Final report for 2016 market season

Summary conclusions: It is estimated that 102,927 individuals visited the Oak Park Farmers' Market during the entire 2016 season. Approximately 4,700 visitors (3,851–5,679) attended on a typical (non-rainy) day. These numbers are similar to those from the 2015 market season and during the single count in 2010.

Comparison to past years

Contrary to what we thought looking at this year's numbers compared to last, there actually appears to be no significant change in attendance when running the statistics across 2010, 2015, and 2016 (more explanation on this below). Four dates were tallied during the 2016 season (all fair weather), four dates in 2015 (two rainy and two fair weather) and one date in 2010 (fair weather). (See below for raw and estimated numbers.) With more tallies now available, statistical estimation methods have improved (see "Methods" below for details), allowing corrected estimates to be applied to past years. Using these corrections, 104,604 total visitors were estimated during the 2015 season and 4,491 visitors on the single date in 2010. Across all four years, approximately 4,823 individuals visit market on a typical (fair weather) day.

These estimates differ from the "Final Report for the 2015 Market Season" submitted last year, which estimated 125,000 total visitors for the market season. The explanation for this change is that the statistical methods were based on just four dates, two of which were rainy (which always results in diminished attendance) and two that were sunny. In retrospect, one of these sunny dates (May 23, 2016) was **anomalously** well attended (originally estimated at 7,271 visitors), much higher than any other recorded date. Given the small sample size (four tally dates, of which two were rainy and one had anomalously high attendance), the past estimation methods failed to recognize that the outlier was much higher than usual. Accordingly, it had a disproportionate effect on all other estimates, resulting in incorrectly overestimated attendance numbers. The four "typical" tallies made during the 2016 season have diminished the bias of this one anomalous date, and provide a more accurate estimate for estimating current and past attendance numbers. Given that we're now up to 9 tally days and will add more next year, it is unlikely that future analyses will substantially change previously reported numbers.

Other observations and concerns

Effect of rain: Because none of the 2016 sampled dates included rain, it is not possible to update the effect of inclement weather on market attendance. But based on the two rainy dates sampled in 2015, and based on anecdotal evidence provided by farmers on the 2015 Vendor Survey (re: impact of weather on sales), it still seems likely that rain has the greatest effect on market attendance, diminishing attendance by approx. 36%. (In other words, approx. 3,100 visitors attend when rainy compared to approx. 4,800 otherwise.)

Hourly trends: The hourly visitor trends (Fig. 1) have remained similar in 2015 and 2016. Peak market visitation occurs 8–11 AM (especially 9–10 AM), and drops off substantially after noon. In 2015, weather (chiefly rain) appeared to have a small impact when limited to a light drizzle or small duration, as visitors appeared to adjust their visitation times to avoid rain. This pattern was not able to be confirmed during the 2016 season because no tallies were made on days with precipitation.

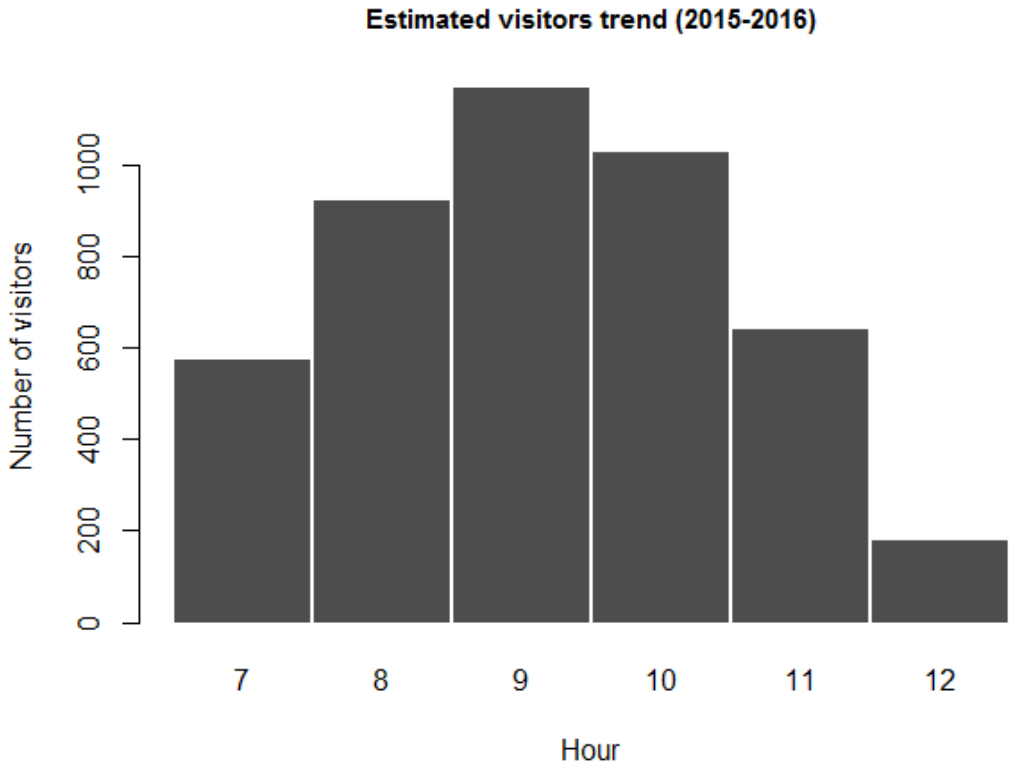

Figure 1. Number of visitors to OPFM during each hour, for five dates.

Lower attendance in Fall? Attendance in 2016 and 2015 was lowest on the last market date (the last weekend of October). Aside from these last market dates, no tallies have ever been made in September or October. Given the lack of other Fall tallies, it is not possible to conclude whether attendance generally declines after Labor Day, or whether the last market day is generally lower than other dates, or whether some other factor is at play (such as the start of school). Clarification could be provided by sampling such Fall dates in future years. Independent data sets (e.g., sales data from market vendors or church donut sales) could also be informative on this matter. A question on the Vendor Survey specifically about sales in September and October could also help.

Effect of special events: There is no obvious increase in attendance on special-event dates (Go Green Days, WBEZ radio advertising, Children's Activities, Corn Roast, Stone Soup, etc.), compared to dates lacking special events. But given the small sample sizes, it is not possible to properly evaluate the effect of these events on daily attendance.

Entrances, and potential effect of garage demolition: The front entrance consistently accounts for ~42% of entries, with the back-of-church Scoville alley (by parking garage) another ~38%, and the remainder elsewhere (chiefly the NE corner of market on Elmwood, between Mint Creek [Wettstein's in prior years] and Genesis vendors).

No formal sampling has been conducted to evaluate the proportion of visitors who park in the OPRF High School parking garage. But anecdotal observation by tally-takers stationed at the Scoville alley entry by the garage suggests that approximately half the market visitors who enter from this entry parked in the garage. This equals approximately 20% of visitors (or 900 individuals) per typical day who park in the garage. It is not possible to estimate how demolition of the garage might affect market attendance, but it seems reasonable that it would result in some reduction. If High School actions result in demolition and replacement of the garage, it would be prudent for the Board to request demolition/construction occur during times least likely to affect market visitors.

The conclusions above are based on head counts on nine dates spanning the market seasons of 2010, 2015, and 2016, at a variety of weather conditions and event days (Table 1).

Table 1. Summary for each tally date (corrected using 2016 statistical methods). Weather conditions taken from National Weather Service for entire day (actual market conditions reported in parentheses.)

Date	Total attendance (range)	Weather	Events
6/12/2010	4,437* (4,409–4,465)	Sunny, rain after 11 AM	
5/23/2015	4,774 (3,264–6,284)	Sunny, a few clouds	Opening day, Memorial Day Weekend, food demos, Go Green Day, children's seed potting
8/15/2015	5,628 (5,476–5,780)	Sunny, hot	Corn roast day
8/29/2015	3,499 (3,232–3,765)	Overcast, drizzle/ light/heavy rain	
10/31/2015	2,801 (2,589–3,013)	Overcast, light rain	Last market day with stone soup, face painting, and storytime
5/21/2016	4,604 (4,142–5,066)	Partly cloudy (sunny, mild)	Opening day, Go Green Day, children's seed potting, YMCA
7/16/2016	5,273 (5,164–5,382)	Partly cloudy (cool, clear, sunny)	OPPL book bike, first day of corn, WBEZ on site
8/13/2016	4,706 (3,813–5,598)	Overcast and humid	Corn roast day with WBEZ on site
10/29/2016	3,925 (3,849–4,001)	Mostly cloudy (cool, clear, sunny)	Last market day with stone soup and OPPL book bike

* 2010 count only included two entries, totaling 3,600 visitors. The reported number of 4,437 is extrapolated across all entrances.

Methods:

Counts were made by Commissioner Sandra Novack-Gottshall and husband Phil Novack-Gottshall, using the attached protocol (Appendix 1) during four tally days in each of 2015 and 2016. This method counts individuals who enter market through a given entrance for a 10-minute interval each hour, rotating entryways throughout each hour.

Analyses conducted in 2015 (and confirmed in 2016) demonstrate that counts at the two main entrances (Lake St. ["front"] and church alley by garage entry ["back"]) provide reasonable estimates of total market attendance. The use of two entrances is preferable to using a single entrance to provide two independent estimates of market attendance.

To obtain estimates of "total" market attendance across all entrances, test counts were also made at (1) the alley access by the musicians/dumpster, (2) the NE alley by Genesis Growers/Mint Creek/Wettstein Meats, and (3) the small entryway between Genesis and Mint Creek/Wettstein's. The use of the donut/playground entry is unreliable for counting visitors because it is biased by visitors who pass by through it to purchase coffee/donuts and/or listen to music, and then return to market (often repeatedly). This entryway was not counted in 2016. The NE alley by Genesis Growers/Mint Creek/Wettstein Meats is also unreliable because it double-counts visitors who walk through this alley to enter at the musicians/dumpster alley also being tallied. Estimates of "total" market attendance were thus obtained by summing the four tallies for the front, back (both those entering from the garage and from the center alley), and the NE corner by Genesis/Mint Creek/Wettsteins (excluding those entering at the alley). This total is likely to be slightly underestimated, as it lacks visitors who enter market in other ways (such as between vendors or by the market service tent). But anecdotal observation suggests that relatively few visitors enter market in these ways.

With larger number of samples available, it was possible to use more powerful statistical methods than was used in the final 2015 report. Regression analyses were conducted using all available data, plotting observed tallies at the front (fig. 2A) and back (fig. 2B) entrances to the "total" observed numbers across all four entrances. The resulting regression equations were used to estimate the total number of visitors across all entrances during the sum of all 10-minute intervals for each date, then multiplying by 6 to obtain hourly estimates for the entire date. (Note that the range of values listed in Table 1 are the estimates based on the front and back entrances. Confidence intervals are not presented in this summary.)

The consistency of the estimates obtained from the front and back entrances (Table 1) provides additional evidence that the visitor counts are accurate. It also suggests that using just the front entry counts (and multiplying them by 2.5) in future seasons could be an easier proxy for total visitor counts.

Seasonal estimates were extrapolated using the nine tallied dates (2010–2016), two of which had rain (with average attendance of 3,070 visitors) and seven of which had "typical" (fair-weather) conditions (with average attendance of 4,823 visitors). Weather conditions for each market date in 2015 and 2016 were obtained from the National Weather Service, with 7 rain dates in each season (two of which were "count" days in 2015). Combining the rain estimates with fair-weather estimates for non-counted days yielded the total season estimates.

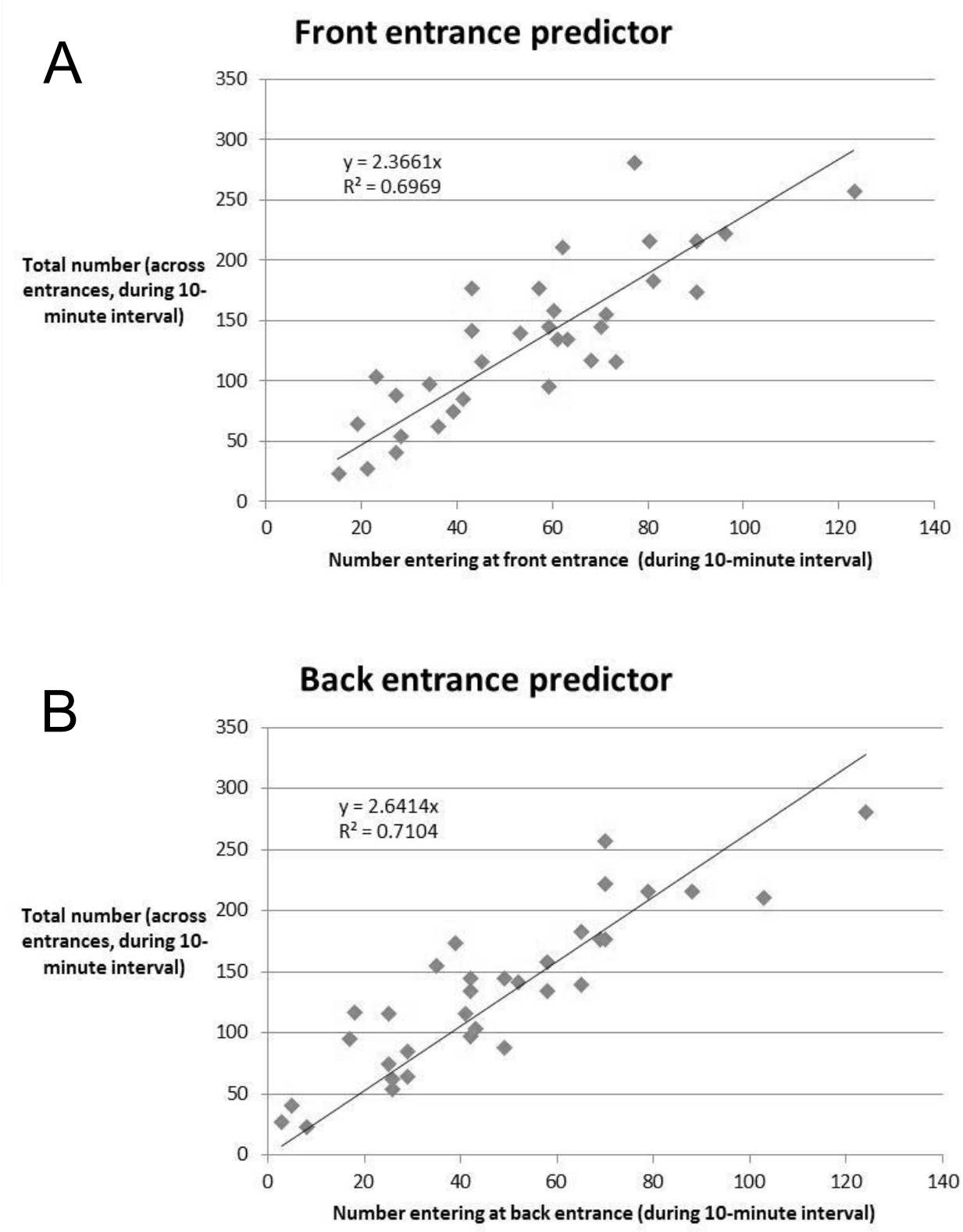

Fig. 2. Regression analyses showing relationship between tallies at (A) front and (B) back entrances and those across all entrances.

Oak Park Farmers' Market
Protocol for Counting Visitors

Thank you for your service to the Oak Park Farmers' Market! This sheet explains the methods we use to obtain visitor counts at the market. Please do your best to follow instructions exactly. If you find that you must deviate, please make a note on your data form so we have a record.

Materials needed:

- **Visitor count collection form**
- **Tally counter** (clicker that advances with each push of the lever)
- **Pen or pencil**
- **Clipboard**
- **Watch/phone/clock** with second-hand. One with a 10-minute timer is especially useful.

Definitions:

- **Visitor**: Any person who enters the entryway into Market when you are counting, whether they are adults, children, infants, farmers, vendors, market staff, or security personnel.
- **Front entry:** The Lake St. entryway to parking lot, between Iron Creek (vendor) and Stover (vendor). (Recommended counting line falls between edges of vendor tents across the entryway.)
- **Back entry:** The N. Scoville Ave. alley entryway, across from parking garage. (Recommended counting line falls between NE corner of Pilgrim Congregational Church building and fence corner at 150 N. Scoville Ave.)

Instructions:

1. Collect counting materials at OPFM staff table and arrive at the front gate a few minutes before the half-hour. If needed, reset the tally counter so that it reads "0000".
2. Record your name, the weather (sunny, cloudy, light rain, etc.), any special market events, and any other notes on the visitor count data form.
3. At exactly 30 minutes past the hour (7:30:00 AM, 8:30:00 AM, … 12:30:00 PM), click the tally counter each time a visitor passes into Market through the entrance.
4. Continue counting all visitors for exactly 10 minutes (until 7:40:00 AM, etc.), stopping promptly. Resist the temptation to count visitors almost at the entrance.
5. Record the tally count in the appropriate box of the visitor count data form.
6. Move to the back entry.
7. Repeat steps 3–5, starting promptly at 45 minutes past the hour (7:45:00 AM, 8:45:00 AM, … 12:45:00 PM). Continue counting for exactly 10 minutes, and record your count in the appropriate box.
8. If sharing counting duties with other volunteers (or at the end of the day), return the visitor count data form to the OPFM staff desk so the next count can commence the next hour.

Notes and troubleshooting:

- Do your best to follow the directions exactly as written, but do not worry if you make a rare honest mistake.
- Prepare for weather conditions when counting. Sunscreen, hat, sunglasses, raingear, and other accessories are useful.
- When counting, you may find it useful to stand off to the side of the entryway and appear unobtrusive. Visitors often avoid "officials" with clipboards, and you do not want to affect when and where visitors enter the market.
- It is very important that the counting occur as close to 30 and 45 minutes after each hour. It is even more important to continue counting for 10 minutes (exactly 600 seconds).
    - Starting and stopping precisely at these times helps ensure that the counts are accurate.
    - If you realize you started early or late by only a few minutes, make sure to end at exactly 10 minutes (600 seconds) after you started. If you start more than 5–10 minutes late, it is better to skip, wait, and re-start at the next scheduled tally.
- When counting, you may find it helpful to imagine a straight line at the entryway marking the "entrance" that you use to "click" when visitors enter the market.
- If a visitor takes a "shortcut" through a vendor's sales space (or some other route to avoid the posted entryway), still count her/him. But ignore someone who enters through other entryways. In other words, only count visitors who enter through the entryway, or would have if he/she hadn't taken a shortcut to avoid it. (Shortcuts at front gate happen especially toward the end of the day, if vendors start disassembling their tents early.)
- It is important, too, to resist the temptation to anticipate entry, especially just before the official counting time begins, or just after it ends. Only click the tally counter when someone actually enters the market, and only click on the exact starting/stopping times.
    - If someone lingers before the entryway but does not enter, do not count him/her.
- If a crowd enters at once, or there is a high rate of visitors, do your best to count each visitor. But do not worry if you make a mistake.
- If someone enters then exits immediately, or exits and immediately re-enters, or does this repeatedly, do your best to count each visitor only once for each genuine entry. If more than a few minutes pass between entries (or you cannot remember if she/he had just entered and exited), then count the visitor as a new visitor.
- Continue counting, even if there are few visitors. Counts of "less popular" hours are just as informative as counts when many visitors are attending.
- If there is a notable change in weather, note that on the form as well, including the approximate time of the change.

Oak Park Farmers' Market Date: _____

Visitor Count Data Form Volunteer: _____

Weather/event notes:

Tally all visitors

Hour	Gate	Start time	End time	Count
7:00 AM	Front	7:30 AM	7:40 AM	
	Back	7:45 AM	7:55 AM	
8:00 AM	Front	8:30 AM	8:40 AM	
	Back	8:45 AM	8:55 AM	
9:00 AM	Front	9:30 AM	9:40 AM	
	Back	9:45 AM	9:55 AM	
10:00 AM	Front	10:30 AM	10:40 AM	
	Back	10:45 AM	10:55 AM	
11:00 AM	Front	11:30 AM	11:40 AM	
	Back	11:45 AM	11:55 AM	
12:00 PM	Front	12:30 PM	12:40 PM	
	Back	12:45 PM	12:55 PM	