

Total Quality Management for cycling

Purpose

This note will assist local governments to progress towards Total Quality Management (TQM) for cycling against a series of milestones to measure continuous improvement. It is recommended that the local government review their position on each of the tables, set a desired target and review progress towards this target annually.

Introduction

The planning, design, construction and maintenance of cycling facilities require coordination among several areas of local government. The following scorecards are designed to assist in determining the levels of effort required by each part of the organisation to achieve the best possible outcomes for improved safety and increased participation in cycling.

Total Quality Management

Many local governments have invested time and money into complying with AS9000 and AS9001 for the delivery of high quality services to their customers. While these quality processes can improve some aspects of service delivery, TQM can be implemented to bring all facets of planning, design, construction and maintenance of bicycle facilities up to a high standard.

Within TQM the scope of quality has been extended to include the rate at which an organisation can improve the quality of all its activities, including overall business performance. The pace of technological change and competitive pressures have increased to the point where business practices must adapt to accommodate such rapid changes.

By adopting TQM principles for the provision of bicycle facilities, services can be provided or improved in a consistent and appropriate way. With this approach, requests for new services can be handled transparently, with priority given where it is needed.

Responsibility for bicycle facility planning and development lies within a number of areas of a local government, including but not limited to the following: engineering (planning and design), works, social/community planning, sport and recreation, town/urban planning, media/public relations (as required), tourism (in some areas), safety and environment.

State government legislation and policy requires cycling to be viewed on a more equal footing with other transport modes (See Note A2). It is important that local governments address cycling needs in an appropriate way. This note will assist local governments to progress from an ad-hoc approach to a TQM approach to cycling issues. This progress is shown in the following diagram:

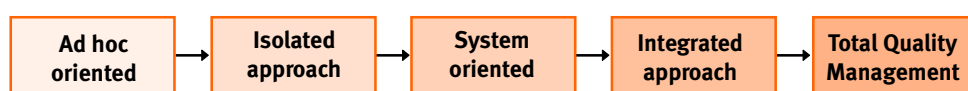


Figure 1
Progressive integration of cycling needs into local government activities

Aim

This series of notes is designed to assist planners and engineers to provide for cycling in their local area.

The Cycle Notes should be read in conjunction with:

- Guide to Traffic Engineering Practice, Part 14 - Bicycles (Austroads, 1999), and
- Queensland Manual of Uniform Traffic Control Devices, Part 9 Bicycle Facilities.

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Total Quality Management for cycling

Scorecards

How to use the scorecards

The needs of bike riders can be met more effectively and economically when an integrated approach is adopted. It is recommended that local governments examine progress towards their ideal position annually using the scorecards on the following pages. These scorecards can help manage and monitor that process. This process also lends itself to comparison among local governments.

Steps to filling in the scorecards

- Indicate the level of progress to date by marking the current position on each scorecard (0-10).
- Indicate the levels of achievement required on an annual basis and the ultimate goal on each scorecard.
- Assign a date and position responsible for achieving each milestone.

After the scorecards have been filled out, information from each individual scorecard can be transposed onto a summary table. This will give an immediate snapshot of the entire process (see Table 1).

NOTE:

Local governments that manage large cities or regional centres will need to provide a higher level of integration due to population density, general traffic management concerns and the need to encourage cycling to deal with pollution and congestion problems. These local governments would be aiming for 10 out of 10 in many of the scorecards. Smaller governments with lower populations and wide quiet streets will not need to aim so high or may work collaboratively with neighbouring local governments to achieve total quality management across a region.

Table 1:
Summary table (sample only)

| | | | | | | | | | | | |
|----|----------------------|---------------------------------|-------------------|-----------------------|-----------------------|---------------------------------------|-------------------------------|---------------------------------------|---------------------------------------|------------------------------------|-------------------------|
| 10 | | Ultimate goal | Ultimate goal | | | | | | | | Ultimate goal |
| 9 | Ultimate goal | | | | | | Ultimate goal | | | | |
| 8 | Year 5 | Year 5 | Year 5 | Ultimate goal | | Ultimate goal | | Ultimate goal | | Ultimate goal | Year 5 |
| 7 | | | | | Ultimate goal | Year 5 | Year 5 | Year 5 | Ultimate goal | Year 5 | |
| 6 | | | | Year 5 | Year 5 | | | Year 1 | Year 5 | | |
| 5 | | Year 1 | Year 1 | Year 1 | | Year 1 | Year 1 | Current position | Year 1 | | Year 1 |
| 4 | Year 1 | | | | | Current position | Current position | | Current position | Year 1 | Current position |
| 3 | | Current position | | Current position | Year 1 | | | | | Current position | |
| 2 | Current position | | Current position | | Current position | | | | | | |
| 1 | | | | | | | | | | | |
| | Local Cycle Strategy | Local Area Bicycle Network Plan | Local BAC and BUG | Transport integration | Technical integration | Mechanisms for appropriate treatments | Design guidelines/ references | Expertise to incorporate cycle design | Construction standards and procedures | Maintenance, inspection and repair | Budget/funding/staffing |

Planning and ongoing development

| 1. Local cycle strategy | | Current position | Desired position | By when | By whom |
|-------------------------|--|------------------|------------------|---------|---------|
| 0 | No strategy | | | | |
| 1 | Need for strategy identified | | | | |
| 2 | Initial research prepared | | | | |
| 3 | Stakeholders identified | | | | |
| 4 | First draft prepared by staff/consultant | | | | |
| 5 | Reviewed by stakeholders | | | | |
| 6 | Final strategy accepted by BAC (or appropriate committee of Council) | | | | |
| 7 | Strategy passed by council and distributed to all key stakeholders | | | | |
| 8 | Strategy published and available to the public | | | | |
| 9 | Strategy annually reviewed | | | | |
| 10 | Strategy integrated into local government's corporate documents (eg. Planning Scheme, Corporate Plan, Integrated Local Transport Plan) and being implemented | | | | |

A Local Cycling Strategy sets targets for increasing cycling and identifies actions that can help to achieve these targets.

| 2. Local Area Bicycle Network Plan | | Current position | Desired position | By when | By whom |
|------------------------------------|---|------------------|------------------|---------|---------|
| 0 | No local area network plan | | | | |
| 1 | Need for a plan identified | | | | |
| 2 | Process established for the development of the plan | | | | |
| 3 | Existing facilities identified and mapped | | | | |
| 4 | Areas likely to be trip generators identified | | | | |
| 5 | User groups identified and contacted for input | | | | |
| 6 | Plan developed based on existing and future needs of bicycle users | | | | |
| 7 | Plan distributed internally and externally for comment | | | | |
| 8 | Plan integrated into annual construction/capital works programme | | | | |
| 9 | Plan available on GIS and in hard copy and available at council offices | | | | |
| 10 | Plan linked into cycle strategy | | | | |

The Local Area Bicycle Network Plan is one element of the Local Cycle Strategy and focuses on infrastructure requirements to support cycling. Often a local government will generate a network plan before establishing a cycle strategy. It is through establishing and integrating both of these documents that the local government can move towards Total Quality Management for cycling.

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| 3. Local Bicycle Advisory Committee (BAC) and Bicycle User Group (BUG) | | Current position | Desired position | By when | By whom |
|--|--|------------------|------------------|---------|---------|
| 0 | No local BAC or BUG | | | | |
| 1 | Need for BAC recognised | | | | |
| 2 | Local BUG development encouraged | | | | |
| 3 | Terms of Reference for BAC developed | | | | |
| 4 | Internal resources required to support BAC identified and funded | | | | |
| 5 | Members of BAC identified and invited based on initial terms of reference and Secretariat established | | | | |
| 6 | BAC established with clear reporting lines through the committee structure of Council | | | | |
| 7 | BAC meets regularly for development and implementation of Local Cycle Strategy and Local Area Bicycle Network Plan | | | | |
| 8 | BAC linked with BUG, community groups and other interested parties | | | | |
| 9 | BAC membership reviewed and changed to reflect progress in plan implementation | | | | |
| 10 | BAC integrated into procedures for consideration of general transport policy | | | | |

When planning for and implementing cycling facilities, a local government can improve the end product by establishing formal channels for consultative decision-making. This generally requires the council to commit staff and funding to the process and establish a Bicycle Advisory Committee (BAC) that includes representation from the local BUG. Its development and integration into the decision making process is shown in this scorecard.

| 4. Integration with transport and land use planning | | Current position | Desired position | By when | By whom |
|---|--|------------------|------------------|---------|---------|
| 0 | Cycling not acknowledged in integrated planning for transport or land use | | | | |
| 1 | Cycling issues addressed on an as-needed basis only | | | | |
| 2 | Local government staff are aware of relevant state and national cycling policies, legislation and guidelines | | | | |
| 3 | Existing council policy and by-laws reviewed to identify where cycling requirements need to be incorporated | | | | |
| 4 | All staff connected with cycling planning and design are fully versed on their responsibilities in relation to the Transport Planning and Coordination Act, Transport Infrastructure Act and Integrated Planning Act | | | | |
| 5 | Specific policies and by-laws developed and adopted to deal with issues particular to cycling. For example, the management of users of shared bicycle/pedestrian facilities | | | | |
| 6 | Integrated Local Transport Plan developed or reviewed to address the needs identified in the Local (or Regional) Cycle Strategy | | | | |
| 7 | Policies developed to incorporate cycling needs into the planning, design and construction of roads and major transport projects | | | | |
| 8 | Local government has developed IPA-based planning schemes which incorporate cycling needs | | | | |
| 9 | Infrastructure Charges Plan developed under the IPA includes provisions for cycling facilities | | | | |
| 10 | All integrated plans reviewed annually and include provisions for cycling facilities | | | | |

Under the Integrated Planning Act 1997, development assessors are required to ensure the effective and efficient integration of transport infrastructure into existing and future development, including cycling on road systems, and public transport networks within a local government area.

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| 5. Integration with technical design, construction and maintenance | | Current position | Desired position | By when | By whom |
|--|--|------------------|------------------|---------|---------|
| 0 | Cycling facilities are not included in standard council road infrastructure drawings | | | | |
| 1 | Site specific "one-off" cycle facility work has been designed or constructed | | | | |
| 2 | Design standards adopted from Main Roads and/or Austroads Part 14 and/or MUTCD | | | | |
| 3 | Maintenance contracts include specific requirements for maintaining cycling facility levels of service (including on-road facilities) | | | | |
| 4 | Construction standards specified and adopted for cycling facilities based on Austroads Part 14 and other standards | | | | |
| 5 | Maintenance inspections of roads include cycling criteria when assessing surface conditions and rideability | | | | |
| 6 | Design drawings developed or adopted to standardise cycling facilities throughout local government area | | | | |
| 7 | All private works, recreational and commercial within the local government's jurisdiction are assessed for compliance with cycling facility design standards | | | | |
| 8 | All aspects of construction work incorporate the needs of people cycling, including provision at construction sites | | | | |
| 9 | Design standards allow for flexible use of facilities to encourage alternative travel modes | | | | |
| 10 | All design, construction and maintenance work is done with full consideration of cycling needs along with all road user needs | | | | |

Sound design standards, construction techniques and maintenance regimes are vital to the development of local government's entire infrastructure. An integrated approach to these three elements will provide greater efficiency and economy when the needs of bike riders are to be considered.

Design

| 6. Mechanisms for determining most appropriate treatments for specific sites | | Current position | Desired position | By when | By whom |
|--|--|------------------|------------------|---------|---------|
| 0 | No perceived need for cycling treatments | | | | |
| 1 | Cycling treatments done based on local government perception of needs | | | | |
| 2 | Treatments done as requested by user(s) | | | | |
| 3 | Requests for treatments recorded in database | | | | |
| 4 | Mechanism in place for selection of one treatment over another based on annual budget and engineering judgement | | | | |
| 5 | Use of existing cycling facilities regularly monitored | | | | |
| 6 | Liaise with stakeholders through BAC and BUG to determine preferred cycling facilities | | | | |
| 7 | Documentation developed to standardise facility types for various on- and off-road applications | | | | |
| 8 | Requests for cycling treatments assessed through standardised approach | | | | |
| 9 | Bicycle traffic counts and other assessments undertaken to monitor use of facilities | | | | |
| 10 | Ongoing community liaison and monitoring of facility use to ensure strategic cycle plan is in keeping with community needs | | | | |

The selection of the most appropriate facilities for bike riders is based on an understanding of the different types of users, the location of the primary cycling network and the types of facilities possible based on funding available. The Local Cycle Strategy and Local Area Bicycle Network Plan provide the strategic focus for this.

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| 7. Appropriate design guidelines/references | | Current position | Desired position | By when | By whom |
|---|---|------------------|------------------|---------|---------|
| 0 | No bicycle facility design guide used by the local government | | | | |
| 1 | Ad hoc design performed in-house or by consultants | | | | |
| 2 | All bicycle facility design references are held by consultants | | | | |
| 3 | Queensland Streets predominantly used | | | | |
| 4 | Main Roads Road Design Manual and MUTCD primary design resources | | | | |
| 5 | Austrroads Part 14 used as key design reference | | | | |
| 6 | Austrroads Part 14 principles incorporated into local government's design manuals and policy | | | | |
| 7 | Designs developed to correspond to the preferred treatments for each on- and off- road application | | | | |
| 8 | Key standard drawings adopted and utilised for generic on- and off-road cycling facilities | | | | |
| 9 | Standard drawings modified to correspond with the changing requirements of the community | | | | |
| 10 | All the local government's standard design drawings for roads contain a reference to cycling requirements | | | | |

The three key references for the design of bicycle facilities are the *Guide to Traffic Engineering Practice: Part 14 - Bicycles* (1999) produced by Austrroads (this document supersedes the 1993 version); *Queensland Manual of Uniform Traffic Control Devices: Part 9 - Bicycle Facilities* and *Australian Standard AS2890.3: Manual of Parking Facilities Part 3 - Bicycle Parking Facilities*.

| 8. Expertise, processes and mechanisms to incorporate cycle design within all transport and recreational design | | Current position | Desired position | By when | By whom |
|---|--|------------------|------------------|---------|---------|
| 0 | No in-house expertise or other advice available for planning or design of cycling facilities or programmes | | | | |
| 1 | Staff call on key state government departments and/or consultants to obtain knowledge and support for specific issues | | | | |
| 2 | Staff have a close formal agreement with the appropriate state government departments for advice and support | | | | |
| 3 | Staff are trained in the planning and design of cycling facilities or programs as appropriate | | | | |
| 4 | Staff in the planning area are fully versed on the IPA requirements for cycling | | | | |
| 5 | All staff understand legislative responsibilities for the provision of cycling facilities | | | | |
| 6 | Strong links established among key engineering, planning and recreation staff responsible for cycling | | | | |
| 7 | Recreational campaigns to promote cycling developed and key cycling promotional campaigns identified and carried out regularly | | | | |
| 8 | All relevant staff are involved in the annual review of the cycle strategy and the budget development process | | | | |
| 9 | Processes in place through BAC for the feedback into the skills, knowledge and expertise of staff | | | | |
| 10 | Regular training for all staff involved in planning for and provision of cycling facilities | | | | |

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Construction

| 9. Construction standards and procedures | | Current position | Desired position | By when | By whom |
|--|--|------------------|------------------|---------|---------|
| 0 | No manual of procedures for construction of bicycle facilities exists | | | | |
| 1 | Construction standards for general traffic exist but have not been modified to suit the needs of bicycle riders | | | | |
| 2 | Staff are aware of the need to provide cycling facilities that are of a particular standard, different to the requirements of motorised vehicles | | | | |
| 3 | The local government has investigated signing, surfacing and space requirements for people cycling at road works | | | | |
| 4 | Construction works undertaken in accordance with Qld MUTCD - Part 3: Traffic Control Devices for Works on Roads and any relevant local codes and regulations | | | | |
| 5 | Procedures in place to identify sites where consideration for cycling must be given as a priority | | | | |
| 6 | Detours provided at construction sites for pedestrians and people on bicycles that provide the appropriate level of service | | | | |
| 7 | On-road conditions are constructed to take into account surface tolerances required by bicycle riders (as per Austroads Part 14 Sect 8.5.1 and 8.5.2.1) and bicycle friendly gully grates and road edges | | | | |
| 8 | Construction/installation of line marking, signing and lighting of key cycling routes provided as per Qld MUTCD -Part 9: Traffic Control Devices for Bicycle Facilities | | | | |
| 9 | Significant detours from well-used cycle facilities are signed well and early showing the alternative route and the number of days that this detour will be required | | | | |
| 10 | All road construction works are designed and installed taking all the needs of people cycling into consideration | | | | |

The development of bicycle aware construction methods requires an understanding of the finished surface and space requirements of bike riders as well as an understanding of the types of environments that attract and deter riders.

Maintenance

| 10. Maintenance, inspection and repair | | Current position | Desired position | By when | By whom |
|--|--|------------------|------------------|---------|---------|
| 0 | No maintenance programme in place for bicycle facilities | | | | |
| 1 | Maintenance performed reactively not based on a Level of Service | | | | |
| 2 | Maintenance performed reactively based on broad Level of Service principles | | | | |
| 3 | Manual plan-based records kept of all maintenance work carried out on cycle facilities (on- and off-road) | | | | |
| 4 | Regular maintenance work carried out for example cleaning of key cycle paths | | | | |
| 5 | Inspection program documented for all on-road conditions including edges of rural roads, pavement conditions at railway crossings, gully grates and other service pit covers | | | | |
| 6 | Inspection program documented for line marking, signing and symbols for bicycle facilities | | | | |
| 7 | Level of Service established and documented for bicycle facilities | | | | |

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| 10. Maintenance, inspection and repair | | Current position | Desired position | By when | By whom |
|--|--|------------------|------------------|---------|---------|
| 8 | Maintenance procedures carried out on-road take the needs of bicycle riders into account | | | | |
| 9 | Customer complaints/request for action system records bicycle facility based requests | | | | |
| 10 | All work carried out on bicycle facilities is recorded against the facility/asset in the asset management system | | | | |

Most local governments are aware of the financial implications of failing to maintain roads, and yet it is not uncommon for bike paths to be neglected after construction. Paths for bicycles need to be included in asset management programs in a similar manner to roads, to ensure a safe and useable riding surface and to avoid the increasing cost of maintenance or reconstruction as a result of the asset degradation.

Budget/staffing

| 11. Budget/funding/staffing | | Current position | Desired position | By when | By whom |
|-----------------------------|--|------------------|------------------|---------|---------|
| 0 | No funding or staff committed to the provision of cycling facilities | | | | |
| 1 | The local government understands responsibilities re the provision of cycle facilities | | | | |
| 2 | Staff resources given responsibility for cycling in the local government district | | | | |
| 3 | Joint funding arrangement negotiated with neighbouring local government(s) as appropriate | | | | |
| 4 | Cycle facilities/assets recorded and valued | | | | |
| 5 | BAC established by the local government. Staffing provided to chair and support the work of this committee | | | | |
| 6 | Funding provided for cycling promotional campaigns and community programmes | | | | |
| 7 | Maintenance costing for cycling facilities is appropriate for the age and extent of existing network | | | | |
| 8 | Capital works program and funding adequately reflects future growth in cycling facilities | | | | |
| 9 | Maintenance funding requirements of future work considered in capital works program | | | | |
| 10 | Capital works program reflects the local government's cycle network plan | | | | |

For more information

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