



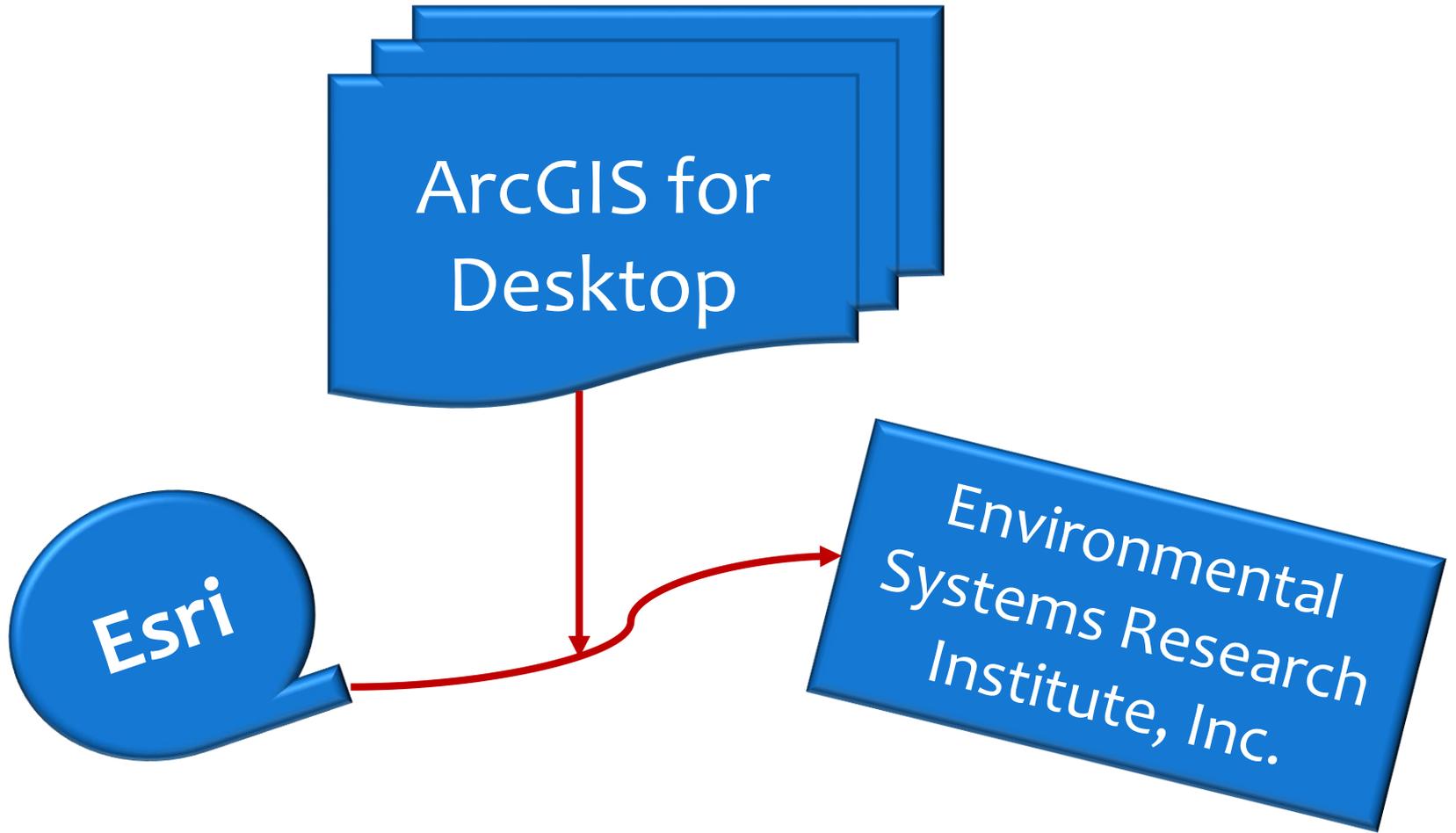
FDOT Streamlines ArcGIS for Desktop License Management

Ana E. Nowak
GIS/CADD Supervisor
FDOT-CO-Surveying & Mapping

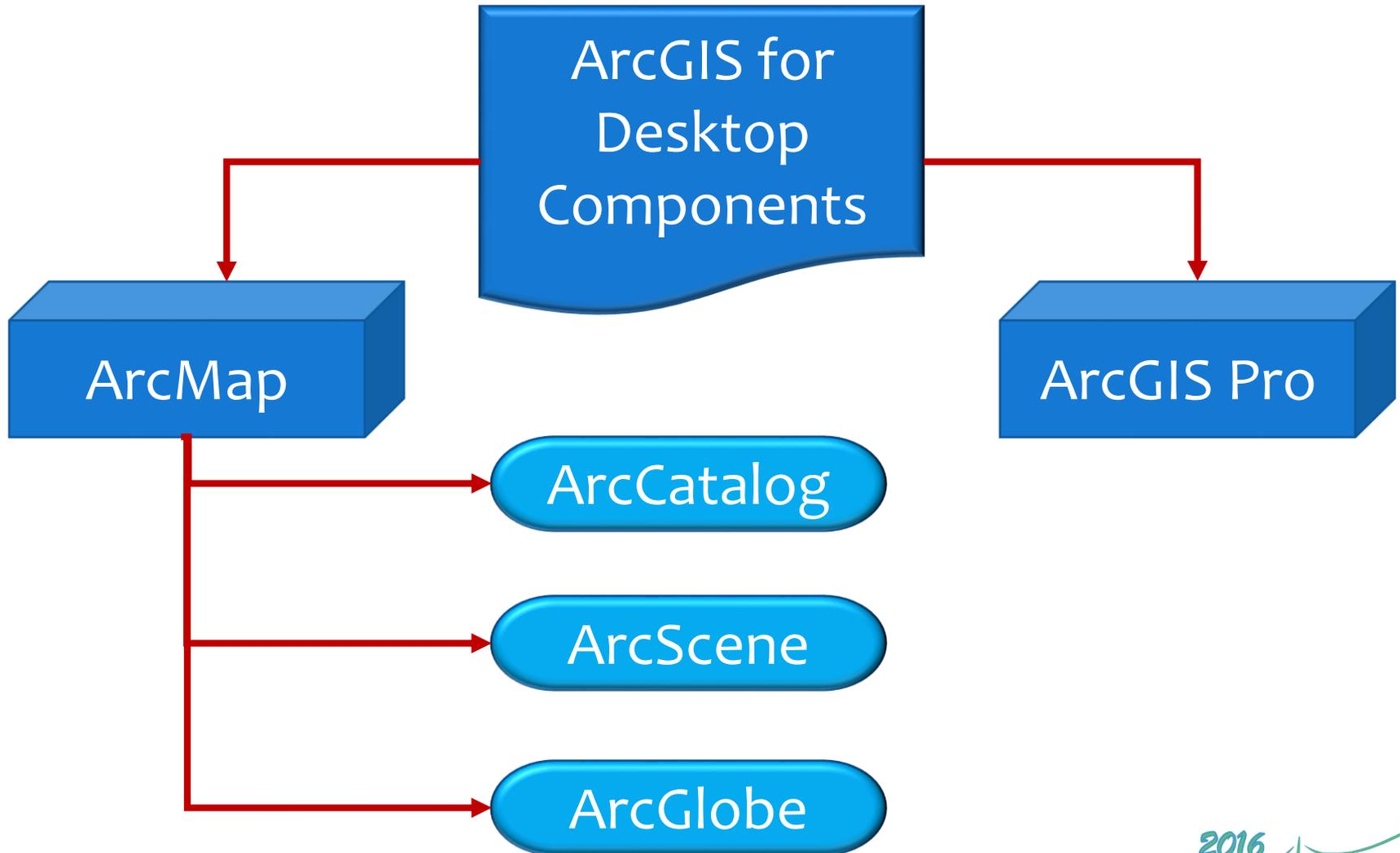
O V E R V I E W

- ArcGIS for Desktop
- FDOT ArcGIS for Desktop License Consolidation Background
- FDOT ArcGIS for Desktop Licenses and License Maintenance Entitlements
- Monitoring License Usage of ArcGIS for Desktop
- GIS@FDOT
- Accessing the Software & Requesting New Licenses
- What's Next?

ArcGIS for Desktop



ArcGIS for Desktop



ArcGIS for Desktop

3D Analyst

Network Analyst

Data Interoperability

Schematics

ArcGIS for Desktop Extensions

Data Reviewer

Workflow Manager

Spatial Analyst

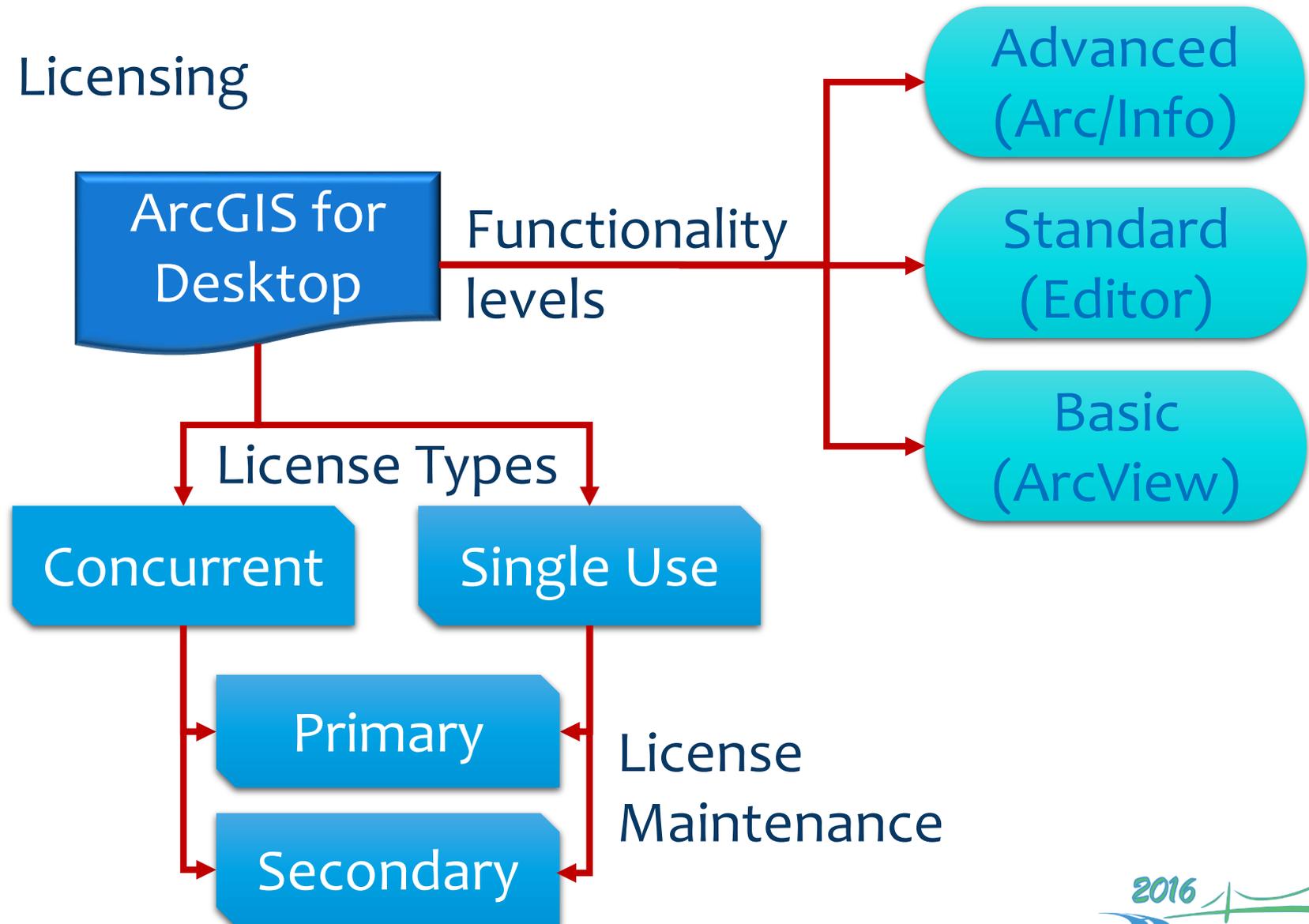
Geostatistical Analyst

Publisher

Tracking Analyst

ArcGIS for Desktop

Licensing



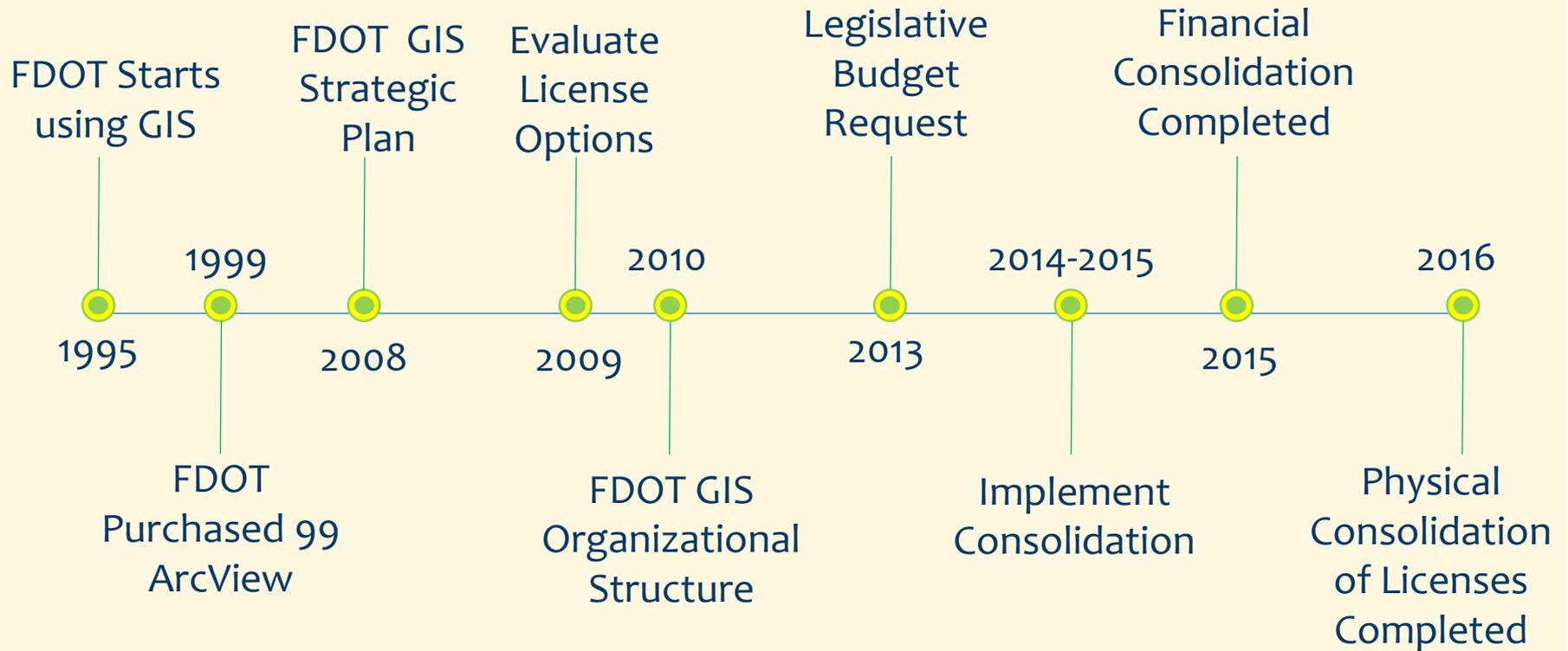
ArcGIS for Desktop

| Product Level | License Type | Cost / license |
|---------------------|-----------------------|----------------|
| Advanced (Arc/Info) | Concurrent Single Use | \$9,999 |
| Standard (Editor) | Concurrent Single Use | \$7,000 |
| Basic (ArcView) | Concurrent | \$3,500 |
| | Single Use | \$1,500 |
| ArcGIS Extensions | Concurrent Single Use | \$2,500 |

Prices include:

- 1st Year maintenance
- One ArcGIS Online Name User
- One ArcGIS Pro license of the same level

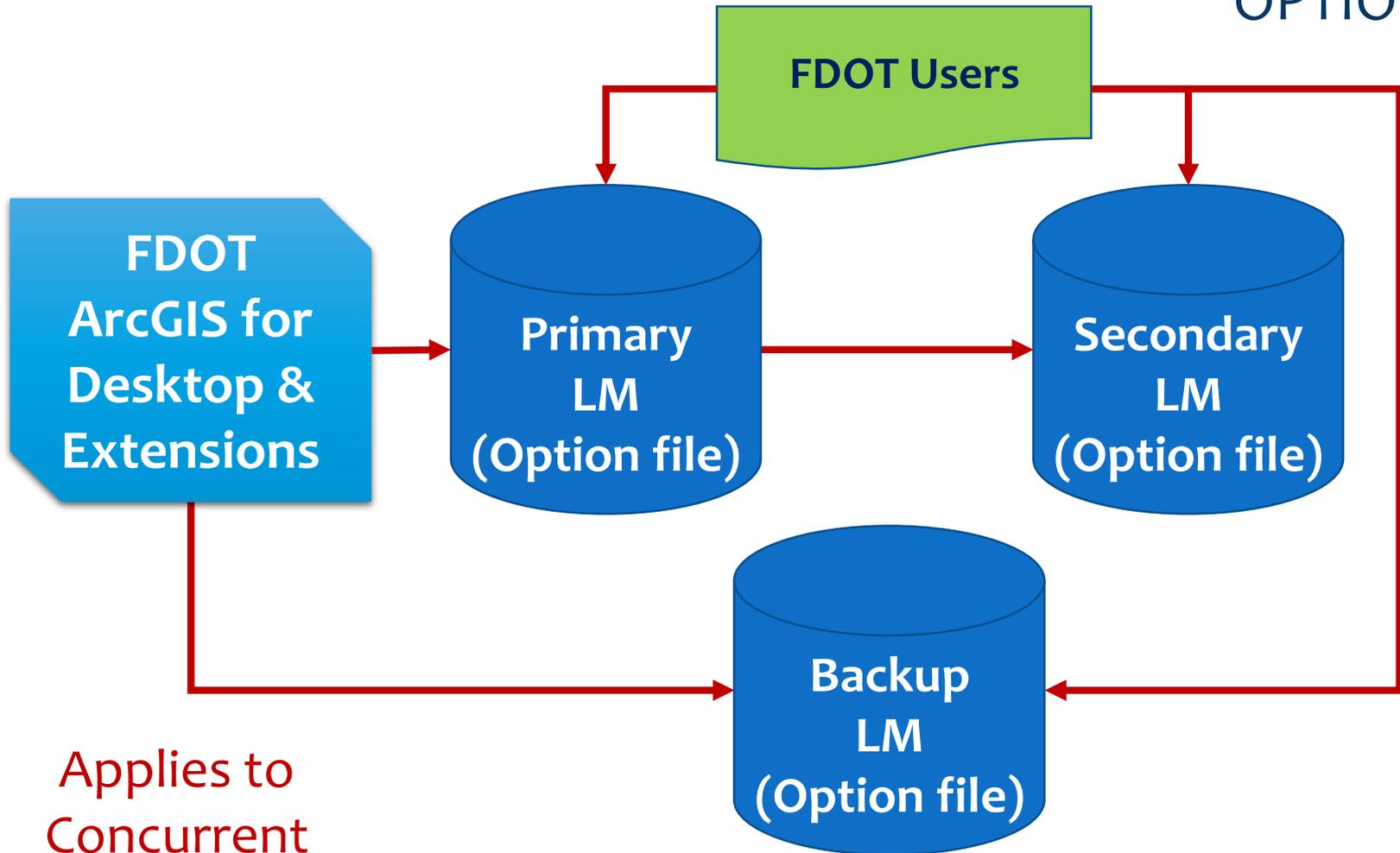
FDOT ArcGIS for Desktop License Consolidation Background



FDOT ArcGIS License Consolidation Background

Proposed License Manager Structure

OPTION A

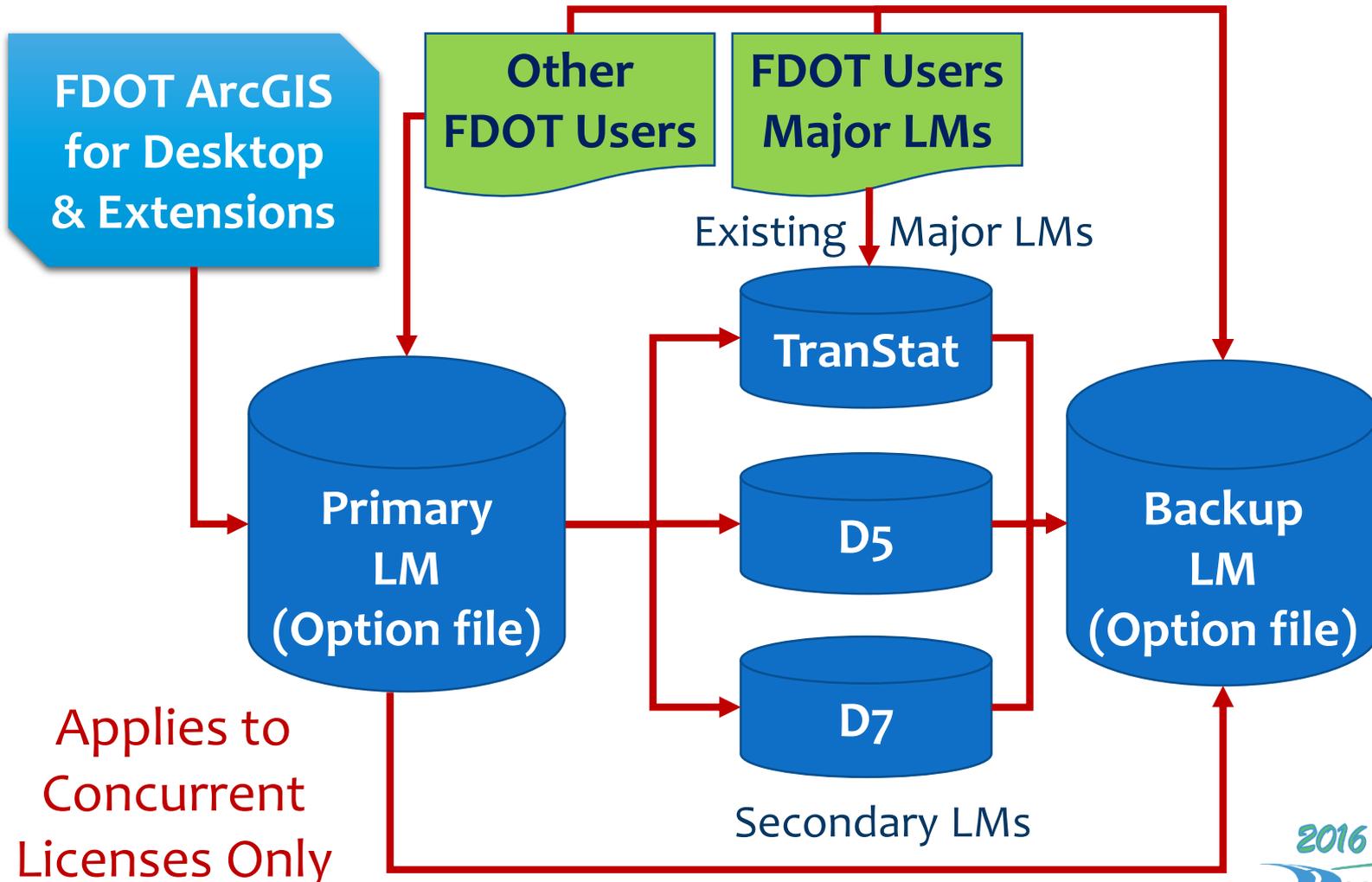


Applies to
Concurrent
Licenses Only

FDOT ArcGIS License Consolidation Background

Proposed License Manager Structure

OPTION B



FDOT ArcGIS License Consolidation

| Office | No. Concurrent Licenses | No. Single Use Licenses |
|-----------------|-------------------------|-------------------------|
| District 1 | 3 | 14 |
| District 2 | 12 | 0 |
| District 3 | 4 | 0 |
| District 4 | 20 | 0 |
| District 5 | 17 | 0 |
| District 6 | 9 | 0 |
| District 7 | 14 | 12 |
| State Materials | 12 | 0 |
| Subtotal | 92 | 26 |

Prior to Consolidation

- FDOT GIS Groups 17
- ArcGIS License Mangers 14

FDOT ArcGIS License Consolidation

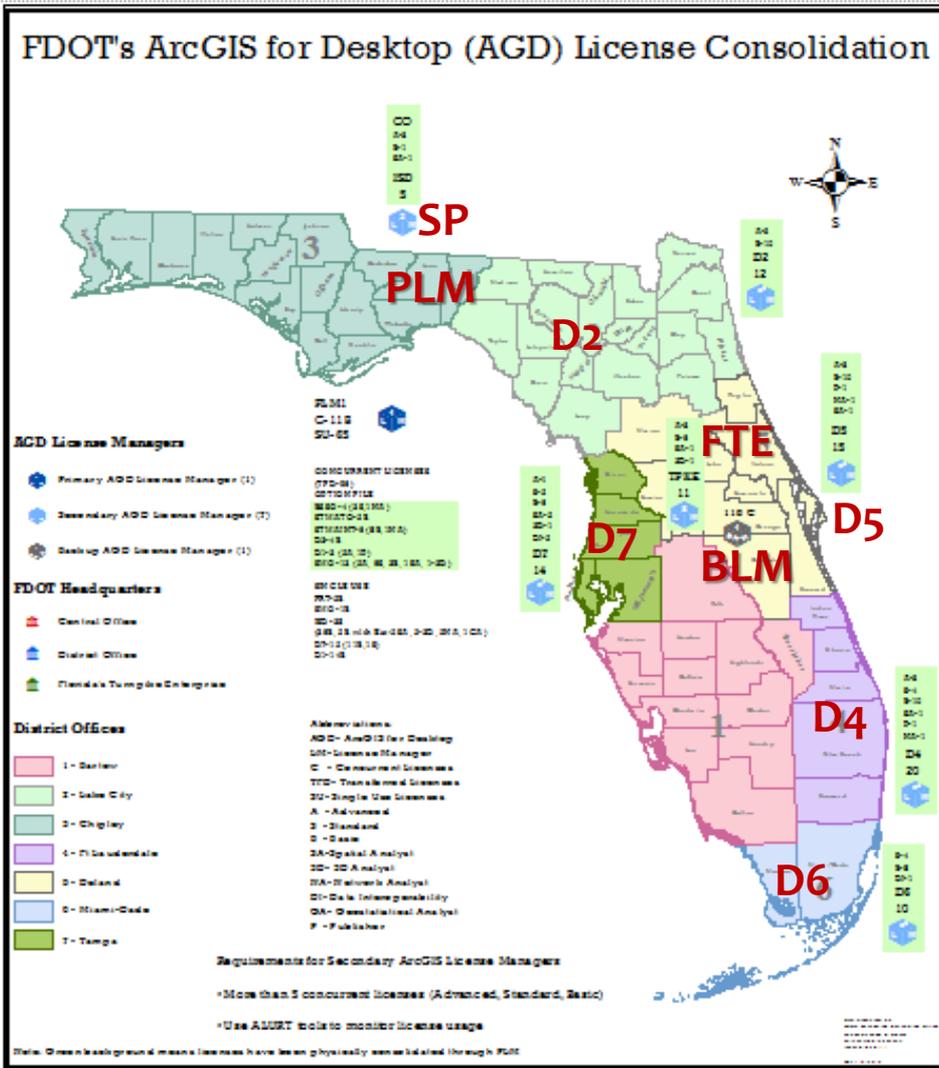
| Office | No. Concurrent Licenses | No. Single Use Licenses |
|--------------------|-------------------------|-------------------------|
| Sys. Planning | 5 | 30 |
| Trans. Statistics | 11 | 10 |
| EMO | 0 | 3 |
| Freight & Logistic | 0 | 2 |
| State Maintenance | 6 | 0 |
| CO - SMO | 13 | 1 |
| CO - OIT | 4 | 0 |
| State Materials | 2 | 0 |
| Safety Office | ? | ? |
| Total | 132 | 72 |

Prior to Consolidation

- Total ArcGIS for Desktop Licenses 204

FDOT ArcGIS License Consolidation

After Consolidation

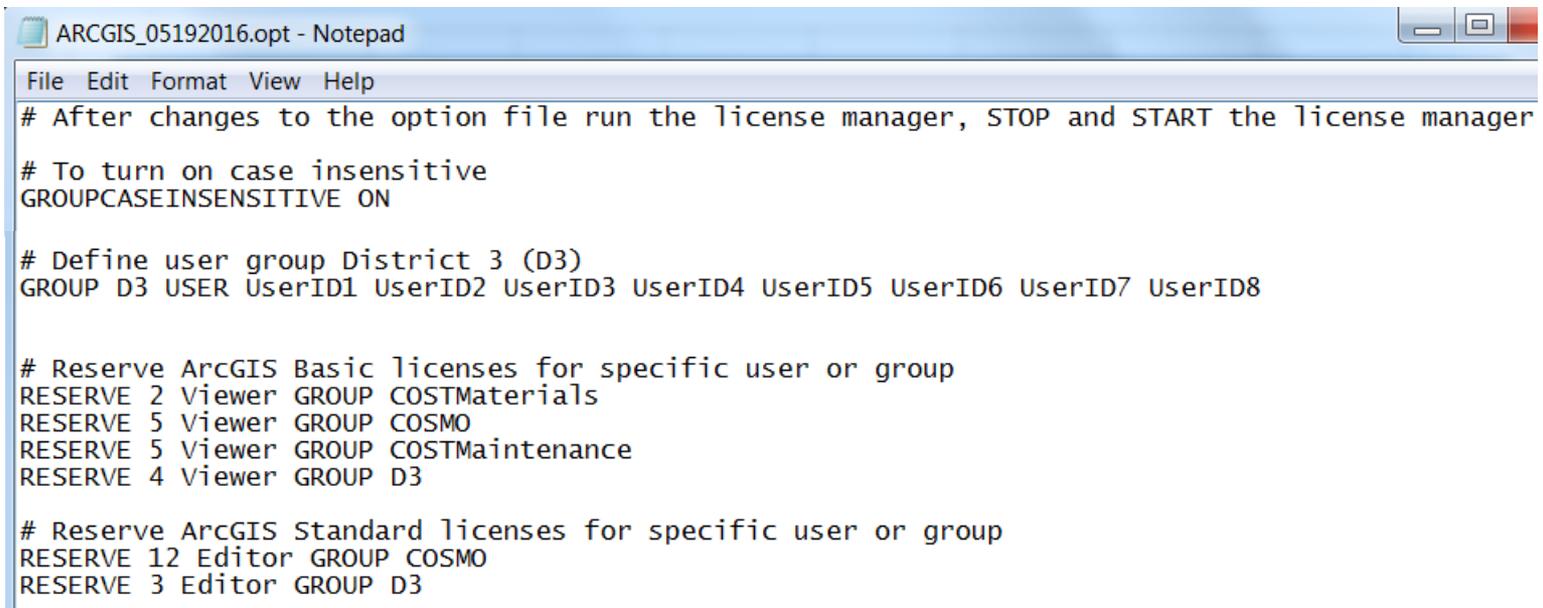


- AG License Managers (LM) 9
 - Primary LM 1
 - Backup LM 1
 - Secondary LM 7
- AG for Desktop Licenses 191
 - Concurrent 119
 - Single Use 72

FDOT ArcGIS License Consolidation

Option File

- Primary LM
- Backup LM



```
ARCGIS_05192016.opt - Notepad
File Edit Format View Help
# After changes to the option file run the license manager, STOP and START the license manager

# To turn on case insensitive
GROUPCASEINSENSITIVE ON

# Define user group District 3 (D3)
GROUP D3 USER UserID1 UserID2 UserID3 UserID4 UserID5 UserID6 UserID7 UserID8

# Reserve ArcGIS Basic licenses for specific user or group
RESERVE 2 Viewer GROUP COSTMaterials
RESERVE 5 Viewer GROUP COSMO
RESERVE 5 Viewer GROUP COSTMaintenance
RESERVE 4 Viewer GROUP D3

# Reserve ArcGIS Standard licenses for specific user or group
RESERVE 12 Editor GROUP COSMO
RESERVE 3 Editor GROUP D3
```

FDOT ArcGIS for Desktop Licenses Maintenance Costs - Prior & After Consolidation

| Product | License Type | No. Lic. | Prior - No. Primary Lic. | After - No. Primary Lic. | Primary Cost / license | Second. Cost / license |
|-----------------------|--------------|----------|--------------------------|--------------------------|------------------------|------------------------|
| Advanced (Arc/Info) | Concurrent | 19 | 8 | 2 | \$3,000 | \$1,200 |
| Standard (Editor) | Concurrent | 19 | 5 | 2 | \$1,500 | \$1,200 |
| | Single Use | 1 | 1 | 1 | \$1,500 | \$1,200 |
| Basic (ArcView) | Concurrent | 60 | 10 | 6 | \$700 | \$500 |
| | Single Use | 62 | 19 | 7 | \$400 | \$300 |
| Basic with extensions | Single Use | 2 | 1 | 1 | \$1,000 | \$900 |
| Extensions | Concurrent | 21 | 19 | 5 | \$500 | \$200 |
| | Single Use | 7 | N/A | N/A | N/A | N/A |

FDOT ArcGIS for Desktop Licenses Maintenance Costs - Prior & After Consolidation

- Prior to Consolidation

\$126,000.00 / yr.

- Cost savings of \$18,000.00 / yr.

- After Consolidation

\$67,787.94 - Prorated licenses 2015

\$108,000.00 / yr.

ArcGIS for Desktop Licenses and Maintenance Entitlements

| Product | Concurrent Lic. | Single Use Lic. | Support Autho. Callers | AGOL Name Users | ArcGIS Pro & ext. | EUC |
|-----------------------|-----------------|-----------------|------------------------|-----------------|-------------------|----------|
| Advanced | 19 | | 2* | 19 | 19 | 2* |
| Standard | 19 | 1 | 3* | 20 | 20 | 2 |
| Basic | 60 | 62 | 13* | 122 | 122 | 4 |
| Basic with extensions | | 2 | 1* | 2 | 2 | |
| Subtotal | 98 | 65 | 19* | 163 | 163 | 8 |

*Based on primary licenses

<http://www.esri.com/software/maintenance>

ArcGIS for Desktop Extensions and Maintenance Entitlements

| Product | Concurrent Lic. | Single Use Lic. | Support Autho. Callers | AGOL Name Users | ArcGIS Pro & ext. | EUC |
|------------------------|-----------------|-----------------|------------------------|-----------------|-------------------|----------|
| Spatial Analyst | 7 | 2 | | | 9 | |
| 3D Analyst | 3 | 2 | | | 5 | |
| Net. Analyst | 5 | 2 | | | 7 | |
| Data Interop. | 3 | | | | 3 | |
| Publisher | 3 | | | | | |
| Geostatistical Analyst | | 1 | | | | |
| TOTAL | 119 | 72 | 19 | 163 | 188 | 8 |

Monitoring of ArcGIS License Utilization

ArcGIS License Utilization Reporting Tools (ALURT)

Reader Tool

- Installed on the server hosting any of the ArcGIS License Managers
- It extracts the usage data from the log file 'lmgrd9.log' and stores it in the ALURT database
- Read & write permissions to ALURT database are needed for running this tool



Monitoring of ArcGIS License Utilization

```
Imgrd9.log - Notepad
File Edit Format View Help
21:39:17 (lmgrd) -----
21:39:17 (lmgrd) Please Note:
21:39:17 (lmgrd) This log is intended for debug purposes only.
21:39:17 (lmgrd) In order to capture accurate license
21:39:17 (lmgrd) usage data into an organized repository,
21:39:17 (lmgrd) please enable report logging. Use Flexera Software LLC's
21:39:17 (lmgrd) software license administration solution,
21:39:17 (lmgrd) FlexNet Manager, to readily gain visibility
21:39:17 (lmgrd) into license usage data and to create
21:39:17 (lmgrd) insightful reports on critical information like
21:39:17 (lmgrd) license availability and usage. FlexNet Manager
21:39:17 (lmgrd) can be fully automated to run these reports on
21:39:17 (lmgrd) schedule and can be used to track license
21:39:17 (lmgrd) servers and usage across a heterogeneous
21:39:17 (lmgrd) network of servers including windows NT, Linux
21:39:17 (lmgrd) and UNIX. Contact Flexera Software LLC at
21:39:17 (lmgrd) www.flexerasoftware.com for more details on how to
21:39:17 (lmgrd) obtain an evaluation copy of FlexNet Manager
21:39:17 (lmgrd) for your enterprise.
21:39:17 (lmgrd) -----
21:39:17 (lmgrd)
21:39:17 (lmgrd) pid 4084
21:39:17 (lmgrd) Detecting other license server manager (lmgrd) processes...
21:39:18 (lmgrd) Done rereading
21:39:18 (lmgrd) FlexNet Licensing (v11.11.1.2 build 134011 i86_n3) started on dotscosmgisp1 (IBM PC) (9/3/2014)
21:39:18 (lmgrd) Copyright (c) 1988-2013 Flexera Software LLC. All Rights Reserved.
21:39:18 (lmgrd) world wide web: http://www.flexerasoftware.com
21:39:18 (lmgrd) lmdown/lmread only allowed on this machine
21:39:18 (lmgrd) License file(s): C:\Program Files (x86)\ArcGIS\License10.2\bin\service.txt
21:39:18 (lmgrd) lmgrd tcp-port 27000
21:39:18 (lmgrd) Starting vendor daemons ...
21:39:18 (lmgrd) started ARCGIS (pid 4072)
21:39:20 (ARCGIS) FlexNet Licensing version v11.11.1.2 build 134011 i86_n3
21:39:22 (ARCGIS) Server started on dotscosmgisp1 for: ACT
21:39:22 (ARCGIS) ARC/INFO      ArcStorm      ArcStormEnable
21:39:22 (ARCGIS) Editor          Grid          Maplex
21:39:22 (ARCGIS) MrSID           Plotting     TIFFLZW
21:39:22 (ARCGIS) TIN             VBA         viewer
21:39:22 (ARCGIS) EXTERNAL FILTERS are OFF
21:39:22 (lmgrd) ARCGIS using TCP-port 49279
 3:39:21 (lmgrd) TIMESTAMP 9/4/2014
 3:44:26 (ARCGIS) TIMESTAMP 9/4/2014
```

Imgrd9.log

Monitoring of ArcGIS License Utilization

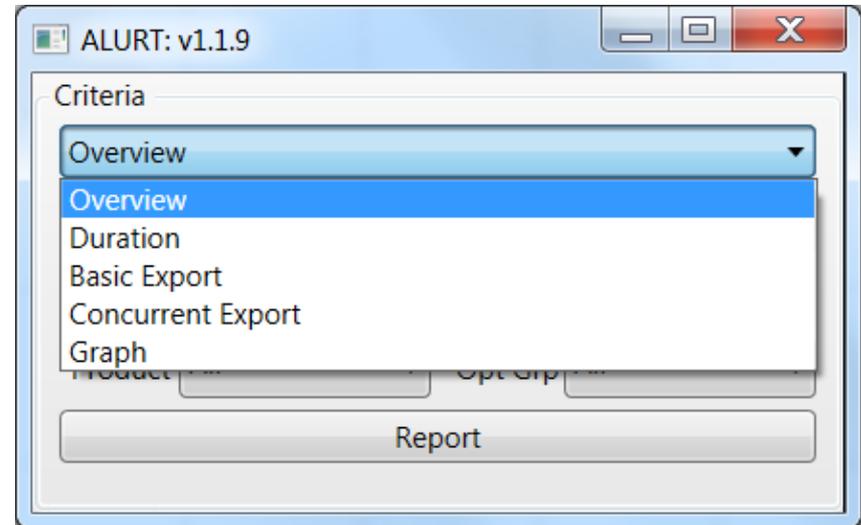
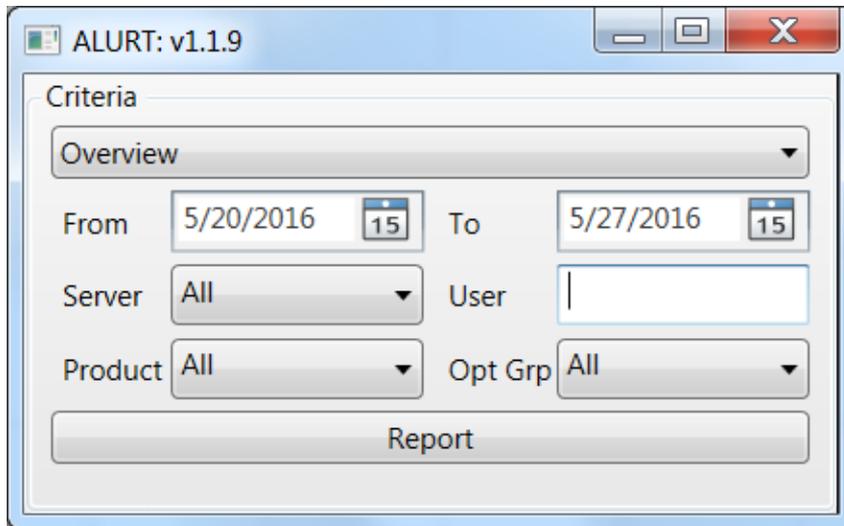
Reporter Tool

- It creates different reports from the ALURT database
- Installed on any computer, as long as it is within the FDOT network and can connect with the Primary License Manager Server
- The installer creates a short cut on the computer desktop for easy access

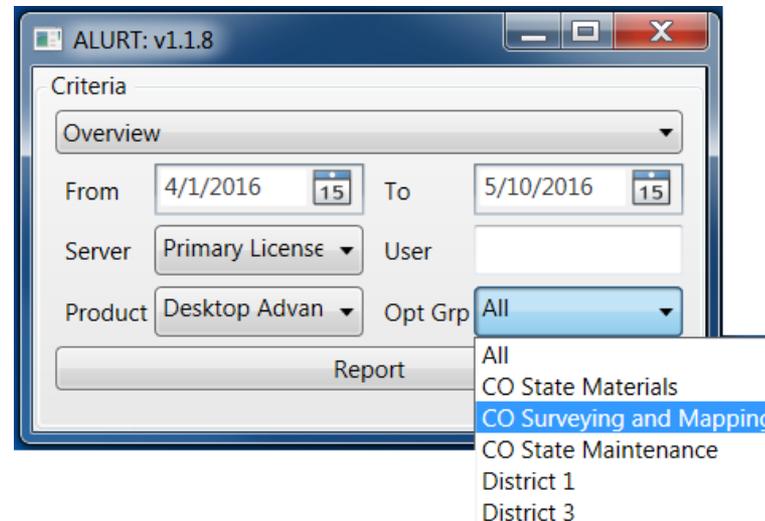
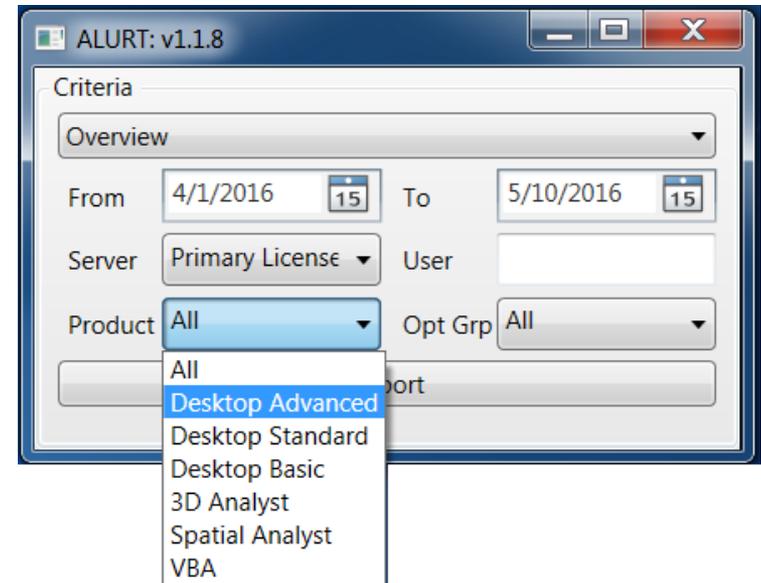
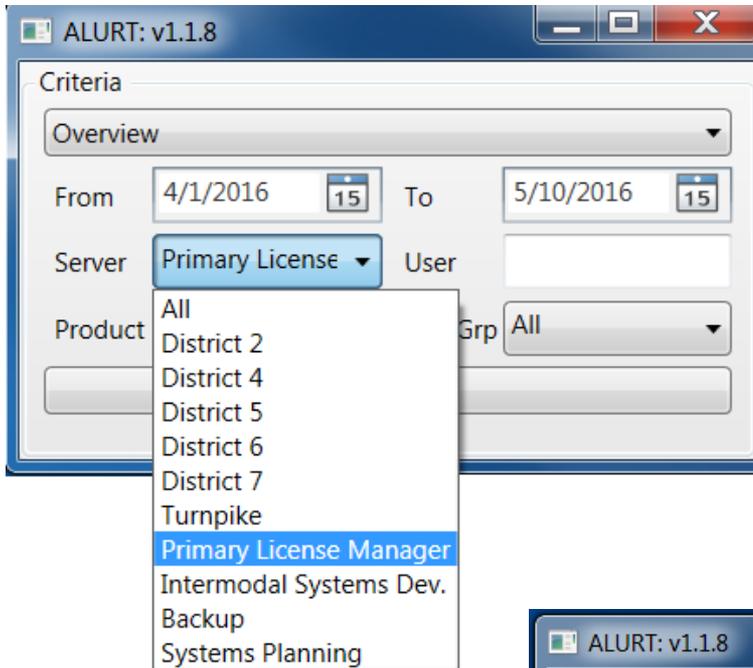


Monitoring of ArcGIS License Utilization

Reporter Tool

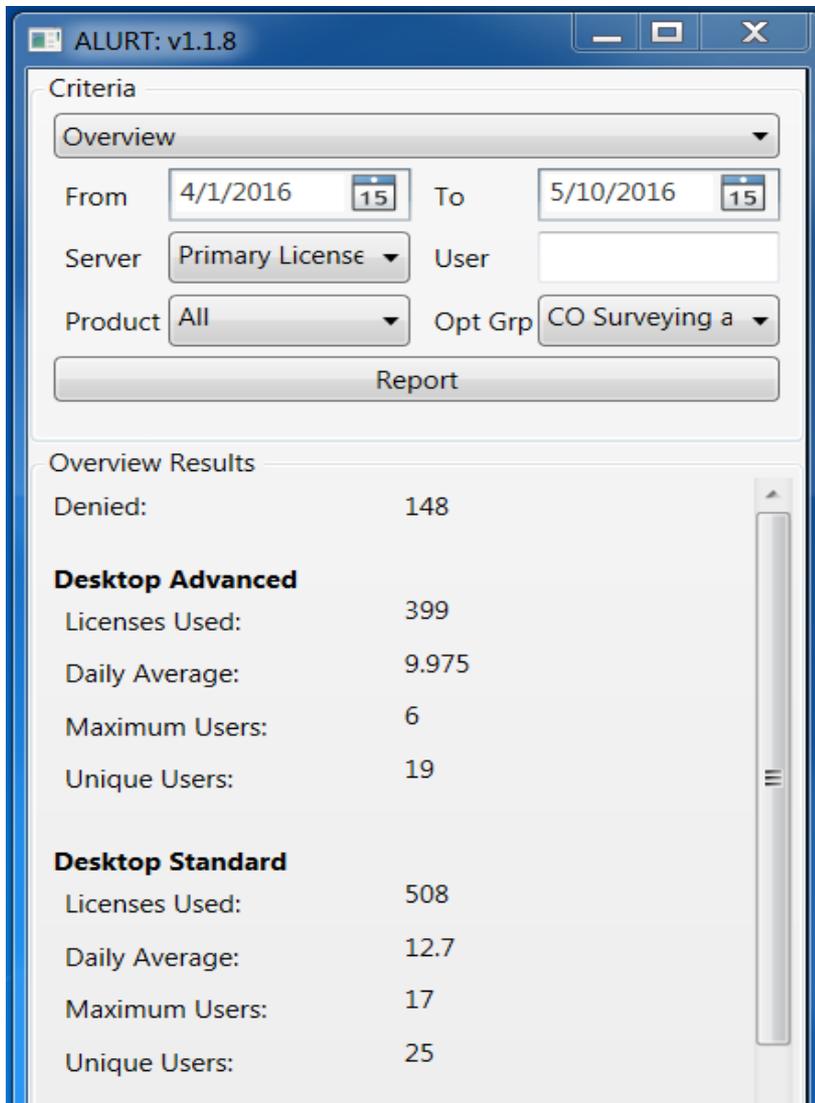


Monitoring of ArcGIS License Utilization



Monitoring of ArcGIS License Utilization

Overview Report



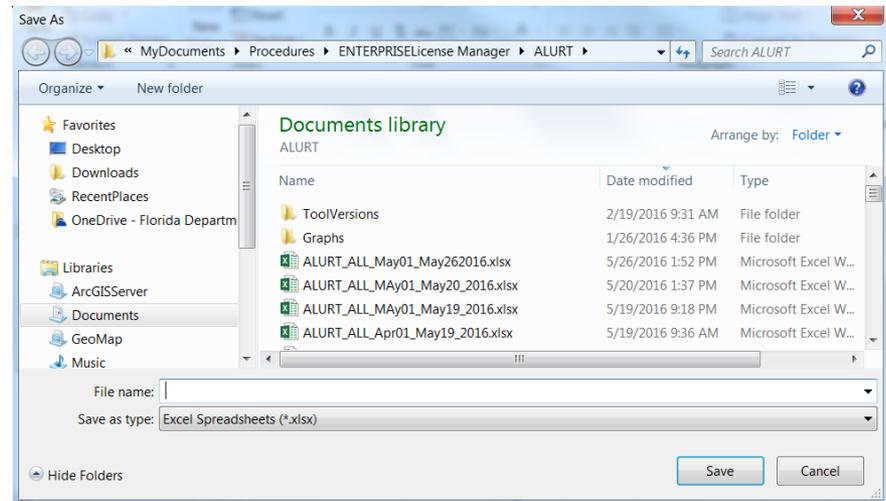
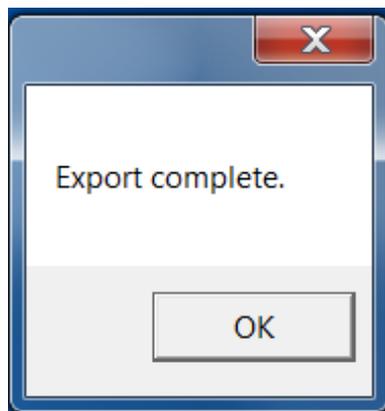
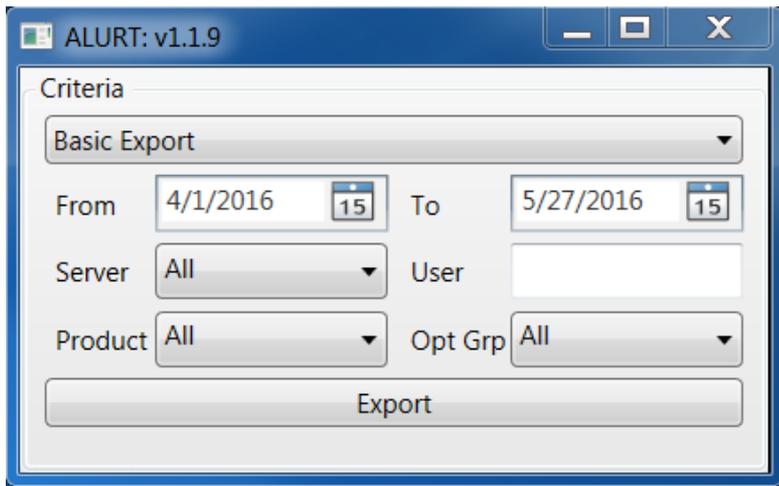
The screenshot shows the ALURT v1.1.8 application window. The 'Criteria' section includes a dropdown for 'Overview', date pickers for 'From' (4/1/2016) and 'To' (5/10/2016), a 'Server' dropdown set to 'Primary License', an empty 'User' field, a 'Product' dropdown set to 'All', and an 'Opt Grp' dropdown set to 'CO Surveying a'. A 'Report' button is located below these criteria. The 'Overview Results' section displays the following data:

| Category | Value |
|-------------------------|-------|
| Denied: | 148 |
| Desktop Advanced | |
| Licenses Used: | 399 |
| Daily Average: | 9.975 |
| Maximum Users: | 6 |
| Unique Users: | 19 |
| Desktop Standard | |
| Licenses Used: | 508 |
| Daily Average: | 12.7 |
| Maximum Users: | 17 |
| Unique Users: | 25 |

- **Denied** - # denials
- **Licenses Used** - # checkouts
- **Daily average** - checkouts / days within time frame
- **Maximum Users** – max. # concurrent users
- **Unique Users** – unique users within the time frame

Monitoring of ArcGIS License Utilization

Basic Report



Monitoring of ArcGIS License Utilization

Basic Report

| Date | Checked Out | Checked In | License Manager | Server Name |
|----------|----------------|----------------|------------------------------|-------------|
| 5/1/2016 | 5/1/2016 8:17 | 5/1/2016 9:40 | Primary License Manager (SM) | Server1 |
| 5/1/2016 | 5/1/2016 11:05 | 5/1/2016 11:11 | Primary License Manager (SM) | Server1 |
| 5/1/2016 | 5/1/2016 14:15 | | Primary License Manager (SM) | Server1 |
| 5/1/2016 | 5/1/2016 14:15 | | Primary License Manager (SM) | Server1 |
| 5/1/2016 | 5/1/2016 14:15 | | Primary License Manager (SM) | Server1 |
| 5/1/2016 | 5/1/2016 14:15 | | Primary License Manager (SM) | Server1 |
| 5/1/2016 | 5/1/2016 14:37 | | Primary License Manager (SM) | Server1 |
| 5/1/2016 | 5/1/2016 14:56 | 5/1/2016 14:56 | Primary License Manager (SM) | Server1 |
| 5/1/2016 | 5/1/2016 14:56 | 5/1/2016 14:56 | Primary License Manager (SM) | Server1 |

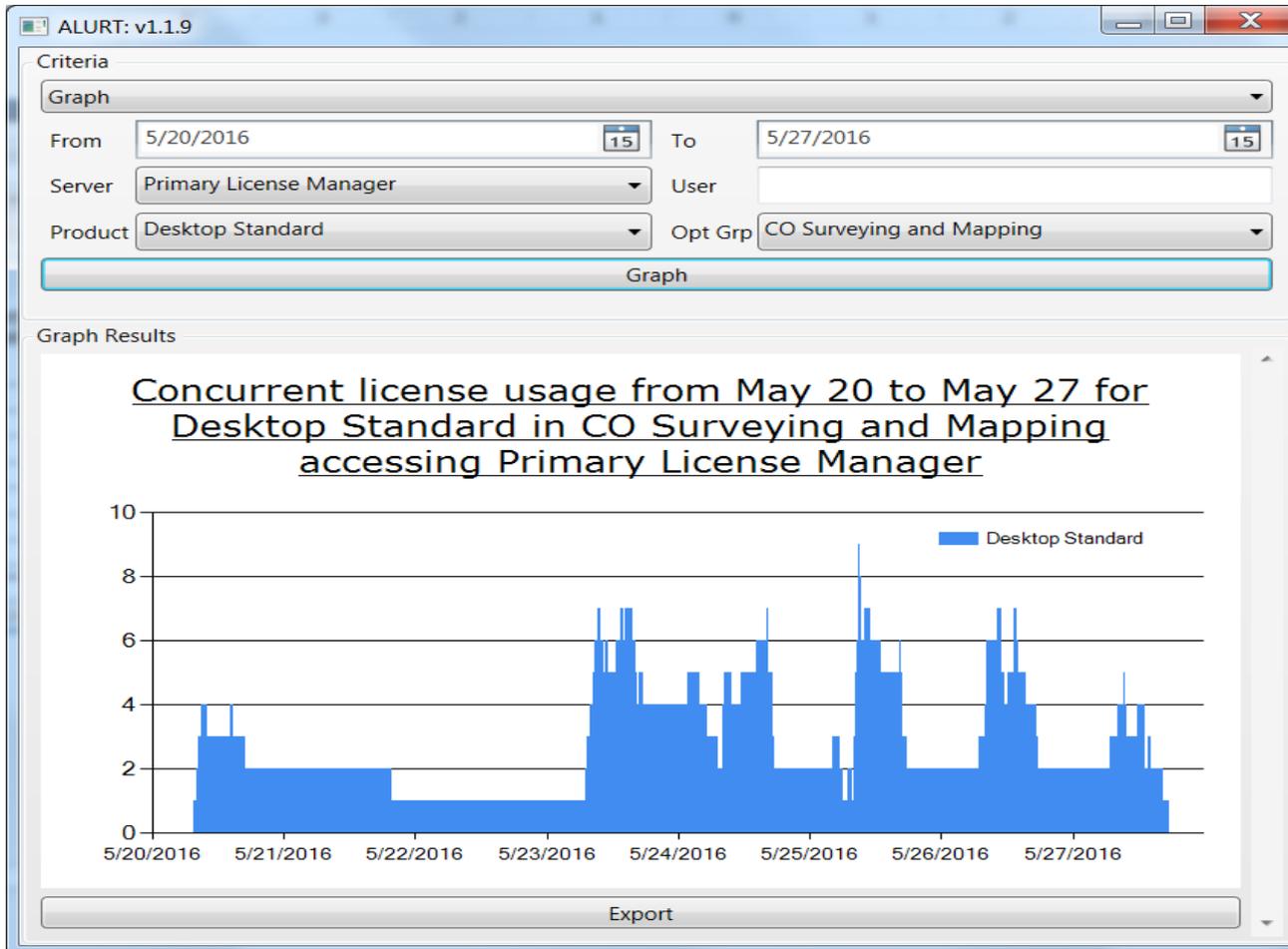
Monitoring of ArcGIS License Utilization

Basic Report

| Product | User Group | User | Usage | Denie |
|------------------|--------------------------------|-----------------|---------|-------|
| Desktop Basic | OFFICE ST FREIGHT PLAN & LOGIS | User1@Computer1 | 1:22:42 | N |
| Desktop Basic | OFFICE ST FREIGHT PLAN & LOGIS | User1@Computer1 | 0:05:33 | N |
| Spatial Analyst | MATERIALS OFFICE | User2@Computer2 | 0:00:00 | Y |
| Publisher | MATERIALS OFFICE | User2@Computer2 | 0:00:00 | Y |
| 3D Analyst | MATERIALS OFFICE | User2@Computer2 | 0:00:00 | Y |
| Network | MATERIALS OFFICE | User2@Computer2 | 0:00:00 | Y |
| 3D Analyst | MATERIALS OFFICE | User2@Computer2 | 0:00:00 | Y |
| Desktop Advanced | MATERIALS OFFICE | User2@Computer2 | 0:00:47 | N |
| Desktop Advanced | MATERIALS OFFICE | User2@Computer2 | 0:00:05 | N |

Monitoring of ArcGIS License Utilization

Graph



FDOT's ArcGIS Online Organizational Account

- Implemented in November 2014
- Lightweight maps & applications
- Data sharing for both internal and external use without taxing our existing IT infrastructure



FDOT's ArcGIS Online Organizational Account

Current Usage

- Named Users 118 of 163
- Credits 6,800 Expire 8/31/2016
- 54 Groups (organizational structure)



FDOT's ArcGIS Online Organizational Account

In the last 12 months

- 900+ Layers
 - Most Popular are Active Construction Projects, District Boundaries and Mile Markers
- 368 Maps
 - Most popular are the TP Work Program, Right of Way Pilot and Pavement Evaluation
- 168 Apps
 - Most popular are the High Pedestrian Traffic Areas, State Map Revisions App, TP Work Program and Bicycle Friendly Roads



FDOT's ArcGIS Online Organizational Account

- GIS@FDOT Best Practices & Governance document

https://fldot.sharepoint.com/sites/CO-GIS/Shared%20Documents/GIS%40FDOT/GIS%40FDOT_BestPractices.docx



- Best Practices
- User rolls
- Member usage
- Groups
- Sharing and publishing content, especially with the public
- Metadata/ data disclaimer
- Thumbnail images
- Content Management
- Credit management and usage

GIS@FDOT Home Page

- Technical support for GIS@FDOT
- District GIS Coordinator or Office Representative
- GIS@FDOT Administrators

Matthew Gore

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Ana Nowak

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Jared Causseaux

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GIS@FDOT Florida Department of Transportation

FDOT's Maps, Apps and Layers

App Work Program 2015

App Bicycle Routes

App ROAD CLOSED Active Construction Projects

App Turnpike Construction Projects

Welcome to GIS@FDOT! GIS@FDOT is the portal for FDOT's organizational account for ArcGIS Online, which is a collaborative, cloud-based platform that allows members of an organization to use, create, and share maps, apps, and data with anyone. It provides a mechanism for data organization and management across districts and functional areas within the Department, eliminating the need for data duplication. This platform is also portable and all maps created will be compatible across desktops, tablets, and smart phones.

Request Access

FDOT Data Sources:

FDOT Data Clearinghouse

FDOT Aerial Photography

FDOT TranStat GIS

FDOT Public Content

Get started! Learn how to...

Map data in Microsoft Excel

Make a web application with a template

Add authoritative content to a map

Create a group for sharing maps

Embed a map in a public website

Explore more useful maps

Learn how to enable your mobile workforce

Discover Open Data

Build an operation dashboard

Accessing the software

- ArcGIS for Desktop – New Users
 - Request access to your District GIS Coordinator / Office Representative
 - The District / Office Representative will request OIT to do the software installation if you do not have admin rights to your computer.
 - The software should be configured to get a license from the corresponding license manager

Accessing the software

- ArcGIS for Desktop - Existing Users
 - Contact your District GIS Coordinator / Office Representative for any version upgrades or problems accessing the software
 - The District/Office Representative will request OIT to do the upgrade if you do not have admin rights to your computer

Accessing the software

- ArcGIS for Desktop



Quick Links

[Department Contacts](#)
[Department Resources](#)
[Public Notices](#)
[Technology Resources](#)

[Home](#)

[Notebook](#)

[Documents](#)

[Business Plan](#)

[Clearinghouse](#)

[Contacts](#)

[D-7 CADD/GIS IRR](#)

[Enterprise GIS](#)

[Home](#) [Applications:](#) [Central Office](#) [District 1](#) [Dis](#)

Enterprise GIS Software

FDOT's Enterprise GIS software is listed below.

ArcGIS for Desktop

- [ArcGIS for Desktop 10.3](#)
- [ArcGIS for Desktop 10.3 Tutorial Data](#)
- [ArcGIS License Manager 10.3](#)

- [ArcGIS for Desktop 10.3.1](#)
- [ArcGIS for Desktop 10.3.1 Tutorial Data](#)
- [ArcGIS License Manager 10.3.1](#)

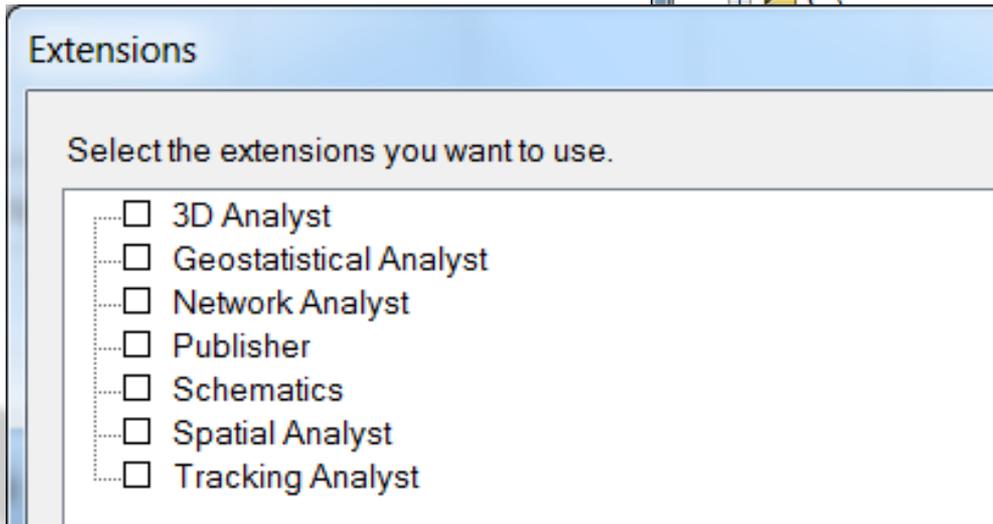
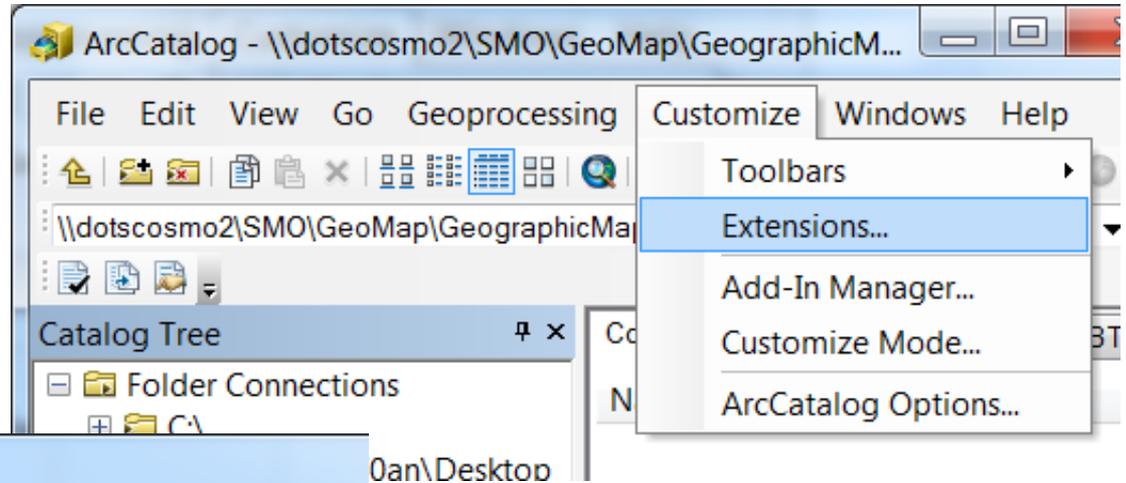
- [ArcGIS for Desktop 10.4](#)
- [ArcGIS for Desktop 10.4 Tutorial Data](#)
- [ArcGIS License Manager 10.4](#)

<https://fldot.sharepoint.com/sites/CO-IS/Lists/Enterprise%20GIS%20Software/AllItems.aspx>



Accessing the software

- ArcGIS for Desktop Extensions



Accessing the software

- GIS@FDOT
 - Request access to your GIS Coordinator
 - GIS@FDOT Home Page
 - Enterprise GIS SharePoint site



ArcGIS Online

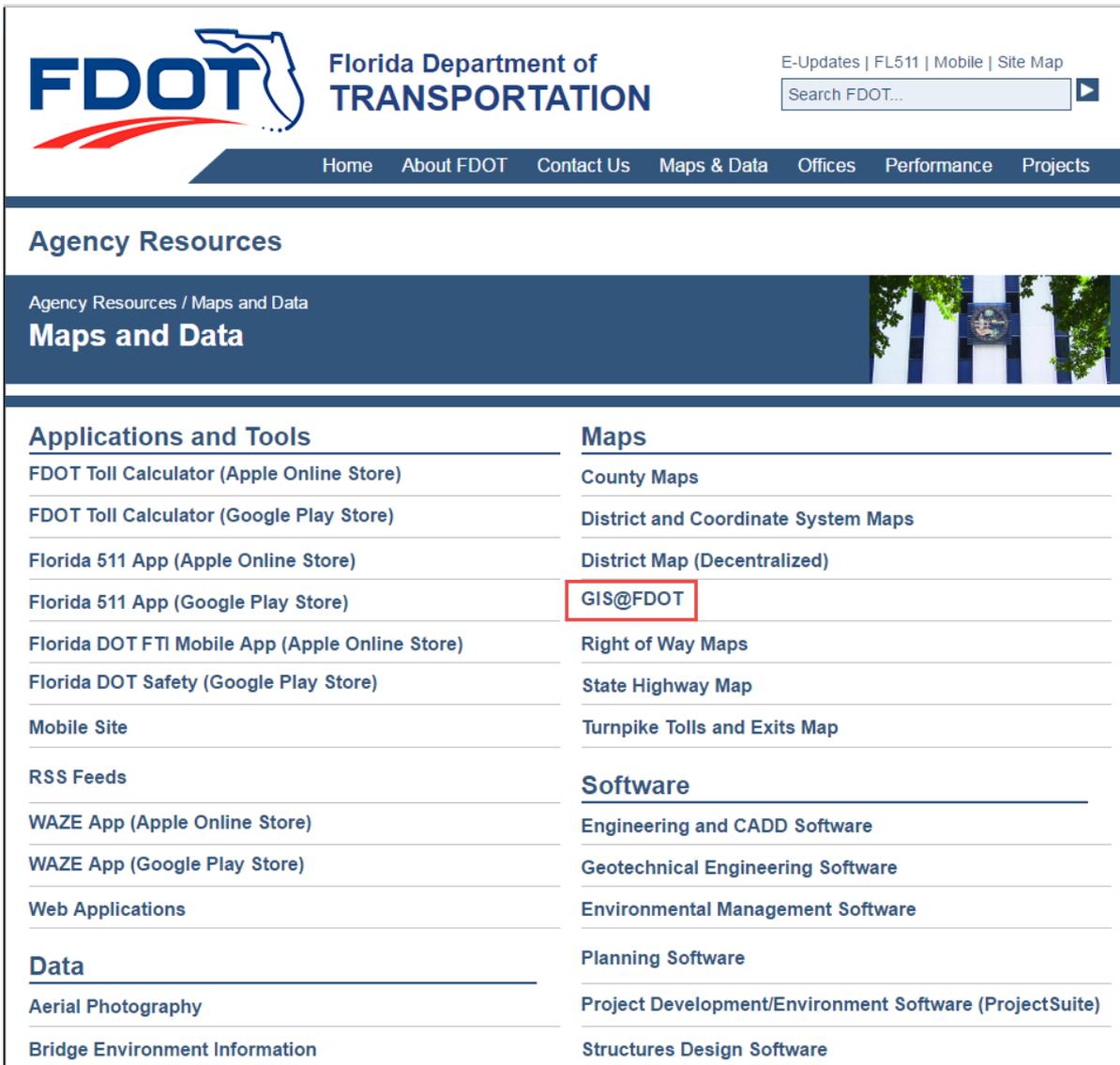
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GIS@FDOT is FDOT's organizational portal in ArcGIS Online. If you are interested in learning more about ArcGIS Online or would like to discuss how it may help you or your department [contact us](#).

<http://fdot.maps.arcgis.com/home/>



Accessing the software



The screenshot shows the FDOT website header with the logo and navigation menu. The 'Maps and Data' section is active, displaying a grid of links. The 'GIS@FDOT' link is highlighted with a red box.

FDOT Florida Department of TRANSPORTATION

E-Updates | FL511 | Mobile | Site Map

Search FDOT...

Home About FDOT Contact Us Maps & Data Offices Performance Projects

Agency Resources

Agency Resources / Maps and Data

Maps and Data

| | |
|---|---|
| Applications and Tools | Maps |
| FDOT Toll Calculator (Apple Online Store) | County Maps |
| FDOT Toll Calculator (Google Play Store) | District and Coordinate System Maps |
| Florida 511 App (Apple Online Store) | District Map (Decentralized) |
| Florida 511 App (Google Play Store) | GIS@FDOT |
| Florida DOT FTI Mobile App (Apple Online Store) | Right of Way Maps |
| Florida DOT Safety (Google Play Store) | State Highway Map |
| Mobile Site | Turnpike Tolls and Exits Map |
| RSS Feeds | Software |
| WAZE App (Apple Online Store) | Engineering and CADD Software |
| WAZE App (Google Play Store) | Geotechnical Engineering Software |
| Web Applications | Environmental Management Software |
| Data | Planning Software |
| Aerial Photography | Project Development/Environment Software (ProjectSuite) |
| Bridge Environment Information | Structures Design Software |



Accessing the software

ArcGIS Pro & Extensions

- Currently ArcGIS Pro licenses are tied to the GIS@FDOT member accounts
- Request a license activation to your District GIS Coordinator / Office Representative
- ArcGIS Pro licenses are limited to the number of ArcGIS for Desktop licenses owned by each GIS group

Accessing the software

ArcGIS Pro Download Site



ArcGIS Pro

- [Pro 1.0](#)
- [Pro 1.1](#)
- [Pro Python 3.4.1](#)
- [Pro 1.2](#)
- [Pro Python 3.4.3](#)

Note: Microsoft SQL Server 2008 is not supported with ArcGIS Pro 1.1

<https://fldot.sharepoint.com/sites/CO-GIS/Lists/Enterprise%20GIS%20Software/AllItems.asp>

Purchasing New Licenses

- Individual offices are responsible for justifying and purchasing new ArcGIS for Desktop licenses when needed.
- All new licenses and extensions should be purchased under the Esri's Primary Customer Number for FDOT
- First year license maintenance is included with the license purchase
- Subsequent annual license maintenance will be funded through Esri's Primary Customer Number for FDOT

Purchasing New Licenses

- Quotes

- FDOT Desktop License Administrator and/or FDOT State GIS Coordinator

Ana Nowak

ana.nowak@dot.state.fl.us

Jared Causseaux

jared.causseaux@dot.state.fl.us

- District GIS Coordinator / Office Representative

What is next?

- Continue improving the tools for monitoring license usage
- Look for better ways to share licenses and reduce costs without impacting production and/or innovations of the GIS Groups in FDOT
- Explore this consolidation model to see if it could be extended to other software products own by the Department that use a Flex License Manager

Additional Resources

AGOL Help

<http://doc.arcgis.com/en/arcgis-online/>

ESRI Online training

<http://www.esri.com/training/main/training-catalog>

Getting starting with GIS (Desktop or AGOL)

<http://training.esri.com/gateway/index.cfm?fa=catalog.webcoursedetail&courseid=2500>

Telling Your Story with Esri Story Maps

<http://training.esri.com/gateway/index.cfm?fa=catalog.webCourseDetail&courseid=2924>

Streamline GIS Workflows with ArcGIS Pro

<http://training.esri.com/gateway/index.cfm?fa=catalog.webCourseDetail&courseid=2888>

Additional Resources

ESRI site -Get started with ArcGIS Pro

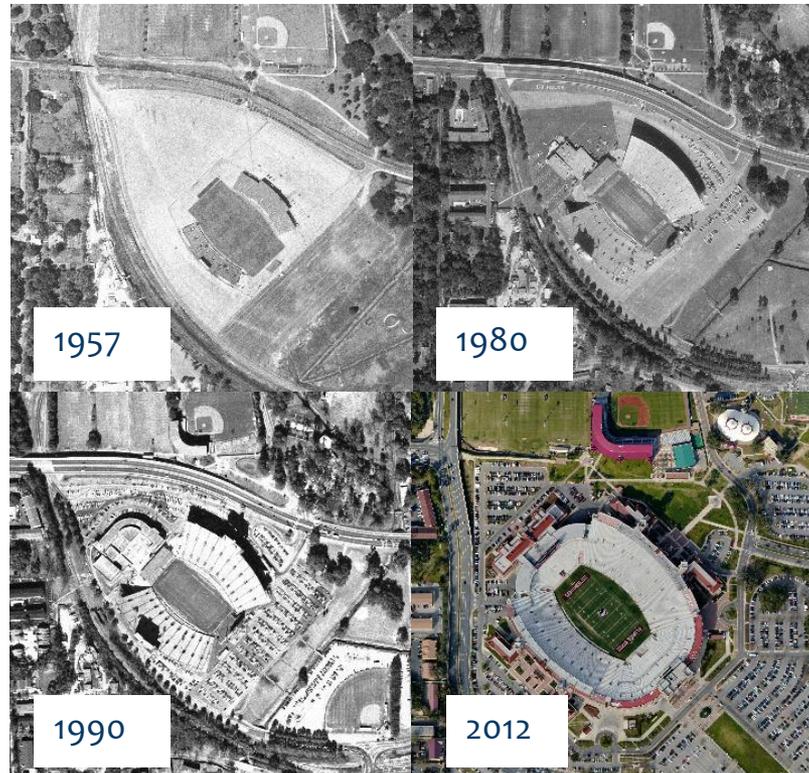
Installation

<http://pro.arcgis.com/en/pro-app/get-started/get-started.htm>

Tutorials

<http://learn.arcgis.com/en/projects/get-started-with-arcgis-pro/>

Questions?



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