

Creating a Data Dictionary in GPS Pathfinder® Office

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Overview

Data dictionaries define the types of features that you can collect in the field. The types of features are point, line, and polygon. Attributes are the information about the feature that need to be recorded or answers to questions. Below is a list of attribute types.

Menu– creates picklists or checklists for a defined set of options.

Numeric– allows entry of numeric values. Minimum and maximum values help prevent incorrect entries.

Text– allows for letter and numbers to be added . It's limited by number of characters that can be entered.

Date– automatically populates the attribute with the current data.

Time– automatically populates the attribute with the current time.

File Name– associates a file with the feature such as a photo.

Separator– separates attributes and be used to group related attributes

GPS Pathfinder Office® has the Data Dictionary Utility that is used to create the data dictionaries for TerraSync™. Multiple data dictionaries can be stored on your handheld, but only one can be assigned to your data files.

Planning

Before you start your data dictionary, you will want to gather information for the types of features that you will need to collect data on and if there are any data requirement. For this example, we will be collecting data at the all parks in the city. The city would like us to collect all the trees, sidewalks, and playground areas. They are requiring that we have the park name and date associated with each feature. They would also like the condition of the sidewalks and the type of damages they have so that they may repair them at a later time.

Now that we know what features types we will be collecting, we can start to put together our data dictionary outline. We are required to put the park name and date with each feature. We are also going to put a comments attribute with each feature for any remarks the field crew may think are needed, but doesn't have an attribute for it.

To save some time in the field, we want to create some picklists. We know that there are only three parks that we will be collecting data in city park, mountain park, and school park From the information that we got from the city, the only trees they planted in the parks are cedar, oak, maple, and white pine trees.

For the damages to the sidewalk, we want to categorize the conditions to good, fair, and poor. The good condition will have no damages. The fair condition will have damages of small cracks, uneven, or small chipping. The poor condition with have damages of large cracks, large chipping, heaving, and drainage problems. We will want to set a requirement that the damage fields show only when the corresponding condition is selected.



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The table below puts the above information into an easier to view format.

Feature Name	Feature class type	Attributes	Attribute Type	Data	Conditions
Tree	Point	Park Name	Menu	City Park Mountain Park School Park	
		Date	Inspection Date		
		Species	Menu	Cedar Oak Maple White Pine	
		Height	Numeric		
		Condition	Menu	Good Fair Poor	
		Comments	Text		
Sidewalk	Line	Park Name	Menu	City Park Mountain Park School Park	
		Date	Inspection Date		
		Condition	Menu	Good Fair Poor	
		DamageFair	Menu	Small Cracks Uneven Small Chipping	If Condition is not Fair then DamageFair is Not Visible
		DamagePoor	Menu	Large Cracks Large Chipping Heaving Drainage Problems	If Condition is not Fair then DamagePoor is Not Visible
		Picture	File		
Playground	Area	Park Name	Menu	City Park Mountain Park School Park	
		Date	Inspection Date		
		Play Equipment	Text		
		Condition	Menu	Good Fair Poor	
		Comments	Text		

Creating the Data Dictionary

In Pathfinder Office, go to Utilities> Data Dictionary Editor.

In the name field enter CityParks and for comments put your name.

From the version dropdown select TerraSync v5.00 and later.

Click File> Save and save the data dictionary as city parks.

Point Feature

The first feature that we are creating is the Tree feature which is a point.

- Click New Feature button.
- On the Properties tab enter Tree in Feature Name field.
- Make sure that Point is selected under Classification.
- On the Default Settings tab, we will change the Minimum Positions from 1 to 10.
- On the Symbol tab, click the change button and select the icon of a tree.
- For the foreground color, select green and the background color, select black.
- Click OK to create the feature

Properties | Default Settings | Symbol

Feature Name:

Comment:

Classification:

Point Line Area

Properties | Default Settings | Symbol

Logging Interval

Time (Seconds)

Off

Minimum Positions:

Accuracy:

Labeling

Label 1:

Label 2:

Image Names

Based on:

Include image attribute name

Include date and time

Properties | Default Settings | Symbol

Font:

Style:

Size:

Foreground:

Background:

Preview:

Line Feature

The next feature that we are creating is the Sidewalk feature which is a line.

- Click New Feature button.
- On the Properties tab enter Sidewalk in Feature Name field.
- Make sure that Line is selected under Classification.
- On the Default tab, change the Time Logging Interval to 3 seconds.

Hint: If collecting lines or polygons in an area where you will have to physical stop without pausing the collection, such as in areas of rough terrain or at stop lights, it is best to increase the time on the logging interval or switch to distance. This will keep from getting a cluster of positions while you are stationary.

- On the Line Style, change the color to gray.
- Click OK to create the feature.

Properties | Default Settings | Line Style

Feature Name:

Comment:

Classification:

Point Line Area

Properties | Default Settings | Line Style

Logging Interval

Time seconds

Distance meters

Off

Offset

Direction:

Horizontal Distance:

Vertical Distance:

Labeling

Label 1:

Label 2:

Image Names

Based on:

Include image attribute name

Include date and time

Properties | Default Settings | Line Style

Color:

Thickness:

Join

Preview:

Polygon Feature

The next feature that we are creating is the Playground Area. We will be collecting the boundary of the playground so the feature needs to be a polygon.

- Click New Feature button.
- On the Properties tab enter PlaygroundArea in Feature Name field.
- Make sure that Area is selected under Classification.
- On the Default tab, change the Time Logging Interval to 3 seconds.
- On the Line Style, change the color to black.
- Click OK to create the feature.

Properties | Default Settings | Line Style

Feature Name:

Comment:

Classification:

Point Line Area

Properties | Default Settings | Line Style

Logging Interval

Time seconds

Distance meters

Off

Offset

Direction:

Horizontal Distance:

Vertical Distance:

Labeling

Label 1:

Label 2:

Image Names

Based on:

Include image attribute name

Include date and time

Properties | Default Settings | Line Style

Color:

Thickness:

Join

Attributes

Now that we have the feature created, we can add the attributes to it.

Menu Attribute

- Select Tree in the features list. Click the New Attribute button.
- The New Attribute Type Windows will appear. Click Menu.
- In the New Menu Attribute window, enter Park Name in the Name field.
- Click the New button under Menu Attribute Values.
- Uncheck the Default box.
- In the Attribute Value Field, type in City Park then press Enter or the Add button. You will now see that City Park is listed in the Menu Attribute Values List.
- Add Mountain Park and School Park with the same steps.
- Make sure that Display In Field As is set to Picklist.
- Under Field Entry, change On Creation and On Update to Required.
- Hint: This setting will back the field crew fill out the attribute before they can save the feature.*
- Click OK to create the attribute.

Edit Menu Attribute

Name:

Alias:

Menu Attribute Values

Name	User Code 1	User Code 2	Image
City Park			No
Mountain Park			No
School Park			No

Display In Field As:

Feature Repeat:

Field Entry:

On Creation:

On Update:

Condition

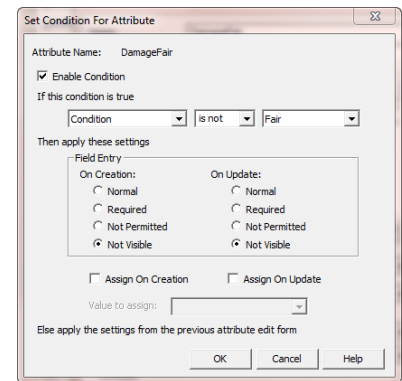
Condition is disabled

The Park Name attribute will be used on all three features. Instead of creating this attribute multiple times, we can right click on the Park Name attribute and select copy. Now select the Sidewalk feature, right click in the Attributes box, and select paste. Repeat for the Playground Area.

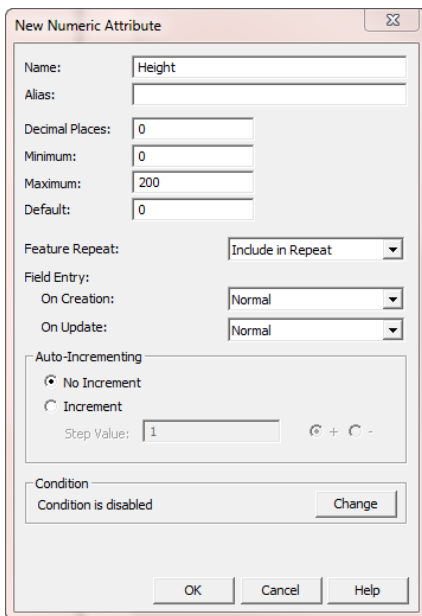
Use the above steps to add all the menu type attributes to their corresponding feature as displayed on the planning table.

Where we only want DamagaeFair and DamagePoor attributes to show when the corresponding choice is selected for Condition attribute, we will have to sent up a condition on the DamagaeFair and DamagePoor attributes.

- Select Sidewalk in the feature list and DamagerFair in the Attribute list.
- Click Edit Attribute.
- Click the change button next to Condition is disabled.
- In the Set Condition For Attribute Window check the box next to Enable Condition.
- The statement for If this condition is true needs to read Condition is not Fair.
- On Field Entry, select Not Visible for On Creation and On Update.
- Click OK to save the Condition and OK again to save the Attribute.



Repeat the above steps for the DamagePoor attribute, but remember to make sure the statement for If this condition is true needs to read Condition is not Poor.



Numeric Attribute

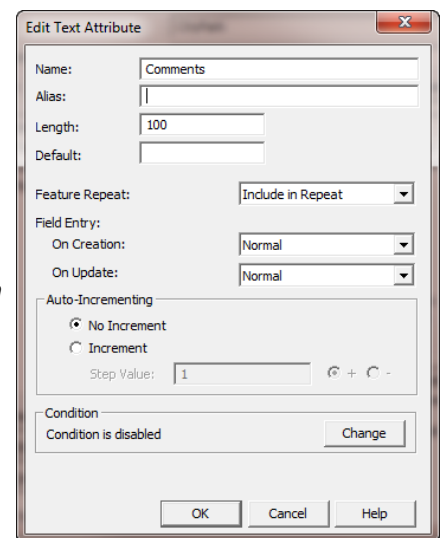
- Select Tree in the features list. Click the New Attribute button.
- In the New Attribute Type window, click Numeric.
- In the New Numeric Attribute window, enter Height in the Name field.
- Enter 0 for Minimum.
- Enter 200 for Maximum.
- Enter 0 for Default.
- Click OK to create the attribute.

Text Attributes

- Select Tree in the features list. Click the New Attribute button.
- In the New Attribute Type window, click Text.
- In the New Text Attribute window, enter Comment in the Name field.
- Change the Length to 100.
- Click OK to create the attribute.

Note: The length for text attribute is a total number of characters that can be entered. You will want to make sure that the length is high enough to allow an adequate space for the data that will be entered.

Use the copy and paste method or the above steps to add all the text type attributes to their corresponding feature as displayed on the planning table.



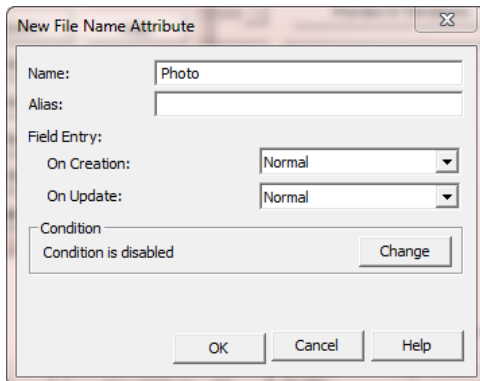
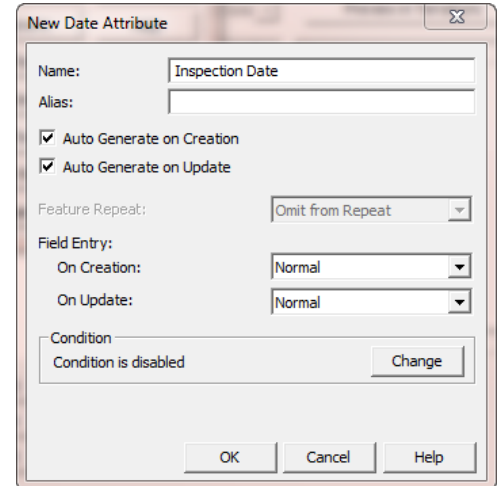
On the Play Equipment Attribute under PlaygroundArea, we are going to use the Default functionality. We know that all of the playgrounds have a slide and swing in them. This will allow for slide and swing to be automatically populated in the attribute and the field crew can just type in the remaining equipment.

- Select PlaygroundArea in the feature list and Play Equipment in the Attribute list and click Edit Attribute.
- Type in Slide Swing in the Default field.
- Click OK to save the Attribute.

Date Attribute

- Select Tree in the features list. Click the New Attribute button.
- In the New Attribute Type window, click Date.
- In the New Date Attribute window, enter Inspection Date in the Name field.
- Check the boxes next to Auto Generate on Creation and Auto Generate on Update
- Under Field Entry, change On Creation and On Update to Required.
- Click OK to create the attribute.

Use the copy and paste method to add all the date type attributes to their corresponding feature as displayed on the planning table.



File Name Attribute

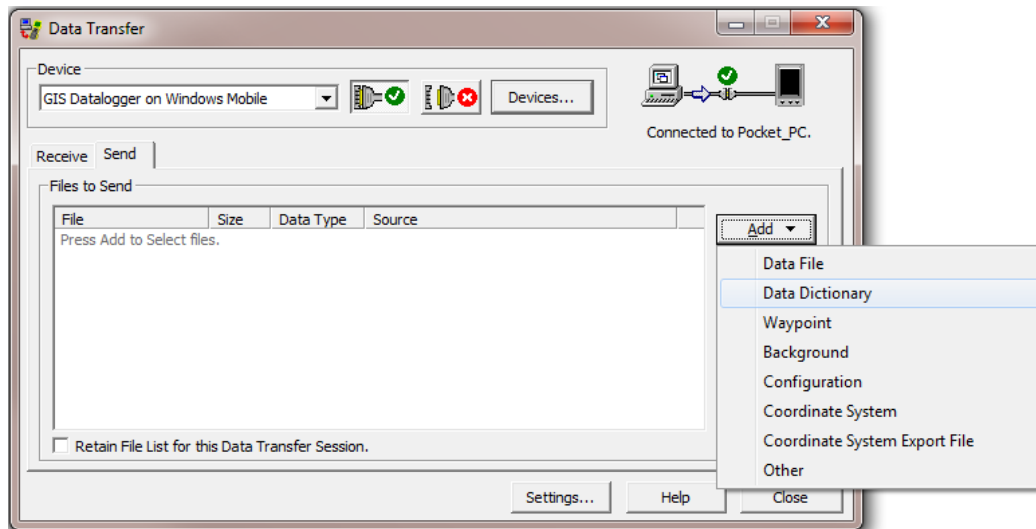
- Select Sidewalk in the features list. Click the New Attribute button.
- In the New Attribute Type window, click File Name.
- In the New File Name Attribute window, enter Photo in the Name field.
- Click OK to create the attribute.

If you would like to change the way that any of the attributes or features are listed in the data dictionary, you can select that attribute of feature and use the up or down arrows on the toolbar.

If you have the full or view only version of TerraSync installed to your computer, you can use the Preview in TerraSync button to view the data dictionary before sending it to the handheld and make sure it's setup the way you would like it to be.

Transferring Data Dictionary to Handheld

- Connect the handheld to your computer through Windows® Mobile Device Center or ActiveSync.
- Open the Data Transfer Utility under Utilities in Pathfinder Office.
- Connect as GIS Datalogger on Windows Mobile and press the connect button to establish a connection to the handheld.
- Select the Send tab.
- Click the Add button then Data Dictionary.
- In the Open window, browse to where you save the data dictionary. *Hint: The file ending will be .ddf.*
- Click Open to add the data dictionary file to the transfer list.
- Click Transfer All to transfer the file to the handheld.



Assigning Data Dictionary to a Data File

- Open TerraSync on the handheld under Start> Programs.
- Change the first dropdown to Data and the second dropdown to New.
- Enter a name in the File Name field.
- In the dropdown for Data Dictionary select the data dictionary that you created.
- Click Create to create the data file.

