

TRAINING GUIDE

Overview of ArcGIS Pro with Lucity

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Overview of ArcGIS Pro with Lucity

In this session, we'll cover the Lucity ArcGIS Pro add-in.

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Overview

Highlights for version 2018

- Configure GIS domains with corresponding Lucity picklist fields.
- Kick off a GIS force sync task on the fly for selected features in the map.
- Run a QA/QC analysis on any feature layer in the map.
- Define, Dissolve, Generate, or Link/Unlink Supersegments.
- Copy attributes from the longer pipe/segment when merging features.
- View product information with the About Lucity dialog.
- Persist the contents of the Process Log to disk to aid in troubleshooting.
- View selected features in the Lucity Relates tool with their display field, instead of Esri's ObjectID.
- Access version-specific tools based on the Lucity server version.

Highlights for version 2018r2

- View and manage bookmarks shared across the Lucity enterprise.
- Configure and generate Module Spatial Data as map layers.
- Update values in GIS with values from the corresponding Lucity records.
- Update the InMap flag in Lucity and view orphaned records for both GIS and Lucity.
- Create a work point at an XY location.
- Add an XY location to an existing Work Order or PM/Template.
- Renumber any inventory module with the Lucity Renumber tool.
- Have association tables updated during a Renumber operation.
- Have Storm BMP Sites updated during a Storm Conduit Split or Merge operation.

Requirements

- Pre-2017r2: ArcGIS Pro 1.2-1.4
- 2017r2-2018: ArcGIS Pro 2.0-2.2
- 2018r2: ArcGIS Pro 2.2
- Lucity Internal Web REST API must be installed and running.
- Lucity Internal Identity Server API must be installed and running.

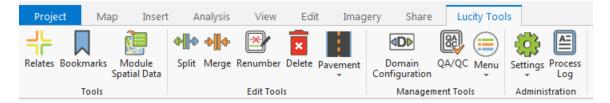
Note: With every release so far, no additional Lucity licensing is needed to use the Lucity extension in ArcGIS Pro. This will likely not be the case in a future release and some sort of Lucity license would be required to use the Lucity extension in ArcGIS Pro.

Installation

- The extension is provided in the format of an Esri add-in (LucityArcGISPro.esriAddInX)
- The Lucity workstation install will copy the .esriAddInX file to the Lucity desktop bin directory. The workstation install then determines if the workstation has ArcGIS Pro installed by checking the registry for HKLM>SOFTWARE>Esri>ArcGISPro. If that directory exists, then it will attempt to register the add-in with ArcGIS Pro.
- The add-in can also be manually installed. A download of the LucityArcGISPro.esriAddInX can be obtained at ArcGIS Pro 2.2 (1.2-1.4 for Pre-17r2 and 2.0-2.2 for 17r2 and 18). Simply double-clicking the add-in file will register the add-in with ArcGIS Pro.
- Lucity Internal Web REST API must be installed and running
- Lucity Internal Identity Server API must be installed and running

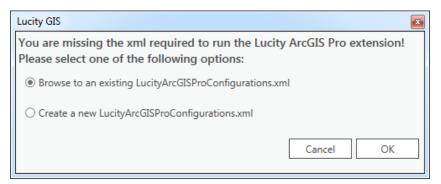
Setup/Configuration

When the Lucity ArcGIS Pro add-in is registered with ArcGIS Pro, a new Lucity Tools menu item is added to the ArcGIS Pro ribbon. The Lucity Tools menu contains four tool groups: Tools, Edit Tools, Management Tools, and Administration.



• The Lucity ArcGIS Pro extension doesn't require any Lucity workstation component to be installed, as the integration with Lucity is done via the Lucity Internal Web REST API. Therefore, before the tools provided with the Lucity ArcGIS Pro extension can be used, you must perform some initial configuration so the extension knows the location of the Lucity Internal Web REST API.

 When you attempt to use one of the Lucity ArcGIS Pro tools, the Lucity extension checks to see if it has been previously configured for use. If not, the following prompt will be displayed:



Note: Each time the Lucity ArcGIS Pro extension initializes it looks for a LUCITY_PROCONFIGDIR registry key in HKEY_CURRENT_USER>Software>Lucity>CurrentVersion. This key contains the path to where the LucityArcGISProConfigurations.xml resides. If the key isn't found or there isn't an .xml at that location, then it will prompt the user to configure ArcGIS Pro for first time use.

 The Lucity ArcGIS Pro extension requires a LucityArcGISProConfigurations.xml that contains information regarding the Lucity clients and their Internal Web REST API root URLs. An example of the contents of the .xml is:



There are two options: 1) Browse to an existing .xml or 2) create a new one. Ideally, an organization could just create one LucityArcGISProConfigurations.xml, place it on a network share, and configure all end-users to use that single .xml. Alternatively, each user could create their own .xml and have it saved locally.

 Browse to an existing LucityArcGISProConfiguration.xml- If you select this option an open dialog will appear, prompting you to select the existing .xml.

♥ ● Computer ♦ t (\\gbams	-dev-0	11) (T:) 🕨 TestData 🕨 Config	🗸 🍫 Search	Config	,
Organize 🔻 New folder				· · ·	0
Pictures B Subversion Videos Windows (C:)	E	Name LicenseCodes,Jackup.xml LicenseCodes,Dackup.xml LicenseCodes;Dackup.xml LicenseCodes;DAcset.xml LicenseCodes;DAxaml LicenseCodes;NamedUser.xml LicenseCodes;NamedUser.xml LicetyArcGISProConfigurations.xml LicetyArcGISProConfigurationS.xml LicetyConfigurations.xml LicetyConfigurations.xml	Date modified 11/30/2015 4:37 PM 11/32/2015 4:48 PM 12/28/2015 9:51 AM 12/28/2015 9:53 AM 12/28/2015 9:55 AM 12/28/2015 9:55 AM 12/28/2015 9:55 AM 5/19/2016 11:09 AM 6/7/2016 4:52 PM	Type XML Document XML Document XML Document XML Document XML Document XML Document XML Document XML Document	Siz
😴 t (\\gbams-dev-01) (T:)		< III			
File name: LucityArc	GISPro	Configurations.xml	XML Fil Op	es (*.xml) en Cancel	•

 Create a new LucityArcGISProConfigurations.xml- This option prompts the user with the following dialog for input regarding their Lucity Internal Web REST API(s).

Lucity GIS	E					
Enter the Lucity RESTAPI Url for each client you would like to access with the Lucity ArcGIS Pro extension						
Lucity Internal Web REST API Root Url	Client Name (Read Only)					
Validate	Cancel Save					

1. Enter the root URL to the Lucity Internal Web REST API for each client you wish to have work with the Lucity ArcGIS Pro extension.

Notes:

2. Validate. You must validate the configuration before saving. This will attempt to connect to the Internal Web REST API using the URL provided. If successful, the Client Name field will be populated with the associated name; otherwise, it will be populated with an error message.

Lucity GIS	
Enter the Lucity RESTAPI Url for each client y the Lucity ArcGIS Pro extension	you would like to access with
Lucity Internal Web REST API Root Url	Client Name (Read Only)
http://lct-w2008r2-01/18r2/LucityWebRESTAPI	Master SQL Server Development
http://localhost:51596	Error: Unable to connect to the r
	•
Velidete	Canal Sam
Validate	Cancel Save

3. Save. Once you have configured each desired client and validated, you need to save, which will create the .xml file. If you attempt to save when there are invalid records you will receive the following warning:

Lucity GIS			
You have some invalid records! Only valid records will get saved. Do you want to try and resolve before saving this configuration?			
Yes No			

Notes:____

 Choose location. The following dialog will appear prompting for the location to where you wish to save the newly created LucityArcGISProConfigurations.xml. Note: If you wish to share the .xml then you would likely want to save it to a shared network location where other users can access it.

Browse For Folder	×
Select where to save the LucityArcGISProConfigurations.xml	
📃 Desktop	
District Control Co	
Eric Daniel	
▷ 🖳 Computer	
🖻 🗣 Network 🔤	
Equation Panel	
👿 Recycle Bin	
32	
📕 ACT2015	
🐌 BATs	
C9JS_Fundamentals	
- Eval	
Make New Folder OK Cancel	

Notes:______

Logon Process

For each ArcGIS Pro session, you will be prompted to logon the first time a Lucity ArcGIS Pro tool is used. If you have more than one Lucity client configured for use, you will receive the following prompt to select which Lucity client to log into.

+ Lucity Logon
JL lucity.
Select a client:
Master SQL Server Development 🔹
ОК

The Lucity Identity Server is required for logging into the Lucity Internal Web REST API. The following prompt will appear asking for the user's Lucity credentials:

+ Lucity Login	
╡╞║	JCity
ר ו	
Username	
Password	Password
Fassword	
	Login

Once logged in, the user can begin using the Lucity ArcGIS Pro tools.

Tools

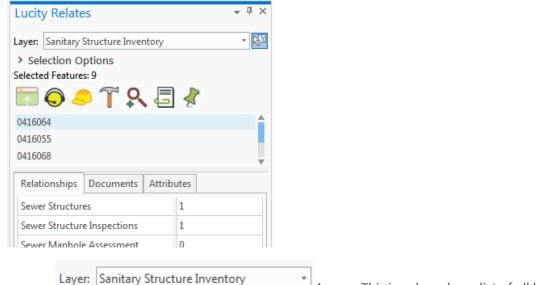
Relates



The Lucity Relates tool is used to view module relationships, manage documents, open related records in Lucity web, and create requests, work orders, pms, and inspections.

Project	Ma	p Insert	Analysis	View	Edi	t Imag	ery Share	Lucity Too	ls
Relates Boo	9	Module Spatial Data	Split Merge			Pavement	Domain Configuration		Settings Process Log
	Tools			Edit Tool	S		Managen	nent Tools	Administration

• When clicked, this tool opens a dockable window:



Layer: This is a drop down list of all layers in the

map that are linked to Lucity.

25

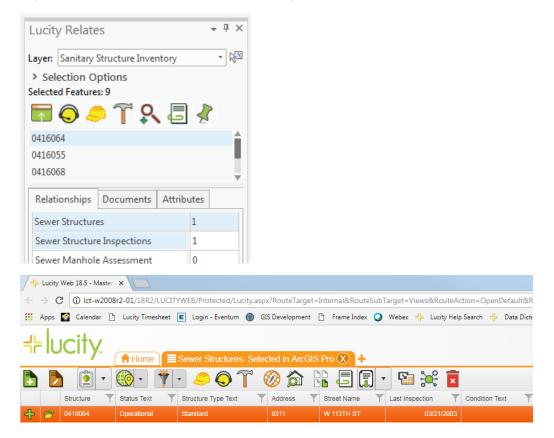
0

- Selection Tool: This changes the active tool to a selection tool, allowing the user to select features from the active layer (the active layer is the one specified in the Layer dropdown).
- Selected features grid: This is a list of the selected features for the currently selected layer. Selecting one or more records in this list will enable the Lucity tools.



View Record(s) in Lucity Web.

This tool will only be enabled if one or more features are highlighted in the selected features grid. This tool will open the module selected on the relationships tab.



Notes:

Create a Lucity Request

This tool will create a request (or multiple) using the highlighted feature(s) in the list. When clicked, the following dialog will appear:

Create Request Options	8
Create Request(s) for	
Highlighted Records [2 total]	○ All records [11 total]
Where	
○ ALL share a single Request	• EACH Record has its own Request
Export the current map view and attach it as a do	cument Cancel OK

- Select an option to create a request for just the highlighted record(s) or all records.
- (Optional) Export the current map view and attach it as a document to the Request. The format of the document is determined by the System Setting under GIS Desktop>>Format for map exports. If none is specified, then the default is pdf. Supported: bmp, emf, jpeg, pdf, png, tga, and tiff.
- Specify the desired options and click OK. If successful, the following prompt will appear:

Lucity	y GIS
Request(s) created successfully! newly created item(s)?	Would you like to open the
	Yes No

Notes:_____

Create a Lucity Work Order

This tool will create a work order (or multiple) using the highlighted feature(s) in the list. When clicked you will receive the following prompt:

Create Work Order	Options		×
Create Work Ord	ler(s) for		
Highlighted Re	cords [2 total]	○ All records [11 total]	
Where			
ALL share a sin	ALL share a single Work Order O EACH Record has its own Work Order		
Select Template:	(Optional)		
PM/Template	PM/Template Text		
1989-16	Add XY Test 2	1	
1989-15	Add XY test		
0019-SWCT38	0218170Locate		
0250-SWCT78	0218171Replace Sewer Main		
001234web-EQP1	test-Heavy Cleaning		
bldg	test		
0090 pm	test		
Export the curr	ent map view and attach it as a doc	ument Cancel OK	~

- Select an option to create a work order for just the highlighted record(s) or all records.
- Select an option to add all assets to a single work order or to create a separate work order for each asset.
- (Optional) Select an existing PM Template (list based upon the asset type) that should be used when creating the work order.
- (Optional) Export the current map view and attach it as a document to the Work Order. The format of the document is determined by the System Setting under GIS Desktop>>Format for map exports. If none is specified, then the default is pdf. Supported: bmp, emf, jpeg, pdf, png, tga, and tiff.
- After setting the desired options, click OK. If successful, the following prompt will appear:

Lucity GIS	
Work Order(s) created successfully! Would you like to c the newly created item(s)?	pen
Yes No	

Create a Lucity PM/Work Template

This tool will create a PM/Work Template (or multiple) using the highlighted feature(s) in the list. When clicked, the following prompt will appear:

Create PM/Work Template Options	
Create PM/Work Template(s) for	
Highlighted Records [2 total]	○ All records [11 total]
Where	
ALL share a single PM/Work Template	O EACH Record has its own PM/Work Template
Code and description are required: Routine Code Routine Description Export the current map view and attach it as a do	cument Cancel OK

- Select an option to create a pm/work template for just the highlighted record(s) or all records.
- Enter a Routine Code and a Routine Description. These are required, and the Routine Code must be unique.
- (Optional) Export the current map view and attach it as a document to the PM/Work template. The format of the document is determined by the System Setting under GIS Desktop>>Format for map exports. If none is specified, then the default is pdf. Supported: bmp, emf, jpeg, pdf, png, tga, and tiff.
- After setting the desired options, click OK. If successful, the following prompt will appear:

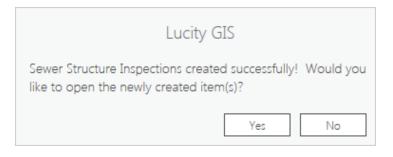
Lucity GIS		
PM/WorkTemplate(s) created successfully! Would you like to open the newly created item(s)?		
Yes No		

Create a Lucity Inspection

Q This tool will create an inspection (or multiple) using the highlighted feature(s) in the list. When clicked, you will receive the following prompt:

Create Inspection Options	
Create Inspection(s) for	
Ighlighted Records [2 total]	○ All records [11 total]
Where	
○ ALL share a single Inspection	EACH Record has its own Inspection
Select an inspection type:	
Sewer Structure Inspections	
Sewer MACP Inspections	
Sewer Manhole Vacuum Tests	
Sewer Stream Sampling Inspections	
	Cancel OK

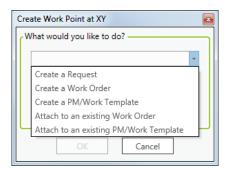
- Select an option to create the inspection for just the highlighted record(s) or all records.
- Select an inspection type. The list of inspection types is based upon the asset type. Note: Some asset types may have only one inspection type, and some may have none.
- After specifying the desired options, click OK. If successful, the following prompt will appear:



Create a Lucity Work Point

This tool will create a Lucity Request, Work Order, or PM/Template at an XY point, or attach an XY point to an existing Work Order or PM/Template. When clicked, the cursor becomes a crosshair, and you may click a location on the map to capture that location's coordinates. Once a point has been clicked, you will receive the following prompt:

> If you choose to create a new work object, then the Request, Work Order, or PM/Template Options dialog will appear once you click OK.



 If you choose to attach the coordinates to an existing Work Order or PM/Template, then a field will appear asking for the Work Order Number or the PM/Template Code. Clicking OK will send the data to Lucity.

Attach a Document

This tool will attach a document to the highlighted feature(s) in the list. When clicked, you will receive the following prompt:

Document Location:	
Allowed: doc, docx, bmp, wrf, x	ls, pdf, png, avi, jpg, mp4, mov, xlsx, txt, wmv, rpt, gif, html, msg
Document Description:	

- Document Location: This is the path to the document on your local filesystem that you would like to upload. Supported filetypes are shown below the text box.
- Document Description: A text description for the document.
- **Carry over to work order:** If checked, the document will be attached to any work orders created from the asset.
- Always open document directly: If unchecked, the web app will display a link to the document location, rather than opening the document itself.
- Once these options have been set to your desired configuration, click Attach. Results, success or failure, will be written to the Process Log.

Note: Attaching documents from ArcGIS Pro automatically uploads them to the document server. Associating documents (like you can do in Lucity Web) is not currently supported.

View a Document

Lucity Relates 🗸 🖣 🗙							
Layer: Sanitary	Layer: Sanitary Structure Inventory 🔹 🕅						
Selection O	ptions						
Selected Feature	s: 9						
🗖 🔕 🧢 🍸 🞗 🖥 🕴							
0416064			t i i				
0416080							
0416081							
Relationships Documents Attributes							
✓ Sewer Structures (1)							
7/17/2018 Document							
> Work Requests (1)							

- The Documents tab allows you to view all documents for all highlighted features in the list. This includes the feature's module itself, as well as all related modules (Work Orders, Requests, Inspections, etc.).
- Click View Documents to load the documents for all highlighted features.
- In the first field, the date the document was uploaded, along with its description, is displayed. In the second field, if the document is an image, a thumbnail is displayed.
- Double-clicking on the document in the list will do one of the following:
 - Open the document with your local machine's default program for whatever filetype the document is, if "Always open document directly" is set to true.
 - Download the document to your local downloads folder, if "Always open document directly" is set to false.

Notes:

Edit or Delete a document

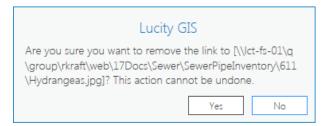
Relationships	Documents	Attributes
✓ Sewer Stru	ictures (1)	
	1/2018 ument	
> Work Requ	iests (1)	
	View Docume	ents

- These tools allow you to edit or delete a single selected document in the list.
- o To edit a document, click the Edit button. The following dialog will appear:

Edit Document	*
Document Location:	
\\lct-fs-01\q\group\rkraft\web\17Docs\Sewer\SewerPipeInventory\611\Hydrar	
Document Description:	
Document Save Cancel	
Carry over to work order	

- Document Location: This is the read-only path of the document as it exists on the file server. If the document was only associated (not uploaded), then this is not read-only, and can be changed.
- Document Description: A text description for the document.
- Carry over to work order: If checked, the document will be attached to any work orders created from the asset.
- Always open document directly: If unchecked, the web app will display a link to the document location, rather than opening the document itself.
- Once these options have been set to your desired configuration, click Save. Results, success or failure, will be written to the Process Log.

• To delete a document, click the Delete button. The following prompt will appear:



- Clicking Yes will disassociate the document from the record in whichever module it appears under in the list.
- If the document can also have its underlying file deleted, then this prompt will appear next:

Lucity GIS			
Document link successfully removed. Do you also want to delete the file [\\lct-fs-01\q\group\rkraft\web\17Docs\Sewer \SewerPipeInventory\611\Hydrangeas.jpg]? This action cannot be undone.			
Yes No			

- Clicking Yes will delete the document's underlying file from the file system.
- Results, success or failure, will be written to the Process Log.

Notes:

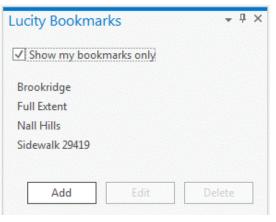
Bookmarks



The Lucity Bookmarks tool is used to view and manage bookmarks shared across the Lucity enterprise.

Project	Мар	Insert	Analysis	View	Edit	t Imag	jery Share	Lucity Too	ls	
Relates Book		iodule tial Data	�∰� �∭∳ Split Merge		× Delete	Pavement	Domain Configuration	QA/QC Menu	J V	Process Log
	Tools			Edit Tool	s		Manager	ment Tools	Admini	stration

- When clicked, this tool opens a dockable window:
 - Show my bookmarks only: This filters the list view to show only bookmarks that the current user has created.
 - Clicking on any bookmark item in the list will automatically zoom the map extent to that of the selected bookmark.



- Mousing over any bookmark item in the list will show a tooltip with the bookmark's description.
- To add a bookmark, click the Add button. The following dialog will appear:

Create bookmark	
Name:	Created by:
Description:	1
Extent (Xmin, Ymin, Xmax, Ymax, wkid):	
Existing extent:	
Current map extent 2252358.98901786,232210.994	1490964,2253778.7577717,233096.613976994,3419
Replace existing extent with current map extent	
Save	Cancel

- Name: A unique name for the bookmark.
- **Created by:** The Lucity user who created the bookmark.
- Description: A text description for the bookmark.
- **Current map extent:** The current extent of the active map view. This is the extent that will be used to create the bookmark.
- Once these options have been set to your desired configuration, click
 Save. The following prompt will appear once the bookmark has been created:

Lucity GIS	×
Bookmark created successfully!	
	OK

 To edit a bookmark, select a bookmark in the list and click the Edit button. The following prompt will appear:

Edit bookmark	
Name:	Created by:
Brookridge	gsmith
Description:	
Brookridge Country Club	
Extent (Xmin, Ymin, Xmax, Ymax, wkid):	
Existing extent: 2253336.83389927,236602.742939	527,2258386.76844302,238683.300028587,3419
Current map extent 2253336.83389927,236068.004	276844,2258386.76844302,239218.03869127,3419
Replace existing extent with current map extent	
Save	Cancel

- Name: A unique name for the bookmark.
- **Created by:** The Lucity user who created the bookmark.
- Description: A text description for the bookmark.
- **Existing Extent:** The current extent of the selected bookmark.
- **Current map extent:** The current extent of the active map view.
- Replace existing extent with current map extent: Updates the bookmark's extent to that of the current active map view.

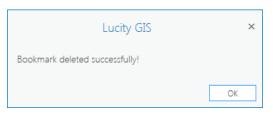
 Once these options have been set to your desired configuration, click Save. The following prompt will appear once the bookmark has been updated:



• To delete a bookmark, select a bookmark in the list and click the "Delete" button. The following prompt will appear:

Lucity	GIS	
You are about to delete the bookmark [Brookridge]. Are you sure you want to proceed?		
	Yes	No

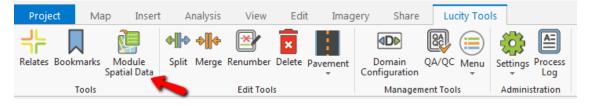
 Click Yes to confirm deletion of the bookmark. The following prompt will appear once the bookmark has been deleted:



Module Spatial Data



The Lucity Module Spatial Data tool allows a user to display Lucity Work data, and some inspection data, in the map.



The Module Spatial Data tool loads spatial work/inspection data into ArcGIS Pro with the following steps:

- 1. Spatial features are returned to ArcGIS Pro from Lucity.
- 2. LucityGISTools.gdb is created in the current Windows user's temp folder, if it doesn't already exist.

- 3. Feature classes (for each geometry type returned) are created in the LucityGISTools.gdb.
- 4. Fields that the user specified to be included in the results are added to the feature classes.
- 5. The feature classes are populated with the spatial features from Lucity.
- 6. The feature classes are added to the current map as layers.

To use the Module Spatial Data Tool:

1. Click the Module Spatial Data button. The following dialog will appear:

Lucity GIS- Load Spatia	I Lucity Data	Ē			
Selected Module	Sewer CCTV Assessment Select Module Layer Title:	CCTV Assessment			
Filter: SWPACP LEFT JOIN SWNET ON SWPACP.PA_NT_ID = SWNET.NT_ID					
	Change Filter	Limit results to current map extent			
Configure Properties	To Include				
Select Module:	Select Field:	CCTV Defect Remove			
CCTV Assessment Observations	# of TV PA_CONN Add	CCTV Rec # Remove			
	Additional Info PA_ADDINFO Add	Contin Footage Remove			
	Address PA_ADDRESS Add Alt Pipe ID NT_NUMBER	Distance Remove			
	Alt Pipe ID NI_NOWBER Add	Inspected Date			
Color code base	d on field	Symbol Size:			
	Load Cancel				

Notes:_____

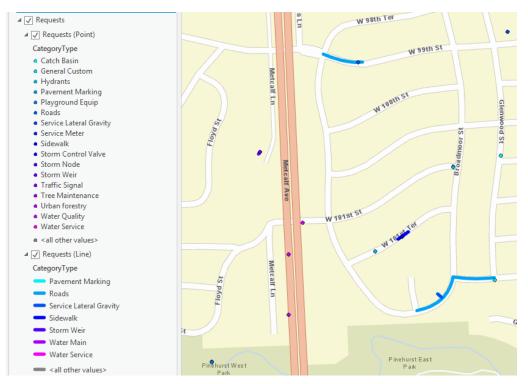
• **Selected Module:** The module for which to load spatial features. This is set by clicking the Select Module button, which opens the following dialog:

Select Module
Select a Module
▲ Sewer
▲ Pipes
CCTV Assessment
TV Inspections
Smoke Tests
Building Inspections
Overflows
▷ Storm
Transportation
▷ Water
▷ Work
OK Cancel

- **Layer Title:** The name to apply to the resulting layer(s) in the map.
- **Filter:** The filter used to retrieve spatial data from the selected module.
- **Change Filter:** Enables the filter textbox so that the user may modify the filter. Also displays a dropdown list of current filters for the selected module.
- **Limit results to current map extent:** Passes a spatial filter to Lucity so that only features within the current map extent will be returned.
- **Select Module:** Controls which fields are shown in the Select Field list view. This will either be the parent module, or one of the child modules.
- Select Field: Displays a list of all fields in the selected parent or child module selected under the Select Module list view. Clicking Add will add a field to the far-right list view, which holds fields to be included in the results. Clicking Remove from the far-right list view removes the field from the list of fields to be included in the results.
- **Color code based on field:** Indicates that the resulting layers will be symbolized based on unique values of a given field. If checked, the user must specify a field to symbolize on and a color palette to use.
- **Symbol size:** The symbol size for point/line features in the resulting layers. The default is 4.
- 2. Once you have set the options to your desired configuration, click Load. While geoprocessing tools are working to create and load feature classes, a cancelable progress indicator is provided:

Puilding Sectors Classes
Building Feature Classes
Adding fields to WorkRequestPoint_20187181134
Cancel

3. Upon completion, the resulting layer(s) are symbolized and added to the map under a group layer:



Edit Tools

Split

⇔∰⇒ Split The Lucity Split tool allows a user to split any Lucity-linked line feature in both GIS and Lucity, for several different asset types.

Project	Ma	p Insert	Analysis	View	Edit	Image	ery Share	Lucity Too	ls
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Relates Book		Module Spatial Data	Split Merge	Renumber	Delete Pa	avement T	Domain Configuration	QA/QC Menu	Settings Process
	Tools			Edit Tool	s		Managem	ient Tools	Administration

The following asset types are supported by the Lucity Split tool: Sewer Pipes, Storm Conduits, Water Pipes (Distribution, Raw, Recycled), Street Segments, Street Subsegments.

To use the Split tool:

1. Select any single line feature in the map that is linked to one of the aforementioned modules, and click the Split tool button on the Lucity Toolbar.

- 2. Click the point along the line where you would like to split the line.
- 3. For Sewer, Storm, or Water splits, if there was no existing Lucity-linked split point feature at the location where you clicked, you will be prompted to choose an asset type for the new split point feature:

Lucity GIS- Sewer Pipe Split				
Select a feature layer for inserted feature:				
Note: Only editable layers that are currently in the map are listed. A new feature will be created at the location of the split using the editing template defined below.				
Select a template to use if creating a new feature:				
*				
OK Cancel				

- 4. The Split Options form will display:
 - For Sewer, Storm, and Water splits:

Lucity GIS- Sewer Pipe Split			
Existing Pipe Info]
From/US Point: 0219012 From/US Point Type: Structure From/US Rim: 884.781 From/US Invert: 864.94	Pipe Number: 1937 GIS Pipe Length: 388.35 Lucity Pipe Length: 388.4	To/DS Point: To/DS Point Type: To/DS Rim: To/DS Invert:	0219011 Structure 883.308 863.72
	where split will occur. (Th inv be updated in the case where	thive pre-split pipe. is will keep a pipe recor entory module for the p ior archived pipe: Op	
CommonID for new US/From Pipe From/US Point: 0219012 To/DS Point: CommonID: Manual Entry Use Lucity Number Generator Use Endpoint IDs Use Existing Pipe's CommonID	Split Point Feature Asset Type: Sanitary Structure Inventor CommonID: Manual Entry Use Lucity Number Generator Rim Elevation: Rim Elevation: Rim Status: N/A Structure Depth:	CommonID for new I From/US Point: To/DS Point: CommonID: Manual Entry Use Lucity Numl Use Endpoint ID Use Existing Pip	0219011 ber Generator
	OK		

- **Existing Pipe Info:** This is read-only information for the existing pipe, upstream structure, and downstream structure.
- Split Options: You have the following options here: override the split distance calculated based on your click point along the line here, set which pipe will be used where only one relationship can be defined, archive the pre-split pipe, and set the status for the archived pipe. If you choose to archive the pre-split pipe, then it will not be deleted from the inventory module.

- CommonID for new US/From Pipe: You have the option to manually enter a Common ID for the new upstream pipe, use a Lucity number generator if one is set up, use the endpoint IDs, or use the existing upstream pipe's Common ID.
- Split Point Feature: If there is a new split point feature, you have the option to manually enter a Common ID for the split point feature, or use a Lucity number generator if one is set up. You also have the option to set the new rim information for the split point feature if it's a Sewer or Storm split.
- CommonID for new DS/To Pipe: You have the option to manually enter a Common ID for the new downstream pipe, use a Lucity number generator if one is set up, use the endpoint IDs, or use the existing downstream pipe's Common ID.
- For Street Segment splits:

Lucity GIS- Street Segment Split		
Existing Segment Info		
From Intersection: 20020000004089 From Street Name: W 103RD ST	Segment Number: 30460 Street Name: CONSER ST GIS Segment Length: 1845.83 Lucity Segment Length: 1845.8	To Intersection: 20020000007951 To Street Name: CONSER ST
CommonID for new From Segment From Intersection: 20020000004089 To Intersection: CommonID: Manual Entry Use Lucity Number Generator Use Intersection IDs Use Existing Segment's CommonID New Address Range for the From Segment Left Right From From To	Intersection Feature CommonID: Manual Entry Use Lucity Number Generator Do Not Create an Intersection Split Options 1156.2 Distance along the existing segment measured from start point (From Point) where split will occur. Use Longer Segment The segment that will be updated in the case where only one segment can be associated (i.e. requests)	CommonID for new To Segment From Intersection: To Intersection: 20020000007951 CommonID: Manual Entry O Use Lucity Number Generator Use Intersection IDs O Use Existing Segment's CommonID New Address Range for the To Segment Left Right From From To To To
	OK	

- **Existing Segment Info:** This is read-only information for the existing segment, from intersection and street, and to intersection and street.
- CommonID for new From Segment: You have the option to manually enter a Common ID for the new from segment, use a Lucity number generator if one is set up, use the intersection IDs, or use the existing from segment's Common ID.
- Intersection Feature: If there is a new intersection feature, you have the option to manually enter a Common ID for the intersection feature, use a Lucity number generator if one is set up, or not create an intersection at all.

- CommonID for new To Segment: You have the option to manually enter a Common ID for the new to segment, use a Lucity number generator if one is set up, use the intersection IDs, or use the existing to segment's Common ID.
- New Address Range for the From Segment (optional): This is the address info for the new from segment.
- Split Options: You have the following options here: override the split distance calculated based on your click point along the line here, set which pipe will be used where only one relationship can be defined, archive the pre-split segment, and set the status for the archived segment. If you choose to archive the pre-split segment, then it will not be deleted from the inventory module.
- New Address Range for the To Segment (optional): This is the address info for the new to segment.
- For Street Subsegment splits:

Lucity GIS- Street Subsegment Split	×
Existing Subsegment Info	
Subsegment ID: 13502-1 Sidewalk Length N	W: 1140.88 Sidewalk Length SE: 1711.32
Start Station: 0 %: 0 # of Driveway	
End Station: 1116.03 %: 74.43 ''	
GIS Length: 1116.03	Lucity Length: 1116.03
Split Options	
528.91 Distance along the existing pipe measure	red from start point (From/US Point) where split will occur.
New From Subsegment Info	New To Subsegment Info
Start Station: 0 %: 0.00 Length:	Start Station: 528.91 %: 35.27 Length:
End Station: 528.91 %: 35.27 528.91	End Station: 1116.03 %: 74.43 587.12
Start Desc:	Start Desc:
End Desc:	End Desc:
Pavement Type: •	Pavement Type: •
Surface Type: +	Surface Type:
Group Number:	Group Number:
Width: # of Lanes:	Width: # of Lanes:
Sidewalk Length NW: SE:	Sidewalk Length NW: SE:
Driveway Approaches NW: SE:	Driveway Approaches NW: SE:
OK	Cancel

- **Existing Subsegment Info:** This is read-only information for the existing subsegment.
- **Split Options:** You have the option to override the split distance calculated based on your click point along the line here.
- New From Subsegment Info (optional): These are various fields specific to the subsegment module for the new from subsegment.
- New To Subsegment Info (optional): These are various fields specific to the subsegment module for the new to subsegment.

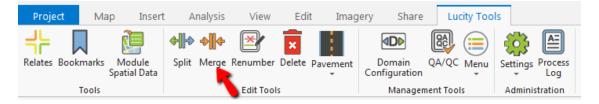
- 5. Once you have set the Split options to your desired configuration, click OK. The split will be processed first in GIS, and then in Lucity.
- 6. The following prompt will appear once the split has completed:





Merge

The Lucity Merge tool allows a user to merge any two Lucity-linked line features in both GIS and Lucity, for several different asset types.



The following asset types are supported by the Lucity Merge tool: Sewer Pipes, Storm Conduits, Water Pipes (Distribution, Raw, Recycled), Street Segments, Street Subsegments.

To use the Merge tool:

- 1. Select any two adjacent line features in the map that are linked to one of the aforementioned modules, and click the Merge tool button on the Lucity Toolbar.
- 2. The Merge Options form will display:

Notes:

• For Sewer, Storm, and Water merges:

Lucity GIS- Sewer Pipe Merge		2
Existing From/US Info	Existing Split Feature	Existing To/DS Info
Alt Pipe ID: 1835 Feature Type: Structure	Alt ID: 0237048 Feature Type: Sanitary Structure	Alt Pipe ID: 5115 Feature Type: Structure
Feature ID: 0237049 GIS Length: 269.947963107726 Lucity Length: 269.9	Only delete feature Delete feature from GIS only Delete from GIS and Lucity Select a status for the structure:	Feature ID: 0237047 GIS Length: 394.68854695893 Lucity Length: 394.7
New Pipe Info From/US Feature Type: Structure From/US Feature ID: 0237049	To/DS Feature Type: Structure To/DS Feature ID: 0237047	New Pipe Attributes Copy from:
New Alt Pipe ID:		Existing To/DS Pipe Existing Longer Pipe Archive (Optional)
 Manual Entry 	○ Use Existing From/US Pipe ID ○ Use Existing To/DS Pipe ID	Archive pre-merged pipes. (This will keep a pipe record in the Lucity inventory module for both of the pre-merged pipes.) Status for archived pipes: Operational
	OK	

- **Existing From/US Info:** This is read-only information for the existing from pipe.
- Existing Split Feature: This is read-only information for the existing split feature and you have the option to not delete the feature, delete it from GIS only, or delete it from GIS and Lucity.
- **Existing To/DS Info:** This is read-only information for the existing to pipe.
- New Pipe Info: This is read-only information for the new pipe, and you have the option to manually enter a Common ID for the new pipe, use a Lucity number generator if one is set up, use the endpoint IDs, use the existing upstream pipe's Common ID, or use the existing downstream pipe's Common ID.
- New Pipe Attributes: You can choose to copy over the attributes from the premerge from pipe, pre-merge to pipe, or the longer pipe.
- Archive (Optional): Select this option if you wish to maintain a record in the pipe inventory module for both the pre-merged pipes. If you select this option, the pre-merge pipes will not be deleted from the inventory module.

• For Street Segment merges:

Lucity GIS- Street Segment Merge		
Existing From Segment	Existing Intersection	Existing To Segment
Segment ID:9727Street Name:HAYES STFrom Intersection ID: 20020000017568From Street Name:ENGLAND DRGIS Length:885.245008326533Lucity Length:885.2	Intersection ID: 20020000003711 Onon't delete feature Delete feature from GIS only Delete from GIS and Lucity Select a status for the intersection: Operational	Segment ID:9740Street Name:HAYES STTo Intersection ID:200200000003793To Street Name:W 98TH TERGIS Length:825.909012551563Lucity Length:825.9
New Street Segment From Intersection ID: 2002000000175 From Street Name: ENGLAND DR New Segment Length: 1711.1		New Segment Attributes Copy from: Existing From Segment Existing To Segment Existing Longer Segment
	○ Use Existing From Segment ID ○ Use Existing To Segment ID	
	OK Cancel	

- Existing From Segment: This is read-only information for the existing from segment.
- Exsting Intersection: This is read-only information for the existing intersection feature, and you have the option to not delete the feature, delete it from GIS only, or delete it from GIS and Lucity.
- **Existing To Segment:** This is read-only information for the existing to segment.
- New Street Segment: This is read-only information for the new segment, and you have the option to manually enter a Common ID for the new segment, use a Lucity number generator if one is set up, use the intersection IDs, use the existing from segment's Common ID, or use the existing to segment's Common ID.
- New Segment Attributes: You can choose to copy over the attributes from the pre-merge from segment, pre-merge to segment, or the longer segment.

• For Street Subsegment merges:

Lucity GIS- Street Subsegment Merge					
Existing From Subsegment	Existing To Subsegment				
Subsegment ID: 7237-1	Subsegment ID: 7237-2				
Start Station: 0 %: 0	Start Station: 389.77 %: 47				
End Station: 389.77 %: 47	End Station: 829.3 %: 100				
Lucity Length: 389.8 GIS Length: 389.7741304	Lucity Length: 439.5 GIS Length: 439.5327159				
Start Desc:	Start Desc:				
End Desc:	End Desc:				
Pavement Type: Asphalt	Pavement Type: Concrete				
Surface Type:	Surface Type:				
Width: 56 # of Lanes: 4	Width: 44 # of Lanes: 4				
Sidewalk Length NW: 291.3 SE: 436.9	Sidewalk Length NW: 0 SE: 0				
# of Driveway Approaches NW: SE:	# of Driveway Approaches NW: SE:				
New Subsegment					
Start Station: 0 %: 0	Start Desc:				
End Station: 829.3 %: 100	End Desc:				
Length: 829.3					
Pavement Type:	Width: # of Lanes:				
Surface Type:	Sidewalk Length NW: SE:				
Group Number:	Driveway Approaches NW: SE:				
New Subsegment Attributes					
Copy from: Existing From Subsegment Existing	To Subsegment O Existing Longer Subsegment				
ОК	Cancel				

- Existing From Subsegment: This is read-only information for the existing from subsegment.
- Existing To Subsegment: This is read-only information for the existing to subsegment.
- **New Subsegment:** These are various fields specific to the subsegment module for the new merged subsegment.
- New Subsegment Attributes: You can choose to copy over the attributes from the pre-merge from subsegment, the pre-merge to subsegment, or the longer subsegment.
- 3. Once you have set the Merge options to your desired configuration, click OK. The merge will be processed first in GIS, and then in Lucity.
- 4. The following prompt will appear once the merge has completed:

Lucity C	GIS ×
Merge completed successfully!	
	ОК

Renumber



The Lucity Renumber tool allows a user to change the Common IDs of many assets at once, for any inventory type that can be linked to GIS.

Project	Ma	p Insert	Analysis	View	Edit	Imag	ery Share	Lucity Too	ls
Relates Boo		Module Spatial Data	Split Merge	Renumber	Delete (Pavement	Domain Configuration	QA/QC Menu	Settings Process Log
	Tools			Edit Tool	5		Manager	nent Tools	Administration

To use the Renumber tool:

- 1. Select the feature(s) in the map that you would like to renumber (these must all be from the same Lucity-linked feature class) and click the Renumber tool button on the Lucity Toolbar.
- 2. The following dialog will appear:

R	Renumber Features - Sanitary Pipe Inventory									
I	Features to Renumber									
	Use number generator for all features									
	Current Common ID	New Common ID	Use Number Generator							
	3225									
	3273									
	5002									
	1937									
Ιl				_						
	C	Ж	Cancel							

- **Use number generator for all features:** This option sets the Use Number Generator checkbox for all features in the selection.
- Current Common ID: This is a read-only field that displays the current Common ID for each selected feature. Clicking in this field will zoom and highlight the corresponding asset in the map.
- **New Common ID:** Enter the new Common ID value here. This is disabled if you are using a number generator for the feature.
- Use Number Generator: This option tells the program to use a configured number generator to assign the new Common ID to the feature, instead of the user manually entering it.

- 3. Once you have either set a new Common ID (or opted to use a number generator) for each selected feature, click OK. The renumber process will begin.
- 4. The following prompt will appear once the renumber has completed:

Lucity GIS	х
Renumber completed successfully!	
	ОК

Delete

×

Delete

The Lucity Delete tool allows a user to delete many assets at once, from both GIS and Lucity, for almost any asset type.



The Lucity Delete tool can currently be used on any asset type supported by GIS except Street Subsegments.

To use the Delete tool:

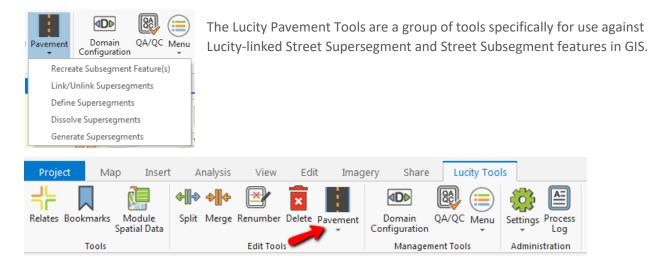
- 1. Select all features in the map that you wish to delete from both GIS and Lucity. These can be from multiple Lucity-linked feature classes.
- 2. Click the Delete tool button on the Lucity Toolbar to begin the delete process. The following prompt will appear:

Lucity GIS	×	
You currently have 3 features selected. Do you want to permanently DELETE these features from Lucity and the map?		
Yes No		

- 3. Clicking Yes will delete all selected features from both GIS and Lucity.
- 4. The following prompt will appear once the delete has completed:



Pavement Tools

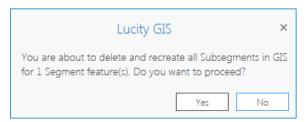


Recreate Subsegment Feature(s)

This tool redraws all Subsegments in the map for each selected Street Segment feature, based on the information within Lucity.

To use the Recreate Subsegment Feature(s) tool:

- 1. Select all Street Segment features in the map that you would like to recreate in GIS.
- 2. Click the Recreate Subsegment Feature(s) button under the Pavement Tools dropdown on the Lucity Toolbar. The following prompt will appear:



- 3. Clicking Yes begins the process. For each selected Segment, all existing child Subsegments will be deleted in GIS. Next, the child Subsegments will be redrawn in GIS by copying the parent Segment's geometry, and then splitting that line feature at each Subsegment's current end station distance in Lucity until all Subsegments have been drawn again.
- 4. The following prompt will appear once recreating Subsegments has completed:



Link/Unlink Supersegments

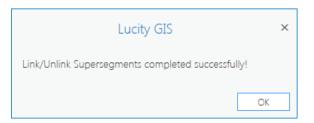
This tool manages linkages between Supersegments in Lucity, based on selected Supersegment features in the map.

To use the Link/Unlink Supersegments tool:

- 1. Select all Street Supersegment features in the map for which you would like to modify links.
- 2. Click the Link/Unlink Supersegments button under the Pavement Tools dropdown on the Lucity Toolbar. The following dialog will appear:

Link/Unlink Supersegment Features	×
Select an Option:	
Remove selected supersegments from existing links	
O Link selected supersegments	
O Remove selected supersegments from existing links and link selected supersegments	
Note: The option you choose will be applied to all (4) selected supersegment features in the the map WITHOUT saving edits!	
OK Cancel	

- **Remove selected supersegments from existing links:** Removes the selected supersegments from all links with other supersegments.
- Link selected supersegments: Links the selected supersegments together. This also links together any supersegments that are linked to the selected supersegments.
- Remove selected supersegments from existing links and link selected supersegments: Removes the selected supersegments from all links with other supersegments, then links the selected supersegments together. The resulting group of supersegments will include only those currently selected.
- 3. Once you have selected the desired option, click OK. The following prompt will appear upon completion:



Define Supersegments

This tool defines a Supersegment in GIS and Lucity, based on a group of Selected Subsegment features in the map. A new Supersegment feature is created in GIS to reflect the changes.

To use the Define Supersegments tool:

- 1. Select all the Subsegment features in the map that you would like to define as a Supersegment.
- 2. Click the Define Supersegments button under the Pavement Tools dropdown on the Lucity Toolbar. The following dialog will appear:

Lucity GIS- Define Supersegment									
Select option:									
O Create a new supersegment									
○ Redefine an existing supersegment									
○ Add to an existing supersegment									
O Remove from an existing supersegment									
Supersegment attributes:									
Superseg ID:									
Description:									
Group:									
Pavement Type:									
Classification:									
OK Cancel									

- Create a new supersegment: A brand new Supersegment will be created based on the selected Subsegments.
- Redefine an existing supersegment: An existing Supersegment will be redefined to be based on the selected Subsegments.
- Add to an existing supersegment: The selected Subsegments will be added to an existing Supersegment.
- Remove from an existing supersegment: The selected Subsegments will be removed from the Supersegment that they currently belong to.
- **Superseg ID:** The Common ID of the Supersegment to define. This is required for all the above options except "Remove from an existing supersegment".
- **Description:** The new description for the Supersegment.
- **Group:** The group identifier, if the Supersegment is part of a group of Supersegments.
- **Pavement Type:** The material that the Supersegment is made up of.
- **Classification:** The type of street by traffic load.
- 3. Once you have set the options to your desired configuration, click OK. The following prompt will appear once the define has completed:

Lucity GIS		×
Define Supersegment completed successfully!		
	OK	

Dissolve Supersegments

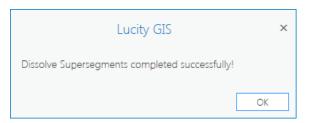
This tool disassociates all Subsegments in Lucity from the selected Supersegment in the map and deletes the Supersegment from GIS.

To use the Dissolve Supersegments tool:

- 1. Select all the Supersegment(s) in the map that you would like to dissolve.
- 2. Click the Dissolve Supersegments button under the Pavement Tools dropdown on the Lucity Toolbar. The following prompt will appear:

Lucity GIS	×
You have 1 Supersegment feature(s) selected. This tool wi disassociate the Subsegments currently associated to the selected Supersegment(s). In addition, you can delete the Supersegment inventory record from Lucity.	
Do you also want to delete the Supersegment inventory record and its associated Planning Table Asset records?	
Yes No Cancel	

- Yes: All Subsegments will be disassociated from the Supersegment in Lucity, and the Supersegment feature will be deleted from GIS. Additionally, the Supersegment Inventory record, and all its associated Planning Table asset records, will be deleted from Lucity.
- No: All Subsegments will be disassociated from the Supersegment in Lucity, and the Supersegment feature will be deleted from GIS. The Supersegment and all its associated Planning Table Asset records will remain in Lucity.
- **Cancel:** The Supersegment Dissolve process will be canceled.
- 3. Once you click Yes or No, the Supersegment Dissolve process begins. The following prompt will appear upon completion:



Generate Supersegments.

This tool creates Supersegment features in GIS based on what is defined in Lucity.

To use the Generate Supersegments tool:

1. Click the Generate Supersegments button under the Pavement Tools dropdown on the Lucity Toolbar. The following dialog will appear:

Lucity GIS- Generate Supersegn	nent 🛛 🛛
Supersegments to generate:	Hawthorne Valley
Filter	
○ All Records	
Currently Selected	
OK	
Cancel	

- **Filter:** Supersegments within a selected Lucity filter will be generated.
- All Records: All records in the Supersegment module will be generated.
- **Currently Selected:** Only Supersegments selected in the map will be generated. This is disabled if there are no selected Supersegment features.
- 2. Once you have selected your desired option, the Supersegment Generate process begins. The following prompt will appear upon completion:

Lucity GIS	×
Generate Supersegment completed successfully!	
	OK

Notes:

Management Tools

Domain Configuration



The Lucity Domain Configuration tool is used to manage synchronization between GIS domains and their corresponding Lucity picklists or libraries.

Project	Map	o Insert	Analysis	View	Edit	Imag	ery Share	Lucity Too	ls
Relates Book		Module Spatial Data	Split Merge	Renumber	Delete p	avement		QA/QC Menu	Settings Process Log
	Tools			Edit Tool	s		Managem	ient Tools	Administration

- The Lucity Domain Configuration tool can be used to update domains for feature classes and hosted service layers alike. To update hosted service layer domains, the user MUST be logged into the relevant ArcGIS Portal AND have it set as the active Portal in ArcGIS Pro.
- As of 2018r2, the tool can also be used to sync GIS subtypes with Lucity picklists.
- There are two types of GIS domains that Lucity updates:
 - **Standard Domains:** These are domains that are mapped to a Lucity inventory module's picklist.
 - Special Domains: These are domains that store values from another Lucity module or library. These include Street Name List, Street Light Library, MUTCD (Sign) Library, Tree Library, and Work Category, Maintenance Zone, and Alternate Zone.

To use the Lucity Domain Configuration tool:

1. Click the Domain Configuration button. The following dialog will appear:

Lucity GIS- Domain Configuration	
Select a Domain Type	Water Hydrants
○ Standard domains	Water Hydrant Laterals
 Special domains 	Water Mains
Street Name 🔹	
Note: to update domains for hosted service layers, the relevant ArcGIS Portal MUST be logged in AND set to active in ArcGIS Pro	
OK Cancel	Select all layers in list

- 2. Select whether you would like to update Standard domains or Special domains.
 - Choosing Standard Domains requires you to select layers in the right-hand list for which to manage domains.
 - Choosing Special Domains requires you to select a type of Special Domain.
- 3. Click OK, and another dialog pertaining to your selection will appear.

Standard Domains

• Once the domain validation process begins, the results are written to the process log. The tool validates each Lucity-linked domain in each selected layer:

Lucity Process	Log
	_
Log Everything	Persist Log to Disk
Lucity Domain Config Building for	
v	andard Domains Start alidating Domains for [Water Hydrants] Validating Domain for Lucity field [HY_MFG_CD] Lucity Picklist is missing GIS code for [TEST] in GIS Domain Validating Domain for Lucity field [HY_OWNR_CD] Validating Domain for Lucity field [HY_MANG_CD] alidating Domain for Lucity field [PP_MAT_CD] Validating Domain for Lucity field [PP_OWNR_CD] Validating Domain for Lucity field [PP_MANG_CD] Validating Domain for Lucity field [PP_MANG_CD] Validating Domain for Lucity field [PP_MANG_CD] Validating Domain for Lucity field [PP_MANG_CD]

• Additionally, a form will display with a summary of the validation results. Rows highlighted in red indicate that discrepancies were found between the domain and the corresponding picklist.

	No Issues	Missing Domain	Invalid Type	No Domain values	Domain Missing Value	Lucity Missing Value	Desc Don't Match	GIS Domain Name	Feature Class	GIS Field	Lucity Field	GIS Field Type	Lucity Field Type
/lanage						V		wHydrantManufacturer	Water Hydrants	MANUFACTURER	HY_MFG_CD	String	Numeric
/lanage								AssetOwner	Water Hydrants	OWNEDBY	HY_OWNR_CD	SmallInteger	Numeric
lanage	V							AssetManager	Water Hydrants	MAINTBY	HY_MANG_CD	SmallInteger	Numeric
lanage								piPipeMaterial	Water Mains	MATERIAL	PP_MAT_CD	String	Numeric
lanage								AssetOwner	Water Mains	OWNEDBY	PP_OWNR_CD	SmallInteger	Numeric
lanage								AssetManager	Water Mains	MAINTBY	PP_MANG_CD	SmallInteger	Numeric

- Manage: Opens the Domain Compare dialog to manage the selected domain.
- **No Issues:** The domain is in sync with the Lucity picklist.
- **Missing Domain:** The GIS field has no domain applied to it.
- Invalid Type: The GIS field has a domain, but it is not a coded-value domain.

- **No Domain values:** The GIS field's domain is empty.
- Domain Missing Value: The domain is missing a coded value that exists in the Lucity picklist.
- Lucity Missing Value: The Lucity picklist is missing a coded value that exists in the GIS domain.
- **Desc Don't Match:** The GIS domain has a type value that is different from that of the corresponding Lucity code value (or vice versa).
- **GIS Domain Name:** The name of the GIS domain.
- **Feature Class:** The feature class (or layer) name.
- **GIS Field:** The name of the GIS field that is using the domain.
- Lucity Field: The name of the Lucity field that the GIS field is mapped to.
- **GIS Field Type:** The data type of the GIS field.
- **Lucity Field Type:** The data type of the Lucity field.
- **Revalidate:** Re-runs the validation. This is useful to do after making changes to the domain and/or picklist.
- **Close:** Closes the dialog.
- To resolve discrepancies that are found for a given domain, click Manage. The following dialog will appear. Information about the GIS Domain (or Subtype) is shown on the left, and information about the Lucity Picklist is shown on the right. In both top grids, rows that have a discrepancy are highlighted in red.

Resolve Domain Discr	repancies						
GIS Domain		1	Lucity Picklist				
GIS Feature Class:	Water Hydrants		Lucity Module:	Water Hydrants			
GIS Field Name:	MANUFACTURER Field Type: String		Lucity Field Nam	e: HY_MFG_CD Field Type	e: Numeric		
GIS Domain:	wHydrantManufacturer	>> Add value to Lucity >>	Lucity Picklist:	ManufacturerCode			
Code	Description	Repopulate Lucity to match GIS	Code	Description	GIS Code *Req	Restricted	
American Darling	American Darling		1	Wood-Matthews	Wood-Matthews		
Clow Corporation	Clow Corporation		2	Waterous	Waterous		
Corey	Corey	<< Add value to GIS <<	3	US Pipe	US Pipe		
Dresser	Dresser	<< Add value to GIS <<	4	Unknown	Unknown		
Eddy	Eddy	Repopulate GIS to match Lucity	5	Traverse City	Traverse City		
Iowa Valve	Iowa Valve		6	Other	Other		
Kennedy Valve	Kennedy Valve		7	Mueller Company	Mueller Company		
M&H Valve	M&H Valve		8	M&H Valve / Dresser	M&H Valve / Dres		
M&H Valve / Dres	M&H Valve / Dresser	Close	9	M&H Valve	M&H Valve		
Mueller Company	Mueller Company		10	Kennedy Valve	Kennedy Valve		
Other	Other		11	Iowa Valve	Iowa Valve		
TEST	Test		12	Eddy	Eddy		
Traverse City	Traverse City		13	Dresser	Dresser		Ŧ
	Apply Changes	Show current values and record count	5	Apply Changes	5		

- **GIS Feature Class:** The feature class (or layer) that the domain is assigned to.
- **GIS Field Name:** The GIS field that uses the domain.

- **Field Type:** The data type of the GIS field.
- **GIS Domain:** The name of the domain.
- o <u>Domain values grid.</u>
 - **Code:** The coded values for the domain.
 - **Description:** The descriptions for each coded value in the domain.
- **Apply Changes:** Commits the changes to the GIS domain.
- Add Value to Lucity: Adds the selected domain value to the Lucity picklist.
- **Repopulate Lucity to match GIS:** Overwrites the entire Lucity picklist with the values from the GIS domain.
- Add Value to GIS: Adds the selected picklist value to the GIS domain.
- **Repopulate GIS to Match Lucity:** Overwrites the entire GIS domain with the values from the Lucity picklist.
- **Close:** Closes the dialog.
- Show current values and record counts: Expands two more data grids that display how many records in GIS and Lucity are using each domain value or picklist value, respectively.

			Show current values and record counts			
Current GIS Values -			Current Luci	ty Values		
Code	Description	# of Records	Code	Description	GIS Code	# of Records
American Darling	American Darling	9 🔺	1	Wood-Matthews	Wood-Matthews	0
Clow Corporation	Clow Corporation	1	2	Waterous	Waterous	2
Corey	Corey	0	3	US Pipe	US Pipe	0
Dresser	Dresser	0	4	Unknown	Unknown	0
Eddy	Eddy	0	5	Traverse City	Traverse City	0
Iowa Valve	Iowa Valve	0	6	Other	Other	0
Kennedy Valve	Kennedy Valve	0	7	Mueller Company	Mueller Company	1951
M&H Valve	M&H Valve	0	8	M&H Valve / Dresser	M&H Valve / Dre:	0
M&H Valve / Dres	M&H Valve / Dresser	0	9	M&H Valve	M&H Valve	0
Mueller Company	Mueller Company	1951	10	Kennedy Valve	Kennedy Valve	0
	Other	0	11	Iowa Valve	Iowa Valve	0

- Lucity Module: The module in Lucity that the feature class (or layer) is linked to.
- Lucity Field name: The Lucity field that the GIS field is mapped to.
- **Field Type:** The data type of the Lucity field.
- **Lucity Picklist:** The name of the Lucity picklist.
- <u>Picklist values grid.</u>
 - **Code:** The coded values for the picklist.
 - **Description:** The descriptions for each coded value in the picklist.

- GIS Code: The code values that the GIS domain uses. This is required if the data type of the GIS field does not match that of the Lucity field. These values are used to translate back and forth between GIS and Lucity.
- **Restricted:** Indicates whether the picklist value is restricted. If it is, then only the GIS Code can be modified.
- Apply Changes: Commits the changes to the Lucity picklist.

Special Domains

- A different dialog will display for each type of Special Domain option that is selected. They all have the following two steps:
 - Step 1: Select a workspace or hosted service layer to update domain(s) for: This is the workspace (file geodatabase, enterprise geodatabase, or hosted service layer) that will take the domain update. This also is used to build the dropdown list(s) of available domains.
 - Step 2: Select the existing domain (or create a new one) that corresponds to: For each Lucity field or picklist, the user has a dropdown list of available domains. In that dropdown list, the user must opt to do one of the following:
 - Choose an existing domain to update.
 - Create a new domain.
 - Skip the domain update.
- Street Name Domains:

Step 1: Select a workspace or hosted se	ervice layer to update domain(s) for						
LucityGISDev as DBO on LCT-ARCSRV-02.sde							
Step 2: Select the existing domain (or c	reate a new one) that corresponds to:						
Street direction (ADR_DIR):	×						
Street prefix type (ADR_PT):							
Street name (ADR_STR):							
Street type (ADR_TY):	· · · · · · · · · · · · · · · · · · ·						
Street suffix (ADR_SFX):							
Composite street name:							
·	All of the above fields combined into one field. Code and Description will be identical.						
Street name ID:	Coae ana Description will be laentical.						
·	Code = (ADR_ID), Description = (All of the above fields combined into one field).						
OK	Cancel						

- **Street direction (ADR_DIR):** Address direction from the Street List.
 - Domain code and type are equal.
 - Domain name is *Lucity.StreetNameDirection* if created by Lucity.
 - This domain will be automatically associated to all fields linked to a Lucity Street Direction field (typically *_ADR_DIR).
- **Street prefix type (ADR_PT):** Address prefix type from the Street List.
 - Domain code and type are equal.
 - Domain name is *Lucity.StreetNamePrefixType* if created by Lucity.
 - This domain will be automatically associated to all fields linked to a Lucity Street Prefix Type field (typically *_ADR_PT).
- Street name (ADR_STR): Address street name from the Street List.
 - Domain code and type are equal.
 - Domain name is *Lucity.StreetNameName* if created by Lucity.
 - This domain will be automatically associated to all fields linked to a Lucity Street Name field (typically *_ADR_STR).
- **Street type (ADR_TY):** Address street type from the Street List.
 - Domain code and type are equal.
 - Domain name is *Lucity.StreetNameType* if created by Lucity.
 - This domain will be automatically associated to all fields linked to a Lucity Street Type field (typically *_ADR_TY).
- Street suffix (ADR_SFX): Address street suffix from the Street List.
 - Domain code and type are equal.
 - Domain name is *Lucity.StreetNameSuffix* if created by Lucity.
 - This domain will be automatically associated to all fields linked to a Lucity Street Suffix field (typically *_ADR_SFX).
- **Composite street name:** All the above fields combined into one field.
 - Domain code and type are equal.
 - Domain name is *Lucity.StreetNameComposite* if created by Lucity.
 - This domain will be automatically associated to all fields linked to a Lucity Composite Street Name field (those shown in green in GIS/GDB Configuration).

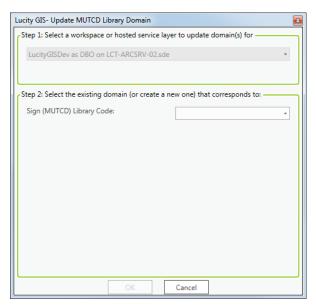
- Street name ID: Record number from the Street List.
 - Domain code is the record number and domain type is a collection of all the street fields combined into one field.
 - Domain name is *Lucity.StreetNameList* if created by Lucity.
 - This domain will be automatically associated to all fields linked to the Lucity Street Name ID field (SN_ST_SID, SN_ST1_SID, SN_ST2_SID).
- Street Light Domain:

ucity GIS- Update Street Light Domain							
Step 1: Select a workspace or hosted s	service layer to update domain(s) for						
LucityGISDev as DBO on LCT-ARCSRV-02.sde							
Step 2: Select the existing domain (or	create a new one) that corresponds to:						
Street Light Library Code							
	•						
OK	Cancel						

- **Street Light Library Code:** Library code and text from the Street Light Library.
 - Domain code is the library code and domain type is the library text.
 - Domain name is *Lucity.StreetLight* if created by Lucity.

Notes:____

• MUTCD (Street Sign) Domain:



- **Sign (MUTCD) Library Code:** Library code and sign description from the MUTCD Library.
 - Domain code is the library code and domain type is the library code and the sign description, separated by a dash ("-").
 - Domain name is *Lucity.MUTCD* if created by Lucity.
- Tree Library Domain:

Lucity GIS- Update Tree Library Domain	X
Step 1: Select a workspace or hosted service laye	r to update domain(s) for
LucityGISDev as DBO on LCT-ARCSRV-02.sde	•
Step 2: Select the existing domain (or create a ne	w one) that corresponds to:
Tree Library Code:	v
Select two Tree Library fields (separated by a d for this domain.	ash "-") to use as the description
Field 1:	Common Name (TZ_CO! •
Field 2:	Species (TZ_SPECIES) *
OK	Cancel

- **Tree Library Code:** Library code and combination of fields from the Tree Library.
 - Domain code is the library code and domain type is defined by the user.
 - Domain name is *Lucity.TreeLibrary* if created by Lucity.

- Select two Tree Library fields (separated by a dash "-") to use as the description for this domain: The user must pick two library fields to use as the domain description.
 - These are separated by a dash ("Field 1 Field 2").
 - By default, they are Common Name and Species, respectively.
- Work Domains:

Lucity GIS- Update Work Domains	x							
Step 1: Select a workspace or hosted service layer to update domain(s) for								
LucityGISDev as DBO on LCT-ARCSRV-02.sde								
	J							
Step 2: Select the existing domain (or create a new one) that corresponds to:	ר							
Default Work Category Code:								
Default Work Maintenance Zone Code:								
Default Work Alternate Zone								
OK Cancel								

- **Default Work Category Code:** Category code and description from Work Flow Setup.
 - Domain code is the category code and domain type is the category code and the category description, separated by a dash ("-").
 - Domain name is *Lucity*. *WorkCategory* if created by Lucity.
 - This domain will be automatically associated to all fields linked to a Lucity Work Category Code field (typically *_BR_CD).
- Default Work Maintenance Zone Code: Maintenance zone code and description from Work Flow Setup.
 - Domain code is the maintenance zone code and domain type is the maintenance zone code and the maintenance zone description, separated by a dash ("-").
 - Domain name is *Lucity*. *WorkMaintenanceZone* if created by Lucity.
 - This domain will be automatically associated to all fields linked to a Lucity Work Maintenance Zone Code field (typically *_MZONE_CD).

- **Default Work Alternate Zone Code:** Alternate zone code and description from Work Flow Setup.
 - Domain code is the alternate zone code and domain type is the alternate zone code and the alternate zone description, separated by a dash ("-").
 - Domain name is *Lucity.WorkAlternateZone* if created by Lucity.
 - This domain will be automatically associated to all fields linked to a Lucity Work Alternate Zone Code field (typically *_AZONE_CD).



QA/QC

The Lucity QA/QC tool can be used to identify possible problems with GIS data, regardless of whether the layer is linked to Lucity.



- The QA/QC tool performs five tests against a given GIS layer, the results of which are written to the Process Log. The tests are:
 - Features that are missing a Common ID.
 - Features that have duplicate Common IDs.
 - Features with empty geometries.
 - Features with duplicate geometries.
 - Features with non-simple geometries.

- To use the QA/QC tool:
 - Click the QA/QC button. The following dialog will appear:
 - Step 1: Select a layer in the map: The layer to run QA/QC against. This does not have to be linked to Lucity.
 - **Step 2: Specify the Common ID:** The field in the chosen layer that stores the unique identifier. This is used for some of the QA/QC tests.
 - Once you have set your desired options, click
 Perform QC. A cancelable progress indicator will appear:

Lucity GIS- Quality Control
Step 1: Select a layer in the map
(This is the data to perform the QA/QC on)
Step 2: Specify the Common ID
Common ID Field:
Perform QC Cancel

Performing QC Analysis Analyzed 8 records Cancel

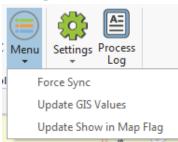
• Once the analysis is complete, the following prompt will appear:

Lucity GIS	×
QA/QC complete! Check the Process Log fo	r results.
	OK

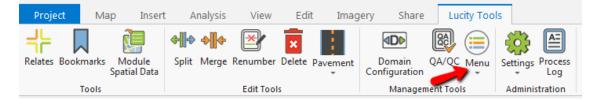
• QA/QC results are written to the Process Log, which can then be exported as a file:

city QA/QC On(
Building f										
	QA/QC Start									
	Gathering info from Laver = [Parks]	selected options.								
	Connection = [http CommonID field =		net/server/	/rest/serv	rices/Luci	tyGISDev	r/LucityGl	S_All_Editabl	e/FeatureSe	rver/215]
Log 1 of	5: Features that are	missing a Commo	n ID							
OID	Starting X Coordinate		Y Coordina		Ending X			Ending Y Co		
193	2273276.3067585		23884514		2273276			239993.238	845147	
194	2240644.3933727 5: Features that ha			2240644	.3933727	234959.6	6/0931/5	/		
	CommonID	Starting X Coordir		Starting)	Coordina	to	Ending X	Coordinate	Ending	y Y Coordina
195	PARK 03	2244205.334973			07742782			33497375		7.30774278
196	PARK 03	2244662.434711			6220472			43471128		2.36220472
Log 3 of	5: Features with em	pty geometries								
OID	CommonID	Starting X Coordin	nate	Starting `	Coordina	te	Ending X	Coordinate	Ending	y Y Coordinai
197	PARK_04									
	5: Features that ha									
OID 198	CommonID	Starting X Coordir 2240312.338582			Coordina			Coordinate		Y Coordina 4.55807086
198	PARK_01 PARK_02	2240312.338582			58070868 58070868			33858268 33858268		4.55807086
	5: Features with no								23270	4.55007000
OID	CommonID	Starting X Coordin			Coordina			Coordinate	Ending	Y Coordina
149		50295275	234981.3				5029527		4981.379921	
154	48 2250941	.62992126	230822.4	7112860	5	2249833	6948818	23	0777.339895	01
189	jcpark_008	2273375.637795			41732283			63779528		3.64173228
191	jopark 013	2273016.244750	66	234351.6	96850397	7	2273016	24475066	23435	1.69685039

Management Tools Menu



The Management Tools Menu provides 3 tools used to manage/update data in both GIS and Lucity.



Force Sync

This tool updates the Lucity system with data from the features selected in the map. The tool works by kicking off a temporary GIS sync task on the fly, based on what features are selected in the map. The tool can be run against multiple Lucity-linked layers at a time.

Requirements:

- Lucity Services must be running and GISTaskRunner must be enabled on the Lucity Services machine.
- The map layers to run Force Sync against must be feature service layers, since the GIS tasks require feature services to run.

To use the Force Sync tool:

1. Select the features in the map that you would like to sync with Lucity and click the Force Sync button. The following dialog will appear:

Lucity GIS- Force Sync 🛛 🔊
Force Sync Options
Insert record if it doesn't already exist
Update existing record
Enable number generator for imports
Enable spatial relates for imports
3 feature(s) selected
Note: You MUST have GISTaskRunner enabled on your Lucity Services machine to perform a Force Sync
OK Cancel

- Insert record if it doesn't already exist: Allows new records to be inserted into Lucity.
- Update existing record: Allows existing records to be updated in Lucity.
- Enable number generator for imports: Number generators will be utilized to assign Common IDs for new records.
- Enable spatial relates for imports: Spatial relationships will be processed during the sync.
- 2. Once the desired options have been set, click OK. The following prompt will appear:



- 3. A GIS task for the selected records for each layer will be queued up in Lucity and will process automatically the next time the task processor runs. This should take no longer than a few minutes.
- 4. Since there is no GIS task interface in ArcGIS Pro to view logs, the user can view them in Lucity web under Admin Portal > Web App Management > GIS Scheduled Tasks Log:

icenses	Task ID	Layer Name	Recorded DateTime	Status	Edit Type	Edit Description	Error Type
anagement							
lications	39	wHydrant	7/24/2018 10:03 AM	Import Complete.	N/A		
nd Tasks uled Tasks Log dater Processing	39	wHydrant	7/24/2018 10:03 AM		Add	Inserted new record	0
Integration	39	wHydrant	7/24/2018 10:03 AM	Starting Import. Number of records to process: [1]	N/A		
ors Activity Log	39	wHydrant	7/24/2018 10:03 AM	Force Sync Scheduled Task- Start Process	N/A		
	36	trPolePost	7/23/2018 10:59 AM	Import Complete.	N/A		
	36	trPolePost	7/23/2018 10:59 AM		Add	Inserted new record	0
	36	trPolePost	7/23/2018 10:58 AM		Update	Updated existing record	0
	36	trPolePost	7/23/2018 10:58 AM		Update	Updated existing record	0
	36	trPolePost	7/23/2018 10:58 AM		N/A	Invalid address: [W 93rd St] and system settings require address to be valid.	0
	36	trPolePost	7/23/2018 10:58 AM		Update	Updated existing record	0
	36	trPolePost	7/23/2018 10:57 AM		Update	Updated existing record	0
	36	trPolePost	7/23/2018 10:57 AM		N/A	Invalid address: [W 93rd St] and system settings require address to be valid.	0
	36	trPolePost	7/23/2018 10:57 AM		Update	Updated existing record	0
	36	trPolePost	7/23/2018 10:56 AM		N/A	Invalid address: [W 93rd St] and system settings require address to be valid.	0
	36	trPolePost	7/23/2018 10:56 AM	Starting Import. Number of records to process: [6]	N/A		
	36	trPolePost	7/23/2018 10:28 AM		N/A	Invalid address: [W 93rd St] and system settings require address to be valid.	0
		Page 1 of 3 >					0 of 110 in

Update GIS Values

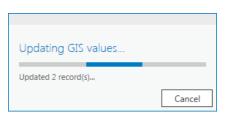
This tool updates records in GIS with data from the corresponding Lucity records.

To use the Update GIS Values tool:

- 1. Click the Update GIS Values button. The following dialog will appear:
 - Select a layer and fields to update: Choose a Lucitylinked layer in the map from the top dropdown list. Once a layer is chosen, the list box below the dropdown list will be populated with Lucity-linked fields from the layer. Clicking on these fields will add them to the list of fields to be included in the update.
 - Overwrite GIS value to null if it is null in Lucity: If checked, if a given value is null in Lucity, then the corresponding GIS record will have its value updated to null. Otherwise, the update for that field will be skipped for that GIS record.

Lucity GIS- Update GIS Values 🛛 🔊
Select a layer and fields to update
· · · · · · · · · · · · · · · · · · ·
Options
Overwrite GIS value to null if it is null in Lucity
Update:
Ill Records
○ Currently Selected
OK Cancel

- All Records: All records in the layer will be updated.
- **Currently Selected:** Only records currently selected in the map from the layer will be processed. This option is only available if the chosen layer has a map selection.
- 2. Once you have selected the options to your desired configuration, click OK. A cancelable progress dialog will appear:



3. Once processing is complete, the following prompt will appear:

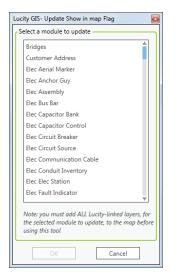


Update Show in Map Flag

This tool looks for matching features in GIS for each record in a Lucity module and updates the Lucity record's In Map flag based on whether a match is found in GIS.

To use the Update Show in Map Flag tool:

1. Click the Update Show in Map Flag button. The following dialog will appear:



- Select a module to update: Pick from a list which module you would like to update the in-map flag for. It is required that all layers linked to the given module are present in the map.
- 2. Once you have selected a module, click OK. The tool will run and when processing is complete, the following dialog will appear with results:

Lucity GIS- Upda	ucity GIS- Update Show in Map Flag Results								
Module: Park	s								
In GIS and Not	In Lucity			In Lucity and Not	In GIS				
Layer	Common ID	Object ID		Common ID	Auto ID				
Parks		193		662	725				
Parks		194		727	727				
Parks	PARK_03	195		728	728				
Parks	PARK_03	196		729	730				
Parks	PARK_04	197		1059	1139				
Parks	PARK_01	198		1141	1141				
Parks	PARK_02	199		1142	1142				
				1143	1144				
				9999	1255				
				1302	1365				
				1367	1367				
				1368	1368				
				1369	1370				
				1661	1741				
				1743	1743				
				1744	1744	T			
7 record(s) (sel	ect rows in the grid to	Force Sync with Lucit	v)	141 record(s)					
			-	2.2.2.00010(5)					
Enable num	iber generator	Enable spatial rel	ates						
	Force Sync	Close							

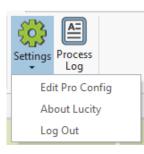
- **Module:** The Lucity module for which the in-map flag was updated.
- In GIS and Not In Lucity: Records that exist in GIS but have no match in Lucity. Selecting rows in this table will enable Force Sync options.
 - Layer: The GIS layer that the feature belongs to.
 - **Common ID:** The value in the GIS field that is mapped to Lucity's Common ID.
 - **Object ID:** Esri's Object ID for the feature.
- In Lucity and Not In GIS: Records that exist in Lucity but have no match in GIS.
 - **Common ID:** The unique identifier for the Lucity record.
 - Auto ID: The record number, or database ID, for the Lucity record.
- **Enable number generator:** If a Force Sync is kicked off, the number generator will be utilized to assign Common IDs to new records.
- **Enable spatial relates:** If a Force Sync is kicked off, spatial relationships will be processed during the sync.
- 3. For GIS records that don't exist in Lucity, there is an option to run an import Force Sync task. To do this, select records in the grid that you would like to import into Lucity, set whether you would like to utilize a number generator or spatial relationships, and click Force Sync. The following prompt will appear once the Force Sync task has been queued:

Lucity GIS	×
Force Sync task(s) successfully created!	
	ОК

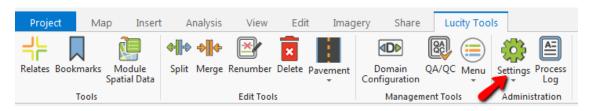
Notes:

Administration

Settings



There are three tools currently under Lucity Settings: Edit Pro Config, About Lucity, and Log Out.



Edit Pro Config

This tool lets you modify the currently configured LucityArcGISProConfigurations.xml or create a new .xml. When clicked, the following prompt will appear:

ucity GIS		
Please select one of the following options:		
$\textcircled{\sc black} \textcircled{\sc black} \label{eq:linear} \textcircled{\sc black} \begin{tabular}{lllllllllllllllllllllllllllllllllll$		
○ Create a new LucityArcGISProConfigurations.xml		
Cancel OK		

- Select if you wish to edit the existing .xml or create a new one and click OK.
- See the Setup/Configuration section of this session for more details about Edit Pro Config.

About Lucity

This tool displays a dialog full of product information, including the add-in version, Lucity server version, Lucity contact information, and license agreement.

Log Out

This tool logs the user out of the Lucity Internal REST API. This is useful if you are looking to switch Lucity clients without closing completely out of ArcGIS Pro.

Process Log



The Lucity Process Log is a tool to help troubleshoot problems that may arise while using the Lucity ArcGIS Pro add-in. Information is written to the log in real-time, and is color-coded based on the type of logging.

Project Map Insert	Analysis View Edit Imag	ery Share Lucity Too	ls
+ 🛛 🗿	+ + + + 🕑 🖬		🔅 🖴
Relates Bookmarks Module Spatial Data	Split Merge Renumber Delete Pavement	Domain QA/QC Menu Configuration	Settings Process
Tools	Edit Tools	Management Tools	Administration

Here is the color-coding convention:

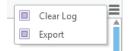
- Black lettering Standard logging.
- Gray lettering Extra logging (added by checking the Log Everything option).
- Orange lettering Process warnings.
- Red lettering Process errors.

Lucity Process Log Log Everything Persist Log to Disk				

Persist Log to Disk allows the contents of Process Log to be copied to the local machine at %APPDATA%\Lucity\logs. It is recommended that this remain turned off, unless when troubleshooting cases where ArcGIS Pro is crashing, as log growth will take up disk space.

By default, the Process Log is not visible, but the user can view it by clicking the Process Log button on the Lucity Toolbar. Errors are always written to the log in red, and if an error occurs, the user will be prompted to check the Process Log for more error details.

There is a menu on the far-right of the Process Log with additional options:



- **Clear Log:** Clears all text currently inside of the Process Log.
- **Export:** Saves the contents of the log to a rich-text (.rtf) file on the user's local machine. This is particularly helpful for Lucity Support, as a user can easily export it and email it to support staff for review.