



DRAPP Imagery Services

Presented by:
Ashley Summers

August 2020





Agenda

- Survey results
- Imagery service options
- Imagery service comparisons
- Timeline
- Summary



Survey results

- Only 15 responses, only 5 named = hard to interpret and extrapolate results for all partners
- 60% of respondents use the L3 Harris services (9 partners) which may mean that only 18% of partners are using this benefit.
- 60% of respondents want DRCOG to provide an imagery service option, 83% want the service to be secure (https), and 71% want the service to not have login credentials.



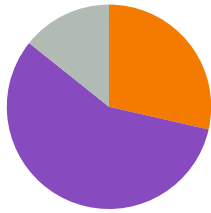
Survey results

- 1/3 of respondents cited no need for DRCOG to provide services because:
 - They create their own services.
 - They use Nearmap for imagery streaming.
 - They don't need services at all.
- None of the respondents use the imagery for analysis; only for viewing as a background image.



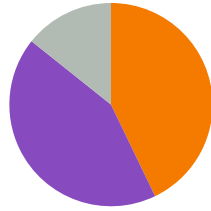
Needs and wants

Change transparency, brightness, contrast



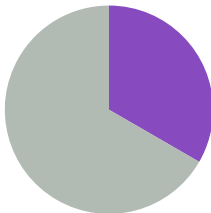
■ Need ■ Want ■ Neither

Download/export images



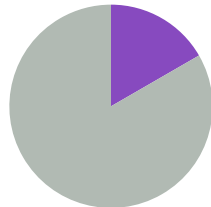
■ Need ■ Want ■ Neither

Change histogram stretch options



■ Want ■ Neither

Change band combinations



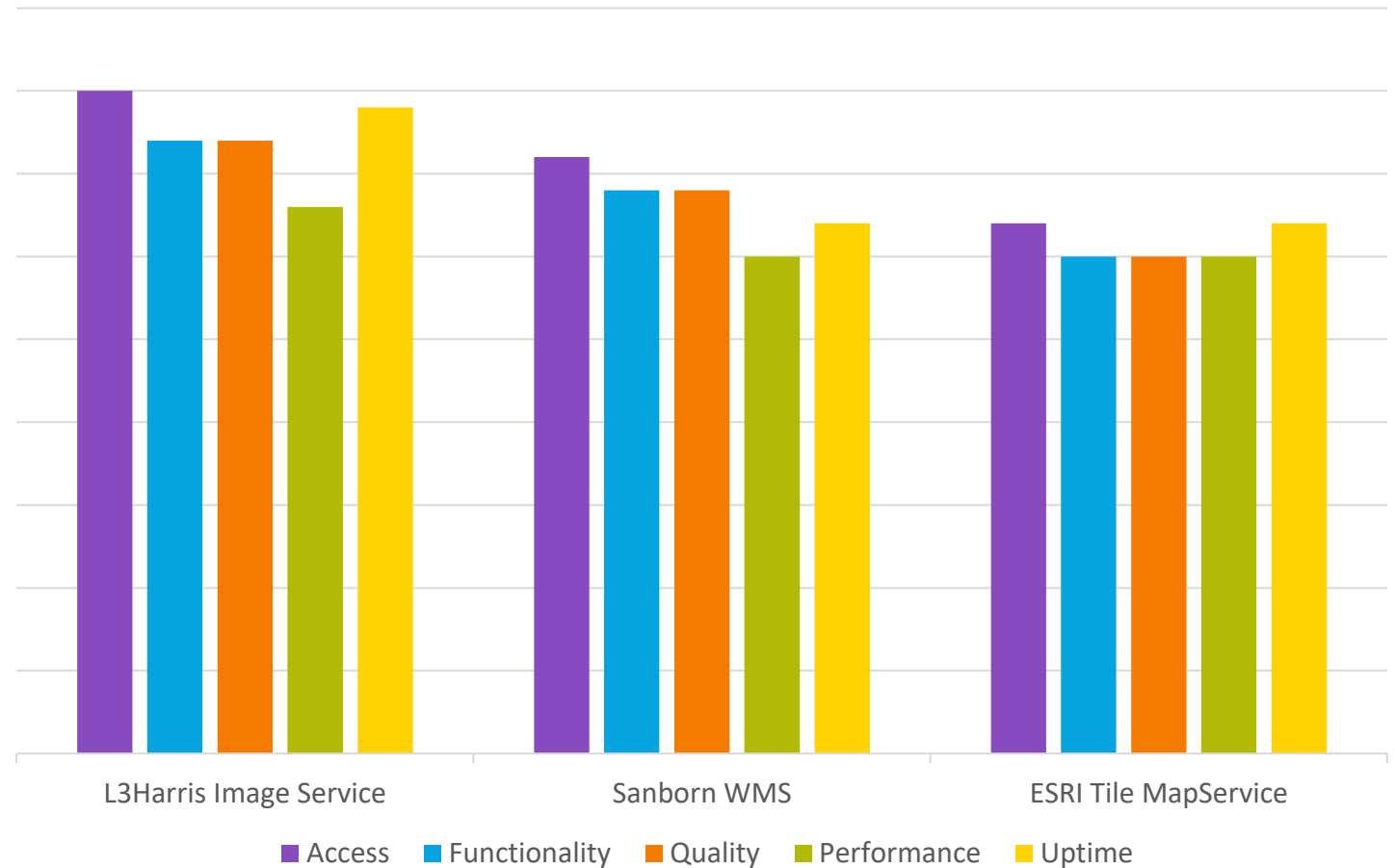
■ Want ■ Neither

- In order of importance:
 1. Download/export images
 2. Change transparency, brightness, contrast
- May not need to be accommodated:
 - Change histogram stretch options
 - Change band combinations



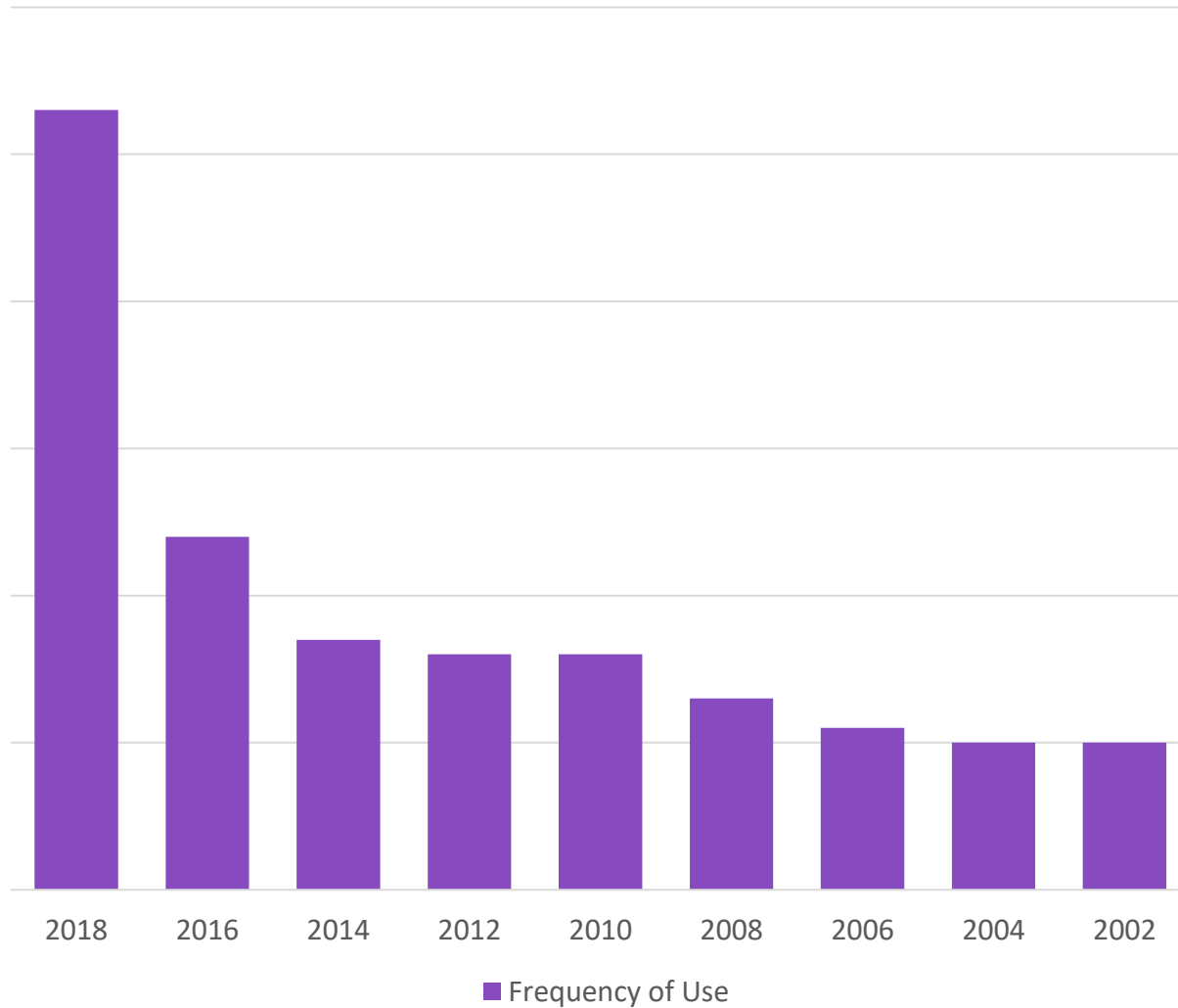
Test/trial results

- Partners were given the option to evaluate an image service, a WMS, and tile map service.
- Image services were preferred in every category.





Use of historic services



- Only the current services are used daily.
- A handful of partners reference data back to 2010 monthly or quarterly.
- Pre 2010 services are rarely if ever accessed.



Options

- Image Services
 - L3Harris Image Service (historic and current)
 - ESRI “Dedicated Imagery” Image Service (historic and current)
- Tiled Map Services
 - ESRI Tiled Map Service (historic and current)



Imagery service options

| Option | Description | Considerations | Advantages | Disadvantages |
|---|--|--|---|--|
| L3Harris Image Service <i>This is the status quo</i> | Image services offer the ability to see individual tiles in the attribute table and change the histogram stretch/band combinations. The capability to download images is not turned on, but it could be added to these services. | L3Harris manages the service. Images are stored in their cloud. | Requires no change for our partners. All historic imagery is already accommodated. Survey results: Easy to use in Portal web apps/maps and desktop apps High quality imagery; export well Is secure (https) | More expensive than it used to be. Survey results: Slow performance |



Imagery service options

| Option | Description | Considerations | Advantages | Disadvantages |
|---|--|---|---|--|
| ESRI Dedicated Imagery Service <i>Beta</i> | Image services offer the ability to see individual tiles in the attribute table and change the histogram stretch/band combinations. The capability to download images is not turned on, but it could be added to these services. | ESRI manages the services. Images are stored in DRCOG cloud (AWS). | Utilizes technology we already have (image server). Stores data in a reliable place. Requires only link changes for our partners. | In beta and expected to launch in December 2020 (the technology is proven but the business model is new, which may be risky for us). We don't have the appropriate data types (tiffs) for several of the historical years so we would need to get them from L3Harris. |



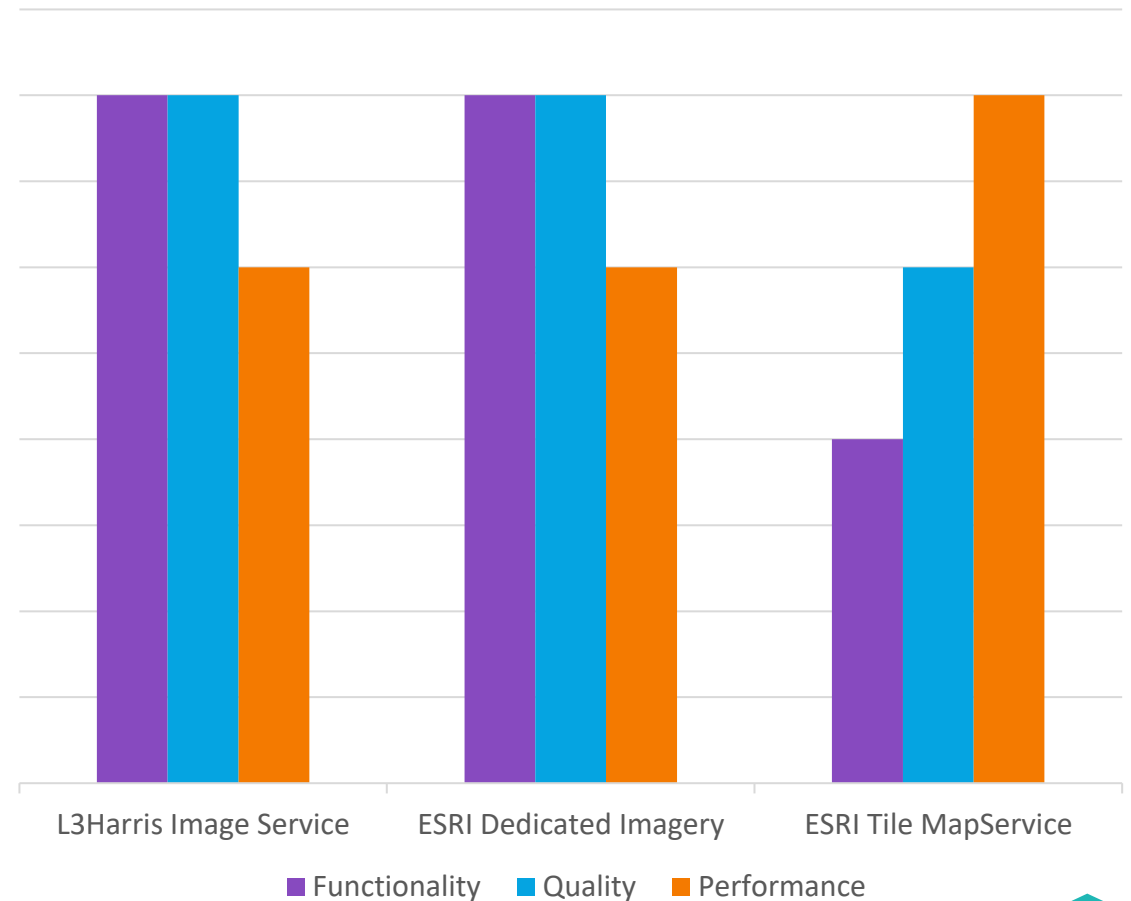
Imagery service options

| Option | Description | Considerations | Advantages | Disadvantages |
|------------------------|---|---|---|---|
| ESRI Tiled Map Service | In Tiled Map Services the imagery is cached by zoom level for quick loading. The user cannot adjust the appearance. | DRCOG manages the service after initial setup by ESRI. Images are stored in DRCOG's AGOL account. Maximum of three services per year split by resolution. | Utilizes technology that DRCOG already has (AGOL). Stores data in a reliable place (ESRI servers). Good performance. Survey results: Easy, cheap, fast | Takes a long time to setup. Risk with setting up all our historical imagery – issues unknown. Images may not be shown at full resolution because they are cached. Less functional for the user. Survey results: Can't adjust, grainy images |



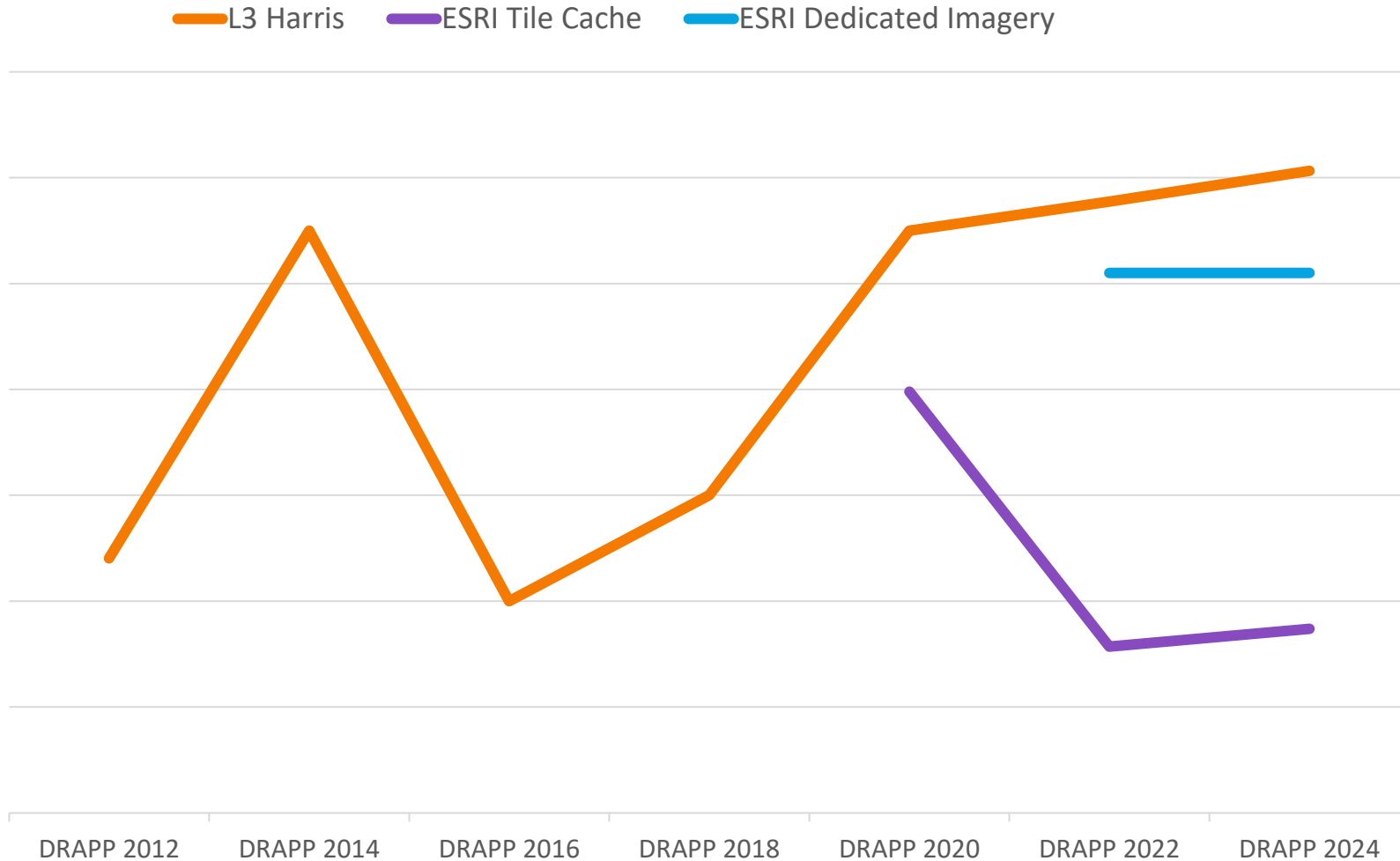
At-a-glance option comparison

- Ease of access and uptime is the same for all options (not graphed)
- Image services offer the most **functionality** and tiled map services offer the least.
- Image services are higher **quality** than tiled map services.
- Tiled map services have better **performance** than image services.





At-a-glance cost comparison



- L3Harris is the most expensive option this year and increases 5% each project.
- ESRI Dedicated Imagery is slightly cheaper than L3Harris.
- ESRI Tile Cache is cheap after initial setup.



Cost impact to partners

- No change to your DRAPP 2020 not-to-exceed cost committed in your letter of intent (LOI). *We are eating through some contingency money this year.*
- For DRAPP 2022
 - Keeping the status quo (L3Harris) would increase your cost.
 - Switching to ESRI Dedicated Imagery would increase your cost. We could drop historic services to see if that would maintain your cost.
 - Switching to the tile map service would maintain your cost.
 - None of the options are expected to lower your cost. **The only way to lower cost is for DRCOG to stop providing services altogether.**



Timelines

- **Nov 30, 2020** – L3Harris services end unless DRCOG continues their contract.
- **Jan 1, 2021** – ESRI is planning to launch the Dedicated Imagery Program and we can potentially be a beta partner.
- **May 31, 2022** – If we resign a contract with L3Harris, this is when access to the services will expire. **All DRAPP 2020 partners have been offered access until this date in their commitment paperwork.**



Summary

- Less than 20% of partners use the services we offer now. Even fewer use the historic services.
- Users report not needing much functionality (so a cheaper, tiled map service would suffice) but when rating services, users like the image services better (more expensive but more functional).
- The tiled map service, while cheaper and faster, is not as high quality or as functional as we are used to. It also carries extra risk because DRCOG would have to maintain it (and we have a very small team). I would not want to take this option without more testing.
- The image services are comparable in cost so there isn't much incentive to switch. (e.g. switching from L3Harris to ESRI Dedicated Imagery would only save us money – maybe - if we dropped historic services).

What if we....

Keep the L3Harris option and:

- Start testing the ESRI Dedicated Imagery option for 2022?
- Create a DRAPP 2020 tiled map service for simultaneous use until 2022?
- Consider dropping services altogether in 2022?

An aerial photograph of a city skyline, likely Denver, Colorado, featuring several prominent skyscrapers and a dense urban landscape. The image is overlaid with a semi-transparent teal banner that contains text. The banner has a large white arrow pointing to the right on its right side.

Email me at asummers@drcog.org

QUESTIONS?