Nova Scotia Civic Address

Best Practice for the Maintenance of Spatial Civic Address Data

Version 1.1
June 16, 2015

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Introduction

This best practice document is composed of various documents and sources (e.g. National Vector Data – Guide to Best Practices for Acquisition -1.0, the Nova Scotia Civic Address Users Guide, the Nova Scotia Topographic Database Data Compilation Specifications, the GPS Technical Specifications, and the National Vector Data – Guide to Best Practice for Acquisition).

The intent of this document is to have a concise description and best practice recommendations for collecting and editing the NSCAF components (i.e. points (civics), line (roads) and polygons (communities).

The best practice document is divided into three parts:

Part 1 | Roads
The Roads section begins with a brief discussion on how the NSCAF Roads are derived. It explores the methods and technical specifications used to capture road geometry that is to be added to the NSCAF. The methods presented in this section can be used either in the field or during an on screen digitizing (heads up). In addition, each road capture method contains a recommended and in some cases a not recommended best practice.

Part 2 | Civic Points
The Civic Points section opens with a brief discussion describing: what a civic number is, what it is comprised of and what is an addressable point. Several subsections contain technical specifications in regards to the collection of civic address points, while others attempt to capture the most common situations one may come across while assigning civic numbers (e.g. assigning civic numbers to: apartments, malls, addressing islands, etc.). Each subsection contains a recommended best practice.

Part 3 | Communities
The Communities section commences with a brief discussion on community (GSA) boundaries. Next the process for adjusting community boundaries is described, which includes a recommended best practice for adjusting community boundaries. The remaining sections briefly describe the assignment of feature codes and what each means, and assigning civic numbers to buildings accessed by roads form another community.

Part

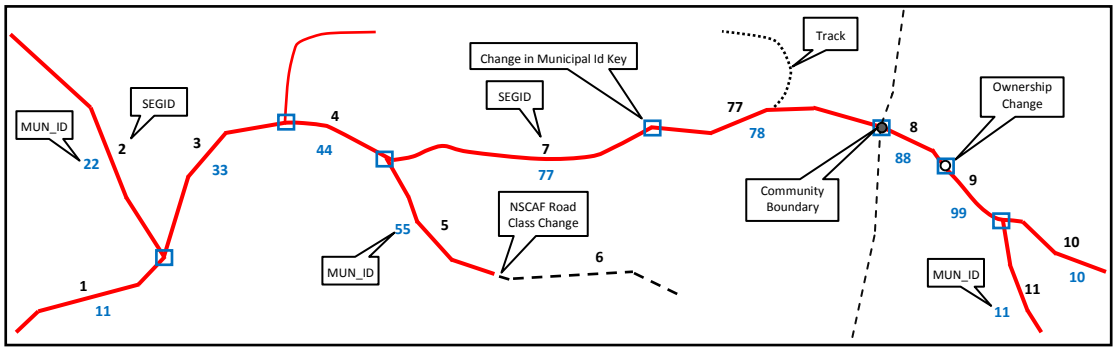
1

1 ROADS

The Nova Scotia Civic Address File (NSCAF) roads are derived from the Nova Scotia Road Network (NSRN) and represent every addressed street, road, and highway in Nova Scotia. NSCAF roads are represented by line geometry, and identified by a unique SEGID key. Every addressed road in the province has a name, an owner, and a left and right civic address range unique for that municipality.

Road segmentation in the NSCAF allows for alias road names to be assigned to individual segments, assign address range for different sides on the street, allow for road name changes and properly assign road class to individual segments. Therefore, in order to maintain the level of attribution new and existing NSCAF road segments are split at the following locations:

› Intersections with other addressed roads
› Community boundaries
› Road name changes
› Road ownership change
› NSCAF road class change
› Change in external Municipal ID keys



These splits in the road segments will cause the current SEGID to be retired and new SEGIDs will be assigned to each section or segment. These actions may have implications for users who rely on the SEGID to link to their own datasets. Therefore, a MUN_ID is included in the street segment table (SEG_TAB), which allows a municipality to use this column as a bridge to link the NSCAF road segments with their own dataset. The MUN_ID column also allows the NSCAF to accommodate other splits in the roads where the NSCAF normally wouldn't split the road segment. For example, if

a municipality wanted to include road splits at their electoral district boundaries. The roads would be split, new SEGIDs assigned to each segment, and the MUN_IDs retained and assigned to the new SEGIDs.

Likewise, when a temporary road is replaced with a GPSed road, the existing SegID may be retired and a new number could be assigned.

For a more detailed discussion on the NSRN and NSCAF roads, please refer to the Nova Scotia Road Network NSRN – Appendix B documentation located at:

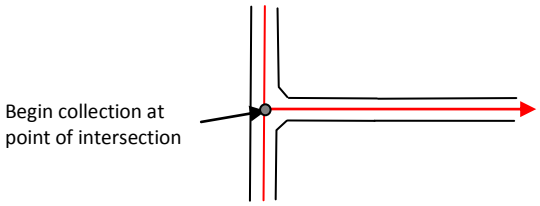
http://nscaf1.nsgc.gov.ns.ca/civicmain/docs.htm

1.1 NEW ROADS – ROAD CENTRELINES

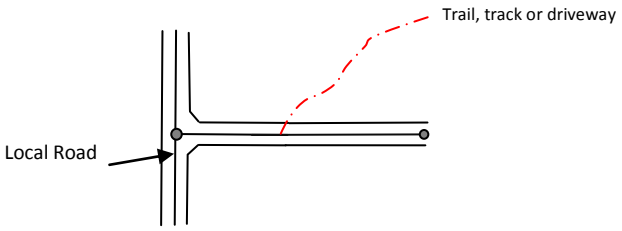
New road construction is most often associated with subdivision development or when development reaches a certain point (i.e. equal to or greater than three houses on a private driveway). In these situations, when development reaches a certain point, the driveway is normally converted to a private road. Therefore, the following recommendations should be followed while collecting new roads.

RECOMMENDED

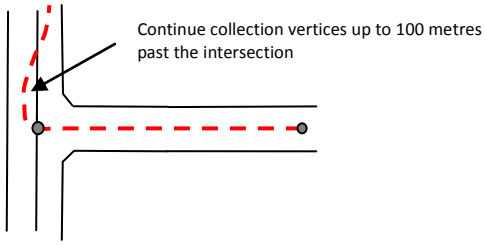
- **On screen digitizing:** Begin and end collection of new or modified road sections at a point of intersection with a pre-existing road centerline



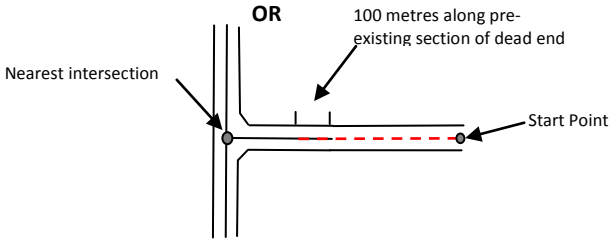
- **GPS:** If the pre-existing road segment has attribution indicating it represents a track, trail or driveway, continue collecting vertices to its intersection with a road class higher than any of the former three.



• **GPS**: If the road segment being collected ends at a pre-existing "T" intersection, and there is no offset involved with the road coming from the opposite direction, continue collecting vertices through, and up to 100 meters past the intersection.



• **GPS:** In the case of new or modified dead end section of road, begin collection at the dead-end point and continue collecting the road centerline to the nearest intersection with a pre-existing road or for 100 metres along a pre-existing section of the dead-end road, whichever is shortest.

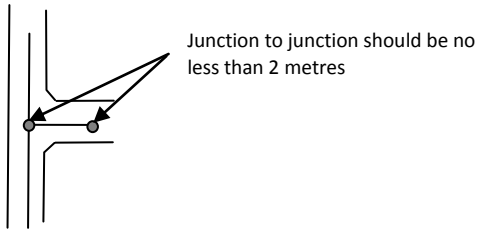


1.1.1 MINIMUN SIZE OF A ROAD ELEMENT

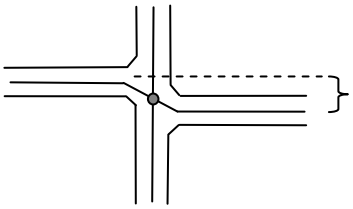
Road segments should never be shorter that half the width of a lane. Considering that a single lane is approximately 3.5 metres wide, the segment of a dead end road, from junction to junction, should at least be 1.75 metres long when accessible from a single lane road.[1]

RECOMMENDED

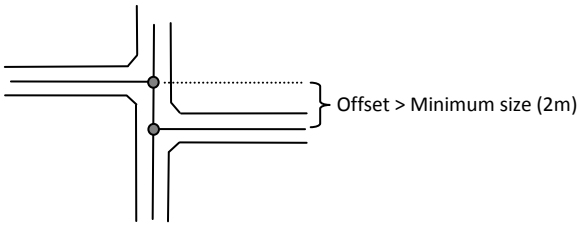
- The minimum size for a road segment, from junction to junction, is set to 2 metres.



- If two roads at an intersection meet at a slight offset that is less than the minimal size, their representation should meet at a junction located at mid-point between the two as shown below.



- If an offset is more than the minimum size of 2 metres, they should be represented by two road intersections formed by three roads as shown in the figure below.



[1] [1] GeoBase® National Road Network Guide to Best Practice for Acquisition Edition 1.0 / 2010-06

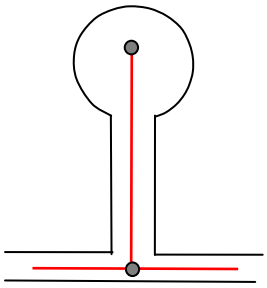
1.2 CUL-DE-SAC

1.2.1 CUL-DE-SAC WITH NO PHYSICAL OBSTRUCTION

A cul-de-sac is a dead-end street with the end enlarged into a circle to allow traffic to turn. Addressing proceeds as for the rest of the street, with odd numbers on one side and even numbers on the other. The odd and even numbers come together at the top of the cul-de-sac.

RECOMMENDED

• A cul-de-Sac that is completely open (no physical obstruction): the centreline should extend through the road right of way and stop at its upper end.



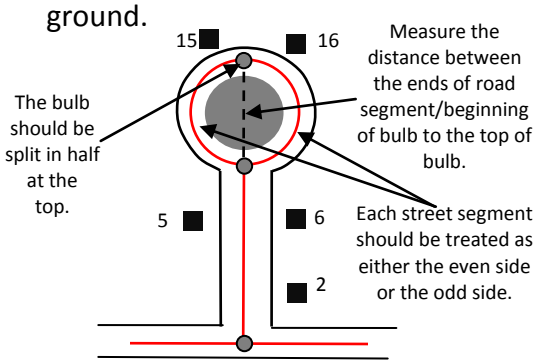
A cul-de-Sac without a physical obstruction.
See Section 2.5 ODD/EVEN Assignment Guidelines

1.2.2 CUL-DE-SAC WITH A PHYSICAL OBSTRUCTION

A cul-de-sac that has a physical obstruction should depict the situation that exists on the ground.

RECOMMENDED

• The centreline should depict the situation that exists on the ground.



Cul-de-Sac with a physical obstruction/island
See Section 2.5 ODD/EVEN Assignment Guidelines

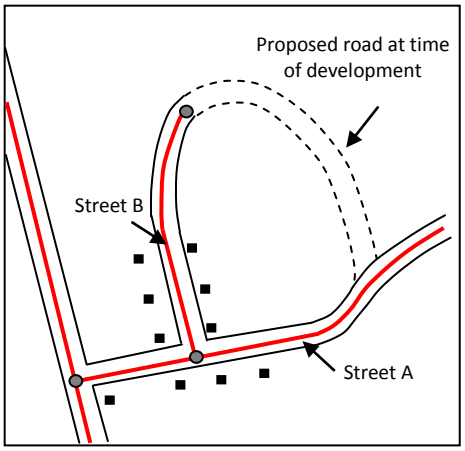
1.3 "Y" ROAD

Y roads can sometimes be the results of a proposed road (loop) in the early stages of development, which never got built. It could also be that development has forced the proposed road (loop) to be directed into another direction.

RECOMMENDED

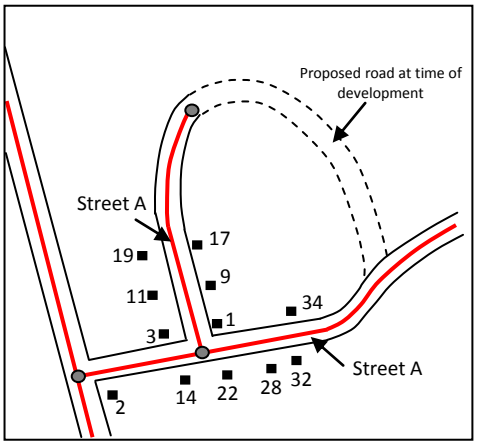
- Rename one section of the road.
- Primary consideration for retaining the original name should be given to the section which carries the most traffic.

RECOMMENDED

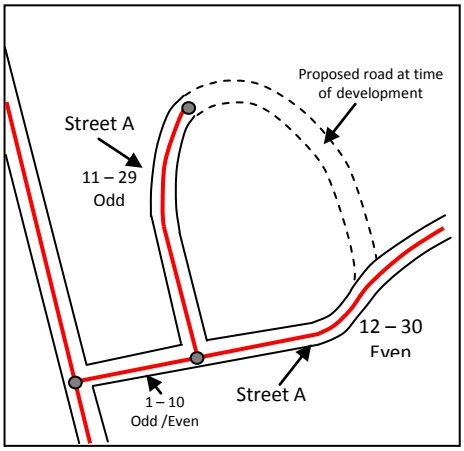


NOT RECOMMENDED

- Having numbers offset from those on the other section to avoid duplication.
- Having the same name on the different entrance but having different ranges.
- Having odd – even overlaps. See Section 1.6 Local Roads VS Seasonal Roads



NOT RECOMMENDED
Offset numbers from those on the other section.



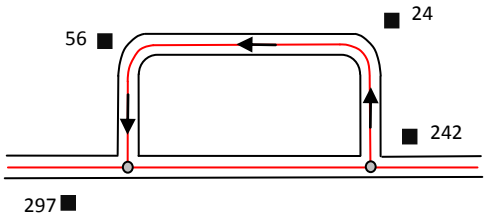
NOT RECOMMENDED
Same name with odd - even overlaps.

1.4 CRESCENT

A crescent is a street that joins back to the same street from which it originated.

RECOMMENDED

- When assigning civic numbers, begin at the end that has the lower civic range from the source street.



1.5 LIMITED ACCESS, UNMAINTAINED AND DISCONTINUOUS ROAD

Unmaintained roads that are impassable or have limited access should not be named or assigned address ranges. The presence of these roads in the NSCAF can be misleading since it may indicate they could be used for emergency vehicles, and therefore should only be submitted as non-addressed road geometry.

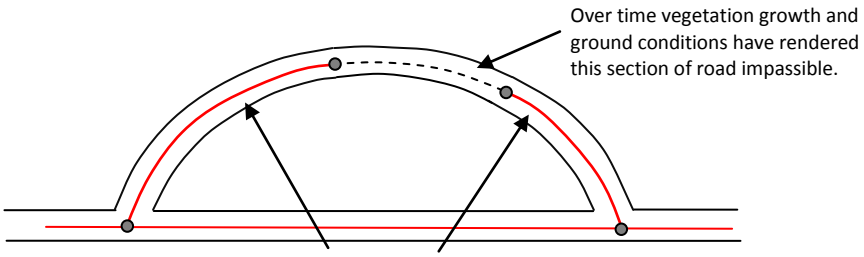
RECOMMENDED

- Should not be named or assigned address ranges.
- Should be maintained in a separate non-address roads layer.

Disconnected roads that exist as separate physical sections are a particular cause of confusion and each section in effect should be a separate street.

RECOMMENDED

- Each section should have a different name and addressed separately.



Streets were initially assigned same name.
Should have different names and addressed separately.
See Section 1.6 Y Road Guidelines

If a situation arises as a result of a re-alignment at an intersection, another road built over a section of existing road, or a physical separation between sections of a road.

RECOMMENDED

- Road changes should only be collected when it can be traveled.
- Renumbering and renaming is a last resort, but may be the only alternative in some cases.

1.6 LOCAL ROADS VS SEASONAL ROADS

Local streets are low-speed roads, which are dedicated to provide year-round, full access to the front of properties. All roads within residential or urban areas (e.g. city, town, residential development, cottages, mobile home parks) or public service areas (e.g. government services, hospitals, universities, industrial complexes) are classified local street.

Seasonal roads on the other hand are typically private-owned be roads that serve as local roads, but do not receive winter maintenance. Seasonal roads are often associated with resource access and extraction such as forestry or farm access, or with seasonal/recreational properties such as camps and cottages.

RECOMMENDED

- Local roads are collected using the same methods as in Section 1.1.1

1.7 PRIVATE ROADS

Private roads are any roads that are not owned by the Department of Transportation and Infrastructure Renewal (TIR), a municipal authority, or a First Nations community. In order to accommodate georeferencing needs for emergency response, any road that services three or more addressable buildings or landmark (e.g. parks, ball fields, etc.) or acts as a common driveway for 3 or more buildings, can be considered as private roads and should be addressed.

RECOMMENDED

- Any road with three or more addressable buildings or landmark should be captured either using a heads up method (i.e. computer digitizing via NSCAF maintenance tool) or by using a GPS unit. See Sections 1.1 and 1.1.1
- GPSed roads should be submitted to the Geomatics Centre so they can be inserted into the NSCAF.

NOT RECOMMENDED

- Road should not be considered a private road where there are fewer than three addressable buildings or landmark on a driveway.
- Trails or extended driveways should not be considered as private roads.

1.8 DIVIDED HIGHWAYS

Divided highways are roads divided by a median, curb, or green space, which prevents the crossing of vehicles into lanes carrying traffic going in an opposite direction. These roads should be captured as two roads; one for each direction.

RECOMMENDED

- Collect a separate road centreline for each side of the physical obstacle. (See figure 2 and obstacle definition beneath figure 2.)

Figure 1

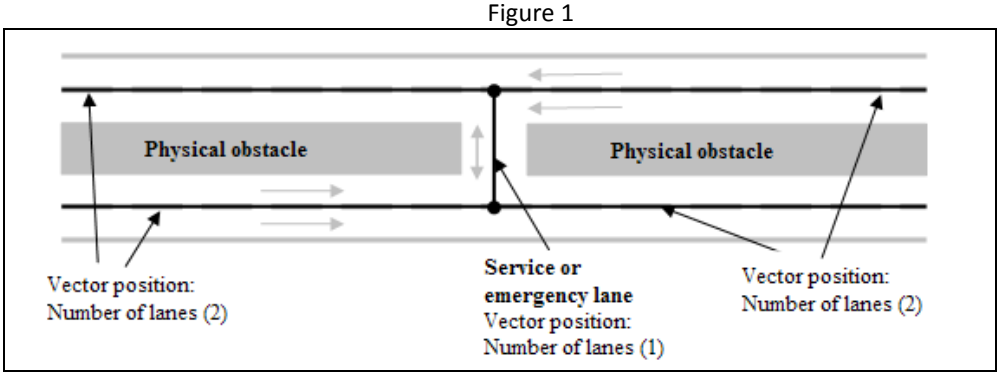
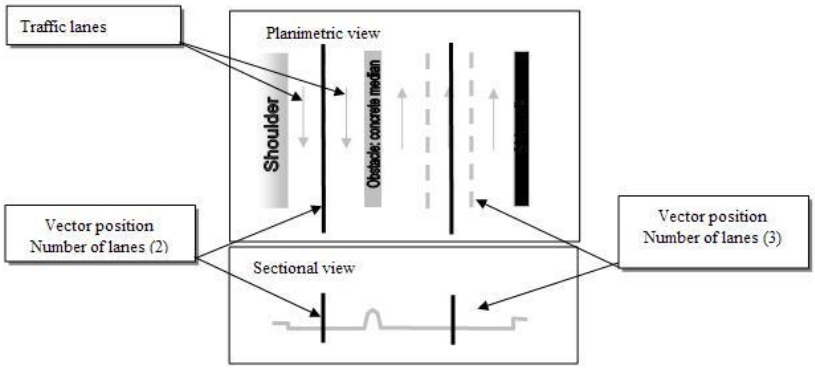


Figure 2



Obstacle: Any physical object that separates the traffic lanes. An obstacle must be at least 10 metres in length to be taken into consideration. All openings along a median that allow a vehicle to cross the median must be captured.

1.8.1 EMERGENCY TURN AROUNDS (CROSSOVERS)

Emegency Turn Arounds (Crossovers) are short sections of road that bridge across the medians of divided highways. Since they are designed to provide access for emergency vehicles, they should be included in the NSCAF. (Refer to Figure 1 on page 9)

RECOMMENDED

- Geometry should be captured if new or missing.
- If a sign is present the crossover for highways should adhere to the following naming convention, (i.e. Highway 104 ETA (emergency turn around) 12). The “12” represents the crossover that is closest to the 12 km highway marker.

1.9 HIGHWAY INTERCHANGES AND RAMPS

1.9.1 HIGHWAY INTERCHANGES

TIR has standards to name ramps and interchanges in order to avoid duplication of road names and uniquely identify each ramp. The current approach is to use the authority number and direction of travel for the lane serviced by the ramp (e.g. EB for Eastbound), then to append the exit identifier (e.g. Exit 4), and whether it is an on ramp, or an off ramp. For example, Hwy 104 WB Exit 4 Off would identify the off ramp at Exit 4 from Highway 104 for the westbound lane of the highway.

RECOMMENDED

- Where two numbered roads merge, the naming convention for the ramps should first consider the type of road (Highway, Trunk, or Route).
- Highways (100 series) take precedence over Trunks (numbers less than 100), which take precedence over Routes (200 series for east/west roads; 300 series for north/south roads).
- Where roads of the same series merge, use the numerically lower number. For example, the interchange between Highway 102 and Highway 104 in Truro should name the ramps using Highway 102 (e.g. Hwy 102 SB Exit 15 On).

1.9.2 RAMPS

Highway ramps are a system of interconnected roadways for the controlled movement between two or more roadways.[2]

When capturing highway ramps either by using on screen digitizing or a GPS unit the point of intersection should be captured the followed way.

RECOMMENDED

- The point of intersection of a ramp to a road centre line is the mid-entry point from the ramp onto the road/ramp merging lane.

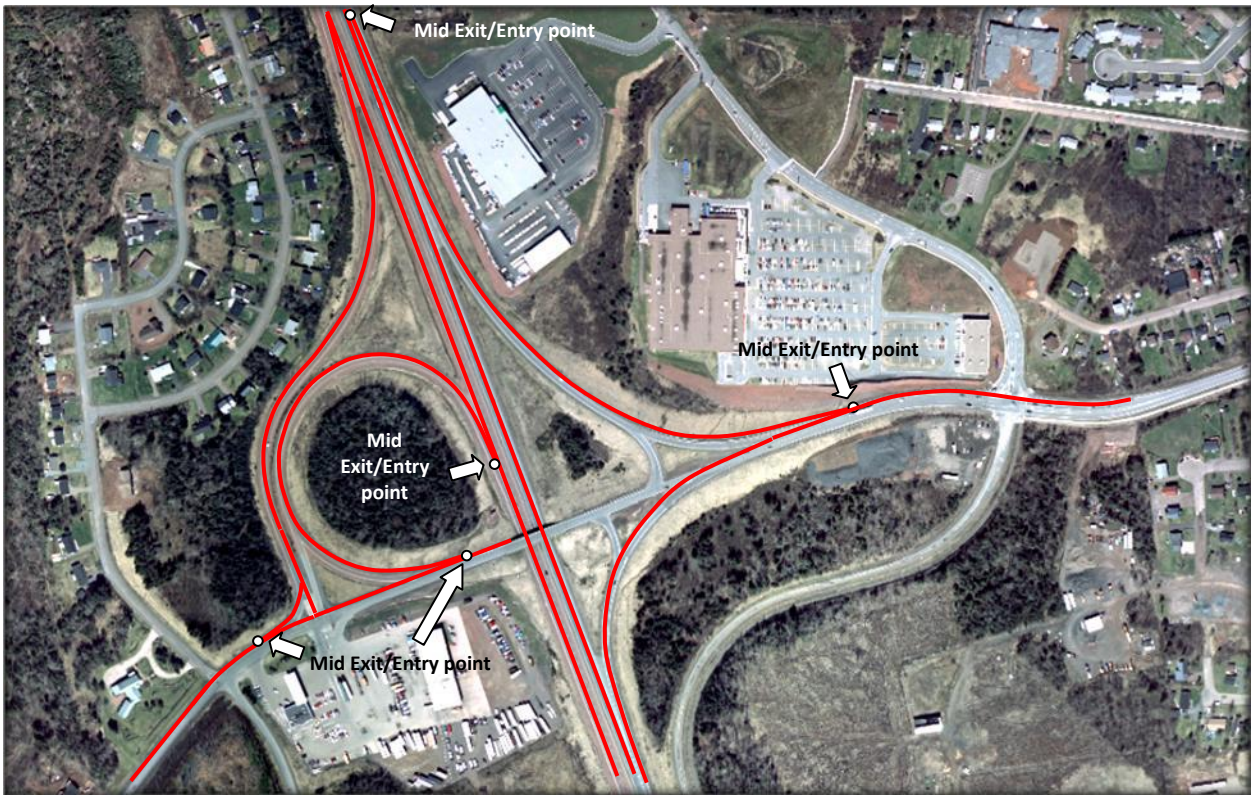


Image 1 Exit 13 Truro/Truro Heights

NOT RECOMMENDED

- Ramps should not be assigned road ranges.

If it is necessary to assign ranges to support civic addresses adjacent to the ramps, ranges should be assigned to one side of the ramp, and the other left unassigned. This approach does not encompass all possibilities, but should provide a starting point to help ensure a consistent approach to naming interchanges.

[2] GeoBase® National Road Network Guide to Best Practice for Acquisition Edition 1.0 / 2010-06

1.10 ROAD CROSSING COUNTY/MUNICIPAL LINE

Many thoroughfares cross County/Municipal lines. These roads are usually administered by TIR and jurisdiction issues are thus simplified to the district office of that department. But in some situations this can fall under municipal jurisdiction and may cause jurisdiction issues.

Crossing a county line does not automatically require a change in status or name, and in fact it is preferred if the same name is used throughout.

RECOMMENDED

- The road name should stay the same throughout.
- Street ranges should continue in the direction of street range.
- Road segment should be split at boundary.
- Effected Municipalities should jointly agree who will take sole responsibility for civic addressing issues.

1.11 ROAD FOLLOWING MUNICIPAL BOUNDARY

These situations can causes confusion since residents on one side of the street will reside in one community, and those across the street in another.

RECOMMENDED

- Avoid whenever possible.
- Realign NSCAF community boundaries so that the line runs along the back of a property such that all of the properties abutting the road are encompassed within a single community boundary
- In cases where this is unavoidable the NSCAF model can accommodate these cases.

1.12 ROAD CHANGING NAME MIDWAY

TIR roads which pass through a community may be administered by the municipality, or jointly with TIR. Within the community the road may have a separate name, and the TIR authority number may not resume until after the road leaves the community.

RECOMMENDED

- Change in status should occur at a significant intersection, a bridge, traffic lights or other prominent locations.
- Signage must clearly show the new name and number at the transition point.

Part

2

2 CIVIC POINTS

Civic addressing is a referencing system to identify a specific location, and within the context of 911/ emergency health services should be associated with human activity and be accessible by an emergency response vehicle. While these premises still leave room for interpretation, they are a useful guide for determining whether a location should be assigned a civic address. A NSCAF civic address is comprised of a civic number, street name, community, municipality and county, and is designed to work within a georeferencing system, and should be considered different than a mailing address.

2.1 ADDRESSABLE POINT

New and existing addressable points are normally permanent physical locations, landmarks and or points of interest (e.g. dwelling unit, shopping mall, office complex, Provincial/Federal Parks, tourism kiosks, etc) of human activity that is accessible by emergency vehicles. All new NSCAF points must be associated with a building use and a description of what the point represents (e.g. building centroid, hydrant, vacant lot, etc.)

RECOMMENDED

- The location should be associated with a human activity.
- The location must be accessible by emergency vehicles.

2.2 CIVIC LOCATION DATA

A civic address is assigned to a specific geographic point. For the majority of addresses in the province, it is assigned to a geographic point which is ideally located within the building footprint. Once collected to the provincial standard of collection specifications, a civic point should be accurate to within +/- 2.5 meters.

RECOMMENDED

- Collect geographic point with a GPS unit
- Calculate using location certificate.
- Calculate using measure wheel and mapping techniques.

2.3 DISTANCE INTERVAL FOR ADDRESSING

Civic numbers are calculated based on distance along the street using driveway locations (or often the front door of buildings in urban areas). The distance interval used in Nova Scotia is typically ten (10) metres in rural areas and five (5) metres in urban areas. These values can vary from municipality to municipality.

RECOMMENDED

- 10m intervals in rural areas
- 5m intervals in urban areas[3]
- 5 m interval can be used for subdivisions plans and or site plans.

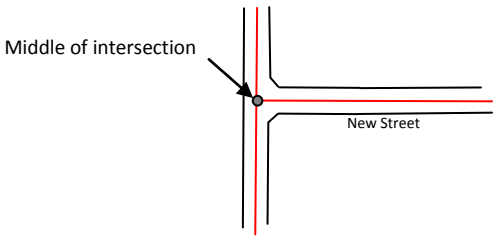
2.4 STARTING POINT FOR ADDRESSING

Starting points will vary from municipality to municipality as many have civic addressing by-laws and others may legacy guidelines.

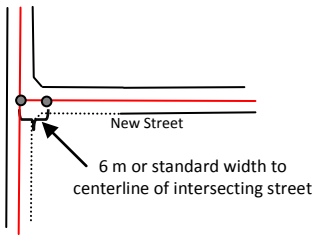
The first civic number on a street can be calculated using several methods and are listed in the following section.

RECOMMENDED

- All attempts should be made to start at 1 on the odd side and 2 on the even side.
- Commence measurement from the middle of the intersection.



- Commence measurement from the curb and adding six metres, or the standard width to the centreline of the intersecting street.

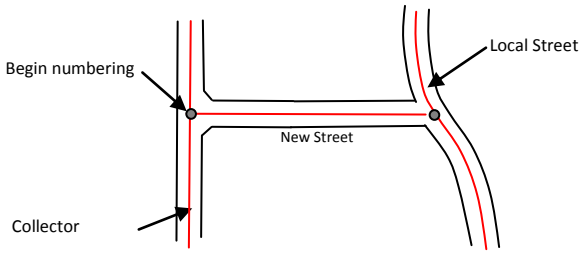


[3] This is at the discretion of the Municipality.

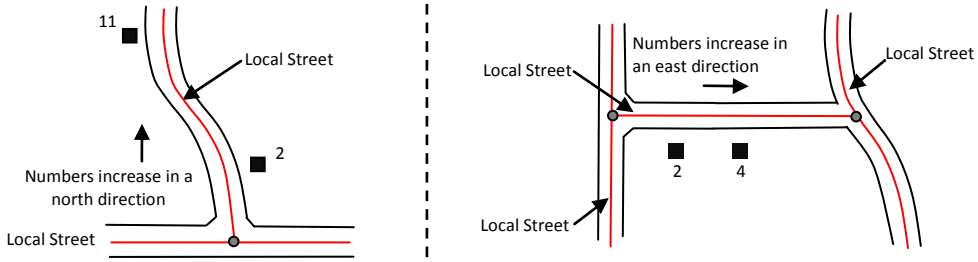
Deciding what end of the street to start numbering on is based on the priority of the intersecting streets. Road priority is as follows Highway, Trunk, Route, Local Street and Private Road.

RECOMMENDED

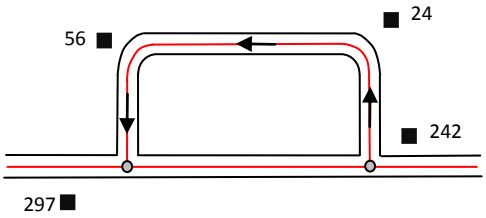
• A street that spans from a minor collector to a local street would be numbered beginning at the end connected to the minor collector.



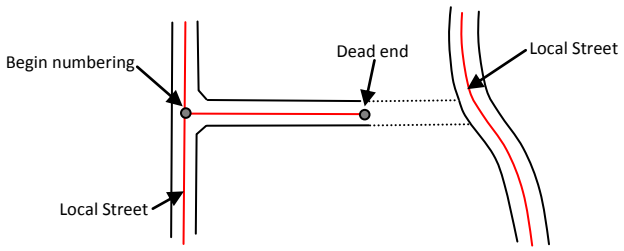
• For connecting streets that have an equal priority, numbers increase progressing in a north and or east direction.



• A crescent is numbered from the end with the lower civic numbers for the source street.



• A dead-end street are always numbered from the accessible end of the street. If there are future plans to connect the street through to another street, this may be taken into consideration.



2.5 ODD/EVEN ASSIGNMENT

It is imperative that a logical sequence is maintained when assigning civic numbers with odds on one side of the road, and evens on the other.

RECOMMENDED

Assign odd numbers on one side and even numbers on the opposite side.

• The NSCAF default is odds on the left and evens on the right, but odd/even is at the discretion of municipal bylaws.

• Municipalities are encouraged to remain consistent with the designation of odd/even assignments

• If one side of a road cannot be addressed due to a physical obstruction, it can be considered unaddressable and given a parity of "zero" and a zero-range.

NOT RECOMMENDED

• Avoid sequential numbering on the same side (e.g. 1, 2, 3, 4, 5, etc).

2.5.1 CALCULATING NEW CIVIC NUMBERS

RECOMMENDED

•If the number being assigned is the first on the street

$$New\ Civic = \left(\frac{Distance\ from\ the\ start\ of\ the\ street\ (m)}{Distance\ Interval\ (10m\ for\ rural\ areas\ or\ 5m\ for\ urban\ areas\ \bullet optional\bullet)} \times 2\right)$$

• If the civic being added is being added to an existing street or for infilling

$$\textbf{New Civic} = \left(\frac{Distance\ from\ the\ start\ of\ the\ street\ or\ the\ previous\ driveway\ distiance\ (m)}{Distance\ Interval\ (10m\ for\ rural\ areas\ or\ 5m\ for\ urban\ areas\ \textbf{optional})} \times 2\right)$$

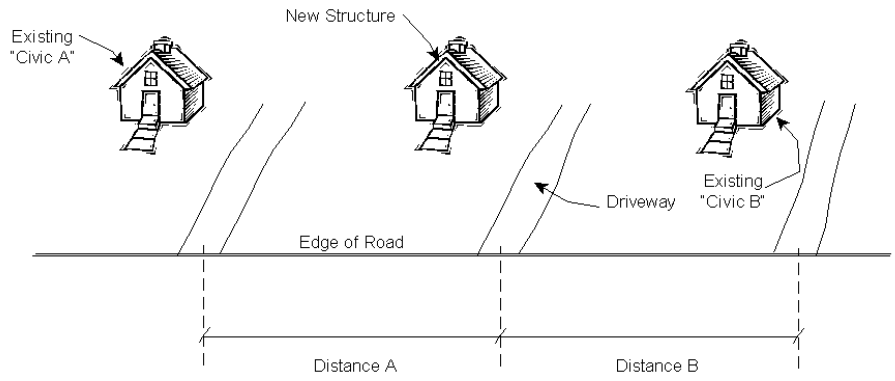
2.6 PLACING A NEW CIVIC NUMBER BETWEEN EXISTING CIVIC NUMBERS

When placing a new civic number between existing numbers, the formulas in section 2.4.1 can be used to calculate civic numbers between existing civic numbers.

RECOMMENDED

- Ensure consistent assignment of odd and even numbers.
- Calculate the proportional distance.

Following is an example of placing a civic number between two existing numbers. The distance from each existing civic number is measured and calculated in the following manner. Using the illustration below a new civic point is placed between Civic A and Civic B.



The new civic point is located 40m from 345 Jackson St (existing Civic B) and 20m from 357 Jackson St (existing Civic A). Calculate the proportional distance using the following formula.

$$Porportional\ Distance = \frac{Distance\ A}{(Distance\ A + Distance\ B)} = \frac{40m}{(40m + 20m)} = 0.667$$

Now calculate the gap in the civic numbers between the existing civic numbers is then calculated as

$$Civic\ Number\ Gap = Civic\ B - Civic\ A = 357 - 345 + 12$$

This result is multiplied by the proportional distance and added to Civic A to give the new civic number as

$$(Civic\ Number\ Gap \times Porportional\ Distancr) + Civic\ A = New\ Civic\ Number$$

$$(12 \times 0.667) + 345 = 353\ Jackson\ St.$$

The civic number may have to be adjusted by one to maintain the correct parity.

2.7 APARTMENT BUILDINGS

Apartment buildings are buildings that usually contain three or more dwelling units, which have common or separate entrances.

RECOMMENDED

- Apartment building should be issued a single civic number.
- Each apartment should be identified by an apartment or unit number.
- If there are multiple structures in an apartment complex, each separate structure should be issued a separate civic number.

2.8 CONVERTED APARTMENTS

A residential dwelling where its basement has been converted into an apartment (dwelling unit), and has a separate entrance.

RECOMMENDED

- A civic number should be assigned for each separate entrance.

2.9 CONDOMINIUMS

Condominiums are addressed based on the nature of the structure.

RECOMMENDED

- Apartment building style condominiums should be address in the same manner as apartments.
- Duplex and row housing style condominiums should be a civic number for each separate entrance.

2.10 DUPLEXES AND ROW HOUSING

Duplexes and row housing are owned separately and have separate entrances. They are usually on separate parcels of land, with only a shared wall and property line.

RECOMMENDED

- Addressed separately as if they were detached residences.
- If necessary, the distance interval can be decreased to 5m to provide additional civic numbers for addressing.

2.11 MALLS

Malls are addressed in a manner similar to apartments.

RECOMMENDED

- One civic number is assigned, and each store in the mall is identified by a unit number.
- If there are multiple buildings on the same property, each separate building should be issued a separate civic number.

2.12 STRIP MALLS

A strip mall is addressed in the same manner as other malls.

RECOMMENDED

- One civic number is assigned to each separate building, and each unit within the building is identified by a unit number.

2.13 MULTIPLE ENTRANCES

Large buildings with entrances on multiple streets present a unique case.

RECOMMENDED

- Each entrance that fronts onto a public road should be addressed separately.
- Buildings that are accessed by a single driveway do not necessarily require multiple civic numbers.
- Multiple addresses are recommended if the building has entrances that are accessed from different streets.

2.14 CORNER LOTS

Buildings that are situated on corner lots, with more than one unit with separate points of access, can have units associated with different roads.

RECOMMENDED

- Units should be addressed from the road where the driveway/access is located.
- Best practice is to add a separate civic point on the parcel to represent the corner unit that represents the unit's door or point of access.

2.15 VACANT LOTS

The NSCAF can store civic numbers on vacant lots that abut on addressed roads, but it is not a requirement. Assigning numbers to vacant lots is more common in new subdivisions, but also occurs when a structure is demolished but the municipality wants to keep a civic number associated with that property parcel.

RECOMMENDED

- Calculate the civic number using its access point on the address road.
- Code in NSCAF as vacant lot.

NOT RECOMMENDED

- Civic numbers should not be assigned to vacant back lots or land locked lots.

2.16 MULTIPLE CIVIC NUMBERS ON A SINGLE PROPERTY

It is permissible to have multiple civic numbers assigned to separate buildings on a single property if each building is occupied independently.

RECOMMENDED

- Assign one number to the main building.
- Assign a number to other structures if it has a separate driveway.
- Assign a number to other structures if it has a separate telephone.

NOT RECOMMENDED

- Number ancillary buildings such as sheds, garages, barns, etc.

2.16.1 ADDRESSING CONTROLLED ACCESS SITES

Many manufacturing sites have multiple buildings, but access to the site is controlled by a gate or main office.

RECOMMENDED

- Address each building individually if it can be done in a straightforward manner.
- Assign one civic address to the main access point (e.g. main office) and identify other addressable buildings with unit numbers.
- Building names should be included as a supplemental means of identifying individual buildings.

2.16.2 ADDRESSING PUBLIC COMPLEXES

Civic addressing options for large public complexes depend on the size of the facility.

RECOMMENDED

- Address each building individually if it can be done in a straightforward manner.
- Name each internal road within the complex and address each building individually

2.16.3 ADDRESSING SMALL COMPLEXES

Civic addressing options for small complexes depend on the size and layout of the facility.

RECOMMENDED

- Address each building individually if it can be done in a straightforward manner.
- Name each internal road within the complex and address each building individually.

- Assign a civic address to each entrance.
- Assign unit numbers and building names to the other addressable buildings.[4]

2.17 MOBILE HOME PARKS

The preferred method for assigning civic numbers to mobile home parks is to assign street names and number each lot as if it were a typical residential neighbourhood.

RECOMMENDED

- The frontage interval can be decreased to five (5) metres to accommodate the higher density of buildings, otherwise is should be treated normally.

NOT RECOMMENDED

- Assigning one civic number to the mobile home park and assigning lot numbers to serve as unit numbers to each lot.

2.18 ADDRESSING ON ISLANDS OR LAKES

To help accommodate civic addressing on islands and lakes with no road access, the following may be considered for addressing buildings.

RECOMMENDED

- On larger islands where local roads exist, they can be named and the civic addresses assigned in the normal fashion.
- Assign the civic address based on the wharf location typically used to access the island.
- The shoreline of the island or lake may be used as the reference for addressing.
- Numbering may begin at the most southerly point of the island or lake.
- Assigns odd numbers on one side and even numbers on the opposite side.
- Avoid sequential numbering on either side of the island or lake (e.g. 1, 2, 3, 4, 5, etc.).

2.19 PUBLIC TELEPHONES

It is recommended to address outdoor public telephones like any other civic structure since they can be used in emergencies to call 911.

RECOMMENDED

- Public telephones in parking lots or public spaces should have a distinct civic-unit number when possible.

[4] Use this approach only use if no other option is available.

• Telephones attached to the outside of a building should be assigned the same civic number as the building.

2.20 HIKING TRAILS

Since many hiking trails will not allow for vehicular access, the NSCAF recommends adding trail heads as points for civic numbers when they can be accessed in close proximity or crossing an addressed road. Trails that do allow for vehicular access for the full length of the trail can be assigned a name and may use distance markers as civic numbers.

RECOMMENDED

• Address the location of the trail entrance and exit as a trail head where the trail crosses an addressed road

• Address the location of the trail entrance and exit as any other civic number if it is in close proximity to, but does not cross over, an addressed road.

2.21 CAMPING PARKS

Recreational camping parks should be assigned a single civic address.

RECOMMENDED

• Civic number should be associated with the main administrative building.

• Large parks, including National Parks, should have civic numbers assigned to all major administrative buildings and at the entrance to each campground.

• Campsites within the park should be identified by site number.

2.22 RECREATIONAL FACILITIES/LANDMARKS

Ball fields, soccer pitches, beaches, day parks, and other recreational areas should be considered for inclusion in the civic addressing system. They are locations of regular activity and are potential sites for accidents.

RECOMMENDED

• Addressed from the parking lot access point.

2.23 OTHER PUBLIC PLACES/POINT OF INTERESTS

Cemeteries, memorials, look-offs, and other locations where the public gather should also be considered for inclusion, as with recreational facilities.

RECOMMENDED

• Addressed from the parking lot or driveway access point.

2.24 RAILWAY CROSSINGS

Railway crossings are potential sites of accidents and thus it would be helpful to be able to accurately identify these locations. They are the crossing point used for calculating the civic number.

RECOMMENDED

- Addressed from the road they cross with by using the crossing point to calculate the civic number.
- Use either an odd or even number to addressed to the crossing, but only one number should be used.

2.25 BRIDGES

Bridges are useful landmarks for identifying locations and therefore could be addressed from the road serviced by the bridge.

RECOMMENDED

- Calculated civic number from the middle of the bridge.
- Bridges can be addressed to either the even or odd numbered side of the road, but only one number should be used.
- The number should be posted at the abutments on both ends of the bridge.

2.26 FEDERAL AND PROVINCIAL BUILDINGS AND COMPOUNDS

In some instances restricted properties such as Department of National Defense bases are responsible for their own civic addressing implementation, which alleviates municipal responsibility to update and maintain the NSCAF. In cases where municipalities work jointly with federal agencies, the municipality will maintain and update civic addressing in the normal manner.

RECOMMENDED

- Assign the new civic number to these buildings in normal manner.
- Collect building name as posted on the front or the building.

2.27 COMMUNICATION TOWERS, VALVE STATIONS, AND OTHER UNOCCUPIED STRUCTURES

It is becoming increasing common to see civic numbers posted on communication towers, gas pipeline valve and compressor stations and other similar structures. They are normally unoccupied and have no phone service. However, they are potential locations of accidents during servicing, and a civic address provides a convenient reference to the location if the work crew calls from a cell phone.

RECOMMENDED

- Address from access point.

2.28 CIVIC NUMBERING ACROSS COUNTY AND MUNICIPAL BOUNDARIES

Long rural thoroughfares that link communities are numbered such that the numbers reset at county lines. This avoids having very high civic numbers for long roads, but can be difficult to manage as it creates duplicate civic numbers on the same road. However, there are existing cases where the numbers continue across county lines, and these are handled on a case-by-case basis in consultation with EMO and the affected municipalities.

RECOMMENDED

- Local roads that cross county lines should only reset (start civic numbering) if there is an issue with high civic numbers.

2.29 ASSIGNING CIVICS TO A ROAD IN AN ADJACENT COMMUNITY

When a road runs close to a community boundary, there may be cases where a civic is assigned to the road that actually exists across the community boundary. These are acceptable cases, but should be considered carefully since the road accessing the civic will be in one community, but the civic will be shown in an adjacent community and may result in confusion.

2.30 BUILDING USE

The NSCAF maintains the building use code for each unit of a civic point. The building use codes distinguish various human locations, activities and facilities such as hospitals, clinics, residential care facilities, assembly halls, churches, schools, colleges and other facilities that may be needed in the event of an emergency. In cases where a single civic address is associated with multiple uses, the primary function of that address should serve as the building use. For example, farm lands with a residence on the parcel should give precedence to the farmhouse and the Residential building use code.

The building codes are originally based on the Nova Scotia Standard Land Use Classification System. Over the years this list has grown to accommodate building uses which were not in the original list. These building use codes can be used by emergency responders to identify what types of issues to expect at a location.

The building use code uses up to three pairs of letters to form a six-letter land use activity code. The hierarchical pairs of letters describe the primary, secondary, tertiary, and quaternary land use. The NSCAF can accommodate all four levels, but normally only includes the primary, secondary, and tertiary components. The primary codes and activities are described in Table1.

Table 1 - Building Use Primary Code

Primary Classification Code	Activity Description
AG	Agriculture
FI	Fishery
OF	Forestry
IT	In Transition
MA	Manufacturing
MI	Mining
PL	Protected and Limited Use
RC	Recreation, Culture, and Entertainment
RS	Residential
SA	Sales
SE	Service
TR	Transportation, Transmission, and Storage

The secondary and tertiary classification codes provide further detail on the type of primary activity. For example within the Residential primary classification are codes for single unit dwellings (SI) and duplexes (TW). The primary and secondary codes are combined into a single code (e.g. RSSI and RSTW). A full description of NSCAF building use codes is available in the NSCAF schema appendix: http://nscaf1.nsgc.gov.ns.ca/civic_help/V5/html/NSCAFSchemaAppendix.htm

2.31 BUILDING NAME

An additional field is been included in the NSCAF to accommodate names of buildings. Many buildings are known more commonly by their name than by their civic number.

RECOMMENDED

- The building name should be included as it is posted on the front of the building.

2.32 POSTAL CODE

The NSCAF has always been able to accommodate postal codes, but has always been left unpopulated until recently.

RECOMMENDED

- If postal code is known, it may be assigned to new civics points.

Part

3

3 COMMUNITIES

3.1 COMMUNITY (GSA) BOUNDARIES

GSAs were developed for administration of the NSCAF. They are medium scale geographic areas that encompass built-up areas or define an administrative unit. GSAs are generally analogous to traditional communities, but there are distinct differences. GSAs encompass all areas of the province. Even remote, uninhabited areas are assigned to GSAs to provide a consistent means of identifying these areas. In Towns, the boundaries of GSAs generally follow community boundaries, although no legal connotation is implied regarding the boundary definition. However, some municipal councils have adopted these boundaries to define their communities, which provides a consistent application of the terminology. To reduce confusion the term "GSA" is discontinued, and the use of "Community" has been adopted.

The boundary lines for communities have attribution and the source of each line segment can be determined. However, this information is not displayed or distributed with NSCAF data. Polygon boundaries attempt to represent the limits of where people would say they live, along with additional unpopulated areas exclusively accessed from that community. GSA has become a legacy concept, relating solely to emergency response areas.

In many parts of the province, the polygons precisely represent (dynamic) community boundaries.

The road geometry represents Nova Scotia streets, roads, and highways. Although they are not physically part of the NSCAF, tracks, trails, and unaddressed dry weather roads are used to clarify access issues and help define communities. Typically, the road network in a developed area is encompassed within a single community. This is preferred, since it avoids having isolated roads extending into a neighbouring area with no external road access from that community.

3.2 ADJUSTING COMMUNITIES (GSA) BOUNDARIES

An important principle of the community boundaries is that where possible, they use existing features to define the location of the boundaries. For example, community boundaries often follow property lines. To document this relationship, the community line file contains a field that identifies the type of feature that the line was derived from. Unexpectedly, property lines are not fixed. Therefore, they are constantly under review and corrections or improvements in the data result in shifts. NSCAF community boundaries must then be updated in order to coincide with these shifts. In fact, the majority of the work is finding these changes and updating the community boundary file accordingly.

Issues can also be observed when performing other NSGC activities, for example, when importing new roads/civic points that may conflict with the existing boundaries. Municipalities may also request boundary adjustments as a result of development along the margin of a community boundary or to correct errors they have noted during their work.

Minor adjustments are usually done without consultation, but for any meaningful change, the NSGC will point out the issue to the municipality with a proposed solution for approval.

RECOMMENDED

- Follow county, municipal and federal boundaries
- Follow property boundaries
- Follow hydrological features
- Keep the road network within a single community.
- Use information provided by the public (e.g. where people say they live).
- Use community name signage

NOT RECOMMENDED

- Boundary following road centerline. If it needs be along a road, use the right of way on either side.

3.3 COMMUNITY NAMES IN NSCAF

NSCAF staff use an in-house tool called the Boundary Editor to make edits to community boundaries. When communities are edited, geometry or attributes, names need to be reassigned to the polygons. The names are supplied to the tool from the Geographic Names Database and the NSCAF GSA codes are created by adding the letter 'G' in front of a gazetteer key. It is possible to assign custom names to the NSCAF, but the GSA code will begin with 'GZ' instead, meaning it is a temporary code and not an official name in the gazetteer.

3.4 CHANGING OR ADDING A NSCAF COMMUNITY NAME

We recommend petitioning property owners to ensure community support and seeking approval from the Municipal Council.

All community names should be official and classified as a place name in the Canadian Geographical Names Database. Guidelines, the naming process and other information are available at nsplacenames.ca. This process includes a petition.

Once the final decision is made, the property owners need to be informed of the change and the effective date. A letter needs to be sent to the NSCAF Maintenance Group stating all property owners were informed of the change and the effective date so that the NSCAF can be updated. The letter can be sent to NSCAFMaintenance@novascotia.ca or 160 Willow St, Amherst, NS B4H 3W5.

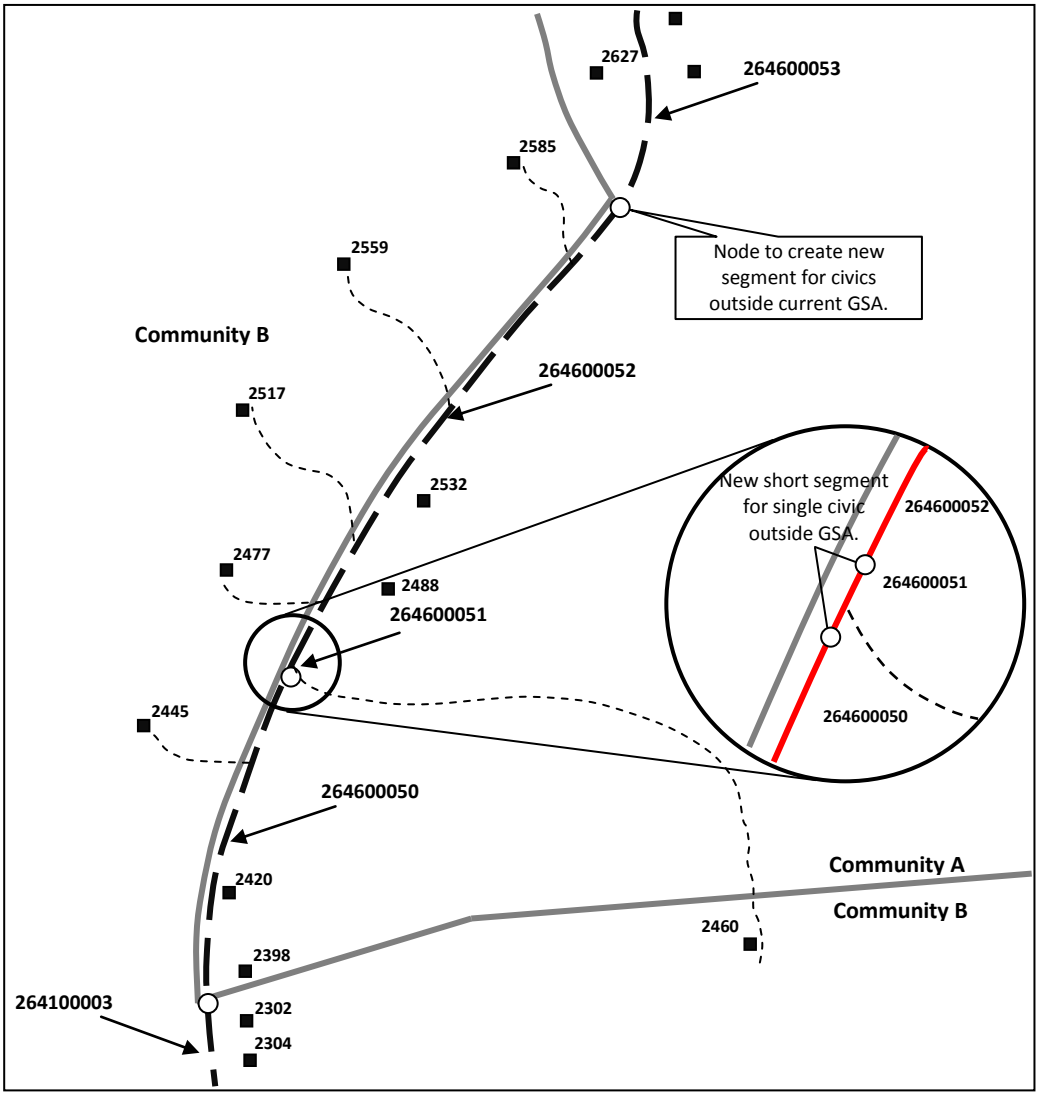
3.5 SEGMENTATION FOR CIVICS OUTSIDE CURRENT COMMUNITY

The NSCAF model allows civics to be addressed based on the community in which they are physically located even though they may be accessed by a road in another community. This is accomplished by having distinct left and right address range records for each segment.

Segmentation requirements are illustrated in Figure 3 on the following page. The segment entering from the bottom (SegID 264100003) is in Community B. At the community boundary, a new segment is created as it was in the previous model. But since there are no other roads joining the segment in Community A, the old model would have maintained this as one segment (unless there was a change in road ownership). Sections of roads that contain civics located outside the community in which the road is located require breaks in the segment and new SegIDs.

Even a single civic located outside the community will require a break in the road segment. This is illustrated for civic #2460 that has a long driveway and crosses into the next community (ideally, a boundary adjustment would be made to accommodate civic #2460 in Community A, but sometimes circumstances prevent this from occurring). This requires breaks in the road segment to create SegID 264600051 (normally such a break to accommodate a single civic would be the minimum addressable length of 5 m). This also requires new SegIDs for the north and south sections of the original segment. The east side of the shortest new segment now links to Community B, along with the west side of all three new segments, by way of the GSA_Key in the Addr_Tab.

Figure 3



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