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Title: Receive the report regarding the proposed improvements to 248th Avenue from 95th Street to 103rd Street (Item 1 of 3)

Sponsors:

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Attachments: 1. 248th Avenue Alternatives - Short Version, 2. 248th Avenue Alternatives - Detailed Version, 3. 248th Avenue Noise Impact Results

Date	Ver.	Action By	Action	Result
3/1/2022	1	City Council	received	Pass

CITY COUNCIL AGENDA ITEM

ACTION REQUESTED:

Receive the report regarding the proposed improvements to 248th Avenue from 95th Street to 103rd Street (Item 1 of 3)

DEPARTMENT: Transportation, Engineering and Development

SUBMITTED BY: William J Novack, Director of TED/City Engineer

BOARD/COMMISSION REVIEW:

See Items 2 and 3 regarding the recommendations from the Transportation Advisory Board's February 17, 2022 meeting

BACKGROUND:

As part of this agenda item, the City Council is requested to:

- Confirm alternative 2 as the preferred alternative for 248th Avenue
- Direct staff to submit an application for federal funding for the 248th Avenue improvements

Staff is not seeking direction on the scope or funding of noise walls at this time due to incomplete information. Specific recommendations on the scope and funding of potential noise walls is anticipated in late summer after the full analysis of the noise wall feasibility criteria is complete and initial results on federal funding are received.

Existing Condition

248th Avenue is classified as a minor arterial between 103rd Street and 95th Street that carries approximately 14,000 vehicles per day. The road has a rural design with one 11.5-foot through lane in each direction, aggregate shoulder, and adjacent drainage ditches. The posted speed limit is 45 mph.

Traffic signals are located at 95th Street, Trumpet Avenue and 103rd Street. Left turn lanes are provided at the higher volume intersections along the corridor. The existing right-of-way on this segment varies from 80 to 120 feet in width.

South of 103rd Street, 248th Avenue consists of two 11-foot through lanes in each direction with a 17-foot median and left turn lanes. This segment of 248th was improved in 2005 with the adjacent development.

Purpose and Need of the Project

The need for capacity improvements along 248th Avenue was initially identified through the analysis associated with the City's Road Improvement Plan. The purpose of the proposed improvement of 248th Avenue between 95th Street and 103rd Street is to reduce congestion and improve mobility, access and safety for vehicles, bicyclists, and pedestrians.

Existing traffic volumes are nearing the capacity limits of the current two-lane roadway. Additional traffic lanes are needed to accommodate the anticipated traffic growth (projected 2050 average daily traffic is 18,000 vehicles). Eliminating gaps in the existing shared-use path will allow bicyclists and pedestrians to better navigate the corridor. Street lighting, additional turn lanes, and crossing enhancements will provide safety and operational benefits.

Public Information Meetings (PIMs)

City staff believes this roadway widening project is a good candidate for federal funding. All federally funded projects must complete a Phase I Engineering study. The Phase I studies all environmental impacts an improvement will have if constructed. Public meetings are also required. To date, the City has conducted six public information meetings for the project as summarized below:

PIM #1 - November 7, 2019 (95th Street Public Library): Introduce project to the public and seek feedback and concerns from the public

PIM #2A - August 31, 2020 (Zoom): Present 3 alternatives

PIM #2B - September 10, 2020 (Commissioner's Park): Same information provided as Public Information Meeting #2A

PIM #3 - December 8, 2021 (95th Street Public Library): Present the preferred alternative

PIM #4 - February 3, 2022 (City Council Chambers): Go over the revised noise impact analysis

PIM #5 - February 17, 2022 (City Council Chambers): Transportation Advisory Board meeting to confirm the preferred alternative along with applying for federal funding

Pedestrian Facilities

There is a 10-foot shared-use path along the west side of 248th Avenue with gaps. There are no existing pedestrian facilities on the east side of 248th Avenue.

The Tall Grass Greenway Trail crosses 248th Avenue between Honey Locust Drive and Lapp Lane at an uncontrolled mid-block crossing. At the crossing, there is a painted crosswalk, signage, and pushbutton-activated flashing warning beacons. The Tall Grass Greenway Trail is under the joint maintenance and jurisdiction of the Forest Preserve District of Will County (west of 248th) and the

Naperville Park District (east of 248th).

DISCUSSION:

Proposed Geometric Improvements

The proposed improvement on 248th Avenue between 103rd Street and 95th Street will consist of widening the roadway from a two-lane section to a five-lane section. The design will include a landscaped median with left-turn lane at intersecting streets and curb and gutter. As part of this study, three alternatives were developed as shown in the attachments:

- Alternative 1 - 17-foot median with symmetrical widening
- Alternative 2 - 17-foot median with asymmetrical widening
- Alternative 3 - 12-foot median with symmetrical widening

We typically widen roadways symmetrically as shown in Alternative 1. However, for this stretch of roadway there is an existing unincorporated house on the west side of the street opposite Landsdown Avenue. The home was built before any of the subdivisions in the area and is located close to the property line. Widening the roadway symmetrically will place the roadway close to the house and require significant land acquisition from the resident for the roadway and shared-use path on the west side of the street.

The asymmetric widening related to Alternative 2 includes horizontal re-alignment of the 248th Avenue centerline six feet to the east near Landsdown Avenue. This re-alignment will reduce right-of-way impacts to the parcel on the west side of 248th Avenue.

Alternative 3 addresses the issue by use of a 12-foot wide median instead of a standard 17-foot wide median. Besides resulting in a median that is not as pleasing as the 17-foot wide one this narrower one does not provide as much refuge area for pedestrians who choose to use the mid-block crossing for the Tall Grass Greenway Trail.

Based on all the feedback and concerns from residents as well as an internal review of all three alternatives, city staff recommends approval of Alternative 2. This will reduce the impact to the right-of-way and existing utilities while also minimizing the number of existing trees that must be removed.

Proposed Pedestrian Improvements

The gaps in the 10-foot shared-use path on the west side of 248th Avenue will be filled-in, providing a continuous connection between 103rd Street and 95th Street for both bicyclists and pedestrians. Our initial plan was to construct a five-foot wide sidewalk on the east side of 248th Avenue. However, after listening to concerns about the mid-block crossing staff decided to construct a shared-use path on the east side from the Tall Grass Greenway north to Trumpet Drive. For pedestrians and bicyclists that don't want to use the mid-block crossing, they can head north and cross with the assistance of the traffic signal at Trumpet Drive. The remainder of the east side will have the five-foot wide sidewalk.

For those who chose to cross 248th mid-block an at-grade, two-stage crossing is proposed with a pedestrian refuge island in the median. Two rectangular rapid flashing beacons will be installed in each direction (one in the parkway and the other in the median) to enhance awareness and compliance for drivers on 248th Avenue. The trail offset in the median also forces trail users to face any oncoming traffic before they make the second crossing. The offset provides good visibility to both trail users and drivers.

A grade separated crossing was considered however cost and feasibility were not favorable. Birch Lane west of 248th is too close to 248th Avenue to provide adequate run out for bringing the path back to grade. If the trail was constructed over 248th Avenue, it would have to extend west and go over Birch Lane too. Additionally, this land is owned by Com Ed which has traditionally been reluctant to grant easement rights on their property. An underpass would face similar grade issues along with conflicts with a buried electrical duct bank.

Noise Analysis

A noise impact analysis was performed in accordance with the requirements of the Federal Highway Administration and the Illinois Department of Transportation (IDOT). The requirements must be followed to remain eligible for federal funding. Those requirements include using the traffic projections of the regional planning agency, which in our case is using the 2050 traffic volumes forecast by the Chicago Metropolitan Agency for Planning (CMAP).

The results of the initial noise impact analysis showed that there was only one house with an impact. That house is the unincorporated house on the west side of the street near Landsdown Avenue. These results were shared with the public at the December 8, 2021, public information meeting, which was shortly after the City Council approval of the Islamic Center of Naperville (ICN). During the meeting, many residents questioned why the impact of the ICN development was not included in the analysis.

Based on that feedback, the City and our consultant reached out to IDOT to see if we would be allowed to assess the noise impacts again using the CMAP 2050 traffic volumes plus the ICN volumes at build out of their site. IDOT eventually did state that adding in the ICN traffic would be acceptable for assessing the noise impacts.

When the model was re-run with the ICN traffic added in the results showed that the entire west side of 248th and the northernmost and southernmost blocks on the east side of 248th had noise impacts, as shown in the attached noise impact exhibit. Having a noise impact is just the first step in determining if a noise abatement wall is warranted. For a wall to be warranted the following must also be met:

- The wall must be constructable from an engineering perspective; there must be a corridor it can physically fit within
- A five-decibel noise reduction must be achieved at a minimum of two receptors within each noise block
- An eight-decibel insertion loss must be provided for at least one receptor in each noise block
- The cost per benefited receptor in each block must not exceed \$30,000
- The majority of the benefitting receptors must approve of the wall by vote

Our consultant is currently assessing the criteria noted above which is anticipated to take approximately two months. The analysis will then be submitted to IDOT for review. The results could show that all, some or none of the blocks with noise impacts meet all the criteria. Because the deadline for the federal funding applications is March 15, 2022 staff plans to submit our application assuming all impacted areas meet all the criteria. Both the roadway construction and warranted noise abatement walls are eligible for federal funding.

One question that has been raised by the public since not all areas had noise impacts is if the City Council will install noise abatement walls along the entire corridor as opposed to just where it meets all criteria. Initially, staff planned to bring this question to the City Council for input at this meeting.

However, while we know approximately three quarters of the corridor has noise impacts, we do not know whether the eligibility requirements will be met. In addition, because the necessary heights and design of the wall have not been determined yet, we cannot provide accurate cost estimates.

It will take our consultant up to two months to complete the analysis followed by IDOT review. We do not expect to have certainty on which walls meet all requirements and which do not until late summer. At that time, we will also have the initial results of our federal funding application back. Staff proposes to bring the question of where to install the noise walls back to City Council at that time instead of making the decision now when we do not have all the information needed.

The surrounding neighborhoods have been very engaged in the discussions and public meetings on 248th Avenue. Utilizing the hundreds of resident contacts in our communication system for this project, we will notify them of this delay. We will utilize this system again to inform them of when the item will be on a City Council agenda later this year.

FISCAL IMPACT:

The roadway improvements are estimated to cost \$7.5 million with the noise wall costing an additional \$3.5 to \$4.5 million dependent upon height and material. Federal funding could pay for 70% of the eligible costs with an estimated maximum of \$6.5 million.