IDScanners

Engineering Project Proposal

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Our Team

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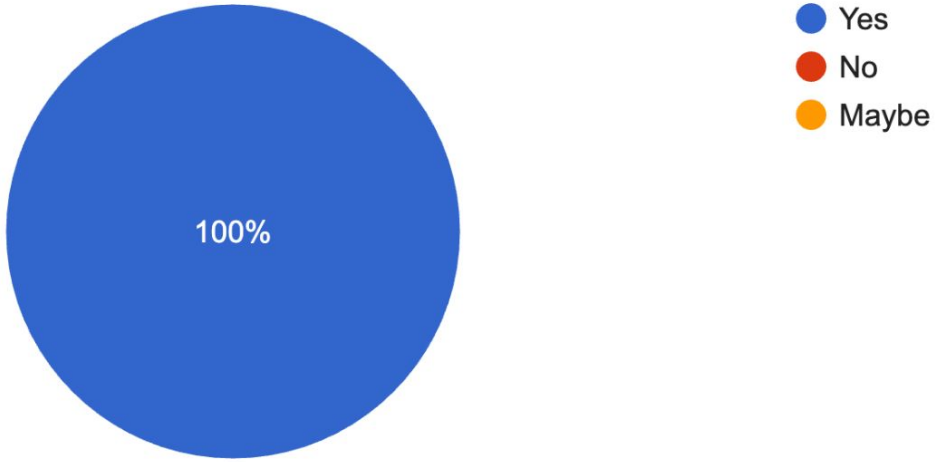
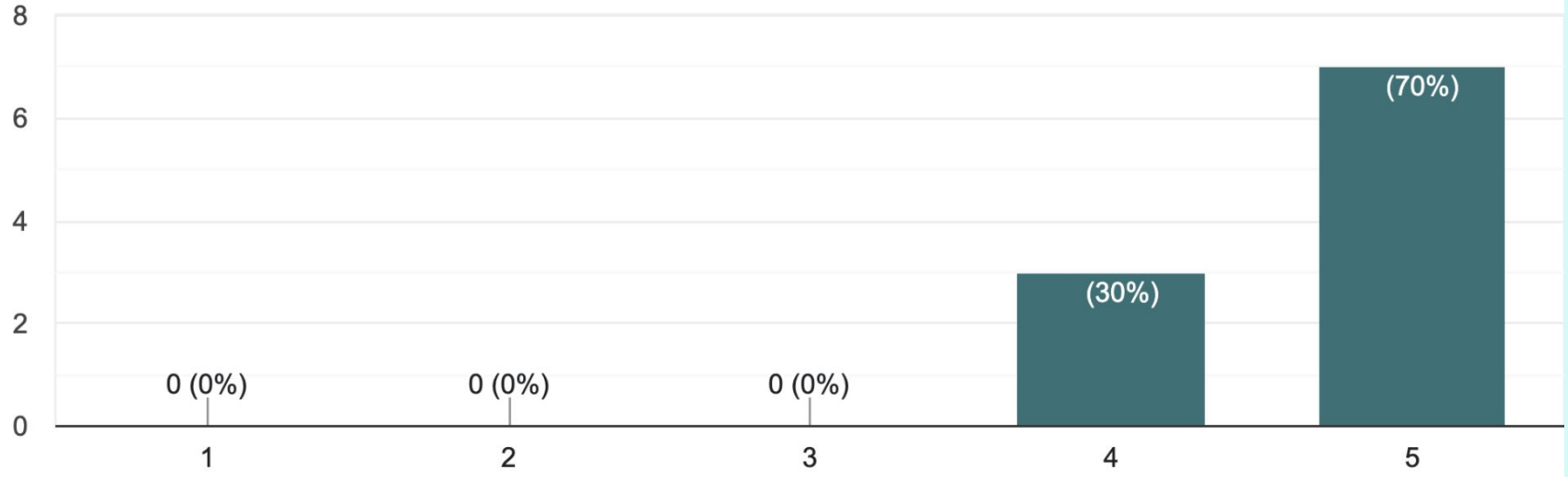
Faulty Security Systems at CCNY

- Despite proximity of buildings, travel time between classes can take up to 20 minutes.
- Students are required to show campus ID and a Cleared4Pass to enter buildings
    - Long Lines
    - Unsafe interactions during peak hours.
- In the current semester, there have been instances of suspicious individuals entering buildings without identification.
- Security is understaffed since the pandemic, with many vacant positions being removed.

Do you believe that the installation of ID scanners would be an appropriate measure to alleviate the crowding at building entrances?



How much do you believe the installation of ID scanners at building entrances would improve your experience entering City College buildings.



How will we solve this problem?

- Depending on the allocated operating budget, we may opt for card readers alone to decrease project costs, instead of installing turnstiles.
- It is important to note that our proposal only relates to CCNY security and student life, and does not aim to alter the security at any other CUNY school.
- By implementing this solution, we anticipate a significant improvement in campus security and access control, as well as an enhanced experience for students at CCNY.211c
- Incorporating a card reader system: We are asking for 10,368 USD to implement a new security measure to address the lapses in campus security student tardiness, which will take 3 full business days to install.

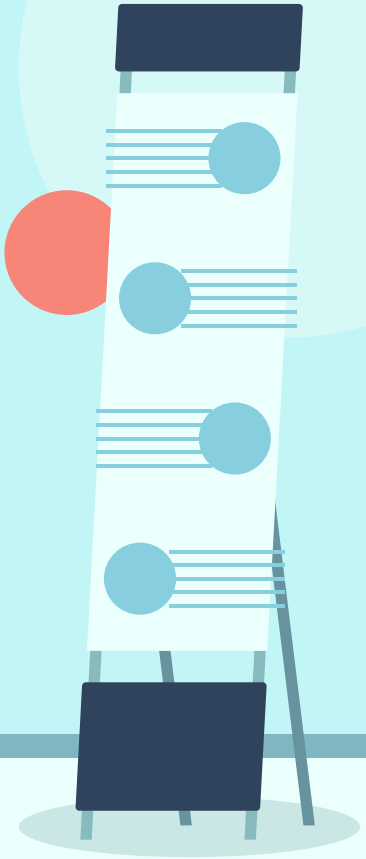
Objective

Our aim

To enhance security and create more efficient identification system within CCNY.

The goal

Install ID scanners at entrances either for every building, or the buildings with high volume of students.



Project Description

Description

- Solution is ID reader system
- Keeps track of students entering building and their information
- Emulator keeps track of name and Cleared4 status
- Information sent to access point for entry confirmation

Feasibility

- ID Card reader can be easily attached to points at entrances for scanning
- Optical Barrier is more difficult, Marshak doesn't have space for it
- Most high traffic buildings still have space for turnstiles
- Hunter implements similar ID scanning system with ONEcard and turnstiles

Approach Description

Approach 1

This first approach utilizes two different components, the IDTech EasyMag Card Reader and the Optical Barrier Turnstiles-MT251, but only implements the system in high-volume buildings. These buildings consist of the Shepard Hall, Marshak, Steinman and NAC. This approach is more cost-effective but isn't as safe since it leaves other locations open to unsupervised entry.

Approach 2

The second approach utilizes the same machinery but will implement the ID card reader system into every entrance. While this approach is more cost heavy, it is the most safest.

Figure 1

Figure 2

Figure 3

Budget

Funding Source

Fiscal 2024 Preliminary Plan of the Fiscal 2023 Mayor's Management Report for the City University of New York.
Program to Eliminate the Gap (PEGs) and hiring freeze saving $4.8 million through removal of 156 vacant positions annually.

Personnel Costs

The personnel required for this plan are solely construction workers. Security personnel will not be increase in any way, and even may be decreased.

Equipment and Materials

The materials needed to install ID scanners are highly dependent financially on the solution chosen.
Materials needed to fulfill this project installation are the scanners/turnstiles and materials to install which will be provided by construction staff.

Additional Labor Costs

Depending on the plan chosen, the construction staff will work different hours which may include paying for lunch hours, adding to costs.

Financial Funding Source

- Proposed budget for the 2024 fiscal year is $1.28 billion, $120 million less than the adopted (starting) budget of the 2023 fiscal year
- Program to Eliminate the Gap (PEG)
- CUNY- wide Hiring Freeze
- 89% of proposed removed vacant positions are non-pedagogical staff.
    - CCNY security staff is currently operating with 60% of the staff pre-covid.
    - Turnstile scanners can help relieve the stress on the security personnel.

Approach One High-Volume Buildings

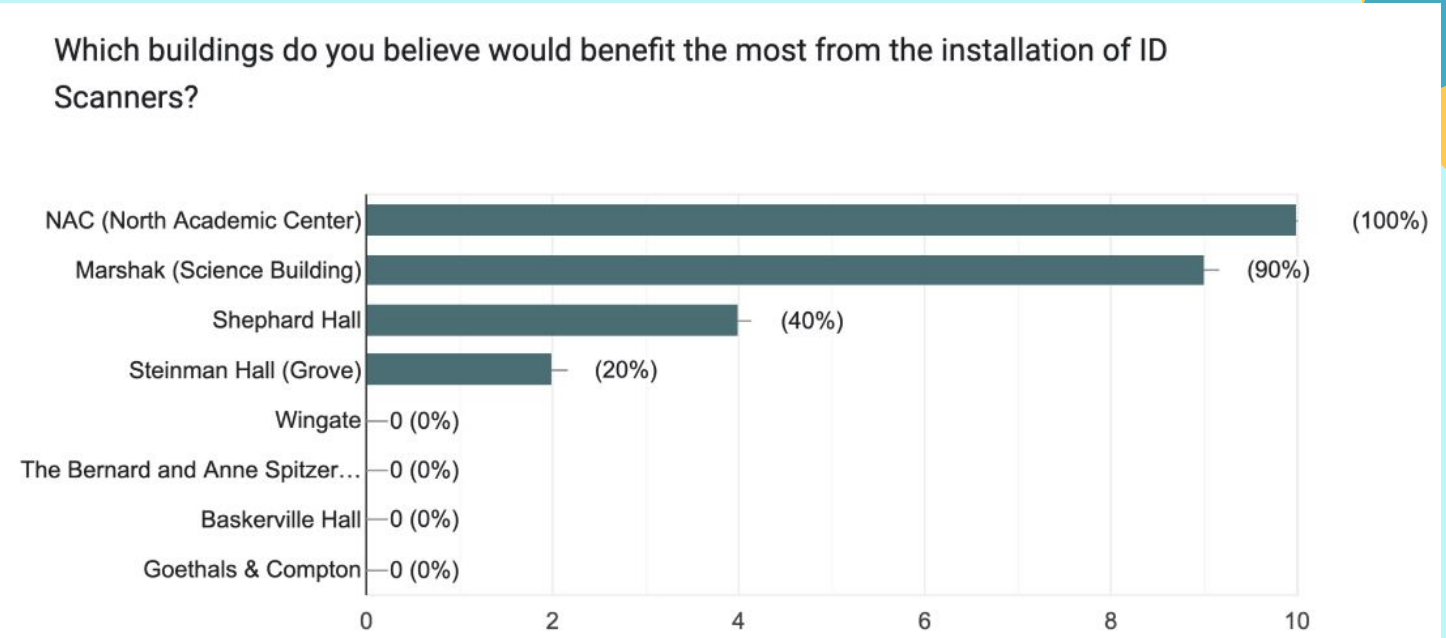


Figure 1: Shows percentage of students voting for which buildings to install identification card readers as a safety measure.

Approach One Project Timeline & Costs

IDTech EasyMag Card Reader

One hour Installation
7 Total Hours of Work
8-9 Hours with Lunch Hour

168.24 - 189.27 USD: 1 worker
168.24 USD: 2 workers
Total Cost: 5,803.24 USD
One Full Business Day

Optical Barrier Turnstiles-MT251

One Day Installation
8 Hour Work Day
1 worker

1,177.68 USD: 1 Worker
Total Cost: 10,367.81 USD
Seven Full Business Days

EZ Lane Swing Arm Optical Turnstile

One Day Installation
8 Hour Work Day
3 Workers

1,177.68 USD: 1 Worker
Total Cost: 70,567.81 USD
Seven Full Business Days

Approach One Project Expenses

Cost for Scanners at Buildings Voted to Most Benefit from ID Scanners by CCNY Students					
Buildings	Entrances	# of Readers Needed	IDTech EasyMag Card Reader (115)	Optical Barrier Turnstile- MT251 (1400)	EZ Lane Swing Arm Optical Turnstile (~10,000)
North Academic Center	3	3	345	4200	30000
Marshak	2	2	230	2800	20000
Shepard Hall	1	1	115	1400	10000
Steinman Hall	1	1	115	1400	10000
		Total Cost	805	9800	70000
		Percentage of PEG Savings	0.016770833	0.204166667	1.458333333

Approach Two All Campus Buildings

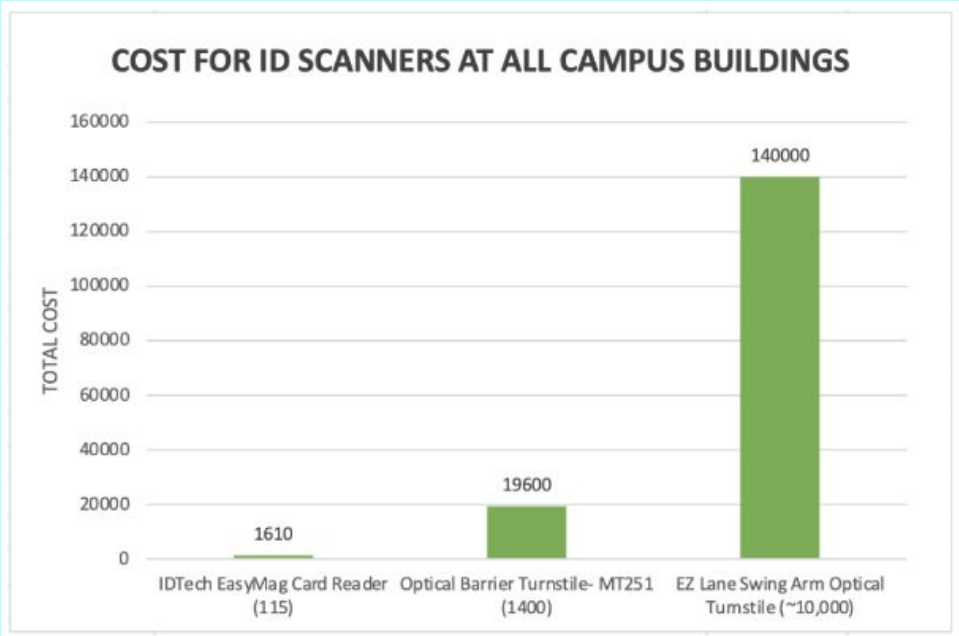


Figure 3: Total cost for installing each scanner at the main entrance of each of the campus buildings.

Approach Two Project Timeline & Costs

IDTech EasyMag Card Reader

One hour Installation
9 Hour Work Day w/ Lunch Hour
3 Workers

567.81 USD: 3 Workers
Total Cost: 2,787.68 USD
One Full Business Day

Optical Barrier Turnstiles-MT251

One Day Installation
8 Hour Work Day
8 Workers

4,037.76 USD: 3 Workers
Total Cost: 23,637.76 USD
Three Full Business Days

EZ Lane Swing Arm Optical Turnstile

One Day Installation
8 Hour Work Day
8 Workers

4,037.76 USD: 3 Workers
Total Cost: 144,037.76 USD
Three Full Business Days

Approach Two PEG Savings Percentage

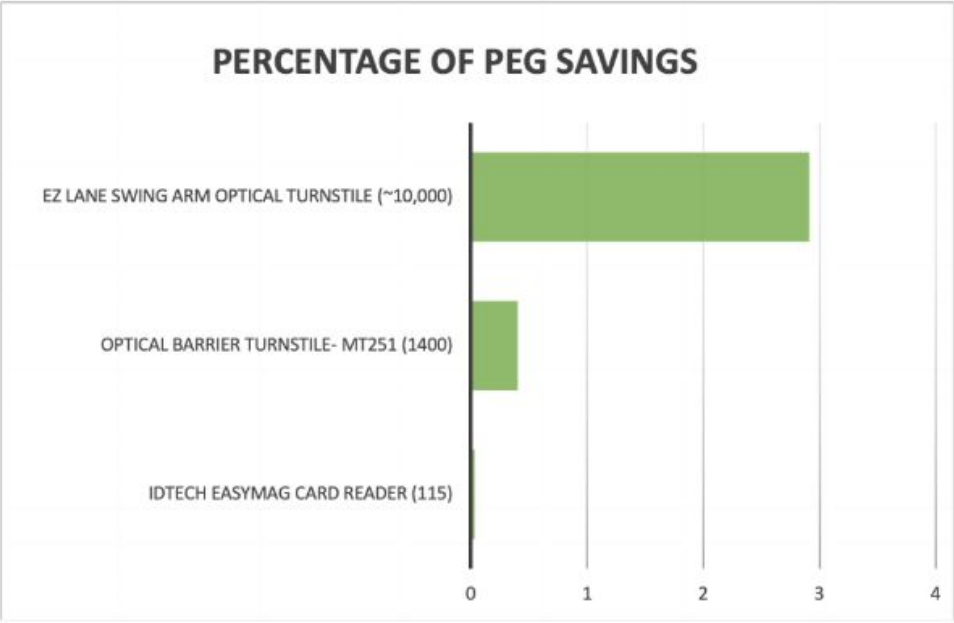


Figure 4: Percentage of PEG Savings used for approach II

Project Expenses Comparison

Total Costs for All Approaches and Card Readers				
	APPROACH ONE			
Card Reader	Card Reader Cost (in USD)	Installation (in USD)	Total Costs (in USD)	PEG Savings Percentage
IDTech EasyMag Card Reader	805	168.24 - 189.27	5,803.24 - 5,824.27	0.12%
Optical Barrier Turnstile- MT251	9,800	567.81	10,368	0.20%
EZ Lane Swing Arm Optical Turnstile	70,000	567.81	70,568	1.50%
	APPROACH TWO			
IDTech EasyMag Card Reader	1610	1,177.68	2,787.68	0.05%
Optical Barrier Turnstile- MT251	19,600	4,037.76	23,637.76	0.50%
EZ Lane Swing Arm Optical Turnstile	140,000	4,037.76	144,037.76	~ 3.0%

Conclusion

Due to understaffed security, and large student traffic, the current safety measures need an overhaul. Our proposal would greatly benefit the school.

Cost-Effective

Installation of turnstiles costs fraction of money saved from layoffs. Low financial loss for school.

Efficiency

Turnstiles allow students to enter building an a smooth and timely manner. Easier on security staff.

Safety

Worst case scenario, can stop dangerous individuals from entering campus.

The benefits of our proposal make it a worthwhile and safe investment for City College.

Thanks!

Do you have any questions?

Feel free to ask in the comments of the discussion board!