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MEMORANDUM

TO: Eileen M. Donoghue, City Manager

FROM: Diane N. Tradd, Assistant City Manager/DPD Director

SUBJECT: MOTION OF 3/6/18 BY COUNCILOR CIRILLO REQUEST CITY MANAGER PROVIDE A REPORT FOR BUDGETED COST AND IMPLEMENTATION REGARDING THESE OPTIONS FOR BICYCLE SAFETY: 1. PAINTING AND UPKEEP OF BICYCLE LANES THROUGHOUT THE CITY. 2. BIKE LANES BEING SEGREGATED BY A BARRIER FOR ADDED SAFETY.

PAINTING AND UPKEEP OF BICYCLE LANES THROUGHOUT THE CITY

There are over 200 miles of roadway in the City, with about 70 miles (one-third) containing double yellow lines and fog (white) lines. To date, the City of Lowell has painted 14 miles of dedicated bike lanes and 21.4 miles of sharrows (shared vehicle/bicycle travel lanes). Currently, the City repaints bike lanes and symbols when it repaints the other roadway markings, such as double yellow lines and fog lines. Repainting the 14 miles of bike lane lines, the accompanying bike lane symbols, and the 21.4 miles of sharrow symbols of the existing bike infrastructure, costs range $8,000 - $21,000. The more complex markings, such as those on Father Morrissette Blvd, would be in addition to that expense. To repaint all pavement markings on all roads that currently have double yellow lines and fog lines, including existing bicycle lanes and markings, would cost approximately $60,000 on an annual basis. However, the City's annual pavement marking budget is approximately $25,000 for all street markings, including: stop lines, turn arrows, crosswalks and other markings, in addition to double yellow lines, fog lines, and bicycle lanes. This allows for the repainting of approximately 10% of all roadway markings annually.

BIKE LANES SEGREGATED BY A BARRIER FOR ADDED SAFETY

The City of Lowell has no separated bike lanes at this time. However, there are numerous regional and national studies that demonstrate the installation of separated bike lanes can increase bike ridership, decrease injuries to bicyclists, and decrease motor vehicle accidents and injuries. Separated bike lanes have proven to reduce travel time for vehicles as more travelers choose to bike, thus removing cars from the road. Installation of separated bike lanes can also increase retail sales along corridors with these bike amenities. Bike lanes can be separated from vehicular traffic in several ways, for example: two foot wide raised curbing that may include plantings; posts installed within pavement striping; and shifted parking lanes with additional pavement markings. Each option has a different cost per linear foot (LF) as follows (next page):

Curbing with plantings – average cost $30-$70/LF

Flexible Ground Mount Post Delineators - ~$30 each, typically installed every 20 feet

Shifted parking lanes and painted buffer zones (as space allows)-thermoplastic single lines $0.40/LF; symbols $4 each; painted lines $0.04/LF

An engineering review and design would be required for any separated bicycle lane installation. The review and design would determine how much right-of-way (ROW) exists for City streets identified as possible locations for bike lanes and if vehicular traffic and parking can be accommodated at current levels.

The costs of installing and maintain the above options can vary widely and be summarized as follows:

Option	Cost per mile	Caveat
Apply all bike lane symbols	$16	One every ¼ mile
Reapplying all sharrow symbols	$400-$800	One every 50-100 feet
Repainting all the bike lanes in the city	$200-$300	Needs to be redone annually
Thermoplastic bike lane lines	$2,000	Needs to be redone every 5 years
Install flexible delineators	$115,000	Only includes cost of posts – design, pavement markings & installation not included
Curbing installation (2' wide, double sided)	$2.6M	Doesn't include the cost of design or plantings

In addition, the cost also varies to maintain the above options. For example, separated bike facilities may need snow removal for year-round use. Flexible delineators need to be replaced over time.

BICYCLE MASTER PLANS

Not all streets need the same type of bicycle facilities. Cities with limited resources have found success in creating bicycle master plans that identify priority locations for bicycle lanes and separated bicycle facilities. These planning efforts identify those routes bicyclists take most and routes that would be safest or most convenient for cyclists with a small amount of additional infrastructure. Bicycle master plans map out a complete network of safe bicycle routes linking origins and destinations, which may include connections to regional trails and neighboring communities. The plans also identify appropriate facilities on each of these routes based on traffic volume, traffic speed, and available right-of-way (ROW).

For example, on low-volume, low-speed roads, cyclists and cars can comfortably share the street with sharrows. On higher traffic streets, separated lanes are preferred. On the busiest and fastest streets, bicycle tracks separated by buffer zones are preferred if there is room within the right-of-way. In some cases, a 2-way bike track on one side of the road is safer and more user-friendly than a single bike lane on each side of the road.

During the Open Space and Recreation Plan (OSRP) public participation process that was recently completed by DPD, citizens identified bicycle master planning as a priority. A bicycle master plan such as this could be used to prioritize installation of separated bicycle facilities where they would have the largest impact on encouraging bicycle use and promoting safety for all roadway users. It could also identify low-hanging fruit or ideal locations for less expensive demonstration projects. Finally, it could guide already-planned road reconstruction projects on the installation of bicycle infrastructure. In April, DPD submitted a capital budget request for $75,000 for a comprehensive bicycle/pedestrian plan. Currently, that funding for the plan is scheduled to be appropriated in FY 2023.

NV/ns
9/25/18
cc: Natasha Vance, Transportation Engineer