

Roseville Public Works, Environment and Transportation Commission Meeting Agenda

Tuesday, March 28, 2017, at 6:30 p.m.
City Council Chambers, 2660 Civic Center Drive
Roseville, Minnesota 55113

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| 6:30 p.m. | 1. Introductions/Roll Call |
| 6:35 p.m. | 2. Public Comments |
| 6:40 p.m. | 3. Approval of February 28, 2017 meeting minutes |
| 6:45 p.m. | 4. Communication Items |
| 6:55 p.m. | 5. Metro Transit Update |
| 7:40 p.m. | 6. Eureka 2016 Year End Report |
| 8:00 p.m. | 7. Engineering Design Standards |
| 8:15 p.m. | 8. Items for Next Meeting – April 25, 2017 |
| 8:30 p.m. | 9. Adjourn |

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**Roseville Public Works, Environment and
Transportation Commission**

Agenda Item

Date: March 28, 2017

Item No: 3

Item Description: Approval of the February 28, 2017 Public Works Commission Minutes

Attached are the minutes from the February 28, 2017 meeting.

Recommended Action:

Motion approving the minutes of February 28, 2017 subject to any necessary corrections or revision.

Move: _____

Second: _____

Ayes: _____

Nays: _____



**Roseville Public Works, Environment and Transportation Commission
Meeting Minutes - Tuesday, February 28, 2017 - 6:30 p.m.**

1. Introduction / Call Roll

Chair Cihacek called the meeting to order at approximately 6:30 p.m. and at his request, Public Works Director Marc Culver called the roll.

Present: Chair Brian Cihacek; and Members Thomas Trainor, John Heimerl, Joe Wozniak, and Duane Seigler

Absent: Vice Chair Sarah Brodt Lenz and Member Kody Thurnau

Staff Present: Public Works Director Marc Culver, Assistant Public Works Director Jesse Freihammer and Environmental Specialist Ryan Johnson

2. Public Comments

3. Approval of January 24, 2017 Meeting Minutes

Comments and corrections to draft minutes had been submitted by PWETC commissioners prior to tonight's meeting and those revisions incorporated into the draft presented in meeting materials.

Motion

Member Wozniak moved, Member Trainor seconded, approval of the January 24, 2017 meeting minutes as amended.

Corrections:

- **Page 14, Line 640 (Wozniak)**
Typographical correction from "regarded" to "regarded"

Ayes: 5

Nays: 0

Motion carried.

4. Communication Items

Public Works Director Culver and Assistant Public Works Director Freihammer provided additional comments and a brief review and update on projects, maintenance activities, and City Council actions listed in the staff report dated February 28, 2017.

Discussion included a surplus of salt so far for next season, providing financial and material considerations but representing only a minimal impact on the overall Public Works/Engineering budget that was projected and adjusted annually; stability of road salt over time compared to the less and unknown stability or possible spoilage of the organic beet juice received in large plastic containers and

delivered more on an as-needed basis until further researched; and this year's mild winter allowing for catch up on additional maintenance and operational issues (e.g. street sweeping earlier than normal, tree trimming). Mr. Culver reported that the wear and tear on road equipment may be less this year than normal, but also noted that the city still did a considerable amount of pre-treating and ice control measures during the winter months.

For the benefit of the listening audience, Member Heimerl asked staff to reassure residents of the city's water system in lieu of another system problem in the City of Blaine; and asked if staff was confident of Roseville's water system and didn't anticipate similar issues.

Mr. Culver responded that city staff was confident of its SCADA and back-up systems in place; as well as its water supply system. As a precautionary measure, Mr. Culver reported that staff was doing a thorough review of its back-up systems; and as mentioned at the last PWETC meeting, the city's largest concern was with its booster station, with monies allotted in the city's capital improvement program (CIP) to upgrade and rehabilitate the booster station, with the city in the process of accelerating those plans (e.g. new generator) to ensure continued delivery.

Member Heimerl also noted recent news reports of vandals opening fire hydrants in Big Lake, MN, and asked if there was any similar issue in Roseville that may result in a drop in pressure by opening key fire hydrants that could put Roseville at a disadvantage; or if there was any way to detect or notice pressure issues in the system.

Mr. Culver responded that, while unsure if an interruption of small scale would be immediately noticed, there were monitors in place on all water towers and within the booster station that checked water pressure at various points. Also, Mr. Culver noted that if any hydrants were spewing water, the public would alert city staff accordingly.

5. Approve Comprehensive Surface Water Management Plan (CSWMP) 2017 Update

Environmental Specialist Ryan Johnson introduced Ms. Rebecca Nestingten of SEH, Inc. for Meeting #3 of this updated draft of the CSWMP, and to receive public input on this iteration. Ms. Nestingten reviewed the goals of the update including implementation of new and innovative ideas, an update of goals and policies and an issues assessment, and alignment of the CSWMP with the three watershed districts within which various areas of Roseville operated.

Ms. Nestingten noted that public comment had also been sought through an electronic survey as well as on the former Speak Up! Roseville.org portal, with an unfortunate response rate of five responses as of October 18, 2016 and only sixteen as of January 13, 2017. Of those few responses received, Ms. Nestingten

92 reported that the areas of highest concern were flooding drainage and surface
93 water management quality and protection. Ms. Nestingen reported that these
94 responses were similar to other surveys performed by SEH; and addressed
95 concern about stormwater runoff from streets and parking lots, construction site
96 erosion, and shoreland land uses.
97

98 Ms. Nestingen reported that the draft plan update had been emailed to the
99 PWETC and City Council prior to tonight's meeting, and also posted on the city's
100 website. Ms. Nestingen further reported that this latest draft plan update since
101 the 2013 plan was based on feedback to-date from the PWETC and goals and
102 policies discussed by them at Meeting #2, and any city updates and demographic
103 changes, best management practices (BMP's) through the city, and overhaul of
104 the city's CIP to-date; all key highlight areas with most of the figures updated for
105 clarity.

106 Discussion

107 Member Trainor noted that even with the weather changes and increased intensity
108 in rain events being experienced references in the plan update were still from
109 2006 studies, and suggested referencing more current studies and building on that
110 data and determinations as to whether that current data is accurate or if new
111 studies provided updated information.
112

113 Referencing the lack of survey participation and public comment received results
114 seemed futile and insignificant; Member Heimerl expressed hope that moving
115 forward the city would seek ways to obtain additional public feedback on the plan
116 and impacts to the community. With the desire to obtain sufficient data to form a
117 good opinion of resident needs and wants, Member Heimerl noted the need for
118 additional sources and better ways to communicate to obtain that feedback to
119 inform the plan earlier in the process.
120

121 City Engineer Freihammer stated that staff was open to any and all ideas from the
122 PWETC as well as the efforts expended by the city's communications staff in
123 seeking that feedback from city residents.
124

125 Mr. Johnson suggested expanding efforts on social media to increase that
126 communication from residents especially for water quality concerns that were
127 shared among residents in the community and how they related to and impacted
128 this plan and quality of life for residents.
129

130 Member Heimerl suggested that timing for receiving that feedback may be the
131 answer in seeking it during other events (e.g. Day in the Park, Rosefest, etc.)
132 when people were gathered and getting the community's pulse at public events
133 during the summer when people are out and about. Member Heimerl suggested
134 setting up booths at Central Park during those events, and perhaps focusing on
135 different issues or topics and possibly in advance of important upcoming issues or
136 areas of interest.
137

Chair Cihacek agreed that other opportunities for obtaining data during public gatherings or meetings may help create a larger data source over a broader spectrum for tracking over the ten-year period from one plan update to another versus waiting to gather that input in the year the plan is due.

Member Wozniak suggested reaching out to lake management associations for their input.

Mr. Johnson responded that there were several in Roseville (e.g. Lake Owasso and Lake McCarron's Associations), advising that historically those groups had provided comment (e.g. at the last update in 2013), but this year neither electronic or other efforts when posted had received that input, nor having people show up at informational meetings from those lake associations.

Chair Cihacek suggested person-to-person information shifts may be needed for future efforts. Chair Cihacek asked if individual PWETC comments previously submitted had been incorporated into this most current draft of the CSWMP.

Ms. Nestington responded that they had been received, but not yet incorporated until after tonight's meeting.

Member Wozniak asked if there was a way to raise the awareness and expand efforts with residents on area lakes currently without an association to point out some benefits in them forming their own lake management groups to improve water quality. Member Wozniak asked what steps staff took to make homeowners aware of lake quality issues in this area.

Mr. Johnson responded that homeowners along lakeshores must be aware of the issues faced by lake bodies (e.g. McCarron's and Owasso, neither of which are impaired right now) and impacts to property values when lakes are designated as impaired or when their water quality is considered good. As water quality degrades, Mr. Johnson noted that property values decreased as well, but unfortunately homeowners typically didn't become concerned until a lake became impaired. Mr. Johnson advised that he wasn't aware of any other lake homeowner associations in Roseville, since as an example, a considerable portion of Little Lake Johanna was owned by the University of Northwestern. In response to Chair Cihacek, Mr. Johnson reported that Langton Lake and Lake Josephine were mostly publicly owned by the city and county.

Mr. Johnson advised that the next steps once this draft of the CSWMP was updated by SEH would be to move to public agency review.

At the request of Member Trainer, Mr. Johnson clarified that the figures included in the plan had been recently updated and formats changed for easier readability.

Mr. Freihammer opined that the last four pages of the plan were the most important of the plan providing focus areas that would be improved upon by the city over the next decade.

Chair Cihacek asked staff to explain Figure 14, special flood hazard area.

Ms. Nestingen responded that this was an official Federal Emergency Management Agency (FEMA) flood hazard insurance rate map, with Roseville having four such areas; with Zone AE providing a more detailed study of the area and assigned a base flood elevation as noted; and Zone A is an approximately flood area without a base flood area. Ms. Nestingen advised that the remainder of Roseville is outside the 500 year annual chance flood area and therefore not specifically mapped by FEMA since it was considered to have no regional flood concern and only involving more localized flood issues as designated in Figure 19.

Chair Cihacek asked that for future reference by the PWETC, overlay information (e.g. Figures 9 and 19) be provided to address land use and surface water issues and for future presentations (e.g. parking lot issues) that provided the whole picture as part of the PWETC's basic data to reference and incorporate accordingly.

Mr. Johnson noted that all the information and figures were GIS-based and used by SEH to provide this information, and with those figures and maps available electronically, staff could layer them as desired by the PWETC (e.g. land use, contours, storm sewer locations, geology, etc.) and all layered depending on the particular discussion being held.

Motion

Member Trainor moved, Member Heimerl seconded, recommending to the City Council approval of the draft Comprehensive Surface Water Management Plan (CSWMP) as presented for update and agency review

Ayes: 5

Nays: 0

Motion carried.

6. Stormwater Management Standards for Parking Lots

City Engineer Freihammer noted that detailed information had been previously forwarded to the PWETC prior to tonight's presentation by Environmental Specialist Johnson.

Mr. Johnson advised that tonight's presentation, last discussed at the December 2016 PWETC meeting as detailed in the staff report and Attachment A, had been updated based on that discussion and individual comments and preferences of the PWETC at that time. Mr. Johnson noted that one of those updates included the

definition of “land disturbance,” using the existing policy for reference, and new option 1 and 2 respectively less and more restrictive in nature. Mr. Johnson noted that Option 1 was similar to the current policy, but provided more clarification; and Option 2 was more restrictive and required treatment when parking lot base material was exposed (e.g. through BMP installation or via payment in to the city’s stormwater management fund) as applicable. Mr. Johnson reviewed Option 3 that would have the city potentially providing support (e.g. design and/or financial assistance) for installation of BMP’s.

Mr. Johnson noted that tonight’s presentation sought additional PWETC feedback to move forward, including citywide or designated zones for stormwater management standards for parking lots. Mr. Johnson advised that this could mean retaining the status quo with a less restrictive option with clarified language as suggested (Option 1) or to push toward a more restrictive cutting-edge (Option 2) beyond watershed district requirements at this point and thus putting Roseville in a leadership role to push stormwater mitigation for parking lots in the community.

Chair Cihacek referenced Figure 19, the chronic flooding issue map; and asked how many such areas could be solved with a more restrictive option.

Mr. Johnson responded that none would be solved if using Option 1 either as any points for chronic flooding areas (e.g. Highway 36 at County Road B and at Fairview Avenue) would require multiple projects from Roselawn Avenue to Highway 36 to make any impact. While any parking lot improving stormwater management on their sites wouldn’t solve the overall issue, Mr. Johnson advised that it would move one project closer to stopping or alleviating the broader issue.

Member Trainor spoke in support of Option 1.

Member Seigler stated that he could support Option 2 other than for the problem with “removals;” since if a property owner pulled off the pavement resulting in pollutants on the base needing mitigation, the tendency would be to simply cover it over again to avoid a big and expensive problem. Therefore, Member Seigler spoke in support of Option 1 as being more realistic.

Under Member Seigler’s scenario, Chair Cihacek suggested going with Option 2 without “removal.”

However, Member Seigler stated that any oil leakage of any kind would create the mandate for the property owner to remove it resulting in a massive expense.

Mr. Johnson clarified that in either case, it would apply whether permit triggered or not.

Member Seigler opined that if the property owner exposed an issue, they would need to pave over it or realize a bigger expense.

Member Heimerl stated that he was leaning toward Option 1 with the recommended clarified language. However, Member Heimerl noted that in looking long-term, it was important to realize that more was contributing to the stormwater runoff issue than simply parking lots. As an example, Member Heimerl noted the comment to look at the number of driveways feeding into a street beyond parking lots for a realistic view of the actual impact of one or the other. Member Heimerl suggested that a more meaningful impact may be to encourage or incent keeping residential runoff from driveways – or parking lots – from going into the street with everyone sharing the responsibility. Member Heimerl stated that he hated to see businesses delay or avoid taking care of their parking lots due to a fee for them to do so, opining that wouldn't be beneficial to the city or to any Roseville residents. However, if property owners – whether residential or commercial – were made to realize the impacts of that runoff, it may provide an incentive or at a minimum that awareness may slow down runoff into the stormwater system.

City Engineer Freihammer agreed that the problem was a result of all runoff, with some residential neighborhoods having an issue simply due to the impervious issues on their lots from driveways and other structures or surfaces.

Member Heimerl stated that he would like to see Roseville more in the forefront for leadership (Option 2), but also preferred to see the focus on a great citywide and comprehensive plan to attack citywide flooding with everyone involved, not only those with parking lots. While supporting a city policy to encourage business owners redoing their parking lots to also fix stormwater drainage issues at the same time, Member Heimerl admitted that he wasn't sure how to put such a policy together, but volunteered to assist staff in drafting such a policy. As an example, Member Heimerl noted that even Eagle Scouts could be recruited to look at projects to impact the community. Member Heimerl suggested looking at data to put together a potential plan for implementation in the city that would have a tremendous impact on drainage issues, but result in a different option beyond Option 2 as currently presented.

Member Wozniak agreed with the comments and suggestions of Member Heimerl. While initially supporting the opportunity to improve stormwater management citywide by going with Option 2, Member Wozniak noted that at the same time he agreed with Member Heimerl in questioning why a business owner's parking lot became responsible for addressing the broader stormwater control issue when it represented only one of many impervious elements in that area. Member Wozniak noted that rainfall didn't distinguish land uses and whether it was one parking lot or ten driveways creating a similar area of impervious surface. Therefore, Member Wozniak opined there must be some way to share the burden beyond just addressing parking lots. While unsure of the answer at this time, Member Wozniak stated his preference that Roseville be on the cutting-edge in stormwater management efforts to benefit the entire

community. With the increasing intensity of storms being realized, Member Wozniak noted the need to do something now, questioning when the next opportunity may arise to look at the issue. Member Wozniak opined that other sources of runoff needed to be taken into account, in other words any impervious surfaces, whether driveways, patios, parking lots or structures, and to spread the word that everyone has a role in controlling that runoff.

Mr. Johnson clarified that the city had some policies already in place to address impervious coverage on a lot and what did or didn't trigger a permit, particularly on the residential side. However, Mr. Johnson noted that while there were some comparisons between residential and commercial properties, the extent of that coverage at a higher percentage for commercial and typically on larger lots, made a parking lot situation easier to work with since it was more in the open.

Member Wozniak asked if that meant there was a limit on residential properties but not as much of a limit for commercial properties.

Mr. Freihammer responded that there was an upper limit on all zoned properties throughout the community; but noted that commercial properties were well beyond the maximum 30% impervious coverage for residential properties.

Since commercial businesses differed in their purpose and role versus that of residential parcels, Chair Cihacek asked if further consideration was needed as to whether or not the maximum 85% impervious coverage was appropriate for commercial sites. Chair Cihacek stated that he was leaning toward Option 1, in not wanting to be more restrictive without a broader more comprehensive policy. Chair Cihacek opined that part of this involved watershed district rules to define city policies. In the future, Chair Cihacek advised that he would entertain development of a comprehensive set of requirements with the three watershed districts and the city. Chair Cihacek questioned if it was fair to not require the burden to be shared citywide, especially considering that many commercial properties in Roseville are older than the residential properties that had developed adjacent to and around them.

Without objection, Chair Cihacek summarized that the PWETC's consensus was for Option 1; with the caveat that they supported further study to develop a more comprehensive way to deal with the stormwater management issue citywide, preferably in the very near future and incorporating additional research by staff as per this discussion.

Mr. Freihammer thanked the PWETC for their direction; advising that staff would make the definition change to provide further clarification for Option 1; and also work with respective watershed district staff toward the goal of more consistent requirements of a more comprehensive nature whether or not they were more restrictive than those currently in place, and with the city's requirements then matching those restrictions. Mr. Freihammer noted that ideally the city would

like to move in concert with the watershed districts as well as any other authorities to make it easier to manage things from a regulatory perspective rather than having four different sets of rules. Therefore, Mr. Freihammer suggested the first step may be for a listening session of those parties to inform a process moving forward.

Member Wozniak noted that several individual members of the PWETC were open to a more aggressive policy; but also noted the need to defer to watershed districts as the experts in the field, questioning why the city would choose to take a leadership role outside of their expertise. Therefore, Member Wozniak suggested that the city work with them to seek a more aggressive stance in controlling stormwater, which should help achieve the goal or at least move in that direction.

Public Comment

An unidentified speaker (off microphone) in the audience suggested incentives in addressing residential driveways by installation of rain gardens whenever possible to help mitigate drainage on their property. The speaker stated that his property was over the 35% impervious coverage permit area. The speaker advised that he had considered putting in a rain garden to capture more, but at this time didn't do so as there was no incentive to encourage him to do anything. However, if there was an incentive for residents, the speaker opined that would be helpful, whether or not it was feasible for the city.

In response to the unidentified speaker, Public Works Director Culver advised that the city had implemented a stormwater credit program several years ago; but clarified that it wasn't necessarily intended for residential properties since their annual stormwater management fees were minimal to begin with (approximately \$44/year). However, for commercial properties, Mr. Culver reported that stormwater management mitigation could result in hundreds of dollars in fee credits, thus creating more of an incentive; thus the city's implementation of the credit program for commercial properties installing a BMP to make the project larger than needed to obtain credit for the portion not required and as an incentive. While the city had attempted to incent BMP's in the past, Mr. Culver agreed with the speaker that there wasn't much incentive for residential properties. Mr. Culver noted that one concern he had with rain gardens as a mitigation for residential properties currently over their maximum 30% impervious coverage was that at some point in the future, property owners may change and the new owner may not have the same interests in maintaining the BMP. Even though the city has a five-year inspection process for BMP's to ensure their maintenance, Mr. Culver noted that a lot could happen during that timeframe that impacted the overall city stormwater drainage system. With commercial properties, Mr. Culver noted that they had more resources to maintain stormwater management systems.

7. Items for Next Meeting – March 28, 2017

Discussion ensued regarding upcoming agendas beyond those listed in the staff report; including future tax increment financing (TIF) update and education for the PWETC (March agenda) and as part of the broader Capital Improvement Program (CIP) overview; election of officers (April agenda); and digging deeper into stormwater management concerns as per tonight's discussion.

Chair Cihacek expressed interest in staff providing the PWETC with copies of current policies for residential and commercial stormwater management, including city code, watershed district(s) requirements, and other regulatory arena considerations and mandates. Chair Cihacek stated that this included current gaps, areas that were more or less restrictive, and other initial thoughts to start that conversation (April or May agenda). At the request of Member Seigler, staff was asked to also provide any old or new regulations under the new U. S. President that may be revised or anything in city code that was relevant and/or needing review to determine if still valid.

To save meeting time, Chair Cihacek suggested individual commissioners do that research and review outside of the meeting and then bring any comments and/or suggestions to the PWETC when that discussion was scheduled on a future agenda, especially if they found anything outdated or needing revision.

Mr. Culver noted that many of those code provisions fell under the Planning Commission umbrella. As part of that, Mr. Culver referenced the city's subdivision ordinance currently under review for revisions, including that section of code and others that may be involved. At this time, Mr. Culver noted that city code included detailed engineering requirements for new developments and subdivisions; with the current revision stripping that language from ordinance and putting it into a more manageable engineering manual to allow more flexibility in making changes and updates for modern practices outside of an ordinance amendment and formal public hearing. Mr. Culver noted that this made city code cleaner and less complex.

Mr. Culver noted an upcoming discussion (April agenda) for the PWETC would be the transportation plan update as part of the larger comprehensive plan update; with proposals due later this week for a consultant to guide the work, anticipated to be under contract by late March or April with the PWETC then asked to engage in that process. At the request of Chair Cihacek, Mr. Culver clarified that the consultant would identify which PWETC meetings would be targeted for public input as part of that process; with staff working in conjunction with them to identify which PWETC meetings made the most sense in the overall process. Mr. Culver noted that this update would coincide with public engagement efforts and other public meetings for the comprehensive plan update. Mr. Culver noted that there would also be electronic surveys for this process, hoping for a better success rate than with that of the CSWMP process. At that point, Mr. Culver advised that a draft would be provided for the PWETC and public to respond to at a formal public hearing, anticipated for late summer or early fall.

Further discussion included the status of solar energy efforts; the city's space needs study anticipated by mid-June (June PWETC agenda to review architectural recommendations); and current status of the city's LED conversion – interior and exterior.

Member Heimerl suggested a summer field trip with longer daylight hours (May or July agendas) for citywide projects of interest to the PWETC. Member Seigler suggested it may be of interest to the PWETC to view the Metropolitan Council's sanitary sewer line replacement project; with Mr. Culver clarifying that the bids were anticipated for award in May and the earliest work start date anticipated in October of 2017 through the spring of 2019, opining there wouldn't be much to observe before the winter months.

Member Wozniak suggested review of Ramsey County's organics collection program; and research by staff to see if they had yet to identify any sites in and around Roseville for expansion. Member Wozniak suggested another fieldtrip could be to the Washington-Ramsey County Recycling facility in Newport, MN.

With only Member Seigler having attended a tour of the Eureka MRF, Chair Cihacek suggested that may be a good fall fieldtrip after the upcoming busier agenda months had been completed.

Chair Cihacek suggested a policy overview, including educating the PWETC on where the money comes from and how it is designated, as well as an inventory of stormwater management for residential and commercial properties as researched by staff (April agenda). Chair Cihacek opined that this would serve as good background on the next step conversations planned over the summer and inform the comprehensive plan with a citywide perspective.

In that vein and at the request of Member Wozniak, Mr. Culver reviewed the quarterly fee paid by single-family homes of a certain size \$11/quarter - \$45/year), with multi-family and apartment buildings, as well as commercial buildings, paying a much larger fee.

8. Adjourn

Member Trainor moved, Member Wozniak seconded, adjournment of the meeting at approximately 7:43 p.m.

Ayes: 5

Nays: 0

Motion carried.

Roseville Public Works, Environment and Transportation Commission

Agenda Item

Date: March 28, 2017

Item No: 4

Item Description: Communication Items

Public Works Project updates:

- Twin Lakes Parkway Phase III and Twin Lakes Area Signals: Extension of Twin Lakes Parkway from Prior Ave to Fairview Ave and construction of traffic signal at Fairview Ave. and Twin Lakes Parkway.
 - All work on Twin Lakes Parkway is complete other than the new signal and related work at Fairview Avenue.
- Cleveland Lift Station: Lift station replacement project at Cleveland & Brenner.
 - Work will likely begin in May.
- 2017 Lining Project
 - Estimated to line 5.5 miles of sanitary sewer main and 0.1 miles of storm sewer
 - Contractor started work on March 13.
- Larpeur Sidewalk
 - Work involves the construction of new sidewalk on the north side of Larpeur Ave between Mackubin St and Galtier St.
 - Council Awarded the project on March 13. Work likely to begin in late April.
- 2017 Railroad Crossing Improvements
 - Work involves replacement of railroad crossings on Terminal Road and Walnut Street.
 - Council Awarded the project on March 13. Work likely to begin in June.
- Dale Street Parking Lot
 - Work involves the complete replacement of the parking lot for the soccer fields located off of Dale St just south of County Road C.
 - Council Awarded the project on March 13. Work likely to begin in late April.
- Staff will be opening bids on the following projects in the next month;
 - 2017 Utility Improvements
 - 2017 PMP
- Transportation Plan Update RFP
 - Staff has solicited proposals from three consultants to update the Transportation Plan and the Pathway Master Plan. Staff is recommending WSB & Associates be awarded the contract. This is on the March 27 City Council Agenda for approval.
- Water Booster Station RFP
 - Staff sent an RFP for design services for upgrades needed on the Water Booster Station. Goal is to have a consultant under contract by May.

Ramsey County updates:

- Ramsey County will be resurfacing Cleveland Ave between Iona St and County Road D. Work is anticipated to be completed sometime between July and September.
- County Road B between Dale St and Rice St has been delayed at least a year due to gas main work.

Private Utility Work:

- Xcel Energy will be replacing a large amount of gas mains ahead of this year's PMP project.
- Comcast will be upgrading its network in the majority of the City. Work involves the installation of additional utility cabinets in City right of way.

Minnesota Department of Transportation updates:

- Snelling Avenue Project – Resurfacing project between Como Ave and TH 36.
 - o Creation of additional turn lanes at Larpenteur and County Road B.
 - o Project is scheduled to begin April 3.

Metropolitan Council Environmental Services updates:

- Roseville Sewer Rehabilitation Project
 - o Project involves sewer lining and will take place from Fall 2017 through Spring of 2019.
 - o Two open houses were held during March. MCES will hold an additional open house sometime this summer once a contractor is chosen and a schedule is known.

City Council Update:

- The Council is reviewing their Policy Priority Plan for 2017 and have indicated a desire to establish a better priority based CIP analysis. Staff will be working to develop a five year preliminary CIP for the major asset groups and will present this to the PWETC prior to presenting to the City Council.
- Community Development staff is working on hiring a consultant to provide a Visioning document and plan for the intersection of Rice and Larpenteur. This plan would include items such as streetscaping to enhance the appearance of the intersection and invite investment in the area.

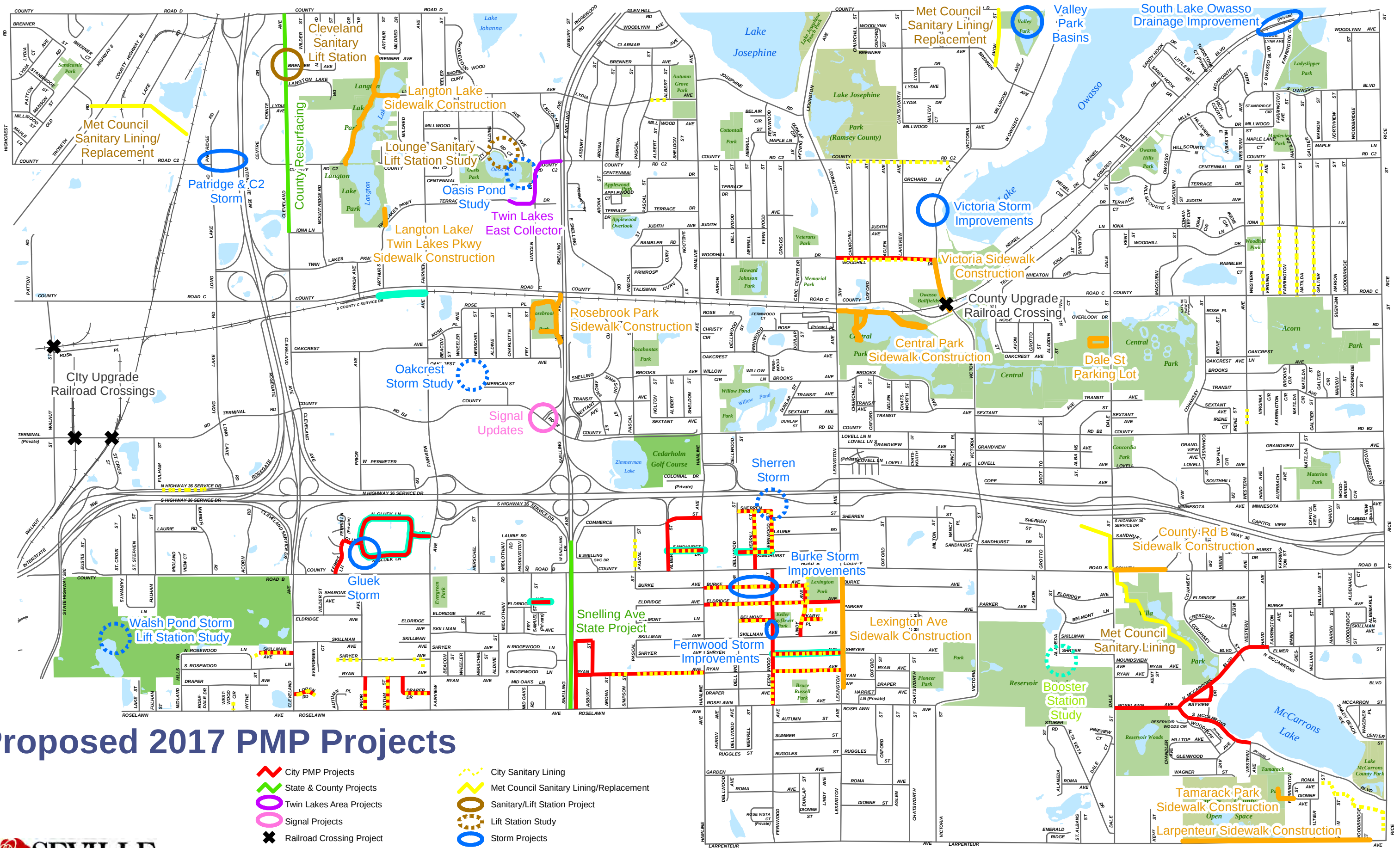
Major Maintenance Activities:

- Plowed and salted for snow and ice events
- Winter tree trimming maintenance.
- Spray patching when weather permits.
- Continued street sweeping.
- Sign work
- Storm sewer outlet repairs.
- Collected bacteriological water samples.
- Collected disinfection byproduct for testing.
- Repaired 2 broken watermain breaks since February.
- Continued exercising large water distribution system valves.

Attachments:

A: 2017 Project Map

B: Development Activity Report



Proposed 2017 PMP Projects



Prepared by:
Engineering Department
March 21, 2017

- City PMP Projects
- State & County Projects
- Twin Lakes Area Projects
- Signal Projects
- X Railroad Crossing Project
- Pathway and Parking Lot Projects
- City Sanitary Lining
- Met Council Sanitary Lining/Replacement
- Sanitary/Lift Station Project
- Lift Station Study
- Storm Projects
- Future Project Study
- Watermain Projects
- Booster Station Study

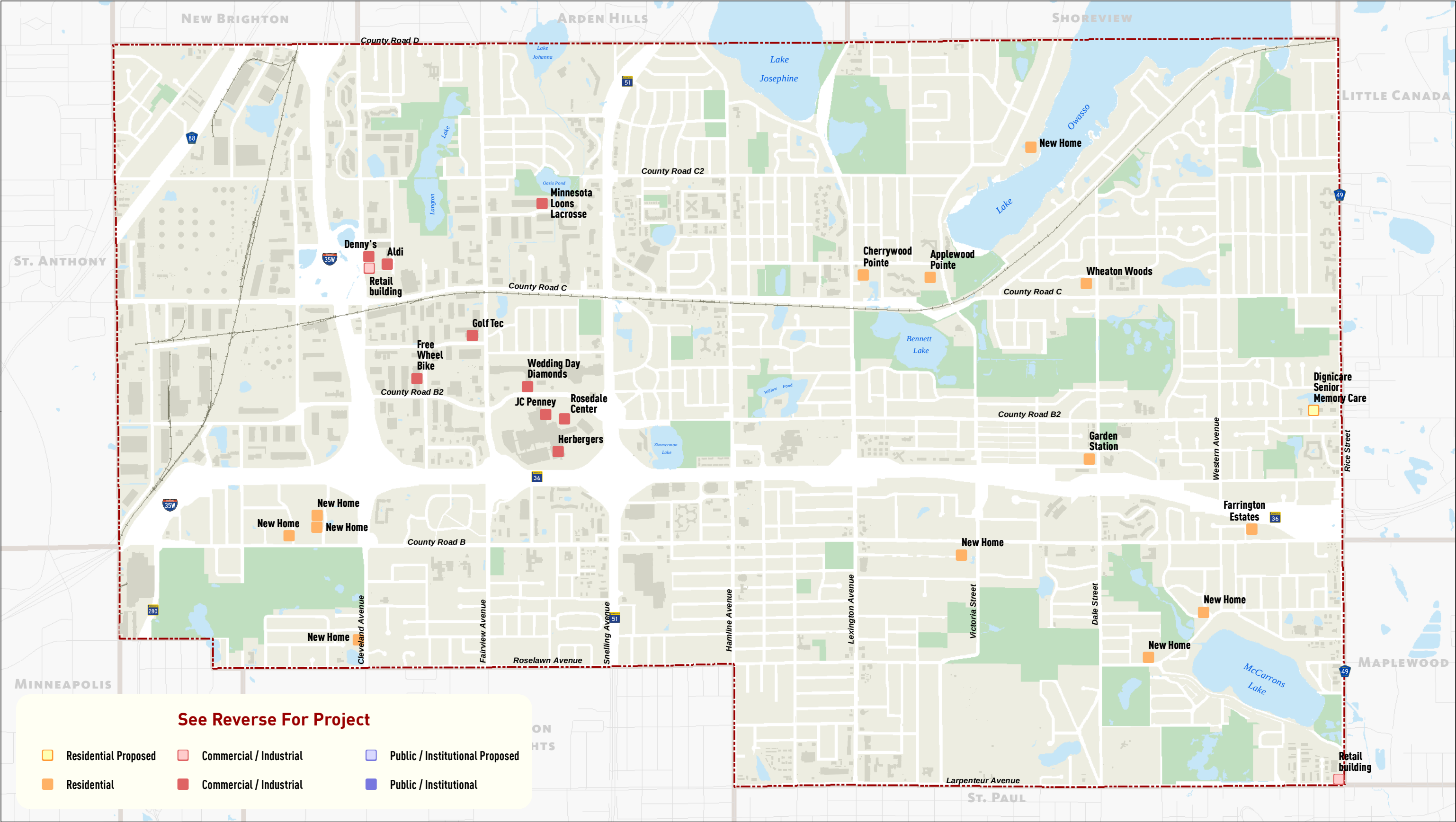
Data Sources and Contacts:
* Ramsey County GIS Base Map (3/10/17)
* City of Roseville Engineering Department
For further information regarding the contents of this map contact:
City of Roseville, Engineering Department,
2660 Civic Center Drive, Roseville MN

DISCLAIMER:
This map is neither a legally recorded map nor a survey and is not intended to be used as one. This map is a compilation of records, information and data located in various city, county, state and federal offices and other sources regarding the area shown, and is to be used for reference purposes only. The City does not warrant that the Geographic Information System (GIS) data used to prepare this map are error free, and the City does not represent that the GIS Data can be used for navigational, tracking or any other purpose requiring exacting measurement of distance or direction or precision in the depiction of geographic features. If errors or discrepancies are found please contact 651-792-7075. The preceding disclaimer is provided pursuant to Minnesota Statutes §466.03, Subd. 21 (2000), and the user of this map acknowledges that the City shall not be liable for any damages, and expressly waives all claims, and agrees to defend, indemnify, and hold harmless the City from any and all claims brought by User, its employees or agents, or third parties which arise out of the user's access or use of data provided.

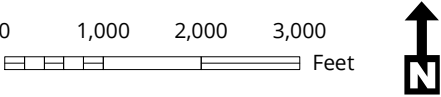
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Development Projects: February 2017



ROSEVILLE COMMUNITY DEVELOPMENT DEPARTMENT • FEBRUARY 2017 • DEVELOPMENT ACTIVITY REPORT (*NEW IN FEBRUARY)					
	Project Name	Address	Project Description	Applicant/Owner Information	Starting/Occupancy
Residential Proposed	Dignicare Senior Memory Care	197 County Rd B2	26-Unit assisted living memory care facility	Greiner Construction	TBD/TBD
Residential Under Construction	Applewood Pointe	2665 Victoria St	105-Unit senior co-op	United Properties	Summer 2016/Fall 2017
	Cherrywood Pointe	2680 Lexington Ave	Assisted living/memory care	United Properties	Summer 2016/Fall 2017
	Garden Station	2325/2335 Dale St	18 attached townhomes	GMHC	Winter 2015/TBD
	Farrington Estates	311 County Rd B	6-lot single-family subdivision	Premium Real Estate Solutions/Michael B. Oudin	Winter 2016/Fall 2017
	New Home	901 Burke Ave	Single-family home	Equinox Construction, LLC	Summer 2016/Spring 2017
	New Home	1975 Cleveland Ave	Single-family home	David Raab	Winter 2016/Summer2017
	New Home	2006 Cohansey Blvd	Single-family home	Covert Constructions	Summer 2016/Spring 2017
	New Home	2179 Marion Rd	Single-family home	Homeowner	Summer 2016/Spring 2017
	New Home	2201 Acorn Rd	Single-family home	Lee Homes	Winter 2017/Summer 2017
	New Home	2215 Acorn Rd	Single-family home	Lee Homes	Winter 2017/Summer 2017
	New Home	2950 West Owasso Blvd	Construct new single-family home	Homeowner	Fall 2014/Summer 2017
	New Home	535 Roselawn Ave	Construct new single-family home	Bald Eagle Builders	Fall 2016/Spring 2017
	Wheaton Woods	Wheaton Ave & Dale St	17 single-family homes	Golden Valley Land Co/TJB Homes/Accent Homes	Summer 2016/TBD
Commercial/Industrial Proposed	Retail Building	1681 Rice St	New 9500 sq ft, single-story, multi-tenant shell building	Gary Carlson/Danna LLC	TBD
	Retail Building	2035 Twin Lakes Pkwy	New single-story, multi-tenant shell building	Tech Builders/Tech Builders	Fall 2016/Spring 2017
Commercial/Under Construction	Aldi	2005 Twin Lakes Pkwy	New grocery	JAVA Capital Partners	Fall 2016/Summer 2017
	Denny's	2045 Twin Lakes Pkwy	New restaurant	Tech Builders/Tech Builders	Fall 2016/Spring 2017
	*Free Wheel Bike	1955 County Rd B2	Tenant Build out	Fendler Patterson Construction	Winter 2017/Spring 2017
	Golf Tec	2575 Fairview Ave #210	Tenant build-out	Hunerberg Construction/Roseville Properties	Winter 2017/Spring 2017
	Herbergers	1675 Highway 36	Interior remodel	Thomas Grace Construction/Bon Store Realty Two	Winter 2017/TBD
	JC Penney	1700 County Rd B2	New entrance	JC Penny Properties, Inc./Maxwell Builders	Fall 2016/Spring 2017
	Minnesota Loons LaCrosse	1633 Terrace Dr	Tenant remodel	Guptil Construction/St. Paul Fire & Marine Ins.	Winter 2017/Spring 2017
	Rosedale Shopping Center	1700 County Rd B2	Utility work, parking deck, interior updates, new anchor	Jones Lang LaSalle/PPF RTL Rosedale Shopping Ctr, LLC	Fall 2016/TBD
	Wedding Day Diamonds	1747 County Rd B2	New retail	Diversified Construction/Rosedale Commons LP	Winter 2017/Spring 2017
Proposed Public/Inst	NONE				
Under Construction Public/Institutional	NONE				

Roseville Public Works, Environment and Transportation Commission

Agenda Item

Date: March 28, 2017

Item No: 5

Item Description: Metro Transit Update

Background:

Scott Thompson from Metro Transit will be in attendance to provide a brief update on Metro Transit operations in the City of Roseville including some updated ridership numbers for the A Line Bus Rapid Transit service along Snelling Ave. Mr. Thompson will also respond to questions submitted by PWET Commission members prior to the meeting.

Attached is some preliminary information from Metro Transit on overall ridership and fare collection, A Line Update, and the status of any new transit shelters in Roseville.

Recommended Action:

Receive presentation from Metro Transit and participate in a question and answer session.

Attachments:

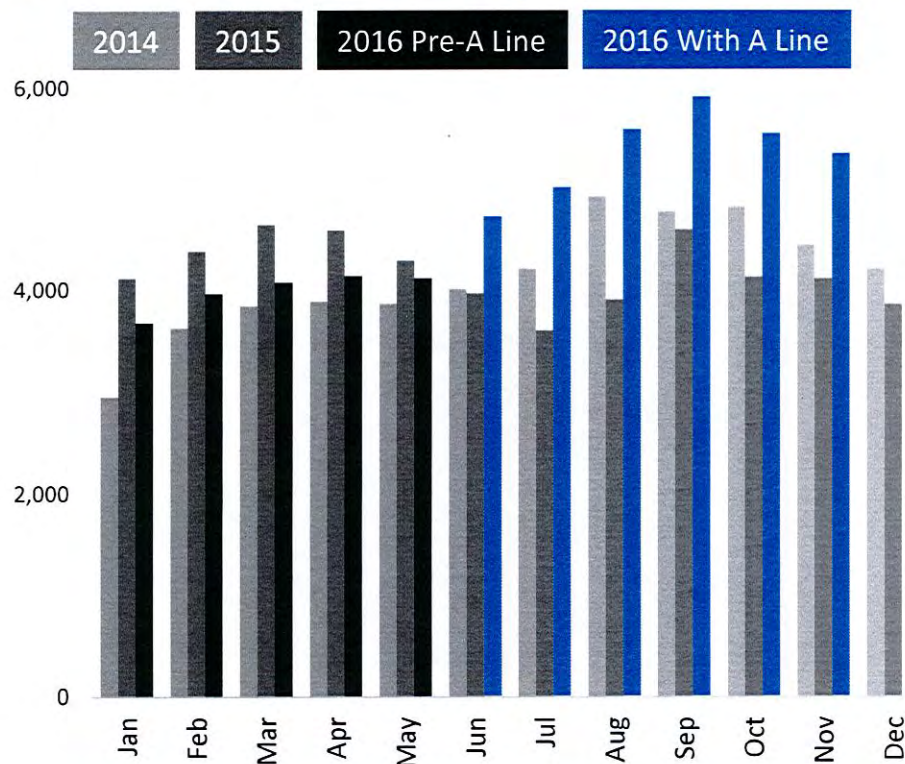
A. Metro Transit Update Info

Farebox Recovery (2015)

Service Type	Farebox Recovery	Subsidy Per Passenger	Passengers (thousands)
Express Bus	37%	\$3.86	12,200
Light Rail	35%	\$1.84	23,003
Urban Local Bus	22%	\$3.16	56,750
Northstar Commuter Rail	16%	\$18.31	723
Suburban Local Bus	13%	\$5.22	4,968
Metro Mobility	13%	\$23.94	2,065
Transit Link	11%	\$19.92	371



A Line: Initial performance



- Ridership
 - Up 35% over 2015
 - Strongest growth at **rail connections, Rosedale Transit Center & on Fridays**
- Speed & reliability
 - Schedule targeted 8-9 minutes savings per trip (20% faster than existing service)
 - 92.2% on-time performance through October
- Strong customer response

Metro Transit Note on Transit Shelters

Metro Transit currently considers shelter installation at bus stops where the average weekday boardings are 40 or more in Minneapolis/St Paul or 25 or more outside Minneapolis/St Paul. There are four stand-alone bus stops in Roseville that currently have 25 or more boardings and do not have a shelter:

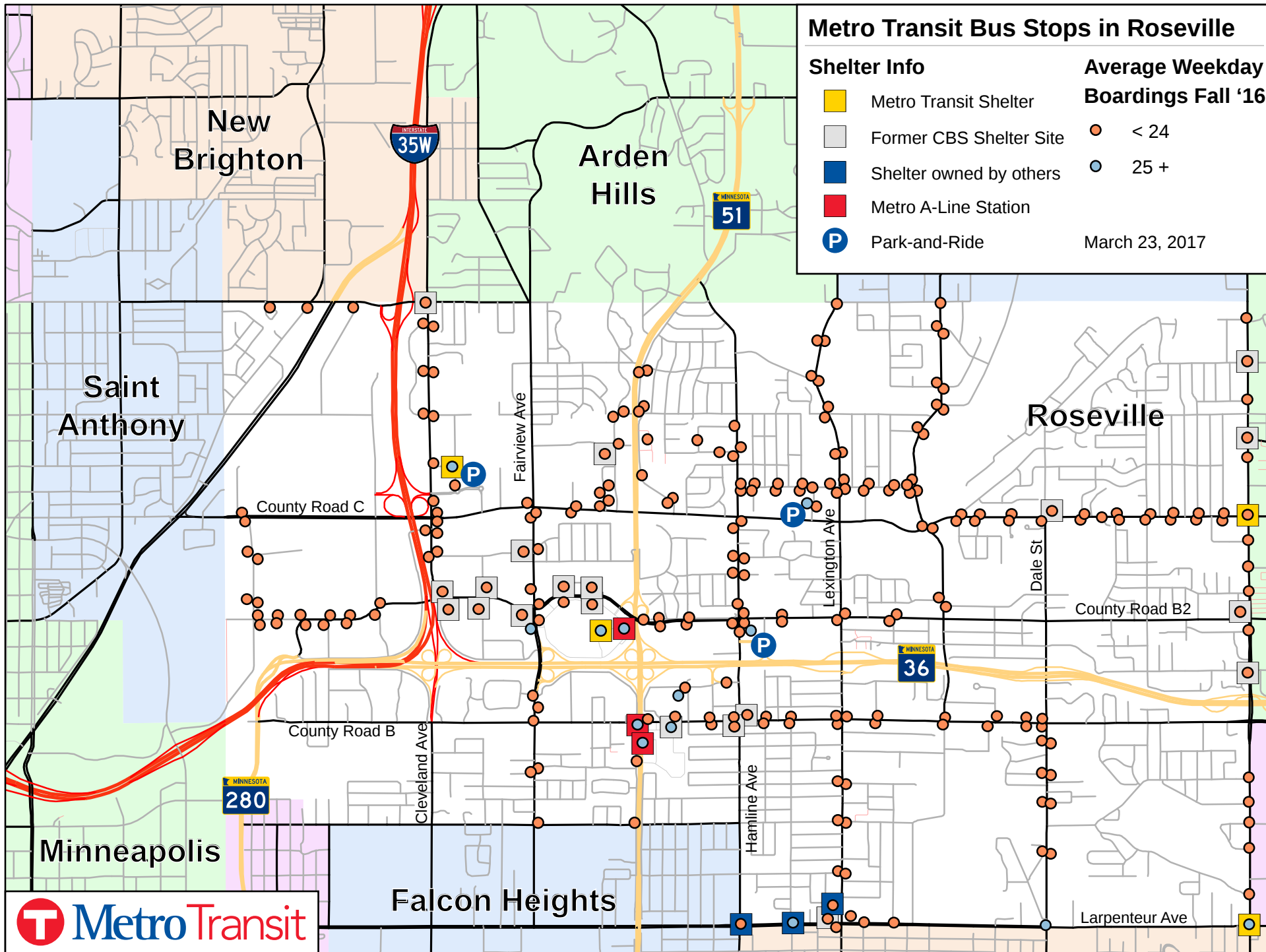
- eastbound Co Rd B at Har Mar Mall (this is the only former CBS site that has 25 or more boardings)
- southbound Dale St at Larpenteur Ave
- southbound Fairview Ave at Rosedale Marketplace
- westbound Target Drive at Pascal St

Metro Transit doesn't have a schedule for installing shelters at these locations. We have many more bus stops that are eligible for shelters than we have capital and operating costs to provide and maintain shelters. Our current capital investments in shelters for the next couple of years are focused on the [Better Bus Stops](#) program. Individuals may request shelters, and we consider those requests as we are evaluating sites for new shelters. Of these four bus stops, the one at Co Rd B and Har Mar Mall would be the highest priority for us because it has 70-80 boardings per weekday – much higher than the other locations. We are looking into the potential to add a shelter at this location. Attached is a map of Roseville bus stops to provide more information on boarding levels and shelter locations.

There is also a bus stop at southbound Rice St and Larpenteur Ave that will be temporarily removed this summer for a construction project. It will be replaced by the developer with a standard shelter with an electrical connection for light.

Anna Flintoft

Manager, Planning and Urban Design
Engineering & Facilities
Metro Transit |



Roseville Public Works, Environment and Transportation Commission

Agenda Item

Date: March 28, 2017

Item No: 6

Item Description: Eureka 2016 Year End Report

Eureka Recycling has recently produced the annual recycling report. Staff from Eureka will be on hand at the meeting to review the highlights of the report and future recycling efforts.

The 2016 Annual Report is included in the PWETC packet. The recycling contract requires the report to be reviewed by this commission per the following language: **6.04 Annual Performance Review Meeting to Discuss Recommendations for Continuous Improvement**

Upon receipt of the Contractors annual report, the City shall schedule an annual meeting with the Contractor and the City's Public Works Environment and Transportation Committee.

The objectives of this annual meeting will include (but not limited to):

- Review Contractor's annual report, including trends in recovery rate and participation.
- Efforts the Contractor has made to expand recyclable markets.
- Review Contractor's performance based on feedback from residents to the Committee members and/or City staff.
- Review Contractor's recommendations for improvement in the City's recycling program, including enhanced public education and other opportunities.
- Review staff and Committee recommendations for improving Contractor's service.
- Discuss other opportunities for improvement with the remaining years under the current contract.
- Discuss actions Contractor is taking to reduce its carbon footprint.

Let us know if you have specific questions you would like staff to follow up on prior to the meeting.

Recommended Action:

Discuss recycling program with Eureka staff.

Attachments:

A. Draft Annual Report w/ Attachments



City of Roseville

2016 Year-End Recycling Report

This year-end report contains information on several areas that Eureka Recycling tracks to monitor the success of Roseville's zero waste recycling program over the course of each year. As a non-profit social enterprise organization we believe tracking and reporting this data is an essential way to ensure program transparency. It also gives Eureka Recycling and city staff the tools needed to successfully manage the program.

(651) 222-SORT (7678)
www.eurekarecycling.org

Our mission is to reduce waste today through innovative resource management and to reach a waste-free tomorrow by demonstrating that waste is preventable, not inevitable.

This report covers the following categories of information:

- Tonnage collected – page 2
- Resident participation in the program – page 3
- Composition of the materials being recycled – page 4
- Revenue earned from the sale of recycled material and shared with the city – page 7
- Environmental benefits from the material recycled by residents – page 10
- Tonnage recycled by each multifamily building and city building - Appendix A
- Education and outreach activities – Appendix D

Introduction

This is the third year that Roseville has had a single sort recycling program with wheeled carts. The program continues to function smoothly with decreasing numbers of people calling the hotline with recycling questions or concerns. Participation continues to be the highest in Ramsey County at 94%. Despite the continued lightening of packaging, the tons of recycling collected in Roseville in 2016 rose by 0.5%.

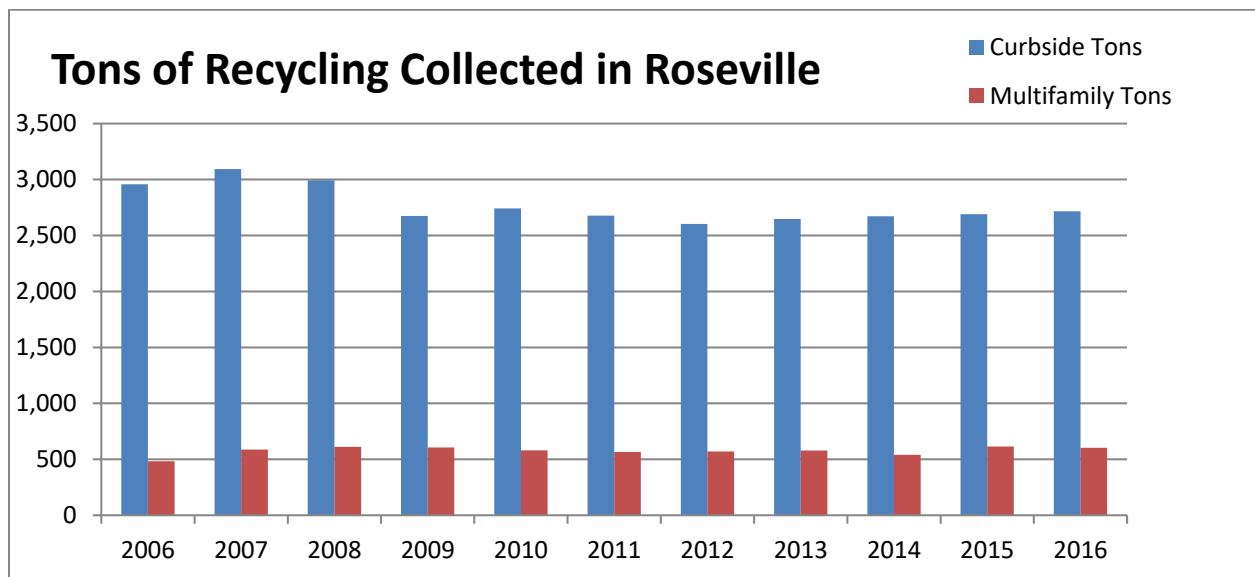
Market prices showed slow and steady improvement throughout 2016 with Roseville receiving just over \$17,911 in revenue. In addition, there continues to be a significant and positive environmental impact from the recycling efforts of Roseville residents. More details on these and other aspects of the program can be found within the pages of this report.

An affirmative action, equal opportunity employer.

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TONS OF MATERIAL RECYCLED

Total tonnage collected in Roseville in 2016 was 3,320 tons. This represents a small (0.5%) increase over the previous year. This is something to be proud of considering the continuing trend towards the lightening of individual products and packaging that make up recycled materials. Recycling rates are measured by weight industry wide, but that metric doesn't tell the complete story. Manufacturers are continuing to find lighter and lighter weigh packaging options. Products once bottled in glass are now bottled in plastic or aluminum. Aluminum and plastic bottles are getting thinner and lighter. Also, fewer and fewer households subscribe to physical newspapers and magazines, opting instead to get their news and entertainment on computers, tablets, and phones. Roseville's 0.5% increase very likely represents a bigger percentage increase in terms of actual recycling efforts by residents, because it takes more material to create a ton now than it has in the past.



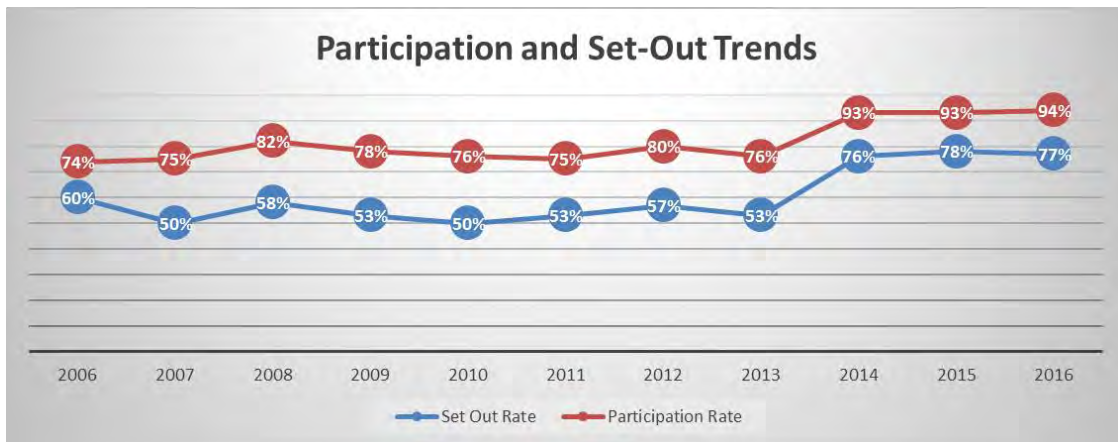
PARTICIPATION

Roseville is one of the few cities in the metropolitan area in which the actual city-specific participation trend information is gathered and made available. 94% participation is the highest of any city in Ramsey County that Eureka has data for.

In previous years the study was conducted manually with staff going out to the routes before the truck collected and counting set-outs, marking on a map which houses were setting out material and which were not. This was done in one 200-250 household sample section in each route with the same section being used each year. This method yields information to study the trends year to year in the number of people that set out in any given week and also the percentage of households that participate in the program at all.

Taking advantage of new equipment installed in the fall of 2016 on our trucks and our customer service hotline, we are now able measure set-outs and participation every collection day throughout the year. Each time a cart is tipped the system logs that tip for that address. On a quarterly basis we can run a report detailing what percentage of households set out recycling in any given week. We can also run a report that details if and how often all households in the city participate in the recycling program.

This new method of collecting participation information should make the process of monitoring who is participating in the program easier and more accurate as a human being making marks on a map is less accurate than a computer counting tips.



Eureka Recycling conducted the annual participation and set-out rate trend study in the fall of each year. (See Appendix C for the definitions, and methodologies of the participation, and set-out rate studies.)

COMPOSITION OF MATERIALS

Each year Eureka Recycling conducts a composition of the material collected in Roseville.

While this is certainly not an industry standard, Eureka Recycling believes that this information is important for cities to have as they plan their budgets, make decisions on

their education and outreach work plans and communicate with residents about what to recycle and the success of their program overall.

Type of Material	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
	% of Total Tonnage	% of Total Tonnage	% of Total Tonnage	% of Total Tonnage	% of Total Tonnage	% of Total Tonnage	% of Total Tonnage	% of Total Tonnage	% of Total Tonnage	% of Total Tonnage	% of Total Tonnage
Total Annual Tons	3,441	3,681	3,556	3,281	3,322	3,244	3,173	3,225	3,212	3,305	3,320
Papers											
News Mix	63.98%	56.46%	66.00%	61.65%	59.68%	51.53%	56.86%	54.40%	56.27%	54.08%	50.00%
Cardboard	6.71%	13.23%	4.50%	5.48%	7.34%	10.33%	9.09%	8.78%	8.59%	7.35%	12.80%
Boxboard	2.37%	7.60%	2.60%	5.48%	3.79%	7.04%	5.81%	2.54%	4.48%	4.38%	4.44%
Wet Strength	0.36%	0.10%	0.50%	0.00%	1.77%	0.46%	0.50%	0.58%	0.84%	0.74%	0.57%
Phone Books	1.33%	0.11%	0.10%	0.02%	0.12%	0.14%	0.28%	0.37%	0.00%	0.00%	0.14%
Milk Cartons & Juice Boxes	Not collected	Negligible	Negligible	Negligible	0.02%	0.03%	0.47%	0.07%	0.31%	0.19%	0.19%
Textiles	0.40%	Negligible	Negligible	0.02%	0.02%	Negligible	0.20%	0.09%	0.11%	0.16%	0.23%
Residual	0.24%	0.11%	0.50%	0.06%	0.07%	0.27%	0.19%	0.07%	N/A	N/A	N/A
TOTAL	75.40%	76.60%	74.20%	72.72%	72.81%	69.79%	73.40%	66.90%	70.60%	66.90%	68.37%
Containers											
Total Glass	14.89%	15.15%	16.70%	17.54%	17.31%	18.08%	16.94%	18.78%	17.58%	21.36%	19.52%
Steel Cans	2.64%	2.00%	2.40%	2.43%	2.65%	2.49%	2.38%	3.30%	2.09%	2.12%	1.39%
Aluminum	1.48%	1.10%	1.40%	1.40%	1.43%	2.10%	1.37%	1.99%	1.13%	0.98%	1.04%
Total Plastics	4.70%	4.01%	4.60%	5.75%	5.67%	6.94%	5.63%	7.29%	6.13%	6.09%	5.24%
Residual	0.89%	0.15%	0.70%	0.17%	0.12%	0.60%	0.28%	1.74%	N/A	N/A	N/A
TOTAL	24.60%	22.40%	25.80%	27.28%	27.19%	30.21%	26.60%	33.10%	26.93%	30.55%	27.19%

* Recycling collected in Two Sort System from 2006-2013. Single sort began in 2014

Increases in Cardboard

The 2016 composition study revealed an increase of the percentage of cardboard of almost 5.5%. This can be linked to an increase in online shopping and rapid delivery offered by shipping companies. More people are buying more things online. This creates an increase in the amount of cardboard boxes households have to recycle each week.

From a zero waste perspective this suggests the need for factors that balance this increase in consumption. More is not necessarily better unless the products we are manufacturing and purchasing have been designed to be:

- Durable and last a long time
- Repairable if they break
- Exchanged to others when they are no longer needed and not thrown away.
- Made from materials that are free of toxins
- Completely re-usable, recyclable or compostable at the end of their lifecycles
- Made by local businesses that keep the revenue from the sale of these products within the local economy creating local living wage jobs.

Non-Preferred Items and Residual Rates in Single-Sort Recycling Programs

Non-Preferred Items											
Scrap Metal	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.25%
Bulky Riddids	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.02%
SUB-TOTAL	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.27%
Residual	1.13%	0.26%	1.20%	0.23%	0.19%	0.91%	0.47%	1.81%	2.47%	2.55%	4.17%
TOTAL	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

For more information on the methodology of the composition analysis done by Eureka Recycling, please see Appendix B.

“Non-Preferred Items” refers to items that may in some months be able to be marketed for recycling but are not compatible with a mechanically sorted curbside recycling program. These are items that cause damage to machinery or hazard to staff in MRFs. Eureka has begun to sort and measure these items as they appear more regularly in cart based collection systems where the driver cannot see the items before they end up in the truck. The best method of reducing these materials is to do additional education to let residents know they should not place them in with their recycling.

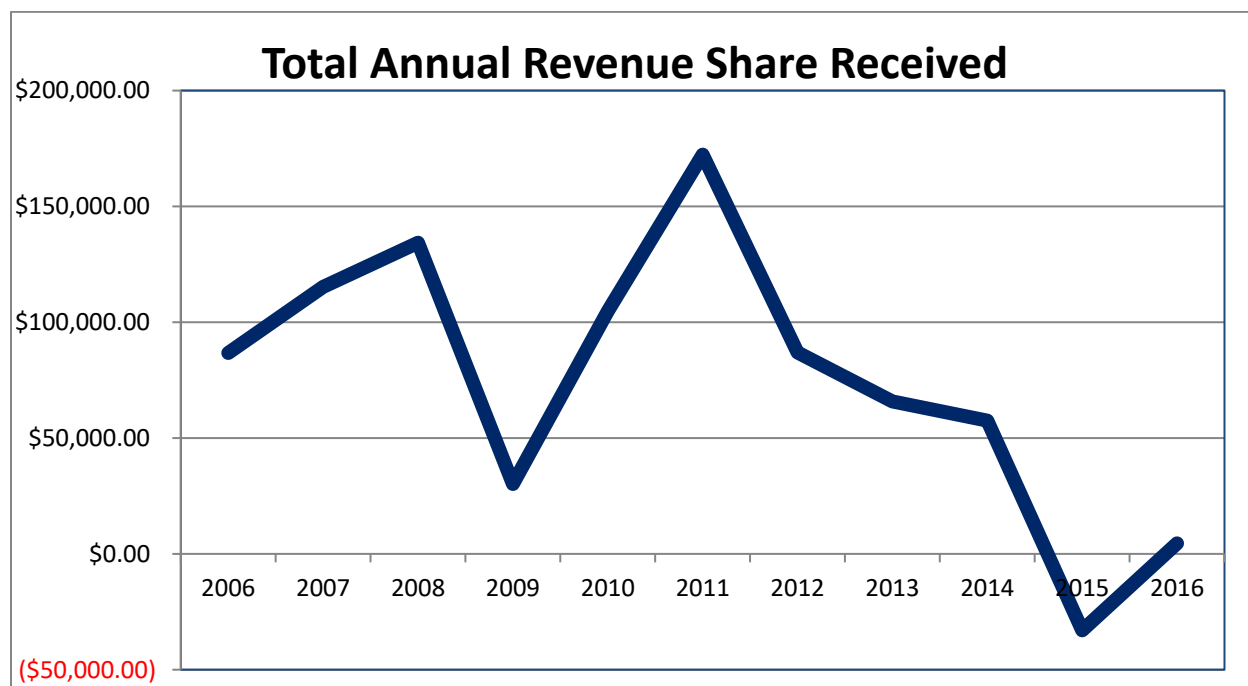
“Residual” refers to the amount of material collected from residents that is either not actually recycled. In 2016, the residual rate increased. Although still under 5%, which is considered excellent in a single sort MRF, it does indicate more effort may be needed to keep non-recyclable items out of the recycling. Plastic bags, Black plastic, Styrofoam, and plastic pouches continue to be the most common non-recyclable items in the residual. Some if it like fuel tanks and needles can cause hazards to staff or to the equipment in the MRF.

Engaging with residents through education (including the Guide to Recycling) in-mold labels on all recycling carts, our zero waste hotline, and outreach at many city sponsored events all lead to a lower residual rate. Regular communications makes it easy for Roseville residents to stay informed, and be clear about what is and is not recyclable in their city.

REVENUE

Since 2006, the City of Roseville has received more than \$870,000 in revenue from the sale of its recyclables. The materials that Roseville residents set out are valuable. They required tons of natural resources, a great deal of energy, and hours of labor to produce. Much of that value still remains in the items after they are used. Recycling this material captures that value and reinvests it into the next generation of products reducing costs and creating significant environmental benefit. The market for recycled material generates billions of dollars each year in the United States alone. This material is highly sought after by manufacturers who want to make new products out of it.

In 2016 Roseville received \$17,911.99 in revenue from the sale of recyclable materials. Commodity prices remained low in the first quarter of 2016 leading to the city receiving no revenue from the sale of product to markets. This turned around in the second quarter of the year with moderate improvements in prices being paid by markets. By the end of the year Roseville had received just over \$17,911. While this may be a far cry from the revenues the city saw a few years ago it is revenue that the city can use to make improvements to the city's waste reduction programs or to keep the cost of recycling low for the residents.



Global, Regional, and Local Market Conditions Affecting Prices

Recycled materials are commodities just like other products such as, corn, cotton, and oil. In our modern, global economy things that happen near and far can impact the prices paid

for material on the open market. The following are the major factors influencing the prices paid for recycled materials. Some are very local issues affecting glass prices. Others are more global in nature and involve the economies of other countries like China.

Summary of Current Market Conditions

In 2016, the overall prices paid by end markets for the material recycled in the city's program began the year low with the gross revenue generated from the sale of materials still being exceeded by the cost for processing. The "zero floor" clause of Roseville's contract in 2016 meant that Eureka Recycling absorbed the \$13,376 in lost processing fees.

In the second quarter of the year prices began to show a slow and steady increase. In the second quarter Roseville saw just over \$2,869 in revenue. By the end of the year that had risen to just over \$17,911.

The low cost of oil continues to put downward pressure on the price of recyclable plastics as manufacturers can choose to use virgin oil over recycled content.

Cardboard saw a steady increase. With more and more people joining the online shopping phenomenon all those shipments in cardboard boxes meant that not only did we see an increase in the amount of cardboard in the recycling. It also caused an increase in the prices paid by manufacturers for recycled cardboard to make the next generation of boxes. Old corrugated cardboard (OCC) prices were up 60% by the end of 2016.

Steel also showed price improvements from January to December. The price for steel went up nearly 35% by the end of the year, with higher spike in prices mid-year during the summer. At its peak steel was up 90% from its January price.

Prices paid for glass remain very low in 2016. The existence of only one processing facility for glass in Minnesota means that the supply of glass is still as high or higher than the capacity of the local market to process and sell it. As a result, while Eureka is still able to sell and recycle the glass here in a local market the cost of processing and shipping that mixed glass to Strategic Materials Inc. (SMI) exceeds the price paid for it. While the economic value of glass may currently be low, the environmental benefits and the positive impact glass has when recycled locally supporting jobs locally still makes it a net positive material.

Why does recycling glass matter?

Without immediate planning and action, some of Minnesota's recycled glass will end up in landfills or dropped from programs all together, and without a long-term solution that requires responsibility and some investment from producers, like bottle deposit legislation, glass may cease to be recycled at all. Glass collected for recycling that needlessly ends up in a landfill will end up costing the cities and their residents more money while reducing their recycling programs' environmental benefits.

There are significant, undisputable environmental and economic benefits achieved from recycling glass. These include energy savings, reduction of air and water pollution, and a

reduced need to mine new resources. Furthermore, State, municipal and environmental advocates agree that environmental benefits reduce dramatically the further we stray from the highest and best use of recycled glass, so glass bottles recycled into glass bottles should be the primary goal and then the next best markets for the smaller glass and fines need to be developed. These environmental impacts are the reason Eureka Recycling has been committed to finding a solution to keep bottle-to-bottle recycling viable despite changes in collection methods.

- Glass bottles and jars are 100% recyclable and can be recycled endlessly without any loss in purity or quality.
- Over a ton of natural resources are saved for every ton of glass recycled.
- Energy costs drop about 2-3% for every 10% recycled glass, also called cullet, used in the manufacturing process.
- One ton of carbon dioxide is reduced for every six tons of recycled container glass used in the manufacturing process.

ENVIRONMENTAL BENEFITS

The environmental benefits of Roseville's zero-waste recycling program are quantified transparently using widely-accepted environmental models. This ensures that all residents have a chance to see how their efforts can be measured and quantified.

There are many ways to calculate the benefits of recycling. To better explain these benefits in commonly understood terms, government agencies, research scientists, and economists have created several "calculators" to translate the amounts of recycled materials collected, and processed into equivalent positive societal and environmental benefits.

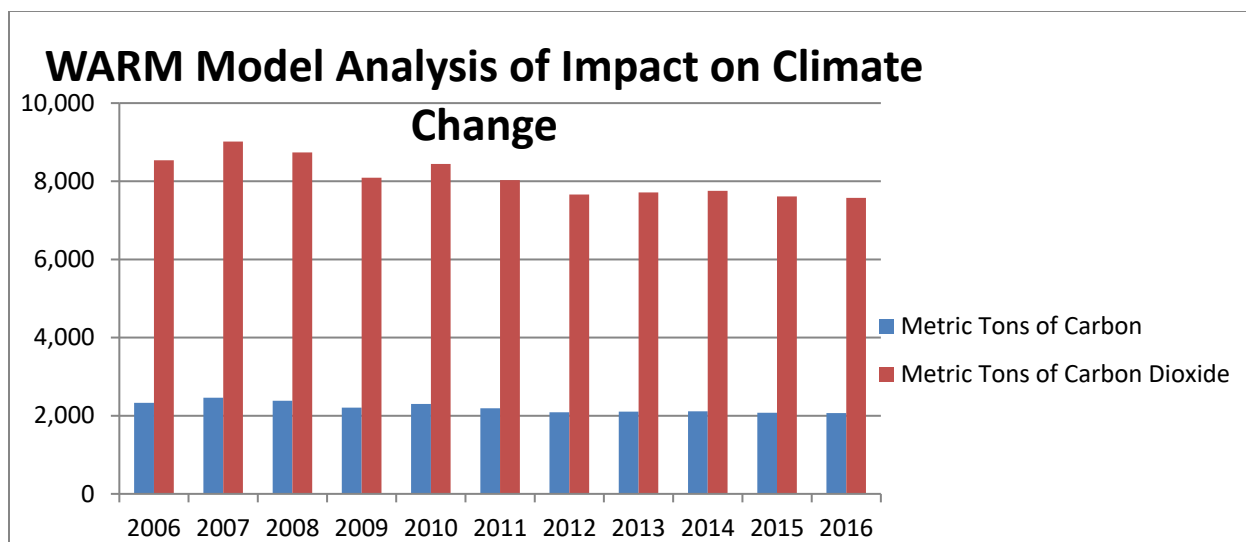
Because of the increasing societal focus on causes of, and solutions to, climate change, it has become imperative to measure waste reduction (and all of our activities) in terms of its impact on the environment. This allows us to speak in a common language, understand the impact of our choices, and help us prioritize the personal, and policy actions that we take. Many cities around the country work with the International Council for Local Environmental Initiatives (ICLEI) to quantify and now register the climate change impacts of their city. It is also important to calculate the carbon impact of waste reduction as the global effort continues to enact a carbon "cap and trade" system.

In addition to climate change mitigation, there are other environmental benefits to recycling, including saving energy and protecting air quality, water quality, natural resources, natural beauty, habitat, and human health.

The Environmental Protection Agency (EPA) WARM Calculator

The equations used in environmental calculations try to take into account the "full life cycle" of each material—everything from off-setting the demand for more virgin materials (tree harvesting, mining, etc.) to preventing the pollution that would have occurred if that material were disposed of (burned or buried). Different calculators may include some or all of the many factors that contribute to the "full life cycle" so results will vary from calculator to calculator.

While there are many models emerging to calculate greenhouse gas reductions, the most recognized, and standard model is the U.S. Environmental Protection Agency's Waste Reduction Model (WARM). WARM was designed to help solid waste planners and organizations track and voluntarily report greenhouse gas emissions reductions from several different waste management practices. WARM, last updated in June 2014, recognizes 46 material types.



MTCE (Metric tons of carbon equivalent), and MTCO₂E (Metric tons of carbon dioxide emissions) are figures commonly used when discussing greenhouse gas emissions. For more information about the process of measuring the environmental benefits of waste reduction, visit <http://epa.gov/climatechange/wycd/waste/measureghg.html#click>

What do all these numbers mean?

In addition to preventing pollution, an important impact of recycling is that it conserves a huge amount of energy. Making products and packaging from raw materials harvested from nature uses a much larger amount of energy than using recycled materials.

Every manufactured item has the energy used to make it “embedded” into it. Recycling takes advantage of that energy, as it is easier and more energy efficient to make a glass bottle from another glass bottle than from raw materials.

The WARM model and other calculators measure the difference between recycling all these tons of materials and using them to make new products versus sending them to an incinerator and making replacement products from raw materials. This difference is expressed as the amount of CO₂ that was not produced because we did not have to make and use all the energy that would have been needed if we used raw materials.

The numbers above help municipalities calculate and track their environmental footprint. For more information about the process of measuring the environmental benefits of waste reduction, visit <http://epa.gov/climatechange/wycd/waste/measureghg.html#click>.

These numbers, however, don’t have much meaning to the average person. To help recyclers understand the significance of their actions, the EPA has also developed tools to translate these numbers into equivalent examples that people can more easily understand.

- For example, using the figures above, the EPA estimates that **Roseville would have had to remove 1,595 cars from the road for one year to have had the same environmental impact in 2016 as they did by recycling.** To achieve this, nearly 10.5% of Roseville’s households would have had to give up one car for a year.

- Another way to look at it is that the residents of Roseville prevented the environmental impact of having burned a 55 gallon drum of gasoline for each household.

Although WARM is the most widely peer-reviewed, and accepted model, it is considered to have several flaws. Many believe the use of this calculator is conservative, and understates the real impact of waste reduction efforts, but it offers a conservative starting place to measure our impacts, and work towards our goals. Even with these conservative calculations, the impacts of Roseville's recycling program prove to be quite significant.

Measuring Environmental Benefits Calculator (MEBCalc™)

Jeffrey Morris, Ph.D., Economist at Sound Resource Management in Seattle, has developed a calculator that begins with the EPA's WARM calculator, and expands upon it to gather information on not just carbon, and CO₂, but also several other important environmental, and human health indicators. Although not yet widely used, this calculator shows the significant benefits that WARM does not consider.

The MEBCalc™ model expands, and shows the benefits other than just energy savings, and carbon savings. Recycling materials with zero waste in mind recognizes not just the value in the resource itself, but the contribution to the health of the community when materials are kept out of landfills, and incinerators, avoiding the toxic, and carcinogenic emissions.

Roseville	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Total Recycling Tons	3441	3682	3556	3281	3322	3243	3173	3225	3212	3305	3320
Carbon Dioxide Equivalent Reduction Metric Tons (eCO ₂)	9,437.3	9,619.0	9,683.5	8,814.0	8,739.3	8,425.1	8,106.2	8,478.7	8,386.3	8,159.5	8,088.0
Human Health—Carcinogens Reduction Metric Tons (eBenzene)	1.9	1.9	1.9	1.9	1.9	2	1.8	1.9	1.7	1.7	1.7
Human Health—Non-Carcinogen Toxins Reduction Metric Tons (eToluene)	4,609.7	5,253.0	4,665.7	4,452.0	4,518.0	4,699.6	4,375.0	4,280.1	3,953.0	3,810.2	4,064.9
Human Health—Particulates Reduction Metric Tons (ePM _{2.5})	4.4	6.6	4.2	4.4	4.8	5.9	5.1	4.2	3.6	3.3	4.4
Acidification Reduction Metric Tons (eSO ₂)	26.9	27	27.3	25.3	25.5	27.1	24.3	25.7	22.7	20.6	22.1

Appendix A

Roseville Multi-Family Tonnage by Property - 2015

Residential Buildings												
Property Name	Primary Address	2006 Total lbs.	2007 Total lbs.	2008 Total lbs.	2009 Total lbs.	2010 Total lbs.	2011 Total lbs.	2012 Total lbs.	2013 Total lbs.	2014 Total lbs.	2015 Total Lbs.	2016 Total Lbs.
1144 Dionne Street	Dionne Street, 1144	7,150	8,457	5,961	5,167	6,906	5,892	5,539	5,557	5,957	6,979	7,369
1363 County Road B	County Road B, 1363	1,892	1,910	2,744	2,629	2,255	2,090	2,426	2,296	2,487	2,668	2,601
161 McCarrons Street~	McCarrons Street, 161	439	198	-	-	-	-	-	-	-	-	
161 Minnesota Avenue	Minnesota Avenue, 161	148	678	423	646	1,076	1,264	1,258	1,226	1,582	1,695	1,419
1614 Eldridge Avenue	Eldridge Avenue, 1614	1,424	1,280	2,651	4,237	3,583	3,858	3,230	1,457	1,983	1,479	1,474
1624 Eldridge Avenue	Eldridge Avenue, 1624	2,541	2,029	1,996	2,629	2,249	1,842	4,753	3,897	3,596	3,242	4,902
Skillman Villas	Skillman Avenue, 1629	2,505	3,002	2,951	2,686	2,151	1,981	2,897	1,929	1,674	1,903	1,629
1635 Eldridge Avenue	Eldridge Avenue, 1635	3,284	1,702	1,650	2,333	2,380	2,026	1,881	1,912	2,210	2,081	1,163
1705 Marion Street	Marion Street, 1705	1,437	1,578	224	291	1,370	840	587	523	844	623	620
1750 Marion Street	Marion Street, 1750	3,511	3,576	4,317	3,906	3,386	2,741	1,617	2,080	-	851	595
2125-2133 Pascal Street	Pascal Street, 2125	2,514	3,184	5,239	4,717	4,829	5,007	5,093	5,538	5,517	5,326	6,707
2180 Haddington Road	Haddington Road, 2180	964	1,285	737	1,690	1,484	1,214	1,749	1,784	1,560	1,703	1,805
2275 Rice Street ^	Rice Street, 2275	1,924	2,830	2,852	2,973	869	-	-	-	-	-	
2447 County Road B	County Road B, 2447	2,584	2,867	3,143	2,519	2,567	2,572	2,642	2,098	2,522	2,661	3,271
2610 Snelling Curve	Snelling Curve, 2610	2,929	2,696	3,164	3,113	3,284	3,323	3,678	3,055	2,890	3,612	3,457
2900 Highcrest Road	Highcrest Road, 2900	4,581	4,436	2,715	2,534	3,597	3,512	3,720	3,444	2,049	2,594	2,859
2950 Highcrest Road	Highcrest Road, 2950	2,980	2,295	2,486	2,685	2,496	1,742	1,817	1,209	1,331	1,187	1,517
Applewood Pointe	Applewood Court, 1480	47,799	58,215	46,499	39,220	36,217	30,640	25,912	23,956	23,819	23,533	27,356
Applewood Pointe at Langton Lake	Langton Lake Drive, 1996	-	-	-	-	-	7,419	16,144	24,786	27,487	25,722	21,949
Aquarius Apartments	County Road C2, 2425	-	-	15,391	17,449	12,570	11,702	13,094	15,157	14,376	13,796	13,648
Bonaventure	Lexington Avenue North, 3090	7,490	8,105	7,033	5,367	5,497	5,281	5,033	4,465	6,023	5,190	5,218
Centennial Gardens East & West	Centennial Drive, 1420	26,759	21,852	22,677	23,021	21,122	20,025	20,137	20,888	20,374	20,206	17,987
Cherrywood Pointe	Cleveland Avenue North, 2996	-	-	-	-	-	-	3,962	8,407	10,995	10,724	9,338
Coventry Seniors Apartments	Snelling Avenue, 2820	19,939	19,110	22,729	24,917	22,952	21,268	21,247	21,275	20,041	21,277	20,115
Dale Terrace Apartments	County Road B, 720	9,360	7,793	12,033	13,323	12,343	11,572	10,371	9,892	9,997	10,998	11,629
Dellwood Condominiums	Dellwood Street, 1725	1,226	1,923	2,650	2,630	2,721	3,298	2,891	2,439	2,887	3,603	3,860
Eagle Crest	Lincoln Drive, 2925	13,892	60,799	56,057	57,249	64,086	67,291	70,827	68,040	70,991	59,310	58,883
Executive Manor Condos	Old Highway 8, 3153-3155	12,385	14,530	17,674	17,185	15,918	16,897	19,637	18,055	16,322	16,073	18,451
Garley Apartments	County Road B, 1634	2,153	1,161	1,415	1,547	1,420	1,793	1,897	1,487	1,524	1,726	1,966
Greenhouse Village	Larpenteur Avenue, 1021	19,032	37,098	28,751	24,581	30,384	25,402	22,453	25,797	23,539	22,201	24,751
Hamline House Condos	Hamline Avenue, 2800	34,102	33,973	32,182	29,441	24,522	22,481	20,586	21,206	21,171	20,589	25,655
Hamline Terrace	Terrace Drive, 1360-1410	12,817	12,230	17,366	19,233	23,416	23,105	20,080	20,639	19,132	19,436	20,474
Heritage Place	County Road B West, 563	21,892	23,110	17,258	16,066	19,781	18,879	16,649	18,963	18,189	17,787	16,518
Hillsborough Manor	Woodbridge Street, 2335	16,298	17,755	28,418	35,852	29,398	21,312	19,284	24,054	25,407	47,638	42,532
Karie Dale Apartments	Dale Street North, 2355	6,691	7,455	9,794	8,483	7,508	7,910	6,931	7,151	8,711	10,741	10,290
Lake Josephine Condominiums	Lexington Avenue North, 3076	9,411	8,313	7,040	6,632	6,179	6,603	6,389	5,817	5,175	6,765	6,983
Lar Dale Apartments	Larpenteur Avenue West, 655	2,068	2,189	2,348	1,546	2,472	2,865	3,326	3,224	3,431	3,541	4,542
Lexington Court	Lexington Avenue, 2192-2206	3,390	2,970	4,293	5,076	4,092	4,808	5,924	7,020	6,743	9,509	11,048
Lexington Twin Apartments	Lexington Avenue, 1890	5,674	5,519	5,456	5,689	5,014	5,371	5,791	5,549	5,971	6,239	5,440
Lexlawn/Roselawn Apartments	Lexington Avenue, 1943	3,142	2,888	3,774	4,033	3,788	4,074	3,788	3,369	2,711	3,233	3,090
Marion Street/ Brittany Apartments	Larpenteur Avenue, 175	11,980	16,150	17,191	17,485	18,645	11,838	11,263	8,711	2,627	2,581	63
McCarrons Apartments	McCarrons Boulevard North, 204	5,092	4,919	5,543	5,039	4,939	4,172	3,743	3,884	5,867	7,316	1,706
McCarrons Lake Condos	McCarrons Boulevard N, 185	-	-	-	-	-	5,076	7,757	9,407	9,584	10,195	8,372
Midland Grove Condos	Midland Grove Road, 2200	48,162	60,937	50,758	45,718	48,159	50,575	54,288	49,123	43,548	39,886	43,230

Property Name	Primary Address	2006 Total lbs.	2007 Total lbs.	2008 Total lbs.	2009 Total lbs.	2010 Total lbs.	2011 Total lbs.	2012 Total lbs.	2013 Total lbs.	2014 Total lbs.	2015 Total Lbs.	2016 Total Lbs.
Msocs	Huron Street North, 1898	-	-	-	615	4,326	3,717	2,452	2,369	3,185	2,072	360
Northwestern College Apartments	Lydia Avenue, 1610	6,061	7,839	4,941	4,379	4,055	4,111	3,418	3,653	3,775	3,299	2,754
Northwestern College/Snelling Terrace	Snelling Drive East, 2906	7,386	16,027	12,542	12,253	12,443	10,702	11,261	11,308	6,879	11,302	10,832
Palisades	Sandhurst Drive West, 560	40,078	41,635	55,306	51,667	45,972	47,910	40,893	45,973	49,821	53,587	54,182
Parkview Estate Condominiums	Oxford Street, 2670	28,447	29,206	30,816	29,683	24,738	24,793	23,440	25,588	26,361	24,372	33,208
Parkview Manor	Dale Street North, 2202-2210	4,931	4,553	5,085	5,612	4,698	4,518	4,242	4,799	4,586	5,259	5,526
Parkview Terrace Condos	Oxford Street, 2690	3,960	33,244	28,285	23,919	21,702	19,169	17,420	16,521	16,706	17,184	15,629
Ramsey Square Condos	Dale Street North, 2710	-	35,796	34,991	35,127	41,288	38,930	37,992	40,702	44,247	46,485	41,454
Riviera Apartments	Highway 36 West, 925 & 965	12,473	13,597	19,108	17,369	15,204	15,900	14,110	15,255	14,406	15,547	16,385
Rose Hill Estates	County Road B, 591	4,341	4,904	5,880	5,345	3,775	5,514	5,281	7,552	7,743	10,449	13,149
Rose Mall Apartments	Albert Street, 2201-2221	37,328	41,412	43,984	47,376	41,250	42,786	39,486	37,841	35,987	38,473	41,754
Rose Park Apartments (1615)	Eldridge Avenue, 1615	1,809	1,091	1,721	2,076	1,922	1,678	1,479	1,336	1,574	1,200	924
Rose Park Estates	Fry Street, 2136	4,757	5,426	6,065	6,466	4,253	4,591	5,084	4,510	4,540	4,500	5,565
Rose Park Commons	County Road B, 1610	2,266	2,324	1,967	2,396	2,079	1,858	1,827	1,808	1,865	1,764	1,687
Rose Vista Apartments	Rose Vista Court, 1222-1263	19,697	18,366	24,634	26,822	23,830	23,146	20,789	20,499	24,767	25,817	27,309
Rosedale Estates North	Rice Street, 2835	21,885	24,253	33,475	34,083	26,954	22,234	19,283	20,899	21,290	24,688	24,629
Rosedale Estates South	Rice Street, 2735	20,750	23,864	26,581	27,377	23,770	21,632	19,071	20,251	21,867	23,092	20,756
Roselawn Village	Roselawn Avenue, 1074	5,576	5,950	5,616	5,417	4,730	5,563	5,633	4,792	4,880	4,889	4,457
Rosepointe	Hamline Avenue North, 2545	32,645	29,485	33,312	31,688	31,195	29,229	27,706	28,977	29,948	37,623	38,712
Roseridge Estates	Samuel Street, 2086-2090	2,653	3,099	3,829	4,537	3,744	5,739	6,519	5,255	6,084	5,435	5,800
Rosetree Apartments	Highway 36, 655	12,251	12,394	12,654	11,831	10,236	8,515	8,026	7,421	7,075	8,258	7,568
Roseville Apartments, LLC	Eldridge Avenue, 1625	2,037	2,546	1,833	2,106	1,730	2,172	2,538	3,764	3,745	2,857	2,452
Roseville Arms Condos	Elmer Street, 160	789	1,565	3,269	3,068	2,074	2,780	3,049	3,148	3,459	5,970	5,331
Roseville Commons	County Road C2 West, 2496	8,332	7,515	8,281	9,065	6,415	6,470	5,999	6,841	8,233	6,001	7,434
Roseville Estates	Lexington Avenue, 2599	5,593	9,842	12,312	10,028	7,472	6,588	9,453	8,345	6,433	6,862	8,844
Roseville Seniors	Larpenteur Avenue West, 1045	25,581	33,600	30,521	27,577	23,698	24,268	20,647	24,456	24,314	24,340	25,173
Roseville Terrace	Dunlap Street, 1759	5,363	4,785	5,032	5,469	4,658	4,167	3,876	3,671	3,965	3,567	2,900
Roseville Townhomes	Old Highway 8, 3085	-	13,423	20,619	24,021	23,733	22,322	29,349	23,836	23,976		

Municipal Buildings												
Property Name	Primary Address	2006 Total lbs.	2007 Total lbs.	2008 Total lbs.	2009 Total lbs.	2010 Total lbs.	2011 Total lbs.	2012 Total lbs.	2013 Total lbs.	2014 Total lbs.	2015 Total Lbs.	2016 Total Lbs.
Acorn Park	County Road C, 286	-	-	-	-	-	184	761	487	493	677	350
Central Park Lexington	Lexington Ave North, 2540	-	-	-	-	-	-	-	33	-	-	
Central Park Victoria West	Victoria Street North, 2495	-	-	-	-	-	46	741	628	-	-	
City Hall	Civic Center Drive, 2660	28,244	28,474	24,682	20,562	21,228	21,590	18,786	16,775	15,317	10,539	11494
Evergreen Park Ballfield	County Road B West, 1810	497	515	456	818	305	336	404	190	789	70	1379
Fire Station 1 Roseville**	Lexington Avenue, 2701	3,226	3,630	2,134	2,058	2,063	1,890	**	214	555	1,566	987
Fire Station 3 Roseville***	Dale Street North, 2335	1,564	2,786	3,604	2,960	3,968	3,437	2,911	2,568	-	-	
Golf Course	Hamline Avenue North, 2323	2,729	2,654	2,080	2,149	2,689	2,048	2,093	1,671	1,532	1,635	1702
Harriet Alexander Nature Center	Dale Street North, 2520										1,918	1911
License Center (Active but not on routes)	Lexington Avenue, 2737	79	178	10	38	31	26	-	-	-	-	
Owasso Ballfields	Victoria Avenue, 2659	120	36	400	361	295	-	171	134	149	16	169
Public Works Garage	Woodhill Drive, 1140	8,341	12,089	13,916	13,566	16,863	16,644	17,608	17,680	16,398	18,063	14331
Skating Center	Civic Center Drive, 2661	4,877	5,038	5,244	3,938	5,057	7,514	6,692	8,806	11,046	11,944	12215
State Farm Insurance	Lexington Avenue North, 2201	-	-	705	1,758	718	759	241	480	746	926	673
Wildlife Rehabilitation Center	Dale Street North, 2530	14,607	13,948	12,726	12,513	11,840	10,509	9,158	9,649	8,536	9,108	13605
Total Pounds for Municipal Buildings		64,283	69,348	65,957	60,720	65,057	64,983	59,566	59,315	55,561	56,463	58816

		2006 Total lbs.	2007 Total lbs.	2008 Total lbs.	2009 Total lbs.	2010 Total lbs.	2011 Total lbs.	2012 Total lbs.	2013 Total lbs.	2014 Total lbs.	2015 Total Lbs.	2016 Total Lbs.
	Total Pounds for Roseville per year	953,942.01	1,172,519.83	1,227,032.00	1,215,703.72	1,160,910.89	1,144,598.32	1,145,960.00	1,173,365.00	1,169,864.77	1,210,202	1,223,126

Total Units in 2016	6169
Total Units in 2015	6,158
Total Units in 2014	6,112
Total Units in 2013	6,049
Total Units in 2012	6,049
Total Units in 2011	5,999
Total Units in 2010	5,781
Total Units in 2009	5,781
Total Units in 2008	5,781
Total Units in 2007	5,662
Total Units in 2006	5,367

*Har Mar Apartments changed name to Sienna Green Apartments as of November 2010

** Fire Station 1 was demolished and is being rebuilt. Will reopen in 2013

***Fire Station 3 was closed in the fall of 2013 when Fire Station 1 was reopened

In 2013, two property names were updated in our records. 1610 County B is now Rose Park Commons and 1615 Eldrige is now Rose Park Apartments

^2275 Rice Street canceled September 2010. Building is demolished

1705 Marion is a builling with no units, this was corrected in 2011. In 2010 it was reported with 3 units.

~161 McCarrons: Restarted at the end of 2015. Units included in total.

Harriet Alexander Nature Center has not been included on this list until 2015. They used to share carts with WRC and received their own account with carts this year.

Keystone Communities was listed as Rosewood Estates (Roseville) until 2015.

Eureka Recycling Composition Analysis Methodology

Eureka Recycling collects materials in a single sort collection system with all paper, cardboard, metal and plastic, steel, aluminum and glass containers combined by residents into one cart. Each year we conduct an annual composition study of the single sort material to determine the percentage each material represents in the overall composition.

(651) 222-SORT (7678)
www.eurekarecycling.org

Our mission is to reduce waste today through innovative resource management and to reach a waste-free tomorrow by demonstrating that waste is preventable, not inevitable.



Composition by Commodity of Each Recycling Stream

During the composition study we weigh each truck before and after to determine the weight of the material. Each truck has a stored weight that is updated regularly for accuracy. This process allows us to determine the initial weight of the material set out by residents during the period being analyzed.

The composition study starts with Eureka Recycling storing all of the materials collected in the city during a one-week period. These materials are stored in a separate bunker from all other materials at the facility. We sort the material separately from all other recycling at the facility.



The sorted materials are then baled or put into a hopper and transported with a forklift to the truck scale to be weighed. Finally, we weigh the total amount of each sorted material grade including the non-recyclable material (residual) to establish the percentage of the total tonnage that each material type represents in the overall composition.

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 Printed on 100% postconsumer recycled paper that was processed without the use of chlorine.



Participation Trend Analysis Methodology

Eureka Recycling conducts an annual participation study in which both set-out and participation rates are analyzed and documented.

The **set-out rate** is the average number of households that set materials out for recycling collection on a given day. Not every household sets out their recycling each week. If they are out of town, forget or simply don't have very much in their cart they may not have a cart out for collection on their day. The Set-Out number is the average across all weeks reported of percentage of households that set-out material in any given week.



The **participation rate** is the number of households who set materials out for recycling collection at least once over the period of the study, which for this program is done quarterly. The participation rate is a better indication of overall recycling participation because it includes households that recycle at least once over the course of a quarter, recognizing that some households may not set-out recycling every week. It more accurately indicates how many households are participating in the recycling program overall, as opposed to the number of participants on a specific day.

Summary of Process

The study is done quarterly. Each time the truck tips a cart that collection is recorded for that specific address. Once per quarter Eureka Recycling runs a report of all tips and sorts by collection day. The percentage of all addresses in that route that register a tip in any given week is recorded as that week's set-out rate. Then all set-out rates recorded for that quarter are averaged to produce the citywide set-out rate for that quarter.

The report is then sorted by address. Each address will be repeated for each collection day they recorded as having been tipped. Duplicate addresses are removed. The remaining list of addresses represents all households that participated in recycling at least once within that quarter. This is the participation rate for that quarter.

Quarterly set-out and participations rates are averaged for the annual set-out and participation numbers.

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City of Roseville

Outreach and Education Summary 2016

Roseville's recycling program continues to be a leader in the country. Outreach and education elements of the program are an important part to ensuring good participation and helping residents understand the benefits of recycling. In 2016, Eureka Recycling continued to support the efforts of the city of Roseville to make city events zero-waste. This was the fifth year we attended Night to Unite parties to talk about zero waste and to distribute educational materials. The Wild Rice Festival, and Earth Day celebration were also successful events—bringing Roseville residents' attention to zero-waste issues while diverting nearly 98% of event materials from the waste stream. These successes continue to show the City of Roseville's leadership and its commitment to zero waste and sustainability. In addition Eureka Recycling worked for the second year with city staff and with the Roseville Rotary to make the Taste of Rosefest a successful zero waste event as well. This year we worked with food and beverage vendors and the over 800 attendees to produce a diversion rate of over 95% with 540 pounds of material being recycled or composted.

Second Year of Roseville's Transition to Single Sort Recycling

Zero-Waste Hotline

There was a large spike in calls to our hotline in the first year of single stream in 2014. As residents have settled into the new system the number of calls, while still somewhat higher than the pre-single-sort levels, have come down a good deal.

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Hotline Calls										
Curbside Calls	425	540	480	410	330	415	885	2476	1910	1458
Multi-family Calls	49	78	35	74	81	72	94	85	72	62
Total Calls	474	618	515	484	411	487	979	2561	1982	1520
Requests for Printed Materials										
Curbside	41	74	21	43	47	33	41	556	163	52

There were 41% fewer calls to the hotline from single family households than at the peak of the transition in 2014, 24% decrease from 2015. We also saw the continued decrease in requests for additional printed education. Over 90% less requests for additional printed materials education materials from the peak of the transition and a 68% reduction from 2015. These requests are returning to a similar volume of requests as pre-transition numbers.

Curbside Program

Guide to Recycling

The 2016 guide to recycling provided all of the information needed for each household to participate in the single sort program. Many residents appreciated this additional information and chose to call the Zero-Waste Hotline to learn more.

This year's guide promoted the new Story of a Cereal Box video. More information on that new video can be found below in the Special Outreach and Education Section.

Direct Education

Our experience has shown that the absolute best place to educate residents about their zero-waste recycling program is right at the curb. Eureka Recycling and the City of Roseville share a value that all the material that can be recycled should be and material that cannot be recycled should not be collected. Taking non-recyclable items on a ride in a recycling truck and through a processing facility not only wastes the fuel and energy to transport and process the material, but also leaves the residents with the mistaken impression that the material can be recycled.



Eureka Recycling drivers educate residents at the curb using educational tags for specific problems. In 2016, drivers left approximately 447 educational tags in recyclers' bins. By simplifying the program to a single sort process, using carts provided to the household, and by adding additional plastics we eliminated many of the issues that generated tags in the past.

The most common reason residents received a tag in 2016 were:

1. Repeatedly having excess recycling placed next to cart while having a small or medium sized cart. The tag recommended that the resident call the hotline to request a larger, or even a second cart.
2. Cardboard not been broken down to a size that will fit in the cart. To collect extra cardboard the driver tips the cart and then puts the extra cardboard into the cart and tips it again. Cardboard too big for the cart is difficult for the driver to collect.
3. Placing cart too far from the curb or backwards with the handle facing the street. This makes it hard for the material to fall in the truck and causes litter.

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Driver Tags	9,540	10,156	7,367	13,565	13,010	50,061	9,736	20,341	1,833	995	447
Postcards	650	822	451	742	559	1,136	951	7,576	0	0	0
Personalized Letters	30	51	0	3	10	41	179	20	151	80	4

We work with our drivers to ensure they take every opportunity to provide additional education to residents. The value of this approach is that begins a conversation with residents and eliminates confusion. All of Eureka Recycling's tags encourage residents to call our hotline where zero-waste educators are available to clear up confusion about why certain items are not recyclable or to explain how residents' efforts at the curb have an important impact on the value of the material and the environmental benefits of recycling.



Sample Tags

Postcards

In the previous two-sort system of collection, if a resident did not have a blue bin to leave a tag in the driver would write up the address and our customer service staff would send a postcard with the same images and messaging to the home to inform them about the issue. In the new single-sort system every house now has a cart so the driver always has a place to leave a tag, which eliminates the need for postcards.

Letters

Personalized letters are another form of communication about programs and services. There are two types of personalized letters we send to residents:

1. Chronic problem letters provide detailed information and instructions about setting out recycling. These letters are used when previous letters have not been successful in correcting repeated problems. Drivers keep a daily record of the addresses that have received tags but still need further education. Addresses that have received tags for three consecutive collection weeks with no change in how they are recycling receive a personalized letter that encourages the resident to contact us so we can have a more in-depth conversation.
2. Letters to update service information for Special Pickup Instruction (SPI) customers. These letters are sent when SPI residents have changed the location of their recycling, or if it appears the resident has moved out of the home and no longer needs the service.

In 2016 Eureka Recycling sent only 4 personalized letters to residents. This is a decrease from the previous year but is still a bit higher than was seen in most pre-single sort years. When residents experience confusion around how to best set out their recycling a letter can help them understand the issue, while inviting them to call the hotline with additional questions or concerns. The most common issues that generated letters were cardboard not broken down, repeatedly having extra material outside the carts while using a smaller cart, and not having the cart out by 7 a.m.

Special Pickup Addresses

To ensure every resident has the opportunity to recycle, Eureka Recycling offers to collect recycling from locations other than the curb for residents who request special pickup service due to short- or long-term physical limitations. This service is provided free of charge to ensure that anyone who would like to recycle has the opportunity to do so by helping remove any physical barriers. Eleven residents added this service in 2016 for a total of 137 total residents.

Multifamily Zero-Waste Recycling Program

Eureka Recycling currently services a total of 6,169 units in Roseville's multifamily program.

In February 2016 Eureka Recycling mailed reports to all of Roseville's multifamily building managers, providing them with data on the tonnage recycled for their building(s), a comparison of the amount of tonnage recycled for the whole city's multifamily program, and the environmental benefits of the entire City's effort in recycling. This communication provides the building managers the tools to work with their residents to inspire and motivate them to increase their recycling rate.



One of the challenges with recycling in multifamily properties is turnover. Residents move in and out all the time and even property managers and caretakers turn over constantly. Not having a reliable contact at each property makes it difficult to manage problems that may arise or to communicate the successes to residents. This challenge is one of the reasons most cities do not include apartment and condo buildings in their residential recycling programs. Eureka Recycling's staff also updated building managers' contact information whenever possible. If it were not for the time Eureka Recycling staff takes each year to ensure correct and updated data, effective and timely communication would not be possible and the quality of the program would be in jeopardy.

Multifamily Educational Materials and Customer Service

Eureka Recycling constantly monitors the performance of each account to improve participation. Our drivers track issues so our staff can immediately follow up with suggestions to address any identified building needs and to provide educational materials for residents.

Eureka Recycling provided 267 pieces of recycling education (instructional posters, brochures, schedules, etc.) to building management and residents of existing and newly established multifamily accounts in 2016.

We continue to monitor the performance and service issues with each account to adjust service levels on an ongoing basis. We ensure that we are providing appropriate service levels to all buildings by working with our drivers and involved on-site contacts to add more carts as residents recycle more.

Special Education and Outreach

The Story of a Cereal Box Video

Many people have asked to come on a tour of our materials recovery facility (MRF) to see what happens to their material after it leaves their curb. While not everyone can do this we wanted to offer the next best thing. We created a 10 minute video that follows a cereal from the household that placed it in to their recycling all the way through the sorting process and finally to the end market that makes it into a new cereal box and the store that sells that new box.

Viewers can see the many types of machines and awesome people who make recycling work for Roseville. They can also see the impact of problem materials like plastic bags, hoses, chords and other things that people try and recycle. The video can be seen on Eureka Recycling's website. Residents and community groups can even request a special screening of the video along with a questions and answer presentation so they can ask all the questions they have about their recycling program.

Outreach at Roseville Events

In 2016 Eureka Recycling and the City of Roseville partnered during three events to give residents an opportunity to learn about recycling, while also experiencing that waste is preventable. Eureka Recycling provided Zero-Waste Event Services, which included staff helping to monitor zero-waste stations and educate residents about recycling and zero-waste issues.

On April 23, 2016 at the Roseville Earth Day event Eureka Recycling and the City had a table where our staff shared information about the recycling program. We also had one of the recycling trucks on hand so kids could see the how recycling is collected up close.

Night to Unite

We again joined the City of Roseville at Night to Unite celebrations all over the city. Together, we recognized it as an opportunity to connect with Roseville residents on a night where the community gathers. The City and Eureka Recycling see this event as a great opportunity to bring resources to residents, while taking the time to build community and answer questions. At neighborhood gatherings Eureka Recycling staff distributed educational materials to help

individuals learn how to recycle more. Staff spent time answering recycling questions and talking to residents about the environmental and economic benefits of recycling. Residents were responsive to not only the recycling information, but also additional recycling bins and to have conversations around zero-waste.

Leading up to this event, Eureka Recycling once again supported the city's effort to encourage block party organizers to register their parties with the City by offering a free backyard composting bin to any registered neighborhood party that wanted one. Registering parties helps the City to retain the information about who the energized and engaged residents are. This makes it easier to develop stronger relationships with those residents and allows them to help get community feedback and to help disseminate information on important community initiatives to their neighbors. We also provided fact sheets about making neighborhood events zero-waste. This fact sheet is available on our composting website: <http://bit.ly/1EBgK6n>

Twin Cities Free Market

Residents of the City of Roseville have the opportunity to exchange reusable materials via the Twin Cities Free Market (www.twincitiesfreemarket.org). The Twin Cities Free Market is a great way for residents to give and get free, reusable items while keeping them out of the landfill or incinerator. In 2016, 99 Free Market users from Roseville listed over 6.36 tons (12,727 pounds) of usable items that were made up of mostly furniture, electronics, and appliances that were spared from the landfill or incinerator.

Appendix E - 2016 Roseville Customer Service Calls

Date Reported	List Address	Long Description	Notes
04-Jan-16	Autumn Place West, 2005	redump customer	sent driver back, resident had packed material too tightly.
13-Jan-16	Asbury Street North, 3077	Block Miss	sent driver back
14-Jan-16	Ruggles Street West, 1123	Miss	sent driver back
14-Jan-16	Lexington Avenue North, 2237	Miss	sent driver back
19-Jan-16	County Road C2 West, 1398	miss	collected on off-week recycling day
20-Jan-16	Transit Avenue West, 1485	Block Miss	sent driver back
21-Jan-16	Pascal Street North, 2446	Block Miss	sent driver back
21-Jan-16	Transit Avenue West, 1485	Miss	sent driver back
22-Jan-16	Eldridge Avenue West, 1804	miss	collected on off-week recycling day
23-Jan-16	Transit Avenue West, 1475	miss	collected on off-week recycling day
23-Jan-16	Aldine Street North, 2612	miss	collected on off-week recycling day
01-Feb-16	Lovell Lane North, 518-4	Block Miss	sent driver back
02-Feb-16	Lovell Avenue West, 510-2	miss	collected on off-week recycling day
2/4/2016	Eldridge, 700	Complaint	Cart placement complaint- driver leaves cart in the middle of her driveway. We spoke to the driver about not doing this.
10-Feb-16	Asbury Street North, 3077	SPI Miss	sent driver back
11-Feb-16	Troseth Road North, 2909	Miss	sent driver back
10-Mar-16	Lydia Avenue West, 1490	Miss	sent driver back
14-Mar-16	Ryan Avenue West, 1778	Miss	collected on off-week recycling day
14-Mar-16	Dale Street North, 2750	miss	collected on off-week recycling day
14-Mar-16	Minnesota Avenue West, 446	redump customer	sent driver back, resident had packed material too tightly.
17-Mar-16	County Road B2 West, 1505	Miss	sent driver back
17-Mar-16	Oakcrest Avenue West, 1770	SPI Miss	sent driver back
18-Mar-16	Ryan Avenue West, 1778	miss	collected on off-week recycling day
23-Mar-16	Pascal Street, 3033	Complaint	Resident reported that material spilled out of her cart when it was being tipped. She cleaned it up, just wanted to let us know. We spoke with the driver about the incident.
24-Mar-16	Terrace Drive West, 664	redump customer	sent driver back, resident had packed material too tightly.

Date Reported	List Address	Long Description	Notes
25-Mar-16	Highcrest Road North, 3082	Redump	sent driver back, was driver error
25-Mar-16	Roselawn Avenue West, 1951	SPI Miss	sent driver back
31-Mar-16	Giesmann Street North, 2010	Block Miss	sent driver back
31-Mar-16	Wheeler Avenue North, 2599	miss	collected on off-week recycling day
01-Apr-16	William Street North, 2001	Block Miss	sent driver back
4/8/2016	Acorn Road, 2265	Complaint	Resident reported that driver seemed to be speeding. GPS did not show excessive speed but we followed up with driver.
14-Apr-16	Sextant Avenue West, 1350	Miss	sent driver back
14-Apr-16	Simpson Street North, 2493	Miss	sent driver back
5/2/2016	Mackubin Street, 2737	Complaint	Property manager reported minor asphalt damage near recycling carts and wanted to know why it was happening and prevent further damage. We investigated, it was from driver needing to turn the wheels to get to carts on hot days. We spoke with drivers on other ways to navigate, and property manager repaired the damage.
03-May-16	Owasso Hills Drive West, 527	Miss	sent driver back
03-May-16	Hamline Avenue North, 2932	redump customer	sent driver back, resident had packed material too tightly.
04-May-16	Asbury Street North, 2918	Miss	sent driver back
10-May-16	Rose Place West, 1118	Miss	sent driver back
12-May-16	Irene Street North, 2034	Miss	sent driver back
17-May-16	Churchill Street North, 3080	redump customer	sent driver back, resident had packed material too tightly.
19-May-16	Huron Street North, 2844	Miss	sent driver back
23-May-16	Ferris Lane North, 2232	Miss	sent driver back
23-May-16	Shryer avenue west, 1867	redump customer	sent driver back, resident had packed material too tightly.
23-May-16	Northview Street North, 2941	redump customer	sent driver back, resident had packed material too tightly.
27-May-16	Albert Street North, 2450	Miss	sent driver back
02-Jun-16	Asbury Street North, 2999	Miss	sent driver back
02-Jun-16	Griggs Street North, 2718	Miss	sent driver back
02-Jun-16	Rambler Road West, 1423	Miss	sent driver back
03-Jun-16	Woodbridge Street North, 2049	miss	collected on off-week recycling day
04-Jun-16	Hamline Avenue North, 1992	Miss	sent driver back
04-Jun-16	Gluek Lane South, 1877	Redump	sent driver back, was driver error
6/6/2016	County Road B2, 356	Complaint	Small hydraulic leak- driver caught it right away and cleaned it up.
06-Jun-16	Gluek Lane North, 1877	Redump	sent driver back, was driver error

Date Reported	List Address	Long Description	Notes
08-Jun-16	Transit Avenue West, 1543	Block Miss	sent driver back
08-Jun-16	County Road D West, 2418-4	Miss	collected on off-week recycling day
08-Jun-16	Rambler Road West, 1432	Miss	collected on off-week recycling day
08-Jun-16	Simpson Street North, 2475	Miss	sent driver back
10-Jun-16	Shryer Avenue West, 555	redump customer	sent driver back, resident had packed material too tightly.
13-Jun-16	Grandview Avenue West, 700	miss	collected on off-week recycling day
13-Jun-16	Woodhill Drive West, 540-75	redump customer	sent driver back, resident had packed material too tightly.
14-Jun-16	Woodhill Drive West, 570	Miss	sent driver back
22-Jun-16	Albert Street North, 244	Complaint	resident called and said there was some fluid leaking from one of our trucks we sent dayton back to clean up he cleaned up what he could (we did not do the spill dayton checked truck thourouly and resident also seen it was not our truck
23-Jun-16	Wheeler Street North, 2625	Miss	sent driver back
29-Jun-16	Asbury Street North, 2999	redump customer	sent driver back, resident had packed material too tightly.
30-Jun-16	Brenner Avenue West, 2523	Miss	sent driver back
05-Jul-16	Midland Hills Road North, 1953	redump customer	sent driver back, resident had packed material too tightly.
08-Jul-16	Colonial Drive, 1347	Redump	sent driver back, was driver error
09-Jul-16	Roselawn Avenue West, 1749	redump customer	sent driver back, resident had packed material too tightly.
13-Jul-16	Merrill Street North, 2835	Miss	sent driver back
19-Jul-16	County Road B2 West, 985	Miss	sent driver back
21-Jul-16	County Road B2 West, 1505	Miss	sent driver back
21-Jul-16	Sheldon Street North, 2483	redump customer	sent driver back, resident had packed material too tightly.
21-Jul-16	County Road B West, 202	SPI Miss	sent driver back
26-Jul-16	Galtier Street North, 2942	Miss	sent driver back
27-Jul-16	Fry Street North, 2545	redump customer	sent driver back, resident had packed material too tightly.
01-Aug-16	Fisk Street North, 2622	redump customer	sent driver back, resident had packed material too tightly.
03-Aug-16	Charlotte Street North, 2612	Miss	sent driver back
04-Aug-16	Galtier Circle North, 2499	Block Miss	sent driver back
04-Aug-16	Wheeler Avenue North, 2598	Block Miss	sent driver back
04-Aug-16	Wheeler Avenue North, 2544	Miss	sent driver back
04-Aug-16	Wheeler Avenue North, 2750	Miss	sent driver back
08-Aug-16	Galtier Circle North, 2475	Block Miss	sent driver back
08-Aug-16	Wheeler Street North, 1987	Miss	sent driver back

Date Reported	List Address	Long Description	Notes
11-Aug-16	Brenner Street West, 1863	Miss	sent driver back
12-Aug-16	Lexington Avenue North, 2237	Miss	sent driver back
12-Aug-16	Roselawn Avenue West, 1357	miss	collected on off-week recycling day
12-Aug-16	Eldridge Avenue West, 1706	redump customer	sent driver back, resident had packed material too tightly.
12-Aug-16	Merrill Street North, 1867	redump customer	sent driver back, resident had packed material too tightly.
24-Aug-16	Brenner Avenue West, 940	Miss	sent driver back
24-Aug-16	Pascal Street North, 3027	redump customer	sent driver back, resident had packed material too tightly.
29-Aug-16	Shryer Avenue West, 1852	Miss	sent driver back
06-Sep-16	Iona Lane West, 552	redump customer	sent driver back, resident had packed material too tightly.
06-Sep-16	Western Avenue North, 2748	redump customer	sent driver back, resident had packed material too tightly.
07-Sep-16	Heinel Drive West, 526	redump customer	sent driver back, resident had packed material too tightly.
09-Sep-16	Asbury Street North, 3033	Block Miss	sent driver back
09-Sep-16	Rambler Road West, 1423	Miss	sent driver back
09-Sep-16	Wheeler Street North, 2565	Miss	sent driver back
10-Sep-16	Roselawn Avenue West, 955	Miss	sent driver back
12-Sep-16	Asbury Street North, 3011	Miss	sent driver back
12-Sep-16	Lydia Avenue West, 1541	Miss	sent driver back
12-Sep-16	Asbury Street North, 3017	Miss	sent driver back
12-Sep-16	Asbury Street North, 2999	Miss	sent driver back
23-Sep-16	Lexington Avenue North, 2025	Miss	sent driver back
05-Oct-16	Victoria Street North, 2674	Miss	sent driver back
06-Oct-16	Manson Street North, 2695	Miss	sent driver back
06-Oct-16	Old Highway 8, 3207	redump customer	sent driver back, resident had packed material too tightly.
07-Oct-16	Roma Avenue West, 1020	Miss	sent driver back
10-Oct-16	Gluek Lane North, 1856	SPI Miss	sent driver back
14-Oct-16	Skillman Avenue West, 1345	Miss	sent driver back
14-Oct-16	County Road B West, 202	SPI Miss	sent driver back
19-Oct-16	County Road C2 West, 1309	Miss	sent driver back
10/20/2016	Autumn Street, 1162	Complaint	Resident complained about litter. Driver was removing plastic bags from his recycling cart and one blew into his yard. We educated resident that plastic bags should not be included with his curbside recycling, and spoke with the driver about making sure material isnt blowing into yards.
10-Nov-16	Snelling Curve North, 2580	Miss	sent driver back
12-Dec-16	Woodbridge Street North, 3050	redump customer	sent driver back, resident had packed material too tightly.

Roseville Public Works, Environment and Transportation Commission

Agenda Item

Date: March 28, 2017

Item No: 7

Item Description: Engineering Design Standards

Background:

The Engineering department has developed an Engineering Design Standards Manual in conjunction with the new subdivision ordinance that is currently being updated by Community Development. The purpose of this manual is to provide developers and consultant engineers the standards and specifications that the City will require for any new roads or utilities that are constructed in the City. The manual will be referenced in the updated subdivision ordinance and the developers will be required to adhere to the standards listed in the manual.

Recommended Action:

Receive presentation and provide feedback to staff.

Attachments:

- A. Engineering Design Standards Manual

**PUBLIC WORKS
ENGINEERING DEPARTMENT**

DESIGN STANDARDS



2660 Civic Center Drive, Roseville, MN 55113-1899
phone (651) 792-7004 fax (651) 792-7040

Design Standards
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DESIGN STANDARDS

The design and construction of public infrastructure facilities shall be performed in accordance with the most recent editions of the Minnesota Department of Transportation (MnDOT) **"Standard Specifications for Highway Construction"** and any amendments thereto, and the **"Standard Utilities Specifications for Sanitary Sewer and Storm Sewer Installation"** as published by the City Engineers Association of Minnesota, and the City of Roseville's Standard Specifications and Detail Plates or as modified herein. For all watermain related work, the St. Paul Regional Water Services Specifications shall be adhered to. All designs must incorporate the requirements identified in the City's Comprehensive Plans in effect at the time of the infrastructure design and installation.

A. GRADING/DRAINAGE/EROSION CONTROL/SITE RESTORATION

This work shall be done in accordance with the most recent additions of the **"MnDOT Standard Specifications for Highway Construction"**, the **"Protecting Water Quality in Urban Areas"** (Best Management Practices) prepared by the Minnesota Pollution Control Agency (MPCA), and the most recent edition of the City's Best Management Practice Handbook (BMPH) and the City's Surface Water Management Plan (SWMP). These planning handbooks will guide the developer and their engineer in protecting the land and water resources of the City during land development.

The City requires the following for submittal of grading, drainage, and erosion control plans in accordance with the Roseville Zoning Code.

1. The Developer shall obtain all regulatory agency permits and approvals including those from the MPCA for "General Stormwater Permit for Construction Activity" and applicable Watershed District.
2. Show adjacent plats, parcels, property lines, easements of record, section lines, streets, existing storm drains and appurtenances, etc.
3. Signature of professional engineer registered in the State of Minnesota.
4. Extend existing 2' contour lines a minimum of 100' beyond the property boundary or more as needed to accurately depict the existing drainage patterns.
5. Show the bench mark utilized and the limits of construction.
6. Maximum 3:1 slopes are allowed in "maintained" areas except as approved by the City Engineer.
7. Show the NWL and HWL for ponds, lakes, wetlands, and rivers based upon the most recent City's Surface Water Management Plan criteria.
8. For each house pad, show the type of proposed house to be built such as R or WO for rambler or walkout. Also, show the garage floor, first floor and basement walkout

elevations. The lowest entry level of affected houses shall be 2' above the HWL of adjacent ponds.

9. If retaining walls are needed, submit detailed plans and specifications that show type and height of retaining wall. Retaining walls will not be allowed within the City's ponding easements or street right-of-way.
10. Show City of Roseville project number on the plan or title page.
11. Show emergency overflow routes from all low points and show elevation of high point along emergency overflow route. The lowest entry level or opening of affected houses shall be 1' above the emergency overflow elevation.
12. Show removal of all trees and brush below the normal water level that will be impacted from existing and newly created ponding areas.
13. Show or define access routes for maintenance purposes to all inlets or outlets at ponding areas (must be maximum of 8% grade, 2% cross slope and 10' wide).
14. Show all existing and proposed grades. Required standard is 2' contours with existing contours shown as dashed or screened and proposed contours shown as solid. Standard scale is 1" = 50' or less depending on the amount of detail required.
15. Upon completion of grading, the developer is required to provide the City with a mylar "as-built" grading plan certifying the actual grades of the site including house pad and lowest exposed structure elevations of existing and proposed.
16. Provide existing and proposed hydrologic/hydraulic calculations for 10- and 100-year, 24-hour storm events.
17. Provide pre- and post-detailed hydrologic/hydraulic calculations for stormwater ponds and wetlands verifying location and capacity adequacy of all overland drainage routes. Consult the City's Surface Water Management Plan for further detail on design criteria.
18. Show the location of silt fence and all other erosion control devices. Note for all silt fence to be installed by the contractor and inspected by the City prior to any site work. Construction areas adjacent to existing water bodies such as wetlands, creeks, ponds, or lakes shall have Type III erosion control (see details).
19. All drainage plans shall be consistent with the City of Roseville's Comprehensive Surface Water Management Plan (CSWMP).

B. SANITARY SEWER

All sanitary sewer and appurtenances shall be checked for conformance with the design criteria specified in the Recommended Standards for Waste Water Facilities – 1990

edition of the Great Lakes – Upper Mississippi River Board of State Sanitary Engineers (10 State Standards) or latest revision and as modified herein.

1. The Developer shall obtain all regulatory agency permits and approvals including those from the MPCA and Metropolitan Council Environmental Services prior to beginning of construction.
2. The number of capita per dwelling units used in design calculations shall be reviewed and approved by the city engineer.
3. Determination of sanitary sewer services size and design shall be done in accordance with the Department of Health, Minnesota Plumbing Code, and City of Roseville's Comprehensive Sanitary Sewer Plan.
4. Manholes shall be placed on street centerline to the greatest extend possible. Other locations outside the wheel paths (3' and 9' off centerline) may be allowed with City approval.
5. The maximum spacing between manholes is 400'.
6. Manholes are required on the terminus end of all stubs if the line will be active.
7. Any connections to existing manholes shall be core drilled. If the pipe diameters of the existing and proposed pipes are the same, then the invert elevations shall drop 0.10 feet through the manhole. If the pipe diameters are different, then the 8/10ths line of the two pipes shall match at the manhole.
8. Maintain a minimum of 10' of horizontal separation between sanitary sewer and watermain.
9. The minimum slopes for sanitary sewer shall be as follows:

<u>SIZE OF PIPE</u>	<u>MINIMUM SLOPE</u>
8"	0.40%
10"	0.28%
12"	0.22%
15"	0.15%

10. Show on the plans the existing and proposed sanitary sewer in plan and profile view along with other existing and proposed utilities in the construction zone.
11. Drop manholes are required when the pipe inverts are greater than 2' apart.
12. If the sanitary sewer is to be installed less than 10' deep within private property, the easement shall be a minimum of 20' wide with the pipe centered in the easement. If the sanitary sewer is 10' deep or greater, then the easement shall be at least twice as wide as the depth or as required by the City. Show these utility easements on the construction plans and final plat.

13. Trunk sanitary sewers shall be designed to promote a laminar flow through the sewer system. Junction manholes should be designed to limit the hydraulic head increase by matching hydraulic flow lines and by providing smooth transition angles.
14. No manhole shall be located within a designed ponding/flowage easement without City approval. If such location is unavoidable, then the structure may be required to be built to a higher elevation to avoid flooding, constructed to tolerate frost action, and shall be made of water-tight materials.
15. The following pipe types and class are identified in general with respect to depths with soil type verification and design criteria required to substantiate size and type of pipe used:

SIZE	DEPTH	TYPE & CLASS
8" TO 10"	8' TO 16'	PVC, SDR 35
8" TO 10"	16' TO 26'	PVC, SDR 26
8" TO 10"	26' TO 40'	DIP, CLASS 52
8" TO 10"	Over 40'	DIP, CLASS 53

16. Deflection testing for all non-rigid PVC pipe shall be conducted after the final backfill has been in place for 30 days.

C. WATERMAIN

1. All fittings, valves, and hydrants shall be secured utilizing Cor-Blue bolts.
2. All fittings and Ductile Iron Pipe (DIP) should be encased with a polyethylene film conforming to AWWA C105/A21.5 and ASTM A674, tube form and color black.
3. The film marking is required to conform to AWWA C105/A21.5 and ASTM A674, including AWWA/ASTM standard, corrosion protection warning and applicable range of nominal pipe diameter size(s) every 2 feet along its length.
4. Polyvinyl Chloride Pipe shall conform to AWWA C900 for pipe sizes 4 to 12 inches and AWWA C905 for pipe sizes 14 to 24 inches. All pipes shall have a minimum dimension ratio (DR) of 18 corresponding to a working pressure of 235 psi for PVC type 1120 pipe
5. Ductile Iron Pipe shall be cement lined class 52, ductile iron with mechanical or push-on joints and shall conform to the requirements of ASA A-25.51
6. High Density Polyethylene Pipe shall be extra high molecular weight, high density polyethylene (EHMW-HDPE, PE3408) conforming with the minimum structural standards of ASTM D3350 with cell classification 345434C as manufactured by Chevron Phillips Chemical Company 4000/4100 Series, or equal. All HDPE pipe material shall meet the requirements of ASTM D1248 for a Type III, Class C, Category 5, Grade P34.

The pipe to be used shall be (HDPE) pressure pipe conforming to the requirement of AWWA C-906 of a 160 psi working pressure. The grade used shall be resistant to aggressive soils or corrosive substances present. Unless otherwise specified, the dimensions and tolerances of the pipe barrel should conform to ductile iron pipe equivalent outside diameters.

The dimension ratio (DR) shall be 11.

7. Fittings for all types of pipe shall be ductile iron, have a minimum working pressure rating of 150 psi and shall conform to the requirement of AWWA C153 (ANSI 21.53) Ductile Iron Compact Fittings, unless otherwise approved by the City Engineer.
8. Water service pipe requirements shall conform to the requirements of ASTM B 88 for Seamless Copper Water Tube, Type K, Soft Annealed temper.
9. Valve boxes shall be ductile iron, buffalo-type adjustable. Valve boxes shall be provided for 7.5 feet of cover, except where greater depths are indicated on the profiles of the Drawings.
10. Valve boxes shall be at least 3 pieces with sufficient adjustment to provide at least 6 inches of adjustment above and below grade. Adjustments for depths greater than 6 inches shall be incidental and no payment made therefore. All valve boxes should have a built in connection point for tracer wire. Tracer wire shall:

Conform to the applicable requirements of NEMA WC3, WC5, WC7.

Shall be Underwriters Laboratories (UL) listed for use in direct burial applications (E.G. USE, UF, or tracer wire).

Conductor: Minimum No. 10 AWG – Copper Clad Steel Tracer Wire rated to 30 volts

Outside Identification: Volts (V), AWG size, UL and designation (ex. “tracer wire”).

Magnetized Tracer Boxes: Snake Pit Magnetized Tracer Box, www.copperheadwire.com, or approved equal.

Valve box stabilizers manufactured by Adaptor Inc., or approved equal, shall be installed on all gate valves.

11. Curb stop and box shall be for copper service pipe inlet and outlet and boxes shall be approved extension service boxes of a uniform make. Inside diameter of upper section shall be standard for curb stop with which it is to be used.
12. Curb stops shall be Mueller MK 11 H-15150, oriseal curb valves, or equal. All threads shall conform to the requirements of AWWA C800.

13. Curb boxes shall be Mueller M 10300 through 1 inch and H-10386 for 1 1/2 inch and 2 inch or equal, with foot piece and equipped with stationary rod equal to Mueller No. 84274, A.Y. McDonald 5671. All boxes shall be adjustable up and down for 6.5 to 7.5 feet of cover.
14. Hydrants shall be Clow Medallion break-off type with breakable ground line flange and with bronze lower plate or approved equal. The breakoff section shall be 16 inches in height.
15. Each hydrant shall have a 4.5 foot red/white reflective hydrant marker installed on it. Cost of this marker shall be incidental to the cost of a new hydrant with no direct compensation thereof.
16. The centerline of the break-off flange shall be from 1 inch to 4 inches above the ground line.
17. Hydrants shall have 7.5 foot bury depth.
18. Hydrants shall have a Tracer Wire Kit installed and attached consisting of a 1" PVC conduit for protection and shall be bolted to the Hydrant. Kit must be approved by Engineer.
19. In general, water services shall have a 7.5 feet bury with the exception of those locations in which conflict may occur with storm sewer. In these cases the water service shall be constructed below the storm sewer to permit a clearance of three feet between storm sewer invert and water service. The connection will be a wet tap unless authorized by the Engineer or specifically shown on the Drawings.
20. A connection to an existing watermain by methods other than a wet tap can be done only with approval of the City Engineer.
21. Approximately 1% slack shall be maintained in the wire by installing 101 feet of wire for each 100 feet of pipe length.
22. The wire shall be electrically tied to each valve by extending the wire to ground surface outside the valve box. A hole shall be drilled in the taper of the valve box and the wire shall be brought inside the valve box and attached to the valve box with stainless steel screws. The wire shall be electrically tied to each hydrant assembly by extending the wire up the hydrant and securely attaching it to one of the break-off flange bolts. All connections shall receive a coat of an approved bituminous rust preventative material such as Koppers 505, or equal.
23. At junctions of non-conductive pipe materials with conductive pipe materials, the Contractor shall electrically connect the conductive material with the tracer wire adjacent to the non-conductive material.

24. The Contractor shall successfully complete a conductivity test of the installed tracer wire system prior to final acceptance.
25. Directionally drilled pipe shall have 2 tracer wires installed on opposite sides of the pipe with the pipe. Wires shall be securely taped to the pipe barrel every 20 feet.
26. The Contractor shall perform a conductivity test within one week of completion of pressure testing of the main on all iron pipe watermain to establish that electrical thawing may be carried out in the future. A conductivity test shall be completed on the tracer wire system installed with PVC or HDPE pipe watermain. The system (pipeline, valves, fittings and hydrants) shall be tested for electrical continuity and current capacity. The electrical test shall be made after the hydrostatic pressure test and while the line is at normal operating pressure. Backfilling shall have been completed.

Direct current of 350 amperes +/- 10% shall be passed through the pipeline for five minutes. Current flow through the pipe shall be measured continuously on a suitable ammeter and shall remain steady without interruption or excessive fluctuation throughout the five-minute test period.

Insufficient current or intermittent current or arcing, indicated by large fluctuation of the ammeter needle, shall be evidence of defective contact in the pipeline. The cause shall be isolated and corrected. Thereafter, the section in which the defective test occurred shall be retested as a unit and shall meet the requirements.

27. City requires contractor to follow AWWA C651 - Disinfecting Water Mains (Tablet method).

D. STORM SEWER

1. Stormwater plans for the development shall utilize as a guide the Comprehensive Surface Water Management Plan (CSWMP) for the City of Roseville.
2. Stormwater management plans shall use a 10-year frequency storm for pipe design and a 100-year frequency storm for ponding detention basin design.
3. Stormwater management plans shall use design criteria utilizing a hydrograph method based on sound hydrologic theory to analyze the stormwater runoff and proposed development such as the Soil Conservation Service TR-55 Urban Hydrology for Small Watersheds.
4. Drainage calculations shall be submitted to show the sizing of pipe, ponds, and emergency overflow spillways. Pond calculations should analyze a 2-year, 10-year and 100-year frequency, 24-hour storm event using a modeling program such as HydroCAD or approved alternative. Any assumption used in the design should be included with the calculations. Stormwater ponds shall be designed and constructed in accordance with the City's CSWMP using criteria from the National Urban Runoff

Program (NURP).

5. Provide for overflow routes to drain low points along streets or lot lines to ensure a freeboard of 2' from the lowest exposed structure elevation and the calculated 100-year storm HWL elevation. Design criteria verifying the adequacy of the overland drainage route capacity is required. At low points in the street, the catch basin grates shall be assumed to be 50% plugged for design purposes.
6. The storm sewer alignment shall follow the sanitary sewer and watermain alignment where practical with a minimum of 10' of separation. Storm sewer placed along the curb alignment shall be along the curb opposite the watermain to maintain the 10' separation.
7. Catch basins shall be located on the tangent section of the curb at a point 3' from the radius. Mid-radius catch basins will not be allowed. Also, catch basins shall be designed to collect drainage from the upstream side of the intersection.
8. The maximum spacing between manholes is 400'.
9. Manholes steps will be aligned and over the downstream side of the manhole. Steps within manholes will be:

1"± horizontal alignment
1"± vertical alignment with 16" spacing as the standard
10. Any connections to existing manholes or catch basins shall be core drilled or the opening cut out with a concrete saw. No jack hammering or breaking the structures with a maul is permitted. Also, all connections to an existing system will require a manhole for access.
11. To the greatest extent possible, manholes shall be placed in paved surfaces outside of wheel paths (3' and 9' off centerline) or other readily accessible areas.
12. Minimum pipe size shall be 12" in diameter.
13. Type of pipe shall be Reinforced Concrete Pipe (RCP). All storm sewer pipe beneath roadways or pavement shall be Class 5. The table below shows the allowable class of pipe for storm sewer outside of the roadway:

PIPE DIAM.	CLASS 2	CLASS 3	CLASS 4	CLASS 5
12" – 18"				X
21"			X	X
24" – 33"		X	X	X
≥ 36"	X	X	X	X

Show the class of pipe in the profile view only. For areas outside of the roadway, the City may allow the use of HDPE (High Density Polyethylene) pipe.

14. Aprons or flared-end sections shall be placed at all locations where the storm sewer outlets a ponding area. All outlet flared-end sections above the NWL of the pond shall be furnished with hot dipped galvanized trash guards. All trash guard installations will be subject to approval by the City Engineer.
15. Riprap and filter blanket shall be placed at all outlet flared-end sections. The placement of the riprap shall be hand placed. The minimum class of riprap shall be MnDOT 3601.2 Class III. Design criteria justifying the size and amount of riprap are required. Geotextile material is not allowed for filter aggregate where ice action along the shoreline may tear the geotextile (see Detail Plate).
16. The invert elevations of the pond inlet flared-end sections shall match the NWL of the pond. Submerged outlets will only be allowed with the use of an outlet structure (see Detail Plate).
17. Long radius bends may be used for greater than 24" pipe diameter if necessary and approved by the City Engineer in vertical and horizontal alignment. However, only one series of bends will be allowed, either vertical or horizontal, between structures.
18. If the public storm sewer is to be installed less than 10' deep within private property, the easement shall be a minimum of 20' wide with the pipe centered in the easement. If the storm sewer is 10' deep or greater, then the easement shall be twice as wide as the depth or as required by the City.
19. Show or define access routes for maintenance purposes to all manholes outside the public right-of-way and inlets or outlets at ponding areas (8% maximum grade, 2% cross slope, and 10' wide). Access easements shall be dedicated at the time of final platting to provide this access.
20. Junction manholes should be designed to limit the hydraulic head increase by matching hydraulic flow lines and by providing smooth transition angles.
21. In the development of any subdivision or ponding area, the Developer and/or property owner is responsible for the removal of all significant vegetation (trees, stumps, brush, debris, etc.) from any and all areas which would be inundated by the designated controlled NWL of any required ponding easement as well as the removal of all dead trees, vegetation, etc. to the HWL of the pond.
22. The Developer and/or Engineer upon the completion of the construction of a designated ponding area is required to submit an as-built record plan of the ponding area certifying that the pond constructed meets all design parameters as set forth in the City's respective stormwater management plans.
23. Utilization of existing wetlands for stormwater management is subject to review by the appropriate regulatory agency in accordance with the "Wetlands Conservation Act".
24. Outlet control structures from ponding areas are required as directed by the City. Location and appearance of outlet structures shall be subject to City approval and

may require landscape screening.

25. Environmental manholes (three-foot sumps) shall be constructed as the last structure that is road accessible prior to discharge to any water body. Additional protection may be required when outletting to a sensitive water body.
26. For all storm pipes that outlet to a pond or other water body, show the elevation contour of the NWL in the plan view.
27. Provide a storm sewer schedule on the plans using the following format:

STORM SEWER SCHEDULE

STRUCTURE NO.	SIZE	CASTING	BUILD
CBMH 1	48"	R-3290-V	4'

Structures shall be classified as a catch basin (CB), catch basin/manhole (CBMH), or manhole (MH). CB's are inlet structures with a total of one pipe either entering or leaving. CBMH's are inlet structures with more than one pipe either entering or leaving. MH's are all non-inlet structures. Standard inlet castings are: R-3290-V when in the curb line and R-4342 when outside of paved areas. The standard MH casting is R-1642.

28. A four inch solid drain tile shall be stubbed out of structures at street low points and for lots that are not adjacent to a pond/wetland in accordance with the detail plates. Cleanout risers are required every 100' and at the terminus end of the line (see Detail Plate).

E. STREETS

1. Flexible pavement design shall be based on design procedures set forth by the Minnesota Department of Transportation. Residential streets shall be designed for a minimum seven-ton pavement design.
2. Soil borings and/or special design considerations may be required by the City Engineer in areas where unstable soils exist.
3. The roadway subgrade shall be constructed per MnDOT Specification 2105 and test rolling per MnDOT Specification 2111 shall be required. The test roller and amount of allowable deflection shall be as specified in the Special Technical Condition Specifications.
4. Street alignment for local streets, both vertical and horizontal, shall be designed for 30 MPH design speed based on the latest edition of the American Association of State Highway and Transportation Officials Manual unless otherwise approved by the City Engineer.

5. Minimum street grade shall be 0.75%. The design maximum shall not exceed 5.0% for arterials and 7.0% for others. Special situations such as saving environmental features may allow limited areas of 10.00% with City approval.
6. Streets shall be designed to intersect at right angles whenever possible. In no case shall the angle of intersection between two streets be less than sixty (60°) degrees.
7. Unless approved by the City street intersections and commercial driveway intersections shall match at the centerlines. If the streets or driveways cannot be aligned to match, the intersections shall be offset a minimum of 300 feet or as approved by the City Engineer.
8. Barricades in accordance with the Minnesota Manual on Uniform Traffic Control Devices shall be placed at all dead end streets.
9. At intersections, the street grade shall not exceed 3.00% for the first 30 feet approaching said intersection. The 30 feet is measured from the curb line of the intersected street. In cul-de-sacs, the gutter grade shall not be less than 0.80%. A minimum 0.5 foot crown or minimum 3.00% cross slope grade, whichever is greater, is required of all street cross-sections. The minimum curb return radius shall be 20 feet. The minimum grade around curb returns shall be 0.50%.
10. Private streets and or common driveways shall be a minimum of 20' wide and built to a 7-ton design.
11. The City requires concrete valley gutters across street and driveway intersections with overland cross drainage having a grade less than 1%.
12. The design of streets shall accommodate a minimum of a 5-foot clear zone behind the curb where trailways or sidewalks are proposed and a minimum of 12 feet in areas without trailway or sidewalk to provide for adequate sight distances and snow storage. The clear zone area will be the boulevard behind the curb. This area shall not contain any landscaping other than a ground cover and the area shall have a maximum 2% slope unless approved by the City. At intersections, the clear zone is a triangle measured back 60 feet on each side from the curb line of the intersected street.
13. Retaining walls over 4 feet in height must be designed by a Minnesota Registered Professional Structural Engineer. The retaining wall is to be located on private property. The construction of any retaining walls within the public right-of-way will need prior approval of the City Engineer. All walls over 4 feet in height will require an approved fence at the top of the wall. The retaining wall construction will require the submittal of detailed plans and specifications for review by City staff and a permit through the Building Department.
14. The design and construction of sidewalks and trailways shall be in accordance with the City's Standard Plates and City ordinances. Residential sidewalks shall be 5-foot wide concrete and trailways shall be a minimum of 8-foot wide bituminous. In commercial/industrial/retail areas, the sidewalk shall be 6' wide.

15. Horizontal curves on residential streets with concrete curb and gutter shall be designed to ensure a horizontal sight distance of not less than 100 feet. The minimum design speed shall be 30 MPH. The following are other minimum requirements for residential streets:

- a. Horizontal curves shall have a minimum of 180-foot centerline radius. Refer to MnDOT State Aid Manual for more information.
- b. Vertical curves shall be designed as follows:

$$L = K A$$

Where L = Minimum length of vertical curve in feet

$$K = 20$$

A = Algebraic difference in grade in percent

18. Vertical curves and horizontal curves on collector streets with concrete curb and gutter shall be designed to ensure a vertical and horizontal sight distance of not less than 300 feet (arterials = 500 feet minimum). The following are other minimum requirements for collector streets:

- a. Horizontal curves shall have a minimum of 300 feet centerline radius without super elevation on 30 MPH design streets and a minimum of 450 feet centerline radius without super-elevation on a 35 MPH design street. Refer to the MnDOT State Aid Manual for more information.
- b. Horizontal curves shall have a minimum tangent of 300 feet between reverse curves.

F. SANITARY SEWER SERVICES

1. Service lines shall be sized in accordance with the Minnesota Plumbing Code – Chapter 4715.
2. The number of capita per dwelling unit used in design calculations shall be approved by the City.
3. The pipe material for sanitary services shall be a minimum of 6-inch PVC SDR 26.
4. The sewer service shall be included in the pressure and leakage testing requirements for the main lines.
5. Minimum grade for sanitary service stubs shall be $\frac{1}{8}$ inch per foot (1%).
6. Sanitary sewer services shall be constructed with 6-inch DIP Class 52 from main line sewer to the 45° bend when DIP is used for the main line sewer itself. The City requires all services with risers to be televised.

7. Developers are responsible for constructing services from the mainline pipe to the right-of-way line.
8. Cleanouts are required at 90-foot intervals including the riser on sanitary sewer services. All sanitary sewer cleanouts constructed in paved areas require the installation of a meter box and cover for ease of access to the cleanout.
9. Sewer services shall be connected to a wye on the main and shall not be constructed into manholes unless approved by the City. Approved connections to a manhole require a KOR-N-SEAL connection or approved equal and must match the manhole invert.

G. MICELANNEOUS

1. All private utility boxes and poles shall be located within property lot lines.
2. All utility disconnects must be done at the main and be mechanically capped. For utility disconnects on major roads, the City Engineer may require the disconnect to occur at the right of way line and a fee be paid in lieu of capping the service at the road.
3. Refer to City Details in Appendix for pathway and sidewalk design standards.
4. Refer to City Details in Appendix for driveway design standards.

Appendix

<https://www.cityofroseville.com/2933/Standard-Detail-Plates>

Standard Detail Plates

Bedding	City Plate Number
Pipe Bedding	BED-1
Erosion Control	City Plate Number
Erosion Control Fence	EC-1
Sediment Filter Sack	EC-2
Rock Construction Entrance	EC-3
Landscape	City Plate Number
Planting Detail	L-1
Miscellaneous	City Plate Number
Mailbox	M-1
Construction Sign	M-2
Wood Rail Fence	M-3
Paving / Streets	City Plate Number
Driveways and Sidewalks	P-1
Commercial Driveway	P-2
Concrete Sidewalk Joint Pattern	P-3
Transverse Crack Control Joints	P-4
Construction Sign	P-5
Concrete Valley Gutter	P-6
Sanitary Sewer	City Plate Number
Manhole Type B Thru G	S-1
Sanitary Sewer Manhole (27 Inch)	S-2
Sanitary Sewer Service	S-3
Manhole Type B Thru G Sump	S-4

<u>Sanitary Sewer Service with Riser</u>	S-5
<u>Sanitary Sewer Replacement</u>	S-6
<u>Sanitary Sewer Service Replacement</u>	S-7
<u>Sanitary Sewer Service Installation for CIPP</u>	S-8
<u>Sanitary Sewer Wye Replacement</u>	S-9
<u>Sanitary Drop Inlet Manhole</u>	S-10
Storm Sewer	City Plate Number
<u>Type A Catch Basin</u>	ST-1
<u>Type B Catch Basin</u>	ST-2
<u>Biofiltration Trench</u>	ST-3
<u>Baffle Structure</u>	ST-4
<u>Rain Garden</u>	ST-5
<u>Perforated Structure</u>	ST-6
<u>Perforated Pipe</u>	ST-7
<u>Rain Guardian</u>	ST-8
<u>Type B Sump Catch Basin</u>	ST-9
<u>Perforated Pipe Trench</u>	ST-10
<u>Standard Overflow Structure</u>	ST-11
<u>Flared End Section</u>	ST-12
<u>Riprap</u>	ST-13
<u>Biofiltration Basin</u>	ST-14
<u>Manhole Type B Thru G</u>	ST-15
Water Main	City Plate Number
<u>Hydrant and Gate Valve Installation</u>	W-1
<u>Water Main Service Connection</u>	W-2
<u>Water Main Service Disconnection</u>	W-3
<u>Pipe Insulation Detail</u>	W-4

Roseville Public Works, Environment and Transportation Commission

Agenda Item

Date: March 28, 2017

Item No: 8

Item Description: Look Ahead Agenda Items/ Next Meeting April 25, 2017

Suggested Items:

- Transportation Plan

Look ahead:

May: MS4 Update

June:

Recommended Action:

Set preliminary agenda items for the April 25, 2017 Public Works, Environment & Transportation Commission meeting.