Compton Lounge sustainability brief

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MIT UA Committee on Innovation is a committee of 21 undergraduate students
We work to seed, support and scale innovation at and beyond MIT

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Background

Physical space shapes our behavior—able to promote wellness, build community and further research and innovation. This is at the heart of all we do at MIT and that which enables us to advance knowledge, educate students, and serve the world. Our campus should reflect these, our community values and priorities, and help further them

We believe that our ability to work together as a community is the measure of our potential and progress as an Institute

We want to help bring people together

Why Compton Lounge?

- We developed a prototype lounge space to test and develop our vision for future space on campus, seeking to provide a warm and welcoming environment for students 24/7
- Community space on our campus is particularly lacking—libraries are described as “quiet, alone space” and the student center as “in need of renovation”
- 1,100 students signed our petition last semester to keep the prototype lounge open and expand to further spaces

About the space

- A refurbishment of 26-110, a 1300 square foot room in the heart of campus
- Largely unused over the last few years, generally just a couple of students at a time. Was previously the undergraduate math lounge, while the Simons Building (Building 2) was under renovation
- We rearranged the room, adding shelving, tables, bean bags, a daytime nap area, plants, Lego, student publications, whiteboards, sticky notes, etc. and are serving free bananas and coffee/tea/hot chocolate to students
- Accessible to all students, undergraduate and graduate, via a card reader
- Space is used for everything from pseting together to group projects to praying to taking a nap after 9am lecture and taking a break from the day to meeting new and old friends to coming in early to work on a thesis to study breaks to student group activities to playing ukulele on Friday evenings

Photos : Mahi Shafiullah — The Tech, April ‘18

About the space (cont.)

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- Originally intended to be a week long experiment, we were able to develop the space into a more permanent offering with the support of the UA, DSL, and the Committee on Student Life
- Now we see about 1,000 unique students/week; about 3,000 total/week (about four times more than *Coffeehouse*, W20-308)*
- We expect more than 40,000 visits this semester
- Costs $8k / semester. Fully funded by UA Innovation for Fall ‘18

*based on anonymized, aggregated card reader data from March and April 2018

Last semester in review

- We maintained the space for 7 weeks (51 days), April 4th to May 25th
- Distributed 10,000 bananas and 5,000 drinks; washed 2,500 cups
- Space was run by 15 members of UA Innovation + extra student volunteers, checking in on the lounge more than 337 times, about seven times a day

- Spent $5300 ($3000 operations; $2300 capital), funded by UA Innovation and DSL via $1000 grant from Suzy Nelson

Sustainability updates: an overview

As we transition from a prototype space to a more permanent one, we are streamlining operations and working hard to ensure the space becomes sustainable beyond UA Innovation.

The biggest hurdle at the moment is upkeep: a lounge is more than its furniture and floorplan, taking daily investment ("energy and love") to maintain. Last semester, this was about 20-25 hours a week.

We have got weekly upkeep down to 11 hours now by making three key changes:

1. *Bananas:* changing our supplier; getting daily deliveries instead
2. *Cup washing:* installing dishwashers + sink in the room; more cups
3. *General upkeep:* more student volunteers; weekly clean with custodial services

This brief goes on to describe these sustainability updates

Budget for fall ‘18

Our estimated budget for the semester it $10k, fully funded by UA Innovation ($8k operations; $2k capital)

Budget is mostly for fruit (23,000 bananas) and coffee (14,000 drinks), services we believe critical to stimulating the lounge atmosphere and promoting conversation

We have worked hard to minimize unit cost ($0.20 each), competitive with the cheapest offerings we could find while, we believe, being of higher quality

This brief goes on to describe the budget and the decisions behind it

Budget for fall ‘18: operations

Expenses per semester

Bananas	$	4,500.00
Coffee	$	2,850.00
Cups	$	150.00
Upkeep	$	500.00
Total	**$**	**8,000.00**

Budget for fall ‘18: capital

Bananas	$ 100.00
Coffee	$ -
Cups	$ 700.00
Upkeep	$ -
Other upgrades*	$1,000.00
Total	**$1,800.00**

*more bean bags, plants, whiteboards and other requests

Banana supply brief

Fall ‘18

Why bananas?

Bananas are served to stimulate a lounge atmosphere and promote conversation

- We evaluated different snacks, including other fruits and granola bars, choosing bananas for health, fun, and cost ($0.20 / banana, $0.46 / apple, $0.49 / orange; $0.37 / Amazon granola bar, $0.95 / LÄRABAR granola bar)
- Fruit can be difficult to come by on campus, and it is generally expensive at cafés, on-campus and close by, costing $1-2 per apple or banana—for many students, this was the first fresh fruit they had in weeks
- For students who skip breakfast in order to make early morning lectures, a healthy snack is as a welcome relief

Stats overview

- We served fruit for 7 weeks (51 days), April 4th to May 25th
- 10,000+ pieces of fruit (10k bananas, 500 apples, 100 oranges)
- Spent $1,800 (~18 cents / fruit, on average)
- About 200 pieces / day

Daily demand

Monday	270
Tuesday	230
Wednesday	240
Thursday	210
Friday	230
Saturday	120
Sunday	140
	1,400

Mondays and Wednesday's we struggled to meet demand.
We suggest planning for and buying 3 boxes rather than 2 for those days

Note: averages are calculated from 4/20 – 5/21 and rounded.
Treat as minimum average daily demand

Supplier: overview

Purchase date	Supplier	Boxes of bananas,	of apples,	of oranges
4-Apr	Yell-O-Glow	8	2	
10-Apr	Yell-O-Glow	10	2	
20-Apr	Yell-O-Glow	9	1	2
27-Apr	Bon Appetit	2		
28-Apr	Yell-O-Glow	12		
4-May	Bon Appetit	2		
5-May	Yell-O-Glow	13		
12-May	Yell-O-Glow	13		
19-May	Yell-O-Glow	9		
	Total (boxes)	78	5	2
Total (approx. pieces)		**9750**	**500**	**112**

Note: a 40lb box is about 125 bananas

Suppliers: cost breakdown

Yell-O-Glow

$19.1 / 40lb box

($17 / box + transport, averaged over our final four Yell-O-Glow runs)

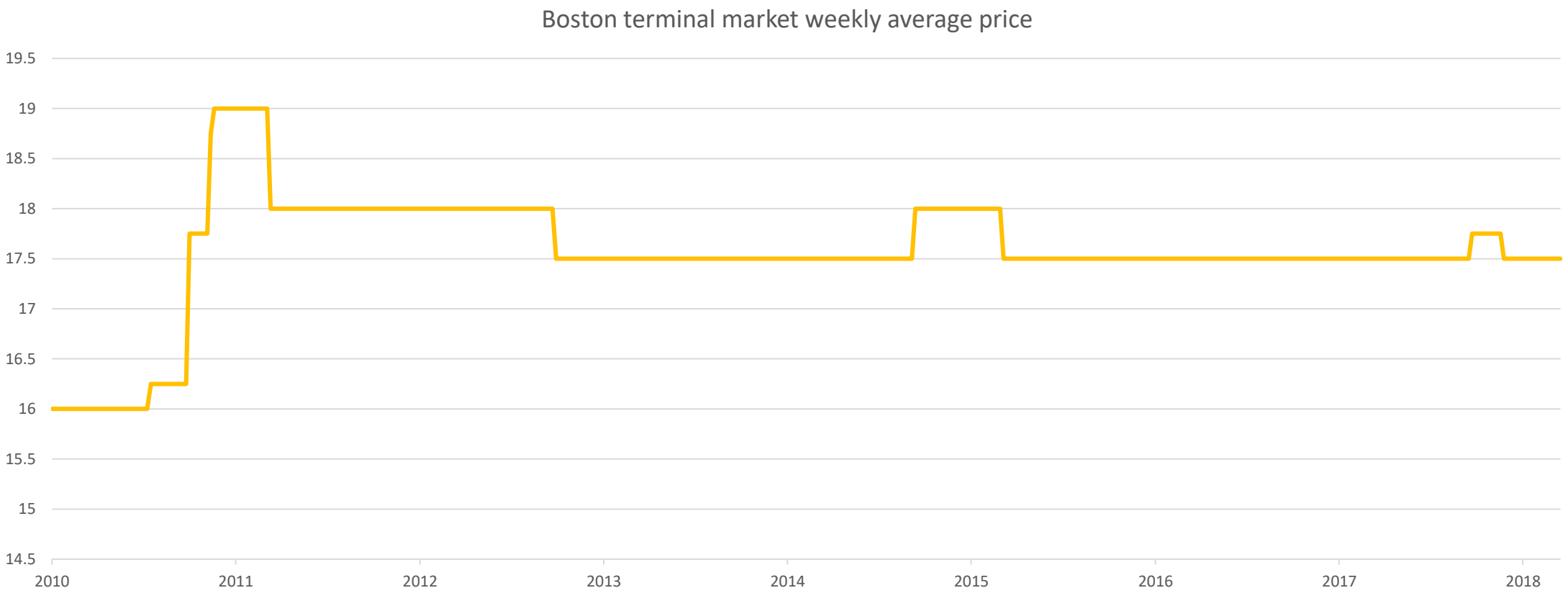
Bon Appetit

$20-25 / 40lb box

(we paid $22.50 / box, but prices fluctuated between days)

Suppliers: a note on pricing

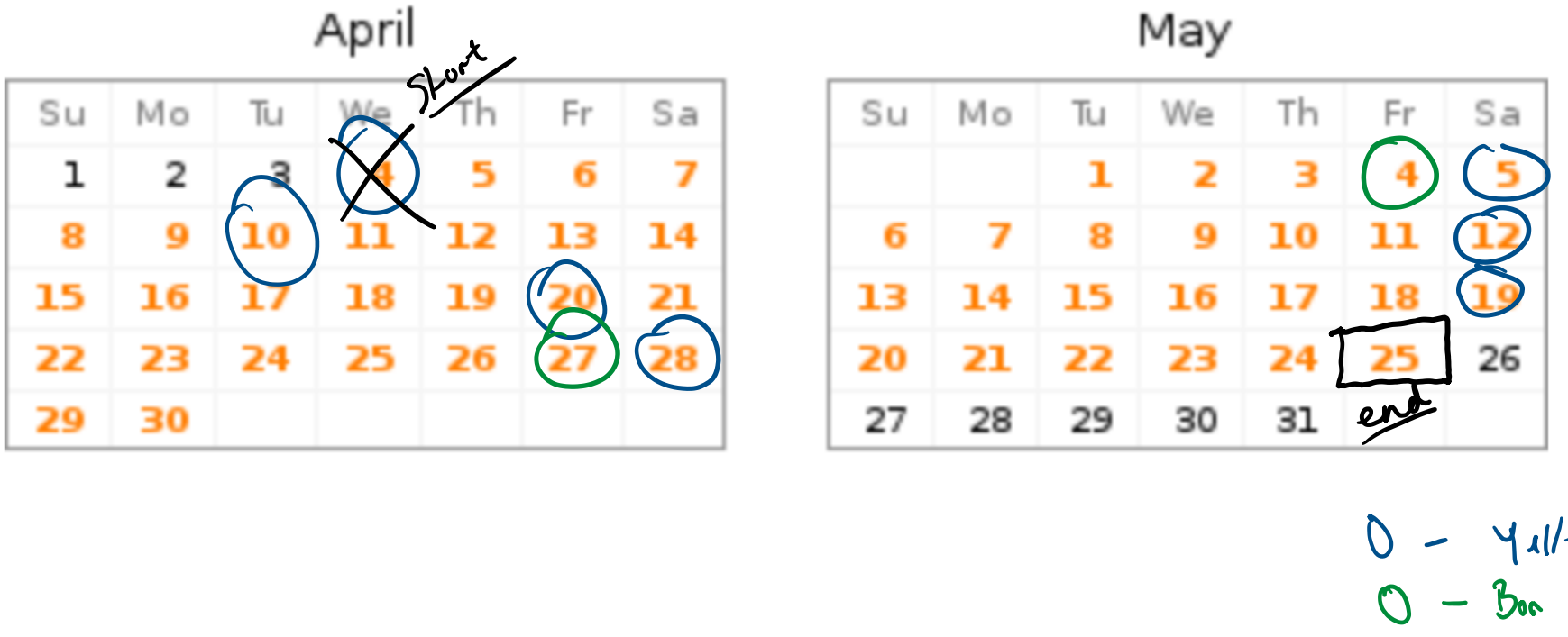
The average price at Boston wholesalers is $17.50 / 40lb box at the moment. We paid $17 with Yell-O-Glow



"Terminal Market prices represent sales by first receivers to retailers or other large users of wholesale lots of generally good quality and condition." (USDA, 2018) with data from 6/5/2010 – 8/18/2018

Timing of purchases

Approx. once a week



Loss rate

i.e. thrown out because they were unsafe to eat

5 bananas (0.05%) and about a dozen each of apples and oranges

- Bananas rarely go moldy, unlike other fruits, but are very susceptible to bruising and climate damage (<13.5°C, rapid temperature changes and low humidity). These generally occur during ripening and initial transport, two parts of the supply chain with have little control over except in working with suppliers directly to improve processes
- reuse and ec-discuss readily accept large volumes of bruised and over-ripe fruit on short notice

The Bon Appetit process

- Bon Appetit is supplied by various food distributors. Their bananas come from *Sid Wainer & Son* (Natick, MA) and *Baldor Food* (Chelsea, MA)
- These bananas are generally **more expensive** (31% more expensive then Yell-O-Glow, accounting for transport costs) and of **lower quality** than other bulk suppliers
- MIT Dining, through Bon Appetit, gets supplied each workday and Saturday, usually around 7am, but sometimes as late as noon or even early evening. This currently happens at Maseeh, but will be moving to W20 (Student Center) soon(?)
- We would carry the boxes directly from Maseeh dinning hall to Compton
- They offer bananas in two ripeness levels, “ready to eat” and “green tips” (ready in 2-3 days). From experience, “ready to eat” bananas are not ripe and require at least another day of ripening
- Significant loses i.e. bananas damaged (turned mushy) during transport and handling, up to a dozen / box, are to be expected depending on the banana producer used at the time (food distributors vary between different banana producers)

The Yell-O-Glow process

- Yell-O-Glow is a New England wide supplier of bananas and restaurant wholesaler based in Chelsea, a 15 min drive from MIT
- It took ~4 hours once a week to pick up bananas (bike/run there—reducing costs—, buy them, Uber back, carry to EC, sort and stack them)
- Come before 6am for the best bananas. Come too late and you'll only get green ones
- Each day, there were two to three ~10 min runs from EC to Compton delivering banana boxes
- We could only put out about ½ a box at a time in Compton, so needed to actively resupply the banana baskets in the room from the Compton storeroom). Often volunteers did this

Ripening bananas: choosing a fruit company

- We bought bananas from four different fruit companies—Chiquita (sold both under the *Chiquita* and the *Amigo* brands), Dole Food Company, Fresh Del Monte Produce, and Fyffes—operating different plantations across Central America—Colombia, Costa Rica, Guatemala, and Honduras
- Bananas from the Chiquita, Dole and Fyffes brands tended to be better than from Amigo and Del Monte, with further variations across countries and over time
- As wholesalers often vary between companies and locales in order to maintain a reliable supply, it is difficult to improve quality by selection of fruit company alone—more significant are the handling conditions at the wholesaler

Ripening bananas: choosing ahead

Ripening bananas: what we did

- We stored bananas in a committee member's room in EC, converting it into a cold store. This meant largely giving up the room
- As far as possible, we maintained an optimum ripening environment (temperature, humidity and wind levels) by way of opening/closing the window, running a fan and a humidifier, and evaporative cooling
- Temperature and humidity within the boxes of bananas was tracked in realtime and managed live via the internet

Ripening bananas: lessons learnt

We ran different ripening experiments. This is what we found:

- Controlling temperature is most important. Keep that low, about 14°C
- Below 13.5°C, they sustain cold damage i.e. turn brown-gray (taste not seriously effected)
- Higher humidity helps maintain flavor and keep the peel intact (just splash with water once or twice a day)
- On arrival, remove the box lid, unwrap the plastic and cross stack for airflow, unless you specifically seek to accelerate ripening
- Avoid touching them—including removing them from the box—as they are easily damaged
- Avoid rapid changes in temperature as this can result in “green with brown spots” syndrome i.e. soft to eat but with a slightly sour taste—pretty nice, actually, but they look unappetizing to many
- During cold days, you can make it 7 days / batch. On warmer days (>25°C), it is hard to go beyond five
- Very green bananas have not been exposed to ethylene gas and will (more or less) never ripen
- Ethylene gas rises in air, so keep a fan running when in the room for longer periods

Hurdles to sustainability

1. Ripening 600lb of bananas each week in a student dorm room is a significant commitment and can be difficult when warm (about 2 – 3 weeks each semester).

Recommend changing suppliers to Bon Appetit / MIT Dining. This means incurring a 31% increase in unit cost

2. Banana quality and ripeness from Bon Appetit has sometimes been problematic.

Recommend our own final-day ripening, buying bananas at least one day in advance (also solves the delayed deliveries problem), and working with Bon Appetit to investigate any possible improvements in the handling chain

Recommendations for the fall

- Order 14 boxes a week ($322*)

	Boxes served	Boxes to be collected that day
Monday	3	2 boxes “ready ripe”
Tuesday	2	3 boxes “ready ripe”
Wednesday	3	2 boxes “ready ripe”
Thursday	2	2 boxes “ready ripe”
Friday	2	1 box “ready ripe”
Saturday	1	1 box “ready ripe”
		3 boxes “ready in 2-3 days” (for Monday)
Sunday	1	-

*using a $23 / 40lb box average price. Budget for $25 i.e. $350/week to account for price fluctuations

3 boxes for Mondays and Wednesdays, high demand days

- Leave in 26-104 storeroom (final day ripening of bananas is relatively independent of temperature)
- Buy a trolley to move bananas from MIT Dinning to Compton
- Consider improvements—particularly volunteers and better signage—to distribute bananas from the 26-104 storeroom to tables within lounge

Budget: recurring semester expenses

$4500

For 13 weeks of 14 boxes ($350) = $4550. Lower demand during Thanksgiving and finals week give space for price fluctuations and periods of higher demand, like the week before finals

Demand changes: we anticipate an increase in weekly banana demand, from 12 to 14 boxes (17% increase), to fully meet the demand shown in the spring semester

Unit cost changes: we anticipate an increase in the cost of bananas, from $19.1 to $25 / box (31% increase), as we switch to Bon Appetit as our banana supplier

Budget: capital request for fall ‘18

$100

For a trolley for moving boxes of bananas from MIT Dinning to 26-110

No capital at the moment requested.

Coffee and other drinks brief

Fall ‘18

Why coffee?

Coffee, tea and hot chocolate are served to stimulate a lounge atmosphere and promote conversation

Most cafés on campus are also closed outside of business hours, precisely when students do most of their work and have most of their free time

Stats overview

- We served drinks for 7 weeks (51 days), April 4th to May 25th
- Served about 5,000 drinks—tea, coffee and hot chocolate in roughly equal amounts—, about 100 a day at a unit cost of ~$0.20 per cup
- Given that the hot water and coffee pots were sometimes empty and clean cups were not always available, this is likely an underestimate of demand
- Spent $1,200 ($200 capital)

Capital costs

	Amount	Cost	
Coffee maker	2	$	70.00
Water heater	1	$	67.00
Pitcher	1	$	7.00
Dishwashing buckets	6	$	25.00
Extension cord	2	$	25.98
Total		**$**	**194.98**

Pitcher used to collect water from the water cooler outside 26-110 for the coffee maker and water heater.

Dishwashing buckets used to collect dirty cups

The water heater

- We explored different methods for having hot water on demand. Avoiding professional plumbed models, we chose a refillable high capacity water heater
- Has a capacity of 20-25 cups, heats full volume of water fast, in about 10 minutes, and keeps it warm
- Refilling was a frequent chore, generally 1 – 3 times a day
- This was sometimes done by volunteers. Nonetheless, we frequently ran out of hot water. Better signage/training would help

The coffee maker

- We explored different coffee makers—single cup ceramic drippers, conventional coffee makers, *Keurig's*, *AeroPress's*, and French presses—deciding on conventional coffee makers for cost, volume, ease, quality, speed, and lounge ambiance
- Had two coffee makers running, each with a capacity of 12 cups
- Coffee was generally brewed 2 – 4 times a day. Brewing took 5 min
- Running two coffee makers side by side helped provide continuous coffee service and ensure freshness of the brew
- Volunteers sometimes made coffee, but during peak times we frequently ran out. Better signage/training would help
- There were also some issues with technique—grounds in the coffee, watery brew, etc.—but these were mostly resolved with the placing of how-to directions next to the coffee maker

Operations costs

	Amount	Total cost	Cost per
Coffee	1,500	$ 433.50	$ 0.29
Hot chocolate	1,650	$ 209.71	$ 0.13
Tea	1,700	$ 181.96	$ 0.11
Subtotal		$ 825.17	
Creamer	1,600	$ 74.95	$ 0.05
Sugar	700	$ 14.00	$ 0.02
Subtotal		$ 88.95	
Stirrers	2,000	$ 24.27	$ 0.01
Napkins	1,500	$ 13.00	$ 0.01
Coffee filters	400	$ 15.50	$ 0.04
Detergent	7	$ 22.65	
Subtotal		$ 75.42	
Operations total		**$ 989.54**	**$ 0.20**

We got hot chocolate cost per cup down to $0.09 by the end of the semester, changing suppliers and buying in bulk

About one in five drinks were made with creamer (assuming 1.5 creamers / cup)

Sugar and napkins ended up being easier to restock using left overs from across campus and free-food than buying ourselves

Average cost per cup includes all operations costs divided by total drinks served

Notes on coffee

- Repeatedly complimented as the “best coffee on campus” and described as “best coffee I’ve had in months” by many
- Used 5lb bulk bags of freshly-roasted, freshly-ground, single-origin coffees from *Coffee Bean Direct*, a NJ based coffee roaster. Cost competitive with cheapest options on Amazon, which are not freshly roasted
- Alternated between light (Ethiopian Yirgacheffe, Tanzanian Peaberry, City Roast Papua New Guinea, Colombian Supremo) and dark (Dark Sumatra Mandheling, French Roast, Dark Brazilian Santos) roasts to cater to different tastes. Ethiopian Yirgacheffe (light roast) and Dark Sumatra Mandheling (dark roast) were most popular
- Cost of $0.29 / cup. Negligible cost savings if buying 25lb bags ($0.28 / cup) instead of 5lb bags

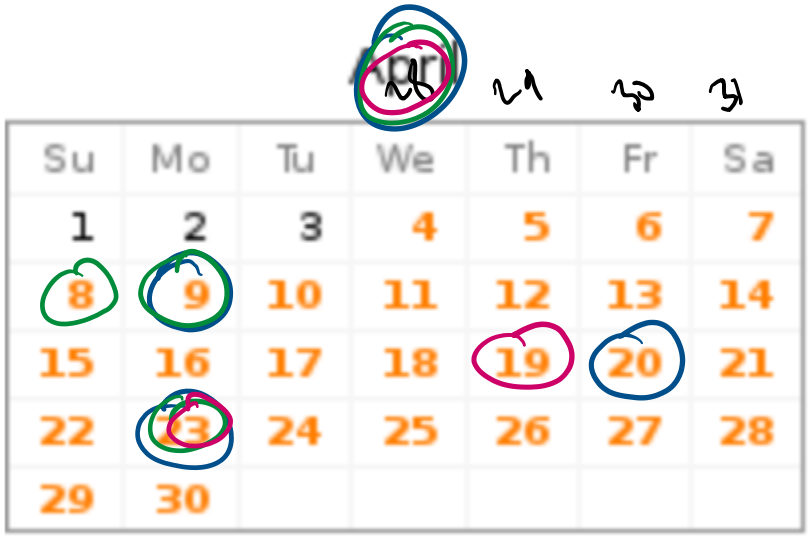
Notes on hot chocolate

- We experimented with *Equal Exchange* ($0.24/cup) and *Swiss Miss* ($0.09/cup)
- *Swiss Miss* is sweeter, but demand was similar for both
- Went with *Swiss Miss* because of 2.7x cost savings

Notes on tea

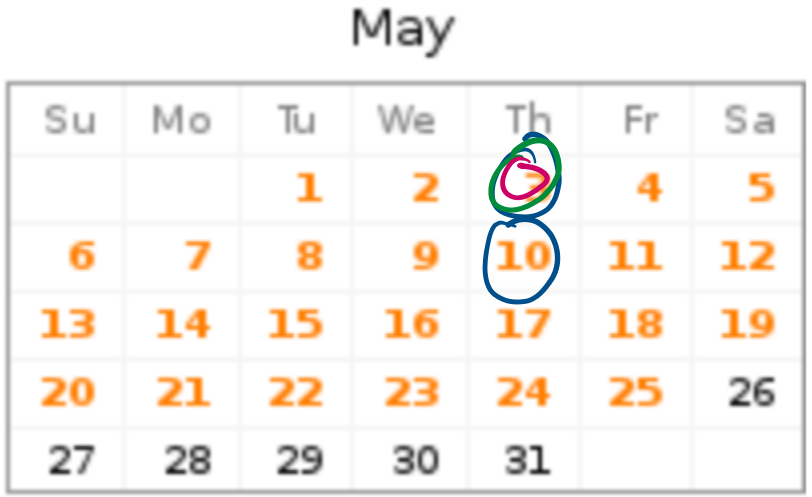
- Different varieties provided: green, black (Early Grey, English Breakfast), herbal (Peppermint, Chamomile), and fruit teas
- Earl gray, Green tea, and Chamomile were most popular
- Variety was appreciated

Timing of purchases



April

Su	Mo	Tu	We	Th	Fr	Sa
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					



May

Su	Mo	Tu	We	Th	Fr	Sa
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
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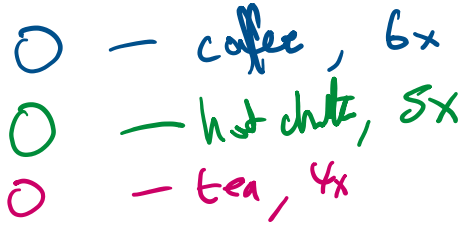


Recommendations for the fall

- Buy consumables in bulk at the start of the semester, except coffee—continue buying weekly for optimum freshness

- Consider procuring a professional, plumbed hot water heater and coffee maker to avoid constant refilling and manual brewing. Low priority, as perhaps not necessary with more volunteers

Budget: recurring semester expenses

$2850

$2800 for 13 weeks of an average 150 drinks per day with an average all-operations cost of $0.20 per cup. Lower demand during Thanksgiving and finals week give space for price fluctuations and periods of higher demand, like the week before finals

$50 for maintenance of the existing equipment, as needed

Changes from spring semester:

Demand changes: we anticipate an increase in drink demand, from an average of 100 to 150 drinks per day (50% increase), as we improve operations (more clean cups available, etc.) to fully meet demand shown in the spring semester

Unit cost changes: we anticipate no change in cost of consumables, continuing with the choices and supply chain we optimized in the last weeks of last semester.

Budget capital request for fall ‘18

$0

No capital at the moment requested

Cups and dishwashing brief

Fall ‘18

Why cups?

Mugs were provided instead of disposable paper cups to stimulate a homely lounge atmosphere *within* the space, and to promote environmental sustainability

Stats overview

- We served drinks for 7 weeks (51 days), April 4th to May 25th
- Bought 118 cups; lost 46 (39%) as of May 23rd
- Some students would also bring their own cups and thermos mugs to the lounge, BYO style
- As a team, we washed at least 1,800 cups. More were washed by general users of Compton Lounge. Total estimate of 2,500
- Cups were used on average for two drinks, suggesting a significant length of stay in the lounge for those who grab tea or coffee
- Spent $380 on cups

Usage rate

	Cups washed	Drinks served
Monday	66	99
Tuesday	51	77
Wednesday	62	94
Thursday	50	75
Friday	54	81
Saturday	24	36
Sunday	35	53
Average	49	73
Total	**342**	**513**

Note: averages are calculated from 4/27 – 5/23 and rounded. Drinks served calculated with an average 1.5 drinks per cup used

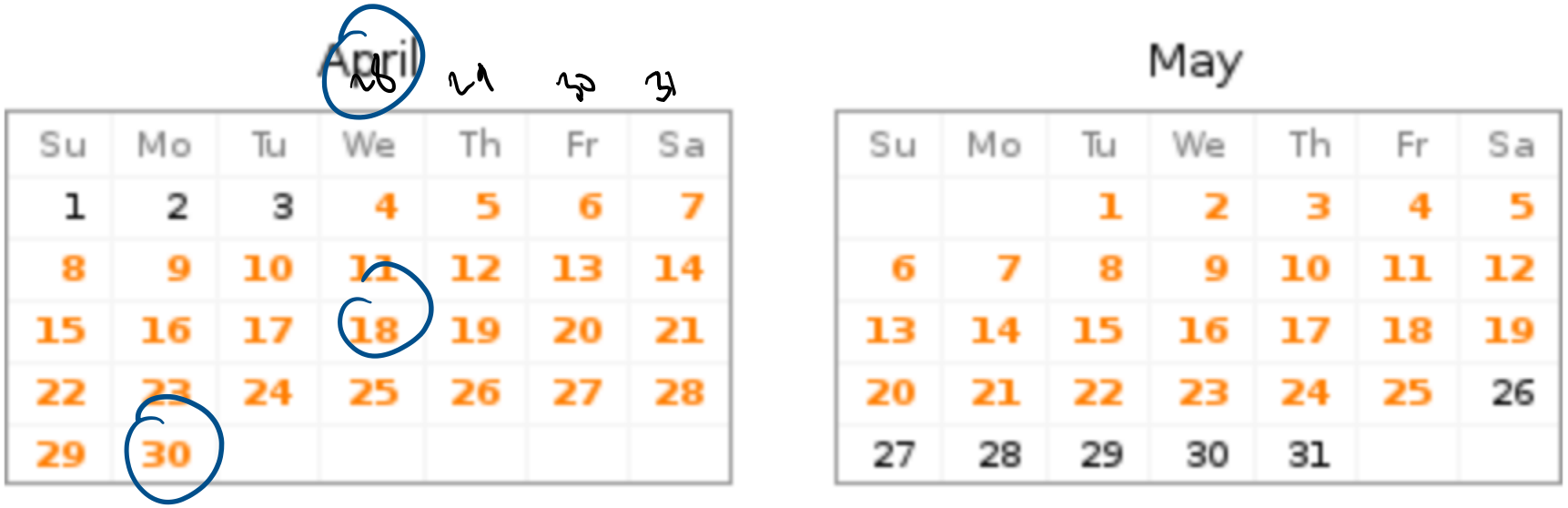
Treat as minimum average daily demand—almost all days we couldn't wash fast enough; on the days we could, we often hit 90+ cups washed

Buying cups: overview

Date	Type	Amount	Cost	Cost per cup
28-Mar	Creative	6	$ 33.00	$ 5.50
28-Mar	Culver	4	$ 28.00	$ 7.00
28-Mar	Winnsoma	6	$ 19.00	$ 3.17
28-Mar	Vremi	6	$ 32.00	$ 5.33
18-Apr	Winnsoma	18	$ 60.54	$ 3.36
18-Apr	Vremi	12	$ 66.36	$ 5.53
30-Apr	Oneida	36	$ 59.94	$ 1.67
30-Apr	Oneida	36	$ 100.84	$ 2.80
	Donated cups	1	$ -	$ -
	Amazon returned cups	-6	$ (20.18)	$ -
	Total*	**119**	**$ 379.50**	**$ 3.19**

*total does account for a number of broken-on-arrival cups or incomplete deliveries

Timing of purchases



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27	28	29	30	31		

Buying cups: different cups

Different cups were experiment with. Variety in color, shape and volume was appreciated, though can also be replicated by painting the cups differently.
Costs as at time of purchase

Creative ($4.5)

Bought 6

Handles broke easily

Culver ($7)

Bought 4

Winnsoma ($3)

Bought 24, returned 6

Many arrived broken; the ceramic around the lip often chipped

Vremi ($5)

Bought 18

Oneida ($2.2)

Bought 72 of these; painted them

We settled on these.

Buying cups: reusable vs. disposable

Reusable

$2.20 / cup

The cheapest we got, buying 72 cups April 30th

Had we bought these cheaper cups from the beginning, it would have cost,

Total: $260

Disposable

$0.09 – 0.15 / cup

Depending on volume, lid and sleeve options

With 5,000 drinks served during the 51 days, it would have cost,

Total: $450 – 750

Given the greater cost of disposable cups, and with drinks provided to stimulate a lounge atmosphere *within* the space, we settled with reusable cups and disposable cups were not explored further.

Cup loss: intro

Cups that never arrived + broken on arrival and not sent back + broken during use + borrowed and not returned

We lost 46 cups (as of May 23). Anecdotally, perhaps two-thirds of these were borrowed and not returned.

- Data collected 4/27 – 5/23 suggests an average loss rate of 5.1 / week

- This is lower than our average for 4/4 – 4/26 of 8.3 lost / week, suggesting initiatives –posters, painting the cups, etc. – had a substantial positive effect

Cup loss: initiatives

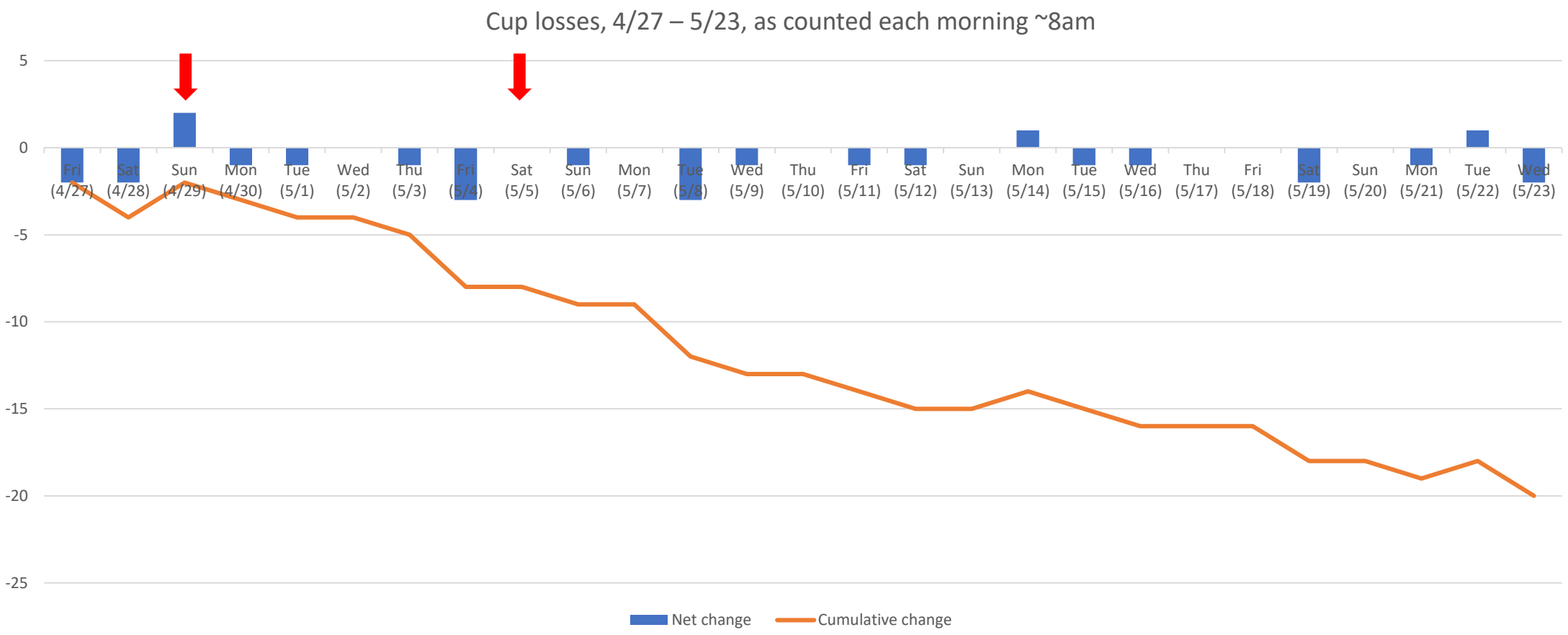
Posters (4/29)

Painting the cups (5/5)

Also, cup collection bins were placed closer to the doors to ease return
Cups were painted (named, numbered and/or drawn on) together with Compton users as a group study break, Friday (5/5) 10p – 2a

Cup loss: trends

Posters were hung up 4/29, painted cups were introduced into service 5/5



Cup loss: losses aggregated by day of week

	Average loss per day
Monday	-0.25
Tuesday	-1
Wednesday	-1
Thursday	-0.25
Friday	-1.5
Saturday	-1.25
Sunday	0.25

Note: averages are calculated from 4/27 – 5/23

Data suggests further research into and initiatives to prevent loss on Friday and Saturday could be worthwhile

Cup loss: conclusion

- Some cup loss is unavoidable, but can be probably be brought down a little further. Further experimentation needed
- Estimated losses over a semester are relatively low (70 cups*, $150)
- Ceramic mugs remain cheaper and more sustainable than using disposable cups

*using a 5.3 cups lost / week rate over a 13 week semester

Cup washing: by hand

- 4/4 to 4/21 we washed cups by hand
- This entailed stacking them in dishwashing buckets, carrying to the bathrooms or a nearby learning community (Concourse, Terrascope) and washing with soap and a sponge
- Handwashing would take about 15-30 minutes each time, and was generally done 1 – 3 times a day
- Volunteers would sometimes pick up the buckets and go wash cups for everyone; some would also just wash their own cups after use

Cup washing: by dishwasher

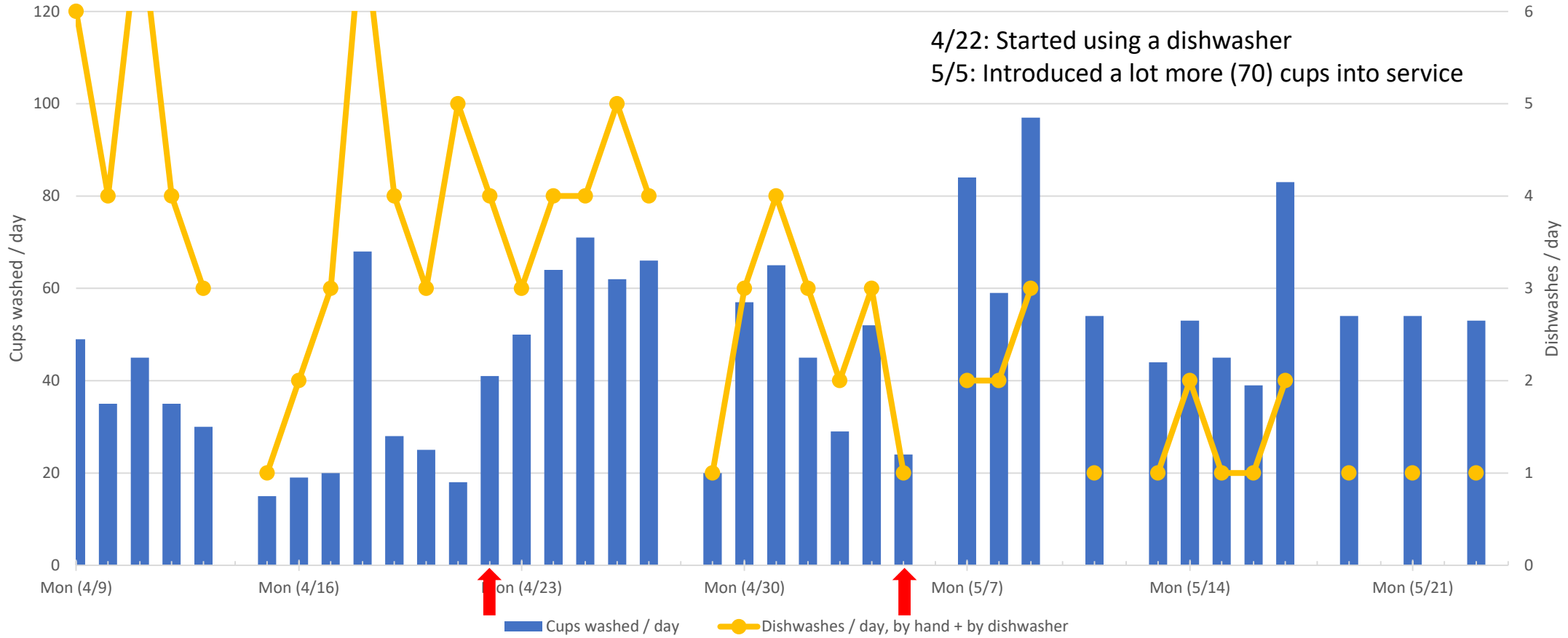
- 4/22 onwards, we primarily used the Terrascope Room (26-168) dishwasher, hand washing where necessary for speed or volunteers washing their own cups
- Dishwasher was usually run every day (fits 54 cups) with additional cups washed by hand

- This saved a lot of time and effort
- Dishwashing also allows for steam sanitization of the cups, for additional hygiene

- Other communities on campus, with significantly smaller usage rates, have one or more dishwashers e.g. Terrascope, Martin Trust Center

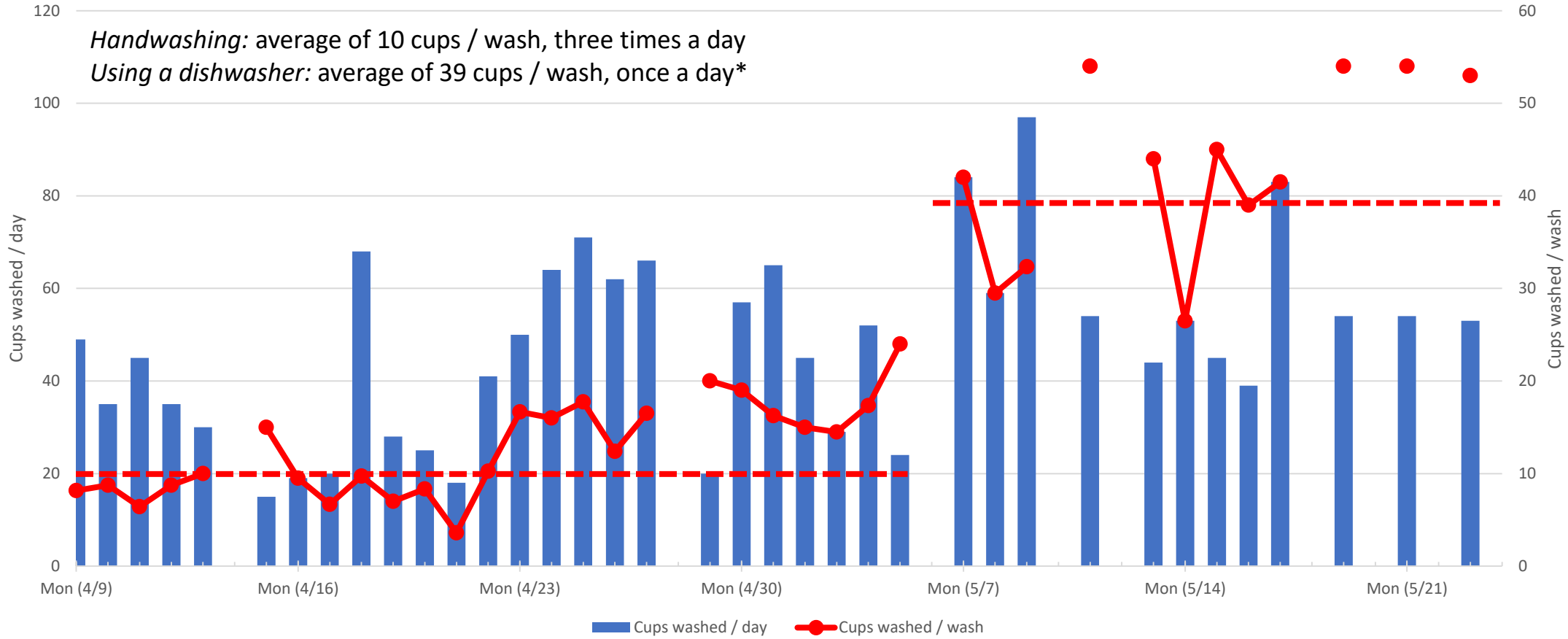
Cup washing: by hand vs. machine

Dishwashing efficiency improvements helped significantly reduce upkeep needed



Cup washing: by hand vs. machine (cont.)

Using the Terrascope Room (16-168) dishwasher allowed us to wash more cups with less work, two components critical to increased meeting demand this semester



*note these are averages and not peak demand

Hurdles to sustainability

Cup washing is a significant commitment

Recommend installing two dishwashers and a sink within 26-100 and continuing to develop the culture of student volunteers. Using the Terrascope Room dishwasher helped, but required carrying cups across buildings and, at times, presented an inconvenience to the Terrascope community. While waiting for the install, use disposable paper cups.

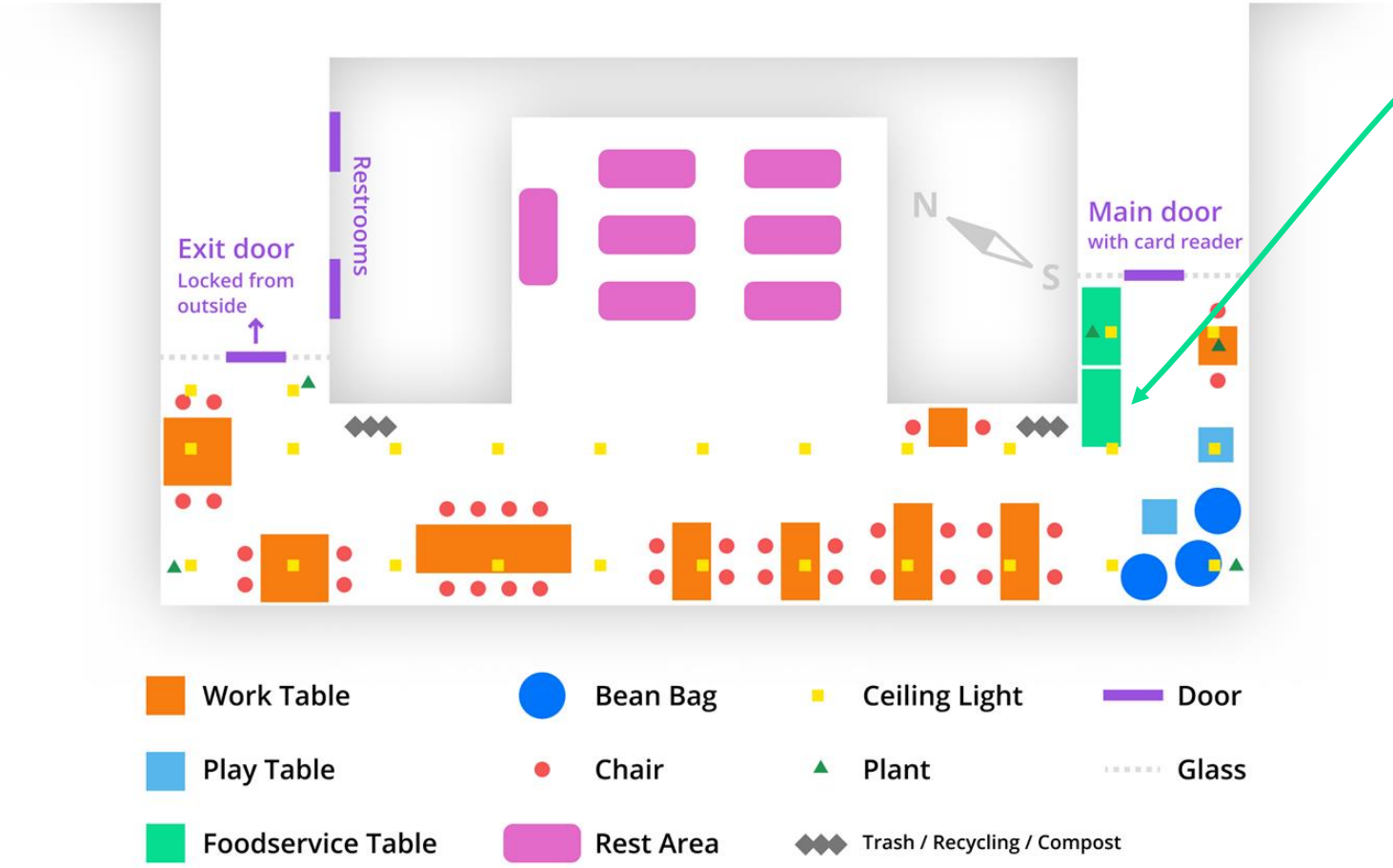
Recommendations for the fall

- Install two dishwashers and a sink in 26-110
- Install shelves for storing all the cups (should fit >150)

- Buy more cups, maintaining a suggested stock of at least 150, enough to last a day of heavy use

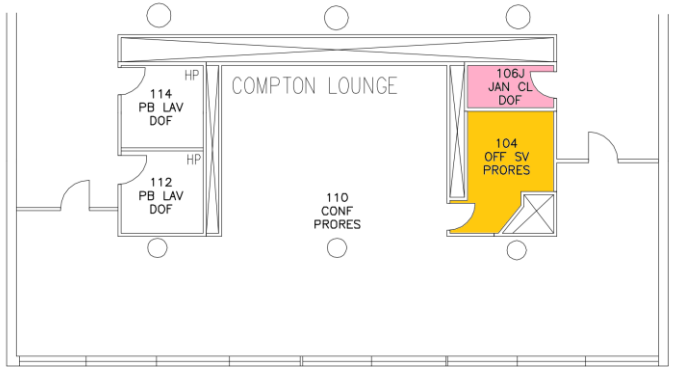
- Continue to paint the cups and experiment with different initiatives to promote cup return

Recommendations for the fall (cont.)



Suggested install location, with shelving behind the foodservice tables and dishwashers underneath. Location dependent on pipe layout and to be decided on recommendation of MIT Facilities

Alternatively, dishwashers could be installed in 26-104 or 26-106J, though best to have them as close as possible to the foodservice tables for easy access



Budget: recurring semester expenses

$150

For the 70 cups we predict to lose every semester

Changes from spring semester:

Demand changes: we anticipate no significant changes in cup demand i.e. the cup loss rate, from what we were able to get it down to in the spring semester (5.1 / week)

Unit cost changes: we anticipate no significant changes in cup cost from what we were able to get it down to in the spring semester ($2.2 / cup)

Budget: capital request for fall ‘18

$700

$450 for 200 cups, to get up to 150 and cover predicted losses

$50 for two dozen ceramic painting markers to paint the cups with

$200 for multiple shelving units from Ikea to store the cups in (transport included)

and, for the dishwashers:

$600 - 2000 + install fee

Depending on number of, size of, and features of the dishwasher(s). We recommend two dishwashers to make it easier to staff and maintain (we are planning for 150 dirty cups a day during the week and a dishwasher can handle about 50 cups a load)

Installing a sink within the space at the same time would be most helpful with draining liquid and refilling the water heater and coffee maker

Upkeep brief

Fall ‘18

Why upkeep?

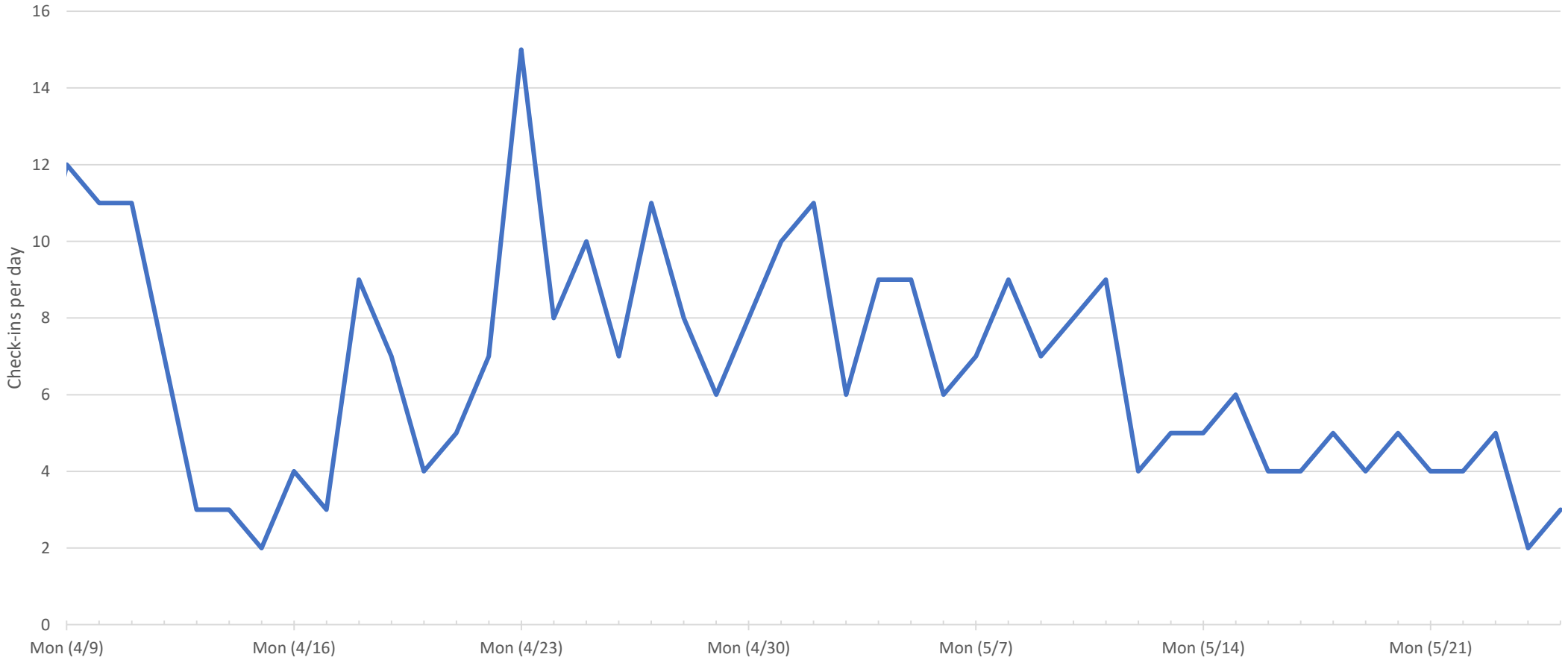
A lounge space like Compton Lounge requires regular and significant upkeep to maintain a clean and welcoming atmosphere

Stats overview

- We maintained the space continuously for 7 weeks (51 days), from April 4th to May 25th
- Members of UA Innovation checked in on the lounge at least 337 times, about seven times a day
- 15 team members of UA Innovation took part in upkeep
- Volunteers helped with additional check-ins

Daily check-ins needed

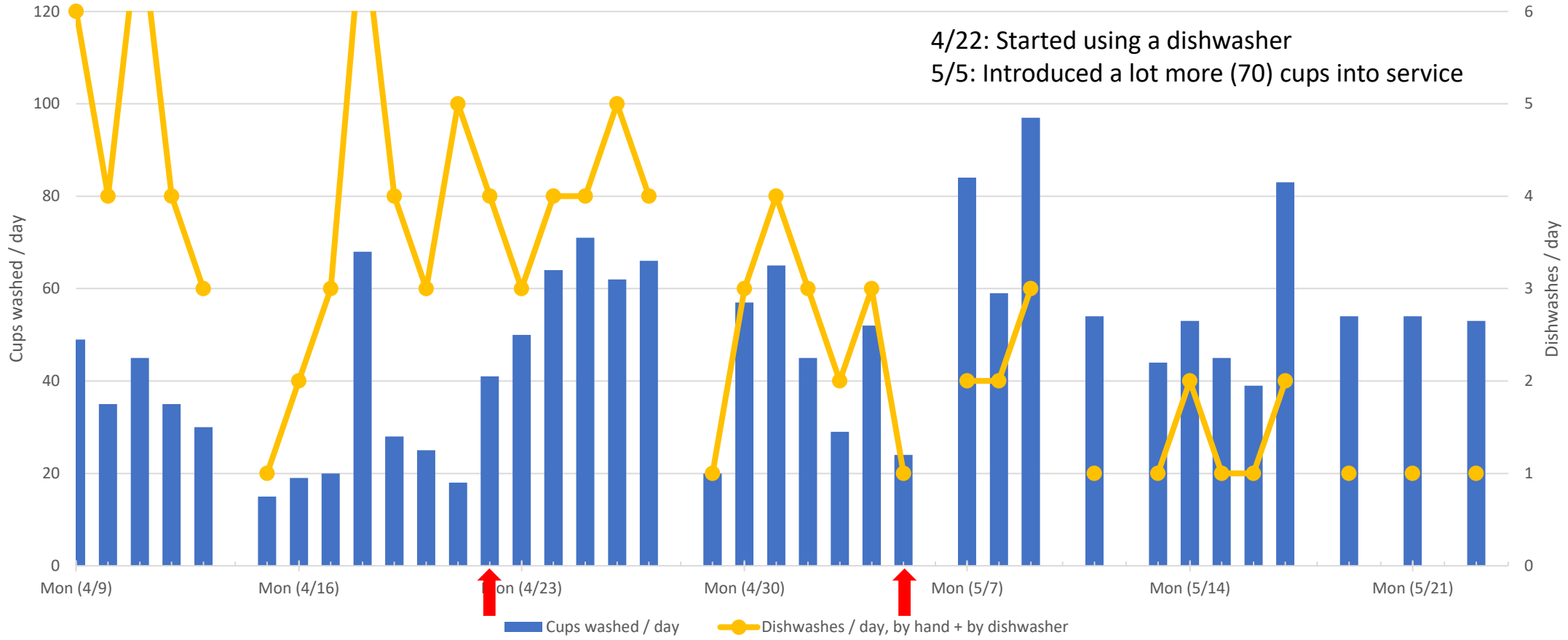
Daily check-ins decreased as we were able to improve efficiency in running the lounge, down to about 4 / day



Note there was a family emergency within the committee, 4/10 - 4/15

Daily check-ins needed

Dishwashing efficiency improvements helped significantly reduce upkeep needed



Upkeep tasks required

Last semester, all tasks were handled by UA Innovation. Going forward, we propose they be staffed by volunteers (managed by UA Innovation) and custodial services (MIT Facilities):

2-4 times daily	Refilling water for coffee makers and hot water heater; brewing coffee	Volunteers
Daily	Loading/unloading of the dishwasher(s)	Volunteers
Daily	Picking up bananas from the supplier and restocking the lounge with bananas and other consumables from the storeroom (26-104)	Volunteers
Daily	Emptying the trash	Facilities
Weekly	General cleaning including wiping down tables and vacuuming the floor	Facilities
Weekly	General upkeep, including rearranging furniture and watering plants	Volunteers
Fortnightly	Washing nap area pillow cases and blankets	Volunteers
Fortnightly	Deep-cleaning the coffee makers, water heater, dishwasher, etc.	Volunteers

Note that the bins in Compton were semiregularly emptied by the end of last semester by John, one of the kind custodians responsible for building 26

Brewing coffee and refilling water (2-4 times daily)

- Wiping down of the foodservice tables
- Refilling water heater
- Refilling coffee makers with water, throwing out the old filter and grounds, putting in a new filter in with ground coffee, turning on

Time estimate: 5 minutes

See *Coffee and other drinks brief*

Loading/unloading the dishwasher(s) (daily)

We predict 150 drinks / day on average meaning three dishwasher loads to load/unload daily

Time estimate: 30 minutes

See *Cups and dishwashing brief*

Restocking (daily)

Bananas

- Bananas need to be brought to 26-110 every day for the next day as per the banana schedule
- We are working with Bon Appetit to have the bananas delivered to the room Monday-Friday. Saturday they would need to be delivered by volunteers
- Requires a trolley and 1-2 people to move the 80-200lb of bananas
- Once in the Compton store room, 26-104, they can be put out as needed, a couple of a times a day

Time estimate: 5 minutes daily; 25 minutes Saturdays

See *Banana supply brief*

Restocking (daily), continued

Consumables, like coffee grounds, hot chocolate mix, tea bags, creamer, etc. also need to be restocked from the store room to the food service area as needed

Time estimate: 5 minutes

Emptying the trash (daily)

- 6 large bins to empty – two each for trash, recycling and compost
- They fill up quickly with food waste, so are best emptied daily

Time estimate: 5 minutes

General upkeep (weekly)

- Watering plants every few days
- Rearranging furniture, if too messy

Time estimate: 15 minutes

General cleaning (weekly)

- 9 work tables to be wiped down
- About 1300 square feet of carpet to be vacuumed

Time estimate: 30 minutes

Deep-cleaning the coffee maker, water heater, and dishwasher (fortnightly)

- Removable parts can be placed into the dishwasher
- The coffee maker, water heater and dishwasher are cleaned and decalcified by running a cycle with vinegar

Time estimate: 1 hour

Washing blankets and pillow cases (fortnightly)

- 8 blankets and 8 pillow cases to be washed
- They take up 4 MIT dorm washing machines; 3 dryers
- EC facilities are very convenient for this, less than five minutes away
- To be washed regularly, at least every two weeks

Time estimate: 3 hours (mainly waiting for the washers and dryers)

The May 26th – June 3rd non upkeep

- After finals week, for an eight period (May 26 – June 3), with most members of the team off campus, we did not check in or keep up the space
- This meant that dirty cups were left out, brewed coffee went bad and the room was messy
- We were notified by a fellow student as to the situation on June 3. Two UA Innovation members went to the space that day for a brief clean
- This unacceptable lapse in our stewardship of the space was a failure on our part; a mistake in not properly maintaining and returning the space for the summer
- To avoid this happening again, extra effort must me made to ensure the space is fully cleaned and certain services e.g. coffee are closed for the summer and similar times of low use. This takes a few students a good day. This should be properly planned for. Clearer cleaning instructions should also be posted to make it easier for students to clean. A sink within the space would also help.

Cleaning emergencies

- One evening a student was sick in the space
- They were coming back from an evening with friends, and together they stopped in the lounge to take a break
- They let us know via the e-mail we posted in the space and we responded within five minutes. Common spaces were wiped down (we provided Lysol wipes in the lounge) and the dirty beanbag was taken out of service to be washed

Recommendations

A lounge space like Compton requires regular and significant upkeep, about 11 hours a week

Volunteers

Much of this can be done by student volunteers – about 90% of it. There was significant interest expressed last semester by students wishing to help out, and we believe it best to keep the space, as much as possible, student run and managed.

We are working to fully implement this during Fall ’18.

Custodial services

For some upkeep tasks, like vacuuming and emptying the trash, it would be helpful to be able to work with MIT Facilities to have custodial services assume those responsibilities

Compost bins are also sought, with the volume of banana peels generated.

The lounge should be fully cleaned at the end of every semester, by both students and custodial services (e.g. carpet cleaning) and services e.g. coffee closed for breaks like the summer and end of Fall semester to the start of IAP

Basic cleaning supplies e.g. Lysol wipes, paper towels, hand sanitizer should continue to be provided. They proved very helpful

Weekly student volunteer time

Task	Time	Hours per week*
Brewing coffee and refilling water heater	5 minutes, 2 – 4 times daily	2.5
Loading/unloading dishwasher	30 minutes, once daily	4
Restocking	5 minutes, daily 25 minutes, Saturday	1
General upkeep	15 minutes, weekly	0.25
Deep-cleaning the coffee maker etc.	1 hour, fortnightly	0.5
Washing blankets etc.	3 hours, fortnightly	1.5
	Total	**10 hours**

Of note, cup washing is the largest time sink each week. We should work hard to decrease the effort needed, in particular in considering the install of two dishwashers within the lounge space.

*rounded

Weekly custodial services time

Task	Time	Hours per week*
Emptying the trash	5 minutes, daily	0.5
General cleaning	30 minutes, weekly	0.5
	Total	**1 hour**

*rounded

Budget: recurring semester expenses

$500

$200 for washing ($100, 7 washes a semester at 7 washer/dryer cycles + detergent) and cleaning supplies ($100, vinegar, Lysol wipes, paper towels, etc.)

$300 for general maintenance (e.g. replacing plants that die, a bean bag cover, etc. as things come up)

Changes from spring semester:

Demand changes: no change

Unit cost changes: possible increase due to cleaning fee from Custodial Services

Budget: capital request for fall ‘18

$0

No capital at the moment requested.

MIT UA Committee on Innovation is a committee of 21 undergraduate students
We work to seed, support and scale innovation at and beyond MIT