

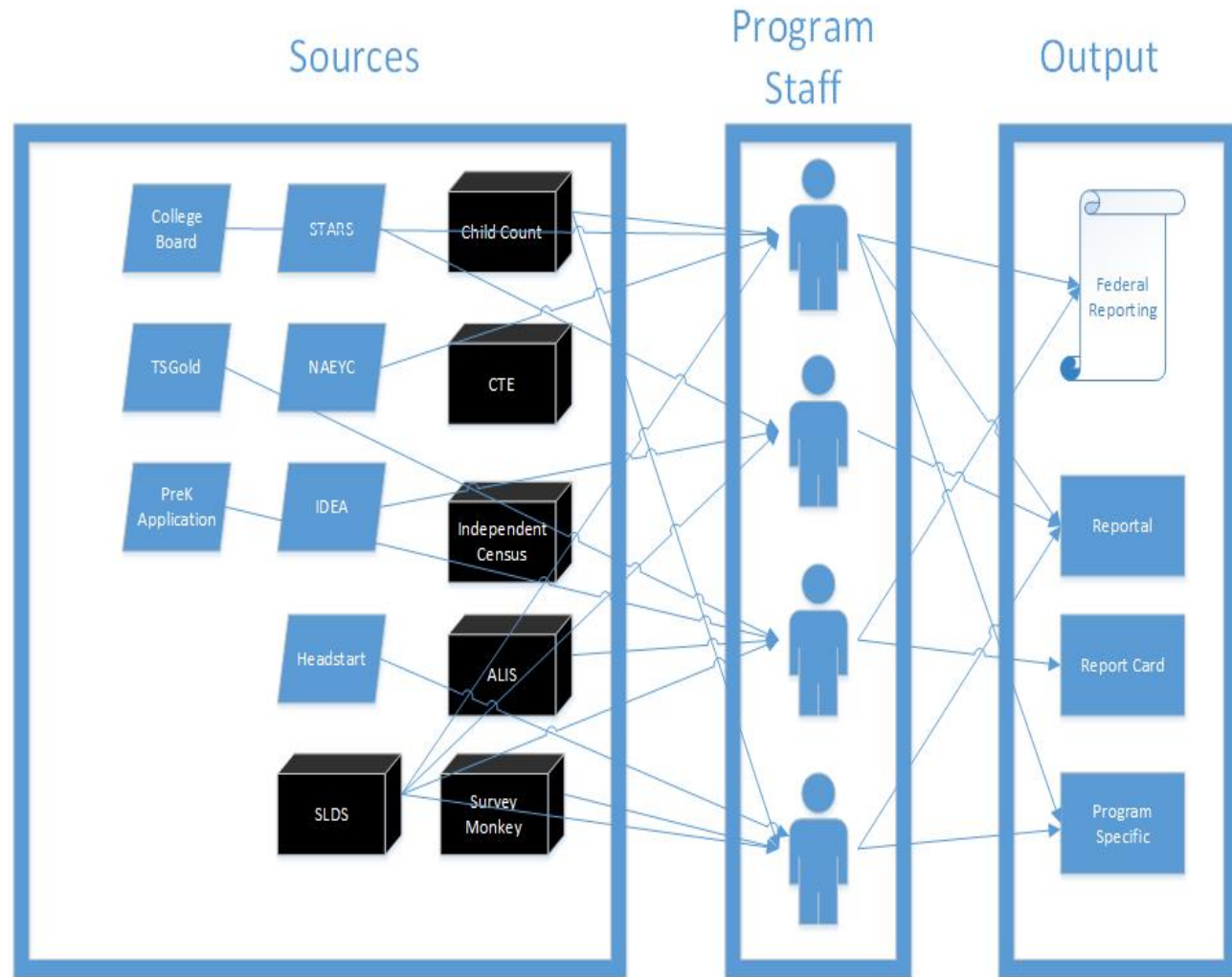
# AOE Data Strategic Plan Briefing

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# Historic Landscape

- Point to Point
- Reliance on Data Program Staff
- Labor Intensive



# THE CONDITIONS

## LEGACY STATE

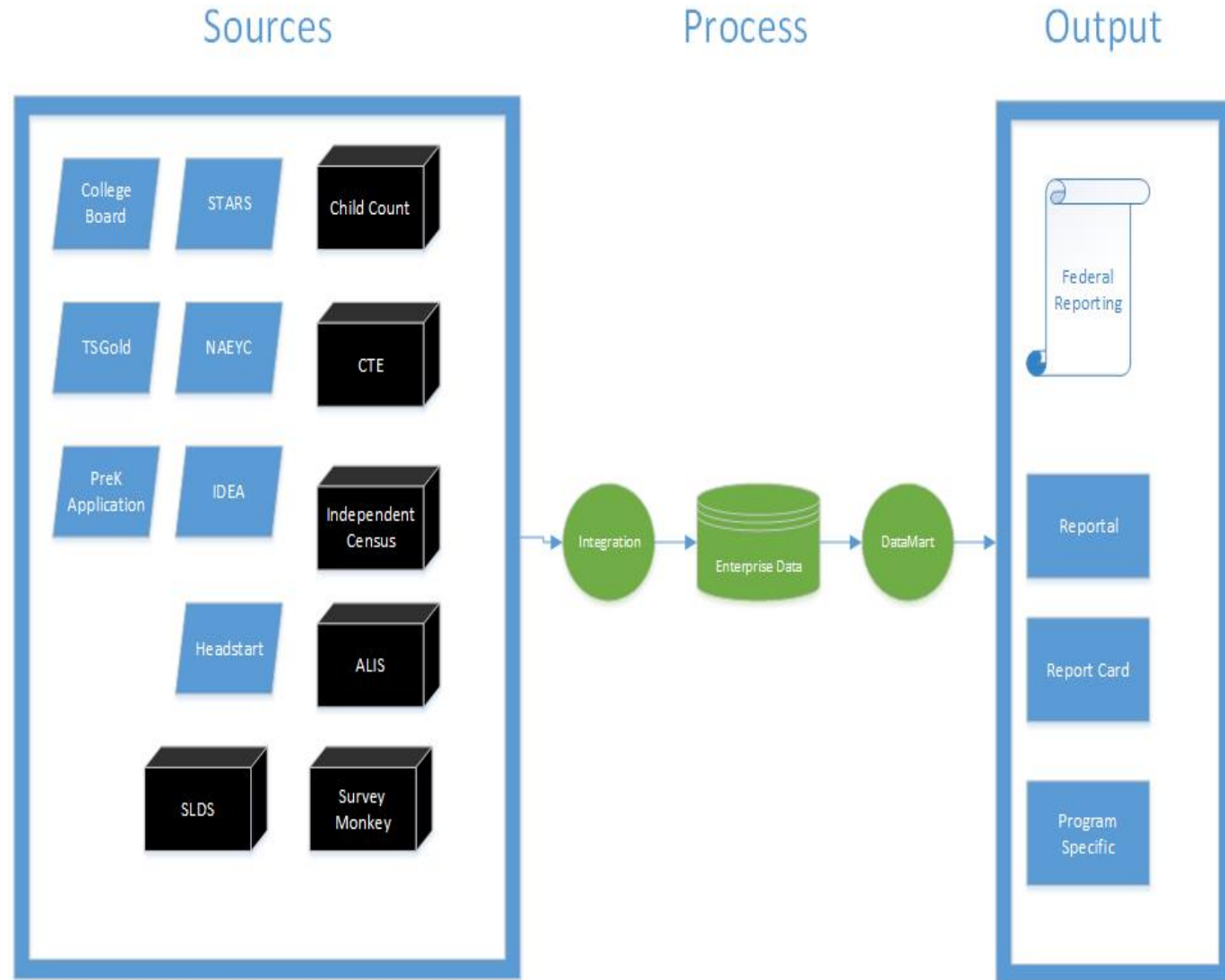
- Disjointed approach to tool and skill modernization across IT and Data teams
- Many, disparate points of data collection
- Many, non-integrated data sets
- No single, unified data model
- Patchy, non-standard process documentation
- Non-uniform application of governance
- Heavy reliance on non-scalable processes
- Heavy reliance on manual work to meet compliance reporting
- Data stewards, analysts, specialist teams federated across the AOE

## FUTURE STATE

- Shared approach to modernization (IT – Data Partnership)
- Standardized operating procedures for all data collections
- Master data management to facilitate data integration
- Single, unified data model (CEDS NDS)
- Centrally managed, enterprise-wide governance
- Scalable, portable, repeatable processes
- Automated production of compliance reporting, interactive dashboards, slack for value-added analysis
- Data stewards, analysts, specialist teams centrally unified under DMAD

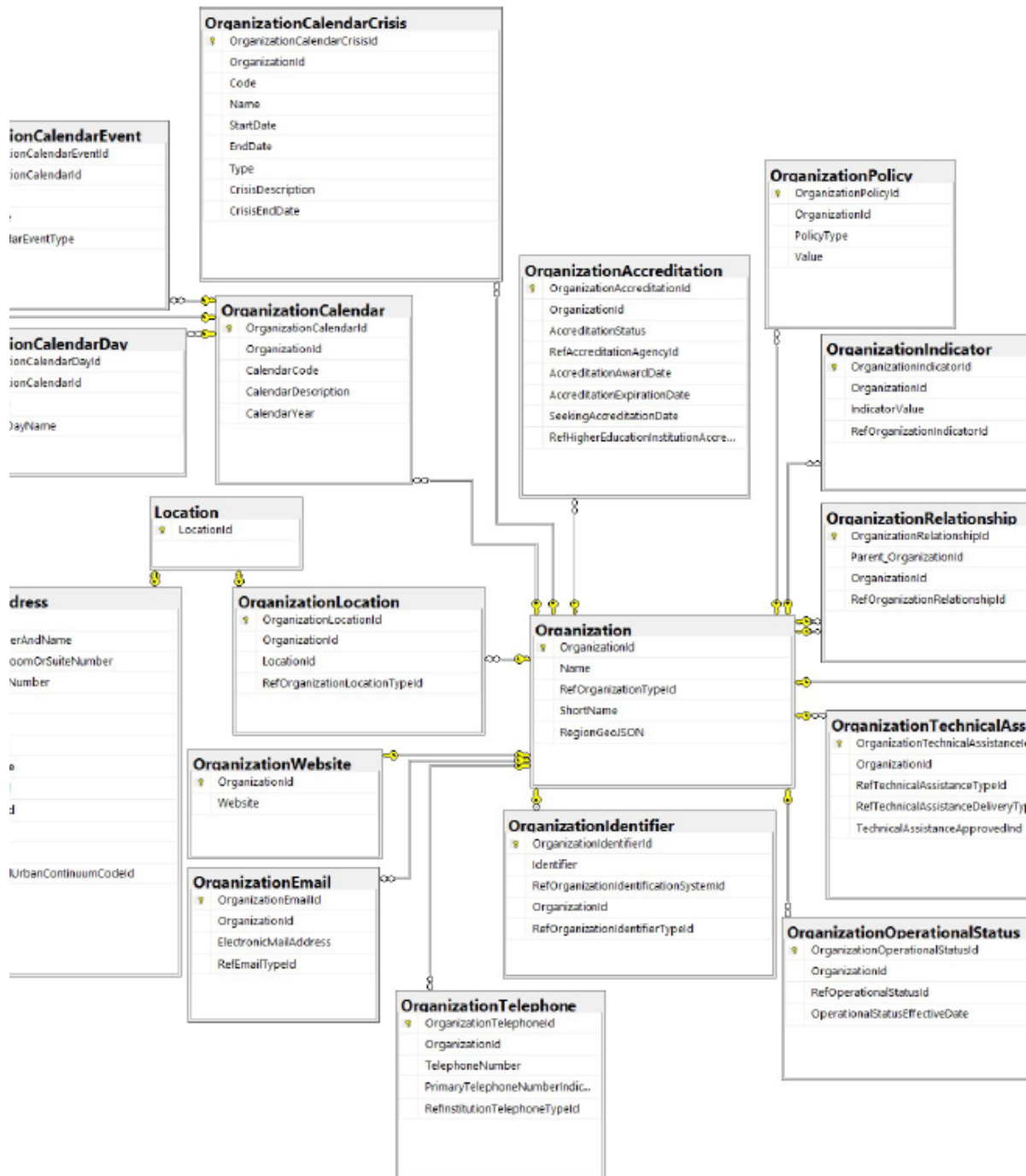
# Future Vision

- Data Centric
- Resilient to Change
- Free Program Resources



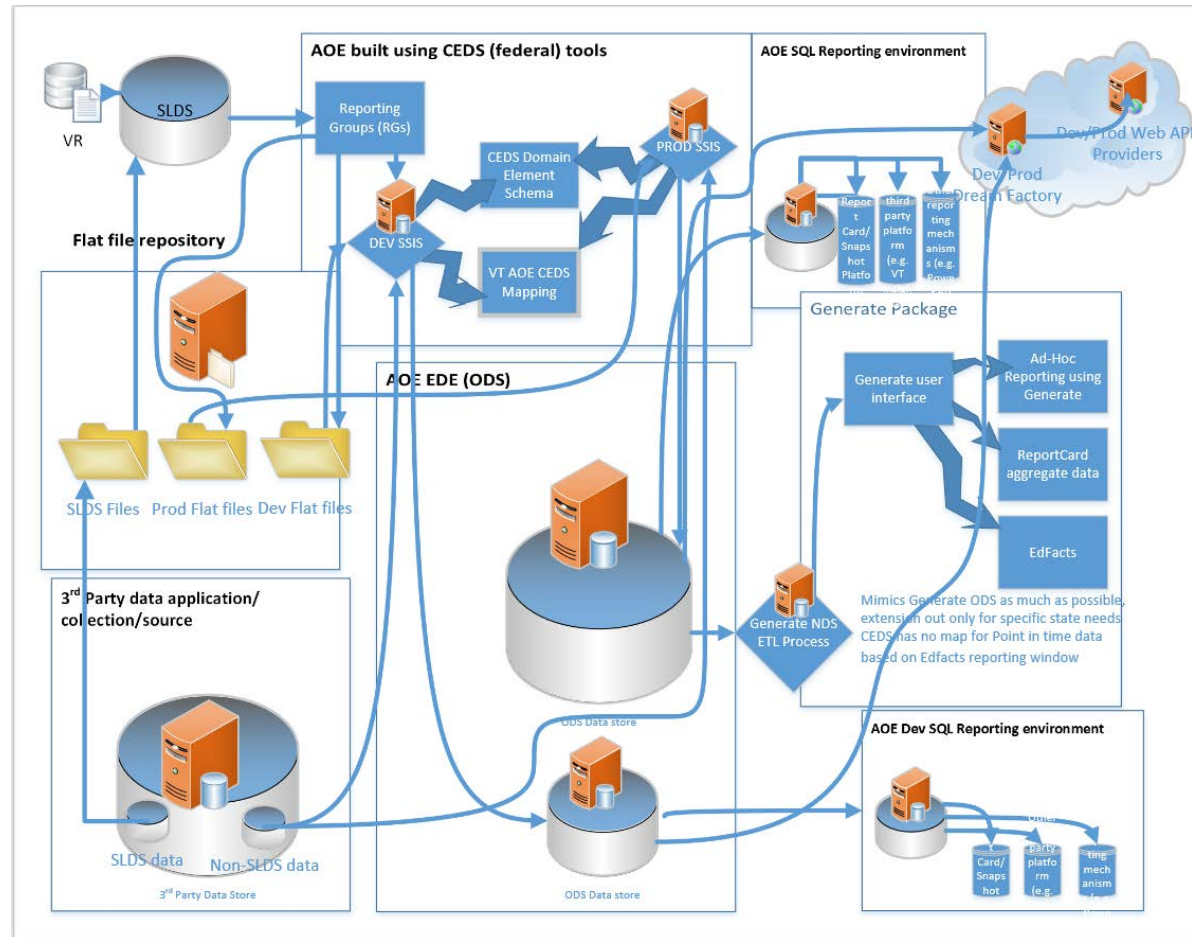
# Common Data Model

- Federally Established
- Extendable
- Common Language



# Enterprise Infrastructure

- System Centric
- Leverage Resources
- Sustainable Framework to support business needs



Resource constraints

\$cant budget

Aging infrastructure

Technical debt burden

Fear of change

Deferred maintenance

Struggling morale

Overallocated staff

## But how to get there?



I'll just put this over here with the rest of the fire.



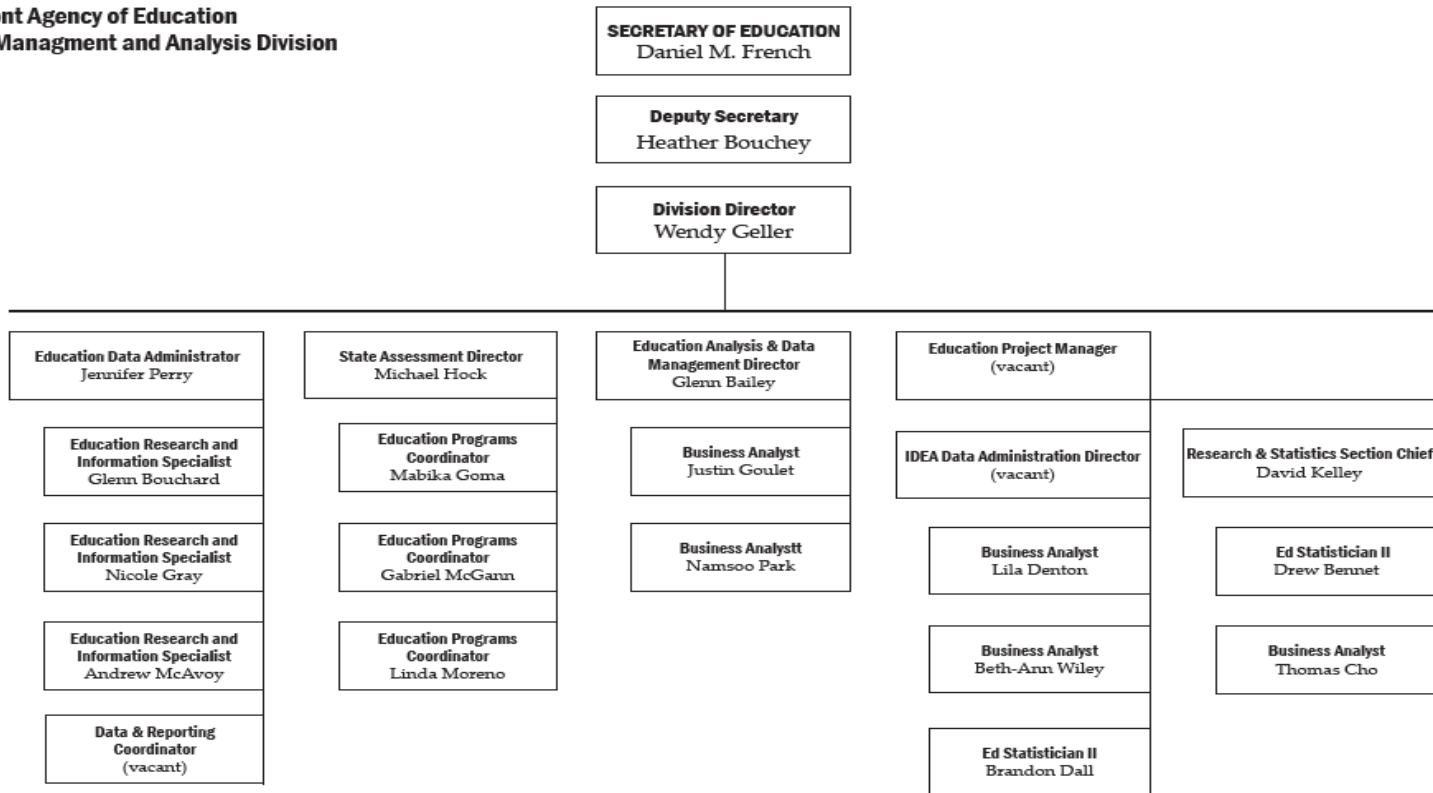
# 3-5 Year Breakthrough Objectives

1. Modernize collection, management, storage, and data analysis platforms, tools, and methodologies.
2. Move from reactive culture to proactive culture.
3. Adopt a posture of innovation and continuous improvement.
4. Effectively coordinate resources to execute cross-functional workflows.
5. Strengthen security and privacy postures while reducing burden of supporting secure and sound data handling.
6. Empower staff and stakeholders with data.



# From 4 Teams to 1 Work Family

Vermont Agency of Education  
Data Management and Analysis Division



Data Administration

Assessment

Assessment Analysis

Data Analysis



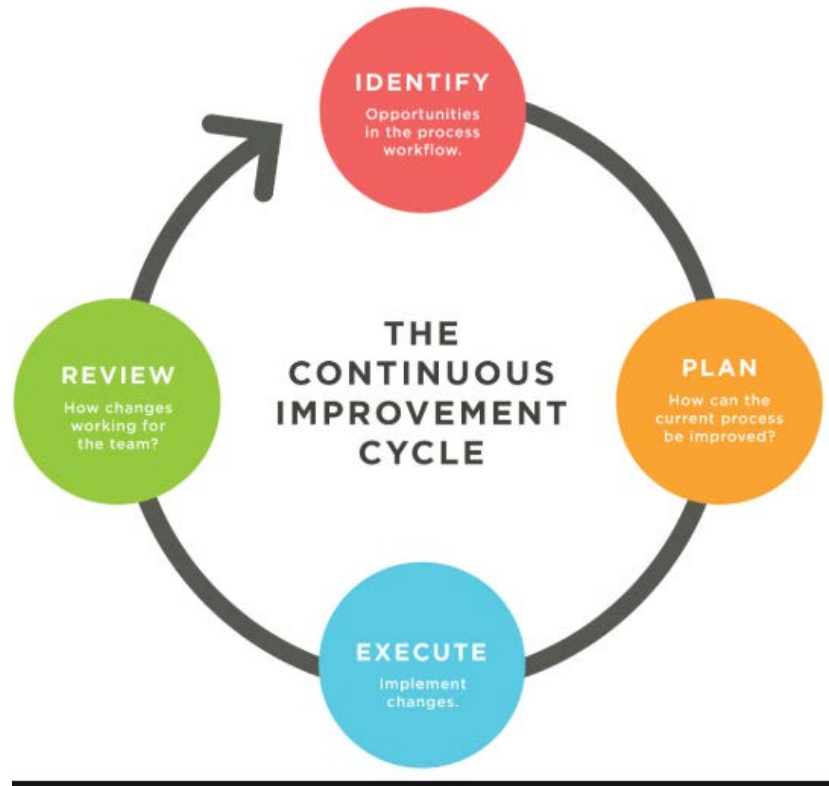
Partner with Extended  
(ADS) Work Family



# How to do the work together?

## What is Lean?

- A methodology and culture dedicated to continuous improvement.
- The practice of constantly reviewing processes to identify, measure, and learn about where there is waste and how it can be mitigated.
- An environment of continuous feedback loops that drive adjustments and improvements to yield more value.

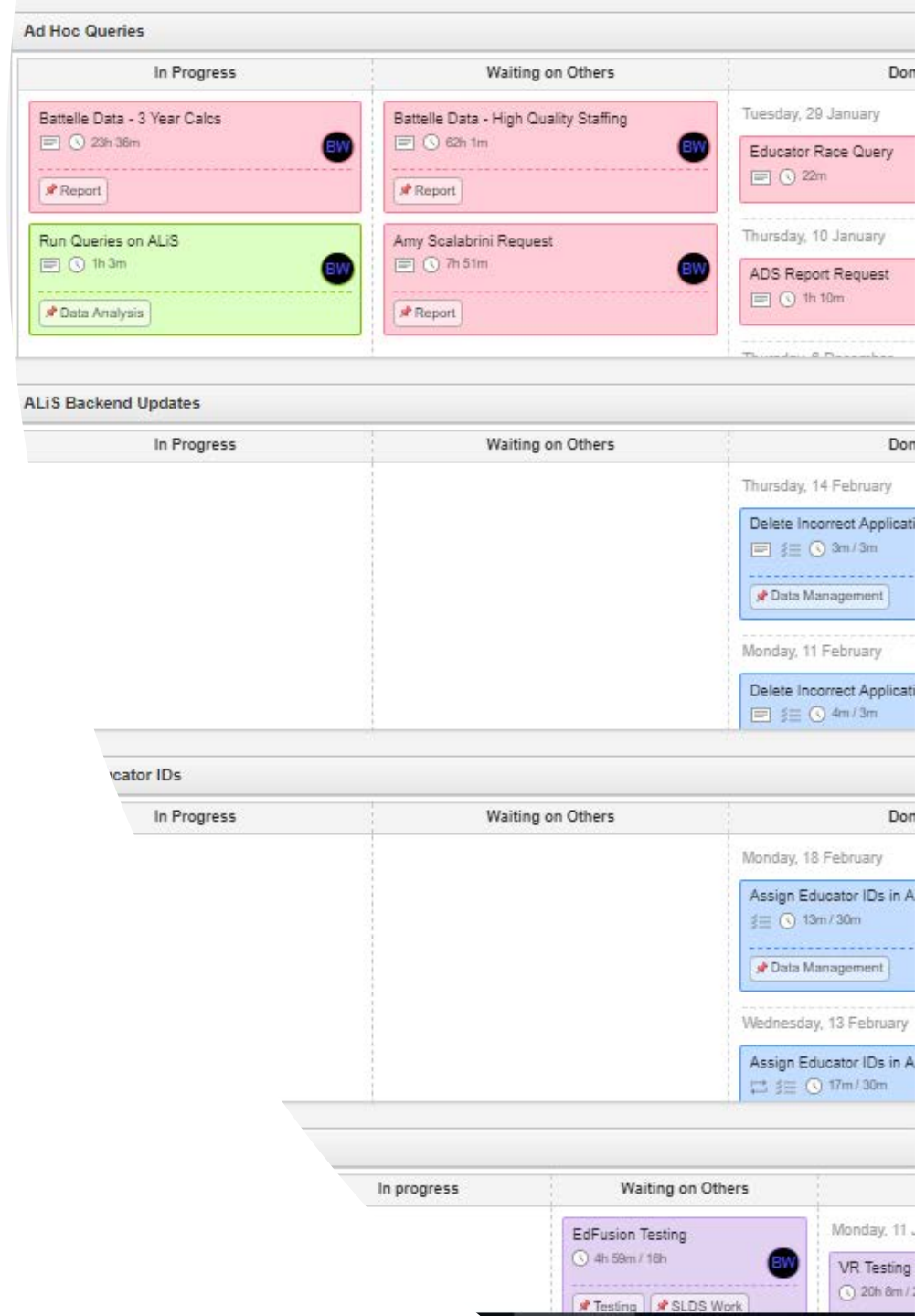


# Kanban = Card

...In Japanese

Kanban practice helps us:

- Identify the work
- Define the work in standard ways
- Visualize the work
- Visualize the process of doing the work
- Identify waste in the process
- Address the waste in the process
  - Clarity to adjust the process
- Find better ways to perform the work
- REPEAT



# Lean: Create Standard Operating Procedures that Visualize Our Work Together

The image shows a KanbanFlow board interface. The board title is "SHELL - Regularly Scheduled State/Federal Data Reporting". The board is organized into six columns: Backlog, To-do, Do today, In progress (0/3), Waiting For, and Done. The Backlog column contains several task cards:

- Understand ALL reporting requirements** (Pink card):
  - Understand ALL reporting requirements (0h / 0h)
  - Report
  - Read reporting specifications (insert file path/link to specs for reporting)
- Make sure the data are clean** (Blue card):
  - Data Management
  - Check for duplicates and remove
  - Check for missing data
  - Check for anomalies (e.g. run frequencies for all relevant variables, check for outliers, check for missing data)
  - Check for correct ORG NAMES and ORG IDs (at all levels, e.g. school, SUISD, etc.)
  - Re-code if necessary (ALWAYS RE-CODE INTO NEW VARIABLE)
  - If re-coding, re-run frequencies (or other cleaning procedure) on new variable
  - Create/compute new variables as necessary (ALWAYS CREATE/COMPUTE INTO NEW VARIABLE)
  - Create final clean master data files
  - Save one complete copy of master data files - FREEZE THIS AND DONT CHANGE OR OVERWRITE THIS FILE EVER
- Create Reporting Year/Time Folder** (Blue card):
  - Create Reporting Year/Time Folder (0h / 10m)
  - Data Management
- Assess where the data source is (where the data resides)** (Blue card):
  - Assess where the data source is (where the data resides) (0h / 1h)
  - Data Management
- Compile Data** (Blue card):
  - Compile Data (0h / 4h)
  - Data Management
- Create Submission Files** (Green card):
  - Create Submission Files
  - Data Analysis
- Create Codebook** (Blue card):
  - Create Codebook (0h / 2h)
  - Data Management

# Lean: Tailor Standard Operating Procedures to Specific Types of Work Together

Boards KanbanFlow

COLLECTION - Child Count

	TEMPLATE	TO-DO	Do today	In progress	Waiting for Others	Done
<b>Data Collection Process - December</b>	<p>7 overdue tasks</p> <p>Today</p> <p>Tuesday, 18 September</p> <p>STEP 3: Kick-Off Meeting</p> <p>STEP 2: Prepare for Kick-Off Meeting</p> <p>STEP 4: Write up and distribute notes from Kick-Off Meeting</p> <p>Sunday, 16 September</p> <p>STEP 1: Schedule Kick-Off Meeting</p>					<p>Today</p> <p>Tuesday, 18 September</p> <p>STEP 2: Prepare for Kick-Off Meeting</p> <p>Monday, 17 September</p> <p>STEP 4: Write up and distribute notes from Kick-Off Meeting</p> <p>STEP 3: Kick-Off Meeting</p> <p>Tuesday, 11 September</p>
<b>Data Reporting Process - December</b>	<p>6 overdue tasks</p> <p>Today</p> <p>Thursday, 11 March</p> <p>Step 1: Verify that all data is loaded in Back End</p> <p>Step 2: If data hasn't been matched, arrange to have Jen Perry match it</p> <p>Step 3: While data is being matched (may take a day or two), roll over GSM Child Count Backend database for new year.</p>			<p>Public Reporting of Child Count</p> <p>Step 8: EdFacts Processing</p>	<p>Step 7: Final Verifications</p> <ul style="list-style-type: none"> <li>Open Checks and Reports on the Main Menu of GSM Back End database, then select Final Verification Report.</li> <li>Beat up the GSM database to make it work.</li> <li>Run report for each SU and save the PDF output to network drive.</li> <li>Draft an email to attach reports to send to Special Ed Administrator and Child Count Contact via secure email. Include due date and methods of returning (fax number, attach signed and scanned report to original secure email, or mail). I request that they notify me if they mail the report back, because that delays receipt.</li> <li>Send reports via EFT. I reserve fusing as a back-up in case people have difficulties with secure email.</li> </ul>	<p>Today</p> <p>Monday, 28 March</p> <p>Step 3: Build Data Processing Syntax</p> <p>Friday, 23 March</p> <p>Step 4: Reach out to SU's for Clarification</p> <p>Step 2b: Start working on the Verification process</p> <p>Step 2a: Build SPSS Data Processing Steps - Start Over</p>
<b>Data Collection Process - Exiting</b>				<p>Field support for Exiting Part of collection.</p>		

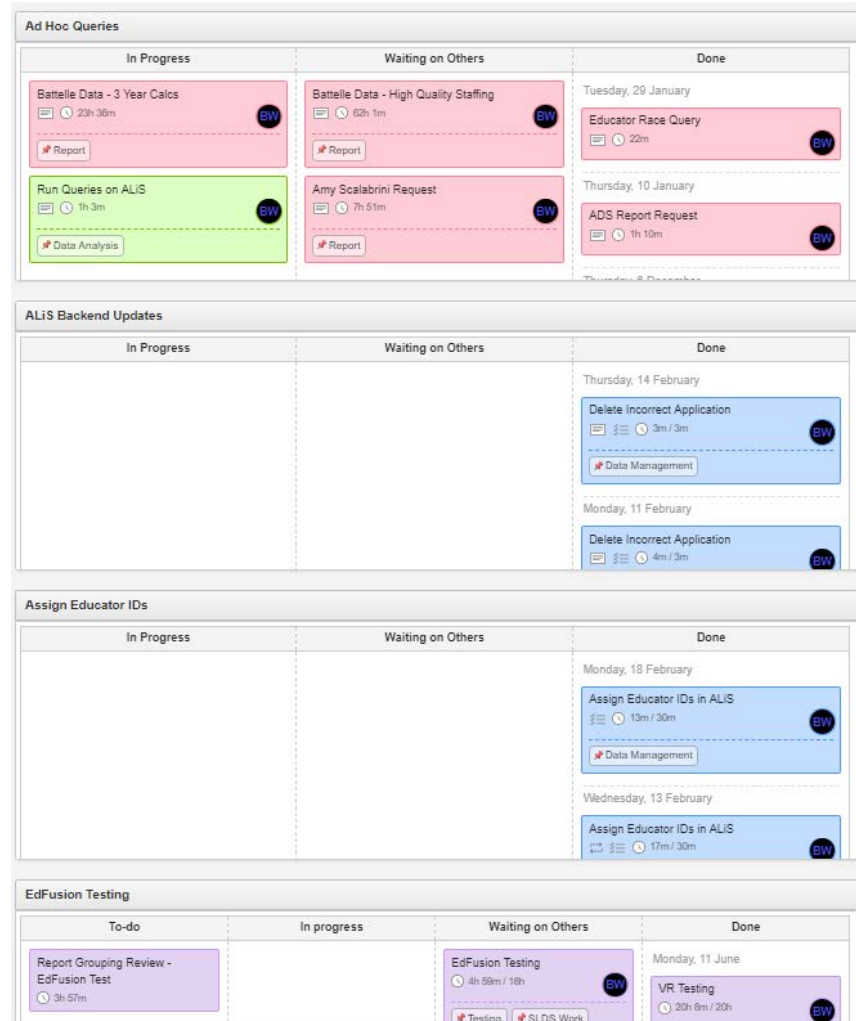
Data Governance | Data Analysis | Data Management | Reports / Data Products | Product Review | SLDS Work | Professional Development | Management | Meetings | Other / Administrative

# Lean: To Know Where to Go, You Have to Know Where You Are

## Create Dashboards to Visualize All Our Work

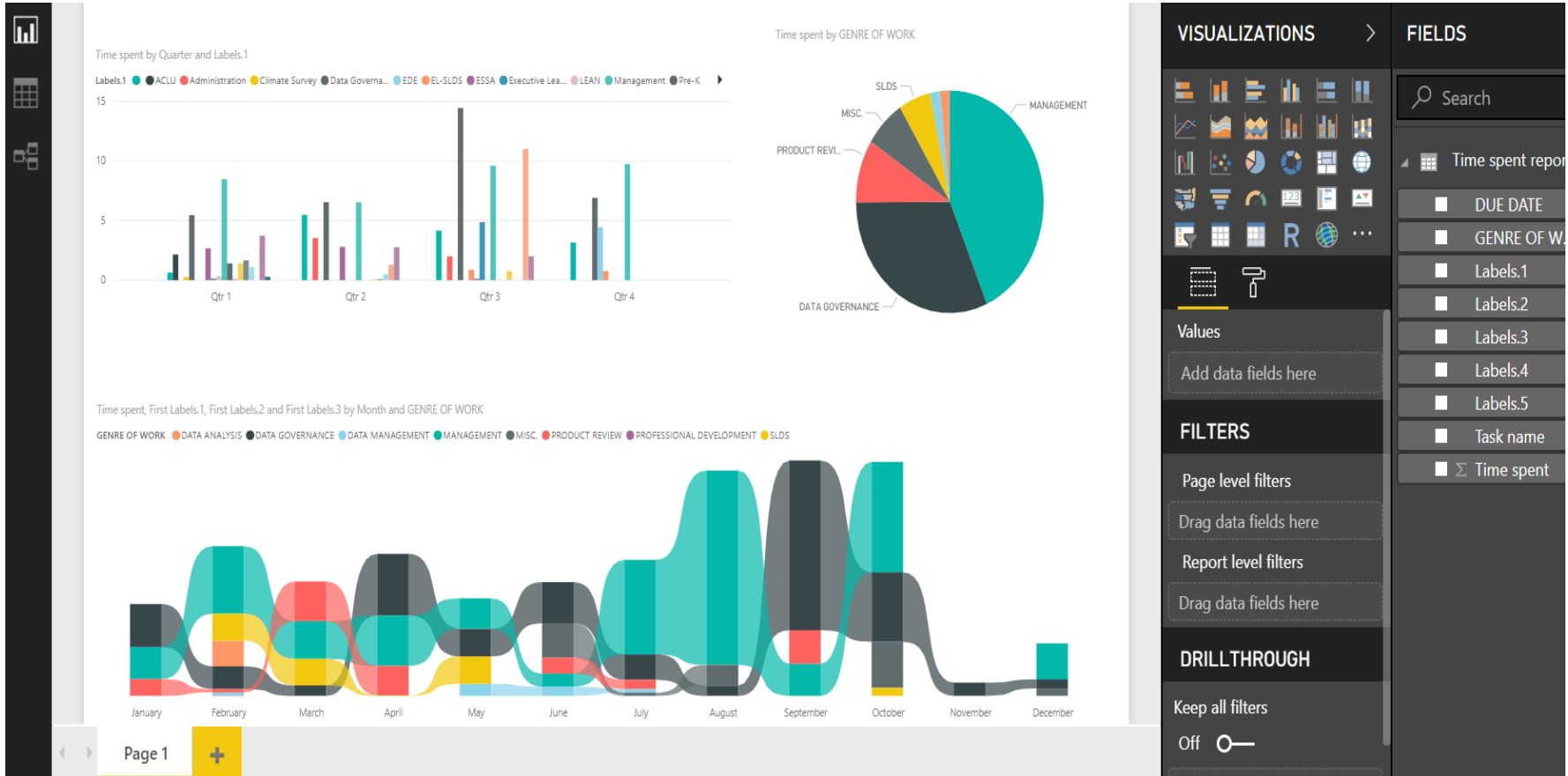
By doing this:

- Find bottlenecks
- Find the barriers in a workflow
- Find and define waste
- Deploy resources to minimize waste
- REPEAT





# Lean: Measure Our Work, Report Out, Drive Process Improvement





# The Work: Year 1

Goal	The Work: Year 1	Status
Modernize collection, management, storage, and data analysis platforms, tools, and methodologies.	<ol style="list-style-type: none"> <li>Upskill/reskill through coordinated professional development (e.g. SQL, Python, Jupyter Notebooks, Power BI, Power Query, Lean, Project Management Best Practices)</li> <li>Complete K-12 SLDS project</li> <li>Complete EL-SLDS project</li> <li>Complete Report Card/Snapshot project</li> <li>Stand up Enterprise Data Environment (EDE)</li> </ol>	<ol style="list-style-type: none"> <li>In progress</li> <li><b>Accomplished</b></li> <li><b>Accomplished</b></li> <li>In progress</li> <li>In progress</li> </ol>
Move from reactive culture to proactive culture.	<ol style="list-style-type: none"> <li>Standardize documentation procedures using Project Management (PM) and Lean practices and tools.</li> <li>Migrate into and build workflows in Azure DevOps. Deploy for PM purposes within Division (and to shape cross-functional work with program and ADS partners)</li> </ol>	<ol style="list-style-type: none"> <li>In progress</li> <li>In progress</li> </ol>
Adopt a posture of innovation and continuous improvement.	<ol style="list-style-type: none"> <li>Hire Data, ADS, staff augmentation FTEs</li> <li>Ensure EPMO AOE collaboration</li> </ol>	<ol style="list-style-type: none"> <li>In progress</li> <li><b>Accomplished</b></li> </ol>
Effectively coordinate resources to execute cross-functional workflows.	<ol style="list-style-type: none"> <li>Learn and leverage Federal resources and standards (e.g. CEDS NDS, GENERATE, OSEP APR templates, other federal TA materials)</li> <li>Complete execution of the AOE reorganization (stand up the Division)</li> </ol>	<ol style="list-style-type: none"> <li>In progress</li> <li><b>Accomplished</b></li> </ol>
Strengthen security and privacy postures while reducing burden of supporting secure and sound data handling.	<ol style="list-style-type: none"> <li>Stand up web-based collection mechanism for Alt Assessment waiver and Fitness Assessment accommodation request process</li> <li>Streamline Alt Assessment waiver and Fitness Assessment accommodation request process.</li> </ol>	<ol style="list-style-type: none"> <li><b>Accomplished</b></li> <li><b>Accomplished</b></li> </ol>
Empower staff and stakeholders with data.	<ol style="list-style-type: none"> <li>Leverage Power BI and Power Query tools to manipulate data, conduct analysis, create visuals, and get data to partners securely, safely, and quickly with minimal overhead for refresh</li> <li>Display data via the Report Card/Snapshot Platform</li> </ol>	<ol style="list-style-type: none"> <li>In progress</li> <li>In progress</li> </ol>



Questions?  
Conversation?