

Designing for Distance

URI VOTES

Voting
Facilities

Process
Changes

RI Case
Study

THE
UNIVERSITY
OF RHODE ISLAND
COLLEGE OF
ENGINEERING

democracy
fund

Facility Selection Limitations

Possible COVID-19 Challenges:

- ✓ Restrictions on facility type (e.g., schools, nursing homes).
 - ✓ Certain facilities are deemed unusable for public safety.

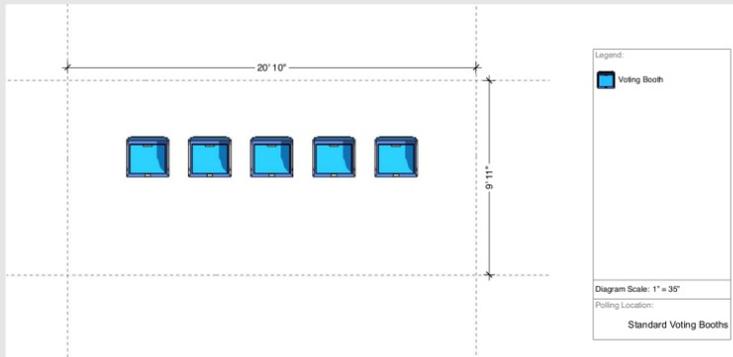
- ✓ Reduced facility quantities.
 - ✓ Fewer facilities willing to participate.
 - ✓ Fewer facilities able to participate.

- ✓ Increased space requirements.
 - ✓ Social distancing for voters and poll workers.
 - ✓ Additional space around voting equipment.

Adjusted Space Requirements

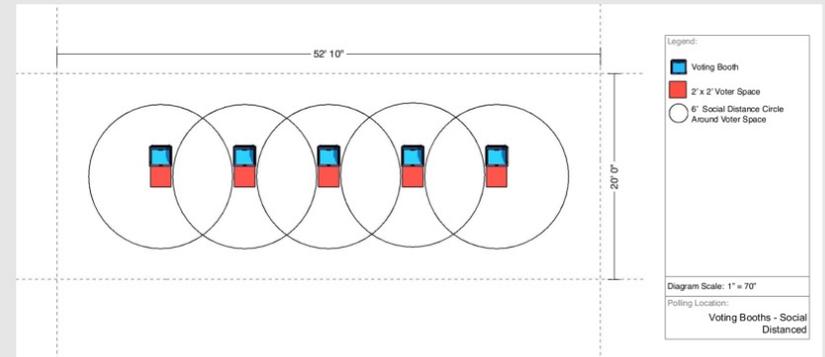
How much space is required to reasonably fit **5** privacy booths?

Traditionally:



208 sq. ft.

Socially Distanced:

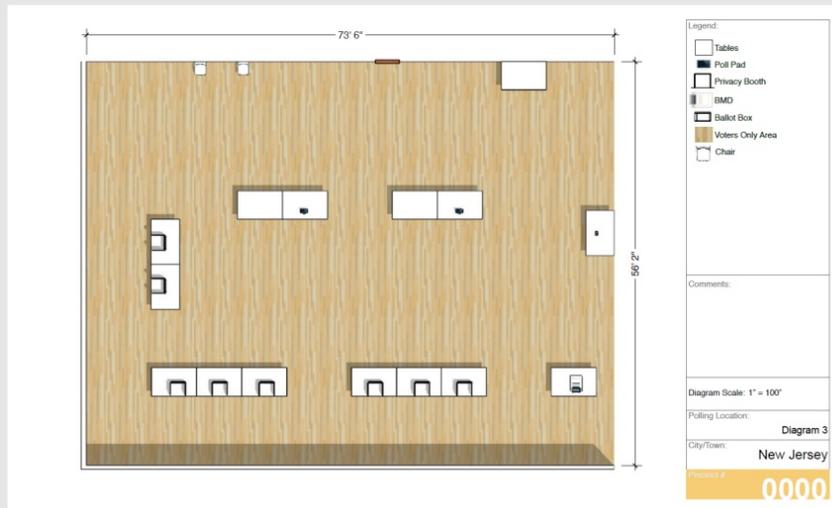


1,056 sq. ft.

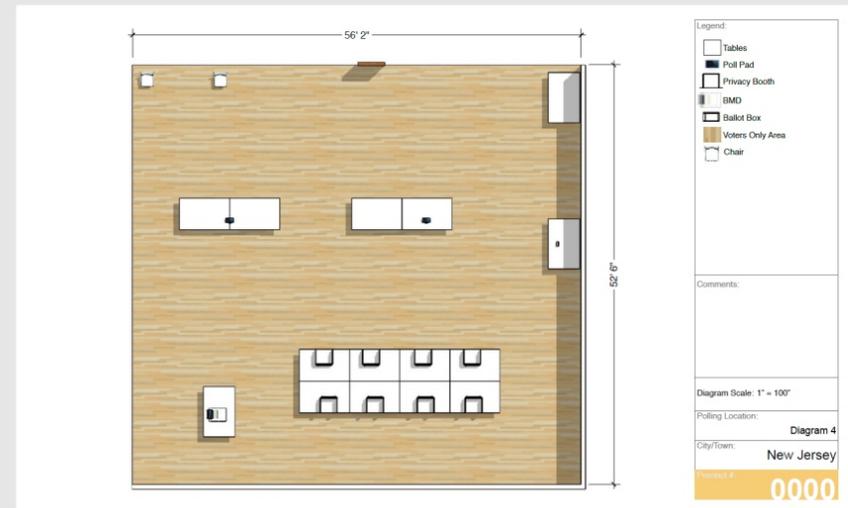
6 ft. social distancing assumed from the edge of each person. 2 sq. ft. of space is included for voters to occupy and 3 ft. are included for travel paths.

New Jersey Space Requirements

How much space is required to hold **8** voting booths, **2** check-in stations, **1** accessible BMD, **1** ballot box, **1** sanitization area, and **2** chairs for observers with social distancing in place?



4,128 sq. ft.

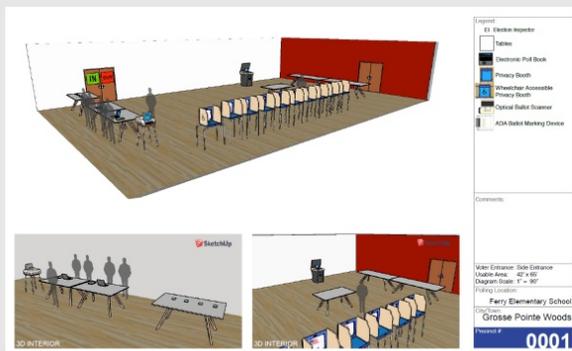
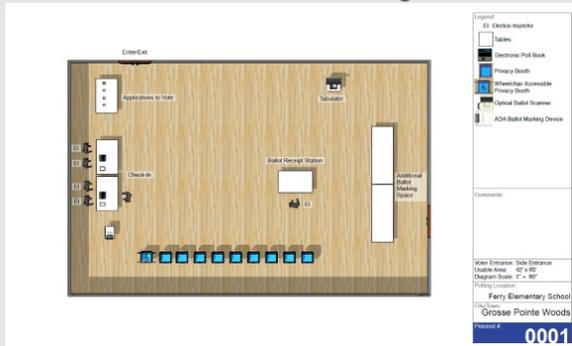


2,949 sq. ft.

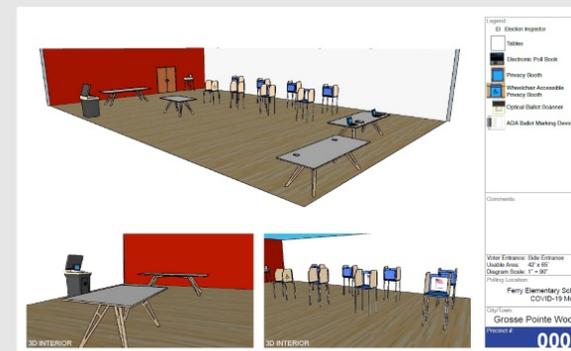
Other Challenges with Social Distancing

A "Straight forward" polling location:

Traditional Layout



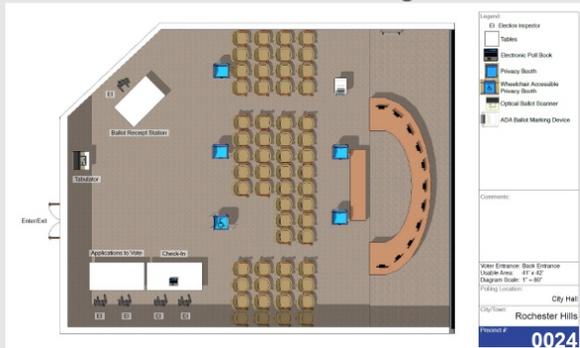
Socially Distanced Layout



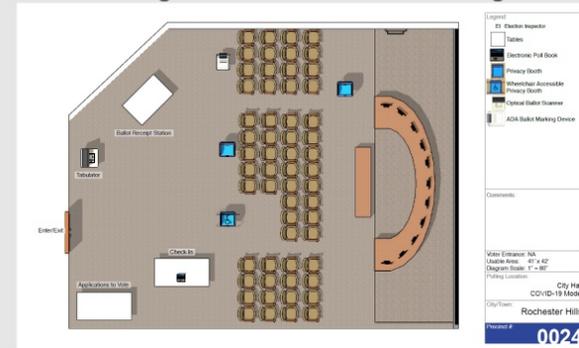
Other Challenges with Social Distancing

A challenging polling location:

Traditional Layout



Socially Distanced Layout



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Processing Changes and Vote Times

How will vote times be impacted by additional or changed processes required for voter and poll worker safety?

- ✓ **Social Distancing:** How will social distancing and reduced resource capacities impact vote time?
- ✓ **Equipment Sanitization:** How will the addition of sanitization processes impact vote time?
- ✓ **Regulation Changes:** Are two poll workers still required to check voters in?
- ✓ How can election administrators prepare for these changes?

Social Distancing



Social distancing is likely to increase the physical length of lines forming at polling locations.

An increase in required space for people and equipment means a reduction in resource capacities.

Resource allocation must be reconsidered with more focus on location size and layout.

Equipment Sanitization



Different strategies will have different impacts on voting systems (e.g., cleaning devices after each use, cleaning devices once an hour).

Sanitization staff will be exposed to uncleaned surfaces for extended durations.

Resource capacity is reduced during sanitization processes.

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Rhode Island 2020 PPP Case Study

Considerations:

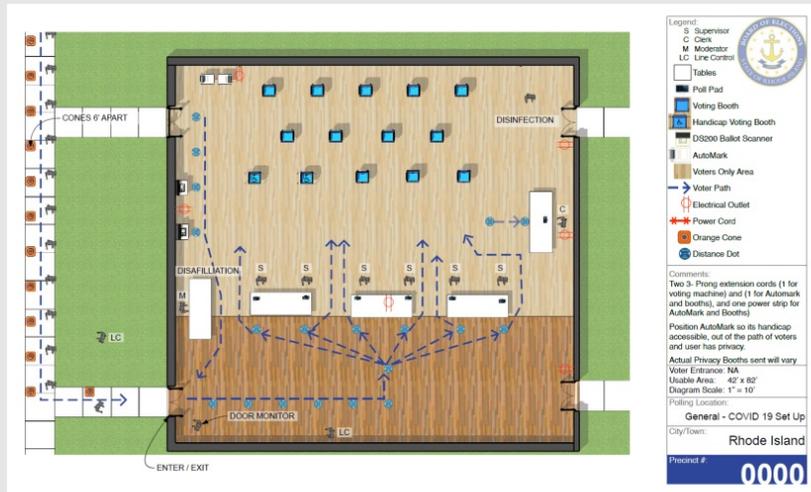
- ✓ 47 Open Polling Locations
- ✓ Social Distancing Precautions in Place
- ✓ Periodic Sanitization of Equipment

Analysis:

- ✓ Worker Exposure
- ✓ Impact on Vote Time
- ✓ Resource Allocation



Updating Layout and Setup Techniques



- Social Distancing
- Flow Management
- Reduced Capacity

- Line Control
- Reduced Staffing
- Equipment Sanitization



Simulating the Election

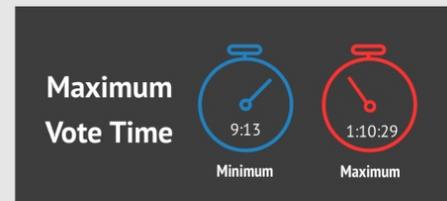
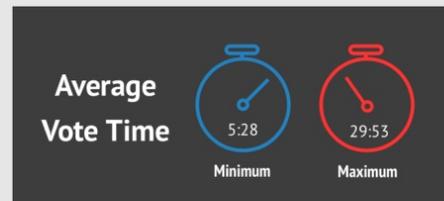


Simulation Results

Resources

Poll Pads	Voting Booths	Ballot Scanners	Sanitization Workers	Disaffiliation
Minimum: 3 Maximum: 8	Minimum: 4 Maximum: 18	Minimum: 2 Maximum: 4	Minimum: 1 Maximum: 4	Minimum: 4 Maximum: 8

Results



n Results

Resources

Poll Pads

Minimum: 3
Maximum: 8

Voting Booths

Minimum: 4
Maximum: 18

Ballot Scanners

Minimum: 2
Maximum: 4

Sanitization Workers

Minimum: 1
Maximum: 4

Disaffiliation

Minimum: 4
Maximum: 8

Results

Results

**Average
Vote Time**



Minimum



Maximum

**Maximum
Vote Time**



Minimum



Maximum

**Average
Line**

Minimum

1



Maximum

30



**Sanitization
Exposure**



Minimum
3.83%



Maximum
78.84%

Simulation Analysis

Simulated Turnout: 39,450

25% Total Turnout * 20% In-Person

Actual Turnout: 21,449

17.2% Total Turnout * 17.2% In-Person

- ✓ Six locations were identified to have long lines.
- ✓ Nine locations were identified to have sanitization exposure rate over 60%.
- ✓ Six locations were identified to have inadequate space for the recommendation.

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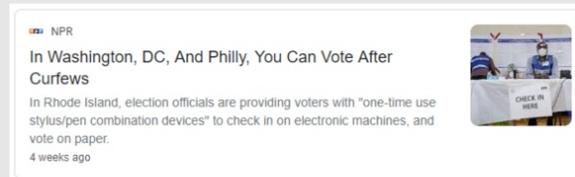
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 The New York Times

Rhode Island Presidential Democratic Primary Election Results

Winner. Joseph R. Biden Jr. has won the Rhode Island primary, according to The Associated Press. Updated June 4, 2020 96% reporting. Candidate, Votes, Pct...



4 weeks ago

 NPR

In Washington, DC, And Philly, You Can Vote After Curfews

In Rhode Island, election officials are providing voters with "one-time use stylus/pen combination devices" to check in on electronic machines, and vote on paper.



4 weeks ago

 ABC News

[Rhode Island Primary Results](#)

Rhode Island encouraged all its voters to cast absentee ballots in the election, though the state already had high engagement with absentee voting in previous ...



4 weeks ago

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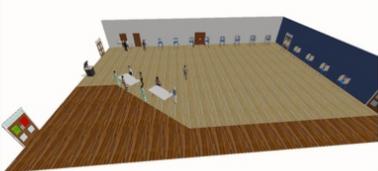
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URI Voter Operations & Election Systems

URI > URI VOTES > Tools > COVID-19 Planning Tool

Home Team + Tools + In the Press Publications + Sponsors COVID-19

COVID-19 Planning Tool

Simulate your in-person Election Day(s) system to help make more informed decisions with COVID-19.



A visual simulation model is a powerful tool that enables users to explore the relationship between polling place layout design and the flow of voters through the system. With COVID-19, social distancing is required to 'smooth the curve' and keep those participating in on-site democracy safe. These health and safety factors create an environment where layout planning, line balancing, and resource allocations are

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