

**PUBLIC WORKS DEPARTMENT  
MEMORANDUM #2017 – 64**

DATE: November 20, 2017  
TO: Honorable Mayor Joyce Downing and City Council Members  
FROM: James A. Hayes, AICP – City Manager *JH*  
David H. Willett – Director of Public Works *KHK*  
SUBJECT: **Council Study Session**  
Traffic Calming Update

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**PURPOSE**

The purpose of the study session is to provide an update on the streets that are currently in the Public Meeting stage of the City’s Traffic Calming Policy.

**BACKGROUND**

In September, City Council requested that public meetings be held for both: 1) Melody Dr and 2) Claude Ct. There have also been two locations where complete petitions have been submitted to the City: 112<sup>th</sup> Pl from Clarkson St to Larson Dr and Livingston Dr from Roseanna Dr to 104<sup>th</sup> Pl. Now that Staff has received completed petitions, public meetings will be scheduled to discuss the next stage of the Traffic Calming Policy with the affected neighborhood.

**BUDGET IMPLICATIONS**

There is currently no CIP funding in place for Traffic Calming. Appropriations would be required for the engineering and implementation of any Right-of-Way modifications.

The cost estimate for the City to host the neighborhood meetings is \$340.00 for Melody Dr and \$210.00 for Claude Ct.

**SCHEDULE/TIME IMPLICATION**

There are currently four locations in the petition phase of the Traffic Calming Policy. Because there is a significant amount of Staff time needed to prepare for and organize these meetings, one could be held once a month, starting in January. Below is the proposed schedule for the four locations.

Location	Public Meeting Date	# Residents	City Council Update	Design	Construction
Melody Dr	January	164	February	2018	2018
Claude Ct	February	307	March	2018	2018
112 <sup>th</sup> Pl	March	61	April	2018	2019
Livingston Dr	April	38	May	2018	2019

**STAFF RECOMMENDATION**

Staff is seeking feedback on the general approach and proposed schedule for the four locations currently in the public meeting stage of Traffic Calming.

**STAFF REFERENCE**

Kent Kisselman, PE, Engineering Manager  
Rachelle Plas, PE, Civil Engineer II

[kkisselman@northglenn.org](mailto:kkisselman@northglenn.org) 303.450.4005  
[rplas@northglenn.org](mailto:rplas@northglenn.org) 303.450.4079

**ATTACHMENTS**

- Traffic Calming Policy
- Melody Dr Traffic Calming
- Claude Ct Traffic Calming

CITY OF NORTHGLENN – TRAFFIC CALMING POLICY

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Last Revised: August 10, 2016

**Traffic Calming Objectives**

Traffic calming is intended to influence motorist behavior and prevent undesirable driving practices. This can be achieved through a combination of physical and non-physical measures that reduce vehicle speeds, reduce traffic volumes, discourage cut-through traffic, and encourage non-motorized travel.

This policy should be used to address traffic issues on residential streets (local streets or minor collector streets). Streets with higher functional classifications (i.e. major collectors, minor and major arterial roadways) should not be considered under this policy.

This policy will guide residents and City staff in an effort to address neighborhood traffic safety, preserve neighborhood character and livability, and educate and encourage residents through neighborhood involvement. The goals and objectives of this policy are:

- **Improve Neighborhood Traffic Safety** – Excessive traffic speeds within the City’s neighborhoods greatly reduce the safety and security of those neighborhoods. Therefore, the first goal of this policy is to promote a safe and pleasant environment for residents, pedestrians, bicyclists, and motorists in the City’s neighborhoods.
- **Preserve Neighborhood Character and Livability** – Traffic management plays a vital role in the character and livability of neighborhoods. Traffic calming is intended to reduce the negative effect that automobile use may have in residential areas and increase the livability of the City’s neighborhoods.
- **Increase Neighborhood Involvement** – Actively involved residents in the decision-making process is essential to the successful implementation of traffic calming. Residents in the area must support the ultimate outcome. Through the process outlined in this policy, residents are strongly encouraged to participate in the assessment of the benefits and trade-offs of implementing projects within their own neighborhoods.

 **Basic Traffic Calming**

Basic traffic calming services include the installation of traffic control devices (such as crosswalks, residential permit parking, truck restrictions, and bike lanes), speed radar trailers, and traffic enforcement by Northglenn Police Department. The application of Basic and Comprehensive devices are subject to federal, state, and local policies and guidelines.

 **Comprehensive Traffic Calming**

Neighborhoods that are experiencing adverse traffic conditions that cannot be addressed using Basic traffic calming services may be eligible for a Comprehensive traffic calming project (these can include modifications such as speed limit signage, striping, neckdowns, bulbouts, chicanes, speed humps, raised crosswalks, and raised intersections). If an adverse traffic condition cannot be addressed through Basic traffic calming services and the thresholds are met, a Comprehensive traffic calming analysis can be initiated. The implementation of Comprehensive traffic calming projects is limited to residential, 2-lane local or minor collector streets, with a maximum posted speed limit of 25 mph.

### **Threshold Criteria for Comprehensive Projects**

1. Functional classification = local street or minor collector street
2. Traffic volume less than 2,500 ADT
3. 20 mph posted speed limit: 85<sup>th</sup> percentile speed of 28 mph or more (8 mph over posted speed limit)
4. 25 mph posted speed limit: 85<sup>th</sup> percentile speed of 32 mph or more (7 mph over posted speed limit)

Locations that do not meet the threshold criteria may be eligible for traffic calming measures if the Engineering Division determines that a unique or unusual condition exists which results in negative traffic impacts caused by a high crash rate, vehicles traveling at excessive speeds, significant pedestrian activity or proximity to major traffic corridors or traffic generators that contribute to extraordinary changes to normal traffic conditions.

### **Evaluation of Eligible Comprehensive Projects**

Eligible Comprehensive traffic calming projects will be evaluated for implementation based upon the severity of the traffic conditions by taking into account the following cumulative traffic impacts: speeding, volume, crash history, proximity to pedestrian generators (i.e. schools, parks, community centers) and unique roadway conditions. Data collection:

- Speed is given the most important, since high speed usually affects safety and livability the most. It is also the condition that can be improved the most using traffic calming measures.
- Traffic volume is also considered because it contributes to the general traffic conditions on the street.
- Auto accident history gives an indication of existing safety problems with the street. A high level of auto accidents can be an indicator of limitations of the street design that may be difficult to quantify. In addition, reducing traffic speed and volumes has been shown to reduce auto accidents on residential streets.
- Roadway geometry (and pavement markings) is an important factor in traffic safety in neighborhoods. Roadway geometry features can restrict visibility; creating hazards for motorists and pedestrians.
- Other criteria such as the presence of sidewalks and pedestrian generators, bus routes, area population, and drainage information.

### **Funding of Comprehensive Projects**

Funding for projects that are eligible for comprehensive traffic calming must be appropriated by City Council and is subject to available funding. If a project is not selected in a given funding cycle, it will remain on the project list for consideration in the next funding cycle. As resources permit, projects may be reassessed to ensure that the priority ranking reflects any significant changes in land use, speed, volume, crash history, pedestrian activity or other conditions that may have occurred on any given roadway(s).

### **Community Support for Comprehensive Projects**

Substantial community support is required for the installation of physical roadway devices on either a trial or permanent basis. Generally community support is defined as neighborhood property owners or residents that reside within the affected area. Utilizing relevant data and community input, and based on the roadway network in the area, the Engineering Division will determine the scope and affected area for each location identified for Comprehensive traffic calming. The *applicant* will distribute a petition (which contains a map of the affected area) developed by the Engineering Division to all households, businesses, schools, and absentee property owners within the affected area. The petition must have majority support (**75%**) of all affected households, businesses, and schools within the area for perusing trial or permanent installations. Once a petition is completed and received by the City containing the required community support, a neighborhood meeting will be held. At this meeting, the City will discuss the findings of the study, Comprehensive traffic calming options, and the next steps in the process for design and funding. Roadway modifications incorporating proposed Traffic Calming projects will be designed by the Engineering Division or a Transportation Engineer.

### **Traffic Calming Comprehensive Project Application**

Residents of the City of Northglenn (City) may submit an application for traffic calming. Applications can be found online or can be picked up at either City Hall or the City’s Maintenance and Operations facility. *Also see Attachment #1*. Completed applications should be returned to the City’s Engineering Division.

Mailing Address:           City of Northglenn  
                                  Attn: Engineering Division – Traffic Calming  
                                  12301 Claude Ct  
                                  Northglenn, CO 80241

Email Address:           [trafficalming@northglenn.org](mailto:trafficalming@northglenn.org)

The Engineering Division will initiate a Traffic Operations Request (TOR) upon receipt of the Application and notify the applicant of status/category after the preliminary data collection has been completed and assessed.

All applications will be evaluated to determine if the location of concern falls under this traffic calming policy. Data will be collected for five (5) consecutive days, including a weekend, to complete an engineering traffic analysis. This analysis will use current traffic data to confirm whether or not the neighborhood roadway system meets the threshold criteria for traffic calming measures.

### **Definitions**

Minor Collector Street - designed to handle traffic volumes less than 7,000 vehicles per day. These streets handle traffic volumes loading from and onto local, other collector, and arterial roadways and are continuous for less than two (2) miles. See the *City of Northglenn Public Right-of-Way Standards and Specifications*.

Residential Street - designed to handle traffic volumes less than 2,500 vehicles per day. These streets handle traffic volumes primarily for residential purposes such as single-family, two-family, and multi-family units. See the *City of Northglenn Public Right-of-Way Standards and Specifications*.

**References**

American Association of State Highway and Transportation Officials (AASHTO)  
Institute of Transportation Engineers (ITE)  
Federal Highway Administration (FHWA)  
Manual on Uniform Traffic Control Devices (MUTCD)  
National Association of City Transportation Officials (NATCO)  
American Public Works Association (APWA)

**Attachments**

1. Traffic Calming Application – Comprehensive Projects
2. Traffic Calming Illustrations – Comprehensive Projects



City of Northglenn  
12301 Claude Ct  
Northglenn, CO 80241

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### Traffic Calming Application

Traffic calming is intended to influence motorist behavior and prevent undesirable driving practices. This can be achieved through a combination of physical and non-physical measures that reduce vehicle speeds, reduce traffic volumes, discourage cut-through traffic, and encourage non-motorized travel.

Basic Traffic Calming services include the installation of traffic control devices (such as crosswalks, stop signs, residential permit parking, truck restrictions, and bike lanes), and traffic enforcement by Northglenn Police Department. Neighborhoods that are experiencing adverse traffic conditions that cannot be addressed using Basic Traffic Calming services may be eligible for a Comprehensive Traffic Calming project. The implementation of Comprehensive Traffic Calming projects is limited to residential, 2-lane local or minor collector streets, with a maximum posted speed limit of 25 mph.

In order for a location to qualify for Comprehensive Traffic Calming, the following thresholds must be met:

1. Functional classification = local street or minor collector street
2. Traffic volume less than 2,500 ADT
3. 20 mph posted speed limit: 85<sup>th</sup> percentile speed of 28 mph or more (8 mph over posted speed limit)
4. 25 mph posted speed limit: 85<sup>th</sup> percentile speed of 32 mph or more (7 mph over posted speed limit)

Applicant: \_\_\_\_\_

Address: \_\_\_\_\_

Phone #: \_\_\_\_\_ Email: \_\_\_\_\_

Location: \_\_\_\_\_

Description of Problem: \_\_\_\_\_

\_\_\_\_\_

Please return completed applications to City's Engineering Division:

Mailing Address: City of Northglenn  
Attn: Engineering Division – Traffic Calming  
12301 Claude Ct  
Northglenn, CO 80241

Email Address: [trafficalming@northglenn.org](mailto:trafficalming@northglenn.org)

All applications will be evaluated to determine if the location of concern falls under this traffic calming policy. Data will be collected to complete an engineering traffic analysis. This analysis will use current traffic data to confirm whether or not the neighborhood roadway system meets the threshold criteria for traffic calming measures.

# Speed Limit Signage

## Description

Regulatory Speed Limit signs are installed along streets to notify and remind drivers of the legal speed limit.

## Application

If used, Speed Limit signage should be installed in conformance with the MUTCD.

## Advantages

Speed Limit signs provide a clear indication of the speed limit and undisputable basis for enforcement. Relatively easy and low-cost to install and do not slow emergency vehicles.

## Disadvantages

Signs alone do not guarantee responsible driving behavior. The overuse of unnecessary signs creates visual clutter that detracts from the conspicuity of other important signs and leads to loss of effectiveness. Posted speed limits that are below the 85th percentile speed for a roadway, or at an unrealistically low speed will not be respected by most drivers, and will breed disrespect for speed limits in general. Signs require regular maintenance.

## Effectiveness

Speed:	High
Volume:	Low
Crashes:	N/A
Ped/Bikes:	High
Cost:	\$



Cost Key:	\$ = \$0 - \$25,000
	\$\$ = \$25,000 - \$150,000
	\$\$\$ = \$150,000 +

# Radar Speed Limit Sign

## Description

Radar speed signs, are post-mounted signs installed on the side of the road that use radar to sense an oncoming vehicle's speed and display that speed back to the approaching driver. This is intended to give the driver an external visual indication of their speed, which if excessive, may remind them to slow down.

## Application

On neighborhood local or collector streets where a problem of speeding traffic has been documented, radar speed signs may be installed to help reduce traffic speeds.

## Advantages

The visual reminder of drivers' speeds has been shown to be effective in prompting some speeding drivers to slow down. Radar speed signs do not slow emergency vehicles and alert violators without affecting normal traffic.

## Disadvantages

Effectiveness may reduce over time as regular drivers become desensitized. Some drivers may ignore, knowing that the radar speed signs do not include enforcement. Some drivers may also try to register a high speed.

## Effectiveness

Speed:	High
Volume:	Low
Crashes:	N/A
Ped/Bikes:	High
Cost:	\$



Cost Key:	\$ = \$0 - \$25,000
	\$\$ = \$25,000 - \$150,000
	\$\$\$ = \$150,000 +

# Striping

## Description

While most local neighborhood streets exist without any traffic striping, centerline, edge line, and lane line striping can be used to create designated travel lanes, bicycle lanes, parking lanes, and/or medians. As a neighborhood traffic calming measure, striping is positioned to reduce travel lane widths, making drivers feel more restricted and thereby inducing them to lower their speeds.

## Application

On neighborhood local or collector streets where a problem of speeding traffic has been documented, traffic stripes may be painted where there was previously none, or existing stripes may be removed and new stripes painted in the new desired configuration. This installation is most suited to long, straight, and wide streets where drivers feel unconstrained and speeds are high. On curvilinear streets, striping can reinforce lane designations, causing drivers to slow in order to maintain their travel within their lane. Striping should be installed according to the MUTCD.

## Advantages

Striping is relatively easy and low-cost to install and modify. Traffic striping does not slow emergency vehicles.

## Disadvantages

Regular maintenance is required and the removal of pre-existing traffic stripes in order to change the configuration may leave unsightly scars on the pavement surface. Also, the effectiveness may be low.

## Effectiveness

Speed:	Medium
Volume:	Medium
Crashes:	N/A
Ped/Bikes:	High
Cost:	\$



Cost Key:	\$ = \$0 - \$25,000
	\$\$ = \$25,000 - \$150,000
	\$\$\$ = \$150,000 +

# Neckdowns and Bulbouts

## Description

Neckdowns are raised curb extensions at intersections that reduce the roadway width from curb to curb. Neckdowns increase pedestrian comfort and safety at intersections by shortening crossing distances for pedestrians and drawing attention to pedestrians via raised peninsulas. They also tighten the curb radii at the corners, reducing the speeds of turning vehicles. The magnitude of speed reduction is dependent on the spacing of neckdowns between points that require drivers to slow.

## Application

Neckdowns implemented mid-block as a vehicular speed control measure and pedestrian enhancement are most effective when constructed with permanent raised curbs by can be implemented using striping. Bulbouts occur at the corners of intersections using raised curbs to extend the sidewalks and narrow the travel lanes. This slows vehicles by providing visual cue of pedestrian activity as well as by reducing the curb radii. Both the crossing distances and the time pedestrians are exposed to traffic are reduced.

## Advantages

Decreases vehicle speeds, reduces pedestrian crossing distance, and clearly delineates areas of pedestrian activity.

## Disadvantages

May reduce on-street parking, complicates drainage design, and reduces bicycle lane and/or side of road area used by bicyclists. They may also slow right-turning emergency response vehicles.

## Effectiveness

Speed:	High
Volume:	Medium
Crashes:	Medium
Ped	High
Bikes:	Medium
Cost:	\$\$/\$\$\$



Cost Key:	\$ = \$0 - \$25,000
	\$\$ = \$25,000 - \$150,000
	\$\$\$ = \$150,000 +

# Chicanes

## Description

Chicanes are a series of narrowings or curb extensions that alternate from one side of the street to the other forming S-shaped curves.

## Application

Chicanes should be implemented mid-block as a vehicular speed control measure. This slows vehicles by changing the course of traffic. Chicanes should be designed using vertical curb and gutter.

## Advantages

Decreases vehicle speeds and provides opportunity for landscaping.

## Disadvantages

May reduce on-street parking, complicates drainage design, and reduces bicycle lane and/or side of road area used by bicyclists.

## Effectiveness

Speed:	High
Volume:	Medium
Crashes:	Medium
Ped	High
Bikes:	Medium
Cost:	\$\$/\$\$\$



Cost Key:	\$ = \$0 - \$25,000
	\$\$ = \$25,000 - \$150,000
	\$\$\$ = \$150,000 +

# Speed Hump

## Description

Speed humps are common traffic management devices that are familiar to most drivers. Speed humps consist of raised pavement placed across the entire roadway width creating a vertical deflection to slow vehicles. The humps are often 12 feet in length and between 3 and 3.5 inches high.

## Application

Speed humps can be installed on neighborhood streets to address speed and volume.

## Advantages

Decreases vehicle speeds. They are inexpensive and easy to construct.

## Disadvantages

May cause speeding between humps and divert traffic to an adjacent neighborhood street. They may also increase noise levels as vehicles decelerate and accelerate.

## Effectiveness

Speed:	High
Volume:	High
Crashes:	Medium
Ped/Bikes:	High
Bikes:	Medium
Cost:	\$/ea



Cost Key:	\$ = \$0 - \$25,000
	\$\$ = \$25,000 - \$150,000
	\$\$\$ = \$150,000 +

# Raised Crosswalk

## Description

Raised crosswalks are a speed table the width of a typical crosswalks stretching across the entire roadway.

## Application

Raised crosswalks can be installed in place of a typical crosswalk on neighborhood streets to address speed and volume.

## Advantages

Decreases vehicle speeds and enhance pedestrian crossing.

## Disadvantages

May divert traffic to an adjacent neighborhood street. They may also increase noise levels as vehicles decelerate and accelerate.

## Effectiveness

Speed:	High
Volume:	High
Crashes:	Medium
Ped/Bikes:	High
Bikes:	Medium
Cost:	\$\$\$/ea



Cost Key:	\$ = \$0 - \$25,000
	\$\$ = \$25,000 - \$150,000
	\$\$\$ = \$150,000 +

# Raised Intersection

## Description

Raised intersections consist of raised pavement placed across the entire intersection to slow vehicles.

## Application

Raised intersections can be installed on neighborhood streets to address speed and volume.

## Advantages

Decreases vehicle speeds and enhances pedestrian environment and crossings.

## Disadvantages

May divert traffic to an adjacent neighborhood street and complicates drainage design. They may also increase noise levels as vehicles decelerate and accelerate.

## Effectiveness

Speed:	High
Volume:	High
Crashes:	Medium
Ped/Bikes:	High
Bikes:	Medium
Cost:	\$\$/ea



Cost Key:	\$ = \$0 - \$25,000
	\$\$ = \$25,000 - \$150,000
	\$\$\$ = \$150,000 +



## **Melody Traffic Calming - Neighborhood Meeting**

The purpose of the Melody Traffic Calming neighborhood meeting is to convey the types of traffic calming measures possible along the corridor and to gain some consensus from the area on the types of calming measures they prefer. Staff will summarize the feedback from the community and report to City Council to receive direction on proceeding.

Staff proposes the following scope for the meeting:

1. Open house format
  - Staff will create 1-2 posters for each of the following stations that describe traffic calming options and associated costs for Melody Drive:
    - i. Striping – will use short term striping recommendations from the bike/ped plan
    - ii. Radar speed limit signs
    - iii. Neck-downs, bulbouts, chicanes
    - iv. Speed humps
    - v. Raised intersections
  - Staff will print large maps of the corridor for meeting participants to note areas of concern and write suggestions for improvement directly on the map as one way for staff to collect feedback
  - Voting station – staff will have a station that allows residents to vote for their preferred traffic calming solution(s) based using sticky dots. We will also have comment cards for other suggestions or if someone prefers not to vote publicly
  - Next steps poster – explain that the results of the meeting will be presented to Council to determine further action (is this how we also want to report back to the community)
  - We should offer fruit, cookies, & water for the meeting - ~\$80 (are there other ways we want to incentivize attendance?)
  - Between 6-8 staff required to facilitate the different stations
2. Meeting location
  - Staff recommends holding the meeting at North Mor Elementary (cost TBD – staff has reached out to Adams 12 Five Star School District to get a rate estimate and to understand availability. For budget estimate purposes, staff is assuming \$170 based on the fee schedule for the 112<sup>th</sup> STAMP public meeting at a school district neighborhood school.)
3. Meeting times
  - The meeting will take place between the 2<sup>nd</sup> and 4<sup>th</sup> week of January (depending on availability of space at North Mor Elementary), this provides staff plenty of time to notice the meeting and prepare materials; also, residents may also have conflicts with holidays and other competing activities in November/December
  - Meeting should be 2 hours
  - Preference is Tuesday or Wednesday evening, so it will not conflict with City Council meetings, between 4-6 pm, 4:30-6:30 pm or 5-7 pm.

4. Outreach

- Staff suggests direct mailing to the residents in the impacted area. Melody has 164 residents in this area. Mailing will cost .403 per letter
- Option to hire company to distribute flyers door to door within the impacted area for additional cost to the proposed budget
- Social media postings (Facebook, Next Door, twitter, etc.)
- Notice in the newspaper and the Northglenn Connection

5. Budget

- ~\$340.00 depending on the cost to reserve space at North Mor through Adams 12

6. Follow up

- Staff will provide City Council an update on the results of the meeting in February 2018 study session to receive further direction on how to proceed
- Should there be follow up directly with the neighborhood?



## **Claude Traffic Calming - Neighborhood Meeting**

The purpose of the Claude Traffic Calming neighborhood meeting is to convey the types of traffic calming measures possible along the corridor and to gain some consensus from the area on the types of calming measures they prefer. Staff will summarize the feedback from the community and report to City Council to receive direction on proceeding.

Staff proposes the following scope for the meeting:

1. Open house format
  - Staff will create 1-2 posters for each of the following stations that describe traffic calming options and associated costs for Claude Ct:
    - i. Striping – will use short term striping recommendations from the bike/ped plan
    - ii. Radar speed limit signs
    - iii. Neck-downs, bulbouts, chicanes
    - iv. Speed humps
    - v. Raised intersections
  - Staff will print large maps of the corridor for meeting participants to note areas of concern and write suggestions for improvement directly on the map as one way for staff to collect feedback
  - Voting station – staff will have a station that allows residents to vote for their preferred traffic calming solution(s) based using sticky dots. We will also have comment cards for other suggestions or if someone prefers not to vote publicly
  - Next steps poster – explain that the results of the meeting will be presented to Council to determine further action (is this how we also want to report back to the community)
  - We should offer fruit, cookies, & water for the meeting - ~\$80 (are there other ways we want to incentivize attendance?)
  - Between 6-8 staff required to facilitate the different stations
2. Meeting location
  - Staff recommends holding the meeting at the Northglenn M&O facility
3. Meeting times
  - The meeting will take place between the 3<sup>rd</sup> and 4<sup>th</sup> week of February. This provides staff one month between neighborhood meetings and time to notice the meeting and prepare materials;
  - Meeting should be 2 hours
  - Preference is Tuesday or Wednesday evening, so it will not conflict with City Council meetings, between 4-6 pm, 4:30-6:30 pm or 5-7 pm.
4. Outreach
  - Staff suggests direct mailing to the residents in the impacted area. Claude has 307 residents in this area. Mailing will cost .403 per letter
  - Option to hire company to distribute flyers door to door within the impacted area at an additional cost not included in the budget estimate

- Social media postings (Facebook, Next Door, twitter, etc.)
  - Notice in the newspaper and the Northglenn Connection
5. Budget
- ~\$210
6. Follow up
- Staff will provide City Council an update on the results of the meeting in March 2018 study session to receive further direction on how to proceed
  - Should there be follow up directly with the neighborhood?