



Austrroads Road Asset Data Standard

1 June 2017



Today's moderators



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About Austroads



The peak organisation of Australasian road transport and traffic agencies

- Roads and Maritime Services New South Wales
- Roads Corporation Victoria
- Department of Transport and Main Roads Queensland
- Main Roads Western Australia
- Department of Planning, Transport and Infrastructure South Australia
- Department of State Growth Tasmania
- Department of Transport Northern Territory
- Transport Canberra and City Services Directorate, Australian Capital Territory
- Commonwealth Department of Infrastructure and Regional Development
- Australian Local Government Association
- New Zealand Transport Agency

Housekeeping

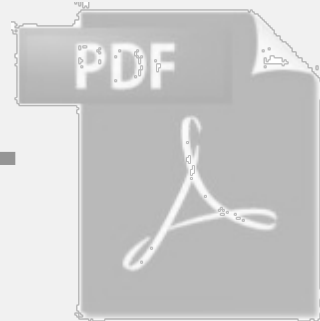


Presentations = 70 mins

Question time = 20 mins



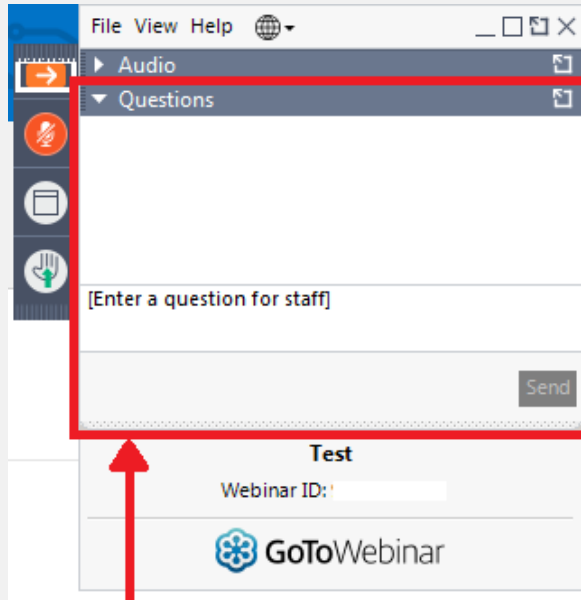
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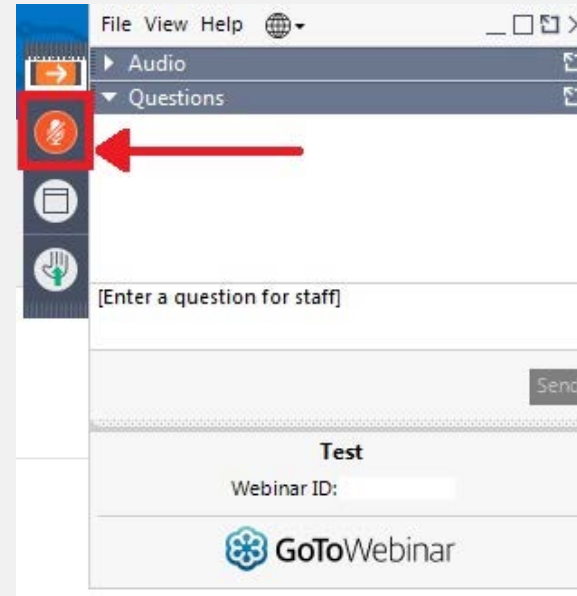
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GoToWebinar



Please type your questions here



Agenda



Topic	Presenter
Putting Data Standard into Context of Austroads Assets Program	Richard Yeo
Overview of Data Standard Project	David Darwin
Case Studies on Data Harmonisation <ul style="list-style-type: none">Toowoomba Shire CouncilNZ Transport Agency / Road Efficiency Group	Justin Weligamage Dawn Inglis
Implementation Overview	Angus Draheim
Metaconnect Demonstration – Christchurch City Council	Michael Zhang
Panel Q&A	All presenters

Today's presenter



Dr Richard Yeo

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Putting Data Standard into Context of Austroads Assets Program

Dr Richard Yeo



Austrroads Assets Program



Extending the life and performance of infrastructure to ensure the effective and sustainable maintenance of the road network

Work streams:

- Emerging technology – materials development
- Strategic management of road infrastructure
- Managing loading impacts
- Pavement management
- Bridge management
- Managing for climate change
- Sustainable roads and roadsides
- Managing rural and remote roads



Austrroads Assets Program



***Move beyond effective and sustainable maintenance of the road network to:
Maximising the value derived from road assets for road users and stakeholders***

Work streams:

- Emerging technology – materials development
- Strategic management of road infrastructure
- Managing loading impacts
- Pavement management
- Bridge management
- Managing for climate change
- Sustainable roads and roadsides
- Managing rural and remote roads



Strategic Management of Road Infrastructure

- AT1901 Reliability centred maintenance strategy and framework for management of ITS assets
- AAM2098 Performance and investment framework for road network infrastructure



Managing Loading Impacts

- TP1969 Implementation of new pavement design system
- AT1920 Data to support heavy vehicle road reform



Pavement Management

- AT1932 Network trend analysis to identify the effectiveness of maintenance activities
- AAM2106 Level of service (LOS) requirements for freight on rural roads



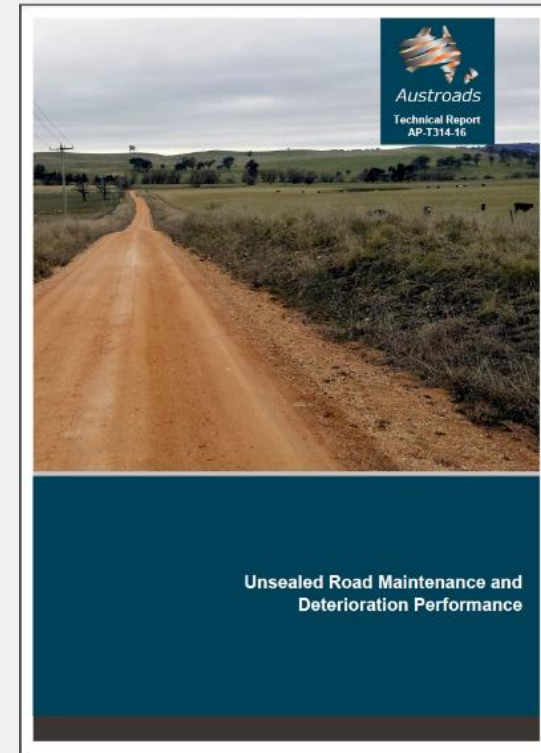
Bridge Management

- TP1951 Implementation of a nationally consistent framework for the assessment of bridges
- TP1952 AS5100-7 Tier 3 bridge assessment



Managing Rural and Remote Roads

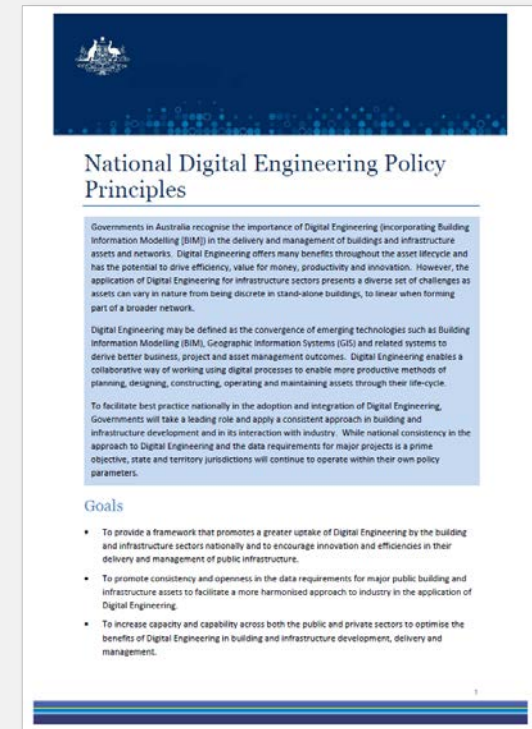
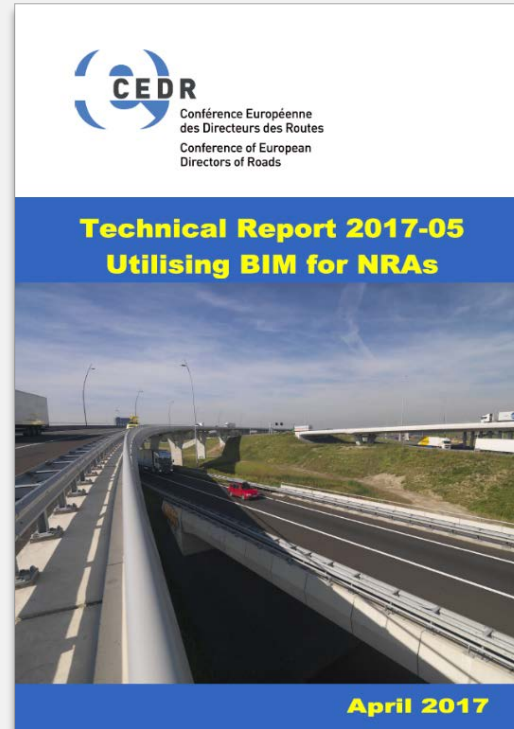
- AAM2101 Appropriate use of marginal and non-standard pavement materials and road construction maintenance
- TT1897 Increasing the use of low-cost modified granular materials in new and rehabilitated pavements



Emerging Technologies

Digital Engineering – Building Information Modelling

- Digital representation of physical and functional characteristics
- Measurements to form a reliable basis for decisions during an asset's lifecycle
- Location referencing important
- Open information exchange digital data standards needed



Thank you

Dr Richard Yeo
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Today's presenter



David Darwin

State Highway Outcomes Delivery Manager
NZ Transport Agency

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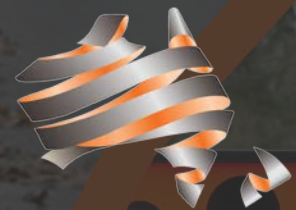
E: David.Darwin@nzta.govt.nz





Overview of Data Standard Project

David Darwin



Austroads

P

What is a Data Standard?

- The Austroads data standard sets out how core asset information can be described in a common way.
- When data is described in a standard way it can be readily shared between organisations, comparative statistics and trends have more meaning because of their comparable basis, and asset management approaches can be shared between organisations with confidence.
- The data standard encompasses a variety of asset information including: infrastructure, condition, performance, risk, works and costs, demand, road classification and access.
- The standard also describes how to locate or reference infrastructure. It identifies a core set of data and three levels of sophistication for simple to complex contexts.

Potential Benefits

Lower maintenance costs

- Consistent contract information deliverables
- Easy transfer of approaches

Comparable performance

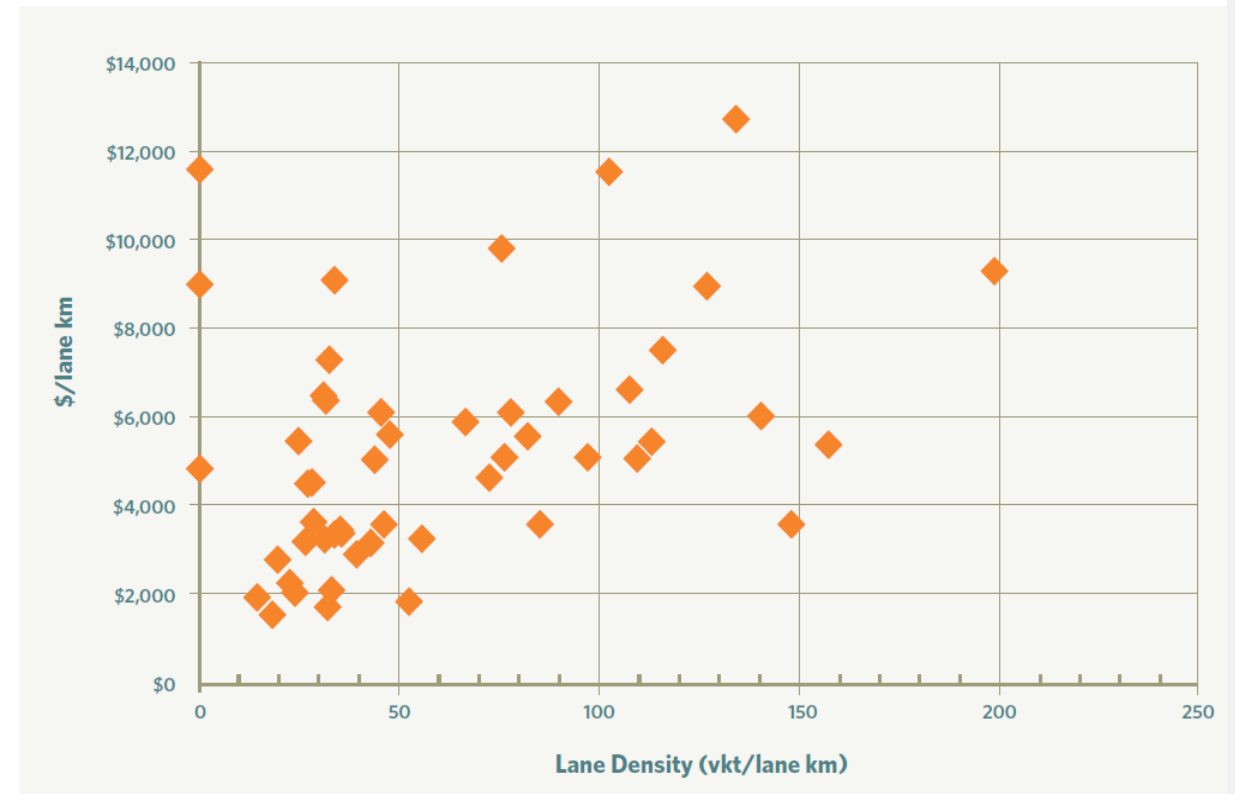
- Trend and comparative performance

Improved investment outcomes

- Comparable opportunities
- Common basis for costs

BCR ~ 4

Cost/lane km vs Lane Density — “Rural” Networks Maintenance, Renewals, Improvements Expenditure 2004-2013



Approach



- Strategic business case positive
- Engage to assess interest and scope
- Develop draft standard
- Consult and refine
- Respond to context
- Deep dive sample costs
- Prioritise scope
- Manage on-going development

Challenges

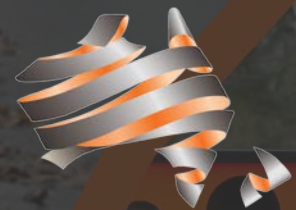


- Variety of approaches and contexts of road agencies
- Change in practise
- Dispersed costs and benefits
- Alignment of agency expectations



Road Asset Data and Investment Decision Making

Justin Weligamage



Austroads

Transport Infrastructure Asset Management and Decision Making



- Collection and analysis of quality data, create efficiencies in the planning, design, operation and management of infrastructure
- Evidence-based data-driven models can be more effective
- Improve demand prediction will strengthen investment decisions
- Improve the adaptability and longevity of assets

Procurement of Data

- In house or out sourcing
- Making technical specification easier in the tender documentation
- Reduce information requirements
- Facilitate communication with service providers
- Improve quality and reduce errors

Governance and Management



- Facilitate receiving, processing and auditing
- Reduces complexity for those tasked with testing and auditing standards compliance
- Communication make easy on issues with IT service providers

Analytics



- Help to build innovative new simulation models, predictive analytics and integrated optimisation models

Reporting



- Consistent corporate reporting
- Influence other authorities
- Significantly decreases the time to create and access business intelligence

Benefits In General

- Synergies with various interested organisations
- Facilitate exchange of data and improve automation
- Public access to non-sensitive information (Consistency and comparability)
- Collaboration make easy
- Provide users with a comparable view of data
- Benchmarking

Challenging Situations - Examples



- Working with computer software developers and business analysts
- Diversity in data collection and reporting

Today's presenter



Dawn Inglis

Manager

Waikato Road Asset Technical Accord

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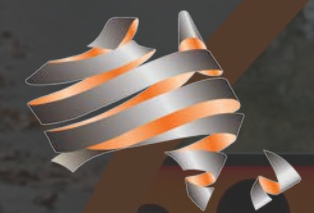
E: Dawn.Inglis@waipadc.govt.nz





Road Efficiency Group: Why Consistent Data is Important

Dawn Inglis



Austroads

Road Efficiency Group: Why Consistent Data is Important



Road Efficiency Group – REG

- Collaboration between Local Government NZ and NZ Transport Agency
- Focussed on delivering better value for money from road maintenance, renewals and operations
- Developed One Network Road Classification (ONRC)
- Introduced consistent Customer Promises (customer levels of service - CLoS)
- Provided performance measures to support CLoS

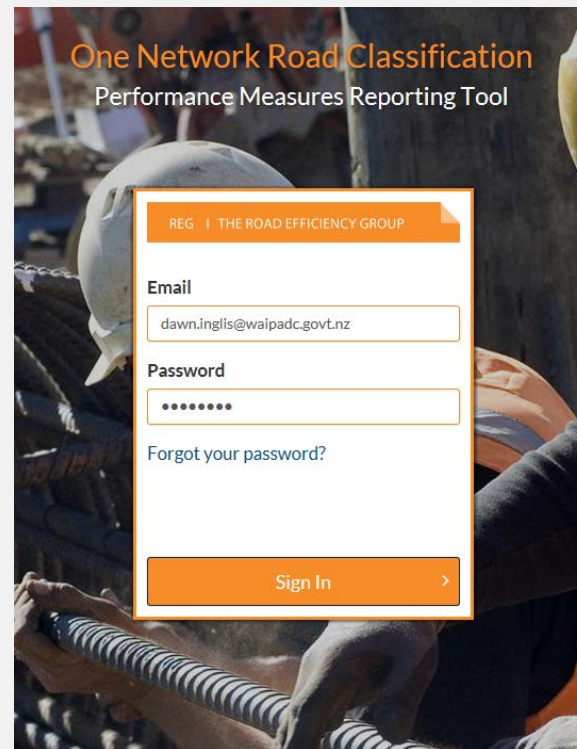
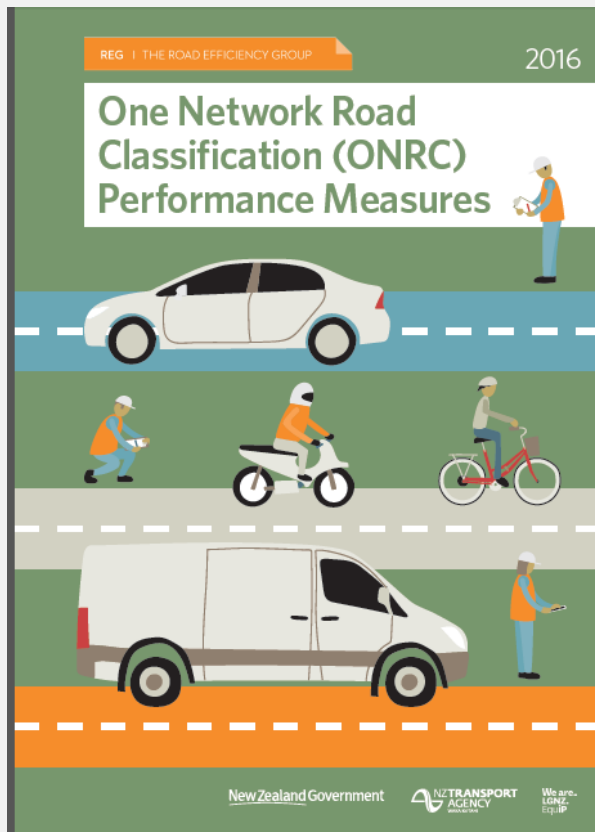
REG | THE ROAD EFFICIENCY GROUP

Road Efficiency Group: Why Consistent Data is Important



Framework and Performance Measures

(<https://www.nzta.govt.nz/assets/Road-Efficiency-Group-2/docs/NZTA160801-The-ONRC-Performance-Measures-Final-Published.pdf>)



Safety
Safety Customer Outcome 1 - Serious Injuries and Fatalities >
Safety Customer Outcome 2 - Collective Risk >
Safety Customer Outcome 3 - Personal Risk >
Safety Technical Output 2 - Temporary Hazards >
Safety Technical Output 4 - Loss of Control on Wet Roads >
Safety Technical Output 5 - Loss of Driver Control at Night >
Safety Technical Output 6 - Intersections >
Safety Technical Output 9 - Vulnerable Users >
Resilience
Resilience Customer Outcome 1 - The Number of Vehicles Impacted by Unplanned Events >
Resilience Customer Outcome 2 - The Number of Instances Where Road Access is Lost >
Amenity
Amenity Customer Outcome 1 - Smooth Travel Exposure (STE) >
Amenity Customer Outcome 2 - Peak Roughness >
Amenity Technical Output 1 - Roughness of the Road (Average) >
Amenity Technical Output 1 - Roughness of the Road (Median) >

Road Efficiency Group: Why Consistent Data is Important



Cost Efficiency

Percentage of network surfacing renewed annually

Key Question: How much of my sealed network am I renewing each year in comparison with others?

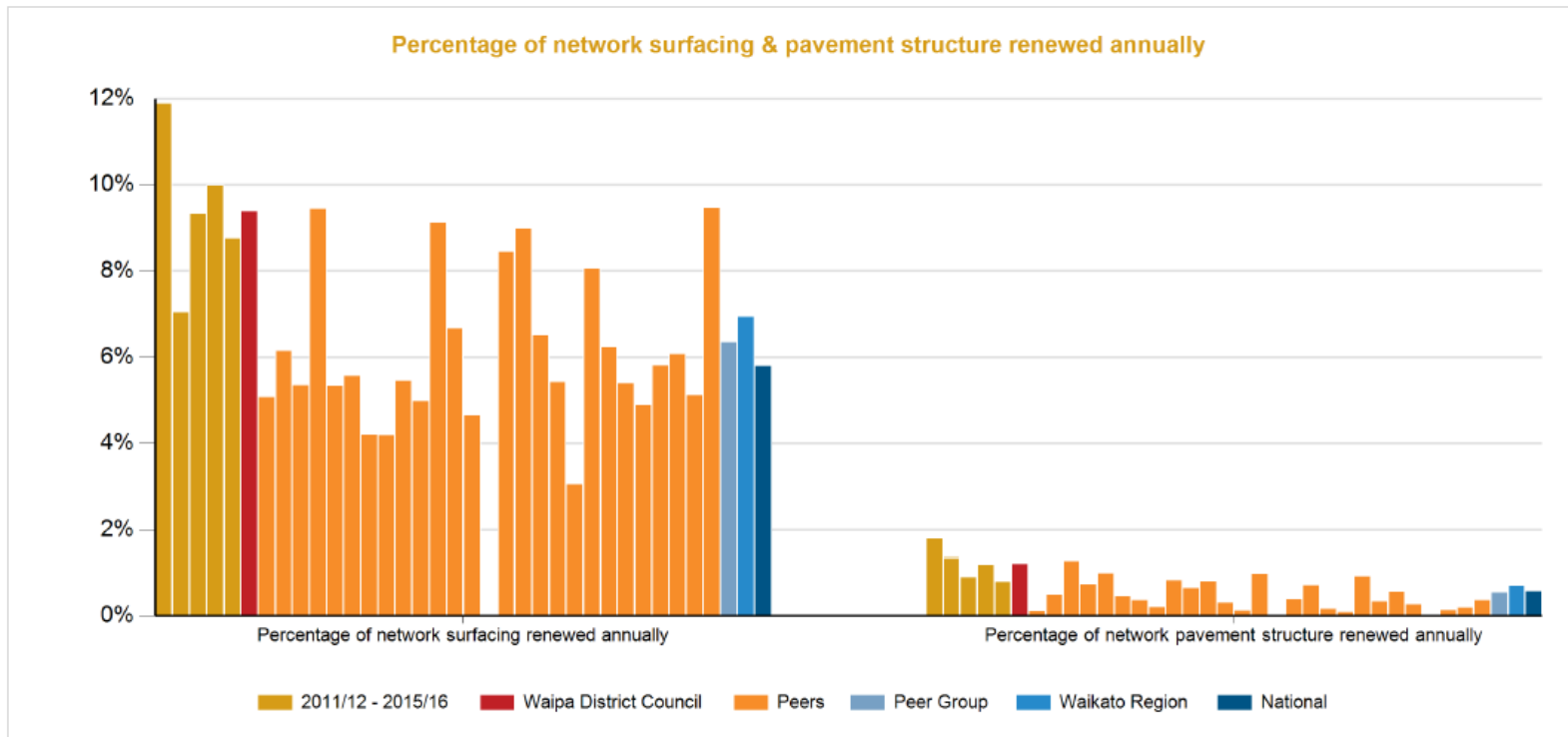


Figure 9: Annual surfacing renewal & pavement renewal percentage - Sourced from NZ Transport Agency TIO annual achievement figures

Road Efficiency Group: Why Consistent Data is Important



Framework and Performance Measures

Reports

Single **Comparative**

Safety

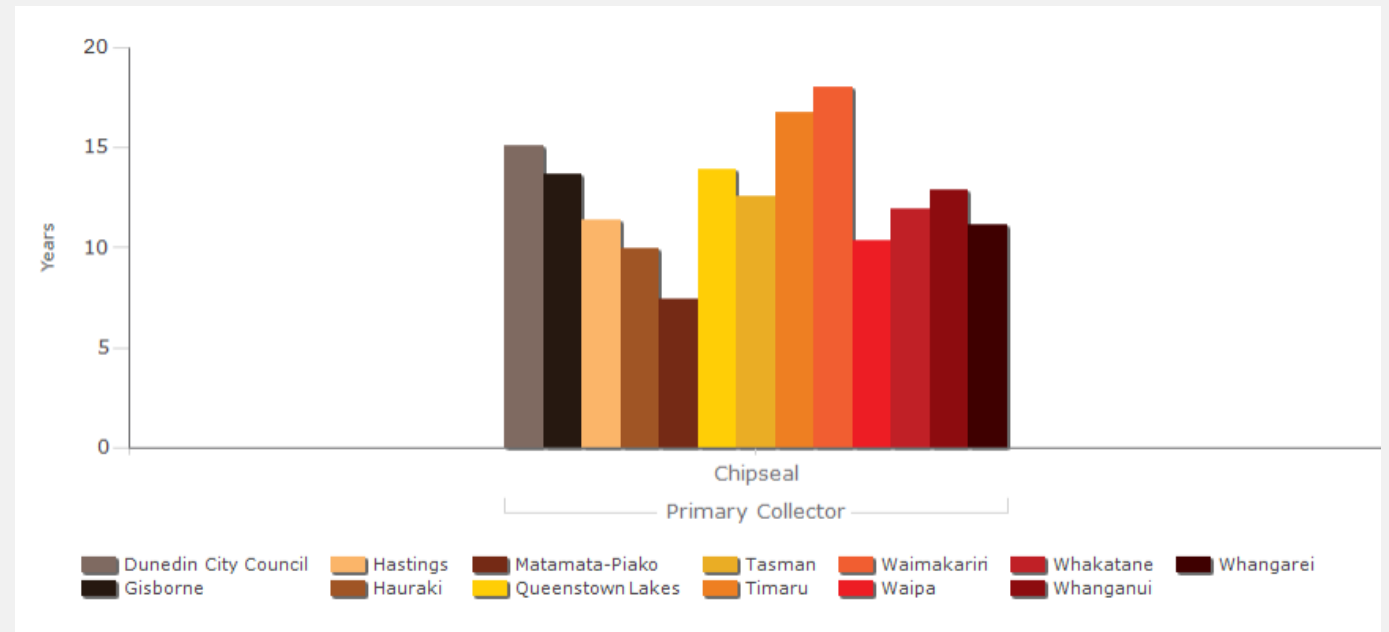
- Safety Customer Outcome 2 Comparative - Collective Risk >
- Safety Customer Outcome 3 Comparative - Personal Risk >

Amenity

- Amenity Customer Outcome 1 Comparative - Smooth Travel Exposure (STE) >
- Amenity Customer Outcome 2 Comparative - Peak Roughness >
- Amenity Technical Output 1 Comparative - Roughness of the Road (Median) >

Cost Efficiency

- Cost Efficiency 2 & 3 Comparative - Average Life Achieved of Sealed Surfaces Renewed >
- Cost Efficiency 2 & 3 Comparative - Pavement Resurfacing Cost (\$) per Lane Km >
- Cost Efficiency 2 & 3 Comparative - Pavement Resurfacing Cost (\$) per 1000 VKT >

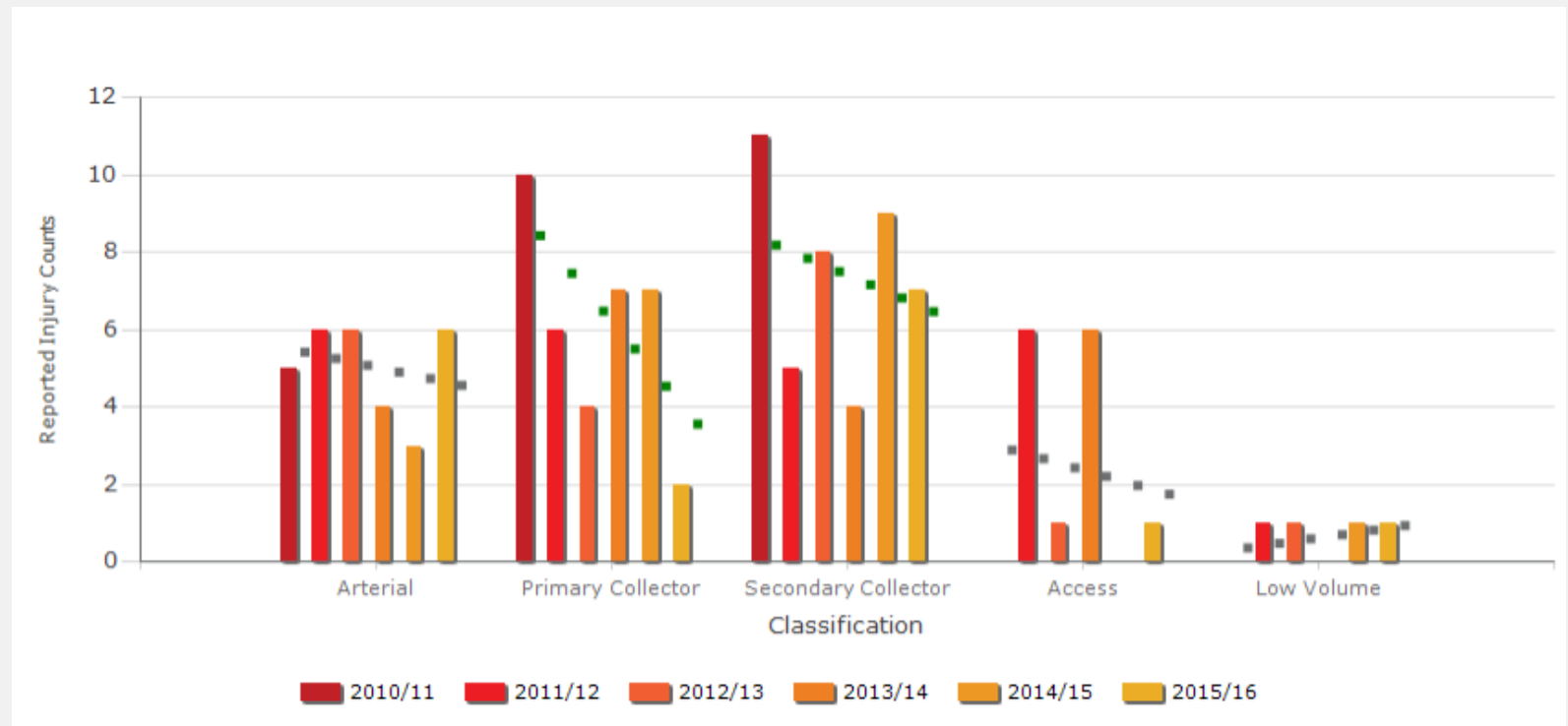


Road Efficiency Group: Why Consistent Data is Important



Framework and Performance Measures

Safety	
Safety Customer Outcome 1 - Serious Injuries and Fatalities	>
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Road Efficiency Group: Why Consistent Data is Important



Why consistency matters..



Road Efficiency Group: Why Consistent Data is Important



Why consistency matters..



Road Efficiency Group

Why Consistent Data is Important



What will consistent data mean to NZ?

- Confidence that differences in outcomes are due to inputs and not “data issues”
- Analysis of inputs becomes meaningful – what are really driving costs in our sector?
- Confidence from our investors (both local and central government) that they are gaining benefits from investing in maintenance, operations and renewals
- I have confidence that I am investing public funds to achieve appropriate, fit for purpose levels of service for those wanting to use our land transport system

Road Efficiency Group: Consistent Data is Important!



Thank You

Today's presenter



Angus Draheim

Data Harmonisation Project Manager
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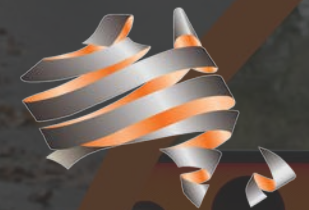
E: angus@adraheim.com.au





Implementing the Data Standard

Angus Draheim



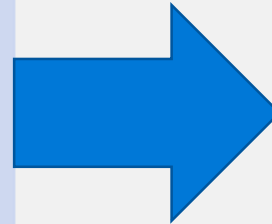
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Objectives of Data Standard Implementation



Why Harmonise

- Improved net benefit from maintenance activities
- Improved net benefit from capacity expansion activities
- Improved ability to leverage heavy vehicle road reform benefits
- Lower data collection costs
- Lower operational costs for governments - e.g. training costs
- Improved ability to leverage new technologies



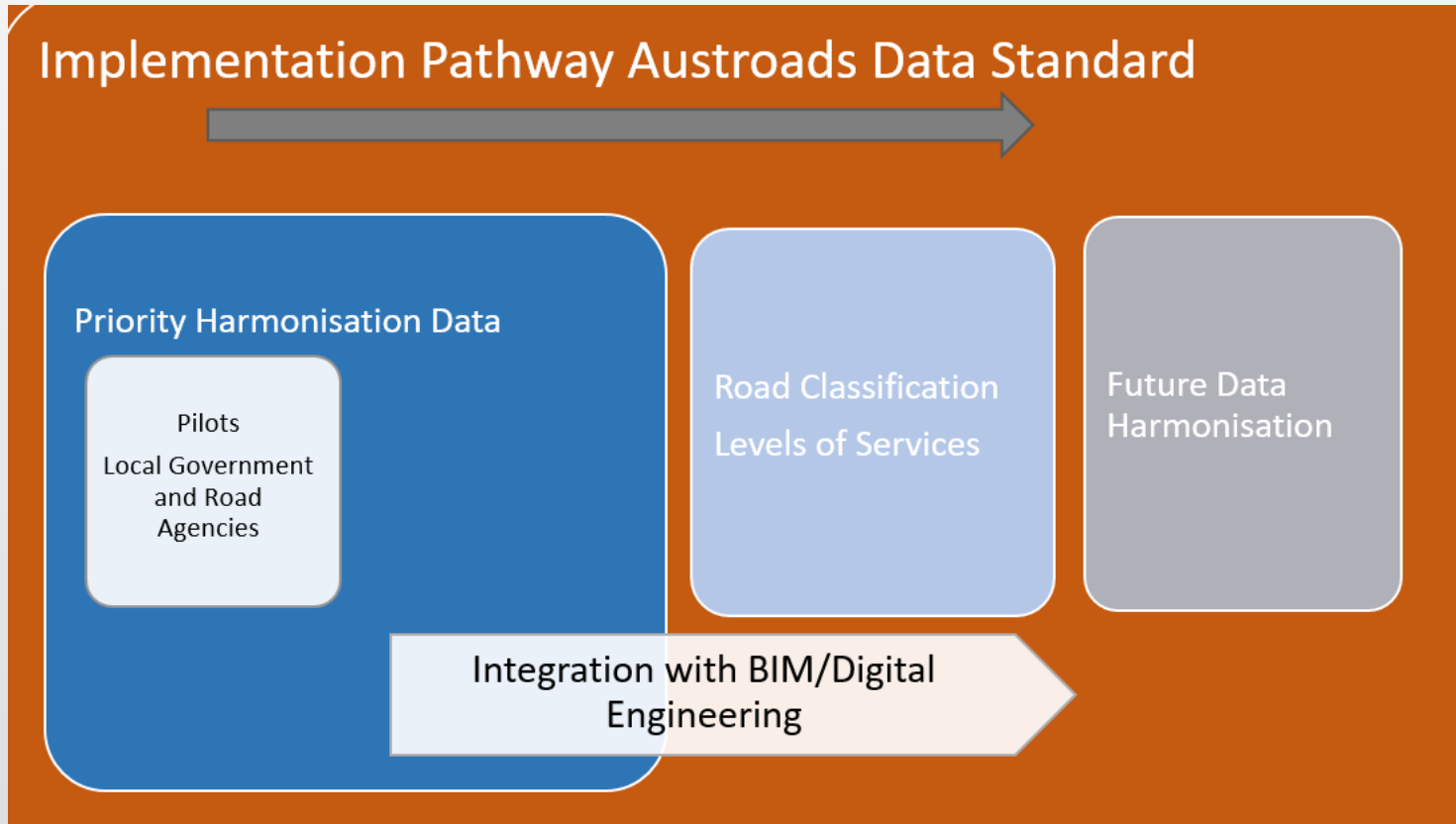
Harmonisation Approach

- Staged, incremental benefits
- Focus on high benefit low cost data items
- Maintenance related information prioritised
- Align / rationalise government reporting
- Architecture to support reporting and benchmarking

Stage Adoption



Implementation Pathway Austroads Data Standard



Data Standard serves to guide asset management maturity across the sector.

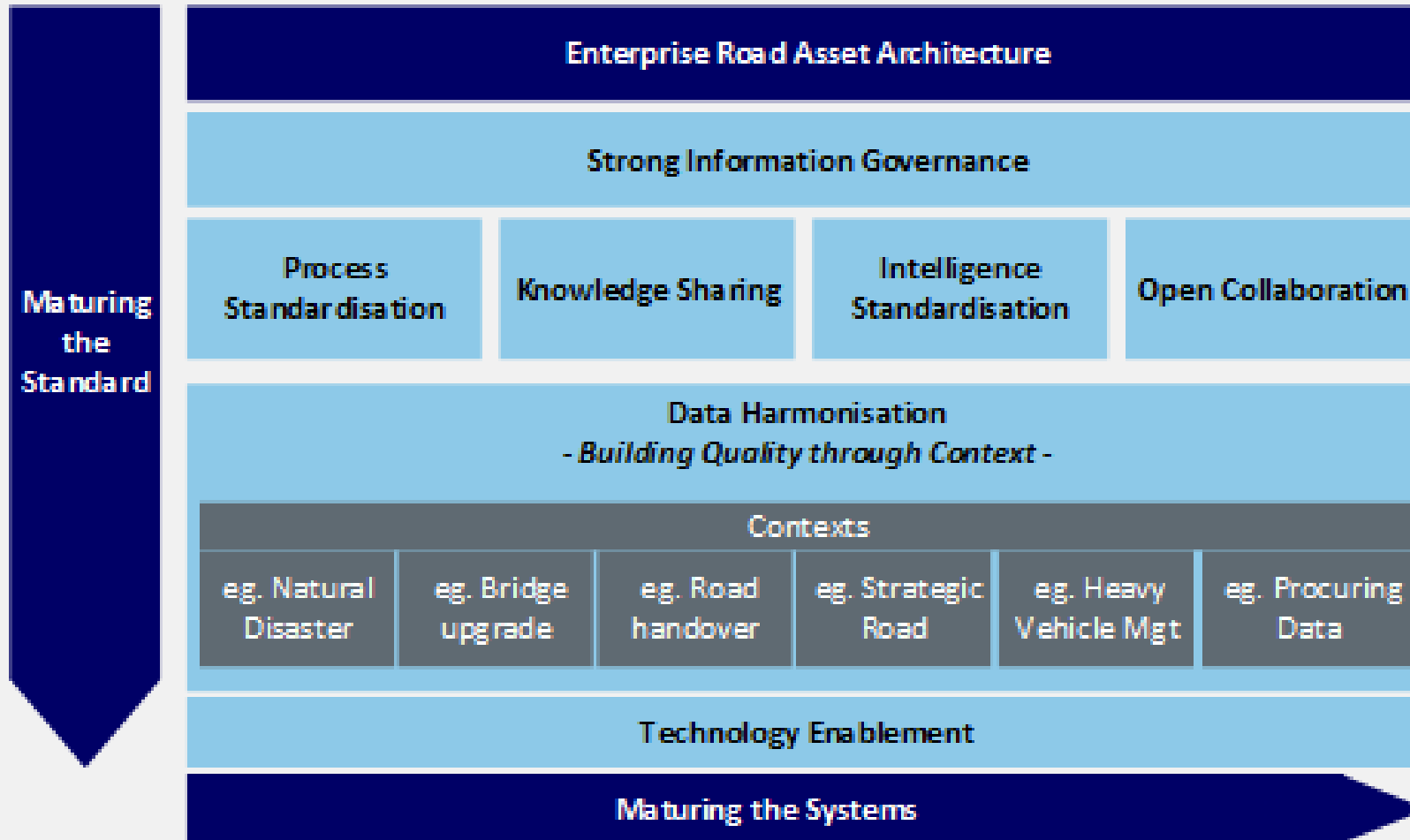


Much of the benefits from harmonising small subset of 'maintenance' benchmarking related data.



Proposing road managers only harmonise portion of subsets currently being collected.

Information Architecture



Analytical Tools

National level analysis

Regional level analysis

Shared platforms

Ease of reporting opportunities

Cost Efficiency 2 - Chipseal Resurfacing (Length and Area)

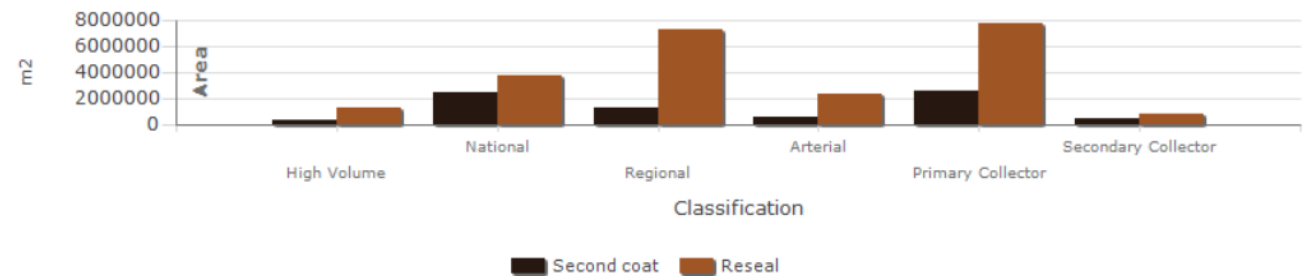
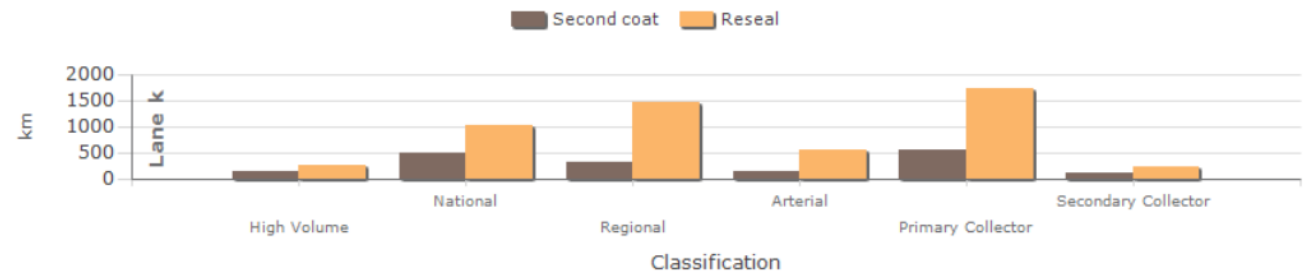
The total quantity of sealed road chipseal resurfacing undertaken over the previous year.

Financial Year: 2016/17

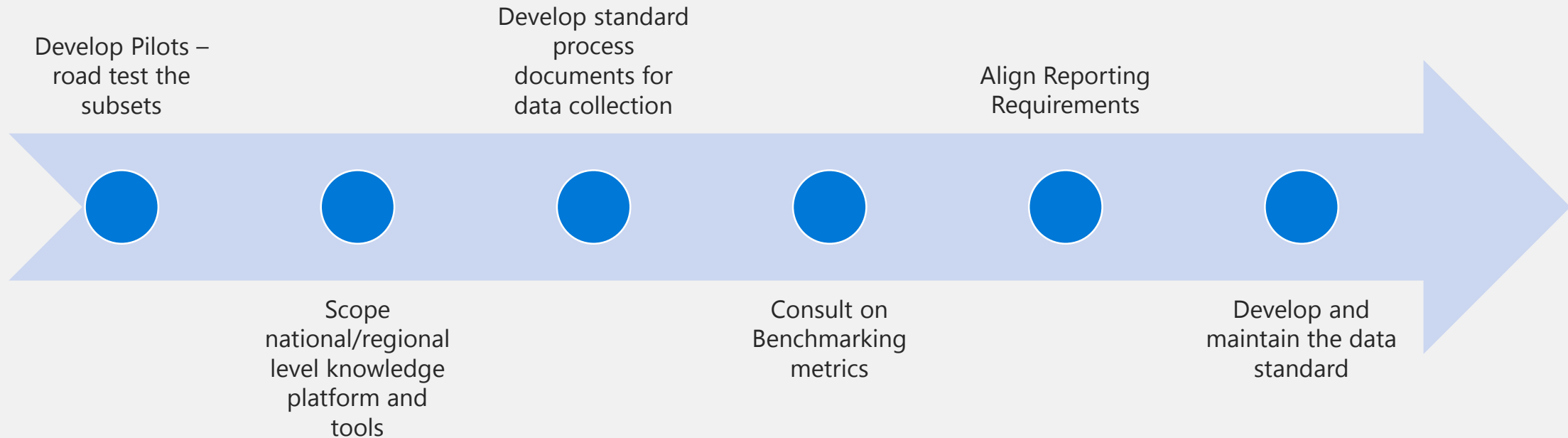
RCA: NZTA

Urban/Rural: Rural

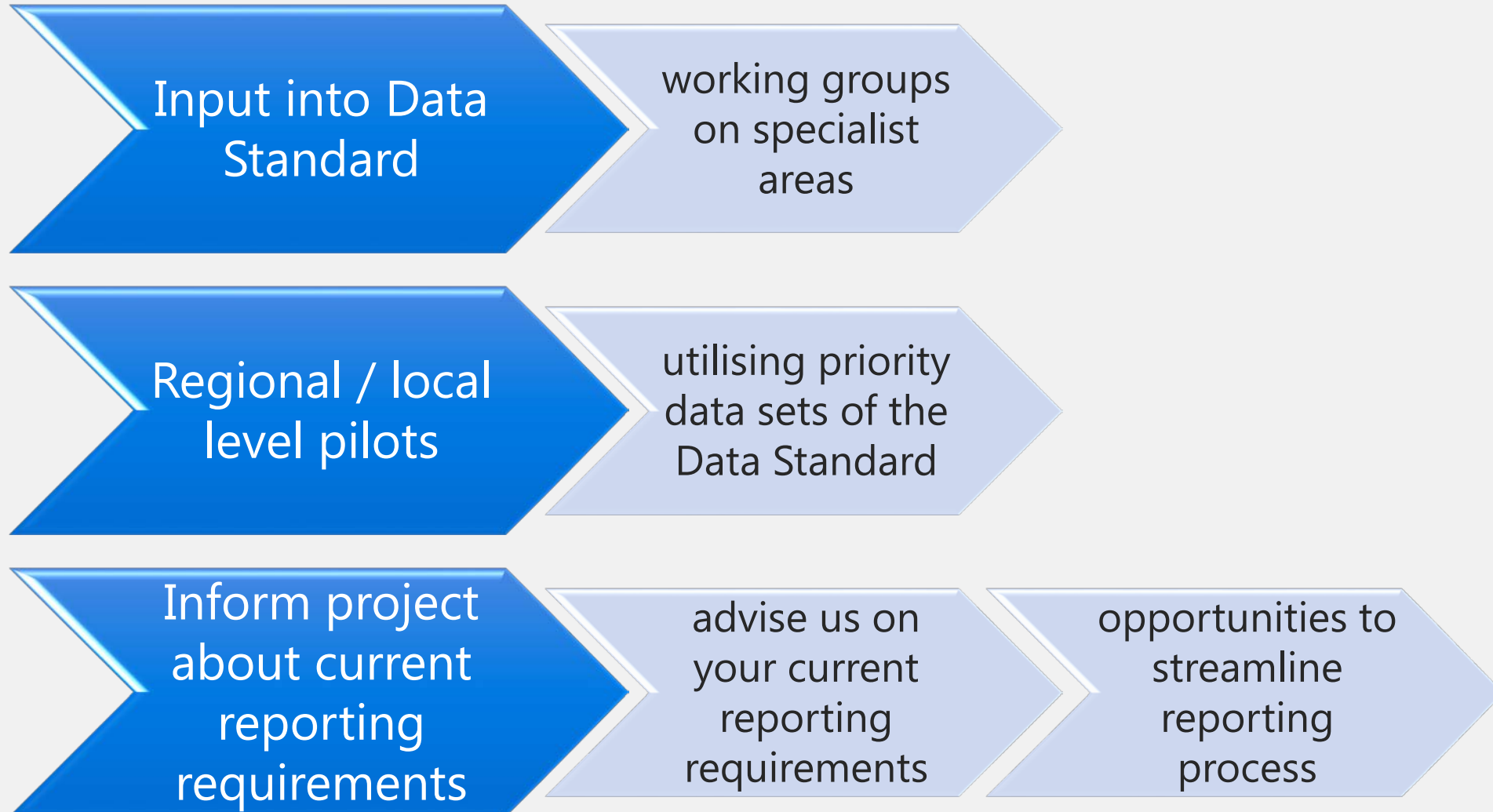
Year: 2015/16



Initial Actions



Getting Involved in Implementation



Today's presenter



Michael Zhang

Transport Asset Systems Analyst
Christchurch City Council

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Metaconnect – Moving to a Digital Ecosystem

Michael Zhang



New Zealand at a glance



- Local government in New Zealand consists of 78 local, regional and unitary councils.
- The local government sector consists of:
 - 11 regional councils;
 - 61 territorial authorities – 11 are city councils and 50 are district councils; and
 - Six unitary councils – which are territorial authorities with regional council responsibilities.
- Average population per council is approximately 85,000 residents
 - 1.44 million residents in Auckland
 - 600 in the Chatham Islands.
- Australian local government is not doubt more diverse

Understanding each other

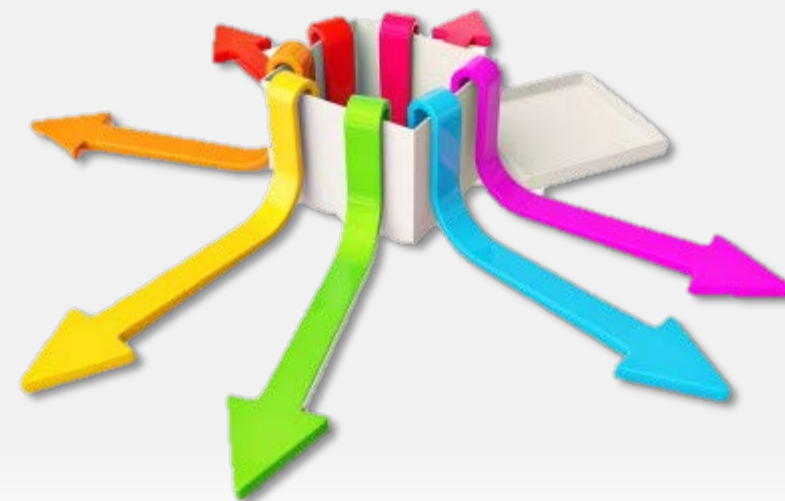


- All the local authorities no doubt have developed their unique way of capturing and storing asset data
- Administratively resource hungry for governing bodies
- Just as we all have a common language it makes sense to speak the same in terms of data
- The importance and value of national data standards in Government is understood and prioritised



Standardised Distribution

- Once a data standard has been agreed upon by the industry & government it needs to be distributed
- The efficacy of the standard depends on successful distribution
- Widespread – accessible to all
- Up to date – everyone is using the latest version
- Ease of distribution – logistical nightmare?
- Standard needs to be used in order to be effective!



Portable Document File

- The current way standards are distributed are in PDFs
- Standard can be distributed quickly via email and anyone can open a PDF on their computer
- BUT you cannot ensure everyone is using the latest version and you cannot keep track of changes efficiently or document history
- However so far there is no other solution which is easy to distribute and widely supported



As they say on TV, there has to be a better way!

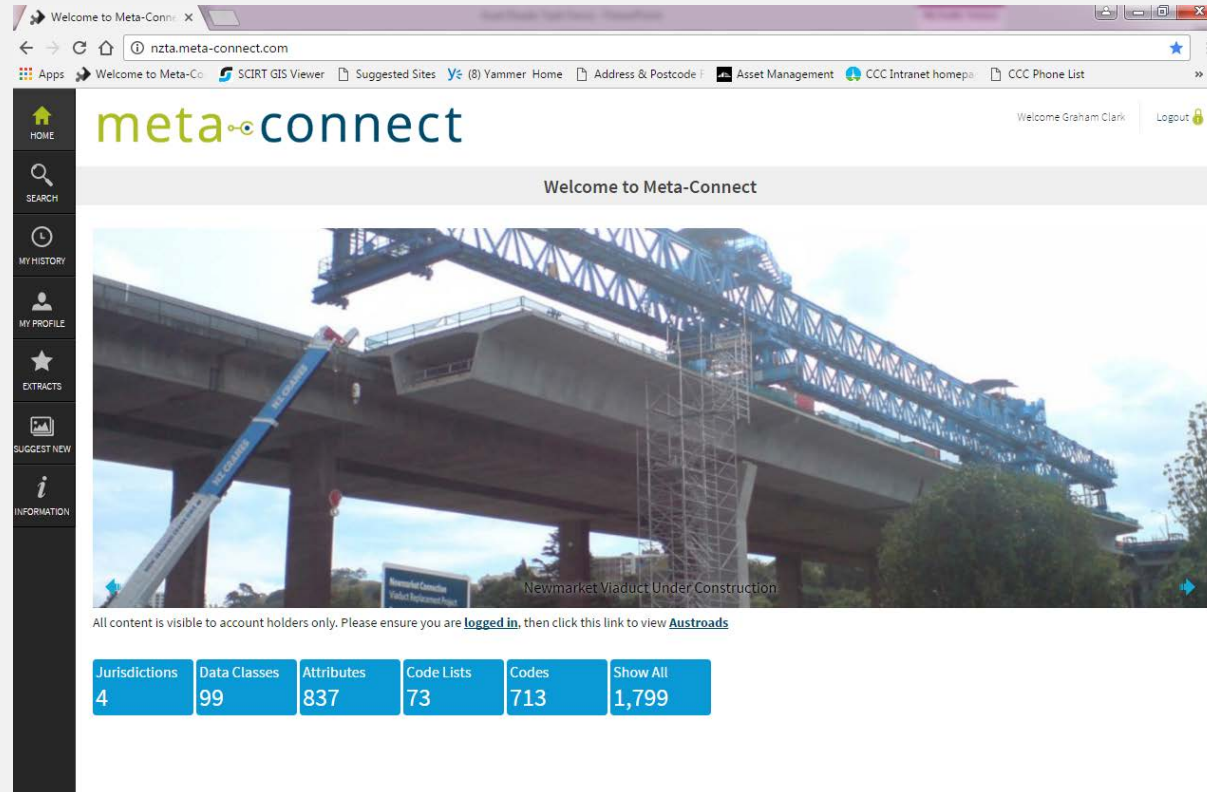
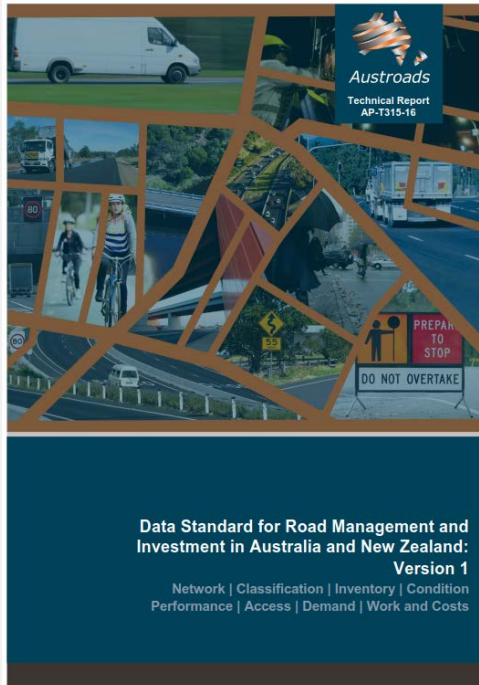


meta-connect



- Tool developed collaboratively by Christchurch City Council, Auckland Transport, New Zealand Transport Agency & Wellington City Council
 - Proof of concept completed. Full tool to follow
- Developed to store data standards
- Accessed through web browser
- Robust permissions & change management
- Version controlled down to attribute level
- Flexible Exports
- Single Source of truth!

Transforming the PDF



Austroads Data Standard PDF

Austroads Digital Data Standard

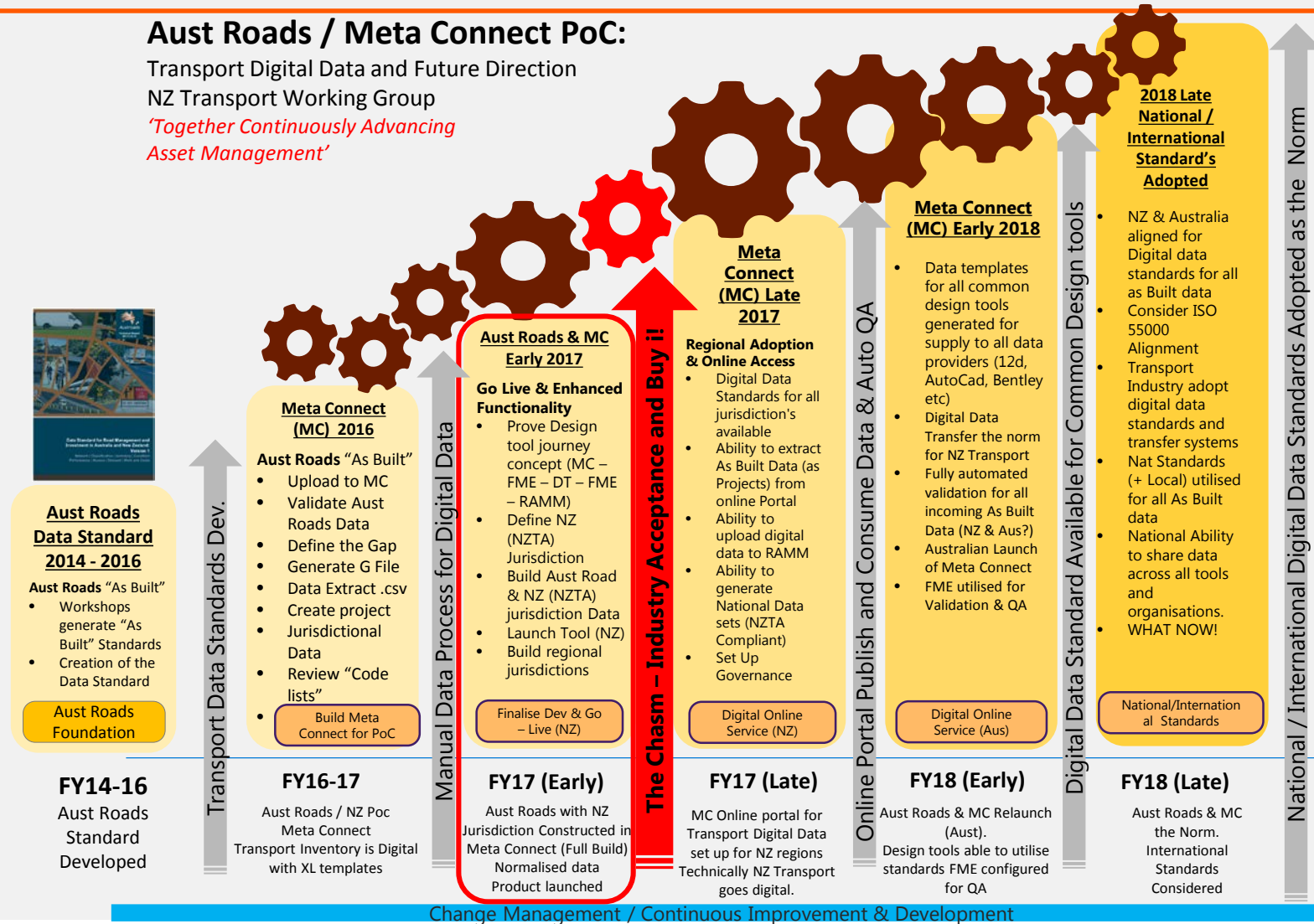


Implementation Roadmap



Aust Roads / Meta Connect PoC:

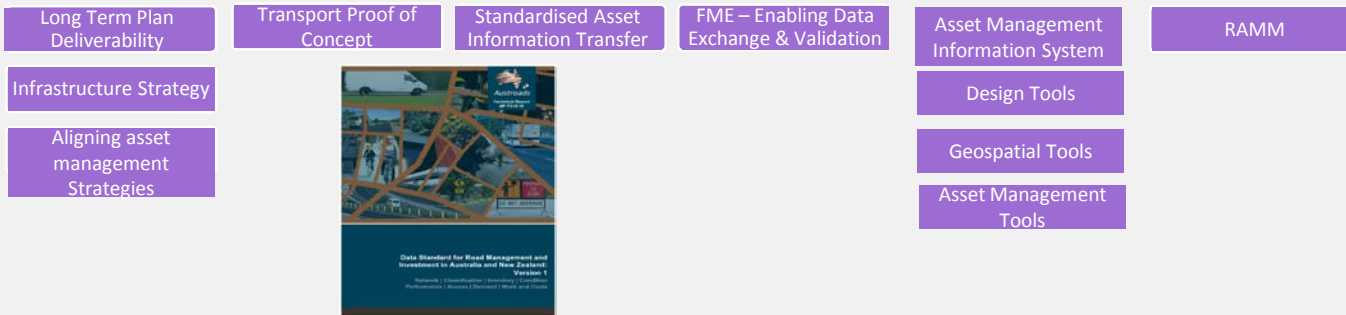
Transport Digital Data and Future Direction
 NZ Transport Working Group
*'Together Continuously Advancing
 Asset Management'*



What & Why



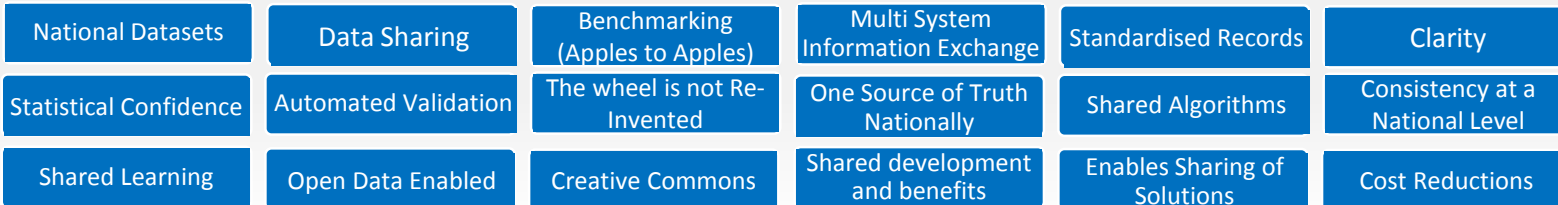
Strategic Programme.



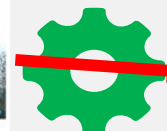
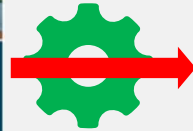
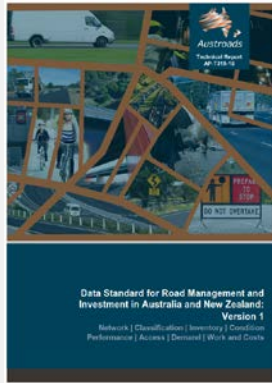
The Influencing Factors (The building blocks) – WHAT?



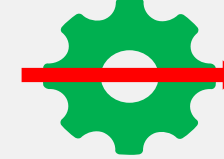
The benefits to be realised – WHY?



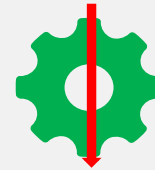
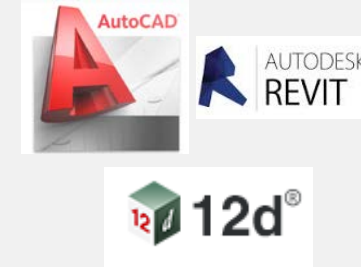
How it all works – Digital Ecosystem



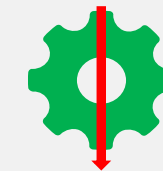
- Connect Your Applications



- Inform your Design Applications



- Update your Systems

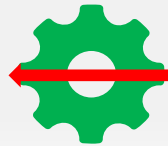
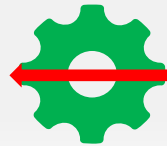


- Update your Systems

- Defined Standard
- Defined the rules
- Create a benchmark



- Enable Digital Data
- Online portal
- 100% Data Confidence.



Metaconnect 101



- HOME
- SEARCH
- MY HISTORY
- MY PROFILE
- EXTRACTS
- SUGGEST NEW
- INFORMATION

meta-connect

Welcome Graham Clark | Logout

Welcome to Meta-Connect



Lyttelton Tunnel North Entrance

All content is visible to account holders only. Please ensure you are [logged in](#), then click this link to view [Austrroads](#)

Jurisdictions	Data Classes	Attributes	Code Lists	Codes	Show All
4	99	837	73	713	1,817



Using the search function



The screenshot shows the meta-connect search interface. A red circle highlights the search bar and the 'Search' button. A red arrow points from the search bar to the '99 results found' notification, which is also circled in red. A red text box says 'Search helps find the data definition we are looking for'. The search results are displayed in a grid of cards, each representing a data class. The cards include:

- Pavement All**: Format: Data Class, Jurisdiction: Austrroads, Version: 1.0
- Pavement**: Format: Data Class, Jurisdiction: Austrroads, Version: 1.0
- Poles**: Format: Data Class, Jurisdiction: Austrroads, Version: 1.0
- Lighting**: Format: Data Class, Jurisdiction: Austrroads, Version: 1.0
- Pavement Surfacing All**: Format: Data Class, Jurisdiction: Austrroads, Version: 1.0
- Pavement Surfacing**: Format: Data Class, Jurisdiction: Austrroads, Version: 1.0
- test Jurisdiction node**: Format: Data Class
- NewDataClass1**: Format: Data Class, Jurisdiction: Austrroads
- KBNEWClass**: Format: Data Class
- Jurisdictional Data Class**: Format: Data Class, Version: No Version
- CCC Footpath**: Format: Data Class, Jurisdiction: Christchurch City Council
- Austrroads Location**: Format: Data Class, Jurisdiction: Austrroads, Version: 1.0

Delving into the Street Light Asset (data class)



Apps | Welcome to Meta-Co | SCIRT GIS Viewer | Suggested Sites | (8) Yammer Home | Address & Postcode | Asset Management | CCC Intranet home | CCC Phone List | City Care Event Man | Council Catalogue | Download the IDS | FWP FORWARD WOR | Google

meta-connect Welcome Graham Clark | Logout

Lighting

Description
Assets that primarily provide illumination to the road surface for the purpose of safety.

Valid Location Types
Point

Attribute

- Bracket angle
- Bracket height**
- Bracket length
- Bracket material
- Bracket mounting type
- Bracket Orientation
- Bracket type
- Bulk circuit connection
- Connected to smart grid
- Connection Type
- Control Point number
- LED chip manufacturer
- Light shade type
- Luminaire capacity
- Luminaires wattage
- Manufacturer Importer name
- Number of luminaires
- Power supply company
- Upcast angle

DETAILS

Jurisdiction
[Austroroads](#)

Version
[1.0](#)

LINKED CLASSES

Parent Class
[Inventory](#)

VERSIONS

- 0.2 (Current)
- [0.1](#)

Review Attribute data rules



meta-connect

Welcome Graham Clark | Logout

Bracket height

DETAILS

Jurisdiction
[Austroads](#)

Version
[1.0](#)

DOCUMENT REFERENCES

Document Combined Ref
8.3.9.1

Document Section
8.3

Document Sub Section
9

Document Unique Ref
1

R-SPEC REFERENCES

R-Spec Field Name
Brk_Height

RAMM REFERENCES

RAMM Asset System
Street Light

RAMM Asset Type
Bracket

RAMM Table Name
sl_bracket
sl_profile

RAMM Column Name
bracket_height

VERSIONS

Attribute Details:

- Name: Bracket height
- Code: brk_height
- Definition: Height from the ground to the bottom of the bracket
- Definition Without Example: Height from the ground to the bottom of the bracket.
- Example: 6.32
- Data Type: [DC](#)
- Length / Precision: 5
- Scale: 2
- Unit: m
- Purpose: [D](#)
- Sophistication: [1](#)
- Function Group: Inventory
- Used By: [Lighting](#)

Review a Code List (Pick list of values)



meta-connect

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HOME | SEARCH | MY HISTORY | MY PROFILE | EXTRACTS | SUGGEST NEW | INFORMATION

FORMAT: ATTRIBUTE | LINKED TO

Data Type: A

List Of Values: Pathway Type

Purpose: D

Sophistication: 1

Used By: Vehicle Crossings, Traffic Signals, Tactile Paving, Structures, Signs, Shelters, Road Barriers, Public Art, Pits, Pathways, Parking, Mechanical and Electrical Assets, Linemarking All, Lighting, Landscaping, Kerb and Channel, ITS Assets, Fences, Culverts Minor (Pipes), Bridge Major Culvert, Bins, Amenities, Traffic Management Device

Jurisdiction: Austroroads

Type

Name: Type
Code: type
Definition: The constructed type of vehicle crossing
Definition Without Example: Amenity Type
Data Type: A
Length / Precision: 100
List Of Values: Type
Purpose: D
Sophistication: 1
Function Group: Inventory
Used By: Vehicle Crossings, Traffic Signals, Tactile Paving, Structures, Signs, Shelters, Road Barriers, Public Art, Pits, Pathways, Parking, Mechanical and Electrical Assets, Linemarking All, Lighting, Landscaping, Kerb and Channel

DETAILS

Jurisdiction: Austroroads
Version: 1.0

DOCUMENT REFERENCES

Document Combined Ref: 8.3.1.1
Document Section: 8.3
Document Sub Section: 1
Document Unique Ref: 1

R-SPEC REFERENCES

R-Spec Field Name: Type

VERSIONS

0.2 (Current)
0.1



Check the values listed



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Pathway Type

Look Up Field (Name)
Pathway Type

Attribute

Type

Code

- BA - Beach Access
- FP - Footpath
- HT - Horse Trail
- PA - Pedestrian Access
- PR - Pram Crossing
- SP - Shared Path
- WT - Walking Track

DETAILS

Jurisdiction
[Austroads](#)

Version
[1.0](#)

DOCUMENT REFERENCE

Reference
[9.27](#)

VERSIONS

HOME | Back | Result 1571 of 1820 | SEARCH | LINKED TO | MY HISTORY | MY PROFILE | EXTRACTS | RECOLLECTIONS | SUGGEST NEW | INFORMATION

TOOLS



Check the values listed



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Create a Composite

Select from these Data Classes

Inventory

- Amenities
- Bins
- Bridge Major Culvert
- Bridge Major Culvert Component
- Culverts Minor (Pipes)
- Fences
- ITS Asset
- ITS Line
- ITS Point
- ITS Polygon
- Kerb and Channel
- Landscaping
- Lighting

Linemarking All

- Linemarking Lines and Polygons
- Linemarking Point
- Link Section

Mechanical and Electrical Assets

- Mechanical and Electrical Line
- Mechanical and Electrical Point
- Parking
- Pathways
- Pavement
- Pavement All
- Pavement Surfacing
- Pavement Surfacing All

Organise

Grahams Project gc 32 Start a new collection

Save Composite

- Bins
- Amenities
- Landscaping
- Pathways

Drag & Drop

Review the Extract you have generated!



Composite_Grahams_Project_v_20170330_155115 - Excel

Clark, Graham

	A	B	C	D	E	F
1	Class	Jurisdiction	Node Title	Name	Code	Definition
2	Project	Austroads	As Constructed Plan Number	As Constructed Plan Number	plan_no	As Constructed drawing plan number
3	Project	Austroads	Construction Organisation name	Construction Organisation name	const_co	Construction Company name only
4	Project	Austroads	Subdivision stage or project number	Subdivision stage or project number	stage_no	Subdivision or Project Stage Number. Field can be used for either a subdivision or capital works project.
5	Project	Austroads	Work type that created the asset	Work type that created the asset	works_type	The type of work that has created the asset.
6	Project	Austroads	Design Company name	Design Company name	design_co	Design Company name only
7	Project	Austroads	Permit number	Permit number	permit_no	For WA Consortium members, this refers to Western Australian Planning Commission reference number. Other jurisdictions to use local references as appropriate.
8	Project	Austroads	Project or contract Id that created the asset	Project or contract Id that created the asset	works_id	The project or contract Id that created the asset.
9	Project	Austroads	Subdivision or Project Name	Subdivision or Project Name	works_name	Subdivision or Project Name. Field can be used for either a subdivision or capital works project
10	Valuation	Austroads	Construction date	Construction date	const_date	Date the asset was constructed/built/ installed
11	Valuation	Austroads	Estimate currency	Estimate currency	currency	Currency used to estimate costs
12	Valuation	Austroads	Operation status	Operation status	status	Current operational state of the asset.
13	Valuation	Austroads	Replacement cost type	Replacement cost type	rc_type	
14	Valuation	Austroads	Unit cost	Unit cost	unit_cost	Cost per unit of the asset
15	Valuation	Austroads	Valuation year	Valuation year	value_year	The date the valuation was undertaken
16	Inventory	Austroads	exclusive flag	exclusive flag	exclusiveFlag	Set to yes if this is an exclusive list (i.e. if three location types are provided only one must be supplied of either type). Set to No this is an inclusive list and all types are mar
17	Inventory	Austroads	location type2	location type2	location type2	A category of types of Geospatial LOCATION that are (exclusively) required to locate this CLASS. For example, point, polygon or line.
18	Inventory	Austroads	Comments	Comments	comments	Any additional comments that relate to this asset
19	Inventory	Austroads	Contractor or suppliers Unique asset ID	Contractor or suppliers Unique asset ID	cont_id	The contractor or suppliers Unique ID for the asset
20	Inventory	Austroads	Data added date	Data added date	added_date	The date the data was added to the asset register
21	Inventory	Austroads	Data source	Data source	source	The name of the Quarry the aggregate used for chip sealing or asphalt mix was sourced from
22	Inventory	Austroads	Design life	Design life	des_life	Design life length in years for the surface
23	Inventory	Austroads	Owner of the asset	Owner of the asset	owner	The link section that defines the ownership location of a road
24	Inventory	Austroads	Person who added the data	Person who added the data	added_by	The person who added the data to the asset register
25	Inventory	Austroads	Photo reference	Photo reference	photo_ref	Reference photograph of asset.
26	Inventory	Austroads	Vesting date	Vesting date	vest_date	The date the asset was vested (ownership transfer) to the road agency
27	Inventory	Austroads	Vesting source	Vesting source	vest_source	The organisation gifting (vesting) the asset to the road agency
28	Inventory	Austroads	Work type that created the asset	Work type that created the asset	works_type	The type of work that has created the asset.
29	Inventory	Austroads	Unique asset identifier	Unique asset identifier	asset_id	The unique asset identifier
30	Bins	Austroads	Capacity	Capacity	capacity	Bin Capacity in Litres
31	Bins	Austroads	Use	Use	use	The intended use. Recycle, waste, glass only, green clippings etc
32	Bins	Austroads	Liner present	Liner present	liner	A bin liner is present
33	Bins	Austroads	Type	Type	type	The constructed type of vehicle crossing
34	Bins	Austroads	Manufacturer	Manufacturer	manufact	Manufacturer of the signal
35	Bins	Austroads	Material	Material	material	The finished surface material of the vehicle crossing
36	Bins	Austroads	Model number	Model number	model_no	Model number
37	Amenities	Austroads	Type	Type	type	The constructed type of vehicle crossing
38	Amenities	Austroads	Manufacturer	Manufacturer	manufact	Manufacturer of the signal
39	Amenities	Austroads	Material	Material	material	The finished surface material of the vehicle crossing

Moving to a Digital Ecosystem



Questions?



Dr Richard Yeo
Program Manager, Assets
Austroads



Dawn Inglis
Manager
Waikato Road Asset Technical Accord

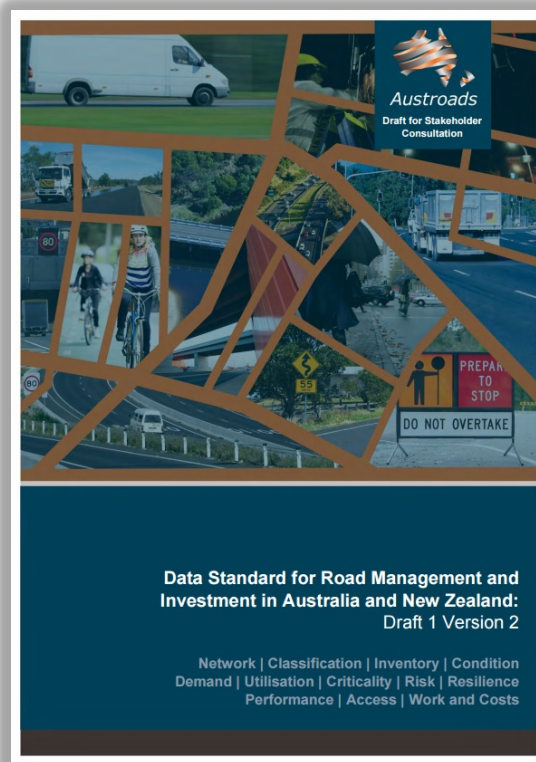


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Thank you



Report

<https://www.onlinepublications.austroads.com.au/items/BA2057-DRAFTV2>

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