



Frequently Asked Questions

This document provides responses to the frequently asked questions pertaining to the proposed improvements and the potential noise wall adjacent to the Thorngate Subdivision associated with the Phase I Engineering Study of Deerfield Road from Milwaukee Avenue to Saunders/Riverwoods Road. Project information, including information shared at the Noise Forum Meeting, can be found on the project website www.deerfieldroadcorridor.com. Please review this information, as it will help inform you of the traffic noise process and results. This document will also be posted on the project website.

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1. Why is the County studying Deerfield Road?

Through the Lake County Division of Transportation (LCDOT) planning process, Deerfield Road from Milwaukee Avenue to Saunders/Riverwoods Road has been identified to have transportation deficiencies as documented in the Lake County 2040 Transportation Plan (2040 Plan). The 2040 Plan is a long range plan adopted in June 2014 that identifies deficiencies and recommends improvements necessary to address the future transportation needs of Lake County including roadway, transit, and non-motorized modes of travel. More information regarding the Lake County 2040 Transportation Plan can be found on their website. From the long range plan, the County develops a 5-year Highway Improvement Program to schedule projects, which includes various phases of engineering and construction.



In addition to transportation deficiencies identified within this portion of Deerfield Road, LCDOT pavement management data shows almost 40% of the base/substructure of the pavement to be in failing condition. As such, LCDOT views the roadway to be near the end of its life and the most cost-effective pavement management approach is to reconstruct the roadway. When a roadway is reconstructed, the entire pavement structure is removed (typically nearly 2 to 3 feet in depth) and rebuilt, which requires a significant financial investment. As such, when a roadway is reconstructed a full evaluation of capacity, safety, drainage, non-motorized accommodations, and roadway design elements are required. The specific needs identified for this project are documented in the Purpose and Need statement located on the project website at: https://deerfieldroadcorridor.com/info_center/project_reports.aspx

2. What is a Phase I Study and when will construction begin?

The roadway project development process includes three phases:

- Phase I is preliminary engineering, environmental studies, and public coordination, and is planned to take 36 months for completion.
- Phase II is contract plan preparation and land acquisition, and typically takes 24 months.
- Phase III is roadway construction, and typically takes 12-24 months.

The Deerfield Road Phase I Study will follow the federal National Environmental Policy Act (NEPA) for project development to be eligible for federal funds. Following this process will allow the study team to balance the need for safe and efficient transportation improvements with any potential impact to the human and natural environment. The specific Phase I Study process consists of data collection, developing the project purpose and need, identifying a range of alternatives, screening the range of alternatives down to a preferred alternative, determining the potential impacts the proposed improvement may have on the environment, and then obtaining design approval from the Illinois Department of Transportation (IDOT) and the Federal Highway Administration (FHWA). Phase I and Phase II are included in the Federal Fiscal Year (FFY) 2019-2024 Transportation Improvement Program (TIP). Phase III (construction) is not programmed in the current TIP. Construction is anticipated to start in 2023.

3. What is the proposed improvement for Deerfield Road between the Des Plaines River and Saunders/Riverwoods Road?

The proposed improvement for this section of Deerfield Road consists of a 3-lane roadway that includes a center bi-directional turn lane, curb and gutter, and 8 foot multi-use path (south side up to Portwine Road; north side up to Saunders/Riverwoods Road). As Deerfield Road approaches the Saunders/Riverwoods Road intersection, the same number of lanes will be provided on Deerfield as currently exists today (5). In this area, there will be some modifications that will require the existing south curb line to move between 4 and 11 feet to the south. The reason for this is to accommodate a lengthening of the eastbound right turn lane by 60 feet to meet intersection design standards, provide a 3 foot "bike friendly" shoulder, and 2.5 foot wide curb and gutter.



4. What is the proposed improvement for Saunders Road?

The proposed improvement on Saunders Road includes a new northbound right turn lane and 6 foot sidewalk along the west side of Saunders Road directly behind the existing curb. The Saunders Road intersection will be modernized with new signal equipment and cross walks on all legs of the intersection. The proposed sidewalk will extend south to the Thorngate HOA Park.

5. Why was a Traffic Noise Study completed?

A traffic noise assessment was required to comply with State and Federal regulations because Federal funds are being used for this project and due to the project scope. The scope of this project includes proposed roadway reconstruction with the addition of through traffic lanes at Milwaukee Avenue and the addition of a center turn lane throughout the length of the Deerfield Road corridor. If any part of the project meets the requirements for a noise analysis, the entire project must be evaluated for traffic noise according to the IDOT Highway Traffic Noise Assessment Manual (2017). A copy of the manual is located on the project website (Information Center/Project Reports). The entire project area was evaluated for traffic noise and based on the analysis, only one location warranted noise abatement (i.e., noise wall) per the IDOT Noise Policy.

6. What are the criteria that must be met for noise mitigation to be considered for a project?

A noise barrier may be proposed when a traffic noise impact occurs, and a noise barrier is determined to be feasible and reasonable.

Based on the IDOT Noise Policy, for a residential area, a traffic noise impact occurs when the design year (2050) build condition traffic noise levels are predicted to be 66dB(A) or greater. A traffic noise impact also occurs if the design year (2050) build condition traffic noise levels are predicted to substantially increase (15 dB(A) or greater) over existing conditions. Traffic noise levels are determined by computer modeling.

A noise barrier is determined to be feasible if it achieves at least a 5 dB(A) traffic noise reduction for at least two impacted receptors. A traffic noise reduction of ± 5 dB(A) is a readily perceivable change in noise.

A noise barrier must also be reasonable, which includes the following three criteria:

- It must meet the noise reduction design goal of achieving at least an 8 dB(A) reduction for at least one benefited receptor. A benefited receptor is the recipient of an abatement measure that receives a noise reduction of 5 dB(A) or greater. A benefited receptor does not need to be an impacted receptor.
- The estimated build cost per benefited receptor must be less than or equal to the allowable cost per benefited receptor. The base allowable cost is \$30,000 per benefited receptor. The allowable cost may be adjusted based on a number of factors. Refer to the IDOT Highway Traffic Noise Assessment Manual (2017) for additional information.

For example, if a noise barrier will benefit 10 residences, and the total cost of the noise barrier is \$270,000, then the cost per benefited receptor would be \$27,000 (which is less than the allowable cost of \$30,000 per benefited receptor) and the noise barrier would be considered economically reasonable.



- If noise abatement measures are determined to be feasible and achieve the first two reasonableness criteria, the benefited receptor viewpoints must be considered. If the majority of the viewpoints are in favor of the noise barrier, then the noise barrier would be considered “likely to be implemented.”

If a noise barrier is not considered feasible or reasonable for an area, the noise barrier abatement measure will not be implemented as part of the project.

7. Can a berm be used instead of a noise wall?

Earth berms can be considered for noise abatement. However, the use of berms depends on the space available. For maintenance reasons, the slope of the berm should not be steeper than 3(H):1(V). For this project, there is limited available space to build a berm that would achieve the necessary noise reduction. The potential noise wall for this project would be 15 feet tall. Comparatively, a 10-15 feet tall berm would be about 60-90 feet wide. The available area for noise abatement would need to accommodate this base width.

8. Can vegetation be used as noise mitigation?

Landscaping (vegetation) is not recognized by the FHWA as a traffic noise abatement measure. However, landscaping can provide traffic noise reductions if it is sufficiently wide, dense (e.g., evergreen trees), and tall such that it cannot be seen through or over. Generally, the vegetation needs to be between 100 and 200 feet in width, 16 to 18 feet tall, and with dense understory growth to obtain a perceivable noise reduction of 5 dB(A). Vegetation/trees can potentially help screen the traffic from view, but it is generally not feasible to plant this number of trees or have available sufficient right-of-way for this to be a prudent abatement measure.

9. What property would be needed for the potential noise wall adjacent to the Thorngate Subdivision?

If the noise wall is included with this project, additional property acquisition will be required. The noise wall would be installed on property that is owned by Lake County. Permanent and Temporary Easements would be required for construction and future maintenance of the noise wall. All property acquisition would be from the Thorngate HOA property adjacent to the Deerfield Road and Saunders Road right-of-way. There is one exception (781 Links Court) where acquisition would be required directly from the property owner. Refer to the proposed improvement exhibit on the project website showing the potential noise wall location and associated property acquisition.

A summary of the proposed property acquisition is provided below. If the noise wall is not included with the project, the property acquisition associated with the noise wall can be eliminated.

- Along Deerfield Road, 5 feet of right-of-way will be needed adjacent to the eastbound right turn lane; a 5 foot permanent easement would be needed along the entire Thorngate Subdivision for future maintenance of the wall; a 5 foot temporary construction easement would be needed to construct the wall (predominantly for clearing vegetation/trees and grading).
- Along Saunders Road, a 10 foot temporary construction easement would be needed to construct the wall (predominantly for clearing vegetation/trees and grading).

Deerfield Road cannot be shifted to the north to avoid property acquisition to the Thorngate Subdivision.



10. How is property that is needed for the project acquired?

This project is using federal funds and therefore a certain process must be followed for property acquisition, which includes preparation of a plat of highway, appraisal, review appraisal, an offer made, and a negotiation with the property owner. Compensation is provided for permanent and temporary acquisition based on the appraisals and any other damages to the remainder of the property. This process is anticipated to begin when Phase II Engineering commences in mid 2020.

11. Where is my property line?

Property lines are shown on the detailed proposed improvement exhibits and noise wall exhibit. The roadway right-of-way, which is owned by Lake County, is depicted as a thick dashed red line style and is approximately 13 feet (adjacent to the eastbound right turn lane) to 25 feet (west of the right turn lane) from the existing roadway curb. The existing power lines and existing wire fence are located within the Lake County roadway right-of-way. Beyond the roadway right-of-way, is HOA property, which is a minimum of 22 feet (and is higher closer to Saunders/Riverwoods Road intersection) from the roadway right-of-way to private property parcels. Many residents adjacent to Deerfield Road and Saunders Road currently have landscaped this area or located other items such as playgrounds within the HOA property. The parcel lines are typically shown as black, solid lines on the project exhibits.

12. Will there be any additional costs for property owners or the HOA to construct the noise wall?

No. All costs for land acquisition and construction of the noise wall will be paid for by Lake County as part of the project.

13. Where would the potential noise wall be located?

The potential noise wall would be located approximately 17 feet (adjacent to eastbound right turn lane) to 23 feet (west of eastbound right turn lane) from the existing roadway curb along Deerfield Road and approximately 17 feet from the existing roadway curb along Saunders Road. The approximate location is shown on the noise wall exhibit. Another reference point is the existing wire fence located near the rear of the residential lots. **Along Deerfield Road, the potential noise wall would be located approximately 6 feet from the wire fence to the south (towards the homes); along Saunders Road, the potential noise wall would be located approximately between the two wire fences.**

14. What would the potential the noise wall look like?

The potential noise wall would have a form liner that would look like natural stone. An example picture is included in the Noise Forum Meeting PowerPoint presentation located on the project website (Information Center/Meeting Materials). The potential noise wall would be 15 feet tall.



15. How was the height of the wall determined?

As part of the traffic noise analysis, a computer noise model was used to evaluate different wall heights. As part of the analysis, many iterations are run to determine a noise wall height that meets the feasibility and reasonableness requirements mentioned above. Based on the analysis completed for this project, the potential noise wall would be 15 feet tall. A lower wall did not meet the feasibility and reasonableness requirements.

16. What will happen to the existing vegetation and landscaping between the roadway and residential homes?

If the noise wall is constructed, it would require the removal of many of the existing trees and other vegetation currently located between the roadway and the residential homes. The noise wall would be 15 feet tall and would also require trimming of tree branches that extend towards the wall. A rendering of what the potential noise wall would look like from a back yard perspective is provided in the Noise Forum meeting PowerPoint presentation located on the project website. Landscaping behind the noise wall will not be provided as part of this project. Since the property directly behind the noise wall is owned by the HOA, any plantings immediately adjacent to the noise wall would be HOA responsibility. Grass would be planted between the noise wall and the roadway. Detailed landscaping will be determined during Phase II Engineering.

17. How much noise reduction would be achieved with the noise wall?

Based on computer modeling, the vast majority of the 37 benefited receptors would receive a noise reduction of between 5 and 11 dB(A) in the 2050 future build condition with the implementation of a noise wall. More than half of these benefited receptors would be on the lower end of that range (i.e., between 5 and 7 dB(A)). Three of the receptors would receive a slightly higher than 11 dB(A) noise reduction due to the receptor location/area of frequent outdoor activity, such as a playset, being located immediately adjacent to the potential noise wall.

Please note that based on computer modeling (and confirmed by field monitoring), the worst case receptor for the Thorngate Subdivision has an existing traffic noise level of 66 dB(A), which would be considered an impact in the build condition. Based on computer modeling, under the 2050 future build condition, the worst case receptor for the Thorngate Subdivision has a predicted noise level of 69 dB(A). **This is a difference of 3 dB(A) from existing to build condition. A change of ± 3 dB(A) is a barely perceivable change in noise.**

18. What is this vote for?

The vote you are casting is only for the potential noise wall to be recommended for implementation as part of the project. The roadway project will proceed regardless of the vote results.

19. Who is allowed to vote?

Only benefited receptors of the noise wall are allowed to vote. For this potential noise wall, there are 37 benefited receptors. The benefited receptor locations are depicted on the Noise Wall Exhibit. To be a benefited receptor, a noise reduction of at least 5 dB(A) must be obtained with the proposed noise wall under future 2050 traffic conditions. Benefited receptors include property owners and renters/lesers residing on the benefited property. In the case of rental properties, both the property owner and renter are allowed to vote.