

**Item #9B:**  
**Village Trustee Barry**  
**Report Of Pathways Committee**

## David Lothspeich

---

**From:** James Hogue  
**Sent:** Monday, May 19, 2014 9:56 AM  
**To:** Cheek, Derick  
**Cc:** David Lothspeich; Joseph Barry  
**Subject:** RE: Grant # 10-203906.  
**Attachments:** Modified Pathway Connection - Grant # 10-203906.pdf

Hi Derick,

You may recall that last November I sent you an inquiry regarding time extensions on both of the Grant with the Village of Long Grove.

I also noted that Grant # 10-203906 may need to be modified to allow construction to occur within the financial constraints of the grant. The Village has other grant application sin process to make the full connection as identified in the original application. We have however not been very successful in gaining additional funding. As such, we need to modify the grant more less as follows;

The Village in cooperation with the Lake County Forest Preserve District (FPD) have devised an alternate route for the pathway segment identified in Grant # 10-203906. This segment would be shortened to a point on the Schaeffer Road right-of-way and the corner of the Forest Preserve District Property. A connection would be made to an existing pathway on the FPD property. The FPD has agreed to improving their property with such a pathway segment. Preliminary estimates of cost indicate the modified pathway segment could be covered by the funds allocated in Grant #10-203906. The connectivity of the pathway segment ( a major goal of this segment as originally proposed) is preserved under this revised scenario as well. The path would still tie into the regional FPD pathway system just at a different location then originally proposed.

I have attached preliminary report as prepared by Hey & Associates to give more detail as the nature of the modifications required.

At their meeting of May 16<sup>th</sup> the Village Pathways Committee directed me to contact you regarding this modification.

Please let me know how to proceed on whatever modifications are required to the existing grant agreement.

Thanks –

Jim Hogue  
Village Planner  
Village of Long Grove

# Summary Report:

## Buffalo Creek Forest Preserve Trail Connection Preliminary Trail Routing Study



Prepared for:



3110 Old McHenry Road  
Long Grove, Illinois 60017

Prepared by:

***Hey and Associates, Inc.***  
Engineering, Ecology and Landscape Architecture

26575 W. Commerce Dr., Ste 601  
Volo, Illinois 60073  
847-740-0888 (phone)  
847-740-2888 (fax)

Contact: Kevin Kleinjan  
kkleinjan@heyassoc.com

April 11th, 2014

# Table of Contents

<b>1</b>	<b>Introduction</b>	<b>1-2</b>
	Project Purpose	1
	Regional & Site Context	1-2
<b>2</b>	<b>Inventory and Analysis</b>	<b>3-16</b>
	Meeting with Village Officials	3
	Data Collection & Methodology	3
	Existing Planning Documents	3-4
	Field Reconnaissance	5-12
	Natural Resources	13-14
	Manmade Resources	15-16
<b>3</b>	<b>Design Standards &amp; Guidelines</b>	<b>17-20</b>
	Resources & Considerations	17
	Trail User Types	18
	Trail Surface Types	18
	Trail Configuration Types	19
	Sidewalks	19
	Sidepaths (off-road paths)	19
	Shared-Use Paths	20
	Shared Lanes (no special provisions)	20
	Shared Lanes (wide outside lanes)	20
	Marked Shared Lanes	20
	Paved Shoulders	20
	Bike Lanes	20
<b>4</b>	<b>Evaluation of Alignment Options</b>	<b>21-28</b>
	Option A - Sidewalk	21-22
	Option B - Sidepath	23-24
	Option C - Shared-Use Path	25-26
	Option D - Paved Shoulders	27-28

## Introduction

# Introduction

Pedestrian and bicycle friendly streets provide non-motorized access between parks, trails, neighborhoods and other destinations. For pedestrians, these typically include sidewalks, high visibility crosswalks, curb ramps and pedestrian crossing signals at intersections with traffic lights. For bicyclists, a variety of facility types exists, including shared-line markings, wide outside lanes, paved shoulder, and bicycle lanes. Shared-use paths accommodate both pedestrians and bicyclists.

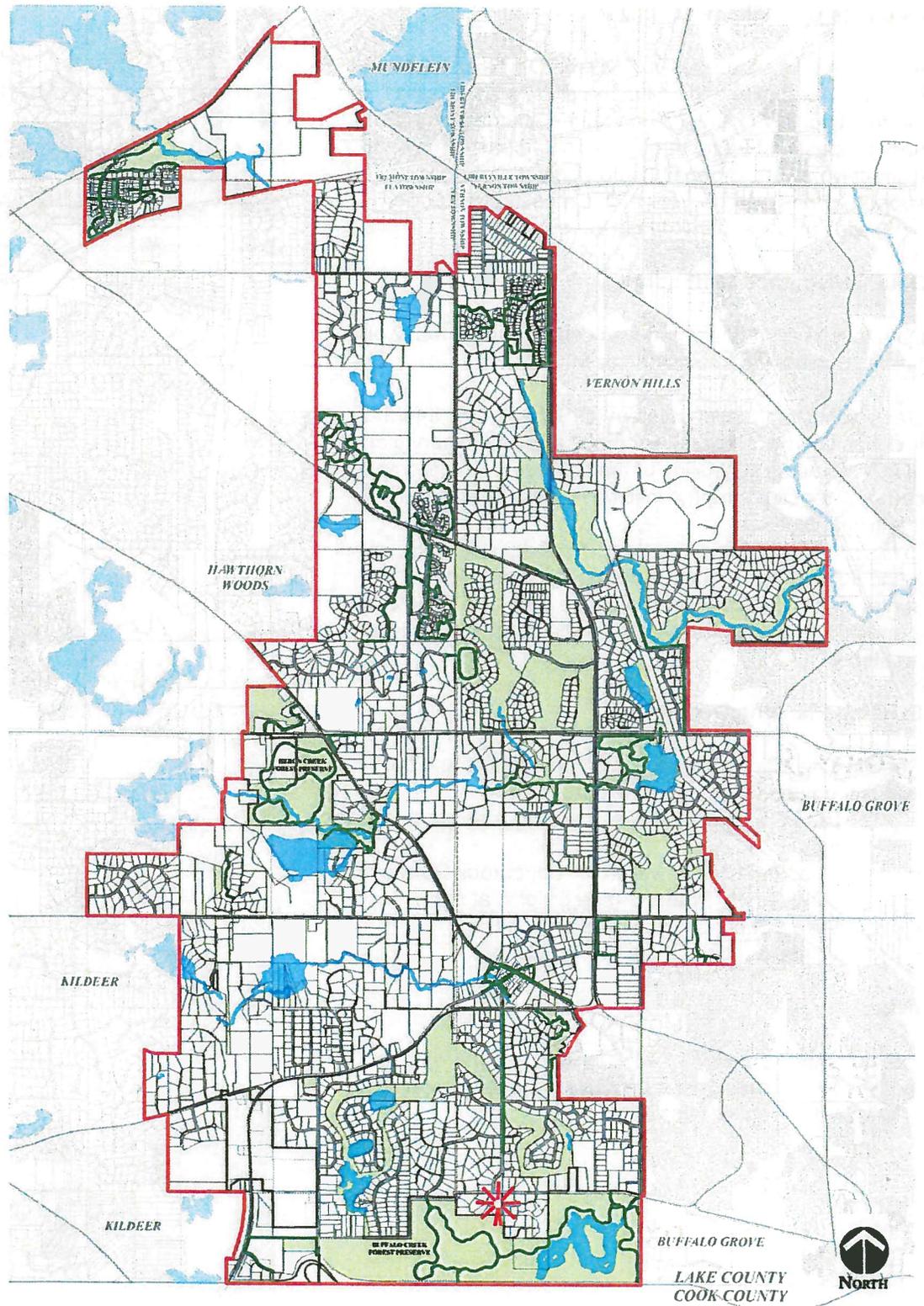
### Project Purpose

The Village of Long Grove (Village) has contracted Hey and Associates, Inc. (Hey) to perform a preliminary trail routing study along portions of Checker Road and Schaeffer Road. This study identifies key issues, opportunities and constraints for trail development within the specified area. Potential trail types and alignments have been outlined, construction and permitting requirements have been researched, and estimates of probable development costs have been presented to help guide the selection of a preferred trail strategy.

### Regional and Site Context

The proposed 900 foot trail section would serve as the final link between the existing Village path network and the proposed Lake County Forest Preserves' Buffalo Creek Forest Preserve multi-use trail extension. This linkage will expand the reach of the Village trail system by linking it to trails leading to Downtown Long Grove, Buffalo Creek Park, Heron Creek Forest Preserve, Buffalo Creek Forest Preserve and the Buffalo Grove Bike-way System, providing Village residents with additional recreation opportunities beyond the Village boundaries to promote and maintain an active and healthy lifestyle.

The proposed trail is consistent with the Village Wide Traffic Study performed in 2007 with recommended: *"The installation of a sidewalk / multiuse path parallel to Schaeffer Road. This provides both the benefit of separating pedestrian / non-motorized traffic from the roadway as well as further enhancing the residential characteristics within the roadway right of way. Such a path would connect to the path in the vacated Schaeffer Road Right of Way" (north of study area).*



Site Context Map

# Inventory & Analysis

### Meetings with Village Officials

A meeting was conducted with Village Officials and the Pathways Committee to define the study area. During the meeting, it was suggested that the alternative originally proposed to travel through a private parcel may not ultimately be viable, depending on future home-owner support. It was also decided at this meeting to include both sides of Schaeffer Road in the study.

### Data Collection & Methodology

Data found within this report was compiled from many different sources and site reconnaissance.

Geographic Information System (GIS) base map information was used to prepare field maps and preliminary planning documents consisting of the base aerial photography, county 1-foot topography, roadways, parcels and other identifying features.

It should be noted that a boundary and topographic survey of existing conditions must be prepared prior to commencing design development and construction documentation.

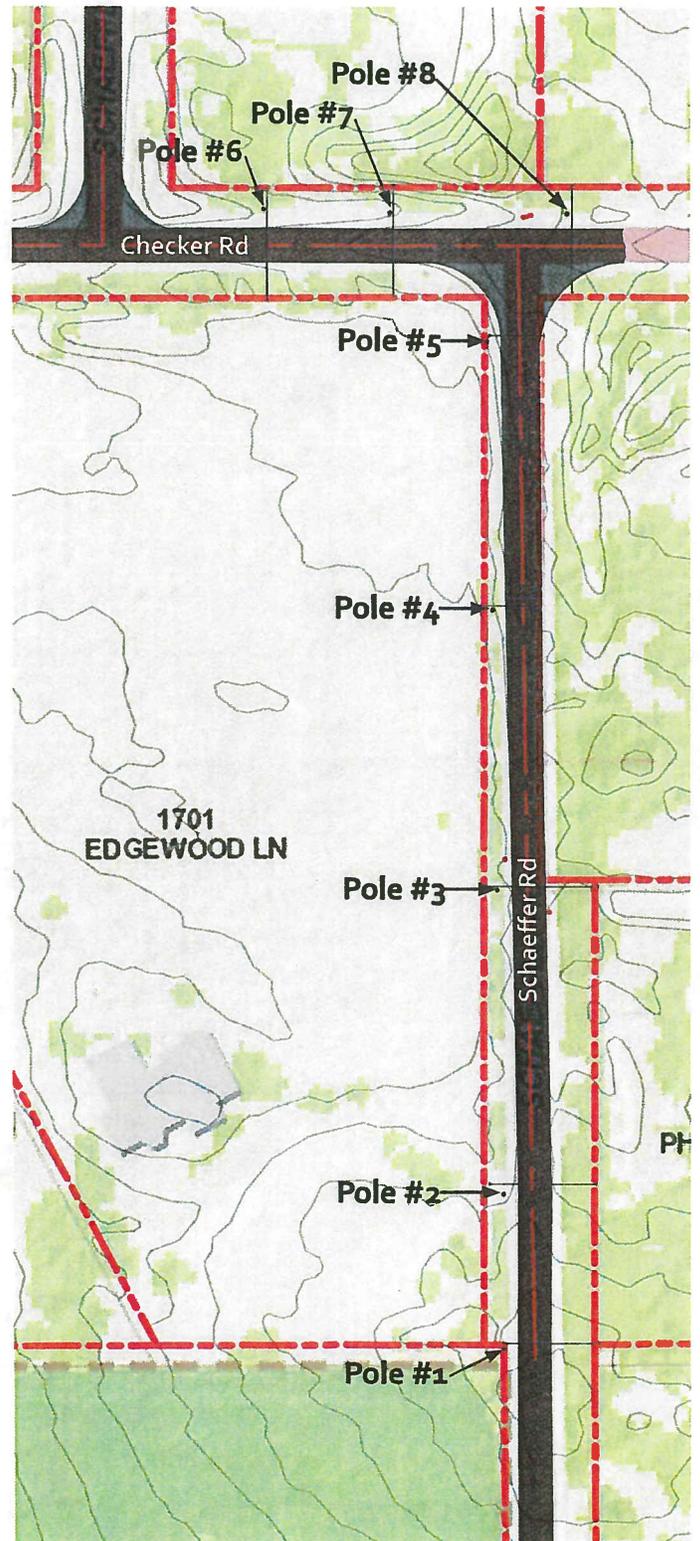
### Existing Planning Documents

Readily available existing planning documents and data that contributed to the study include:

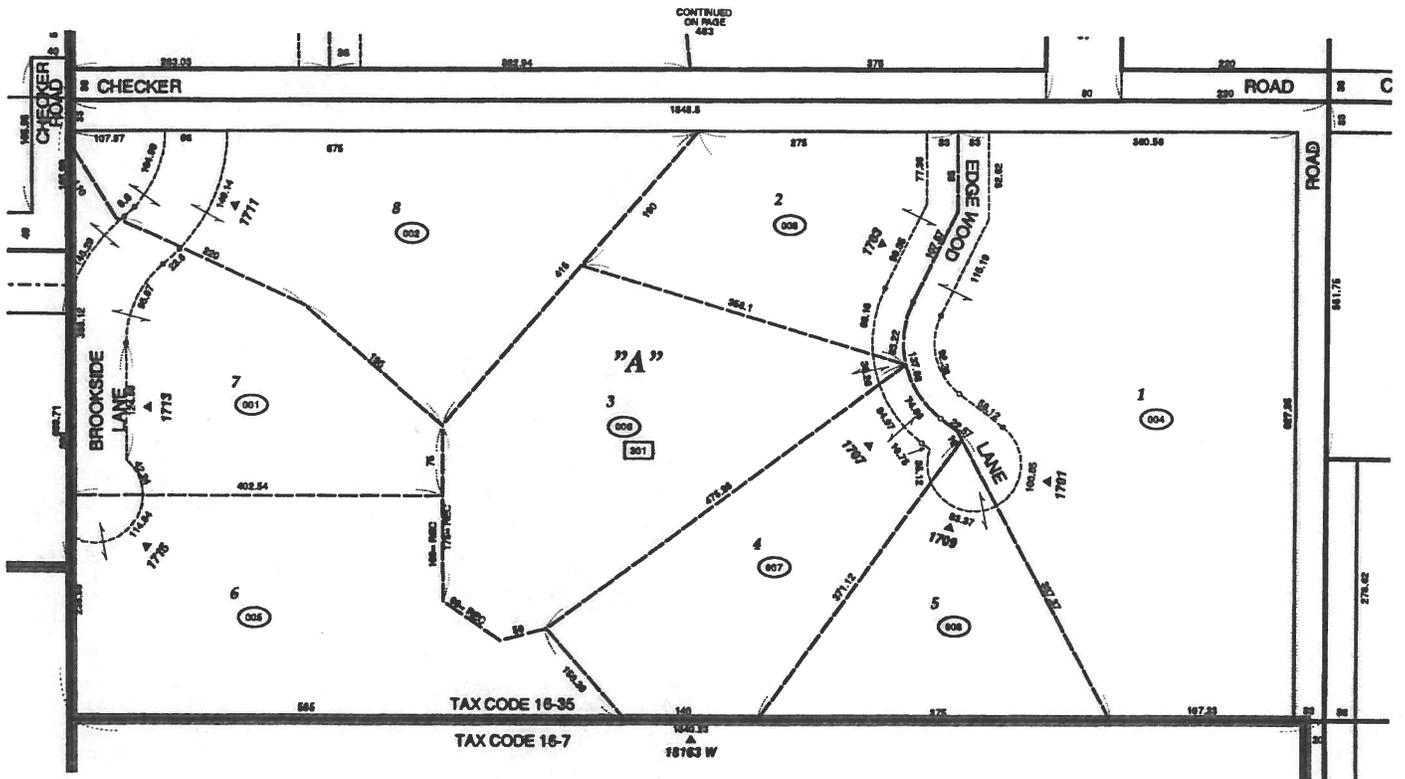
- Lake County Tax Parcel mapping (see graphic at right)
- Final Plat of Subdivision for Edgebrook Downs of Long Grove, Phase C (see graphic at right)
- Lake County Online GIS Mapping Data
- Village of Long Grove Zoning Code

### Note:

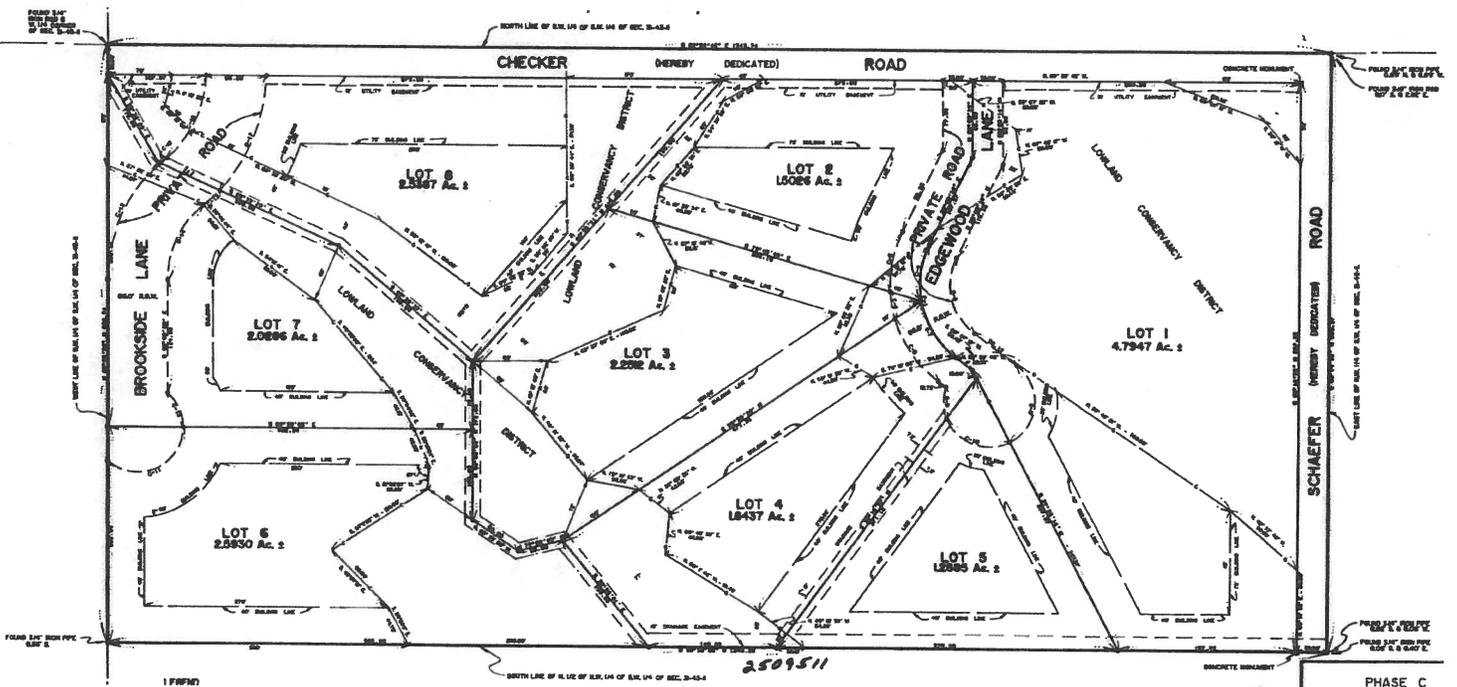
The numbered poles (#1 - #8) depicted at right represent locations where field measurements were taken and are referenced throughout this document.



**Base Map**



Tax Parcel Map



Plat of Survey



# Inventory & Analysis

## Field Reconnaissance

A field reconnaissance was performed to inventory, analyze and document existing conditions. Field data was recorded onto the field maps, and photographs were taken of existing site conditions for use in evaluating trail alignment alternatives. Follow-up field verification of proposed alignments was conducted to verify the feasibility of the conceptual trail alignments.

The photos at right (A through D) correlate to existing paths observed along Schaeffer Road north of the trail study area (see map at far right). Path types described below are explained in greater detail later in this document.

### Photo A

This path segment appears to be an informal sidewalk and is similar in position to a sidepath, though it appears to be too narrow to qualify as such. The path demonstrates a safe separation buffer from the roadway and is suitable for pedestrians and joggers. The narrow width precludes bicycle use and appears to be too narrow to allow for passing.

### Photo B

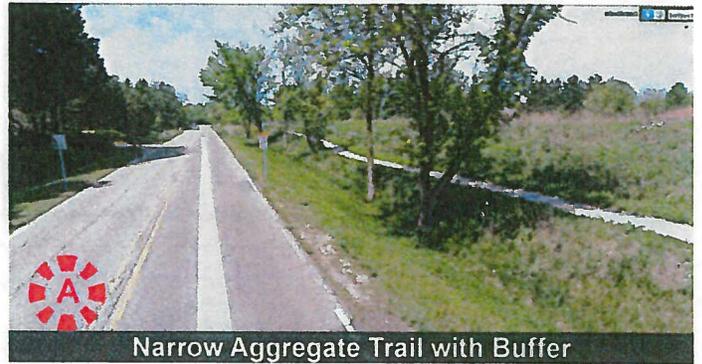
This path segment appears to meet the requirements of a sidepath. The path demonstrates a safe separation buffer from the roadway and is suitable for all trail users.

### Photo C

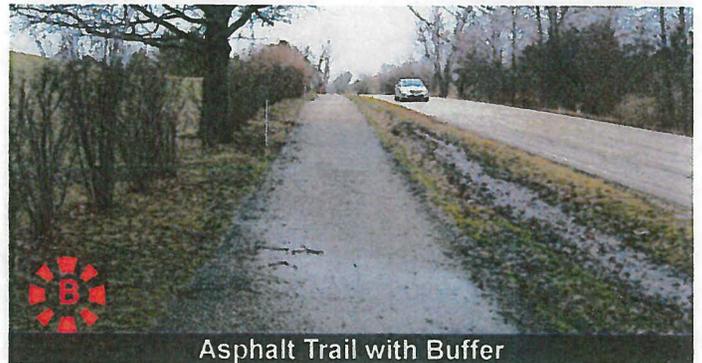
This path segment appears to be an informal sidewalk and is similar in position to a paved shoulder. The path does not provide a safe separation buffer from the roadway for pedestrians and joggers. The absence of a matching segment on the opposite side of the road precludes two-way bicycle use.

### Photo D

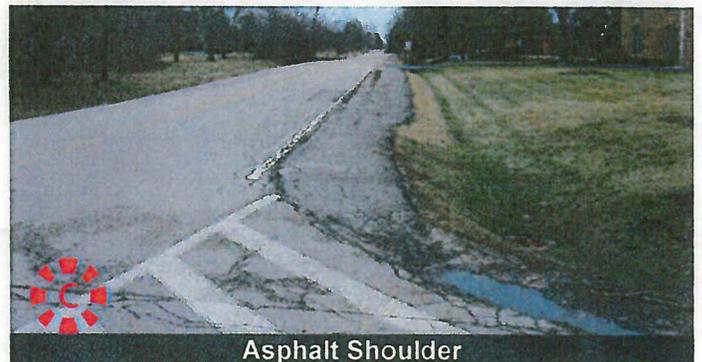
This path segment appears to be an informal sidewalk and appears to provide the minimum separation required from the edge of the roadway. The narrow width precludes bicycle use and appears to be too narrow to allow for passing. This is the northern point of connection for the trail study.



Narrow Aggregate Trail with Buffer



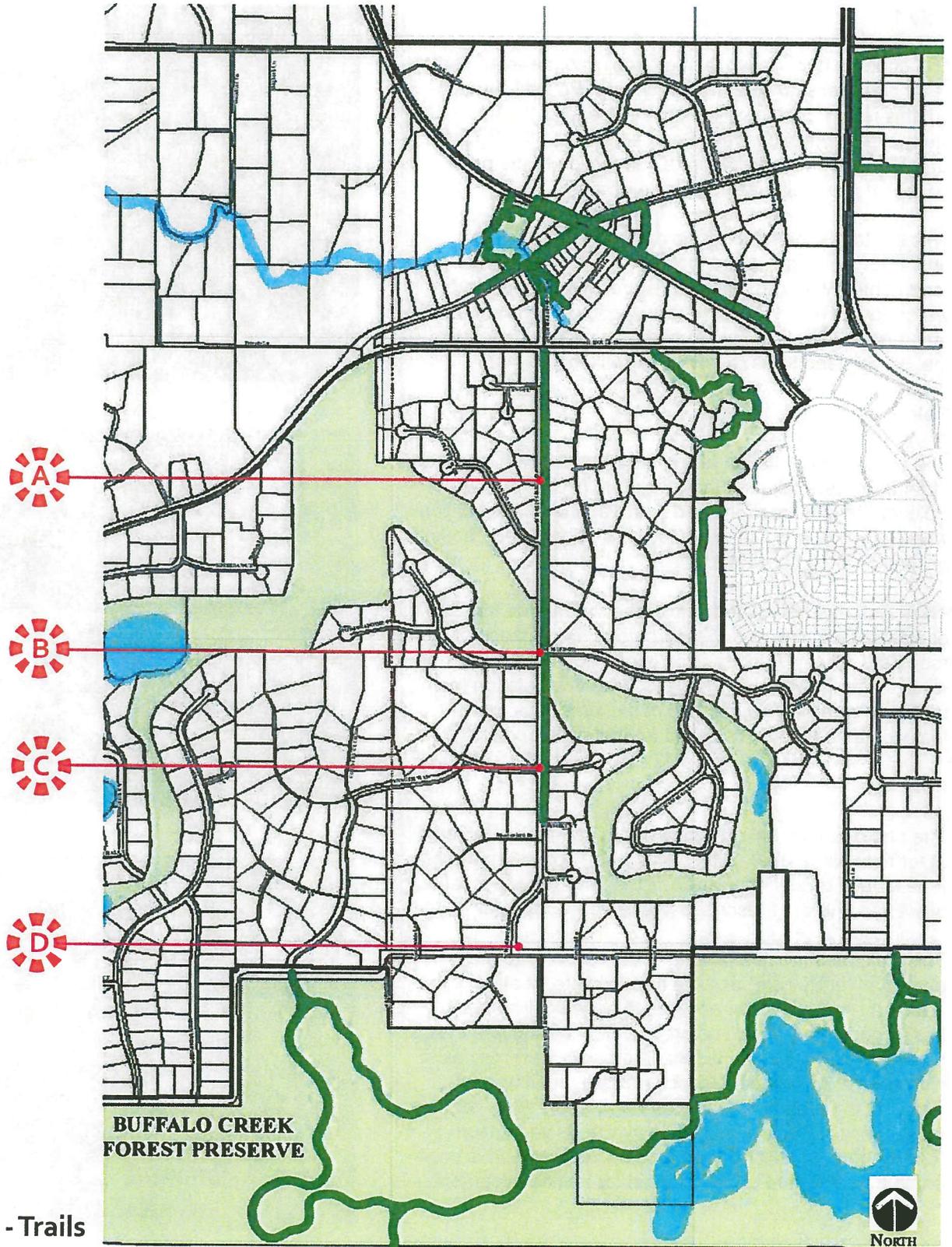
Asphalt Trail with Buffer



Asphalt Shoulder



Asphalt Trail with Minimal Buffer



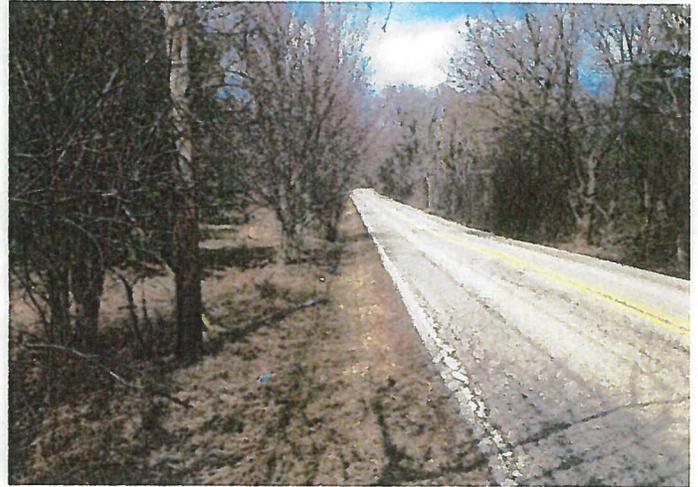
Site Context - Trails

# Inventory & Analysis

## Pole 1

The photo at right (taken facing north) and measurements at far right were taken at the utility pole (Pole #1 throughout this report, typ.) near the southern end of the trail study area along Schaeffer Road adjacent to the Buffalo Creek Forest Preserve where a connection to the proposed off-site multi-use trail would occur.

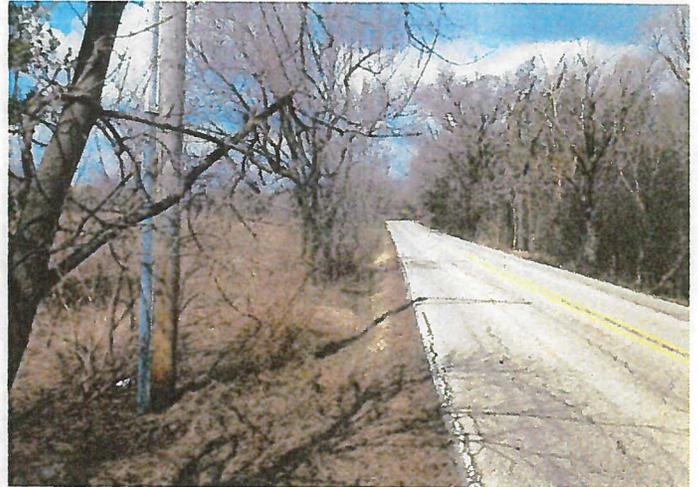
This illustrates the relationship of the roadway to the obstacles (utility pole) and the approximate location of the road right-of-way. A minor ditch is present that conveys water north. Relatively low-quality woody vegetation (common under utility lines due to bird excrement) is present that would need to be removed for trail development.



## Pole 2

The photo at right (taken facing north) and measurements at far right were taken at the utility pole (Pole #2) north of Pole #1 along Schaeffer Road at the approximate location where the Lowland Conservancy District boundary marker occurs on the adjacent lot.

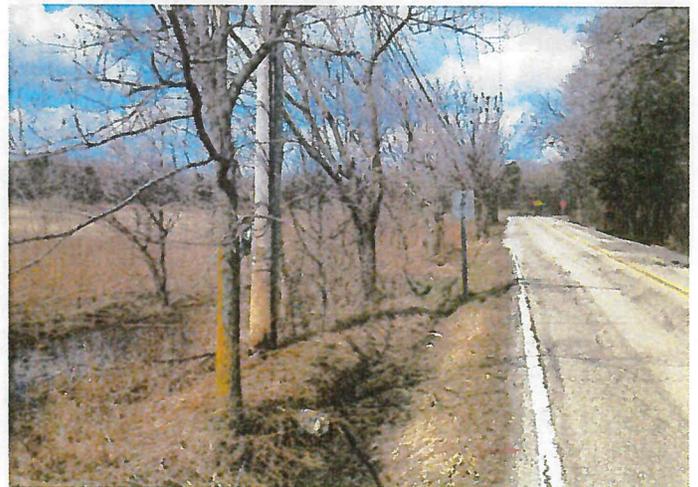
This illustrates the relationship of the roadway to the obstacles (utility pole) and the approximate location of the road right-of-way. A minor ditch is present that conveys water north. Relatively low-quality woody vegetation (common under utility lines due to bird excrement) is present that would need to be removed for trail development.

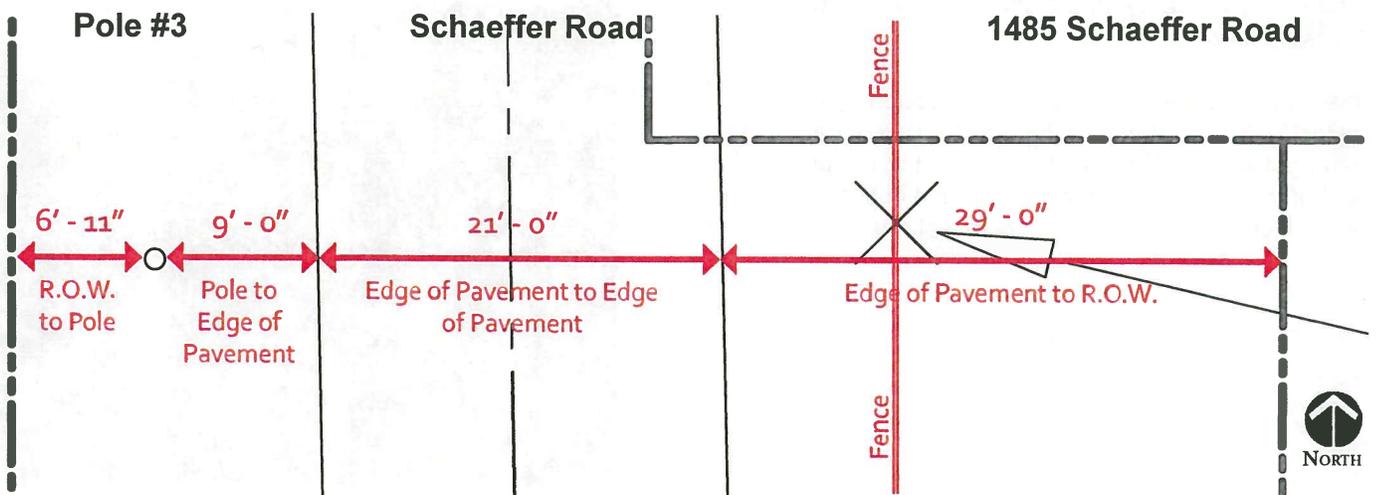
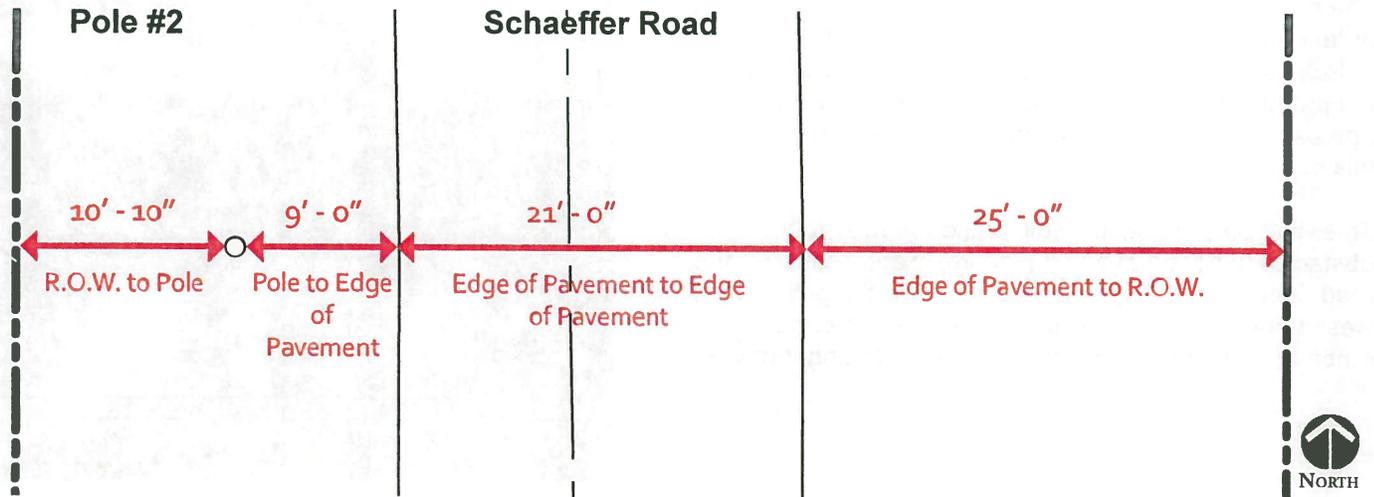
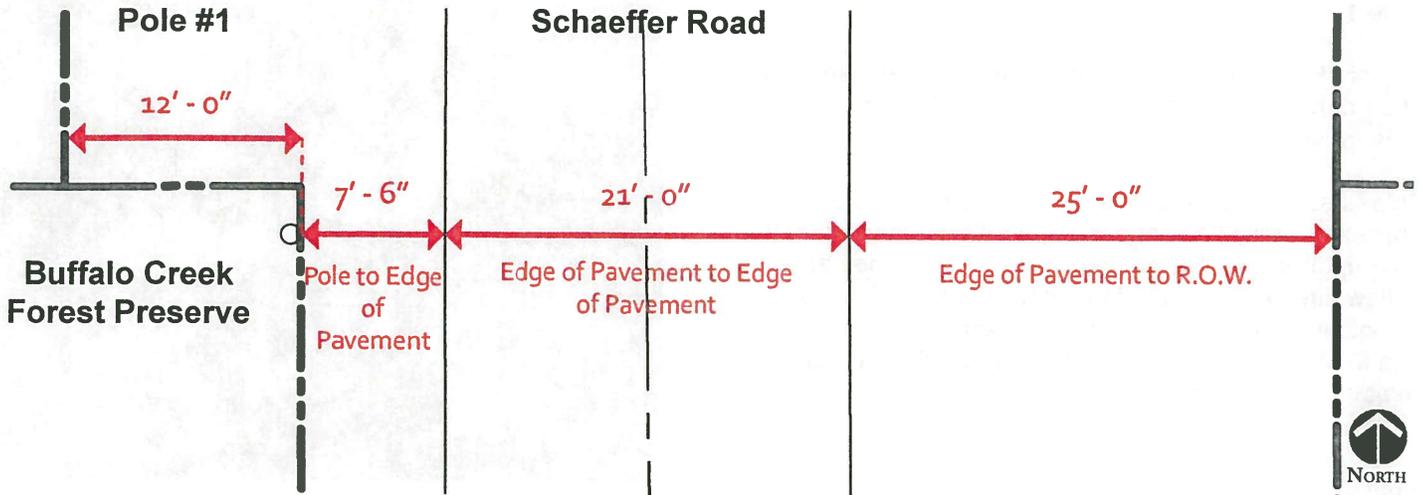


## Pole 3

The photo at right (taken facing north) and measurements at far right were taken at the utility pole (Pole #3) north of Pole #2 along Schaeffer Road at the approximate location of Wetland Area 1 (described later in this document).

This illustrates the relationship of the roadway to the obstacles (utility pole) and the approximate location of the road right-of-way. Water appears to periodically pond in this location (see photo) before traveling west out of the right-of-way. It is suspected that a cross-culvert may exist near this location under Schaeffer Road, but it was not visible at the time of the inventory and would likely require maintenance. Relatively low-quality woody vegetation (common under utility lines due to bird excrement) is present that would need to be removed for trail development.



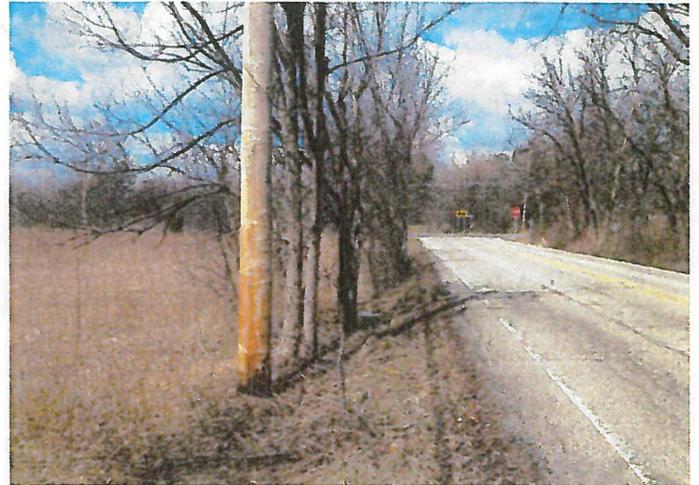


# Inventory & Analysis

## Pole 4

The photo at right (taken facing north) and measurements at far right were taken at the utility pole (Pole #4) north of Pole #3 along Schaeffer Road.

This illustrates the relationship of the roadway to the obstacles (utility pole) and the approximate location of the road right-of-way. A ditch is not evident and runoff appears to flow directly west out of the right-of-way. Relatively low-quality woody vegetation (common under utility lines due to bird excrement) is present that would need to be removed for trail development.



## Pole 5

The photo at right (taken facing north) and measurements at far right were taken at the utility pole (Pole #5) north of Pole #4 along Schaeffer Road near the point where the proposed trail would cross Checker Road and at the approximate location of Wetland Area 2 (described later in this document).

This illustrates the relationship of the roadway to the obstacles (utility pole) and the approximate location of the road right-of-way. Guy wires connected to the pole extend west of the pole in this location. A ditch is not evident and runoff appears to flow directly west out of the right-of-way.



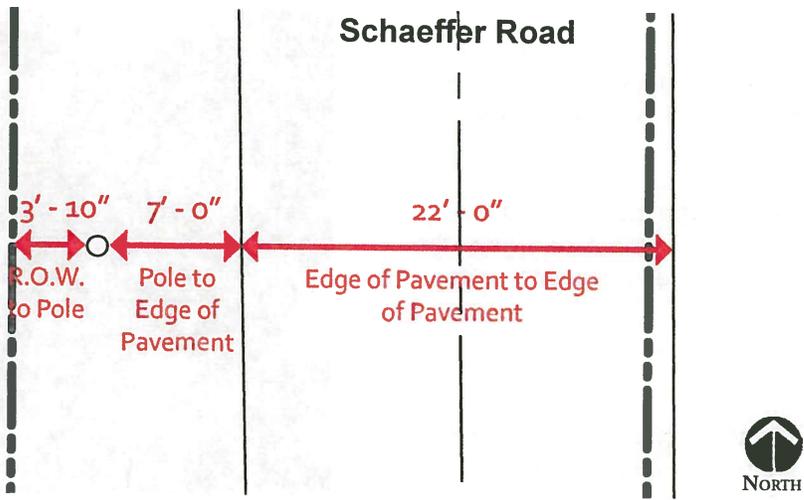
## Pole 6

The photo at right (taken facing east) and measurements at far right were taken at the utility pole (Pole #6) along Checker Road.

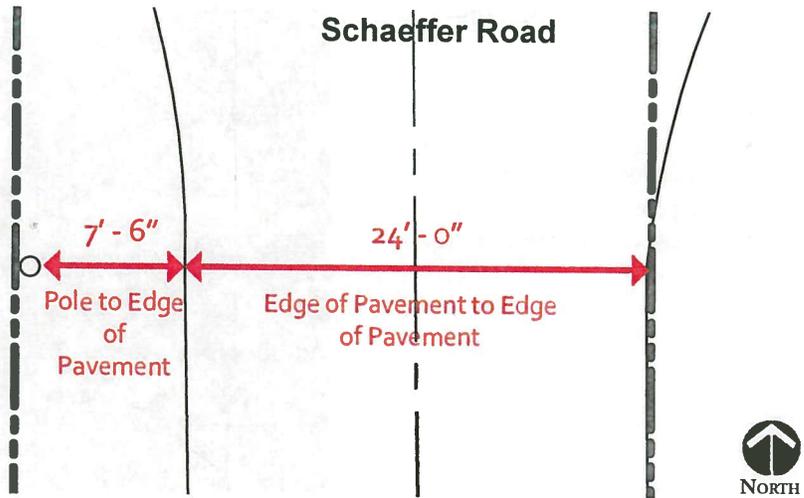
This illustrates the relationship of the roadway to the obstacles (utility pole) and the approximate location of the road right-of-way. Guy wires connected to the pole extend west of the pole behind the street signs in this location. A minor ditch is present that conveys water west.



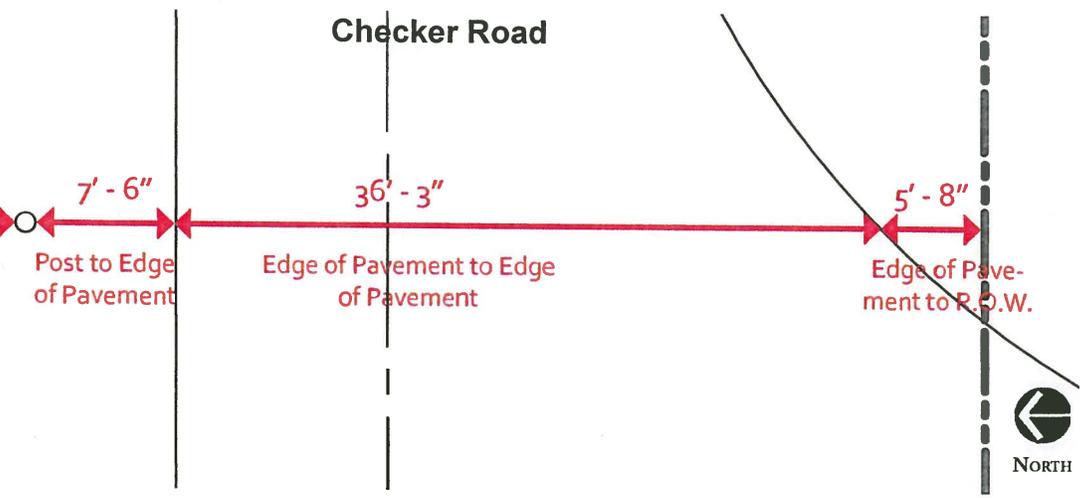
Pole #4



Pole #5



Pole #6



# Inventory & Analysis

## Pole 7

The photo at right (taken facing east) and measurements at far right were taken at the utility pole (Pole #7) west of Pole #6 along Checker Road.

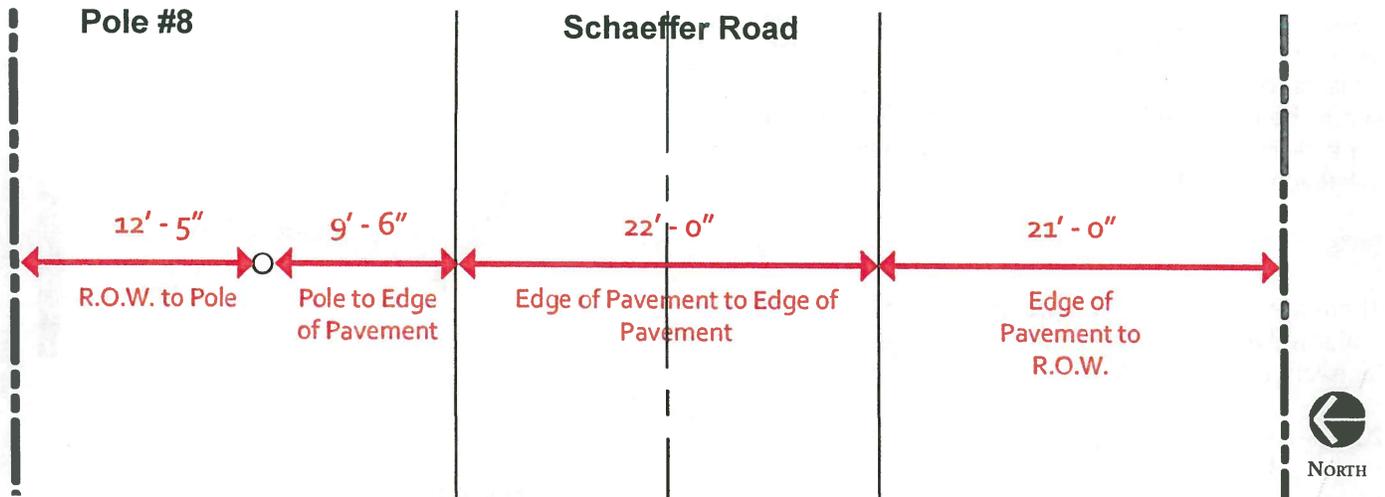
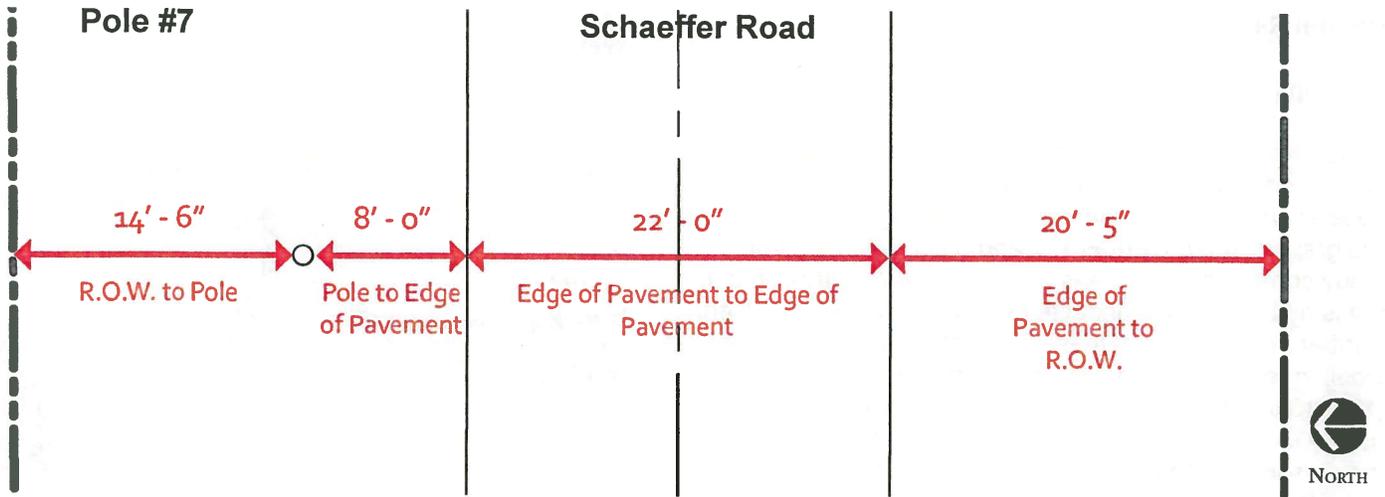
This illustrates the relationship of the roadway to the obstacles (utility pole) and the approximate location of the road right-of-way. A minor ditch is present that conveys water west.

## Pole 8

The photo at right (taken facing east) and measurements at far right were taken at the utility pole (Pole #8) west of Pole #7 along Checker Road near the point where the proposed trail would connect to the existing Village path and at the approximate location of Wetland Area 3 (described later in this document).

This illustrates the relationship of the roadway to the obstacles (utility pole and tree) and the approximate location of the road right-of-way. A minor ditch is present that conveys water west. The tree may provide clearance issues and would likely be limbed up or removed for trail development.





# Inventory & Analysis

## Natural Resources

### Wetlands

A preliminary wetland investigation of the proposed corridor identified four areas that had a dominance of wetland vegetation. Their approximate locations are depicted on the graphic at right. Areas 1, 2 and 3 fall within the trail study corridor and Area 4 is just outside the study corridor, but is hydrologically connected to Area 3 through a culvert. Further investigation of these four potential wetlands would need to be conducted during the growing season (May 15 to October 1). Areas 1 and 2 appear to be low quality isolated wetlands and therefore would fall under the jurisdiction of the Lake County Stormwater Management Commission (LCSMC). Areas 3 and 4 appear to be low quality as well but have a hydrologic connection to Buffalo Creek and therefore would fall under the jurisdiction of the U.S. Army Corps of Engineers (USACE). Impacts to any of these wetland areas for a multi-use trail should be permissible by LCSMC and USACE and with impacts likely under 0.10-acre, no compensatory wetland mitigation would be required.

### Soils

There are two mapped soil groups within the immediate trail study area (232A and 984B). Properties and qualities for each are as follows:

232A – Ashkum silty clay loam, 0 to 2 percent slopes

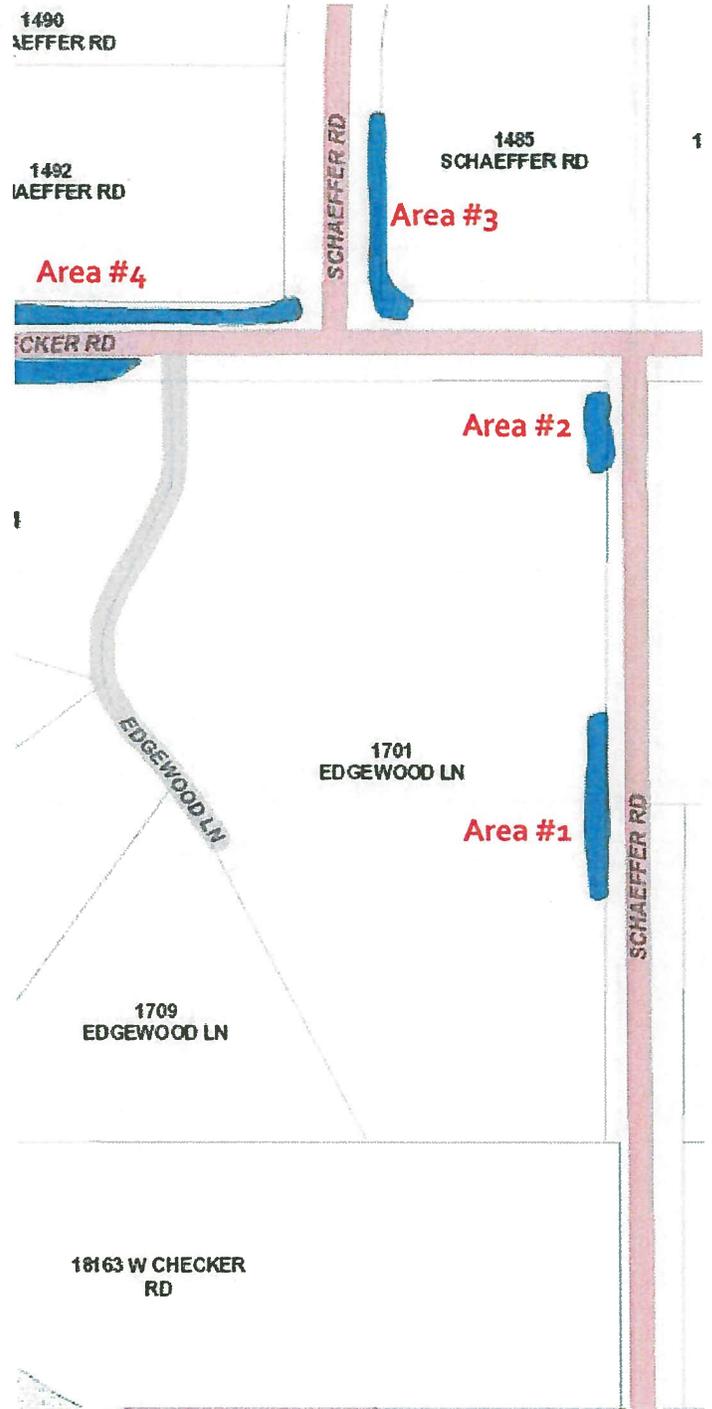
- Hydric soil
- Poorly drained
- High shrink swell potential
- Ponding depth 0 to 0.5 foot, January through May
- High potential for frost action

984B – Barrington and Varna silt loam

- Non-hydric soil
- Moderately well drained
- Moderate shrink swell potential
- Ponding not common
- High potential for frost action

### Hydrology and Watershed

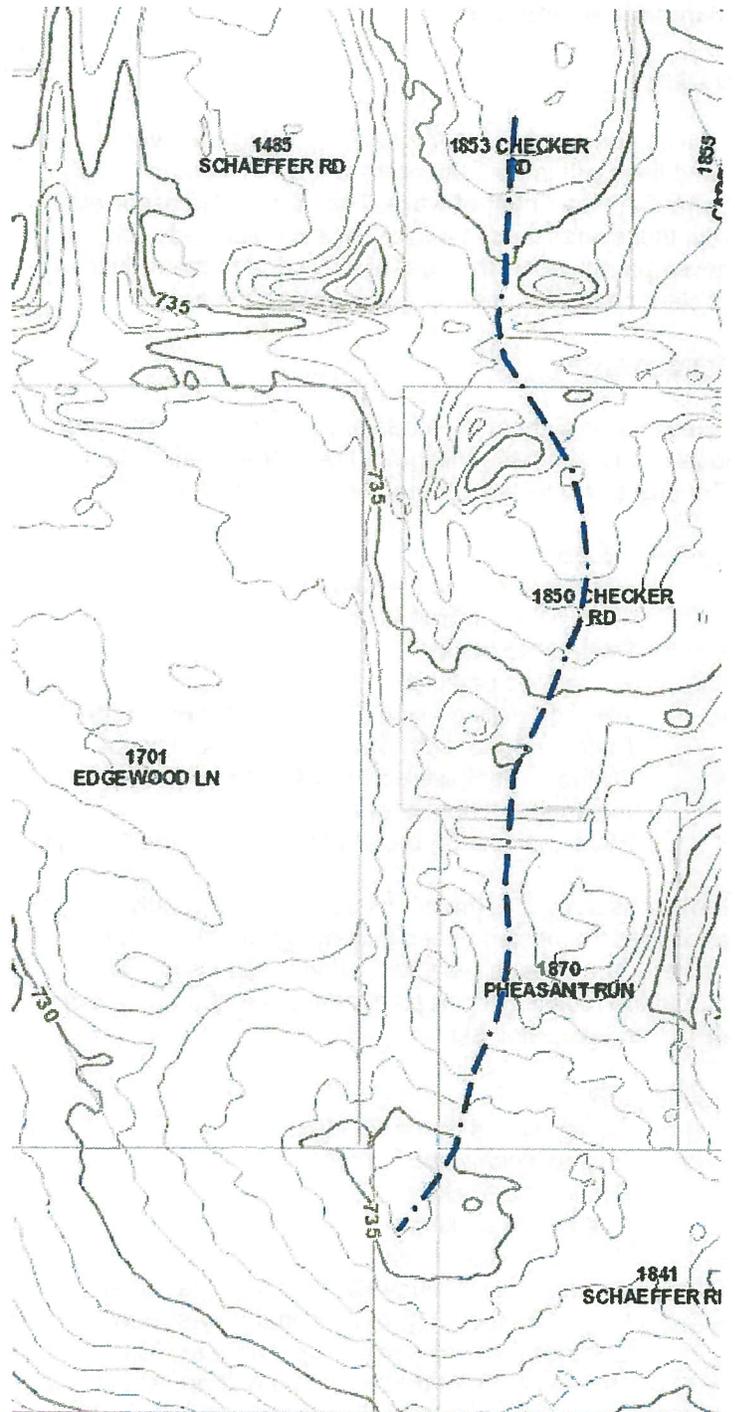
No streams or floodplains are mapped within the trail study area. The contributing watershed originates very near the eastern edge of the study area and is estimated at less than 6 acres. Overland drainage is oriented to the west. Since the contributing area is less than 20 acres and does not appear to contain a depressional floodplain, it is assumed that a BFE determination, compensatory storage and other floodplain/flood-prone area requirements would NOT be applicable for trails planned within the study area.



## Wetlands



Soils



Hydrology & Watershed

# Inventory & Analysis

## Manmade Resources

### Utilities

Utilities observed within the study area include overhead lines within both the north Checker Road and west Schaeffer Road right-of-ways. The utility poles associated with these lines presented the largest obstacle to trail development within the right-of-ways due to the reduction of clear zone width between pole and roadways.

### Transportation

Checker and Schaeffer Roads are both considered minor local roads within the Village of Long Grove jurisdiction. General and observed characteristics for both roads:

#### *Checker Road*

- Posted speed limit = 30 MPH
- Posted weight limit = 4 tons
- Posted "no trucks"
- Posted "no parking"
- Average daily traffic (ADT) = 3,300 (per others)
- Platted 66 foot right-of-way with an additional 10-foot utility easement outside and adjacent to the southern right-of-way:
- 250 lineal feet (approx.) of trail planned (one-way)

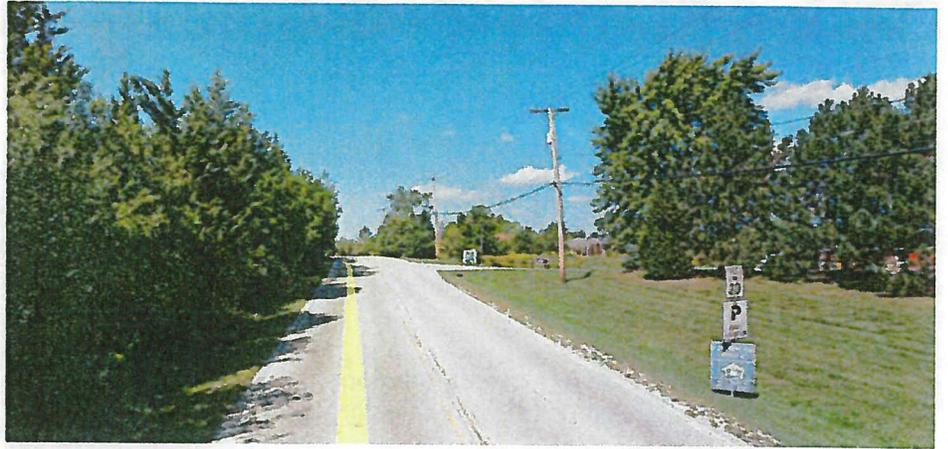
It was observed that the actual travel speed greatly exceeded the posted speed limit along Checker Road, however the speeds were low within the trail study area due to the relatively short planned trail section and proximity to the 3-way stop sign.

#### *Schaeffer Road*

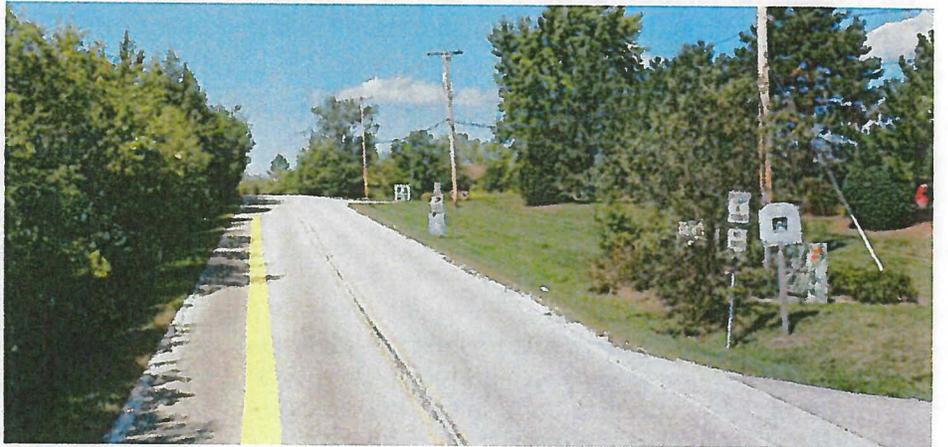
- Posted speed limit = 25 MPH
- Posted weight limit = 4 tons
- Posted "no trucks"
- Posted "no parking"
- Posted "no thru traffic"
- Average daily traffic (ADT) = 1,230 (per others)
- Platted 33 foot right-of-way on the west side from Checker Road to a point approximately 381.75 feet south. From that point south, there is a full 66 foot right-of-way to the southern extent of the trail study area.
- 600 lineal feet (approx.) of trail planned (one-way)

It was observed that the actual travel speed greatly exceeded the posted speed limit and through traffic was frequent along Schaeffer Road adjacent to the planned trail section. Traffic calming should be a consideration if the selected trail is within close proximity of the roadway.

Checker Road Posted Signage



Checker Road Posted Signage



Schaeffer Road Posted Signage



# Design Standards & Guidelines

### Resources

Many resources are available to assist in the design of trails and supporting facilities. The following is a list of resources that formed the technical basis for the majority of the study's recommendations:

- **Bicycle and Pedestrian Accommodations**, IDOT Bureau of Design and Environmental Manual – Chapter 17, 2013.
- **Guide for the Planning, Design and Operation of Pedestrian Facilities**, American Association of State Highway and Transportation Officials, 2004.
- **Guide for the Development of Bicycle Facilities**, American Association of State Highway and Transportation Officials, 2012.
- **A Policy on Geometric Design of Highways and Streets**, American Association of State Highway and Transportation Officials, 2011.
- **Manual on Uniform Traffic Control Devices for Streets and Highways**, FHWA, 2009.
- **Designing Sidewalks for Trails and Access: Part II Best Practices Design Guide**, FHWA, 2001.
- **Recommendations for Accessibility Guidelines: Outdoor Developed Areas**, US Architectural and Transportation Barriers Compliance Board, 2013.
- **Universal Access to Outdoor Recreation: A Design Guide**, USDA Forest Service, 2006.
- **Proposed Accessibility Guidelines for Pedestrian Facilities in the Public Right-of-Way**, United States Access Board, 2011.

### General Considerations

The transportation system should provide a safe network of facilities to accommodate pedestrians and bicyclists. The development of such a network begins in the planning state at the state, regional, and local levels. The challenge that transportation planners and engineers face is to balance the competing interests of each mode of travel in a limited amount of right-of-way. In many cases, pedestrian planning comes down to ensuring that sidewalks and safe crossing opportunities are provided with new roads or during the reconstruction of existing roads.

The proposed US Access Board intends to develop accessibility guidelines for Pedestrian Facilities in the Public Right-of-Way, including sidewalks, pedestrian street crossings, pedestrian signals, shared-use paths and other facilities for pedestrian circulation constructed or altered in the public right-of-way by state and local governments. When the guidelines are adopted . . . compliance with the accessibility standards is mandatory. In the absence of the proposed guidelines, the regulatory assessment assumes that state and local transportation departments will use the revised accessibility standards in the Department of Justice regulations . . . consistent with the guidance issued by the Federal Highway Administration.

The United States Department of Transportation Policy Statement on Bicycle and Pedestrian Accommodation Regulations and Recommendations also encourages State, local governments, professional associations, community organizations, public transportation agencies, and other government agencies to go beyond the minimum design standards and requirements to create safe, attractive, sustainable, accessible, and convenient bicycling and walking networks. For example, shared-use paths that have been designed to minimum width requirements will need retrofits as more people use them. It is more effective to plan for increased usage than to retrofit an older facility.

To an increasing degree, issues of risk management and tort liability are becoming major determinants of planning, engineering, and implementation programs for bicyclists and pedestrians. Agency concerns about potential liability can either lead to innovation and substantially improved facilities and programs, or they can lead to a do-nothing approach. Ignoring risks does not make them go away. Taking systematic steps to identify and evaluate risks and to develop an effective risk management program are essential measures, even if your agency cannot afford to remedy all problems immediately. Without a well-conceived and well-implemented risk management program, the courts become de facto policymakers. Signing any sidewalk as a bicycle path increases the likelihood of tort settlements even years later. Designating a sidewalk for bicycle use sends the message that it is safe to ride there.

## Trail User Types

### Pedestrians and Persons with Disabilities

Safety is a key consideration in the planning, design, and operation of pedestrian facilities. Because pedestrians are the most vulnerable of all transportation facility users, particular attention to pedestrian safety is needed. Accessibility and usability are also key considerations for pedestrian facilities, which should accommodate pedestrians of all abilities.

Personal safety and security are also very important to the decision to walk, and walkway design can make a difference. Sidewalks that are too narrow and/or adjacent to moving lanes of traffic, and pedestrian crossings that are intimidating because of confusing signal indications, excessive crossing distances, or fast-turning vehicles, directly impact the perceived and actual safety of the pedestrian.

### Experienced and Confident Bicyclists

This group includes bicyclists who are comfortable riding on most types of bicycle facilities, including roads without any special treatments for bicyclists. This group also includes utilitarian and recreational riders of many ages who are confident enough to ride on busy roads and navigate in traffic to reach their destination. However, some may prefer to travel on low-traffic residential streets or shared-use paths. Such bicyclists may deviate from the most direct route to travel in their preferred riding conditions. Experienced bicyclists may include commuters, long-distance road bicyclists, racers, and those who regularly participate in rides organized by bicycle clubs.

### Casual and Less Confident Bicyclists

This group includes a majority of the population, and includes a wider range of people:

- (1) those who ride frequently for multiple purpose's;
- (2) those who enjoy bicycling occasionally but may only ride on paths or low-traffic and/or low-speed streets in favorable conditions;
- (3) those who ride for recreation, perhaps with children;
- (4) those for whom the bicycle is a necessary mode of transportation.

In order for this group to regularly choose bicycling as a mode of transportation, a physical network of visible, convenient, and well-designed bicycle facilities is needed. People in this category may move over time to the "experienced and confident" category.

## Trail Surface Types

### Asphalt

Asphalt surfaces provide for the widest variety of trail users including bicyclists, walkers, joggers and wheelchair users. Initial installation costs are relatively high compared to other trail surface types. However, long term maintenance costs will remain lower than others if properly installed and maintained. Asphalt trails are preferred in flood prone areas.

### Concrete

Concrete surfaces are commonly used for sidewalk applications and provide for a wide variety of trail users including bicyclists, walkers, joggers and wheelchair users. Initial installation costs are high compared to other trail surface types. However, long term maintenance costs will remain lower than others if properly installed and maintained.

### Crushed limestone or aggregate

Crushed limestone surfaces can accommodate all trail user types with the exception of in-line skaters. Initial installation costs for this trail surface are relatively low, however long term maintenance costs increase due this surface's higher susceptibility to erosion, especially if not properly installed with swales and cross drains. A crushed limestone surface can also serve as base material for an asphalt surface if trail use increases or funds become available for a surfacing upgrade. Crushed limestone surfaces should be avoided in flood prone areas or steep slopes.

# Design Standards & Guidelines

## Trail Configuration Types

The following are nationally recognized types of pedestrian facilities and bikeway types:

### Sidewalks

Sidewalks are the portion of the street or highway right-of-way designed for the preferential or exclusive use by pedestrians.

*Per AASHTO:* Sidewalks, provided on both sides of a street, are the preferred pedestrian facility. Where one side of the street is undeveloped, sidewalks may be provided only on the developed side of the street. Sidewalks provide the greatest degree of comfort and safety for pedestrians. The Universal Vehicle Code (23) defines a sidewalk as that portion of a street between the curb lines, or the lateral lines of the roadway, and the adjacent property lines, intended for use by pedestrians.

*Per IDOT BDE manual:* Sidewalks are typically 5 ft wide. Where conditions do not allow for a width of 5 ft, a minimum clear sidewalk width of 4 ft is permissible as long as 5 ft by 5 ft passing spaces are provided at least every 200 ft. Sidewalks wider than 5 ft should be considered if intended to accommodate a wider range of users, such as bicyclists. A buffer area of 2 ft to 3 ft wide should be placed between the back of curb (or pavement edge) and the sidewalk. If no buffer area is provided, the sidewalk should be 7 ft wide to accommodate any appurtenances that may be included in the sidewalk. Typically, a 1 ft minimum width is provided between the sidewalk and right-of-way line.

### Sidepaths (also called Off-road Paths)

A sidepath is typically parallel to the vehicular transportation network, within the vehicular right-of-way and is essentially a widened sidewalk. These paths are similar to shared-use paths.

*Per AASHTO:* Sidepaths (also called off-road paths), paved or unpaved, can be an appropriate facility (for pedestrians) in rural or low-density suburban areas. The minimum recommended distance between a path and the roadway curb or edge of traveled way is 5 ft. Where the separation is less than 5 ft, a physical barrier or railing should be provided between the path and the roadway.

*Per IDOT BDE manual:* Railings or barrier, 3.5 ft high, are required wherever a two-way bike path is proposed within 5 ft of the face of a curb (or road edge) on an urban roadway section, or within 10 ft from the traveled way on a rural roadway section. Separation railings are not required when bicycle traffic flows in the same direction as vehicular traffic. If anticipated volume is less than 300 users per Peak Hour, the minimum required width for a one-way path is 6 ft and a two-way path is 10 ft. The horizontal clearance to obstructions should be a minimum of 2 ft and the vertical clearance to obstructions should be a minimum of 8 ft.

# Design Standards & Guidelines

## Shared-use Paths

A shared-use path is typically removed from the vehicular transportation network, within its own easement or right-of-way-, not the vehicular right-of-way. These paths are similar to sidepaths.

*Per AASHTO:* Shared-use paths refer to off-road paths developed for use by both pedestrians and bicyclists. The recommended paved width is 10 ft (with 12 ft recommended) in areas with higher user volumes.

In very rare circumstances, a reduced width of 8 ft may be used where the following conditions prevail:

- Bicycle traffic is expected to be low, even on peak days or during peak hours
- Pedestrian use of the facility is not expected to be more than occasional.

## Shared Lanes (no special provisions)

*Per AASHTO:* A lane of traveled way that is open to both bicycle and motor vehicle travel on a minor road, with low volumes where bicyclists can share the road with no special provisions. ADT generally less than 1,000 per day.

## Shared Lanes (wide outside lanes)

*Per AASHTO:* A lane of traveled way that is open to both bicycle and motor vehicle travel on a major road where bike lanes are not selected due to space constraints or other limitations. ADT generally more than 3,000 per day.

## Marked Shared Lanes

*Per AASHTO:* A lane with pavement marking symbols that indicates an appropriate bicycle positioning in a shared lane.

## Paved Shoulders

*Per AASHTO:* It is important to understand the differences between paved shoulders and bike lanes, particularly when a decision needs to be made as to which facility is more appropriate for a given roadway. Bike lanes are travel lanes, whereas in many jurisdictions, paved shoulders are not (and can therefore be used for parking). On uncurbed cross sections . . . paved shoulders should be at least 4 ft wide (5 ft recommended).

## Bike Lanes

A bike lane on each side of the roadway with a stripe, signage and pavement markings.

*Per AASHTO:* Bike lanes are a portion of the roadway that has been designated for preferential or exclusive use by bicyclists by pavement markings and, if use, signs. It is intended for one-way travel, usually in the same direction as the adjacent traffic lane, unless designed as a contra-flow lane (with physical separation).

*Per IDOT BDE manual:* Design bicycle lanes as one-way facilities that carry bicycle traffic in the same direction as adjacent motor vehicle traffic. Two-way bicycle lanes on one side of the roadway (without physical separation) are unacceptable because they promote riding against the flow of motor vehicle traffic. Wrong-way riding is a major cause of bicycle crashes nationally and violates the Illinois Vehicle Code (625 ILCS 5/11-1505).

# Evaluation of Alignment Options

Four options for providing linear connectivity from the existing Village of Long Grove pathway north of Checker Road to the future Lake County Forest Preserve multi-purpose trail segment terminating in the northeast corner of the portion of the Buffalo Creek Forest Preserve located west of Schaeffer Road have been researched and presented. Each option carries with it a unique set of challenges and offers varying levels of service for pedestrians and/or bicyclists. There are current limitations that prohibit the implementation of some of the options (lack of independent easements, etc.), nonetheless, the various options have been explored in an effort to present a thorough outline of potential opportunities and current limitations for the Village to consider when choosing a preferred option that provides the necessary recreational opportunities, while maintaining user safety in a fiscally responsible manner. Safety should be given a high consideration when selecting a preferred strategy.

It is worth noting that portions of Lot 1 of the Edgebrook Downs of Long Grove, Phase C subdivision (1701 Edgebrook Ln) contain a designated Lowland Conservancy District. The Village of Long Grove Zoning Code – Chapter 5 – lists the following as “Permitted Uses”:

- “passive recreation such as nature trails”
- “special uses: any other uses which can be demonstrated to be of clearly overriding public benefit and would not frustrate the purposes of this chapter”

Further review of these provisions should occur when weighing the shared-use trail option.

The four Options for consideration are depicted on the following pages.

## Option A – Sidewalk

### Objective

Evaluate the requirements for a sidewalk to provide a linkage suitable for pedestrians and persons with disabilities between the existing Village of Long Grove trail system and the proposed Buffalo Creek Forest Preserve multi-use trail.

### Alignment

This option would connect to the existing path within the north Checker Road right-of-way near the southwest corner of the lot associated with 1485 Schaeffer Road and extend east within the north Checker Road right-of-way behind the utility poles to a marked and controlled crossing at the intersection of Checker and Schaeffer Roads. The path would continue south within the west Schaeffer Road right-of-way to the Buffalo Creek Forest Preserve where it would meet up with the proposed multi-use trail.

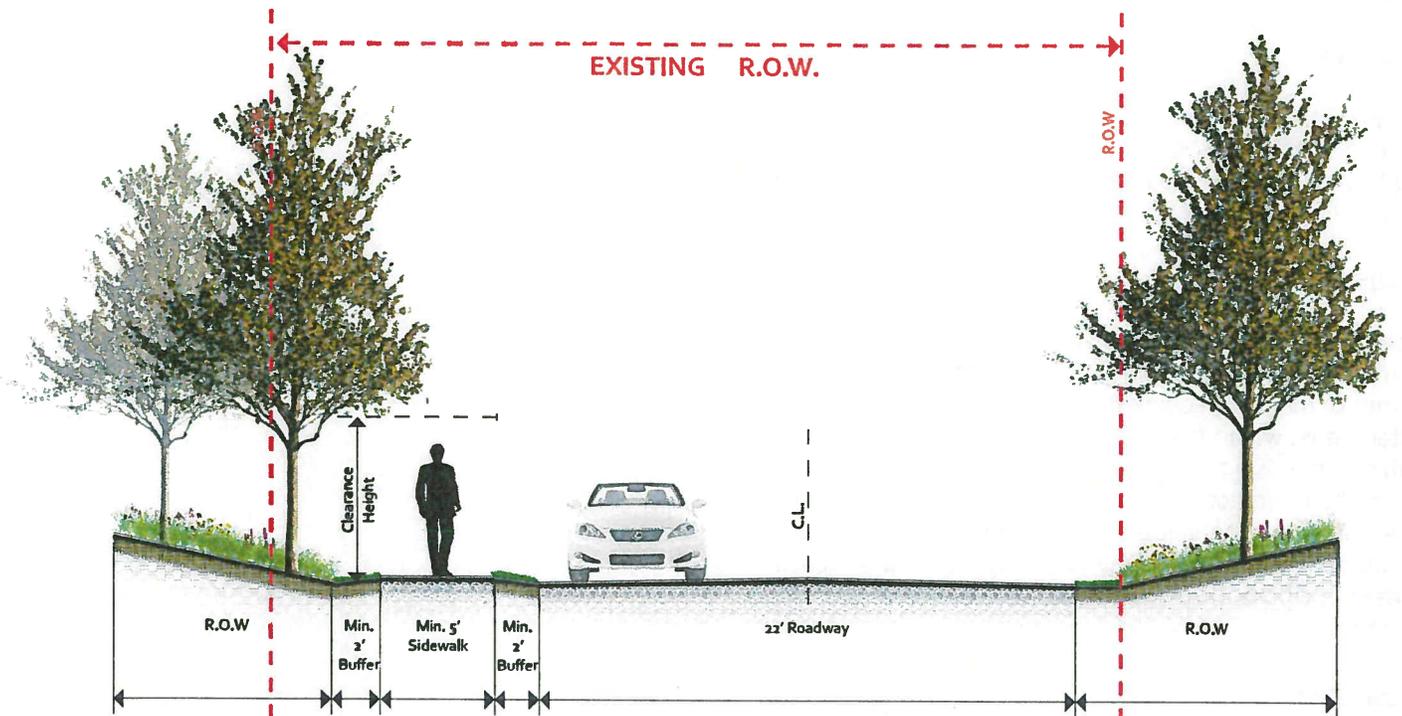
### Challenges

Portions of this alignment travel through points with minimal horizontal clearance. The existing conditions section at left depicts the narrowest point encountered at Pole #4. At this location, minimum horizontal clearance does not exist.

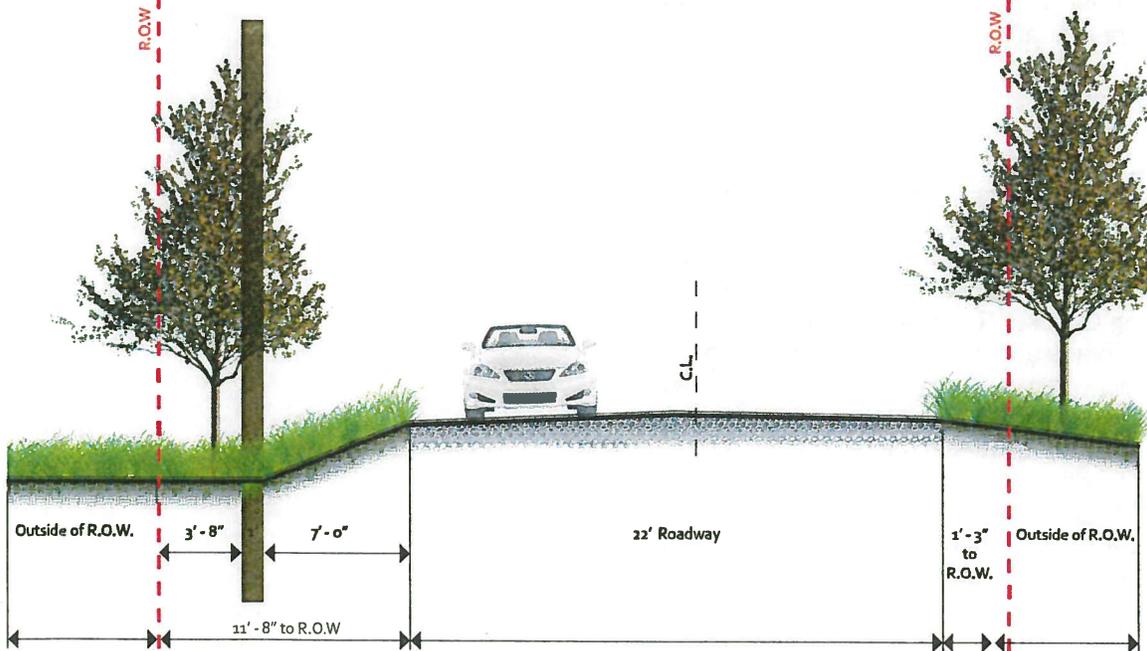
### Opportunities

Relocating utility poles and other obstacles that preclude the required horizontal clearance nearer the right-of-way could provide the required clearance per recommended standards.

# Evaluation of Alignment Options



Clearance Heights:  
Pedestrian - 8' min.



Existing Conditions Dimensions  
Based Off Pole #4

## Option A: Sidewalk Alignment

# Evaluation of Alignment Options

## Option B – Sidepath

### Objective

Evaluate the requirements for a sidepath to provide a linkage suitable for all trail user types between the existing Village of Long Grove trail system and the proposed Buffalo Creek Forest Preserve multi-use trail.

### Alignment

This option would connect to the existing path within the north Checker Road right-of-way near the southwest corner of the lot associated with 1485 Schaeffer Road and extend east within the north Checker Road right-of-way behind the utility poles to a marked and controlled crossing at the intersection of Checker and Schaeffer Roads. The path would continue south primarily within the west Schaeffer Road right-of-way to the Buffalo Creek Forest Preserve where it would meet up with the proposed multi-use trail.

### Challenges

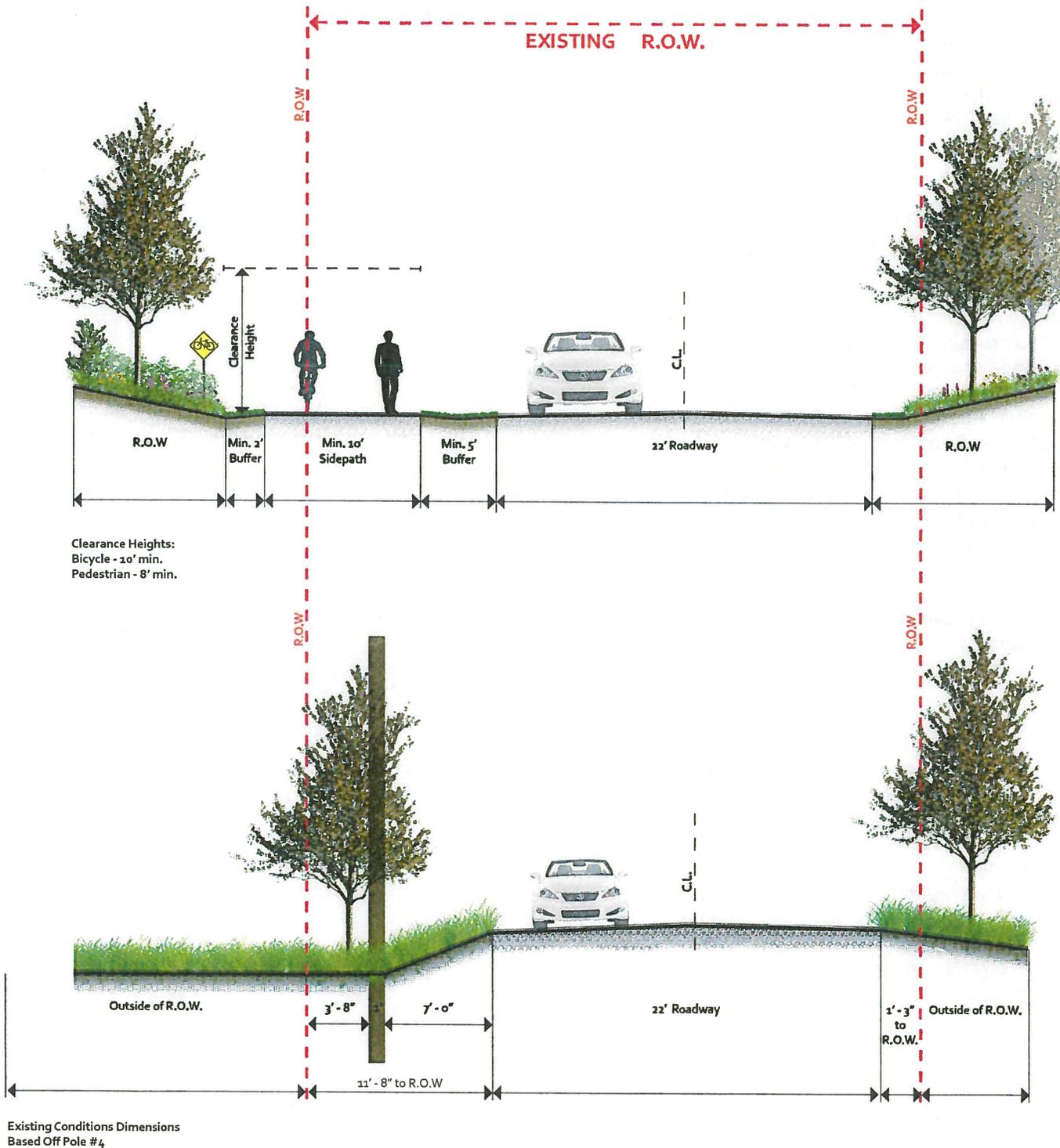
Portions of this alignment travel through points with minimal horizontal clearance. The existing conditions section at left depicts the narrowest point encountered at Pole #4. At this location, minimum horizontal clearance does not exist.

### Opportunities

Relocating utility poles along Checker Road and other obstacles that preclude the required horizontal clearance nearer the right-of-way could provide the required clearance per recommended standards. Relocating the utility poles along Checker Road would NOT provide the required clearance and direct burial of utility lines or acquiring additional easements beyond the right-of-way for pole relocation may be required to provide the required clearance per recommended standards.

A physical barrier could also be considered in conjunction with the actions above to reduce the buffer requirement between roadway and sidepath.

# Evaluation of Alignment Options



## Option B: Sidepath Alignment

# Evaluation of Alignment Options

## Option C – Shared-use Path

### Objective

Evaluate the requirements for a shared-use path to provide a linkage suitable for all trail user types between the existing Village of Long Grove trail system and the proposed Buffalo Creek Forest Preserve multi-use trail.

### Alignment

This option would connect to the existing path within the north Checker Road right-of-way near the southwest corner of the lot associated with 1485 Schaeffer Road. This alignment could extend east within the north Checker Road right-of-way behind the utility poles to a marked and controlled crossing at the intersection of Checker and Schaeffer Roads or extend south across Checker Road and extend east within the south Checker Road right-of-way to a point where it would turn south and parallel the west Schaeffer Road right-of-way within Lot 1 of the Edgebrook Downs Subdivision (1701 Edgwood Ln) to the Buffalo Creek Forest Preserve where it would meet up with the proposed multi-use trail.

### Challenges

Portions of this alignment travel outside of existing Village road right-of-way. The existing conditions section at left depicts the trail in relation to Pole #4.

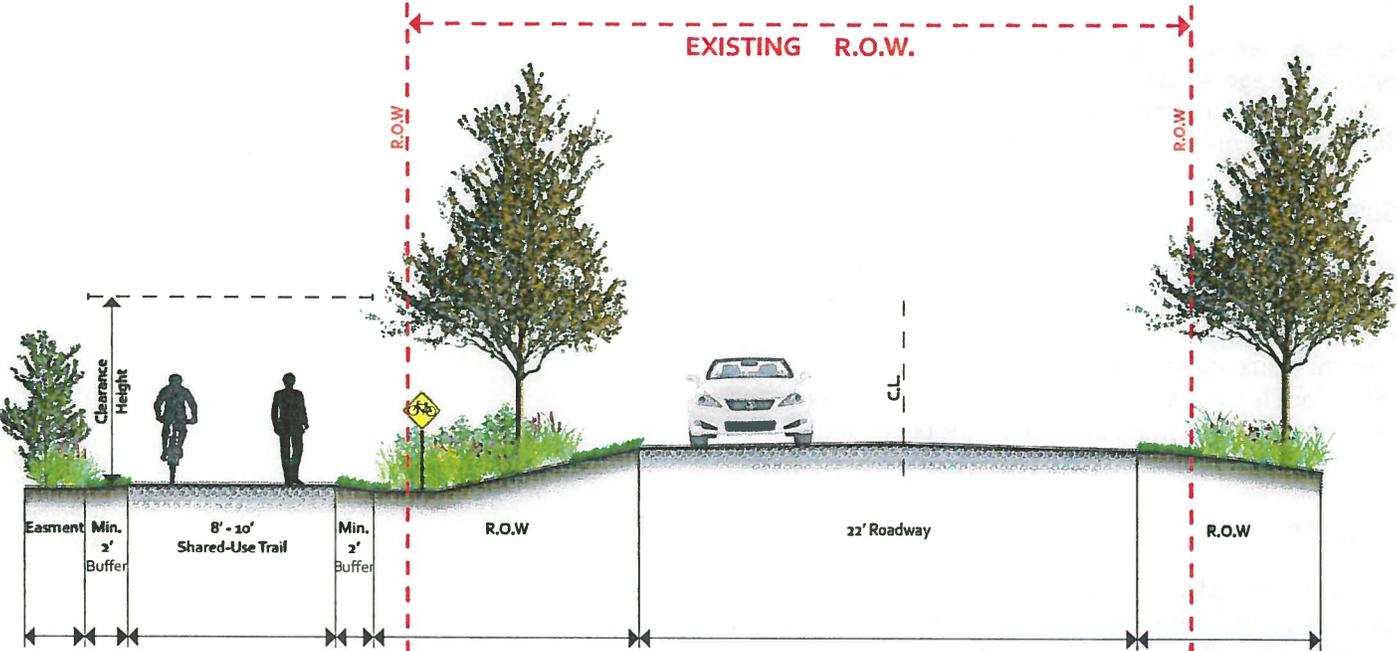
### Opportunities

Portions of Lot 1 of the Edgebrook Downs of Long Grove, Phase C subdivision (1701 Edgewood Ln) contains a designated Lowland Conservancy District. The Village of Long Grove Zoning Code – Chapter 5 – lists the following as “Permitted Uses”:

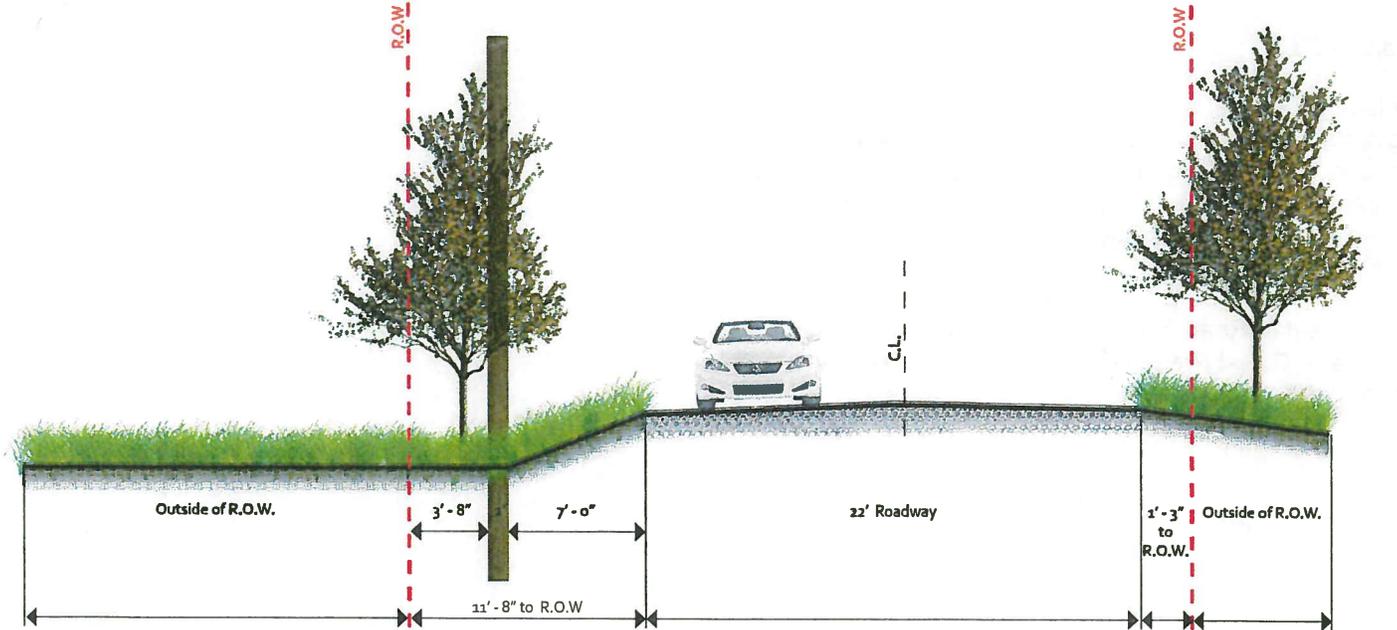
- “passive recreation such as nature trails”
- “special uses: any other uses which can be demonstrated to be of clearly overriding public benefit and would not frustrate the purposes of this chapter”

If it is determined that the proposed trail is a permitted use, it may be possible to construct the majority of the trail within the Lowland Conservancy District portion of Lot 1 with only minor additional easement (2 to 4 feet) necessary through the southern non-Lowland Conservancy District portion (approximately 74 feet in length). This assumes that the majority of the trail through this final section would be shifted into the Schaeffer Road right-of-way. The crossing at Checker Road would warrant additional signage.

# Evaluation of Alignment Options



Clearance Heights:  
 Bicycle - 10' min.  
 Pedestrian - 8' min.



Existing Conditions Dimensions  
 Based Off Pole #4

## Option C: Shared-Use Alignment

# Evaluation of Alignment Options

## Option D – Paved Shoulders

### Objective

Evaluate the requirements for utilizing paved shoulders to provide a linkage suitable for bicyclists between the existing Village of Long Grove trail system and the proposed Buffalo Creek Forest Preserve multi-use trail.

### Alignment

This option would connect to the existing path within the north Checker Road right-of-way near the southwest corner of the lot associated with 1485 Schaeffer Road. This alignment would extend east along both sides of Checker Road before turning south along both sides of Schaeffer Road where it would meet up with the proposed multi-use trail.

### Challenges

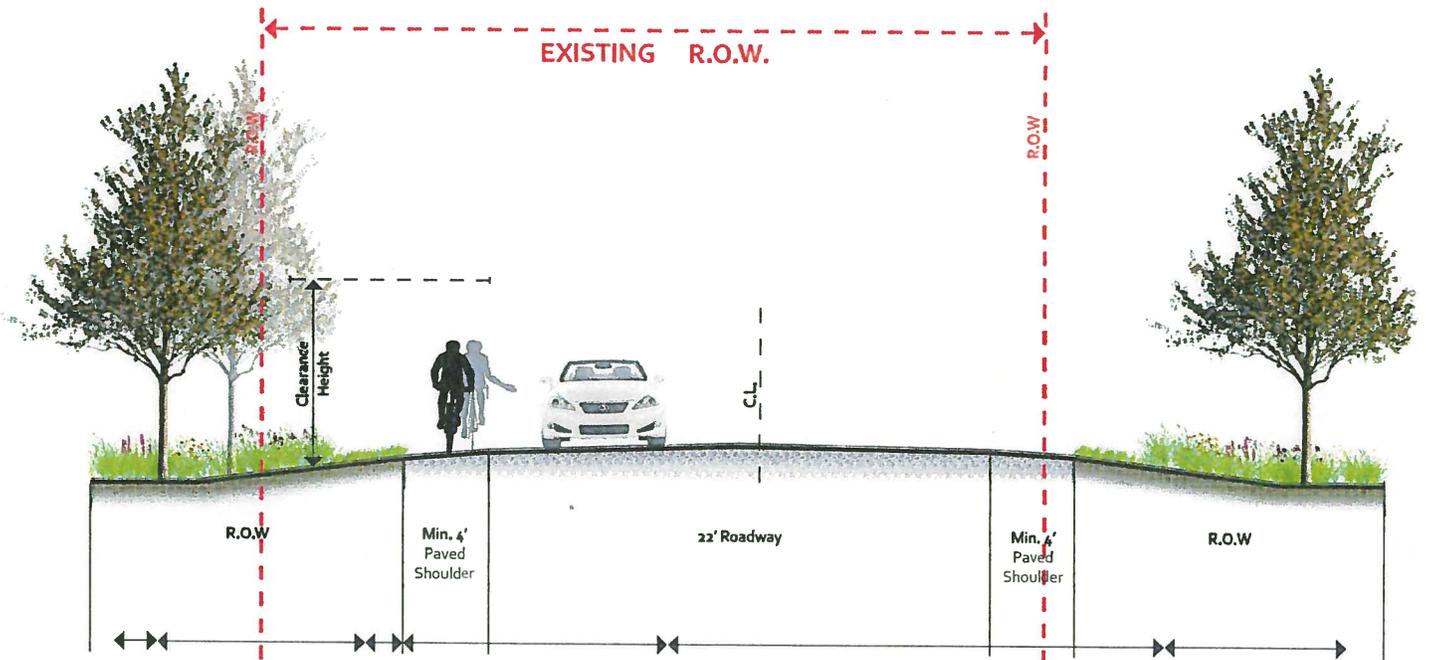
The existing paved roadway is too narrow to provide the necessary shoulder widths for this application. The existing conditions section at left depicts the trail in relation to Pole #4. The portion of this alignment on the east side of Schaeffer Road would occur on the 1850 Checker Road property outside of existing Village road right-of-way.

### Opportunities

Widening Checker and Schaeffer Roads and acquiring additional easements beyond the right-of-way (1850 Checker Road) would be required to provide the required clearance per recommended standards. Sufficient widening would allow for bicycling to occur using paved shoulders or marked lanes.

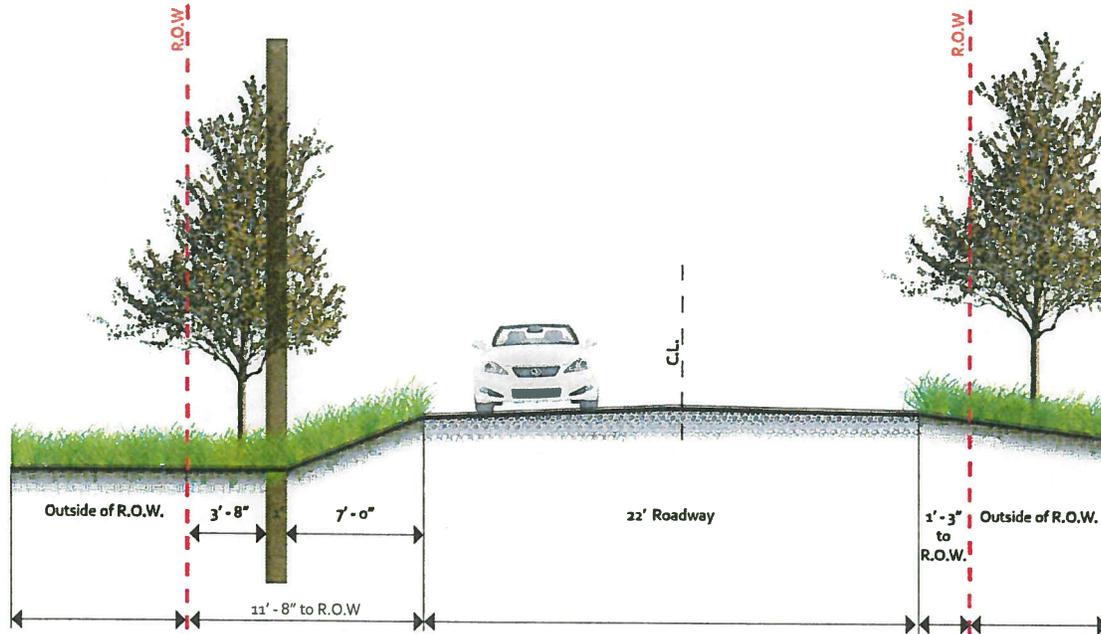
The Schaeffer Road crossing at the connection to the Buffalo Creek Forest Preserve multi-use trail would warrant additional signage.

# Evaluation of Alignment Options



Clearance Heights:  
Bicycle - 10' min.  
Pedestrian - 8' min.

Note: Min. 5' Paved  
Shoulders required for  
Marked Bike Lanes



Existing Conditions Dimensions  
Based Off Pole #4

## Option D: Paved Shoulders