

Reducing the cost of infrastructure – Action plan update August 2014

Action		Purpose/details of changes/benefit/ saving	Status as at August 2014
1 Contracts			
1.1	Develop process for short-listed, guided alternative tender procurement mechanism. Fewer criterion, more transparency on non-cost, reasonable criteria and assessment material - project specific and not the same as prequalification categories.	Clear guidance on procurement method and contract form appropriate for project characteristics.	Engineering Policy EP150 released.
1.2	Develop early design consultant involvement procurement process.	To drive design innovation in competitive environment.	On hold pending development of new whole of government process for engaging engineering consultants by Procurement Transformation Division (with input from SPO)
1.3	MRPDS update	Clear project delivery guidance.	Action complete. Ongoing improvements as part of BAU - particular with release of modular contract form.
1.4	Newly released Austroads Infrastructure Procurement Guidelines.	Moving towards National consistency	Under internal review to compare differences with TIPDS. Lower priority than some other action items.
1.5	Contract Forms Modularisation/Alignment Project	Consistent contracts.	Draft contract documents completed - pilot projects currently being identified for trials in late 2014.
1.6	Contractor performance reporting and intelligence dissemination to selection panels.	Better use of contract performance data to inform selection decisions.	Wording developed for inclusion in conditions of contract - timing of release will coincide with new modular contract release. Also working with Leadership Connect project "Driving Infrastructure Performance in Infrastructure Delivery & Traffic Management"
1.7	New TICC Contract to replace RCC form of contract supplementary conditions.	Consistent contracts.	Draft contract documents completed - pilot projects currently being identified for trials in late 2014.
1.8	Realistic tender periods.	Appropriate processes.	Continuing to be filtered by SPO.
1.9	Realistic tender validity periods	Appropriate processes.	Monitored by SPO during tender prototype reviews - no current issues.
1.10	Encourage alternative/innovative tenders and thoroughly assess same.	Clear guidance on procurement method and contract form appropriate for project characteristics.	See action 1.1.
1.11	Proper feedback after selection processes complete.		Monitored by SPO - no current issues.
1.12	More use of short and long lists.	Clear project delivery guidance.	See action 1.1 and included in action 1.3.
1.13	Utilisation of appropriate procurement process for each particular contract.	Clear project delivery guidance.	See action 1.1
1.14	Use of appropriate form of contract for each particular project.	Clear project delivery guidance.	See action 1.1
1.15	Client capability and consistency State-wide.	Consistent processes.	Regional Reform implemented. Districts responsible for project delivery. Consistent structures and roles across Districts.
1.16	Definition of alternatives v/s innovation.	Clear project delivery guidance.	See Action 1.1.
1.17	TMR be clear up front in documents or industry briefings about alternatives that will not be accepted.	Clear project delivery guidance.	See Action 1.1 and 1.3.
1.18	Investigate more appropriate risk sharing in contracts (time and costs) for PUP.	Clear project delivery guidance.	Progressing as part of Action 1.5.

2 Innovation			
	• Broad Innovation Framework – TMR / industry, define IP, sharing of risk, innovation processes and practices with regard to industry.		
2.1	Update innovation brochure to provide more information framework and processes.	The Brochure 'Engineering Innovation in TMR' has amended with more detail. IP ownership and risk has been clarified. A forward has been included to provide more context. Input from the industry workshop, a submission from Consult Australia were prime influencers. Also amended to reflect TMRs new Innovation strategy	The Brochure 'Engineering Innovation in TMR' has amended and will be published on the TMR internet soon under Innovation
	• How to grow an idea in broader TMR but keep the competitive advantage.		
2.2	Develop framework for developing innovation including explaining TIPES and R&D funding. Consider use of confidentiality agreements.	The amended Brochure sets out TIPES, R&D by TMR and mentions confidentiality agreements.	The amended Brochure sets out TIPES, R&D by TMR and mentions confidentiality agreements.
	• Clarity on innovation – that which have the capability of being accepted, up front list of what will not be accepted and why.		
2.3	All relevant areas to develop lists of what will not be acceptable and why (see 4.1, 4.2).	Contractors and consultants were keen to ensure they understand what TMR considers are dry gullies with respect to innovation	The amended brochure includes an attachment of commonly proposed 'innovations' and when and if they have been accepted by TMR
	• Culture of innovation in TMR (cultural change program – consistent approach to innovation), more consistent, more supportive.		
	• Dealing with issues out of the specification.		
	• <u>Engineering</u> decisions by TMR and consultants rather than blindly applying the specifications.		
2.4	Roll out of training on risk and innovation, RPEQ, engineering duties and messaging to IMD engineers. Adopting theme as part of Traffic Management at Road Works new direction, project reviews for street lighting, included in Brownfields Design Guideline.	It is expected that TMR staff will be more willing to make decisions on innovation if more guidelines and protection are afforded them.	All Contract admin staff have been informed of TMR's expectations about assessment of innovation, keeping an open mind and investing the required effort. Further detailed training material on innovation has been compiled. Guidelines for engineers on engineering risk and decision making (both which should reduce a conservative approach) are in draft. Innovation is now encouraged in traffic control at roadworks designs and road design.
	• See how others are doing this (innovation management) successfully.		
2.5	ARRB project to explore BCC and other lead agencies processes and approach.	A project for ARRB in 14/15	In progress
	• Skilling of staff re specifications with regard to innovation.		
2.6	Commentaries, video training on specification use, training courses.	it is expected that TMR staff will be more willing to make decisions on innovations and deviations from the specifications if they understand the intent of the specification. Commentaries provide this.	All new and amended specifications have commentaries that explain the intent of the specification. Specifications include: MRTS 16, 60,50,14,78,78A and 79

3 Pavements, quarries and materials			
• Continue to deliver initiatives, continue to lead, maintain momentum.			
3.1	Registration of Laboratories.	This provides a mechanism to ensure that only NATA accredited and competent laboratories perform testing for TMR. Test results underpin TMR's quality assurance system. Laboratories can be deregistered if there is evidence of incorrect testing or fraud. TMR can now jointly audit labs, with NATA under a Memorandum of Understanding.	Scheme introduced 1 January 2014. Now 167 laboratories registered. First joint audits (with NATA) have been conducted.
3.2	Release of Pavement Design Supplement.	Supplement provides a linked and complementary document to the Austroads Guide to Pavement Design, to provide Queensland Specific Guidance for pavement designers. This replaces a previous TMR Pavement Design Manual, which duplicated much of the Austroads guide. This approach is consistent with TMR's national harmonisation agenda. It also adopts a less conservative approach to pavement design.	Supplement applied on first two major projects, resulting in significant cost savings. This followed extensive consultation with industry, where the new supplement was very well received.
3.3	Development of Quarry Specific Testing Frequencies.	This provides a mechanism to allow Quarry Managers to self-assess their testing frequencies based on TMR guidelines. Frequencies will vary between quarries. For some well managed quarries with consistent rock quality, new frequencies could be almost 80% less than those currently applying.	The draft guidelines have been developed in collaboration with the CCAA, and issued to all quarries. TMR will release new specifications to allow for the reduced frequencies early in 2015.
3.4	Harmonisation of Asphalt Specification with RMS.	A new specification has been developed for heavy duty asphalt, based on the New South Wales specification. Under this specification, asphalt providers will provide a 12 month defects liability period, and 2 year warranty compared to the 90 day defects liability that currently applies, through assuming more responsibility for the quality and performance of their asphalt.	The pilot specification has been agreed with AAPA and released on the AAPA website. An initial trial is underway. Aim is to release the new specification as an MRTS in 2015.
	Training in the use of the new harmonised asphalt specification	Training of both TMR and Asphalt industry employees in the same training course will ensure a common understanding of the new specification, and reduce rework as a result.	Training of TMR staff and asphalt company employees will commence in August.
• Commentaries on specifications			
3.5	As new specifications are released or existing specifications are updated on rolling program.		Geotechnical design standard Minimum requirement review completed and preparation of final document for publication is in progress
• Consultation with industry.			
3.6	Consult regularly with industry bodies relevant to processes, systems and specification.	Provides a forum to exchange ideas and explain new technologies. Highly effective partnerships to advance mutual goals in the spirit of strong collaboration	TMR engaged very effectively with industry extensively during development of the new Pavement Design Supplement. Engagement with industry on the new asphalt specification and the Quarry Specific Testing frequencies is ongoing. New Harmonised Asphalt Specification and Quarry Specific Testing Frequencies are excellent examples of the benefits of these partnerships.

4 Structures, piles and concrete			
• Compile information on long term maintenance concerns so contractors and consultants can understand TMR's position on some "innovative proposals" to better understand each party's main drivers.			
4.1	Compile one pager on "innovations" that are commonly proposed and not approved.	By providing details of "Innovations" that have been previously proposed and have not been approved supplier and contractors exploring opportunities to reduce infrastructure costs can ensure they do not waste their effort on products and/or processes that are likely to turn out to be 'dry gullies'.	<p>A new technical note will be published on Reinforced Concrete Piles In the future 1 pagers will be on:</p> <ol style="list-style-type: none"> 1. Pile Extension, 2. Unlined Piles, 3. CFA 4. Hollow spun piles 5. Hot air curing 6. Steel culvert in permanent water, and, 7. Maintenance Issues of Bridges <p>As a result of working with industry and have obtain feedback Structures have published 24 Technical Notes on the TMR website which previously were only available on request through contacting Structures directly. Structures has also published a list of approved products and their cross reference to specifications on the TMR website.</p>
4.2	Compile case studies on LT maintenance issues.	If suppliers and contractors understand TMRs needs with respect to long term maintenance issues they will be better placed to investigate innovations that meet short and long term needs	Neerkol Creek & Acacia Ridge is being used as case studies for Unlined Piles at the E&T Forum. Further case studies will follow.
• Rewrite specifications that may prohibit better practices.			
4.3	Review specifications over time to be more output focused and link to case studies.	TMR will revise specifications as resources permit so they represent represents current technology, consistent with AS and other states, and doesn't unintentionally restrict industry to get the same outcome in a different way.	<p>MRTS70 working with industry to ensure the specification represents current technology and is in line with best practice and doesn't unintentionally restrict industry</p> <p>MRTS59 -manufacture of Fibre reinforced Polymer for composite girders has been published. This specification makes possible the manufacture of fibre composite girders as an alternative for timber girders that are locked in state forests for environmental reasons. A technical note about design methodology is being developed.</p> <p>MRTS60- Installation of fibre reinforces polymer composite girders has been published. This specification is written for the installation of fibre composite girders for replacement of timber girders. Following trials, it has been written for a particular product, it will be expanded to include other products</p>
• Establish area of practitioner forums to discuss best practice e.g. piling.			
4.4	Practitioner forums to discuss case studies, raising performance and quality. Consult with the appropriate industry (see highlighted below)		<p>E&T Forum Structures presenting papers on:</p> <ul style="list-style-type: none"> - Assessment of 2170 bridges on road train & B Double routes - Piling Design - Design Criteria - Bridge Design Guidelines - Bridging the Gap (Fibre Composite) <p>Bridge Construction & Maintenance Workshop October 2014 Piling & Foundation Seminar and A Design Criteria Seminar in first half of 2015.</p>
• Progress specification reviews.			
4.5	Update specifications on:		<p>MRTS14 published - the specification included a process to ensure conformity of materials to the Australian Standards because Guardrail is a significant road safety product and its significance after impact is severe</p> <p>MRTS24 - Two rounds of industry consultation has been completed. Specification will be with further advanced with public consultation by 2015</p> <p>MRTS25 - published - specification better aligns with Australian Standard and has incorporated exposure classification outside Australian Standard that represents the conditions that TMR installs this product in. TMR has included concrete pipes now designed with specific construction vehicles during back fill applications to ensure pipes are not cracked during construction phase</p> <p>MRTS26 is being updated to align with changes in MRTS25 especially in relation to construction loads and exposure classifications</p> <p>MRTS59 - and MRTS60 were developed to allow fibre composite girders to be used as a replacement for timber girders which are becoming increasingly difficult to obtain due to logging constraints</p>
	MRTS14 Steel Beam Guardrail - Australian Steel Institute, Steel Suppliers		MRTS14 published - the specification included a process to ensure conformity of materials to the Australian Standards because Guardrail is a significant road safety product and its significance after impact is severe
	MRTS24 Manufacture of Precast Concrete Culverts		MRTS24 - Two rounds of industry consultation has been completed. Specification will show transparency with design criteria, approval of design and manufacturing process.

	• Progress specification reviews.		
	MRTS25 Concrete Pipes - Concrete Pipe Association of Australia		MRTS25 - published. Specification better aligns with Australian Standard and has incorporated exposure classification outside Australian Standard that represents the conditions that TMR installs this product in. TMR has included concrete pipes now designed with specific construction vehicles during back fill applications to ensure pipes are not cracked during construction phase
	MRTS26 Fibre Reinforced Concrete Drainage Pipes		MRTS26 is being updated to align with changes in MRTS25 especially in relation to construction loads and exposure classifications
	MRTS70 Concrete		MRTS70 working with industry to ensure the specification represents current technology and is in line with best practice and doesn't unintentionally restrict industry. Changes include definition of suitable aggregate, improving clarity of what conditions apply to transit mixer concrete and casting yard concrete. There is a review to ensure that current concrete materials technology is included in specification. All documents out for industry comment. MRTS70 Updated version to be released by COB Monday 25 August
	MRTS71 Reinforcing Steel		MRTS71s being upgraded based on industry consultation. There is a proposed change that all reinforcement is to ACRS certified. Feedback from industry received - incorporating feedback and updated by COB 4 August
	MRTS72 Manufacture of Precast Concrete Elements		MRTS72 published. Significant changes relate to 50 and 100 year design life for specific products to align to AS 3600 and AS 5100 respectively. Minor upgrading will be implemented.
	MRTS73 Manufacture of Prestressed Concrete Members and Stressing		Has been out for public comment, the upgrading would be similar in content and scope to MRTS72 and will better align to Australian standards and address varying design life.
	MRTS82A Finger Joints		Proposed change to align Dynamic Load Allowance to draft AS 5100 MRTS82A on Finger Joints fills the gaps between MRTS82 ALU-Strip joints and MRTS90 Modular Expansion Joints
	MRTS96 Management and Removal of Asbestos		MRTS96 Addresses the issue of asbestos in bridges and other infrastructure in accordance with legislation and the TMR Asbestos Framework
	ITS Gantries	Multidisciplinary project to harmonize the structural, ITS, electrical and barrier design for gantries. There is flowchart of different type of gantries and when each of these is required. It will reduce over specification of ITS Gantries	Should be completed end August for September update of specifications
	Storm Tide Guidelines	Cyclone Katrina in USA highlighted the importance of storm surge when the superstructure of a number of bridges were dislodged. Cyclone Yasi produced a storm surge that impacted Cardwell. These guidelines will assist designers and the Storm Surge and Peak High Tide are offset but align with the new Australian Rainfall and Runoff.	Published
4.6	Consult with industry on specification reviews.		See 4.5- all specifications consulted
	• Commentaries on all specifications		
4.7	Progressively include in all updated specifications.	Commentaries explain the 'why' of the specification and aim to assist the user with identifying critical issues and where compromise is possible.	MRTS 14, 60, 72, 78, 78A and 79 have commentaries. MRTS 24, 25, 26, 70, 71 and 73 are being developed. MRTS 59 will have either a commentary or Technical Note.
	• Training of TMR staff using the specifications		
4.8	Continue with annual bridge construction and maintenance course.		Next course 17 October
4.9	Just in time training for TMR staff on major bridge construction projects.		Just in time training implemented on Yeppoon and Moreton Bay

• Training of TMR staff using the specifications		
4.10	Investigate recording presentations on preconstruction specifications.	<p>Below presentations/videos have been posted on TMR Website: Infrastructure Management & Delivery Industry Forum "Structures Update" (15/11/13) MRTS82A Finger Type Bridge Deck Expansion Joints (25/11/13) Design Criteria for Bridges & Other Structures (25/11/13) Hydraulic Guidelines for Bridge Design Projects (3/12/13) Storm Tide - Issues for Design of Bridges & Culverts in Coastal Areas (3/12/13) Bridge Scour Manual, Advice on Managing Scour (3/12/13) Technical Documents Update (26/11/13) Will be reviewed as each publication is reviewed or updated</p>
• Encourage introduction of BIM		
4.11	Trial Structural Project using BIM.	Standard drawings and design have been completed using BIM for 19m deck unit and file is available on website. Further deck unit lengths will follow.

5 Traffic and lighting			
	• Training in exceptions in signing, MUTCD		
	• Clarity L3, L4 and RPEQ roles.		
5.1	Update MUTCD to better clarify these roles.	Reduce excessive and incorrect roadwork signage and promote innovation. Involvement of RPEQs should increase the application of innovative practices and improve quality of appropriate speed limit selection.	Complete
5.2	Develop and deliver awareness sessions for Engineers Australia and for RPEQs in TMR and local government.	Get the speed limits through roadworks right and promote innovation	We have had good RPEQ attendance at District sessions. A "level 5" syllabus will be developed over coming months.
	• Clarify relationship between documents MUTCD, R&DM, training manual, MRTS 02 and 02.1, WH&S.		
5.3	Develop and deliver MUTCD and MRTS02 awareness sessions.	Reduce excessive and incorrect roadwork signage and promote innovation. The aim is for industry to bring innovation forward that improves safety and reduces costs.	Sessions underway with 7 already complete. 197 attendees so far with a further 388 booked in with additional registrations at North and South Coast anticipated
	• Application and consistency on LG roads.		
5.4	Ensure Industry Alliance Group includes representation from Local Government.	Reduce excessive and incorrect roadwork signage and promote consistency of signage across all roads.	IPWEAQ is currently representing Local Government with Intergovernmental Relations Branch assisting by ensuring the Regional Roads Groups are across the issues raised at the Industry Alliance Group.
5.5	Facilitate the collection of information from Local Government auditors on the quality of traffic management.	Reduce excessive and incorrect roadwork signage and promote consistency of signage across all roads.	No progress, awaiting further advice on progress from Local Government auditors
	• Roll out recognition of training interstate.(Austroads Harmonisation Project NT1919)		
5.6	Develop Qld Implementation Plan.	Reduce excessive and incorrect roadwork signage.	An interim progress report has been received from ARRB and the project is on track. When the first draft of the training material is produced, Qld will be able to develop an implementation plan. A discussion paper on the future provisioning of training is under development.
5.7	Review of training content to ensure it covers Qld requirements.	Reduce excessive and incorrect roadwork signage.	The first draft of training material should be released to road agencies at the end of August. Stakeholders' views will be sought and considered as part of TMR's feedback is provided to Austroads.
	• Performance rating for companies		
5.8	Review and enhance the framework and categorisation of the Traffic Management Registration Scheme to align more closely to a prequalification system.	Improve safety of road workers. Reduce excessive and incorrect roadwork signage.	Consultation is now complete. Feedback is currently being analysed and will inform any recommended changes to the scheme.
5.9	Review the traffic management data captured by the Contractor Performance Reports.	Improve safety of road workers. Reduce excessive and incorrect roadwork signage.	The project team is continuing their work on this topic. Project updates reflect the team is on track to their project plan.
5.10	Investigate ways to improve the return rate of Contractor Performance reports.	Improve safety of road workers. Reduce excessive and incorrect roadwork signage.	This falls into the scope of the project outlined in 5.9
	• Enforce signing and speed, and eliminate unnecessary signs.		
5.11	Implementation of the draft MRTS02, including the new provision for penalty for non-compliance with MUTCD.	Improve safety of road workers. Reduce excessive and incorrect roadwork signage.	Complete
5.12	Speed camera enforcement TRUM note.	Improve driver compliance with speed limits through road works	TRUM note finalised and awaiting implementation plan.
5.13	Investigate PINS (infringement notices) being issued by Inspectors.	Improve safety of road workers. Reduce excessive and incorrect roadwork signage.	Industry groups will be asked to nominate an operational representative to participate in a workshop on 16 September 2014 to develop a compliance and enforcement regime for traffic management at roadwork.
5.14	Develop and implement a peer review process for TMP and TGS.	Improve safety of road workers. Reduce excessive and incorrect roadwork signage.	This tool is discussed during the District awareness sessions and we are asking people to nominate sites that might suit a trial of this tool.
5.15	Develop RACI chart for traffic management activities.		First draft complete. Further testing with Senior TMR management is required before consultation with the Industry Alliance Group and WHS Qld
5.16	Review and enhance level 3 and 4 traffic management training.	Improve safety of road workers. Reduce excessive and incorrect roadwork signage.	Level 3 training package is 90% finalised, requires video and photos of roadwork sites to finalise course content. Level 3 and 4 packages will be complete by the end of August. Once finalised, the course will be trialled with internal TMR staff and an implementation plan for full roll out will be developed with SCD.

6 Design matters			
•	Training on DTMR manuals and guidelines.		
•	Training design speed.		
•	Invite industry to training.		
6.1	Include external stakeholders in web based technical training calendar updates and promote externally.	To advise industry of what technical training TMR is offering and when. Attendance at the training will upskill TMR and industry in the processes, practices and design criteria in TMR manuals and guidelines via the delivery of on-line and formal training sessions. This will result in improved road designs that are more fit-for-purpose, have less rework and provide greater consistency. Formal training has the additional benefit of capturing learnings from the industry and incorporating them into future guidelines and training.	Table of companies interested in TMR's training has been produced, after consultation with industry. All companies have been advised of the current training courses on offer. Additionally the training portal has been added to the TMR website - TTS front page. Training calendar 1 July to 31 Dec 2014 updated after discussions with the directors of the various sections.
6.2	Ricky Cox record presentation on speed and put on web.	Educational presentation to retain Ricky's knowledge and experience in the area of operating speed.	Ricky is away all of August. It is now planned for RGS/RES to work with Ricky to develop the presentation by end September 2014. Delivery of web-content / presentation by end November 2014.
•	WOG approach to speed vs operating speed (i.e. enforcement and operations) speed enforcement on roads (cross agency)		
6.3	ARRB Project investigating the impacts and viability (in light of legal advice and scarcity of enforcement capacity) of making design speed equal posted speed.	Research to provided evidence to change current practice and to investigate if there are cost benefits in changing practice. It is likely that recommendation will be a default operating speed of 5km/h over the speed limit, especially for roads in SEQ. This will result in some minor savings in cost due to reduced earthworks and visibility widening.	As of 1 August 2014, report hasn't been received from ARRB. Will request ARRB to complete the report by mid-August 2014. The findings are to incorporated into a future update of the Road Planning and Design Manual.
•	Training in design, manuals and guidelines		
6.4	Training material for key design capability being updated, e.g. Road Design Fundamentals.	Improved training material to aid technology transfer. Outcome should be increased capability of participants as discussed in point 6.1.	Based on review, finalise course material by end Sept 2014 and being ready for delivery after Oct 2014.
6.5	Continued harmonisation of RP&D Manual and Austroads GRD Volumes, e.g. Volume 3, Parts 4, 4A, 4B and 4C.	TMR commitment to reduce own manuals and guidelines through adoption of national practice. Harmonisation of road design criteria has the following benefits: promotes national consistency, shares learnings, incorporates best practice, provides efficiencies in the amount of material each road authority needs to maintain, and provides a single point of focus for industry.	Parts 4, 4A, 4B and 6 of Volume 3 to be published in August 2014. Parts 4C, 6A, 6B and 6C of Volume 3 to be published by end of September 2014. Parts 3 and 7 of Volume 3 to be published by June 2015.
6.6	Record a presentation explaining the manuals and guidelines	Presentations/training (on-line or formal) to introduce new documents or highlight the changes in updated documents. On-line presentations to be assessable directly adjacent relevant guideline or specification. The benefits are to gain a quicker understanding of the changes and the need/benefits of them. This will result in a time savings for practitioners understanding the changes.	Process for recording and establishing on-line videos being developed. Roll-out of first on-line videos expected by end of September 2014.
•	Encourage introduction of BIM		
6.7	Internal Proof of Concept being undertaken on BIM (e.g. lighting)	BIM has been identified by industry to improve the delivery of infrastructure projects. This allows for a single source of truth throughout the delivery process. Various design and validation checks can be somewhat automated by including "intelligence" into to model by associating attributes to items stored in the model. (E.g. conflicts, sight distance, drainage, etc...). The quality of design and "As-Builts" can be improved through automated design/ validation checks. Also has the potential to minimise the requirements for hardcopy drawings and streamline the overall delivery process. The government (being the client) has the role to define the policies/ specifications related to the use of BIM for TMR (primarily around "As-Builts").	Stage 1 – 90% complete with key deliverables being: a draft design workflow developed; drawing and requirements and Schema for road lighting complete; modelling road lighting components in 12d; User interface for lighting design complete; automatically generated electrical schematics/drawing Stage 2 – started with key deliverables to be: Automatic electrical calculations; generation of base drawings/ schedule of quantities; Integration of Road Lighting Schema into 12d; Conflict checks – internal to road lighting design; Validation checks and End user testing – first pass.
6.8	Engaging with Consult Australia in April 2014. (Panel session on BIM).		Occurred in April 2014.

• Landscape Specification.			
6.9	Revise Specification.	Update specification in line with industry feedback. Benefits include easier to understand, implement and administer the specification, less time involved to administer, design and review and ultimately, a reduced cost of landscaping.	Completed in April 2014.
• EDD and design exceptions in regions – consistency.			
6.10	Deliver training courses. 12 courses delivered to regions in 2013, another two prior to June 2014. Propose another Brisbane based session – 5 March.	To increase capability of practitioners in the area of designing in Brownfield sites. Covers the design process and the justification and use of EDD parameters and Design Exceptions. Out of a total of 236 attendees, 27 were from consultancies (11% of total) and 11 were from Local Authorities (5% of total).	Completed in April 2014. The Brownfield and EDD training courses are being combined into one course and the expected roll-out of this course is mid-2015.
• Data source to assist RPEQs with justifying Design Exceptions and help with judgement based on facts.			
6.11	Project being undertaken as part of “Leadership Connect: 2014 program. (Project Learnings, Closeout, Coalface Learnings informing State-wide practice.	Provide guidance and direction, via an online library of examples, to help RPEQs with knowledge development in relation to Design Exceptions. It is expected that using previous examples will result in savings of time and money when justifying similar design exceptions.	Ongoing - Target 2015. Other methods of achieving this are also being investigating, including attaching the reports to TMR Global Information Systems and undertaking an Austroads project to identify all known relationships between road geometry and crash rates. The later could form a database enabling justification of design exceptions to be easier where a relationship with crash rates has been established.
• Streamlined drawing signing by RPEQ			
6.12	Review the process requirements.	Clarify the need for RPEQ certification on all projects drawings and investigate whether electronic signatures can be used. Also investigate the possibility of submitting electronic models instead of paper based drawings. There is potentially a large saving in time and money if industry could submit electronic models and signatures.	The February 2014 release of the Drafting and Design Presentations Standards Manual reduced the amount of certified plans requiring submission. As a minimum, only Issued For Construction plans now need to be individually certified. Other certifications (e.g. of Design Revisions and As-Constructed Plans) can be completed via the consultant's quality system. The Public Records Act 2002 and the Evidence Act 1977 do not currently give any mandate for long term storage of electronic files. There are also issues with the cost and readability of long term storage of electronic files. TMR is keeping a watching brief on this.
• Reward innovation – designs that find innovative solutions that get more for less			
6.13	Clarify for designers, expectations in consultants brief, i.e. expected to optimise the design, seek guidance on innovative options and risk appetite of client. Expected to deliver options including design exceptions that provide savings. Not expected to be responsible for options that can't meet standards due to funding restrictions. Expected research and provide advice on benefits and disbenefits of options.	To provide guidance and direction to TMR Managers in development of Road Design Project Briefs to minimise re-work and variations and to maximise innovation. A list of requirements for a design brief is being included in Part 8 'Design Process' of Volume 3 of the Road Planning and Design Manual. A section on the development of Projects Briefs is being included in relevant road design training courses.	The requirements of a design brief has been included in the draft Part 8 of Volume 3 of the Road Planning and Design Manual. Stakeholder consultation on Part 8 is now being undertaken. Expected publishing date is the end of 2014. Any design must be certified by an RPEQ. If there is any reduction in standard, the certifying RPEQ needs to ensure that sufficient engineering rigor is undertaken. The reduction in standard must be justifiable / defensible and doesn't adversely affect suitable and recognised levels of safety and operation of the road. No RPEQ should accept the engineering responsibility for any design or design component that cannot be justified and defended. If a reduction in standard can be justified, the consultant is not held responsible if something goes amiss for some unforeseeable reason. The reduction in standard is a result of funding limitations, which is not under the control of the consultant. TMR must accept responsibility in this situation. If the design cannot meet the expectations of the brief within budget because particular design exceptions are unable to be justified, then the consultant normally works with the Department to reduce costs by scope reduction (e.g. shortening the job or removing components that don't adversely affect the desired outcomes).