

# How to administer your Bell Total Connect E9-1-1 service

User guide

### Thank you for choosing Bell Total Connect.

Security and reliability are among the many advantages you'll enjoy with this powerful Unified Communications solution delivered over Canada's most advanced network.

Dependability is especially important when it comes to making calls to emergency services such as 9-1-1. Bell Total Connect ensures that your emergency calls will get through to emergency dispatchers. What's more, the service includes an enhanced feature that automatically relays vital information to 9-1-1 dispatchers, such as the caller's location.

The instructions in this guide will help you set up and manage this Enhanced 9-1-1 functionality easily and quickly as your company's Network Administrator for Bell Total Connect.

We appreciate your confidence in Bell to meet your communication needs and look forward to working with you as a trusted partner as your needs evolve.

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# 1.0 Bell Enhanced 9-1-1 service

Bell Total Connect Enhanced 9-1-1 (E9-1-1) increases the safety and security of personnel throughout your organization. It routes all emergency calls to the nearest available Public Safety Answering Point (PSAP) for the most rapid response possible, and automatically transmits location details to PSAP agents – giving emergency responders the most accurate information to act on.

Part of your role as Bell Total Connect Network Administrator is to make sure your company's E9-1-1 is provisioned correctly and populated with accurate location information. This guide explains the steps involved, and also provides a more detailed description of E9-1-1 functionality.

# 1.1. Background: How E9-1-1 works

Within your organization, all Bell Total Connect communications are carried over private local area network (LAN) IP subnets. E9-1-1 operates on the assumption that each of those subnets corresponds to a physical area – whether a building, a floor within a building, or even a specific wing on a particular floor.

That means the location of any call can be pinpointed based on the subnet where it originates. It also means every IP subnet should relate to just one civic address, otherwise PSAP agents will receive conflicting or inaccurate information.

To set up E9-1-1 correctly, you will have to identify and provision all calling zones covered by your Bell Total Connect service. For each zone, you'll need to indicate any private IP subnets deployed. You'll also be asked to identify a specific EdgeMarc (router) when provisioning a subnet. This helps avoid potential IP address conflicts that might arise from the Network Address Translation (NAT) performed by the EdgeMarc session border controller.

All of this provisioning and identification can be done through the Bell Total Connect web portal's E9-1-1 section. (See login instructions in section 2.1.) You'll find all the LAN information you need in your Bell Total Connect welcome package.

After you have provisioned E9-1-1, you'll define each zone with a civic address and a zone identifier (zone ID). (Civic addresses are validated in real time against the Bell Street Address Guide (SAG))<sup>1</sup>. You'll only be able to use civic addresses within the defined Bell Total Connect network footprint.) You'll also be able to identify finer-grained location information such as a floor, wing or area within an address.



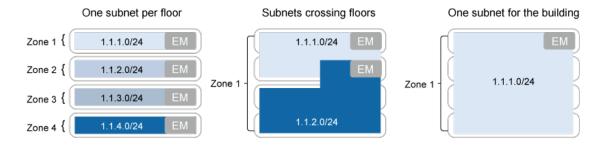


Figure 1 Typical E9-1-1 provisioning

<sup>&</sup>lt;sup>1</sup> The Street Address Guide is maintained by the Bell 9-1-1 team based on information received from municipalities, and other 9-1-1 service provider. It is used to assign an emergency service number to every telephone number. Based on those emergency service numbers, 9-1-1 calls are routed to the most appropriate PSAP.

# 2.0 Getting started

You can provision zones, subnets and contact information through the Bell Total Connect web portal. Only Enterprise Administrators have access to the E9-1-1- section.

# 2.1. Logging into the web portal

- 1. Go to <a href="https://totalconnect.bell.ca">https://totalconnect.bell.ca</a>
- 2. Enter your Enterprise Administrator user ID and password
- 3. Click Log in to access the main menu
- Click on E9-1-1

# 2.2. Adding a Network Administrator

Before adding any zones to the portal, you'll need to add at least one Network Administrator and provide his or her contact information. Network Administrators may be contacted by Bell Canada or certain PSAPs, so it's important this information be up to date and accurate. Please see section 4.0 for more information on the type of contact Network Administrators can expect.

To ensure reachability and avoid communication delays, you can identify more than one Network Administrator, but one person must always be tagged as the primary contact.

### To add a Network Administrator:

- 1. Log into the Bell Total Connect web portal and go to the E9-1-1 page
- 2. Click on Network Administrators
- 3. Click Add
- 4. Fill in all required contact information (see Figure 2)
- 5. Click OK
- 6. An email will be sent to the primary email address provided
- 7. Once the email is received by the Network Administrator, he or she will need to click on the hyperlink embedded in the email, or copy and paste the URL into a browser
- 8. The email address has now been now confirmed, and the Network Administrator has been added



Figure 2 Adding a Network Administrator

# 3.0 Provisioning

# 3.1. Adding individual zones

The following explains how to add zones to your E9-1-1 service. Please note that new zones – and address changes to existing zones – can take up to 72 hours before coming into effect. Changes to subnet information and EdgeMarcs can take up to 30 minutes.

You don't have to enter subnet information at the same time you add or update zones.

To add an individual zone:

- 1. Log into the Bell Total Connect web portal and go to the E9-1-1 page
- Click Zones to access the Zones page
- 3. Click Add
- 4. Choose the appropriate address information from the drop-down menus (see Figure 3) starting with Province and continuing with Municipality, Street suffix, Street name and Street direction (optional). When inputting addresses, keep the following in mind:

The options in each drop-down menu are repopulated based on your selections. For example, picking 'Ontario' in the **Province** field will repopulate the **Municipality** menu with cities in Ontario. It may take a few seconds to repopulate each field after your selections

Some municipalities have not been fully mapped with street names – in these cases, you will be presented with a text field rather than a drop-down menu to manually enter the applicable information

If the address you'd like to input can't be found in the Bell Street Address Guide (SAG), please submit an E9-1-1 Zone support request by accessing the link provided on the **Add** or **Modify Zones** pages in the portal.

- 5. Manually complete the remaining address field (please note that **Civic number**, **Postal code**, and **Language** which indicates the main spoken language in the area are mandatory fields)
- 6. Enter any additional details such as floor, wing, etc., in the Additional info field
- 7. You can now enter your subnet information, if you wish. You can also add subnet information later by using the **Edit zones** function (see Section 3.3)
  - (If you do not wish to add a subnet, proceed to step 9. To add a subnet, enter the subnet information using the xxx.xxx.xxx/yy syntax in the **Private IP subnet** field.)
- Pick the EdgeMarc devices serving the subnet from the EdgeMarc drop-down menu. These are listed by location and unique identifier. You can add or remove subnets from your zone using the + or – buttons
  - (For how to find your EdgeMarc information, see section 3.1.1.)
- 9. Click **OK**: your new zone has been saved



Figure 3 Manually adding a zone

# 3.2. Adding zones in bulk

You can also import zones in bulk – including addresses, subnets and EdgeMarcs –by uploading a commaseparated values (CSV) file. Please note that this process will delete, create new, or update existing zones with the information contained in the file. As a safeguard, the system will require you to fully export any pre-existing zones (i.e., to back them up) before you can continue with a bulk upload. If you have previously provisioned zones, a bulk import can severely affect your users. Bell strongly advises you to perform any bulk import outside of normal operating hours.

If you have no zones provisioned, a bulk import can be performed any time.

CSV files must not exceed 1 MB in size, and each data element must be separated by semi-colons (see the examples below in section 3.2.1). If the file is too large or the format incorrect, the file will be rejected and the import will abort, leaving existing zones unmodified

### Preparing your CSV file

To prepare a CSV file for upload, you'll need the appropriate EdgeMarc information. To download it:

- 1. Log into the Bell Total Connect web portal and access the **E9-1-1** page
- 2. Click **Zones** to access the Zones page
- 3. Click on Export EdgeMarcs
- 4. You will now have the EdgeMarc information you need to prepare your CSV file

Once you have the appropriate EdgeMarc information, you'll be able to create your CSV file.

Start by preparing the information for each zone. The CSV information should appear on two separate lines – one for the header and the other for the data. The header must always be present.

In the data line, optional values may be left blank. Below is an example of proper formatting with both a header and a data line:

**HEADER** (this should be entered as a single unit, with no line-breaks. The data below is a sample only): ZoneID\*; Province;Municipality name;Street suffix;Street name;Street direction; Civic number;Civic number suffix;Additional information;Language; Postal code;Floor;Subnet;Edgemarc

**DATA LINE** (this should be entered as a single unit, with no line-breaks):

12543; QC;QUEBEC;RUE;MAIN;E;203;;WEST WING;F;G1H2K1;2;192.168.11.0/24;203, Main East, Quebec, QC, G1H2K1 - Server room

\*The ZoneID will be populated for exported zones only. **Please do not modify or manually add a ZoneID if the zone is new** - doing so will cause the system to delete and recreate a new zone, delaying E9-1-1 service to that zone for up to 72 hours.

You can also provision more than one subnet per zone/line by adding subnet-EdgeMarc pairs to the end of a line

Here is an example of correctly formatted CSV information that includes Subnet EdgeMarc pairs at the end of a line):

**HEADER** (this should be entered as a single unit, with no line-breaks. The data below is a sample only): ZoneID\*; Province;Municipality name;Street suffix;Street name;Street direction;Civic number;Civic number suffix;Additional information;Language;Postal code;Floor;Subnet;EdgeMarc;Subnet;EdgeMarc

**DATA LINE** (this should be entered as a single unit, with no line-breaks):

12543; QC;QUEBEC;RUE;MAIN;E;203;A;WEST WING;F;G1H2K1;2;192.168.11.0/24;203, Main East, Quebec, QC, G1H2K1 - Server room;192.168.12.0/24;203, Main East, Quebec, QC, G1H2K1 - Lab room

A full list of the specifications for each of the elements included in the above data lines is available by viewing the Appendix at the end of this document.

To make sure you're using valid address values, verify addresses through the Bell Total Connect web portal. If an address shows up on the Zones page in the portal, you can be certain it exists in the Bell SAG and will be accepted. To check addresses this way, please:

- 1. Log into the Bell Total Connect web portal and go to the **E9-1-1** page
- 2. Click Zones to access the Zones page
- Click Add
- 4. Enter the relevant Province and Municipality values
- 5. See that the address or addresses you plan to include in the CSV file appears
- 6. Click Cancel

### Importing your CSV file

Once your CSV file is ready, you'll need to import it. This is also done through the Bell Total Connect web portal.

To import your CSV file:

- 1. Log into the Bell Total Connect web portal and go to the E9-1-1 page
- 2. Click **Zones** to access the Zones page
- 3. Click on Import zones
- The system will require a full export of any existing zones as a back up click Export zones and save the resulting file
- 5. Once the export is complete, click **Browse** to locate the CSV file you'd like to import. (the **Browse** button may have a different label, depending on which browser you're using (see Figure 4))
- 6. You'll now need to validate your file:
  - Click on Validate zones a progress indicator will keep you updated on the validation process
  - If your file contains errors, invalid addresses, invalid EdgeMarcs, exceeds 1 MB or is not
    correctly formatted, the import process will abort. Existing zones will be left unmodified, and an
    error message will appear outlining the specific issue. If this happens, you'll need to edit your
    CSV file to remove the errors and attempt your upload again

- 7. Once validation is complete, you'll reach a confirmation page that tells you how many zones will be imported and how many will be deleted by the bulk upload, if any (see figure 5)
  - If the numbers are what you expect, click Import zones
  - A progress indicator will appear, showing the import status
  - If the process is successful, you'll receive a success message. If there are any errors in the
    upload, you'll receive an error message in which case you can use your backup (i.e., the
    previously exported CSV file) to restore the system to its original state

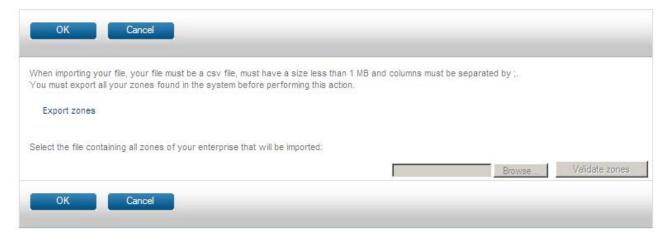


Figure 4 Locating your CSV file



Figure 5 Importing a CSV file

# 3.3. Modifying a zone

Zones can be modified at any time. To modify an existing zone:

- 1. Log into the Bell Total Connect web portal and go to the E9-1-1 page
- 2. Click Zones to access the Zones page
- 3. Input either the zone ID number or the zone address using the same format as your CSV file into the search field (see figure 6)
- 4. Click Search
- 5. Select the zone you'd like to edit, and click Edit
- Make any necessary changes (see figure 7), and click **OK.** If the address you would like to modify is not found in SAG, please submit an E9-1-1 Zone support request by accessing the link provided on the **Add** and **Modify Zones** page of the portal.
- 7. Your zone has now been edited and saved

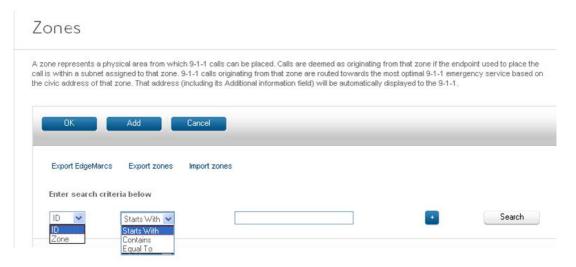


Figure 6 Searching for a zone

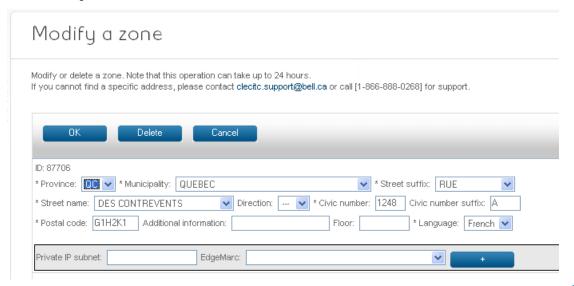


Figure 7 Modifying a zone

## 3.4. Deleting a zone

To delete a zone:

- 1. Log into the Bell Total Connect web portal and go to the **E9-1-1** page
- 2. Click **Zones** to access the Zones page
- Input either the zone ID number or the full zone address using the same format as your CSV file –
  into the search field
- Click Search
- 5. Choose the zone you'd like to edit and click **Delete**
- 6. Your zone has now been deleted

# 3.5. Notes and exceptions

Please keep the following in mind when provisioning zones and subnets:

- If you use VPN equipment for teleworkers to connect to your corporate network, there may be explicit
  private IP subnets on the trusted side of the equipment. Do not provision these subnets on the web
  portal as they will not accurately represent the locations of your users
- The location of 9-1-1 calls coming from Analog Terminal Adapters (ATAs) or EdgeMarc FXS ports will be based on the IP address of their IP interface, so please ensure they match the expected provisioned subnets
- Please ensure no NAT'ing firewall (SIP ALG) is present in the call path, either on the Bell-facing or phone-facing side, as this will interfere with location determination
- Only configured EdgeMarcs can be selected when provisioning subnets. A Bell technician will have to configure all EdgeMarcs before they and their associated subnets become available
- Normally, subnets do not overlap zones. In certain cases, however, you may wish to provision the
  bulk of one subnet to one zone and a specific IP address to another: for example, for a device located
  on a different floor than other devices in its subnet. In these cases, you'll be able to use the
  xxx.xxx.xxx.xxx/32 form to provision a subnet, as the system will always recognizes the smallest,
  most specific subnet
- If there are no street suffix listed, select the "---" option as street suffix and then select your street. The street suffix may have been included in the street name.

# 4.0 Notifications

Once your zones have been provisioned, you may be contacted by either Bell or a PSAP to update certain information or be informed of changes. All notifications will be sent via email or fax.

The following are descriptions of the different types of notifications you might receive.

# 4.1. Municipality-level SAG changes

If the name of a municipality changes – due to a merger or split, for example – the Bell E9-1-1 operations team will notify you well in advance of the change date. This notification will include the original municipality or street name, the new name, and the change date. You'll also be sent a contact email address and phone number should you have any questions.

Once you receive the notification, please update the affected addresses in the Zones section of the web portal on the requested date (see section 3.3 for instructions on editing a zone). A reminder notification will be sent the day before the change date.

# 4.2. Street-level SAG changes

If a street name changes in the SAG, the Bell 9-1-1 Operations team will send a note indicating the change date, the old street name and the new name. The email will also include a contact email address and phone number should you have any questions. Once you receive the notification, please update the affected address within 10 days.

# 4.3. Civic number-level SAG changes

Occasionally, civic addresses can change in the SAG without prior warning. If this happens, you'll be informed as soon as possible by email and asked to update the address information in the affected zones. The email – marked 'high importance' – will contain all the affected zones and their old addresses along with the change information and an email address and phone number to contact with questions. You'll receive this email every day until the addresses are corrected in the web portal.

Should there be a delay in updating addresses, 9-1-1 calls will still be placed through the E9-1-1 system but PSAP routing will be less precise and the old civic address will be displayed to PSAP operators.

# 4.4. Discrepancy reports

Discrepancy reports are generated when a 9-1-1 caller verbally reports a location that is different from the address shown to the PSAP agent. In Quebec and Ontario, this report is sent to the fax number of your primary Network Administrator so he or she can correct any errors in zone provisioning. In other provinces, Bell's 9-1-1 operations will contact your primary Network Administrator by email. Please note this error may have a number of causes – from a typo during provisioning to the caller accidentally reporting the wrong address, so some investigation may be required.

### 4.5. Zones without subnets

Zones without subnets cannot be used to route E9-1-1 calls. Should the system find a zone without subnets in your provisioning, you'll be notified automatically by an email marked 'high importance'. You'll receive the email every day until the zone is provisioned with subnets.

# 5.0 Call flows

### 5.1.9-1-1 calls

A basic call flow occurs when a caller dials 9-1-1 from a phone and the dial plan recognizes the dialstring as external. If the call originates from an IP subnet that was correctly provisioned in the web portal and linked to a specific zone, it will automatically be routed to the optimal – often closest – PSAP point based on the caller's address. This address will automatically be displayed to the PSAP agent.

Shared Call Appearance (SCA) does not affect the availability of E9-1-1, and the location of the originating device is the one used for E9-1-1 routing and display. However, callbacks (see section 5.3) will ring all phones registered with the SCA number. Custom originating numbers such as group caller IDs (CLIDs) are not used for 9-1-1 calls and will not interfere with call handling.

### 5.2. Basic 9-1-1

If the system encounters a subnet mismatch or an internal routing failure, the call will be processed using basic 9-1-1 functionality. A PSAP operator will verbally confirm the caller's originating number and location, then route the call to the appropriate PSAP. No location will be displayed to the PSAP agent.

Calls placed using the Bell Total Connect toolbar (for example, using the remote office feature or the IP Voice Anywhere portal) or the Bell Total Connect desktop app will automatically use the basic 9-1-1 call flow, as they

don't originate directly from an IP phone. Calls transiting business lines – such as hunt groups or autoattendants – will also be treated as basic 9-1-1 calls.

### 5.3. Callbacks

After an E9-1-1 call has concluded, the PSAP agent may dial back the original caller. E9-1-1 allows callbacks to the most recent 9-1-1 callers from any given zones, within a 20 minute timeframe.

When a caller dials 9-1-1, an internal Bell number is used as the CLID to route the call through the 9-1-1 network. PSAP agents may reference these numbers during the 9-1-1 call, but callers will be able to use their 10-digit Bell Total Connect number as their callback number. Please note that callers will not be required to proactively state their 10-digit Bell Total Connect number during the call.

# 6.0 Call control features

Bell Total Connect call control features may change during an E9-1-1 call. For example, some phones, such as Cisco phones, will not allow callers to hang up. Instead, they'll switch automatically to speakerphone. This is intended to prevent accidental or unintended disconnections. In these cases, only the PSAP agent will be able to disconnect the call. Other devices, such as Cisco Analog Terminal Adaptors, will keep the call connected during an attempted hang-up, and will resume the call once the phone is picked up. These devices will also ignore incoming calls during a 9-1-1 call and temporarily disable hold and transfer features.

# 7.0 Help desk

If you have any questions or concerns about your E9-1-1 service, please contact your Bell Total Connect help desk. Your help desk contact information can be found in your Bell Total Connect welcome package.

# 8.0 Other Bell offerings that might interest you

Thank you again for choosing Bell for your communications needs. Now that you're set up with Bell Total Connect V, you may want to learn more about some of our other voice services, including:

- <u>Bell Conferencing</u> Explore a range of conferencing solutions to connect your teams, partners and customers
- <u>Video Platform service</u> Take advantage of a complete online video solution for the management, hosting, publication and delivery of high-quality video content on the Web

If you'd like more information about any of our offerings, please contact your Bell representative or <u>ask for a representative to contact you</u>.

# Stay connected, stay informed.

<u>Sign up</u> for our free Bell Business Insights e-newsletter for updates on industry trends, technology developments and communications issues relevant to your business.

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# **Appendix**

Below are the specifications for each of the elements in the data line:

Data element	Mandatory No	Maximum Length	Format			
Zone ID			Alphanumeric			
Province	Yes	2	ON, QC			
Municipality name	Yes	28	Alphabetic			
Street suffix	Yes	20	For QC: ALLEE AVENUE BOULEVARD CARRE  For ON:  ABBEY ACCESS ACRES ALLEY ARM AUTOROUTE AVENUE BANK BASELINE BAY BEACH BEND BLUFF BOTTOM BOULEVARD BRANCH BRIDGE BUSH BY-PASS BYROAD BYWAY CAMP CAMPUS CAPE CARRE CAUSEWAY CENTRE CHART CHASE CHEMIN CIRCLE CIRCUIT CLIFFS CLOSE CLUB COMMON CONCESSION COPSE CORNER CORNERS COTE COUNTRY ROAD COURSE COURT COURTS	CHEMIN COTE COUR CROISSANT ENTREE IMPASSE  COVE CREEK CRESCENT CROFT CROSS CROSS ROAD CROSSING CUL-DE-SAC CURVE CUT DALE DELL DEVELOPPEMENT DIVERSION DOWNS DRIVE DRIVEWAY END ESTATES EXPRESSWAY EXTENSION FARM FIELD FOREST FREEWAY FRONT GARDENS GATE GATEWAY GLADE GLEN(N) GREEN GROUNDS GROVE HARBOUR HEATH HEIGHT HEIGHTS HIGHLAND HIGHWAY HILL HILLS HOLLOW INLET ISLAND ISLE JARDIN	MONTEE PLACE PROMENADE RANG RANGEE ROUTE  KEEP KEY KNOLL LAKE LAKES LAKEWAY LAND LANDING LANE LANES LAWN LIMITS LINE LINK LOCK LOCKS LOOKOUT LOOP MALL MANOR MAZE MEADOW MEWS MILLWAY MONTEE MOOR MOUNTAIN ORCHARD OUTLOOK OVAL OVER-PASS PARADE PARK PARKWAY PASS PARADE PARK PARKWAY PASS PASSAGE PATH PATHWAY PIKE PINES PLACE PLAZA POINT PORT PRIVATE PROMENADE	ROUTE RURALE RUE RUE RUELLE SENTIER TERRASSE VOIE  QUAY RANGE REACH REGIONAL ROAD RIDGE RISE ROAD ROADWAY ROUTE ROW RUE RUELLE RUN SIDE SIDE ROAD SIDELINE SKY WAY SPUR SQUARE STREET STRIP SUMMIT TERRACE THICKET TOWERS TOWNLINE TRACK TRACK TRAFFICWAY TRAIL TUNNEL TUNNEL TURNABOUT TURNPIKE VALLEY VIEW VILLAGE VISTA WALK WALKWAY WATERWAY WAY WHARF WOLD WOODS WYND

Data element		Maximum Length	Format					
			For AB, BC, MB:  ACRS AF ALLEY AVENUE AVE BAY BEND BLVD BRIDGE CAMPUS CAPE CHASE CIR CIRCLE CREEK CIRCLE CROSE COLLEGE COMMON COR CORNER CORNER CORNER CORES CREST CROSS CRT CTR CUTOFF COVE DALE DRIVE	EST ESTS FSR FWY GATE GATEWAY GDN GDNS GLEN GREEN GRNDS GROVE GRV HALL HARBR HEATH HILLS HOLLOW HTS HVN HWY INLT ISLAND ISLE KEY LANDING LANE LINK LANE LOOP MALL MAZE	MNR MOUNT MTN NE MEWS MNR MOUNT MTN NE NW PARADE PARK PASS PATH PIKE PKWY PKY PLACE PLAZA POINT PORT PARK POINT QUAY RAMP ROAD RDG RDGE RIDGE RISE RIVER RNCH ROAD ROW	RUN ROAD ROW REGIONAL ROAD RUN SHOPS SHORE SHORES SMT SPRINGS SQUARE STREET STN SW TERR TERRACE TRAIL TRL VALE VIEW VILA VILGE VISTA VLG VLY VIEW WALK WAY WILLOW WLK WOOD WAY WYND		
			DWN END	MDW MEWS	REGIONAL ROAD			
Street name	Yes	75	Alphabetic		1.07.5			
Street direction	No	2	N, S, E, W, O, NE, NW, NO, SE, SW, SO					
Civic number	Yes	5	Numeric					
Civic number suffix	No	3	Alphanumeric					
Additional information	No	60	Alphanumeric					
Language	Yes	1	A, E, F					
Postal code	Yes	6	LdLdLd (L=letter, d=digit)					
Floor	No	6	Alphanumeric					
Subnet	No (unless EdgeMarc is present)	18	xxx.xxx.xxx/yy					
EdgeMarc	No (unless subnet is present)	N/A	Must match existing EdgeMarc name					