress/egress traffic within a subdivision or subdivisions. This suffix may only be used for east-west oriented streets. Boulevard BLVD A through street; can also be an entrance roadway for a larger subdivision. These roads contain a landscaped central reservation and a minimum of four through traffic lanes. Roadways of this description are required to use this suffix per the Unified Development Code. Circle CIR A side street which has both termini on the same road, creating a loop or crescent. Court CT Short dead end street which terminates in a cul-de-sac. Recommended length is 600 feet or less. Drive DR A road or thoroughfare that serves through traffic, or ingress/egress traffic within a subdivision or subdivisions. This suffix may only be used for north-south oriented streets. Highway HWY Reserved suffix for State-maintained roads only. Lane LN Minor street within a subdivision which may or may not be a dead-end. Loop LOOP A side street which has both termini on the same road, creating a loop or crescent. Place PL Short dead end street which terminates in a cul-de-sac. Parkway PKWY A thoroughfare designated as a major street. These roadways should include a median or central reservation. Road RD A thoroughfare serving primarily rural areas, with a length greater than one-half mile in length. Street ST A road or thoroughfare that serves through traffic or continues across several subdivisions. Thruway THWY A major street with a minimum of four through traffic lanes and a dedicated central reservation. Walk WALK A side street within an older neighborhood. This suffix is generally not used for new streets except in exceptional circumstances. Way WAY Minor street within a subdivision which may or may not be a dead-end.

18.2 Column Description of the table ROAD_Suffix

18.2.1 Description of column Description of the table ROAD_Suffix

Name	Description
Data Type	VARCHAR2(30)

Comment	

18.3 Column Suffix of the table ROAD_Suffix

18.3.1 Description of column Suffix of the table ROAD_Suffix

Name	Suffix
Data Type	VARCHAR2(10)
Comment	

19 Table ROAD_TYPE

19.1 Description of table ROAD_TYPE

Name	ROAD_TYPE
Comment	Road types

19.2 Column Description of the table ROAD_TYPE

19.2.1 Description of column Description of the table ROAD_TYPE

Name	Description
Data Type	VARCHAR2(30)
Comment	

19.3 Column ROAD_TYPE of the table ROAD_TYPE

19.3.1 Description of column ROAD_TYPE of the table ROAD_TYPE

Name	ROAD_TYPE
Data Type	VARCHAR2(10)
Comment	

20 Table ROUTE_TYPE

20.1 Description of table ROUTE_TYPE

Name	ROUTE_TYPE
Comment	Route Type Classification - Interstate, US, State, City, county, Private Road name types.

20.2 Column DESCRIPTION of the table ROUTE_TYPE

20.2.1 Description of column DESCRIPTION of the table ROUTE_TYPE

Name	DESCRIPTION
Data Type	VARCHAR2(40)
Comment	Free Form Text Description of the record

20.3 Column ID of the table ROUTE_TYPE

20.3.1 Description of column ID of the table ROUTE_TYPE

Name	ID
Data Type	NUMBER(38)
Comment	

20.4 Column NAME of the table ROUTE_TYPE

20.4.1 Description of column NAME of the table ROUTE_TYPE

Name	NAME
Data Type	VARCHAR2(40)
Comment	Short descriptive name

20.5 Column ROUTE_TYPE of the table ROUTE_TYPE

20.5.1 Description of column ROUTE_TYPE of the table ROUTE_TYPE

Name	ROUTE_TYPE
Data Type	VARCHAR2(2)
Comment	Unique meaningful route classification