

Solutions



Transport



# TTM– BALANCING RISK FOR PRACTICAL OUTCOMES

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- 30 years involved with TTM
- Austroads Project Manager (2015-20)
- Specialist advisory to LGs, contractors, utility authorities
- TMD Open – 001 (QLD)
- Registered Professional Engineer Queensland (RPEQ)



# AGENDA



## TTM Observations & implications

- Standards / Guides
- Observed TTM outcomes

## Balancing risk

- What does this mean?
- Who can do this?

## Risk based alternatives

- Short Term Low Impact
- Variations to Guides

## Emerging TTM issues

- Guides & Standards
- Training

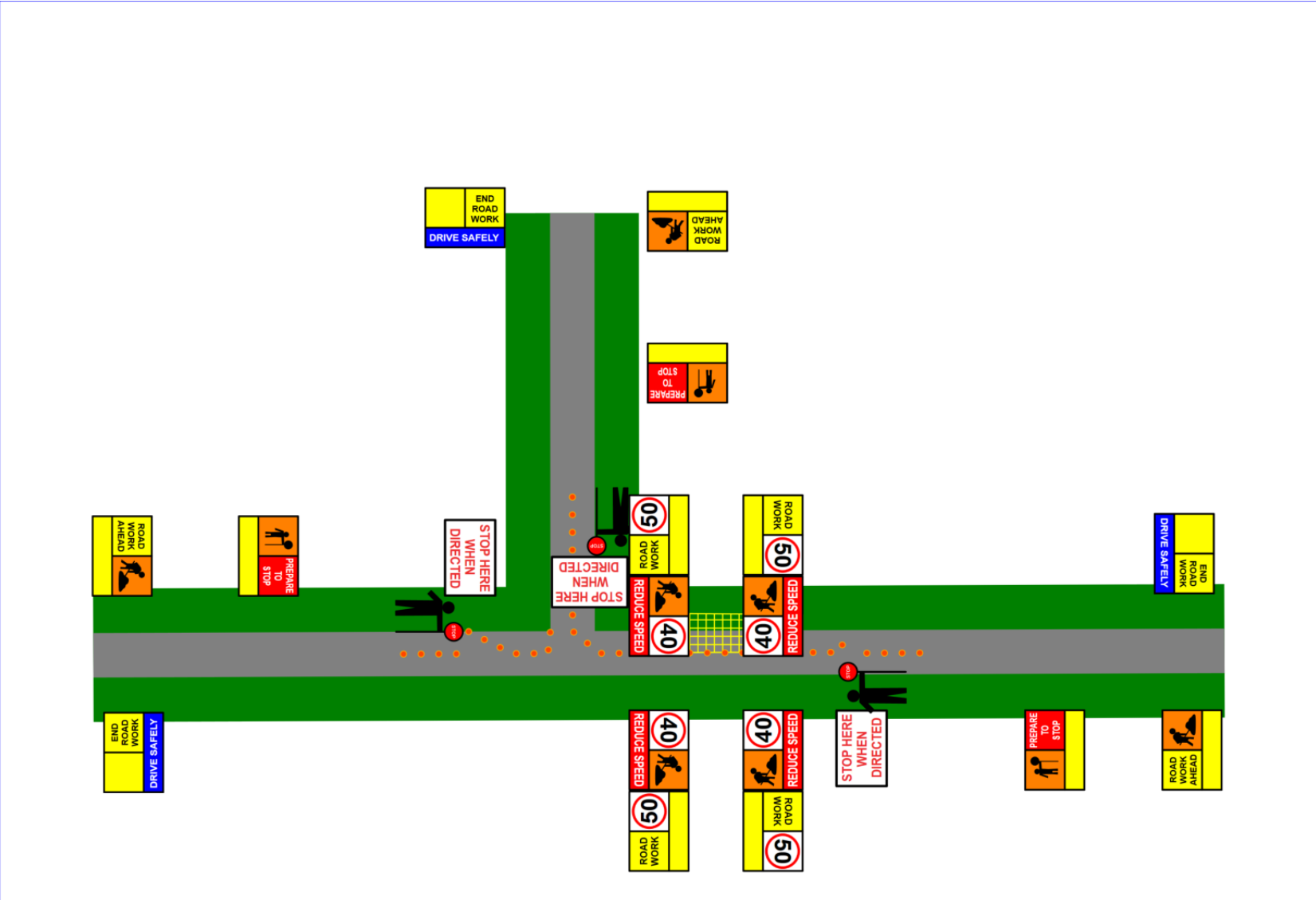
# STANDARDS AND GUIDES

## National

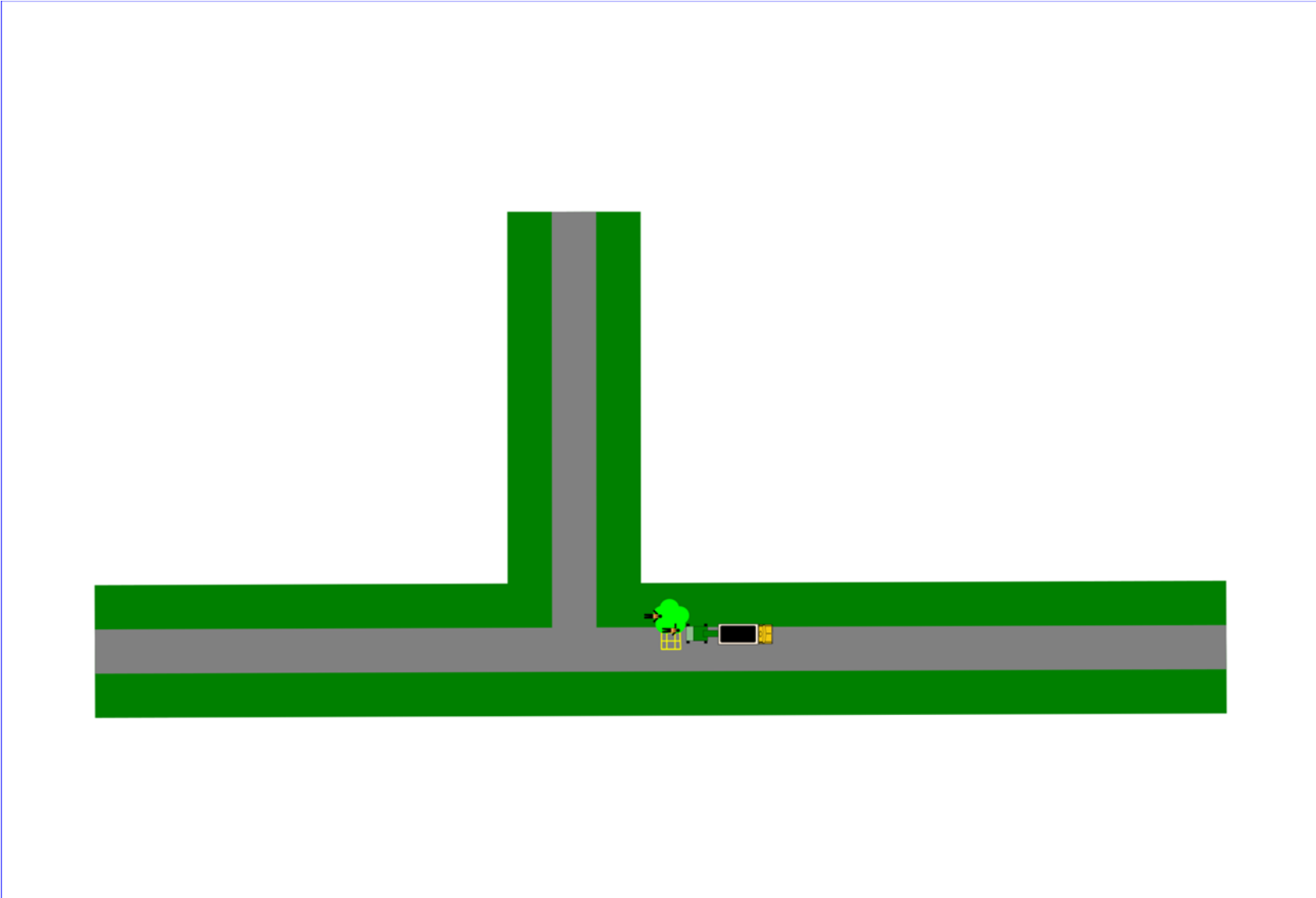
- AS1742.3 Manual of Uniform Traffic Control Devices – Part 3: Works on Roads (2019)
- Austroads Guide to Temporary Traffic Management (10 parts) (2019 / 2021)

Jurisdiction	Additional guidance	
QLD	MUTCD QGTTM	WHS Code of Practice
VIC	Code of Practice Worksite Safety – Traffic Management	
WA	Traffic Management for Works on Roads – Code of Practice	
NT	Standard specification for roadworks	
ACT	Refers to AS1742.3 and AGTTM	
NSW	Traffic control at work sites (State roads only)	
SA	Standards for workzone traffic management	
TAS	Refers to AS1742.3 and AGTTM	

# OBSERVED OUTCOMES - CASE EXAMPLE



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# OBSERVED OUTCOMES

## Conservatively safe

- Better to have more
- Better to slow traffic down
- Better to close lanes
- Place cones around all works vehicles
- Divert all pedestrians to the other side of the road

So what? – isn't that good

## No - because

- Excessive TTM
- Works productivity reduced
- TTM costs increased
- WHS outcomes are actually worse

## Redland Council (tree crews)

- Crews could deliver 90% of sites themselves with signs they carry
- Productivity tripled
- TTM costs reduced by > \$400k per year
- Safer overall

# RISK BASED APPROACH - DESIGN BALANCE

- TTM - appropriately scaled for the risk / extent of works / traffic impacts
  - Do not impact road users un-necessarily
  - Minimise impact on pedestrians
  - Risk assess variations to guidelines
- Each device installed should lead to a positive reduction in overall risk
  - Installing / removing TTM needs to be considered as part of the overall risk
- PCBU responsible for total overall risk





# RISK BASED APPROACH – WHAT DOES IT INVOLVE

## Guides

- Guides are prescriptive
- What does risk-based approach require?
- There are two key approaches
  - Short Term Low Impact measures
  - Practices outside of guides

1. Evaluation of compliant practice
  - Risks compared with pre-works situation
  - Control measures typically applied
2. Development of alternative practice
3. Evaluation of alternative practice
  - Risk compared with both pre-works situation and compliant practice
  - Selection of control measures
  - Demonstrate that resultant risk is same or better than compliant practice

# RISK BASED APPROACH – WHO CAN DO IT?

## Guides

- Provide outline of the process only
- Professional needs to defend decision

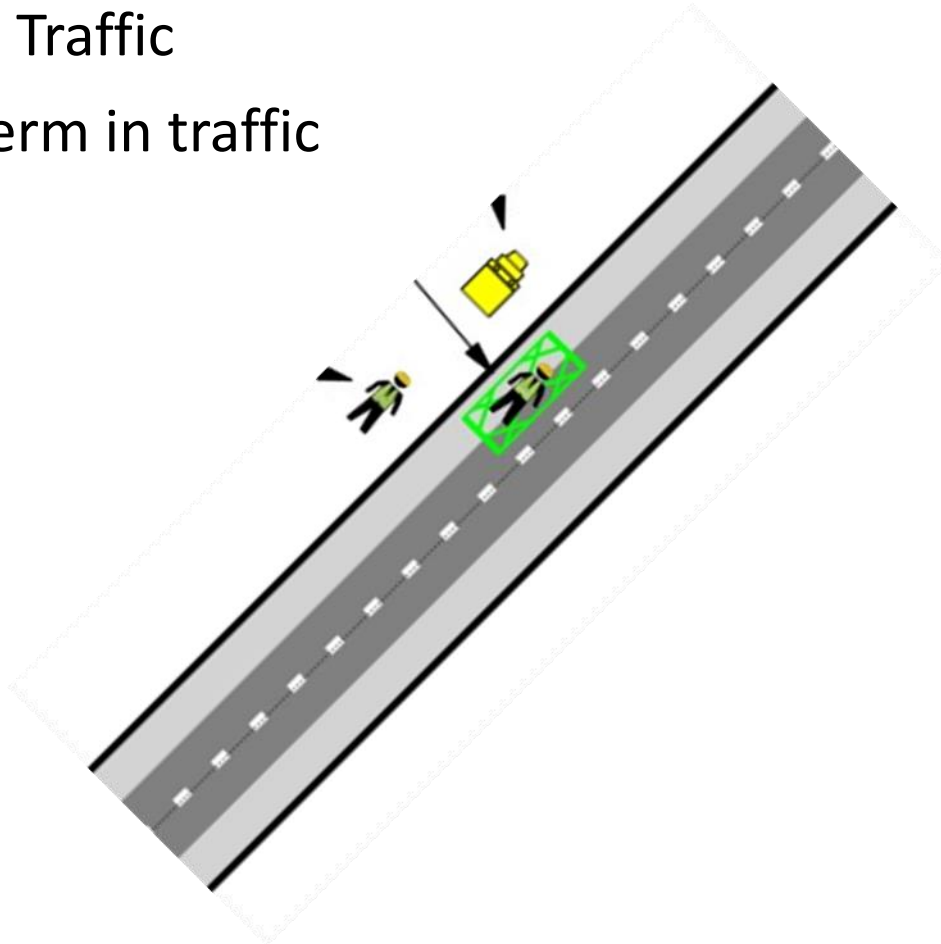
Jurisdiction	Defined requirements
QLD	TMD for recommendations RPEQ for mandatory elements
VIC	Not defined - TMD
WA	Roadworks Traffic Manager
NT	Not defined - Workzone Traffic Management Plan Designer (WZ1/TMD)
ACT	Refer to NSW
NSW	PWZTMP (TMD equivalent)
SA	Not defined – competent person (TMD)
TAS	Not defined - TMD

# RISK BASED APPROACH - TAKEAWAYS

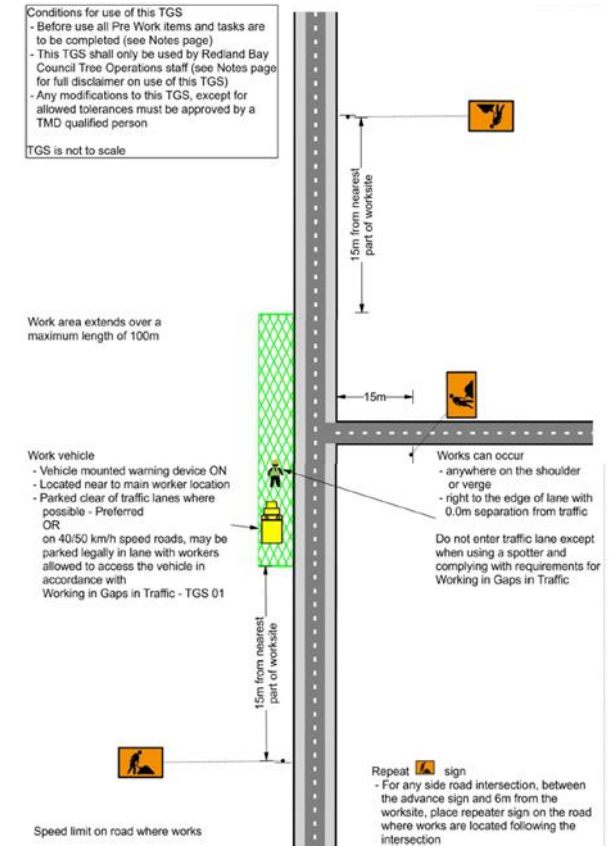
1. Need to ask the right questions
  - a) Client to more accurately define works
  - b) TTM contractor to establish impacts and TTM options
2. Plan works in advance
  - a) Time to explore works details
  - b) Options may include
    - i. Changes to TTM
    - ii. Changes to work task methodology
    - iii. Changes to extent of works
3. Need for field staff to understand options
  - a) Static and STLI options
  - b) Trained in basic risk assessment
  - c) Willing to advise when TTM is not required
4. Systems to support evaluation of options
  - a) Generic diagrams
  - b) Risk assessment models
  - c) Training
  - d) Client / contractor relationship

# RISK BASED ALTERNATIVES – SHORT TERM LOW IMPACT

- Gaps in Traffic
- Short term in traffic



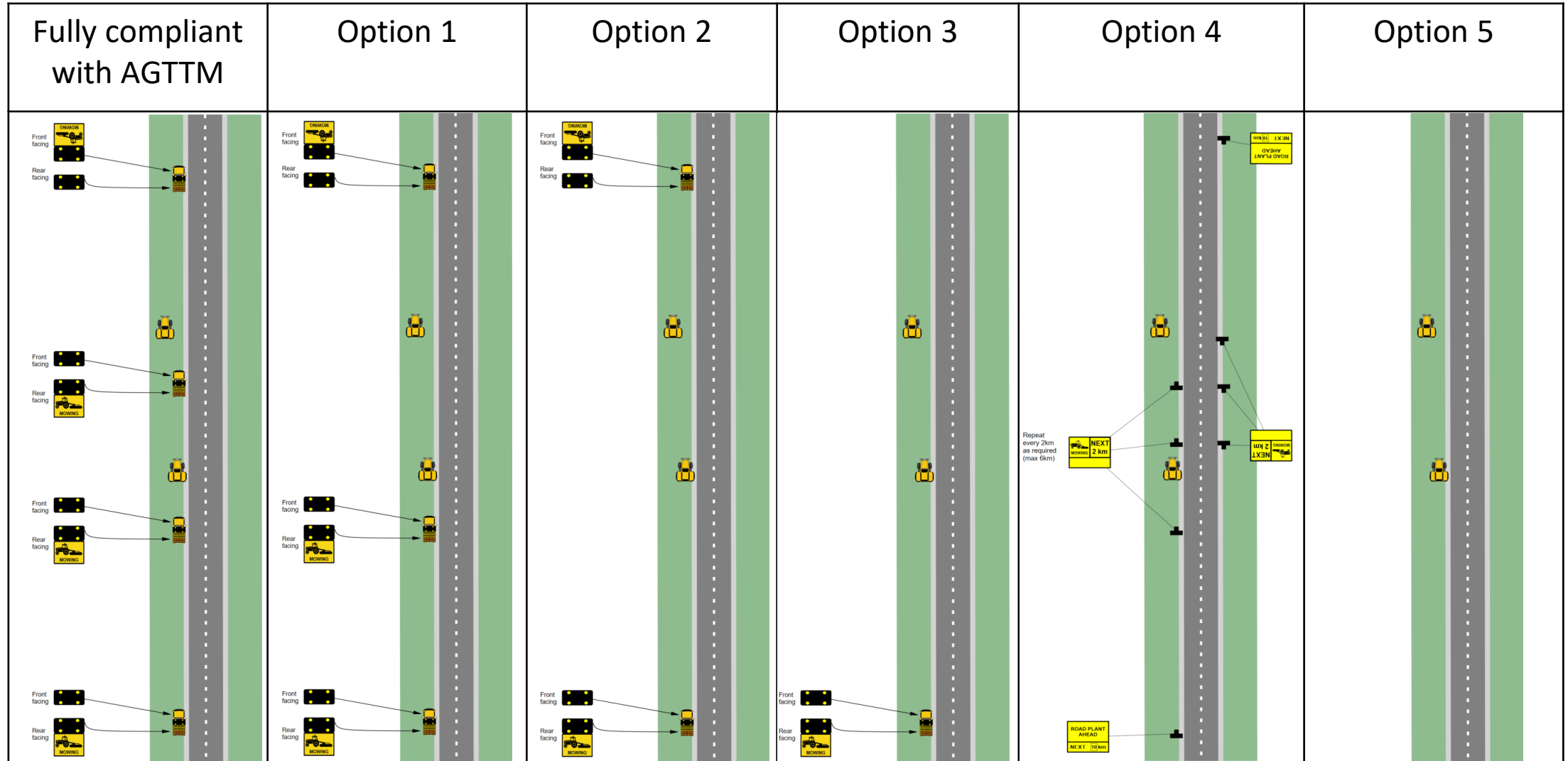
- Works outside of the traffic lane



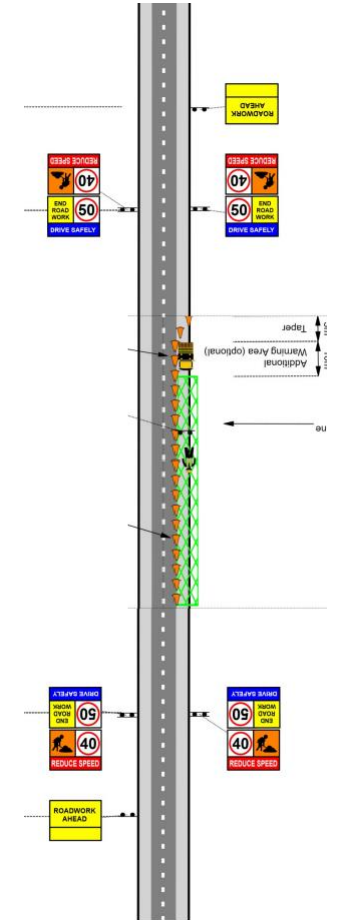
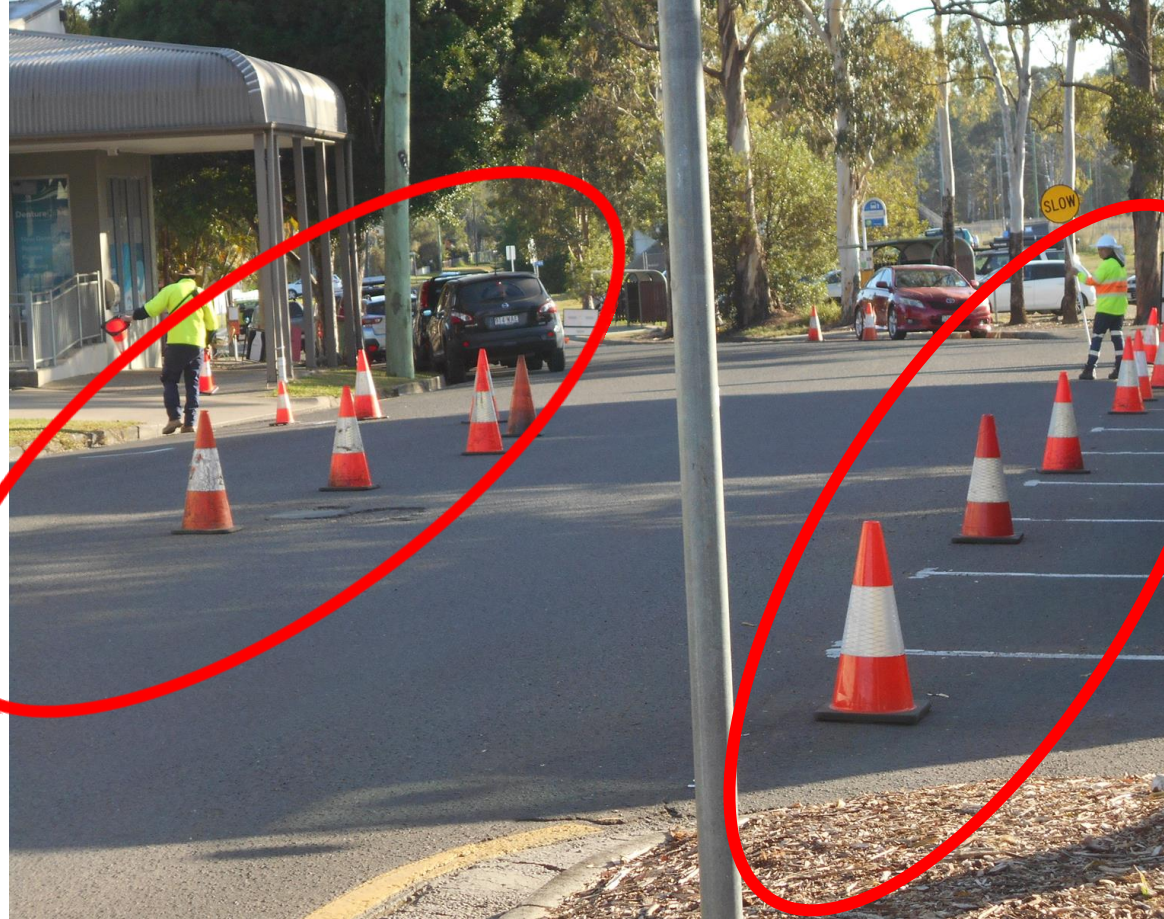
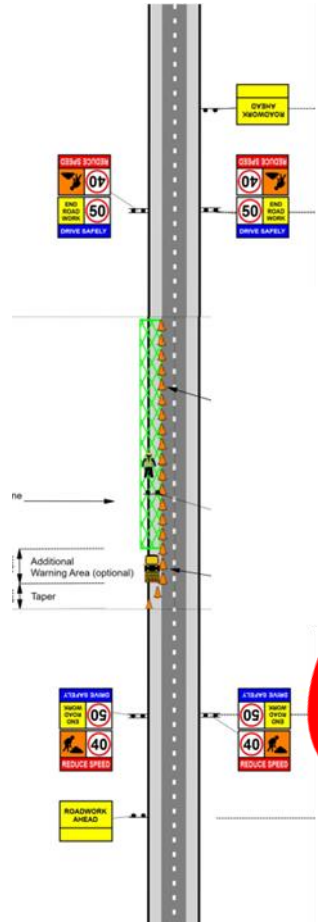
# RISK BASED ALTERNATIVES – VARIATIONS



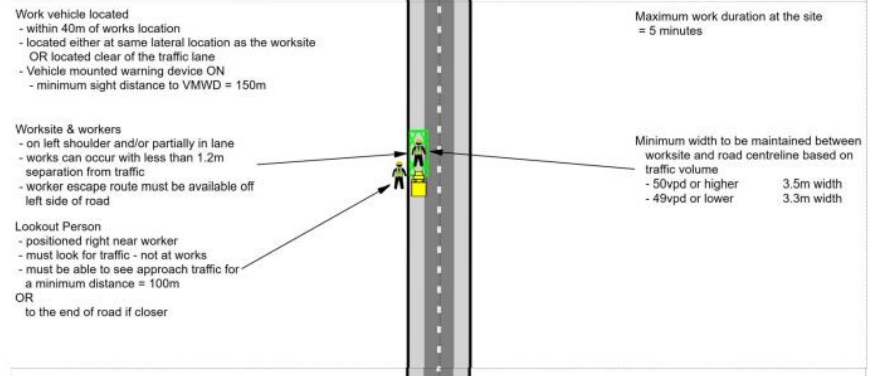
# RISK BASED ALTERNATIVES – VARIATIONS



# RISK BASED ALTERNATIVES – REVIEW DESIGN



# RISK BASED ALTERNATIVES – REVIEW DESIGN & STLI



Short term work in traffic

- 9.5m wide
- Works with small line marking device



# EMERGING ISSUES

## Glitches in Category System

- Low impact works on Cat 2 / 3 roads
- Local Governments and Utility authorities
  - Mainly low impact works
  - Staff unlikely to meet entry requirements for Cat 2 training
  - Maintaining competency

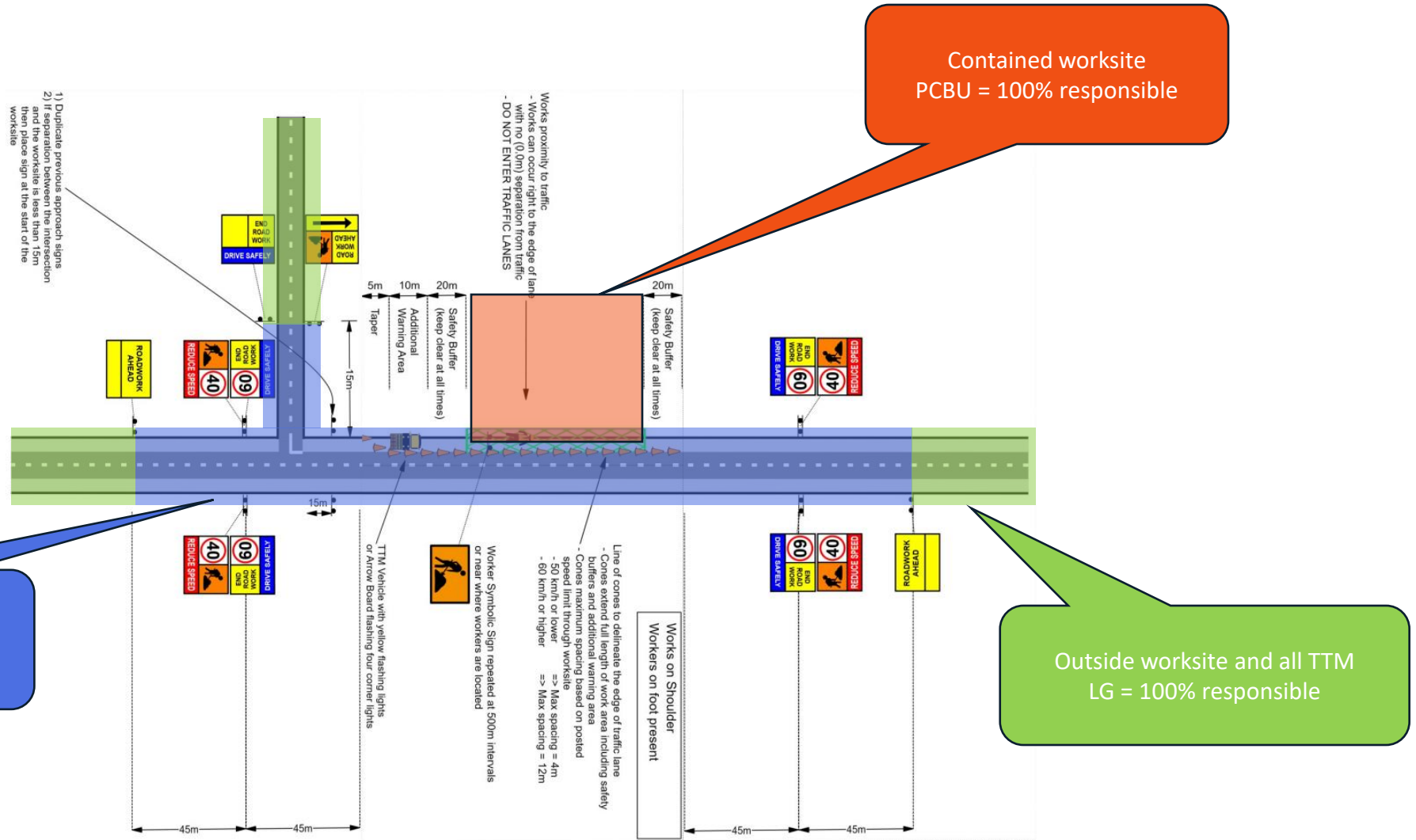


## • Works on local streets

- LGA
  - Standards are excessive
  - TTM is too expensive (up to 80% of the cost of a job)
  - TTM reduces productivity
- Local streets practices are documented
  - Lack of knowledge from clients
  - TTM companies
    - Not familiar with these practices
    - Not willing to accept the risk

# EMERGING ISSUES

## Legal responsibility



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# THANK YOU!



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