

# Geocode Oregon Addresses with a Web Service

July 2024

The Oregon Address geocode locator web service is free and available to the public. Use it in web applications by sending a REST request to the service URL and receiving the results, usually as [JSON](#). Individual addresses or large address lists can be geocoded this way. The output coordinates will be in Oregon Lambert feet (2992) unless an optional output spatial reference is included (such as 4326 for longitude and latitude).

The link to the new geocoding service is -

<https://navigator.state.or.us/arcgis/rest/services/Locators/OregonAddress/GeocodeServer>

All the supported operations are shown at the very bottom of the page.

**Supported Operations:** [Find Address Candidates](#) [Reverse Geocode](#) [Geocode Addresses](#) [Suggest](#)

**Child Resources:** [Info](#)

These operations are detailed below:

1. Find Address Candidates (with Python and JavaScript code samples).
2. Geocode Addresses
3. Reverse Geocode

The [Info](#) link will provide brief metadata for the service including the date it was last updated.

For assistance with the Oregon geocode locators contact [GIS.Info@das.oregon.gov](mailto:GIS.Info@das.oregon.gov)



**Oregon Department of Administrative Services**  
**Enterprise Information Services**  
**Data Governance and Transparency**  
**Geospatial Enterprise Operations**

Use `findAddressCandidates` for individual address lookup.

<https://navigator.state.or.us/arcgis/rest/services/Locators/OregonAddress/GeocodeServer/findAddressCandidates?Address=500+Summer+St+NE&City=Salem&Region=OR&Postal=97301&outSR=4326&f=html>

The screenshot shows a web browser window with the URL `https://navigator.state.or.us/arcgis/rest/services/Locators/OregonAddress/GeocodeServer/findAddressCandidates?...`. The page title is "ArcGIS REST Services Directory" and the breadcrumb is "Home > services > Locators > OregonAddress (GeocodeServer) > findAddressCandidates".

The main heading is "Find Address Candidates: (Locators/OregonAddress)". Below it is a form with the following fields:

- Address:
- Address2:
- Address3:
- Neighborhood:
- City:
- Subregion:
- Region:
- Postal:
- PostalExt:
- CountryCode:
- SingleLine:
- Out Fields:
- Max Locations:
- Match out of range:  True  False
- Language Code:
- Location Type:
- Source Country:
- Category:
- Location:
- Distance in Meters:
- Search Extent:
- Output Spatial Reference:
- Magic Key:
- Format:

At the bottom of the form are two buttons: "Find Address Candidates (GET)" and "Find Address Candidates (POST)".

Below the form, the results are displayed under the heading "Address Candidates: (# address candidates : 1)".

The results include:

- Shape: Point:
  - X: -123.02734500000142
  - Y: 44.9427780000006
- Score: 100.0
- Address: 500 Summer Street Northeast, SALEM, OR, 97301
- Status: M
- Score: 100
- Match\_addr: 500 Summer Street Northeast, SALEM, OR, 97301
- LongLabel: 500 Summer Street Northeast, SALEM, OR, 97301

The results can include the following fields.

Shape:

Point:

X: **-123.02734500000142** (from outSR = 4326 Longitude, otherwise feet)

Y: **44.9427780000006** (from outSR = 4326 Latitude, otherwise feet)

Score:

**100.0**

Address:

**500 Summer Street Northeast, SALEM, OR, 97301**

Status:

**M**

Score:

**100**

Match\_addr:

**500 Summer Street Northeast, SALEM, OR, 97301**

LongLabel:

**500 Summer Street Northeast, SALEM, OR, 97301**

ShortLabel:

**500 Summer Street Northeast**

Addr\_type:

**PointAddress** (or Subaddress or StreetAddress)

Type:

(not used)

PlaceName:

(not used)

Place\_addr:

**500 Summer Street Northeast, SALEM, OR, 97301**

Phone:

(not used)

URL:

(not used)

Rank:

**20**

AddBldg:

(not used)

AddNum:

**500**

AddNumFrom:

(for StreetAddress Addr\_type)

AddNumTo:

(for StreetAddress Addr\_type)

*AddRange:* (for StreetAddress Addr\_type)  
*Side:* (for StreetAddress Addr\_type)  
*StPreDir:*  
*StPreType:*  
*StName:* **Summer**  
*StType:* **Street**  
*StDir:* **Northeast**  
*BldgType:* (not used)  
*BldgName:* (not used)  
*LevelType:* (not used)  
*LevelName:* (not used)  
*UnitType:* (not used)  
*UnitName:* (for Subaddress Addr\_type)  
*SubAddr:* (for Subaddress Addr\_type)  
*StAddr:* **500 Summer Street Northeast**  
*Block:* (not used)  
*Sector:* (not used)  
*Nbrhd:* (not used)  
*District:* (not used)  
*City:* **SALEM** (Postal city for ZIP Code)  
*MetroArea:* (not used)  
*Subregion:* **MARION**  
*Region:* **OR**  
*RegionAbbr:* (not used)  
*Territory:* (not used)  
*Zone:* (not used)  
*Postal:* **97301**  
*PostalExt:* (not used)  
*Country:* (not used)  
*CntryName:* **USA**  
*LangCode:* **ENG**  
*Distance:* **0**  
*X:* **658117.1945519828** (Oregon Lambert feet)  
*Y:* **1173851.2784443316** (Oregon Lambert feet)  
*DisplayX:* **658117.1945519828**  
*DisplayY:* **1173851.2784443316**  
*Xmin:* **657847.1946875228**  
*Xmax:* **658387.1856419924**  
*Ymin:* **1173494.8794374284**  
*Ymax:* **1174207.6810170147**  
*ExInfo:*

For more information on geocoding individual addresses and the output see –

<https://developers.arcgis.com/rest/geocode/api-reference/geocoding-find-address-candidates.htm>  
<https://developers.arcgis.com/rest/geocode/api-reference/geocoding-service-output.htm>

## Code Samples

Programming *examples* of using findAddressCandidates with [REST](#) and [JSON](#).

### Python

```
File Edit View Insert Cell Kernel Help Python 3 (ipykernel) | ⌵
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In [3]: import json, urllib, urllib.parse, urllib.request, urllib.error
example_address = "500 Summer St NE"
example_city = "Salem"
example_state = "OR"
example_zip = "97301"

In [15]: Service = r"https://navigator.state.or.us/arcgis/rest/services/Locators/OregonAddress/GeocodeServer/findAddressCandidates"
Request = urllib.parse.urlencode({"Address" : example_address
, "City" : example_city
, "Region" : example_state
, "Postal" : example_zip
, "outFields" : "*" # Return all output fields (optional).
, "maxLocations" : 1 # Return only the top candidate (optional).
, "outSR" : "4326" # Return the Location in Longitude and Latitude (optional).
, "f" : "pjson"}) # Return the results as JSON.

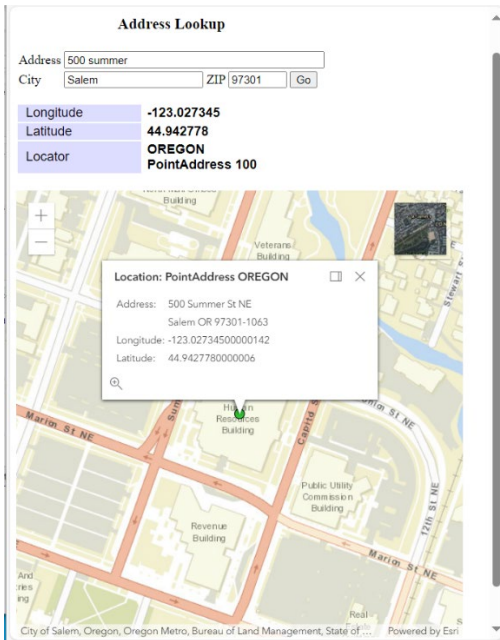
try:
RequestREST = urllib.request.urlopen(Service + "?" + Request)
except Exception as error:
print("ERROR", error)

In [16]: ResultsJSON = json.loads(RequestREST.read().decode("cp1252"))
ResultsJSON

Out[16]: {'spatialReference': {'wkid': 4326, 'latestWkid': 4326},
'candidates': [{'address': '500 Summer Street Northeast, SALEM, OR, 97301',
'location': {'x': -123.02734500000142, 'y': 44.9427780000006},
'score': 100,
'attributes': {'Status': 'M',
'Score': 100,
'Match_addr': '500 Summer Street Northeast, SALEM, OR, 97301',
'LongLabel': '500 Summer Street Northeast, SALEM, OR, 97301',
'ShortLabel': '500 Summer Street Northeast',
'Addr_type': 'PointAddress',
'Type': '',
'PlaceName': '',
'Place_addr': '500 Summer Street Northeast, SALEM, OR, 97301',
'Phone': '',
'URL': '',
'Rank': 20,
'AddBldg': '',
'AddNum': '500',
```

## JavaScript

Provide the address from a web form and display the results in a table and on a map using [AJAX](#).



```
93  gisApp.getLocation = function()
94  {
95      var requestLocation = "https://navigator.state.or.us/arcgis/rest/services/Locators/OregonAddress/GeocodeServer/findAddressCandidates" +
96          "?Address="      + document.getElementById("inputAddress").value +
97          "&City="          + document.getElementById("inputCity").value +
98          "&Postal="        + document.getElementById("inputZip").value +
99          "&Region=OR"      +
100         "&maxLocations=1" +
101         "&outFields=*"   +
102         "&outSR=4326"    +
103         "&f=pjson";
104
105     console.log("REQUEST",requestLocation); // For troubleshooting and debugging.
106     ajax.open("GET",requestLocation,true);
107     ajax.send();
108     ajax.onreadystatechange = seeLocation;
109 };
110
111 function seeLocation()
112 {
113     if (ajax.readyState == 4 && ajax.status == 200)
114     {
115         var resultLocation = eval("(" + ajax.responseText + ")");
116         gisApp.result.location = resultLocation;
117         console.log("RESULTS",gisApp.result.location); // For troubleshooting and debugging.
118         gisApp.decidePassFail(); // Evaluate the results from the location.
119     }
120     else if (ajax.readyState == 4 && ajax.status != 200) // If the service is down or not responding.
121     {
122         document.getElementById("divError").innerHTML = "<img src='note.jpg' width='25' height='25'>Service Unavailable";
123     }
124 };
125
```

Use **geocodeAddresses** for bulk address lists.

<https://navigator.state.or.us/arcgis/rest/services/Locators/OregonAddress/GeocodeServer/geocodeAddresses>

A JSON formatted address list is sent with the request to geocode multiple addresses at a time.

**NOTES:** There are a few rules to follow with geocodeAddresses

- There is a limit of 1,000 addresses per request. Send larger lists in batches of 1,000 addresses.
- Use POST, not GET, to send large address lists.
- The address lists must be URL encoded.

The **addresses=** and **f=** parameters are required but a token is *not* required for the Oregon geocoder. Also, the **OBJECTID** and either **City**, **Region** and/or **Postal** keys are required in the address list.

The JSON list must be [URL encoded](#) when the request is sent. See the table below for the URL codes for the ASCII characters most commonly used for JSON to help you make sense of the URL encoded query string.

This list

```
{"records": [
{"attributes": {"OBJECTID": 1, "Address": "500 Summer St NE", "City": "Salem", "Region": "OR", "Postal": "97301"}},
{"attributes": {"OBJECTID": 2, "Address": "631 Winter St NE", "City": "Salem", "Region": "OR", "Postal": "97301"}}]
```

Would be URL encoded like this

<https://navigator.state.or.us/arcgis/rest/services/Locators/OregonAddress/GeocodeServer/geocodeAddresses?f=html&addresses=%7B%22records%22%3A%5B%7B%22attributes%22%3A%7B%22OBJECTID%22%3A1%2C%22Address%22%3A%22500+Summer+St+NE%22%2C%22City%22%3A%22Salem%22%2C%22Region%22%3A%22OR%22%2C%22Postal%22%3A%2297301%22%7D%7D%2C%7B%22attributes%22%3A%7B%22OBJECTID%22%3A2%2C%22Address%22%3A%22631+Winter+St+NE%22%2C%22City%22%3A%22Salem%22%2C%22Region%22%3A%22OR%22%2C%22Postal%22%3A%2297301%22%7D%7D%5D%7D%0D%0A>

The screenshot shows a web browser window with the URL <https://navigator.state.or.us/arcgis/rest/services/Locators/OregonAddress/GeocodeServer/geocodeAddresses?...>. The page title is "ArcGIS REST Services Directory" and the breadcrumb is "Home > services > Locators > OregonAddress (GeocodeServer) > geocodeAddresses". The main heading is "Geocode Addresses: (Locators/OregonAddress)".

The "Addresses:" field contains a JSON array of two records, which is URL encoded in the screenshot. Below this field are several form controls: "Category:", "Source Country:", "Match out of range:" (with radio buttons for "True" and "False", "True" is selected), "Language Code:", "Location Type:", "Search Extent:", "Output Spatial Reference:" (set to "4326"), and "Format:" (set to "HTML"). There are two buttons: "Geocode Addresses (GET)" and "Geocode Addresses (POST)".

Below the form, the "Geocoded Addresses:" section displays two results. The first result is for "500 Summer Street Northeast, SALEM, OR, 97301" with a score of 100. The second result is for "631 Winter Street Northeast, SALEM, OR, 97301" with a score of 100. Each result includes a "location" object with X and Y coordinates and a detailed "attributes" object with various metadata.

For more information about geocoding address lists see -

<https://developers.arcgis.com/rest/geocode/api-reference/geocoding-geocode-addresses.htm>

URL Encoded Characters commonly used for JSON.

URL	ASCII	URL	ASCII	URL	ASCII
%20	space	%3A	:	%7B	{
%22	"	%5B	[	%7D	}
%2C	,	%5D	]		

Use **reverseGeocode** to find an approximate address for a location.

Provide the X and Y location coordinates in Oregon Lambert feet (Spatial Reference ID 2992).

location=658117.2,1173851.3

<https://navigator.state.or.us/arcgis/rest/services/Locators/OregonAddress/GeocodeServer/reverseGeocode?location=658117.2%2C1173851.3&f=html>

**ArcGIS REST Services Directory**

Home > services > Locators > OregonAddress (GeocodeServer) > reverseGeocode

**Reverse Geocode: (Locators/OregonAddress)**

Location:

Distance:

Language Code:

Location Type:

Feature Types:

Output Spatial Reference:

Return Intersection:  True  False

Format:

**Reverse Geocoded Address:**

Match\_addr: 500 Summer Street Northeast, SALEM, OR, 97301  
LongLabel: 500 Summer Street Northeast, SALEM, OR, 97301  
ShortLabel: 500 Summer Street Northeast  
Addr\_type: PointAddress  
Type:  
PlaceName:  
AddNum: 500  
Address: 500 Summer Street Northeast  
Block:  
Sector:  
Neighborhood:  
District:  
City: SALEM  
MetroArea:  
Subregion: MARION  
Region: OR  
RegionAbbr:  
Territory:  
Postal: 97301  
PostalExt:  
CntryName: USA  
CountryCode:

**Reverse Geocoded Location:**

Point:  
X: 658117.1945519828  
Y: 1173851.2784443316  
Spatial Reference: 2992 (2992)

Or the location can be provided using another projection and coordinate system such as longitude and latitude. Coordinates other than Oregon Lambert (2992) must be provided in JSON format and must include the spatial reference ID. Again, the JSON characters are URL encoded as in geocodeAddresses.

location={"x":-123.0273305,"y":44.942772,"spatialReference":{"wkid":4326}}

<https://navigator.state.or.us/arcgis/rest/services/Locators/OregonAddress/GeocodeServer/reverseGeocode?location=%7B%22x%22%3A-123.0273305%2C%22y%22%3A44.942772%2C%22spatialReference%22%3A%7B%22wkid%22%3A4326%7D%7D&f=html>

← ↻ 🏠 🔒 [https://navigator.state.or.us/arcgis/rest/services/Locators/OregonAddress/GeocodeServer/reverseGeocode?...](https://navigator.state.or.us/arcgis/rest/services/Locators/OregonAddress/GeocodeServer/reverseGeocode?) 🔊 ☆ ⋮

ArcGIS REST Services Directory [Login](#) | [Get Token](#)  
[Home](#) > [services](#) > [Locators](#) > [OregonAddress \(GeocodeServer\)](#) > [reverseGeocode](#) [Help](#) | [API Reference](#)

### Reverse Geocode: (Locators/OregonAddress)

Location:

Distance:

Language Code:

Location Type:

Feature Types:

Output Spatial Reference:

Return Intersection:  True  False

Format:

**Reverse Geocoded Address:**

*Match\_addr:* 500 Summer Street Northeast, SALEM, OR, 97301  
*LongLabel:* 500 Summer Street Northeast, SALEM, OR, 97301  
*ShortLabel:* 500 Summer Street Northeast  
*Addr\_type:* PointAddress  
*Type:*  
*PlaceName:*  
*AddNum:* 500  
*Address:* 500 Summer Street Northeast  
*Block:*  
*Sector:*  
*Neighborhood:*  
*District:*  
*City:* SALEM  
*MetroArea:*  
*Subregion:* MARION  
*Region:* OR  
*RegionAbbr:*  
*Territory:*  
*Postal:* 97301  
*PostalExt:*  
*CntryName:* USA  
*CountryCode:*

**Reverse Geocoded Location:**

*Point:*  
*X:* 658117.1945519828  
*Y:* 1173851.2784443316  
*Spatial Reference:* 2992 (2992)

For more information on reverse geocoding see –

<https://developers.arcgis.com/rest/geocode/api-reference/geocoding-reverse-geocode.htm>