

APGA 2022

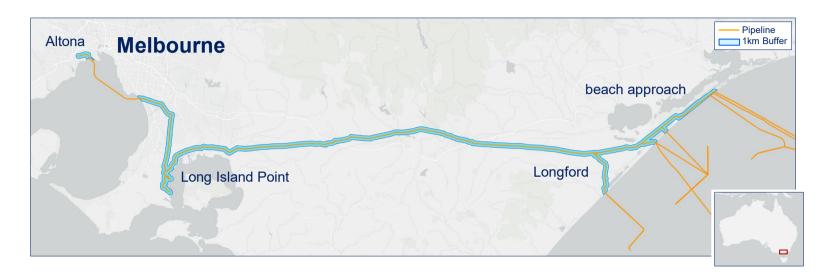
Digital Transformation of the BYDA Workflow for Esso Australia

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All data is for demonstration purposes only

Esso Pipeline Asset



- ~ 260 km onshore easements
- Containing ~1000km of pipeline
- Over 1500 BYDA 'impact' enquiries per year

BYDA Digital Transformation Scope

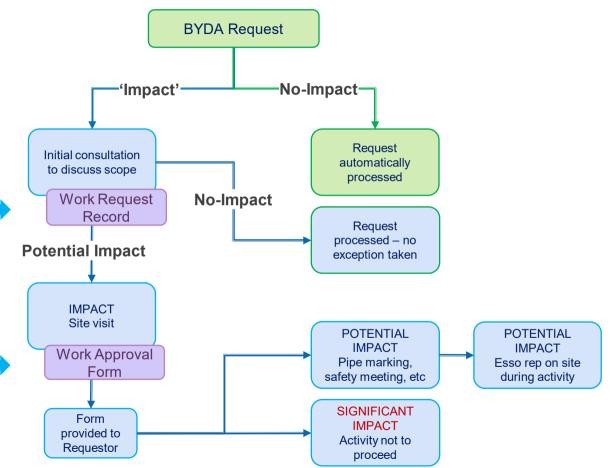


- Transform existing paper-based review process
- Complete reviews in the field
- Improve efficiency of review process
- Improve coordination of site visits

Workflow Diagram

For 'Impact' events:

- Work Request Record
- Work Approval Form



Carbonless Paper Forms

Pipeline Work Request
 » For all manually
 reviewed requests

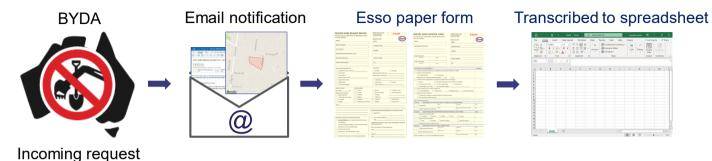
Pipeline Work Approval
 » For requests with
 potential pipeline
 impact

PIPELINE WORK REQUEST RECORD This form is to be completed for all notifications of work near Esso Pipelines JOB NO.		WORK REQUEST NO. Esso Australia Pry Ltd Longford, VK: 3851 REQUESTED BY: NAME		This form	PIPELINE WORK APPROVAL FORM This form is to be completed for all notifications of work near Esso Pipelines JOB NO.		WORK REQUEST NO. Sess Australia Phy Ltd ongford, VIC 3851 REQUESTED BY: NAME	0589 Esso
DATE OF REQUEST		COMPANY NAME		BRIEF W	BRIEF WORK DESCRIPTION		COMPANYNAME	
ESSO CONTACT		ADDRESS					ADDRESS	
VERIFICATION OF DETAILS (Date / Time)				WORKS	WORK START DATE Proposed Actual			
PROPOSED WORK DATE		PHONE / MOBILE			110,000		PHONE / MOBILE	
				COMPLE	COMPLETION DATE			
WORK DURATION (Days)		FAX		22.50 22	Proposed Actual		FAX	
NOTIFICATION RECEIVED VIA		LOCATION:		APPLICA	BLE TO ALL WORK REQUESTS			Complete
NOTIFICATION RECEIVED VIA:				Cor	Conduct an Esso site visit prior to work date for pre-planning / verification of details			
Dial Before You Dig - Seq No.		Melway	VIC Roads	Cor	nduct a Job Safety Review			
Aerial Patrol		Map No. and Grid Reference			Toolbox Meeting Task Analysis			
Ground Patrol		Nearest Road / Intersection		Did	Did the party conducting the works participate? Yes No			
Written Request – Ref				Cor	nfirm location of all pipelines in ease	ment (using minimum of 2 n	nethods)	
Direct Phone Contact		Landowner:			by Esso – non-Esso pipelines will require separate approval by relevant Operator			
1800 Number		Crown Land Crossing			Electronic pipe locator Probe to contact pipe Exposed pipe			
Esso Internal Request		Other (specify)			Probe & dig to work depth	Other method (specify)		
WORK POSITION:	TYPE OF WORK:			Loc	ate and peg / paint locations of pipe	line(s)		
Work depth mm	Trench	Boring	Change in Cover		at crossing point(s) cont	tinuous at m st	raight sections / m change of direction	
Distance from easement:	Fencing	Road / Driveway	Other (Describe):	Ess	o supervision at work site			
Within Easement	Building	Planting			Conducted according to Procedure	ONPOM PPL 600-101 Section	on	
< 50m / Not In Easement	Ripping	Explosives			Esso Surveillance Officer assigned			
50 – 100m	Domestic	Crossing	Major Work	Other	ecial requirements:			
> 100m	Industrial / Commercial	Parallel	Minor Work	Required		ED WORKS FOLLOWING LO	CATION AND MARKING	
				Requirec		Name	Signature	Date
NOTES:					Prepared by			
		DIDELINE CURENUCOR	CALLET OF BEOTHERS ACTION:		Pipeline Supervisor endorsement	Name	Signature or time of verbal approval	Date
		PIPELINE SUPERVISOR ENDORS	EMENT OF REQUIRED ACTION:	Required	i? WORK REQUESTS REQUIRIN	IG PERMITS OR WORK PLANS	S AND ALL MAJOR WORK	Status
		Signature or			Approved Esso work permits			
		_			Excavation Hot Work	Confined S	Space General	
REQUIRED ACTION OF THE REQUESTING PARTY:		Time of Verbal Approval _			Review of third party plans			
DO NOT PROCEED as your work has potential to impact		Date			Plans Drawings	Work Procedures	Safety Procedures	
Esso Pipelines		VERIFICATION OF DETAILS ABOVE AND CONDITIONS OF WORK BY			Engineering reviews required (specify)			
Your Esso Contact will advise you of the required actions		REQUESTING PARTY		Required? ENDORSEMENTS PRIOR TO WORK COMMENCEMENT				
before your work can proceed safely		Name and Signature of Reques	ting Party		Engineering endorsement	Position name	Signature	Date
Esso site visit required		Name			Engineering endorsement	Position name	Signature	Date
Work plan is to be submitted	for review				Major Works endorsement	Position name	Signature	Date
Esso takes no exception to the work proposed above		Signature		Works co	ompleted in accordance with ONPO	M PPL 600-101	Pipeline Supervisor signature	Date
Esso takes no exception to the	e work proposed above	Date						

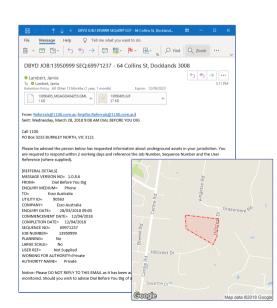
Pipeline Work Request (1)

Pipeline Work Approval (2)

Historical Process



- Email notification in the field
- Complete paper form
- Transcribe paper form to digital spreadsheet



Transitioning Process



- 'Write to GIS' function
- Add BYDA data to our maps

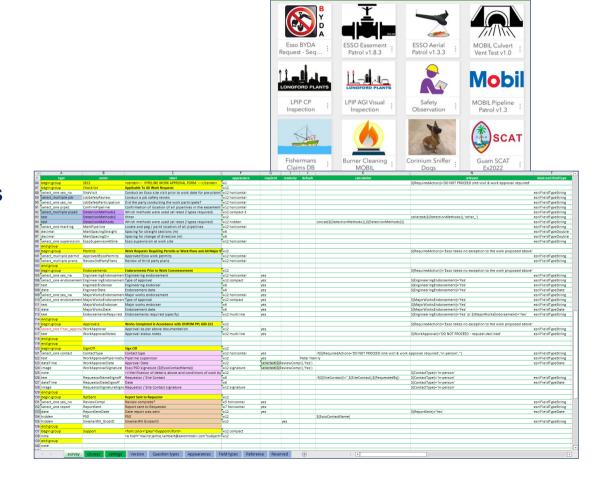
Digital Process



- Digitization of paper forms
- Integration of data / applications within ArcGIS Online
- Digital from the start
- Components: » Digital Form » Report Template » Digital Map

Digital Form

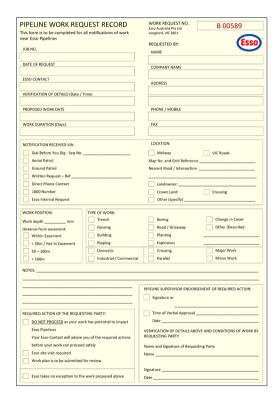
- ArcGIS Survey123
- XLSForms open standard
- Configured in MS Excel
- Smart form logic functions
 - Relevance
 - Calculations
 - Cascading selects
 - and so on...



ArcGIS Survey123 Connect

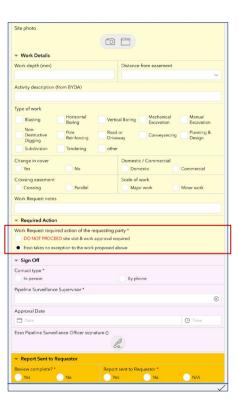
My Survey Designs (Tutorials) (Community

Pipeline Work Request Record (1)





		o BYD	A Review	1		dis.
·	PIPELINE	WORK	REQUEST	RECO	RD	
▼ Job Information						
Job ID Seque		ence ID		Esso Request ID		
Date of request						
□ Date				0	Time	
Proposed start date		Proposed completion date			e	No. days
□ Date		□ Date				
Actual work date		Actual	completion	date		No. days
□ Date		□ Di	ate			
▼ Requestor Details						
Requested by						
Contact mobile		Contact phone				
Email						
Company name			Company	type		
▼ Site Contact						
▼ Site Contact Site Contact			Site Conta	ct no.		
			Site Conta	ct no.		
Site Contact			Site Conta	ct no.		
Site Contact Esso Contact	nce Office	er)	Site Conta			
Site Contact Esso Contact	nce Office	(r) \				
Site Contact Esso Contact Esso contact (Pipeline Surveilla)		~		ect no.	53 438	
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Site Contact Esso Contact Esso contact (Pipeline Surveillar Esso en		no.: 180	Esso conta	ect no.	53 438	Postcode
Site Contact Esso Contact Esso contact (Pipeline Surveilla Esso ontact (Pipeline Surveilla Esso er Location Details		no.: 180	Esso conta	ect no.		



Pipeline Work Approval Form (2)



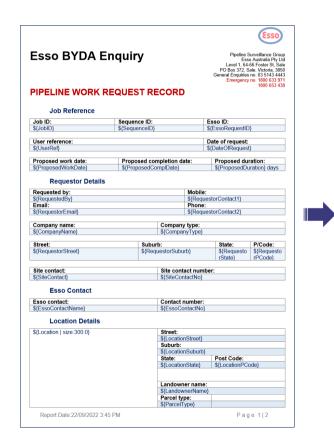


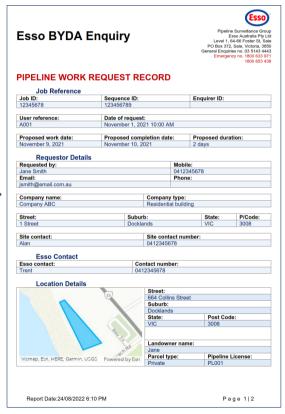
Work Request required action of the requesting party *					
DO NOT PROCEED site visit & work approval required					
Esso takes no exception to the work proposed above					
▼ PIPELINE WORK APPROVAL FORM					
▼ Applicable To All Work Requests					
Conduct an Esso site visit pri	or to work date for pre	e-planning / veri	fication of details		
Conduct a job safety review					
Toolbox meeting		Task analysis			
Did the party conducting the	work participate?	No			
By Esso Which methods were used (a Electronic pipe locator		d)	Probe & dig to work depth		
Exposed pipe	GPS (survey g	grade)	other		
ocate and peg / paint locati	on of all pipelines	Continuous			
Spacing for straight sections	(m)	Spacing for cha	ange of direction (m)		
Esso supervision at work site Conducted according to F	rocedure ONPOM PPL	600-101 Section			
Work Requests Requirin	g Permits or Work P	lans and All Ma	ajor Work		
	-				
Approved Esso work permits					

Engineering endorsement *		
Yes	N/A	
Major works endorsement *		
Yes	N/A	
▼ Works Completed in Accordance	with ONPOM PPL 600-101	
Approval as per above documentation	1*	
Esso takes no exception to the work	proposed above	
DO NOT PROCEED - request decline	ed	
▼ Sign Off		
Contact type *		
In-person	By phone	
Pipeline Surveillance Supervisor *		
		(
Approval Date		
Date Date		(L) Time
Esso Pipeline Surveillance Officer sign	ature ()	
	P	
	02	
Verification of details above and condi	tions of work by requesting party	
Requestor / Site Contact	Date	
	□ Date	
	Time	
Requestor / Site Contact signature		
	E2	
Report Sent to Requestor		

Report Template

- Created in MS Word
- Customizable layout
- One or many templates
- Include all form data

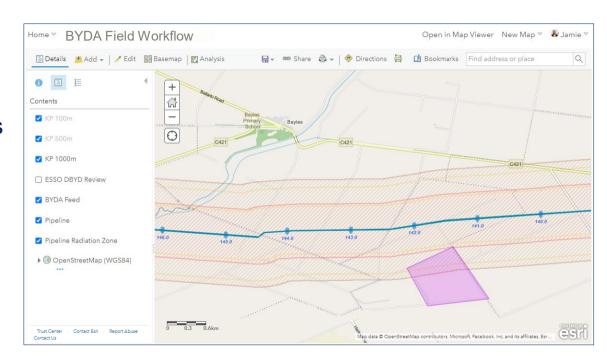




Digital Map

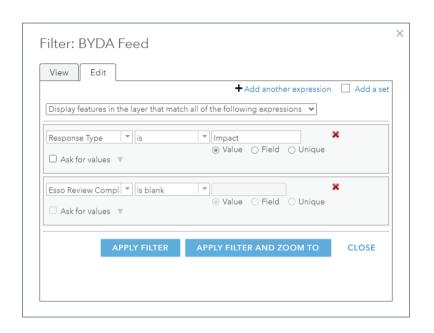
- ArcGIS Field Maps
- View multiple datasets
- Understand relationships

- Map configuration:
 - » Filter
 - » Expression
 - » Custom URL



Filter

- Filter:
 - 'Response Type' is 'Impact'
 - 'Review Complete' is blank*Or
 - 'Request Date' in the last 1 month(s)



* Note: GeoEvent Service modifies input data to enable this filter

Expression

```
Expression
    var geom = Geometry($feature);
     var firstpart = geom.rings[0];
     var outparts = [];
    var counter = 0:
 5 for (var pt in firstpart){
         var ptstr = Concatenate(firstpart[pt].y, " ", firstpart[pt].x);
         outparts[counter] = ptstr;
         counter = counter + 1;
 9
     return Concatenate(outparts, ";")
                                                   Results
                                                            Messages
                                                   Result
                                                              Value
                                                              -38.19907754 145.47614599:-38.19799649 145.47876624:-38.19881843 145.48454725:-38.
                                                   Result
                                                              19940237 145,48436402:-38,20023967 145,48230737:-38,20221077 145,48359255:-38,203
                                                              45037 145.48057718;-38.19907754 145.47614599
```

- Arcade ArcGIS language
- Extract vertices as a text string
- Output used as geometry input in Survey123

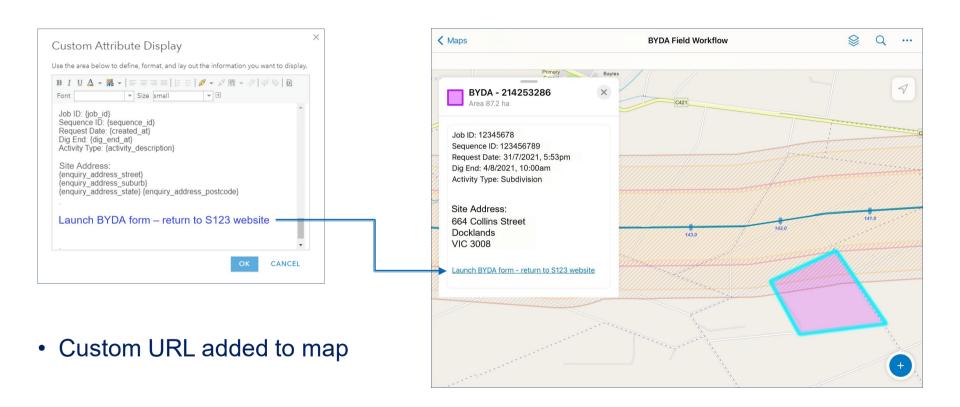
Custom URL

URL Parameter	Function
arcgis-survey123://?itemID=form ID	Launch Survey123 application and open form
&field:target1={source1}&field:target2={source2}	Pass BYDA attributes to survey form
&field: <i>target</i> ={expression/ <i>expr0</i> }	Pass vertices (LAT/LON) text string to form
&callback=https://survey123.arcgis.com/surveys/ form ID/data	Upon form submission, launch the Survey123 website

arcgis-

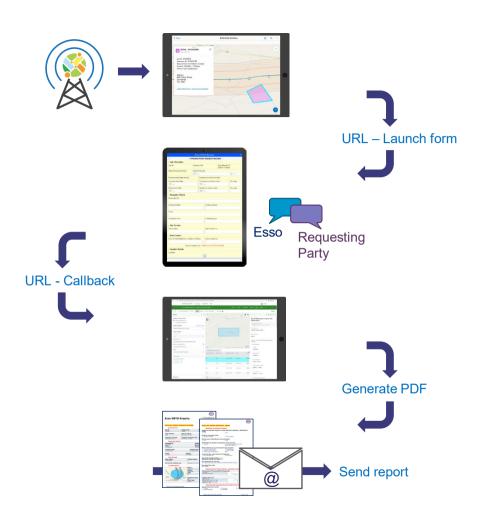
survey123://?itemID=8552d862d2d647028c38c5d3a4878586&field:JobID={job_id} &field:SequenceID={sequence_id}&field:ActivityType={activity_description}&field: Location={expression/expr0}&callback=https://survey123.arcgis.com/surveys/8552d862d2d647028c38c5d3a4878586/data

Add URL to Feature Pop-Up



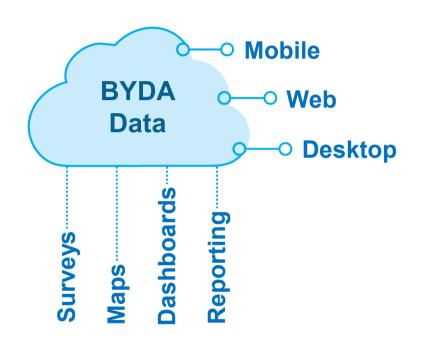
Workflow Summary

- BYDA feed from SmarterWX
- Reviewed request in map
- Launch form, engage Requestor
- Generate output PDF report
- Email report to Requestor

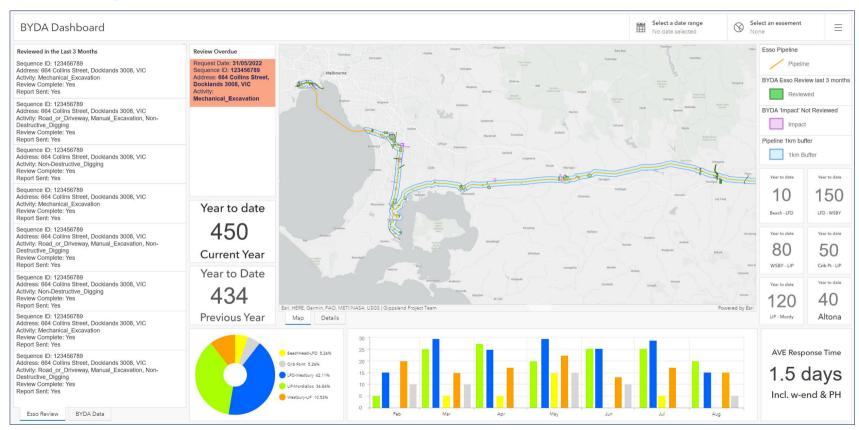


Results

- Efficiency time saving
- Eliminated double handling of data
- Integrated data & application workflow
- Improved data visualization
- Improved data access
- Out-of-the-box configuration



Tracking Dashboard



Thank You

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