iVote

Technology Assisted Voting

**NSW Parliament House, Waratah Room, Level 7
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iVote for SGE 2015

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electoral
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What will be covered:

1.	Introduction	Colin	(5 min)
2.	iVote Background	Ian	(10 min)
3.	eVoting Other Jurisdictions	Ian	(5 min)
4.	iVote for SGE 2015	Ian	(10 min)
5.	Emerging Issues	Ian	(5 min)
6.	Questions and Discussion?		(10 min)

Introduction

Colin Barry

NSW Electoral Commissioner

- Presentation requested by JSCEM
- eVoting is a topical issue after federal election
- iVote is not a "silver bullet"
- iVote should be used to deal with people who otherwise would not have been able to vote or for some declaration votes
- iVote usage should only increase after informed public debate

iVote Background

Background – iVote in NSW

- Why Technology Assisted Voting?
  - Interest groups representing electors with a disability or a vision impairment requested accessible and secret voting options.
  - A judicial decision to provide braille ballot papers existed for SGE and still applies for **Local Government Elections**.
  - In March 2010 the NSW Government requested a feasibility report into electronic voting for the NSW State General Election in March 2011:
    - Report tabled in NSW Parliament September 2010
    - Parliament endorsed the report and appropriated funds for implementation
    - iVote legislation passed on 2 December 2010 with an amendment to include electors outside NSW on polling day

Technology Assisted Voting basics

- What is iVote?
  - Voting over the internet using a standard web browser
  - Voting by phone using a standard handset and DTMF tones
- Who can use iVote?

  (a) the elector's vision is so impaired, or the elector is otherwise so physically incapacitated or so illiterate, that he or she is unable to vote without assistance,

  (b) the elector has a disability (within the meaning of the Anti-Discrimination Act 1977) and because of that disability he or she has difficulty voting at a polling place or is unable to vote without assistance,

  (c) the elector's real place of living is not within 20 kilometres, by the nearest practicable route, of a polling place, or

  (d) the elector will not throughout the hours of polling on polling day be within New South Wales.

# Technology Assisted Voting basics (cont...)

- Approved Procedures must be published prior to voting covering;
  - registration, secrecy of ballot, security of systems, scrutiny of ballot papers printed from the virtual ballot box.
- Registering for iVote;
  - Person must be on NSW electoral roll in order to register.
  - Elector can apply by phone to a call centre or self service via a web browser over the internet.
  - Elector provides a 6 digit PIN at the time of registration.
  - NSWEC confirms application by letter to enrolled address.
  - NSWEC provides an 8 digit iVote Number later, when registration is accepted.
  - iVote Number is delivered by post, and/or SMS and/or email if requested. Electors with a disability may receive by telephone.

Technology Assisted Voting basics (cont...)

- Using iVote at SGE 2011
  - Voting took place from 8am Monday 14th to 6pm Friday 25th March 2011 (the same as pre-poll period) for SGE 2011.
  - Elector needed to enter PIN and iVote Number to vote.
  - iVote by Phone follows the Telephone Voting Standard from Electoral Council of Australia.
  - The Legislative Assembly ballot is presented first, followed by the Legislative Council ballot.
  - A voter receipt is provided for votes cast whether accepted by phone or internet.
  - Receipts could be checked from 28th March by entering iVote Number on phone or web to confirm vote scrutinised.

Satisfaction

- Post Election Survey
  - 94% satisfied
  - Main suggested improvement was to extend usage
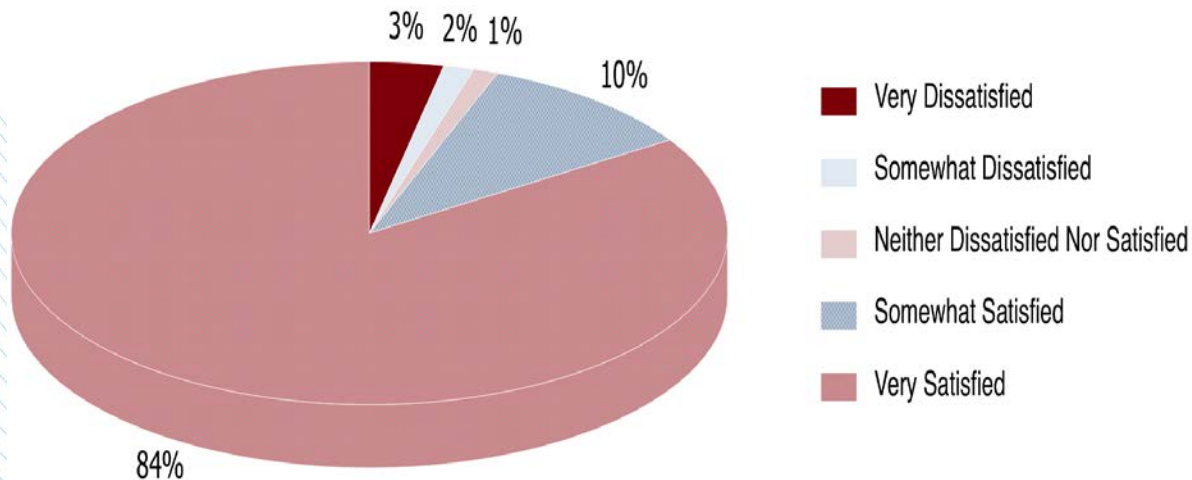
By-elections since SGE 2011

- Five by-elections since SGE 2011
- Generally an increase of 100% to 200%
- Replaced DTMF phone voting with call centre operators taking phone votes. We have learnt this is a valuable channel and we will run this also at the SGE.
- City elections lower increases than country due to difficulties with focusing promotions
- Elector response very positive

eVoting Other Jurisdictions

eVoting Other Jurisdictions

- Electronic Voting History in Australia
  - The Australian Electoral Commission used a remote electronic voting system for overseas ADF personnel in 2007 and also used a kiosk system for blind or low-vision electors.
  - The Victorian Electoral Commission provided electronic voting in pre-poll locations at their 2006 and 2010 elections, principally for disabled electors.
  - Elections ACT uses an in-polling-place system for all polling places, which allowed some 44,000 people to vote in 2008 and since.
  - The Tasmanian Electoral Commission trialled one voting kiosk in their 2007 election.

eVoting Other Jurisdictions (cont…)

- Overseas
  - Norway conducted successful verified voting projects in 2011 and 2013
  - Estonia conducted the largest remote online parliamentary election so far, in 2011 where 140,846 people voted using the internet out of 913,346 electors.
  - Brazil uses voting machines in a large number of polling places.
  - India used over 1 million voting machines in 2004.
  - Switzerland and France use a remote electronic voting.
  - Other countries with some electronic voting experience include; Britain, Ireland, Canada, Venezuela, New Zealand and USA.

eVoting Other Jurisdictions (cont…)

- Norway National Election in September 2013
  - Norway conducted a nation election in early September 2013 which allowed the use of remote electronic voting in 12 electorates for any elector.
  - Mr Brightwell was official observer
  - Over 50 countries attended conference and observed the election
  - Use of electronic voting was generally considered a success and had very few detractors. Many sceptics in Norway who attended conference were pleased with the outcome.
  - Some technical problems were experienced but did not put the outcome of the vote in doubt.
  - May not run electronic voting again as its use needs legislation.

eVoting Other Jurisdictions (cont…)

- Experiences from Norway for NSW
  - The publication of source code on the internet did not provide any discernable benefits as no one appeared to compile the code and definitely no one provided comment on it.
  - Norway used and appointed board of experts to observe the election. This aligned with their overall scrutiny approach for elections where an election board is appointed to oversee the election and act as a court of disputed return.
  - The decryption ceremony did not improve transparency of the decryption process. Another approach is needed.
  - Norway used internationally recognised organisations to audit and review their election. Audit reports to follow soon.
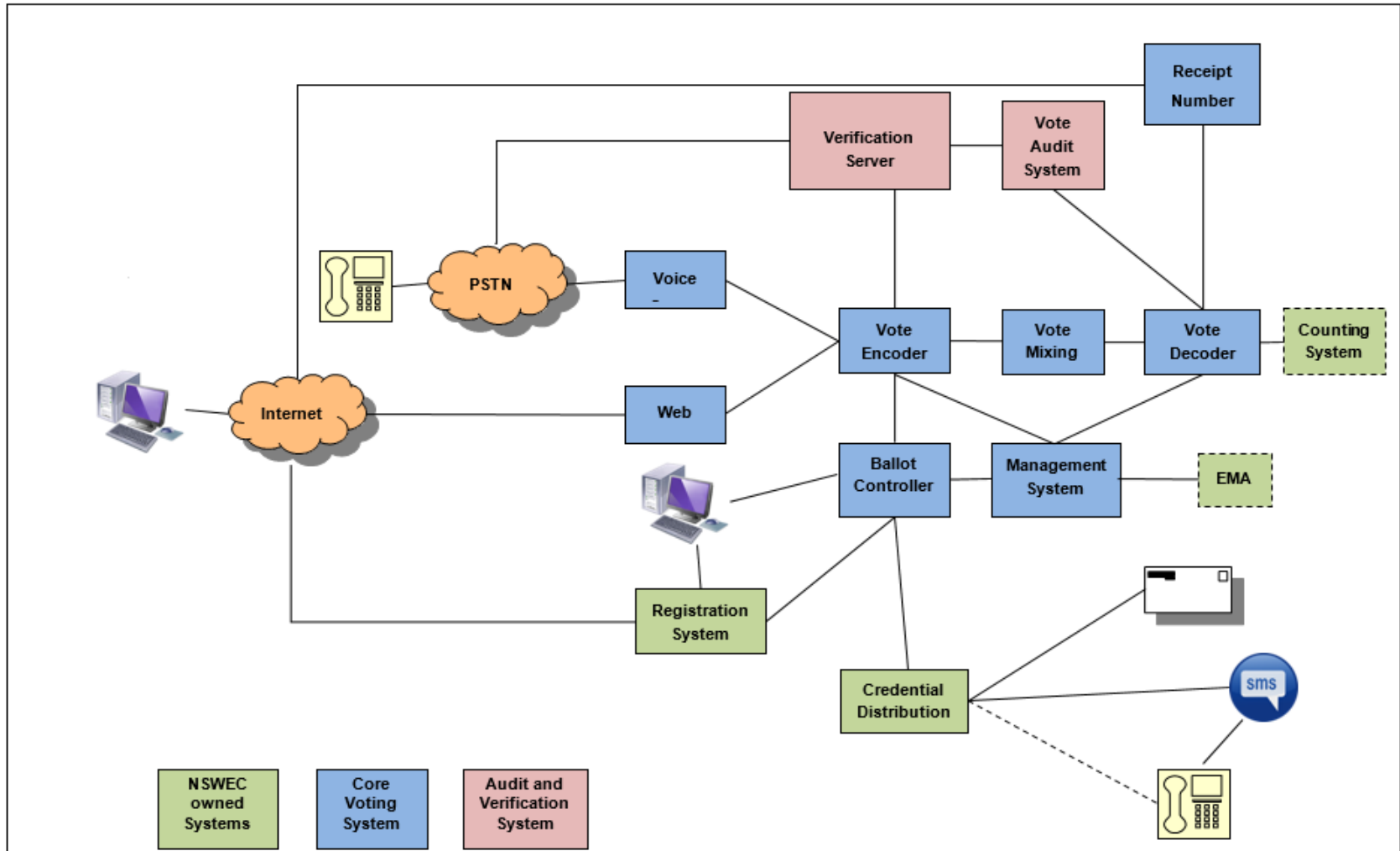
iVote SGE 2015

iVote for SGE 2015

- iVote Strategy for 2015
  - Service needs of primary stakeholders – BLV and disabled
  - Improve enfranchisement of geographically disadvantaged electors
  - Reduce failure of traditional "problem" vote types;
    - Interstate and overseas PV and attendance voters
    - Mobile voting
    - Antarctic voting
    - Cruise ships
  - Prove viability of attendance voting so it can be proposed for LGE 2016 Local Government election to address lack of absent voting for over 200,000 electors
  - Align iVote cost per vote to that of current costs
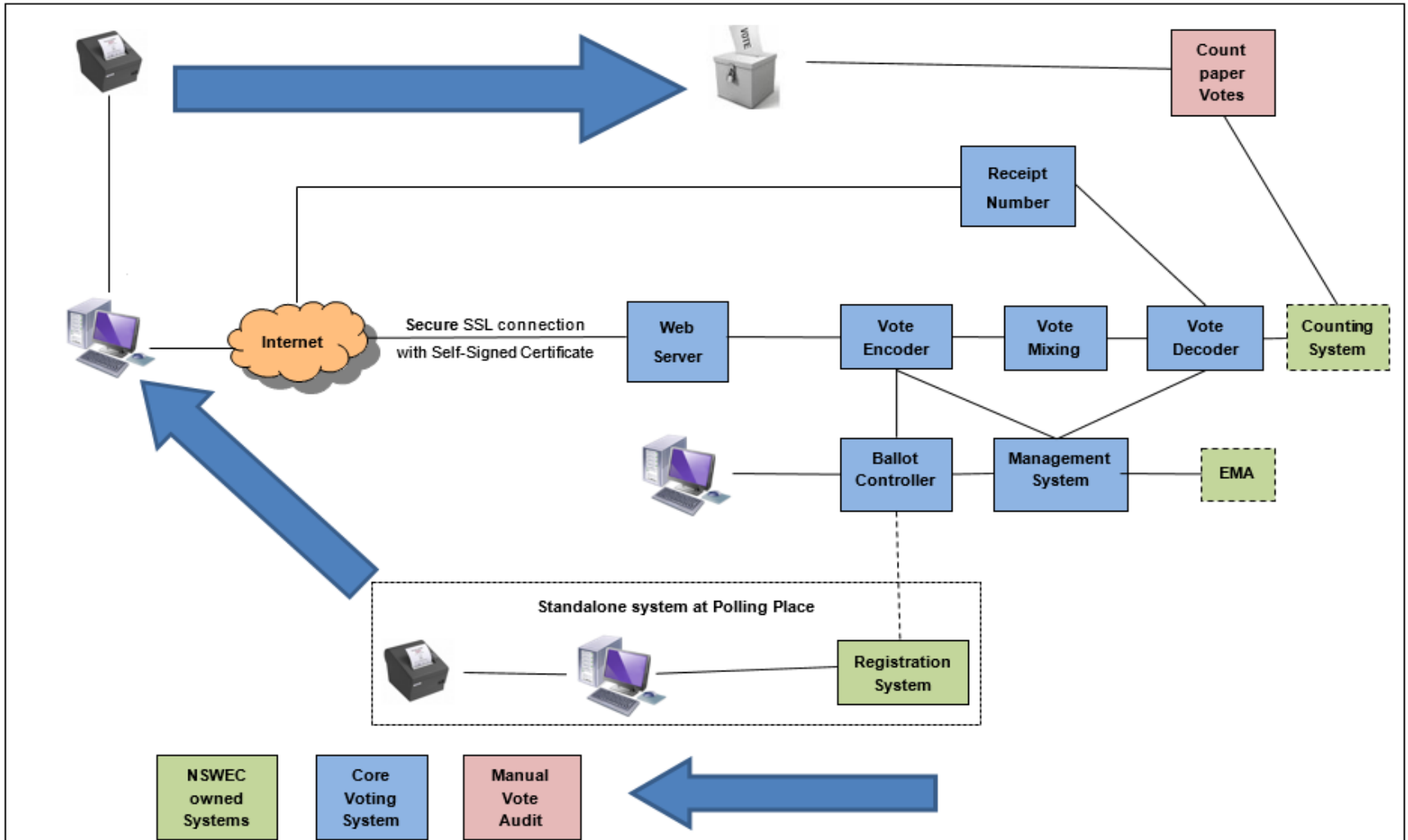
iVote for SGE 2015 (continued...)

The following improvements could be considered for iVote in 2015;

- Increase eligibility classes by including GPVs
- Take phone votes from disabled using call centre operators & enter into iVote web system.
- Trial attendance voting at Sydney Town Hall with paper receipt for expansion at next Local Government election
- Improve Trust with full preference verification by voice over phone
- Increased transparency by involving more reviewers
- Streamline operation by integrating registration with voting system

iVote Application Architecture

iVote Attendance Application Architecture

iVote for SGE 2015 (cont…)

- Currently no ability for interested members of the public to participate in reviewing the iVote process
- All experts involved in the iVote are engaged by the Commission
- What is the value of Governance for Public Elections?
  - Ensure the Commissioner is fully informed and in control of the electoral process
  - Ensure that all persons responsible for managing the electoral process conducted the election in accordance with the legislation and the Commissioner's directions
  - Ensure unexpected events are handled correctly
  - Provide confidence to the electorate that the election has been conducted in accordance with legislation and stated processes

iVote for SGE 2015 (continued...)

The following governance improvements are proposed for iVote in the future;

- Improve Trust
  - Voter verification of preferences through IVR phone channel
  - Auditor verification that votes are counted as cast

- Increased transparency
  - Competent Independent auditors review system
  - Increased publication of system documentation, but not code

- Streamline operation
  - Integrate registration process with voting process
  - Integrate registration with credential distribution process

iVote for SGE 2015 (continued...)

- Technical Advisory Group
  - membership to be by invitation by the NSWEC, on the basis of expertise and ability to make a contribution to the design and implementation of iVote, and subject to confidentiality conditions;

- Stakeholder Reference Group
  - membership to be by invitation by the NSWEC, based on involvement with aging, disabled, vision-impaired and other target voter categories, involvement in political processes and ability to make a contribution to understanding the requirements of these stakeholders; and

iVote for SGE 2015 (continued...)

- Technical Consultative Group
  - membership to be advertised openly, with published selection criteria against which applications will be assessed
    - agree to keep information provided, and to undertake the review, in a secure manner, and to not provide it to unauthorised person/s or organisation/s without the expressed written permission of the Electoral Commissioner;
    - agree to provide all comments about iVote to the Electoral Commissioner in a written form and not make further public comment on the code (unless required by law or to the Electoral Matters Committee) until after expiry of the period during which the election can be contested in the Court of disputed returns; and
    - undertake the review of iVote solely for the benefit of the electors of NSW.

iVote for SGE 2015 (continued...)

- Security and Integrity – Internet Voting
  - Identify any instances of elector impersonation – letter to elector
  - Each elector can verify their vote **cast as intended** by allowing voice verification
  - The auditor verifies every vote is **decrypted as cast** by comparing to verified votes
  - Anyone can verify that all votes are correctly **counted as decrypted** because all preferences from the decryption are published on website
  - Each elector can verify their vote was included in the count by checking their receipt is published on public website

iVote for SGE 2015 (continued...)

- Security and Integrity – Attendance Voting
  - Identify any instances of elector impersonation – personal mark-off the same as all other attendance voting
  - Each elector can verify their vote **cast as intended** by allowing paper audit trail verification
  - The auditor verifies every vote is **decrypted as cast** by comparing paper audit trail to published results
  - Anyone can verify that all votes are correctly **counted as decrypted** because all preferences from the decryption are published on website
  - Each elector can verify their vote was included in the count by checking their receipt is published on public website

iVote for SGE 2015 (continued...)

The following extension is recommended for Technology Assisted Voting for SGE 2015;

– Replace current iVote ballot printing and manual counts for Legislative Assembly and Legislative Council with computer counting;

- Remove cost and effort related to printing of iVotes
- Improve ability to analyse preference flows in results
- Reduce manual counting errors
- Publish all preferences on internet to allow count verification

iVote for SGE 2015 (continued...)

The following extension is recommended for Technology Assisted Voting for SGE 2015;

- Online How To Vote;
  - Most iVoters are remote and do not have access to candidate information therefore this information needs to be provided online.
  - Online information would be of assistance to postal voters
  - Need to consider if similar information can be provided over the phone.
- Publish iVote results separately;
  - Publication of iVote results would improve confidence in the electoral outcomes as iVote counts could be compared to results from other voting channels

Emerging Issues

Emerging Issues

The following are issues arising from WA Senate Recount;

- Impact of recount;
  - Increases focus on upper house elections.
  - Request for a recount of upper house is now a real prospect in any jurisdiction.
  - Community expects the problems in WA will not happen in NSW.
- Improvements needed;
  - Minimise potential for errors in ballot paper "chain of custody" from vote being cast to introduction to final count or recount.
  - Justified all variances between election night and final count prior to commencement of final count by improving documentation of variances and decisions related to count approval.

Emerging Issues (continued...)

The following are actions arising from WA Senate Recount;

- Improve LC operations in polling places;
    - Increase staffing and improve training in polling places performing LC count.
    - Improve tracking and tracing of ballot paper movements between polling place and count centre.
    - Reduce ballot paper handling between polling place and count centre.
    - Reduce risk of ballot paper tampering by using tamper evident bags to secure ballot papers in polling places.
    - Encourage increased scrutiny of LC operations in polling places by scrutineers.

Emerging Issues (continued...)

The following are actions arising from WA Senate Recount;

- Improve control of count centre operations;
  - Fully investigate and document variances between election night and final counts.
  - Increase time taken to declare election from 10 days to 15 to 20 days to allow adequate time to finalise LA count and subsequently properly manage LC count processes.
- Improve declaration and pre-poll vote processing;
  - Encourage scrutiny of initial counts in **ALL** RO offices and count centres by scrutineers.
  - Establish independent scrutiny processes in central count locations
  - Improve security of "loose" ballot papers while held in RO offices.
  - Investigate the use of iVote for vote types which are difficult to scrutinise locally and/or have significant "chain of custody" issues e.g. absent votes at large or remote voting centres, geographically remote voters.

Emerging Issues

The following are issues arising from lower House Recounts;

- Impact of recount;
  - All in district used and unused ballot papers issued to polling places and RO offices must be reconciled prior to commencement of final count.
  - Final distribution of preferences must be accurate and auditable.
- Improvements needed for LA;
  - Use computers to count all LA ballot papers (use similar data entry process to LC but in RO office for polling place votes and count centre for declaration votes)
  - Centralise processing of declaration votes to reduce vote handling and improve consistency of preliminary scrutiny.

Questions?

More information

www.elections.nsw.gov.au