

A Unified Auckland



*The challenge of developing
transport based Design
Standards for the Auckland
Region*

Chris Beasley
Principle Technical Specialist, PMO



An Auckland Council Organisation

Section 1

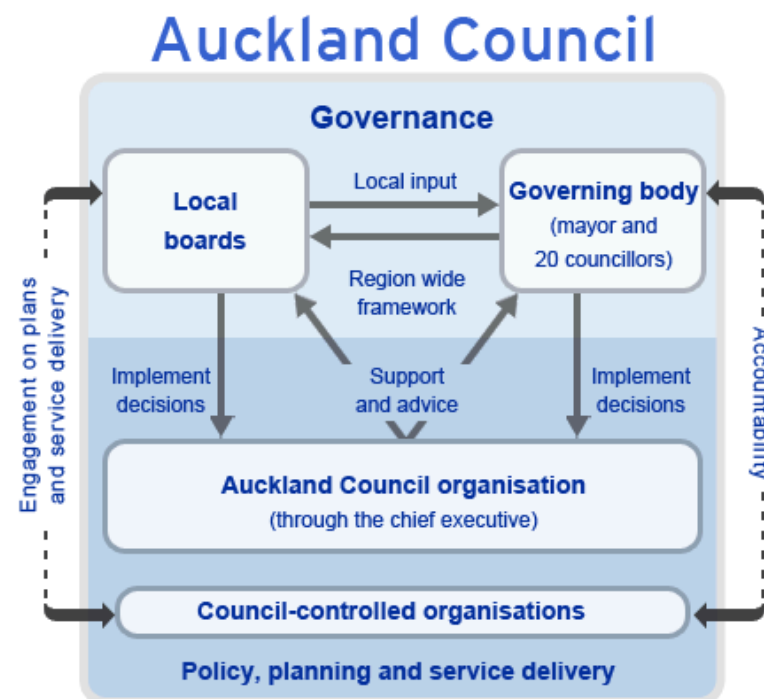
Recap on formation of Auckland Transport and the need for unified standards.

Amalgamation of the Councils and the role of Auckland Transport



The Auckland Council

- 7 Local Councils, 1 Regional Council became 1 Council.
- Reduction in CCOs



The Auckland Council CCOs

- Watercare Services Ltd
- ***Auckland Transport***
- Waterfront Auckland
- Auckland Tourism, Events and Economic Development
- Regional Facilities Auckland
- Auckland Council Properties Ltd
- Auckland Council Investments Ltd

Infrastructure ownership in Auckland

- Water and Waste water supply controlled by Watercare
- ***All Council road and transport infrastructure managed by Auckland Transport***
- The Auckland waterfront area development is managed by Waterfront Auckland
- Council manages everything else
- Council also manages property and buildings

The development of ATCoP



**AT inherited inconsistent
‘engineering infrastructure standards’ from the former
district legacy councils.**

**Using a conglomeration of different
standards could lead to...**



ATCoP attempted to introduce
consistent transport
infrastructure standards to all of
Auckland,
that also allows for innovation
and recognition of special
identity areas.

ATCoP supports Auckland Plan aspirations, aligns with the Unitary Plan and works alongside the Auckland Design Manual.

Design Guides & Infrastructure Standards

What are they for?

- Design, develop and implement the city's transport infrastructure.
- Developers building subdivisions and other transport assets

Legacy Design Standards

- Different approaches
- Monotonous
- Focused road design
- Lack of 'place function'
- No case studies

How the initial Code was developed

- Steering group
- Skeleton of document developed
- Internal workstreams

It all led to this....

ATCOP CONTENTS / CHAPTERS LIST

1. Introduction
2. Integrated Transport Planning
3. Innovation
4. Road Classification
5. Special Routes & Road Elements
6. Street Amenities
7. Road Layout & Geometric Design
8. Traffic Calming / LATM
9. Road Restraint Devices
10. Traffic Signs & Markings
11. Parking
12. Footpaths & Pedestrian Facilities
13. Cycle Infrastructure Design
14. Landscaping
15. Earthworks
16. Road Pavements & Surfacing
17. Road Drainage
18. Structures
19. Street Lighting
20. Public Transport – Buses
21. Public Transport – Rail
22. Public Transport – Wharves
23. Public Transport – Light Rail (F)
24. Vesting of Assets & Data
25. Maintenance
26. Corridor Access Management
27. Traffic Network Management
28. Abnormal Events (tsunamis) (F)
 - (F) = Future completion

Typical Chapter structure:

1. Asset Management Guidelines
2. Standards descriptive content
with photos, tables, diagrams
3. Standard Drawing Set





Street Lighting Guidelines

Asset Management and Systems





Approved Luminaires.

All new luminaires must be included on the Approved List of luminaires before they can be utilised on Auckland Transport network. The approval process is set out Appendix A for HID Luminaires and Appendix B for LED Luminaires.

18.2.8 Lighting Design

The lighting design shall comply with requirements set out in this Code of Practice and the current version of:-

- AS/NZS 1158.1.1 – For roads where the needs of vehicular traffic dominate (Category V) lighting.
- AS/NZS 1158.3.1 – For roads where the needs of pedestrian traffic dominate (Category P) lighting.
- AS 4282 – For control of the obtrusive effects of lighting.

18.5 Luminaire Spacing and Column Height

The lighting design shall maximise the spacing between luminaire positions optimising the mounting height, luminaire type and lamp output.

18.2.9 Spill Lighting and Glare Control (Obtrusive light)

The lighting design shall minimise the impact on the neighbouring properties and environment with regard to glare and spill light.

Requirements aimed at minimizing the obtrusive effects of Public Lighting are addressed in the current version of AS/NZS 1158 Lighting for Roads and Public Spaces covering Vehicular Traffic (Category V) and Pedestrian Area (Category P) Lighting.

Further guidance is provided in AS 4282 – Control of the obtrusive effects of lighting.

In addition the following criteria shall apply;

1. The maximum tilt for a luminaire shall be 5 degrees from the horizontal, tilts up to 10 degrees from the horizontal may be used in exceptional cases.
2. The Threshold Increment (TI) along the road shall be no greater than 10% with the pedestrian traffic lights included in the calculation as well as the adjacent street lights.

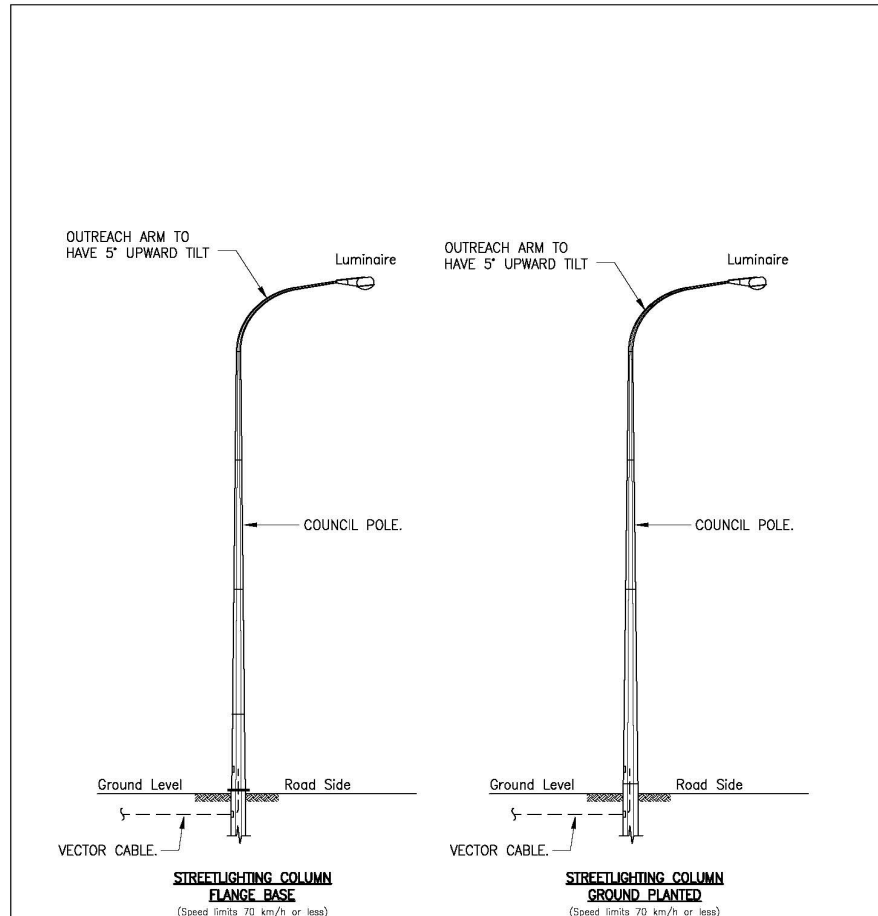
Note: External screens are not to be used.

18.6 Rural Areas

Road lighting in Rural Areas is addressed in AS/NZS 1158. Since the ambient light and sky glow in Rural Areas is significantly less than that in built-up areas, the impact of obtrusive light is much more pronounced.

DRAWING SET INDEX

PLAN No.	TITLE	VERSION
SL001	STREET LIGHTING – DEMARCATION POINT	1.0
SL002	TYPICAL SHEAR BASE DETAIL (EXPLODED VIEW) SPEED LIMIT GREATER THAN 70km/hr	1.0
SL003	STREET LIGHTING – EARTHING DETAIL	1.0
SL004	STREET LIGHTING – ELECTRICAL CONNECTIONS	1.0
SL005	TRAFFIC SIGNAL/STREET LIGHT COMBINATION ELECTRICAL SCHEMATIC	1.0
SL006	STREET LIGHTING PEDESTRIAN CROSSING POLE	1.0



REVISION	BY	DATE	 	AUCKLAND TRANSPORT CODE OF PRACTICE	SCALE
					N.T.S.
					DRAWING No.
					SL001
					VERSION
			TITLE	STREET LIGHTING DEMARCATION POINT	

Key changes from legacy codes.



New chapters and a new approach

- New chapters that had not been covered before
- A new approach in how to specify the correct infrastructure requirements for your project.
 - Flexibility of approach
 - Limited prescriptive details.
 - Basic standard details
- relatively unchanged technical details from the previous code of practices.
- Big changes are contained in the way we build up the design from the foundations.

New guidance topics

- Integrated Transport Planning
- Innovation
- Street Amenities
- Road Layout and Geometric Design
- Footpaths & Pedestrian Facilities
- Cycle Infrastructure Design
- Structures
- Abnormal Events (future chapter)

Section 2: The Auckland Transport Design Manual

The move from ATCoP to the TDM

What is the 'TDM'

- Short for 'Transport Design Manual'.
- Integration with the Auckland Design Manual (ADM)
- Replacement to the current ATCoP draft.
- easier to read and understand.
- Spatial & technical guidance split

Industry Feedback & Lessons Learned

- Generally positive
- Some sections missed the point and didn't align with the general goal
- Missed opportunity for a 'World Class' document

Why did we look to restart the process?

- Wasn't functioning well.
- Confusing to use.
- Disjointed.
- Written by committee.

What is it that we're trying to achieve?

- Clarity
- Consistency
- Opportunities for design innovation
- Principle based design guidance
- Freedom to approach design based on location context

TDM Content

Foreword

Series 1: Strategies, Processes & General Guidelines

- Introduction
- Innovation & ATPAR
- Utilities & the Utilities Act
- Subdivision & Private Developments
- Design Process & Departures
- Corridor Access
- Vesting of Assets & Asset Data

Series 2: Roads & Streets Design Guide

Volume 1: Design Framework

- Introduction
- Design Outcomes/Principles/links to the Auckland Plan/SOI.
- Network Design & Classifications
- Network Mapping
- Design Process

Volume 2: Typologies

- Main Street
- High Street
- Home Zone
- Shared Space
- etc.

Volume 3: 'Spatial Design Guide' - Metro/CBD

Volume 4: 'Spatial Design Guide' - Urban

Volume 5: 'Spatial Design Guide' - Heritage

Volume 6: 'Spatial Design Guide' - Rural (inc. Towns/Villages)

Volume 7: 'Spatial Design Guide' - Coastal Settlements

Volume 8: 'Spatial Design Guide' - Waitakere Ranges Heritage Area

Volume 9: 'Spatial Design Guide' - Hauraki Gulf Islands

Series 3 & 4: Design Standards & Drawings

- Roads: Urban and Rural Design
- Intersection Design & Signal Control
- LATM
- Roadside Restraint Devices
- Traffic Signs & Road Markings
- Parking
- Street Furniture
- Footpaths & pedestrian facilities
- Cycling Infrastructure Design
- Earthworks & Geotechnical Engineering
- Road Surfacing & Pavement Design
- Road Drainage & Surface Water Control
- Structures
- Street Lighting
- Public Transport – Bus Infrastructure
- Public Transport – Rail Infrastructure

Public Transport – Harbour Transport Infrastructure

- Public Transport – Light Rail Infrastructure
- Topographical Surveys & Electronic Drawings
- Transport & Traffic Modelling
- Designing for Abnormal Events (think Christchurch rebuild)

Series 5: Case Studies

- Best examples
- Poor examples
- Worked examples

Volume 6: Specification for Infrastructure Works

- Similar to Specification for Highway Works (UK).
- Will link with cross council methods of measurements (CESMM 4)

Why this structure?

- Roads are predominately defined as movement tools
- Streets are predominately used for living, work and play
- Disconnect in design of places for people vs. movement
- Lower order roads have a different design philosophy to collectors and arterials
- Lack of suitable guidance for urban road and street design
- National adopted guidance is based on rural link road design principles

What is driving this change of focus?

- Greater desire for amenity in the environment
- View that roads and streets are 'Public Open Spaces'
- Context is becoming more important
- Local design issues need a localised and understood design response

Outcomes we are seeking from the TDM

- Step change in design
- Sympathetic land use contexts
- Streets are a vital
- Efficiency
- Mode balancing

Section 3

Issues being faced in developing the guides and rules

Dealing with Auckland Council

- Unification not universal
- Trust
- Loss of authority
- Political pressures
- Diverging strategies
- Housing Project Office (SHAs)

The RMA and consenting authorities

- Not appropriate for CCO based Transport Agencies
- Auckland Transport is only s274 party as NOT considered part of Council
- Over-ruling of desires by Regulatory Authority

Auckland Transport

- Strategies currently do not support the content
- TDM is forcing changes in how we handle land use planning and network planning.
- Still not being used across the business
- Extensive training necessary
- Budgets to deliver comprehensive design guidance

Funding

Capital

- Limited funding to revisit existing roads and change them in to streets as necessary.
- Only major routes get funding to consider the entire corridor
- Minor works programmes can only build small works

Renewals & Maintenance

- Like for like replacement
- Have to combine with capital to achieve transformational change.
- Not enough budget to maintain the new assets required for the city to function

Asset Maintenance

- Consequential cost of designs
- Careful around innovation
- Trial to permanent
- Unproven products
- Unproven designs

Section 4

The 'Future'

Integration with Auckland Council

- Merging with ADM, Watercare and AC Engineering services
- Customer focus through single website
- Common specifications and product approval
- Joint research
- Joint methods of measurement for construction works

Evolution of technical content

- Refine Roads section
- Comprehensive Auckland derived intersection guidance
- Further work on consequential opex rules
- Inclusion of Water Sensitive Design toolkit

Continuous updates

- Bi-annual
- By special request
- Emergency changes
- Must always evolve

Research & Global Best Practice

- Investigate Auckland specific transport issues
- Evolve design guidance to reduce reliance on overseas manuals
- Monitor what is being done internationally
- Join global groups (e.g. NACTO)

Thank you.



Questions?

