Postal Code Points

USA

V2.7

Proprietary & Confidential

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Contents

Document Control

The information below describes the changes made to this document for each version.

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V1.0	12 January 2007	Initial Release
V1.1	23 August 2007	Updated to reflect its now Pipe-Delimited and not .CSV
V2.0	11 July 2008	Consolidated 3 product guides into one reflecting all 3 formats offered. Updated with new product naming (Postal Code Points vs. ZIP+4 Centroids).
V2.1	18 February 2011	Revised Coverage section on p.9 to include Puerto Rico and US Virgin Islands
V2.2	12 August 2011	Added File Geodatabase (GDB) format
V2.3	14 May 2012	Updated file naming structure, attribute table
V2.4	14 August 2012	Added inclusion clarification, sample view
V2.5	23 January 2014	Projection is WGS84
V2.6	21 September 2015	General updates to the Attributes and DVN usage as well as adding three new Attributes: ALT_CITY, GNIS, and H20_CTRD. See table below for descriptions
V2.7	10 February 2017	Coverage expansion of Guam, American Samoa, and the Northern Mariana Islands
V2.7	16 February 2017	Clarification on Character Set Encoding

Introduction

Purpose

The Postal Code Points USA document is intended to be used in conjunction with the NAVSTREETS Street Data Reference Manual. The information described in this document is limited to the layer(s) provided for the Postal Code Points USA product.

Audience

This document is intended for use by HERE staff and current licensees of HERE.

Definitions
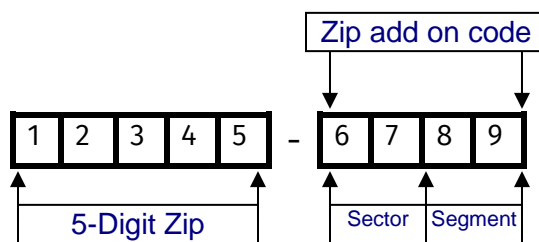
The USPS and USGS are used as a source for this information.

ZIP	ZIP is an acronym created by the United States Postal Service. It stands for "Zone Improvement Plan." It is the term used for a USA postal code.
ZIP Add-On Code	In a ZIP+4 code, it is the 4-digit number that follows the 5-digit ZIP Code. (See above diagram)
ZIP+4	The complete nine-digit postal code that identifies a small geographic delivery area that is serviceable by a single carrier. The ZIP+4 appears in the last line of the address on a mail piece.
ZIP Sector Number	A number that forms the first two digits of the ZIP add-on code. A ZIP sector is a subdivision of a 5-digit ZIP Code area. (See above diagram)
ZIP Segment Number	A number that forms the last two digits of the ZIP add-on code. The ZIP segment is a subdivision of a ZIP sector. (See above diagram)
ZIP+2	A 7-digit ZIP code; it includes the 5-digit ZIP code plus the first two digits of the ZIP add-on code or the ZIP sector number.

Carrier Route	A code assigned to a mail delivery or collection route within a 5-digit ZIP Code. The first character of this identification is alphabetical, and the last three are numeric: Bnnn = PO box Hnnn = Highway contract Rnnn = Rural route Cnnn = City delivery Gnnn = General delivery
FIPS	Federal Information Processing Standards (FIPS) Codes
GNIS	U.S. Board on Geographic Names, Geographic Names Information System (GNIS)

Product Description

The full U.S. postal code (or ZIP code) consists of nine digits (e.g., 12345-6789). For mail delivery the first 5 digits of the postal code are required. The portion after the hyphen (i.e. 6789) is the '+4' of the 9-digit postal code (aka ZIP+4). This is a more refined area within the commonly used 5-digit postal code. It allows for more precise mail delivery. This HERE product contains the centroid representation of the area that covers a single ZIP+4. Only those postal codes which have ZIP+4 extensions are included in this Postal Code Points product.

Feature Representation

- This product consists of 1 layer with centroids of the full U.S Postal Service 9-digit postal codes (or ZIP+4s). This layer can be overlaid upon the HERE map data for enhanced study.
- A centroid is a point feature which has an implicit X, Y coordinate. (The coordinates are explicit in the Pipe-delimited text format of this product).
- ZIP+4 centroids that represent odd or even ranges are offset five meters to the odd or even side of the street.
- The centroids are derived from the most current USPS ZIP+4 file possible in conjunction with a given release of the highly accurate HERE core street database.
- A centroid can represent one side of a city block between intersections; both sides of a street, including cul-de-sacs; a company or building; a floor or group of floors within a building; a cluster of mailboxes; sections of post office boxes; or other similar delivery groups.

Figure 1- Sample view of Postal Code Points in Seattle, WA
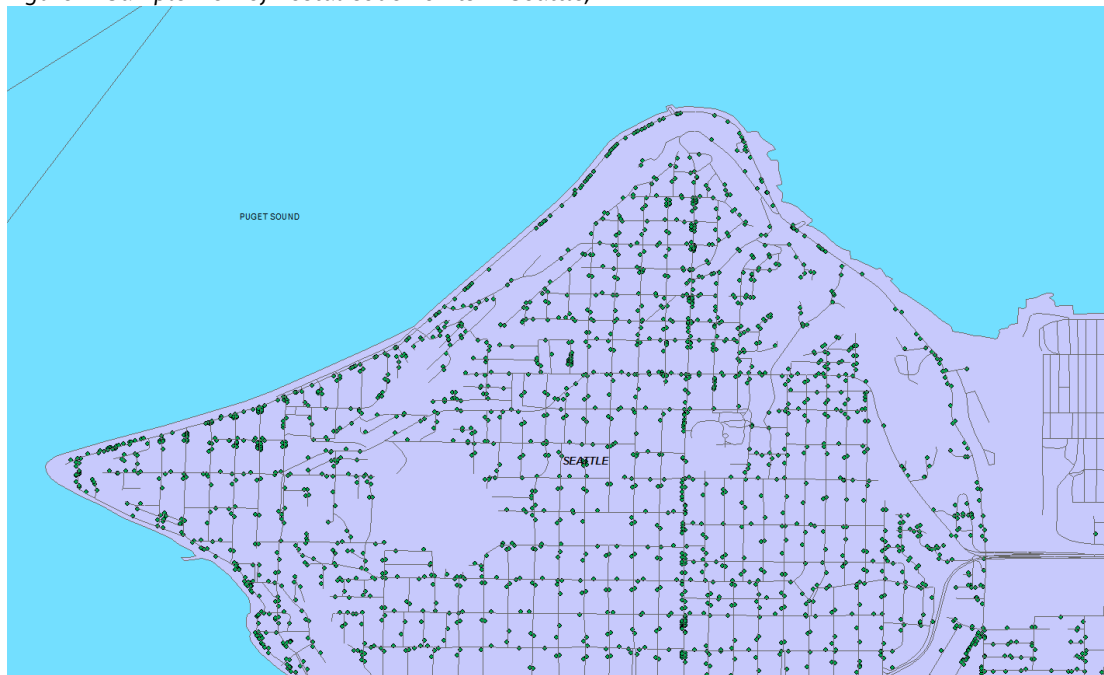
Locating Centroids

The ZIP+4 centroids in this product are located or placed at different levels of geocode precision. These are described as an attribute called "GEO_Level". There are 6 GEO_Levels.

GEO_Level	Name	Description
1	ZIP+4	The centroid is located at the midpoint of the ZIP+4 area.
2	*ZIP+2	The centroid is located at the midpoint of the ZIP+2 area.
3	*Carrier Route Centroid	The centroid is located at the midpoint of the carrier route 'area' which is determined by the other carrier route codes on surrounding centroids.
4	*5-Digit ZIP Centroid	The centroid is located at the midpoint of the 5-digit ZIP code area.
5	City Centroid	The centroid is located at the midpoint of the incorporated city area.
6	County Centroid	The centroid is located at the center point of the County area.

*These 'GEO_Levels' are determined by the point of gravity of all the existing ZIP+4 centroids that fall within those areas.

Record Types

This table describes the 6 different types of ZIP+4 records as described by the USPS in their documentation.

ZIP+4 Record Types	Name	Description
F	Firm	A firm record represents a commercial or organizational entity. The centroids for this record type are located using address information published in the record.
G	General Delivery	A general delivery record has the words "general delivery" in the Street Name field from the USPS ZIP+4 file. General delivery records contain the ZIP+4 code for general delivery mail in a particular ZIP Code. These centroids usually can only be placed at the 5-digit ZIP code level or higher.
H	High-rise	A high-rise record identifies a commercial building, apartment complex, high-rise; wing or floors of a building, grouping of apartment mail boxes, or other physical location other than a street. The centroids for this record type are located using address information published in the record.
P	PO Box	A PO Box record type describes an individual post office box or a range of post office boxes that share the same ZIP add-on code. It may also describe a range of post office boxes in which each box has its own ZIP add-on. These centroids will be placed with best precision possible usually at the ZIP+2 or higher.

R	Rural Route	A rural-route record identifies rural-route box deliveries. These centroids will be placed with best precision possible usually at the ZIP+2 or higher.
S	Street	A street record consists of a range of addresses on a street block, block face (one side of a street), cul-de-sac, or other address grouping. Generally, all named or numbered streets with mail delivery or potential for mail delivery have street type ZIP+4 records. The centroids for this record type are located using address information published in the record.

Assigning Census FIPS Codes

The Census FIPS codes (Census Blocks, Block Groups and Tracts) are assigned as attributes of each centroid in this product. This is done by determining the Census codes for each centroid location by comparing it to the latest version of the HERE Census product.

Uses for ZIP+4 Centroids

- Geocoding
- Density mapping
- Sales territory creation and realignment
- Retail trade area creation and realignment
- Demographic analysis when used with your demographic data
- Direct mailing applications

Limitations

The ZIP+4 information from the USPS found within this product has not been altered or changed in any way. So any issues with the USPS data may be reflected in the HERE ZIP+4 centroid product.

Technical Description

Format

Product delivered in ESRI Shapefile (.shp), MapInfo Tab File (.TAB), Pipe-delimited text, and File Geodatabase (.GDB) formats.

Shapefile format:

Versions Supported
- ArcView 3.x or higher
- ArcGIS 8.x or higher

Precision
- Double precision is used

Directories and Files
- Shapefiles are organized by State with the following structure:

  ST_Shape/ST_Shape.zip/USA_DVN_ST_POSTAL_CODE.shp

  Where "ST" = State abbreviation
  Where "zip" uses WinZip
  Where "DVN" = Product Database Version Number

Tab File format:

Versions Supported
- MapInfo 3.x or higher

Precision
- Double precision is used

Directories and Files
- MapInfo files are organized by State with the following structure:

  ST_TAB/ST_TAB.zip/USA_DVN_ST_POSTAL_CODE.tab

  Where "ST" = State abbreviation
  Where "zip" uses WinZip
  Where "DVN" = Product Database Version Number

Pipe-Delimited Text format:

Versions Supported
- All expected applications that can read Pipe-Delimited Text files

Precision
- Double precision is used

Directories and Files
- Pipe-Delimited Text files are organized by State with the following structure:

  ST_TXT/ST_TXT.zip/USA_DVN_ST_POSTAL_CODE.txt

  Where "ST" = State abbreviation
  Where "zip" uses WinZip
  Where "DVN" = Product Database Version Number

Data is also delivered in File Geodatabase (.GDB) format

Character Set
- Windows Latin-1 ANSI (Windows-1252)

Coverage
- The Postal Code Boundaries product covers all 50 states of the United States of America, the District of Columbia, Puerto Rico, the US Virgin Islands, Guam, American Samoa, and the Northern Mariana Islands

Projection/Datum Related Information
- Coordinate System: Geographic
- World Geodetic System 1984 (WGS84)
- Units: Decimal degrees
- Precision: Five decimal places of precision. Double precision is used to store coordinate data.

Attributes and Table Structure
The layer in the ZIP+4 product contains the following attributes:

Column	Description
POST_MAIN	The standard, 5-digit ZIP code for a point location. Multiple points may be associated with the same ZIP
POST_FULL	The full 9-digit ZIP code
ISO_CTRY	ISO Alpha 3 code for the country
GEO_LEVEL	The geocode level of the centroid
	1- ZIP+4
	2- ZIP+2
	3- Carrier Route centroid
	4- 5-digit ZIP centroid
	5- City centroid
	6- County centroid
REC_TYPE	The type of ZIP+4 record
	F- Firm
	H- High-rise
	S- Street
	G- General delivery
	R- Rural route
	P- PO Box
LAT	Latitude- Found in Pipe-Delimited Text format only
LON	Longitude- Found in Pipe-Delimited Text format only
LINK_ID	Link ID for the nearest link to the centroid
PLUS4	A unique, 4-digit extension to the ZIP. Each ZIP4, grouped with a ZIP, will be associated with only one point. However, a single point may be associated with multiple ZIP4 values. For example, a single office building will have multiple ZIP4 values
CROUTE	The carrier route number for the ZIP+4 record
CENSUS_BLK	The Census Block number for the ZIP+4 record
CENSUS_BGP	The Census Block-Group number for the ZIP+4 record
CENSUS_TRC	The Census Tract number for the ZIP+4 record
CONG_DIST	Congressional District number for the ZIP+4 record
ADMIN4	Identifies the name of the administrative level 4 (municipality) found in the HERE Map associated with a point location
POST_CITY	The Postal City (or last-line city) for the ZIP+4 record
ALT_CITY	Identifies the name of the commonly known built up area when applicable, associated with a point location. It is an alternative place name to what is found in HERE map
COUNTY	Identifies the name of the county associated with a point location

STATE	Identifies the name of the state associated with a point location	
FIPSCO	Identifies the official government code of the county. Official codes are based on the Federal Information Processing Standards (FIPS) codes	
FIPSST	Identifies the official government code of the state. Official codes are based on the Federal Information Processing Standards (FIPS) codes	
GNIS	GNIS feature ID for US counties from the official geographic names repository for the United States	
H20_CTRD	Identify points that are located in a water body 0.5 square km	
	B	Centroid on bridge (Link must be coded Bridge=Yes in the HERE map)
	W	Centroid on water
	N	No (not on water)

Revision History

Version	Date	Page #	Description
1.0	12 Jan 07		Initial Release
1.1	23 Aug 07		It is now Pipe-Delimited Text and not Comma Separated Value (.CSV)
2.0	11 Jul 08		Consolidated 3 product guides into one reflecting all 3 formats offered. Updated with new product naming (Postal Code Points vs. ZIP+4 Centroids).
2.1	18 Feb 11	9	Revised Coverage section to include Puerto Rico and US Virgin Islands
2.2	12 Aug 11	8	Added File Geodatabase (GDB) format
2.3	14 May 12	8,10	Updated file naming structure, attribute table
2.4	14 Aug 12	5,6	Added inclusion clarification, sample view
2.5	23 Jan 14	10	Projection is WGS84
2.6	21 Sep 15	5,9-12	General updates to the Attributes and DVN usage as well as adding three new Attributes: ALT_CITY, GNIS, and H20_CTRD
2.7	10 Feb 17	10	Coverage expansion of Guam, American Samoa, and the Northern Mariana Islands
2.7	16 Feb 17	10	Clarification on Character Set Encoding