



# UNDERSTANDING ENTERPRISE GIS CONTENT WITH FME

Stuart Pidgeon – Auckland Council



# PRESENTATION AGENDA

- |   |                        |
|---|------------------------|
| 1 | Introduction           |
| 2 | Components and Process |
| 3 | Outputs                |
| 4 | Why FME?               |
|   |                        |
|   |                        |
|   |                        |
|   |                        |

START

# Geospatial at Auckland Council

- Geospatial Team – 30+ staff
- Also ‘federated users’ in business - over 115 ESRI desktop licenses in total
- SDE, ArcGIS Server, Portal, ArcGIS Online
- Dev, Test and Prod environments
- 8 SDE database instances in production
- Separate AGS and Portal sites for internal and external
- Multiple AGS sites in Test and Prod
  
- Also FME Server plus 20 FME desktop licenses





# What's there to understand?

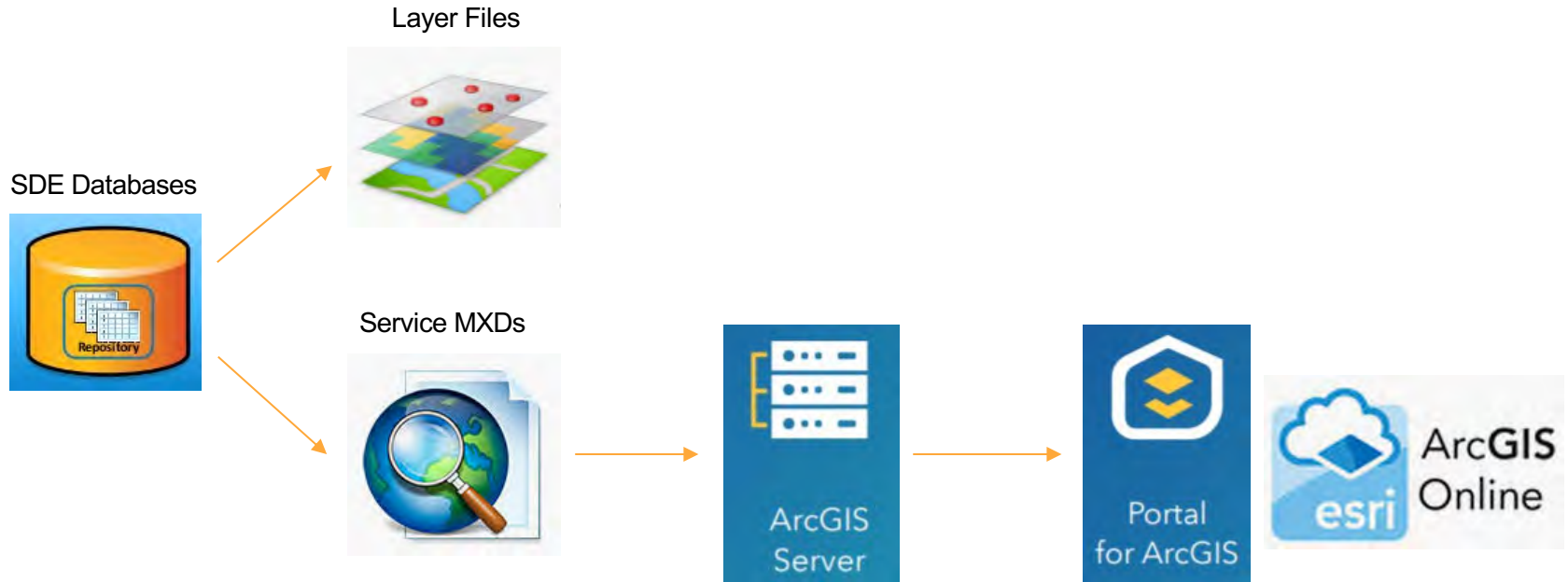
- What content do we have in SDE? Portal? AGOL?
- How do items relate to each other?
- If something changes, what does it affect?
- How complete is our metadata?
- Where is there duplication of content?
- How are Portal and AGOL being used by customers?
- Which are the largest datasets?
- Which datasets are frequently updated? Which are largely static?



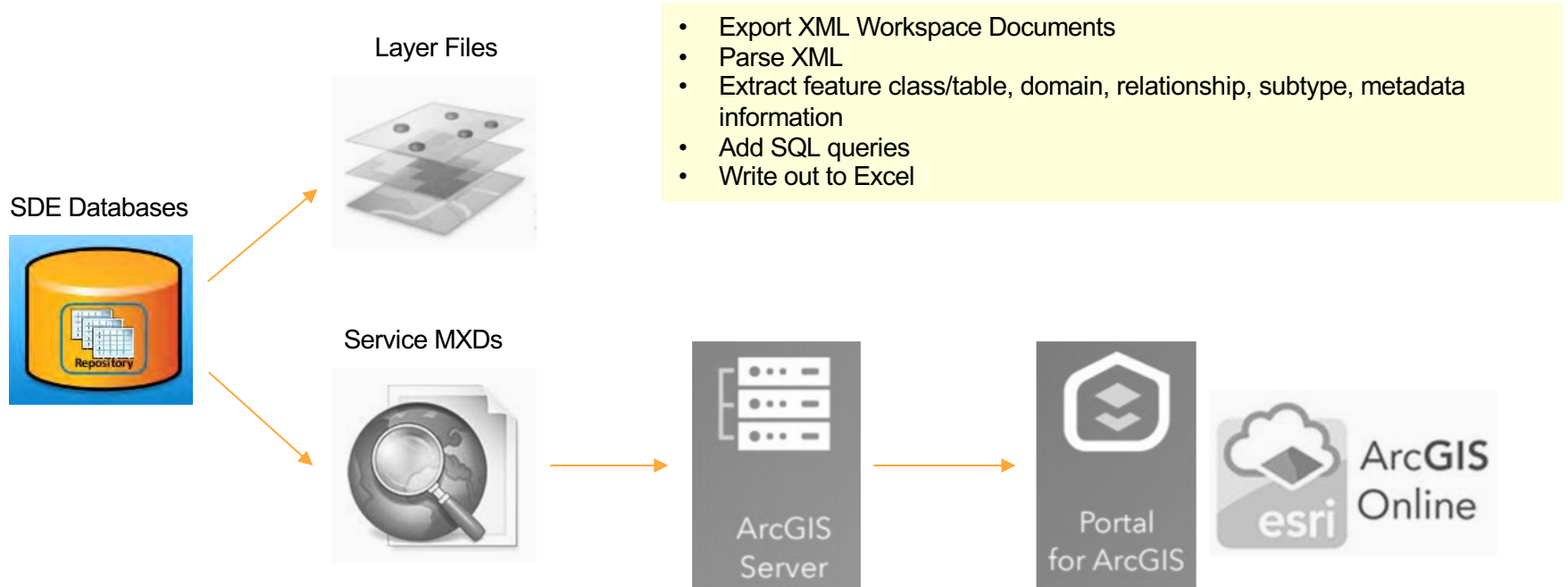


# Components and Process

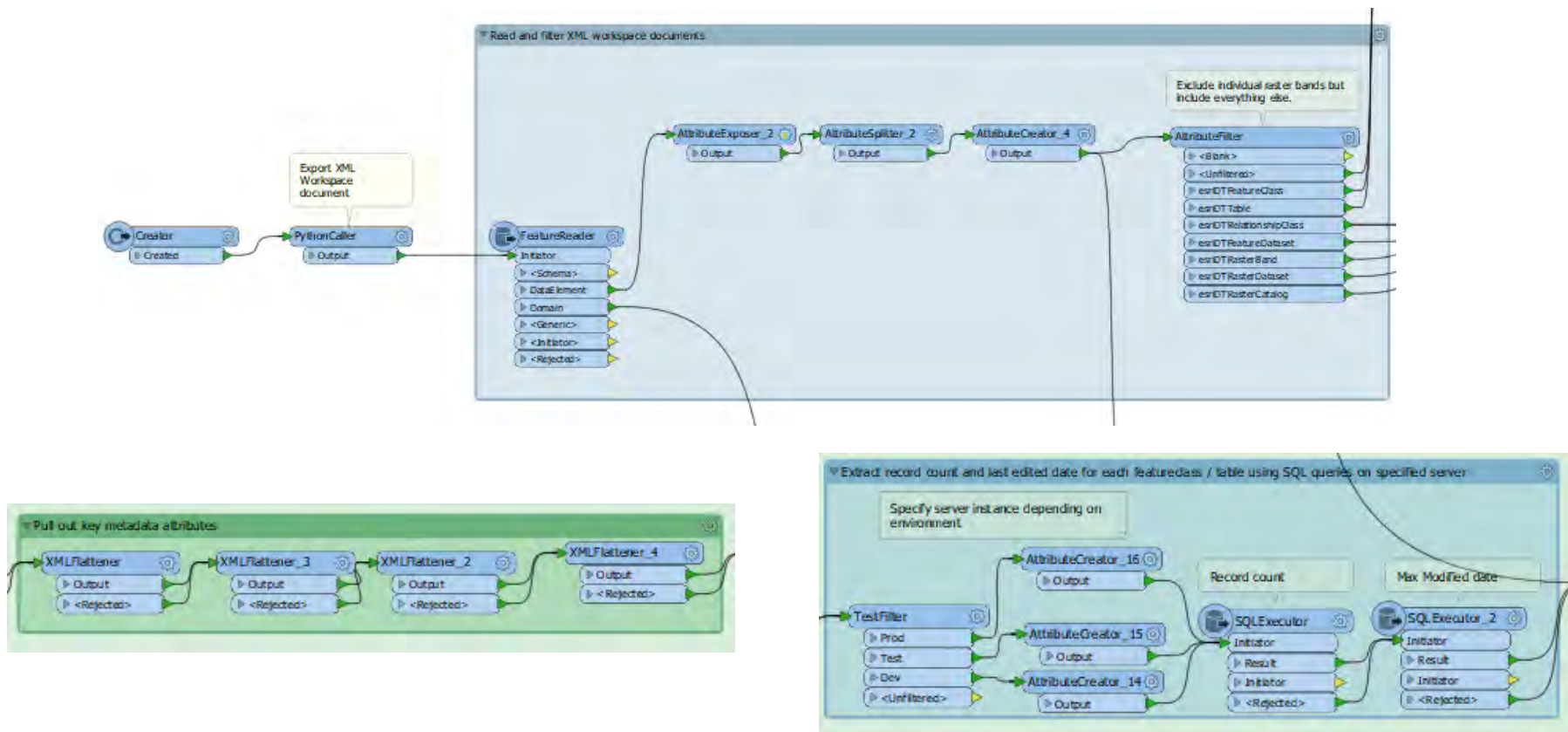
# Main Content Components



# SDE Databases

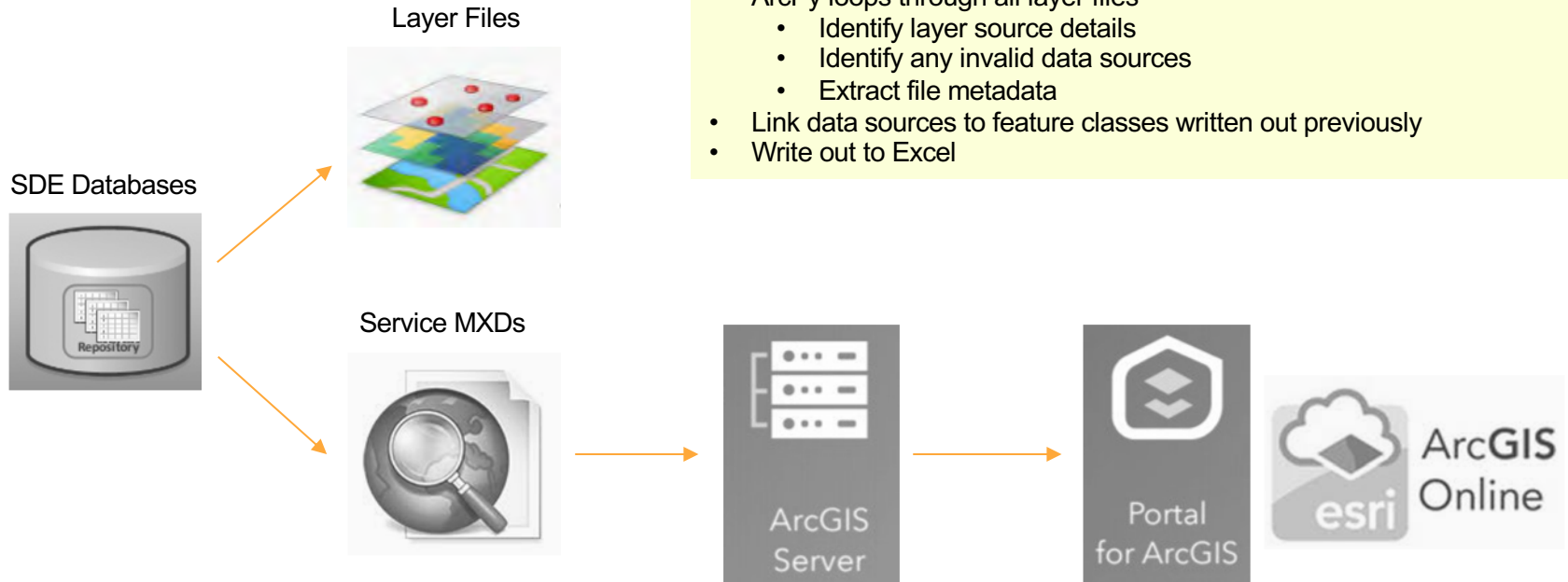


# SDE Databases

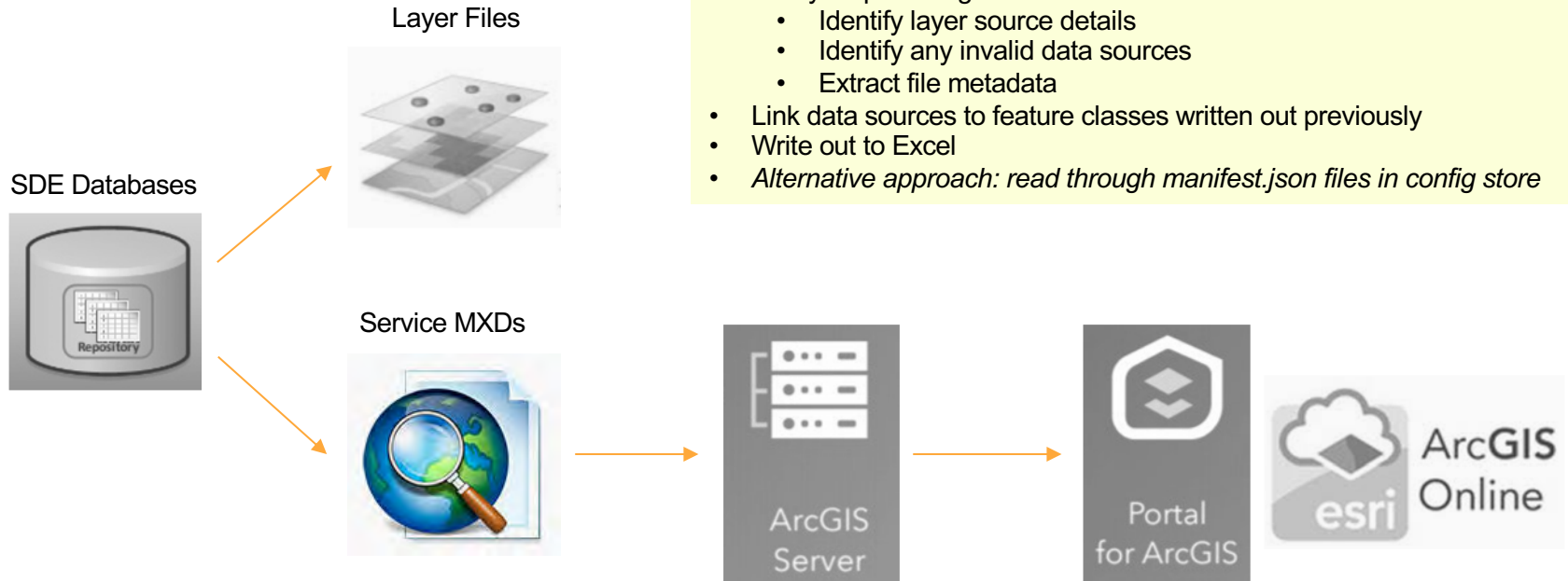




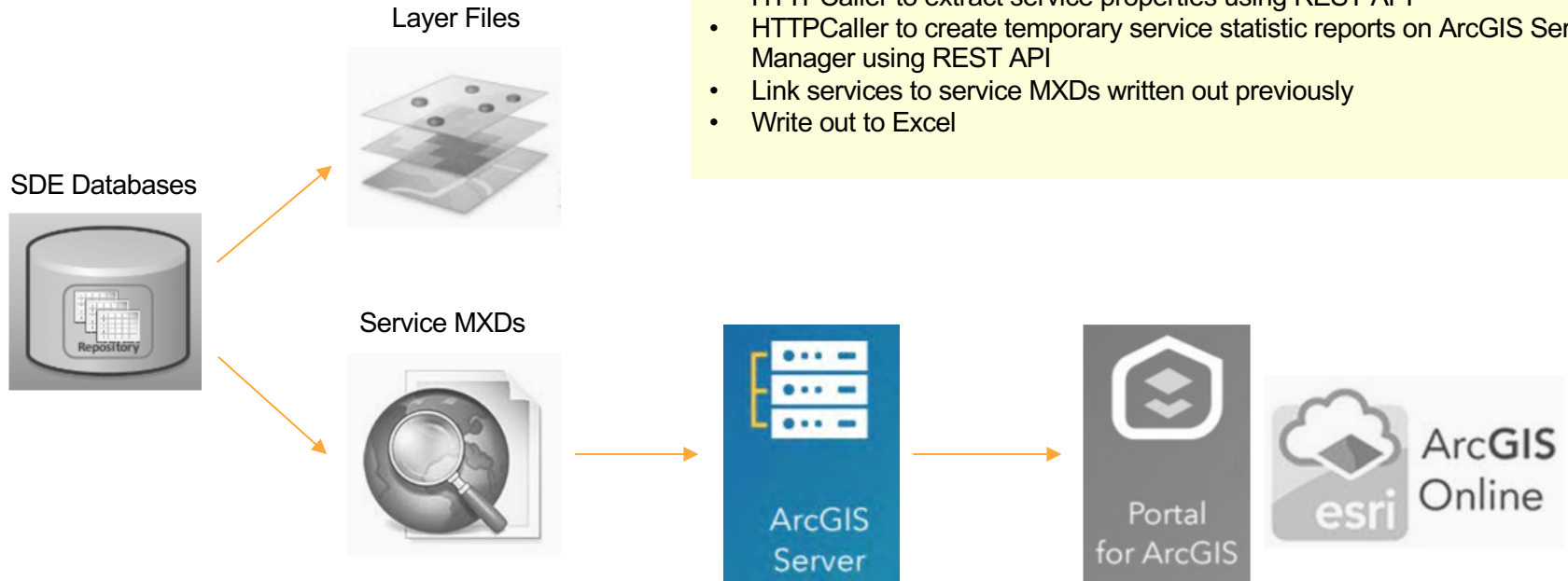
# Layer Files



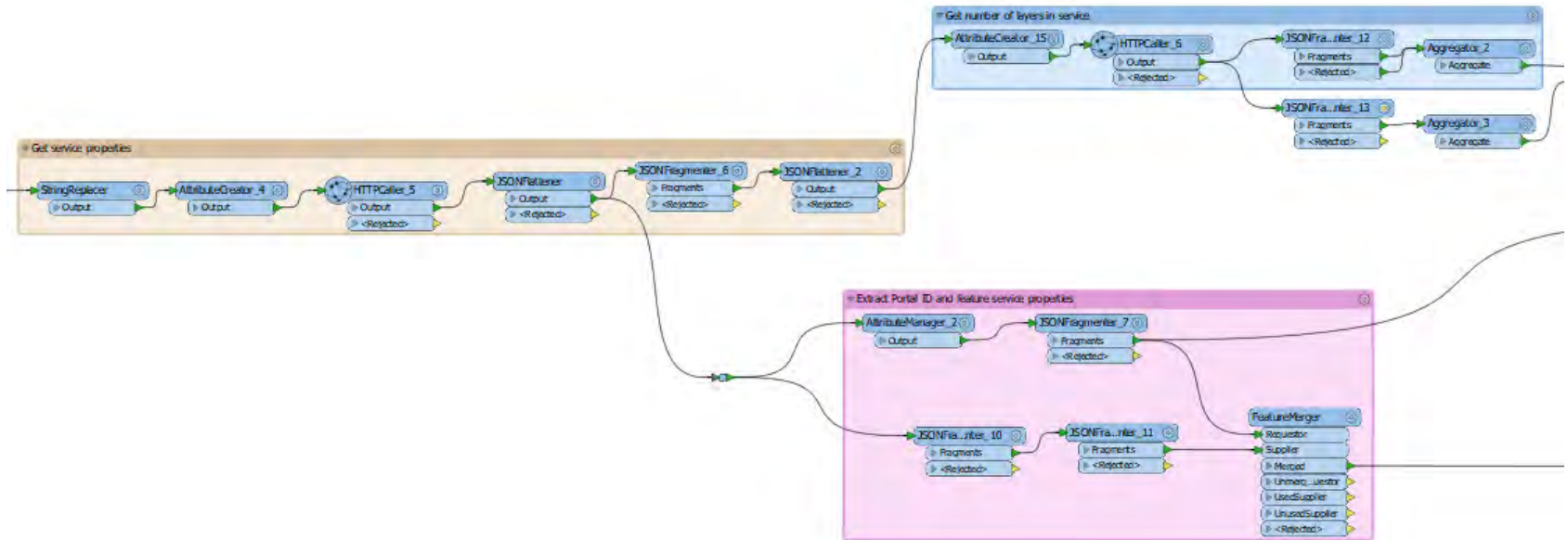
# Service MXDs



# ArcGIS Server

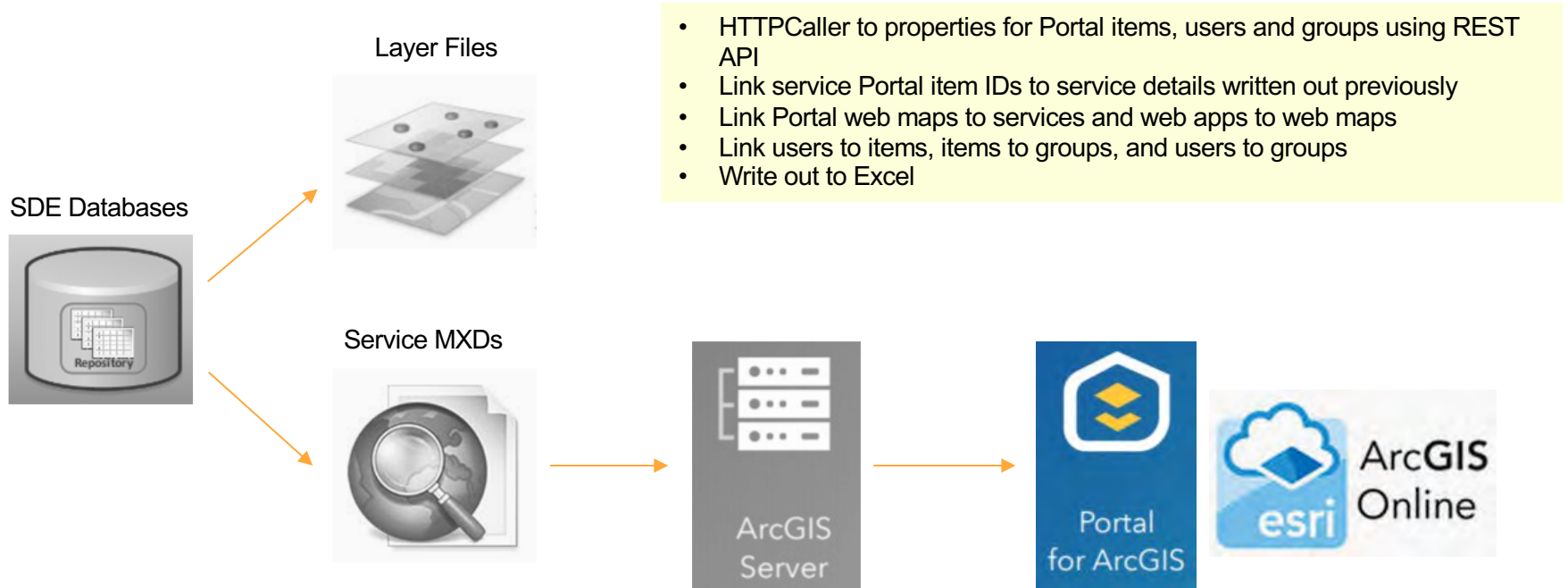


# ArcGIS Server

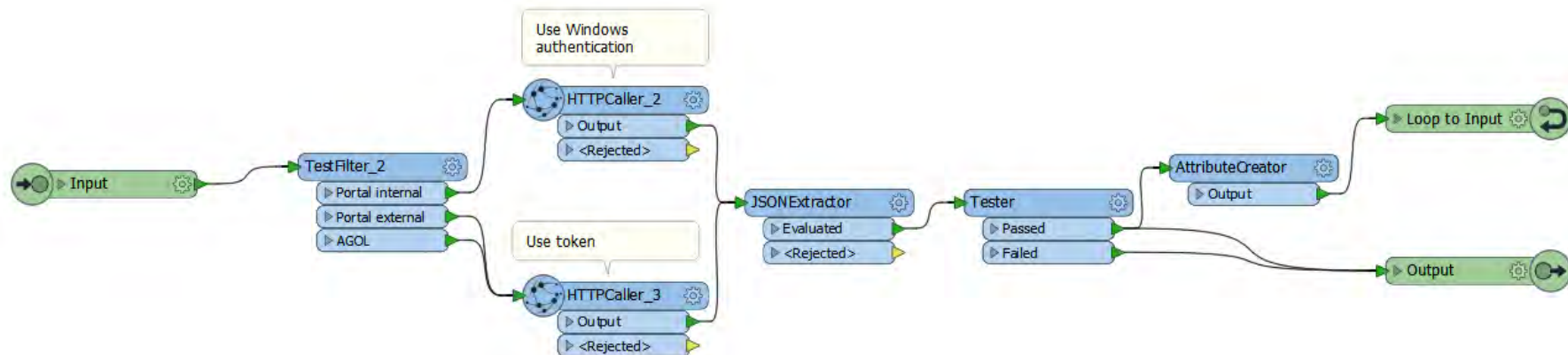




# Portal / ArcGIS Online

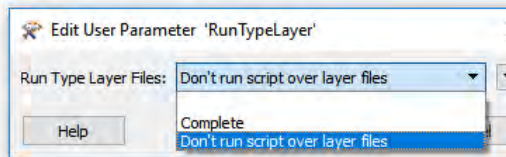
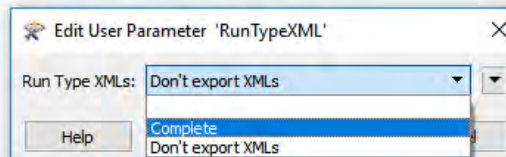
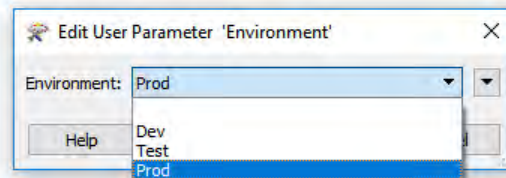
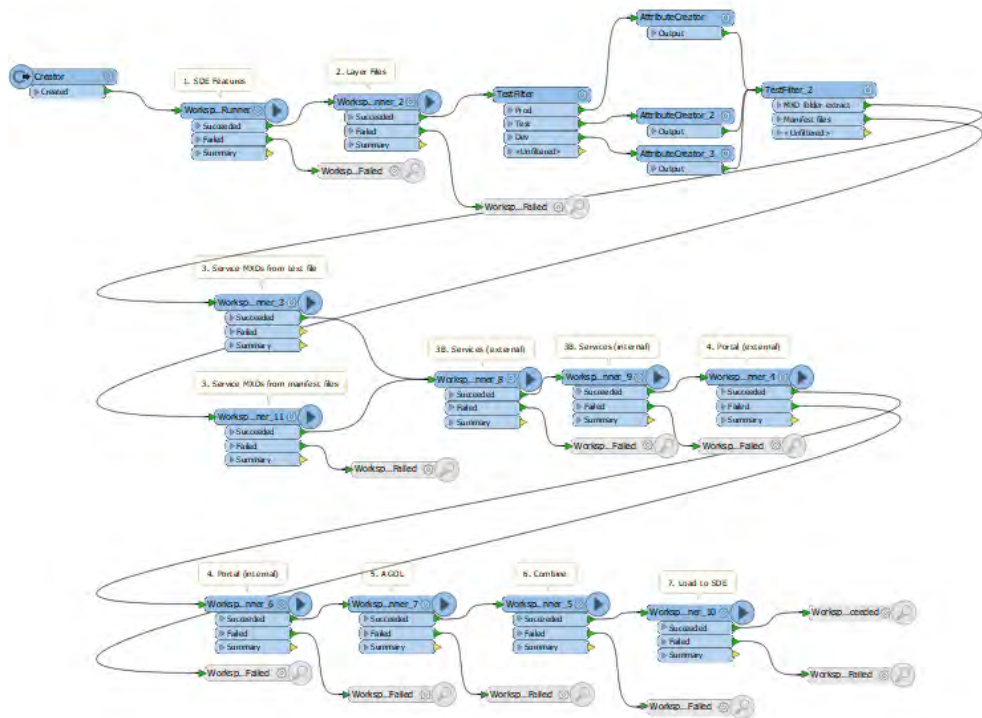


# Portal / ArcGIS Online



# Combined

- WorkspaceRunners to string workbenches together
- Includes combining final outputs and writing to SDE tables



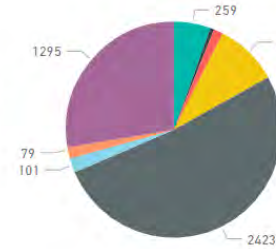
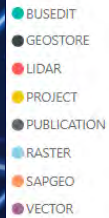


Outputs

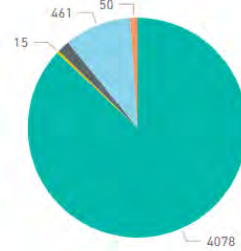
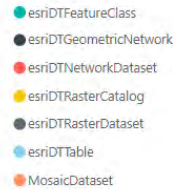


## SDE Feature Classes - Charts 1 (PROD)

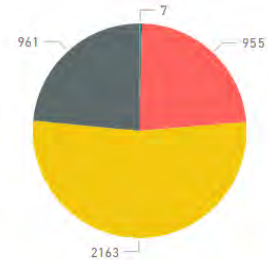
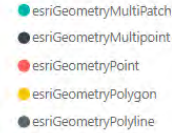
### Database



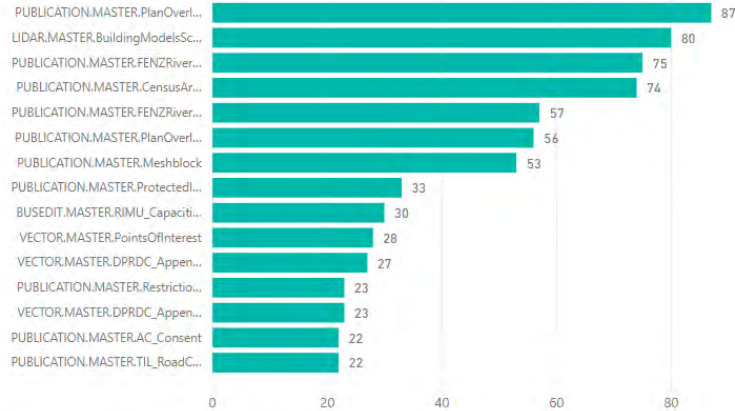
### Dataset Type



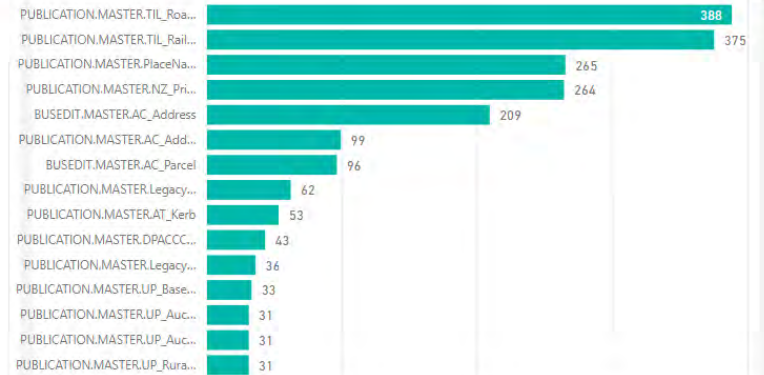
### Shape Type



### Layer File Count



### Service MXD Count



## SDE Domains & Subtypes - Listing (PROD)

Basic Domain Listing - Unrelated To Features

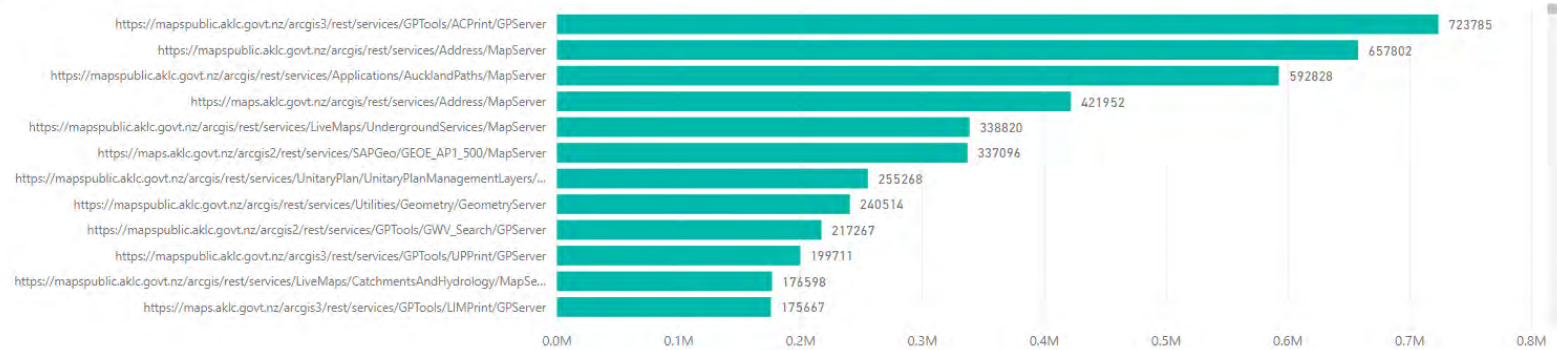
#	Database	DomainName	Description	ValueCount	CodeList
23	BUSEDIT	dBuildingDemolition		2	Yes/No
23	BUSEDIT	dHemagesBuilding		2	Yes/No
23	BUSEDIT	dHIFloor		2	Yes/No
23	BUSEDIT	dProjectStatus	Watercourse Project Status	3	Yes/No, InProgress
23	BUSEDIT	dSpecialChar		2	Yes/No
23	BUSEDIT	dYes/NoDoesNotApply	Watercourse Yes/No & DNA Options	3	Yes/No, Does Not Apply
23	BUSEDIT	dYesNoTextCode		2	Yes/No
23	BUSEDIT	dYesNoToBeSent	yes/No To Be sent	2	Yes/No To Be Sent
23	BUSEDIT	dYes/NoUncertain/Does Not Know		4	Yes/No, Uncertain/Does Not Ap
23	GEOSTORE	dTreeAssessmentStatus		3	Yes/No, TBC
23	PROJECT	Approved		2	Yes/No
23	PROJECT	dBoolean		2	Yes/No
23	PROJECT	dRCHealthAndSafety	Freedom Camping - Are there any health and safety risks if fre	3	Yes, already happening, Yes, pl
23	PROJECT	dRCVionSelfContained	Freedom Camping - Do you agree that freedom camping in all typ	3	Yes, allow all vehicles to camp
23	PROJECT	dRCProhibited	Freedom Camping - Do you agree that all freedom camping should	2	Yes, prohibit freedom camping
23	PROJECT	dRCSelfContained	Freedom Camping - Do you agree that freedom camping should be	3	Yes, allow certified self-contain
23	PROJECT	dRCSpecialFeatures	Freedom Camping - Are there any special features in this area	4	Yes, sensitive environmental fi
23	PUBLICATION	dBoolean_T		2	Yes/No
23	PUBLICATION	dBooleanHP		2	Yes/No
23	PUBLICATION	dDUPApproved		2	Yes/No
23	PUBLICATION	dRUPApproved	DISGR	3	Yes/No
23	PUBLICATION	dTreeOverheadWire_T		3	Yes/No
23	PUBLICATION	dUPApproved		2	Yes/No

Filtered Listing - Related To Features

Name	Database	DomainName
BUSEDIT.MASTER.swEcologicalLine	BUSEDIT	dYesNoTextCode
BUSEDIT.MASTER.swEngineeringAssetInletOutlet	BUSEDIT	dYesNoTextCode
BUSEDIT.MASTER.swEngineeringAssetPipe	BUSEDIT	dYesNoTextCode
BUSEDIT.MASTER.swNangaSpawning	BUSEDIT	dYesNoTextCode
BUSEDIT.MASTER.swNaturalStructure	BUSEDIT	dYesNoTextCode

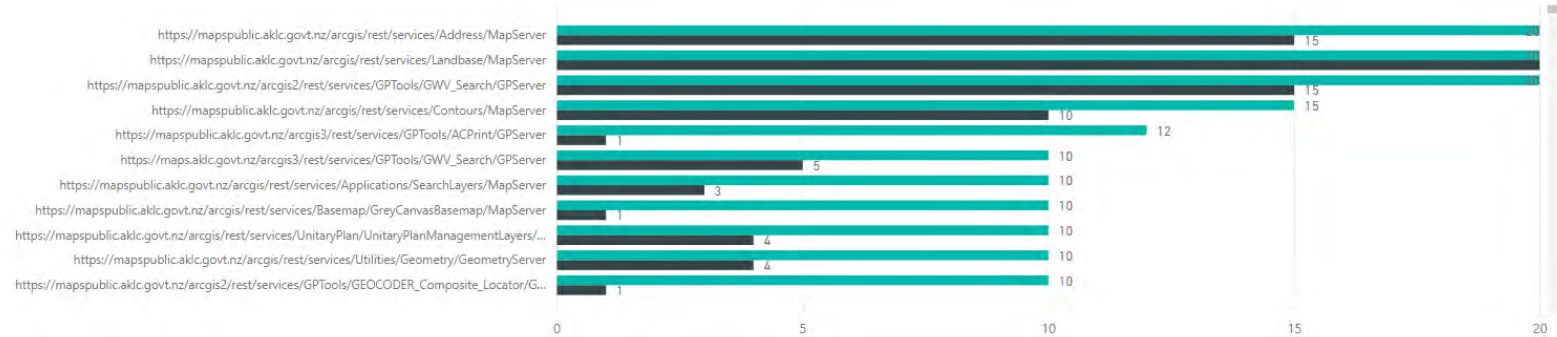
## Web Services - Charts 1 (PROD)

Service Requests Last Week



Max And Min Instances Per Node

● MaxInstancesPerNode ● MinInstancesPerNode



### Portal Items - Charts 3 (PROD)

Items modified in last 12 months





## Portal Users - Listing (PROD)

Basic User Listing - Unrelated To Items

#	Portal	Username	Full Name	Role	Created	Modified
653	AGOL			AC User	5/02/2018 12:00:00 AM	7/02/2019 12:00:00 AM
654	AGOL			org_publisher	29/07/2014 12:00:00 AM	21/09/2018 12:00:00 AM
655	AGOL			org_publisher	17/05/2018 12:00:00 AM	11/08/2018 12:00:00 AM
656	AGOL			org_publisher	28/11/2014 12:00:00 AM	18/07/2018 12:00:00 AM
659	AGOL			AC User	12/12/2018 12:00:00 AM	12/12/2018 12:00:00 AM
660	AGOL			AC User	14/12/2017 12:00:00 AM	29/11/2018 12:00:00 AM
661	AGOL			SW View Extent	29/11/2018 12:00:00 AM	30/11/2018 12:00:00 AM
662	AGOL			AC User	1/11/2018 12:00:00 AM	7/11/2018 12:00:00 AM
663	AGOL			AC User	8/08/2018 12:00:00 AM	6/11/2018 12:00:00 AM
664	AGOL			SW Publisher	21/01/2015 12:00:00 AM	3/08/2018 12:00:00 AM
665	AGOL			org_publisher	4/09/2018 12:00:00 AM	3/03/2019 12:00:00 AM
666	AGOL			AC User	18/03/2017 12:00:00 AM	14/12/2017 12:00:00 AM
667	AGOL			org_publisher	10/09/2018 12:00:00 AM	4/04/2019 12:00:00 AM
668	AGOL			AC User	11/11/2018 12:00:00 AM	13/01/2019 12:00:00 AM
669	AGOL			org_publisher	25/05/2018 12:00:00 AM	2/11/2018 12:00:00 AM
659	AGOL	spidgeon_AC	Stuart Pidgeon	org_admin	15/01/2018 12:00:00 AM	22/03/2019 12:00:00 AM
670	AGOL			AC User	11/11/2015 12:00:00 AM	20/10/2018 12:00:00 AM
671	AGOL			AC Viewer	31/01/2018 12:00:00 AM	1/02/2019 12:00:00 AM
672	AGOL			SW Publisher	10/09/2015 12:00:00 AM	23/06/2016 12:00:00 AM
673	AGOL			SW View Extent	27/10/2015 12:00:00 AM	8/08/2016 12:00:00 AM
674	AGOL			AC User	27/10/2015 12:00:00 AM	24/01/2019 12:00:00 AM
675	AGOL			SW Publisher	27/10/2015 12:00:00 AM	31/10/2018 12:00:00 AM
676	AGOL			SW Publisher	27/10/2015 12:00:00 AM	23/08/2016 12:00:00 AM
677	AGOL			SW Publisher	20/02/2018 12:00:00 AM	22/03/2018 12:00:00 AM
678	AGOL			AC User	28/09/2018 12:00:00 AM	2/10/2018 12:00:00 AM
679	AGOL			org_user	7/07/2017 12:00:00 AM	7/07/2017 12:00:00 AM
680	AGOL			AC User	21/11/2018 12:00:00 AM	7/12/2018 12:00:00 AM
681	AGOL			org_admin	18/12/2017 12:00:00 AM	19/10/2018 12:00:00 AM
682	AGOL			org_publisher	25/01/2018 12:00:00 AM	4/09/2018 12:00:00 AM
683	AGOL			AC User	18/04/2019 12:00:00 AM	13/04/2019 12:00:00 AM

Filtered Listing - Related To Groups

Portal	Full Name	Title (Group)
AGOL	Stuart Pidgeon	Census
AGOL	Stuart Pidgeon	Geospatial Team
AGOL	Stuart Pidgeon	Geospatial Team Collaboratio
AGOL	Stuart Pidgeon	HealthyWaters / KiwiRail Sha
AGOL	Stuart Pidgeon	Maori Design Research
AGOL	Stuart Pidgeon	Māori Design Research - Pres
AGOL	Stuart Pidgeon	Mapping Auckland Capital Pr
AGOL	Stuart Pidgeon	RosehillCollegeGroup
AGOL	Stuart Pidgeon	Test project

Filtered Listing - Related To Items

Portal	Full Name	Title (Item)	Type
AGOL	Stuart Pidgeon	GeoFormTest	Web M
AGOL	Stuart Pidgeon	OurAucklandEvents	Web M
AGOL	Stuart Pidgeon	test	Web M

## Combined Data - Relationships Between System Components (PROD)

### Feature Classes

Database	DatasetName
PUBLICATION	PUBLICATION.MASTER.AucklandCouncilBound
PUBLICATION	PUBLICATION.MASTER.AucklandCouncilPropert
PUBLICATION	PUBLICATION.MASTER.AucklandCivileNetwork
PUBLICATION	PUBLICATION.MASTER.AucklandPlanExtent
PUBLICATION	PUBLICATION.MASTER.AucklandPlanLocations
PUBLICATION	PUBLICATION.MASTER.AucklandPlanRoutes
PUBLICATION	PUBLICATION.MASTER.AucklandPlanRoutesFeedIn
PUBLICATION	PUBLICATION.MASTER.BaseRegionID
PUBLICATION	PUBLICATION.MASTER.BaseRegionID50
PUBLICATION	PUBLICATION.MASTER.BaseRegionID AucklandCo
PUBLICATION	PUBLICATION.MASTER.BaseRegionID GIS
PUBLICATION	PUBLICATION.MASTER.BaseRegionID MARONG
PUBLICATION	PUBLICATION.MASTER.BaseRegionID POP
PUBLICATION	PUBLICATION.MASTER.BaseRegionID TCE

### Layer Files

LayerFile	FullPath
Business.lyr	\\aklc.govt.nz\shared\CityWide\Geospatial\GIS Resources\Layer files\Property-Statut
Existing Urban Area & Rural Settlements.lyr	\\aklc.govt.nz\shared\CityWide\Geospatial\GIS Resources\Layer files\Property-Statut
Future Business Area within Future Urban Area.lyr	\\aklc.govt.nz\shared\CityWide\Geospatial\GIS Resources\Layer files\Property-Statut
Future Urban Area.lyr	\\aklc.govt.nz\shared\CityWide\Geospatial\GIS Resources\Layer files\Property-Statut
Node.lyr	\\aklc.govt.nz\shared\CityWide\Geospatial\GIS Resources\Layer files\Property-Statut

### Web Maps

WebMap	Portal
Auckland Plan - Development Strat...	mapspubli
Auckland Plan - Development Strat...	mapspubli
Auckland Plan - Development Strat...	mapspubli
Auckland Plan - Development Strat...	mapspubli
Auckland Plan - Development Strat...	mapspubli
Auckland Plan - Environment & Cult...	mapspubli
Auckland Plan - Māori Identity & W...	mapspubli
Auckland Plan - Māori Identity & W...	mapspubli
Base layers	mapspubli
Test Nico useful layer-Copy	mapspubli

### Service MXDs

MXDName	MXDFolder
DevelopmentStrategyBusiness.mxd	AucklandPlan
DevelopmentStrategyBusiness_PRE20180720...	AucklandPlan
DevelopmentStrategyBusinessMapLayers.mxd	AucklandPlan
DevelopmentStrategyExistingUrban.mxd	AucklandPlan
DevelopmentStrategyExistingUrban_PRE201...	AucklandPlan
DevelopmentStrategyFutureUrban.mxd	AucklandPlan
DevelopmentStrategyFutureUrban_PRE2018...	AucklandPlan
DevelopmentStrategySequencingandTiming...	AucklandPlan
DevelopmentStrategySequencingandTiming...	AucklandPlan
DevelopmentStrategySocialInfrastructure.mxd	AucklandPlan
EnvironmentCulturalHeritageEnvironmentalA...	AucklandPlan
EnvironmentCulturalHeritageEnvironmentalA...	AucklandPlan
MaoriIdentityWellbeingTangataMaori.mxd	AucklandPlan
MaoriIdentityWellbeingTangataMaori_PRE20...	AucklandPlan
MaoriIdentityWellbeingTangataMaoriWhenua...	AucklandPlan

### Web Services

ServiceUrl
<a href="https://mapspublic.aklc.govt.nz/arcgis/rest/services/AucklandPlan/DevelopmentStrategyBusiness/MapServer">https://mapspublic.aklc.govt.nz/arcgis/rest/services/AucklandPlan/DevelopmentStrategyBusiness/MapServer</a>
<a href="https://mapspublic.aklc.govt.nz/arcgis/rest/services/AucklandPlan/DevelopmentStrategyExistingUrban/MapServer">https://mapspublic.aklc.govt.nz/arcgis/rest/services/AucklandPlan/DevelopmentStrategyExistingUrban/MapServer</a>
<a href="https://mapspublic.aklc.govt.nz/arcgis/rest/services/AucklandPlan/DevelopmentStrategyFutureUrban/MapServer">https://mapspublic.aklc.govt.nz/arcgis/rest/services/AucklandPlan/DevelopmentStrategyFutureUrban/MapServer</a>
<a href="https://mapspublic.aklc.govt.nz/arcgis/rest/services/AucklandPlan/DevelopmentStrategySequencingandTimingofGrowth/MapServer">https://mapspublic.aklc.govt.nz/arcgis/rest/services/AucklandPlan/DevelopmentStrategySequencingandTimingofGrowth/MapServer</a>
<a href="https://mapspublic.aklc.govt.nz/arcgis/rest/services/AucklandPlan/DevelopmentStrategySocialInfrastructure/MapServer">https://mapspublic.aklc.govt.nz/arcgis/rest/services/AucklandPlan/DevelopmentStrategySocialInfrastructure/MapServer</a>
<a href="https://mapspublic.aklc.govt.nz/arcgis/rest/services/AucklandPlan/EnvironmentCulturalHeritageEnvironmentalAssets/MapServer">https://mapspublic.aklc.govt.nz/arcgis/rest/services/AucklandPlan/EnvironmentCulturalHeritageEnvironmentalAssets/MapServer</a>
<a href="https://mapspublic.aklc.govt.nz/arcgis/rest/services/AucklandPlan/MaoriIdentityWellbeingTangataMaori/MapServer">https://mapspublic.aklc.govt.nz/arcgis/rest/services/AucklandPlan/MaoriIdentityWellbeingTangataMaori/MapServer</a>
<a href="https://mapspublic.aklc.govt.nz/arcgis/rest/services/AucklandPlan/MaoriIdentityWellbeingTangataWhenua/MapServer">https://mapspublic.aklc.govt.nz/arcgis/rest/services/AucklandPlan/MaoriIdentityWellbeingTangataWhenua/MapServer</a>

### Web Apps

WebApp	Portal
Auckland Plan - Development Strategy...	mapspubli
Auckland Plan - Development Strategy...	mapspubli
Auckland Plan - Development Strategy...	mapspubli
Auckland Plan - Development Strategy...	mapspubli
Auckland Plan - Development Strategy...	mapspubli
Auckland Plan - Environment & Cultur...	mapspubli
Auckland Plan - Māori Identity & Well...	mapspubli
Auckland Plan - Māori Identity & Well...	mapspubli
Otauhu master storymap	mapspubli
Tab 1 landing page	mapspubli
Test 3D Nico useful layer-Copy	mapspubli
The Ōtāhuhu Portage Project Journal	mapspubli



# Why FME?

- Easy to create and rerun
- XML
- SQL queries
- REST calls
- Python (ArcPy)
- JSON
- Excel ...and...
- FME workbenches?



# FME Workspace Reader

FME Repository	Category	Description	Modified Date	Calls Workbench	Calls Script	Called By
	FMEAdministrators	This workbench is use in the daily runner to check which FGDB to push up to the ags servers. This will automaticly run the FGDB update workbench	Nov 29, 2018	UpdateServerFGDBs.fmw CallScript.fmw	chkFGDBbyTolerance.py chkFGDBBlock.py	NewcoreCheckTrigger_PRD.fmw NewcoreWorkspaceRunner.fmw NightlyFGDBRunner.fmw
FME Administrators	Daily	Submittes Job to fme server to download Watercares data and checks for errors	May 01, 2018	CallScript.fmw	updDataWSL.CMD	
FME Administrators	Daily	This workspace is used to run all the workbenches that updates Production SDE data nightly	Dec 11, 2018	CHI_TableLoad.fmw updDataCHIPlaces.fmw StormwaterNetwork.fmw updDataWaterCare.fmw updACBylawLiquorLicense.fmw CallScript.fmw updDataHydrotel.fmw updDataHydrotelConvertImages.fmw Hydrotelwatertake.fmw updDataMooring.fmw	syncReplicaVersionedEdit.py killLocks.py updFGDBVersionedEdit.py updDataAT.cmd	



# FME Workspace Reader

Reads From (Dataset Name)	Reader Type	Reads From (Location)	Reads From (Features)	SQL Dataset	SQL Statement
FeatureReader BUSEDIT [BUSEDIT_SDE]	GEODATABASE_SDE	\$(FME_MF_DIR)PROD@PUBLICATION@MASTER.sde BUSEDIT	MASTER.AC_RoadIntersection MASTER.AC_RoadCentreline		
FeatureReader BUSEDIT	GEODATABASE_SDE	\\bigisfilp01\App_Workspace\Internal\Administration\SDEconnection\GIS Master\PROD@PUBLICATION@MASTER.sde BUSEDIT	MASTER.AC_RoadSearch MASTER.AC_RoadCentreline		
FeatureReader BUSEDIT [PRODUCTION_SDE]	GEODATABASE_SDE GEODATABASE_SDE	\\bigisfilp01\App_Workspace\Internal\Administration\SDEconnection\GIS Master\PROD@BUSEDIT@MASTER.sde BUSEDIT	MASTER.AC_Site AC_Locality	ODR	<pre> /***** Script for SelectAllRows change "" to Null and t line feeds *****/ /***** Property table *****/  SELECT case   when (ac_property_id) = '' then null   else     REPLACE(REPLACE(REPLACE(REPLACE(REPLACE       (ac_property_id),' ',' ',' ',' ',' ',' ')     end as (ac_property_id)   ,case     when (sap_siteid) = '' then null     else       REPLACE(REPLACE(REPLACE(REPLACE(REPLACE         (sap_siteid),' ',' ',' ',' ',' ')       end as (sap_siteid)     ,case       when (headeracsiteid) = '' then null       else         REPLACE(REPLACE(REPLACE(REPLACE(REPLACE           (headeracsiteid),' ',' ',' ',' ',' ')         end as (headeracsiteid)     ,case       when (headersapsiteid) = '' then null </pre>

# FME Workspace Reader

Writer Type	Writes To (Location)	Writes To (Features)	History
GEODATABASE_SDE	PUBLICATION	MASTER.BylawLiquorLicenseProperty	19/12/2017, kmajola, Remodelled the ACBylaw workbench as the original ones BI database was decommissioned and this workbench now uses SAP derived data.
GEODATABASE_FILE	\\aklc.govt.nz\shared\citywide\Geospatial\GIS	NonMatched	
GEODATABASE_FILE	Resources\Administration\FME\Data\ByLaw.gdb	Matched	
GEODATABASE_FILE	G:\FGDB\PUBLICATION.gdb	BylawLiquorLicenseProperty	
GEODATABASE_FILE	\\aklc.govt.nz\shared\CityWide\Geospatial\GIS	SAPAddressesNotInSite	23/2/2017, NDutton, Added filter to exclude road sites and null SAP ids from address point processing.
GEODATABASE_SDE	Resources\Administration\staging\NewcoreReports\NewcoreReportTemp_PRD.gdb	MASTER.AC_Address	3/11/2017, NDutton, Improved process for missing records for non-aggregate features to add in work to exclude shared portions (ac lots) to improve placement over otherwise overlapping properties
	BUSEEDIT		2/6/2017, NDutton, Update from UAT at Go live 5
			9/8/2017, NDutton, Removed existing Address status before rejoining to new data
			16/3/2017, NDutton, Further testing and rerun after initial UAT load. Alternations to cosmetic details only
			includes changes to detect and terminate if there are large volumes of changes, 12/06/2017, NDutton
			2/05/2018, KMajola, Added Attribute rounders before the change detector. _x and _y attributes had more than one decimal place value causing abnormal number of records that required a change update.
			Added tester to prevent rail sites from being made historic, and include rail in update from SAP, but not generation of new points
GEODATABASE_SDE		MASTER.CulturalHeritagePoint MASTER.CulturalHeritageBuffer	upgraded transformers new fields were ot populating, 14/06/2017, dz_george



# THANK YOU!

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