



Data-Exchange Platform (DEP)

Improving Safety, Mobility, and Reliability

Regional Multi-Modal Mobility Program

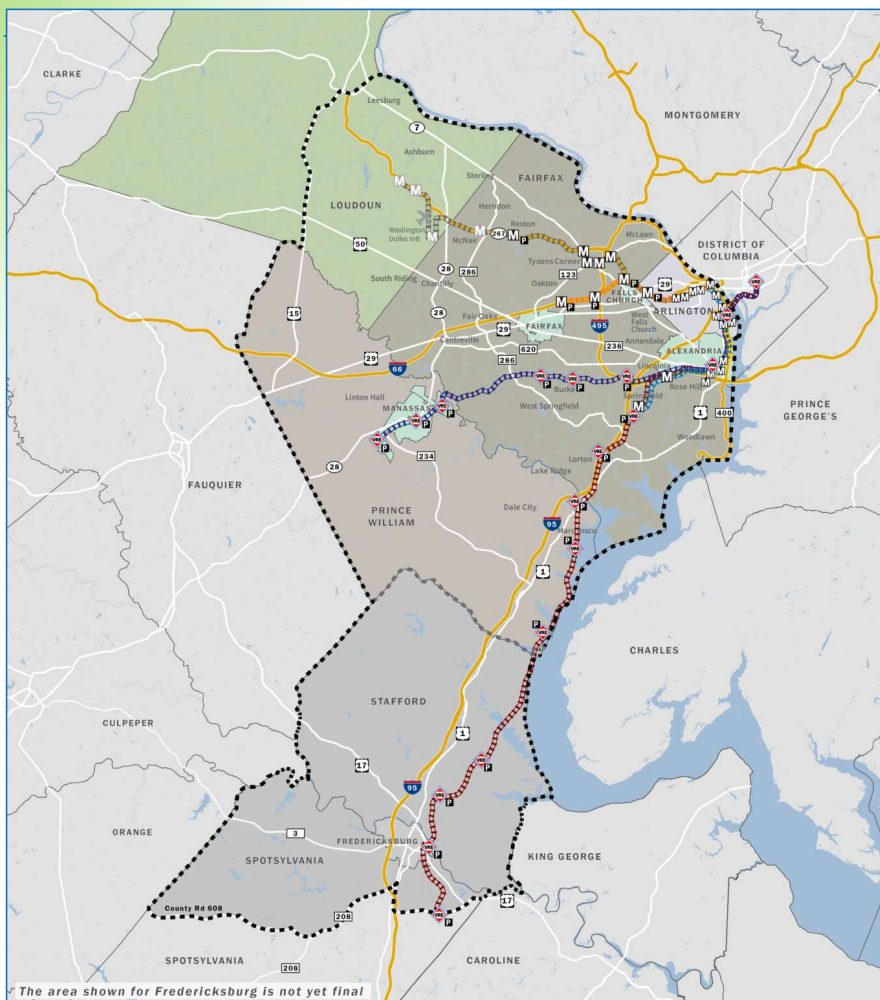


APRIL 30, 2024

RM3P Mission

- Leverage the collaborative use of real-time data to improve travel safety, reliability, and mobility;
- Provide the public with effective tools to make better informed travel choices.

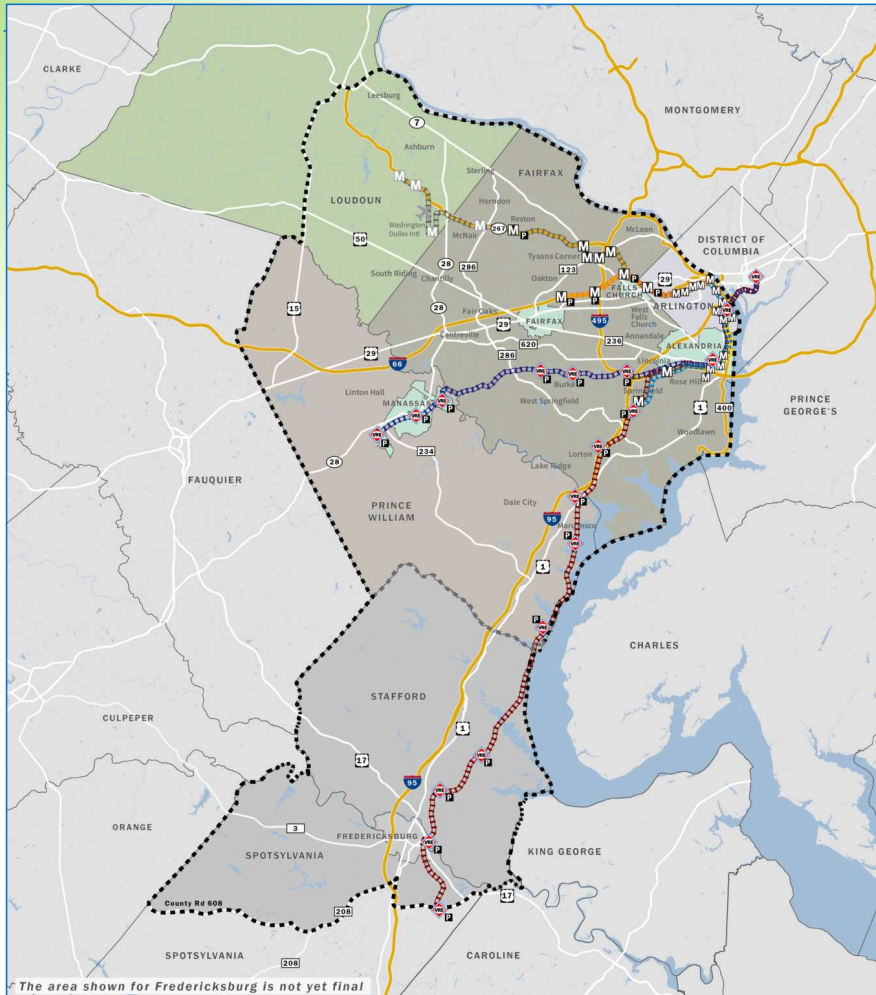
RM3P Overview: Geographic Boundaries



This *data-driven, multi-modal* mobility program, serving Northern Virginia and Metropolitan Fredericksburg, is comprised of 4 active projects:

- ❑ Data-Exchange Platform (DEP)
- ❑ Artificial Intelligence-Based Decision Support System (AI-DSS)
- ❑ Commuter Parking Information System (CPIS)
- ❑ Dynamic Incentivization (DI)

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The DEP Journey



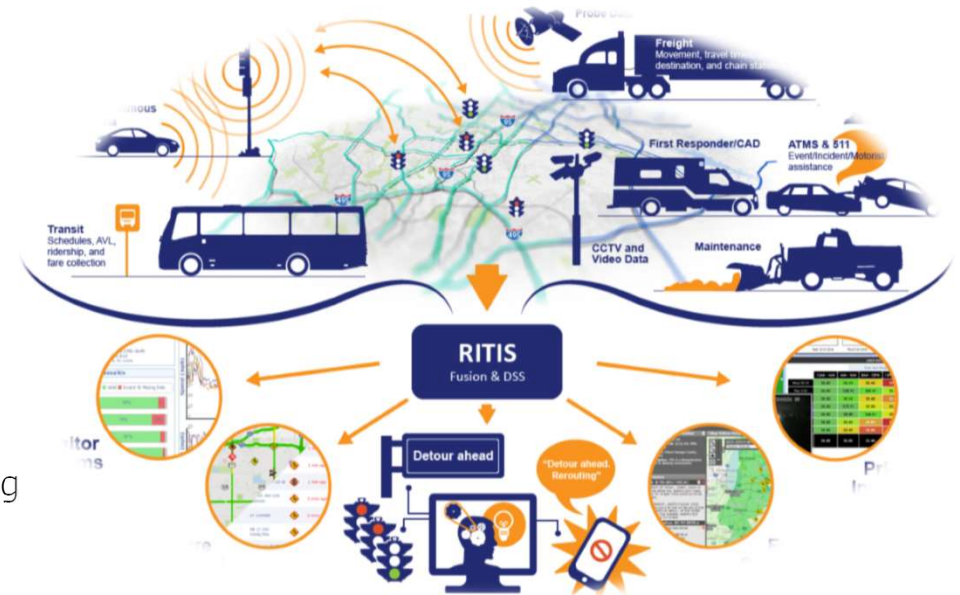
The DEP Approach – Leverage RITIS

What is RITIS?

RITIS is a situational awareness, data archiving, and analytics platform used by transportation officials, first responders, planners, researchers, and more. RITIS fuses data from many agencies, many systems, and even the private sector—enabling effective decision making for incident response and planning.

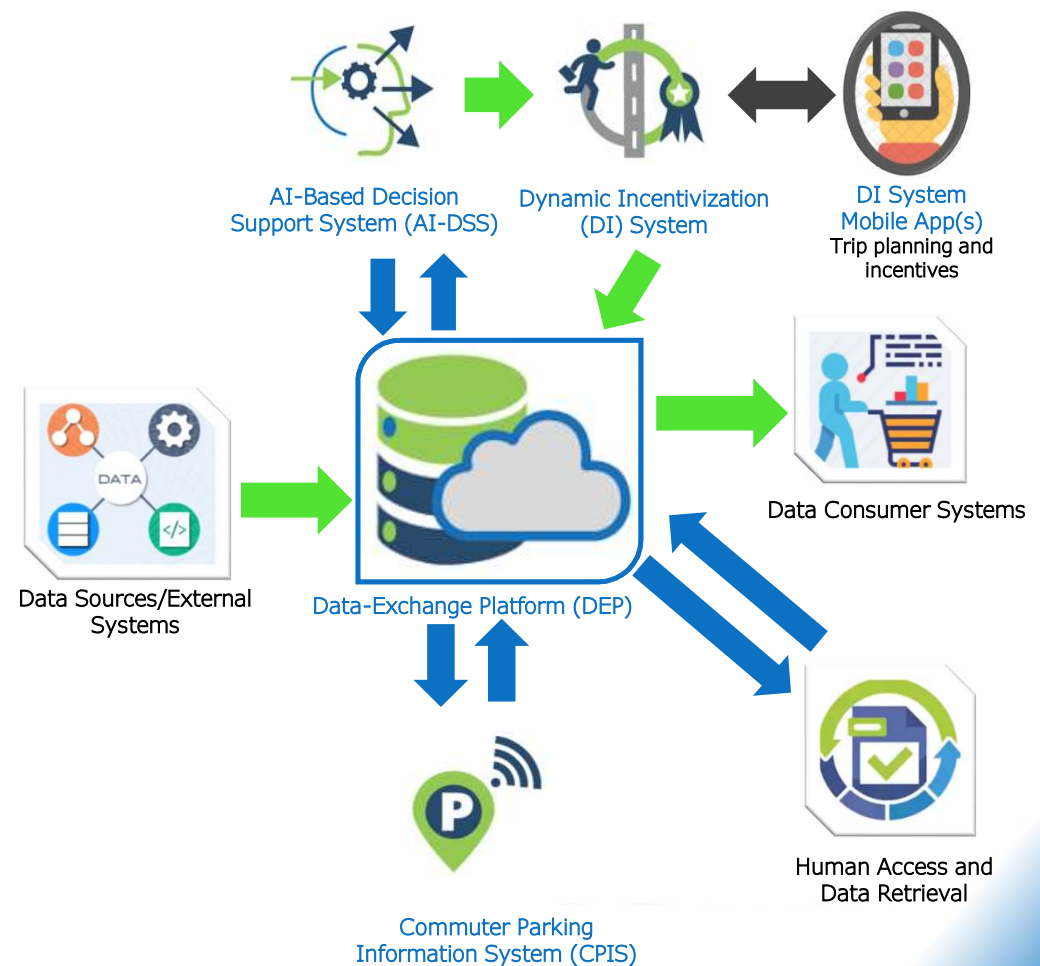
Leverage a State-to-State MOU with UMD/CATT Lab to tailor RITIS to DEP

- RITIS already contains a significant volume of pertinent regional data.
- RITIS supports multi-modal/multi-agency data ingestion.
- The real-time data in RITIS is predominantly incident/event-centric.
- RITIS has extensive experience in the region ingesting and integrating a range of data format.
- RITIS has existing processes & relationship in place.
- Virginia has a large number of existing RITIS users.

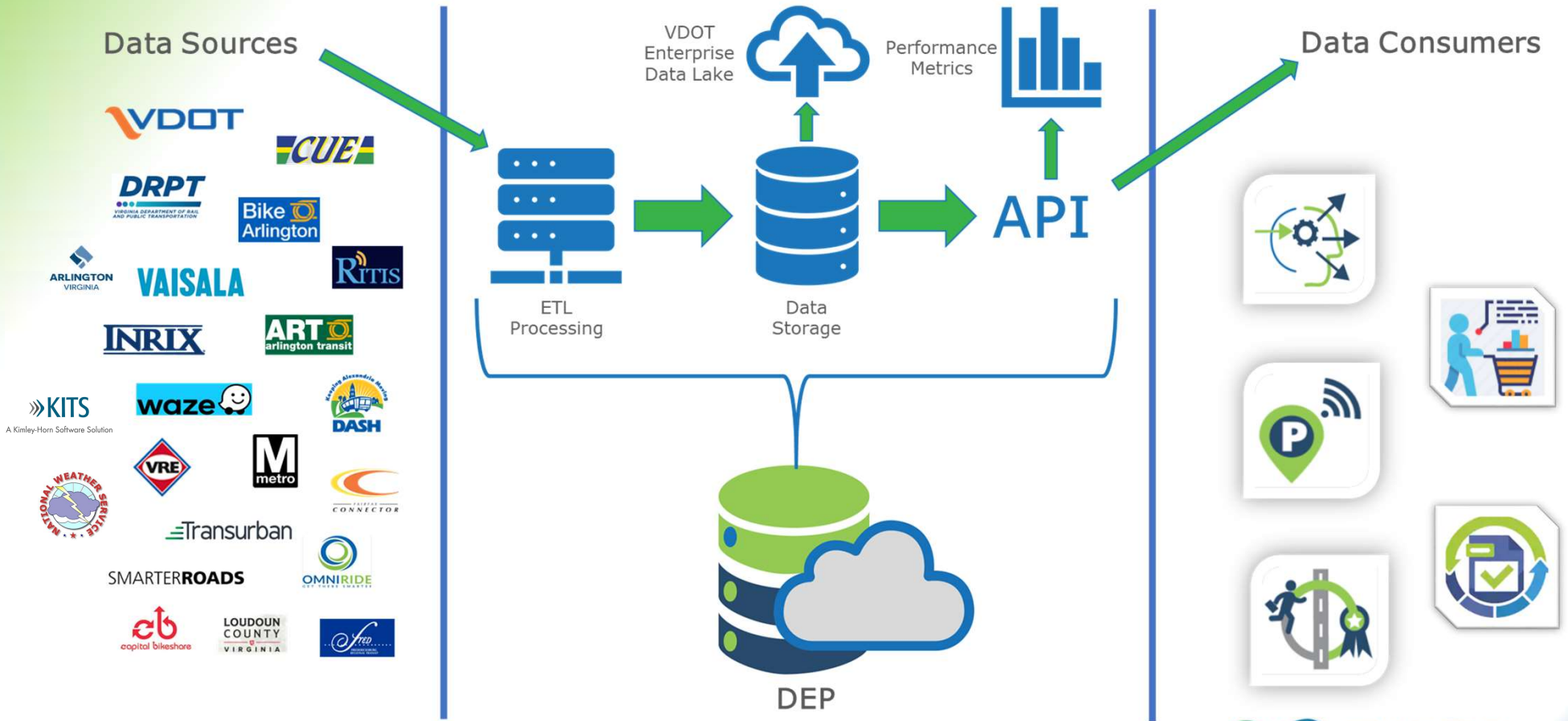


The DEP Background

- Data-Exchange Platform (DEP) is RM3P's data ingestion, data consolidation, data storage and data distribution system.
- Interfaces with all other RM3P systems to provide and receive data.
- Interfaces with other Data Consumers to provide RM3P data



DEP High Level Architecture



Regional Multi-Modal Mobility Program



What Sets DEP Apart from other Data Exchange Platforms?

No data exchange platform is perfect, but what sets DEP apart from others is a strong commitment to its mission:

	Data ↓	Exchange ↓	Platform ↓
RM3P DEP	Variety of prioritized data sets supporting key use cases	Powerful API, raw data download, and associated tools	Flexible, expandable, and evolving
Other DEPs	Either overly focused on one use case, or so broad that may not be useful to any	Either a data “dumping ground” or too human oriented requiring manual effort to use effectively	Either “one-and-done” deployment, or overly constrained by standards or specific use cases

Project Challenges

Challenge Category	Challenge
Data Discovery	<ul style="list-style-type: none">a) Identifying key personnel and determining true status of available data and feedsb) Some data changed or turned out to be unavailable while some data anticipated unavailable became available.
Data Quality	<ul style="list-style-type: none">a) Consuming data from sources is exposing interface and data issues at source levelb) Interface unreliabilityc) Unlinked sources of data (e.g. static inventory IDs don't match real-time status data)
Implementation	<ul style="list-style-type: none">a) Testing vs Production environmentsb) Data duplication (e.g., agency RWIS and WxDE)c) Discovering feed and data issues and discrepancies during implementationd) Source system transitions (e.g., transitions to cloud or new vendors)

Lessons Learned

Collaboration, Agile, and Flexibility

Engage partners early, manage expectations, and be prepared to pivot to alternatives if feeds/data/elements turn out different from expectations.

Leverage Previous Investments and Successes

Take advantage of previous investments by adjusting approaches to leverage existing data, feeds, and systems.

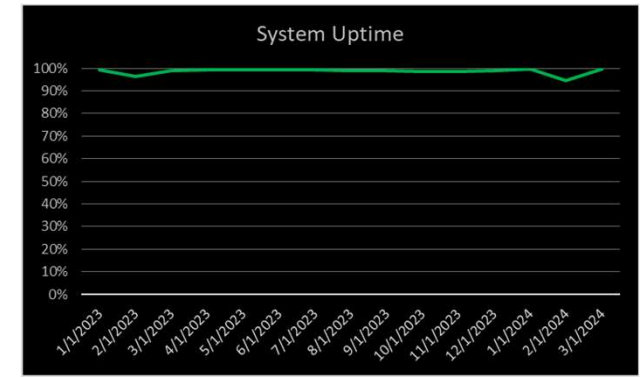
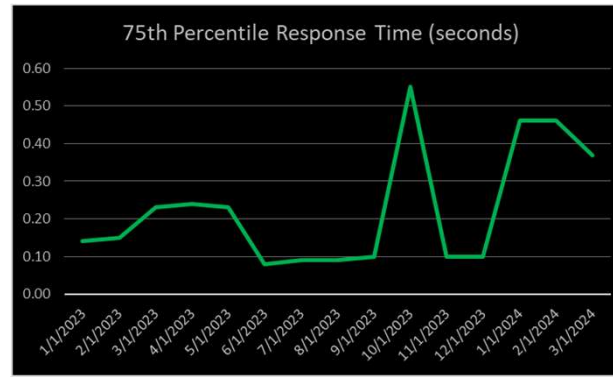
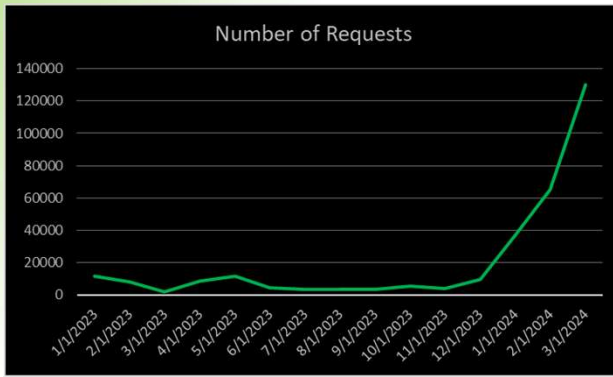
Be Transparent About Goals and Expectations

Demonstrate benefit and obtain buy-in from stakeholders to help overcome technical barriers and set up a cooperative roadmap.

Be Sensitive and Aware of Others' Challenges

Be prepared to accommodate when possible, especially when it comes to cybersecurity and policy requirements.

Where are we today?



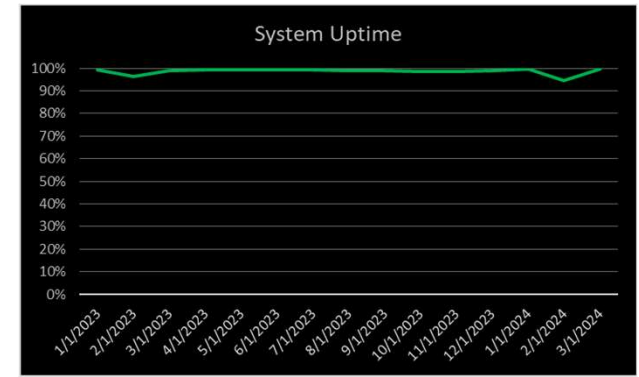
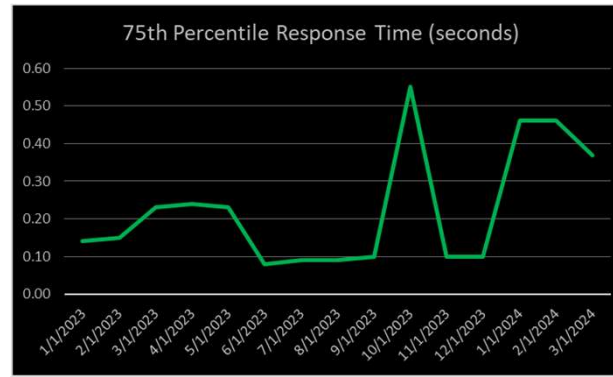
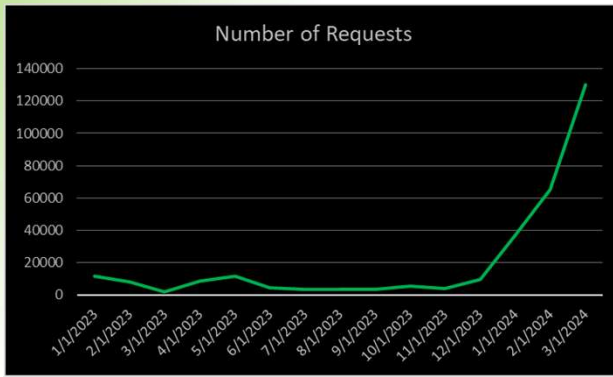
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In Progress

❑ Commuter Parking Information System (CPIS)

❑ Dynamic Incentivization (DI)

In Progress

What's Next?

*More data in the future? Absolutely!
Based on data availability and priority of
business cases that data enables.*

*Continuous Improvements
Performance metrics, user feedback, and
technology evolution: improvements
Combine data where appropriate to create value
and save users' time.*

Collecting Feedback

Current and potential data sources, users, and partners suggesting data that can be shared via DEP, and sharing use cases that builds a library of use cases that can be shared with other users.



Thank You!

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