# Proportional RANKED CHOICE VOTING **STUDY**



# **Proportional Ranked Choice Voting (pRCV)** Study

Phase 1: Municipal Elections



Remember this acronym:

pRCV — proportional Ranked Choice Voting





See page 11 in study guide.



## This study asks...

Does LWVME support the use of **proportional RCV** to achieve **proportional representation**?





Remember this acronym:

LWVME — League of Women Voters of Maine



# Scope of the study: pRCV



#### Single-seat offices

- Mayor
- Governor
- President



#### **Multi-member bodies**

- Municipal Councils and Boards
- County Commissions
- State Legislature
- Federal Legislature





# Scope of the study: pRCV





- Mayor
- Governor
- President



#### **Multi-member bodies**

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# Scope of the study: pRCV



#### Single-seat offices

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#### **Multi-member bodies**

- Municipal Councils and Boards
- County Commissions
- State Legislature
- Federal Legislature





## This study asks...

Does LWVME support the use of proportional RCV to achieve proportional representation in municipal elections?





# Why pRCV?

We have a problem in Maine municipal elections.





#### **Town Council**

Vote for 3.

Candidate 1

Candidate 2

Candidate 3

Candidate 4

Candidate 5





#### **Town Council**

Vote for 3.

Candidate 1

Candidate 2

Candidate 3

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Candidate 5

All current Councilors are registered as Republicans. . .





#### **Town Council**

Vote for 3.

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Candidate 4

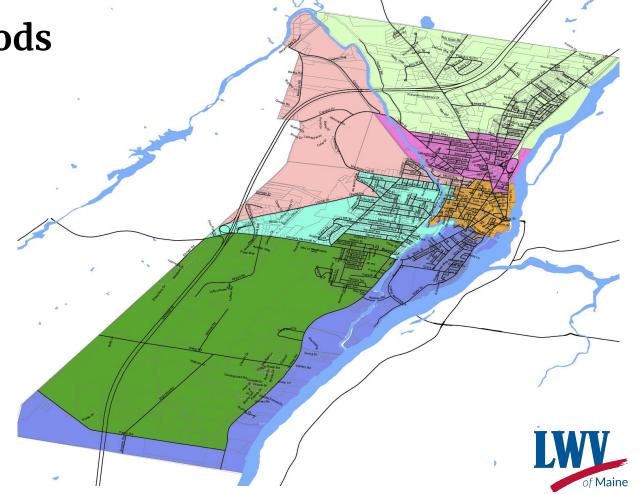
Candidate 5

All current Councilors are registered as Republicans. . .

... even though ~40% vote Democrat.

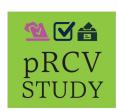


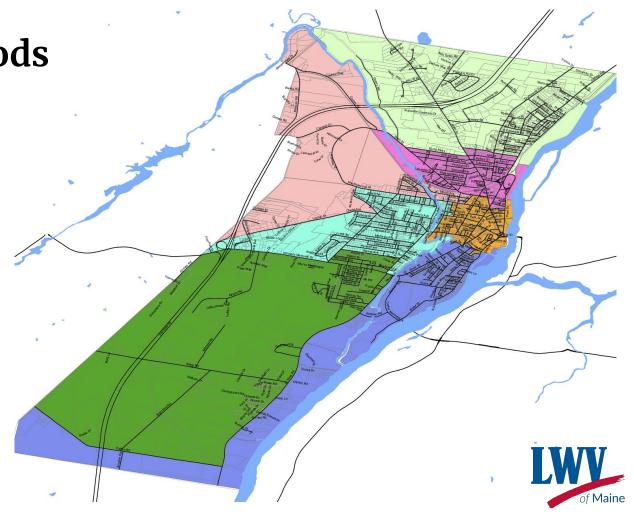






All current Councilors are registered Democrats...

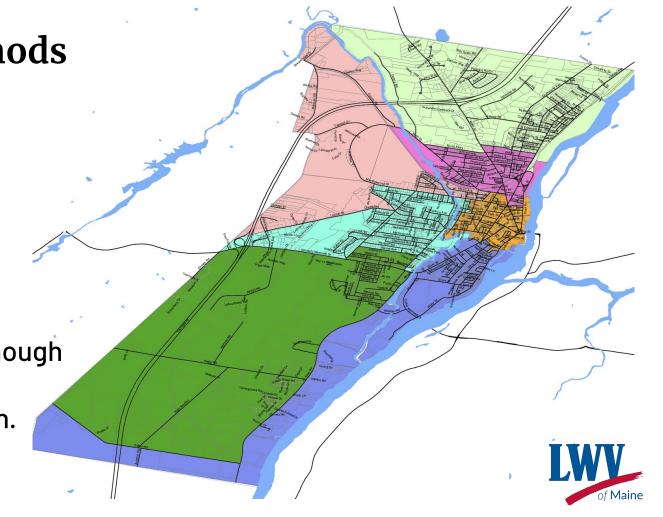




All current
Councilors are
registered
Democrats...

... even though ~30% vote Republican.







### Background

- Relevant League positions
- What is proportional representation?







### Background



### What is pRCV?

- History
- Modern usage
- Mechanics







Background



What is pRCV?



Common methods v. pRCV







Background



What is pRCV?



Common methods v. pRCV



Implementation Issues





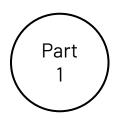


# Background

- Relevant League positions
- What is proportional representation?





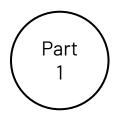


# **Relevant League positions**

1. LWVME supports single-winner RCV.





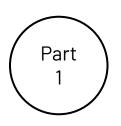


# **Relevant League positions**

- 1. LWVME supports single-winner RCV.
- 2. LWVUS supports proportional representation.





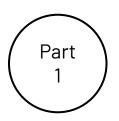


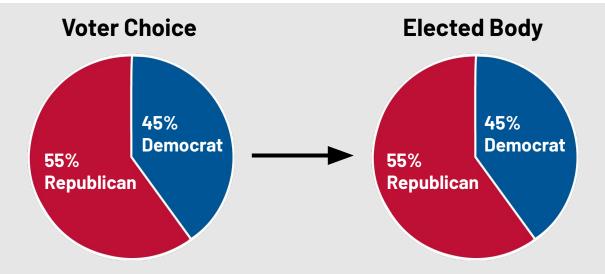
". . . the Representative Assembly, should be an exact Portrait, in Miniature, of the People at large, as it should think, feel, reason and act like them..." — John Adams, 1776







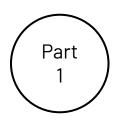


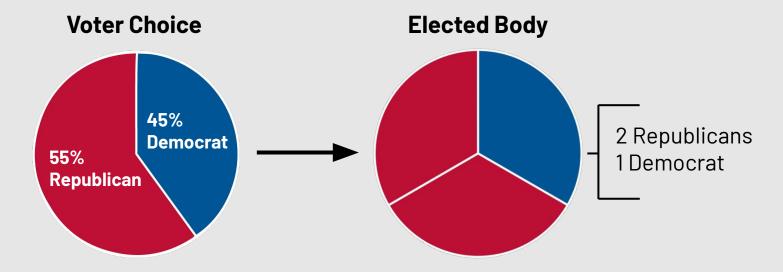








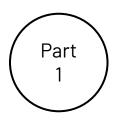


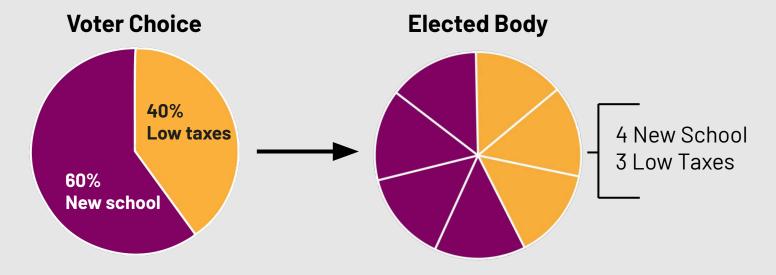








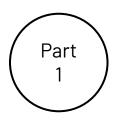


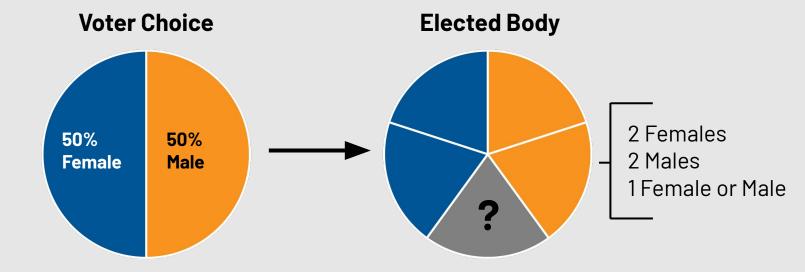








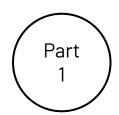












# This study asks...

Does LWVME support the use of **proportional RCV** to achieve **proportional representation** in municipal elections?





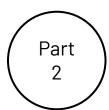


# What is pRCV?

- History
- Modern Usage
- Mechanics

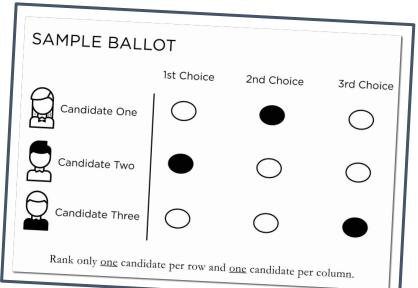






# What is proportional RCV (pRCV)?

 a multi-winner version of RCV

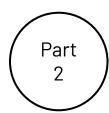






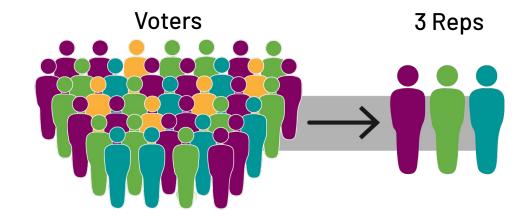
See page 12 in study guide.





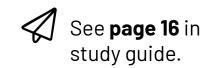
# What is proportional RCV (pRCV)?

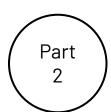
- a multi-winner version of RCV
- designed to produce proportional representation









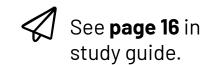


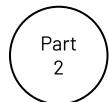
pRCV was invented in Europe during the 1850





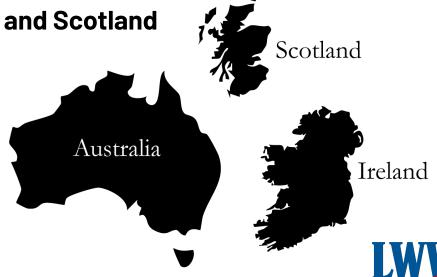




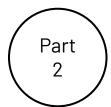


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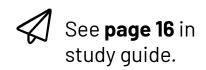
Common in Australia, Ireland, and Scotland







- pRCV was invented in Europe during the 1850
- Common in Australia, Ireland, and Scotland
- Used in 25 cities and towns in the US, beginning in the 1920s

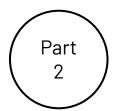




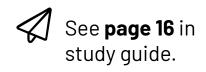
nydailynews.com







- pRCV was invented in Europe during the 1850
- Common in Australia, Ireland, and Scotland
- Used in 25 cities and towns in the US, beginning in the 1920s
- Survived only in Cambridge, MA and Arden, DE

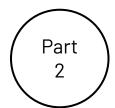




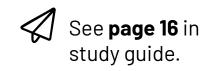
Getty Images







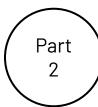
- pRCV was invented in Europe during the 1850
- Common in Australia, Ireland, and Scotland
- Used in 25 cities and towns in the US, beginning in the 1920s
- Survived only in Cambridge, MA and Arden, DE
  - Recent resurgence, with 6 new implementations











## Tabulating ranked choice contests





Step 1. Determine "election threshold"

Always 50% (+1 vote)

Step 2. Run-off Rounds

- a. Cross threshold?→ Elected

  Tabulation complete
- b. No winner? → Eliminate lowest Transfer to next choice
- (Repeat as needed.)



Multi-Winner pRCV (Proportional)

Step 1. Determine "election threshold"

Depends on the number of seats

Step 2. Run-off Rounds

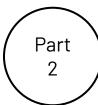
- a. Cross threshold?→ Elected

  Surplus transfer
- b. No winner? → Eliminate lowest Transfer to next choice
- (Repeat as needed.)



See **page 22** in study guide.







#### Single-Winner RCV (Majority)

Step 1. Determine "election threshold" Always 50% (+1 vote)



- a. Cross threshold?→ Elected

  Tabulation complete
- b. No winner?→ Eliminate lowest Transfer to next choice
- (Repeat as needed.)



#### Multi-Winner pRCV (Proportional)

Step 1. Determine "election threshold"

Depends on the number of seats

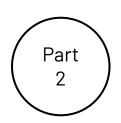
#### Step 2. Run-off Rounds

- a. Cross threshold?→ Elected

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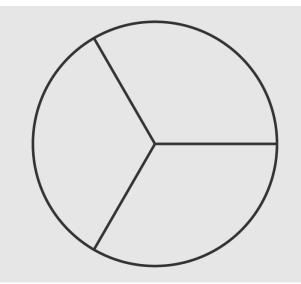
### Determining the election threshold

#### Two-seat race?

Election threshold = 1 / (seats +1)

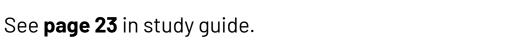
$$= 1/(2+1)$$

$$= 1/3$$

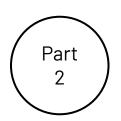












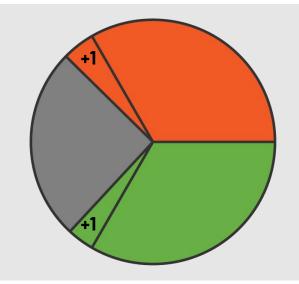
### Determining the election threshold

#### Two-seat race?

Election threshold = 1 / (seats +1)

$$= 1/(2+1)$$

$$= 1/3 (+ 1 \text{ vote})$$









## Determining the election threshold

Three seats Threshold = 1/4 = 25.0% (+1)

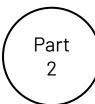
Four seats Threshold = 1/5 = 20.0% (+1)

Five seats Threshold = 1/6 = 16.7% (+1)







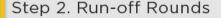






Step 1. Determine "election threshold"

Always 50% (+1 vote)



- a. Cross threshold?→ Elected

  Tabulation complete
- b. No winner?→ Eliminate lowest Transfer to next choice
- (Repeat as needed.)



Multi-Winner pRCV (Proportional)

Step 1. Determine "election threshold"

Depends on the number of seats

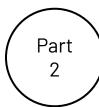
Step 2. Run-off Rounds

- a. Cross threshold? → Elected

  Surplus transfer
- b. No winner? → Eliminate lowest Transfer to next choice
- (Repeat as needed.)











Step 1. Determine "election threshold" Always 50% (+1 vote)

Step 2. Run-off Rounds

- a. Cross threshold? → Elected Tabulation complete
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Multi-Winner pRCV (Proportional)

Step 1. Determine "election threshold" Depends on the number of seats

Step 2. Run-off Rounds

- a. Cross threshold? → Elected Surplus transfer
- b. No winner? → Eliminate lowest Transfer to next choice



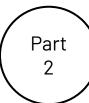
(Repeat as needed.)



(Repeat as needed.)











Step 1. Determine "election threshold"

Always 50% (+1 vote)

Step 2. Run-off Rounds

- a. Cross threshold?→ Elected

  Tabulation complete
- b. No winner? 

  Eliminate lowest

  Transfer to next choice
- (Repeat as needed.)



Multi-Winner pRCV (Proportional)

Step 1. Determine "election threshold"

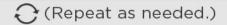
Depends on the number of seats

Step 2. Run-off Rounds

- a. Cross threshold?→ Elected

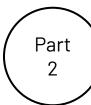
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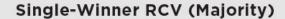












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Step 2. Run-off Rounds

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Multi-Winner pRCV (Proportional)

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Step 2. Run-off Rounds

- a. Cross threshold? → Elected

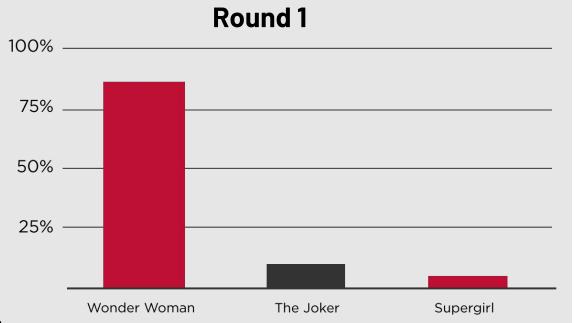
  Surplus transfer
- b. No winner? → Eliminate lowest

  Transfer to next choice
- (Repeat as needed.)





### Why surplus transfer?

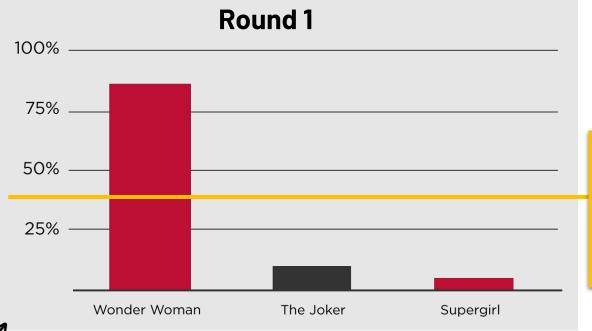








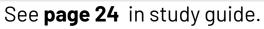
### Why surplus transfer?



Two-seat race, so the election threshold is:

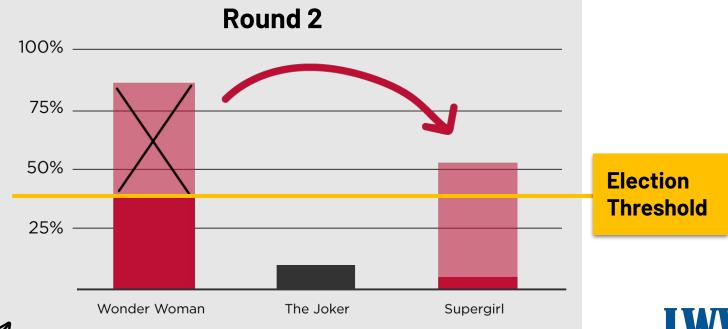
= 1/3 (+ 1 vote)



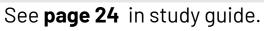




### Why surplus transfer?

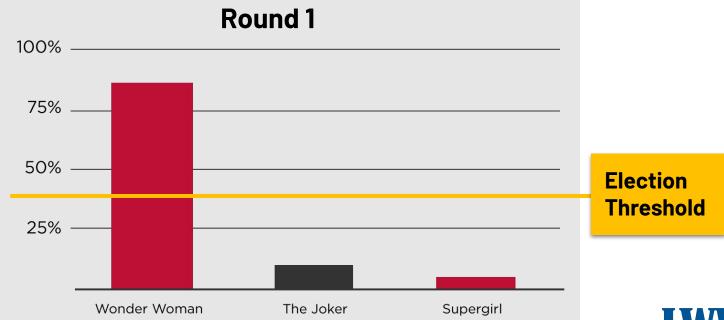








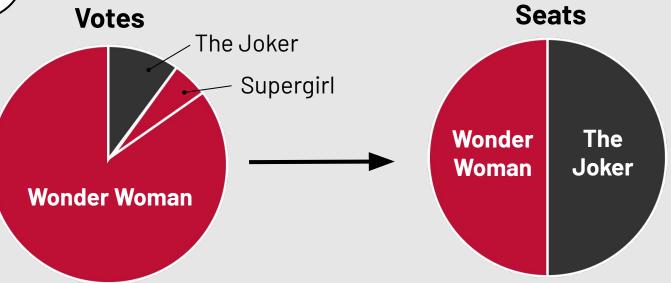
#### If we skip surplus transfer...







#### If we skip surplus transfer...





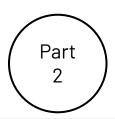


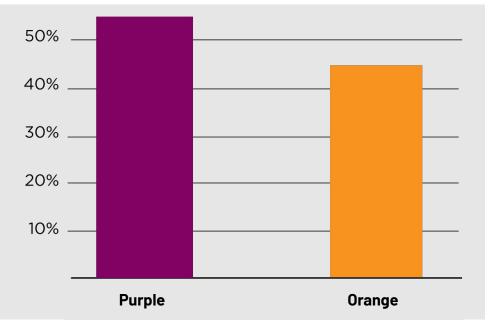
### Why surplus transfer?







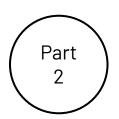


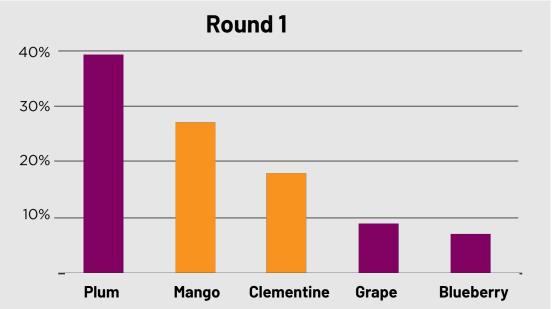


Two **groups** of voters.





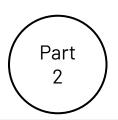


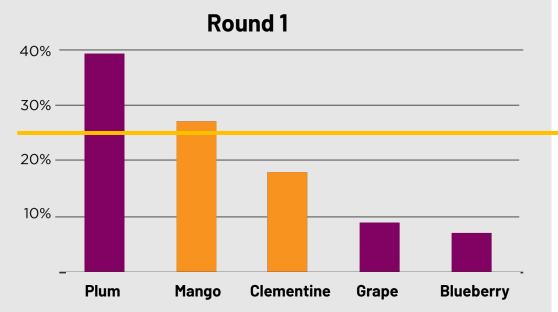


Three-seat race







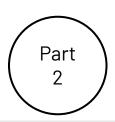


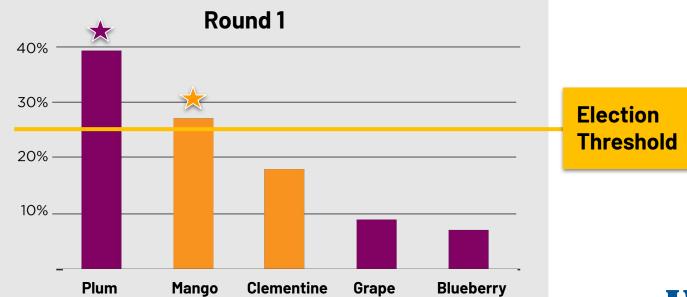
Three-seat race, so the election threshold is:

= 1/4 (+1 vote)



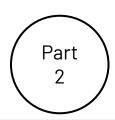


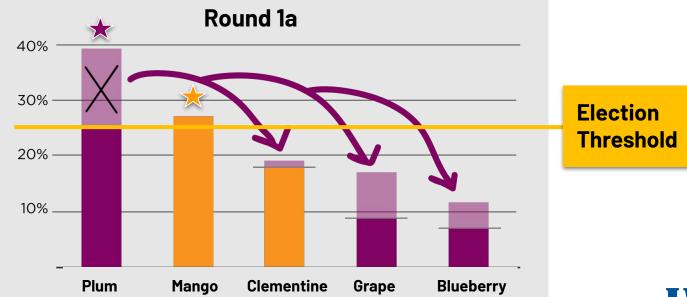






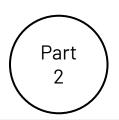


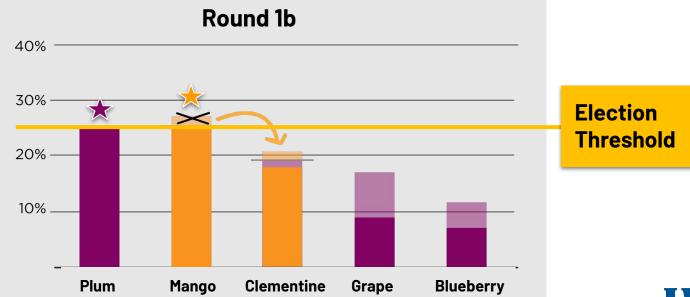






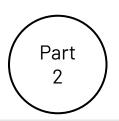


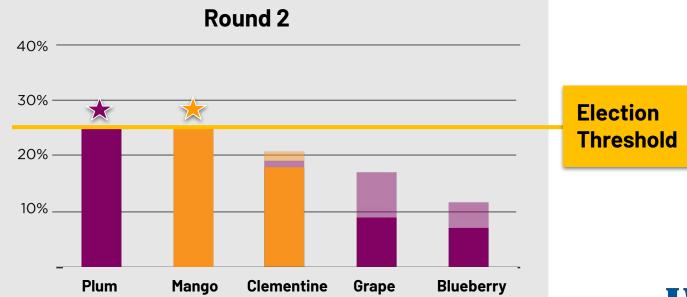






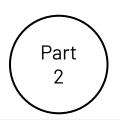








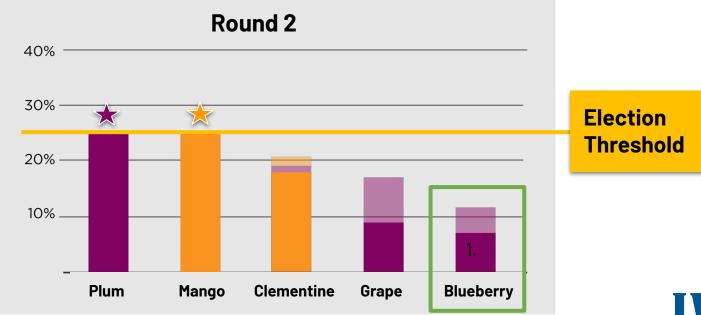


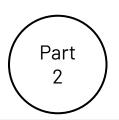


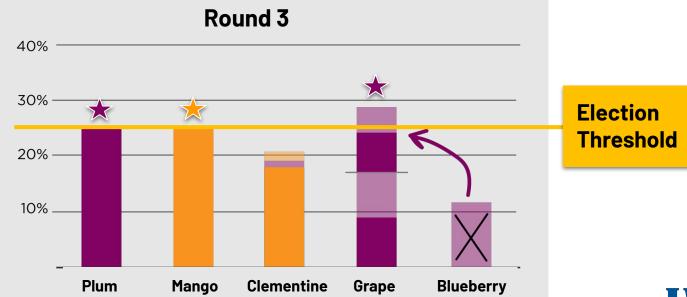
Proportional

**CHOICE** 

VOTING STUDY





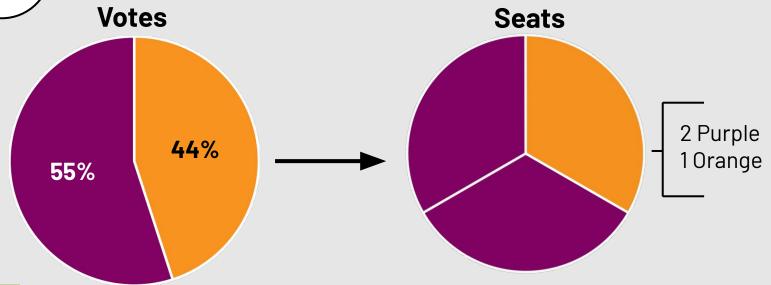








#### And how'd we do?





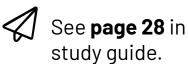


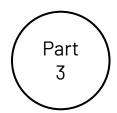


## Comparing pRCV to other election methods







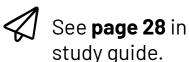


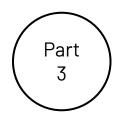
# Comparing pRCV to common approaches

- pRCV v. Vote-for-N
- pRCV v. Single-winner, elected at large
- pRCV v. Single Member Districts







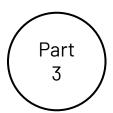


# Comparing pRCV to common approaches

- pRCV v. Vote-for-N
- pRCV v. Single-winner, elected at large
- pRCV v. Single Member Districts





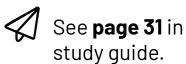


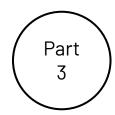
# Violations of the Voting Rights Act









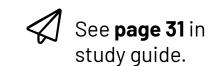


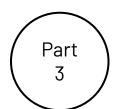
# Comparing pRCV to common approaches

- pRCV v. Vote-for-N
- pRCV v. Single-winner, elected at large
- pRCV v. Single Member Districts









## Comparing pRCV to Vote-for-N

 $'N' \rightarrow$  number of seats to be filled.

- 2 seat election? Vote for 2
- 3 seat election? Vote for 3

#### **School Board**

Vote for 2.

Bob

Cindy C

Donna 🔾

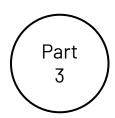
Elmer  $\bigcirc$ 

Fiona O

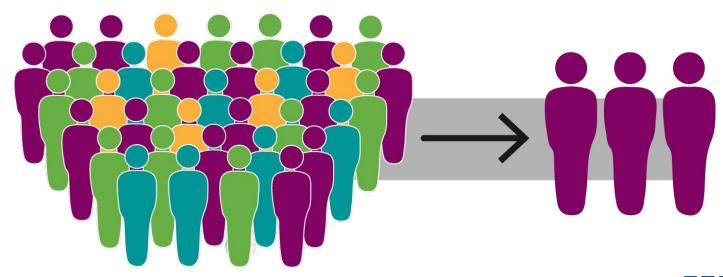
Grant O







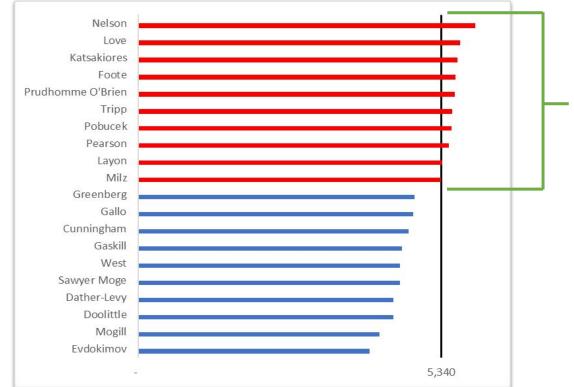
## Vote-for-N → Majority Capture







### Derry, NH → Vote-for-10



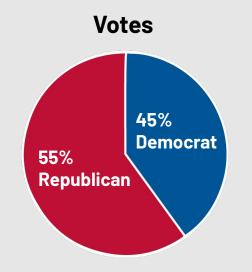
Republicans won all 10 seats with 55% of the vote.

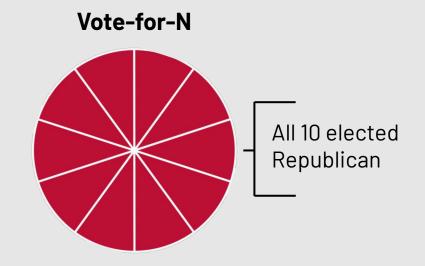






### **Vote-for-N** is <u>not</u> proportional

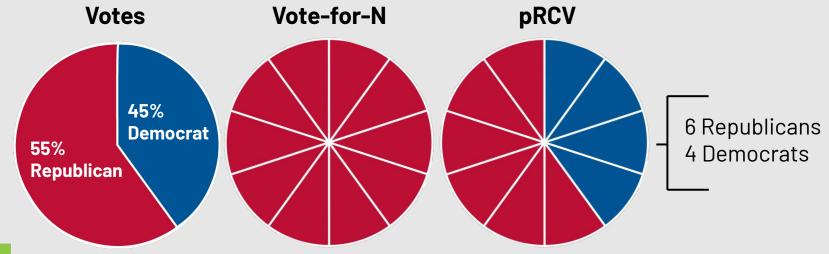






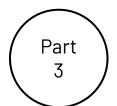


## Vote-for-N is <u>not</u> proportional





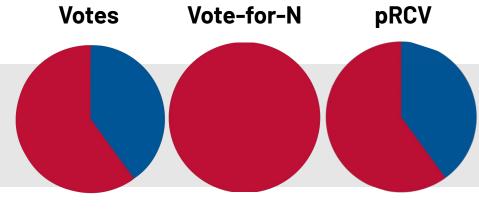




Derry, NH

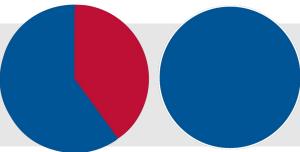
One district, 10 seats

### What about Nashua?

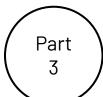


#### Nashua, NH

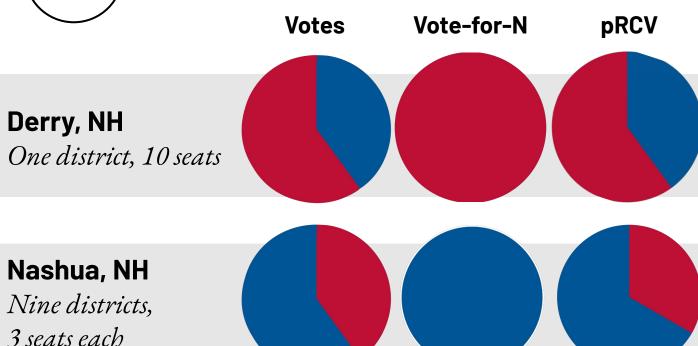
Nine districts, 3 seats each



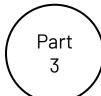




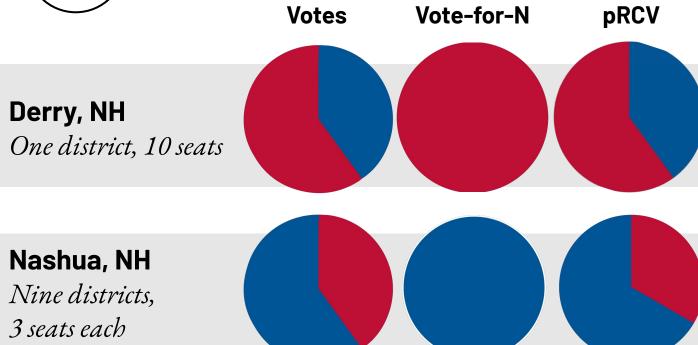
### What about Nashua?



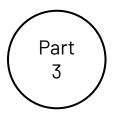




### And what about voter success?







Candidate list effects



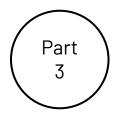




Candidate list effects
 Too few?







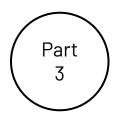
Candidate list effects

Too few?

Too many?







Candidate list effects

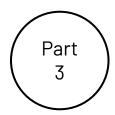
Too few?

Too many?

... particularly in nonpartisan elections.







- Candidate list effects
- Vague campaigning





#### Pros & Cons: pRCV vs. Vote-for-N

#### **pRCV**

- Proportional results
- High voter success
- Minimal 'candidate list effects'
- Promotes clear campaigning

#### **Vote-for-N**

- Majority capture
- Majority voter success
- Strong 'candidate list effects'
- Promotes vague campaigning



#### Pros & Cons: pRCV vs. Vote-for-N

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#### Pros & Cons: pRCV vs. Vote-for-N

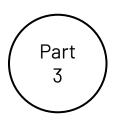
#### **pRCV**

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- Minimal 'candidate list effects'
- Promotes clear campaigning
- More complex vote counting
- RCV ballots

#### **Vote-for-N**

- Majority capture
- Majority voter success
- Strong 'candidate list effects'
- Promotes vague campaigning
- Simple vote counting
- Plurality ballots





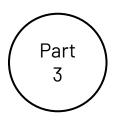
## Comparing pRCV to common approaches

- pRCV v. Vote-for-N
- pRCV v. Single-winner, elected at large
- pRCV v. Single Member Districts





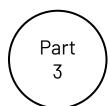




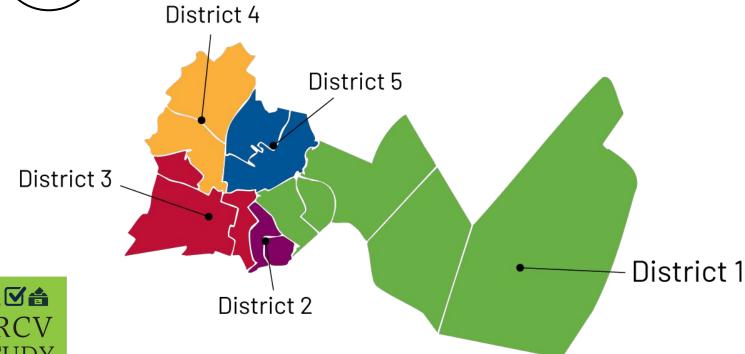
### Part 3 Portland's 8-seat City Council



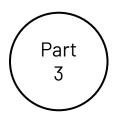




#### Portland's 8-seat City Council





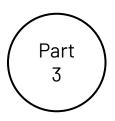


### ) Portland's 8-seat City Council

- 5 Single Member Districts
- 3 Single-winner, elected at large





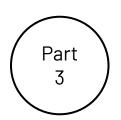


## Comparing pRCV to common approaches

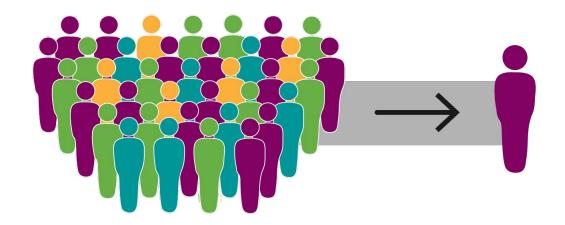
- pRCV v. Vote-for-N
- pRCV v. Single-winner, elected at large
- pRCV v. Single Member Districts





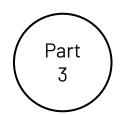


## Single-Winner at-Large → Majority Capture



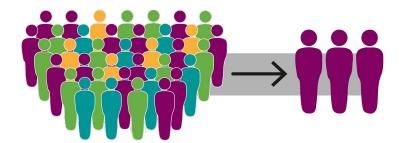






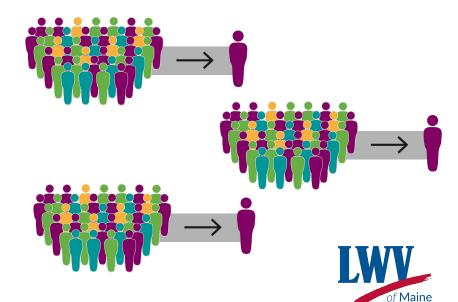
### Comparable at-large elections

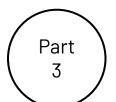
#### Vote-for-N:



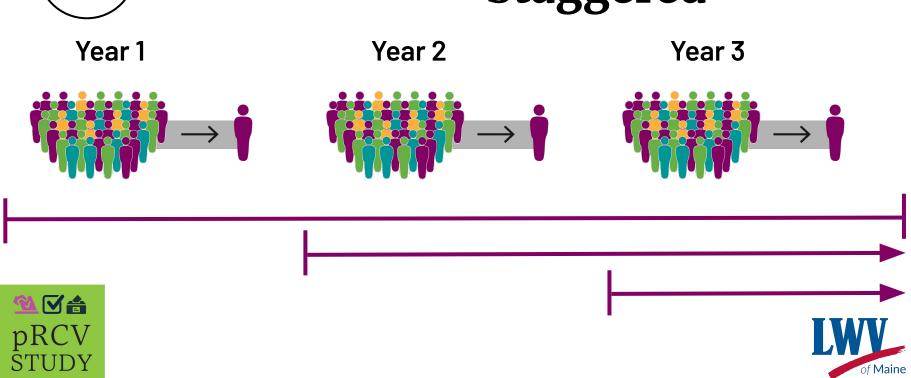


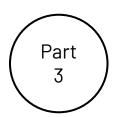
#### Single-Winner at Large:





### Single-Winner at-Large Staggered





#### Single-Winner at-Large Concurrent





Select board, Seat 1



Robert

Amelia

#### Seat 2

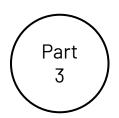


Select board, Seat 2

James







## Pros & Cons: pRCV vs. Single-Winner, at-large

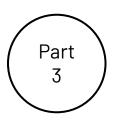
#### **pRCV**

- Proportional results
- High voter success
- More complex vote counting
- Consolidate elections
- RCV ballots

#### Single-winner, at-large

- Majority capture
- Majority voter success
- Simple(r) vote counting
- Overlapping terms
- Plurality ballots





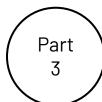
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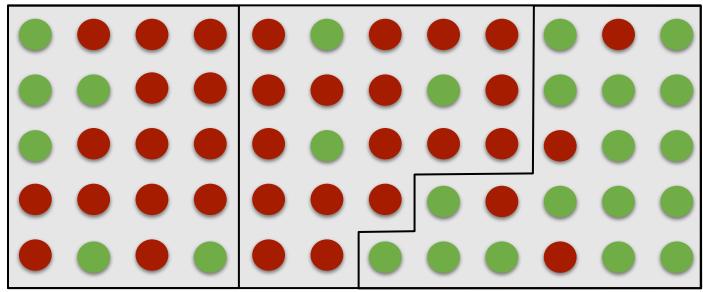








### Single-Member Districts



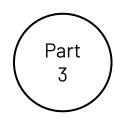






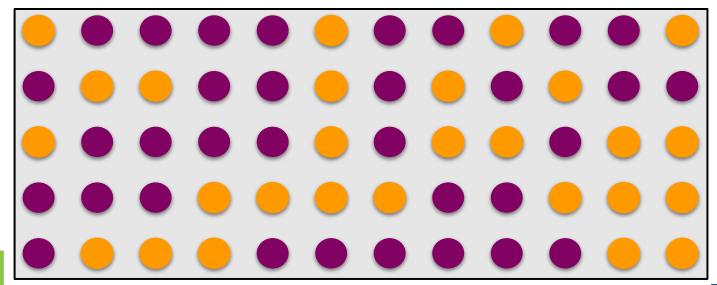






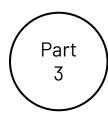
### Single-Member Districts

Three seats to fill. Votes: 55% Purple, 45% Orange



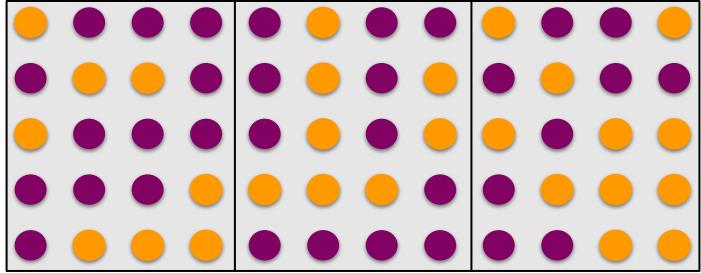






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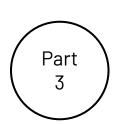


12 Purple | 8 Orange



11 Orange | 9 Purple Orange

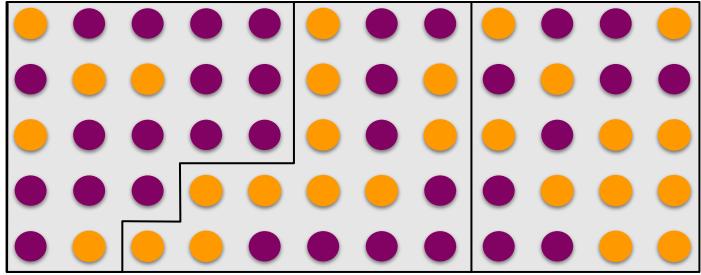




#### **Problem #1:**

#### Redistricting

Three seats to fill. Votes: 55% Purple, 45% Orange



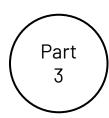


15 Purple | 5 Orange

11 Orange | 9 Purple Orange

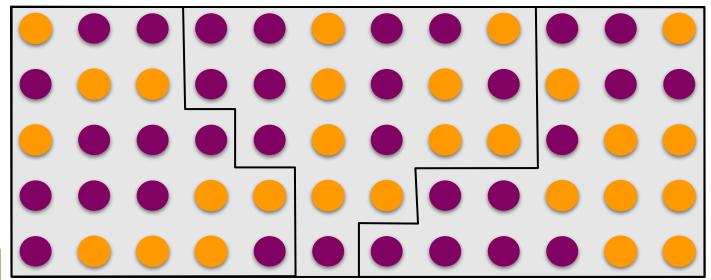
11 Orange | 9 Purple
Orange





#### **Problem #1: Redistricting**

Three seats to fill. Votes: 55% Purple, 45% Orange



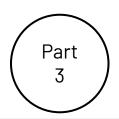


11 Purple | 9 Orange

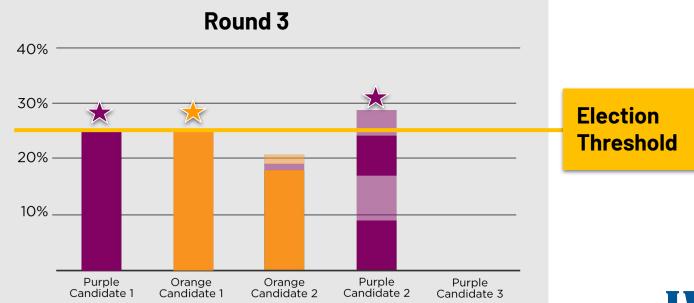
11 Purple | 9 Orange

11 Orange | 9 Purple





### pRCV delivers proportionality...

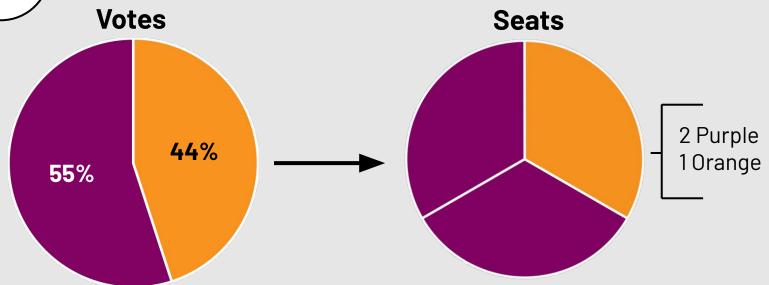






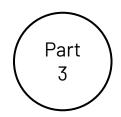


#### pRCV delivers proportionality...





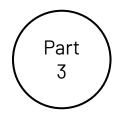




#### Problem #2: Voting blocs may not be stable.



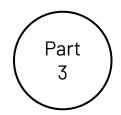




#### Problem #2: Voting blocs may not be stable.







#### Problem #3: Demographic changes

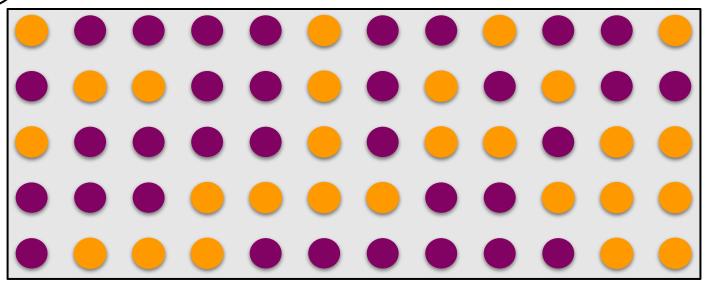






#### Problem #4:

### Demographic distribution

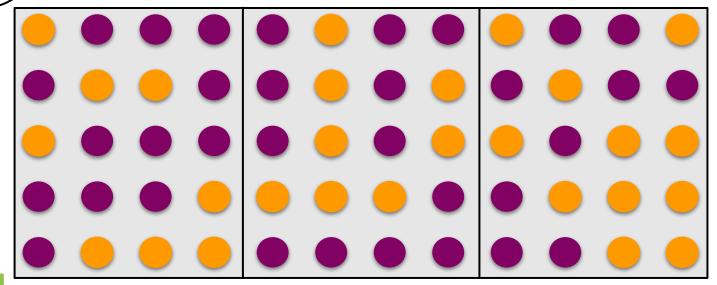




Three seats to fill. Votes: 55% Purple, 45% Orange



#### Limited voter success...



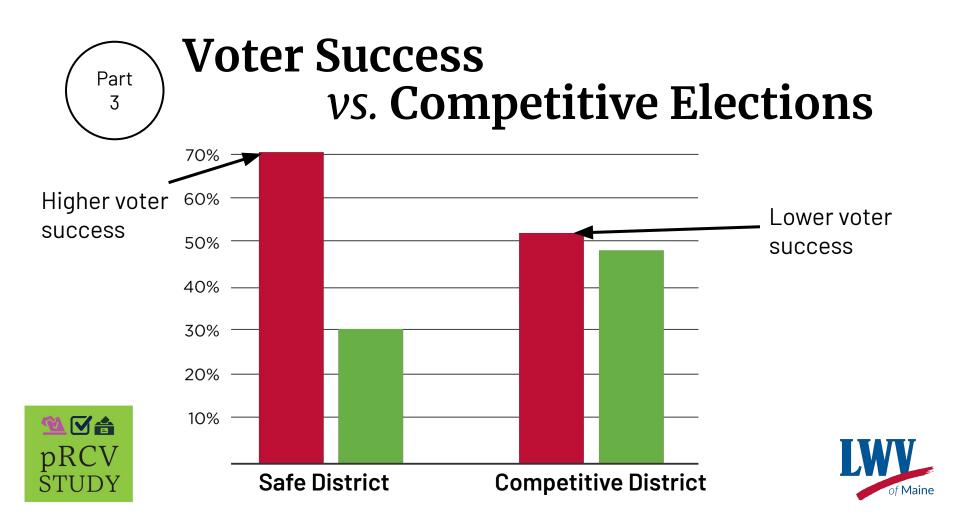


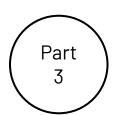
12 Purple | 8 Orange

12 Purple | 8 Orange Purple

11 Orange | 9 Purple Orange



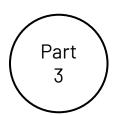




Geographic Diversity?



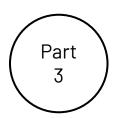




- Geographic Diversity?
- Constituent Relations?



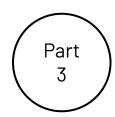




- Geographic Diversity?
- Constituent Relations?
   Single-member districts are smaller.



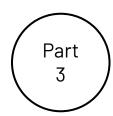




- Geographic Diversity?
- Constituent Relations?
   Single-member districts are smaller.
   pRCV representative shares views.







- Geographic Diversity?
- Constituent Relations?
- Candidates and Campaigning?





## Pros & Cons: pRCV vs. Single-Winner Districts

#### **pRCV**

- Proportional results
- Limited (or no) redistricting
- High rates of voter success and more competitive races

#### **Single-Winner Districts**

- It depends...
- Requires deliberate districting
- Can't have both high voter success and competitiveness



## Pros & Cons: pRCV vs. Single-Winner Districts

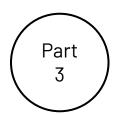
#### pRCV

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- Possible geographic diversity
- More complex vote counting

#### **Single-Winner Districts**

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## Pros & Cons: pRCV vs. Single-Winner Districts

#### pRCV

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- Possible geographic diversity
- More complex vote counting
- Constituent relations?
- Campaigning?
- RCV ballots

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- Simple(r) vote counting
- Constituent relations?
- Campaigning?
- Plurality ballots

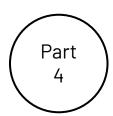




# Implementation Issues







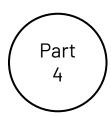
### ) Implementation

• Eligibility - All Maine municipalities.









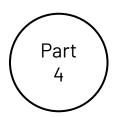
### ) Implementation

- Eligibility All Maine municipalities.
- Voter Education









### **Implementation**

- Eligibility All Maine municipalities.
- Voter Education
- Cost Comparable to single-winner RCV







#### **Summary**

- Proportional representation is a fundamental democratic value
- LWVUS supports proportional representation
- Common election methods are not reliably proportional
- pRCV is an established proportional election method
- Implementation costs are comparable to single-winner RCV



