



New Rules for Cadastral Survey

NZIS Conference – Napier

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Overview

- Background to Rules review
- Progress to date
- Main decisions
- What's next?



Why Change the Rules?

- Current Rules based on Survey Regulations 1998 and Survey Act 1986
- Mixture of:
 - requirements and best practice
 - “what” mixed in with “how”
 - Rules that are not enforced
 - Rules that are vague and not actionable
- Some requirements are not covered



Key Rule-making Principles

- Beneficiaries of the Rules
 - Holders of rights and interests in land
 - Land administration agencies
- Technology independent for compliance
- Risk-based approach – “optimal regulation”
- For the future – not the past



Expert Committee

- Agreed Proposed Rules
 - Considering submissions
 - Agree on final Rules
 - Ensuring these are:
 - robust
 - logical
 - reasonable, and
 - compliance costs justified
- Cadastral Surveyors Licensing Board
 - NZ Institute of Surveyors
 - Local government
 - Otago University
 - Department of Conservation
 - Maori Land Court
 - NZ Law Society
 - LINZ
(includes six external surveyors)



Submissions

- 62 public submissions received
 - Major areas of interest:
 - Boundary Marking
 - Accuracy Tolerances
 - Geodetic Datum
 - Witness Marks and PRMs
 - Redefinition Surveys
 - CSD Plan
 - Certification
- Individual surveyors
 - Survey firms
 - Institute of Cadastral Surveying
 - 11 branches of NZIS
 - Local government
 - Legal profession
 - School of Surveying
 - Survey supply firms
 - Crown land consultants
 - Public



Decisions – Boundary Marking

- Boundary marking required:
 - In case of conflict or limited title
 - For land acquired for public purpose
 - For LT (private) land except where:
 - Occupation follows boundary
 - Parcels held in same ownership
 - Not expected to be occupied up to boundary
 - Impractical
- Not required for Crown or Maori land
 - Maori Land Court or Crown agencies can decide



Decisions – Mark Types

- Boundary mark types
 - Wooden pegs of traditional size
 - Post or other mark labelled as boundary mark
 - If impractical to put in peg or labelled mark – unlabelled mark OK

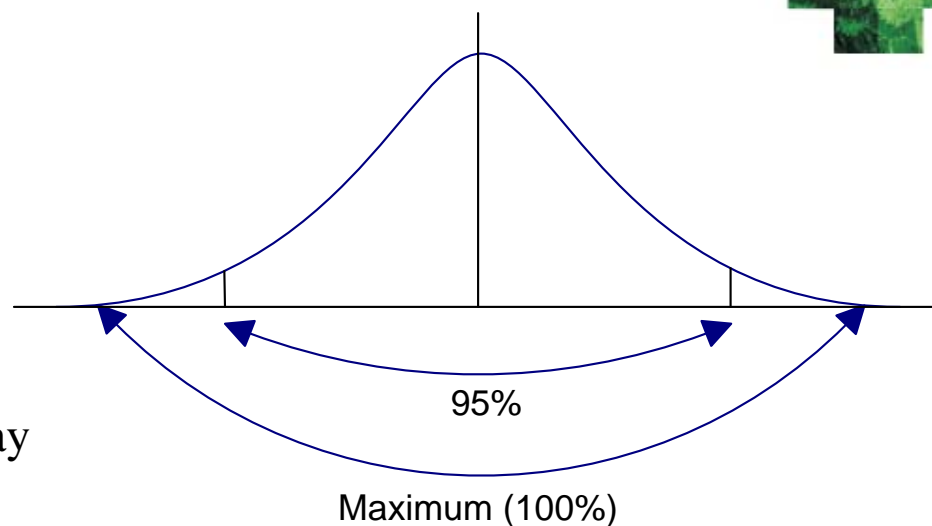


Decisions – Accuracy

- Accuracy – two levels set:
 - 95% confidence
 - A little tighter than 2002/2 Rule tolerances
 - Applies to new vectors only – not adoptions
 - Sets general accuracy expectation
 - Determines survey equipment/methodology
 - Matches Landonline validation check
 - Larger maximum tolerance (100%)
 - Similar to Proposed Rule levels
 - 50% larger than 95% confidence level
 - Applies to all adoptions also
 - Simple arithmetic sum (not RSS)

95% / 100% Accuracy Levels

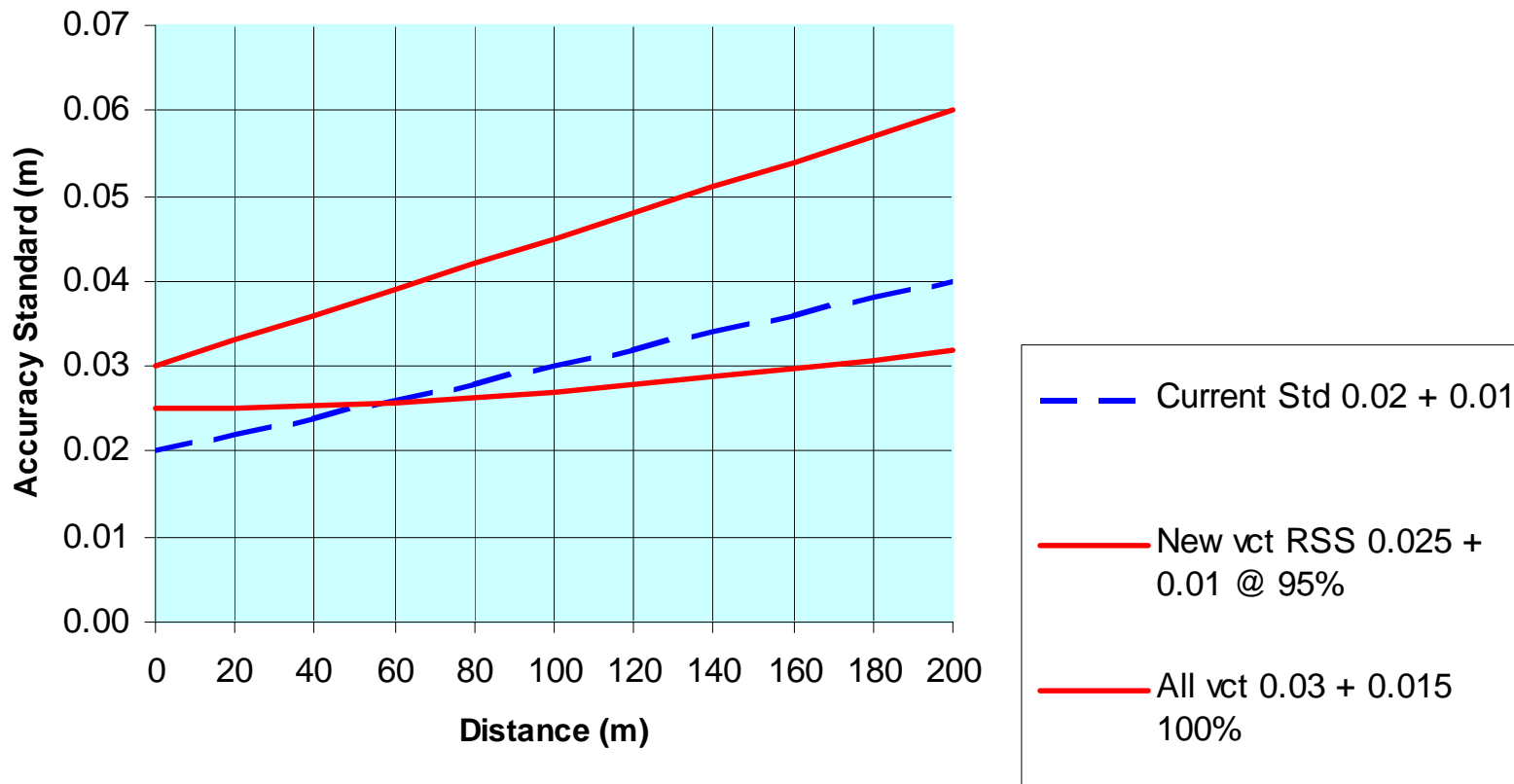
- 100% tolerance
 - All vectors must meet it
 - Any failure will require correction
- 95% confidence
 - 95% of new vectors must meet it
 - < 5% can fail if they pass the 100% test
 - BUT:
 - Failures indicate suspect equipment/methodology
 - Whole approach to survey may need to be considered





Survey Dimension (Traverse) Accuracy

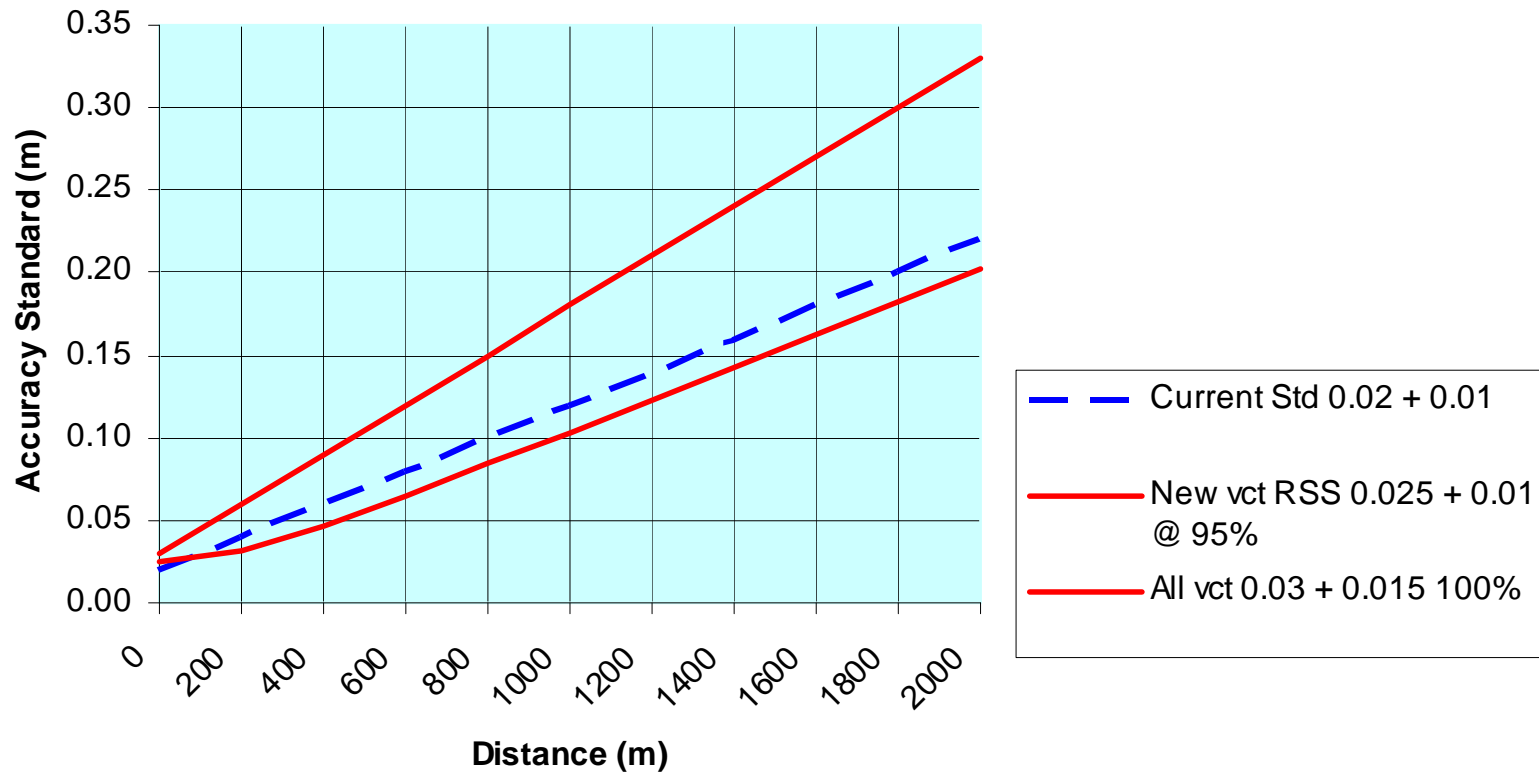
Survey Accuracy Standards (Shorter Distances)





Survey Dimension (Traverse) Accuracy

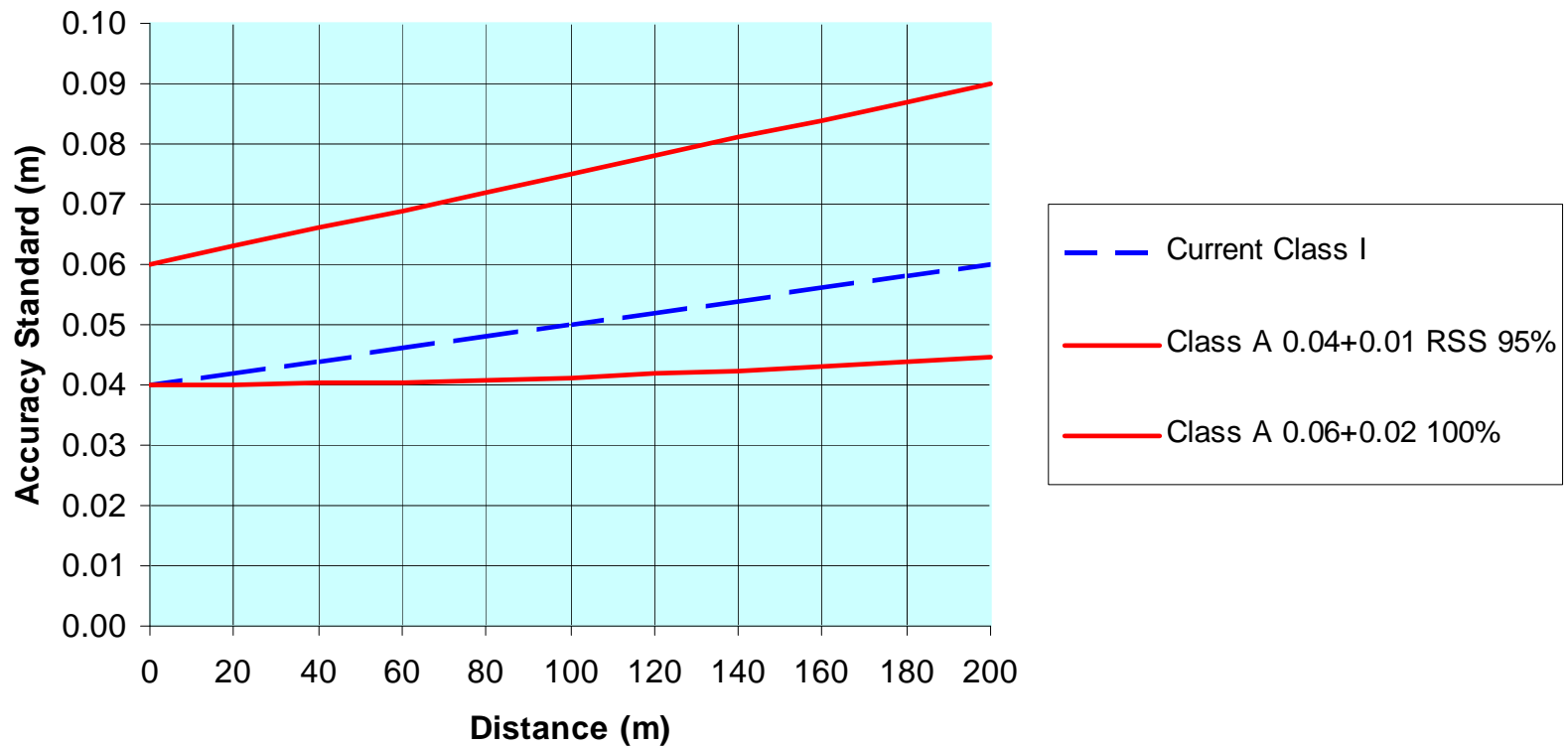
Survey Accuracy Standard (Longer Distances)





Urban Boundary Accuracy

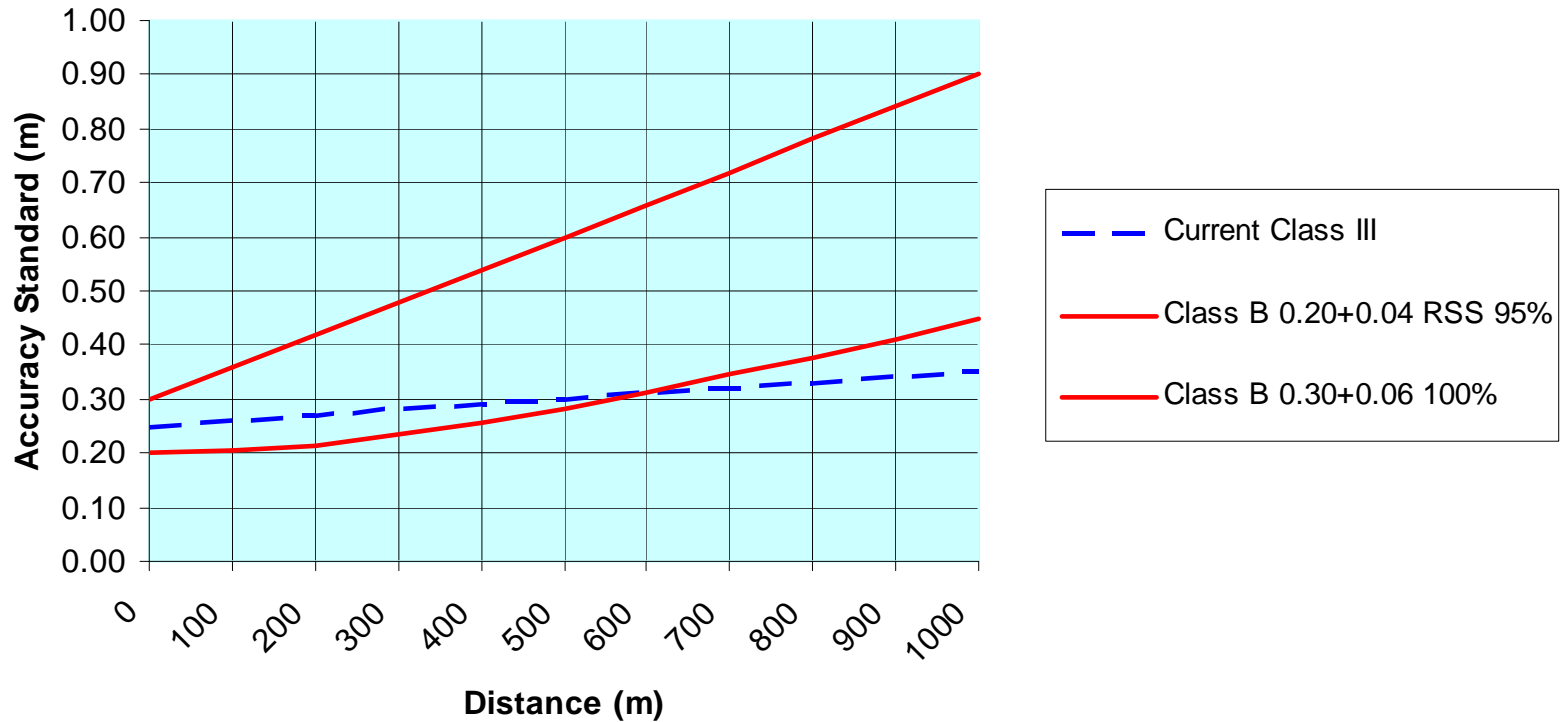
Boundary Accuracy Standard Urban





Rural Boundary Accuracy

Boundary Accuracy Standard - Rural





Decisions – Boundary Definition

- Three forms of boundary definition
 - Defined by survey (Class A or B)
 - must meet all accuracy standards
 - must be witnessed
 - required to be monumented in many cases
 - Defined by adoption (Class A, B or C)
 - must meet maximum accuracy standard only
 - adoption standards are less rigorous
 - Accepted (Class D)
 - boundary information also adopted but not required to meet accuracy standards



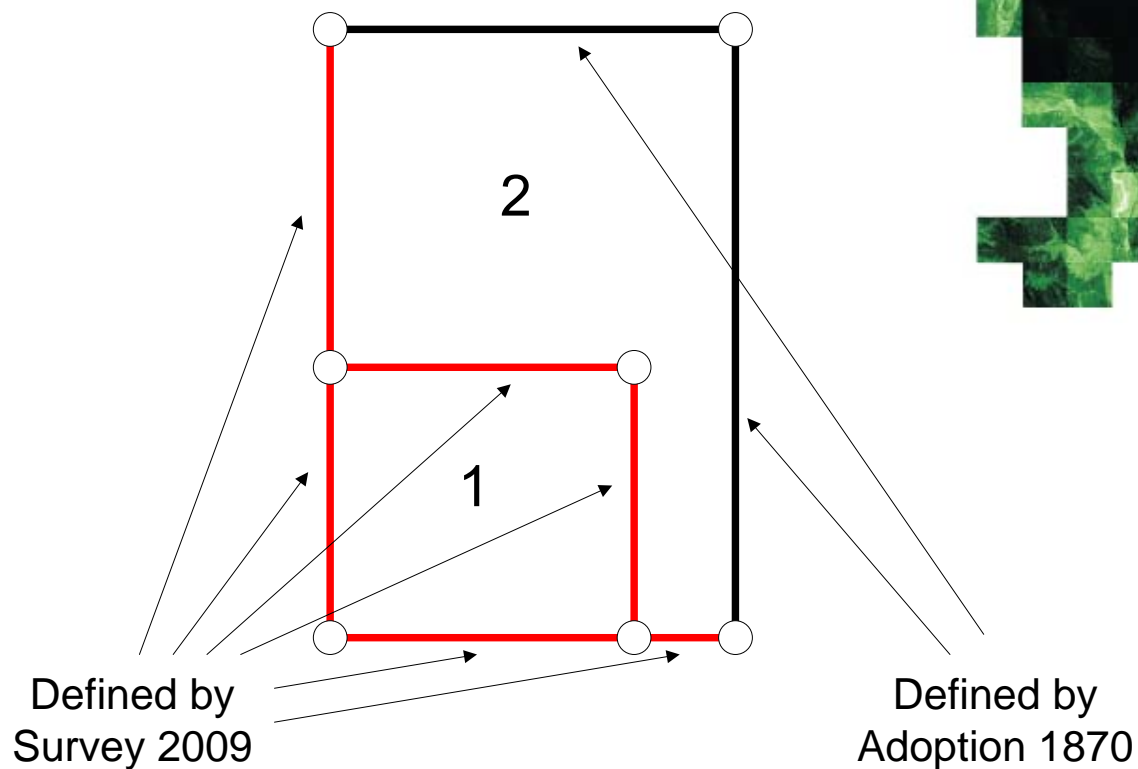
Decisions – Adoption Accuracy

- Must meet maximum (100%) tolerance
- No equivalent of Rule 26(3)
 - Main focus is future owners of new titles
 - Future owner's interest not related to survey history
 - Maximum tolerance reasonably generous
 - Class B = $0.3 + 0.06/100m$
 - Class C = $1.0 + 0.30/100m$
 - Class C & D available in many cases
 - Dispensations possible in rare cases
 - Otherwise - large errors should be resolved



What Does the Future Owner Expect?

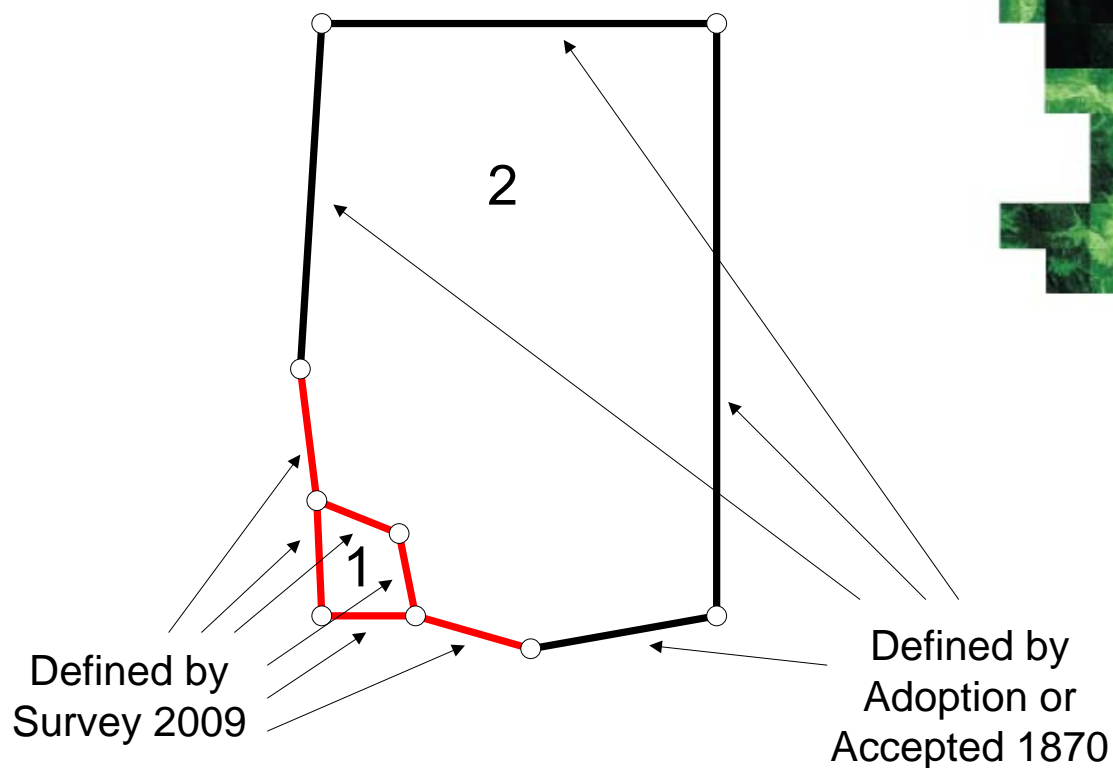
- Owner of Lot 2 equally interested in position of black boundary lines?
- Do they care which boundaries are new and which are old?
- Possibility of a dispute with neighbours adjoining black lines too?





What Does the Future Owner Expect?

- Class C or D criteria
- Size of Lot 2 not greatly reduced
- Intensity of land use for Lot 2 not greatly increased
- Less risk with adopting or accepting boundaries





Decisions – Area & Water Boundaries

- Area accuracy
 - Calculate correctly (no specific tolerance)
 - Can be rounded (to 1:1000 or 1m²)
 - Change in emphasis over time
 - 1972 Regulations – calculate correctly
 - 1998 Regulations/2002 Rules – “True Area”
 - New Rules – calculate correctly

- Water boundary accuracy
 - Sufficient to meet purpose and avoid overlaps
 - No numeric standard



Decisions – Geodetic

- Orientation – NZGD 2000 required
 - Approximately 1% of surveys not geodetic
 - Dispensation available for limited time
- Connection to geodetic required
 - Class A - connect if 6th order within 500m
 - Class B - connect if 6th order within 1000m
 - Not necessarily a geodetic control mark
 - Can be an adopted connection



Decisions – Witness Marks & PRMs

- Witness Marks
 - Minimum of three for Class A, four for Class B
 - Class A distance reduced to 150m
 - Class B retained as proposed - 500m
 - Extension for “back country” to 1000m
- Permanent Reference Marks
 - Minimum of two required
 - Class A - distances extended to 300m
- Longevity
 - “Can reasonably be expected to survive” 10 years/50 years



Decisions – Monumentation CSD

- Monumentation CSD usage extended from Proposed Rules
 - Will now apply also to pre-digital CSDs
 - Show vector/s from “witness” mark to boundary
 - “Witness” mark must meet distance to boundary and accuracy to boundary standards
 - Origin, traverses not required in CSD



Simple Monumentation Plan

- Eg, single boundary mark reinstatement





Decisions – Record Purposes CSD

- All CSDs to comply with Rules
 - Monumentation CSDs provide simple method of recording reinstated boundary marks
 - No record purposes CSDs under Rules
 - Field notes by themselves are not CSDs



Decisions – Vectors

- Sufficient vectors in CSD to locate and verify marks (as proposed)
- As many vectors on plan diagram as practical to be shown
- No definition of calculated and measured
 - Up to surveyor's judgement
 - Not defined in 2002 Rules either



Decisions – Appellations

- Lot or Section <number>
- Maori Block <alternating letters and numbers>
- Unit <number + optional letter>
- Area (lease) <number + optional letter>
 - Proposal for “Building Area” removed
- Area (other) <letter + optional letter>
 - Eg, easement, covenant



Decisions – Symbology

- Black symbols
 - Considered colour but decided against it
- Size/weight described in general terms
- Special PRM symbol (triple circle)
- New/adopted posts – open square
- Calculated – dotted line
 - Distinctly different from adopted and measured



Decisions – Survey Report

- Required in CSD
- Content specified
- But can have reference to information if provided elsewhere in CSD



Consultation

- No additional public consultation phase
- On-going consultation via Expert Committee until final Rules signed off
 - All changes considered and voted on by Expert Committee
 - Six external surveyors on Committee





What's Next

- Remaining issues to be decided by Expert Committee in November 2008
- Seminars explaining final Rules – approximately March-April 2009
- Changes to Landonline to support Rules
- New Rules in effect approx October 2009
- Some guidance documentation will be required

Conclusion

- Consultation resulted in significant improvements
- Thanks to the members of the Expert Committee



Questions / Discussion

