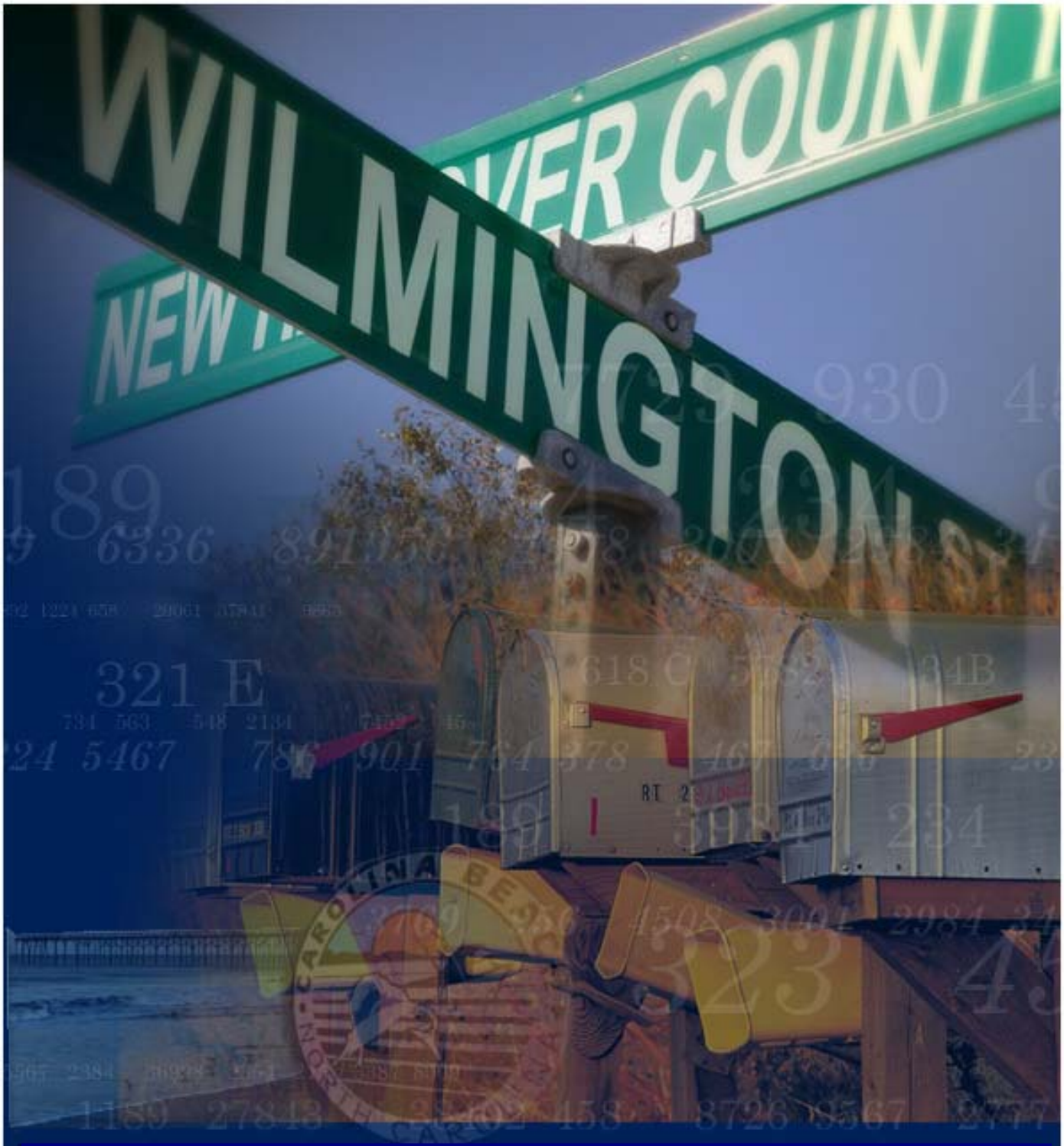

UNIVERSAL ADDRESSING STANDARDS & PROCEDURES MANUAL

FOR THE TOWN OF CAROLINA BEACH (ADOPTED TOWN COUNCIL, MAY 11TH, 2006),
THE CITY OF WILMINGTON (ADOPTED CITY COUNCIL AUGUST 6TH, 2002),
AND NEW HANOVER COUNTY (ADOPTED COUNTY COMMISSIONERS MAY 20TH, 2002).

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1. INTRODUCTION

1.1 PURPOSE OF THIS DOCUMENT

The purpose of this document is to set standards for addressing, by providing guidelines by which house numbers and street names can be assigned, recorded, and maintained.

Addresses are very important. They provide a common systematic means by which people, places, and events can be located within a community. Address information is commonly used in local government to dispatch emergency services, process tax billing, describe locations, and record events.

Although widely used, addresses information is not always assigned, recorded, or maintained in a standard manner or format. This can create numerous problems for people who need to share, or access address information.

Standard addressing rules will provide guidelines for assigning house numbers and street names. A standard database format for recording address information will simplify the maintenance, exchange, and interpretation of address information between governmental agencies and the community.

1.2 AUTHORITY

This document was approved and adopted by the New Hanover County Board of Commissioners on May 20th,2002 as the official addressing standards and procedures manual of New Hanover County, NC. The standards and procedures detailed in this document support the requirements established in the New Hanover County Code of Ordinances (Chapter 47 - Streets, Sidewalks and Other Public Places).

This document was approved and adopted by the City of Wilmington City Council on August 6th, 2002 as the official addressing standards and procedures manual of the City of Wilmington, NC. The standards and procedures detailed in this document support the requirements established in the City of Wilmington Code of Ordinances, and the City of Wilmington Technical Standards and Specifications Manual.

*Reference: **City of Wilmington Code**: Part II GENERAL ORDINANCES, CHAPTER 11 STREETS AND SIDEWALKS, Article I IN GENERAL and ARTICLE II STREETS GENERALLY; Part III TECHNICAL CODES, CHAPTER 18 SUBDIVISION REGULATIONS, ARTICLE III REQUIRED IMPROVEMENTS; **City of Wilmington Technical Standards and Specifications Manual**.*

This document was approved and adopted by the Carolina Beach Town Council on May 11th, 2006 as the official addressing standards and procedures manual of the Town of Carolina Beach, NC. The standards and procedures detailed in this document support the requirements established in the Town of Carolina Beach Code of Ordinances.

*Reference: **Town of Carolina Beach Code of Ordnances**: DIVISION 3. MINIMUM DESIGN STANDARDS, Sections 12-96, 12-97, and 12-103. ARTICLE IV, Section 15-57 to Section 15-65.*

1.3 ADDRESSING ROLES IN LOCAL GOVERNMENT

Most importantly address information is pivotal to the protection of human life, the preservation of property, and the maintenance of general security within our community. Address information is used on a daily basis to direct emergency response services such as police, fire, and EMS to a specify location so they may provide assistance in an emergency.

Address information plays a key role in the daily activities of virtually all of the departments within New Hanover County, and the City of Wilmington government offices.

In Government offices address information is used by the Planning Department, the Engineering Department, and the Building Inspections Department to pinpoint properties, review planned developments, issue building permits, and conduct inspections.

The E911 Center, the Sheriff's Department, and the Fire Services Department use addresses to dispatch and respond to calls for help.

The Registrar of Deeds, the Tax Office, and Legal Collections Office use address information to prepare and record information about property ownership, conduct title searches administer tax billing.

Environmental Management, the Health Department, the Department of Social Services, the Parks Department and the Department of Aging, the County Museum, and the County Library use address information to plan coordinate medical programs, social services, and community programs.

The Office of Voter Registration uses address information to verify precinct and voting district locations

Other Municipal offices address information is used by:

Development Services
Police Dept.
Fire Dept.
Engineering Dept.
Information Technology
Storm Water Services
Utility Services
Public Utilities
Solid Waste
Streets & Traffic
Billing & Collections

1.4 DOCUMENT MAINTENANCE

This document is maintained by the City of Wilmington, the Town of Carolina Beach, and New Hanover County. A regional Addressing Standards Committee administers

maintenance of this document. This committee is composed of members of the City of Wilmington Development Services, City of Wilmington Planning Department, City of Wilmington GIS, New Hanover County Planning Department, Carolina Beach Planning & Development Office, and New Hanover County Information Technologies Department.

All proposed changes to this document should be presented to the City of Wilmington Development Services, Carolina Beach Planning & Development Office, or the New Hanover County Planning Department. The proposed changes will be forwarded to the Addressing Standards Committee for review and possible inclusion into this document

1.5 CONTACTS

The City of Wilmington, Carolina Beach Planning & Development, and New Hanover County have offices and positions, which are responsible for the assignment, recordation, and notification of all new street addresses information. These offices are also responsible for coordinating changes to exist street names and house numbers. For questions regarding street address information please contact one of the following offices.

City of Wilmington
Addressing Coordinator
(910) 342-2723

New Hanover County Addressing
Planning Department.
Addressing / GIS Technician
(910) 798-7165

Carolina Beach Planning & Development
Brenda Butler
(910) 458 8218

2. STREET NAME ASSIGNMENT

2.0.1 Introduction

The rules and guidelines in this section were designed to facilitate the proper naming of streets in every possible naming scenario that occurs in New Hanover County. In our county, streets must be named in a logical easy to understand manner in order to help citizens and emergency personnel quickly locate people places and events.

2.0.2 Key Terms

Street – A Street is any single lane and multi-lane corridor or conveyance, which is passable by a motor vehicle. This includes private and public, improved (paved), unimproved (unpaved) roadways, and alleys.

Intersection – The meeting of two or more passable roadways or possibly where a roadway passes over a named body of water.

Block – A block is a group of buildings that form a unit from one intersection to another. The unit could be a 100 block or 1000 block.

Cul-de-sac -They are extended streets with a wide circular turn-a-round at their ends and only one outlet, they provide access to 4 or more lots.

2.1 WHEN A STREET MUST BE NAMED

A planned or existing street, public or private, should be named and when its has a length greater than 200ft, and serves as the primary means of ingress and egress for a minimum of four (4) or more homes, dwellings, or commercial structures. These requirements should be universally applied. The purpose is to provide consistency and simplicity to naming and numbering of streets. Minor exceptions may be granted for cul-de-sacs only. (*See Section 2.3.2*)

2.1.1 Street Naming Process in the City of Wilmington, NC:

Street naming process for newly planned developments- When preliminary subdivision plans are submitted for review, all proposed public streets, private streets, and driveways that require naming, must be identified *(See Section 2.1 for Definition).* Proposed street names should be submitted to the City Address Coordinator for review and approval. All proposed streets, which are in obvious alignment with other existing and named streets, shall bear the assigned name of the existing street (*Section 18-70(h) of the City Code of Ordinances*). In no case shall the name for the proposed street be duplicate or phonetically similar to an existing street name within New Hanover County (including street names within all municipalities of New Hanover County).

Street naming process for existing un-named streets – ***City Council, City Planning Commission, or any department of the City of Wilmington may initiate the naming of any street or alley within the corporate limits of Wilmington. In addition, any one or more interested parties may initiate a naming or renaming by submitting a Street Naming/Renaming Application and an application fee to City of Wilmington Address Coordinator. A complete and valid application must have the signatures of the majority (51 %) of property owners owning the majority of property abutting the street or alley to be named. Upon receiving the completed application, required fees, and required additional information, the City Address Coordinator shall transmit copies to the affected agencies and City departments for review and recommendations. Upon the review of recommendations from affected agencies, the City Address Coordinator shall present the original application, the required information, and the***

recommendations to the City Manager for review. After review by the City Manager, the street naming will be place on the agenda for City Council to consider an Ordinance to Name or Rename the street or alley at a public hearing. The applicant(s) is requested to be present at all public hearings at which the request for naming or renaming will be reviewed.

If the street to be named or renamed is not a major thoroughfare, then not less than ten (10) days prior to the public hearing for the naming or renaming of a street or alley, the City Clerk shall advertise for one (1) day the proposal to name or rename a street or alley in a local newspaper of general circulation. The City Address Coordinator will notify all affected property owners by first class mail and post a sign in at least two locations along the street or alley to be named or renamed, causing notice of the time, place, and subject matter of the hearing.

If the street to be named or renamed is a major thoroughfare, then not less than thirty (30) days prior to the public hearing for the naming or renaming of a street or alley, the City Clerk shall advertise the proposal to name or renamed a street or alley once a week for two (2) successive weeks in a local newspaper of general circulation. The City Address Coordinator will notify all affected property owners by first class mail and the North Carolina Department of Transportation (if the street or alley is under the authority of the NC DOT) of the public hearing and cause notice of the time, place, and subject matter of the hearing to be prominently posted in at least two (2) locations along the street or alley to be named or renamed. Where an application for the naming or renaming of a street or alley has been signed by all the property owners (100%) fronting on the street or alley, the City Council may adopt an Ordinance for Naming or Renaming the street without publishing the notice in the local newspaper or along said street or alley to be named or renamed.

Where E911 dispatch has notified the City Staff that any street address, other than those of major thoroughfares, could not be located so as to provide emergency service, the City Council, upon finding that it is in the interest of the public welfare and safety, may adopt an Ordinance to Name or Rename the street or alley without posting or publishing the notice in the local newspaper or along said street or alley to be named or renamed.

Upon the approval of the naming or renaming by City Council and the signing of the Order to Name or Rename the street or alley by the Mayor and attested by the City Clerk, and upon receipt of the total administrative expenses for advertising, mailing notices, posting signs, and recording fees for the Ordinance, the City Clerk shall record the signed Ordinance in the Office of the New Hanover County Register of Deeds. Copies shall be made of the order and will be delivered to the City Address Coordinator. The Address Coordinator will distribute copies to the NCDOT, New Hanover County GIS Department, City Development Services, United States Postal Service, and the affected property owners.
Reference: "RESOLUTION AMENDING CITY POLICY FOR NAMING AND RENAMING STREETS OR ALLEYS", adopted by the Wilmington City Council on June 17, 2003

2.1.2 Street Naming Process in New Hanover County, NC: *A newly planned development proposes construction of a new street.* In this situation a plan is submitted to the County Planning Department for review. As part of the development review process the County Planning Department will assign a street name to all newly proposed streets, public and private, that require naming (*See Section 2.1 for Definition*), and will assign house numbers to all newly proposed lots.

A street naming request is submitted to the County Planning Department by staff or by a citizen or a group of citizens - Before a street public or private can be assigned an official street name, it must meet the following requirements. The street must be a minimum length of 200ft, and serve as the primary means of ingress/egress for a minimum of four (4) homes, dwellings or

commercial structures. If a street meets these two requirements, a citizen can request the street be named by submitting a written request to the County Planning Office. The request must include the proposed street name along with the signatures of at least fifty-one (51%) of the affected property owners signing in agreement to the proposed name. A public hearing is then scheduled to discuss the proposed street name. At least *10* days before the hearing, a notice of the subject matter should be posted in the county courthouse, in at least two places, usually at the beginning and end of the street, and a notice is published in the local newspaper for general circulation within the county. The commissioners will grant final approval of the new name.

2.1.3 Addressing Coordinator Responsibilities

An Addressing Coordinator shall be appointed at both the New Hanover County & City of Wilmington.

The Addressing Coordinator will/shall be responsible for overseeing street naming and address assignment in accordance with the guidelines outlined in this document. The naming of all streets shall be subject to the approval of the City Council or New Hanover County Board of Commissioners.
It shall be the duty of the Addressing Coordinator to maintain maps or listings of the official names of the streets within the City/County as they may now exist or may be extended or renamed by the City Council or Board of Commissioners.

It shall be the duty of the Addressing Coordinator from time to time to review the official street names of the city and recommend to the city/county manager and the City Council or Board of Commissioners any changes in names which he or she feels to be justified in order to permit clarity of street designation.

Based on his/her official record of street names, the Addressing Coordinator shall, as submitted, review street names submitted for new subdivisions or multi-unit developments to ensure that new street names are not duplicates of names already used.

From his/her official record, the Addressing Coordinator from time to time shall issue listings of official street names for use by the various departments of the city/county and other interested persons and agencies.

2.1.4 Official Street Naming Authority in the City of Wilmington, NC: Current City of Wilmington Code of Ordinances designates the City Address Coordinator with primary responsibility for assigning and maintaining addresses and new street names.
Reference: City of Wilmington Code of Ordinances (Chapter 11, Article 1, Sec 11-10), (Chapter 11, Article 1, Section 11-30)

2.1.5 Official Street Naming Authority in New Hanover County, NC: The Planning Department is responsible for street name information. The Planning Department is authorized to assign and rename streets within the unincorporated portions of New Hanover County. The New Hanover County Commissioners grant final approval on all new and changed street names.
Reference: New Hanover County Code of Ordinances (Ch. 47, Art. IV, Sec. 47-102)

2.2 BASIC GUIDELINES TO FOLLOW WHEN NAMING A STREET

2.2.1 Min Length - Street names must be a minimum of three (3) characters in length.

2.2.2 Max-Length – Full Street names, including suffix and optional directionals should be limited to a maximum of twenty-four (24) characters in length.

2.2.3 No Special Characters - Street names should avoid the use of special characters, such as hyphens, apostrophes, or periods in the spelling of the name.

2.2.4 No Directional Names - Street names should avoid the use of words or syllables that might be confused with directional or street type designations. (i.e. Northglen Dr, or Circle Dr).

2.2.5 No Same Names - Street names shall not be duplicated. All street names within New Hanover County must be unique. A street name is considered to be a duplicate if any of the following conditions exist:

> **Same Names/Different Suffixes -** Two streets have the same name, but two different suffixes, are still considered a duplicate street. (i.e. Oak Ln, Oak Ave)
>
> **Same Sounding Names -** A street name sounds similar phonetically to the name of another street, despite differences in spelling, is still considered a duplicate street. (i.e. Beach Ave & Beech Ave, Main St & Maine St, Apple Rd & Apple Hill Rd)

2.2.6 Continuous Streets Must Not Have Breaks - Streets with the same name must be continuous and not have permanent breaks in them. In special cases they can have breaks if they are part of the *Historic Downtown* (Fig 1.) numeric blocks, or they are in a state of *Temporary Separation* (Fig 2. *next page*) as new phases of subdivisions are being built.

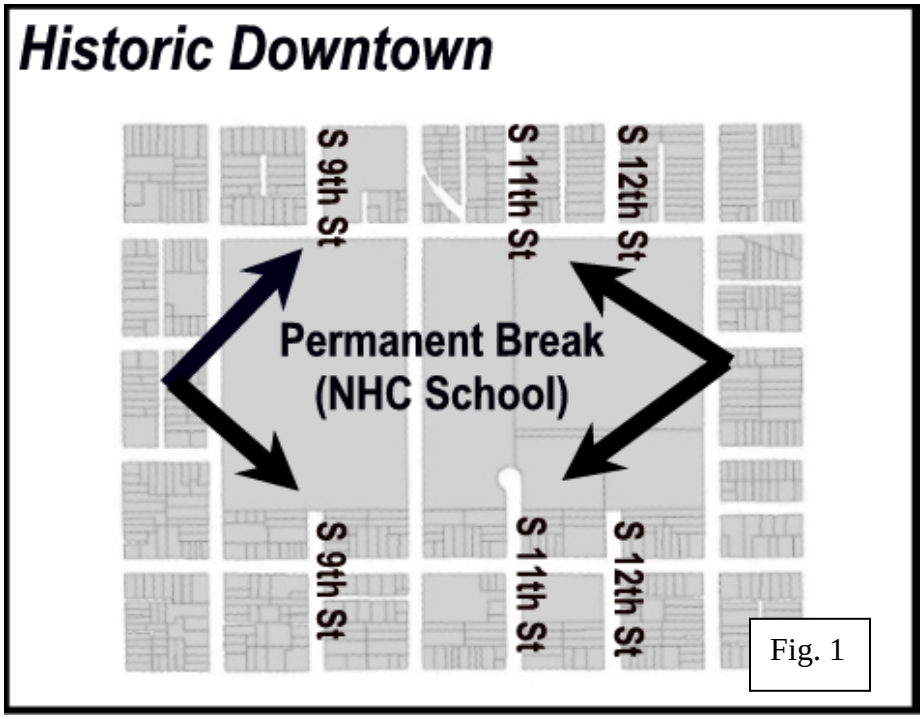
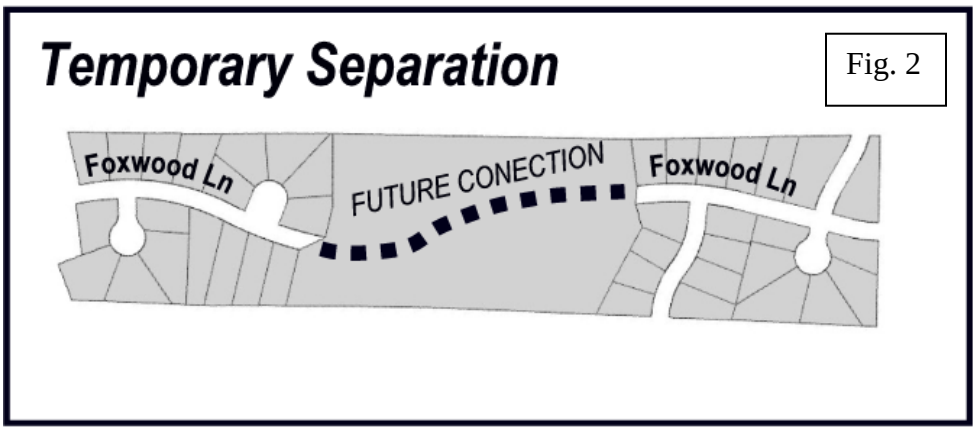


Fig. 1

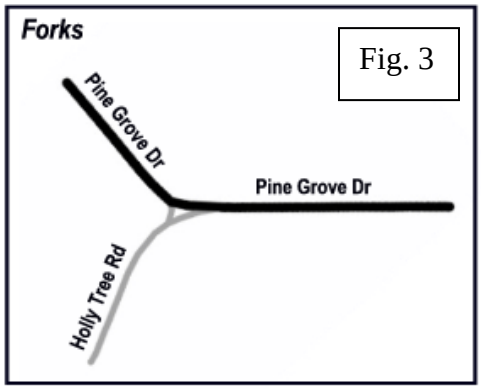


2.2.7 Numeric Names - Numeric street names should end with the appropriate numeric format for the particular number, (i.e. 54th, 23rd, 2nd, etc.) and *NOT* textual format (Fifty-Fourth, Twenty-Third, or Second).

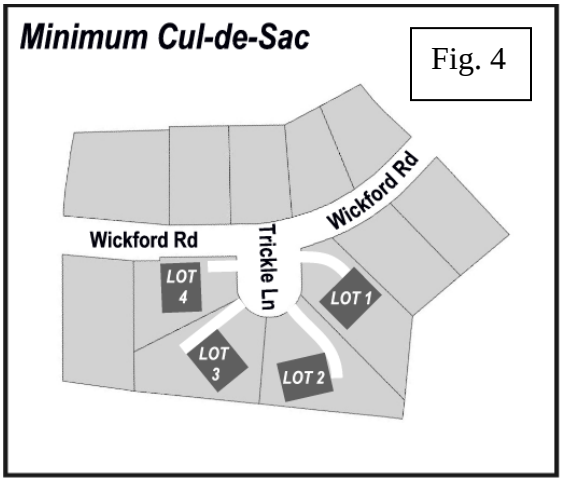
2.2.8 Street Names Vs. Route Numbers - U.S., state and local route numbers are secondary to the names that have been given to the streets. (i.e. US 17 is secondary to Market St.)

2.3 NAMING SITUATIONS TO CONSIDER (SPECIFIC TRAFFIC PATTERNS)

2.3.1 Forks - Names should be assigned based on traffic patterns. (i.e. When a street forks into two streets, the fork with the higher traffic volume should continue the same name. See Fig. 3)



2.3.2 *Cul-de-sacs (Rule Exception) - Cul-de-sacs are extended streets with a wide circular turn-a-round at their ends, and provide access to at least 4 or more lots facing the cul-de-sac (See Fig. 4). A cul-de-sac must be named if it serves 4 or more homes or dwellings, regardless of street length. Any cul-de-sac that provides direct access to 3 or less homes or dwellings must be addressed off of the adjacent street.



2.3.3 Loops - A continuous named street may loop back and terminate on itself. A continuous named street *May Not* loop back and cross over itself creating a situation where the same street name is shared by both intersecting streets (See Fig. 5).

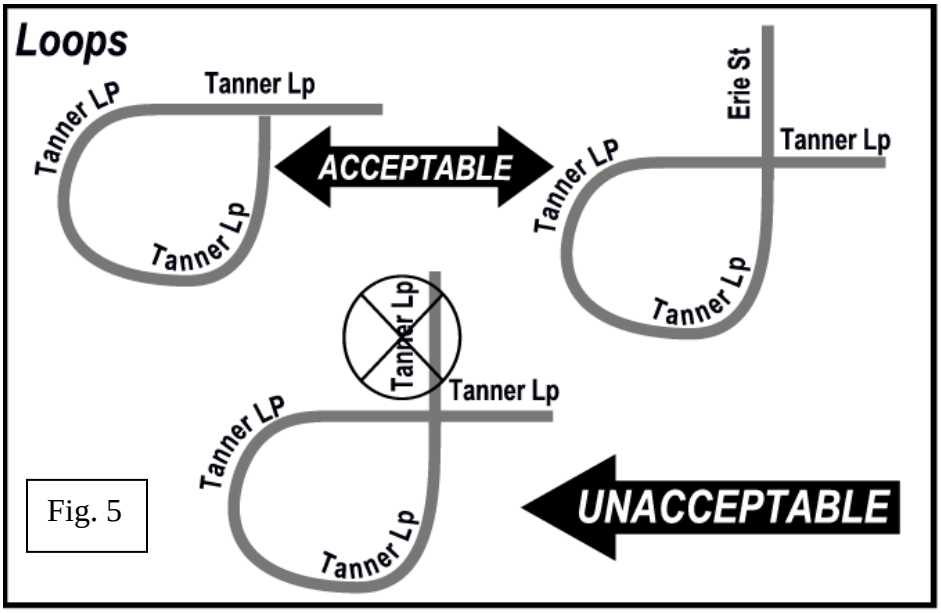


Fig. 5

2.3.4 Continuous Streets Passing Through New Subdivisions – Continuous Streets passing from one existing subdivision to a new one should continue the same name (See Fig 6).

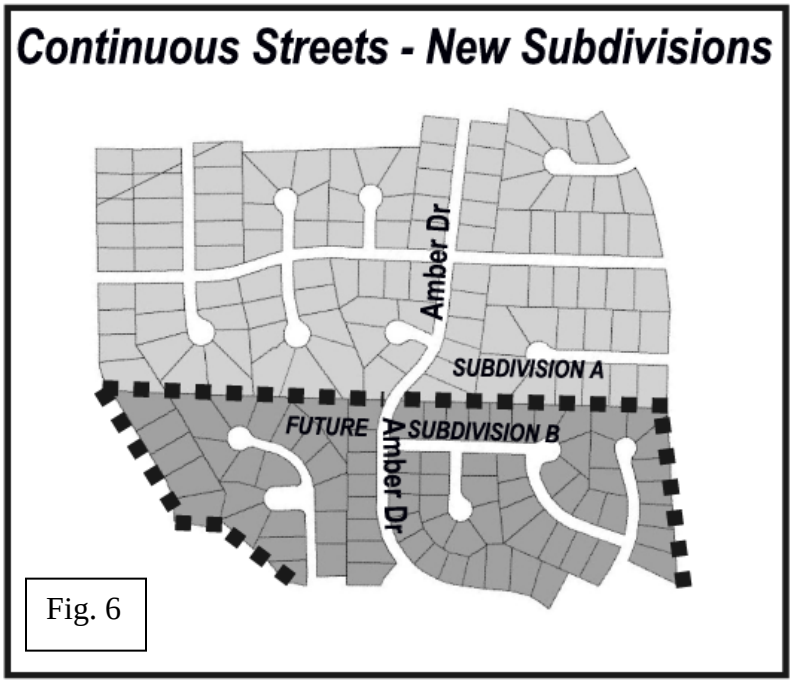


Fig. 6

2.3.5 Continuous Streets Passing Through Intersections - Streets with the same alignment and passing through *minor intersections* (See Fig. 7) should assume the same name. However, continuous street names *CAN* change, if the street crosses one of these defined arterial roads at a *major intersection* (See Fig 8 *next page*).

Fig. 7

Defined Arterial Roads:
Eastwood Rd
Oleander Dr
College Rd
Wrightsville Ave
Blue Clay Rd
Kerr Ave
Castle Hayne Rd
US HWY 421
Carolina Beach Rd
Shipyard Blvd
River Rd
Myrtle Grove Rd
Masonboro Loop Rd
Independence Blvd
Piner Rd
Gordon Rd
Market St.

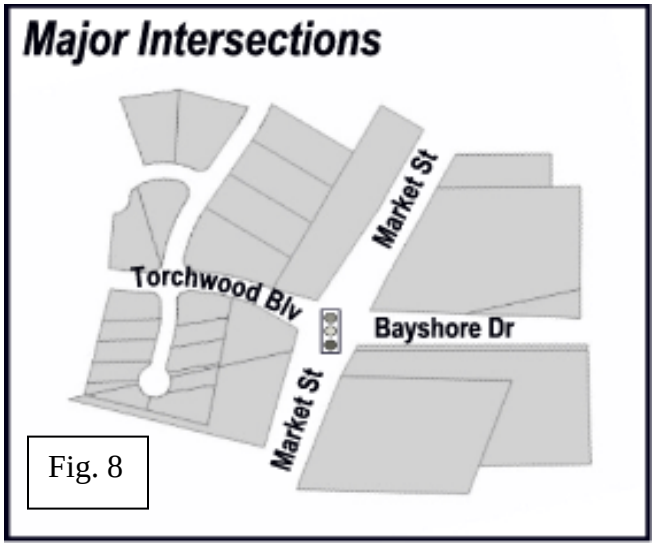


Fig. 8

2.4 WHEN TO ASSIGN A STREET SUFFIX

A street suffix (type) should be assigned to any official named street using one of the street type definitions listed below. A street name with any suffix other than one listed below will be considered to have a null or absent street type. For example, "Whistler Trace," "Wellington Glen," and "Knobby Hollow," would all be considered street names with null types.

2.4.1 Street Suffix Usage Guide

Street suffixes shall be selected from the list below and on next page:

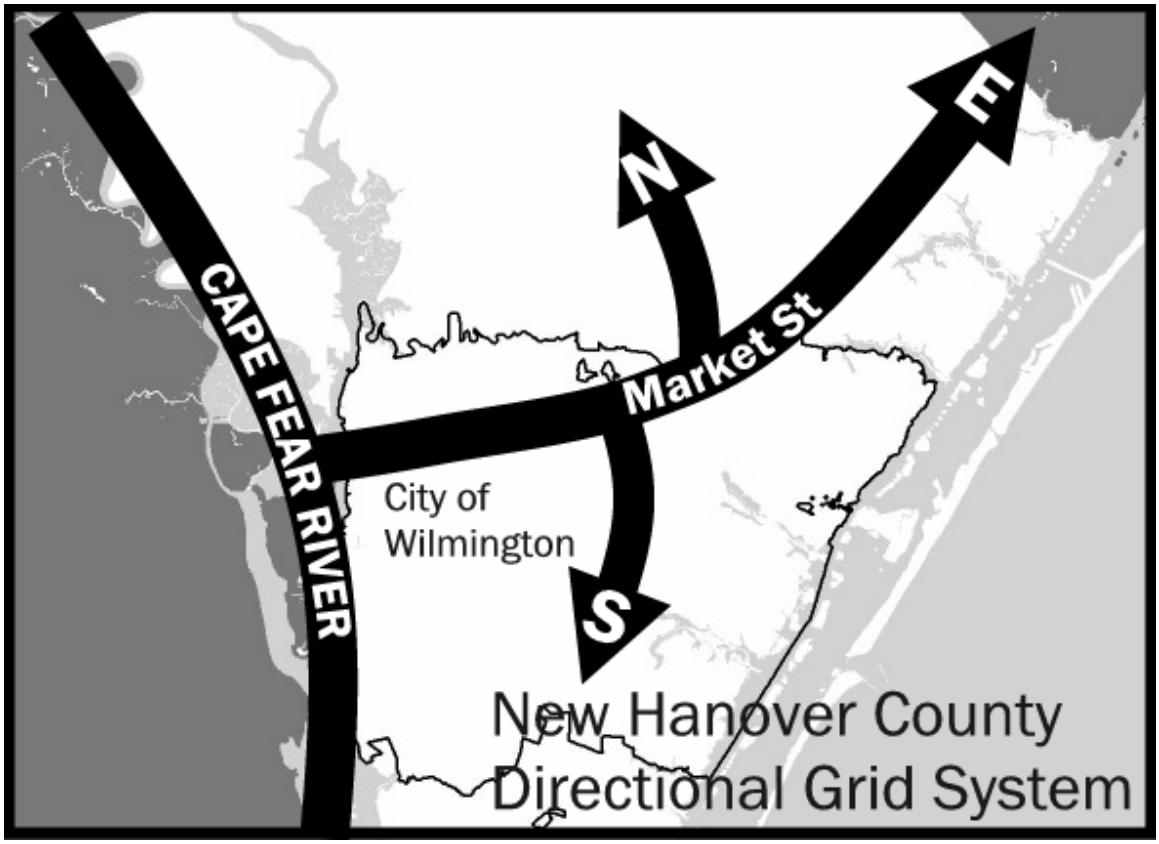
Abbreviation	Represents	Description when to Use *
ALY	ALLEY	A right-of-way, substandard in width, designed to bisect a block for pedestrians or service vehicles, such as garbage collection and delivery trucks. No permanent parking will be allowed in alleys.
AVE	AVENUE	A street more than 1,000 feet in length.
BLV	BOULEVARD	A street divided by a landscaped median.
CIR	CIRCLE	A street less than 1000' in length that returns to itself.
CT	COURT	A cul-de-sac or permanent dead-end road.
DR	DRIVE	A curvilinear street of more than 1,000 feet in length.
HWY	HIGHWAY	A State, Inter-State, or US Highway distinction
LN	LANE	A curvilinear street of less than 1,000 feet in length.
LP	LOOP	A street that loops around and terminates on itself.
PKY	PARKWAY	A special scenic route or park drive.
PL	PLACE	A cul-de-sac or permanent dead-end road.
PLZ	PLAZA	A multi-use road with businesses and homes.
PT	POINT	A road that is adjacent to a waterway.
RD	ROAD	A street more than 1,000 feet in length.
ROW	ROW	No existing specifications
RUN	RUN	No existing specifications
ST	STREET	A street more than 1,000 feet in length.
TER	TERRACE	A curvilinear street of more than 1,000 feet in length.
TRL	TRAIL	A street serving as a collector for one or more local thoroughfares
WAY	WAY	A curvilinear street of less than 1,000 feet in length.
WLK	WALK	A pedestrian walkway that has been named.

2.5 WHEN TO ASSIGN A STREET DIRECTION

A Directional is an option only for streets that are both exceptionally long (10+ Blocks) and cross the predetermined North/South and East/West Grid Streets in New Hanover County. Minor exceptions may be granted for opposing cul-de-sacs only.

2.6 BASIC GUIDELINES TO FOLLOW WHEN ASSIGNING STREET DIRECTIONALS

2.6.1 Directional Grid System for Wilmington and New Hanover County (Preferred Choice) - The Cape Fear River and Market Street shall be the base lines for the purpose of numbering houses and buildings under the provisions of this section. Each street running east and west, or substantially in that course, shall, for the purpose of numbering under this section, have its beginning at the east line of the Cape Fear River, the numbering to begin at this initial point with the number one and ending with the number one hundred (100) at the west line of Front Street, then beginning with the east line of Front Street with the number one hundred and one (101), and increasing eastwardly, in like manner, to the corporate limits of the city as they now exist or may hereafter be extended. Each street running north and south, or substantially in that course, shall, for the purpose of numbering under this section, begin at the north and south side of Market Street, as the case may be, with number one, increasing, in the manner provided in subsection (h), north and south from such initial point to the corporate limits of the city, as they now exist or may hereafter be extended.



2.6.2 Directional Grid System for Town of Carolina Beach:

(1) Cape Fear Boulevard shall constitute the base line for numbering all streets running north and south (see grid map on next page.)

a. All buildings and lots north of Cape Fear Boulevard shall be known as located at street _____ North _____ Street.

b. All buildings and lots south of Cape Fear Boulevard shall be known as located at number _____ South _____ Street.

c. All buildings and lots west of the Atlantic Ocean shall be known as located at number _____ Avenue or Boulevard.

(2) All buildings and lots on diagonal streets shall be numbered the same as north and south streets if the diagonal runs more from the north to the south, and the same on east and west streets if the diagonal runs more from the east to the west.

*Reference: **Town of Carolina Beach Code of Ordnances**: DIVISION 3. MINIMUM DESIGN STANDARDS, Sections 12-96, 12-97, and 12-103. ARTICLE IV, Section 15-57 to Section 15-65*

2.6.3 Directional Abbreviations - Abbreviations must be used for the directionals and they can only be these options:

- North = N
- South = S
- East = E
- West = W

2.6.4 No 45 Degree Directionals - Northeast, Northwest, Southeast, and Southwest are not to be used as directionals.

2.6.5 Must Have Directionals in Pairs - If a North Directional is used, then a South Directional must also be used for clarity. The same applies with East and West.

2.6.6 *Facing Cul-de-sacs (Rule Exception) – Only cul-de-sacs that face each other have the option of having a pair of directionals (N-S, or E-W). If Directionals are used for opposing cul-de-sacs there must be signs on both cul-de-sacs indicating the directional on the sign.

2.7 WHEN A STREET MUST BE RE-NAMED

If a planned or existing street is detrimental to public safety and welfare or does not meet the requirements specified in this document, it can be renamed at the discretion of the City of Wilmington Development Services Dept., or the New Hanover County Planning Dept. and with the approval of the City Council or County Commissioners.

2.7.1 Official Street Renaming Process in the City of Wilmington, NC: The process of naming or renaming any existing street or alley in the City of Wilmington is defined in a Resolution dated June 17, 2003. This process is described in Section 2.1.1 (Description of Street Naming Process) of this document

2.7.2 Official Street Renaming Process In New Hanover County, NC: *A street renaming request is submitted to the County Planning Department by staff or by a citizen or a group of citizens.* - A citizen can change a street name by submitting a written request to the County Planning Office. The request must include the proposed street name along with the signatures of at least fifty-one (51%) of the affected property owners. After submission the proposed name is reviewed for compliance to addressing standards. If compliant, a public hearing is then scheduled to discuss the proposed street name. At least 10 days before the hearing, a notice of the subject matter should be posted in the county courthouse, in at least two places, usually at the beginning and end of the street, and a notice is published in the local newspaper for general circulation within the county. The commissioners must grant final approval of the new name.

The County Planning Department determines that an existing name or condition is detrimental to public safety and welfare. The County Planning Department notifies all adjacent property owners of the proposed street name change. A public hearing is then scheduled to discuss the proposed street name. At least 10 days before the hearing, a notice of the subject matter should be posted in the county courthouse, in at least two places, usually at the beginning and end of the street, and a notice is published in the local newspaper for general circulation within the county. The commissioners will grant final approval of the new name.

2.7.3 Official Street Renaming Authority in the City of Wilmington, NC: The City Address Coordinator is designated with the authority to rename existing streets within the City of Wilmington.

Reference: "RESOLUTION AMENDING CITY POLICY FOR NAMING AND RENAMING STREETS OR ALLEYS", adopted by the Wilmington City Council on June 17, 2003

2.7.4 Official Street Renaming Authority in New Hanover County, NC: The Planning Department is responsible for street name information. The Planning Department is authorized to assign and rename streets within the unincorporated portions of New Hanover County. The New Hanover County Commissioners grant final approval on all new and changed street names.

2.8 BASIC GUIDELINES TO FOLLOW WHEN RENAMING STREETS

2.8.1 Street Renaming Priority - When having to rename one of the streets with similar names consider the following circumstances:

Largest Impact - In most cases, the street with the larger number of homes, dwellings, or commercial structures along the roadway should have priority and retain the name in order to minimize the number of people affected.

Oldest Street - When renaming either of the two streets will have an equal impact, the street that has been consistently signed for the longest period of time should retain the name.

Historical Significance - In some cases, the street with a name of historical significance should retain the disputed name.

2.9 RENAMING SITUATIONS TO CONSIDER

2.9.1 Street Closures - If a portion of an existing street is to be permanently closed, by the installation of barriers or the removal of pavement. Two permanent separate street segments with the same name would result. In this situation one of the two street segments should be renamed. Two Street Closing scenarios are described below:

For a Petition Closing - It is recommended that if the street closing was done by petition, the petitioning neighborhood's street should be the street that is renamed.

Staff, Council, or Commissioner Initiated Closing - If not a petition closing, then it is recommended that the street segment with the lesser number homes, dwellings, or commercial structures along the roadway should be renamed in order to minimize the number of impacted property owners.

3. STREET NUMBERING/ADDRESSING ASSIGNMENT

3.0.1 Introduction
The rules and guidelines in this section are designed to facilitate the proper assignment of addresses to properties for every possible addressing scenario that occurs in New Hanover County. Properties and structures must be assigned addresses in a logical, easy to understand manner in order to help citizens and emergency personnel quickly locate people, places and events.

3.0.2 Key Terms
Units – Units are property address identifiers that are used to divide a single numeric address into identifiable subsets for location purposes.

Cul-de-sac -They are extended streets with a wide circular turn-a-round at their ends and only one outlet, they provide access to 4 or more lots.

3.1 WHEN TO ASSIGN ADDRESSES NUMBERS
When the proper governing body has approved a new street, it must be assigned an address range and each individual property, habitable, and/or substantial structure assigned numbers in accordance with the standards defined in this document. Addresses should not be assigned to structures that are simply accessory to another building or insubstantial in nature.

3.1.1 Street Addressing Process in the City of Wilmington, NC: Address block ranges will be assigned to streets shown on approved preliminary plans. Individual physical addresses must be assigned to lots and/or structures prior to approval of final plan.

3.1.2 Street Addressing Process in New Hanover County, NC: *In a newly planned project, a developer proposes construction of a new street.* In this situation a plan is submitted to the County Planning Department for review. As part of the development review process the County Planning Department will assign a street address range to all newly proposed streets following the rules of this document.

3.1.3 Official Street Addressing Authority in the City of Wilmington, NC: It shall be the duty of the [addressing coordinator] under the general supervision of the city manager and in accordance with the general direction of the City Council to prepare and maintain street address numbering maps of the city and, when a new building is built, or for any reason a number is required, to issue such number upon the request of the owner. It shall be the duty of the [addressing coordinator] from time to time, and upon request, to review street number assignments, resolve conflicts in numbers, reassign numbers or propose any changes which, in his opinion, are necessary.

3.1.4 Official Street Addressing Authority in New Hanover County, NC: It shall be the duty of the planning department, in accordance with the general direction of the county commissioners, to prepare, record, and maintain road address numbering in the county: and when a new house, building or mobile/manufactured home is completed, or for any reason a number is required, to issue such number upon request of the owner.

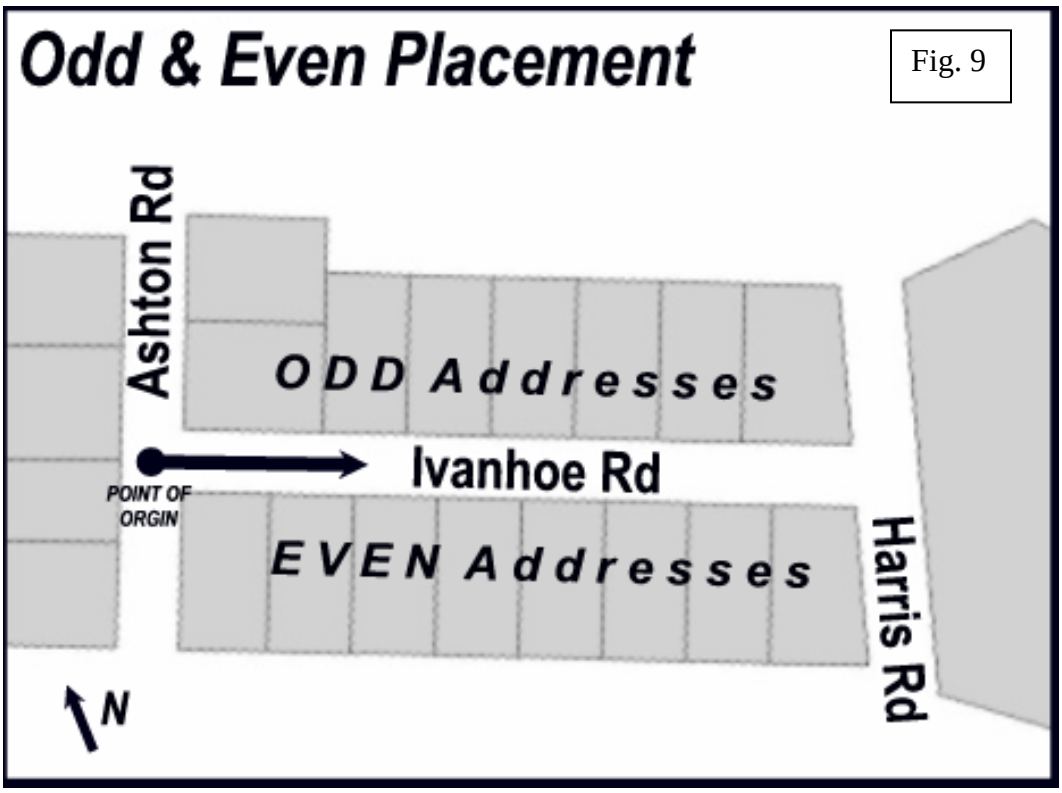
3.2 BASIC GUIDELINES TO FOLLOW WHEN NUMBERING/ADDRESSING STREETS

3.2.1 The New Hanover County Grid Numbering System

East/West Methods for Numbering Streets – Each street running west to east or substantially in that course shall, have its beginning along a route as identified in the NHC Directional Grid Section, the numbering to begin with the 100 block and increasing eastwardly to a new block where the new block begins at each new intersection or every 800 feet not to exceed 1,000 feet nor less then 300 feet unless the distance between the two intersection street is less then 300 feet.

North/South Methods for Numbering Streets – Each street running north to south or substantially in that course shall, for the purpose of numbering under this section, have its beginning along a route as identified in the NHC Directional Grid Section, the north and south side of Market Street, the numbering to begin with the 100 block and increasing north or south of such street.

3.2.2 Placement of odd and even numbers – Even numbers shall be placed on the right hand side of the street and odd numbers on the left hand side of the street from the point of origin (See Fig 9), as dedicated in the NHC Directional Grid Section.



3.2.3 Addresses in Sequential Order – All addresses need to be in sequential numeric order, always increasing from the point of origin, and should numerically balance on both sides of the street (See Fig. 10).

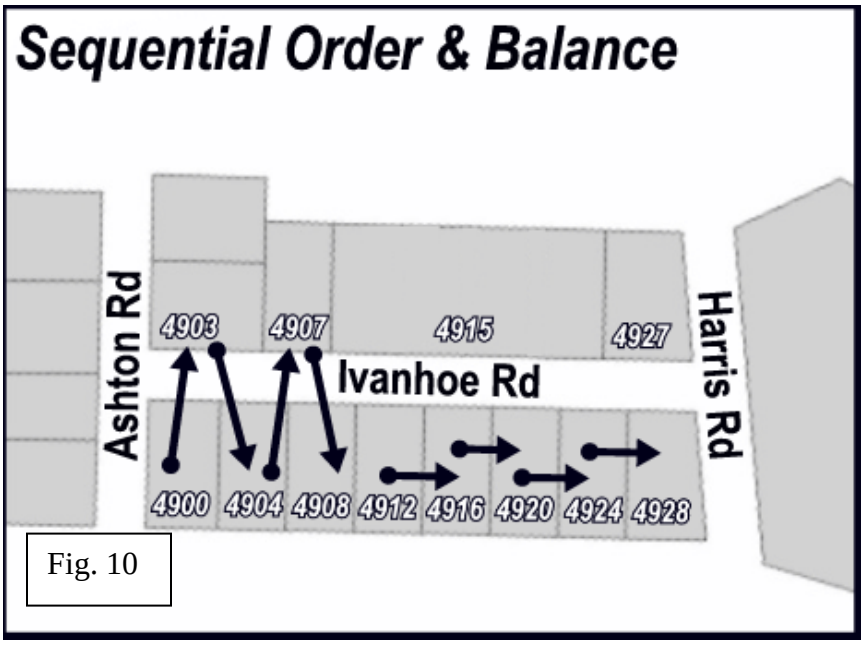


Fig. 10

3.2.4 Numbers Only – Only Numbers can be used to address streets. No fractionals or decimals are to be used.

3.3 ADDRESS SPACING

3.3.1 The Basic Process of Address Spacing - The spacing of addresses between buildings will depend on the development and density of the area. Zoning, Historical Areas, Business Corridors, and Residential Areas affect the addresses spacing greatly. When determining a street's address spacing and address assignment the following process must occur:

I. Define the address spacing for an entire road or individual building and choose its **Addressing Interval (A. I.)**.

II. Break the street into addressing sections or addressing blocks. There are 100 addresses possible per block, but only 50 even and odd addresses on each side.

III. Measure the **Distance (D)** from the beginning of the block to the front of the building(s) along the street.

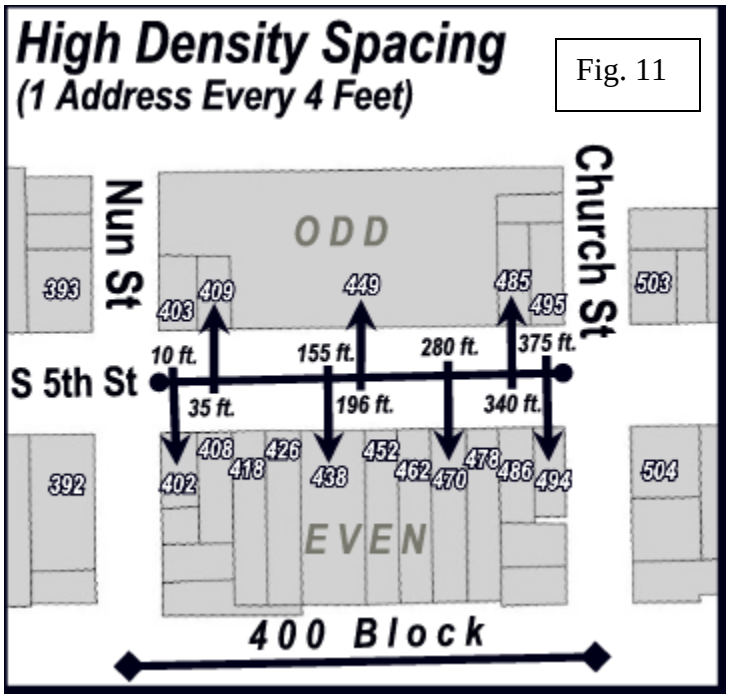
III. Next, use the equation below to achieve an **Addressing Occurrence (A. O.)** for the property(s) involved.

Distance / Address Interval = Addressing Occurrence
D / (A. I.) = (A. O.)

IV. The next step is to take the resulting **Addressing Occurrence** and round it to the nearest odd or even number depending on which side of the street the property is being addressed.

V. The final step is to take the rounded number and add it to the block number to achieve the **Final Address (F. A.)** for the building.

When considering address spacing use the following spacing definitions:



3.3.2 High Density Spacing - Most of Historical Downtown Wilmington, High Density Residential, and along the business corridors (See Fig. 11) have an address interval of **1 Address Every 4 Feet.**

Examples from Fig. 11:

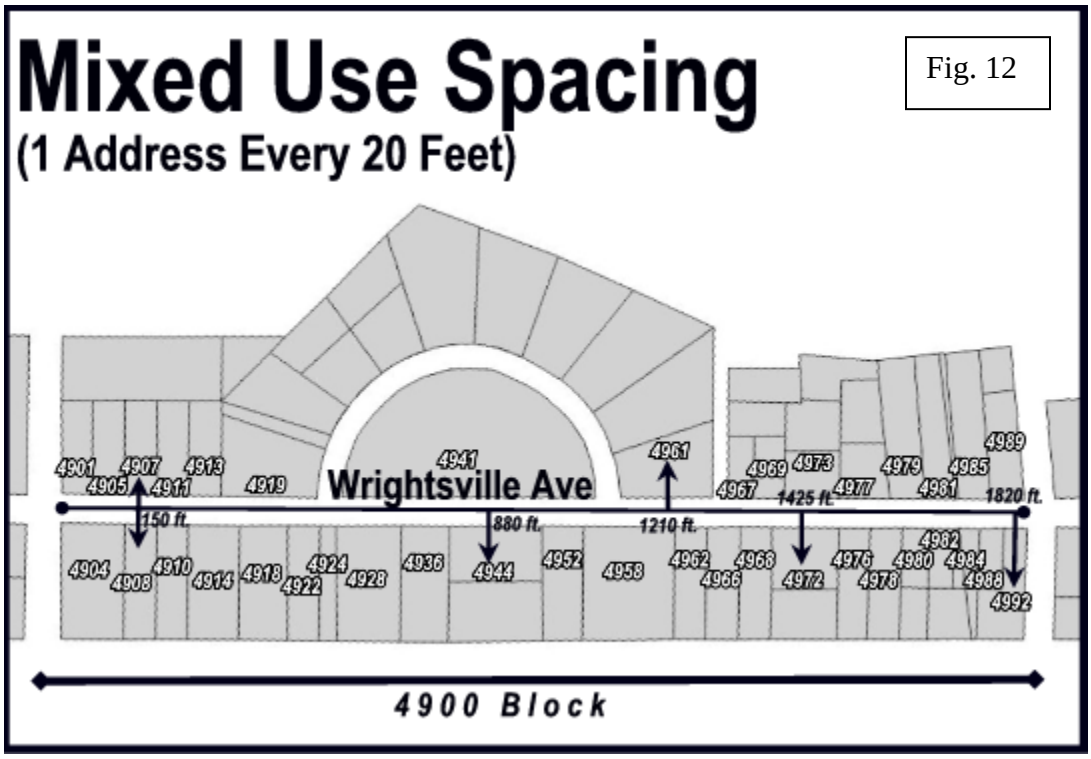
For 402 S 5th Street: **10** ft. (Distance) **/ 4** (Address Interval) = **2.5** (Addressing Occurrence)
Round **2.5** to **2** since the address is on the **EVEN** side and add it to the **400** block = **402** (Final Address)

For 409 S 5th Street: **35** ft. (Distance) **/ 4** (Address Interval) = **8.75** (Addressing Occurrence)
Round **8.75** to **9** since the address is on the **ODD** side and add it to the **400** block = **409** (Final Address)

For 470 S 5th Street: **280** ft. (D) **/ 4** (A.I.) = **70** (A. O.)
No need to Round **70** and since the address is on the **EVEN** side add it to the **400** block = **470** (F.A.)

For 485 S 5th Street: **340** ft. (D) **/ 4** (A. I.) = **85** (A. O.)
No need to Round **85** and since the address is on the **ODD** side add it to the **400** block = **485** (F. A.)

3.3.3 Mixed Use Spacing – Areas that have high to medium density residential areas, minor business groupings, and mixed-use areas (See Fig. 12) have an address interval of **1 Address Every 20 Feet.**



Examples from Fig. 12:

For 4907 Wrightsville Ave.: **150** ft. (Distance) **/ 20** (Address Interval) = **7.5** (Addressing Occurrence)
Round **7.5** to **7** since the address is on the **ODD** side and add it to the **4900** block = **4907** (Final Address)

For 4908 Wrightsville Ave.: **150** ft. (Distance) **/ 20** (Address Interval) = **7.5** (Addressing Occurrence)
Round **7.5** to **8** since the address is on the **EVEN** side and add it to the **4900** block = **4908** (Final Address)

For 4944 Wrightsville Ave.: **880** ft. (D) **/ 20** (A. I.) = **44** (A. O.)
No need to Round **44** and since the address is on the **EVEN** side add it to the **4900** block = **4944** (F.A.)

For 4961 Wrightsville Ave.: **1210** ft. (D.) **/ 20** (A. I.) = **61.5** (A. O.)
Round **61.5** to **61** since the address is on the **ODD** side and add it to the **4900** block = **4961** (F. A.)

3.3.4 Residential Spacing - Single-family homes mostly in defined subdivisions also have **1 Address Every 20 Feet**.

3.3.5 Rural and Forest Lands Spacing – Areas that have sparse housing, farmland, and/or undeveloped land have a high potential for future development. They should be spaced like Mixed Use or Residential Spacing with **1 Address Every 20 Feet**.

3.4 STREET ADDRESSING SITUATIONS TO CONSIDER

3.4.1 Addressing Corner Lots – ***Primary Option*** - When assigning an address to a building on a corner lot, assign a number from the street upon which the front entrance faces.
***Rule Exception** - An address can be assigned based on the side road location in situations where the front entrance of the building is obscured or building frontage is difficult to distinguish. (See Fig. 15).

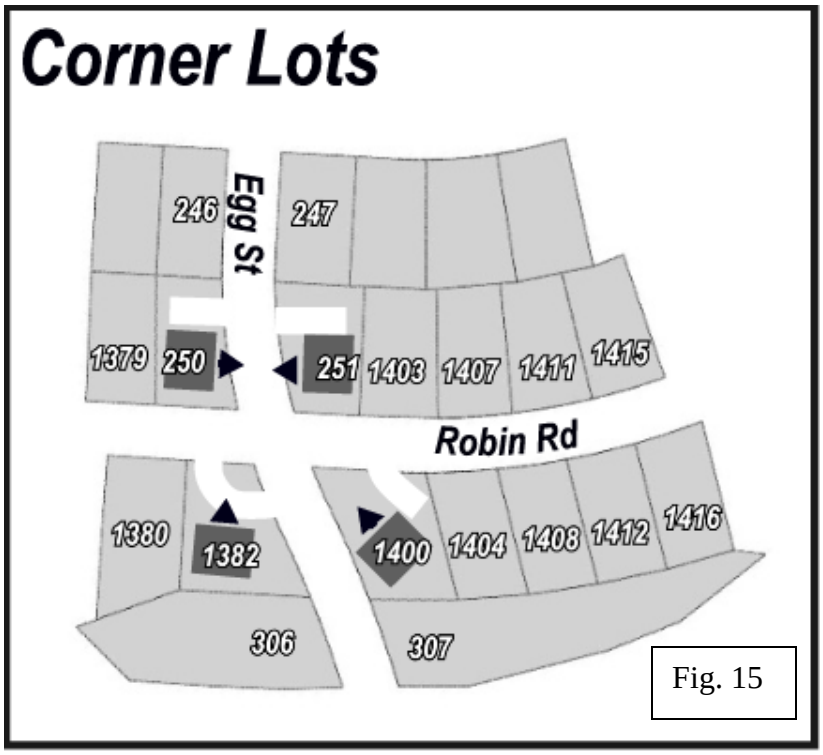


Fig. 15

3.4.2 Addressing Circular Streets - Circular streets should begin addressing at the lowest numbered intersection. The outside of the circle should be numbered first. Next, the inside is then numbered to match with the outside. This may result, in some cases, with fewer numbers on the inside and with some gaps in the inside numbers (See Fig 16).

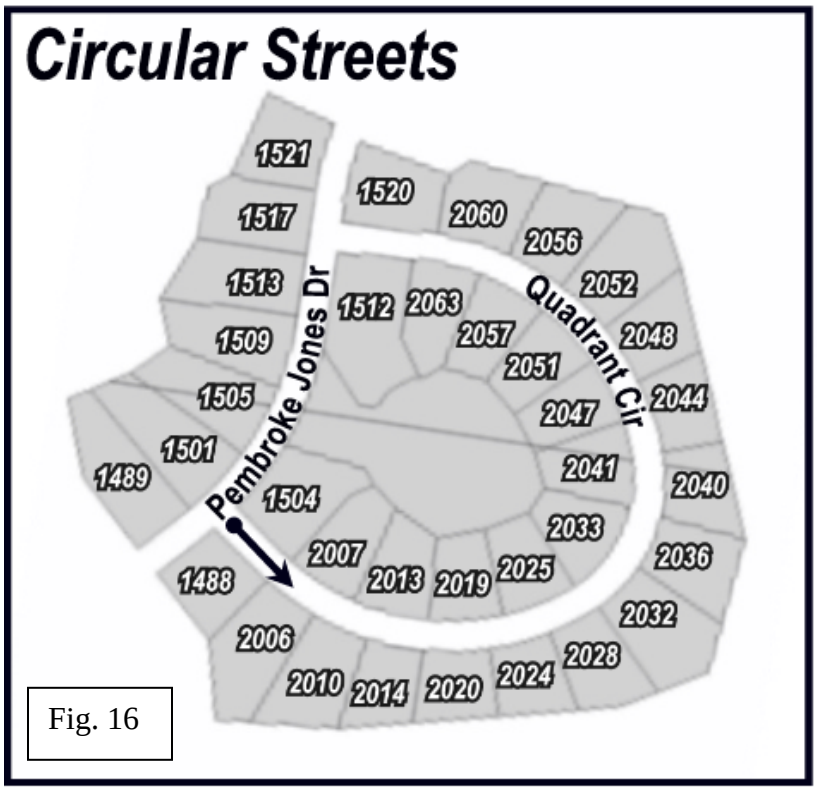


Fig. 16

3.4.3 Addressing Cul-de-sacs – The numbering should begin from the intersection. Once in the cul-de-sac, numbers proceed odd around the left side of the circle, and even around the right side of the circle. When a building occurs in the middle of the circle, assign a number in a way that best fits, such as according to where the front door faces, or where the driveway ends up on the circle (See Fig. 17).

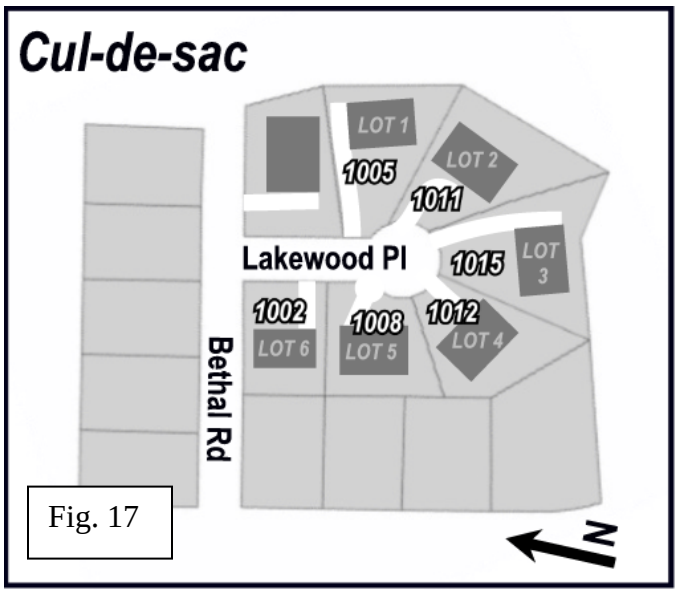


Fig. 17

3.4.4 Adding Garage Apartments, Additions, & Mobile Homes to Single Properties – If an addition (Garage Apartments, Additions, and Mobile Homes) is added to a single-family property it should be given a new address off of the street (Example 1, Fig. 18). If there are no addresses left to assign, a Unit Letter may be assigned to the additional building(s) on that property as a last resort (Example 2, Fig 18). If many Unit Letter additional addresses need to be added to multiple properties on that street then readdressing of the entire block should be strongly considered.

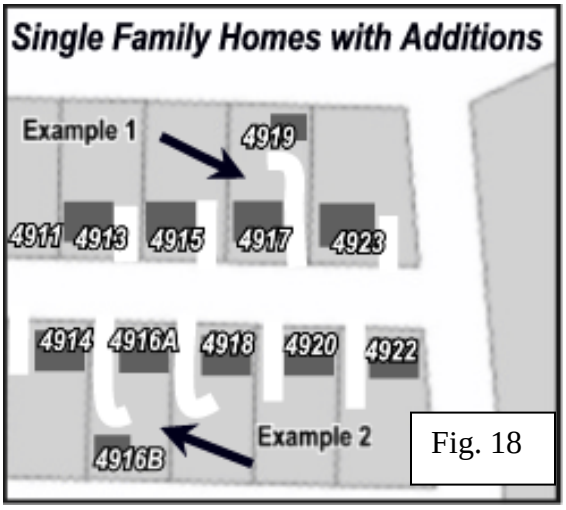


Fig. 18

3.4.5 Addressing Family Streets – In some cases, families build additional dwellings on a single property. In the cases where there are four (4) or more homes, or dwellings, AND they are at least 200ft down a passable driveway off of the road, and serves as the primary means of ingress and egress, that driveway must be named and address numbers assigned in accordance to the rules in this document and in anticipation of possible future changes (See Fig. 19).

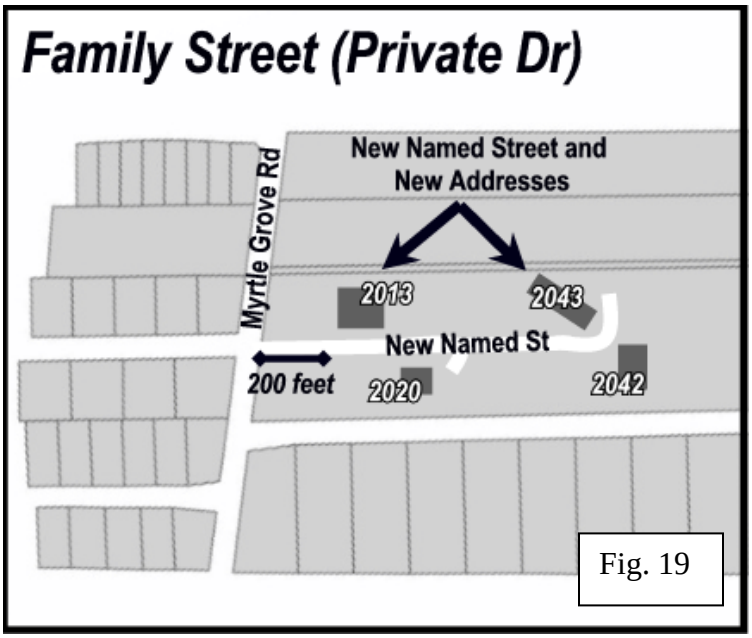
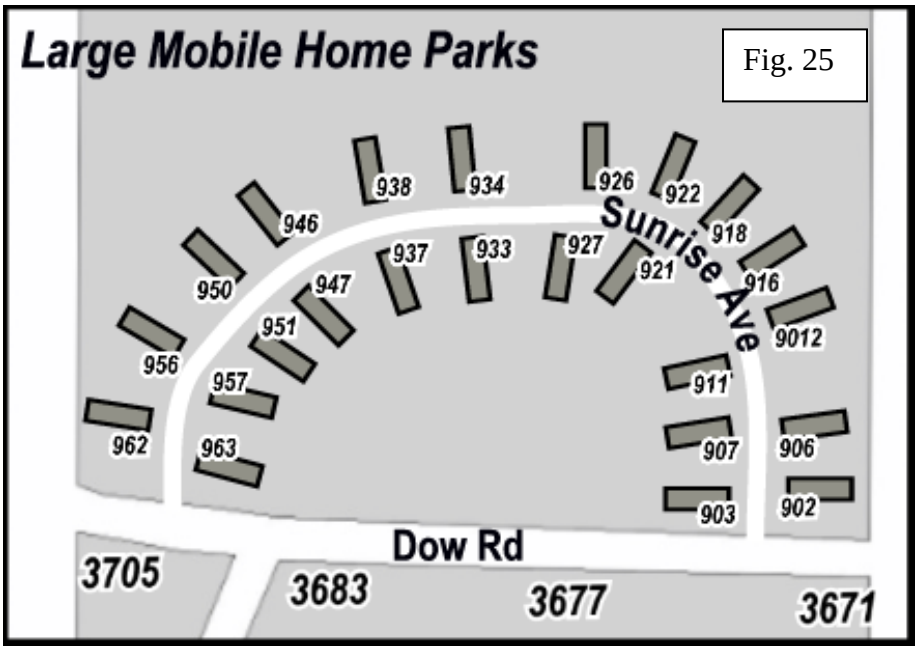


Fig. 19

3.4.6 Addressing Mobile Home Parks – The road into the Mobile Home Park should be named and Addressed in accordance with single family/high density guidelines with 1 address every 4 feet. (See Fig 25 and Fig 11 for address spacing).



3.4.7 Addressing Duplexes – Duplexes are given two separate addresses with adequate spacing between buildings. If there is no more space between properties then a Unit Letter can be assigned to both residences. Example: 302A Walnut Street, and 302B Walnut Street.

3.4.8 Addressing Single Level Condominiums – Condominiums are treated as separate property and are addressed as if they were individual addresses along a street.

3.4.9 Addressing Multi-Level Condominiums - If they are multi-level condominiums then they must be addressed like Apartment Complexes (see *Apartments Complexes* in sections 3.5.2-3.5.4).

3.5 ADDRESSING APARTMENT COMPLEXES

Apartment complexes come in many shapes and sizes. When addressing an apartment complex use one of the following scenarios below as a guide:

3.5.1 Addressing Single Level Apartments – Single level apartments are treated as if they were separate property and are addressed as if they were individual addresses along the street.

3.5.2 Addressing Multi-Level Apartments on Named Streets – This is the strongly preferred method for addressing multi-level apartments. When apartment buildings are situated on a single street or a group of distinct streets in the complex, then the street(s) should be named and the apartment buildings addressed off of the new street(s) as if each were a single home on that street, following the standards for numbering streets in accordance to the rules in this document. For Unit Numbering methods for apartments in each building refer to section 3.5.3, Fig. 22, and Fig.23.

3.5.3 Unit Numbering for Multi-Level Apartments on Named Streets - One of the following methods should be used when defining the Units for the Named Street Apartments:

All Number Units - The Units can then be numbered with 100 ranges defining the floor level and the 1-99 defining the unit location on that floor. Example Address (See Fig 22): 1220 Cardinal St., 3rd Floor (300), and Apartment 7. The Address would be **1220 Cardinal St., Unit 307**.

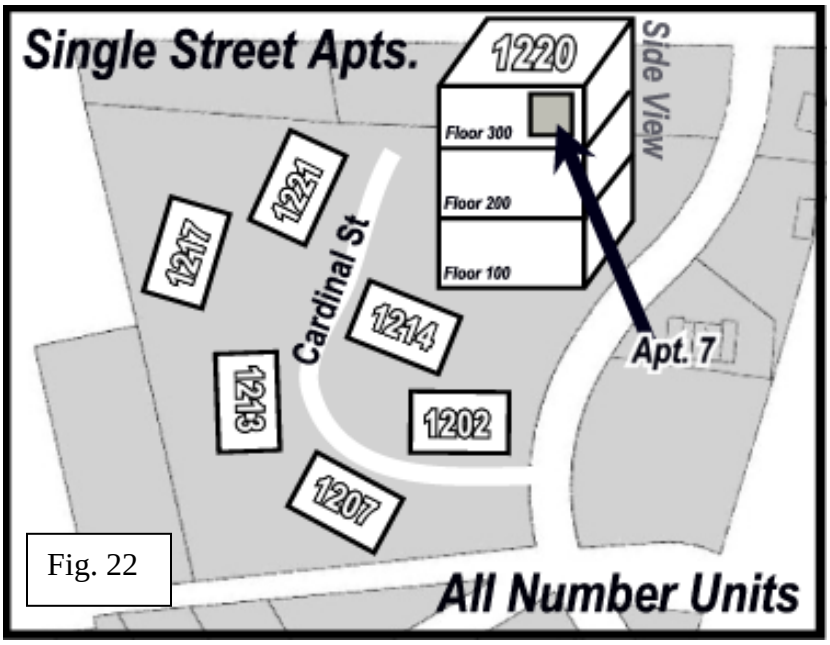


Fig. 22

3.5.4 Addressing Multi-Level Apartments on Private Streets – This is the least desirable method of addressing apartments and are only to be used as a last resort when the apartment roads are unable to be named. When apartments complexes have multiple indistinct access ways, unnamed streets, and parking lots they should be addressed based on an addressing hierarchy of one *Main Street Locator Address*, then the *Building Number*, and then *Apartment Unit Number*.

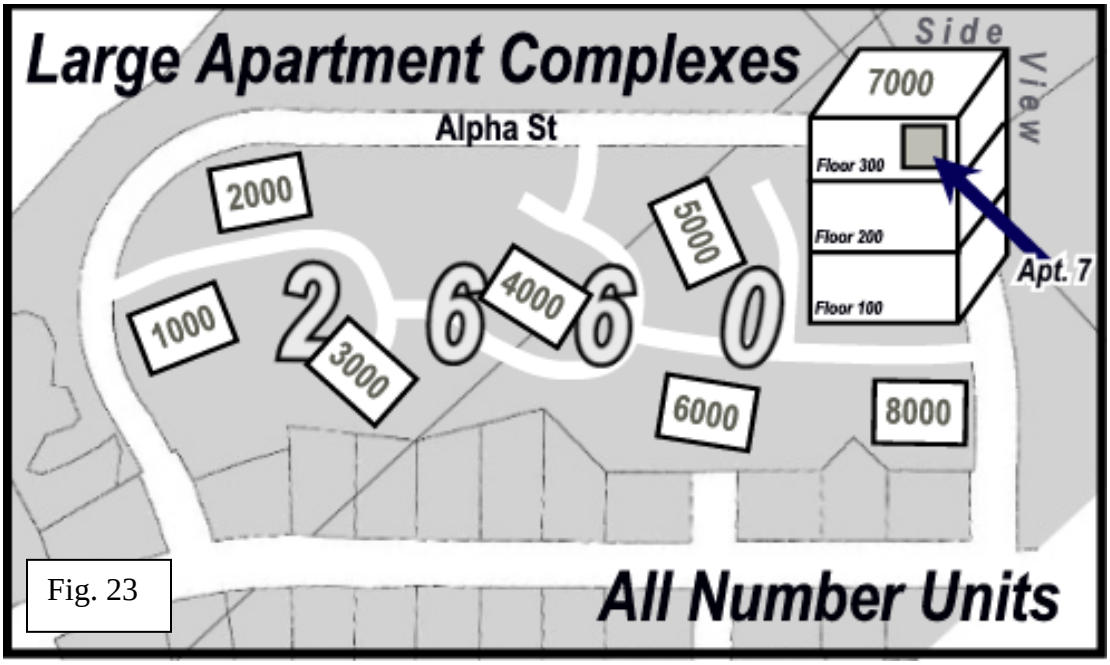


Fig. 23

3.5.5 Unit Numbering for Multi-Level Apartments on Private Streets – The Apartment Units can be numbered with 100 ranges defining the floor level and the 1-99 defining the unit location on that floor (Preferred Methodology). Example Address (See Fig. 23): 2660 Alpha St., Building 7000, 3rd Floor (300), and Apartment 7. The Address would be **2660 Alpha St., Unit 7307**.

3.6 ADDRESSING MULTIPLE BUSINESSES

Businesses and Business Centers come in many shapes and sizes. Location is not only important for emergency situations but for customers as well. When addressing a business(s) use one of the following scenarios below as a guide:

3.6.1 Universal Business Addressing Rule – If there is an existing street, pathway, or entranceway with a length greater than 200ft, and serves as the primary means of ingress and egress for a minimum of three separate commercial structures then that street, pathway, or entranceway (even if it is private) should be named and addressed in accordance with the rules of this document

3.6.2 Addressing Single Level Businesses (Malls/Strip Malls) - If it is one building then it receives one street address, if the property contains separate buildings then they each receive a specific address (See Fig. 26). The Store(s) and/or Office(s) contained within these buildings are then assigned a Unit number 1-999. Extended spacing between addresses should be considered because of the ability for the Units to change tenants and be possibly subdivided over a short period of time.

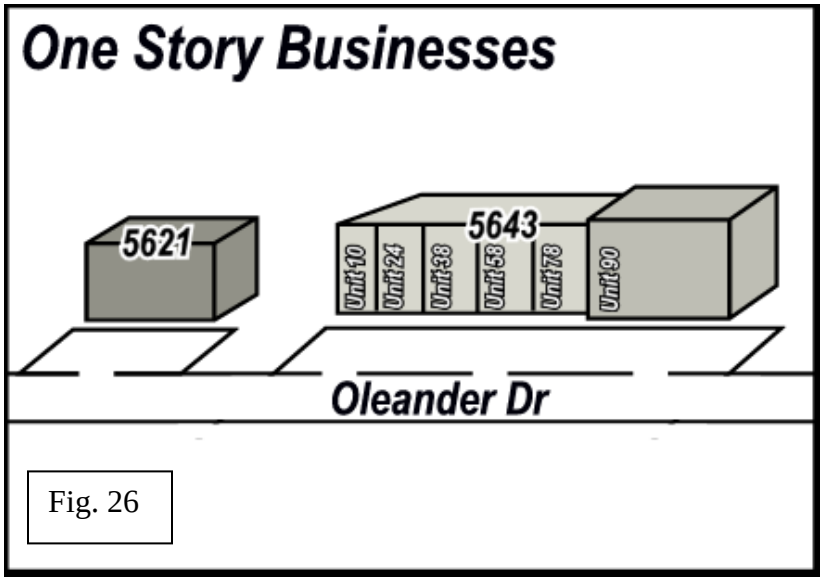
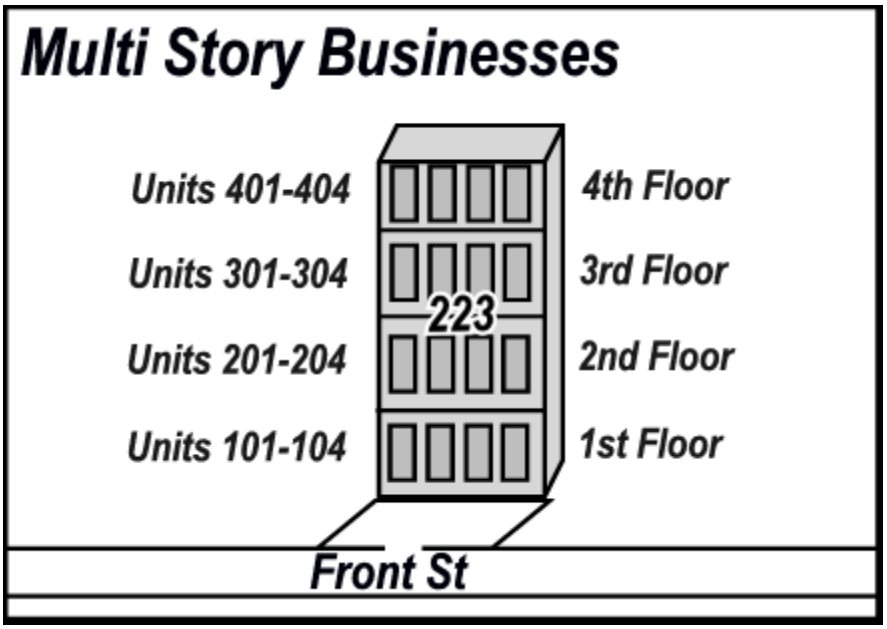


Fig. 26

3.6.3 Addressing Multi-Level Businesses (Office Buildings) – If it is one building then it receives one street address, if the property contains separate buildings then they each receive a specific address. Units within the building(s) are then addressed with the



assignment of Numbers or Letters. The Number system should be used to identify floor and individual units (See Fig. 27). 101-199 to be used for the first floor, 201-299 for the second floor, 301-399 for the third floor, and so forth until the building is fully addressed. Example of an address would be 2345 Market St., Unit 321 (Third Floor, Room 21).

3.7 WHEN A STREET MUST BE RENUMBERED

When the County/City responsible departments determine that renumbering a street is important to public safety and welfare, than it must be renumbered. In most cases, this involves adding additional addresses to an existing street, but there is no room between existing addresses to keep the street numbers in sequence. In order to maintain the integrity of the street system of New Hanover County the street must then be renumbered in accordance to the rules in this document and in anticipation of possible future changes.

3.7.1 Official Street Renumbering Process in the City of Wilmington, NC: It shall be the duty of the [addressing coordinator] from time to time, and upon request, to review street number assignments, resolve conflicts in numbers, reassign numbers or propose any changes which, in his opinion, are necessary. When due to conflicts, change in character or amount of occupancy of any block it becomes necessary to assign and reassign numbers within that block, the [addressing coordinator] shall prepare a map for the proposed renumbering of such area and submit this map to the City Manager and the City Council for their approval. Upon approval, it shall be the duty of the [addressing coordinator] to assign approved numbers to the owners and tenants of each building involved.

Reference: Sec 11-10, Wilmington City Code

3.7.2 Official Street Renumbering Process in New Hanover County, NC*: It shall be the duty of the planning department, from time to time and upon request, to resolve conflicts in numbering, reassign numbers or propose any changes which in their opinion are necessary and in accordance with G.S. 153A-240*. Individual numbers can be changed by the Planning Department and do not have to go through the process of a public hearing. For readdressing streets: The County Planning Department notifies all adjacent property owners of the proposed street numbering change. A public hearing is then scheduled to discuss the proposed street numbering. At least 10 days before the hearing, a notice of the subject matter should be posted in the county courthouse, in at least two places, usually at the beginning and end of the street, and a notice is published in the local newspaper for general circulation within the county. The commissioners will grant final approval of the renumbering.

3.7.3 Basic Guidelines to Follow When Renumbering a Street

When renumbering a street it must then be renumbered in accordance to the numbering rules in this document and in anticipation of possible future changes.

4. APPENDIX A – ELECTRONIC DATA ORGANIZATION AND MAINTENANCE STANDARDS

4.1 INTRODUCTION

Traditionally, addresses have been assigned and maintained in a wide variety of hardcopy formats including printed street maps, subdivision plans, project files, tabular lists, and many other forms. As our organizations have become more and more automated with the proliferation of computer systems, addresses have increasingly been entered into electronic databases. Addresses in these databases are often used as the primary key for identifying events such as customer accounts, project locations, crime incidents, work orders, and many others.

Over time, numerous address databases have been built to support many different applications on a variety of platforms. Unfortunately, there have been no uniform standards in place for how the addresses should be structured, stored, or referenced. As a result, multiple sources of essentially the same information were built which has resulted in operational inefficiency and poorly functioning databases.

The purpose of this standard is to define common electronic address specifications for Wilmington, New Hanover County, and associated jurisdictions to be used for managing address-related information digitally. A master address database shall be developed in accordance with these specifications. The master address database should be referenced when new street numbers are being assigned so that duplications are avoided.

The proposed master address database consists of a master street name table that contains a comprehensive list of all known streets in New Hanover County, and a master address table that contains a comprehensive list of all known physical addresses in New Hanover County. Any time an address is entered into any application, the address should be validated against the master street name/master address database for correctness (See Section **4.5** *Address Point Dataset Model* for additional details).

4.2 ELECTRONIC ADDRESS CHARACTERISTICS

Electronic addresses are typically stored in two (2) principal formats:

4.2.1 Unique physical address represented as a point in GIS.
Example: 543 S MAPLE ST APT 21
Address points represent discrete entities such as homes or utility service connections. Point-based addressing is useful for preserving a one-to-one relationship between a unique address and its physical location.

4.2.2 Generalized linear address represented by centerlines with block-by-block address ranges in GIS.
Address ranges are useful for identifying approximate address locations, high and low block ranges, and address parity (left or right side of block).

The specifications outlined in the remainder of this document apply to unique physical addresses that can be represented as a point in GIS. To the degree possible, the electronic address standards for unique physical addresses should be consistent with those of the linear addressing model of the County E911 CAD system.

4.3 ELECTRONIC ADDRESS FORMAT

Electronic addresses should be consistently formatted across all databases that contain addresses. Individual electronic addresses in the master address database will contain the elements listed below:

Unique Identifier
Address Number
Address Sub-Number
Directional Prefix
Street Name
Street Type
Unit Type
Unit Number/Identifier
City Code

Example:

ADDR-ID	NUM	SUB NUM	DIR	STREET	TYPE	UTYPE	UNIT	CITY
12345	6002	1/2	N	MAPLE	AVE	STE	F	WM

Databases that contain address records should be structured in a similar manner such that records can be sorted, searched or grouped on any individual element. For consistency, all text item values should be capitalized.

Characteristics and descriptions of these elements follow. For additional details of each element, see *Address Point Dataset Model* section **4.5** later in this document.

4.3.1 Unique Identifier

When addresses are added to the master address table, a unique identifier will be assigned to each unique physical address record. The address id will be a sequential integer value and can be used as a key to link other database tables to the master address table. This is a required field in the master address table and may not be null.

4.3.2 Address Number

The address number (house number or street number) should consist entirely of numbers. Where fractional numbers or characters are required, the non-numeric portion shall be recorded in the address sub-number field. Example: 123-1/2 MAPLE ST. The address number is 123 and the sub-number is ½. The address number should not be null, however a 0 address number may be used to represent an unknown value.

4.3.3 Address Sub-Number

The Address sub-number will contain any fractional or character portion of the address number. Note that this is different than a unit, apartment, or suite number (see below).

4.3.4 Directional Prefixes

The standard directional prefix should always be abbreviated and shall not contain periods. Any directional references in a street name shall be stored as a directional prefix. By convention, only directional prefixes are allowed. Example: 138 MAPLE ST N will be stored as 138 N MAPLE ST, with N being the directional prefix.

Special Rules Governing Use of Directional Prefixes

In some instances, directions are commonly considered to be part of the street name. By convention, the electronic address standard will always abbreviate directionals and parse them into the directional prefix field unless one of the following conditions occurs:

> A street name has two directions preceding a street name. In this instance, the first directional will be abbreviated and placed in the prefix field, and the second fully spelled. Example: W NORTH BEND RD
>
> The street name itself is a direction. In this instance, the direction will not be abbreviated. Example: EAST AV

4.3.5 Street Name

Numeric street names shall be written using numbers rather than spelled out. For example, 1ST is to be used rather than FIRST. Numeric street names shall always include the "TH", "RD", "ST", or "ND" characters as part of the street name. For example, 12TH shall be used rather than 12.

Databases that contain street name data should restrict street name values to those names contained in the master street name table.

4.3.6 Street Type

Street types such as Street, Avenue, etc. should be always abbreviated and should not include periods.

4.3.7 Unit Type

Standard unit types such as apartment, suite, building etc. should always be abbreviated and should not include periods.

4.3.8 Unit Number

The unit number may contain any alphanumeric unit designator up to 5 characters. Examples might include:

Number	Street	Type	Unit Type	Unit Number
123	MARKET	ST	APT	5
"	"	"	STE	J
"	"	"	BLDG	1
"	"	"	FLOOR	2
"	"	"	UNIT	LOWER
"	"	"	UNIT	UPPER
"	"	"	UNIT	REAR
"	"	"	UNIT	FRONT

4.3.9 City Code

Each address shall be qualified with an appropriate city code to distinguish similar street names and addresses in different jurisdictions.

4.4 FUNCTIONAL REQUIREMENTS FOR ADDRESS MANAGEMENT AND ENTRY

This section provides a functional overview of the proposed address management system. An important distinction is made between address data management and address data entry.

Address data management refers to the task of building, validating, and maintaining a collection of all known physical addresses in the county. This task is within the purview of the master address database administrator(s).

Address data entry refers to the task of entering an address into any database or application that requires address information to be collected, such as a billing system or a work order management system. Ideally, this task should be limited to simply selecting a known address from the master list rather than allowing free-form entry of address information without any validation. Customer service representatives, dispatchers, or account clerks typically perform address data entry.

The master address database should be designed to accommodate address data management functions and address data entry functions.

4.4.1 Address Data Management

Address data management consists of 2 distinct but related processes: management of the master street name list and management of the master address list. The addresses in the master address list should only contain street names that are defined in the master street name list. For example, if there is an address in the master address table such as

ADDR-ID	NUM	SUB NUM	DIR	STREET	TYPE	UTYPE	UNIT	CITY
10101	6002	1/2	N	MAPLE	AVE	STE	F	WM

then there must be a street name in the master street name table as

STREET-ID	DIR	STREET	TYPE	CITY
20202	N	MAPLE	AVE	WM

where DIR, STREET, TYPE, AND CITY uniquely identify a street name.

Some of the desired functional features for entering and managing address information are described in more detail on the next page.

4.4.2 General Functionality for Street Name/Address Data Management

General functionality for street name/address data management should include:

Multi-user concurrent access for editing, querying, and reporting.

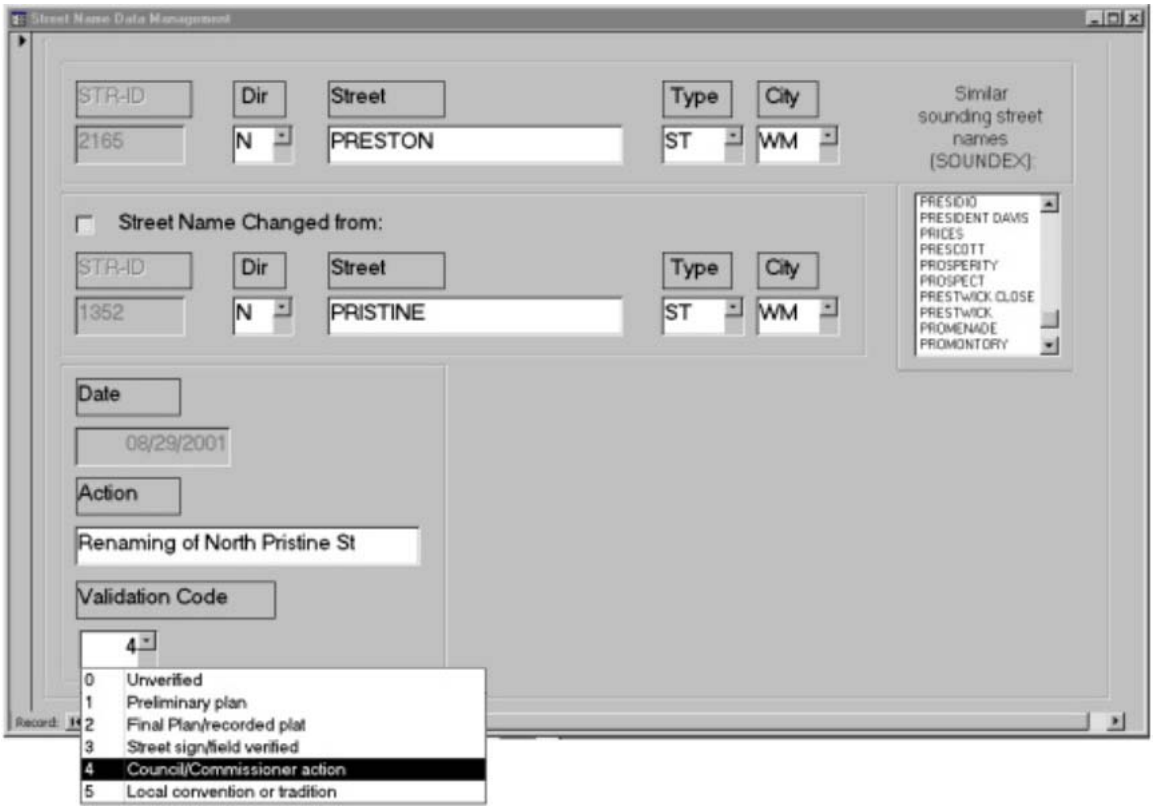
User-level security to control access rights for viewing and updating.

Drop-down lists should be utilized to the extent possible where attribute domain values have been defined. Manual entry of values not corresponding to defined attribute domains may be allowed, but the record should be flagged to indicate further validation should be performed on street name or address information.

Auto-suggest and auto-complete data values based on defined attribute domains.

Remote access to edit, query, and reporting functions via internal network, intranet, and internet.

4.4.3 Management of Master Street Name List



The basic interface for entering new street names or modifying existing street names should consist of the primary street name elements shown above.

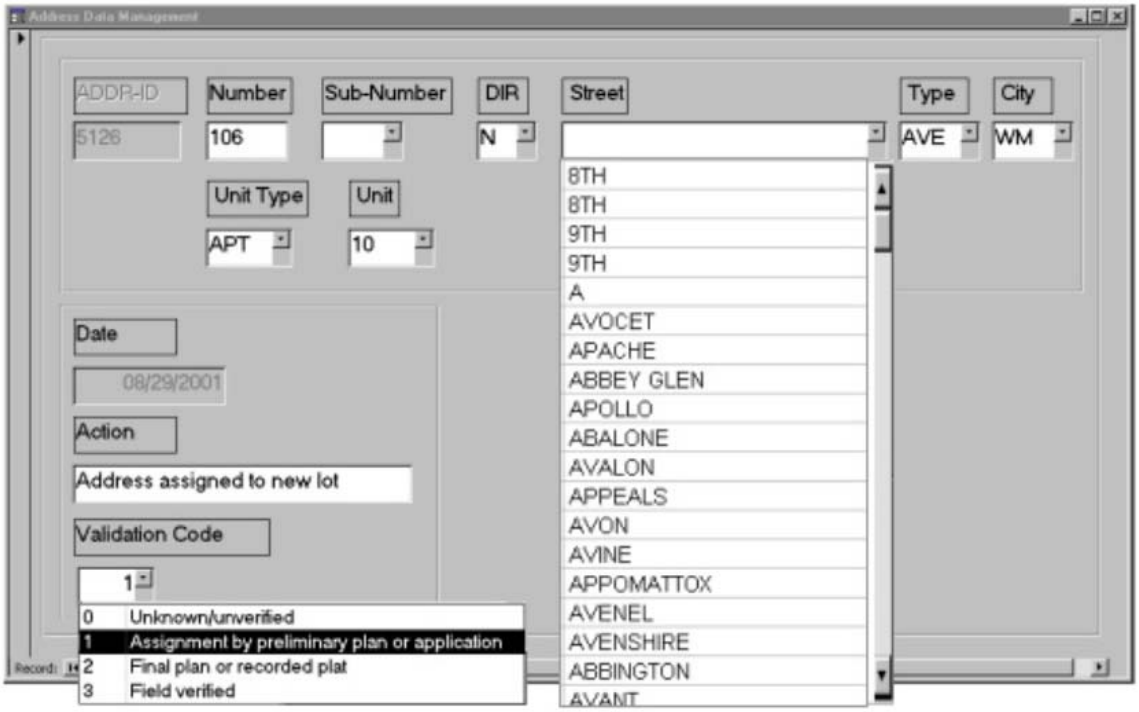
A Street is considered unique for the unique combination of street direction, street name, street type, and city. The application must be able to detect and prevent entry of duplicate street names. A sequential unique identifier should be automatically assigned to each street name record.

When a new street name is entered into the system, the application should be able to compare the proposed street name to existing street names in the database and identify any that are phonetically similar using a standard SOUNDEX algorithm. Similar sounding street names should be presented for review so that a determination can be made whether the proposed street name is adequately distinct from existing street names.

Any time a new street name is entered or an existing street name is modified, a transaction record for that street name should be generated which describes the nature of the update, including transaction date and a description of the action taken.

Parent-child relationships should be established when a street name is changed. A status code should be assigned to indicate whether the street name is active or inactive.

4.4.4 Management of Master Address List



The basic interface for entering new addresses or modifying existing addresses should consist of the primary address elements as shown above.

An address is considered unique for every unique combination of house number, sub-number, direction, street name, street type, and city. A sequential unique identifier should be automatically assigned to each address record. The application must be able to detect and prevent the entry of duplicate addresses. If an address is entered that matches an existing address, the system should provide

House numbers should be validated against known address ranges for the street specified. If the house number falls outside a known address range, the user should be alerted and given the option of correcting the number or accepting the number as-is. If the number is accepted as-is, a flag should be set which initiates a process of verifying and updating the address range information for that street.

Any time a new address is entered or an existing address is modified, a transaction record for that address should be generated which describes the nature of the update, including transaction date and a description of the action taken.

Parent-child relationships should be established when an address is changed or a single address is divided into multiple addresses. A status code should be assigned to indicate whether the address is active or inactive.

4.4.5 Address Data Entry

Having established a procedure for creating and managing addresses, the process of address data entry is reduced to simply associating a known address in the master address list to a record in an application that requires address information. Instead of typing address information free form, addresses can be selected from a list. This will reduce or eliminate typographic errors by data entry clerks and will establish a process for ongoing quality control.

If an address to be entered cannot be found in the master address list, a provision should be made to allow manual entry, but a flag should be set to initiate the process of validation of the unknown address.

4.4.6 Querying and Reporting Functions

The application should provide the following querying and reporting functions:

> *Determine if a street name is already in the master street name list.*
>
> *Determine if a street name is phonetically similar to a street name already in the master street name list.*
>
> *List all known addresses on a specified street.*
>
> *List all known addresses on a specified street within a specified address range.*

4.5 ADDRESS POINT DATASET MODEL

This portion of the *Addressing Standard* discusses a model for developing a dataset of physical addresses that can be accessed as or through geospatial points. Such a dataset could be used for a variety of purposes, ranging from geocoding to assigning addresses in a reliable manner. The model has the potential to serve as both an address repository and a master street name list, providing an invaluable resource to a broad community of users. An address point geospatial dataset could be designed in a number of ways, but this document provides one model that can be altered in a few subtle ways, as noted below.

The model does not absolutely require that the data be stored as a geospatial dataset. Rather, the data can be stored as simply a table within a relational database management system (RDBMS). But, for the data to be geospatial in nature, it is necessary to store X and Y-coordinate values for each physical address so that points can be generated on an ad hoc basis. Z-coordinates (i.e., elevation) could be stored, as well.

Parcel ID (New Hanover County PID or PIN) will not be stored as a component of the dataset. Parcel ID's can change independently of addresses and vice-versa. When an association between parcel ID and address is needed, a spatial overlay between address point and tax parcel regions can be performed.

4.5.1 Master Address Database

The Master Address Database model is comprised of two primary tables:

Master Street Name Table
Master Address Table

Various other associated tables such as transaction tables and QA/QC tables are defined that can be related to the primary tables. These tables are described later in this section.

It is assumed that X Y coordinates defining address point locations will be maintained in the City/County GIS as part of its normal functioning. Thus, fields containing X and Y co-ordinates will not be maintained in the master address table. There should be a 1-to-1 correspondence between address point locations in the GIS and individual address records in the master address table.

The descriptions and diagrams that follow illustrate how a master address database can be designed.

4.4.2 Master Street Name Table

The primary function of the master street name table is to centralize the maintenance of street name assignments and to reduce redundancy of street name lists throughout City/County organizations. All street name additions and changes are posted to this single table instead of multiple, redundant tables. This has the beneficial effect of providing a reliable master street name list and reducing the potential for errors during data entry into address based systems.

The master street name table contains the basic elements necessary to uniquely define a complete street name.

The master street name table is defined with the following items:

Item Description	***Item Name***	***Item Length***	***Item Type***	***Defined Attribute Domain?***	***Nulls Allowed***
Street Name ID	STR-ID	7	Sequential numeric	Yes - positive integer	No
Street Parent ID	STPARENT	7	Numeric	Yes - positive integer	No
Street Direction (directional prefix)	DIR	2	Alpha	Yes - see below	Yes
Street Name	STREET	25	Alpha	No	No
Street Type	TYPE	3	Alpha	Yes - see below	No *see below
City Code	CITY	3	Alpha	Yes - see below	No

A unique street name ID will be assigned for each unique combination of direction, name, type, and city.
The Street Parent ID is included to provide a parent/child relationship between street name records as street names are changed. Additions, deletions, and changes are recorded in the Street Transaction Table.

4.5.3 Defined Attribute Domain for Street Directional Suffix

Street Direction (DIR) values are restricted to the list below:

Direction	**Description**
N	North

S	South
E	East
W	West
~~NE~~	Not Allowed
~~NW~~	Not Allowed
~~SE~~	Not Allowed
~~SW~~	Not Allowed
Default Value: none	

4.5.4 Defined Attribute Domain for Street Type

Street Direction (DIR) values are restricted to the list below:

Street Type Code	**Description**
ALY	ALLEY
AVE	AVENUE
BLV	BOULEVA RD
CIR	CIRCLE
CT	COURT
DR	DRIVE
HWY	HIGHWAY
LN	LANE
LP	LOOP
PKY	PARKWAY
PL	PLACE
PLZ	PLAZA
PT	POINT
RD	ROAD
ROW	ROW
RUN	RUN
ST	STREET
TER	TERRACE
TRL	TRAIL
WLK	WALK
WAY	WAY
Default value:	NONE

*A null street type may be acceptable in the case of streets that include obscure street types such as "Trace", "Glen", "Hollow", etc. For streets that have type values not included in the above list, the street name field should include both name and type, for example "Whistler Trace", "Wellington Glen", and "Knobby Hollow" would all be street names with null street types.

4.5.5 Defined Attribute Domain for City Code

City Code (CITY) values are restricted to the list below:

City Code	**Description**

WM	City of Wilmington
FD	Unincorporated New Hanover County
WB	Town of Wrightsville Beach
CB	Town of Carolina Beach
KB	Town of Kure Beach
Default Value: none	

4.5.6 Street Name Transaction Table

The street name transaction table records any actions related to naming or renaming specific streets. This table can be used to track the history of a given street from inception through any changes or corrections that are made on the name. The street name transaction table is related to the master street name table by the street name id (STR-ID) field that is common to both tables.

The street name transaction table is defined with the following items:

Item Description	***Item Name***	***Item Length***	***Item Type***	***Defined Attribute Domain?***	***Nulls Allowed***
Street Name ID	STR-ID	7	Sequential numeric	Yes - positive integer	No
Transaction Date	STDATE	10	Date	Yes - on or after July 19, 2001	No
Transaction Description	STACTION	90	Alpha	No	No

Examples of street transactions are initial creation of street from preliminary plan, street renaming, road closure (inactivation of street name), or correction of incorrect street name.

4.5.7 Street Name QC Table

The street name QC table is used to rate street name records in the master street name table with a code that reflects the confidence level of the referenced street name. For instance, an unverified street name will have a low confidence level, but street names that have been field verified or otherwise validated will have higher confidence levels.

The street name status code (active or inactive) is used to segregate street names that were once used (active) but which were changed or otherwise inactivated. This provides a mechanism in the master street name table to search and sort only active street names, or only inactive street names if required.

The street name QC table is related to the master street name table by the street name id (STR-ID) field that is common to both tables.

The street name QC table is defined with the following items:

Item Description	*Item Name*	*Item Length*	*Item Type*	*Defined Attribute Domain?*	*Nulls Allowed*
Street Name ID	STR-ID	7	Sequential numeric	Yes - positive integer	No
Street name status	SNSTATUS	1	Character	Yes - see below	No
Street name QC code	SNQC	2	Numeric	Yes - see below	No

4.5.8 Defined Attribute Domain for Street Name Status

Street Name Status (SNSTATUS) values are restricted to the list below:

Status Code	**Description**
A	Active
I	Inactive
Default Value: A	

4.5.9 Defined Attribute Domain for Street Name QC Code

Street Name QC Code (SNQC) values are restricted to the list below:

Street Name QC Code	**Description**
0	Unverified
1	Preliminary plan
2	Final plan/recorded plat
3	Street sign/field verified
4	Council/Commissioner/Staff action
5	Local convention or tradition
Default Value: 0	

4.6 MASTER ADDRESS TABLE

The master address table is used to store all known physical addresses. A unique physical address is defined by any unique combination of street number, street sub number, full street name, unit type and unit number.

Note that the records in the master address table do not store street name information directly, but rather store the reference ID (STR-ID) to the street name in the master street name table. This preserves the integrity of the street name portion of the address record.

The address parent ID acts as a pointer to establish parent-child relationships between addresses. For example, if a large parcel with a single address is subdivided, then the address ID of the large tract becomes the parent ID of each address in the subdivided tract.

The master address table is defined with the following items:

Item Description	*Item Name*	*Item Length*	*Item Type*	*Defined Attribute Domain?*	*Nulls Allowed?*
Address ID	ADDR-ID	7	Sequential numeric	Yes - positive integer	No
Address parent ID	ADDPARENT	7	Sequential numeric	Yes - positive integer	No
Street Number	NUM	6	Numeric	Yes - positive integer	No
Street Sub-Number	SUBNUM	6	Alpha	No	Yes
Street Name ID	STR-ID	7	Sequential numeric	Yes - any valid STR-ID in the master street name table	No
Unit Type	UTYPE	5	Alpha	Yes - see below	Yes
Unit Number / Identifier	UNIT	5	Alpha	No	Yes

4.6.1 Defined Attribute Domain for Unit Type

Unit Type (UTYPE) values are restricted to the list below:

Unit Type Code	**Description**
APT	Apartment
STE	Suite
BLDG	Building
FLOOR	Floor
UNIT	Generic unit where none of above apply
Default Value: none	

4.7 ADDRESS QC TABLE

The address QC table is used to rate address records in the master address table with a code that reflects the confidence level of the referenced address. For instance, an unverified address will have a low confidence level, but addresses that have been field verified or otherwise validated will have higher confidence levels.

The address QC table is related to the master address table by the address id (ADDR-ID) field that is common to both tables.

The address QC table is defined with the following items:

Item Description	***Item Name***	***Item Length***	***Item Type***	***Defined Attribute Domain?***	***Nulls Allowed?***
Address ID	ADDR-ID	7	Sequential numeric	Yes - positive integer	No
Address status	ADDSTATUS	1	Character	Yes - see below	No
Address QC code	ADDQC	2	Numeric	Yes - see below.	No

4.7.1 Defined Attribute Domain for Address Status

Address Status (ADDSTATUS) values are restricted to the list below:

Status Code	**Description**
A	Active
I	Inactive
Default Value: A	

4.7.2 Defined Attribute Domain for Address QC Code

QC Code (ADDQC) values are restricted to the list below:

Code	Description

000		**Unknown/Unverified**	This the default for unknown
333		**Preliminary Addresses**	Address is Valid, but could Change
700		**Verified Addresses**	Verified, Researched Address
	701	Verified by Field Inspection	
	702	Verified by CO	
	703	Verified by Property Owner	
	704	Verified by Tax Department	
	705	Verified by Utilities	
800		**Verified with GPS Location**	Verified and GPS Located (Front Door)
	801	GPS by NHC Inspections	Verified and GPS Located (Inspections)
911		**Addresses for 911 Dispatch**	Unique Addresses for Places (911 Only)

4.8 ADDRESS TRANSACTION TABLE

The address transaction table records any actions related to address assignments or subsequent address changes. This table can be used to track the history of a given address from inception through any changes or corrections that are made on the address. The address transaction table is related to the master address table by the address id (ADDR-ID) field.

The Address Transaction Table is defined with the following items:

Item Description	***Item Name***	***Item Length***	***Item Type***	***Defined Attribute Domain?***	***Nulls Allowed***
Address ID	ADDR-ID	7	Sequentia l numeric	Yes - positive integer	No

Transaction Date	ATDATE	10	Date	Yes - on or after July 19, 2001	No
Description of Transaction	ATACTION	90	Alpha	No	No

Examples of address transactions include initial creation of addresses; bulk re-addressing, or correction of incorrect address.

4.9 MASTER ADDRESS TABLE RELATIONSHIPS DEFINED (CHART)

Master Address Table

ADDR-ID	ADDPARENT	NUM	SUBNUM	STR-ID	UTYPE	UNIT
123	123	5822	1/2	46		
124	123	5824		46		
125	125	601		47	APT	F
126	126	601		47	APT	G
127	127	454		48		

Master Street Name Table

STR-ID	STPARENT	DIR	STREET	TYPE	CITY
45	45		MARY	ST	WM
46	45		MERRY	WAY	WM
47	47	S	WALLY	DR	WM
48	48		CLEAVER	PL	WM
49	48		BEAVER	PL	WM

Address QC Table

ADDR-ID	ADDSTATUS	ADQC
123	I	1
124	A	3
125	A	2
126	I	2
127	A	3

Street Name QC Table

STR-ID	SNSTATUS	SNQC
45	I	1
46	A	4
47	A	3
48	I	2
49	A	5

Address Transaction Table

ADDR-ID	ATDATE	ADACTION
123	2/3/1998	Source - City Development Center
123	3/20/1999	Re-addressed due to conflict
124	3/20/1999	New address for 5822 MERRY WAY
126	8/12/2000	Subdivision of 1 lot into 2
127	6/17/2001	Source - City Development Center

Street Transaction Table

STR-ID	STDATE	STACTION
45	9/12/1996	Name assigned from preliminary plan
45	2/14/1997	Renamed to Merry Way
46	2/14/2001	New name for Mary Street
47	7/21/2000	Field verified sign; code to 3
48	6/3/1988	Name taken from recorded plat
48	11/11/2000	Street sign says BEAVER PL
49	11/11/2000	Changed CLEAVER PL to BEAVER PL

***Note: STPARENT and ADDPARENT provide a parent/child relationship between records as shown.**

5. APPENDIX B - ENFORCEMENT PROCEDURES

5.1 CURRENT STANDARDS IN THE CITY OF WILMINGTON, NC: For newly assigned addresses it shall be the duty of the zoning officer to inspect and verify that the address is accurate and meets all code requirements. If the address does not meet requirements then a certificate of occupancy will not be issued until the address is compliant. Once an address violation has been identified for existing address, it shall be the duty of the addressing coordinator to issue notification of the violation. If the notification process is does not resolve the violation then the address coordinator will deliver the violation to the code enforcement division. Code enforcement will work through their normal procedures to insure that the violation is corrected and brought into compliance.

5.2 STANDARDS OF ADDRESS DISPLAY IN NEW HANOVER COUNTY

The New Hanover County Code of Ordinances Section 47-101 - Address Display

It is the duty of the property owner, agent, or occupant of any house, building or mobile-manufactured home fronting on a road or private easement in the unincorporated area of the county to properly display the number which has been assigned by the planning department. Such number shall be a minimum of three inches in height. The number shall be placed on the home, building, or mailbox, so that it may be plainly seen and observed from the adjacent road.

5.3 ENFORCEMENT OF THESE STANDARDS IN NEW HANOVER COUNTY

The enforcement for address numbers ensures public safety and promotes efficient delivery services. For new structures and renovations it shall be the duty of the inspectors to verify the correct address at the time of a final inspection. Neither the certificate of occupancy nor a certificate of compliance shall be issued unless the address meets the terms of the existing code, which identifies the duty of the property owner.

In the situation where an address change has been requested by the Planning Department or the Planning Department re-numbers a road within the county, it shall be the duty of the address technician/coordinator to inform and direct the property owner(s) to use and display the new address. If the property owner does not meet the departments' request to change and display their address within 30 days, a citation of code violation will be issued to the property owner by the New Hanover County Fire Services Department.

New Hanover County Code of Ordinances Section 47-109 - Enforcement

Any Person who is found in violation of this Article shall be Subject to a civil penalty in the amount of One Hundred Fifty ($150.00) Dollars for each offence, to be issued by either the Fire Services Department, Sheriff's Department, Code Enforcement Officer or Planning Department. Each violation shall be treated as a separate offence.

In addition to any other legal remedies, equitable remedies may enforce this article and any unlawful condition existing in violation of this Article may be subject to an injunction or order of abatement.

5.4 ENFORCEMENT OF THESE STANDARDS IN CAROLINA BEACH

The enforcement for address numbers ensures public safety and promotes efficient delivery services. For new structures and renovations it shall be the duty of the inspectors to verify the correct address at the time of a final inspection. Neither the certificate of occupancy nor a certificate of compliance shall be issued unless the address meets the terms of the existing code, which identifies the duty of the property owner.

In the situation where an address change has been requested by the Planning & Development Office or the Planning & Development Office re-numbers a road within the Town, it shall be the duty of the address technician/coordinator to inform and direct the property owner(s) to use and display the new address. If the property owner does not meet the departments' request to change and display their address within 30 days, a citation of code violation will be issued to the property owner by the Planning & Development Office.

Town of Carolina Beach Code of Ordinances Section 12-39 & 15-64 - Enforcement

Sec. 12-39: Any person violating any provisions of this chapter, or who shall violate or fail to comply with any order made under these articles, shall be punishable by a fine not to exceed fifty dollars ($50.00) under G.S. Section 14-4 or subject to civil penalty as set out in Section 1-6 of this Code, or both. Each day such violation shall be permitted to exist shall constitute a separate offense.

(Code 1977, § 9-3030; Ord. No. 82-53A, § (9-3077), 6-8-82; Ord. No. 86-190, 5-22-86)

State law references: *Each day's violation as separate offense, G.S. § 160A-175.*

Sec 15-65: Any violations to section 15-61, section 15-62, and section 15-64 shall be punishable by a fine not to exceed fifty dollars ($50.00). Each separate violation shall be considered a separate offense.

(Ord. No. 93-318, 5-11-93)

In addition to any other legal remedies, equitable remedies may enforce this article and any unlawful condition existing in violation of this Article may be subject to an injunction or order of abatement.

6. APPENDIX C - STREET SIGNAGE TECHNICAL STANDARDS (NENA BASED)*

6.1 STREET NAME SIGNS

Street name signs shall be constructed to the following specifications:

6.1.1 Tubular Aluminum or Galvanized Steel Posts

Twelve (12) feet in length, minimum, if not set in concrete.

Two and three-eighths (2-3/8) inches outside diameter, three (3) pounds per foot in weight.

Lower end five (5) feet in ground.

Anchored at ground level with three (3) angle bars driven into ground and connected to post with special bolted connecting ring.

6.1.2 Bottom of sign a minimum of seven (7) feet above ground

Sign blanks shall have the following dimensions:

Extruded flange-reinforced-edge aluminum blades.

Blades are a Minimum of twenty-four (24) inches in length, and six (6) inches high for streets under 35 m.p.h. or nine (9) inches high for streets 45 m.p.h.

Point two hundred and fifty (0.250) inches thick at flanges.

Point zero ninety-one (0.091) inches thick at center of blade.

Two (2) seven-sixteenths (7/16) inch holes in top flange end. Two (2) seven-sixteenths (7/16) inch holes in bottom flange. Each hole being one and three-fourths (1-3/4) inches from the vertical centerline of the blade and with their centers seven sixteenth (7/16) of an inch from the extreme top or bottom edge of the blade.

6.1.3 Hardware

Standard approved vandal-proof caps and crosses with recessed head attachment bolts and set-screws.

6.2 COLOR & LETTERING

6.2.1 All Block Capitals.

6.2.2 Height of Blade and Street Name - Name Text of street four (4) inches in height for six (6) inch blades.

6.2.3 Height of Prefixes and Suffixes - Prefixes (N, S, E, & W) and Suffixes (ST, AVE, RD, etc.) two (2) inches in height

6.2.4 Block Numbers (Required) - Two (2) inches in height. The street address block number shall appear bellow the suffix (ST, AVE, etc.) designation.

6.2.5 Color and Reflective Letters - Color of signs, white lettering on reflective green background (may be "reverse-screened").

6.2.6 Private Street Placement - Street name signs installed in areas which have not been dedicated to public use, shall have the word, “PRIVATE” incorporated thereon in letters at least one (1) inch in height. Color of signs, white lettering on reflective green background (may be "reverse-screened").

**Taken From The City of Wilmington Technical Standards Manual New Hanover County Sign Standards*

8. APPENDIX E - KEY TERMS

Block – A block is a group of buildings that form a unit from one intersection to another. The unit could be a 100 block or 1000 block.

Cul-de-sac -They are extended streets with a wide circular turn-a-round at their ends and only one outlet, they provide access to 4 or more lots.

Intersection – The meeting of two or more passable roadways or possibly where a roadway passes over a named body of water.

Public (Street) - A Public Street is a street that is maintained and owned by the municipality, state, or federal government that is responsible for it. They have more restrictions and rules governing their construction, and maintenance.

Private (Street) – A Private Street is a street that is maintained and owned by the property owner(s) that use it for access to their property by motor vehicle.

Street – A Street is any single lane and multi-lane corridor or conveyance, which is passable by a motor vehicle. This includes private and public, improved (paved), unimproved (unpaved) roadways, and alleys.

Units – Units are property address identifiers that are used to divide a single numeric address into identifiable subsets for location purposes.