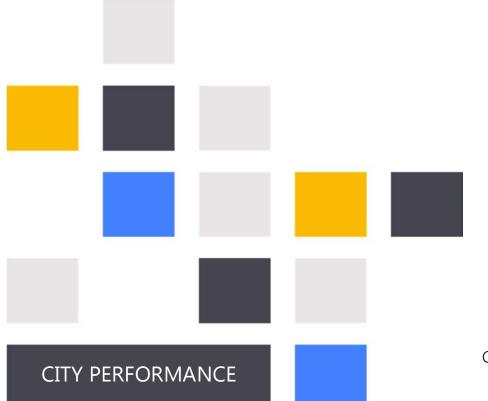
## San Francisco Public Library Patron Use Analysis

Fiscal Year 2017-18

This report analyzes Library open hours system-wide and describes patterns of visitor traffic and computer use during open hours across all days of the week at all 27 branch libraries and the Main Library. Overall, while the current open hours are 21 percent above the minimum required, significant gaps in coverage contribute to busy days and times. Library staff and commissioners should consider addition or reallocation of open hours to better serve patrons.





January 29, 2018

City & County Of San Francisco
Office of the Controller
City Services Auditor

### **About City Performance**

The City Services Auditor (CSA) was created in the Office of the Controller through an amendment to the San Francisco City Charter that was approved by voters in November 2003. Within CSA, City Performance ensures the City's financial integrity and promotes efficient, effective, and accountable government.

### City Performance Goals:

- City departments make transparent, data-driven decisions in policy development and operational management.
- City departments align programming with resources for greater efficiency and impact.
- City departments have the tools they need to innovate, test, and learn.

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## **Executive Summary**

The San Francisco City Charter (Charter) requires that the San Francisco Public Library (Library) maintain a minimum of 1,211 system-wide service hours per week, conduct a comprehensive assessment of needs to modify service hours as appropriate at least once every five years, and establish a community input process to provide feedback for determining service hours, including a mandated public hearing in each supervisorial district. To support this assessment, the City Performance unit of the Controller's Office (City Performance) analyzed existing open hours across the Library system as well as visitor traffic and computer login data for all open hours at each location.

### **FINDINGS**

- The Library exceeds the minimum number of required open hours. The Charter requires a minimum of 1,211 open hours, and the current system-wide total of 1,460 open hours is approximately 21 percent above this floor.
- Overall hours coverage varies little between branches, despite large variations in visitor traffic. All branches are open for either 50 or 55 hours, despite large variations in average hourly visitor traffic, and the Library could likely better serve more patrons by either reallocating existing hours or by prioritizing new hours at the busier branches.
- Busy hours at the start or end of the day suggest latent demand. The opening hour is often busy for many libraries, especially when that opening hour is later than 10 a.m. Similarly, the closing hour is often busy on days when a library closes at 5 or 6 p.m. compared to days when it closes later in the evening. Hours with heavy use at the start or end of day suggest latent demand (e.g., patrons waiting for the library to open or rushing to get to the library before it closes) and that patrons would benefit from earlier or later open hours on those days.
- Gaps in the system-wide open hours footprint likely restrict library use for patrons that work during the regular business day and contribute to busy days and times. Two-thirds of total system open hours and 85 percent of non-weekend open hours occur during the 9 a.m. to 6 p.m. business day, and no library is open before 9 a.m. While the Library's existing system-wide open hours coverage "footprint" (refer to Figure 5 on p. 14) serves many patrons well, it likely makes it difficult for patrons that work during the business day to visit a library during the week and contributes to busy days and times. For example, all branch libraries are open only four hours on Sundays and five hours on Fridays, and these days have the highest average hourly visitor traffic of the week. Further, no library is open on Monday, Friday or weekend evenings after 6 p.m., and the closing hour on these days is generally busy. Dense use on Fridays and Sundays, and in early evening closing hours, suggests that some patrons are adjusting their schedules to visit the library during open hours and would benefit from expanded

open hours on these days.

• Evenings after 7 p.m. generally have the lightest use system-wide. Visitor traffic at most branch libraries drops off substantially after 7 p.m. Although fewer patrons use these later evening hours, these hours likely serve a different patron population than daytime hours. Other times of light use vary from branch to branch.

### **RECOMMENDATIONS**

- Consider allocating any future additional open hours to specific priority areas. If the Library devotes staff and budget resources to a further expansion of open hours, prioritizing open hours in the following areas would reduce gaps in system-wide coverage and alleviate high demand on some days and times at specific libraries:
  - Extend open hours on Sundays and Fridays. Visitor traffic is consistently high from opening to closing at most libraries on these days, likely due to a combination of high demand and libraries being open fewer hours in the day, and extending opening and closing times on these days would likely benefit the largest number of patrons.
  - Extend opening and closing times on other days at locations demonstrating latent demand. Usage is consistently high at the existing 5 p.m. and 6 p.m. closing hours, and many libraries are busy in the opening hour. Extending opening and closing times at some locations would likely alleviate some of this latent demand and would give more choice for library patrons to use a library outside of the existing open hours on more days. The Library should use the visitor traffic and computer login data sheets in Appendix A to support these decisions.
- Consider reallocating existing open hours within and across branch libraries. Instead of or in combination with adding more system-wide open hours, the Library could reallocate current open hours to reduce gaps in system-wide coverage and alleviate high demand on some days and times at specific libraries. The Library should use the visitor traffic and computer login data sheets in Appendix A to support these decisions, and should consider geography when reallocating open hours. Specifically, the Library should consider the following:
  - Reallocate open hours within branches. The June 2017 open hours expansion included 85 additional open hours at 15 branch libraries, all within the existing system-wide open hours coverage footprint. The open hours at these and other branches could potentially be reallocated to both address high-demand times and expand the existing coverage footprint.
  - Reallocate open hours from some low-traffic branches to high-traffic branches or the Main Library. The Main Library and most of the busiest branches received no additional open hours in June 2017, and the Library should consider reallocating some open hours to these libraries to alleviate high demand and potentially expand the coverage footprint. As part of this

reallocation, the Library should consider expanding branch open hours beyond 55 per week at some of the busiest libraries in the system.

- Conduct further analysis into usage patterns. Upcoming infrastructure improvements will allow the Library to analyze the effects of changing hours on patron usage in nearly real time. The Library should use this data to further analyze patron usage to better enable the Library to effectively add or reallocate open hours:
  - Monitor the effect on visitor traffic of the June 2017 open hours expansion. The June 2017 expanded open hours likely alleviated some of the high demand at some locations, and the Library should consider the effect of these new open hours especially where open hours were added adjacent to high-use hours. Any further changes to open hours in 2018 and beyond should be monitored to determine whether they are having the intended effect.
  - o **Pilot hours outside the coverage window.** The current data allows for insight about usage within and at the edges of the current coverage footprint, but is less useful for gauging potential demand further outside existing hours. Piloting longer hours, especially before the business day, would give insight into whether those times might better serve some patrons. Similarly, the Library should review usage patterns as part of any pilot reallocation of open hours designed to reduce coverage gaps and expand the system-wide coverage footprint.

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### Introduction

The San Francisco Public Library (Library) system consists of the Main Library and 27 branch libraries located throughout the City of San Francisco (City), organized into five geographical districts. The Library is governed by the Library Commission. In 2007, voters reauthorized the Library Preservation Fund, which amends the City Charter to provide a funding baseline for the Library through fiscal year 2023-24 and to require that the Library Commission:

- Maintain a minimum of 1,211 system-wide service hours per week
- Conduct a comprehensive needs assessment at least once every five years to modify service hours as appropriate
- Establish a community input process to provide feedback for determining service hours, including a mandated public hearing in each supervisorial district

The last assessment was conducted in fiscal year 2012-13, and the current assessment must be completed by June 30, 2018. The overall goals of the assessment are to use a data-driven approach to gather information on Library visitors and use, to identify days and times of high and low use at specific library locations, and to position open hours to best serve the needs of the public and their respective communities.

The assessment includes analysis of existing open hours across the Library system and analysis of visitor traffic and computer use at each of the 28 library locations. The assessment also includes a separate analysis of survey results from a patron survey and a Library staff survey, to be provided in a report prepared by the City's contracted professional survey consultant.

## Methodology

City Performance compiled and analyzed Library data on visitor traffic and computer logins to present a composite view of library use at each hour for each library location.

### **Visitor Traffic Analysis**

The Library collected visitor traffic data over 12 two-week intervals from September 2014 to October 2016.<sup>1</sup> Library staff recorded counts from automated gate counters located at library entrances at opening, after the first 15 minutes, at the beginning of each hour during the day,

<sup>&</sup>lt;sup>1</sup> The visitor traffic data was collected prior to the June 2017 expansion of open hours, so no data is available for these hours.

15 minutes prior to closing, and at closing. This data allows for analysis of overall visitor traffic by hour at each location.<sup>2</sup>

### **Computer Login Analysis**

The Library collected two types of computer use data:

- Login data for physical library terminal computers was collected every day at each library location from January 2017 to July 2017 via automated library systems that record login time and duration of use whenever a patron uses a Library computer.
- Connections to the Library Wi-Fi network were recorded daily by automated systems from July to November 2017<sup>3</sup>

This data allows for estimation of the number of Library patrons using computer services in any given hour at each location.<sup>4</sup>

Heatmaps and charts showing hourly visitor traffic and computer/Wi-Fi logins at each open hour for each of the 27 branch locations and the Main Library as well as averages across all 27 branch locations are presented in Appendix A.

### Library System Open Hours Analysis

The assessment also included analysis of Library system open hours by time of day and day of week to present a comprehensive visual overview of the Library system-wide open hours coverage "footprint" during the week and identify specific gaps in coverage.

 $<sup>^2</sup>$  The visitor traffic counts include both "ins" and "outs", as the automated gate counters at libraries cannot distinguish a patron entering or exiting. Thus, for any given hour it is not possible to determine the number of discrete library visitors. However, total daily visitor traffic can be divided by 2 to derive the total number of visitors per day and an hourly average (e.g., if visitor traffic is counted at 500 in a day and the library is open for 5 hours the total number of visitors is 500 / 2 = 250 and the hourly average is 250 / 5 = 50 visitors). Further, for purposes of this analysis, all visitor traffic in the first 15 minutes of opening is assumed to be "ins" and all traffic in the last 15 minutes is assumed to be "outs." Thus, for these time intervals, if traffic is counted at 20 then the assumption is that it is 20 visitors, not 10 visitors, during that time.

<sup>&</sup>lt;sup>3</sup> The Wi-Fi data and some of the computer login data was collected after the expansion of open hours at some locations in June 2017, but only hours that have visitor traffic data were included in the analysis.

<sup>&</sup>lt;sup>4</sup> The Wi-Fi login data has some important limitations for use in assessing Library open hours. First, the Wi-Fi is available outside the building at some branches, making it impossible to determine if a user is inside or outside the library when making a connection. Second, the Wi-Fi is also available during hours the libraries are closed. Third, Wi-Fi logins record only the start of a session and therefore under-count usage late in the day. Nevertheless, this data can be useful as a supplement to the visitor traffic data to provide a more comprehensive view of library use at different hours of the day and week.

## Findings

## 1. THE LIBRARY EXCEEDS THE MINIMUM NUMBER OF REQUIRED OPEN HOURS

The Charter requires a minimum of 1,211 open hours, and the Library's current system-wide total of 1,460 open hours is approximately 21 percent above this floor. In June 2017, the Library added an additional 85 open hours at a total of 15 branch libraries, including adding an additional day of service at nine libraries,<sup>5</sup> resulting in all branch libraries now being open seven days per week with a minimum of 50 hours per week.<sup>6</sup>

## 2. OVERALL HOURS COVERAGE VARIES LITTLE BETWEEN BRANCHES, DESPITE LARGE VARIATIONS IN VISITOR TRAFFIC

All branches are open for either 50 or 55 hours, despite large variation in average hourly visitor traffic, and neither the Main Library nor most of the busiest branch libraries received any additional open hours in the June 2017 expansion of open hours. The Library could likely serve more patrons by either reallocating some existing hours or by prioritizing new hours at the busier branches.

Of the busiest five branches by average hourly visitors, only North Beach (ranked number five) received additional open hours in June 2017, and of the top 10 branches only three received more hours. Conversely, seven of the 10 branches with the lowest average hourly traffic received more hours.<sup>7</sup> Appendix B summarizes all library locations by visitors per hour, with weekly open hours and whether additional hours were added in June 2017.

Many of the libraries with lower usage were previously closed one day per week, and the expansion of hours ensures that all branches are now open seven days per week. Appendix C shows the current weekly open hours for all libraries. In some cases, hours were expanded at branches in historically underserved communities or for other community-specific reasons. These equity goals should be considered together with the goal of serving more patrons, as increasing the overall number of patrons served may have equity benefits as well. The Library should analyze how to maintain desired levels of service at all branches while also serving as many patrons as possible.

<sup>&</sup>lt;sup>5</sup> Previously, seven branch libraries were closed on Sundays and two libraries were closed on Mondays.

<sup>&</sup>lt;sup>6</sup> Previously, some branch libraries were open 45 hours per week, some 50 hours, and some 55 hours. The Main Library is open 60 hours per week.

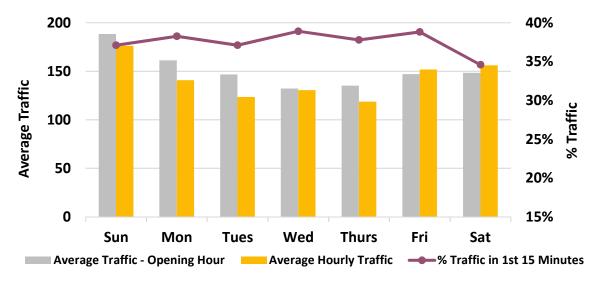
<sup>&</sup>lt;sup>7</sup> The three busiest branches have 157, 144 and 130 average hourly visitors, and the three least busy branches, which all received additional hours, have 37, 34 and 21 average hourly visitors.

## 3. BUSY HOURS AT THE START OR END OF THE DAY SUGGEST LATENT DEMAND

The opening hour is often busy for many libraries, especially when that opening hour is later than 10 a.m. Similarly, the closing hour is often busy on days when a library closes at 5 or 6 p.m. compared to days when it closes later in the evening. Hours with heavy use at the start or end of day suggest latent demand (e.g., patrons waiting for the library to open or rushing to use it before it closes), and patrons would benefit from earlier or later hours on those days.

Figure 1 shows average visitor traffic at the opening hour across all 27 branches compared to average hourly traffic for that day together with the percentage of opening hour traffic occurring in the first 15 minutes.

Figure 1: Libraries are Generally Busy at the Opening Hour, with a Disproportionate Share of Traffic in the First 15 Minutes of Opening



Opening hours at branches tend to be busier than the average hour, and 38 percent of opening hour traffic across all branches occurs in the first 15 minutes (25 percent of an hour). The busy opening hour and first 15 minutes suggests that many library patrons are lined up outside waiting for the library to open and thus would likely benefit from earlier opening times. Further, the percentage of traffic in the opening hour is slightly higher than 38 percent on average for opening hours at noon or 1 p.m., suggesting that when the library opens later than 10 a.m. an even greater proportion of patrons are lined up waiting for the library to open.

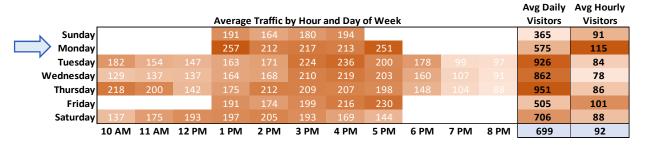
Figure 2 shows a comparison of visitor traffic at the Mission and Merced branches, and demonstrates how shifting hours earlier might alleviate latent demand:

<sup>&</sup>lt;sup>8</sup> This analysis assumes that a greater proportion of visitor traffic in the opening hour is 'ins' and that all traffic in the first 15 minutes is 'ins.' Thus, the total number of visitors is significantly higher on average in the opening hour compared to the daily average, as the traffic total would not be simply divided by 2 to get the number of visitors, as it is for daily totals.

- Both branches open at the same time on Friday, but Mission opens at 1 p.m. on Monday and Merced opens at 10 a.m.
- Both branches have similar relative traffic densities on Friday opening hour, but Mission is relatively busier during the later opening hour on Monday.

Figure 2: Opening Hour is Busier Later in the Morning; Closing Hour is Busier Earlier in the Evening<sup>9</sup>

### Mission



#### Merced

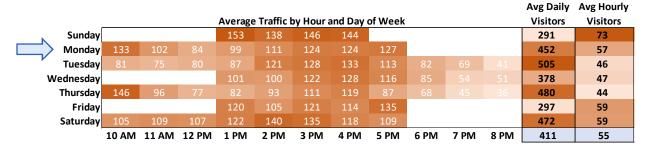


Figure 2 also shows an example of relatively dense use at the closing hour on days the library closes at 5 or 6 p.m. and demonstrates how later open hours on some days might also alleviate latent demand. Both Mission and Merced branches are busy at the 5 p.m. hour on Mondays and Fridays, when the branch closes at 6 p.m., but relatively less busy at that time on other weekdays when the library is open until 9 p.m. This suggests that some patrons may be rushing to use these libraries before closing at 6 p.m. on Mondays and Fridays and that patrons would benefit from later closing hours on these days.

Libraries are also generally busier when open fewer hours in the day. Although the total number of visitors is generally lower on the days that libraries are open fewer hours, the high average hourly visitor traffic shows that more patrons are using the library in each open hour. Figure 3 shows the average visitor traffic across all branches and at the Main Library.

<sup>&</sup>lt;sup>9</sup> Hourly 'traffic' includes both 'ins' and 'outs.' Darker colored areas on the heatmaps indicate higher traffic volume during that hour relative to the traffic for that branch, and white areas indicate hours the library is closed. 'Avg Daily Visitors' is the sum of average daily visitor traffic divided by 2 and 'Avg Hourly Visitors' is the 'Avg Daily Visitors' total divided by the number of open hours that day, showing the average total number of discrete visitors per day and the average discrete visitors per open hour. The shading in these columns visually represents the relative rank of the visitor traffic for that day within the week, which allows for easy identification of the days with high and low visitor traffic as well as the days with high and low average hourly visitors.

Figure 3: Overall Denser Use on Days When Libraries are Open Fewer Hours in the Day

### **All Branches**

				Average	Traffic k	y Hour a	and Day (	of Week				Avg Daily Visitors	Avg Hourly Visitors
Sunday				188	165	168	183					352	88
Monday	124		89	146			563	70					
Tuesday	146	121				678	62						
Wednesday	189	160	108	129	137	166	164	144				718	65
Thursday	149				129	154	153	138				652	59
Friday				147	131	169	159	153				379	76
Saturday	146	154	154	165	169	167	160	134				624	78
	10 AM	11 AM	12 PM	1 PM	2 PM	3 PM	4 PM	5 PM	6 PM	7 PM	8 PM	567	71

### **Main Library**

	•			Average	Traffic b	y Hour a	and Day (	of Week				Avg Daily Visitors	Avg Hourly Visitors
Sunday				1208	1030	1070	1122	1249				2,839	568
Monday		1066	1036	1278	1226	1116	1070	1057	1087			4,467	558
Tuesday	810	909	1064	1273	1230	1168	1057	1085	1075	799	719	5,595	509
Wednesday	936	1152	1295	1479	1381	1281	1203	1151	1100		708	6,232	567
Thursday	815	964	1067	1246	1264	1196	1156	1100	1018	756		5,605	510
Friday				1401	1223	1155	1083	1105	1052			3,510	585
Saturday		950	907	1038	1163	1120	1127	1109	933			4,174	522
-	9 AM	10 AM	11 AM	12 PM	1 PM	2 PM	3 PM	4 PM	5 PM	6 PM	7 PM	4,632	545

Denser use on days with fewer open hours system-wide, especially on Sundays and Fridays, suggests that patrons are adjusting their schedules to visit the library during days with limited open hours. <sup>10</sup> Expanding the coverage footprint to include additional open hours coverage on Sundays and Fridays would likely benefit many Library patrons.

The Library should use the visitor traffic and computer login data sheets provided in Appendix A to support any decisions regarding modification of open hours. Further, because busy hours at each branch are also driven by program schedules, the presence of schools, and other branch-specific factors, library management should also consult with branch managers to inform reallocation of existing hours and/or scheduling of additional hours.<sup>11</sup>

New open hours on Sunday at nine libraries and on Saturday mornings at seven libraries may have alleviated some of the high weekend demand at some branches. For example, Figure 4 shows that Ingleside branch library had the highest average hourly traffic in the Saturday opening hour during the period that the traffic data was collected, but the opening time was changed in June 2017 to 10 a.m. from 1 p.m. Thus, the Library should analyze the effect of earlier opening times like this one on hourly and total visitor traffic.

<sup>&</sup>lt;sup>10</sup> The high average hourly visitor traffic on Wednesday mornings shown in the 'All Branches' summary in Figure 3 is overstated because only 6 out of 27 branch libraries were open in the 10 a.m. and 11 a.m. hours and these 6 branches are some of the busiest branches in the Library system (e.g. Richmond branch).

<sup>&</sup>lt;sup>11</sup> For example, on Tuesdays at 10 a.m. many branches show a major spike in traffic that is likely due to special programming (e.g., story time) rather than latent demand.

Figure 4: New Open Hours May Have Alleviated High Visitor Traffic<sup>12</sup>

### Ingleside

				Average	Traffic b	y Hour a	and Day	of Week				Avg Daily Visitors	Avg Hourly Visitors
Sunday						350	87						
Monday							160	197				495	62
Tuesday	149						163	180				528	66
Wednesday							153	180				520	65
Thursday							148					424	61
Friday						162		144				340	68
Saturday				208	166	162	177	144				429	86
	10 AM	11 AM	12 PM	1 PM	2 PM	3 PM	4 PM	5 PM	6 PM	7 PM	8 PM	441	71

# 4. GAPS IN THE SYSTEM-WIDE OPEN HOURS FOOTPRINT LIKELY RESTRICT LIBRARY USE FOR PATRONS THAT WORK DURING THE REGULAR BUSINESS DAY AND CONTRIBUTE TO BUSY DAYS AND TIMES

Although the Library maintains more open hours than required by the Charter, the coverage footprint has significant gaps. Figure 5 presents an overview of the Library's system-wide open hours coverage footprint, showing the number of libraries open during each "waking hour" (7 a.m. to 11 p.m.) each day of the week. Figure 5 also shows the total number of system open hours broken out by hour of the day and day of the week, as well as the relative share of total system open hours in each day and at each hour across the system.

<sup>&</sup>lt;sup>12</sup> The gray shaded areas indicate expanded open hours as of June 2017.

<sup>&</sup>lt;sup>13</sup> For the purposes of this analysis, "waking hours" are defined as hours where more than 50 percent of the population is engaged in non-sleeping activities according to the Bureau of Labor Statistics (BLS). BLS data available at https://www.bls.gov/tus/#tables.

Figure 5: Library System-Wide Open Hours Coverage Footprint<sup>14</sup>

Current Footprint																Library System Covered Hours	% Coverage Waking Hours	Total System Daily Hours	% Total System Hours
Sunday						1	28	28	28	28						5	31%	113	8%
Monday				15	15	18										8	50%	188	13%
Tuesday			1	28	28	28	28	28	28	28	28	17		17		12	75%	278	19%
Wednesday			1	11			28	28	28	28	28	28	28	17		12	75%	258	18%
Thursday			1	25	25	28	28	28	28	28	28	19		8		12	75%	261	18%
Friday						1	28	28	28	28	28					6	38%	141	10%
Saturday				27			28	28	28	28	28					8	50%	221	15%
	7 AM	8 AM	9 AM	10 AM	11 AM	12 PM	1 PM	2 PM	3 PM	4 PM	5 PM	6 PM	7 PM	8 PM	9 PM 10 PM	63	56%	1460	100%
Total Weekly Hours			3	106	107	124	196	196	196	196	168	64	62	42		7			
% Weekly Coverage			2%	54%	55%	63%	100%	100%	100%	100%	86%	33%	32%	21%					
% Total System Hours			0.2%	7%	7%	8%	13%	13%	13%	13%	12%	4%	4%	3%					

<sup>&</sup>lt;sup>14</sup> The white areas indicate that no library is open during that time and the darker colored areas indicate that more libraries are open during that hour. The colored areas also show the actual number of libraries open (the orange numbers indicate expanded open hours as of June 2017). In the summary columns on the right side of the chart and in the summary rows below the open hours, the darker colored areas indicate more open hours coverage. Columns at right show density of coverage by day of the week; rows at bottom show density of coverage by hour of the day.

Overall, at least one library in the system is open during 56 percent of all "waking hours," including 100 percent coverage in the core 1 p.m. to 5 p.m. period. However, the footprint still shows coverage gaps:

- Tuesdays, Wednesdays and Thursdays have high coverage, but Fridays are at 38 percent and Sundays are at 31 percent.
- All libraries are closed on Friday and Sunday mornings, and on Monday, Friday and weekend evenings.
- The 9 a.m. hour is covered only by the Main Library three days per week, resulting in only 2 percent coverage of total possible system hours at that time.
- No branch library opens before 10 a.m. or closes after 9 p.m., and the 8 p.m. hour has only 21 percent coverage.
- Two-thirds of total system open hours (and 85 percent of weekday system hours) occur during the 9 a.m. to 6 p.m. business day.
- Less than one-third of total possible system evening hours after 6 p.m. are covered. 16

The concentration of open hours during the 9 a.m. to 6 p.m. business day likely serves many types of patrons well, such as school or community groups, people who are unemployed or employed in non-traditional hours, or people who care for children during the day. However, these hours potentially make it difficult for patrons who normally work these hours to visit a library during the week, especially if they also have commitments at home in the early evening on weekdays.

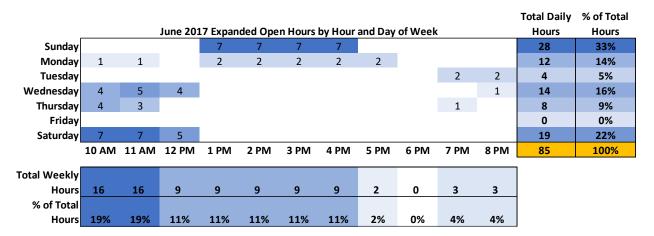
Expanding the coverage footprint to include coverage of more open hours or denser coverage of some open hours could improve access for these patrons and potentially alleviate high demand at other times. According to Library staff, most peer library systems concentrate open hours in the 9 a.m. to 6 p.m. business day, and administrative considerations make expansion beyond those hours challenging. Further research would be needed to determine whether benefits to patrons would justify the administrative difficulty of such an expansion.

The June 2017 open hours expansion added 85 system hours, primarily to mornings and afternoons. Although forty-seven hours (55 percent) were added on weekends, which are generally high-use days, the Library did not expand the system-wide coverage footprint. Figure 6 shows hours added in 2017.

<sup>&</sup>lt;sup>15</sup> In all cases where only one library is open it is the Main Library.

 $<sup>^{16}</sup>$  28 libraries at 7 days per week = 196 possible library open hours for any given hour of the day. So, for the 9 a.m. hour, 3 / 196 = 2 percent, and for the 6 p.m., 7 p.m. and 8 p.m. hours combined, (64+62+42) / (196\*3) = 29 percent.

Figure 6: June 2017 Expanded Open Hours Are Primarily Morning and Afternoon Hours, and Did Not Expand the Coverage Footprint



## 5. EVENINGS AFTER 7 P.M. GENERALLY HAVE THE LIGHTEST USE SYSTEM-WIDE

Visitor traffic and computer logins at most branch libraries drop off substantially after 7 p.m. Other times of light use vary from branch to branch.

As shown previously in Figure 3, average hourly visitor traffic across all branches is generally high at the closing hour on days when a library closes in the early evening, at 5 p.m. or 6 p.m. (e.g., Weekends, Mondays and Fridays), but drops off significantly after 6 p.m. and is lightest in the 7 p.m. and 8 p.m. hours.<sup>17</sup> Figure 7 shows a similar decline in computer logins after 7 p.m. across all branches and at the Main Library.

<sup>&</sup>lt;sup>17</sup> The higher average hourly visitor traffic in the 8 p.m. hour on Wednesdays shown in the 'All Branches' summary is overstated because only 8 out of 27 branch libraries were open during this time (compared to 13 in the 7 p.m. hour), and several of these 8 branches are some of the busier branches in the Library system (e.g., Richmond branch).

Figure 7: Computer Logins Decline Sharply In the Late Evenings<sup>18</sup>

#### **All Branches**

				Average	Logins b	y Hour a	nd Day o	of Week*	:			Avg Daily Logins	Avg Hourly Logins
Sunday				68	75	77	68					287	72
Monday				62			492	61					
Tuesday		60	61			727	66						
Wednesday			56	66	78	90	92	86	71	55		730	66
Thursday		57	61	67	77	89	91	84	66			731	66
Friday				65	74	90	92	80				402	80
Saturday	51	61	66	73	78	79	75	61				545	68
	10 AM	11 AM	12 PM	1 PM	2 PM	3 PM	4 PM	5 PM	6 PM	7 PM	8 PM	559	69

### **Main Library**

												Avg Daily	Avg Hourly
_				Average	Logins b	y Hour a	and Day	of Week				Logins	Logins
Sunday				610	705	741	688					3,301	660
Monday		632	685	751	752	757	744	732	622			5,674	709
Tuesday	600	651	729	822	831	847	838	861	863	646		8,159	742
Wednesday	663	793	878	931	914	883	869	867	813	628		8,666	788
Thursday	582	685	735	821	839	841	830	865	846	643		8,150	741
Friday				749	817	828	806	792	682			4,674	779
Saturday		505	576	636	682	713	735	643	509			4,999	625
-	9 AM	10 AM	11 AM	12 PM	1 PM	2 PM	3 PM	4 PM	5 PM	6 PM	7 PM	6,790	728

Although fewer patrons use these later evening hours, they likely serve a different patron population than daytime hours. Late evening hours may be the only times that some patrons are able to visit a library during the week due to work or other commitments. Further, because most end-of-day traffic consists of "outs" rather than "ins" and fewer patrons are likely to begin computer sessions close to closing time, the traffic and login numbers may understate the actual number of patrons using the libraries after 7 p.m.<sup>19</sup>

The Main Library is only open until 8 p.m., and although it is also generally less busy when closing after 6 p.m. the decline in usage is less significant than at the branches, suggesting that a relatively higher proportion of visitor traffic occurs at the Main Library after 7 p.m. than at the branches, and that patrons would benefit from later open hours at the Main Library.

<sup>&</sup>lt;sup>18</sup> "Logins" include both logins to Library computers as well as logins to the Library Wi-Fi from personal devices. Similar to the visitor traffic heatmaps, the darker colored areas on the heatmaps indicate higher login volume during that hour relative to the logins for that branch, and the white areas indicate hours the library is closed. The columns on the right are daily and hourly averages, with the color shading representing the relative rank of the day to other days in the week.

<sup>&</sup>lt;sup>19</sup> Across all branches 29 percent of visitor traffic in the last 15 minutes are "outs", meaning that the total number of visitors is greater than traffic divided by 2.

## Recommendations

## 1. ALLOCATE ANY NEW OPEN HOURS TO SPECIFIC PRIORITY AREAS

Although the Library well exceeds its minimum number of open hours, service gaps remain that result in high visitor traffic demand on certain days of the week and times of day. Additional open hours would likely alleviate much of this demand and would better serve Library patrons, but adding additional hours would result in additional costs. If the Library devotes staff and budget resources to a further expansion of open hours, the following areas would reduce gaps in system-wide coverage and alleviate high demand on some days and times at specific libraries:

### 1a. Expand open hours on Sundays and Fridays.

Visitor traffic is consistently high from opening to closing at most libraries on these days, likely due to a combination of high demand and the libraries being open fewer hours in the day. Extending opening and closing times on these days would likely benefit the largest number of library patrons.

### 1b. Extend opening and closing times on more days at locations demonstrating latent demand.

Usage is consistently high at the existing 5 p.m. or 6 p.m. closing hours, and many libraries are busy in the opening hour. Extending opening and closing times at some locations would likely alleviate some of this latent demand and would give more choice for library patrons to use a library outside of the existing open hours on more days.

The Library should use the visitor traffic and computer login data sheets provided in Appendix A to support these decisions. Because busy hours at each branch are also driven by program schedules, the presence of schools, and other branch-specific factors, library management should also consult with branch managers to inform scheduling of additional hours.

## 2. CONSIDER REALLOCATING EXISTING OPEN HOURS WITHIN AND ACROSS BRANCH LIBRARIES

Expanding hours would result in additional costs that may or may not be feasible for the Library to expend. However, even without adding more system-wide open hours, the Library could use the following strategies to reallocate current open hours at some locations to improve system-wide coverage and serve more patrons:

## 2a. Reallocate open hours to reduce coverage gaps and expand system-wide coverage footprint.

The June 2017 open hours expansion included 85 additional open hours, primarily in the mornings and afternoons, all within the existing coverage footprint. The expanded hours at these and other branches could potentially be reallocated to both address high-demand times and expand the existing coverage footprint.

Figure 8 on the following page shows the existing footprint and two example reallocations of the existing 1,460 open hours: a moderate expansion that achieves 68 percent waking hours coverage and a broader expansion that achieves 78 percent coverage (compared to the current 56 percent coverage).

City Performance is not recommending that the Library specifically adopt either of these expanded footprints. Rather, they demonstrate strategies that the Library might employ to expand the current footprint and alleviate latent demand, including:

- Reallocating open hours to Monday evenings, and Sunday and Friday mornings and evenings, to address specific high-demand times.
- Opening two branch libraries earlier than 10 a.m. Monday through Thursday.
- Opening one library at 8 a.m. three days per week to allow some patrons to visit a library before the start of the business day.
- Spreading the current morning and evening hours equally across the week to provide coverage on Friday mornings and Monday and Friday evenings.
- Staggering opening and closing times across branches on Sundays and Fridays to expand the footprint on those days.

City Performance has not conducted a cost-benefit analysis of these changes, and understands that even without adding hours some of these reallocation strategies would present administrative considerations, including: changes to staff schedules, increased overhead costs, reduced time for library staff meeting times, and a greater complexity of scheduling across the system. Nevertheless, the Library should weigh these challenges against the benefits to patrons of providing more comprehensive open hours coverage.

If the Library adopts strategies to expand the coverage footprint, it should consider geography when reallocating open hours. The library should consider branches near one another as a cluster and aim to have at least one library in that cluster open during each weekday morning and evening. The Library should strive to ensure that if a patron's local or preferred branch is not open, another nearby location would be open, as patrons who live near several branches may adjust their behavior to use one branch or the other depending on open hours. Thus, these geographic clusters should be based on where patrons live and work, rather than on the 11 supervisorial districts or the Library's five administrative districts and should also consider other factors such as the location of major transit hubs.

Figure 10: Current Coverage Footprint and Example Reallocations of Existing Open Hours to Expand the Footprint<sup>20</sup>

Current Footprint						_											Library System Covered Hours	% Coverage Waking Hours	Total System Daily Hours	% Total System Hours
Sunday						1	28										5	31%	113	8%
Monday				15	15	18											8	50%	188	13%
Tuesday			1	28	28	28	28	28	28	28	28	17					12	75%	278	19%
Wednesday			1	11	12	21	28	28	28	28	28	28	28				12	75%	258	18%
Thursday			1	25	25	28	28	28	28	28	28	19	15	8			12	75%	261	18%
Friday						1	28	28	28	28	28						6	38%	141	10%
Saturday				27	27	27	28	28	28	28	28						8	50%	221	15%
	7 AM	8 AM	9 AM	10 AM	11 AM	12 PM	1 PM	2 PM	3 PM	4 PM	5 PM	6 PM	7 PM	8 PM	9 PM 10	PM	63	56%	1460	100%
Total Weekly Hours			3	106	107	124	196	196	196	196	168	64	62	42						
% Weekly Coverage			2%	54%	55%	63%	100%	100%	100%	100%	86%	33%	32%	21%						
% Total System Hours			0.2%	7%	7%	8%	13%	13%	13%	13%	12%	4%	4%	3%						
70 Total System Hours			0.2/6	1 /0	1 /0	6/0	13/0	13/6	13/0	13/0	12/0	4/0	4/0	3/0						
Example Reallocati	on - N	/lode	rate l	Expan	sion	-														
Sunday						14	28	28	28	28	14						6	38%	140	10%
Monday			2	15	15	16	28	28	28	28	28	8	8					69%	204	14%
Tuesday			3	22	22	22	28	28	28	28	28	18	19	16			12	75%	262	18%
Wednesday			3	11	12	21	28	28	28	28	28	28	20	16			12	75%	251	17%
Thursday			3	25	25	26	28	28	28	28	28	19	19	14			12	75%	271	19%
Friday						8	28	28	28	28	28	8					7	44%	156	11%
Saturday				12	12	12	28	28	28	28	28						8	50%	176	12%
	7 AM	8 AM	9 AM	10 AM	11 AM	12 PM	1 PM	2 PM	3 PM	4 PM	5 PM	6 PM	7 PM	8 PM	9 PM 10	PM	68	61%	1460	100%
			11	85	86	119	196	196	196	196	182	81	66	46						
			6%	43%	44%	61%	100%	100%	100%	100%	93%	41%	34%	23%						
			1%	6%	6%	8%	13%	13%	13%	13%	12%	6%	5%	3%						
Example Reallocati	on - B	road	Ехра																	
Sunday				14	14	28	28	28	28	14	14						8	50%	168	12%
Monday		4	2	15	16	18	28	28	28	28	28	15	13	8			12	75%	227	16%
Tuesday		1	3	15	16	18	28	28	28	28	28	15	13	8			13	81%	229	16%
Wednesday		1	3	15	16	18	28	28	28	28	28	15	13	8			13	81%	229	16%
Thursday		1	3	15	16	18	28	28 28	28	28	28	15	13	8			13	81%	229	16%
Friday				12 12	12	12	28		28	28	28	12	8	6			8	69%	202	14%
Saturday	7 4 4 4	0.486	0.482		12	12	28	28	28	28	28	C D8.5	7.004	0.000	0.004 40	D0.4		50%	176	12%
	7 AM	8 AIVI	9 AIVI	TO AM	11 AM	12 PM	1 PM	2 PM	3 PM	4 PM	5 PIVI	6 PIVI	/ PIVI	8 PIVI	9 PM 10	PIVI	78	70%	1460	100%
		3	11	98	102	124	196	196	196	182	182	72	60	38						
		3	11	90	102	124										- 1				
		2%	6%	50%	52%	63%	100%	100%	100%	93%	93%	37%	31%	19% 3%						

<sup>&</sup>lt;sup>20</sup> Numbers in black indicate no change from existing open hours, numbers in red indicate reduced open hours, numbers in green indicate added hours. City Performance is not recommending that the Library specifically adopt either of these expanded footprints; rather, they demonstrate strategies that the Library might employ to expand the current open hours footprint and alleviate latent demand.

## 2b. Reallocate open hours from some low-traffic branches to high-traffic branches or the Main Library.

The Main Library and most of the busiest branches received no additional open hours in June 2017, and the Library should consider reallocating some open hours to these libraries to alleviate high demand and potentially expand the coverage footprint. As part of this reallocation, the Library should consider expanding branch open hours beyond 55 per week at some of the busiest libraries in the system. The Library should use the visitor traffic and computer login data sheets provided in Appendix A to support these decisions.

## 3. CONDUCT FURTHER ANALYSIS INTO USAGE PATTERNS.

Upcoming infrastructure improvements will allow the Library to distinguish between visitor traffic "ins" and "outs" and will enable the Library to analyze the effects of changing hours on patron usage in nearly real time.<sup>21</sup> Any changes made to open hours in 2018 and beyond should be monitored to determine whether they are having the intended effect.

### 3a. Monitor the effect on visitor traffic of the June 2017 open hours expansion.

The June 2017 expansion included additional hours on weekends and in some cases added hours adjacent to existing hours with high latent demand. Thus, there hours likely alleviated some of the high demand at some locations, and the Library should consider the effect of these new open hours especially where open hours were added adjacent to high-use hours. The Library should also reevaluate the allocation of any new hours between mornings and evenings to ensure that new hours were added most effectively. This analysis would better enable the Library to propose additional open hours, or reallocate existing hours most effectively.

### 3b. Pilot hours outside the coverage window.

The current data allows for insight about usage within and at the edges of the current coverage footprint, but is less useful for gauging potential demand further outside existing hours. For example, it is difficult to draw conclusions about how patrons might use the library before the business day or late at night. Piloting longer hours, especially before the business day, would give insight into whether those times might better serve some patrons, and the Library should monitor and analyze patron usage as part of any such pilot. Similarly, the Library should review usage patterns as part of any pilot reallocation of open hours designed to reduce coverage gaps and expand the system-wide coverage footprint.

<sup>&</sup>lt;sup>21</sup> The Library is currently implementing SenSource (<a href="https://www.sensourceinc.com/">https://www.sensourceinc.com/</a>), a new patron counter system that uses state-of-the-art technology to track patron "ins" and "outs." As of December 2017, this technology has been installed in 15 locations at the Main Library, and it will be fully implemented across the entire system by June 2018. SenSource will provide real-time data and analytics about facilities usage, and will save significant staff time from manually recording daily and hourly gate counts during assessment periods.

## Appendix A: Library Usage by Location

City Performance prepared heatmaps and charts showing hourly visitor traffic and computer/Wi-Fi logins at each open hour for each of the 27 branch locations and the Main Library as well as averages across all 27 branch locations. This data allows for analysis of overall visitor traffic, and for estimation of the number of Library patrons using computer services, by hour at each location. The Wi-Fi data and some of the computer login data was collected after the expansion of open hours at some locations in June 2017, but only hours that have visitor traffic data were included in the analysis.

The visitor traffic counts include both "ins" and "outs", as the automated gate counters at libraries cannot distinguish a patron entering or exiting. Thus, for any given hour it is not possible to determine the number of discrete library visitors. However, total daily visitor traffic can be divided by 2 to derive the total number of visitors per day and an hourly average (e.g., if visitor traffic is counted at 500 in a day and the library is open for 5 hours the total number of visitors is 500 / 2 = 250 and the hourly average is 250 / 5 = 50 visitors). "Logins" include both logins to Library computers as well as logins to the Library Wi-Fi from personal devices.

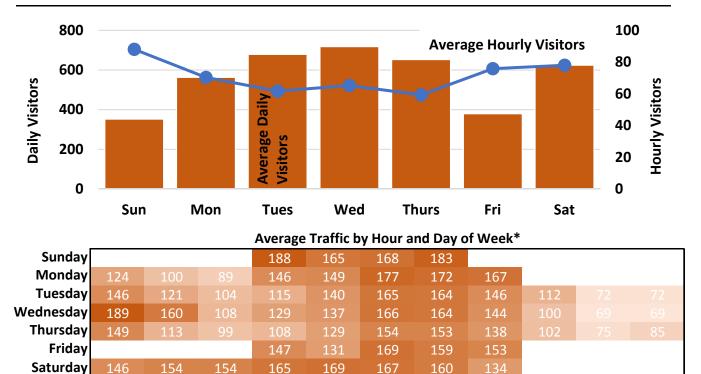
The Wi-Fi login data has some important limitations for use in assessing Library open hours. First, the Wi-Fi is available outside the building at some branches, making it impossible to determine if a user is inside or outside the library when making a connection. Second, the Wi-Fi is also available during hours the libraries are closed. Third, Wi-Fi logins record only the start of a session and therefore under-count usage late in the day. Nevertheless, this data can be useful as a supplement to the visitor traffic data to provide a more comprehensive view of library use at different hours of the day and week.

The darker colored areas on the heatmaps indicate higher traffic/login volume during that hour relative to the logins for that branch, and the white areas indicate hours the library is closed. The gray shaded areas indicate expanded open hours as of June 2017.

Average daily and hourly visitors/logins is also displayed in the column/line chart, with daily visitors/logins represented by the colored columns corresponding to the primary (left) vertical axis and hourly visitors/logins represented by the line corresponding to the secondary (right) vertical axis.

### **All Branches**

### **Visitor Traffic**



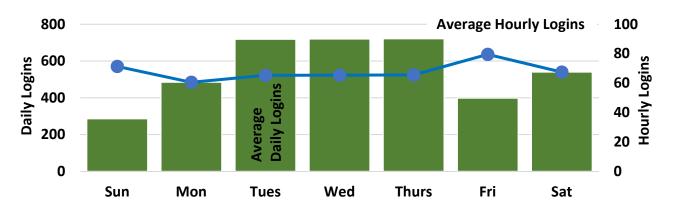
### **Computer and WiFi Logins**

**10 AM** 

11 AM

**12 PM** 

1 PM



**2 PM** 

**3 PM** 

4 PM

5 PM

6 PM

**7 PM** 

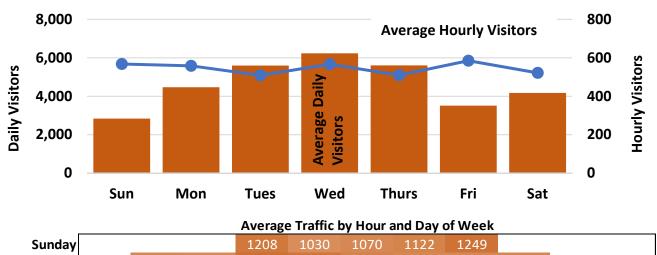
8 PM

				Average	Logins b	y Hour a	nd Day o	f Week*			
Sunday				67	74	76	68				
Monday			48	61	68	77	79	69			
Tuesday	50	59	60	64	73	87	90	84	64	50	36
Wednesday	46	48	54	66	78	89	90	85	70	54	39
Thursday	51	56	60	66	77	89	90	83	64	48	37
Friday				64	74	90	91	79			
Saturday	50	60	65	73	77	79	75	61			
	10 AM	11 AM	12 PM	1 PM	2 PM	3 PM	4 PM	5 PM	6 PM	7 PM	8 PM

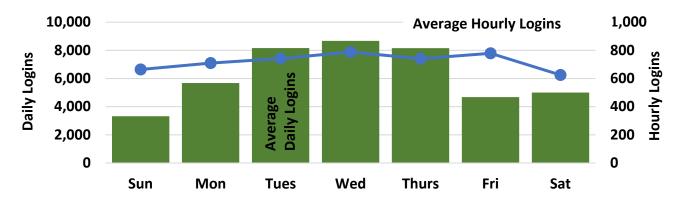
<sup>\*</sup>Hourly 'traffic' includes both 'ins' and 'outs'; 'logins' include both Library computers and personal devices; darker colored areas indicate higher traffic/login volume; white areas indicate hours no branch is open.

Main Library District 6

### **Visitor Traffic**



				Avciage	. II allic i	Jy Hour c	and Day	JI VVCCK			
Sunday				1208	1030	1070	1122	1249			
Monday		1066	1036	1278	1226	1116	1070	1057	1087		
Tuesday	810	909	1064	1273	1230	1168	1057	1085	1075	799	719
Wednesday	936	1152	1295	1479	1381	1281	1203	1151	1100	776	708
Thursday	815	964	1067	1246	1264	1196	1156	1100	1018	756	628
Friday				1401	1223	1155	1083	1105	1052		
Saturday		950	907	1038	1163	1120	1127	1109	933		
_	9 AM	10 AM	11 AM	12 PM	1 PM	2 PM	3 PM	4 PM	5 PM	6 PM	7 PM

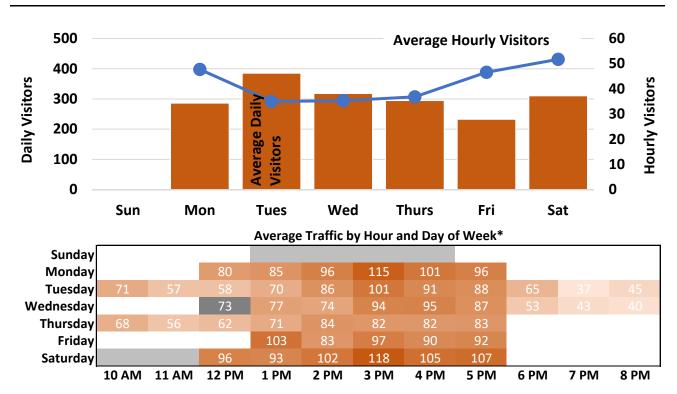


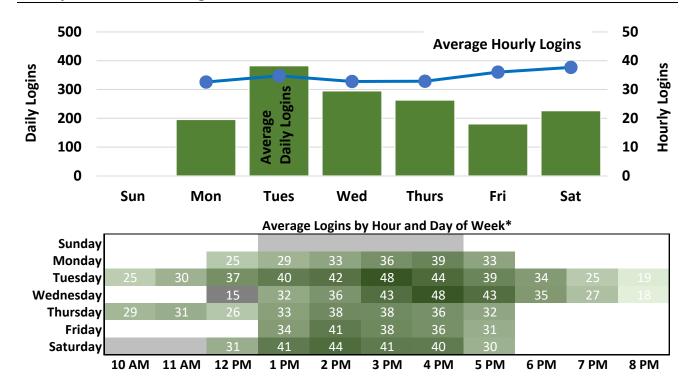
_				Average	e Logins i	by Hour a	and Day o	of Week			
Sunday				614	709	746	692	559			
Monday		632	685	751	752	757	744	732	622		
Tuesday	600	651	729	822	831	847	838	861	863	646	471
Wednesday	663	793	878	931	914	883	869	867	813	628	426
Thursday	582	685	735	821	839	841	830	865	846	643	462
Friday				749	817	828	806	792	682		
Saturday		505	576	636	682	713	735	643	509		
_	9 AM	10 AM	11 AM	12 PM	1 PM	2 PM	3 PM	4 PM	5 PM	6 PM	7 PM

<sup>\*</sup>Hourly 'traffic' includes both 'ins' and 'outs'; 'logins' include both Library computers and patron personal devices; darker colored areas indicate higher traffic/login volume; white areas indicate hours library is closed.

Anza District 1

### **Visitor Traffic**

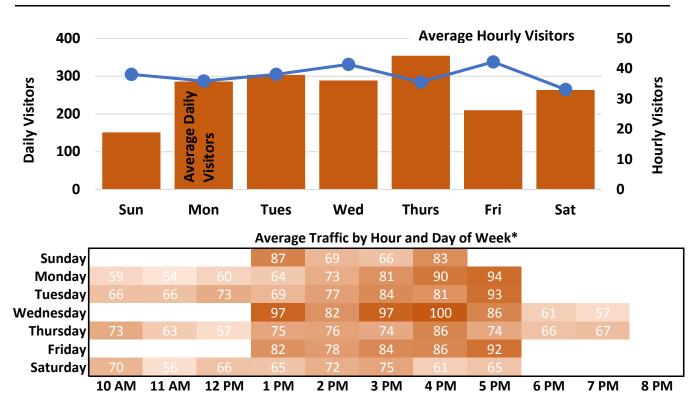


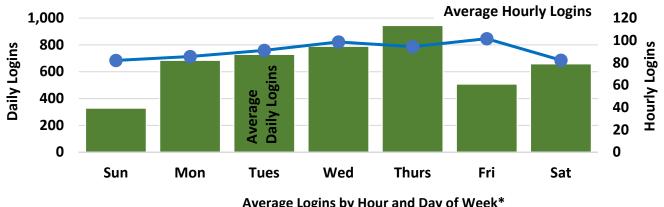


<sup>\*</sup>Hourly 'traffic' includes both 'ins' and 'outs'; 'logins' include both Library computers and patron personal devices; darker colored areas indicate higher traffic/login volume; white areas indicate hours library is closed; gray areas indicate expanded open hours as of June 2017 (dark gray area indicates eliminated hour).

Bayview District 10

### **Visitor Traffic**

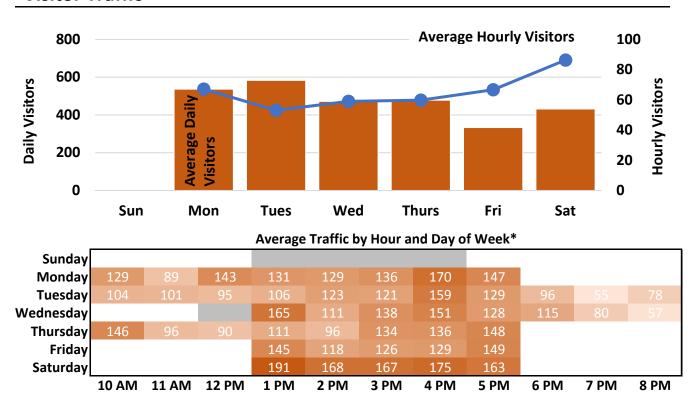




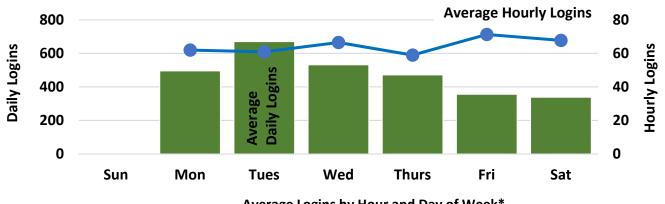
				Average	LUGIIIS D	y Hour a	ilu Day o	IVVECK			
Sunday				83	85	83					
Monday			80			92	114	115			
Tuesday		79		85	85	100	122	121			
Wednesday			79	84		123	123	115	104	85	
Thursday			89	92	93	96	120	127	103	85	
Friday				91	95	106	111	105			
Saturday	73	75	87	88	87	87	88	75			
	10 AM	11 AM	12 PM	1 PM	2 PM	3 PM	4 PM	5 PM	6 PM	7 PM	8 PM

<sup>\*</sup>Hourly 'traffic' includes both 'ins' and 'outs'; 'logins' include both Library computers and patron personal devices; darker colored areas indicate higher traffic/login volume; white areas indicate hours library is closed; gray areas indicate expanded open hours as of June 2017.

### **Visitor Traffic**



### **Computer and WiFi Logins**

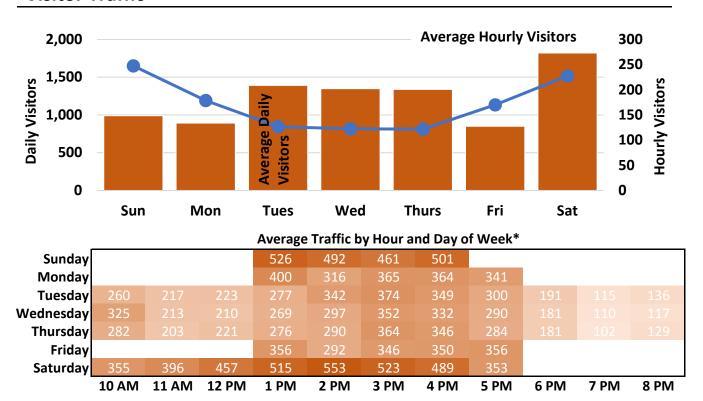


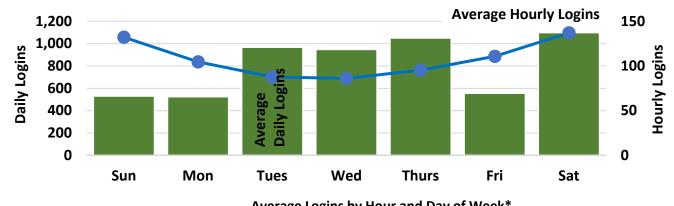
#### Average Logins by Hour and Day of Week\* Sunday Monday 67 81 Tuesday 68 80 87 70 Wednesday 64 77 88 75 **Thursday Friday** 64 70 81 69 75 Saturday 67 62 **10 AM 11 AM 12 PM 1 PM** 2 PM **3 PM 4 PM 5 PM** 6 PM **7 PM 8 PM**

\*Hourly 'traffic' includes both 'ins' and 'outs'; 'logins' include both Library computers and patron personal devices; darker colored areas indicate higher traffic/login volume; white areas indicate hours library is closed; gray areas indicate expanded open hours as of June 2017.

Chinatown District 3

### **Visitor Traffic**



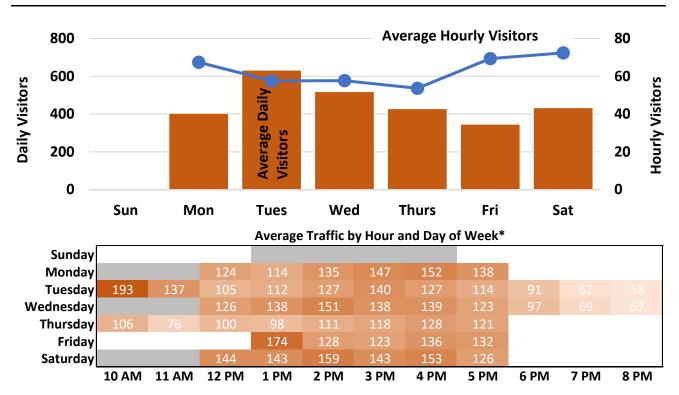


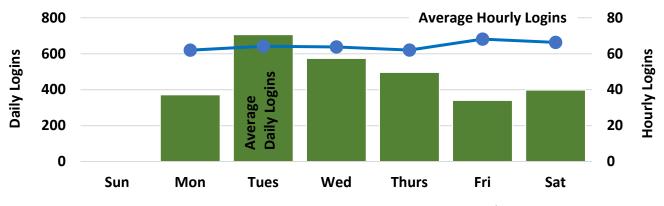
	Average Logins by Hour and Day of Week."										
Sunday				125	142	146	115				
Monday				84	102	118	125	95			
Tuesday				81	99	125	144	123	83		57
Wednesday			79	88	107	123	125	105	76		52
Thursday			83	93	115	145	137	119	86		62
Friday				81	101	129	140	104			
Saturday	87	116	131	155	169	177	156	106			
•	10 AM	11 AM	12 PM	1 PM	2 PM	3 PM	4 PM	5 PM	6 PM	7 PM	8 PM

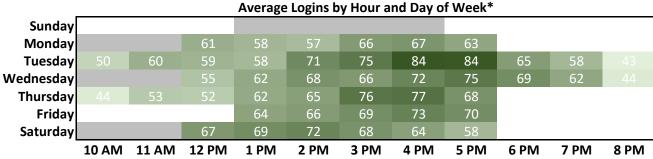
<sup>\*</sup>Hourly 'traffic' includes both 'ins' and 'outs'; 'logins' include both Library computers and patron personal devices; darker colored areas indicate higher traffic/login volume; white areas indicate hours library is closed; gray areas indicate expanded open hours as of June 2017.

Eureka Valley District 8

### **Visitor Traffic**



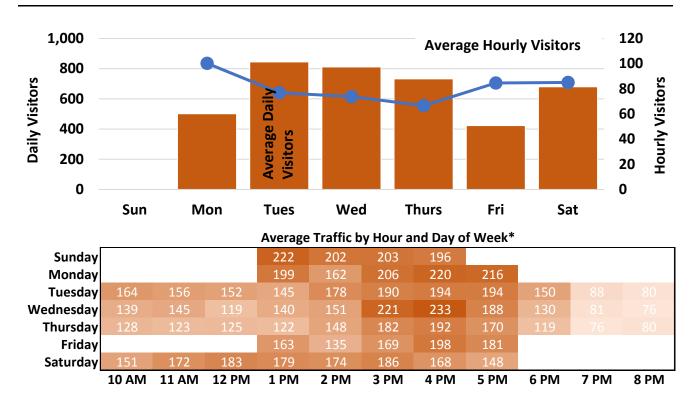


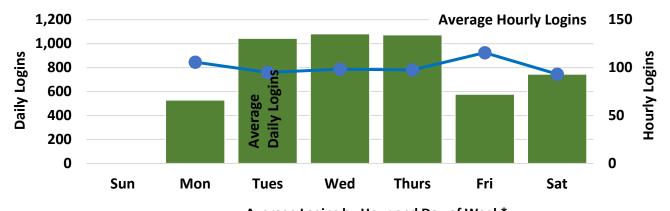


<sup>\*</sup>Hourly 'traffic' includes both 'ins' and 'outs'; 'logins' include both Library computers and patron personal devices; darker colored areas indicate higher traffic/login volume; white areas indicate hours library is closed; gray areas indicate expanded open hours as of June 2017.

Excelsior District 11

### **Visitor Traffic**



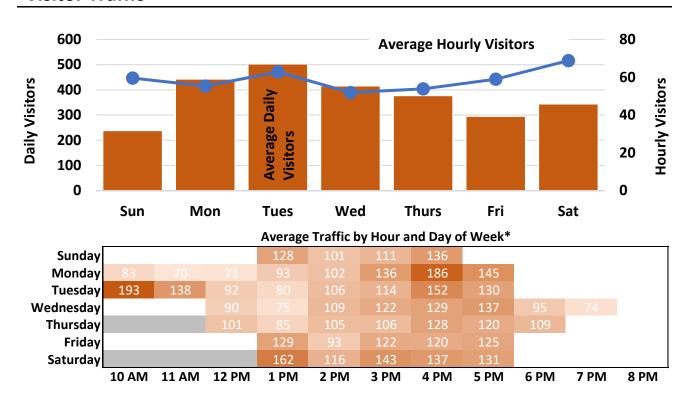


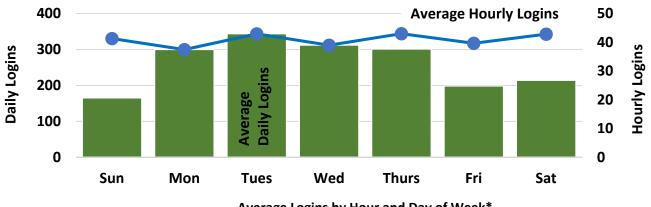
Average Logins by Hour and Day of Week*											
Sunday				94	105	109	93				
Monday				108	111	112	106	91			
Tuesday		83	87	92	103	115	133	128	101	79	58
Wednesday	76	84	87	99	112	127	143	122	98	79	56
Thursday		76	87	100	108	128	141	123	102	83	58
Friday				82	101	127	144	124			
Saturday	72	83	98	102	105	110	100	75			
-	10 AM	11 AM	12 PM	1 PM	2 PM	3 PM	4 PM	5 PM	6 PM	7 PM	8 PM

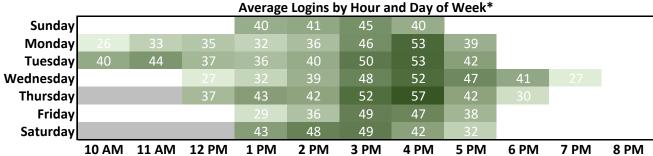
<sup>\*</sup>Hourly 'traffic' includes both 'ins' and 'outs'; 'logins' include both Library computers and patron personal devices; darker colored areas indicate higher traffic/login volume; white areas indicate hours library is closed; gray areas indicate expanded open hours as of June 2017.

Glen Park District 8

### **Visitor Traffic**

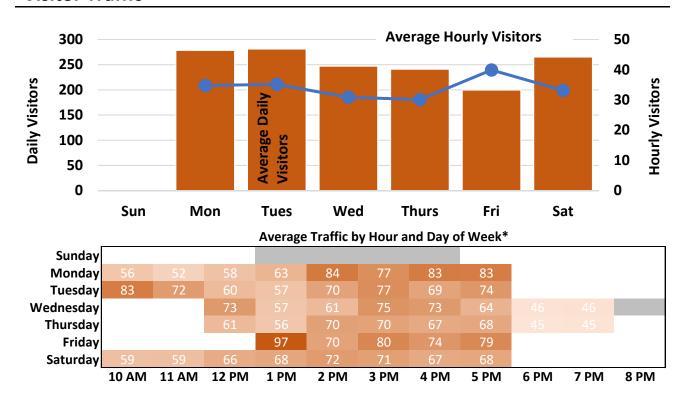


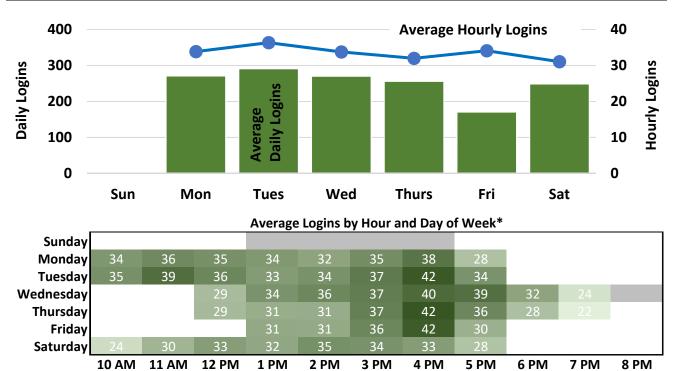




<sup>\*</sup>Hourly 'traffic' includes both 'ins' and 'outs'; 'logins' include both Library computers and patron personal devices; darker colored areas indicate higher traffic/login volume; white areas indicate hours library is closed; gray areas indicate expanded open hours as of June 2017.

### **Visitor Traffic**

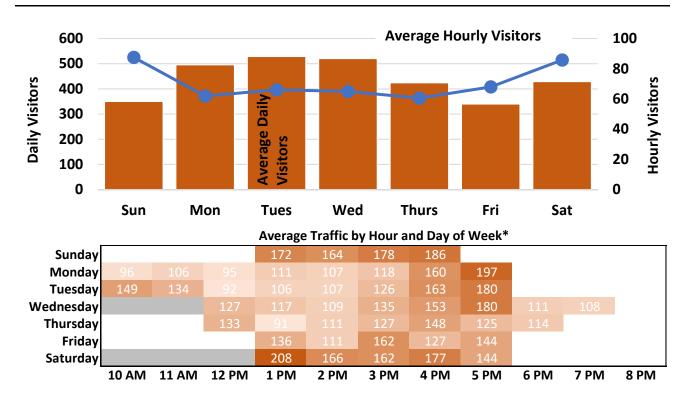


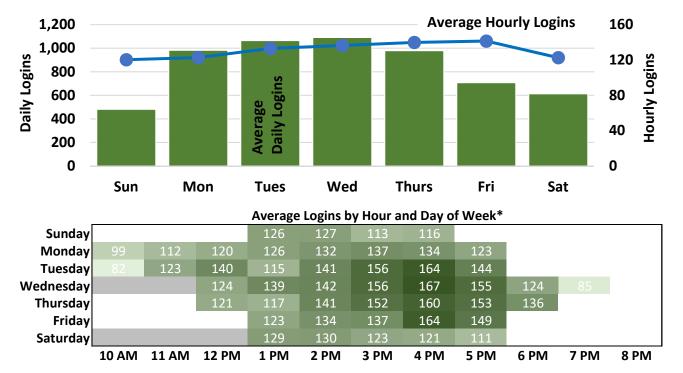


<sup>\*</sup>Hourly 'traffic' includes both 'ins' and 'outs'; 'logins' include both Library computers and patron personal devices; darker colored areas indicate higher traffic/login volume; white areas indicate hours library is closed; gray areas indicate expanded open hours as of June 2017.

Ingleside District 7

### **Visitor Traffic**

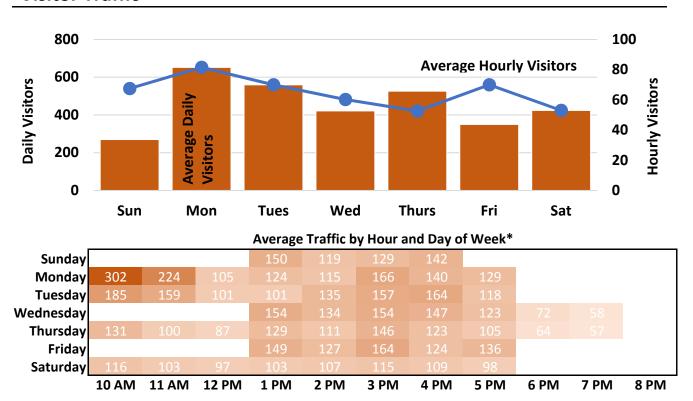


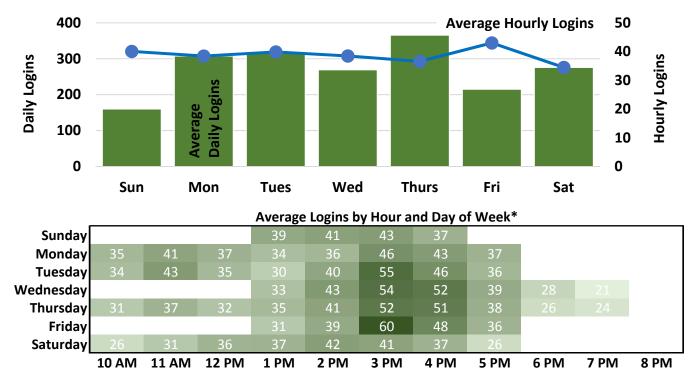


<sup>\*</sup>Hourly 'traffic' includes both 'ins' and 'outs'; 'logins' include both Library computers and patron personal devices; darker colored areas indicate higher traffic/login volume; white areas indicate hours library is closed; gray areas indicate expanded open hours as of June 2017.

Marina District 2

### **Visitor Traffic**

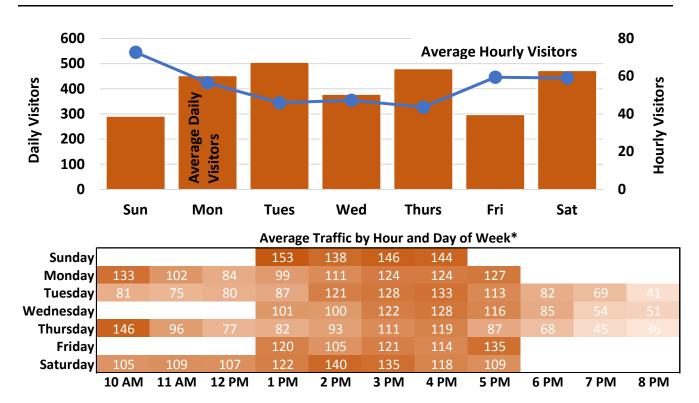


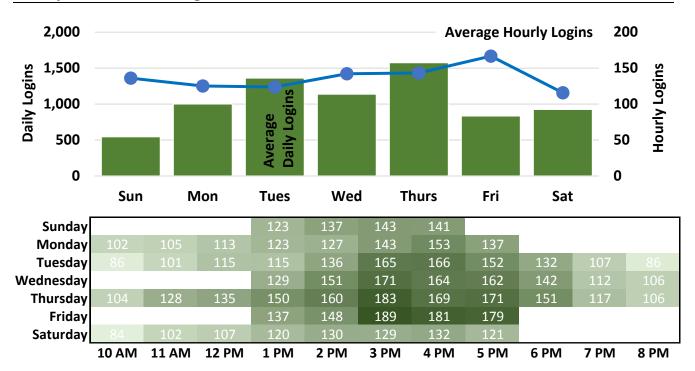


<sup>\*</sup>Hourly 'traffic' includes both 'ins' and 'outs'; 'logins' include both Library computers and patron personal devices; darker colored areas indicate higher traffic/login volume; white areas indicate hours library is closed; gray areas indicate expanded open hours as of June 2017.

Merced District 7

### **Visitor Traffic**

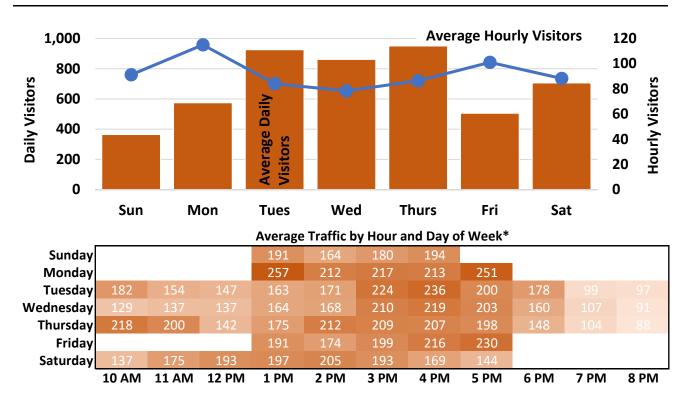


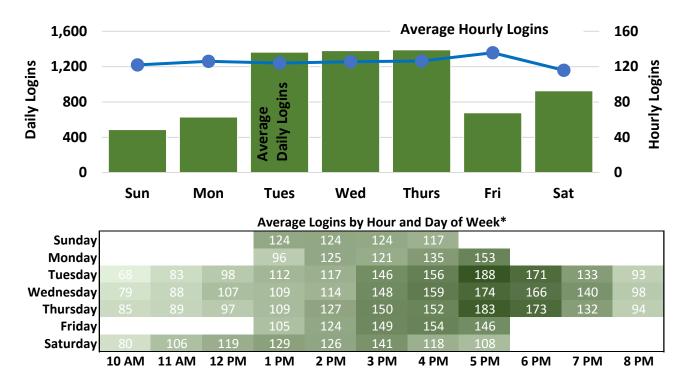


<sup>\*</sup>Hourly 'traffic' includes both 'ins' and 'outs'; 'logins' include both Library computers and patron personal devices; darker colored areas indicate higher traffic/login volume; white areas indicate hours library is closed; gray areas indicate expanded open hours as of June 2017.

Mission District 9

### **Visitor Traffic**

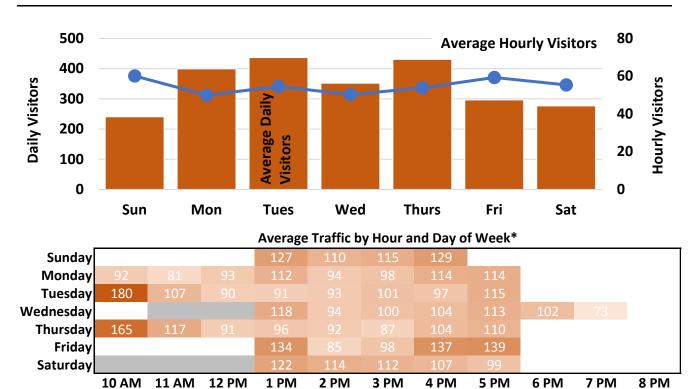


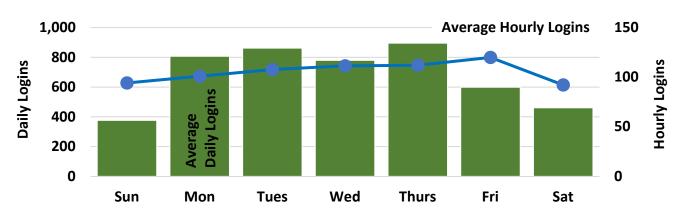


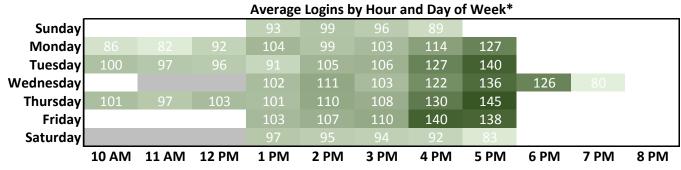
<sup>\*</sup>Hourly 'traffic' includes both 'ins' and 'outs'; 'logins' include both Library computers and patron personal devices; darker colored areas indicate higher traffic/login volume; white areas indicate hours library is closed; gray areas indicate expanded open hours as of June 2017.

Mission Bay District 6

#### **Visitor Traffic**



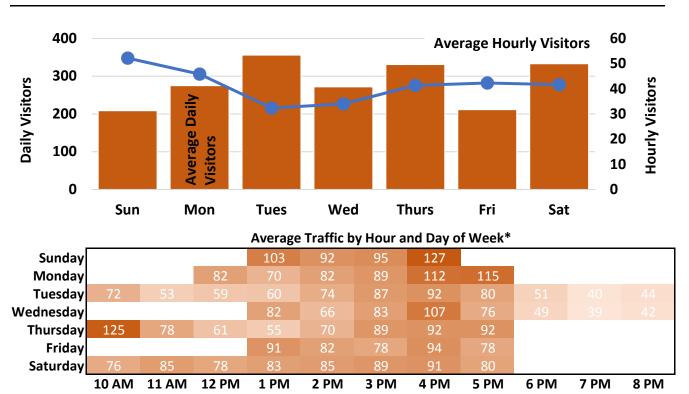


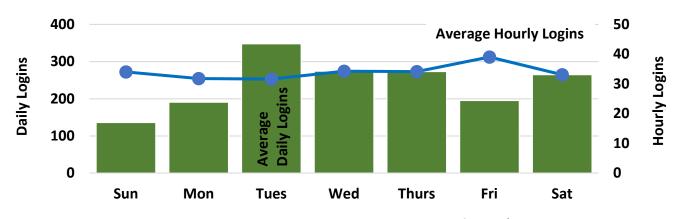


<sup>\*</sup>Hourly 'traffic' includes both 'ins' and 'outs'; 'logins' include both Library computers and patron personal devices; darker colored areas indicate higher traffic/login volume; white areas indicate hours library is closed; gray areas indicate expanded open hours as of June 2017.

Noe Valley District 8

# **Visitor Traffic**



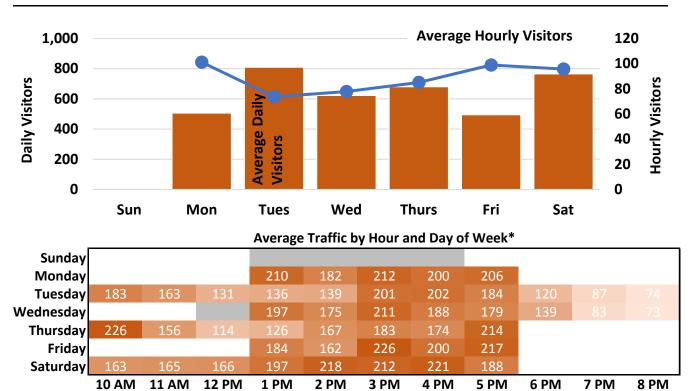


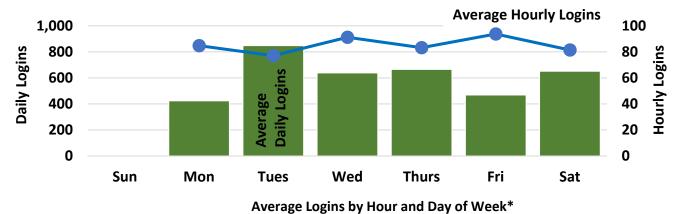
_	Average Logins by Hour and Day of Week*										
Sunday				29	35	38	34				
Monday				28	35	34	40	31			
Tuesday			32	35	39	41	45	36	28		21
Wednesday				29	42	45	44	32	32		23
Thursday	30	32	31	32	33	39	44	30			
Friday				35	37	50	42	31			
Saturday	27	30	33	33	37	38	36	29			
	10 AM	11 AM	12 PM	1 PM	2 PM	3 PM	4 PM	5 PM	6 PM	7 PM	8 PM

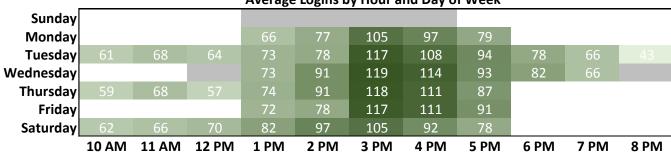
<sup>\*</sup>Hourly 'traffic' includes both 'ins' and 'outs'; 'logins' include both Library computers and patron personal devices; darker colored areas indicate higher traffic/login volume; white areas indicate hours library is closed; gray areas indicate expanded open hours as of June 2017.

North Beach District 3

#### **Visitor Traffic**



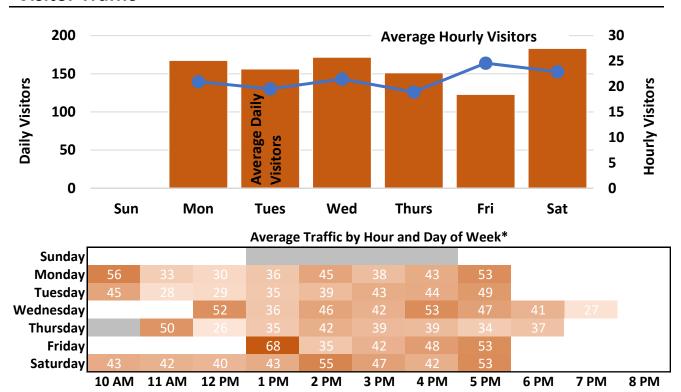


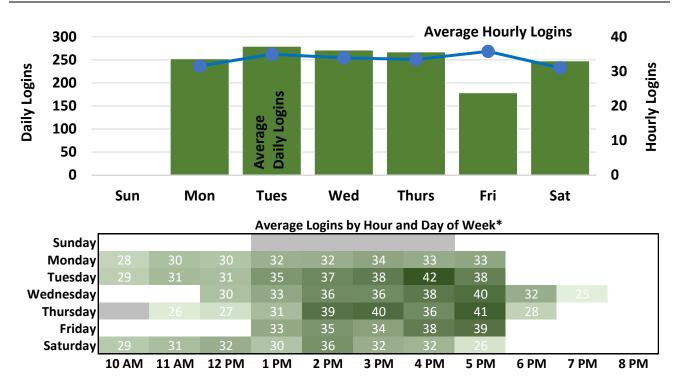


<sup>\*</sup>Hourly 'traffic' includes both 'ins' and 'outs'; 'logins' include both Library computers and patron personal devices; darker colored areas indicate higher traffic/login volume; white areas indicate hours library is closed; gray areas indicate expanded open hours as of June 2017.

Ocean View District 11

### **Visitor Traffic**

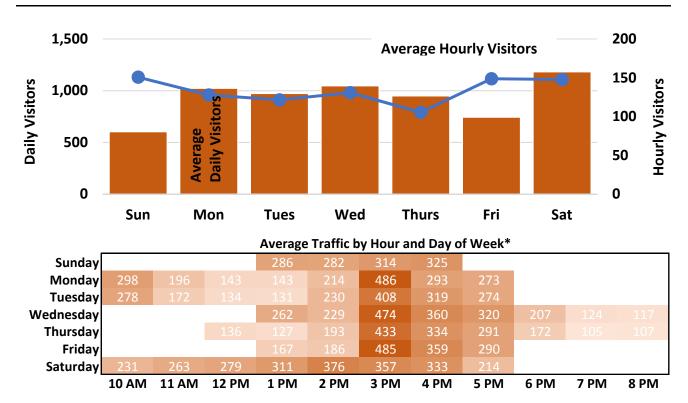




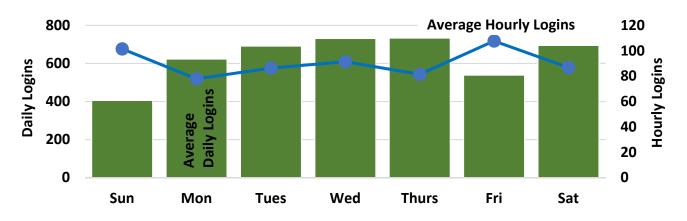
<sup>\*</sup>Hourly 'traffic' includes both 'ins' and 'outs'; 'logins' include both Library computers and patron personal devices; darker colored areas indicate higher traffic/login volume; white areas indicate hours library is closed; gray areas indicate expanded open hours as of June 2017.

Ortega District 4

# **Visitor Traffic**



#### **Computer and WiFi Logins**

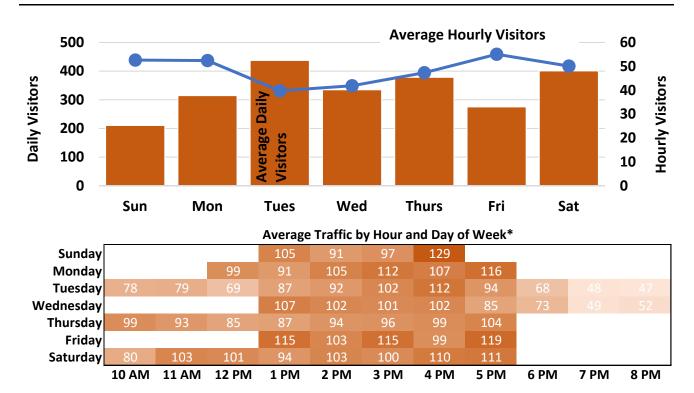


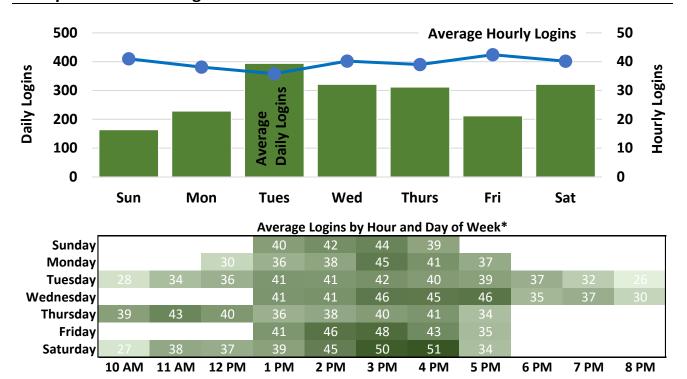
Average Logins by Hour and Day of Week\* Sunday 113 104 Monday 131 112 Tuesday 154 135 Wednesday 164 137 **Thursday** 149 129 Friday 166 142 Saturday 10 AM **11 AM 12 PM 1 PM** 2 PM **3 PM 4 PM 5 PM 6 PM 7 PM 8 PM** 

<sup>\*</sup>Hourly 'traffic' includes both 'ins' and 'outs'; 'logins' include both Library computers and patron personal devices; darker colored areas indicate higher traffic/login volume; white areas indicate hours library is closed; gray areas indicate expanded open hours as of June 2017.

Park District 5

#### **Visitor Traffic**

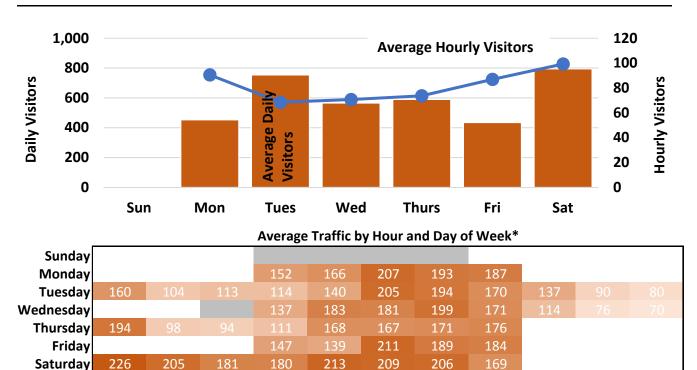




<sup>\*</sup>Hourly 'traffic' includes both 'ins' and 'outs'; 'logins' include both Library computers and patron personal devices; darker colored areas indicate higher traffic/login volume; white areas indicate hours library is closed; gray areas indicate expanded open hours as of June 2017.

Parkside District 4

#### **Visitor Traffic**



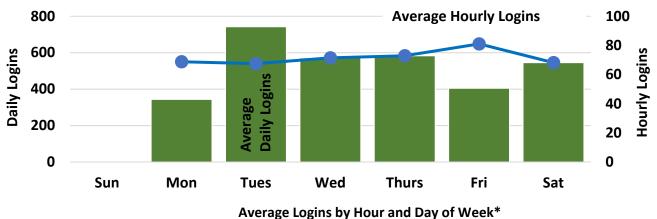
#### **Computer and WiFi Logins**

10 AM

**11 AM** 

**12 PM** 

**1 PM** 



**2 PM** 

**3 PM** 

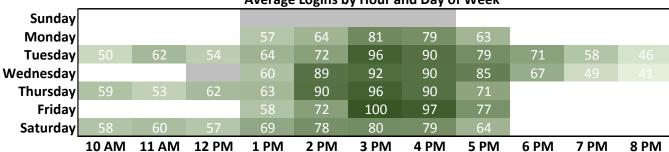
**4 PM** 

6 PM

5 PM

**7 PM** 

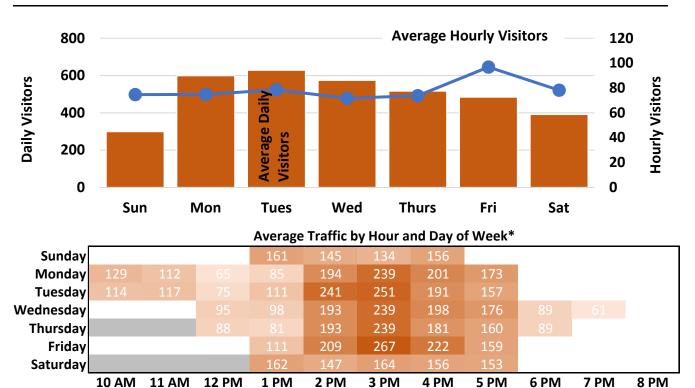
**8 PM** 

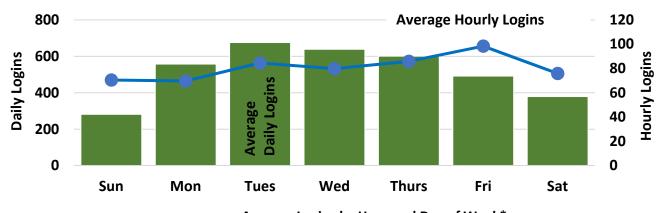


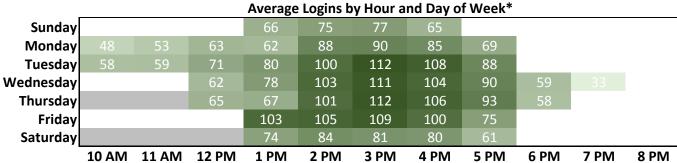
<sup>\*</sup>Hourly 'traffic' includes both 'ins' and 'outs'; 'logins' include both Library computers and patron personal devices; darker colored areas indicate higher traffic/login volume; white areas indicate hours library is closed; gray areas indicate expanded open hours as of June 2017.

Portola District 9

# **Visitor Traffic**



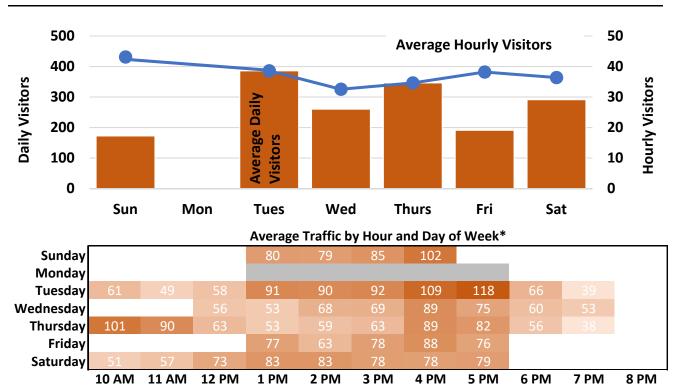


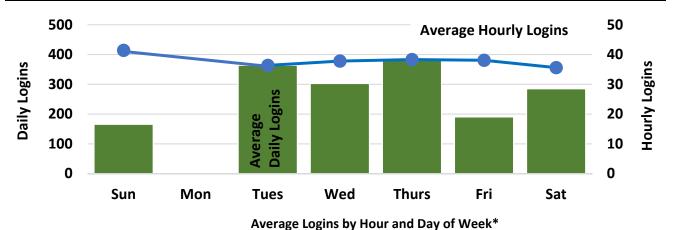


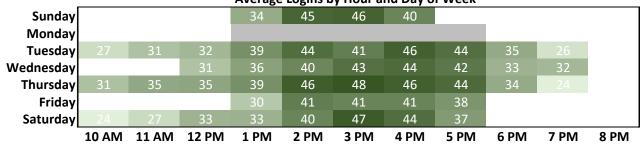
<sup>\*</sup>Hourly 'traffic' includes both 'ins' and 'outs'; 'logins' include both Library computers and patron personal devices; darker colored areas indicate higher traffic/login volume; white areas indicate hours library is closed; gray areas indicate expanded open hours as of June 2017.

Potrero District 10

# **Visitor Traffic**



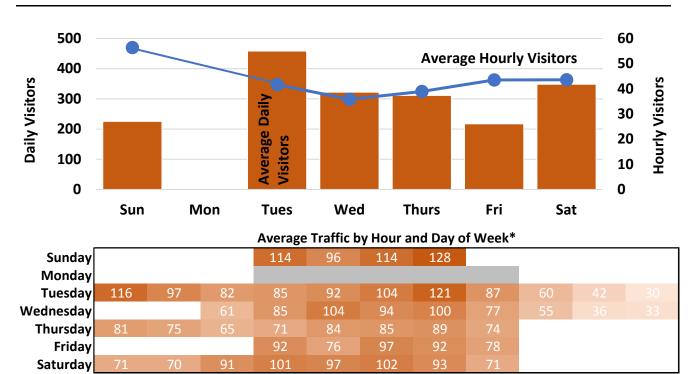




<sup>\*</sup>Hourly 'traffic' includes both 'ins' and 'outs'; 'logins' include both Library computers and patron personal devices; darker colored areas indicate higher traffic/login volume; white areas indicate hours library is closed; gray areas indicate expanded open hours as of June 2017.

Presidio District 2

# **Visitor Traffic**



2 PM

**3 PM** 

**4 PM** 

5 PM

**6 PM** 

**7 PM** 

**8 PM** 

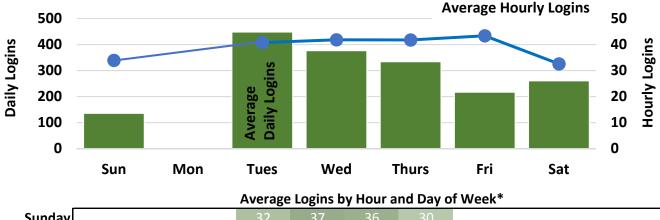
# **Computer and WiFi Logins**

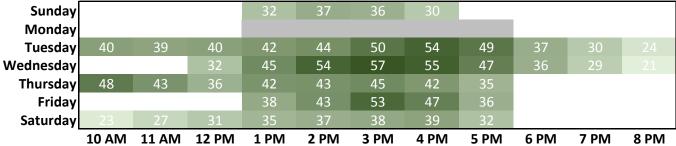
10 AM

**11 AM** 

**12 PM** 

1 PM

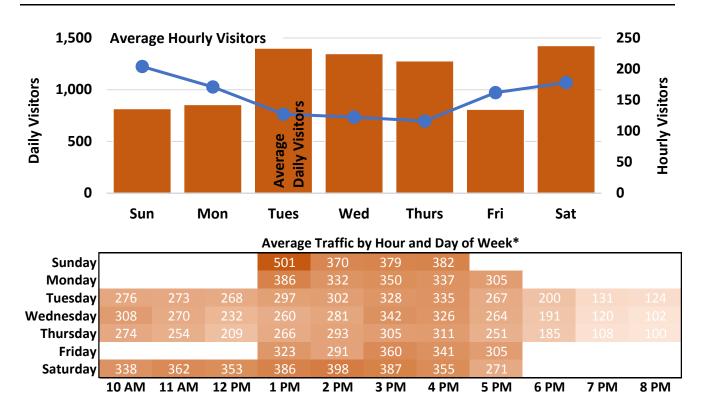




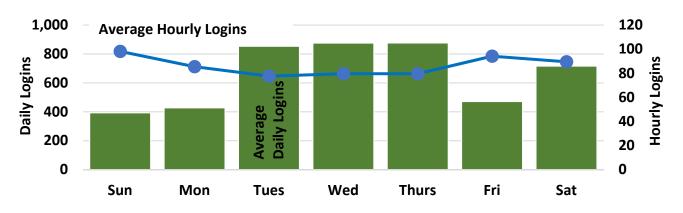
<sup>\*</sup>Hourly 'traffic' includes both 'ins' and 'outs'; 'logins' include both Library computers and patron personal devices; darker colored areas indicate higher traffic/login volume; white areas indicate hours library is closed; gray areas indicate expanded open hours as of June 2017.

Richmond District 1

#### **Visitor Traffic**



#### **Computer and WiFi Logins**

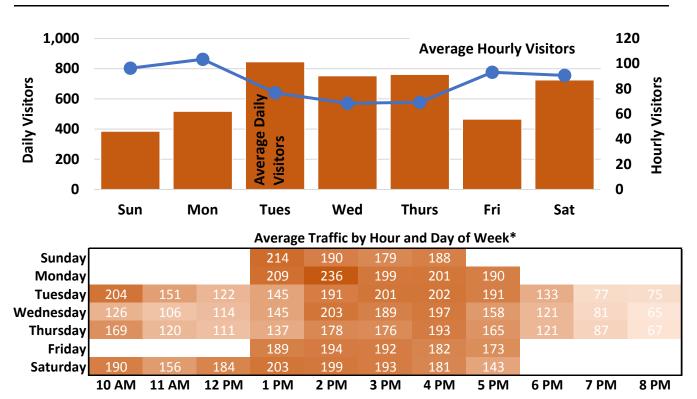


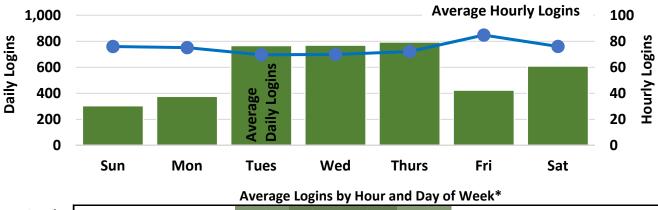
Average Logins by Hour and Day of Week\* Sunday 95 102 102 Monday 84 93 100 **Tuesday** 78 90 97 98 90 90 Wednesday 84 105 105 83 88 102 100 93 **Thursday** 79 77 **Friday** 78 93 109 105 88 Saturday 79 111 114 101 76 **10 AM 11 AM 12 PM 1 PM 2 PM 3 PM 4 PM 5 PM 6 PM 7 PM 8 PM** 

<sup>\*</sup>Hourly 'traffic' includes both 'ins' and 'outs'; 'logins' include both Library computers and patron personal devices; darker colored areas indicate higher traffic/login volume; white areas indicate hours library is closed; gray areas indicate expanded open hours as of June 2017.

Sunset District 4

# **Visitor Traffic**

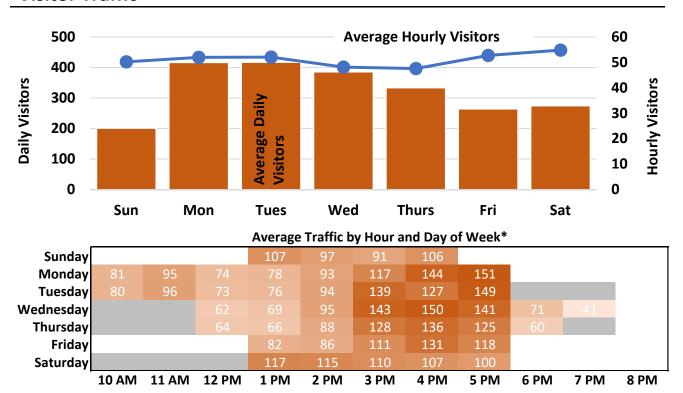


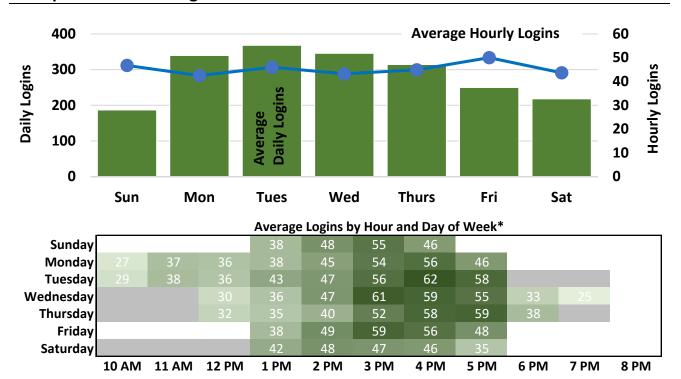


_	7 tter 486 108 ms by 1104 t and 24 y or 1100 t										
Sunday				72	81	81	70		_		
Monday				62	79	80	81	73			
Tuesday	56	60	55	64	92	94	89	91	72	54	38
Wednesday	53	55	61	70	88	85	90	96	77	54	40
Thursday	59	62	59	69	92	90	91	91	80	61	39
Friday				65	94	85	95	84			
Saturday	70	82	78	84	82	76	75	61			
•	10 AM	11 AM	12 PM	1 PM	2 PM	3 PM	4 PM	5 PM	6 PM	7 PM	8 PM

<sup>\*</sup>Hourly 'traffic' includes both 'ins' and 'outs'; 'logins' include both Library computers and patron personal devices; darker colored areas indicate higher traffic/login volume; white areas indicate hours library is closed; gray areas indicate expanded open hours as of June 2017.

#### **Visitor Traffic**

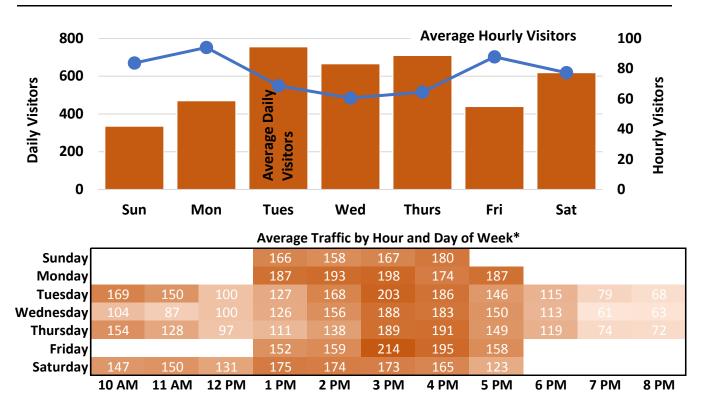


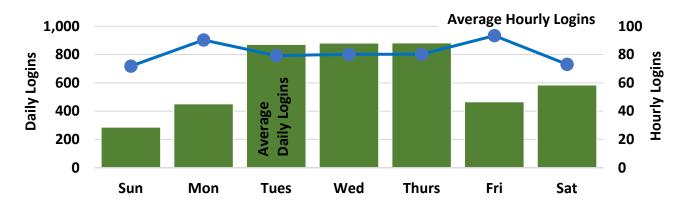


<sup>\*</sup>Hourly 'traffic' includes both 'ins' and 'outs'; 'logins' include both Library computers and patron personal devices; darker colored areas indicate higher traffic/login volume; white areas indicate hours library is closed; gray areas indicate expanded open hours as of June 2017.

West Portal District 7

#### **Visitor Traffic**

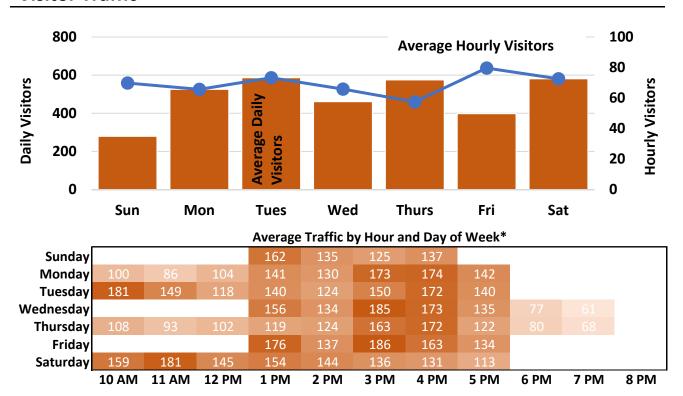


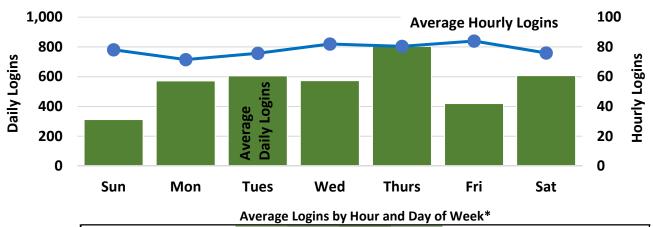


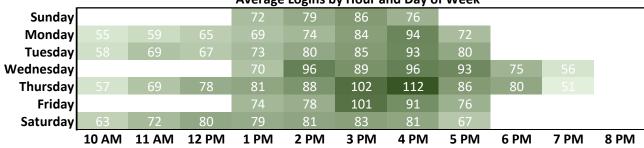
Average Logins by Hour and Day of Week\* Sunday 73 67 84 94 94 Monday Tuesday 79 104 113 117 Wednesday 89 118 110 106 100 **Thursday** 88 110 112 101 103 **Friday** 102 118 112 Saturday 84 79 84 10 AM **11 AM 12 PM 1 PM** 2 PM **3 PM 4 PM** 5 PM **6 PM 7 PM 8 PM** 

<sup>\*</sup>Hourly 'traffic' includes both 'ins' and 'outs'; 'logins' include both Library computers and patron personal devices; darker colored areas indicate higher traffic/login volume; white areas indicate hours library is closed; gray areas indicate expanded open hours as of June 2017.

#### **Visitor Traffic**







<sup>\*</sup>Hourly 'traffic' includes both 'ins' and 'outs'; 'logins' include both Library computers and patron personal devices; darker colored areas indicate higher traffic/login volume; white areas indicate hours library is closed; gray areas indicate expanded open hours as of June 2017.

# Appendix B: Library Visitors by Location

Library	Average Hourly Visitors <sup>22</sup>	Average Weekly Visitors <sup>23</sup>	Current Weekly Open Hours	New Hours in 2017	
Main	545	32,724	60	0	
Chinatown	157	8,629	55	0	
Richmond	144	7,919	55	0	
Ortega	130	6,518	50	0	
Mission	89	4,884	55	0	
North Beach	86	3,872	50	5	
Sunset	81	4,449	55	0	
Excelsior	80	4,399	55	0	
Parkside	80	3,587	50	5	
Portola	78	3,489	50	5	
West Portal	73	3,992	55	0	
Ingleside	69	3,094	50	5	
Western Addition	68	3,408	50	0	
Marina	64	3,199	50	0	
Bernal Heights	63	2,835	50	5	
Eureka Valley	62	2,766	55	10	
Glen Park	58	2,616	50	5	
Mission Bay	54	2,434	50	5	
Merced	52	2,872	55	0	
Visitacion Valley	51	2,290	55	10	
Park	47	2,356	50	0	
Presidio	42	1,881	50	5	
Anza	41	1,826	50	5	
Noe Valley	40	1,985	50	0	
Bayview	37	1,867	55	5	
Potrero	37	1,648	50	5	
Golden Gate Valley	34	1,512	50	5	
Ocean View	21	954	50	5	
System-wide	85	4,429	1,460	85	

<sup>&</sup>lt;sup>22</sup> Data does not include June 2017 expanded hours.

# Appendix C: Library Location Open Hours

Library	Sun	Mon	Tues	Wed	Thurs	Fri	Sat
Anza	1–5	12–6	10–9	1–9	10–6	1–6	10–6
Bayview	1–5	10–6	10-8	10-8	10-8	1–6	10-6
Bernal Heights	1–5	10–6	10-9	12-9	10-6	1–6	1–6
Chinatown	1–5	1–6	10-9	10-9	10–9	1–6	10–6
Eureka Valley	1–5	10–6	10-9	10-9	10–6	1–6	10–6
Excelsior	1–5	1–6	10-9	10-9	10-9	1–6	10-6
Glen Park	1–5	10–6	10–6	12-8	10-7	1–6	10-6
Golden Gate	1–5	10–6	10–6	12-9	12-8	1–6	10-6
Ingleside	1–5	10–6	10–6	10-8	12-7	1–6	10–6
Main	12–5	10–6	9–8	9–8	9–8	12–6	10–6
Marina	1–5	10–6	10–6	1–8	10-8	1–6	10–6
Merced	1–5	10–6	10–9	1–9	10–9	1–6	10–6
Mission	1–5	1–6	10–9	10-9	10–9	1–6	10–6
Mission Bay	1–5	10–6	10–6	11–8	10–6	1–6	10–6
Noe Valley	1–5	12–6	10–9	1–9	10–6	1–6	10–6
North Beach	1–5	1–6	10-9	12-9	10–6	1–6	10–6
Ocean View	1–5	10–6	10–6	12-8	10-7	1–6	10–6
Ortega	1–5	10–6	10–6	1–9	12-9	1–6	10-6
Park	1–5	12–6	10-9	1–9	10–6	1–6	10–6
Parkside	1–5	1–6	10-9	12-9	10–6	1–6	10–6
Portola	1–5	10–6	10–6	12-8	10-7	1–6	10–6
Potrero	1–5	1–6	10-8	12-8	10-8	1–6	10-6
Presidio	1–5	1–6	10-9	12-9	10–6	1–6	10-6
Richmond	1–5	1–6	10-9	10-9	10–9	1–6	10-6
Sunset	1–5	1–6	10–9	10-9	10–9	1–6	10–6
Visitacion Valley	1–5	10–6	10–8	10-8	10-8	1–6	10–6
West Portal	1–5	1–6	10-9	10-9	10–9	1–6	10-6
Western Addition	1–5	10–6	10–6	1–8	10-8	1–6	10-6