City of Keene
New Hampshire

MUNICIPAL SERVICES, FACILITIES AND INFRASTRUCTURE COMMITTEE MEETING MINUTES

Wednesday, October 25, 2017 **6:00 PM** **Council Chambers**

Members Present:
Janis O. Manwaring, Chair
Randy L. Filiault, Vice-Chair
Robert J. O'Connor
Stephen L. Hooper
Gary P. Lamoureux

Members Not Present:

Staff Present:
Elizabeth Dragon, City Manager
Thomas Mullins, City Attorney
Don Lussier, City Engineer
Kürt Blomquist, Public Works Director
Steve Russo, Police Chief
Maria Castellano, Public Works Office Manager
Andrea Nowlan, Public Works Administrative Assistant
Lee Dexter, Engineering Technician

Chair Manwaring called the meeting to order at 6:00 PM, welcomed the public, and explained the rules of procedure.

1) **Verbal Update on Extending Crosswalk Signals – Police Department** (Agenda Item 3)

Chief Russo noted this matter was before the MSFI Committee in September. Public concern was expressed about time for pedestrian crossings at crosswalks and how well traffic lights are working, particularly at West/Island Streets and Winchester Street/Key Road. Since the September meeting, the Traffic Light Technician met with the petitioner to explain how the crosswalks work. The cross signal at West/Island was not working properly but was repaired before the complaint was received by the City. The cross time has been reset based on the length of the crosswalk. There was also concern about two crosswalk buttons at Winchester/Key; one of the buttons has been removed and the remaining button is working properly. If the City wanted to extend crosswalk times, which the Police Department (PD) does not feel is needed; traffic on Winchester and West Streets would back-up. The Chief added there are already traffic issues on these streets. The technology is not available to extend cross time at certain intersections or certain times of the day; any changes would be City-wide.

Councilor Hooper made the following motion, which was seconded by Councilor Filiault.

On a vote of 5-0, the Municipal Services, Facilities and Infrastructure Committee recommends accepting the verbal update on extending crosswalk signals as informational.

2) **Relating to No Parking on Foundry Street – Police Department – Ordinance O-2017-16** (Agenda Item 4)

Chief Russo noted this parking issue came before the MSFI Committee and the Department has implemented the option presented to formalize the east side of Foundry Street as No Parking. This required a new Ordinance in Chapter 94 – Traffic, Parking, and Public Ways.

Councilor O'Connor made the following motion, which was seconded by Councilor Lamoureux.

On a vote of 5-0, the Municipal Services, Facilities and Infrastructure Committee recommends the adoption of Ordinance O-2017-16 relating to no parking on Foundry Street.

3) **Relating to Specific Street Regulation – Police Department – Ordinance O-2017-17** (Agenda Item 5)

Chief Russo noted that during Public Works review of the Downtown Business District, a complaint from someone at the college prompted review of other ordinances. Both the Public Works and the Police Department realized that the speed limit entering Downtown is 25mph for a certain distance on primary streets that enter Downtown. The only places entering Downtown that are not 25mph are Marlboro Street to the rotary and Route 101 to the rotary. Because of the foot traffic on lower Main Street, staff is recommending uniform speed limits coming into Downtown be considered. This Ordinance will change the speed limit from Route 101 to the rotary and Marlboro Street to the rotary. There is a Scribner's Error in the Ordinance presented; it includes Castle Street and should not. Chief Russo asked the Committee to amend the Ordinance to remove Castle Street before adopting the Ordinance.

Chair Manwaring asked why streets (American/Apollo Avenues) around the old Jonathan Daniels School are 25mph and streets around other schools are not. Chief Russo replied he was unsure, but every school is in a school zone. The Public Works Director replied that decision was made based on that neighborhood; wide and long streets prompted concern about speeding. A Safe Routes School project was recently completed to add paint and narrow lanes around American/Apollo Avenues. Councilor Lamoureux added that American Avenue also does not have designated sidewalks and the lower speed limit helps protect pedestrians.

Councilor Lamoureux made the following motion, which was seconded by Councilor Filiault.

On a vote of 5-0, the Municipal Services, Facilities and Infrastructure Committee amended Ordinance O-2017-17 to remove Castle Street.

Councilor Lamoureux made the following motion, which was seconded by Councilor Filiault.

On a vote of 5-0, the Municipal Services, Facilities and Infrastructure Committee recommends the adoption of Ordinance O-2017-17-A relating to specific street regulation.

4) Departmental Presentation – Service with a Smile – Public Works Department (Agenda Item 1)

Chair Manwaring welcomed Maria Castellano (Office Manager) and Andrea Nowlan (Administrative Assistant) from the Public Works Department who presented on how their small team of two works to support their customers. They have worked for the Public Works Department for 10 and 2.5 years, respectively.

Ms. Castellano and Ms. Nowlan provide support for 73 full-time and part-time workers at five facilities throughout the City. They are the first point of contact for the more than 23,000 residents of Keene when they contact the Public Works Department. Though they do not always have all the answers, they make every effort to answer customer questions without transferring them to another staff member or department. They make every effort to make sure customers can easily find answers to their questions without having to call.

Ms. Castellano and Ms. Nowlan oversee and resolve customer requests in person, online, and by phone. They answer the phone an average of 600-700 times monthly and see 60-75 people daily in their lobby. They do a lot more online now with newer technology; the IT Department recently created a Public Works Administration email address so customers can ask questions more directly. Ms. Nowlan interacts a lot with customers on social media as well as the new YourGov app, which allows the public to notify the City of problems from their phones (potholes, etc.). Ms. Castellano and Ms. Nowlan have also created many brochures and handouts to try to provide information to citizens before they have to call.

Ms. Castellano and Ms. Nowlan serve the following customers: the residents of Keene, City staff, vendors/business owners, and guests/visitors. They tried to think of the kinds of questions the get most from their customers most, which are who, what, where, when, why and how questions:

- Who?
    - Who to speak to for different permits?
    - Who can give an update on a current project?
    - Who to speak with to tour a facility?
- What?
    - What if a water bill is high?
    - What is a fire hydrant is leaking?

    - What are they doing on my street?
- When?
    - When is leaf collection?
    - When is household hazardous waste day?
    - When will a road be paved?
    - When will a street be plowed?
- Where?
    - Where is the transfer station?
    - Where is the recycling center?
    - Where to dump RV waste?
    - Where to pick up sand in the winter? Where is the household hazardous waste schedule?
- Why?
    - Why does the City flush water twice per year?Why is a road closed?
    - Why is there no water/discolored water?
    - Why are sidewalks not plowed yet?
- How?
    - How to get a pool filled?
    - How to report a problem?

These are the common questions Ms. Castellano and Ms. Nowlan receive; this is why they have created brochures to address these questions. They have seen a marked decrease in phone calls since making information more readily available; this saves staff time when there are important issues that need to be addressed.

Ms. Castellano and Ms. Nowlan concluded by sharing their personal work goal: to treat every customer with dignity and respect at all times and provide the quality customer service they have come to deserve and expect. Their satisfaction as a team comes in knowing they have provided customers service with a smile.

Councilor Filiault expressed thanks for this presentation, one of the best the Committee has seen.

Councilor O'Connor asked if there is an after-hours hotline for Public Works emergencies. Ms. Castellano replied that Public Works is a 24/7/365 agency. Someone is on call from all divisions at all times. If someone calls the PD or Public Works after hours there is a message directing them to PD Dispatch, who will contact the appropriate staff member; on call staff members must respond to any situation within 30 minutes.

Chair Manwaring asked if the leaf collection schedule can be posted online again. Ms. Nowlan replied it would be posted on Social Media again on October 26. Brochures are also available at the Library, Clerk's Office, Revenue, and City Hall third floor; they welcome suggestions for other brochure locations where people gather a lot.

Chair Manwaring recognized Councilor Philip Jones who thanked them for their presentation. He said it is always a pleasure walking into Public Works and while credit

is often given to the Department heads, support staff is a large part of what the City accomplishes.

Councilor Filiault made the following motion, which was seconded by Councilor Lamoureux.

On a vote of 5-0, the Municipal Service, Facilities and Infrastructure Committee recommends the Public Works Department presentation be accepted as informational.

5) <u>Departmental Presentation – Surveying Technology, Capabilities, and Application – Public Works Department</u> (Agenda Item 2)

Chair Manwaring welcomed Lee Dexter, Engineering Technician in the Public Works Department, who discussed one of the many jobs engineering does, surveying. Engineering surveys measure the physical works for capital improvement projects, asset management, maps and records, and to assist staff and public. Mr. Dexter explained the different survey methodologies, from the oldest (tape and compass) to future methods.

- Tape and Compass
    - Mr. Dexter showed photos comparing older and new tape and compass equipment.
    - Measures direction and distance accurate to less than one foot
        - Less accurate the further you travel
        - Useful to navigate from one point to another
    - Public Works uses Swing Ties – utility records produced with measuring tape to find location of underground utilities. Tie Cards used to be hand written, but are now available to staff on tablets.
    - Compass bearings help navigate over very long distances, like during periodic town line "perambulation" – when Public Works travels the town line with officials from adjacent towns. Many markers define the City limits and must be found and maintained periodically. The markers are typically 80 "rods" apart; at 16.5 feet/rod, that is 1,320 feet.
- Transit Surveys (Level and Rod)
    - Utilize a scope/auto-level and grade rod to measure elevation change between two points.
    - The surveyor uses a magnified scope to read numbers on the grade rod.
    - Graduated in fractions of a foot, this survey method can be accurate to one-hundredth of a foot or 1/8in.
    - Transit surveys only measure vertically, so the horizontal location of equipment is not critical.
    - Grades observed through the auto-level are typically recorded in a field book for later analysis.
    - Transit Surveys are most often used to assist the Highway Division in identifying surface grade changes where paving work might be ordered to alleviate puddles or to calculate the slope of storm pipes to promote positive drainage.
- Theodolite Surveys (Total Station)

  - The Total Station provides the highest level of "survey grade" accuracy, within fractions of an inch. The equipment measures smaller tolerances than the user is able to achieve.
  - The equipment always requires two personnel: an instrument operator and a "rod-person."
  - The survey setup begins with two "base points" – the instrument location and a "back sight" – the equipment turns angles from that established line to determine other points.
  - The Total Station does not *know* where it is in the world. By using Global Positioning (GPS) to reference the two base points, surveys can be located in real space and associated with other resources including aerial photographs.
  - The survey point file provides the data to develop a Triangular Irregular Network (TIN) or a 3D surface model. The vertices of each triangle represent a point that was located with field survey. A more accurate model enables more precise design, which is often necessary to match and preserve buildings and infrastructure that may have been built over one hundred years ago.
    - 3D modeling relies on accurate surveys to design and analyze:
      - Road grades for drainage
      - Sidewalk grades for ADA compliance
      - Underground utilities for construction conflicts
- Global Positioning (GPS)
  - The GPS Rover is unique because it is the only survey method that can be performed alone.
  - Atop the rod, a receiver triangulates its position from as many as 16 satellites.
  - A data collector records points transmitted wirelessly via Bluetooth.
  - Accuracy varies with field conditions (tree cover, buildings, satellite positions), but can be as close as 1/4in horizontal and 3/4in vertical.
  - The collector has a cellular connection with the Base Receiver at 350 Marlboro Street for real-time position corrections. The Base service provider maintains a subscription service that generates revenue for the City through a profit-sharing agreement.
  - The versatility of GPS has many benefits including reducing staff requirements for many Engineering Division functions:
    - Construction stakeout such as road centerline, curb lines, and the location of underground utility structures.
    - Contract compliance to verify a contractor's work was actually installed at the correct location and elevation.
    - Field measurement for work on Capital Improvement Projects so payment is made for actual work completed.
    - Construction as-built records and locating utilities for City Geographic Information System (GIS) mapping and asset management.

        - GPS is also used to help the Parks and Recreation Department paint lines for athletic fields and locate new cemetery plots.
    - The GPS Rover first established its value with the enormous task of locating utilities for the City's GIS mapping project. Assets recorded in this project include:
        - 5,400 storm water inlets
        - 2,750 water shutoff valves
        - 2,150 sewer manholes
        - The water, sewer, and drainage utilities alone account for over 28,000 distinct City assets in GIS. This work continues with plans underway to locate street signs, trees, and the City's fiber-optic network.
    - The City recently implemented Cartegraph asset management software, which is founded upon and maintains a live connection with GIS mapping.
        - Cartegraph helps plan and record maintenance activities, evaluate asset conditions, and assess value for responsible Capital Improvement Projects. It also helps the City manage equipment, personnel, and materials.
    - GPS technology allows surveys conducted for the PD Accident Investigations Team to be referenced with City aerial mapping. This helps detectives get an accurate picture of the entire crash site and anything that might have contributed to it. The call for accident survey often comes after normal working hours. It is easier for an engineer to respond with GPS because it only requires one operator. Previously, the PD had to hand measure and record all the critical aspects of an investigation. GPS is not only more accurate but faster, which means the road can be opened to traffic much sooner following an accident.
    - GPS Facilitates mapping the extent of emergencies such as recent flooding events. Rapid data collection is required to map the changing extent of inundation over a large area of the City. Such real-time data is invaluable to understanding flood events, which aids response planning for future events.
    - Engineering uses handheld GPS that delivers accuracy within several feet; this is useful for mapping assets where precision is not necessary (like signs and trees). Handheld GPS is more suitable for navigation where other methods are not practical, like in the woods or on water.
    - Data points from GPS surveys can be post-processed in the office for a variety of uses:
        - Bathymetric contours can be generated from a Digital Terrain Model
        - Reservoir depths can be calculated on a grid
        - A color gradient map helps visualize the information collected and volumes calculated by depth can be shown in tabular form
        - This information helps determine how much water supply is available depending on the surface elevation of the reservoir
- The Future of Survey Technology

- Survey technology has advanced, and the future is now.
- The Robotic Total Station combines the benefits of surveying, scanning, and imaging in one package. This type of survey can automatically generate rich "point clouds" for 3D models. This equipment is operated by remote control, which allows surveys to be conducted by one person.
- The GPS Rover is now capable of survey-quality accuracy, with the added power of 360 degree digital panoramic imaging.
- Scanning has been referred to as "Reality Capture" – recording a multitude of points previously taken one shot at a time.
- High end scanning and Total Stations use Light Detection and Ranging (LIDAR), a remote sensing method that generates precise 3D models. This technology was previously only available with expensive aerial or drone-based equipment. It can now be operated on the ground, from vehicles, or inside of buildings.
    - Scanning Total Stations can obtain over 26,000 points per second – 360 degrees horizontally, 300 degrees vertically at a distance of 600 meters, with a spot size of 14mm (a dime) at 100 meters.
    - The result is an accurate 3D representation of a site detailed with textures and features not recorded by traditional methods, like tree branches and overhead utility lines.
- The data collected with a Total Station combine surveying, scanning, and imaging to leverage a "virtual world." It can easily create presentation quality models to visualize Capital Improvements before groundbreaking and increase collaboration with stakeholders during construction. It can monitor construction progress and tolerances, measure quantities, and direct field design changes while creating as-built documentation. It increases productivity by producing more robust data quickly without staff requirements. Asset management is more accurate in a living, breathing 3D model that can be used for future Capital Improvement decisions.

Mr. Dexter welcomed questions.

Chair Manwaring asked what kind of education/training is needed to do Mr. Dexter's job. Mr. Dexter replied the typical engineering skill set in school and experience with computer technology, which is constantly changing. Part of his job is learning new things over time as well as trial-by-error. The Engineering Department also gets a lot of support from manufacturers and service providers. Anyone with a good technical skill set is capable of learning the job hands-on. A Bachelor's degree is a good start but he thinks associates and technical degrees are available as well. Field crews he works with have a level of expertise beyond what can be learned in school.

Councilor Lamoureux asked if perambulation time is shorter with newer technology. Mr. Dexter replied perambulation has not changed much but GPS technology allows for quicker location of coordinates to look for survey evidence. Perambulation is more about coordination with adjacent towns; there is no need to survey the location again, just find it. He said technology has reduced staff time most for PD accident surveys, which can be

done by one person now, often before the PD finishes investigating. Scanning in the future will record hundreds of points at once as opposed to one at a time.

Councilor Hooper asked how the GPS provides an aerial view of an accident. Mr. Dexter replied coordinates gathered with GPS are in the NH State Plane Coordinates. The aerial photo is just an overlay it registers based on the coordinates; they are not live photos, just periodic fly-over images like Google Earth.

Councilor Filiault made the following motion, which was seconded by Councilor Lamoureux.

On a vote of 5-0, the Municipal Services, Facilities and Infrastructure Committee recommends the Public Works Department presentation on engineering be accepted as informational.

6) Adjournment

Hearing no further business, Chair Manwaring adjourned the meeting at 6:58 PM.

Respectfully submitted by,
Katie Kibler, Minute Taker