Generate E911 Address Assignment Notification
Documentation

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v1.0.1 - 9/13/2024 | Added MIT License for GitHub Publication

## Generate E911 Address Assignment Notification

Summary: By integrating ArcGIS Pro with Microsoft Outlook, this tool generates an email, which will open as a draft in a new Outlook window, from an input address point selection. This tool is built to generate email that serves as an official announcement to contractors, developers, land/building owners, or other stakeholders of a newly assigned E911 address. The email can optionally include information pertaining to the building permit and/or the property which the addressed structure was developed on. The tool accommodates as many or as few optional parameters relevant to a local government addressing administrator's workflow. It is highly recommended for organizations to set up defaults for input feature layers and fields so the tool can be run quickly after the dialogue box opens.

Tool Usage Requirements:

The Microsoft Outlook desktop application must be installed within the current Windows OS.
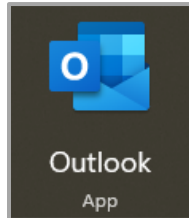
The **pywin32** module **must** be installed in the active environment via Package Manager. Click to read more about ArcGIS Pro's Python Package Manager or installing additional packages.
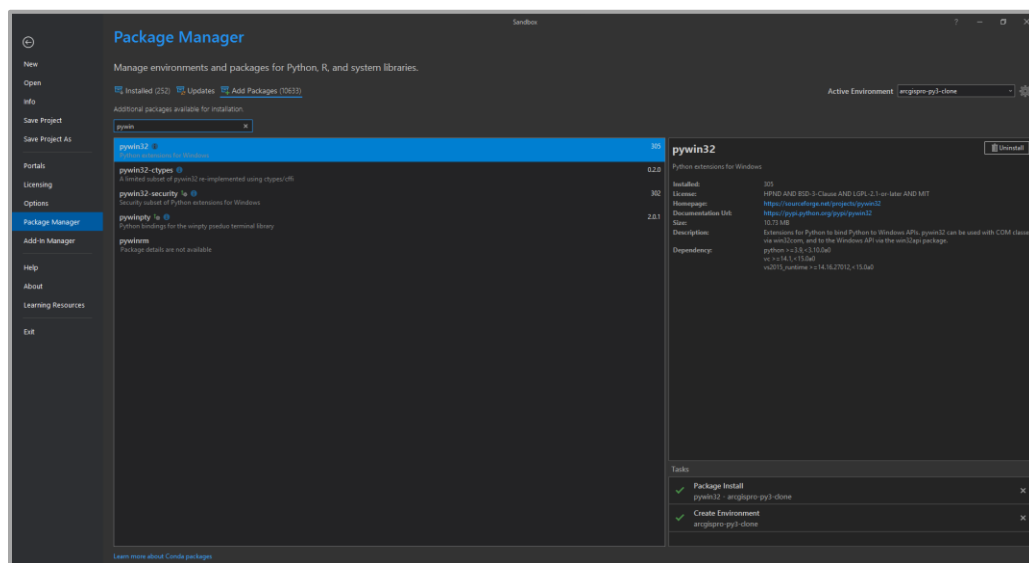
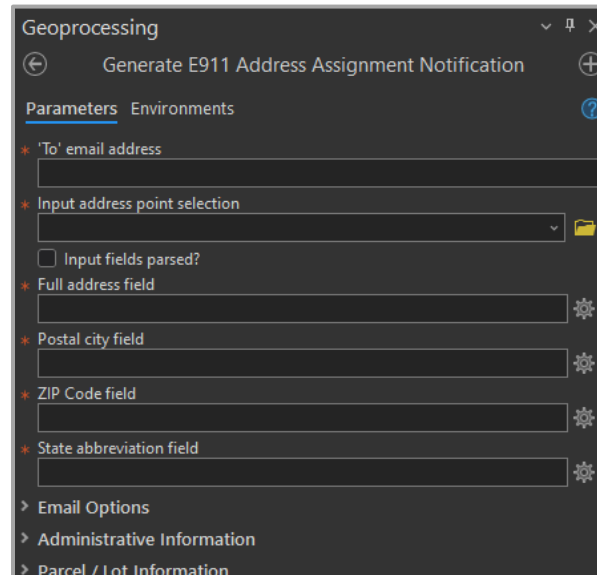All ArcGIS Pro product levels are compatible, and no additional extensions are required.

Licensing information
- o   Basic: Yes
- o   Standard: Yes
- o   Advanced: Yes

Parameters:

Overview:

Upon opening the tool's dialogue box, the user will initially be met with what appears as a busy pane:

There are 21 parameters in total; however, not all 21 parameters are required. In fact, it is impossible to even specify all parameters due to the custom validation rules. At a bare minimum, only one string field, a feature layer selection, and four fields (so six parameters total) are required for the tool to function. All other optional parameters are behind an optional parsed input route or are organized by category in the drop-down lists. The tool will accommodate as much or as little input data into the output email draft.

Required parameters:

- The recipient's email address
  - A string with the email address of the primary recipient.

- A singular selection of the desired 911 address point feature layer
  - The input site address point feature layer with **a singular** selected feature (**1**). The primary emphasis of the email notification will revolve around this point, which represents a new E911 address.

- The field containing the address value *(or alternatively, the user can choose to instead specific input parsed fields based on NENA guidelines)*
  - Full (non-parsed) street address field. Example value found within field: "**100 Pine Road**."

- Three additional USPS postal fields:
  - Postal city
    - Postal City field. Example value found within field: "**Bedford**."
  - ZIP Code
    - Postal ZIP Code field. Example value found within field: "**24523**."
  - State
    - Abbreviated State field. Example value found within field: "**VA**."

Optional parameters:

- **The parsed input fields:**
  - ○ <u>Required:</u>
    - ▪ Street address numbers
      - • *Parsed street address number field. Example value found within field: "**100** Pine Road."*
    - ▪ Street name
      - • *Parsed street name field. Example value found within field: "100 **Pine** Road."*
    - ▪ Street type (e.g., 'Drive', 'Lane', 'Road')
      - • *Parsed street direction suffix field. Example value found within field: "100 Pine **Road**."*
  - ○ <u>Optional:</u>
    - ▪ Street Direction Prefix (e.g., '**N** main Street')
      - • *Parsed street direction prefix field. Example value found within field: "100 **W** Pine Road."*
    - ▪ Street Direction Suffix (e.g., 'Smith Street **W**')
      - • *Parsed street direction suffix field. Example value found within field: "100 Pine Road **W**."*
    - ▪ Address unit (e.g., 'Suite A')
      - • *Parsed street direction suffix field. Example value found within field: "100 Pine Road **Suite A**."*

- **Additional email options:**
  - ○ Custom subject prefix string (e.g., 'Bedford County GIS | ')
    - ▪ *Will be included inline-directly before the rest of the generated subject line. Used to tag your organization. Example: "Your Locality GIS | ".*
  - ○ Email attachment file
    - ▪ *The file path of the desired file to be attached to the email.*
  - ○ Custom paragraph string(s)
    - ▪ *Additional paragraphs to be included in the email body. Can be multiple values. Each entry will be a separate paragraph with dividing line breaks.*

- **Administrative information:**
  - ○ Associated Building Permit Number
    - ▪ *The concrete, operational identifying number of an associated permit. Example: "BLDR23-0100". If specified, additional information will be included in the email.*
  - ○ Permit Type — will be required if a permit number is specified.
    - ▪ *The type/class of associated permit. Example: "Residential".*

- **Parcel / Lot information:**
  - ○ A selection of the parcel feature layer the user wishes to associate the new E911 address with
    - ▪ *The input parcel feature layer with a singular selected feature (1). If specified, additional information will be included in the email.*
  - ○ Parcel Number Field (e.g., 'RPC') — will be required if an input parcel selection is specified.
    - ▪ *The concrete, operational identifying value field of the input parcel selection. Example value found within field: "180-1-28" or "90514250".*
  - ○ Parcel lot number field — will be required if an input parcel selection is specified.
    - ▪ *Lot value field. Example: Lot "**4**".*
  - ○ Parcel sublot number field (optional)
    - ▪ *Sublot value field. Example: Lot 4**A**.*

Tool Instructions:

IMPORTANT To correctly run the tool, select a single feature and then drag the feature layer into the appropriate input parameter box.

The input address point selection should be a point feature layer representing the new E911 address with all necessary 911 and USPS postal data:

- Full address field
  Alternatively, parsed fields can be specified:
    - *Address Numbers (optional)*
    - *Street Name (optional)*
    - *Street Type (optional)*
    - *Street Direction Prefix (optional)*
    - *Street Direction Suffix (optional)*
    - *Address Unit (optional)*
- Postal City
- ZIP Code
- State Abbreviation

The **optional** input parcel selection should be a polygon feature layer representing the locality's parcels/property lines with relevant data fields:

- Parcel ID
- Parcel Lot
- Parcel Sublot *(optional)*

Each input feature layer selection **must** either:

- Be a selection with only a single feature in the current selection ('selected feature: 1')

or

- Consist of only a single feature — *though this would not have much of a practical use-case.*
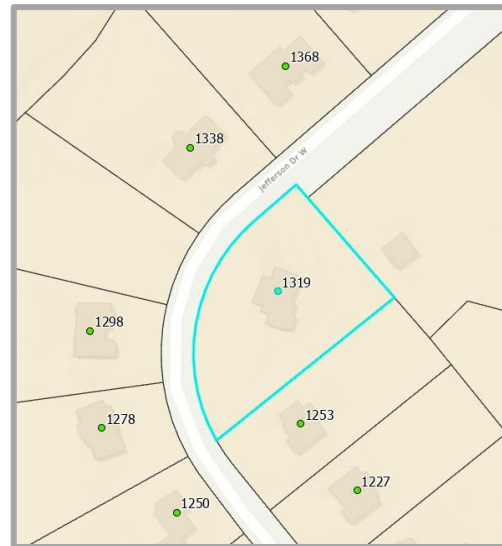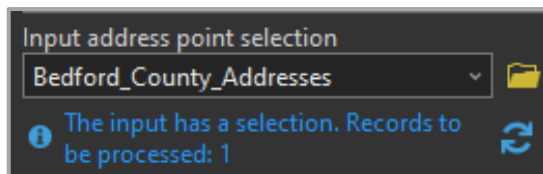
The desired output should be a new email draft appearing in a new Outlook window — similar to the following test email draft:
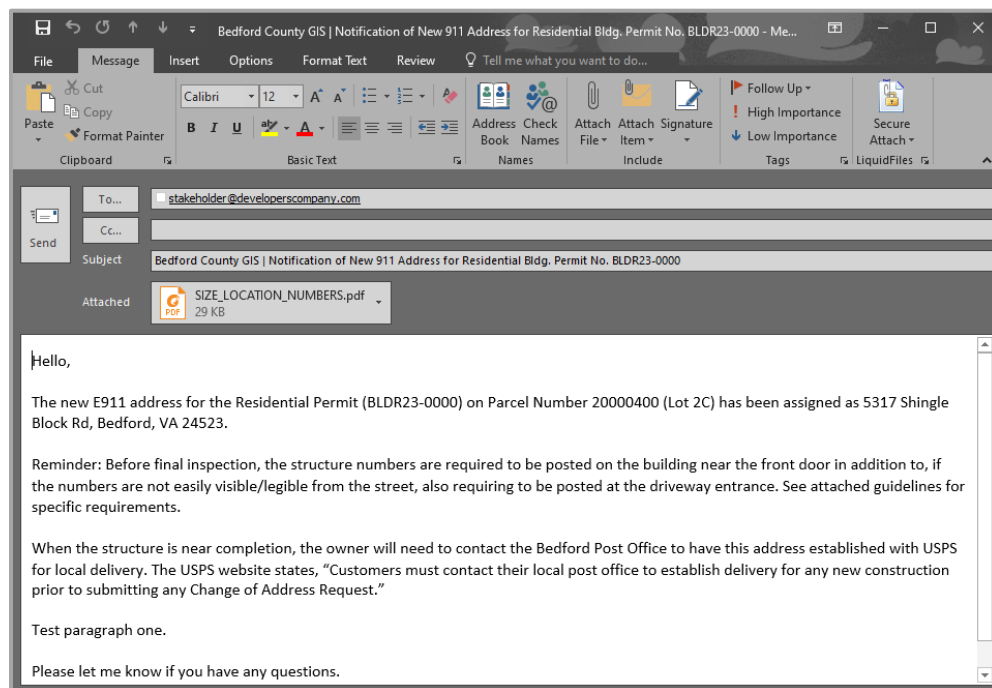
Workflow:

Conceptually, the workflow of the tool is as follows:

- The user will make an address point selection and then define that feature layer input within the tool's dialogue box.
- The user will input optional parameters as desired (it is highly recommended that an organization adapt the tool's default values to reflect their own main working feature layers and appropriate data fields — as to save time with each execution of the tool).
- The tool will extract the data from the specified fields, and format everything correctly to be incorporated into the email components. The tool will accommodate as many or as few defined optional parameters.
- The tool will combine the necessary components and generate an email draft in a new Outlook window.
- Within Outlook, the user should then perform QA/QC with the generated email, add their signature, and optionally apply any desired HTML formatting (such as bolding the address line)
- Finally, the email can be sent to the appropriate stakeholders.

Acknowledgments:

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