

Auckland System Management

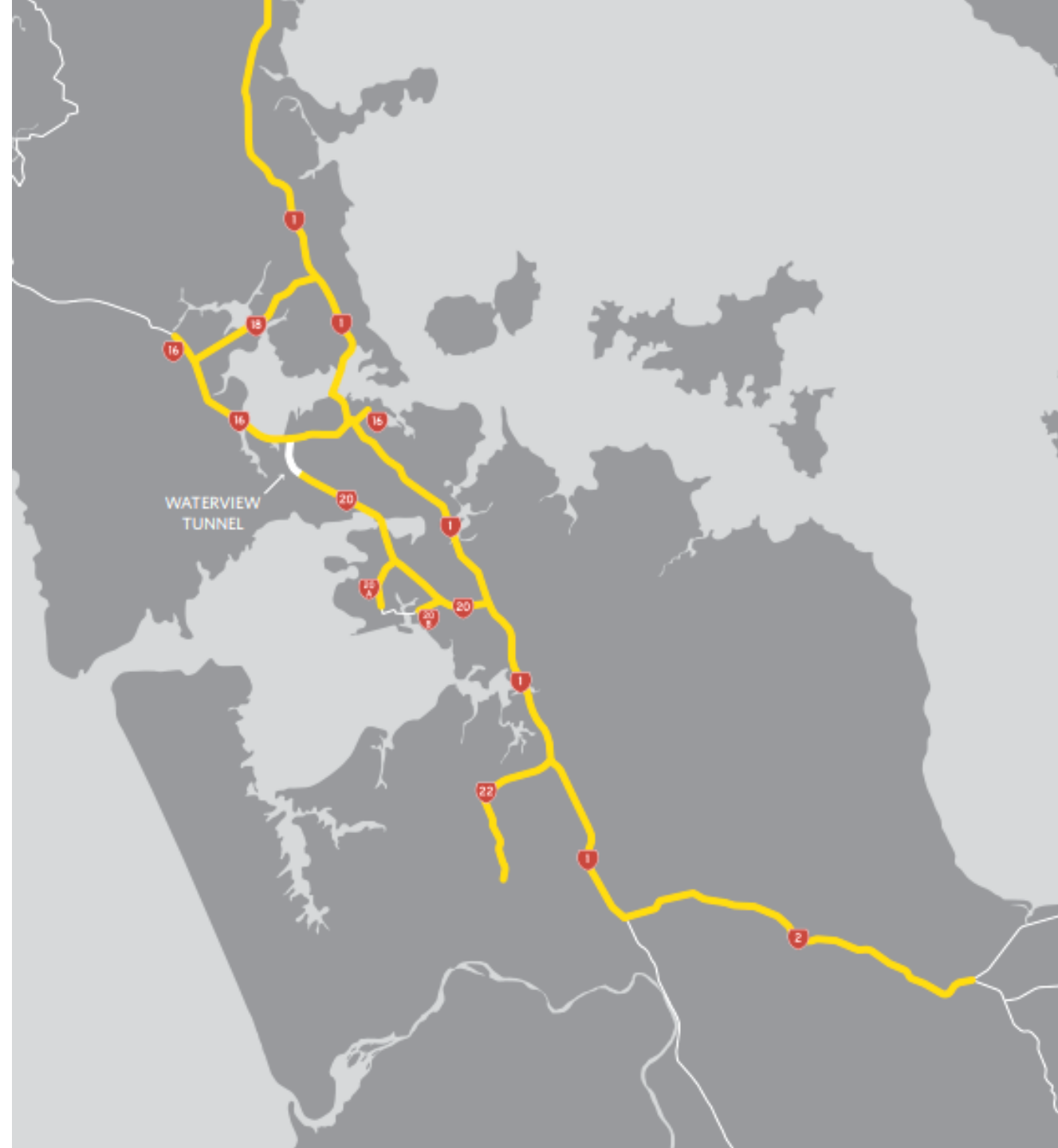
GHG Reporting, Experiences and Reflections

Auckland System Management (ASM)

Alliance Partners



Core Service Providers



ASM's GHG Inventory - What We Did



2019 – 2020

- Methodology
- Boundary
- Scopes & Sources

Where we started:

Alignment with Toitū te Taiao

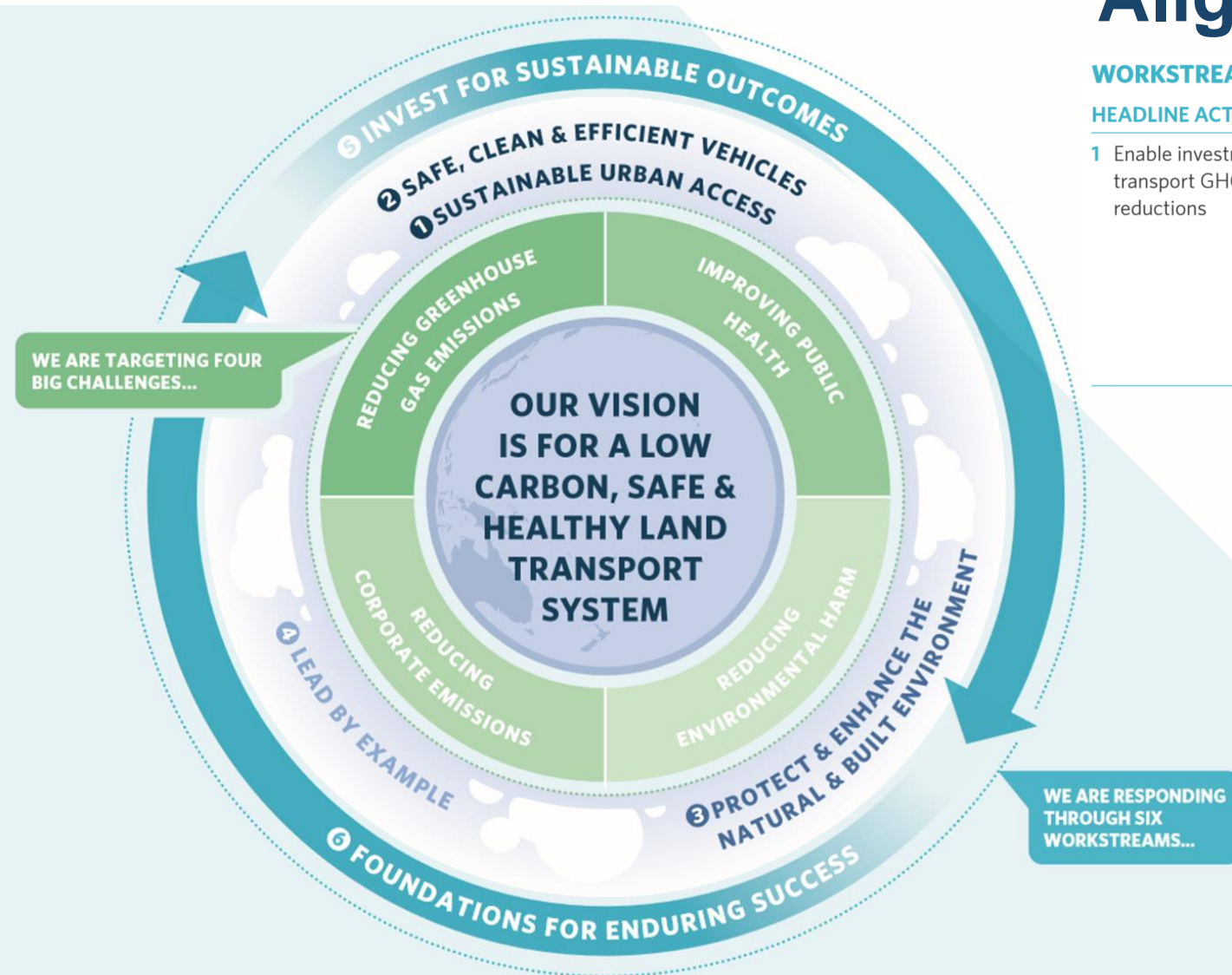
WORKSTREAM 5: INVEST FOR SUSTAINABLE OUTCOMES

HEADLINE ACTIONS

- 1 Enable investment for land transport GHG emission reductions

SUB-ACTIONS

- 1a Embed long term emission reductions objectives and emissions-based thinking into planning, investment and accountability instruments, including national and regional land transport programmes.
- 1b Design and implement a methodology to support GHG emission profiling and monitoring of national and regional land transport programmes; and significant infrastructure with an intergenerational life.
- 1c Work with central government partners to establish values for carbon aligned to international best practice to support assessment of carbon impacts.



Approach

International Standards for Corporate Carbon Accounting

- Greenhouse Gas Protocol – Corporate Accounting and Reporting Standard
- ISO 14064-1:2018

RELEVANCE

Ensure the GHG inventory appropriately reflects the GHG emissions of the company and serves the decision-making needs of users – both internal and external to the company.

COMPLETENESS

Account for and report on all GHG emission sources and activities within the chosen inventory boundary. Disclose and justify any specific exclusions.

CONSISTENCY

Use consistent methodologies to allow for meaningful comparisons of emissions over time. Transparently document any changes to the data, inventory boundary, methods, or any other relevant factors in the time series.

TRANSPARENCY

Address all relevant issues in a factual and coherent manner, based on a clear audit trail. Disclose any relevant assumptions and make appropriate references to the accounting and calculation methodologies and data sources used.

ACCURACY

Ensure that the quantification of GHG emissions is systematically neither over nor under actual emissions, as far as can be judged, and that uncertainties are reduced as far as practicable. Achieve sufficient accuracy to enable users to make decisions with reasonable assurance as to the integrity of the reported information.

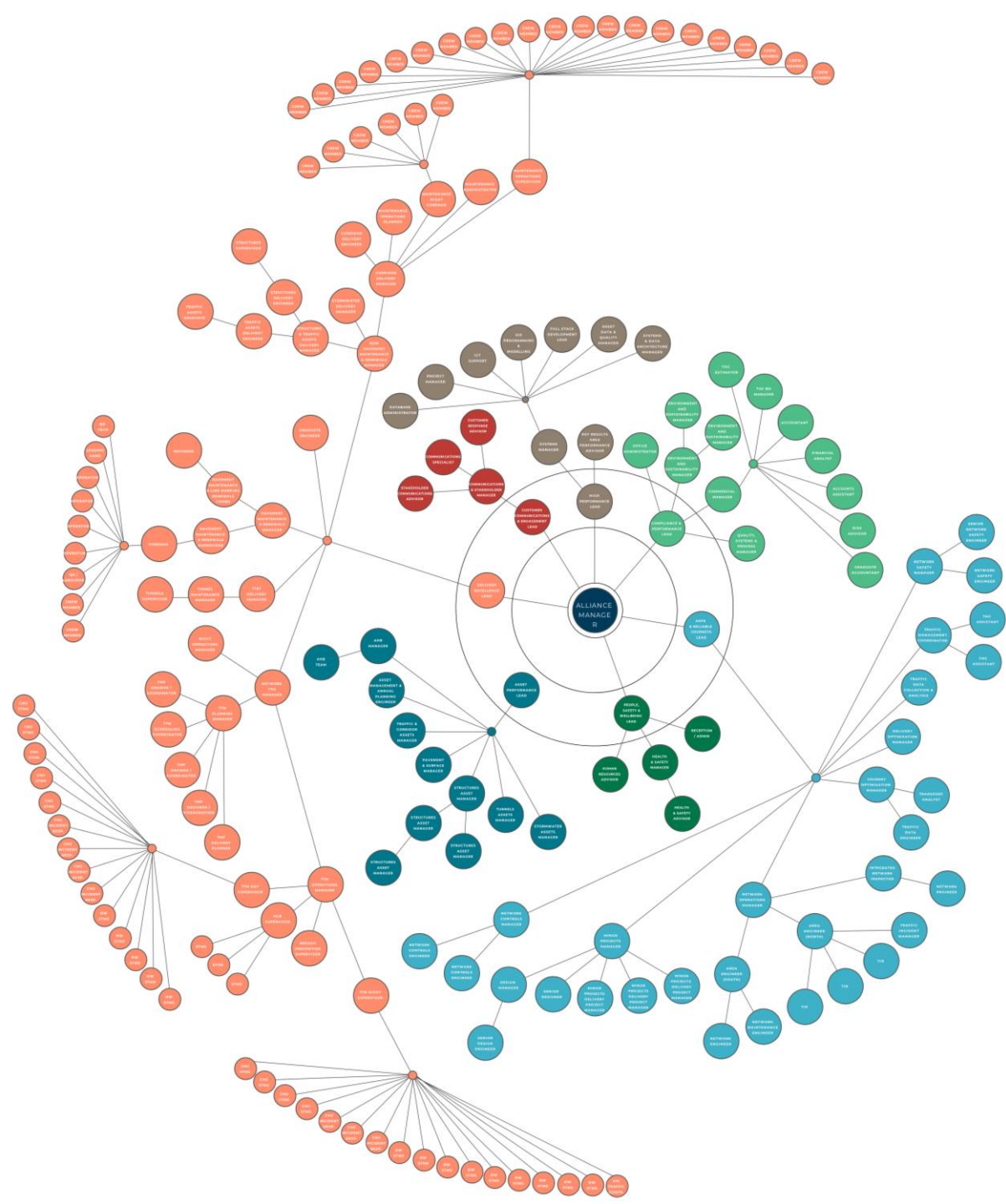
Inventory Boundary

Operational Boundary

- Operational Control Approach

Under the operational control approach, ASM accounted for 100% of emissions from operations over which we have operational control.

ACCOUNTING CATEGORY	FINANCIAL ACCOUNTING DEFINITION	ACCOUNTING FOR GHG EMISSIONS ACCORDING TO GHG PROTOCOL CORPORATE STANDARD	
		BASED ON EQUITY SHARE	BASED ON FINANCIAL CONTROL
Group companies / subsidiaries	The parent company has the ability to direct the financial and operating policies of the company with a view to gaining economic benefits from its activities. Normally, this category also includes incorporated and non-incorporated joint ventures and partnerships over which the parent company has financial control. Group companies/subsidiaries are fully consolidated, which implies that 100 percent of the subsidiary's income, expenses, assets, and liabilities are taken into the parent company's profit and loss account and balance sheet, respectively. Where the parent's interest does not equal 100 percent, the consolidated profit and loss account and balance sheet shows a deduction for the profits and net assets belonging to minority owners.	Equity share of GHG emissions	100% of GHG emissions



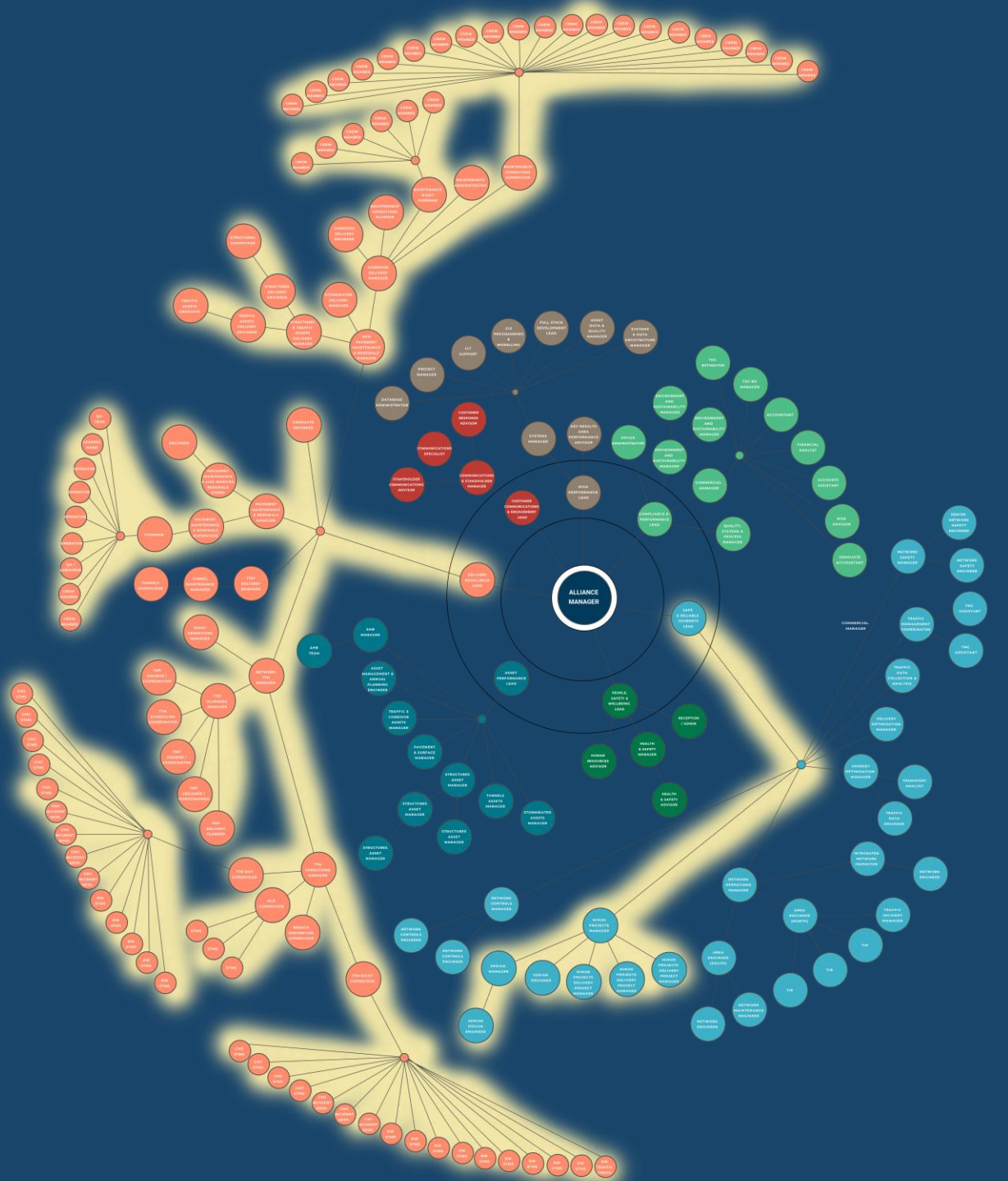
KEY

- HIGH
PERFORMANCE
- COMPLIANCE &
PERFORMANCE
- SAFE
& RELIABLE
JOURNEYS
- PEOPLE,
SAFETY &
WELLBEING
- ASSET
PERFORMANCE
- DELIVERY
EXCELLENCE
- CUSTOMER
COMMUNICATIONS
& ENGAGEMENT

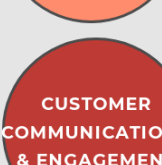
Scopes and Sources

Where do our emissions come from?

- Material?
- Influence?
- Currently measured?



KEY



Scopes and Sources

Workshops

- Material?
- Influence?
- Currently measured?

Source Inclusions and Exclusions

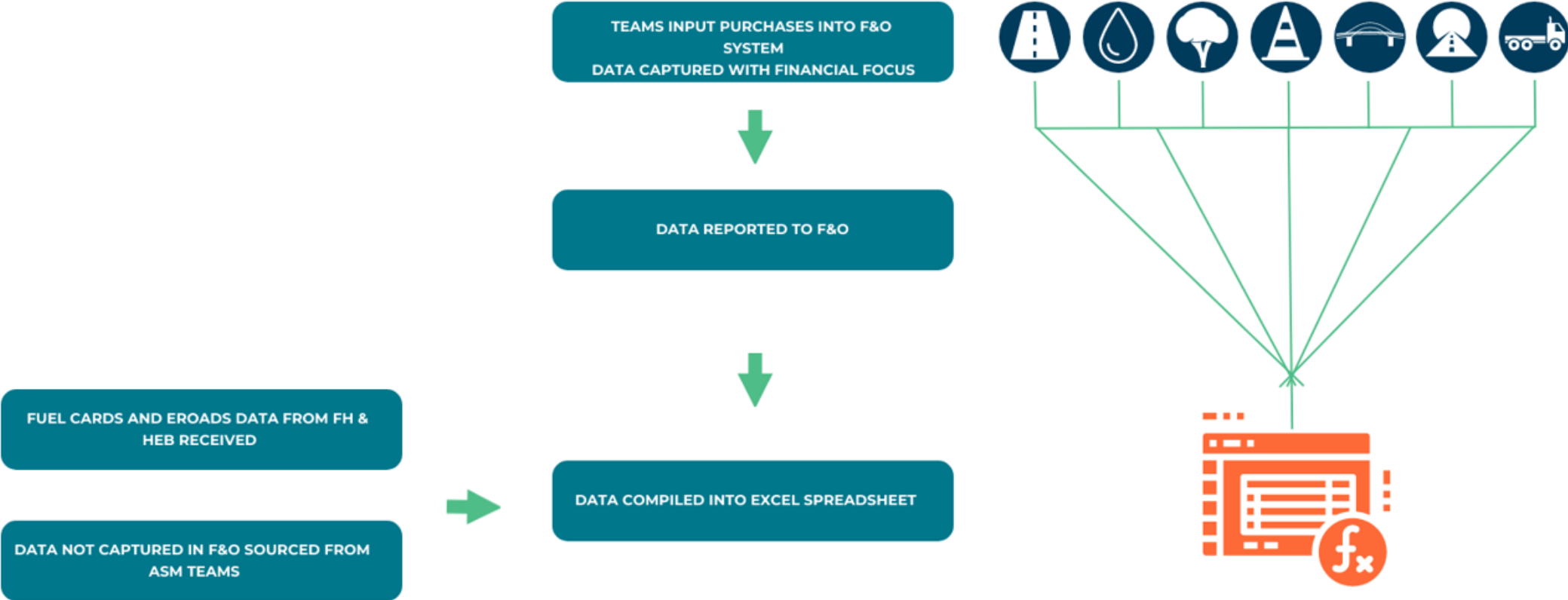
Source	Unit	Data Origin
Scope 1		
Fuel	L	Fuel cards and EROADS
Scope 2		
Electricity	kWh	F&O data collected from Genesis Energy invoices
Scope 3		
Employee Commuting	CO ₂ e/km	Employee Survey
Aggregates	t	F&O data and project drawings
Asphalt	t	F&O data
Aluminium	t	Structures and Traffic Assets Delivery team and project drawings
Steel	t	Structures and Traffic Assets Delivery team and project drawings
Concrete	t	Structures and Traffic Assets Delivery team and project drawings
PVC	t	F&O data
Waste	t	F&O data and various asset and delivery teams
Air Travel	CO ₂ e/km	FMC Travel Solutions Invoices

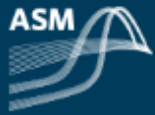
Table 2 Sources included in ASM's GHG Inventory

Exclusion	Reason
Scope 1	
Subcontractor fuel	Insufficient data available
Rental car fuel	Data not available
Professional services company vehicles	Data not available
Miscellaneous charges on fuel cards	Insufficient data available
Scope 2	
ASM office electricity	Data not available ¹
Scope 3	
Stormwater aggregates	Subcontractor data not available
EZ Street data used by the Corridor Delivery team	Insufficient data and de minimus (likely a small contributor)
Aluminium support channels and structures, extrusions, brackets, fittings, fixtures	De minimus (likely a small contributor)
Steel joints, fastenings etc.	De minimus (likely a small contributor)
Stormwater concrete	Subcontractor data not available
Stormwater PVC	Subcontractor data not available
Office waste	Data not available and de minimus (likely a small contributor) ²
Pond emissions	Data not available
Dry waste from septic tanks	Data not available

Table 1 – Sources excluded in the ASM GHG Inventory

Original Data Sourcing





tCO2e Emissions Dashboard: Overview

Filters

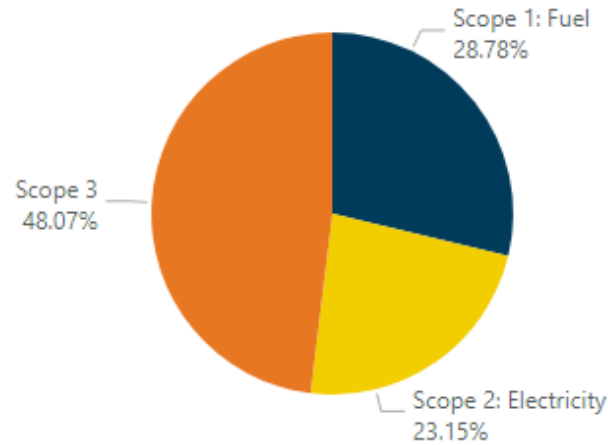
Scope

- Scope 1: Fuel
- Scope 2: Electricity
- Scope 3

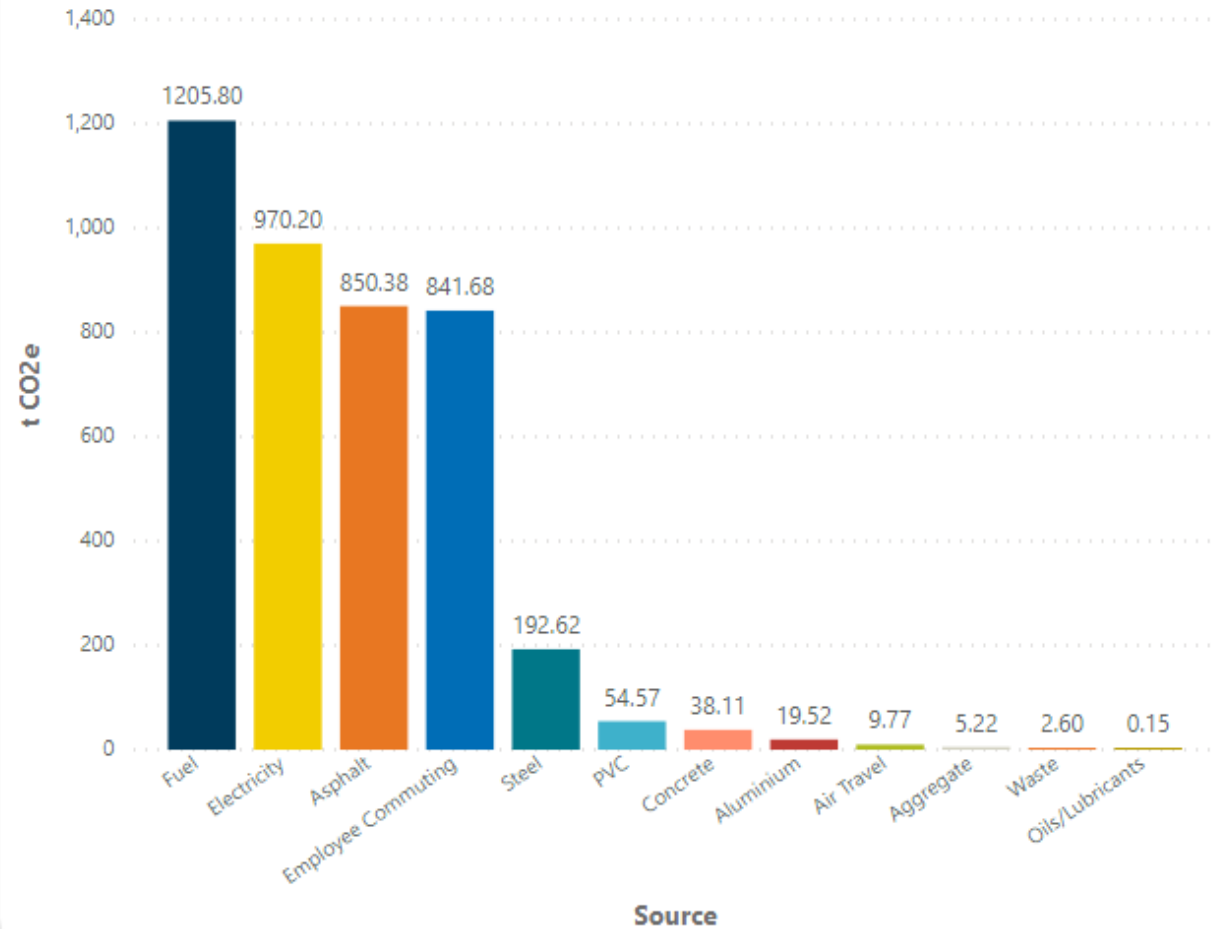
Source

- Aggregate
- Air Travel
- Aluminium
- Asphalt
- Concrete
- Electricity
- Employee Commuting
- Fuel
- Oils/Lubricants
- PVC
- Steel
- Waste

t CO2e by Scope



t CO2e by Source



Selected source(s) contributed:

4,190.62

t CO2e

100.00%

of total ASM emissions

4.19K

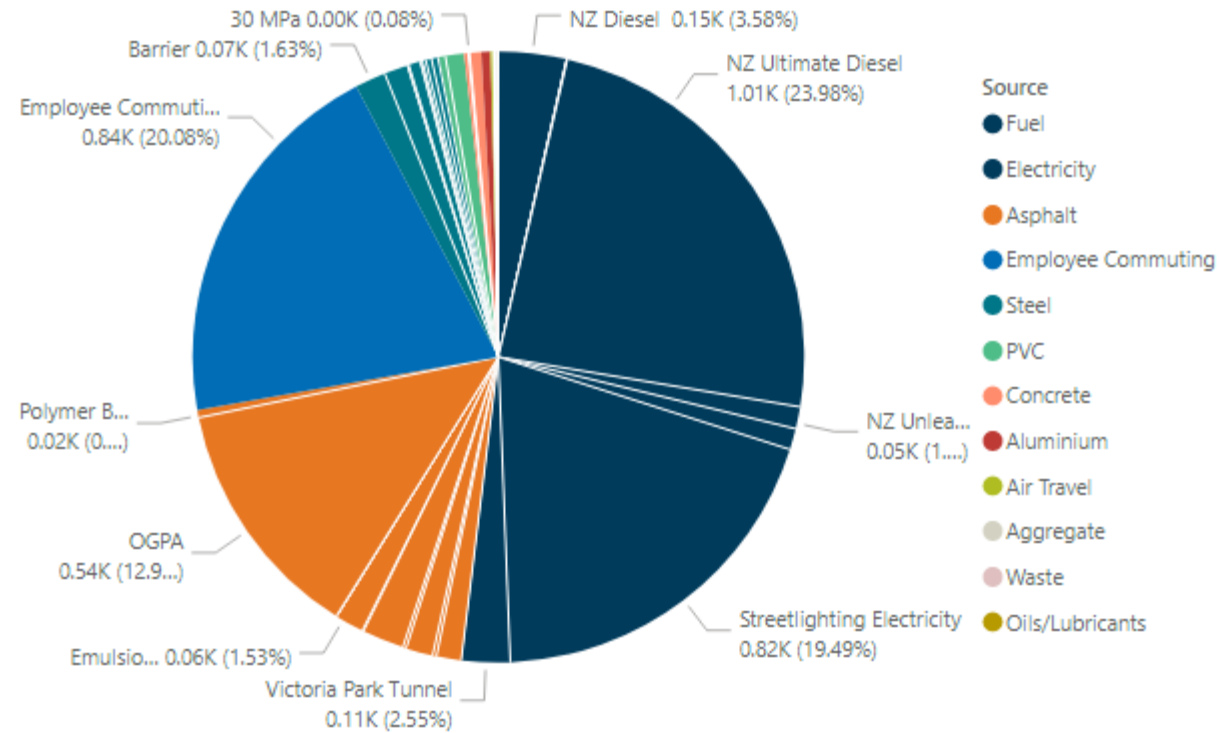
Total tCO2e

Next page: Sources and Types



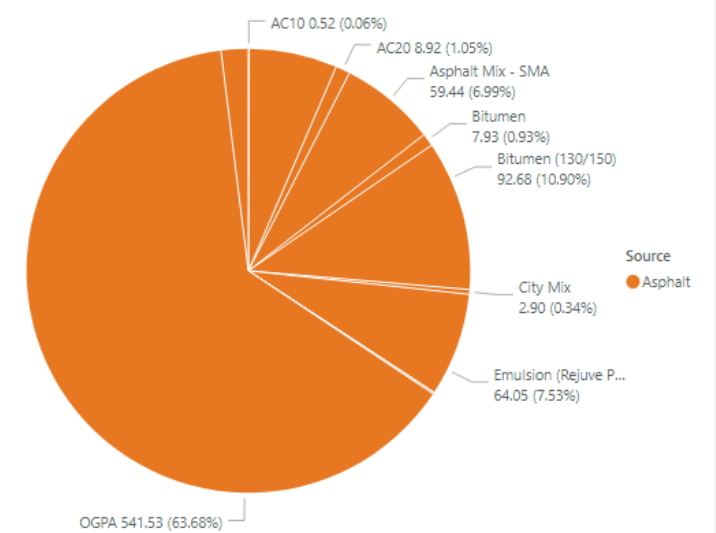
t CO2e by Source and Type

(All)



t CO2e by Source and Type

Asphalt



Challenges

2019 – 2020

- **Data Capture**
- **Data Format**
- **Data Quality**
- **Time & Resource**
- **Environmentally Driven**

2021 – 2022

- **Covid -19**
- **New network areas**

Improvements

2020-2021

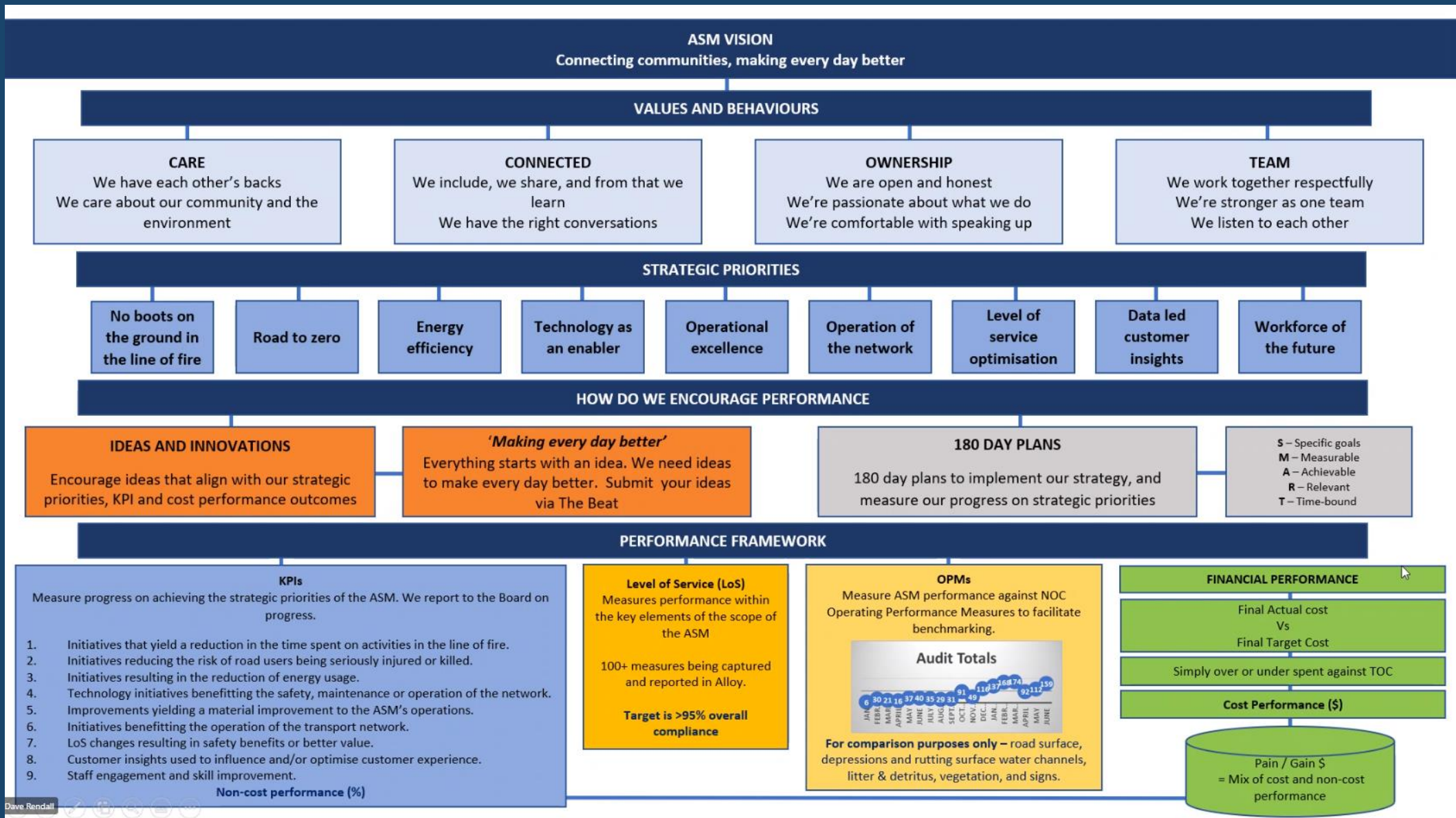
- **F&O Data Capture** – Working with the commercial team
- **Leadership driven**
- **Systems Improvement**

F&O Data Capture

- Extra detail capture in Vault including units for calculations

Product	Line number	Line date	Quantity	Unit	Line text
Asphalt Mix.	4.00		5.54	t	AA15 Hun
Asphalt Mix.	1.00		11.08	t	AA15 Hun
Asphalt Mix.	3.00		11.52	t	SMA11 STS 132
Asphalt Mix.	18.00		11.54	t	SMA11 STS 132
Asphalt Mix.	13.00		8.86	t	SMA8 NR STS 132
Asphalt Mix.	2.00		11.00	t	SMA8 NR Hun 132
Asphalt Mix.	42.00		10.04	t	SMA11 STS 132
Asphalt Mix.	3.00		11.08	t	SMA11 STS 132
Asphalt Mix.	3.00		10.32	t	SMA11 STS 132
Asphalt Mix.	1.00		7.26	t	Millings B
Asphalt Mix.	26.00		6.70	t	AC10 1
Asphalt Mix.	2.00		10.26	t	SMA11 STS 132
Asphalt Mix.	19.00		5.94	t	SMA11 Hun 132
City Mix	5.00		2.58	t	City Mix 7 15/07
City Mix	1.00		0.58	t	04/08 City Mix 7
City Mix	1.00		1.00	t	06/08 City Mix 7
City Mix	1.00		1.03	t	City Mix 7
City Mix	1.00		1.04	t	City Mix 7
City Mix	1.00		0.52	t	City Mix 7
City Mix	1.00		2.06	t	City Mix 7
City Mix	1.00		1.08	t	City Mix 7
City Mix	36.00		1.06	t	City Mix 7
City Mix	1.00		1.54	t	City Mix 7
City Mix	4.00		3.06	t	City Mix 7
City Mix	1.00		2.58	t	City Mix 7

Leadership Support & Prioritisation



Where ASM's heading

- Workshops – decarbonisation opportunities identification – *In progress*
- Integration of carbon assessments and decarbonisation opportunities in ASMs Integrated Asset Management Plan - *In progress*
- Improved reporting tools - *In progress*
- Emissions factors precalculated from assets and components - *In progress*
- Development of a REWMP – *Next TOC*
- GHG measuring and reporting integration with ASM Asset systems (Alloy) – *Long term*

Upload Emissions Data

Category	Source	Date	Unit of Measurement	Quantity	Emissions Factor	tCo2e	Notes
992							
993							
994							
995							
996							
997							
998							
999							
1000							

Q & A

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