VILLAGE OF BARTLETT

COMMITTEE AGENDA

SEPTEMBER 20, 2022

BUILDING & ZONING, CHAIRMAN HOPKINS

Concept Plan: Bartlett BTS (NWC Bartlett and Naperville Roads)

Amend Municipal Code Title 10, Zoning Ordinance: Cannabis Dispensing Centers

COMMUNITY & ECONOMIC DEVELOPMENT, CHAIRMAN GANDSEY

Bartlett/Streamwood Bike Presentation

FINANCE & GOLF, CHAIRMAN DEYNE

2021-22 Strategic Technology Utilization Plan

AGENDA ITEM EXECUTIVE SUMMARY

Item Name	Concept Plan: Bartlett BTS (NWC Bartlett and Naperville Rds)	Committee or Board	Committee

BUDGET IMPACT

Amount:	N/A	*Budgeted*	N/A
List what fund	N/A		

EXECUTIVE SUMMARY

The petitioner is requesting a **concept plan review** for the unincorporated 64.65 acres located at the northwest corner of West Bartlett Road and Naperville Road.

The petitioner is proposing to construct a 500,400 sq.ft. building that includes 25,000 sq. ft. of office area. The location would serve as the North American headquarters of an undisclosed international company.

The petitioner is requesting two full access curb cuts on Naperville Rd. They are also requesting one full access curb cut on West Bartlett Rd. All three curb cuts are under the jurisdiction of, and would require approval from, the Cook County Department of Transportation.

The concept plan identifies 260 passenger vehicle parking spaces to the east of the building including 10 accessible spaces which meets the zoning ordinance requirement. The plan also identifies 64 truck trailer parking spaces located to the west of the building. The northern-most curb cut would align with the street in the Grasslands Subdivision.

The 2-story office area is located on the east side of the building, facing Naperville Rd. The trailer parking stalls and 55 truck docks are located on the west side of the building.

If the Village Board Committee gives a favorable review of this concept, the petitioner would then proceed with a full development application submittal requesting:

- Annexation,
- Rezoning to the I-1 Light Industrial District (upon annexation),
- Site plan review

ATTACHMENTS (PLEASE LIST)

PDS memo, applicant cover letter, application, location map, concept plan

ACTION REQUESTED

- ☒ For Discussion only–*To review the petitioner's concept plan and provide direction to the petitioner*
- ☐ Resolution
- ☐ Ordinance
- ☐ Motion

Staff: Kristy Stone, Interim PDS Director Date: 09.09.22

PLANNING & DEVELOPMENT SERVICES MEMORANDUM
22-83

DATE: September 9, 2022

TO: Paula Schumacher, Village Administrator

FROM: Kristy Stone, Interim PDS Director KS

RE: **(#CP 22-06) Bartlett BTS – Northwest Corner of W Bartlett Rd and Naperville Rd**

PETITIONER

Jeff Lanaghan on behalf of CRG Acquisition, LLC

SUBJECT SITE

Northwest Corner of W Bartlett Rd and Naperville Rd

REQUEST

Concept discussion

EXISTING AND PROPOSED CONDITIONS

	Land Use	Comprehensive Plan	Zoning
Subject Site	**Vacant**	Office/Business Park	R4*
North	Residential	Attached Residential – Low Density (5-7 du/acre)	SR-6
South	Wetland	Open Space/Recreation	I-2 EDA
East	Residential	Single Family Residential	PD
West	Industrial	Mixed Use Business Park	I-1 PUD and I2*

*Cook County Zoning

DISCUSSION

1. The petitioner is requesting a **concept plan review** for the unincorporated 64.65 acres located at the northwest corner of West Bartlett Road and Naperville Road.

2. The petitioner is proposing to construct a 500,400 sq.ft. building that includes 25,000 sq. ft. of office area. The location would serve as the North American headquarters of an undisclosed international company.

3. The petitioner is requesting two full access curb cuts on Naperville Rd. They are also requesting one full access curb cut on West Bartlett Rd. All three curb cuts are under the jurisdiction of, and would require approval from, the Cook County Department of Transportation.

4. The concept plan identifies 260 passenger vehicle parking spaces to the east of the building including 10 accessible spaces which meets the zoning ordinance requirement. The plan also identifies 64 truck trailer parking spaces located to the west of the building. The northern-most curb cut would align with the street in the Grasslands Subdivision.

5. The 2-story office area is located on the east side of the building, facing Naperville Rd. The trailer parking stalls and 55 truck docks are located in the west side of the building.

6. The Concept Plan includes a 150,000 sq. ft. addition for future expansion.

DISCUSSION POINTS

1. If the Village Board Committee gives a favorable review of this concept, the petitioner would then proceed with a full development application submittal requesting:
    a. annexation,
    b. rezoning to the I-1 Light Industrial District (upon annexation),
    c. Site Plan review

2. A copy of the concept plan and additional background information are attached for your review.

djk/attachments
x:\comdev\memos 2022\083_bartlett bts_vbc.docx

CRG | INTEGRATED REAL ESTATE SOLUTIONS

35 East Wacker Drive
Suite 1300
Chicago, Illinois 60601

p 312 658 0747
f 312 890 7664
realcrg.com

July 19, 2022

Ms. Kristy Stone
Interim Planning & Development Services Director
Village of Bartlett
228 S. Main Street
Bartlett, IL 60103

Re: CRG Concept Plan Application: NW Corner of Naperville Road and Bartlett Road

Dear Ms. Stone,

Attached please find the completed Concept Plan Application Packet for the referenced site which includes the executed application, the letter from the Property Owner authorizing the application, $400 application fee and concept plans as identified in the application packet. CRG is submitting for the Concept Plan Review in order to determine the Village of Bartlett's desire to accept a Build-to-Suit opportunity at this location.

CRG is working with an international company to bring their North American Headquarters to the Village of Bartlett. Some of the features of the headquarters includes approximately 500,400 SF of plant and storage space, approximately 25,000 SF of two story office space, 55 dock positions, 64 trailer stalls and 260 cars.

The facility is well located for this user as it is almost the centroid of their work force which is focused in the western and northwestern suburbs. While headcount fluctuates, they are anticipating between 150 to 200 full time equivalent employees at this location. In addition, a similar number of jobs will be created for the construction of the facility.

It is currently anticipated that the two story office façade would be centered on the eastern wall to present an impressive and pleasing view to the new senior development across the street to the east. This allows the truck docks to be located on the western face of the building, away from residents and towards the existing RV RENT N GO facility. The building provides a meaningful transition between the two uses.

Please review our submission and feel free to reach out with any questions or comments.

Best Regards,

Jeff Lanaghan
SVP/Partner, Midwest Region

CC: Tom Hefty, Senior Associate General Counsel
Chris McKee, CRG

VILLAGE OF BARTLETT
CONCEPT PLAN APPLICATION

(Please type or complete in blue or black ink.)

For Office Use Only

Case # CP 22-06

PROJECT NAME Bartlett BTS

PETITIONER INFORMATION (PRIMARY CONTACT)

Name: CRG Acquisition, LLC

Street Address: 7800 Forsyth Blvd, Suite 300

City, State: St. Louis, MO **Zip Code:** 63105

Email Address: LanaghanJ@realcrg.com **Phone Number:** (630) 258-5273

Preferred Method to be contacted: Email

PROPERTY OWNER INFORMATION

Name: Central DuPage Hospital Association

Street Address: 211 East Ontario Street, Suite 1400

City, State: Chicago, IL **Zip Code:** 60611-3223

Phone Number: _____

OWNER'S SIGNATURE: _____ **Date:** _____

(OWNER'S SIGNATURE IS REQUIRED or A LETTER AUTHORIZING THE PETITION SUBMITTAL.)

PROPERTY INFORMATION

Common Address/General Location of Property: NW corner of W Bartlett Rd & Naperville Rd

Property Index Number ("Tax PIN"/"Parcel ID"): Parcel No. (APN): 06-33-100-005

Acreage: 64.65 **No. of Lots/Units:** 1

Zoning: Existing: ER-1 (Refer to Official Zoning Map) **Land Use:** Existing: Vacant

Proposed: I-1 Proposed: Industrial

Comprehensive Plan Designation for this Property: Commercial (Refer to Future Land Use Map)

APPLICANT'S EXPERTS **(If applicable, including name, address, phone and email)**

Attorney Katie Jahnke Dale - DLA Piper

444 West Lake Street, Suite 900 | Chicago, IL 60606-0089

katie.dale@dlapiper.com | (312) 368-2153

Engineer William L. Bohne - Jacob & Hefner Associates, Inc.

1333 Butterfield Road, Suite 300 | Downers Grove, IL 60515

bbohne@jacobandhefner.com

Other

ACKNOWLEDGEMENT

I understand that by signing this form, that the property in question may be visited by village staff and Board/Commission members throughout the petition process and that the petitioner listed above will be the primary contact for all correspondence issued by the village.

I certify that the information and exhibits submitted are true and correct to the best of my knowledge and that I am to file this application and act on behalf of the above signatures.

Any late, incomplete or non-conforming application submittal will not be processed until ALL materials and fees have been submitted.

CRG Acquisition, LLC
By: CRG Services Management, LLC, its Manager

SIGNATURE OF PETITIONER: _____

PRINT NAME: Jennifer E. Nichols, Secretary

DATE: July 20, 2022

REIMBURSEMENT OF CONSULTANT FEES AGREEMENT

The undersigned hereby acknowledges his/her obligation to reimburse the Village of Bartlett for all necessary and reasonable expenses incurred by the Village for review and processing of the application. Further, the undersigned acknowledges that he/she understands that these expenses will be billed on an ongoing basis as they are incurred and will be due within thirty days. All reviews of the petition will be discontinued if the expenses have not been paid within that period. Such expenses may include, but are not limited to: attorney's fees, engineer fees, public advertising expenses, and recording fees. Please complete the information below and sign.

NAME OF PERSON TO BE BILLED: Jeff Pardieck

ADDRESS: 7800 Forsyth Blvd, Suite 300

St. Louis, MO, 63105

PHONE NUMBER: (314) 575-8579

EMAIL: PardieckJ@realcrg.com

SIGNATURE: _____

DATE: 7/20/22

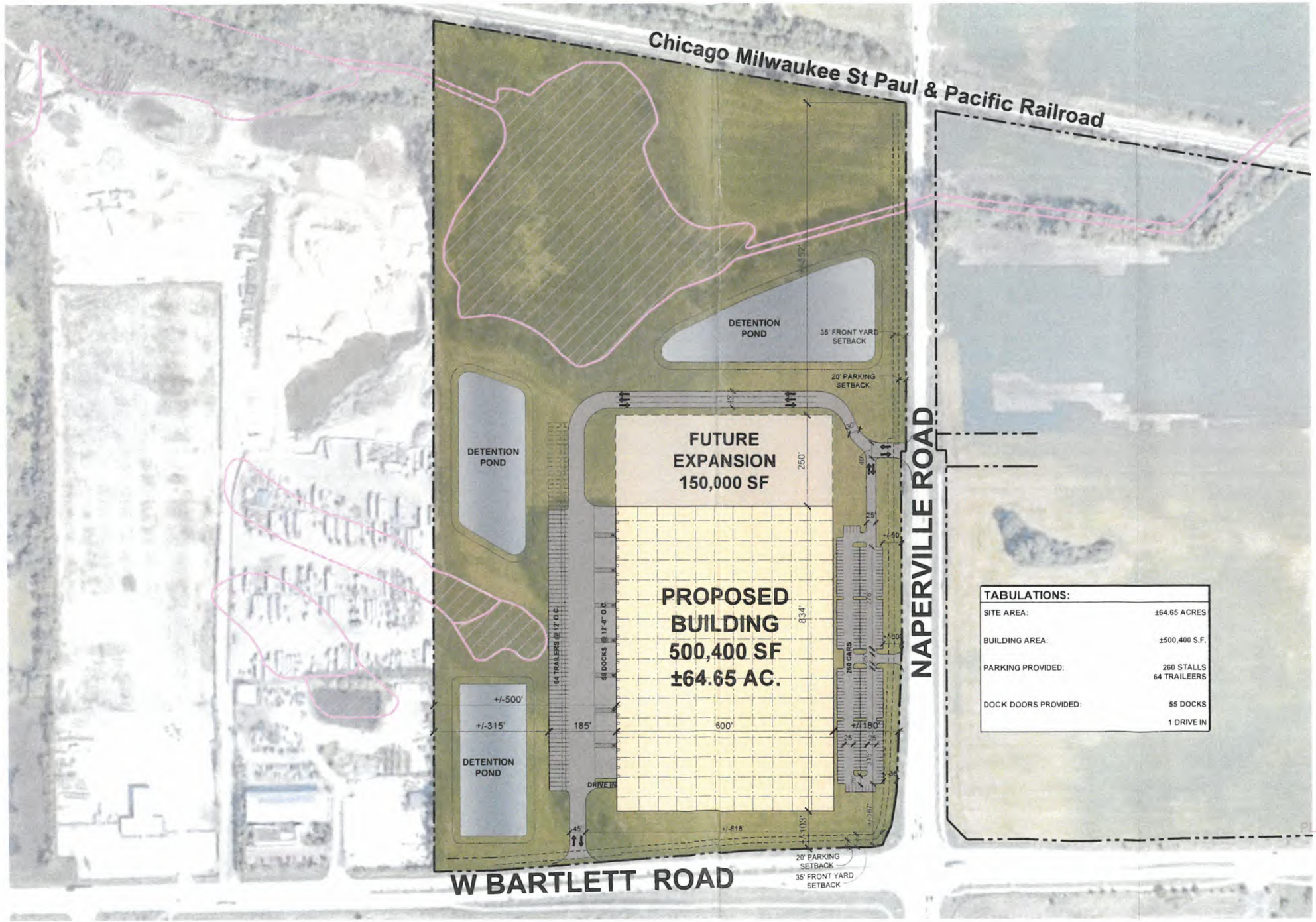
Location Map

CP #22-06
Bartlett BTS

2022

N
W E
S

US Feet
0 155310 620



SITE PLAN
1" = 120'-0"

PRELIMINARY

SEAL

developed by: CRG | INTEGRATED REAL ESTATE SOLUTIONS
realcrg.com
35 E. WACKER DRIVE
CHICAGO, ILLINOIS 60601
Ph 312.658.0747 Fx 314.429.1890

Architect

Civil Engineer: CONSULTANT NAME
Structural Engineer: CONSULTANT NAME
Landscape Architect: CONSULTANT NAME
Interior Architect: CONSULTANT NAME
MEP Engineer: CONSULTANT NAME

PROJECT:
Project Bartlett & Naperville Road
BARTLETT, IL

Developer

DRAWING ISSUE 07/18/2022
Description Date

RECEIVED
AUG 01 2022
PLANNING & DEVELOPMENT
VILLAGE OF BARTLETT

Drawing Title: SITE PLAN
Drawing No.: SK-1
XXX

Clayco Job No. x-xxx-xxx | Consult Job No. x-xxx-xxx

Agenda Item Executive Summary

Item Name	Amending Municipal Code Title 10, Zoning Ordinance: Cannabis Dispensing Centers	Committee or Board	Committee

BUDGET IMPACT

Amount:	N/A	*Budgeted*	N/A
List what fund	N/A		

EXECUTIVE SUMMARY

As discussed at the Committee of the Whole meeting on March 15, 2022, below is a summary of the proposed text amendments to the Zoning Ordinance pertaining to adult-use and medical cannabis dispensing centers:

(a) the 1,000-foot distance requirement would be removed from the definitions,

(b) said uses would be allowed as a special use in the B-2 (Local Convenience), B-3 (Neighborhood Shopping), and B-4 (Community Shopping) Zoning Districts,

(c) said uses would be prohibited in the Downtown Overlay District (including Bartlett Town Center, Main Street Plaza and Streets of Bartlett), and

(d) the findings of fact for a special use permit would be updated to delete the distance requirements

The **Planning & Zoning Commission** reviewed the proposed text amendments and conducted the requisite public hearing at their meeting on July 7, 2022. The P & Z Commission **recommended approval** of the text amendments as written and **requested the Village Board review the P & Z discussion regarding dispensaries in the Downtown Overlay District.**

The **Committee of the Whole** reviewed the Planning & Zoning Commission's recommendation at their August 16, 2022 meeting and discussed the possibility of allowing dispensaries within portions of the Downtown Overlay District while prohibiting sales in close proximity to residential units.

As directed, Staff prepared maps with options for cannabis dispensaries within the Downtown Overlay District for the Committee's review:

Option 1: Prohibit cannabis dispensing centers in the entire Downtown Overlay District

Option 2: Allow cannabis dispensing centers in the B-3 Zoning District as a Special Use and prohibit cannabis dispensing centers within the B-1 Village Center Zoning District and in PD, Planned Development, Zoning Districts in buildings that contain residential units

Option 3: Allow cannabis dispensing centers as a Special Use in all locations that commercial uses are permitted in the DT-O

ATTACHMENTS (PLEASE LIST)

PDS Memo, Maps of Options 1-3 for the DT-O District, Proposed Cannabis Dispensary Use Map

ACTION REQUESTED

- ☑ For Discussion only - *To review and forward to the Village Board for a final vote*
- ☐ Resolution
- ☐ Ordinance
- ☐ Motion

Staff: Kristy Stone, Interim PDS Director Date: 08.26.2022

PLANNING & DEVELOPMENT SERVICES MEMORANDUM
22-073

DATE: August 26, 2022

TO: Paula Schumacher, Village Administrator

FROM: Kristy Stone, Interim PDS Director

RE: Adult-Use and Medical Cannabis Dispensing Center Zoning Ordinance Text Amendments

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MOST RECENT DISCUSSION

The **Committee of the Whole** reviewed the Planning & Zoning Commission's recommendation at their August 16, 2022 meeting and discussed the possibility of allowing dispensaries within portions of the Downtown Overlay District while prohibiting sales in close proximity to residential units. The Committee directed Staff to prepare options for further discussion.

Below are three options for cannabis dispensaries within the Downtown Overlay District:

Option 1: Prohibit cannabis dispensing centers in the entire Downtown Overlay District

Option 2: Allow cannabis dispensing centers in the B-3 Zoning District as a Special Use and prohibit cannabis dispensing centers within the B-1 Village Center Zoning District and in PD, Planned Development, Zoning Districts in buildings that contain residential units within the DT-O

Option 3: Allow cannabis dispensing centers as a Special Use in all locations that commercial uses are permitted in the DT-O

Staff has attached maps of each option for the Committee to review.

BACKGROUND

Ordinance #2013-81 amended the Zoning Ordinance to define cannabis cultivation centers and medical cannabis dispensing centers to match the Medical Cannabis Program Act definitions and to list cannabis cultivation centers (for medical cannabis) and medical cannabis dispensing centers as a special use in the I-1 (Light Industrial) and I-2 EDA (General Industrial Economic Development Area) Zoning Districts.

Ordinance #2019-94 amended the Zoning Ordinance to allow adult-use cannabis dispensing centers as a special use in the I-1 (Light Industrial) and I-2 EDA (General

Industrial Economic Development Area) Zoning Districts and as a prohibited use in all other zoning districts. The ordinance additionally restricted the number of dispensing centers to one (1) within Blue Heron Business Park/Bluff City Industrial Park and one (1) within Brewster Creek Business Park.

The original Medical Cannabis Program Act imposed a distance restriction that medical dispensing organizations could not be located within 1,000 feet of a school, day care center, day care home, or an area zoned for residential use. In 2019, the State eliminated the distance requirements for medical use dispensaries and allowed local units of government to adopt any distance requirements by local ordinance. The Village currently requires the 1,000-ft distance requirement for both medical and adult-use dispensing centers.

A concept plan was submitted for an adult-use cannabis dispensing center at the Bartlett Town Center. The application was withdrawn prior to its scheduled discussion at the March 15, 2022 Committee of the Whole meeting, however Staff requested input from the Committee regarding cannabis dispensing centers in commercial districts. The consensus of the Committee was to (1) follow the State's revision and remove the 1,000-foot distance requirement for all cannabis dispensing centers and (2) allow cannabis dispensing centers, as a special use, in the commercial districts except for B-1 (Village Center) District and the Downtown Overlay District.

TEXT AMENDMENTS

In order to accomplish the goal of allowing, by special use, adult-use cannabis dispensing centers and medical cannabis dispensing centers within the commercial districts of the Village (excluding the downtown), the following amendments to the Zoning Ordinance are proposed:

Section 10-2-2 *Definitions* is amended to (a) remove the requirement that adult-use cannabis dispensing centers and medical cannabis dispensing centers be located at least one thousand (1,000) feet from the property line of a pre-existing public or private nursery school, preschool, primary or secondary school, day care center, day care home or residential care home or pre-existing property zoned or used for residential purposes and (b) remove the limit of one (1) adult-use dispensing center within the Blue Heron Business Park/Bluff City Industrial Park and one (1) within the Brewster Creek Business Park.

Section 10-6A-6 *Prohibited Uses* is amended in the B-1 Village Center District to add medical cannabis dispensing center to the list of prohibited uses. *(Adult-use dispensing centers are currently prohibited.)*

Section 10-6B-6 *Prohibited Uses* and 10-6B-4 *Special Uses* are amended in the B-2

Local Convenience Shopping District: to remove adult-use cannabis dispensing center from the list of prohibited uses and to add adult-use cannabis dispensing center and medical cannabis dispensing center (except in the Downtown Overlay District, where such uses shall be prohibited) to the list of special uses.

Section 10-6C-6 *Prohibited Uses* and 10-6C-4 *Special Uses* are amended in the B-3 Neighborhood Shopping District: to remove adult-use cannabis dispensing center from the list of prohibited uses and to add adult-use cannabis dispensing center and medical cannabis dispensing center (except in the Downtown Overlay District, where such uses shall be prohibited) to the list of special uses.

Section 10-6D-6 *Prohibited Uses* and 10-6D-4 *Special Uses* are amended in the B-4 Community Shopping District: to remove adult-use cannabis dispensing center from the list of prohibited uses and to add adult-use cannabis dispensing center and medical cannabis dispensing center to the list of special uses.

Section 10-9A-6 *Prohibited Uses* is amended in the PD Planned Development District to add Section C to prohibit adult-use cannabis dispensing centers and medical cannabis dispensing centers in any PD Planned Development District which is located within the Downtown Overlay District.

Section 10-13-9 *Special Uses* to amend the findings of fact specific to adult-use cannabis dispensing centers and adult-use cannabis cultivation centers to also include medical cannabis dispensing centers and medical cannabis cultivation centers and to eliminate the 1,000-foot distance requirement.

Section 10-13-9 *Special Use Permits* is amended to remove the requirement that adult-use cannabis dispensing centers are located a minimum of one thousand feet (1,000') from the property line of a pre-existing public or private nursery school, preschool, primary or secondary school, day care center, day care home or residential care home or pre-existing property zoned or used for residential purposes.

Proposed Use Designations for Adult-Use and Medical Cannabis Dispensing Centers by Zoning District

	Special Use	Prohibited Use
All Residential Districts (ER-1 thru SR-6 & MH-1)		**YES**
B-1 Village Center District		**YES**
B-2 thru B-4 Commercial Districts	**YES** (when not located within the Downtown Overlay District)	**YES** (when located within the Downtown Overlay District)
OR Office/Research District		**YES**
I-1 & I-2 EDA Industrial Districts	**YES**	
PD Planned Development District	**YES**	**YES**

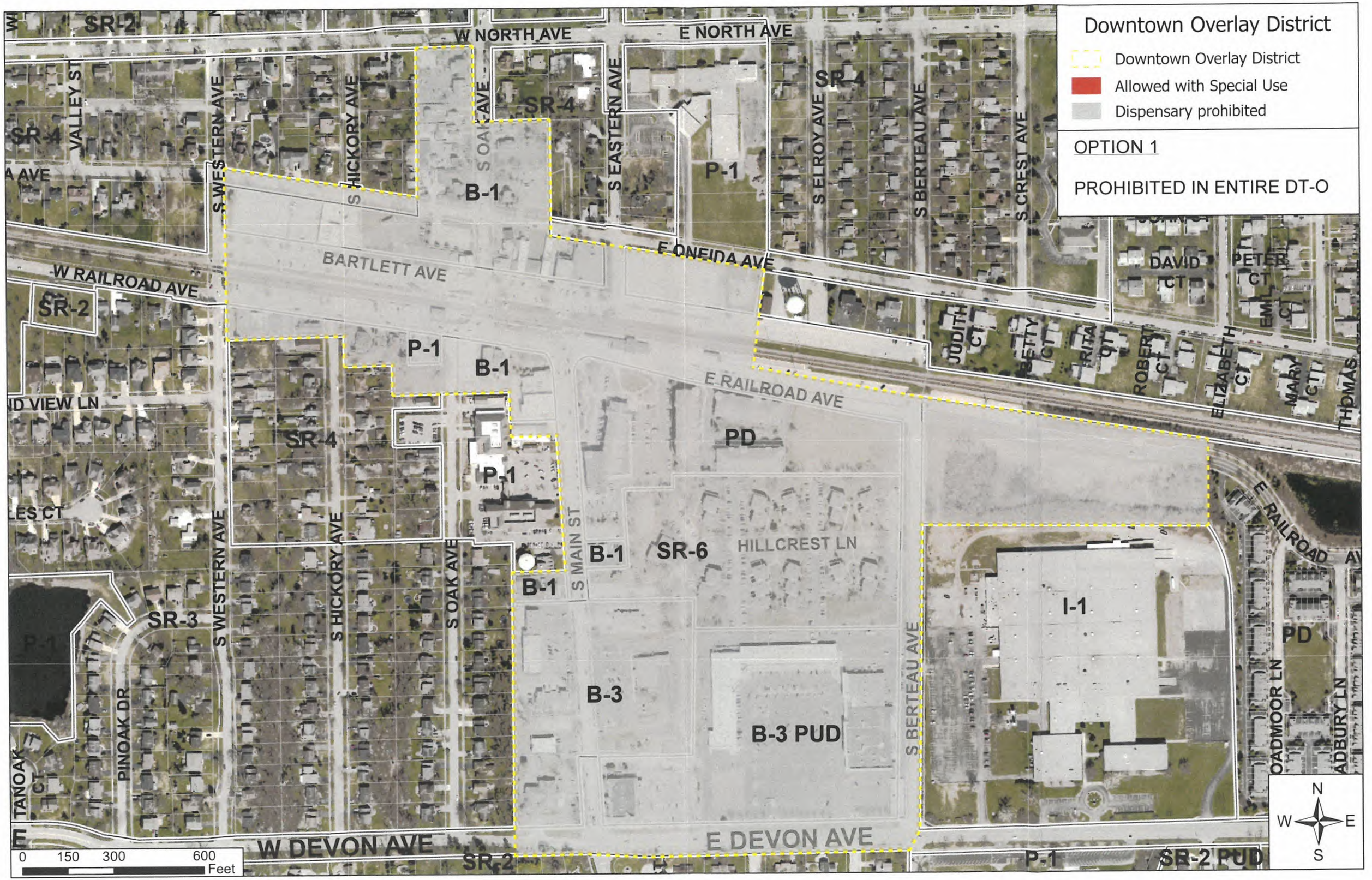
	(when not located within the Downtown Overlay District and commercial/industrial uses are allowed)	(when located within the Downtown Overlay District)
P-1 Public Land District		**YES**

A proposed cannabis dispensary use map is attached to further clarify where cannabis dispensaries could operate with a Special Use Permit if the text amendments are adopted.

P & Z COMMISSION RECOMMENDATION

1. The Planning & Zoning Commission reviewed the proposed text amendments and conducted the requisite public hearing at their meeting on July 7, 2022. During their discussion, Planning & Zoning Commissioners did not object to allowing dispensaries as a Special Use in the Downtown Overlay District; however, they deemed that to be a matter of policy to be determined by the Village Board. The P & Z Commission **recommended approval of the text amendments as written and requested the Village Board review the P & Z discussion regarding dispensaries in the Downtown Overlay District.**

kms/attachments


Downtown Overlay District
Downtown Overlay District
Allowed with Special Use
Dispensary prohibited
OPTION 1
PROHIBITED IN ENTIRE DT-O
W NORTH AVE
E NORTH AVE
E ONEIDA AVE
W RAILROAD AVE
E RAILROAD AVE
W DEVON AVE
E DEVON AVE
BARTLETT AVE
HILLCREST LN
S WESTERN AVE
S HICKORY AVE
S OAK AVE
S EASTERN AVE
S MAIN ST
S ELROY AVE
S BERTEAU AVE
S CREST AVE
VALLEY ST
PINOAK DR
DAVID CT
PETER CT
JUDITH CT
BETTY CT
ROBERT CT
ELIZABETH CT
MARY CT
SR-2
SR-3
SR-4
SR-6
P-1
B-1
B-3
B-3 PUD
PD
I-1
SR-2 PUD
0 150 300 600 Feet
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Downtown Overlay District

- Downtown Overlay District
- Allowed with Special Use
- Dispensary prohibited

OPTION 2

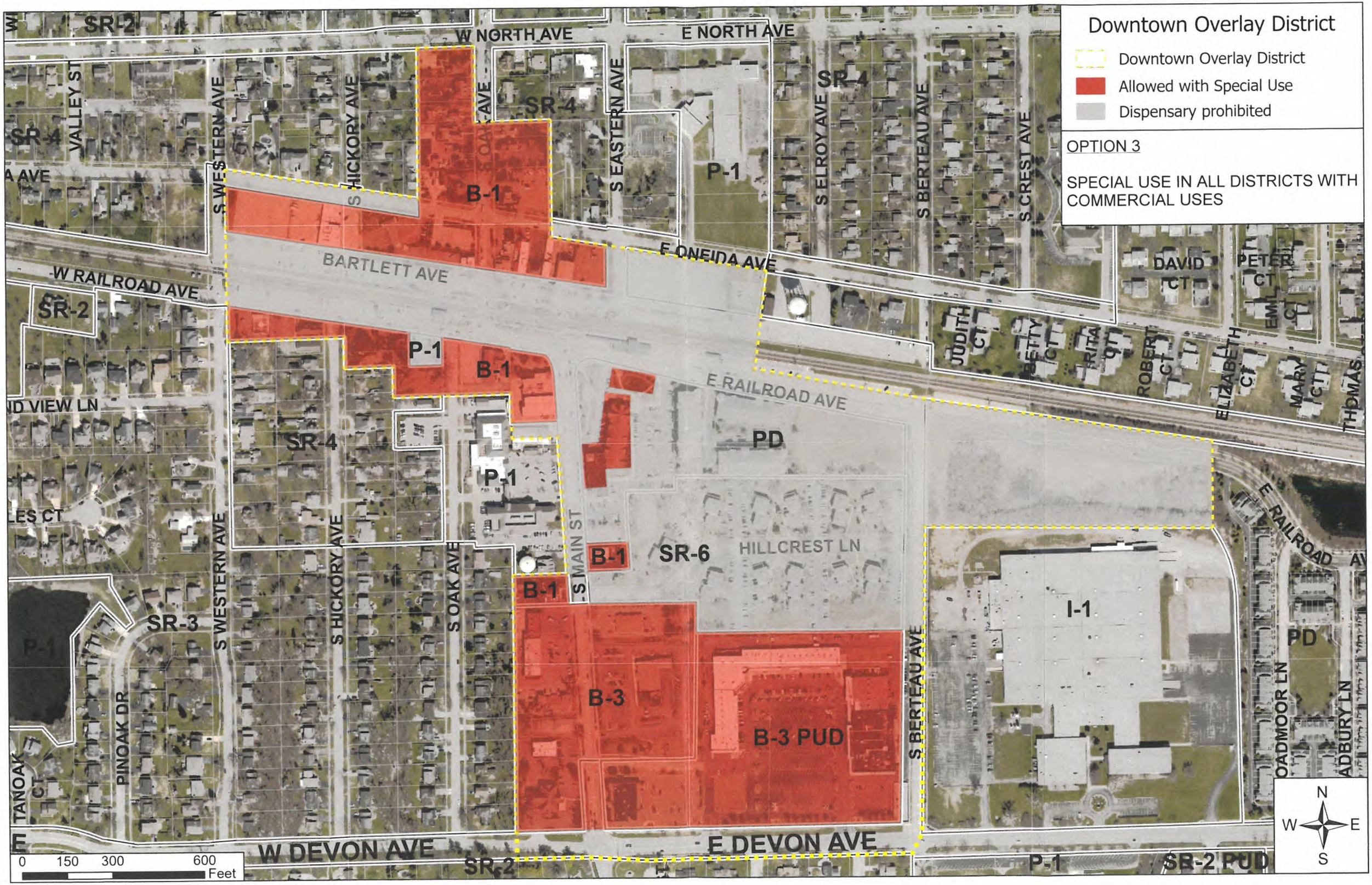
SPECIAL USE IN B-3 DISTRICTS

PROHIBITED IN B-1 DISTRICT AND IN PD DISTRICTS IN BUILDINGS THAT CONTAIN RESIDENTIAL UNITS

W NORTH AVE
E NORTH AVE
W RAILROAD AVE
BARTLETT AVE
E ONEIDA AVE
E RAILROAD AVE
W DEVON AVE
E DEVON AVE
S WESTERN AVE
S HICKORY AVE
S OAK AVE
S EASTERN AVE
S MAIN ST
S ELROY AVE
S BERTEAU AVE
S CREST AVE
HILLCREST LN
PINOAK DR
DAVID CT
PETER CT
JUDITH CT
BETTY CT
RITA CT
ROBERT CT
ELIZABETH CT
MARY CT
VALLEY ST
SR-2
SR-3
SR-4
SR-6
P-1
B-1
B-3
B-3 PUD
PD
I-1
SR-2 PUD

0 150 300 600 Feet

N W E S


Downtown Overlay District
Downtown Overlay District
Allowed with Special Use
Dispensary prohibited
OPTION 3
SPECIAL USE IN ALL DISTRICTS WITH COMMERCIAL USES
W NORTH AVE
E NORTH AVE
BARTLETT AVE
E ONEIDA AVE
W RAILROAD AVE
E RAILROAD AVE
W DEVON AVE
E DEVON AVE
S WESTERN AVE
S HICKORY AVE
S OAK AVE
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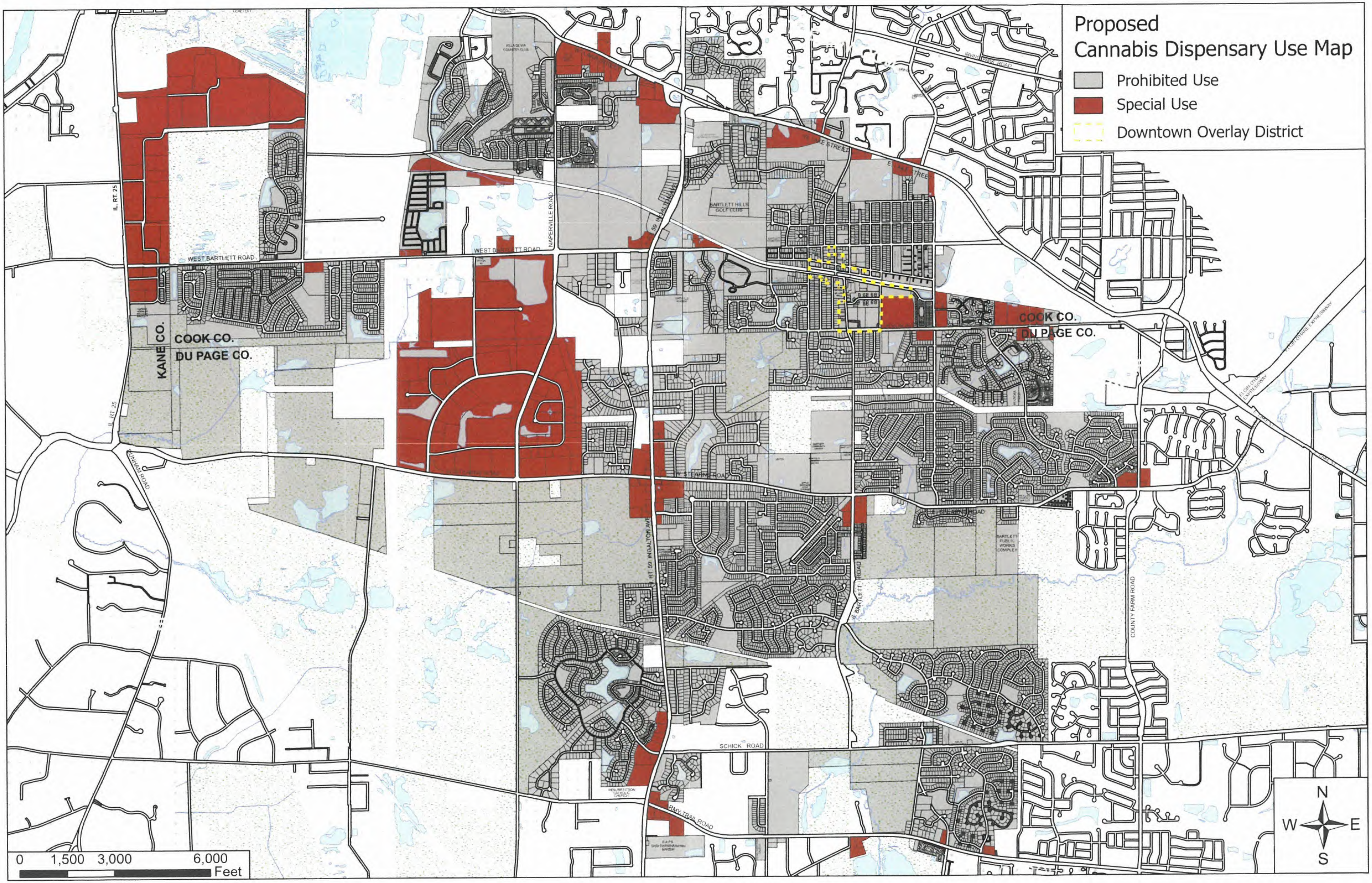

Proposed
Cannabis Dispensary Use Map
Prohibited Use
Special Use
Downtown Overlay District
WEST BARTLETT ROAD
IL RT 25
NAPERVILLE ROAD
BARTLETT HILLS GOLF CLUB
COOK CO.
DU PAGE CO.
KANE CO.
W. STEARNS ROAD
BARTLETT PUBLIC WORKS COMPLEX
COUNTY FARM ROAD
SCHICK ROAD
ARMY TRAIL ROAD
0 1,500 3,000 6,000
Feet
N
W
E
S

AGENDA ITEM EXECUTIVE SUMMARY

Item Name	Bartlett & Streamwood Bicycle & Pedestrian Plan	Committee or Board	Committee

BUDGET IMPACT

Amount:	N/A	*Budgeted*	N/A
List what fund	N/A		

EXECUTIVE SUMMARY

In 2021, the Villages of Bartlett & Streamwood received funding from the Chicago Metropolitan Agency for Planning (CMAP) to develop a plan to make walking and bicycling more safe, comfortable and convenient. Sam Schwartz Engineering served as the consultant to evaluate existing and future facilities to create connected networks for pedestrians and bicyclists.

Through data collection and analysis, stakeholder interviews, and community engagement, the plan:
- Evaluated existing and planned bicycle and pedestrian facilities.
- Identifies a complete, connected network of bikeways that will allow Bartlett and Streamwood residents to access key destinations easily and safely by bicycle.
- Identifies key pedestrian improvements and strategies to increase pedestrian safety, comfort, and convenience.

The draft report was presented to the **Bike & Run Advisory Committee** at their June 23, 2022 meeting.

Alex Hanson from Sam Schwartz Engineering will present an overview of the final report.

ATTACHMENTS (PLEASE LIST)

PDS memo, Bartlett & Streamwood Bicycle & Pedestrian Plan

ACTION REQUESTED

- ☑ For Discussion only–*To review the final report and forward to the Village Board*
- ☐ Resolution
- ☐ Ordinance
- ☐ Motion

Staff: Kristy Stone, Interim PDS Director Date: 09.13.22

PLANNING & DEVELOPMENT SERVICES MEMORANDUM
22-84

DATE: September 13, 2022

TO: Paula Schumacher, Village Administrator

FROM: Kristy Stone, Interim PDS Director KS

RE: **Bartlett & Streamwood Bicycle & Pedestrian Plan**

In 2021, the Villages of Bartlett & Streamwood received funding from the Chicago Metropolitan Agency for Planning (CMAP) to develop a plan to make walking and bicycling more safe, comfortable and convenient. Sam Schwartz Engineering served as the consultant to evaluate existing and future facilities to create connected networks for pedestrians and bicyclists.

Through data collection and analysis, stakeholder interviews, and community engagement, the plan:

- Evaluated existing and planned bicycle and pedestrian facilities.
- Identifies a complete, connected network of bikeways that will allow Bartlett and Streamwood residents to access key destinations easily and safely by bicycle.
- Identifies key pedestrian improvements and strategies to increase pedestrian safety, comfort, and convenience.

The draft report was presented to the Bike & Run Advisory Committee at their June 23, 2022 meeting.

Alex Hanson from Sam Schwartz Engineering will present an overview of the attached final report.

kms/attachments
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Bartlett & Streamwood

Bicycle and Pedestrian Plan

FINAL REPORT

SEPTEMBER 2022

Chicago Metropolitan Agency for Planning

Sam Schwartz

Table of Contents

Acknowledgments

Project Team

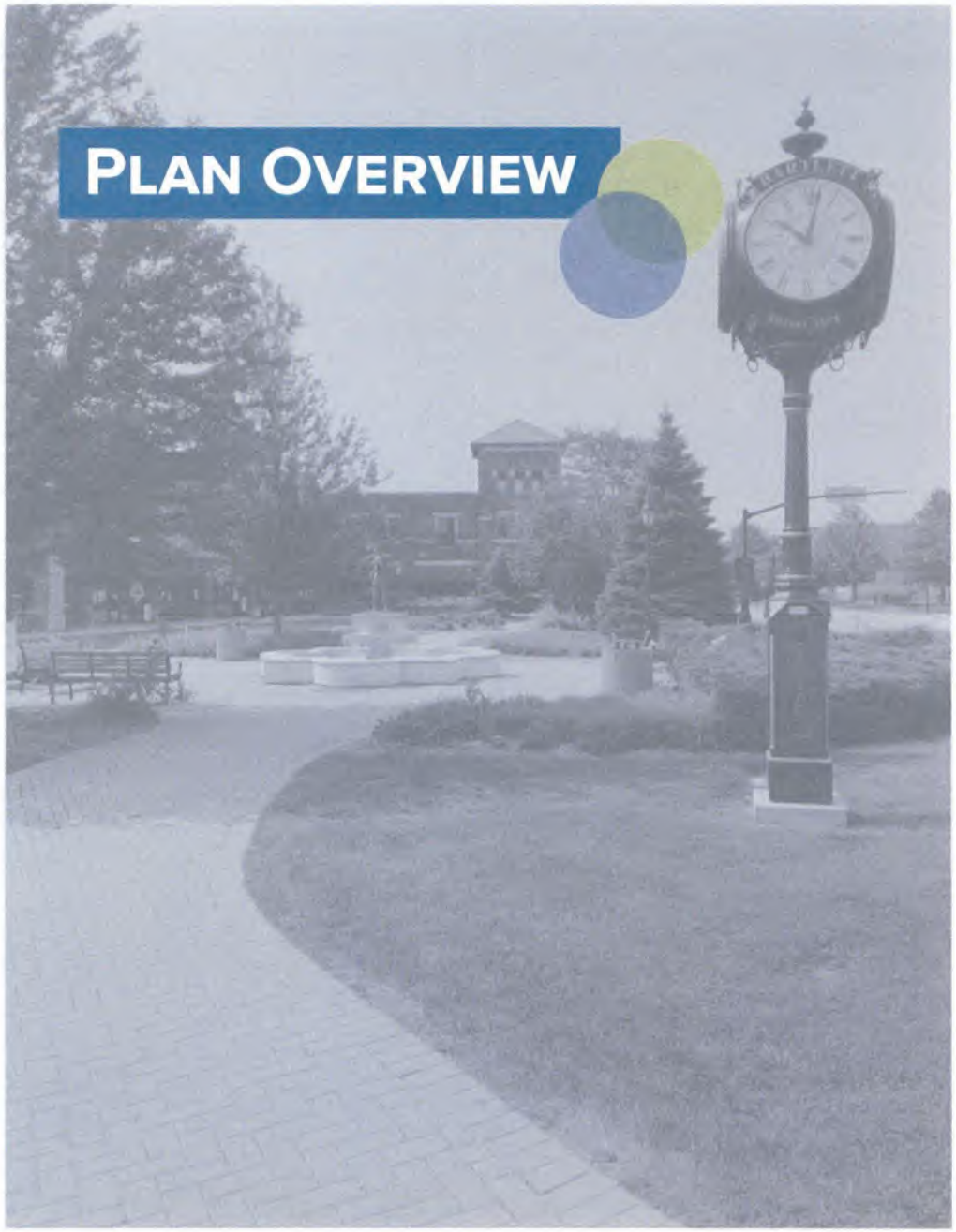
Daniel Dinges	*Village of Bartlett*
Tyler Isham	*Village of Bartlett*
Kristy Stone	*Village of Bartlett*
Matt Mann	*Village of Streamwood*
Alex Riegler	*Village of Streamwood*
Lindsay Bayley	*Chicago Metropolitan Agency for Planning*
Jaemi Jackson	*Chicago Metropolitan Agency for Planning*

Steering Committee

Maggie Czerwinski	*Active Transportation Alliance*
Rita Fletcher	*Bartlett Park District*
Benet Haller	*Cook County Department of Transportation and Highways*
Jeff Prowell	*District U-46*
Sidney Kenyon	*DuPage County Department of Transportation*
Pamela Sielski	*Forest Preserve District of Cook County*
Daniel White	*Forest Preserve District of Cook County*
Jessica Ortega	*Forest Preserve District of DuPage County*
James Barr	*Hanover Township*
Alex Househ	*Illinois Department of Transportation*
Steven Mangella	*Metra*
Christine Rose	*Pace Bus*
David Tomzik	*Pace Bus*
Dave Simmons	*Ride Illinois*
Jeff Janda	*Streamwood Park District*
Aaron Reinke	*Village of Bartlett*
Jeff Harris	*Village of Streamwood*

Project Funding

This project was prepared by the Chicago Metropolitan Agency for Planning (CMAP) Local Technical Assistance (LTA) program.



PLAN OVERVIEW

The Villages of Bartlett and Streamwood partnered with the Chicago Metropolitan Agency for Planning (CMAP) to develop the Bartlett & Streamwood Bicycle and Pedestrian Plan. The process to develop the plan spanned three phases:

1. Getting to Know the Communities: The project team engaged with community members and stakeholders and collected and analyzed a wide range of data to identify the opportunities and challenges for people walking and biking in Bartlett and Streamwood.

2. Visioning: The project team collaborated with CMAP and Village staff to develop preliminary recommendations to address the issues and opportunities identified in the first phase. These recommendations were further refined based on input from community members and the steering committee.

3. Plan Development: The project team identified priorities based on community and stakeholder input to help craft a set of actionable recommendations and roadmap for plan implementation.

The Bartlett & Streamwood Bicycle and Pedestrian Plan will benefit all Bartlett and Streamwood residents and focuses specifically on improving safety, access, and connectivity for people walking and biking, seniors, children, and people with disabilities. It builds on the communities' existing assets and supports the goals in Streamwood's Comprehensive Plan, the Village of Bartlett's Strategic Plan, and CMAP's ON TO 2050 plan.

Objectives of the Plan

Evaluate existing and planned bicycle and key pedestrian facilities.

Identify a complete, connected network of bikeways that will allow Bartlett and Streamwood residents to access key destinations easily and safely by bicycle.

Identify key pedestrian improvements and strategies to increase pedestrian safety, comfort, and convenience.

Village Context

The Villages of Bartlett and Streamwood are located roughly 30 miles northwest of downtown Chicago. Streamwood lies within Cook County, while portions of Bartlett are within Cook, DuPage, and Kane Counties. Both Villages have about 40,000 residents (41,120 in Bartlett and 39,809 in Streamwood) and have become increasingly diverse over the past decade (see the following page for more information on demographics). There are more than 15,500 combined jobs in Bartlett and Streamwood.

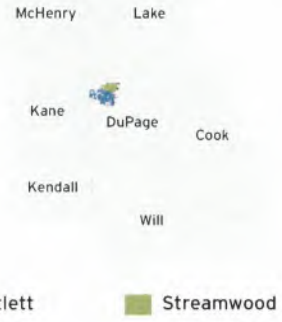
Both Villages' proximity and access to parks and forest preserves are key amenities for the communities. Residents in both Villages have significantly greater access to parks than the average resident across the CMAP region.

While most residents have access to parks, more than 20% of residents in both Bartlett and Streamwood are physically inactive and more than 25% are obese. Residents also have greater than average exposure to air pollution and the resulting health risks.

Transportation Network

Bartlett and Streamwood have limited public transit service, and a lower share of residents live in areas with moderate to high transit availability than the region overall. Because of the lack of alternatives, Bartlett and Streamwood residents drive more than the average resident in the CMAP region, leading to higher transportation costs for households.

Location within the CMAP Region



Biking and Walking

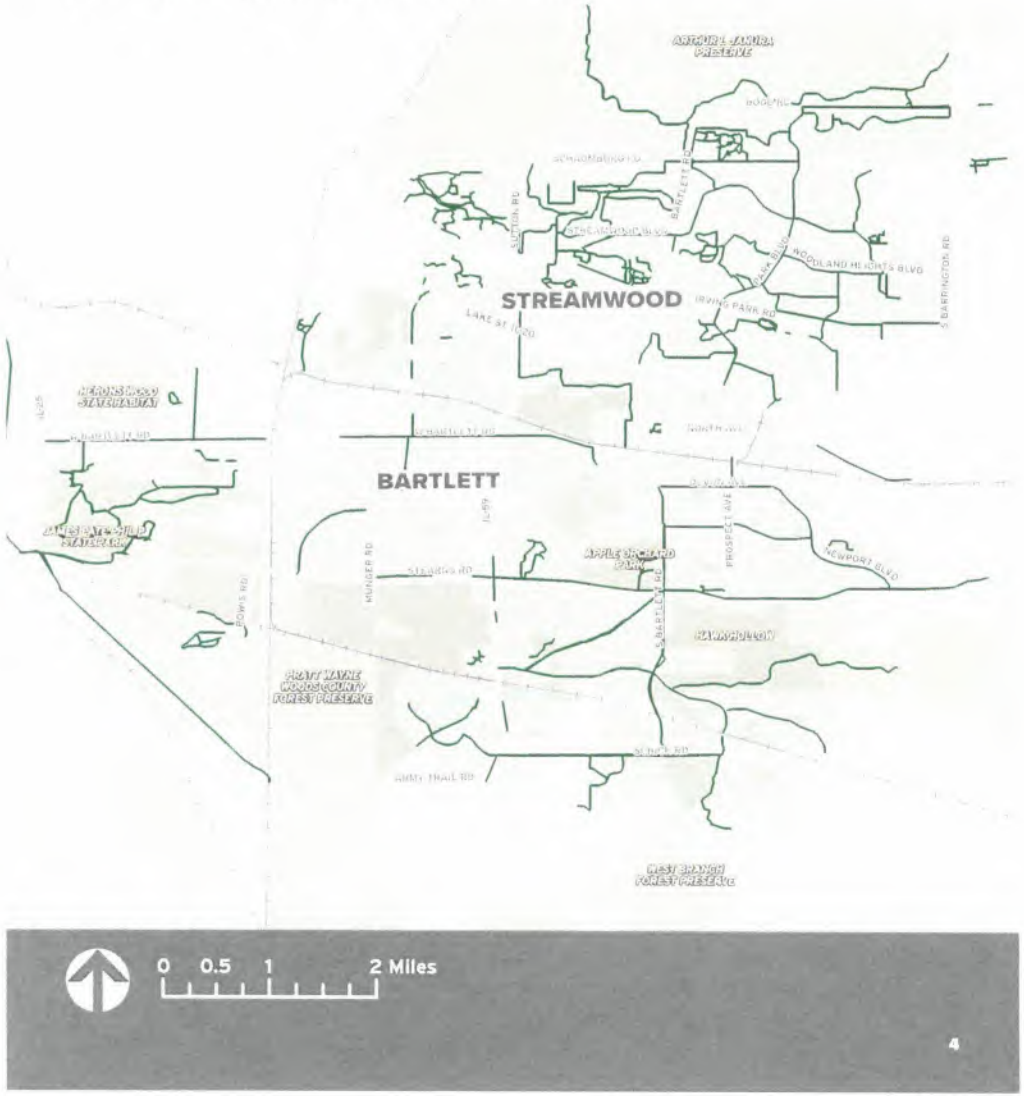
Together, Bartlett and Streamwood have over 100 miles of existing bikeways. The Villages' existing bike networks mainly consist of shared use paths and off-street trails and provide connections to regional trails like the Illinois Prairie Path, N Central DuPage Regional Trail, and the Poplar Creek Trail.

Across both Villages, about two-thirds of all streets have sidewalks on both sides of the street. No portions of either Village are rated as highly walkable according to CMAP. In both Villages, people walking and biking account for a disproportionate share of people seriously injured or killed in traffic crashes.

Building off the Villages' existing assets to create complete, connected, and safe networks for people walking and biking will yield a multitude of benefits. Investing in walking and biking can make streets safer for all users while also providing an alternative to driving and increasing access to transit and other important destinations.

Making it easier and more enjoyable to walk and bike provides more opportunities for physical activity, can help address existing health and environmental challenges, lower household transportation costs, and increase retail activity and economic development. These benefits are particularly important for lower-income households and disconnected or disinvested communities.

Existing Bikeways in Bartlett and Streamwood



Village Profile—Bartlett

Population

41,120 residents live in Bartlett. The Village's population has remained flat over the past decade.

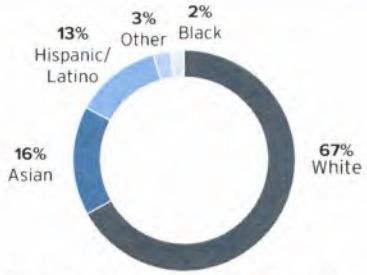
Households

79% of households in Bartlett are families with children, compared to 65% across the CMAP region.

Access to a Vehicle

4% of Bartlett households (540 households) don't have access to a vehicle. The share of households without access to a vehicle has grown by **23%** since 2010.

Race and Ethnicity

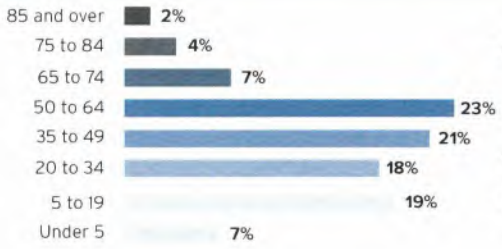


Bartlett has become increasingly diverse over the past two decades. The share of residents who identify as non-white more than doubled from 2000 to 2019, increasing from **16% to 33%**.

Income

Bartlett's median household income is **48%** higher than the CMAP region as a whole, but **19%** of households make less than $50,000 per year.

Age



Over 65

13% of Bartlett residents are over the age of 65. The share of residents over 65 has more than doubled since 2000.

19 and Under

26% of Bartlett residents are age 19 or younger. The share of residents 19 and under has declined since 2000, when it was 33%.

Village Profile—Streamwood

Population

39,809 residents live in Streamwood. The Village's population has remained flat over the past decade.

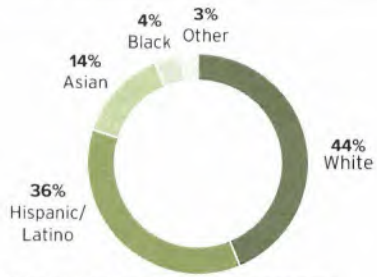
Households

75% of households in Streamwood are families with children, compared to 65% across the CMAP region.

Access to a Vehicle

3% of Streamwood households (403 households) don't have access to a vehicle. The share of households without access to a vehicle has grown by **207%** since 2010.

Race and Ethnicity

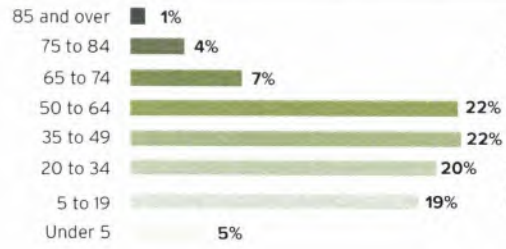


Streamwood has become increasingly diverse over the past two decades. The share of residents who identify as non-white grew from **31% to 56%** from 2000 to 2019.

Income

Streamwood's median household income is **10%** higher than the CMAP region as a whole, but **28%** of households make less than $50,000 per year.

Age



Over 65

12% of Streamwood residents are over the age of 65. The share of residents over 65 has doubled since 2000.

19 and Under

24% of Streamwood residents are age 19 or younger. The share of residents 19 and under has declined since 2000, when it was 31%.

Opportunities and Challenges

During the Getting to Know the Communities phase of the project, the project team identified the following key opportunities and challenges through conversations with community members and stakeholders and an analysis of the existing conditions in both Villages. Additional information is available in the Existing Conditions Report.

Recommendations at a Glance—Biking

The Bartlett and Streamwood Bicycle and Pedestrian Plan calls for a complete, connected network of bikeways designed to be safe and comfortable for the residents of Bartlett and Streamwood, as well as workers and visitors. Delivering on this vision will require significant investments to enhance existing bikeways and create new ones that link together existing routes and community destinations.

Based on input from community members and stakeholders, this plan emphasizes designing and implementing bikeways that are safe and comfortable for people of all ages and abilities. Most of the new bikeways in both Villages are either low-stress connections on neighborhood streets that will be accompanied by traffic calming to reinforce safe driving behavior or facilities that are physically separated from cars, such as off-street trails and shared use paths along major streets. More information on the types of bikeways that are proposed is on page 25.

Three main types of routes make up the network:

1. Off-Street Trails: Trails in parks, forest preserves, and other locations outside the street right-of-way provide comfortable experiences for people of all ages and abilities.

2. Low Stress Local Routes: Local streets typically have low speed limits and traffic volumes. When accompanied by additional traffic calming measures to keep vehicle speeds safe and volumes low, along with additional signage and wayfinding, local streets can become high-quality bikeways.

3. Separated Routes on Major Streets: In both Villages, many important destinations are located along major streets. Major streets often provide the most direct connections and connections across and between Bartlett and Streamwood. These streets, though, often have higher speed limits and traffic volumes, and, thus, require bikeways that are protected or separated from traffic.

The future bike network (shown in the map to the right) entails a more than 50% increase in the total miles of bikeways in both Bartlett and Streamwood. **In Bartlett, the future bike network includes 34 miles of new bikeways and 4 miles of enhancements to existing routes.** In Streamwood, the future bike network includes 23 miles of new bikeways and 13 miles of enhancements to existing routes.

When completed, the vast majority of residents in both communities–85% in Bartlett and 97% in Streamwood–would live within a quarter-mile of the network, enabling access to destinations across both Villages.

To help prioritize the Villages' investments, the plan identifies the highest priority bikeways that can help create a more connected network in the near-term. In Bartlett 15 miles of routes were identified as Tier 1 bikeways. In Streamwood, 16 miles of routes were identified as Tier 1 bikeways. More information on bikeways prioritization is on page 31.

Future Bike Network

* Bikeway for further study could provide a potential connection using a utility right-of-way. While the bikeway could improve access, it requires further analysis to understand environmental impacts.

Recommendations at a Glance—Walking

Community members in Bartlett and Streamwood walk to work, school, and to access transit. People walk to access parks and recreation, for errands and shopping, and to socialize with friends and family. Community members voiced many needs, though, to make walking safer, more comfortable, and convenient—more paths and trails, more and better maintained crosswalks, better sidewalks, and many other safety improvements.

Both Bartlett and Streamwood have extensive sidewalk systems, but filling existing gaps will be critical to achieving this plan's objectives. **In Bartlett, 7 miles of sidewalk gaps were identified as the highest priority to address ("Tier 1 gaps") and an additional 26 miles were identified as medium-term priorities ("Tier 2 gaps").** In Streamwood, 14 miles of sidewalk gaps were identified as the highest priority and 10 miles were identified as medium-term priorities.

The plan also highlights "pedestrian focus areas," which are locations within Bartlett and Streamwood with high pedestrian activity or the potential for greater levels of pedestrian activity based on surrounding land uses and densities. More information on the pedestrian focus areas is on page 35.

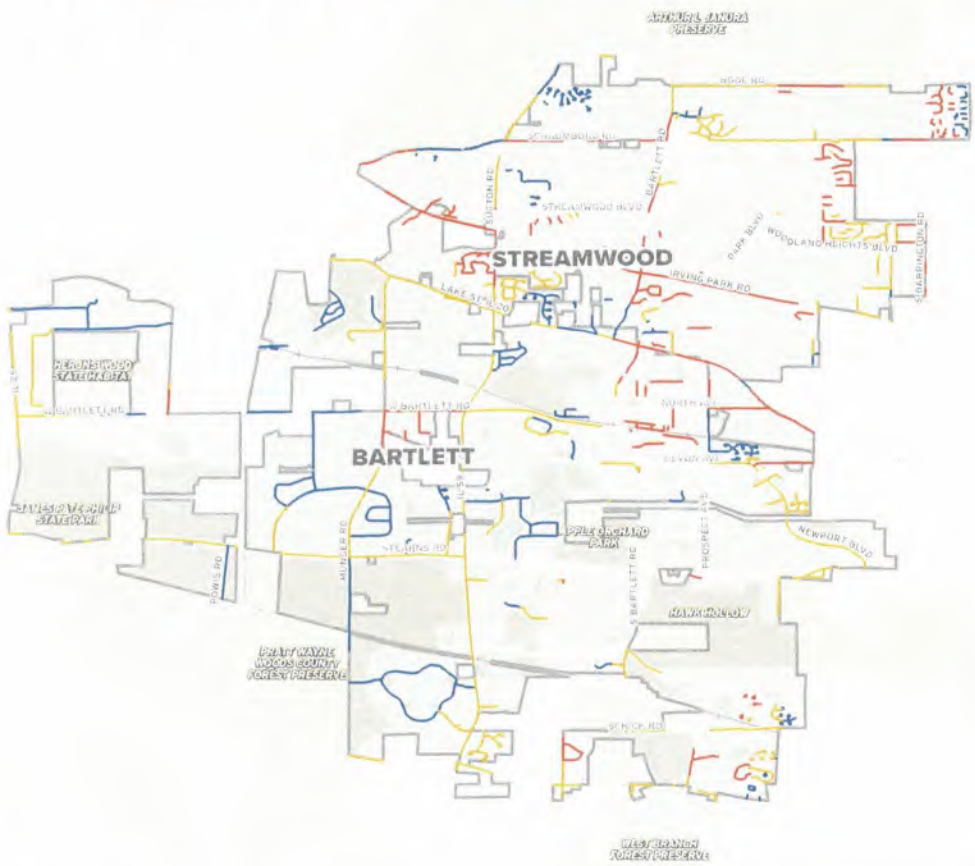
To improve walking in these locations and encourage more people to walk, the Villages should implement targeted physical interventions and policy changes in the pedestrian focus areas. The street design toolbox on page 39 includes information on a range of traffic calming measures and other safety tools that can be applied throughout the pedestrian focus areas.

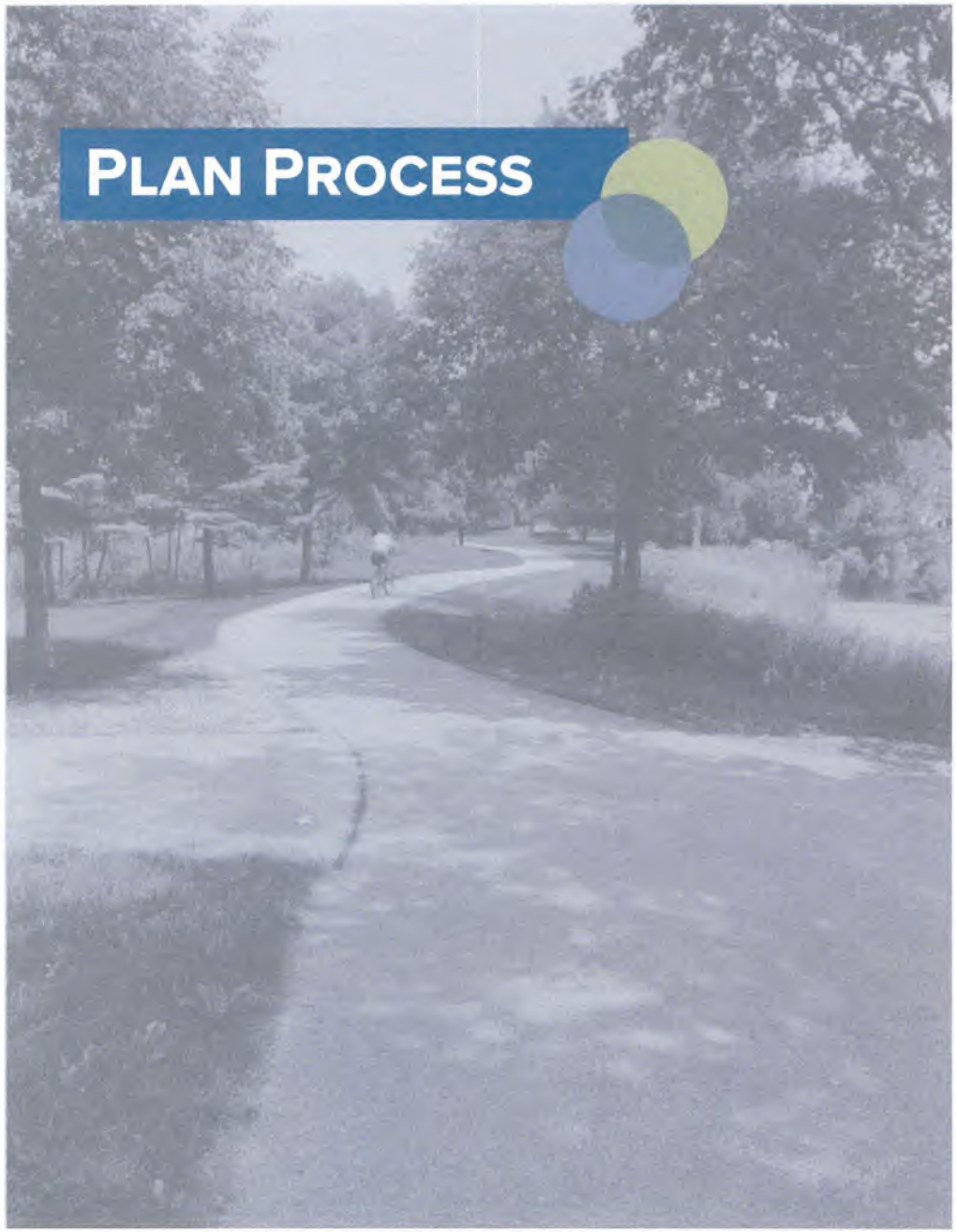
Additional actions to improve safety and increase walking in the pedestrian focus areas include:

- Setting safe speed limits.
- Installing and maintaining marked crosswalks at intersections.
- Implementing leading pedestrian intervals, which improve visibility and safety by giving pedestrians a walk signal before drivers receive a green signal, at all signalized intersections.
- Implementing turning restrictions (e.g., eliminating right turns on red) to reduce conflicts with people walking in crosswalks.
- Converting on-street parking to curb extensions at intersections to decrease pedestrian crossing distance and improve visibility.
- Installing mid-block crossings to provide direct connections to community destinations.

Sidewalk Gap Prioritization

Tier 1 Gaps **Tier 2 Gaps** **Tier 3 Gaps**





PLAN PROCESS

The process to develop the Bartlett and Streamwood Bicycle and Pedestrian Plan spanned three phases over the course of 2021 and 2022.

1. Getting to Know the Communities: The project team engaged with community members and stakeholders and collected and analyzed a wide range of data to identify the opportunities and challenges for people walking and biking in Bartlett and Streamwood. This phase concluded with the development of the Existing Conditions Report.

2. Visioning: The project team collaborated with CMAP and Village staff to develop preliminary recommendations to address the issues and opportunities identified in the first phase. These recommendations were further refined based on input from community members and the steering committee. This phase concluded with the development of the Key Recommendations Memo.

3. Plan Development: The project team identified priorities based on community and stakeholder input to help craft a set of actionable recommendations and roadmap for plan implementation. The analysis, findings, community input, and recommendations were then compiled into this final plan document.

Community engagement and input was a foundational component of each stage of the planning process and the recommendations presented in this plan. The plan's recommendations were also guided by the project Steering Committee, which included Village staff and representatives from partner agencies, community organizations, and neighboring municipalities. The Steering Committee met four times across the planning process, once at the outset of the project to help shape the work plan and once during each phase of the project to provide direction and review preliminary findings and recommendations.

Bartlett and Streamwood Bicycle and Pedestrian Plan Project Timeline

Community Engagement

Engaging the Bartlett and Streamwood communities was a priority for the planning process. A variety of engagement opportunities were used to seek input from community members to inform the project team's understanding of issues and opportunities and develop recommendations that respond to the unique context within the Villages.

Public Meeting #1

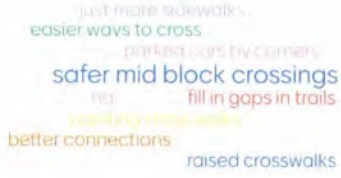
Due to the COVID-19 pandemic, the first public meeting was virtual. The meeting took place on June 24, 2021 from 6:00 - 8:00 PM online via Zoom. The public meeting introduced the Plan to the public, discussed the goals and objectives, and sought feedback from the public in two "breakout rooms"; one for the Bartlett community and one for the Streamwood community. Mentimeter, an online tool for interactive live polling, was used to gather public input in each of the breakout rooms. Attendees answered polls regarding walking and bicycling in their respective community.

Key Takeaways from Public Meeting #1

- *There are many destinations* throughout both communities – parks, forest preserves, stores, and community centers – ***where people would like to walk/bike to but are unable*** to due to a lack of connections.
- ***Most participants would walk and/or bike more if safety weren't an issue.*** Community members raised concerns about driver behavior (i.e., speeding, distracted driving, and drivers not yielding to people walking), gaps in the sidewalk and trail/bike network, and challenges crossing major streets.
- ***Nearly all of the participants shared that they are not at all comfortable or only somewhat comfortable with children walking/biking to school.*** Focusing walking and biking improvements around schools and along key routes to schools should be a major focus of the Plan.
- Community members' ideas to improve walking and biking include: filling gaps in the sidewalk and trail/bike network, creating safer street crossings for people walking and biking, improving signage and wayfinding, lowering speed limits, and improving lighting along streets and trails. Many participants would also like to see more community awareness, education, and outreach about walking and biking.

What kinds of improvements should there be for biking in Streamwood? (Write in your top 3).

What kinds of improvements should there be for walking ir Bartlett? (Write in your top 3).



Community Travel Survey

The Community Travel Survey survey was available online through the project website. The survey was aimed towards community members to learn how people prefer to move around Bartlett and Streamwood. The survey was available from June through July 2021 and 272 community members completed it.

Travel to Destinations - Responses

42% walk to recreation and **34%** ride a bike

34% drive alone to shopping/ errands and **52%** drive with someone.

What Would Improve Walking - Responses

73% would prefer more paths and trails

47% would like to see more crosswalks

37% answered better sidewalks

What Would Improve Biking - Responses

86% answered better connections to paths/ trails

75% would like to see more off-street bike facilities

49% answered more on-street bike facilities

27% would like more bike parking

Stakeholder Interviews

The project team is in process of conducting interviews with stakeholders identified by the Villages of Bartlett and Streamwood. During the month of July, six individual stakeholder interviews were completed. While stakeholders provided unique perspectives, there were a common themes among the conversations including:

- Improve connectivity between existing trails and paths.
- Connect the gaps within the sidewalk system.
- Enhance key intersections and crossings particularly at major streets, such as Route 59.
- Build upon wayfinding and communication efforts surrounding the pedestrian and bicycle network.

Community Engagement

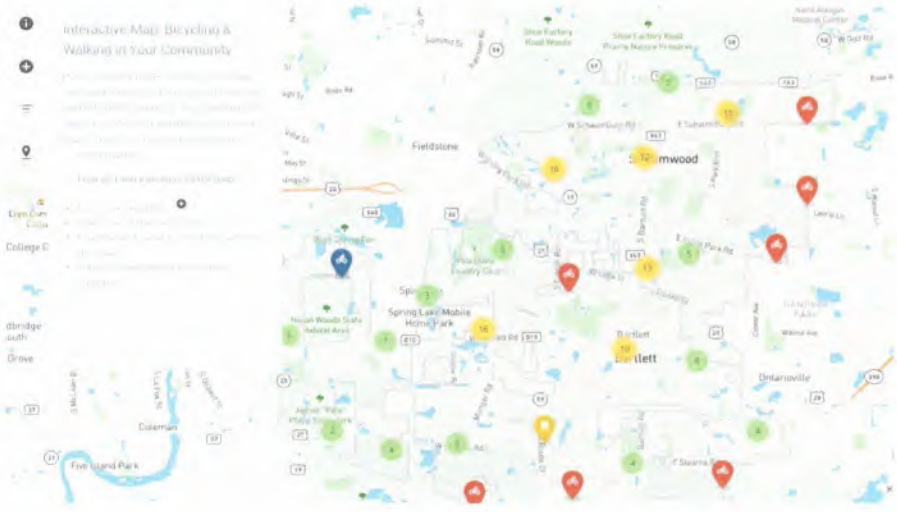
Interactive Map

An interactive map allowed residents and community members to document where they consider challenges and potential opportunities for walking and bicycling. Individuals that utilized the map could select a "pin" and then place it on the map along with a comment.

A total of 160 pins were placed on the map by the public. Responses included discussion about existing conditions of paths and trails, difficulty crossing at specific intersections, sidewalk gaps, recommendations for bicycle links, and other challenges and opportunities. These locations were evaluated and taken into consideration when developing recommendations for the Plan.

A few particular locations garnered several comments including:

- **Route 59/ S Sutton Rd:** Participants identified several opportunities for bicycling and walking, as well as the need for safer crossings.
- **E Schaumburg Rd:** Participants highlighted the challenges of the gaps in the sidewalk network.
- **W Bartlett Rd:** Participants identified opportunities for extending, connecting, and improving the path for pedestrians and bicyclists.
- **Railroad Ave:** Participants pinpointed opportunities for bicycle parking as well as challenges crossing the railroad tracks for people walking, biking, and driving.



Student Engagement

In order to engage students in the planning process, the project team met with the Principal Student Advisory Groups from both Bartlett and Streamwood High Schools to provide information on the plan, gather input, and spread the word to a new audience. The project team also developed online activities specifically geared towards students and their families, including a survey and interactive mapping exercise. 135 students responded to the survey. Through this engagement, the project team identified several key findings.

How survey respondents typically get to school:

- Bus, 32%
- Drive alone, 25%
- Carpool, 24%
- Drop off/pick up, 14%
- Walk/bike, 5%

54% Share of students who would bike to school more if there were a safe, convenient, comfortable route.

48% Share of students who would walk to school more if there were a safe, convenient, comfortable route.

Survey–How comfortable are you biking on these streets?

The project team developed a visual preference survey where respondents rated their level of comfort biking on different types of streets with different types of bikeways. Seventy-four respondents completed the survey, which directly informed the development of the bikeway selection criteria (see page 26). The survey also gathered input on the types of improvements that would make walking and biking more comfortable at intersections.

More than 75% of respondents were comfortable biking on local streets, regardless of the presence of parking or any dedicated bike facilities.

The majority of respondents were **uncomfortable or very uncomfortable biking on major streets that lacked dedicated bike infrastructure**.

Community Engagement

Survey–Prioritizing Sidewalk Investments

The project team gathered input from the community on how and where to prioritize addressing existing sidewalk gaps. Forty-six respondents shared their input, with gaps near schools, along major streets, and near transit rated as the highest priorities to address.

Interactive Map–Preliminary Bike Network and Pedestrian Focus Areas

The project team developed interactive mapping exercises to gather input from the community on the preliminary bike network and pedestrian focus areas. Community members shared 91 comments through the map which helped refine both elements of the plan.

Streamwood Environmental Education Day Pop-Up Event

Members of the project team set up a table at the Streamwood Environmental Education Day event on April 30, 2022 to share information about the project. The event provided an opportunity to engage new community members and raise awareness about the project. Community members also gave input on the future bike network and completed a participatory budgeting exercise.

Public Meeting #2

Based on the success of the first virtual public meeting, the Villages decided to conduct the second public meeting virtually as well. The meeting was held online via Zoom on May 24, 2022 from 6:00 - 8:00 PM. The meeting provided an overview of the planning process to-date and the plan's key recommendations, including the future bike network, pedestrian focus areas, and sidewalk gap prioritization.

In order to enable deeper discussion, participants were invited to join one of two "breakout groups," one focused on Bartlett and one focused on Streamwood. Within the breakout groups, community members completed an interactive mapping exercise to identify key projects, ranked their priorities across different categories of investments (building new trails and sidepaths, improving intersections, filling in sidewalk gaps, improving existing trails/bikeways/sidewalks, neighborhood traffic calming, and programming and education). Similar exercises were also posted to the project website for additional community input.

Key Takeaways

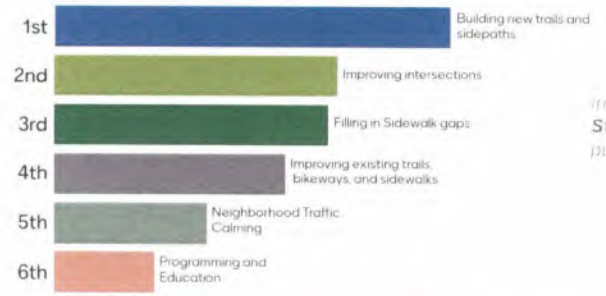
Barrier:
Several barriers were identified including W Bartlett Rd, Sutton Rd, and Irving Park Rd. The barriers related to need for safer crossings and off street paths due to high speed traffic.

Missing Route:
Many of the missing route points called out routes already proposed or outside of Village boundaries. Identified need for connection to Fair Oaks Rd Bike Path.

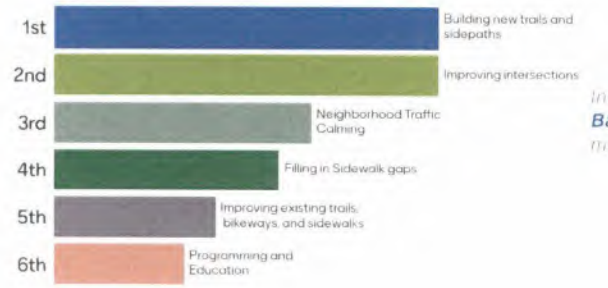
I would use this route:
There were several points throughout the villages including Schaumburg Rd, Park Blvd, Irving Park Rd, Mayflower Ln, Stearns Rd

Key Takeaways from Public Meeting #2

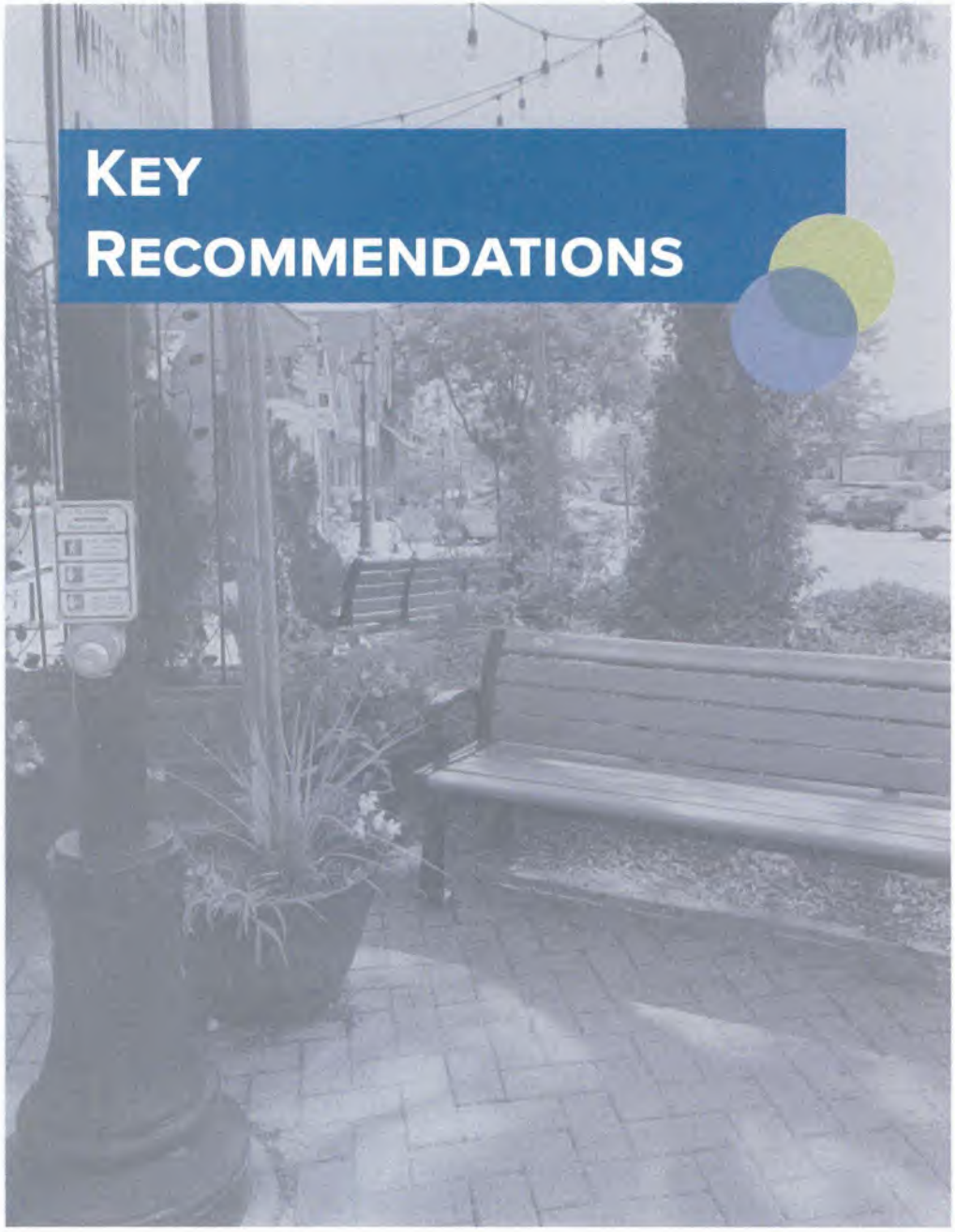
- Community members emphasized the need for bike improvements on major streets to provide access to key destinations as well as on neighborhood streets to provide local connections. They recognized that improvements on major streets outside the Village's control may take more time, so highlighted the need for shorter-term improvements on local streets.
- Key projects community members emphasized included Schaumburg Rd. and Bartlett Rd. in Streamwood and W. Bartlett Rd. and Stearns Rd. in Bartlett.
- Community members also emphasized the importance of wayfinding and bike parking, in addition to investments in bikeways.
- In both Bartlett and Streamwood, building new bikeways and improving intersections were the highest priority investment categories.



*investment priorities in **Streamwood**, based on public meeting feedback.*



*investment priorities in **Bartlett**, based on public meeting feedback.*



KEY RECOMMENDATIONS

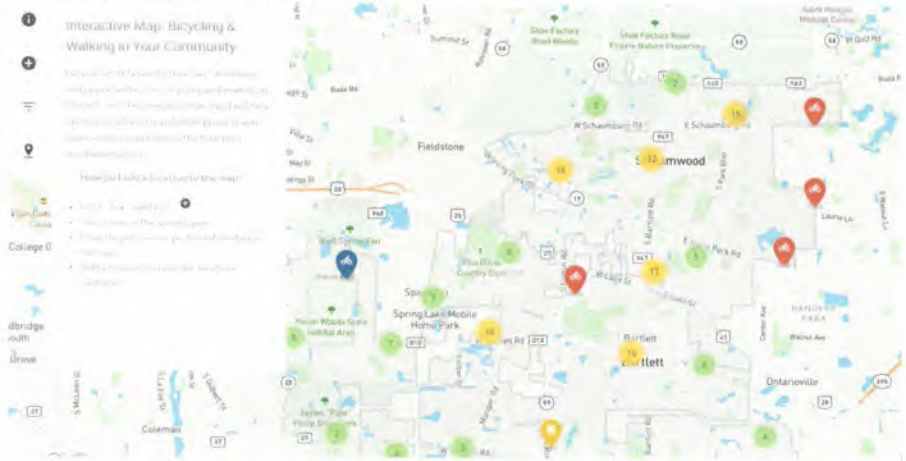
The recommendations within the Bartlett and Streamwood Bicycle and Pedestrian Plan were developed to address the issues and opportunities identified through community engagement and data collection and analysis and achieve the plan's goal to create complete, connected, and safe networks for people walking and biking. These recommendations were developed iteratively, with multiple rounds of feedback from the community, stakeholder input, and additional analysis informing additional refinement and adjustments.

This section of the plan focuses on recommendations related to physical infrastructure (supporting recommendations related to policies and programs begin on page 85).

The key recommendations are divided into four sections:

1. Biking Recommendations: Recommendations related to biking, including the future bike network and recommended types of improvements.
2. Walking Recommendations: Recommendations related to walking, including sidewalk gaps and locations for targeted safety improvements.
3. Intersections and Crossings: Important locations for additional improvements at signalized intersections, unsignalized crossings, and trail crossings.
4. Safety Design Toolbox: Detailed information on tools that can be used to improve safety and comfort for people walking and biking.

Interactive Community Mapping Exercise



Future Bike Network

The future bike network in Bartlett and Streamwood creates a complete, connected network designed to be safe and comfortable for the residents of Bartlett and Streamwood, as well as workers and visitors.

The future bike network builds off the Villages' existing networks and planned/proposed projects as a foundation. Gaps in the existing network were identified based on community input, analysis of access to important destinations, and evaluation of barriers and crash hot spots. New routes were proposed to address these issues and were refined with community and stakeholder feedback.

Three main types of routes make up the network:

1. Off-Street Trails: Trails in parks, forest preserves, and other locations outside the street right of way provide comfortable experiences for people of all ages and abilities.

2. Low Stress Local Routes: Local streets typically have low speed limits and traffic volumes. When accompanied by additional traffic calming measures to keep vehicle speeds safe and volumes low, along with additional signage and wayfinding, local streets can become high-quality bikeways.

3. Separated Routes on Major Streets: In both Villages, many important destinations are located along major streets. Major streets also often provide the most direct connections and routes between Bartlett and Streamwood. These streets, though, often have higher speed limits and traffic volumes, and, thus, require bikeways that are protected or separated from traffic.

The map on the right divides the future bike network into three categories: existing bikeways, bikeways to be enhanced, and new bikeways. Bikeways to be enhanced refers to routes that already exist but require additional enhancement to deliver a safe, comfortable experience. Examples include widening existing sidepaths to meet current best practices or installing traffic calming features to transform a signed bike route into a truly low-stress route.

Bartlett's Future Bike Network

65 miles
Existing Bikeways

4 miles
Bikeways to be Enhanced

34 miles
New Bikeways *(includes bikeways for further study)*

85%
Share of the Village within 0.25 miles of the Future Bike Network

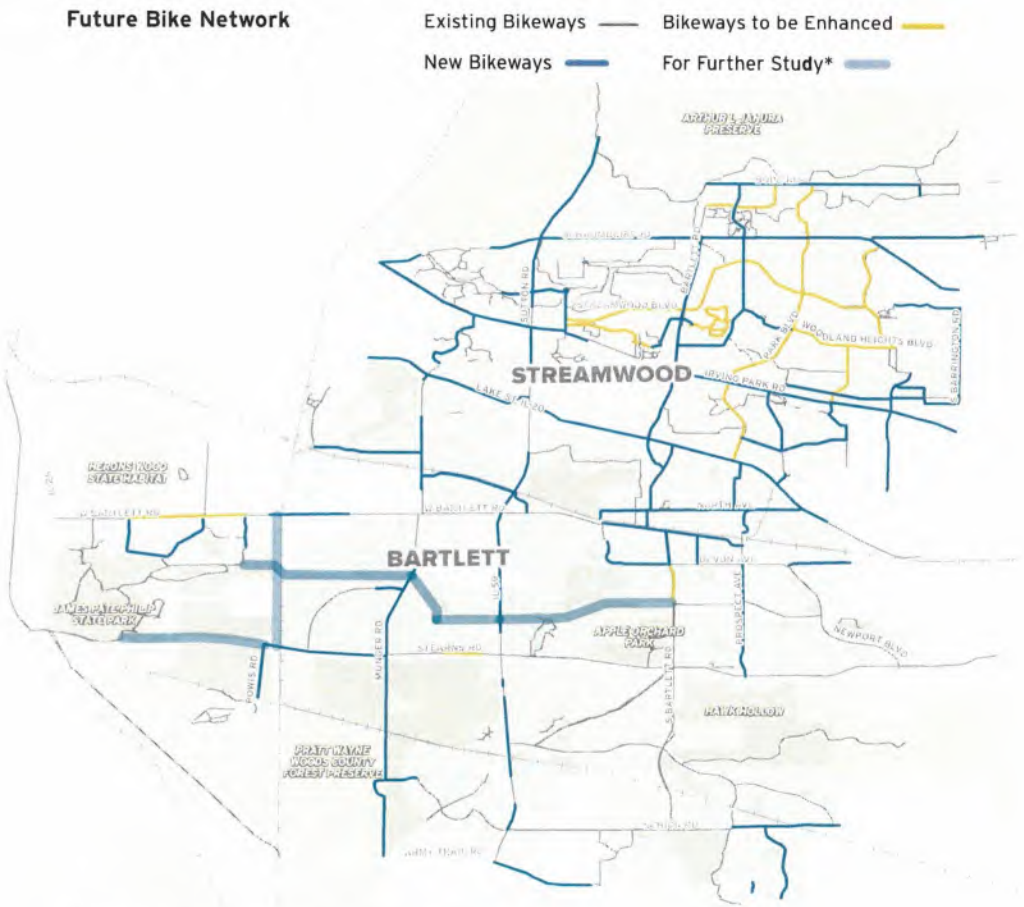
Streamwood's Future Bike Network

66 miles
Existing Bikeways

13 miles
Bikeways to be Enhanced

23 miles
New Bikeways

97%
Share of the Village within 0.25 miles of the Future Bike Network



* Bikeway for further study could provide a potential connection using a utility right-of-way. While the bikeway could improve access, it requires further analysis to understand environmental impacts.

Types of Bikeways

The level of comfort someone experiences while biking is a major determinant of how much and where they are willing to bike. Research illustrates that people who are interested in biking but less experienced and confident are much more comfortable biking when they are separated from fast-moving vehicles and/or high volumes of vehicles.

An online survey conducted during the project found that over half of the 74 respondents (52%) said they are comfortable sharing the road with cars, but prefer to ride in bike facilities. Approximately a third of respondents (34%) indicated they are not comfortable sharing the road with cars but are still interested in riding a bicycle, suggesting separated facilities or shared use paths may make the rider more comfortable.

New shared use path in Streamwood.

To plan and deliver a bike network that is safe, comfortable, and reliable to a wide range of potential cyclists (including children and older adults), it is important to follow criteria that guide what is the most appropriate bike facility for a given street, based on factors such as speed limit, the amount of vehicle traffic, and on-street parking.

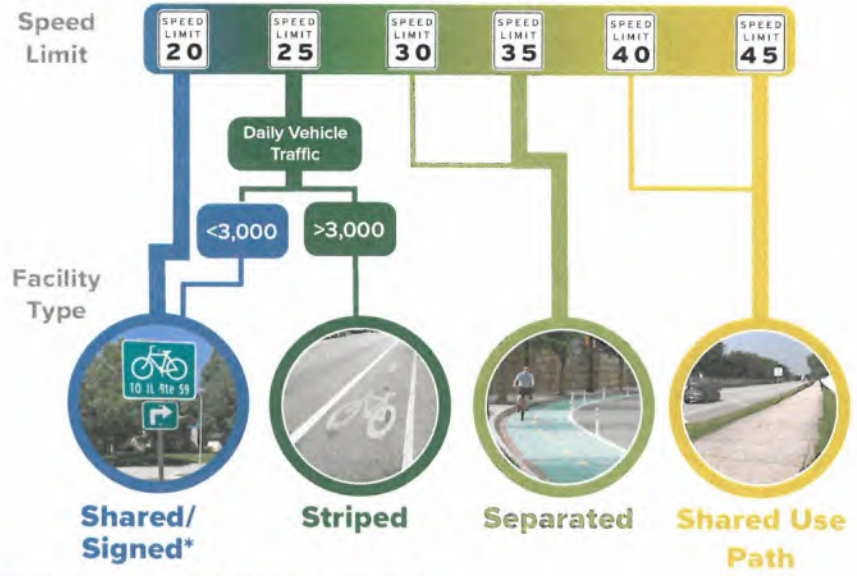
Bartlett and Streamwood both have a wide array of street types with varying speed limits and traffic volumes. Applying the criteria illustrated below (adapted from the National Association of City Transportation Officials' Contextual Guidance for All Ages and Abilities Bikeways) can help the Villages determine which type of facility will best create for a low-stress, comfortable environment.

The criteria includes a street's speed limit and daily vehicle traffic volumes to determine what type of bike facility may be appropriate. However, given a roadway's environment, such as available right-of-way or community interest, a bike facility type can always be upgraded to be a higher-level facility. The guidance identifies four types of bike facilities: shared/signed on-street facilities (marked shared lane, signed route, or neighborhood greenway), striped bike lane, separated bike lane, and shared use path.

Wayfinding should be installed at predictable intervals along all bikeways to help people confirm they are on a designated route and at turns or decision points along the route. Signs should indicate the direction people should follow and the distance to important destinations. The Villages should provide strategic wayfinding signage at key locations, such as the Metra station and forest preserves.

In addition to wayfinding, green infrastructure should be incorporated throughout the bikeway network, where appropriate. Integrating green infrastructure and public art into projects can transform a bikeway into a community asset, further calm traffic, and provide additional health and environmental benefits.

Minimum Accommodations of Facility Type by Speed Limit



*Must be accompanied by traffic calming infrastructure

Bike Facility Selection Criteria for On-Street Bikeways

Shared/Signed On-Street Facility (Mark Shared Lane, Signed Route or Neighborhood Greenway)

On on-street shared/signed facilities, people biking share the same street space with cars. Because shared facilities do not provide separate space for people biking, they should only be used on low-volume (fewer than 3,000 vehicles per day), slow streets (speed limit of 25 mph or less). Roadway configuration, such as the number of travel lanes and presence of on-street parking, should also be considered when determining whether a shared facility is appropriate. Shared or signed facilities should not be installed on streets with more than two lanes and should always be accompanied by traffic calming measures to encourage safe speeds.

Neighborhood greenways, sometimes also referred to as bike boulevards, are shared facilities on low-volume, low-speed neighborhood streets that give people biking travel priority. Using pavement markings, wayfinding signage, and traffic calming measures, neighborhood greenways encourage safe and comfortable bicycling for people of all ages and abilities. They can also incorporate additional features such as green infrastructure and enhanced landscaping. Neighborhood greenways require careful route planning that connects bicyclists to destinations and other safe, comfortable bike facilities. Neighborhood greenways should always be accompanied by robust traffic calming measures to encourage safe speeds and discourage vehicular through trips.

Types of Bikeways

Standards and Guidance

- On non-local streets, green-backed shared lane markings should be installed in the direction of travel. Marking should be a minimum of four feet from the face of curb on streets without on-street parking and 11 feet from face of curb with streets with on-street parking.
- On local streets, shared lane markings should be placed at intersections with non-local streets to assist with wayfinding and travel path through the intersection.
- For both local and non-local streets, signed and shared facilities should be accompanied by traffic calming measures, low speed limits, and pavement treatments that reinforce safe behaviors for all users.

A shared lane in a Northwest suburb.

Striped Bike Lane

A striped bike lane demarcates the right-of-way that is designated for people biking. The addition of green paint can be used to draw additional attention to the bicycle lane or specific conflict points. Striped bike lanes are most appropriate on streets with low to moderate travel volumes and speeds. If space is available, marking a buffer can increase comfort for people biking.

Standards and Guidance

- Striped bike lanes should be six feet in width when adjacent to a curb, and five feet when next to a parking lane, unless there is additional space available for a painted buffer.
- A 3-foot wide painted buffer is desired when next to on-street parking to prevent door collisions.
- "No Parking" signage should be installed along lanes adjacent to the curb to discourage parking in the bike lane.
- Utility covers should be flush with the ground with any grates oriented perpendicular to the direction of travel to prevent bicycle tires getting caught.

A striped bike lane in Evanston.

Separated Bike Lane

Separated bike lanes, or protected bike lanes, are physically separated from vehicle traffic. Physical separation can be achieved through various options, including a painted buffer with flexible delineators or bollards, parking lanes, curbs or concrete medians, or planters with landscaping. Separation can also be achieved by placing the bike lane at sidewalk-level or an intermediate level between the roadbed and sidewalk. Special attention should be given to safely designing areas where the separated facility intersects with vehicular or pedestrian traffic.

Two-way separated bike facilities allow bicycle travel in both directions on one side of the road. These facilities should be limited to streets with few driveways or other turning conflicts across the bike facility.

Standards and Guidance

- A one-way separated bike lane should have a minimum width of five feet along with a minimum desired buffer of three feet between the bike lane and vehicle traffic or parking.
- A two-way separated bike lane should be a minimum of 12-feet wide (six feet in either direction). A minimum width of eight feet is permitted if physically constrained.
- Physical separation may include a painted buffer with flexible delineators or bollards, curb or concrete medians, planters, or parking lanes.
- Conflict markings should be installed where the bicycle path of travel intersects with vehicle path of travel (e.g., intersections, transit stops, driveways).
- Intersections and driveways should be examined for potential visibility and sight distance issues and other safety conflicts.
- Utility covers should be flush with the ground and oriented perpendicular to the direction of travel to prevent bicycle tires getting caught.
- Careful evaluation of intersections (particularly for two-way separate bike lanes) should be conducted.

A separated bike lane in Aurora.

Shared Use Path

A shared use path, also referred to as a sidepath, is a shared bicycle and pedestrian path that is physically separated from vehicular traffic by an open space or barrier and can be either within the street right-of-way or an independent right-of-way. Shared use paths are recommended for corridors with high vehicle speeds and/or volumes. In areas with high pedestrian volumes, it may be necessary to designate separate space for people walking and biking. Shared use paths that are outside of the street right-of-way are off-street trails.

Types of Bikeways

Standards and Guidance

- The desired width for a shared use path is 10 - 14 feet. A minimum width of eight feet is permitted if physically constrained.
- A physical separation of six feet is recommended between the path and street. A minimum of two feet is acceptable when physically constrained.
- When truck volumes exceed 5% of the traffic mix, additional space beyond six feet should be provided.
- Intersections and driveways should be examined for potential visibility and sight distance issues and other safety conflicts.

An off-street trail in Streamwood.

Recommended Bikeway Types

Applying the bike facility selection criteria shown on page 26, the project team identified recommended bike facilities for the proposed network (all new bikeways and those to be enhanced). Survey findings illustrated that 87% of community members are comfortable riding a bicycle on a neighborhood street and 75% of respondents shared they are comfortable riding on a sidepath. This aligns with the proposed network where shared use paths are recommended for major streets and shared facilities for neighborhood streets.

Bartlett's Future Bike Network

6 miles
Shared/Signed Facility

1 mile
Striped Bike Lane

3 miles
Separated Bike Lane

20 miles
Shared Use Path

8 miles
Off-Street Trail

Streamwood's Future Bike Network

10 miles
Shared/Signed Facility

4 miles
Striped Bike Lane

17 miles
Shared Use Path

5 miles
Off-Street Trail

Recommend Bikeway Types Shared/Signed — — Striped — Separated —

Shared Use Path/Off-Street Trail — *For Further Study —

* Bikeway for further study could provide a potential connection using a utility right-of-way. While the bikeway could improve access, it requires further analysis to understand environmental impacts.

0 0.5 1 2 Miles

Bikeway Prioritization

This plan calls for Bartlett and Streamwood to expand their existing bike networks by more than 50%, adding or enhancing a total of 72 miles of bikeways across both Villages. In order to target investments towards projects with the greatest potential impact, proposed routes were prioritized through analysis and community and stakeholder input.

For the analysis component, six criteria were used to prioritize bikeways:

1. Equity (economically disconnected/ disinvested areas from CMAP),
2. Destinations (count of community destinations within 1/8 mile),
3. Connectivity (ratio of proposed route distance: distance of existing facilities route intersects),
4. Safety (count of people walking/biking injured or killed in traffic crashes along the route),
5. Community input (count of interactive map comments along the route),
6. Barriers (count of intersecting barriers along the route).

Bikeways that scored the highest through this evaluation were categorized as Tier 1 and all other projects were categorized as Tier 2. Additional adjustments were made based on community and stakeholder feedback.

The Villages plan to work with neighboring communities to encourage the implementation of the bikeway network outside of Bartlett and Streamwood jurisdiction.

Bartlett's Future Bike Network

15 miles
Tier 1 Bikeways

23 miles
Tier 2 Bikeways

List of Tier 1 Bikeways (Jurisdiction)

- Spaulding Rd. *(Village)*
- Naperville Rd. *(Cook County)*
- S. Bartlett Rd. *(DuPage County)*
- W. Bartlett Rd. *(Cook County)*
- Main St. *(Village)*
- Munger Rd. *(DuPage County)*
- Oak Ave. *(Village)*
- Hickory Ave. *(Village)*
- Devon Ave. *(Village)*
- IL 59 *(IDOT)*
- Railroad Ave. *(Village)*
- Lake St. *(IDOT)*
- Stearns Rd. *(DuPage County)*
- Prospect Ave. *(Village)*
- Schick Rd. *(Village)*
- Grasslands Trail (Naperville Rd. to IL 59) *(Private)*
- Fairfax Ln. *(Village)*

Streamwood's Future Bike Network

16 miles
Tier 1 Bikeways

20 miles
Tier 2 Bikeways

List of Tier 1 Bikeways (Jurisdiction)

- Park Blvd. *(Village)*
- Irving Park Rd. *(IDOT)*
- Woodland Heights Blvd. *(Village)*
- Trail connecting over Sutton Rd. *(Village)*
- Streamwood Blvd. *(Village)*
- Bartlett Rd. *(Cook County)*
- Trail from Vine to St. Frances Ave. *(Village)*
- Madison Dr. *(Village)*
- Schaumburg Rd. *(Cook County)*
- Sutton Rd. *(IDOT)*

Bikeway Prioritization

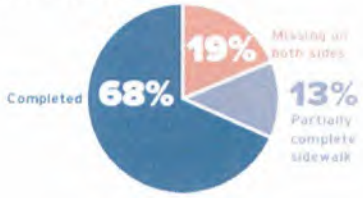
Tier 1 Bikeways — Tier 2 Bikeways — Other Municipalities

Sidewalk Gaps

Sidewalks are critical to creating Bartlett and Streamwood's pedestrian network, providing people with safe places to walk. While both Bartlett and Streamwood have extensive sidewalk systems, the Villages each have gaps within their networks.

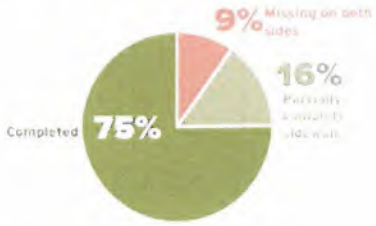
In Bartlett, approximately 68% of streets have sidewalks on both sides of the streets, 13% have sidewalks on one side of the street, and 19% of streets have sidewalks missing from both sides. There are a total of 52 miles of sidewalk gaps in Bartlett.

Sidewalks in Bartlett



In Streamwood, approximately 75% of streets have sidewalks on both sides of the streets, 16% have sidewalks on one side of the street, and 9% of streets have sidewalks missing from both sides. There are 28 total miles of sidewalk gaps in Streamwood.

Sidewalks in Streamwood



Based on community and stakeholder feedback, the most impactful sidewalk gaps in the sidewalk network have been prioritized to help focus the Villages' resources. Sidewalk gaps were grouped into three tiers, from highest to lowest priority.

- **Tier 1 Gaps**–Sidewalk gaps near schools and transit were identified as highest priority. Filling in these gaps will enable people to walk to school, the bus, or the train.
- **Tier 2 Gaps**–Include sidewalk gaps near libraries and community centers, parks and forest preserves, gaps along major streets, and any gaps located in pedestrian focus areas (explained on the following page).
- **Tier 3 Gaps**–All remaining sidewalk gaps.

Sidewalk Gaps in Bartlett

7 miles
Tier 1 Gaps

26 miles
Tier 2 Gaps

19 miles
Tier 3 Gaps

Sidewalk Gaps in Streamwood

14 miles
Tier 1 Gaps

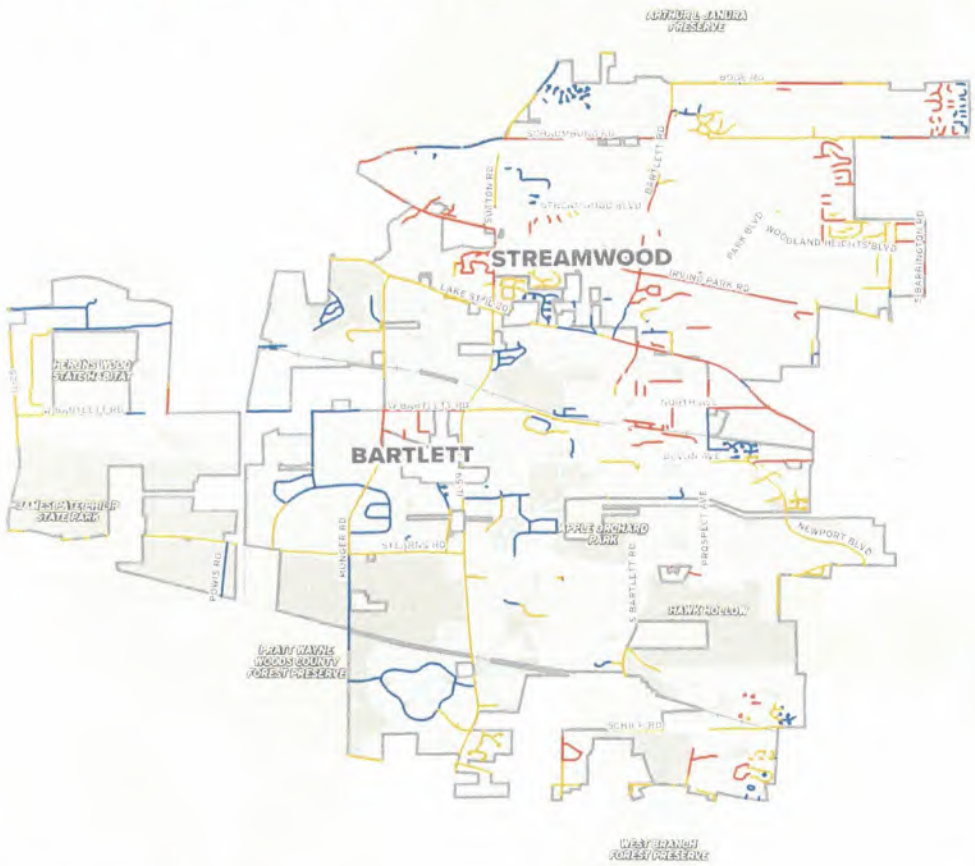
10 miles
Tier 2 Gaps

5 miles
Tier 3 Gaps

Sidewalks and crossings must be in compliance with the Americans with Disabilities Act (ADA). Visit the Villages' Public Right-of-Way Transition Plans for more information.

Sidewalk Gap Prioritization

Tier 1 Gaps — Tier 2 Gaps — Tier 3 Gaps



Pedestrian Focus Areas

Pedestrian focus areas are areas with high pedestrian activity or the potential for greater levels of pedestrian activity based on surrounding land uses and densities (as well as potential future changes to land use and densities). The focus areas were identified by applying a quarter-mile buffer around community destinations, such as schools, community centers, transit stations, commercial centers, and major entry points to parks/forest preserves. The pedestrian focus areas were refined based on feedback from the community and stakeholders.

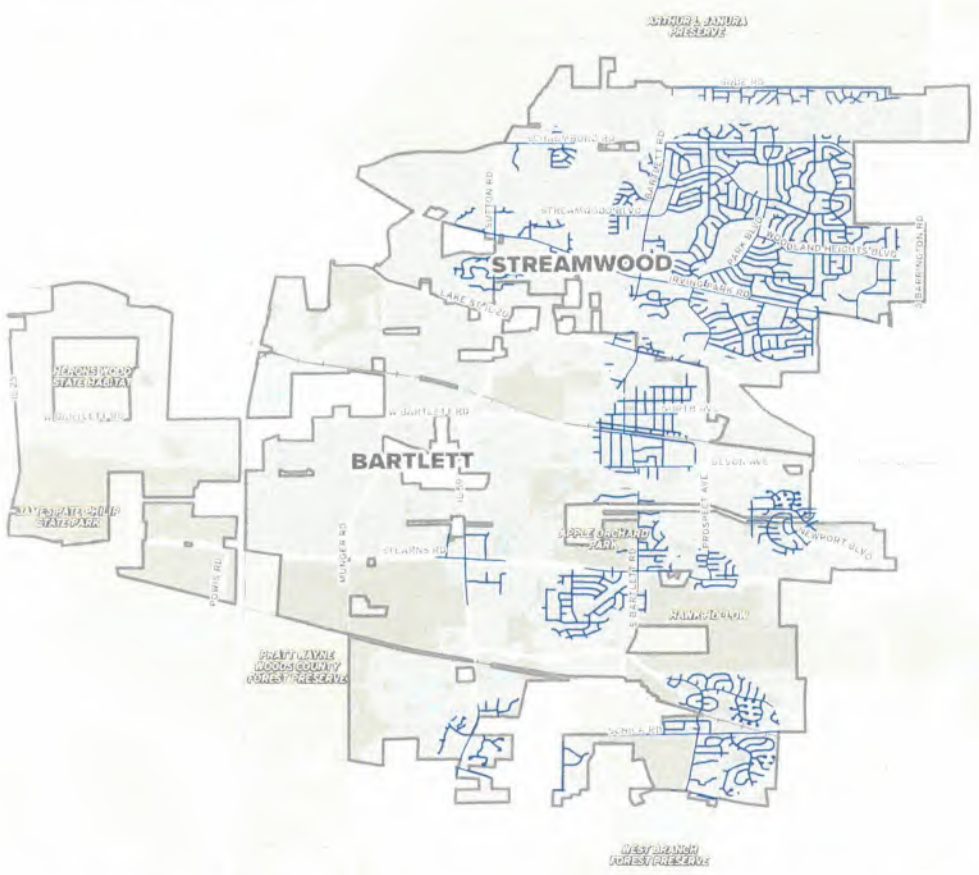
To improve walking in these locations and encourage more people to walk, the Villages should implement targeted physical interventions and policy changes within the pedestrian focus areas. The street safety design toolbox on page 39 includes detailed information on a range of traffic calming measures and other safety tools that can be applied throughout the pedestrian focus areas.

Newly painted crosswalks in Bartlett.

Additional actions to improve safety and increase walking in the pedestrian focus areas include:

- Setting safe speed limits (targeting 20-25 miles per hour on Village-controlled streets).
- Installing and maintaining marked crosswalks at intersections. Install high-visibility crosswalks at intersections with major streets and in locations with high levels of pedestrian activity. Include stop bars at traffic signal or controlled intersection markings to indicate to the driver where to stop. Evaluate raised crosswalks and intersections at major destinations to further improve safety.
- Implementing leading pedestrian intervals, which improve visibility and safety by giving pedestrians a walk signal before drivers receive a green signal, at all signalized intersections.
- Implementing turning restrictions (e.g., eliminating right turns on red) to reduce conflicts with people walking in crosswalks.
- At intersections, converting on-street parking to curb extensions to decrease pedestrian crossing distance and improve visibility.
- Installing mid-block crossings at major pedestrian generators, especially where the nearest traffic signal or controlled intersection is >600 feet away.
- Updating signals for an automated pedestrian phase.

Pedestrian Focus Areas



Intersection and Crossing Recommendations

Intersections and crossings are essential elements in creating safe, connected networks for people walking and biking. Intersections and crossings can create major barriers for people walking and biking and can break up what would otherwise be a connected route.

In gathering community input throughout the project, numerous intersections and crossings were highlighted–including improvements to existing locations as well as locations in need of new crossings. This feedback was combined with a detailed analysis of crash data (crash data was provided by Illinois Department of Transportation [IDOT] for 2015 - 2019) to identify key intersections and crossings requiring improvements.

The following map shows key intersections and crossings for improvements. The intersections and crossings shown on the map are organized into three categories, each of which involve different types of improvements from the street safety design toolbox beginning on page 39:

Signalized Intersections – intersections with a traffic signal (7 in Bartlett, 13 in Streamwood).

Unsignalized Locations – locations without a traffic signal, often located mid-block to provide a direct connection to a key destination or where a trail crosses a street (11 in Bartlett, 9 in Streamwood). IDOT has published guidance on safety measures at uncontrolled locations.

Grade-Separated Crossings – on streets with very high traffic volumes and speeds, providing a grade-separated crossing for people walking and biking (e.g., a bridge) may be the most comfortable option (1 in Bartlett, 2 in Streamwood).

The following street design toolbox provides detailed information on safety tools and improvements that can be implemented at key intersections and crossings as well as other locations throughout the Villages.

What physical improvements would make you feel safer crossing an intersection while **biking**?

Intersection markings | Bike signals | Protected intersections

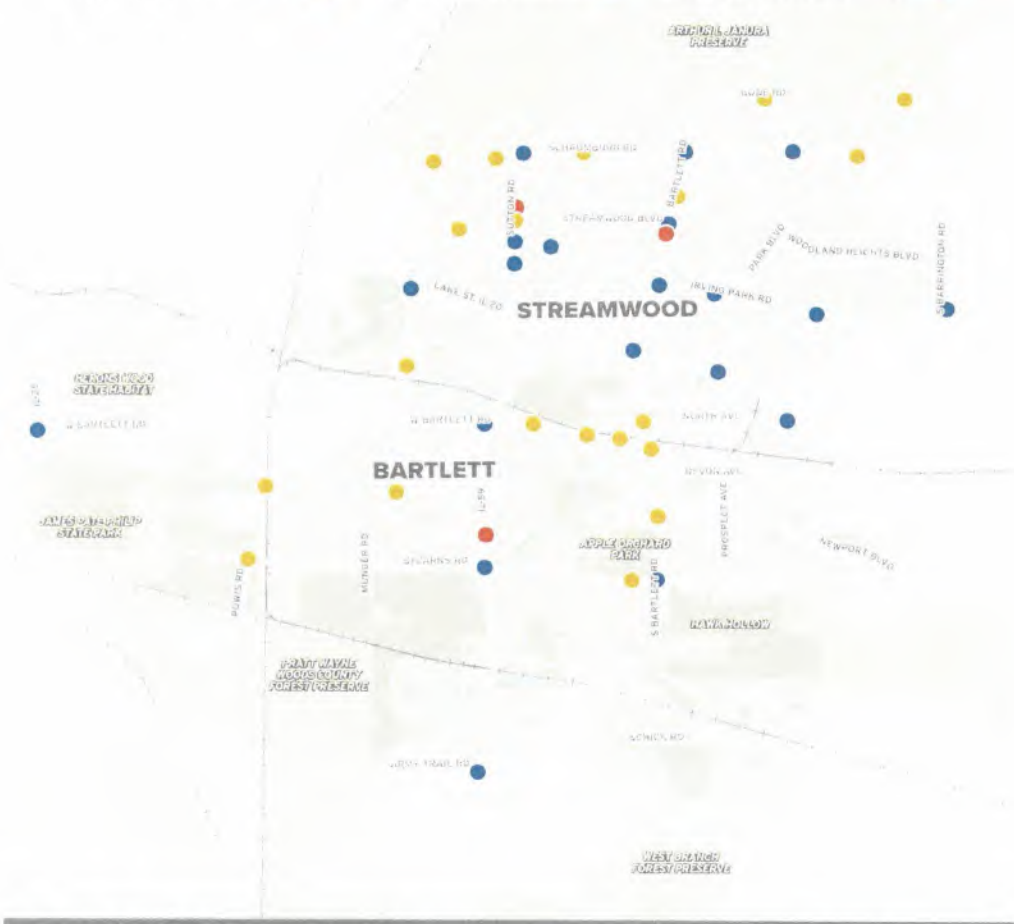
What physical improvements would make you feel safer crossing an intersection while **walking**?

High visibility crosswalks | Leading pedestrian intervals | Pedestrian refuge islands

Results from a community survey on desired improvements at intersections and crossings

Key Intersections and Crossings

Signalized Intersections **Unsignalized Locations** **Grade-Separated Crossings**



Street Safety Design Toolbox

Implementing improvements to make streets and intersections safer and more comfortable for people walking and biking will greatly benefit those who already walk and bike, encourage more people to walk and bike, and enable a multitude of co-benefits that come from more walking and biking.

Throughout the planning process community members raised concerns about safety while walking and biking. The items within the toolbox will all help to address these concerns and build off community members' and stakeholders' ideas. The Street Safety Design Toolbox provides guidance to help inform the decision-making process.

How to Use The Toolbox

Each tool includes a description and information on the cost, timeline, and location for implementing the tool.

Cost

Planning level unit cost estimates were determined for each tool and are denoted by dollars signs. The ranges shown in the table are associated with per lane mile, per intersection, or per instance costs.

- $ Less than $10,000
- $$ $10,000 to $100,000
- $$$ $100,000 to $1 million
- $$$$ Greater than $1 million

Timeline

The timeline reflects the time for design and construction for the tool.

- Limited engineering design and construction time required
- Some engineering design and a construction season required
- Long-term planning necessary with comprehensive design and approvals required. Construction requires more than one season or must be coordinated as part of another project.

Location

Each tool specifies whether it is intended for use on minor, major, or all streets.

Street Safety Design Tools

Tools for Biking at Intersections

- Bike Boxes
- Two-Stage Turn Queue Box
- Protect Intersection
- Conflict Markings
- Intersection Crossing Markings
- Bike Signals

Tools for Intersections

- High Visibility Crosswalk and Signage
- ADA Curb Ramps
- In-Street Pedestrian Crosswalk Sign
- Raised Crossing
- Raised Intersection
- Pedestrian Refuge Island
- Grade Separated Crossing
- Turn Restrictions
- Speed Feedback Signs
- Curb Extensions
- Mid-Block Crossings
- Hardened Centerline
- Reduce Curb Radii
- Slow Turn Wedge
- Intersection Visibility and Sight Distance
- Enhanced Lighting
- Landscaping

Tools for Trail Crossings

- Vehicle Warning signs and markings
- Bike/Pedestrian warning signs and markings
- Pedestrian Hybrid Beacon (PHB)
- Rectangular Rapid Flashing Beacon (RRFB)
- Signalization
- Grade Separated Crossings
- Crossing Design
- Warning signs or markings ahead of rail crossing
- Minimize Flange opening

Tools for Traffic Calming

- Right Sizing
- Narrow Travel Lanes
- Access Management
- Slip Lane Removal
- Turn Restrictions
- Signal Progression
- Speed/Red Light Cameras
- Gateway Treatment
- Leading Pedestrian Interval (LPI)
- Lagging Left Turn Phase
- Pedestrian Countdown Signal
- Diverters
- Chokers
- Chicanes
- Pavement Treatments

STREET SAFETY DESIGN TOOLBOX

Tools for Biking: At Intersections

cost $$$

timeline

location all streets

Bike Boxes

A bike box is a designated area between the vehicle stop bar and the crosswalk, marked or painted to give bicyclists a safe space to stop at an intersection. Bike boxes bring visibility to bicyclists at intersections and give bicyclists a jump on the next green light to help prevent collisions with turning vehicles.

cost $$$

timeline

location major streets

Two-Stage Turn Queue Box

Two-stage turn queue boxes provide a safer way for bicyclists to make a left-turn on multi-lane signalized streets. In a two-stage turn, a person biking crosses into the intersection where they are provided a space to wait and turn their bicycle 90 degrees so that they can then proceed straight when the street they just crossed receives a green light.

STREET SAFETY DESIGN TOOLBOX

Tools for Biking: At Intersections

cost $$$

timeline

location major streets

Protected Intersection

Protected intersections separate people biking from motor vehicle traffic by setting back the bikeway from turning cars and using corner islands to encourage slower turns. Protected intersections improve visibility of people biking and create clearer expectations for all users' behavior through the use of signs, paint, and pavement markings.

cost $$$

timeline

location all streets

Conflict Markings

Conflict markings can be applied at driveways and other curb cuts to alert drivers to the presence of bicyclists. Dashed green paint is typically used to draw attention to potential conflicts.

STREET SAFETY DESIGN TOOLBOX

Tools for Biking: At Intersections

cost $$$

timeline

location all streets

Intersection Crossing Markings

Bicyclists crossing at intersections are especially vulnerable to drivers making turns. Bicycle intersection striping demarcates space for people biking through intersections. Paint and prominent striping let drivers know they are crossing the bicycle right-of-way and must yield when making turns. Similar to crosswalks, striping through an intersection guides bicyclists along an intended path. White dashed markings are typically used and can be supplemented by green paint to increase visibility and draw attention to potential conflicts.

cost $$$

timeline

location major streets

Bike Signals

Bicycle signals are bicycle-specific traffic signals installed at signalized intersections to indicate when people biking can enter an intersection and restricts conflicting vehicles. At most intersections, bicyclists will be required to follow vehicular signals. However, bicycle-specific signals may improve a particularly busy or dangerous intersections.

Bicycle-specific signals look like standard traffic signals, but typically feature a cut-out shape of a bicycle in front of the light, similar to pedestrian signals with the silhouette of a person or hand. These signals may be used to give bicyclists a leading start on vehicular traffic, stop bicycles while vehicles are given turning permissions, or signal bicycle-specific permissions in a situation such as a contra-flow bicycle lane that goes against one-way vehicle traffic.

STREET SAFETY DESIGN TOOLBOX

Tools for Intersections

cost $$$

timeline

location major streets

High Visibility Crosswalk and Signage

High visibility crosswalks are more visible to drivers than standard parallel crosswalk lines, alerting them to the presence of pedestrians. Crosswalks must be repainted when the paint begins to fade.

High visibility crosswalks vary in style, however, the crosswalk type should be consistent throughout a community and apply a continental crosswalk, wide painted bars in line with traffic flow.

In addition to the painted crosswalk, the tool should be paired with the appropriate signage. When at a controlled stop, a painted stop bar should be painted before the crosswalk. Stop bars indicate to the driver to stop before the crosswalk. When at an uncontrolled stop, crosswalk warning signs and advanced warning signs in accordance with the Manual on Uniform Traffic Control Device (MUTCD) should be included. Depending on the number of lanes and speed and volume of traffic, additional safety measures may be needed.

cost $$$

timeline

location all streets

ADA Curb Ramps

ADA curb ramps are required by law at crossings to allow people with mobility limitations to safely and comfortably cross. Curb ramps must include detectable warning tiles to indicate to visually impaired pedestrians they are leaving or entering the street. Curb ramps also benefit sidewalk users with strollers and people wheeling objects.

Tools for Intersections

cost $$$

timeline

location major streets

In-Street Pedestrian Crosswalk Sign

In-Street pedestrian crosswalk signs are temporary or permanent signs placed in the street, adjacent to crosswalks, to alert motorists to the presence of a crossing. In-street pedestrian crosswalk signs have proven more effective than signs outside of the curb-to-curb, particularly because an obstacle in the road can increase motorist caution, increase awareness of a crossing and decrease speed as a result. Creating a gateway of in-street signs paired with curb extensions has proven particularly effective at increasing motorist yielding.

cost $$$

timeline

location major streets

Raised Crossings

A raised crossing maintains the level of the sidewalk through the intersection, or mid-block crossing. Raised crossings reinforce slow speeds and encourage drivers to yield to pedestrians. Raised crossings may require reconfiguring current drainage engineering.

STREET SAFETY DESIGN TOOLBOX

Tools for Intersections

cost $$$

timeline

location major streets

Raised Intersection

Raised intersections raise the entire area of an intersection, including the crossings, to the level of the sidewalk. This encourages drivers to drive with caution and gives pedestrians more visibility. Raised intersections may require reconfiguring current drainage engineering.

cost $$$

timeline

location major streets

Pedestrian Refuge Island

Pedestrian refuge islands provide a protected space in the middle of the street to help people walking safely cross the street. On wide streets, refuge islands can make a long crossing distance safer by providing a safe waiting space for people and increase driver attention. Refuge islands can be installed at signalized and non-signalized locations.

Tools for Intersections

cost $$$

timeline

location major streets

Grade Separated Crossing

Grade separated crossings, such as overpasses or underpasses, give pedestrians and bicyclists a safe way to cross street with high vehicle speeds and/or volumes.

cost $$$

timeline

location major streets

Turn Restriction

Turn restrictions are restrictions that prevent vehicle movements at an intersection, such as restricting a right turn. Turn restrictions can be used to reduce key pedestrian conflicts. Due to restricted movements, an assessment of resulting traffic flow may be necessary.

STREET SAFETY DESIGN TOOLBOX

Tools for Intersections

cost $$$

timeline

location major streets

Speed Feedback Signs

Speed feedback signs provide drivers feedback about their speed in relation to the posted speed limit. Speed feedback signs can be an effective method for reducing speeds at a specific location and typically most effective for a limited period of time.

cost $$$

timeline

location major streets

Curb Extensions

Curb extensions, or bump-outs, extend the sidewalk and align with the parking lane. Curb extensions can also be implemented at mid-block crossings. Curb extensions reduce crossing distances, slow turning vehicles, and improve pedestrian visibility. In the short-term, curb extensions can be installed using paint, bollards, and/or planters. When installed permanently, curb extensions require rebuilding the curb and sidewalk.

Tools for Intersections

cost $$$

timeline

location major streets

Mid-Block Crossings

Mid-block crossings are those that are outside of an intersection. They are appropriate along long blocks or blocks with high pedestrian activity. They are also appropriate where a trail crosses a street outside of an intersection. Mid-block crossings can benefit from curb extensions, or chokers, and should feature parking restrictions within 20 feet of crossings to ensure driver visibility of pedestrians and bicyclists. Crossings should be paired with a high visibility crosswalk and appropriate signage.

cost $$$

timeline

location major streets

Hardened Centerline

Hardened Centerlines are low plastic barriers and flexible delineators on top of centerlines at intersections. They discourage left-turning vehicles from crossing over the centerline of the receiving street, forcing a tighter and slower turn.

STREET SAFETY DESIGN TOOLBOX

Tools for Intersections

cost $$$

timeline

location major streets

Reduce Curb Radii

A smaller curb radius requires drivers to slow down before making their turn. A slower turn provides more reaction time to the driver to look for pedestrians and requires a shorter stopping distance. A reduced curb radii can be installed in the short-term using paint and flexible delineators or made permanent through reconstructing the curb.

cost $$$

timeline

location major streets

Slow-Turn Wedge

A slow-turn wedge uses paint, low plastic barriers and plastic flexible delineators to create a tighter turn radius. Slow-turn wedges are an appropriate short-term solution before permanent curb work can be completed or can be a long-term solution that allows emergency vehicles, buses and garbage trucks to still make a turn.

STREET SAFETY DESIGN TOOLBOX

Tools for Intersections

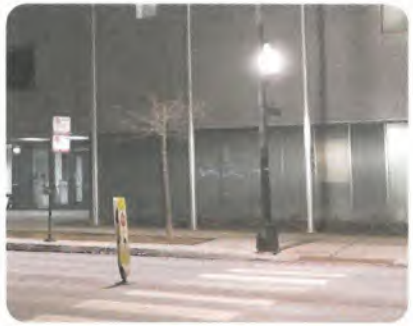
cost $$$

timeline

location all streets

Intersection Daylighting

Daylight intersections create clear, visible sight lines between people driving and people crossing a street, often by removing barriers near a crosswalk or intersection. Daylighting usually restricts parking within 20-25 feet of crossing to ensure proper pedestrian sightlines and clears the intersection of unnecessary signage.



cost $$$

timeline

location all streets

Enhanced Lighting

Enhanced lighting provides additional lighting where it is insufficient or nonexistent. Enhanced lighting should be installed at transit stops and along paths that lead from nearby destinations to the stop.

STREET SAFETY DESIGN TOOLBOX

Tools for Intersections

cost $$$

timeline

location all streets

Landscaping

Landscaping is the use of trees and vegetation in the public right-of-way to create a more pleasing environment and to provide physical separation from pedestrians and bicyclists from vehicular traffic. Sightlines at intersections should be considered when planting vegetation, particularly trees.

Tools for Trail Crossings

cost $$$

timeline

location all streets

Vehicle Warning Signs & Markings

Vehicle warning and markings alert motorists when they are approaching crossings with off-street paths. Signage may also provide additional bicycle awareness, such as "State Law: 3 Feet Min to Pass Bicycles" for bicycles on roadways.

cost $$$

timeline

location all streets

Bike/Pedestrian Warning Signs & Markings

Bicycle/pedestrian warning and markings alert trail users to upcoming vehicular traffic. Light rumble strips can be used to further alert bicyclists.

STREET SAFETY DESIGN TOOLBOX

Tools for Trail Crossings

cost $$$

timeline

location all streets

Pedestrian Hybrid Beacon (PHB)

Pedestrian hybrid beacons are overhead, pedestrian-activated signals placed at uncontrolled, marked crosswalks that, when activated, stop motor vehicle traffic and allow pedestrians and/or people biking to safely cross the roadway. Pedestrian hybrid beacons are often installed at locations where pedestrians need to cross the street and vehicle speeds and/or volumes are high, but traffic signal warrants are not met.

cost $$$

timeline

location all streets

Rectangular Rapid Flashing Beacon (RRFB)

Rectangular Rapid Flashing Beacons (RRFB) are user-activated warning lights. Bicyclists and pedestrians push a button to activate the warning lights before attempting to cross the roadway. The unique flashing pattern of the RRFBs have been shown to induce vehicle yielding at a much higher rate than traditional warning lights. Care should be taken to ensure that the button used to activate the RRFB is easy to reach for a bicyclist without dismounting the bicycle, children, and for people in wheelchairs. Roadway geometry should be taken into consideration.

STREET SAFETY DESIGN TOOLBOX

Tools for Trail Crossings

cost $$$

timeline

location all streets

Signalization

Traditional signalized intersections create gaps in traffic flow and allow pedestrians or bicyclists to cross the street. As a pedestrian tool, traffic signals are appropriate at locations where a significant number of pedestrians are crossing and would otherwise experience excessive delay or safety issues. The installation of traffic signals is governed by Warrants in the Manual of Uniform Traffic Control Devices (MUTCD) and are generally based on the number of pedestrians and vehicles crossing the intersection, among other conditions. Traffic signals should automatically provide a walk signal to pedestrians, rather than require people walking to activate the signal.

cost $$$

timeline

location all streets

Crossing Design

The desirable path alignment at a street crossing is 90-degrees or perpendicular to the crossing street, as to minimize the exposure of crossing trail users and maximize sightlines.

At rail crossings, it is safest to cross the tracks on bike at a 90-degree angle.

cost $$$

timeline

location all streets

Warning Signs or Markings Ahead of Rail Crossings

Warning signage indicates to bicyclist of an upcoming railroad crossing.

cost $$$

timeline

location all streets

Minimize Flange Opening

Flange openings and gaps along the rail should be kept to a minimum to prevent any bicycle wheels from getting caught. Additionally, the rail crossing should be a smooth surface.

STREET SAFETY DESIGN TOOLBOX

Tools for Traffic Calming

cost $$$

timeline

location major streets

Right Sizing

Right sizing streets involves reducing the overall number and/or size of travel lanes on a street and re-purposing that space for other uses, such as bicycle facilities, dedicated transit facilities, or public space. Right sizing has demonstrated safety benefits, often reducing vehicle speeds and making it easier and safer for people walking to cross the street. Because many right sizing projects include a center left turn lane, these benefits can often be achieved with minimal impact on vehicle travel times. Traffic analysis will be required to determine if a right sizing project is appropriate.

cost $$$

timeline

location all streets

Narrow Travel Lanes

Vehicle speeds are influenced by how fast a driver feels they can safely travel. Narrow(er) travel lanes require greater caution to maintain the lane and avoid conflicts and may lead to lower vehicle speeds and improved safety.

Tools for Traffic Calming

cost $$$

timeline

location major streets

Access Management

Driveway access interrupts sidewalk continuity and introduces pedestrian and vehicle conflict points. Access management as a policy controls the location, spacing and design of driveways.

Good access management practices limit the presence of driveways, particularly redundant ones, to maintain safety.

cost $$$

timeline

location all streets

Slip Lane Removal

Slip turn lanes allow vehicles to make right-hand turns at high speeds, resulting in dangerous conditions for crossing pedestrians and bicyclists. Removing slip lanes requires all vehicles to make a full stop at the intersection. In the short-term, slip lanes can be closed using planters, flexible delineators, paint, and other materials. Additional evaluation can identify and assess the implications of slip lane removal.

STREET SAFETY DESIGN TOOLBOX

Tools for Traffic Calming

cost $$$

timeline

location major streets

Signal Progression

Signal progression is traffic signal adjustment along a stretch of street so that it is timed for a desired vehicle speed. For example, if a street has a speed limit of 25 mph but the signal timing requires cars to travel 30 mph in order to make every green light, drivers are incentivized to travel at 30 mph. Proper signal timing can reinforce posted traffic speeds and increase safety.

cost $$$

timeline

location major streets

Speed / Red Light Cameras

Speed and red-light cameras are examples of automated enforcement. Speed cameras can be an effective tool for reducing vehicle speeds on streets with a high number of serious or fatal injury crashes. Red-light cameras can be effective at reducing vehicle crashes at intersections with a high number of serious or fatal injury crashes resulting from drivers failing to yield for a red traffic signal. Automated enforcement programming should be carefully placed and provide appropriate warning signage. Additionally, locations should be identified using crash data analyses and regularly evaluated.

Tools for Traffic Calming

cost $$$

timeline

location major streets

Gateway Treatment

A gateway treatment uses vertical features along or over a street to signal the entrance to a neighborhood or business district. In addition to creating a sense of place, gateway treatments may indicate the change in vehicle speed through the neighborhood or district.

cost $$$

timeline

location all streets

Leading Pedestrian Interval (LPI)

LPIs are signals that allow pedestrians to start crossing the street before vehicular traffic in the same direction is given the green light. The walk signal is lit before the vehicle signal which gives the pedestrians a head-start in crossing the street.

STREET SAFETY DESIGN TOOLBOX

Tools for Traffic Calming

cost $$$

timeline

location major streets

Lagging Left Turn Phase

A lagging left turn phase holds left-turning cars until through traffic has passed; the left turn phase comes after through traffic. This signal phasing removes potential pedestrian conflict with turning vehicles by allowing pedestrians to cross first.

cost $$$

timeline

location all streets

Pedestrian Countdown Signal

Pedestrian countdown signals indicate how much time pedestrians have to complete crossing a street. This can inform the pedestrian how much time is left and prevent them from being stranded in the middle of traffic when the signal phase ends. Countdown signals inform other road users as well.

The MUTCD requires countdown signals to be installed whenever pedestrian signal heads are warranted.

STREET SAFETY DESIGN TOOLBOX

Tools for Traffic Calming

cost $$$

timeline

location minor streets

Diverters

A diverter is a barrier that blocks through vehicle movements along a street but allows bicycles and pedestrians to continue traveling through. Diverters are usually built at intersections, requiring vehicles to turn left or right. Diverters help disrupt lengthy vehicle straightaways that can lead to high speeds and volumes on neighborhood streets and allowing for low-stress walking and biking routes.

cost $$$

timeline

location all streets

Chokers

Chokers are mid-block curb extensions that work to narrow the street and slow down vehicle speeds. The curb extension can include landscaping and provide a good opportunity for a mid-block crosswalk.

STREET SAFETY DESIGN TOOLBOX

Tools for Traffic Calming

cost $$$

timeline

location minor streets

Chicanes

Chicanes feature offset curb extensions on alternating sides of a street that require drivers to navigate in a nonlinear fashion. The slight deviation encourages slower speeds and more attention. Chicanes can be created temporarily with paint and bollards or more permanently with concrete curb extensions.

cost $$$

timeline

location all streets

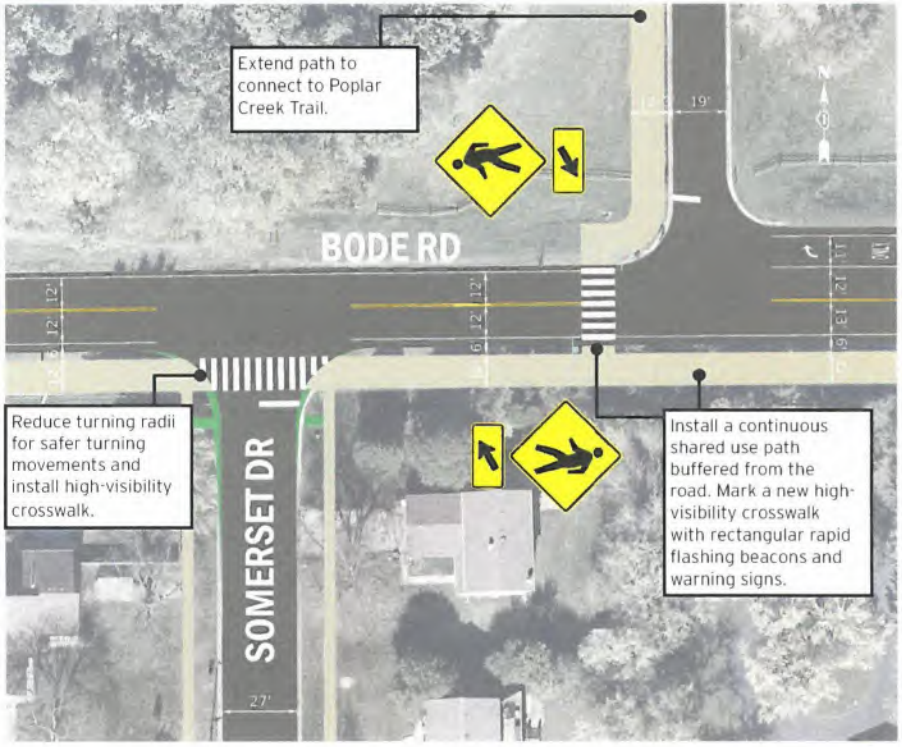
Pavement Treatments

Pavement treatments are unique crosswalks that apply a stamped concrete or concrete paver to bring additional attention to a marked crosswalk. Pavement treatments can be applied with different colored paint and/or designs and be paired with other tools, such as raised crosswalks or intersections.

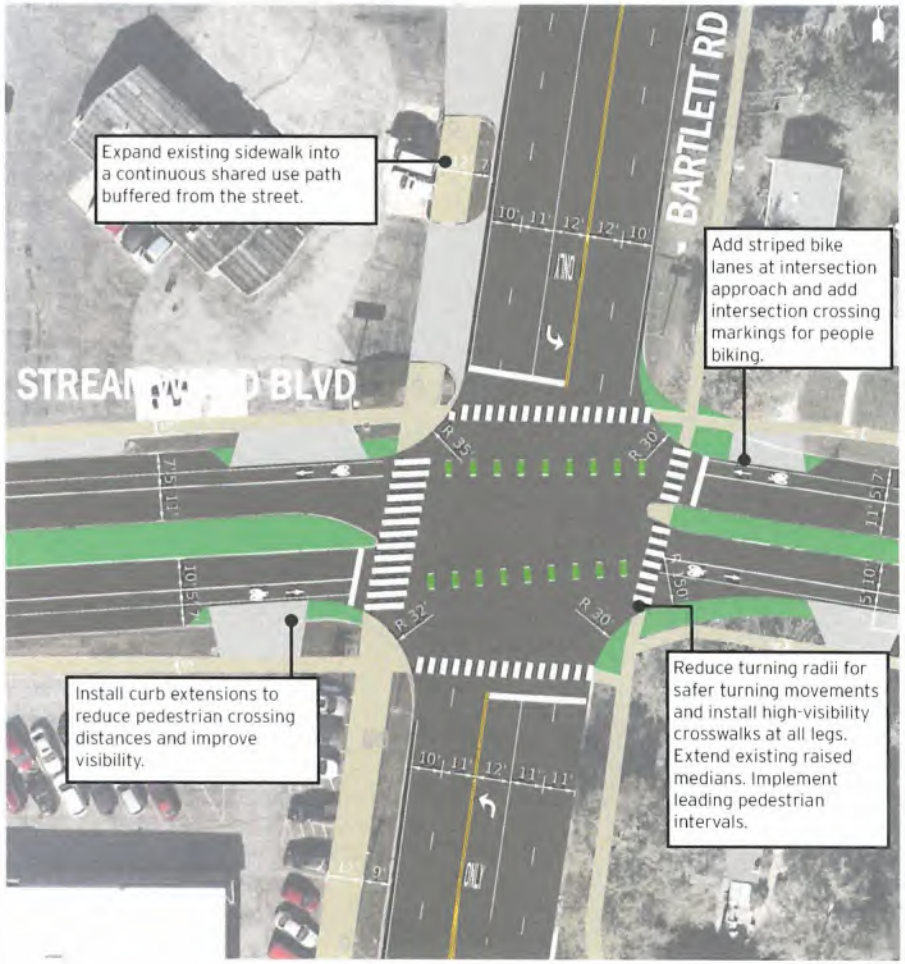
Applying the Toolbox

The examples on the following pages demonstrate how the design tools detailed in the toolbox can be applied to improve safety and comfort at important locations throughout Bartlett and Streamwood. These are conceptual designs which require additional investigation and due diligence, as well as engagement with community members and stakeholders, before advancing.

Trail Crossing at Bode Rd.

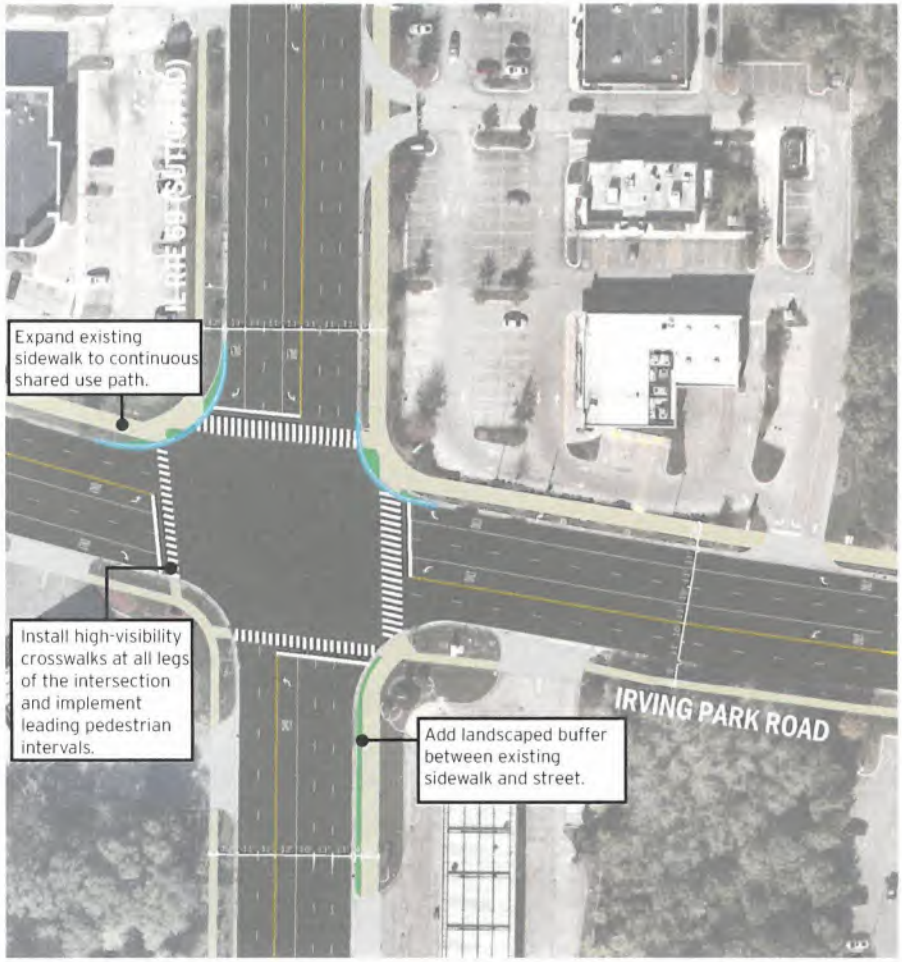


Signalized Intersection at Bartlett Rd. and Streamwood Blvd.

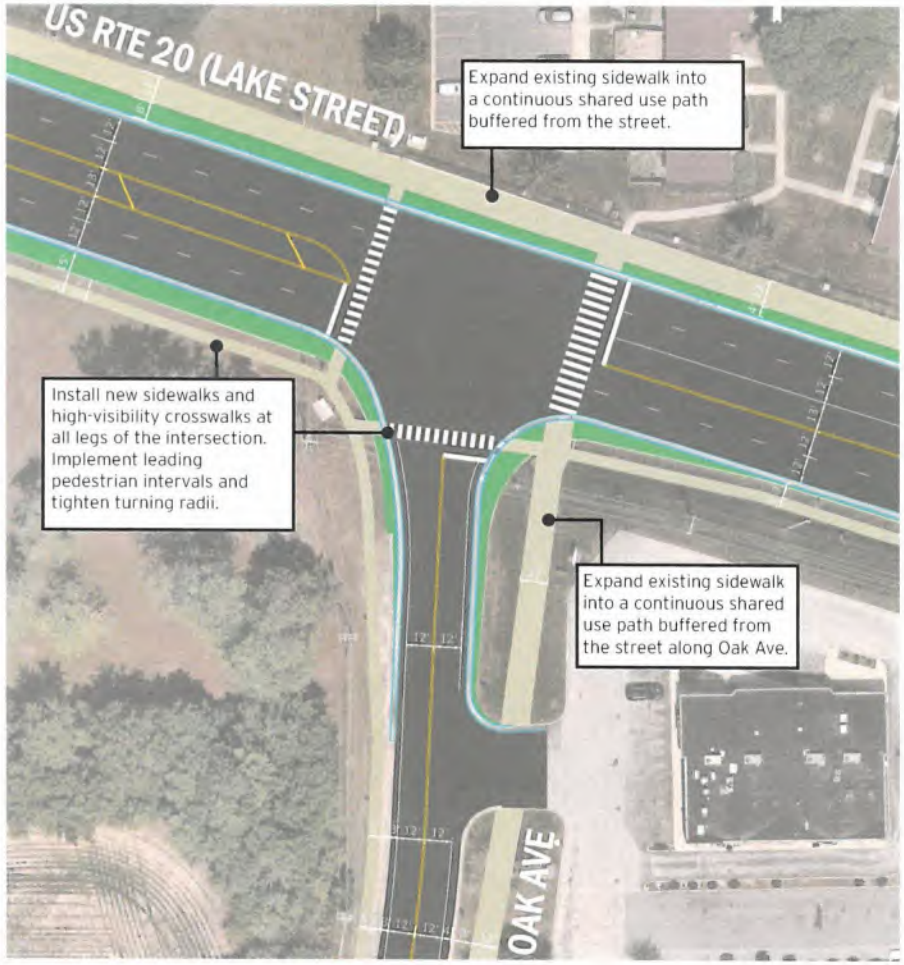


Applying the Toolbox

Signalized Intersection at Irving Park Rd. and Sutton Rd.

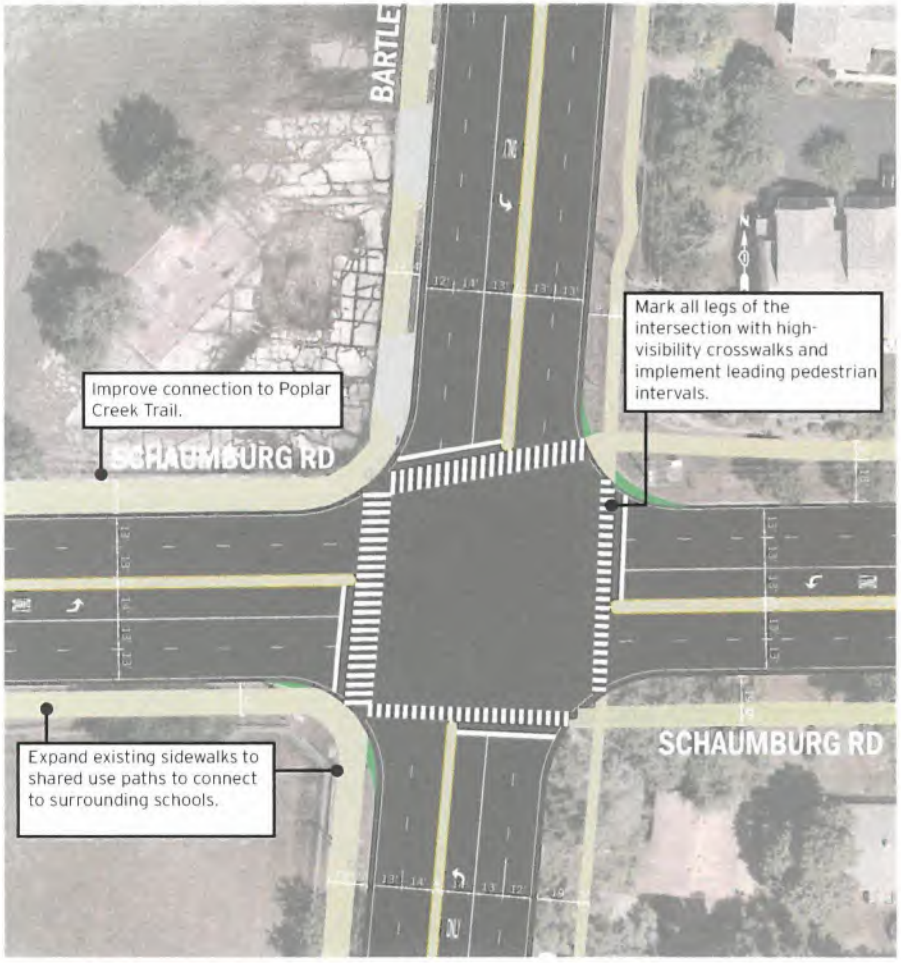


Signalized Intersection at Lake St. and Oak Ave.



Applying the Toolbox

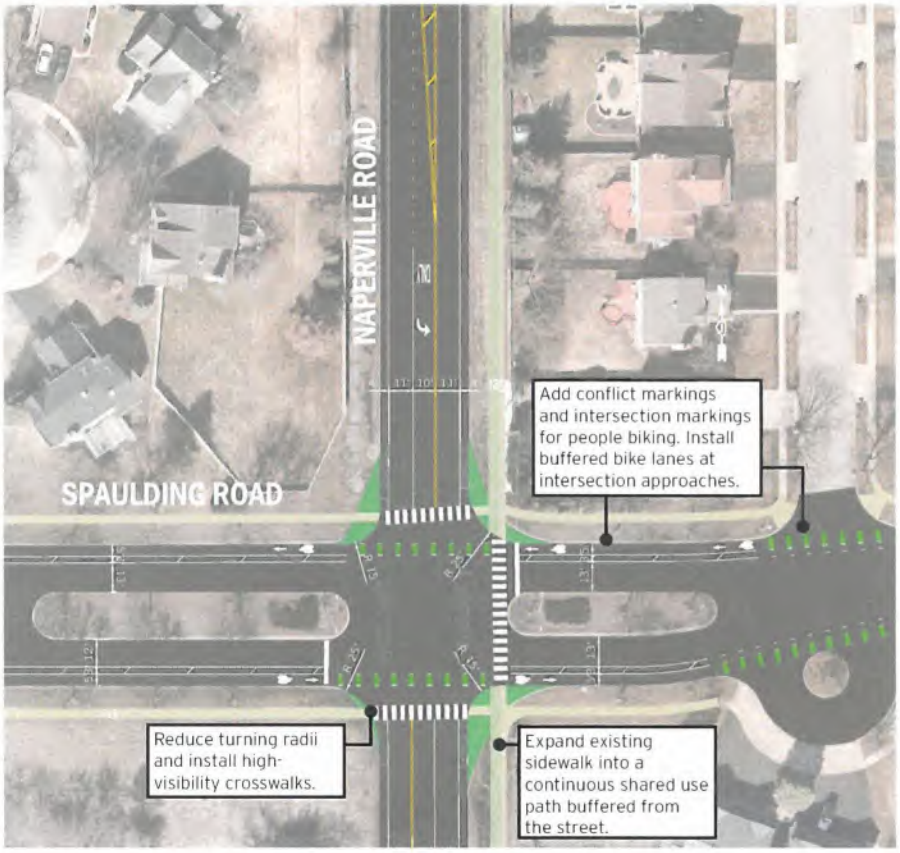
Signalized Intersection at Schaumburg Rd. and Bartlett Rd.

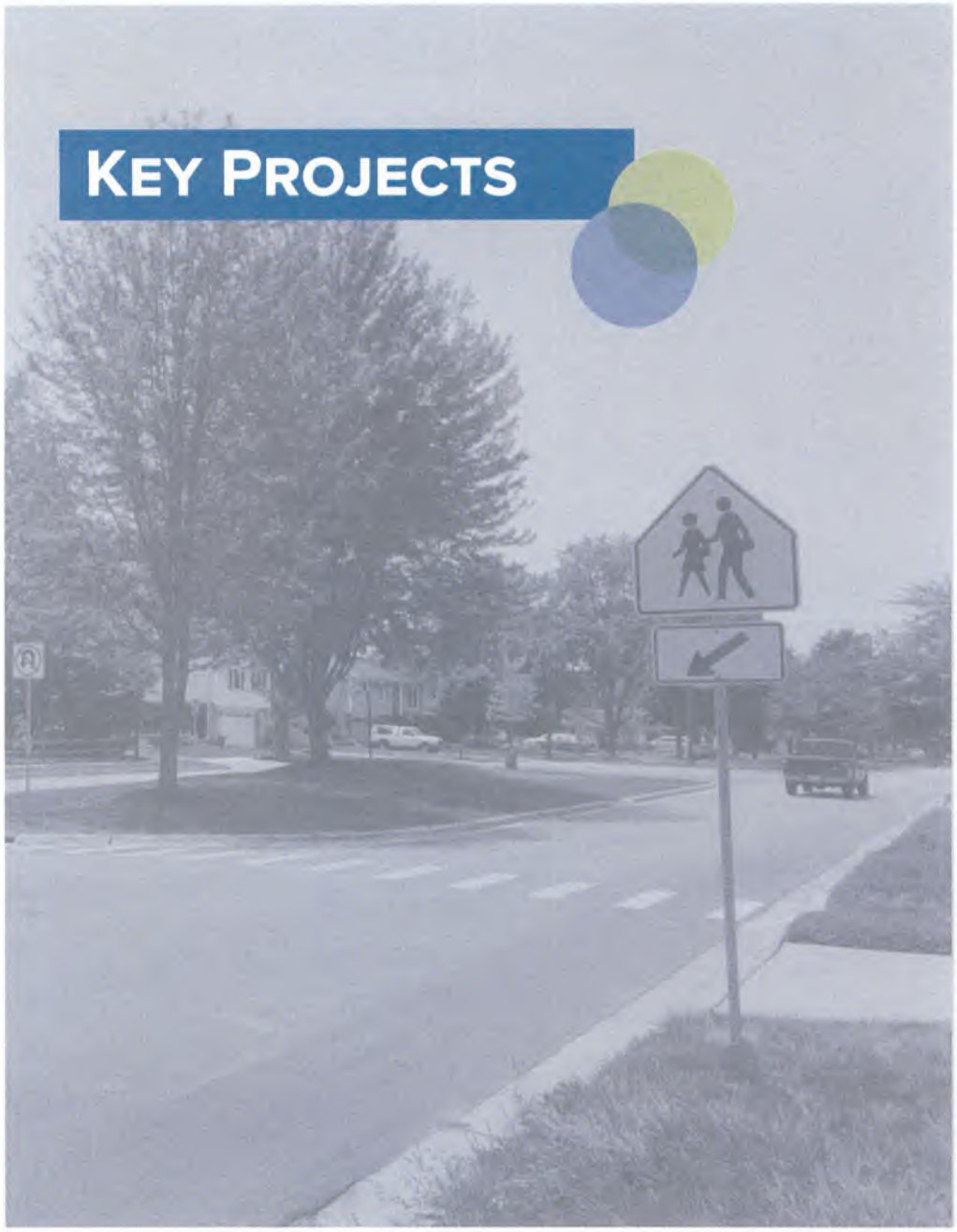


Signalized Intersection at Schaumburg Rd. and Sutton Rd.

Applying the Toolbox

Unsignalized Intersection at Naperville Rd. and Spaulding Rd.





KEY PROJECTS

The Bartlett and Streamwood Bicycle and Pedestrian Plan prioritizes recommendations within individual categories for bikeways and sidewalk gaps, but it is also important to look holistically across individual categories of improvements to identify areas of overlap where multiple needs could be addressed simultaneously through a single project. Coordinating improvements is cost-effective, saves time, and limits disruptions for the public.

The project team gathered information from Village staff, key stakeholders, and the community to identify 12 key projects, six in each Village, where multiple needs for people walking and biking overlapped. The following section provides additional detail on these key projects which the Villages can work to garner outside funding to support (for more information on grants see page 107).

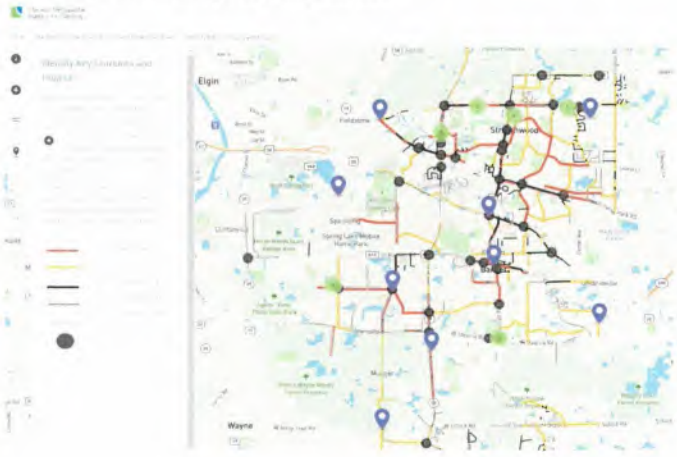
Bartlett–Key Projects

- Munger Rd. (Stearns Rd. to Sayer Rd.)
- W. Bartlett Rd. (Bennington Ln. to West Ridge Blvd.)
- Naperville Rd. (W. Bartlett Rd. to Timberline Dr.)
- Spaulding Rd. (Naperville Rd. to Lambert Ln.)
- Stearns Rd. (Munger Rd. to James Philip State Park)
- IL 59 (Schick Rd. to Gulf Stream Dr.)

Streamwood–Key Projects

- Schaumburg Rd. (Sutton Rd. to Bartlett Rd.)
- Schaumburg Rd. (Bartlett Rd. to Old Church Rd.)
- Bartlett Rd. (Schaumburg Rd. to Streamwood Blvd.)
- Bartlett Rd. (Streamwood Blvd. to Lake St.)
- Irving Park Rd. (Sutton Rd. to Schaumburg Rd.)
- Irving Park Rd. (Bartlett Rd. to East Ave.)

Interactive Community Mapping Exercise



Community members and stakeholders identified key projects through this interactive mapping activity.

Schaumburg Road (from Sutton Rd. to Bartlett Rd.)

Village: Streamwood
Project Length: 1.1 miles
Sidewalk Gaps: 0.7 miles, Tier 1
Population and Jobs (within 0.5 miles): 13,046 people and 435 jobs
Crash History (2015 - 2019): 1 serious pedestrian injury

Street Jurisdiction: Cook County
Bike Improvements: Shared Use Path, Tier 1
Key Intersections/Crossings: 2 signalized, 1 unsignalized

Project Description

Schaumburg Road (from Sutton Rd. to Bartlett Rd.) in the Village of Streamwood is an important connection for people walking and biking. Two schools are located along the corridor, including Streamwood High School, which has an enrollment of over 1,700 students. The corridor also connects to the Poplar Creek Trail to the north, which is included in CMAP's Regional Trails and Greenways Plan. To improve safety and connectivity, this project would expand the existing sidewalk on the south side of the street to a shared use path for people walking and biking. The project would also fill existing sidewalk gaps on the north side of the street and include safety improvements at the intersections of Sutton Road and Bartlett Road, as well as upgrades to the existing unsignalized crossing at Walnut Drive. The project also serves an Economically Disinvested Area, as identified by CMAP in the ON TO 2050 plan. Input from community members throughout the planning process, including engagement with students at Streamwood High School, highlighted this corridor as an opportunity and priority.

Anticipated Benefits

This project would make it safer and more attractive for students to walk and bike to school. In a survey of District U-46 students, 54% of respondents said they would bike to school more often if there were a safe, comfortable, and convenient route. The project would also increase access to the Poplar Creek Trail, forest preserves, and the commercial area at the intersection of Schaumburg and Sutton Roads. It would also address safety issues located at major intersections and crossings.

Schaumburg Road (from Bartlett Rd. to Old Church Rd.)

Village: Streamwood
Project Length: 1.2 miles
Sidewalk Gaps: 0.5 miles, Tier 2
Population and Jobs (within 0.5 miles): 21,617 people and 394 jobs
Crash History (2015 - 2019): 1 serious bicycle injury

Street Jurisdiction: Cook County
Bike Improvements: Shared Use Path, Tier 1 Route
Key Intersections/Crossings: 2 signalized, 1 unsignalized

Project Description

Schaumburg Road (from Bartlett Rd. to Old Church Rd.) in the Village of Streamwood is a continuation of the connection from Sutton Road to Bartlett Road and provides an important link to reach commercial areas along Barrington Road and connect to Schaumburg. The project will also improve connections between the neighborhoods on either side of Schaumburg Road and improve access to a number of parks. To improve safety and connectivity, this project would expand the existing sidewalk on the south-side of the street to a shared use path for people walking and biking. This project will also fill existing sidewalk gaps on the north-side of the street and include safety improvements at the intersections of Bartlett Road and Park Boulevard. There is also a need for additional mid-block crossings to reduce the distance people walking must travel to access a crosswalk. The project serves an Economically Disinvested Area, as identified by CMAP in the ON TO 2050 plan.

Anticipated Benefits

This project would make it safer and more attractive for students to walk and bike to school and for community members to access parks along the corridor. It would also improve access to commercial areas and address safety issues at major intersections and crossings. A number of comments from community members highlighted the need for sidewalks and bicycle facilities along the corridor, and implementing these improvements would encourage more walking and biking.

Bartlett Road (from Schaumburg Rd. to Streamwood Blvd)

Village: Streamwood
Project Length: 0.7 miles
Sidewalk Gaps: 0.1 miles, Tier 1
0.1 miles Tier 2
Street Jurisdiction: Cook County
Bike Improvements: Shared Use Path, Tier 1 Route
Key Intersections/Crossings: 2 signalized, 1 unsignalized
Population and Jobs (within 0.5 miles): 15,857 people and 554 jobs
Crash History (2015 - 2019): None

Project Description

Bartlett Road (from Schaumburg Rd. to Streamwood Blvd) in the Village of Streamwood is an important corridor for providing north-south connectivity across the Village. The Hanover Countryside Elementary School is located along this section of Bartlett Road. Implementing a shared use path would provide a connection for people biking and address several important sidewalk gaps. The project also provides a connection to the commercial area at the intersection of Streamwood Boulevard and Bartlett Road and could have a catalytic impact on plans for future development centered at the intersection. There is also an opportunity to improve access to the trail around Streamwood Oaks Golf Course and implement an important mid-block crossing at Cypress Drive (which community members raised the need for). The project serves an Economically Disinvested Area, as identified by CMAP in the ON TO 2050 plan.

Anticipated Benefits

This project would make it safer and more attractive for students to walk and bike to school. In a survey of District U-46 students, 54% of respondents said they would bike to school more often if there were a safe, comfortable, and convenient route. The project would also increase access to the commercial area at the intersection of Streamwood Boulevard and Bartlett Road and address safety issues at major intersections and crossings.

Bartlett Road (from Streamwood Blvd. to Lake St.)

Village: Streamwood
Project Length: 1.2 miles
Sidewalk Gaps: 0.5 miles, Tier 1
0.1 miles, Tier 3
Street Jurisdiction: Cook County
Bike Improvements: Shared Use Path, Tier 1 Route
Key Intersections and Crossings: 2 signalized
Population and Jobs (within 0.5 miles): 13,427 people and 1,297 jobs
Crash History (2015 - 2019): 1 serious pedestrian injury

Project Description

Bartlett Road (from Streamwood Blvd. to Lake St.) connects several parks and provides access to the Streamwood Community Center, several religious institutions, and commercial areas and jobs. The project would address major missing sidewalk gaps, which impede access for people walking to these community destinations, and provide important connections for people biking. Streamwood envisions the area around Bartlett Road and Streamwood Boulevard as a future walkable, mixed-use center for the Village, and this project could help catalyze future development. The project would also address safety issues at the intersections of Streamwood Boulevard and Irving Park Road, where a pedestrian was seriously injured in 2015. The project also serves an Economically Disinvested Area, as identified by CMAP in the ON TO 2050 plan. Input from community members throughout the planning process, including engagement with students at Streamwood High School, highlighted this corridor as an opportunity and priority.

Anticipated Benefits

This project would make it safer and more attractive for families, students, and community members to walk and bike to a range of important community destinations by providing safe, comfortable, and convenient walking and biking routes. The project area has a history of crashes with a serious pedestrian injury and improvements would help to improve the safety along this corridor.

Irving Park Rd (from Sutton Rd. to Schaumburg Rd.) & Sutton Rd (from Irving Park Rd. to Schaumburg Rd.)

Village: Streamwood
Street Jurisdiction: IDOT
Project Length: 1.2 miles (Irving Park Rd) & 0.85 miles (Sutton Rd)
Bike Improvements: Shared Use Paths, Tier 1 Route
Sidewalk Gaps: 0.5 miles, Tier 1; 0.5 miles, Tier 2
Key Intersections / Crossings: 2 signalized, 2 unsignalized, 1 overpass
Population and Jobs (within 0.5 miles): 11,734 people and 1,561 jobs
Crash History (2015 - 2019): 1 serious pedestrian injury

Project Description

Irving Park Road (from Sutton Rd. to Schaumburg Rd.) and Sutton Road (from Irving Park Rd. to Schaumburg Rd.) in the Village of Streamwood are both important opportunities to improve connectivity for people walking and biking and set the stage for future development at the node of Sutton and Irving Park Roads. This project provides access to several parks and an important commercial hub. Providing a shared use path and addressing sidewalk gaps would enable people to walk and bike for more trips. Improvements at the intersection with Sutton Road and a new mid-block crossing at Blue Ridge Drive would improve safety and create connections between the neighborhoods on the north and south sides of the street. Irving Park Road is also a key regional route included in CMAP's Regional Trails and Greenways Plan and the Northwest Municipal Conference's Multimodal Transportation Plan. The Village has plans for new trail connections at Irving Park Road at Sutton Road. Plans include a bridge across Sutton Road which would allow pedestrians and bicyclists to safely travel over the busy road from the existing trail west of Sutton Road to a new shared use path east to Madison Drive. The bridge and trail plans are in the beginning of Phase 2 Design Engineering and Permitting.

Anticipated Benefits

This project would further regional connections for people biking while also improving local access to parks and commercial areas (for both people walking and biking). Addressing sidewalk gaps, improving intersections, providing a shared use path, and new mid-block crossing would all improve safety for people walking and biking.

Irving Park Rd (from Bartlett Rd. to East Ave.)

Village: Streamwood
Street Jurisdiction: IDOT
Project Length: 1.6 miles
Bike Improvements: Shared Use Path, Tier 1 Route
Sidewalk Gaps: 1.1 miles, Tier 1
Key Intersections and Crossings: 3 signalized
Population and Jobs (within 0.5 miles): 16,316 people and 2,382 jobs
Crash History (2015 - 2019): 1 pedestrian fatality, 3 serious pedestrian injury, 1 serious bicyclist injury

Project Description

Irving Park Road (from Bartlett Rd to East Ave) in the Village of Streamwood connects a number of commercial areas, the Village's municipal center, parks, and schools. At the intersection of Irving Park Road and Bartlett Road there is a commercial node including the Post Office and Jewel-Osco Grocery Store. In the middle of this corridor is Kollar Park and TEFFT Middle School along with an ALDI and a key commercial area with restaurants and shops. This corridor has a history of bicycle and pedestrian crashes resulting in serious injury or fatality. Safety improvements to this area are vital. The project would include a continuous shared use path, fill existing sidewalk gaps, and safety improvements at intersections with Bartlett Road, Park Boulevard, and East Avenue. Irving Park Road is also a key regional route included in CMAP's Regional Trails and Greenways Plan and the Northwest Municipal Conference's Multimodal Transportation Plan. Streamwood envisions the area around Irving Park Road and Park Boulevard as a future walkable civic core, and this project could help catalyze future development.

Anticipated Benefits

This project would result in a safer, more convenient and more comfortable corridor for residents, families, and students. Improvements to the signalized intersections along the roadway segment would improve overall safety and access to jobs, schools, and other community destinations.

Munger Road (from Stearns Rd. to Sayer Rd.)

Village: Bartlett
Project Length: 1.1 miles
Sidewalk Gaps: 0.3 miles, Tier 1
0.4 miles, Tier 2
Population and Jobs (within ½ mile): 7,146 people and 1,185 jobs
Crash History (2015 - 2019): none

Street Jurisdiction: DuPage County
Bike Improvements: Shared Use Path, Tier 1 Route
Key Intersections and Crossings: none

Project Description

Munger Road (from Stearns Rd. to Sayer Rd) in the Village of Bartlett provides access to the Brewster Creek Business Park and connects to Liberty Elementary School and Pratt's Wayne Woods further south. Addressing sidewalk gaps and constructing a shared use path would improve connections for people walking and biking. A new connection on Munger Road would link to existing bike routes on W. Bartlett Road and Stearns Road, providing a major boost to connectivity in the Village. Input from community members and stakeholders highlighted this segment of Munger Road as an area in need of improvements for people walking and biking.

Anticipated Benefits

Improving walking and biking facilities along Munger Road would increase access to thousands of jobs and encourage more biking by addressing an important gap in the Village's network. The project would also provide safer access to Liberty Elementary School and to the forest preserve further south.

West Bartlett Road (from Bennington Ln. to Westridge Blvd.)

Village: Bartlett
Project Length: 0.8 miles
Sidewalk Gaps: 0.3 miles, Tier 2
0.1 miles, Tier 3
Population and Jobs (within ½ mile): 8,472 people and 974 jobs
Crash History (2015 - 2019): none

Street Jurisdiction: Cook County
Bike Improvements: Shared Use Path, Tier 1 Route
Key Intersections and Crossings: 1 signalized

Project Description

West Bartlett Road (from Bennington Ln. to Westridge Blvd) in the Village of Bartlett is an important connection for people walking and biking. Expanding the existing sidewalk to create a shared use path would create a continuous connection for people biking and there are several sidewalk gaps on the north side of the street. The corridor connects to multiple parks and schools and could be an important regional connection to access James "Pate" Philip State Park. West Bartlett Road is included in CMAP's Regional Trails and Greenways Plan. Improvements to the intersection at IL 25 would enhance safety and connectivity west to South Elgin High School. Community input throughout the process emphasized the need for a safe, continuous connection along West Bartlett Road. This project also serves an Economically Disconnected Area as defined by CMAP in the ON TO 2050 plan.

Anticipated Benefits

This project would make it safer and more attractive for students to walk and bike to school. The project would increase local access to the parks along the segment, while also providing a regional connection for people biking.

Naperville Road (from W. Bartlett Rd. to Timberline Dr.)

Village: Bartlett
Street Jurisdiction: Cook County
Project Length: 0.7 miles
Bike Improvements: Shared Use Path, Tier 1 Route
Sidewalk Gaps: 0.5 miles, Tier 2
Key Intersections and Crossings: 1 unsignalized
Population and Jobs (within 0.5 miles): 8,571 people and 451 jobs
Crash History (2013 - 2019): none

Project Description

Naperville Road (from W. Bartlett Rd. to Timberline Dr.) in the Village of Bartlett is an important connection to improve access between the Villages of Bartlett and Streamwood. Naperville Road is included in CMAP's Regional Trails and Greenways Plan. This segment has an existing half-mile sidewalk gap that disconnects the neighborhoods from Spaulding Road and north from the land uses at West Bartlett Road. Closing this gap and constructing a shared use path would open up opportunities for residents and visitors to make connections to existing trails and the commercial and educational land uses around West Bartlett Road. Community input throughout the process emphasized the need for a safe, continuous connection along Naperville Road.

At the northeast corner of Naperville Road and West Bartlett Road, The Grasslands subdivision was approved for development. The development construction will include a bike path along Naperville Road, stretching the subdivision limits.

Anticipated Benefits

The project would make it safer and more attractive for individuals of all ages and abilities to bike and walk between Bartlett and Streamwood while improving local access to several parks and recreational facilities.

Spaulding Road (from Naperville Rd. to Lambert Ln.)

Village: Bartlett
Street Jurisdiction: Bartlett
Project Length: 0.8 miles
Bike Improvements: Shared Use Path, Tier 1 Route
Sidewalk Gaps: 0.1 miles, Tier 3
Key Intersections and Crossings: 1 unsignalized
Population and Jobs (within 0.5 miles): 4,472 people and 75 jobs
Crash History (2013 - 2019): none

Project Description

Spaulding Road (from Naperville Rd. to Lambert Ln) is an important local connection for several neighborhoods. Addressing sidewalk gaps and creating a new bikeway along Spaulding Road would make biking and walking more feasible to an area that is currently disconnected from the network. This project connects to Naperville Road, which is an important regional route identified in CMAP's Regional Trails and Greenways Plan. Improvements at the intersection with Naperville Road would improve connections between neighborhoods and address safety concerns voiced during the planning process.

Anticipated Benefits

The project would greatly enhance walking and biking access for several neighborhoods that are currently disconnected, opening up new connections to the Village's overall network and access to new opportunities. Improvements at the intersection with Naperville Road would increase safety and comfort for people walking and biking.

Stearns Road (from Munger Rd. to James Philip State Park)

Village: Bartlett
Street Jurisdiction: DuPage County
Project Length: 1.7 miles
Bike Improvements: Shared Use Path, Tier 1 Route
Sidewalk Gaps: 0.9 miles, Tier 2
Key Intersections and Crossings: 1 unsignalized
Population and Jobs (within 0.5 miles): 3,047people and 2,221 jobs
Crash History (2013 - 2019): none

Project Description

Stearns Road (from Munger Rd. to James Philip State Park) in the Village of Bartlett is an important connection to the amenities and trails at James "Pate" Philip State Park, as well as Pratt's Wayne Woods to the south. Extending the existing shared use path is a high priority for Bartlett residents. Doing so would provide a safe, convenient and comfortable route for those looking to visit the park and create a continuous east-west connection across the Village. There is also the need for a trail crossing at the intersection with Powis Road to enable access to Pratt's Wayne Woods. Stearns Road is an important regional connection identified in both CMAP's Regional Trails and Greenways Plan and the DuPage Trails Plan.

Anticipated Benefits

While there is no existing crash history in this area, improvements to these facilities would provide safer connections for people walking and biking alike. The project would create a continuous east-west connection for people biking across Bartlett and enhance regional connectivity to important recreational destinations.

IL 59 (from Schick Rd. to Gulf Stream Dr.)

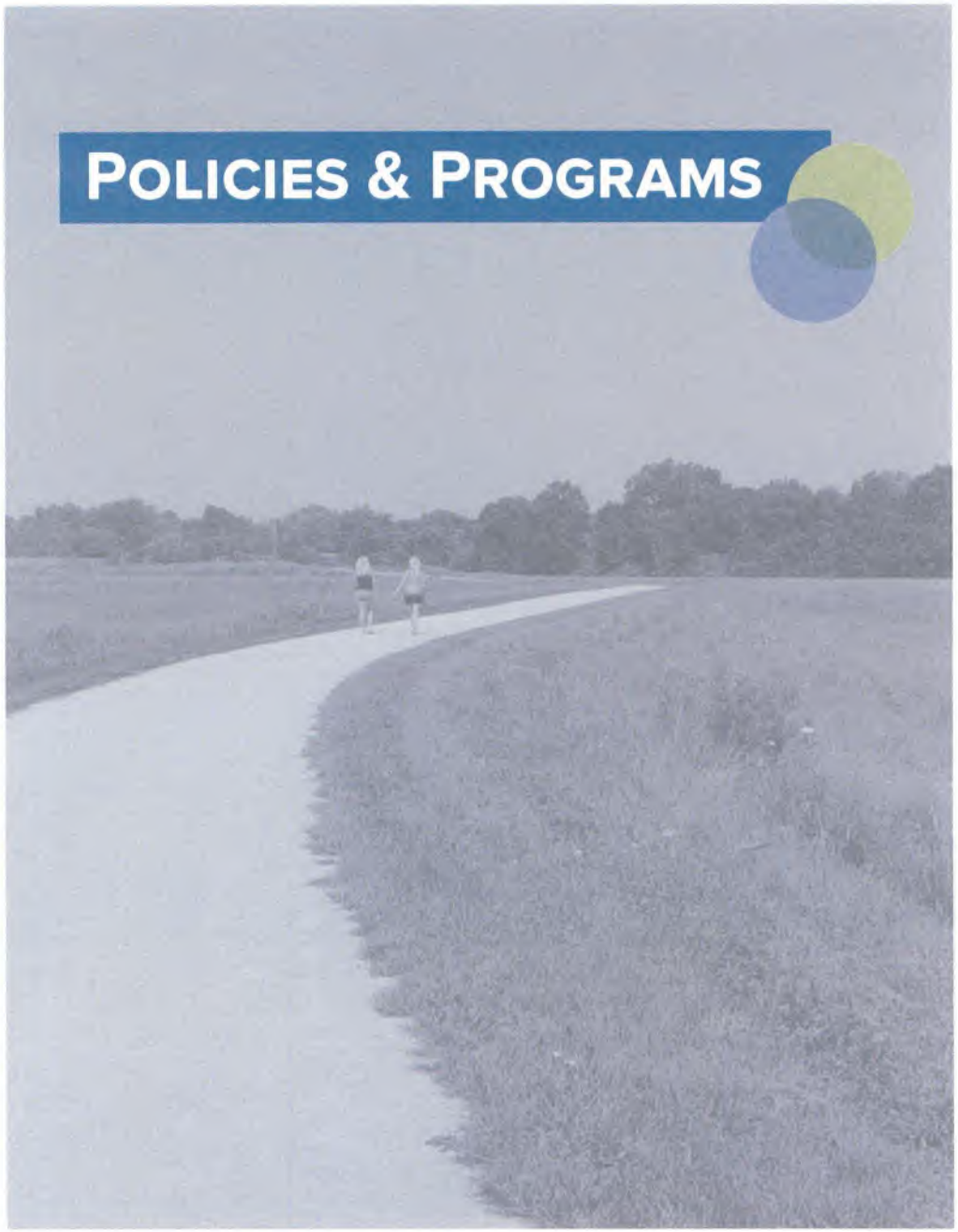
Village: Bartlett
Street Jurisdiction: IDOT
Project Length: 0.25 miles
Bike Improvements: Shared Use Path, Tier 1 Route
Sidewalk Gaps: 0.25 miles, Tier 2
Key Intersections and Crossings: 1 signalized
Population and Jobs (within 0.5 miles): 8,406 people and 210 jobs
Crash History (2013 - 2019): none

Project Description

IL 59 (from Schick Rd. to Gulf Stream Dr.) in the Village of Bartlett provides access to several important commercial areas as well as Bartlett High School. This project would address existing sidewalk gaps, continue the shared use path that currently ends at Gulf Stream Drive to Schick Road, and enhance the existing path south of Schick Road to provide additional space between the street and path. The project would also include safety improvements at the intersection with Army Trail Road where there are a number of shops and restaurants. Engagement with students at Bartlett High School, as well as general community engagement, specifically highlighted the need for these improvements. IL 59 is also an important regional connection and is included in the DuPage Trails Plan.

Anticipated Benefits

This project would address several important gaps in Bartlett's walking and biking networks, improving connectivity and enabling more people to make trips via walking and biking. The project would also make it safer and more attractive for students to walk and bike to Bartlett High School. In a survey of District U-46 students, 54% of respondents said they would bike to school more often if there were a safe, comfortable, and convenient route. Lastly, safety improvements at the intersection with Army Trail Road would make walking and biking to stores and restaurants a more feasible option.



Policies

Complete Streets Policy

According to the National Complete Streets Coalition there are ten elements to a comprehensive Complete Streets policy: vision and intent; diverse users; commitment in all projects and phases; clear, accountable exceptions; jurisdiction; design; land use and context sensitivity; performance measures; project selection criteria; and implementation steps. A thorough and updated Complete Streets policy is important because it enables communities to regularly improve multi-modal transportation at all available opportunities. Bartlett and Streamwood both have existing Complete Streets policies which can be strengthened and made more effective with several additions and updates.

Bartlett and Streamwood's policies should be updated to provide measurable definitions of priority groups and places, include requirements that ensure private development projects abide by the Complete Streets policy, provide specific performance measures to evaluate the success of implementation, include an equity component, and recommend the training of municipal staff.

Bartlett and Streamwood's policies include exemptions for certain situations and types of projects. While not every project can or needs to incorporate a full range of multimodal improvements, Bartlett and Streamwood should update the exemptions listed in their policies to have narrower and more specific definitions.

Example:

The City of Des Plaines' Complete Streets Policy very clearly explains what types of projects fall under the policy (City of Des Plaines projects, other public agency projects, and private development) and how the City applies the policy for each project type. It also has very narrowly defined exceptions, "Exceptions to such applicability of the Complete Streets policy are: a) Projects occurring on a roadway where specified users are prohibited by law, such as within interstate highway corridors. b) The cost for a particular Complete Street design recommendation would be excessively disproportionate to the need of that particular improvement, with due consideration given to future users, latent demand, and the social and economic value of providing a safer and more convenient transportation system for all users."

Bartlett and Streamwood's policies should incorporate checklists to serve as a guide for Village staff. Many communities have developed Complete Streets checklists that are incorporated into their policies. These tools can help effectively standardize the incorporation of Complete Streets considerations into the project development and design phases.

Example:

The City of Evanston's Complete and Green Streets Policy includes a detailed checklist to guide staff through project scoping and design.

Policies

Example:

Another resource for the development of an updated policy overall is the New Jersey Department of Transportation Complete & Green Streets for All: Model Complete Streets Policy & Guide published in July of 2019. This document provides a sample policy for implementation at the County and Municipal level. The sample policy includes all ten components recommended by the Complete Streets Coalition and further includes recommendations for the implementation of green infrastructure. It is recommended that Bartlett and Streamwood look to this guide as they update their complete streets policies.

Subdivision Ordinance

Providing clearly stated requirements for bicycle and pedestrian facilities within subdivision ordinances is beneficial to municipalities to encourage new developments to be bicycle and pedestrian friendly.

Bartlett and Streamwood should conduct a thorough review of their subdivision ordinances to ensure development sites will support walking and biking by requiring continuous sidewalk connections between public sidewalk and building entries, as well as connections to trails or subdivisions.

The ordinances should set design and infrastructure best practice standards for subdivision and private developments as well as a trail connection requirement where applicable. The existing subdivision ordinance for Bartlett does outline specific design guidance for their sidewalks and bicycle paths, however the existing Streamwood ordinance does not.

Bicycle Parking Ordinance

Bicycle parking can create an active transportation environment that is simpler and more convenient. It is important to ensure that bicycle parking is placed directly adjacent to the building's main entrance. It is recommended that Bartlett and Streamwood develop ordinances that require bicycle parking (short term and long term) be installed with new or amended developments.

The ordinances should include a requirement of short-term bicycle parking at all public buildings as well as long-term bicycle parking at places of employment, multi-unit residential buildings and transit stations. The table below outlines recommendations of bicycle parking requirements for different land use types provided in the Association of Pedestrian and Bicycle Professionals Bicycle Parking Guidelines.

This ordinance should also dictate standards for good bike parking that is safe, secure, and easy to use. These design standards should include specific approved bicycle rack styles as well as specific rack placement guidelines.

Well-Located Bike Parking at the Target on Irving Park Rd. in Streamwood

Bike parking at transit stations is also an important consideration in enabling more people to bike to transit. Installing secure, covered bike parking creates the best experience for users.

Policies

Proposed Bicycle Requirement by Land Use Type

Land Use	Type of Activity	Long-Term Bicycle Parking Requirement	Short-Term Bicycle Parking Requirement
Residential	***Single Family Dwelling***	None	None
	Multi Family Dwelling a. With private garage for each unit b. Without private garage for each unit c. Senior housing	None 0.5 space per bedroom (minimum of 2)	0.05 spaces per bedroom (minimum of 2)
Civic: Cultural / Recreational	***Non-assembly cultural (library, governmental building etc.)***	1 space per 10 employees (minimum of 2)	1 space for each 10,000 s.f. of floor area (minimum of 2)
	Assembly (church, theaters, parks, etc)	1 space per 20 employees (minimum of 2)	Spaces for 2% of maximum expected daily attendance
	Healthcare / hospitals	1 space per 20 employees or one space for each 70,000 s.f. of floor area (minimum of 2)	1 space for each 20,000 s.f. of floor area (minimum of 2)
	Education a. Public, parochial, and private day-care of 15+ children b. Public parochial, and private nursery/kindergartens, and elementary schools c. Public, parochial, elementary, junior high and high schools d. Colleges and universities	1 space per 20 employees (minimum of 2) 1 space per 10 employees (minimum of 2) 1 space per 10 employees plus 1 space per 20 students of planned capacity (minimum of 2) 1 space per 10 employees plus 1 space per 10 students of planned capacity; or 1 space for each 20,000 s.f. of floor area whichever is greater	1 space per 20 students of planned capacity (minimum of 2) 1 space per 10 students of planned capacity (minimum of 2)
	Rail/bus terminals and stations/ airports	Spaces for 5% of projects a.m. peak period daily ridership	Space for 1.5% of a.m.
Commercial	***Retail*** General Food sales or groceries General retail Office	1 space for each 12,000 s.f. of floor area (minimum of 2) 1 space for each 10,000 s.f. of floor area (minimum of 2)	1 space for each 2,000 s.f. of floor area (minimum of 2) 1 space for each 5,000 s.f. of floor area (minimum of 2) 1 space for each 20,000 s.f. of floor area (minimum of 2
	Auto Related Automotive sales, rental, and delivery, automotive servicing Off-street parking lots and garages available to the general public	1 space for each 12,000 s.f. of floor area (minimum of 2) 1 space per 20 automobile spaces (minimum of 2)	1 space for each 20,000 s.f. of floor area (minimum of 2) minimum of 6 spaces of 1 per 20 auto spaces. unattended surface lots excepted.
Industrial	***Manufacturing and production***	1 space for each 15,000 s.f. of floor area (minimum of 2)	number of spaces TBD by municipality. Consider a minimum of 2 per public building entrance.

Education

Driver & Traffic Safety Education

Driver safety education provides training for people working to gain their driver's license. Typical instruction includes educating community members on driver and traffic safety issues, including speed laws, sharing the road, and rules of the road. It is important education courses should include bicycle and pedestrian safety, as well as safe driver behavior.

The Villages of Bartlett and Streamwood should partner with District U-46 to promote pedestrian and bicycle safety in district high school driver's education programs. Additionally, the Villages can work with private driving schools to support pedestrian- and bicycle-friendly curriculum.

To encourage safe driving behaviors within the Villages, Bartlett and Streamwood should promote pedestrian and bicycle safety education for staff that drive municipal vehicles. Recently, the Village of Bartlett promoted Ride Illinois' free bicycle-friendly driver course. Continuing to promote this type of education will help encourage a safer street environment!

In 2018, the Bicycle Safety and the Dutch Reach amendment (Illinois HB5143) updated the Illinois Vehicle Code to add information about bike safety to the state's Rule of the Road manual and driver's license exam. Bike safety information, such as the Dutch Reach, should continue to be shared throughout Bartlett and Streamwood.

Walking and Biking Safety Education in Schools

In a survey with District U-46 students, 5% of respondents said they walk or bike to school, however nearly half of respondents (48%) would walk or bike to school more if there were a safer, more connected network. Youth-focused walking and biking safety education in schools provides a space to teach students about road safety and safe walking and biking behaviors. Teaching students about road safety and safe walking and biking behaviors provides valuable life skills that they can use throughout their lives, including for when they drive in the future.

In 2018, new state legislation (Biking and Walking in Schools, Illinois HB4799) requires school boards to adopt policies for educating K-8 students about biking and walking safety. In 2019, District U-46 School Code was updated to include language that "students in grades kindergarten through 8 shall receive instruction on the effective methods of preventing and avoiding traffic injuries related to walking and bicycling". The Villages should partner with District U-46 to understand existing and future walk/bike safety education.

Currently, District U-46 offers Walking for Wellness Physical Education classes at the high school level. Additionally, students develop a walking path in their neighborhood and a safety plan when walking outside.

In District U-46, bike safety is included in health classes at two Hanover Park Elementary Schools. The District plans to add bike safety information as health classes are expanded in elementary schools.

Education

Example:

The City of Batavia and its Batavia Bike Commission have worked with schools to teach bike education to third graders. Additionally, the Villages can support District U-46 schools in bike/walk education efforts, such as Walk or Ride Your Bike to School Days.

The Villages can partner with Park Districts and Police Departments to provide annual "bike rodeos", workshops to teach children bicycle safety skills.

Example:

The City of Berwyn and Village of Riverside are examples of municipalities that have put together bike rodeos for children to teach about the importance of wearing a helmet and bike safety skills. The bike rodeos did helmet fittings and had a helmet giveaway.

Neighborhood sidewalk in Streamwood

Education and Outreach along with New Facilities

Providing education and outreach materials is an important step in promoting newly installed bike facilities, informing community members about how they can bike in the Village(s), and educating community members on safe bicycling routes. Education and outreach can be conducted both online and on-the-ground, through marketing materials and opportunities. It is important to engage and share materials with traditionally underrepresented voices.

The Villages should provide online resources with new bike facilities and provide additional bike facility education, such as the types of routes and infrastructures and how to use them. Outreach not only promotes bicycling as a mode of transportation, but also educates community members on road safety. The Villages can partner with the Park Districts and the Poplar Creek Library District to share materials and information.

The Villages should support skills and safety training programs for adults, such as offering pedestrian and bicycle training for adults (e.g., safety classes, learn-to-ride classes, or basic bike mechanics classics). The Villages can partner with the Poplar Creek Library District to organize classes. Additionally, there is the opportunity to partner with local bike shops to teach about basic bike mechanics.

Example:

The Village of Schaumburg enlists the help of their Transportation & Bicycle Safety Interns to distribute bike materials, promote existing facilities, and educate the community on bicycle safety.

Programming

Safe Routes to School

Throughout the community engagement for the Bartlett and Streamwood Bicycle and Pedestrian Plan, residents and students have raised the need for better conditions to make it possible for more students to walk and bike to school. Safe Routes to School (SRTS) is a federally funded program with the goal of making it safer for students, including those with disabilities, to walk and bike to school (https://www.saferoutesinfo.org/). Establishing a formal Safe Routes to School Program in Bartlett and Streamwood, in concert with District U-46, would set up a system to address these needs. The National Center for Safe Routes to School has developed a menu of online and in-person training and technical assistance options for the purposes of building consensus, identifying issues and solutions, supporting equity and prioritizing needs.

It is recommended that Bartlett and Streamwood partner with District U-46 schools, students, and families to identify a network of Safe Routes to walk and bike to local schools. A safe routes network is a grouping of designated streets and routes for walking and biking to all district schools along with the recommendation and implementation of improvements to those areas.

Safe Routes for Seniors

Both Bartlett and Streamwood have seen a significant increase in the share of their populations that are over age 65. Thirteen percent of Bartlett residents and 12% of Streamwood residents are over 65 years. A Safe Routes for Seniors Program takes the regulations of the Americans with Disabilities Act (ADA) one step further to accommodate sensory changes that occur as people age.

Surrounding communities targeted to older adults, a Safe Routes for Seniors Program would focus traffic calming efforts and programming within those areas. Pedestrian safety improvement could be developed and implemented in these areas. Some example spaces would include senior centers, hospitals, and community centers.

N Central DuPage Regional Trail pedestrian bridge

Programming

Neighborhood Traffic Calming Program

Neighborhood traffic calming programs identify speeding, safety, and cut through traffic issues on neighborhood streets, often relying on resident requests, and install improvements to reduce vehicle speeds and volumes and improve safety.

Bartlett and Streamwood should develop neighborhood traffic calming programs. The program would include a process for residents to submit traffic safety concerns to the villages and for staff to review and prioritize requests.

As part of the program, the villages should establish a set of standard traffic calming tools that can be implemented through the program and create a dedicated, recurring source of funding for neighborhood traffic calming.

Examples:

The Villages of Mount Prospect and Oak Park both have successful neighborhood traffic calming programs that enable residents to make requests for traffic calming improvements on residential streets.

Bike Lending Program at Libraries

In several areas across the country libraries are developing and managing bike lending programs. Bike lending programs provide the opportunity for library card holders to check out bikes and bike-related equipment, such as tools, helmets, and locks. Programs like these help expand access to bikes and can help to improve the overall health, wellbeing, and happiness of communities.

It is recommended that Bartlett and Streamwood coordinate with the Poplar Creek Public Library to gauge interest and provide support in starting a bike lending program. Coordination with local bike shops and potential in-kind donations should also be explored.

Bike lending programs can also provide access to new or specific types of bikes, such as electric bikes and cargo bikes. Bartlett and Streamwood should work with the community to gauge levels of interest in these types of bikes.

Bike parking at the Bartlett Metra Station

Maintenance

Biking and Walking Infrastructure Maintenance

Maintaining biking and walking infrastructure–including trails, paths, sidewalks, bike facilities, signage, and markings–is essential to create a comfortable environment for people walking and biking, particularly for people with disabilities and younger or older residents. Biking and walking infrastructure requires regular upkeep and preventative maintenance–activities like sweeping, trash removal, mowing, trimming, sign and marking upkeep, and minor surface repair that are conducted weekly, monthly, or at least once a year–as well as major maintenance, repair, and replacement–things like surface rehab or reconstruction, sign replacement, and replacing markings–that may only be required every few years.

Bartlett and Streamwood should establish a regular inspection schedule and standards for all walking and biking infrastructure, along with a system for documenting and tracking maintenance needs. Maintenance needs should be prioritized based on established criteria.

Example:

The Village of Schaumburg conducts a village-wide sidewalk, bikeway, and trail inspection every three years. The Village established specific criteria to guide inspections and ensure consistency so that the Village's transportation and bicycle safety interns are able to conduct inspections.

Example:

The Village of Hoffman Estates includes sidewalks and bikeways as part of its annual streets assessment program. Identified maintenance needs are then programmed through the Village's road improvement fund.

Across the region, many maintenance issues can be traced back to unclear responsibilities across different entities and agencies. Both Bartlett and Streamwood should map maintenance responsibilities for all biking and walking infrastructure and work to develop joint standards with partner agencies.

Maintaining walking and biking infrastructure in a state of good repair requires regular, dedicated funding. Bartlett and Streamwood should evaluate existing maintenance funding against identified needs, while also evaluating longer term needs as both Villages expand their walking and biking networks.

Maintenance

Snow Clearance and Winter Maintenance

For walking and biking to be reliable, year-round transportation options for Bartlett and Streamwood residents facilities must be well-maintained, usable, and safe during the winter.

Both Bartlett and Streamwood should establish clear regulations for snow removal on sidewalks. If sidewalks are the responsibility of residents/property owners, regulations should specify the time frame for clearing all snow and ice and the required clear path width (ideally five feet).

Bartlett and Streamwood should consider designating priority winter walking and biking routes where the Village will lead snow removal and prioritize clearing routes quickly and regularly.

Maintaining Walking and Biking Access during Construction

It is important that safe, continuous access for people walking and biking is maintained during construction activity and through work zones. Disruptions caused by construction can severely limit access for people walking and biking and create unsafe situations.

Bartlett and Streamwood should establish checklists that include requirements for maintaining bicycle and pedestrian access as part of all temporary traffic control plans.

Villages should conduct regular inspections of private construction activity and levy fines when access is not maintained for people walking and biking.

Columbia Park in Streamwood

Walking and Biking Promotion

Walk and Bike to School Day

Walk and Bike to School Day is one of the most fundamental strategies for encouraging younger residents to walk or bicycle. Although sometimes referred to as "Walk and Roll to School Day" this event has been popularized in the past as "Walk to School Day," and the typical focus has been on encouraging walking and biking to school.

The Villages of Bartlett and Streamwood should work with the school district to promote the events and provide resources and support to local schools and community groups.

Walking and Biking Events

A great way to increase awareness and excitement towards walking and biking in the community is to support events that allow residents to participate in the activity. Example events could include: the development of walking groups, organized bike rides, open streets events, and promoting Bike to Work Day. Open streets events involve shutting down a roadway or roadways for a day and hosting a variety of activities along the now closed space. It also provides residents and visitors the opportunity to see what a "car free" roadway looks and feels like and can boost the confidence of those that are not avid walkers or bikers to feel comfortable doing so.

Bartlett and Streamwood should develop resources and dedicated funding and supplies to help community groups to organize and lead walking and biking events. This support could include micro-grants for community groups and supplies such as traffic barricades and traffic cones. Additionally, it would be beneficial for the Villages to develop a checklist to simplify the process for community groups. This checklist would provide a step-by-step guide for organizing and hosting these events, especially for required permitting and approvals.

The Village should promote the program and conduct outreach to community groups to raise awareness of the funding and resources available.

Walking, Biking and Trail Programming Calendar

Bartlett and Streamwood should work with surrounding municipalities and agency partners to develop a comprehensive online calendar advertising trail events, bike rides or other walking and biking community events in the immediate region.

Regional Bike Map

Bartlett and Streamwood should work with surrounding municipalities and agency partners to develop a regional bicycle map showing trails and bike facilities throughout the region. This map should also show the type of facility (Shared or striped lanes, shared use paths etc.) and highlight low-stress routes. A map such as this would help community members identify routes that are within their level of expertise and within their comfort zone. The map could be posted online and be available in print formats at a variety of locations, such as local bike shops, trailheads, libraries, and community centers.

Reporting

Reporting System Expansion

Currently both Villages maintain an online system for residents and community members to report issues, problems, or concerns. Integrated into the reporting systems should be the opportunity to provide input on locations for bicycle parking. This would allow members of the community to voice where bicycle parking would be the most helpful. It provides the opportunity for community members to have a voice and it assists the villages in identifying where there is a need. This could be in the form of an interactive map or a survey that asks for an address or point of interest.

Bike plan Implementation, Monitoring, and Reporting

Throughout the implementation of this plan Bartlett and Streamwood should monitor and report to the communities on progress each year. The Villages could track the number of recommendations installed, the miles of bike lanes or sidewalk installed, and/or the reduction in bicycle and pedestrian crashes per year. This is an important step towards accountability and community buy in throughout the process.

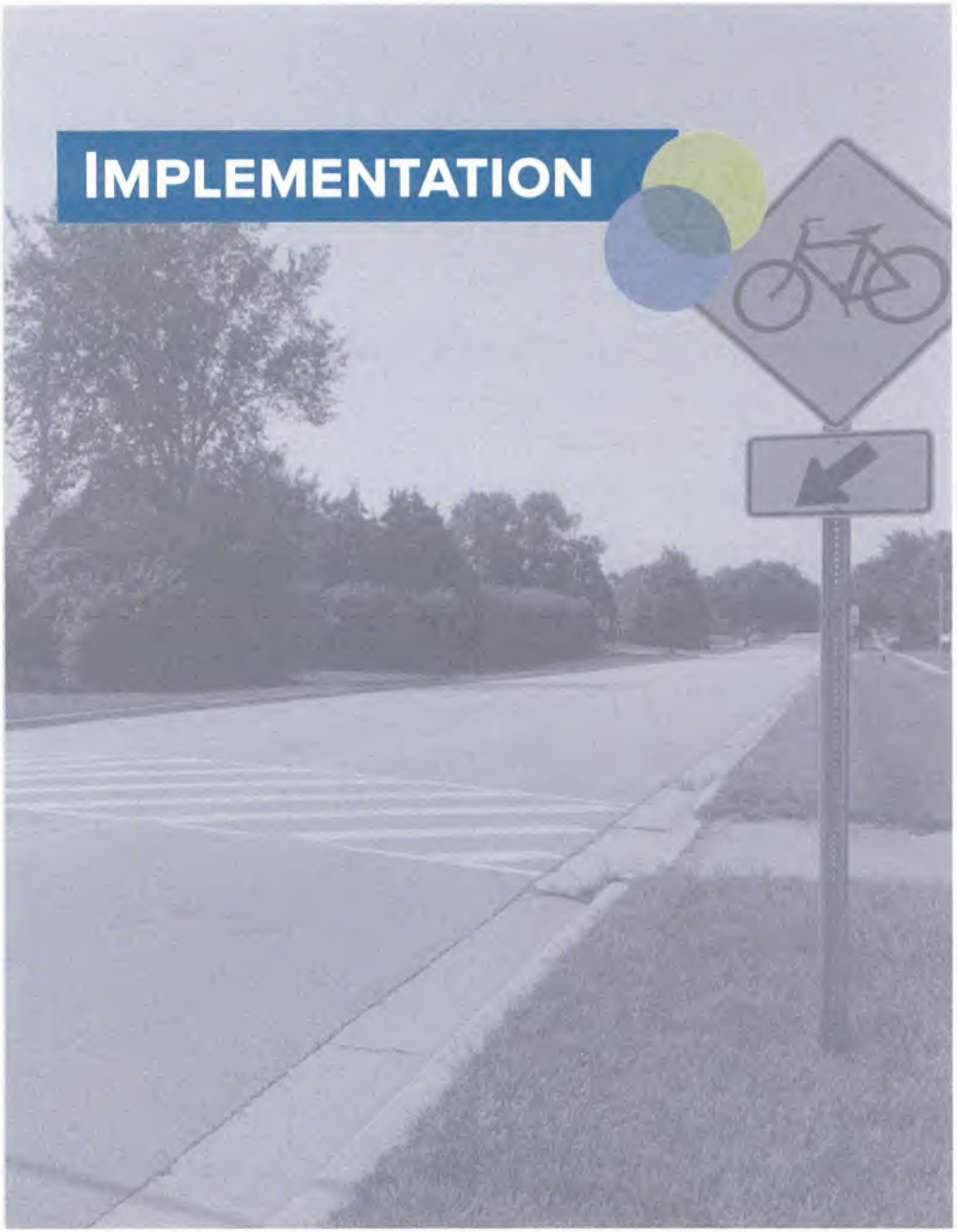
A view in Streamwood

Coordination

Implementing the Bicycle and Pedestrian Plan's recommendations will require coordination between Village staff, county and state agencies, private utility companies, and neighboring municipalities. Several major roads in both Bartlett and Streamwood fall under state/county jurisdiction and these corridors are important links for creating a connected network that provides access to important destinations for people walking and biking. Similarly, coordination with county forest preserves and neighboring municipalities will enable the development of a regional, contiguous bike network that enables access to a wider array of destinations for Bartlett and Streamwood residents.

Establish designated liaisons with key agency partners and regular processes for receiving and providing updates and tracking all planned work on corridors within the Villages but not under their jurisdiction.

Establish a formal bike and pedestrian coordinating committee with staff from Bartlett, Streamwood, Hanover Park, Hoffman Estates, Schaumburg, Elgin, South Elgin, and Wayne Township. Meet on a regular basis to coordinate bike and pedestrian improvements projects with the goal of enhancing regional connectivity.



IMPLEMENTATION

Cost Estimates

Delivering on the Bartlett and Streamwood communities' vision for safe, connected, and convenient networks for people walking and biking will require significant investment. Planning-level cost estimates were developed to identify and plan for the funding needed to implement this plan's recommendations.

Bartlett–Bikeways

Tier 1 Projects

Facility Type	Miles	Cost Estimate
Shared Facility (neighborhood greenways)	1.5	$150,000
Bike Lane	1.0	$25,000
Separated Bike Lane	0.3	$95,000
Shared Use Path/Trails	11.6	$3.4 million
Total	**14.4**	**$3.7 million**

Tier 2 Projects

Facility Type	Miles	Cost Estimate
Shared Facility (neighborhood greenways)	4.8	$460,000
Bike Lane	0.3	$8,000
Separated Bike Lane	2.4	$850,000
Shared Use Path/Trails	16.2	$4.6 million
Total	**23.7**	**$5.5 million**

Full Network–38.0 miles, $9.1 million

Bartlett–Sidewalk Gaps

Tier	Miles	Cost Estimate
1	7	$2.1 million
2	26	$7.8 million
3	19	$5.7 million
Total	52	$15.6 million

Cost Estimates

Bartlett–Intersections and Crossings

Category	#	Cost Estimate
Unsignalized Crossings (trails/mid-block)	11	$190,000
Signalized Intersections	7	$525,000
Bicycle/Pedestrian Bridges	1	$4.6 million
Total	19	$5.3 million

Bartlett–Total Costs

Category	Cost Estimate
Tier 1 Bikeways	$3.7 million
Tier 2 Bikeways	$5.5 million
Tier 1 Sidewalks	$2.1 million
Tier 2 Sidewalks	$7.8 million
Tier 3 Sidewalks	$5.7 million
Intersections + Crossings	$5.3 million
Total	**$29.8 million**
Tier 1 Bikeways + Sidewalks Total	*$5.8 million*

Streamwood–Bikeways

Tier 1 Projects

Facility Type	Miles	Cost Estimate
Shared Facility (neighborhood greenways)	2.5	$250,000
Bike Lane	2.6	$60,000
Shared Use Path/Trails	11.0	$3.2 million
Total	**16.1**	**$3.6 million**

Tier 2 Projects

Facility Type	Miles	Cost Estimate
Shared Facility (neighborhood greenways)	7.4	$740,000
Bike Lane	1.5	$35,000
Shared Use Path/Trails	11.0	$3.2 million
Total	**19.9**	**$4.0 million**

Full Network–36.0 miles, $7.5 million

Streamwood–Sidewalk Gaps

Tier	Miles	Cost Estimate
1	14	$4.2 million
2	10	$3.0 million
3	5	$1.5 million
Total	29	$8.7 million

Cost Estimates

Streamwood–Intersections and Crossings

Category	#	Cost Estimate
Unsignalized Crossings (trails/mid-block)	9	$155,000
Signalized Intersections	13	$975,000
Bicycle/Pedestrian Bridges	2	$9.2
Total	24	$10.3 million

Streamwood–Total Costs

Category	Cost Estimate
Tier 1 Bikeways	$3.6 million
Tier 2 Bikeways	$4.0 million
Tier 1 Sidewalks	$4.2 million
Tier 2 Sidewalks	$3.0 million
Tier 3 Sidewalks	$1.5 million
Intersections + Crossings	$10.3 million
Total	**$26.6 million**
Tier 1 Bikeways + Sidewalks Total	*$7.8 million*

Funding

A variety of local, state, federal, and private funding sources can be used to support the design and construction of walking and bicycling infrastructure and provide financial resources for programming and marketing initiatives. Implementation of this plan will leverage local, state, and federal grants whenever feasible.

New grants and funding sources have recently been developed as part of the Infrastructure Investment and Jobs Act (IIJA) creating even more opportunities for funding of these types of improvements. The IIJA also will increase funding for many existing programs that fund walking, biking, and safety improvements in Illinois, including the Congestion Mitigation and Air Quality Program, the Surface Transportation Program, Transportation Alternatives Program.

There have also been several recent legislative changes at the state level that may help to fund many of this plan's recommendations.

- Illinois House Bill 270: Bicycle and Pedestrian Ways–Amends the Illinois Highway Code and requires the state to fund 100% of the costs of walking and biking infrastructure when constructing, reconstructing, or making any changes to any state transportation facility. This bill eliminates the previous requirement that local municipalities had to fund 20% of the costs of requested walking and biking infrastructure.
- Illinois House Bill 2950: Sidewalks and Shared Use Paths–Amends the Illinois Counties Code and provides that, in the counties of DuPage, Kane, Lake, Will, and McHenry, proceeds from the County Motor Fuel Tax Law may also be used for operating, constructing, improving, and acquiring land for shared use paths for nonvehicular public travel, sidewalks, and bike paths. The bill also amends the Illinois Highway Code so that "highway" includes shared use paths for nonvehicular public travel, sidewalks, and bike paths.

The following section provides additional information on key grant funding sources, detailing the administering agency, typical award, purpose, eligibility, and any local match requirements.

Key Grants

Congestion Mitigation and Air Quality Program (CMAQ)

Agency: CMAP
Typical Award: $16-30 Million
Website: https://www.cmap.illinois.gov/mobility/strategic-investment/cmaq

Purpose: Fund projects that help CMAP meet the National Ambient Air Quality Standards of the Clean Air Act. This includes projects that help to reduce congestion, and encourage a shift to more sustainable modes of transportation including walking, bicycling, and the use of transit.

Eligibility: Local governments with projects that are included in the state's Transportation Improvement Program (TIP)

Local Match: The grant covers 80% of a project and requires a 20% local match. Projects must be programmed into the region's Transportation Improvement Program (TIP). High need local communities have no local match requirement. Phase I Engineering should be substantially complete to be considered.

Candidate Projects: Regional trail connections, new bicycling and walking facilities, improving transit, or adding multimodal improvements along regional corridors. Joint agency projects that involve multiple jurisdictions, access to transit projects, implementation of regional transit transfers, and connectivity improvements.

Surface Transportation Program (STP-L)

Agency: CMAP
Typical Award: $150,000 to $4 Million
Website: https://www.cmap.illinois.gov/committees/advisory/council-of-mayors/stp

Purpose: Shared fund of surface transportation to support the implementation of large-scale regional projects to improve local transportation and support regional objectives of ON TO 2050. Major projects including bridge construction, grade-separated crossing, transit station rehabilitation, and transit speed and reliability improvements. Funding is competitive among municipalities within the same council of mayors.

Eligibility: Government entities

Local Match: The grant covers 80% of a project and requires a local match on a need-based sliding scale. High need local communities have no local match requirement. Phase I Engineering should be substantially complete to be considered.

Candidate Projects: Trail overpasses, grade separations, regional trails, transit infrastructure

Transportation Alternative Program (TAP-L)

Agency: CMAP
Typical Award: $100,000 - $1 Million
Website: https://www.cmap.illinois.gov/mobility/strategic-investment/

Purpose: Projects that help CMAP implement the Regional Greenways and Trails Plan

Eligibility: Local governments, non-profit organizations

Local Match: The grant covers 80% of a project and requires a 20% local match. High-need local communities have no local match requirement. Phase I Engineering should be substantially complete for a project to be considered eligible for TAP funding.

Candidate Projects: Regional trail connections, connecting two ends of a trail network, builds new segments of regionally-significant trails.

Local Highway Safety Improvement Program (HSIP)

Agency: IDOT
Typical Award: $2-5 Million
Website: https://idot.illinois.gov/transportation-system/local-transportation-partners/county-engineers-and-local-public-agencies/funding-opportunities/highway-safety-improvement-program

Purpose: Projects that are intended to produce a measurable reduction in fatal and serious injury crashes on public roads. A data-drive program seeking to reduce the frequency and occurrence of these types of crashes.

Eligibility: Government Entities

Local Match: The grant covers 90% of a project and requires a 10% local match.

Candidate Projects: Corridor improvement projects with a documented safety concern, may include signal coordination and timing improvements, and projects to reduce roadway deficiencies such as inadequate sight distance, guardrail issues, and projects to improve pedestrian safety. Projects must be able to calculate a benefit/cost ratio to compare effectiveness against other projects in this category.

Key Grants

Illinois Transportation Enhancements Program (ITEP)

Agency: IDOT
Typical Award: $2 Million
Website: http://www.idot.illinois.gov/transportation-system/local-transportation-partners/county-engineers-and-local-public-agencies/funding-opportunities/ITEP

Purpose: Projects that enhance the existing transportation system to support and encourage walking and bicycling

Eligibility: Local governments, regional transportation agencies, transit agencies, natural resource and public land agencies, school districts, non-profits responsible for transportation safety programs.

Local Match: Local match requirements are based on a sliding scale of 20%, 10%, or 0% determined by poverty level, community size, median income, and total property tax base. The grant sets aside 25% of funds for high need communities. Phase 1 Engineering is eligible to receive funds.

Candidate Projects: Pedestrian, bicycle, and trail projects that enhance the transportation network. Roadway resurfacing projects and parking lots are not eligible.

Illinois Bicycle Path Grant Program

Agency: IDNR
Typical Award: $100,000 - $200,000
Website: https://www2.illinois.gov/dnr/grants/Pages/BikePathProgram.aspx

Purpose: To assist local government agencies in the acquisition, rehabilitation, and construction of public non-motorized bicycle facilities.

Eligibility: Government organizations (must be able to purchase and own property, school districts not eligible).

Local Match: The grant covers 50% of the capital cost of a project, requiring a 50% local match.

Candidate Projects: Sidepath or trail projects on property owned by the local agency (not on IDOT or LCDOT right of way).

Recreational Trails Program

Agency: IDNR
Typical Award: $200,000
Website: https://www2.illinois.gov/dnr/grants/Pages/PARC-Grant.aspx

Purpose: To provide funding for acquisition, development, construction, and maintenance of motorized and nonmotorized trails. Must be open to the public.

Eligibility: Government entities (municipalities, park districts), non-profit organizations, for-profit organizations, businesses, and individuals.

Local Match: The grant covers 80% of a project and requires a 20% local match. 30% of the program is committed to nonmotorized trails, 30% to motorized trails, and 40% to trails that accommodate both.

Candidate Projects: Trail projects that have a motorized and non-motorized component, public/private partnerships

Access to Transit for Small-Scale Capital Projects (RTA)

Agency: RTA
Typical Award: $150,000 - $1 Million
Website: https://www.rtachicago.org/plans-programs/access-transit-program

Purpose: Projects that help to improve access to transit by: (1) increasing transit ridership, (2) improving first-and-last mile connections to transit infrastructure, which includes making it easier to walk and bicycle to transit, (3) reducing demand for parking, (4) promoting pedestrian-friendly neighborhoods to be better served by transit, and/or (5) supporting the development of transit oriented development (TOD).

Eligibility: Government entities who have completed or are in the process of completing a project funded in part by the RTA Community Planning Program, CMAP LTA Program, or other relevant planning effort that aligns with ON TO 2050. Projects may cover the cost for projects costing less than $1 Million for which Phase I engineering has already been completed or may pay for the cost of preparing preliminary (Phase I) Engineering up to $50,000.

Local Match: The grant covers 80% of a project and requires a 20% local match.

Candidate Projects: Mobility Improvement Area (MIA) Projects, bicycle parking, sidewalk connections that are missing. Phase I engineering for a larger trail (so long as phase I doesn't cost more than $50,000)

Key Grants

Safe Routes to School Grants (SRTS)

Agency: IDOT
Typical Award: $25,000 to $200,000 for infrastructure and $2,500 to $50,000 for non-infrastructure applications.
Website: https://idot.illinois.gov/transportation-system/local-transportation-partners/

Purpose: Enable and encourage children to walk and bicycle to school

Eligibility: Government agencies, transit agencies, school districts

Local Match: At least 20% local match required.

Safe Streets and Roads for All SS4A

Agency: USDOT
Typical Award: N/A
Website: https://www.transportation.gov/grants/SS4A

Purpose: Projects that prevent roadway deaths and serious injuries. Program supports the Secretary of Transportation National Roadway Safety Strategy and Departments goal of zero deaths and serious injuries on the nations roadways.

Eligibility: Metropolitan Planning organizations; counties, cities, towns, and transit agencies; federally recognized tribal governments; multi-jurisdictional groups

Local Match: N/A

Candidate Projects: development or update of an Action Plan, conducting planning, design, and development activities to support an Action Plan, carry out projects and strategies identified in an Action Plan

Agenda Item Executive Summary

Item Name	2021-22 Strategic Technology Utilization Plan	Committee or Board	Committee

BUDGET IMPACT

Amount:	N/A	*Budgeted*	N/A
List what fund			

EXECUTIVE SUMMARY

The past several months we engaged the services of the Northern Illinois University Center for Governmental Studies to evaluate our current use of technology and to develop recommendations for the village's future IT infrastructure.

Working with our staff they were able to identify a number of ways we could enhance performance and efficiency of tasks and procedures across the organization in both short-term and long-term timeframes. These recommendations have been organized in a three-tier matrix for implementation and then broken down by department. This plan structure allows for the maximum flexibility to enact the recommendations based on changing needs and available resources.

ATTACHMENTS (PLEASE LIST)

Memo

2021-22 Strategic Technology Utilization Plan

ACTION REQUESTED

- ✓ For Discussion Only
- ❑ Resolution
- ❑ Ordinance
- ❑ Motion

Staff: Paula Schumacher, Village Administrator Date: August 17, 2022

Memorandum

TO: Village President and Board of Trustees

FROM: Paula Schumacher, Village Administrator

DATE: August 17, 2022

SUBJECT: 2021-22 Strategic Technology Utilization Plan

The village's strategic plan calls for the examination of service delivery methods and approaches and to maintain or enhance village standards for service delivery. Creating a Village Wide Technology Plan was identified as a critical need to further these goals. Bartlett's last technology plan was drafted just as desk top computers, email and the internet entered the workplace. Our telephones were bound to cords and landlines. The idea of GPS was more in the realm of rocket launches than watermain breaks.

Technology, and specifically Information Technology, has changed the way we provide critical core services, interact with our residents, and how we perform everyday tasks. The last few years have demonstrated how quickly technology and the community expectations can change. There is a demand to respond to the needs of an increasingly mobile world with 24/7 access to technology at user's fingertips.

The past several months we engaged the services of the Northern Illinois University Center for Governmental Studies to evaluate our current use of technology and to develop recommendations for the village's future IT infrastructure. These efforts began with an employee technology survey and interviews. The survey was followed by site visits and focus groups with the management team. Over 100 staff members provided input. This data collection was done with consideration of how staff used both hardware and software to deliver services and what improvement could be made to workflows. The overriding guideline being how can we best serve the community today and in the future.

The study team worked with our staff to review technology options to assist our productivity on a daily and long-term basis. They were able to identify a number of ways we could enhance performance and efficiency of tasks and procedures across the organization in both short-term and long-term timeframes. These recommendations

have been organized in a three-tier matrix for implementation and then broken down by department. This plan structure allows for the maximum flexibility to enact the recommendations based on changing needs and available resources.

Tier 1 – Quick projects with short implementation time and relatively low cost. Examples in this tier include modifications to existing software and additional training for staff.

Tier 2- Intermediate activities that have a longer scope and require more resources. Examples of recommendations in this tier include a transition to Office365, implementation of body cameras, and more paperless workflows.

Tier 3- Horizon projects, more complex that require additional planning. Examples in this tier include adoption of an enterprise asset management solution, over-the-air water meter reading, and GPS enabled golf carts.

IT Coordinator Chris Hostetler and Assistant Village Administrator Scott Skrycki worked many hours with our staff and the evaluation team from NIU to build this plan. The full report for your consideration and discussion at the Committee of the Whole.

2021-22 Strategic Technology Utilization Plan for the Village of Bartlett

Prepared by the Northern Illinois University Center for Governmental Studies
in coordination with the NIU Regional Technology Group

NORTHERN ILLINOIS UNIVERSITY
Center for Governmental Studies
Outreach, Engagement, and Regional Development

NORTHERN ILLINOIS UNIVERSITY
Division of Information Technology

Contents

1.0 Introduction

In the early summer of 2021, the Village of Bartlett engaged a study team that includes members of two divisions at Northern Illinois University – the Center for Governmental Studies and the Regional Technology Group in the Division of Information Technology – to work with the Village organization to develop a Strategic Technology Utilization Plan. The subsequent study was accomplished in three phases:

I. Gather information from the organization on both the present and the future use of technology via site visits, interviews, leadership focus groups, and an organizational online survey sent to all staff

II. Analyze, synthesize, and summarize themes, ideas, and findings to develop recommendations emanating from both the organization and best practices and identify possibilities for the Village's future IT infrastructure and use

III. Combine the findings and scenarios into a Strategic Technology Utilization Plan for the Village to employ when developing near, mid-term and longer-term strategies and decisions about technology use in the organization

The study began with a series of interviews, a leadership focus group, and the development of an organization-wide questionnaire on current and future uses and ideas about technology. The data-capturing steps focused on further expansion and utilization of technology across the various departments that comprise the Village's work units. The data gathering and analysis phases of the study took place over a period of approximately four and a half months, with over a hundred Village staff members providing feedback, input, and ideas. The scope of the analysis included a review of interview data, notes, survey responses, focus group ideas, and relevant documents and examples. The study team explored the use of technology with an eye on the future and how staff saw technology, both hardware and software, relating to their work, their work processes, and their responsibilities today and tomorrow as well as how to best serve the needs and interests of the community.

1.1 The Evolution of Local Government Technology

Thirty-five years ago, local governments had very little technology deployed in their organizations. City managers and department administrators did not contemplate the creation of technology utilization plans and strategies. Desktop computers were DOS-based. Users employed the state-of-the art medium for data: floppy drives. Windows operating systems and desktop graphics were mere glimmers in the imaginations of silicon-valley engineers and programmers.

Telephones were things on desks and still had cords. The rare cellular phone was the size of a middle-schooler's lunchbox. The internet was a mysterious place or phenomenon that only the most avant garde (or brave) dared to use. Handheld devices were unheard of. These musings of our memories seem far-fetched and

uninspired. Today, we can all see how ubiquitous technology is, how it soaks into every aspect of our daily lives and our daily work. Virtually every municipal operation of today relies on connectivity, mobility, computing power, interfacing software applications, and plug-and-play user interfaces. The technology revolution is not over: it's exploding. At the local government level, the use of technology enhances operations/core services, citizen and user interfaces/customer service, productivity, analysis, convenience, and a myriad of tasks and critical functions. The challenge for the Village's leaders is that change is continual, inevitable, and critical. Today's hardware and software are quickly superseded by new designs and versions only months after they have been acquired and implemented.

In response, municipal organizations, like their private sector counterparts, have three options: 1) spend resources on an ad hoc basis to attempt the implementation of every new innovation or later iteration, 2) squeeze every possible moment of use out of fading, hard-to-maintain or obsolete hardware and software until the technology no longer functions, or 3) thoughtfully plan for changes and adaptations that can maximize resources by deploying and utilizing strategic upgrades via purchases, new or revised software, and the most promising and well-matched hardware that is available. The Village of Bartlett's leaders have elected to take a proactive approach to the future of technology by taking the time to explore possibilities and develop a strategic technology utilization plan to help guide future decisions and directions rather than tackle them by issue.

1.2 Summary Opening Thoughts

The strategic utilization plan that follows presents the results of the study team's organization-wide investigation. As readers will note, the report identifies areas for future utilization, follow-up actions, and further planning. In the short term, using the ideas and suggestions embodied in the report will require thoughtful management, department collaboration, and the skills and good efforts of the Village's information technology (IT) personnel. Technology users will be part of the formula of success. Departmental users and leaders will be in a good position to be partners for change through regular interactions to generate ideas, take pauses when necessary to re-evaluate needs, and provide feedback and inclusion of user input when changing or developing new or revised business solutions.

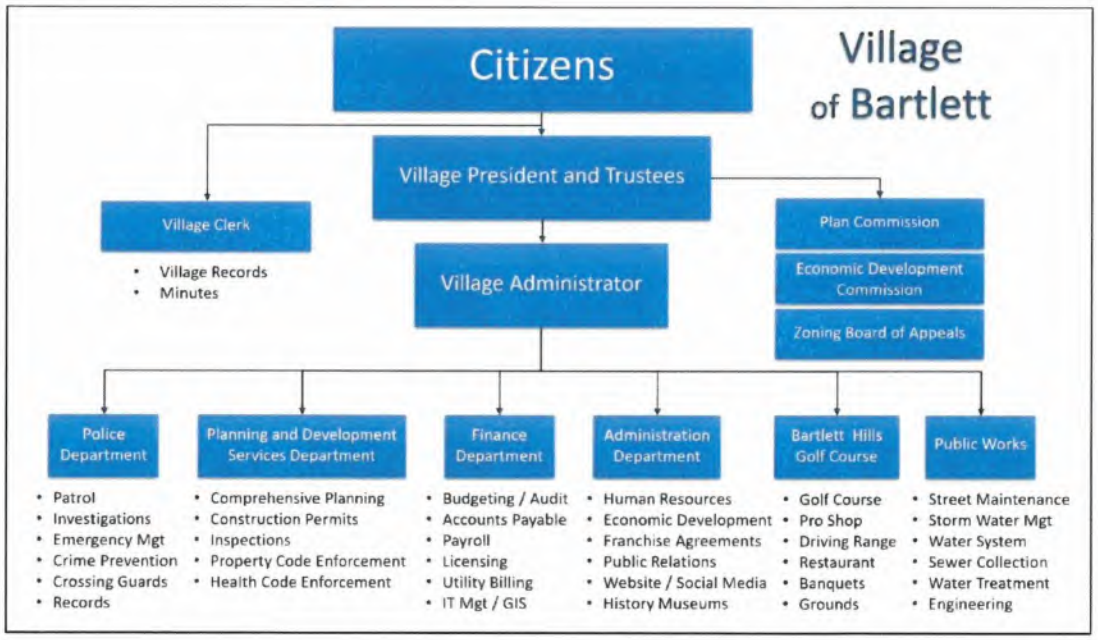
Information silos grow quickly and oftentimes inadvertently when technology use expands and external customer or user success is the focal point. However, the sharing of data and the integration of platforms is a critical element of future success. The study team encourages the Village's administrators and users to evaluate whether a pending decision isolates data by department or creates a pathway to sharing data across units for analysis and trending/performance measures. System security and well-designed/protective access protocols should be part of the equation as well.

Investments in technology are an essential part of organizational effectiveness. The Village has taken the steps to plan for technology upgrades, changes, and enhancements on a planned, periodic basis, as is the practice for other pieces of infrastructure, such as vehicles, heavy equipment, streets, water mains or sewers.

The key is that taking an overall view allows it to be done strategically. The following analysis will hopefully prove to be a helpful tool as the Village steps into its technology future. The report that follows represents the outcomes of the study team's work with the Village on the development of a strategic utilization plan that looks toward the future of technology in the organization.

1.3 Community Profile

The Village of Bartlett, Illinois, incorporated in 1891, is situated in the northeastern Illinois counties of Cook, DuPage, and Kane. Bartlett has a population of 41,105[1] and encompasses 15.95 square miles. While primarily a residential community, the Village has a vibrant downtown district, as well as restaurants, shopping areas, and business parks. The Village is served by Illinois Route 20, a major east-west roadway on the northern border, and Stearns Road, a major east-west roadway on the southern border, in addition to Illinois Rt. 59, which is the main north-south artery. It is located 35 miles from the Chicago Loop and 21 miles from O'Hare International Airport, and the community is served by the Metra Milwaukee District West Commuter Railroad Line, an economical transportation option for residents commuting to downtown Chicago. A Metra station is located in downtown Bartlett and the train trip to or from downtown Chicago Union Station takes about an hour.



Bartlett is a full-service, home rule municipality, and is governed by a Village Board consisting of the Village President, six Trustees, and the Village Clerk. The term of office for each of these positions is four years. The scope of traditional services and functions provided by the Village includes Administration, Police, Planning and Development, Finance, and Public Works. Additionally, the Village

[1] Population Census, April 1, 2020

owns and operates Bartlett Hills Golf Course. Information Technology Management is a component of the Finance Department. Fire and emergency medical response services are provided by the Bartlett Fire Protection District. As of 2020, Bartlett has 193.52 full-time equivalent employees.

The citizens and elected officials of the Village recognize the importance of strategic planning for the present and future operations and direction of the community. In February 2017, the current strategic plan was originally adopted. Since then, it has been reviewed on a regular basis, most recently being updated in August 2021. Also, the Village is continuing to develop an up-to-date geographic information system (GIS) to assist with infrastructure maintenance and to enhance public awareness of services and activities.

1.4 Purpose and Components of the Study

As noted in the introduction, the Village of Bartlett engaged the Northern Illinois University Center for Governmental Studies (NIU-CGS), with the assistance of the NIU Regional Technology Group, to develop a Strategic Technology Utilization Plan to holistically examine the use of information technology by the Village.

The study included multiple levels of input from and interaction with members of the Village's organization across all departments. The study team especially wishes to thank the Village's IT personnel and the Administrator's office team for their feedback, assistance, and coordination of the study's components.

In addition to the ideas and input gathered from all levels of the organization, NIU's study team reviewed current uses, workflows, network connectivity, hardware, software, security, applications, support, and planning related to the Village's current utilization of information technology. The study team's approach capitalized on multiple facets of the current and future use of technology. The overall goal of the study is to identify departmental and Village-wide possibilities while creating a framework for information technology's strategic use in the organization. Key areas of the plan's development included:

- Understanding the breadth of and approaches to the present utilization of information technology in the Village
- Gathering and developing ideas and prospects for future strategic and operational uses of technology
- Identification of refined, enhanced, and new approaches for technology utilization
- Connection of information technology use and application to overall Village goals and priorities
- Preparation of a strategic technology utilization plan that addresses near, mid, and longer-term IT possibilities across the organization

1.5 Shaping the Future of Technology in the Village of Bartlett

As we have now passed over two years of living with COVID-19, there is a need to recognize and respond to the needs of an increasingly mobile world that expects higher performance and better experiences at their fingertips. This is particularly true for the workforce at the Village of Bartlett and the residents that rely on these individuals to provide crucial services, especially when the unforeseen happens.

Increased mobility inside and outside of the office means employees depend more heavily on their workplace for the technology that will allow them to get the work done. Working remotely presented significant hurdles for many during 2020, bringing to the forefront a number of gaps technology-wise that ranged from training and device deficits to connectivity and communication issues.

As part of the data gathering phase, the study team conducted an organization-wide survey that resulted in over a hundred responses from all departments. The survey was administered between June and July 2021. Additionally, the study team conducted site visits and met one on one and in small groups with a cross-section of Village staff members. The aim of the survey, site visits, interviews, and other conversations was to gather information on how technology is being used today, how it might be used tomorrow, and to gain perspective from staff members regarding how technology may assist their workflows on a daily and long-term basis. Analysis of the resulting data identified a spectrum of technology-related factors and possibilities that could enhance, impact, and aid the performance and efficiency of tasks and activities across the organization.

After studying the input and applying the study team's experience and expertise to the findings, a number of possibilities and suggestions/recommendations emerged. The breadth and types of technology opportunities that surfaced were sorted and presented using a time continuum for possible implementation. The identified opportunities form a blueprint for future action that utilizes the following three tiers:

These tiers prioritize flexibility, ensuring the Village can adapt the study team's recommendations to changing needs and available resources. The allocation of tasks to each tier is based on the team's interactions with the Village, survey feedback, and experiences with other municipalities. However, the Village may reallocate a task to a different tier with relative ease using this blueprint as a framework.

- **Tier 1** focuses on quick wins, which are initiatives that involve short-term implementation with a relatively low resource footprint.

- **Tier 2** encompasses intermediate activities that require more resources and backend support over a slightly longer period than Tier 1.
- **Tier 3** is reserved for horizon projects, those longer-term endeavors which entail extra prerequisites and additional planning.

Please see Appendix A, the tier-based reference included with this strategic technology utilization plan, which is a flexible matrix that serves as a jumping-off point for future discussion, preparation, scheduling, budgeting, and implementation. The template is straightforward: each department is accorded its own section, within which are color-coded rows representing the three tiers, in descending order from near-term to longer-term. Each row represents a task that can be quickly considered using the provided information regarding resources and actions as well as potential impacts. The generalized terminology and brevity are intentional, permitting the organization to explore options rather than feel they must commit to new technology within a particular time-frame.

The study team recognized the need for a reference document that can be easily adapted to the ever-changing needs of the Village and provide direction at various intervals over the coming fiscal years. The Village can easily assign its own timeline to the tiers, e.g., Tier 1 may represent projects that require at least twelve months to complete, from the planning stage to full realization, including training. As the organization places higher priority on activities, they can also amend the tier-based reference accordingly by shifting tasks within the tiers. Users can also be asked to provide feedback about which action items should take precedence over others by sharing portions of the tier-based reference that are relevant to their work. Finally, coding each tier by color and using succinct content permits groups to review and consider a significant number of strategies more efficiently. The Village is invited to personalize this tier-based reference as they see fit over a short or long period and revisit it at scheduled junctures to ensure their strategic technology utilization plan is on track.

While a tier-based reference is an essential component of contemplating near-term and longer-term technology possibilities, there are many layers of input that resulted in the creation of Appendix A. The following narrative provides the background and rationale for the study team's findings and recommendations. Each section of the narrative corresponds with the organization of the tier-based matrix in Appendix A. Readers of the report will note that two subheadings are used where applicable in the unit/department narratives. The two subheadings used in various sections of the report include a reference to time horizons: the **Near and Mid-Term Priorities** consist of Tier 1 and Tier 2 items, while the **Longer-Term Priorities** refer to Tier 3 tasks. This allows the Village to create a timeline for each tier and still refer back to the narrative with ease.

2.0 Administration Department

The Bartlett Administration Department is responsible for human resources, economic development, franchise agreements, public relations, the local history museums, social media, the Village website, and other activities and initiatives. In addition to oversight of this department, the Village Administrator has responsibility for overall management and supervision of all Village departments. The study team conducted interviews with Administration Department personnel to gain further insight into the use of information technology related to the functioning of the Department within the Village organization.

2.1 Current Utilization

Similar to other Bartlett departments, depending on position and duties, hardware use includes desktops and laptops, as well as peripherals (printers, copiers, scanners, etc.). Software use across departments includes Microsoft Office, Munis, and Adobe applications like Acrobat and InDesign, etc. An online system is used for employee benefits enrollment, including Public Salaries.com and an employment application process available through Granicus, the Village's website platform.

It was noted that development meetings are much more effective with the use of technology. Other uses of technology that have been of benefit to the Village include recent implementation of a disaster app for Village response to severe weather and other urgent situations, weekly dissemination of the top five things happening of which staff should be aware, and use of a 'retention and recruitment' infographic report format for presentations.

Dashboarding and the use of existing and future data was noted as a desired future role in the Administration function. Like many organizations, the Village has expanded its use of various software and hardware platforms and software solutions/applications. These applications have, by their nature, captured countless pieces of data, creating a warehouse of information. However, much of the information that is generated by these various applications is limited in how it is used. Administrative leaders shared that it would be very helpful to be able to aggregate and more easily access data that is available representing activities across various units in the Village. The deployment of a dashboarding application and the design of different analytical and reporting pages is essential to future information sharing, reporting, awareness, and analysis for units, leaders, and decision-makers.

A number of generalizable information technology ideas and recommendations that emerged from the study team's work with the organization are highlighted and presented below. They are offered here as additions or amplifications to those found in other sections of this report pertaining to the Village as a whole, or they are specific to certain Village departments and functions. For additional organization-wide suggestions, enhancements, or strategic items, please see Appendix A, the tier-based matrix included with this plan.

2.2 Near and Mid-Term Priorities

Suggestions, ideas, and requests with respect to IT needs were mentioned to the study team, including the following items of a general nature that could be addressed during the next one to two years:

- Continue to commit to the steps necessary to assure that existing and future technologies and applications are utilized to match existing organizational needs to the greatest extent
- Reduce paper-driven processes by implementing electronic options for maintenance of personnel files and to allow new hires to complete new employee forms online
- Improve the employee portal to allow for online completion of some tasks
- Encourage use of online resources for employee training
- Improve technology capabilities for virtual and other connections and presentations in all conference rooms
- Promote and ensure utilization of Munis to its fullest extent, which may require more training
- Enhance collaboration capabilities through the implementation of Microsoft Office 365
- Review the online employment application process for efficiency and user friendliness

Enhanced communication pathways and broader collaboration between information technology personnel and the other departments and units are highly desirable in any organization, and Bartlett is no exception. The study team encourages the Village to explore ways to build on and enhance the current flow of information/communications related to technology ideas, planning, decision-making, and implementation. The importance of this ingredient was shared with the study team as ideas were explored and suggestions and possibilities for new or enhanced technologies were discussed. Some of the ideas from users in the organization related to information and communication flow are summarized below:

- Enhanced guidance regarding helpful information technology tools that are available and how to use them
- Expanded brainstorming, input, and idea-sharing on technology with departmental staff can help reduce reluctance/resistance to change or conversions/abandonment of existing systems
- Implementation of a regular idea exchange/routine brainstorming mechanism to encourage staff to share ideas about how to make things better

2.3 Longer-Term Priorities

Today's IT units have become integral to almost every function in an organization. A recent article in the Wall Street Journal explored both the evolution and importance of the information technology function in every organization. Technology and the staff members that have expertise in technology must operate on several levels in an organization: the user level, the unit level, the department level, the enterprise level, and the community/customer level. Each of these levels represents a strategic partnership that requires all of the skills and abilities of technology specialists for not only day-to-day support but also coordinated long-term assessment and planning.

In many governmental settings, the evolutionary nature of technology growth has generally weighted technology assets and time toward immediate and ever-growing operational needs, leaving less time for broader, organization-wide exploration, planning, and coordination demands. Changing technology platforms make replacements and reinvestment unavoidable imperatives. An emerging best practice for information technology, and a leading trend over the past several years, has been the evolution of IT management functions into a strategically anchored service unit working within the highest levels of an organization.

At present, the Village's information technology function reports to the Finance Department. This organizational arrangement is not unusual in light of the history of computers being put to work initially in most municipalities for accounting and similar purposes. However, the essential nature of technology today has made this function an indispensable internal service provider to all departments. The study team suggests that the Village begin the process of exploring the next phase/next evolutionary step for technology management and services in the organization. While the finance function plays an integral role as an internal service unit, like human resources, the long-term effectiveness of information technology as an internal sub-unit of another primary internal unit will likely result in reduced effectiveness, added reporting and communication channels, and an added layer of distance from strategic decision-making/makers and the execution of strategies for maximizing technology and data assets. While there is no urgency to adopt this adaptation for current IT personnel, the study team would recommend that a plan be developed to work toward migrating technology services to a more centralized role, operating within or from the Village Administrator's office as a strategic supporting unit that engages with every department and unit across the Village organization. Appendix C on Page 66 provides representative comparative data from thirteen municipalities to aid in this endeavor.

Other priorities which the study team recommends as part of the Village's strategic plans for technology on the longer-term horizon include:

- Development of an ongoing, flexible plan for information technology training for all Village employees

- Ongoing convening of an assessment or evaluation team for potential additional uses of information technology and/or data sharing across the organization (e.g., event planning)
- Creation of a user-friendly, technology-focused meeting space for virtual collaboration
- Evaluation and implementation of outward-facing technology to assist residents and businesses without discouraging visits to Village Hall if that is the preference of customers/residents
- Improvement of collaboration tools used across all units
- Utilization of digital workflow and process improvement tools and systems
- Employment of performance-based dashboards and databases

Please see the Administration Department section of the enclosed Tier-Based Reference (Appendix A, Pages 45-48) for a full listing of recommended technology utilization action items organized by the three tiers mentioned on Pages 7-8.

3.0 Bartlett Hills Golf Club

Bartlett Hills Golf Club is a municipally owned golf course which provides to the public a practice range, pro shop, and 18-hole golf course, as well as food, beverage, and banquet services. The venue is managed by an administrative team that oversees a greenskeeper, grounds crew, maintenance crew, pro shop, grille room, and banquet venue. These varied yet intertwined operations must function in unison to provide the type of customer experience that encourages repeat patrons and furthers the mission of this municipal enterprise function that is an essential source of revenue for the Village.

3.1 Current Utilization

The three main operations are led by a Head Golf Pro, a Food and Beverage Manager, and a Grounds Superintendent. All three utilize Munis, the Village's procurement system, for capital purchasing. However, payroll and time-keeping are handled differently by each operation. Golf course staff utilize Time Clock for both scheduling and payroll, then the data is entered into Munis for payroll purposes. Food and beverage staff use paper for their scheduling process because some employees fulfill various roles that are paid at different rates, such as when one individual is earning wages for bartending and serving.

Golf carts do not currently utilize GPS to track distances, which may contribute to decreased speed of play. Lack of connectivity options and a user-enabled GPS platform or interfaced ordering system also prevents users from placing orders for food and beverages between "nines" at the turn or the conclusion of the round. A beverage cart is only utilized when the course is busy enough to support the

operation, and inventory and orders are tracked on paper. However, point of sale (POS) transactions for the golf course reservations and the restaurant use the same POS module in GolfNow, the same application used by patrons to schedule tee times online.

Grounds/greenskeeping utilizes Greenskeeper AP, an online platform that requires a subscription. A water sensor system that relies on moisture detection is also utilized by the grounds crew to determine when different aspects of the golf course need watering, maximizing efficiency and minimizing waste.

3.2 Near and Mid-Term Priorities

The study team recommends that all systems, functions, and workflows be automated and standardized as much as possible to ensure this enterprise function is running efficiently and economically. The more its three operational units are unified by technology, the better will be the customer experience. Scheduling and time-keeping should be automated, especially since today's payroll software can handle an individual fulfilling different functions at different times with different pay rates. There are many software platforms for time-keeping and scheduling that can be explored that can integrate with payroll platforms. Several employees at the facility undertake different roles at different times. An automated time system can assist with scheduling and accuracy of reporting. Procurement systems and inventory control should be standardized, and all should be available to be uploaded as necessary for asset management and procurement. Systems which utilize Quick Response (QR) or bar code options should be explored, including the necessary hardware to implement them.

In Golf operations, consideration should be given to upgrading the GolfNow reservation platform to the G1 version. It is the study team's understanding that there may be greater utility in the G1 version that could potentially facilitate POS transactions on the course to enable food and beverage orders via mobile devices. The Greenskeeper AP software used to maintain the greens may also be due for an upgrade.

One of the biggest issues facing Bartlett Hills is the ability to communicate with staff and patrons in every corner of this expansive venue. Currently the grounds/greenskeeping function does not experience satisfactory connectivity nor reliable cellular signals in the maintenance building and on the course to better utilize technology for its services. There is also suboptimal connectivity (cellular and Wi-Fi) in the Pro Shop, Grille Room, clubhouse, and the kitchen basement. These connectivity issues are a hindrance to communication not only within Bartlett Hills, but also between their operations and the Village of Bartlett procurement, finance, and management functions as well as outside vendors.

3.3 Longer-Term Priorities

The study team suggests that Bartlett Hills and the Village of Bartlett explore available technology to provide a better experience for both staff and patrons. For instance, providing GPS-enabled golf carts would increase the speed of play,

allowing for more rounds to be booked, and it would provide a better on-course experience if it was integrated with an upgraded POS module in GolfNow to permit food and beverage sales while playing.

Technology is advancing rapidly related to golf course maintenance. Consideration should be given to integrating the current sensor-based watering system with automated irrigation of the greens and the use of autonomous mowers.

Lastly, administration at both Bartlett Hills and the Village would benefit from access to a shared dashboard management system to stay apprised of golf course activities. A municipal enterprise function is a business that requires close monitoring to improve performance, detect trends, uncover financial issues, and address maintenance needs. Use of a dashboard would result in increased efficiency and communication in addition to improved tracking, productivity evaluation, and data-driven decision making.

Please see the Bartlett Hills Golf section of the enclosed Tier-Based Reference (Appendix A, Pages 48-50) for a full listing of recommended technology utilization action items organized by the three tiers mentioned on Pages 7-8.

4.0 Planning and Development Services Department

The Bartlett Planning and Development Services Department is a technology-intensive department. With responsibilities for administration, enforcement, and recommendation of regulations and policies associated with land use, zoning, building construction, and health safety within the community, including comprehensive planning, construction permits, inspections, property code enforcement, and health code enforcement, technology is fundamental to meeting the department's mission every day. Staffing in the department includes management, secretarial, planning, building and health code enforcement, permit, data entry positions, and a summer intern. The study team gleaned input from the survey results and met with several members of this department to learn about availability, possibilities, and utilization of information technology for department operations.

4.1 Current Utilization

Information technology hardware generally used by Planning and Development Services staff includes desktops, cell phones, and laptops. In some instances, field laptops and field printers are used by code enforcement officers, including the Health Officer, who also uses a Village-issued mobile flip phone. There is some field use of iPads to record inspection results. Handheld cameras are utilized in some instances related to code enforcement.

Each member of the department's clerical/support staff has and uses a desktop with two screens and a scanner. Also, a computer is available at the service desk to help customers follow along with the department staff's entry of data related to the purpose of the customer's visit. Software being used includes Microsoft

Office (Outlook, Excel, Word, etc.), OpenGov (which was in the implementation process during the time of the study team's site visit and data collection activities), Munis, GORequest, GovQA, ArcGIS Pro, Foxit, and Laserfiche. Staff expressed to the study team at the time of data collection that the OpenGov software was not being used to its full potential, and several staff members indicated that they were not familiar with the extent of its capabilities. The program was described as having potential, but it was not intuitive per users. This resulted in the OpenGov platform being perceived by some users as requiring more steps (rather than fewer) to get things done. Staff members continue to make use of the platform to realize a broader extent of OpenGov's capabilities.

Staff sees the possibilities and is appreciative of the updated technology that OpenGov presents, but concern was expressed that more input could have been factored into the transition to OpenGov. Department members sensed that as implementation took place, the software was not functioning as well as it could if/when utilized Village-wide. OpenGov is customizable and provides accountability, but feedback indicated there is more work to be done to reach full functionality/possibilities and meet all of the expectations of the implementation process. At present, OpenGov is being used for all building permits, inspections, and code enforcement. Microsoft Access databases developed in-house are used to track vacant buildings, properties in foreclosure, a local citation program, and the adjudication process.

Another area staff expressed to the study team where technology can help to solve a time-intensive service is the way current guidance is provided on the Village website for permit applications. Staff spend considerable time providing application process guidance/clarifying the process to the general public. Technology can be a solution here and it is recommended that the site be amended accordingly within the next year or so to help alleviate some of the follow-up customer encounters that are currently part of the workflow.

While there is now ongoing extensive use of information technology for the Planning and Development Services function, like the Public Works and Engineering functions, the study team was advised of some enhancements and future needs which, if accomplished, could increase the use of technology and be of benefit to daily operations and service delivery. Again, as noted earlier in this report, there are near-term and longer-term technology possibilities offered for consideration.

4.2 Near and Mid-Term Priorities

The following action items were proposed by staff to the study team via in-person interactions and the survey instrument:

- Capitalizing on the capabilities and possibilities of OpenGov is a near-term opportunity to maximize a recent technology introduced to the organization
- More training to maximize the use of OpenGov

- Additional refinements (e.g., work types and categories/more specificity) would increase the utility of the program
- Identify tools and technology solutions to improve integration and interoperability and permit increased communication between OpenGov and Munis and GORequest to eliminate the need for manual transfers of data between these systems
- Update guidance provided on the Village website for permit applications to reduce time spent by staff explaining the process to the public
- Enhance the notification system for all Village employees to make technical glitches known, such as phones not functioning, server issues, etc.

It is the study team's understanding that the OpenGov processes and workflows continue to be reviewed and IT personnel are constantly endeavoring to address identified concerns. It is recommended that this comprehensive response effort be continued, with a goal of overall successful implementation and usefulness before the end of the coming fiscal year.

4.3 Longer-Term Priorities

During discussions with Planning and Development staff, a number of future possibilities and opportunities for technology were relayed to the study team:

- Acquiring tablets with rugged cases, cameras, and talk-to-text features to aid in code enforcement and other inspections as well as remote data retrieval
- Making available for electronic viewing information subject to the Freedom of Information Act (FOIA)
- Establishing GIS as a master address source for use by Village staff
- Implementing a digital plan review process using Bluebeam or a similar program
- Evaluating the acquisition of smartphones with rugged cases for in-field use by staff to improve remote access and data retrieval and eliminate the use of private mobile devices
- Exploring and preparing for the use of drones or other remote sensing or visualization technology for inspections of structures, particularly commercial inspections

During the next two to three years, the study team recommends the above action items be reviewed and discussed with department members and with IT personnel to determine actual needs, costs, and a timeline for implementation.

Please see the Planning and Development Services section of the enclosed Tier-Based Reference (Appendix A, Pages 50-52) for a full listing of recommended technology utilization action items organized by the three tiers mentioned on Pages 7-8.

5.0 Public Works Department and Engineering Division

The Bartlett Public Works Department has responsibility for the effective, efficient, and safe delivery of street, water, wastewater, stormwater, and engineering services to the community. The utilization of information technology is crucial to meeting these responsibilities. The study team reviewed the results of the survey, conducted site visits, and then met with Public Works management, supervisory, senior maintenance, and administrative personnel to gain insight and perspective pertaining to the daily and ongoing utilization of information technology to meet the responsibilities of the department.

5.1 Current Utilization

Examples of how information technology currently is being used to facilitate department operations include desktops, laptops, SCADA (Supervisory Control and Data Acquisition) for the wastewater treatment plant and the water system (which can be monitored remotely by supervisory personnel), Waterly Software for water system data management, on-call mobile phones, GIS (geographic information system), the Village website, and GPS (global positioning system). Two-way radios are also used but infrequently except for certain situations (e.g., snow and ice control operations). Other software/programs/apps currently in use includes OpenGov, GORequest, Munis, a graphics package for signs, and Microsoft Office (Excel, Word, Outlook), as well as Foxit, ArcGIS Pro, and AutoCAD LT in the Engineering Division.

Although the Village's utilization of information technology is extensive with respect to its public works and engineering functions, it was noted that there are several opportunities and areas where enhancements and/or improvements could be of benefit to service delivery. Some of these possibilities can be addressed during the coming fiscal year, while others require a longer timeline.

5.2 Near and Mid-Term Priorities

At present, efficient field operations and service request response are affected by less-than-optimal communications and processes. Village two-way radios are available in Public Works vehicles, but Village-issued smartphones and tablets are limited. Current iPads have GIS data, internet access, and JULIE (Joint Utility Locating Information for Excavators) access. Personal mobile devices are frequently used to communicate with Village staff and others, resulting in personal cell numbers being shared whenever personnel are away from their vehicles to perform their duties or lack access to a Village-issued smartphone. Additionally, when a Village-issued tablet without a rugged case is available, it

may not be used due to fear of it being inadvertently damaged during performance of job site work. A Village-issued on-call mobile phone is shared among staff during their on-call shifts, but it could be better utilized with the addition of more helpful apps, including those that reduce spam and unwanted texts.

During the study team's site visits and interviews, water system service requests and assignments – such as meter readings and meter repair – were described as largely paper-driven processes. Although an email request was used to generate a work order, it could not be sent electronically to field personnel. Accordingly, paper service requests were picked up daily at Village Hall. This process lacked efficiency due to the travel it necessitated for field personnel to and from Village offices. The study team has been advised that this process has since been revised to include the use of Microsoft Outlook's calendar and iCloud tools. A Microsoft Outlook calendar scheduling system was being used for the lead service line study and was recommended to be considered for the scheduling of service requests.

Within the next one to two years, to allow sufficient time for budget review and consideration, it is recommended that Village-issued mobile phones be provided to all field personnel for use related to their assigned duties and responsibilities. It is suggested that in conjunction with the issuance of a mobile phone, each staff member be given a Village email address to enhance communication of job-related information. In addition, it is recommended that a tablet with a rugged case be provided to each Public Works crew, with access to cellular service and, if possible, an option for hands-free operation, along with requisite training for its use.

While it is recognized that implementation of this recommendation is not without fiscal cost, the potential benefits to the Village and its staff include:

- Reduction in the potential for liability and other problems associated with the use of personal phones for Village business
- Increased ability to contact personnel at a work site and more quickly contact emergency services in the event of an accident or other incident
- Decreased fuel consumption and mileage for Village vehicles

Issuance of a tablet with a rugged case or similar device to each crew (including a crew consisting of one person) should encourage its use at job sites and allow for more timely transmission of work orders, immediate logging of activities, and recording of job site data (e.g., start and finish times, linear feet of pipe installed, diameter of repair sleeve installed, etc.).

GIS data is becoming an increasingly useful tool for Public Works field operations. The study team encourages continued emphasis on entry, updating, and correction as necessary of infrastructure and other public improvements information to assist Village personnel in timely and safe performance of maintenance and repair responsibilities. Review and consideration of improvements to facilitate this process are also encouraged.

Additionally, it was noted that the Village has a significant commitment to its forestry program, including a yearly update of its tree inventory utilizing GIS. However, the in-house GIS and work orders system platforms appear to not work well together. It is suggested that this concern be addressed to determine if improvements are possible to correct this situation and to assist in daily work and route scheduling for tree crews.

The Public Works Department and the Bartlett Police Department have begun implementation of a GIS disaster app, have completed an initial tabletop emergency exercise, and used the app during response to recent storms. This endeavor should continue.

The American Public Works Association (APWA) has noted the use by some agencies of GPS-based Automated Vehicle Location (AVL) systems to track snowplow locations, road conditions, and material spread rate to enhance efficient and effective snow and ice control operations. Although it appears that use of this technology currently is limited to state agencies and larger municipalities, it is suggested that the APWA Top Tech - Tech Box be checked for further information regarding this and other innovations that might be helpful for the public works function.

For purposes of communication, the wastewater buildings, including lift stations, are connected by radio signal; there is no fiber connection. To limit the potential for communication interruptions, such as might be caused by strong winds, it is recommended that redundancy be provided via a hard-wired connection. With respect to water system pump houses and storage tanks, cellular service is the primary communication connection, with no redundancy. Backup for the existing Verizon cellular system service is recommended.

The study team suggests there be more reliance on electronic data entry versus paper. Currently, there are many binders of documents. For example, water system preventive maintenance activities, confined space entry reports, and monthly reports could be entered electronically. The study team was advised that work is in progress to allow reports of water received from Chicago to be processed with a computer instead of preparing paper reports. Staff in GIS and Public Works are working together to improve data utilization and reporting. Also, keeping in mind cyber security, electronic invoicing should be explored along with an assessment of password needs and management.

5.3 Longer-Term Priorities

Over the course of the next few years, it is recommended that attention be given to implementation or enhancement of hardware, software, and/or programs directed at improvement of several processes and procedures that affect the efficiency and effectiveness of Public Works and Engineering operations. Simplification of some processes would greatly improve customer service, preventing residents from having to make multiple calls to the Village. Some of the following recommendations may also be applicable to processes in other Village departments.

At present, employee work hours are recorded with the use of a timeclock. The existing payroll process is viewed by some staff as having too many steps. For purposes of accuracy and efficiency for staff, Human Resources, and Finance, it is recommended that entry of employee work hours, time-off requests, sick days, etc., be done electronically. For employees without a Village-issued computer, a readily accessible shared computer should be made available for data entry, or a system should be employed that permits submissions via smartphones and/or tablets.

With respect to the Village water and wastewater systems, it is recommended that a dashboard be installed at appropriate locations (e.g., the Public Works offices and the main water reclamation plant) to facilitate convenient real-time monitoring of system functioning by management and supervisory personnel. This endeavor requires selection of system components critical to performance to transmit real-time operational information (e.g., the interconnect/pump station for water from the DuPage Water Commission as well as elevated storage towers and other metering points; for wastewater, at sewage lift stations and critical mains; and for stormwater, installing flow meter and sensors in critical pipes and junctions for real-time information on flows, breaks, blockages, or other anomalies, etc.) for connection and transmission of real-time operational information.

In conjunction with the dashboard recommendation, it is suggested that the installation of an in-house system be explored for constant monitoring of the water distribution system for leaks. Such monitoring should enable more rapid knowledge of and response to main breaks and valve malfunctions, resulting in the potential for less water loss, pressure reduction possibility, and related damage. Currently, water system leak detection is done on a contractual basis four times per year. The American Water Works Association (AWWA) has recently updated water audit software (v 6.0 2020) available for conducting an annual water audit, the results of which can assist with a program for water loss control. Also, the International City/County Management Association (ICMA) and Siemens Industry, Inc. have prepared 'Smart Communities: Rethinking Infrastructure Report' which focuses on technologies that communities are deploying with respect to energy and water systems to help with operational resiliency, responsiveness, and monitoring.

It is recommended that the Village move toward more utilization of information technology options for asset management and maintenance functions, and to establish electronic databases. Examples of tasks which currently are paper driven include logging of manhole numbers and maintenance, lift station maintenance, and certain information which is subsequently entered into a computer for dissemination to the IEPA or other agencies. Additionally, it is recommended that appropriate software be acquired and used to assist with inventory management. While some of these added features of GIS use can be realized, an enterprise asset management (EAM) system could provide additional analysis and planning capabilities to help in managing local infrastructure installations.

The Village's in-house engineering focus is on oversight and coordination of local improvements, including issuance of contracts, measurement of quantities, and inspections. Going forward, it is recommended that there be review and consideration of the duties and responsibilities of Engineering to determine needed

technology. For example, is there a desire to do more in-house or take on larger projects? It is important to ascertain what the Village wishes to undertake prior to the acquisition of additional technology. Similar to mentions in other sections and for other departments, the use of visual or other data gathering devices (e.g., sensors, cameras, and drones) in the engineering realm and project management realm is a horizon technology that is seeing greater use by firms, contractors, and owners today. Efficiencies and perspectives that were once unavailable or complicated to achieve are getting more in-the-field use. These types of sensors will generate data that can provide valuable confirmation or new information for the construction and design of improvements, diagnoses, as well as project verification.

Please see the Public Works Department section of the enclosed Tier-Based Reference (Appendix A, Pages 52-53) for a full listing of recommended technology utilization action items organized by the three tiers mentioned on Pages 7-8.

6.0 Finance Department

The Bartlett Finance Department has overall responsibility for recommendation, implementation, and oversight of policies, practices, and operations that foster the fiscal health and well-being of the Village, including efficient and effective use of information technology. Duties and tasks include annual budget guidance and preparation; the annual audit process; accounts payable, payroll, utility billing, and licensing; GIS; and organization-wide information technology maintenance, use, and improvement. The study team met with management, accounting, budgeting, and payroll staff to learn more about the day-to-day and overall functioning of the department.

6.1 Current Utilization

At present, all Finance Department staff use desktop computers with the option for two monitors as well as two printers. The Finance Director also uses a laptop for presentations.

Software used includes Munis, Microsoft Office (Outlook, Excel, Word), OpenGov, and Laserfiche. It was noted that Munis is used for general accounting, accounts payable, financial reporting, online requisitioning, and water billing. Software for budgeting is not used. It was mentioned that Laserfiche is used for scanning and storing documents, and the search for scanned files can be cumbersome.

Options for bill payment to the Village include drop box, electronic checks, Illinois ePAY, in-person, and mail. The Village works with First Eagle Bank for postal box and drop box payments and with Vanco for electronic funds transfers. There is increasing use of Illinois ePAY.

Water meter reads are done each month, mostly via a drive-by system. A pilot program for an antenna read system is in progress and a water meter replacement program was recently recommended for inclusion in the current capital budget.

Two-way radio is used for communication with Public Works personnel regarding water service turn-on and turn-off information. It is the study team's understanding that Munis will continue to be used related to water meter reading and water billing tasks.

As previously mentioned, IT personnel report to the Finance Department. In light of the focus of this study and the constant impact of information technology on organization-wide operations, the Administration Department section of this report includes suggestions about the Village's overall current and future utilization of information technology. Additionally, following the priorities listed below, there is further commentary regarding the future of IT operations in the Village.

6.2 Near and Mid-Term Priorities

Implementation of Munis is estimated to have occurred in 2001, with some of its original processes still being used. The study team was advised that upgrading Munis for water billing has been problematic, but IT personnel have been working to resolve issues. It was suggested that Munis is not being utilized to its fullest extent, and it is also difficult to obtain tech support from Munis when there are issues.

Assuming continued use of Munis by the Village, it is recommended that the following points be considered for follow-up and closer internal review, ideally during the next fiscal year:

- Engage department staff in an assessment of the full utilization of Munis, including modules/features not currently in use
- Methodically evaluate the capabilities and usability of Munis and identify areas for improvement
- Automate and streamline payroll entry, transfer, and time-reporting methodologies for enhanced utilization
- Utilize the information gathered from discussion and evaluation and an analysis of costs and benefits to consider an upgraded version or replacement of Munis
- Explore whether direct assistance from Munis should be utilized to conduct in-person and/or virtual staff training

As noted in other sections of this report, implementation of OpenGov is underway. The study team was informed that Munis and OpenGov are not able to communicate with one another, resulting in extra work to reconcile transactions and financial records. It was suggested that it may be beneficial to create a Village-wide users group for OpenGov. The study team was advised that OpenGov allows payments by credit card, provides a notation when payment is by cash or check, and is being used for the building permitting function, due to the Munis permitting function not being fully operational. It is recommended that work continue on the comprehensive effort to have successful, full implementation of OpenGov.

6.3 Longer-Term Priorities

During the next one to two fiscal years, it is suggested that the Village undertake a best practices evaluation/business process update of its payment processing systems. This evaluation could assist in determining opportunities for additional payment methods – for instance, Apple Pay – while also reducing manual processing steps and increasing efficiency, such as decreasing or eliminating the need for paper and ink without neglecting necessary concerns for security and payment validity records. The Government Finance Officers Association (GFOA) might be a source of assistance for proceeding with approaches and solutions for these types of transaction and process redesigns.

Following are some examples of future technology action items that were brought to the study team's attention for review:

- Determining with technology assistance the accuracy of electronic invoices
- Improving efficiencies/redesigning invoice review and approval process to maximize technology
- Storing all payroll documents by period in a digital and secure format
- Exploring a universal/tech-based time-keeping/time-reporting system
- Utilizing an antenna read system for water meters as an alternative to the monthly drive-by read system to reduce travel costs and provide quickly accessible usage and payment information for Village staff and residents
- Monitoring the use and advances of AI (artificial intelligence) related to data management, accounting processes, and other transactional functions and – due to the likelihood that AI is likely to become a part of the financial reporting landscape in coming years even though the timing of AI advances is uncertain – studying carefully how, when, or if it might be deployed in the Village as it will likely impact various applications and software platforms the Village is presently using

6.4 Future of Information Technology Operations

Information technology is the youngest operational aspect of most municipal organizations. As this operation matures, the fundamentals become more standardized, documentation becomes more thorough, and basic standards become known. Technology, as with all other consumables, becomes commoditized and the focus shifts.

Strategically, IT's sole mission is to act as a strategic partner to all the business units in the organization to ensure the data needed to make decisions is collected in appropriate systems, and the technology is in place to support that endeavor. This means that every department has what they need to serve their discipline specific citizens. For example, public works staff need data to understand

performance and anticipate challenges to ensure proper service of complex water and wastewater function; police departments require data to ensure citizens view police activities in a positive, fair, and collaborative perspective, finance department staff need tools to manage countless financial data points and transactions; and community and economic development department staff need data to expedite and streamline permitting, have transparency using a variety of tools like a geographic information system (GIS) to have meaningful conversations with current and perspective residents and business owners.

Most people have an under-appreciation for all the tasks and responsibilities IT is asked to carry out. Consider the following summarization of the responsibilities most IT departments are asked to deliver:

- Application and Data Architect
- Network Architect, Engineer, and Project Analyst
- ERP Functional and Technical Consultant
- Network Security Engineer and Information Security Analyst
- Application Developer
- System Administrator
- Business Systems Analyst
- Business Intelligence/Analytics Architect and Developer
- Cloud Computing Architecture
- Data Warehouse Architect and Developer
- Database Designer, Developer, and Administrator
- Quality Assurance Testing Engineer
- Statistical Programming
- Technical Writer
- User Help Desk

As an internal service provider, IT plays a vital role in keeping the whole enterprise functioning, responding, and excelling. The list above captures the depth and breadth of IT responsibilities required in a modern and progressive local government. Consequently, it is incumbent upon the IT leadership of any organization, including the Village of Bartlett, to collaborate with all levels of the enterprise to meet the general and specific, current and future technological requirements of the enterprise. Working in an environment of constraints and competing resources, it is vital for the Village to maximize the use of technology. As a result, the Village is encouraged to strategically position IT services beyond an organic approach to technology that is common in many municipalities as technology use evolved and expanded. One of the best practices that has emerged as technology use has expanded is what many characterize as enhanced operational and IT governance approach. By developing a governing approach that

fits the Village, a universally applied IT support and decision-making framework will facilitate the use, deployment, support and resource allocations required to maximize IT across the organization. Putting to work a collaboratively shaped and developed IT governing framework in the Village will help to balance unavoidable strains, competing priorities, and scarce resources that impact most organizations at one time or another.

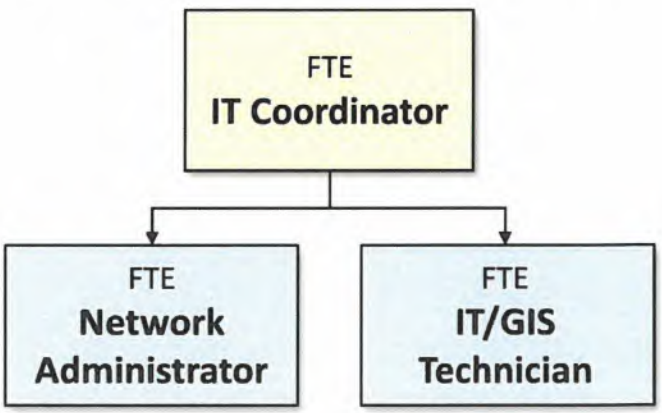
A familiar phrase is "the future is just around the corner." For many IT applications, the future is now, and more changes are coming. In all industries, IT has reached an inflection point, and emerging IT technologies, including sensors, broadband/networks, advanced analytics, AI, biometrics, and cognitive computing, are readily available and already being applied and deployed by government organizations. These emerging uses of technology must exist side-by-side with what many might consider more mundane, but no less important, day-to-day uses of technology in cities and other units of government.

As a result, to aid in maximizing technology for the organization, and to better manage tools and talent, Village leadership should embark on an initiative to work with IT leadership to enhance IT's capacity to respond to growing needs. Key steps to advancing and enhancing the IT function include staffing capacity and skill set mixes, establishment of enterprise-wide technology decision and action standards, encouraging and empowering user groups, and putting in place various IT-related metrics that will enhance project management, track workload, capture user experiences and needs, and measure internal customer satisfaction as well as outcomes.

The study team opted to forego a listing of near, mid, and long-term actions in this section of the report because the totality of the recommendations in Appendix A, and in the narrative of each of the departmental sections, will require the input and implementation by the IT team. For instance, adoption of Microsoft Office 365 would have an impact on every unit of the organization, and therefore is an endeavor to carefully weigh after input from all affected parties.

6.4.1 Function Staffing and Design

In the Village of Bartlett, IT personnel report directly to the Finance Department. The IT team consists of the following:



The study team was informed that the IT team's work is apportioned as follows:[2]

IT Coordinator (FTE)

- ~30% of capacity spent on administrative and management tasks, including:
  - Procurement
  - Budget
  - Meetings and solutions discussions
  - Researching technology
  - Protocol and governance work
- ~70% of capacity spent on technical tasks, including:
  - Help Desk/Level 1 ticket response
  - Network administration/engineering tasks
  - Database administration tasks
  - Application reporting
  - Ad-hoc training
  - Security monitoring
  - Website content management system/content work

Network Administrator (FTE)

- ~30% of capacity on Help Desk/Level 1 ticket response
- ~30% of capacity on Network Administration/Level 2 ticket response
- ~40% of capacity is spent on project management tasks

IT/GIS Technician (FTE)

- ~40% of capacity on Help Desk/Level 1 support
- ~60% of capacity on GIS data entry and other GIS tasks

The Finance Department also employs support staff and a full-time GIS Specialist who is not a formal member of the IT Help Desk but assists with GIS training and troubleshooting while being responsible for GIS maintenance and management. Approximately 60% of this position's capacity is spent on GIS data collection,

[2] The apportionment shown for each role is an approximation based on study team data. For instance, while there appeared to be a relatively even split of managerial and technical tasks performed by the IT coordinator, upon reviewing qualitative data from interviews, it appeared that up to 70% of capacity could involve technical tasks due to changing needs and priorities when viewed in the aggregate.

entry, and reporting/visualization, and approximately 40% of capacity is spent on training and database management/system maintenance.

The unit is staffed to accomplish as much technical work as possible in a typical work week. The ever-expanding use of technology places significant demands on IT personnel, leaving little capacity for strategy and vision, process enhancement, governance development, and the implementation of other Village-wide improvements. This finding is in keeping with similarly sized municipal organizations. IT staff in local governments continue to evolve as technology evolves.[3] As technology applications, old and new, continue to expand in the organization, there is very limited availability for IT personnel to devote resources to strategic issues, potential new uses, and organization-wide impacts and outcomes of past and future choices and decisions. Keeping operations running is often the most urgent need; addressing other needs is largely dependent on the resources and investments the organization can devote to other issues and decision making related to technology. The study team urges the Village to continually monitor and evaluate its IT investments (hardware, software, personnel) to assure all aspects are aligned to accomplish organizational goals.

Bartlett IT personnel recognize their crucial role to assist each Village department in accomplishing its mission. Aspects of that role include guidance as might be needed, maintaining a focus on cyber security, and being fiscally prudent with respect to expenditures. The Village's IT-related policies provided to the study team were robust and inclusive.

The crux of successful IT utilization in an organization relies on three pillars: People, Processes, and Technology. This is the PPT framework that has been a guiding principle since the 1960s, and it is an optimal tool to facilitate breaking down the value stream for data and technology support in local government.[4] The following is a high-level breakdown of general technology findings; additional elements are articulated in the other department sections of this report.

The study team has compiled the following information regarding the human resources, position designs, capacities, and capabilities of the IT personnel:

- Regarding capacity and availability, various non-critical tasks are, at times, delayed or not able to be accomplished because much is asked of the current IT personnel but only so much time is available. The end result is frustration and workarounds, especially related to 24/7 technology needs in the Bartlett Police Department for critical services. IT personnel can be reached after hours, but it was noted by the study team that there is generally a hesitancy to request support services after hours.

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[3] Kim, Hyun Joon & Bretschneider, Stuart. (2004). Local Government Information Technology Capacity: An Exploratory Theory. Proceedings of the 37th Annual Hawaii International Conference on System Sciences. 37. 10.1109/HICSS.2004.1265310.

[4] https://medium.com/technology-hits/integrating-security-mindset-with-ppt-framework-8dd3a3a8b8da

- IT personnel routinely plan for and recommend training, but competing demands limit what both IT and Village staff can achieve.
- More emphasis on communication and organization-wide understanding/utilization regarding IT opportunities and related decision making at both the micro and macro levels.
- Requests for the support of daily work requirements make it difficult to spend time on longer-term needs for strategy, to process evaluations and improvements, to stretch resources, and to impact internal service effectiveness. IT personnel are also called on to act in project management capacities in addition to their primary duties and functions.

IT leadership in local government is transitioning from technologist to business solutions provider. To accomplish this, technology leadership should be engaged and empowered to work with organizational leaders from each department regarding strategic questions, decisions, and choices while overseeing and delegating technical work to staff and contracted resources. Creating time for overall organizational strategy, governance, resource brokering, and effective protocols will pay enormous dividends. IT leadership's involvement in meetings with Village administrators and department heads on a regular basis can create a regular forum and meeting framework to discuss current challenges, trends, and planning. This also allows IT personnel to identify power users in each unit and capitalize on their knowledge of day-to-day use and workflows to discover new ways to maximize technology resources across the organization.

6.4.2 Process and Budget

As previously mentioned, establishing a governance model is an endeavor the study team is encouraging the Village to explore and implement. Establishing a governance framework will help to ensure that technology and its various applications are maximized, that system requirements are established and met, and that solutions considered for investment or deployment are thoroughly vetted. This can be accomplished in a number of ways, but some of the most effective approaches involve the establishment of a technology steering committee that is composed of representatives from all departments as well as IT personnel. To reflect the importance and centrality of its work and decision making, an effective committee should be led by a designee appointed by the Village Manager.

Budgeting techniques are also recommended for consideration. The Village might explore establishing a specific code or the identification of specific funds in each department's budget for technology-related purchases and maintenance. This approach can help to apportion and track technology spending, support training, assign department-specific technology investments, and facilitate department awareness of technology expenses. While training has been mentioned previously, the study team wishes to note that training does not happen without dedicated resources for it.

Training creates budget trade-offs and is often downplayed in many municipalities. Rather than being seen as a depletion of resources, training must become a priority investment. Training with a purpose is important and framing and defining it will help vendors and IT personnel to focus specifically on those goals.

Strategic procurement is a part of budgeting and resource allocation. Using the work recommended in the governance discussion, technology requirements should be developed and a rating system established for how negotiable are the requirements to be explored. The creation of a requirements list that is reviewed regularly will help create a book of knowledge which can be used as a reminder of lessons learned when issues arise with problematic technology ideas, possibilities, acquisitions, and agreements. Some example requirements would include:

- Platform-agnostic design technology that can run independently from specific operating systems or technology types should be an expectation for new technology.
- Technology should run natively as expected without the need to support additional systems, thus third-party plug-ins should be prohibited.
- Systems should communicate in a secure manner with only extenuating exceptions via encryption in transit design.

6.4.3 General Technology Utilization

The study team urges the Village to foster an overall approach and focus on technology investments that are targeted at accomplishing outcomes valuable to both the organization and community. Having clear organizational goals that are socialized to include a technology lens will help drive successful investments.

Leveraging Microsoft collaboration tools to a greater extent is an overall recommendation of the study team. Cloud-based systems can be more expensive over time than on-premises systems. However, their offerings are becoming more feature-rich as there is a real incentive for vendors to bring organizations into these cloud-based environments. Some general recommendations include:

- Implementing Email in Microsoft Office 365 leaves the administration of the email system to IT personnel while Microsoft engineers handle the full-time job of the more technical side: email settings, updates, and availability. The current Microsoft email system used by the Village is no longer efficient to run on premises as it requires a significant amount of storage and memory to function properly.
- Advanced Threat Protection (ATP) is only available in the Office 365 subscription as an additional monthly charge per user. While no security system is perfect, ATP can lower the risk of ransomware and other attacks when set up because it executes every email attachment in a secure environment and blocks it if malicious activity is found. It also notifies the recipient when such an action is taken. In addition, to

maximize the Office 365 platform, the Village should take steps to implement multi-factor authorization protocols where applicable.

- Microsoft Teams is another option only available with the Office 365 platform. Depending on the subscription, this can include chat, video conference with phone option, and can replace an organization's phone system, with the exception of 911 if the organization houses primary/backup dispatch functions and elevator phones. As a monthly subscription, this could be a more effective spend using soft phones on the desktops/cell phones to eliminate the extra cost and maintenance of a PBX device and hard phones. As noted in some of the department sections, the study team found a gap in communications which could be solved using Microsoft Teams or a similar platform for collaboration.

- Microsoft Office 365 offers multiple capabilities and features for organizations to consider. The study team encourages the Village to fully explore how such functions may improve the operability and the overall technology environment of the organization.

Over time, cloud-based systems are not typically less expensive than on-premises systems or platforms, as noted earlier. A subscription service offers a lower cost of entry and transfers technology costs from a capital expense to an operating expense. From a financial perspective, this transitions the technology from the "roller coaster" spending pattern often found with capital expenses, where large investments up front are required and increasing maintenance costs merge over time. The ups and downs of capital expenses convert to more level and predictable budget costs annually.

Please see the Finance Department section of the enclosed Tier-Based Reference (Appendix A, Pages 54-55) for a full listing of recommended technology utilization action items organized by the three tiers mentioned on Pages 7-8.

7.0 Bartlett Police Department

This portion of the study provides a review of the current operations, facilities, and equipment for the Bartlett Police Department (BPD), focusing specifically on technology. A series of surveys and interviews were conducted with a wide range of staff, from patrol officers to records clerks, and relevant documentation was reviewed to determine current operational details. On-site visits also allowed the study team to observe firsthand the operations of the Department. Recommendations for future IT needs are based on the collected data.

The Village is situated along a line straddling both Cook and DuPage Counties, with a small parcel on the western border located in Kane County. This is significant because the Department regularly deals with three different sheriffs' departments, jails, prosecutors, clerks, and court systems.

As of August 2021, the Department consists of 61 full-time sworn police officers, 17 full-time civilians, 3 part-time civilians and 37 seasonal crossing-guards. As the chart indicates, the Village of Bartlett's Police Department is managed by the Chief of Police, who is assisted by two Deputy Chiefs who both typically work Monday through Friday, 7am to 4pm. There are 3 Commanders and 7 Sergeants who provide supervision around the clock. The 48 Officers include those assigned to Patrol, Investigations, and specialty assignments. The staff of full-time sworn officers is supplemented by 4 Community Service Officers, a Records Supervisor, 8 Records Clerks, 2 Secretaries, a civilian Accreditation Manager, and a civilian Property Custodian. There are two part-time Data Entry Clerks and one part-time Parking Enforcement Officer.

This review relied on detailed interviews with key police department personnel. On-site interviews were conducted with Chief Ullrich, Deputy Chief Pretkelis, other sworn members of the department, and support staff. In August 2021, the study team was able to conduct several in-person interviews while wearing masks and observing COVID-19 social distancing protocols.

7.1 Current Technology and Near, Mid, and Long-Term Recommendations[5]

7.1.1 CALEA

The Bartlett Police Department has been accredited by the Commission on Accreditation for Law Enforcement Agencies, Inc. (CALEA) since 1997. POWER DMS is the software used for CALEA accreditation, policies, and training bulletins. The software tracks employee interactions with informational items to document when employees have opened training bulletins, read updates, reviewed policies as well as completed training.

7.1.2 911 Dispatch

Bartlett is part of the DuPage County Emergency Telephone System Board (ETSB), the entity that collects monthly surcharges on cell phones and landline phones to support the 911 system. The Bartlett Police Department does not have its own communications center. Instead, the Village contracts for this service with DU-COMM, and currently pays $678,374 annually for this service. The fee is based on a formula derived from the number of sworn officers, and workload for BPD the prior year. DU-COMM generates Computer Aided Dispatch (CAD) incidents or calls. CAD incidents should not be confused with 911 telephone calls. Most 911 telephone calls result in a CAD incident, but when an officer is flagged down by a citizen or self-generates an activity, such as a business check or traffic stop, a CAD incident is also generated to track those activities. This is done for safety purposes as well as data collection and statistical analysis.

The consolidation of public safety dispatching services is an effective and efficient way to handle the complex and expensive 911 function. DU-COMM is a Public Safety Answering Point (PSAP) that was established pursuant to an

[5] This section is presented by police function.

Intergovernmental Agreement in 1975 and is one of two consolidated 911 centers in the state. Currently it provides 911 phone call answering, radio dispatching, and computerized records of calls for 22 police departments, including BPD, and an additional 22 fire departments.

Using this shared model, the citizens of Bartlett receive improved service for a much lower cost. Given the technology and personnel requirements, the Village would not be able to staff a 911 center around the clock for the member fee of $678,374 annually. Salaries and benefits alone would exceed that, and there would be extensive equipment and technology costs as well.

BPD may want to work with DU-COMM on a pilot program to have Bartlett officers be able to listen in real time to the audio of incoming 911 telephone calls, including redirected 988 calls beginning in 2022, as they come into the center. One such service is Live911, powered by HigherGround, which utilizes geofencing technology to allow increased situational awareness – officers can see fellow officers' locations – and permits the listener to rewind live audio.[6] This new technology may improve response times and increase officer safety by allowing the responding officers to livestream the conversation between the 911 caller and dispatcher as it happens, similar to scanning other radio frequencies.[7]

7.1.3 Radio Communications

Radio communications for BPD are conducted using the STARCOM21 system. STARCOM21 is a digital 700/800 MHz radio system with state-wide coverage and roaming for Illinois governmental users with 280+ sites, over 45,000 users, and 1,600 agencies utilizing the system. It was built to allow interoperability among local, state, and federal law enforcement users on specific "talk-groups" (channels). Motorola is under state contract to manage and operate the infrastructure network which is similar to a cell phone network. Individual portable radios (walkie-talkies) are used instead of in-car radios. Each unit costs approximately $4,500 and requires a monthly service fee to be on the network. This system is more cost effective and reliable than the system it replaced where Bartlett and DU-COMM partner agencies had to maintain radio system infrastructure and maintenance on the UHF band. An added benefit of the STARCOM21 system is that now Bartlett officers can talk directly with virtually any other officer in the area with the twist of a knob on the radio they carry on their belt. An enhanced feature of the Starcom system is GPS locating. BPD officers always have their portable radio with them when they are on-duty, and the Starcom GPS feature improves officer safety and accountability. The Bartlett Police Station has a bi-directional antenna (BDA) system installed inside the building to help boost the radio signal. The BDA is an important safety feature and helps enhance clear communications. The STARCOM 21 portables are not currently

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[6]https://live911.com/

[7]Closing the 9-1-1 Gap: How Streaming 9-1-1 Audio Can Transform Emergency Police Response William "Fritz" Reber [https://www.policechiefmagazine.org/closing-the-9-1-1-gap-how-streaming-9-1-1-audio-can-transform-emergency-police-response/?ref=109704b4c30064c1e30bfdc49e5315d5]

able to be updated or programed via Wi-Fi, thus such routine activities must be done by a technician using the physical radio rather than remotely.

Administrators, supervisors, and detectives have cell phones issued to them for police business. It is possible patrol officers who do not have work cell phones issued to them by the Village of Bartlett may use their personally owned phone for police business. This situation is not desirable, thus the study team recommends comparing two options: improved functionality of compatible soft phone extensions currently available or the acquisition of smartphones for all officers to conduct duty-related business. It may be worth the investment given the liability presented by use of personal cell phones for police business.

The study team recommends also exploring the acquisition of tablets with rugged cases and appropriate security for detectives and supervisors, perhaps first as a pilot program. When detectives are in unmarked cars without laptops and a docking station, they still need to run license plates and do other work on a computer. Proper device configuration, including multi-factor authentication (MFA) and other security protocols, should be considered. Tablets would permit more flexibility, allowing supervisors to utilize them in the office, in their vehicles, or at other remote locations as needed.

Another hardware recommendation is to replace desktops for detectives, supervisors, and other office personnel with laptops or tablets paired with docking stations. The stations consist of a full-size monitor, keyboard, and mouse and the user simply plugs in, or docks, the device versus utilizing a desktop. Additionally, docking stations should be able to accommodate CD and DVD drives, since the majority of newer laptops and tablets lack these drives, but police regularly must view CDs and DVDs. Desktops and laptops should also be equipped with webcams to help facilitate the increasing numbers of video conferences (such as Zoom and Microsoft Teams) that have become prevalent since the COVID-19 pandemic.

7.1.4 Field Reports

BPD utilizes ID Networks as their software for writing police reports, and a Records Management System (RMS) keeping track of crime data, identities of suspects, arrestees, victims, and vehicles. The system is an intelligence tool as the search feature is used to find people, locations, and vehicles already in the software from prior events. The software was used by Northwest Central Dispatch Center and by the police agencies served by them in Cook County (including neighboring Streamwood and Schaumburg). Bartlett is not utilizing the Hexagon Computer Aided Dispatch (CAD) system that is utilized by most if not all DuPage police agencies and is familiar to DU-COMM. The study team's survey and interviews with end users revealed areas for improvement that may not have yet been addressed by the most recent version:

- The system is often down or very slow, outside of scheduled software updates and outages, preventing officers from composing and submitting reports efficiently (routinely they see a spinning ball icon

that indicates the system is trying to initialize) and encumbering the approval process

- Officers cannot reliably depend on the reporting system, having experienced the loss of hours of work when the system crashes, thus instead they type up narratives using Microsoft Word, Google Docs, or another word processing software, then upload that to the system, which creates working drafts of reports that may differ from the official report (besides the inefficiency and redundancy posed by this process, there are legal ramifications regarding what is submitted in response to court orders)
- Patrol officers ideally should be able to compose reports in the field, using the computers in their squad vehicles, but routinely they do so at the station due to the somewhat more reliable network connection and access to keyboards and larger screens, reducing their visibility when on patrol and the ability to respond more quickly to calls during their shifts
- Bartlett police personnel are entering substantial amounts of data in a system that differs from the one utilized by neighboring agencies in DuPage County, thus information ranging from suspects and victims to vehicles and location histories is not readily accessible by DuPage, nor can Bartlett officers readily access the data in the DuPage County system
- Information obtained from the Illinois Law Enforcement Agencies Data System (LEADS) is not autopopulating fields in the ID Network field report writing software, resulting in officers manually reentering information, which is redundant, inefficient, and may result in unnecessary errors

The study team recommends that BPD and the Bartlett IT staff meet with the current software vendor to resolve these issues. Further inquiries are needed to determine whether a licensing agreement can be arranged so that BPD Officers can access the DuPage system for intelligence purposes.

7.1.5 Email Limits and Firewalls

Detectives reported to the study team during site visits and interviews that permissions from civilian IT technicians were required to look at websites dealing with guns and other crime-related content due to the Village's network firewalls. This protocol can result in the appearance of a compromise of the integrity of BPD investigations. Since the time of the study team's site visits, this issue has been explored and is being addressed by establishing different firewall rules for detectives.

Officers also report problems sending emails with large files to prosecutors. They are forced to print out hard copies and drive to the prosecutor's office an hour away, which is inefficient. The study team recommends an organization-wide migration to a cloud-based service for file sharing and management, such as Microsoft Office 365. A subscription could also include Microsoft OneDrive to facilitate centralized control within an enterprise-level system. Other file sharing

options in a cloud-based service are available, but consumer-based systems should be avoided due to the higher security risk and reduced effectiveness. These collaborative solutions present far less obstacles than an on-premises email system.

Finally, the study team was made aware that sensitive data may be accessible by the many users of the shared drives and networks, and it was suggested that a secure dedicated server be considered for the Department, or a separate virtual server for the Investigations Division. However, the current software in operation may have sufficient data classification options that have not been employed.

7.1.6 Printers

Many employees reported during the study team's interviews and visits that printer access is an issue. Some indicated printing permission is limited to a single printer based on their user profiles, while others have more than one printer they can select from a drop-down box. When printers are offline or require maintenance, employees who can only print to a designated printer are left with no other options. One solution might be a smart print system tied to the proximity ID cards already carried by all employees. An individual's print jobs can be sent from their desktop to the network, and the user's swipe of their card at a working printer will grant them access to files in the queue. These applications can also track usage and provide associated billing and cost center tabulations in the event the vendor's systems are utilized by multiple units in the Village.

In-squad printers should also be explored to allow the user to print citations for all three counties if and when the ability to utilize a multi-county system becomes available. Due to the Village's jurisdiction including three counties with three different court systems, the permissions and integrations necessary to achieve full utilization of in-squad citation printing via a multi-county system should continue to be considered.

7.1.7 Surveillance

MidCo is the vendor who maintains the software system through which the jail, salley port garage surveillance cameras, and audio/video systems run. BPD has six rooms – 3 adult, 2 juvenile, and one "soft" – that are wired for audio and video recordings of the quality needed for court evidence, and there are no reported issues with this system.

All BPD squad vehicles are equipped with digital dashboard cameras (dash-cams) that are activated manually or when the emergency lights are turned on. This system provides additional evidentiary support of officers' reports, bolsters community trust, and reinforces accountability and crime prevention. As BPD implements a body-worn camera program, efforts should be made to integrate both systems if cost effective.

Currently the BPD does not have any License Plate Readers (LPRs) in the Village. This appears to be due to insufficient funds to subscribe to a commercial service in order to retrieve LPR data, which is critical to help solve crimes and prevent

them. The ability to pinpoint a specific vehicle at a particular location and time is crucial, especially when tracking a suspect or investigating a missing person. Hundreds of commercial tow trucks and repossession companies collect license plate information daily in northern Illinois. The Illinois Tollway Authority and City of Chicago also contribute a significant amount of data hourly. The community can be reassured that this data is only available to law enforcement with a court order and there are privacy laws to deal with how such information is utilized. Both the Department and Bartlett would benefit from utilizing LPR technology.

For more information regarding body-worn cameras and camera-equipped Tasers, please see the next two sections below.

7.1.8 Body-Worn Cameras

There are still discussions on the Illinois State legislative mandate regarding the use of police body-worn cameras (BWCs) by 2025. The study team is recommending that the Village continue to evaluate this important technology. The BWC program will help build community trust through transparency, in addition to providing strong evidentiary documentation for a variety of cases. Two issues impacting the future implementation of such a program are legislation and cost. Currently the State of Illinois requirements for retention of videos and redaction of sensitive information (electronic blurring of faces and muting of audio) can be cumbersome and expensive.

An important factor to consider relates to the long-term setting of video quality requirements: higher resolution recordings create larger files. These files have minimum storage mandates, so lower resolution recordings could provide more budget value for storage but less video clarity. There is no minimum image resolution quality in the current mandate, so each jurisdiction will need to determine the set-up parameters and corresponding storage solutions. The City of Elgin implemented a program several years ago and spends $170,000 a year for storage of videos generated by 203 cameras. That cost of $837 a year per camera just for storage of videos is expensive.[8] The Village of West Dundee is in the early stages of their BWC program. West Dundee's contract calls for 20 cameras at a cost of about $136,502, including video storage fees, which the Village will pay for over a period of five years – roughly $1,365 per camera annually.[9]

Hopefully the cost of video equipment and storage will decrease over time, as often happens with new technology. There is also proposed legislation in Illinois to lessen the strict redacting and retention requirements. BWCs will be required by January 1, 2025, for the Bartlett Police Department (residential population less than 50,000) in accordance with legislation passed by the Illinois General Assembly 50 ILCS 706/10-15 (b)(4). BPD staff has already started planning for a new policy

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[8]Elgin police chief testifies in support of expanded use of body cameras, Daily Herald, 10/28/20 [https://www.dailyherald.com/news/20201028/elgin-police-chief-testifies-in-support-of-expanded-use-of-body-cameras]

[9]West Dundee plans to purchase 20 body cameras for village police officers, Elgin Courier News, 05/31/19 [https://www.chicagotribune.com/suburbs/elgin-courier-news/ct-ecn-west-dundee-cops-body-cameras-st-0531-story.html]

and begun budgeting for equipment, storage, and the additional staff hours to process videos. This includes planning for court copies, redacting, and logging.

7.1.9 Tasers

BPD officers are equipped with Tasers. These devices provide an intermediate level of force between empty-hand control and deadly force from a firearm. They have an internal computer that documents each time it is turned on or off, as well as when it is activated and the duration of a single use. This weapons system requires a dedicated desktop loaded with proprietary software to download performance data. Officers currently share Tasers and therefore each device experiences additional wear and tear as opposed to use by one officer. The Tasers currently in use do not have cameras, which are available in newer models. The technical support for these devices is not expected to change.

7.1.10 On-Site Evidence Storage

BEAST is the software utilized to track items of evidence in the BPD property room. This software system utilizes unique bar-codes to track individual items. It is preferable, as the Illinois State Police uses the same system, and like many other police agencies, Bartlett uses the Illinois State Police crime labs to analyze and test their evidence. Since both BPD and Illinois State Police use BEAST, there is more accountability and less likelihood of evidence being lost or misplaced.

Access to the evidence storage area is restricted by use of a key-card and PIN. A deputy chief is notified via an alarm if unauthorized access is attempted. There are no environmental failure alarms in the BPD property room, which is the central repository for all criminal evidence. The Department may want to investigate an alarm system that notifies the civilian property custodian and/or the front desk (staffed 24/7) in the event of fire, water leaks, power failures, or refrigerator/freezer temperature fluctuations. This is especially important for the prevention of the damage or loss of critical criminal evidence.

7.1.11 Fingerprinting

BPD has two LIVESCAN fingerprint machines. These computers capture a digital image of prisoner's fingerprints and transmits that image directly to the Illinois State Police Bureau of Identification. This technology is time-tested (over a decade) and appears to be working without issues. It would be beneficial to have in-field access to fingerprint scanning as well via a secure app for tablets and/or smartphones.

7.1.12 Front Desk and Records

The Records area is staffed 24/7 so there is always someone working at the front desk. They are monitoring security CCTV cameras in the jail lock-up area and around the building as well as using touch-screens to open doors. There is an air phone system at the front door that staff use during off-hours. This technology seems to be sufficient but options are likely to evolve in the future. FRONTLINE is the software

used to track vacation checks and overnight on street parking requests. Our interviews revealed that it is user friendly, intuitive, and works well.

STARCOM21 portable radios can be programmable over Wi-Fi to reduce technician costs. BPD should consider that option when purchasing new radios and replacing current models.

The study team recommends that the civilian clerks working the front desk always have a STARCOM21 portable radio capable of transmitting as well as receiving. The clerks have the responsibility to monitor the security of the police facility via CCTV, watch detainees in the lock-up, and greet visitors in the lobby. The quickest, safest, most efficient way for them to communicate directly with DU-COMM, BPD supervisors and officers is directly via STARCOM21 radio and not having to call on the telephone.

The front desk personnel are utilizing paper and pen books to record vehicles towed by tow trucks for the Village, as well as vehicles relocated by re-possessors. Administrative tows are tracked in a similar way. Bartlett officers check these books (or have Records personnel do it) prior to taking a stolen vehicle report in order to avoid taking a report on a vehicle that was simply towed or re-possessed. Although effective, there may be a better low-cost computerized alternative to better document such information such as an access database. The long-term storage issues of paper and pen records can be daunting.

Front desk personnel and officers are still using a punch clock system to document detainee checks and meals in the lock-up (jail). This paper system might also be converted over to computer through a module on the jail booking software. BPD pays $4,000 a year in licensing fees to ID Networks for booking/imaging systems, there may be a module there that can be activated for a nominal price.

The crossing guard schedule is still being done on paper. Again, this is a process that might be easily improved with technology. A simple scheduling app accessible via a smartphone or tablet could be utilized to allow quick updates and a more transparent system.

During staff interviews and visits, the study team was advised that the front desk currently does not have access to a fully up-to-date list of keyholders for Bartlett businesses and institutions. When burglar alarms are activated or property is damaged, owners appreciate quick notification. The Village already has data on businesses for licenses. The study team has been informed that keyholder data is entered into OpenGov when a business applies for a license. This is a good example of how access to information shared across departments can be highly valuable. To encourage individuals to provide such information, a public education campaign and continuing efforts to update keyholder information could prove beneficial.

7.1.13 Patrol Vehicles

BPD maintains and operates a fleet of 44 vehicles. The Chief is the only employee with a take-home vehicle. The patrol vehicles are equipped with computers, printers, and cameras. Internet connectivity is provided by Verizon air cards.

Patrol officers are assigned squad vehicles to drive when they are on duty. Vehicles are intended to be utilized at approximately the same rate so they will depreciate at a predictable rate and can be replaced on a schedule, but the study team was informed that squad vehicles are often out of service for tech repairs or upgrades. When integrated devices are not working and awaiting repairs, officers logically use another vehicle with working technology. This results in fully operational vehicles being over-used, increasing the chances of a technological component failures. The study team recommends a program to better monitor and repair technology in the squad fleet. There will only be more computer technology in police squad vehicles in the years to come, not less. The lack of regular maintenance and repair of in-vehicle technology should be addressed before it becomes more of an issue.

7.1.14 IT Support

BPD does not have a dedicated IT technician nor on-call support for after-hours assistance. The Chief does not believe this is necessary because the existing relationship with Bartlett's IT personnel is good and the Department consults with them prior to making decisions regarding technology. However, police staff feel discouraged from contacting IT outside of their usual daytime hours unless there is a critical emergency, especially since such requests must first be approved by a supervisor. IT personnel use an electronic ticket system to monitor issues and service calls, but after 5 p.m. there are no on-site technicians, and since most of the department does not work a traditional 9 to 5 shift on weekdays only, IT support is not regularly available during these off hours.

Police departments are dependent on technology to function, and officers and staff are not trained in nor able to fully perform troubleshooting, nor should they attempt repairs on their own during their working/duty hours. The study team recommends that the Village consider establishing an on-call system with remote screensharing access as one very effective and workable solution. Another approach would be to add/hire or provide IT technicians who can alternate hours to ensure one is always available on-site to support the 24/365 responsibilities and staff of the BPD. During down time, a technician could possibly create training modules, perform preventative maintenance on vehicle and station technology not in use, and generally troubleshoot less urgent issues before they become time-consuming crises.

Although security is very important, the study team recommends exploring different methods to permit access to software. End users stated that they maintain on average ten to twenty passwords for various programs. Some write down the passwords, which is not advisable. The study team recommends the following to limit risk while improving access to resources:

- A password management software, purchased through enterprise licensing, could provide a more streamlined way for employees to manage their multiple passwords and avoid repeated passwords for different systems, which is highly risky. Such software usually limits the number of passwords a user needs to memorize to two (main password management password and password to log into computer).

Enterprise password management software can provide BPD with the means to manage access to the system, and a way to share passwords without divulging the actual password.

- Virtualization could be used to permit access to browsers in a controlled environment. These solutions allow virtual access to the software/operating system via the production computer, such as a standard desktop, without risking that hardware. Special environments and connections can be set up to allow investigators and others to access sites that may contain malicious programs or other risks. These virtual systems can be utilized and the activity can be tracked and monitored to avoid needing IT personnel to remove barriers.

7.1.15 Training

Technology is changing at a quick pace. Hardware and software updates require training. Without it, many of the systems utilized by the BPD may not be fully utilized. In policing, where the focus is on 24/7 public safety, there is little time for technology training. The study team recommends a more user-friendly system of training utilizing short on-demand video modules that allow viewers to pause and rewatch certain parts if not immediately understood. A library of videos could be made available that allow those in the field or at home to access them when time permits. Short videos could be produced in-house using tablets or smartphones equipped with high-quality cameras to reduce costs and address those activities which require more training. A cloud-based subscription service such as Microsoft Office 365 could take the place of a more expensive learning management system as well, since its platform can support the storage, management, and sharing of the training videos. The tools available from such a service would be more accessible as well, allowing individuals with Wi-Fi and a mobile device to more conveniently create and view videos remotely.

7.1.16 Social Media

BPD's current social media presence may benefit from real-time reporting and notification without the two-way communication provided by platforms such as Twitter. The trending public expectation is speed and reliability. Residents appreciate receiving information quickly and from a trusted source. Traditional two-way social media platforms are also problematic because the account holder (BPD) must constantly monitor public communication for profane or offensive comments. Push notifications via the Bartlett Connect app might be a worthwhile avenue to explore to report traffic backups, weather alerts, crime-related emergencies, and other urgent communications. BPD may also want its designated social media representatives to be working with the Village's Community Relations Coordinator to ensure optimal crisis management.

7.2 The Future of Police Technology

As technology evolves, police departments must stay up to date about new advances and capabilities. They must weigh the positive impact technology has on

officer safety and the protection of the public against concerns about privacy issues and the associated costs.

Technology can help police perform tasks more effectively (completely, better) as well as more efficiently (usually quicker, and for less money). Much of the technology law enforcement will utilize in the near future will be both effective and efficient and will improve the work of patrol officers and detectives, but there will be a corresponding increase in the need for support. All technology, especially newly emerging technology, requires well-trained IT professionals to help procure, implement, repair, maintain, and, finally, train the end users. One of the big hidden costs of technology will be the salary and benefits of full-time employees (or contractors) that make the technology work.

7.2.1 Facial Recognition Software

Already in use by many people to unlock their smartphones, facial recognition software is proving to be an evolving investigative tool. Basically, the computer captures and analyzes the geometry of a person's face. Key points may include the distance between the eyes and/or the distance from the forehead to the chin. This application will continue to be considered for a variety of settings related to law enforcement.

7.2.2 Other Biometrics

Police around the world have been using fingerprints since 1894 to identify suspects. Now, in addition to fingerprints, scientific advances in DNA technology, facial recognition software, and a variety of other biometrics are being utilized by law enforcement, including hand, voice, and iris recognition software.

7.2.3 Smartwatches

When paired with a smartphone over Bluetooth, smartwatches can monitor an officer's vital signs and make that data available to the 911 dispatch center and/or supervisor. This could be critical in an emergency, such as when an officer's pulse rate suddenly spikes due to a foot pursuit, physical attack, or stressful situation. Smartwatches are also practical communication devices. A dispatcher can send a simple question like "Status?" and the officer can acknowledge "Okay" with the push of a button on the watch. Such communication is brief, quick, and discreet.

7.2.4 The Internet of Things

The Internet of Things (IoT) is the system of interconnected devices like body-worn cameras (BWCs), surveillance camera feeds, camera-equipped drones, GPS, radios, cell phones, smart watches, and field report writing software.

We already see this network when a Computer Aided Dispatch (CAD) system such as those offered by Hexagon and Motorola integrates and synchronizes police radios, overlays body-worn camera footage with police radio traffic, and then a case number is generated and displayed in the corner of the video.

In the near future, BWCs will be connected to the internet via a live feed over the 5G cell network. The cameras could capture video and audio and then compare biometrics in real-time. The officer would get a notification that the system believes the officer is talking to 17-year-old Mary Smith, based on her face and voice, and if Mary Smith is a reported runaway or trafficked person, the system would notify the officer of those facts as well.

The smartphone is a tool we already have that is likely to be increasingly relied upon by the police. With the introduction of law-enforcement-specific apps, as well as built-in cameras, GPS capabilities, and a longer battery life, these hand-held computers can allow a supervisor to monitor an officer's BWC in real-time. After all, we already use Apple Facetime and Zoom meetings.

7.2.5 Vehicle Voice Technology

A police squad vehicle is in many ways a patrol officer's office. Operating the radios and typing on the computers while driving is both difficult and dangerous. Voice command technology (similar to Siri or Alexa) that can handle commands to run a license plate or turn on the lights and siren are already in the operational stages. We already dial our cell phones or send text messages while driving using this technology.

7.2.6 Robots

Many law enforcement agencies are now using next-generation robotic cameras in their bomb squads to investigate suspicious packages. Those same robots can also be used for a wider variety of dangerous tasks, including clearing a building after a burglar alarm sounds or delivering a telephone to a hostage taker. These robots are useful in situations where it is dangerous for human officers to go, such as areas suspected of being contaminated with anthrax or a harmful virus.

7.2.7 Drones

Unmanned aerial vehicles (UAVs), also known as drones, are regularly being used by police departments throughout the country to search for missing children, autistic individuals, and patients with Alzheimer's. They can be used for the monitoring of traffic conditions, vehicle accident reconstruction, crime scene documentation, and flying over SWAT teams that are executing search warrants. The smaller drones with cameras and microphones can actually fly inside of buildings. This would be useful during an active shooter threat in a church, school, mall, or office building. The larger drones are often equipped with thermal imaging cameras. They are easy to fly and are almost foolproof, as they return to their launching point and land if they experience any technical problems. The two main issues with drones are battery size and life (duration) along with privacy concerns.

7.2.8 Cyber Crimes

As technology advances in law enforcement, it follows the rest of the world. Criminals use technology and computers to commit more crimes every year. Everything from bank fraud and child pornography to illegal surveillance (spying) and drug dealing can involve social media, cell phones, and computers. When

criminals use those devices and programs, the police need officers who are specially trained in how to discover and document to make provable cases for court. Even the simplest assault case often involves text messages sent between the victim and offender, social media postings, and photographs (usually taken and forwarded from a phone). Obtaining the actual phones and securing warrants to download the data to investigate the crime takes time and specialized expertise. This is a phenomenon that is certain to increase in volume and complexity. The Bartlett Police Department should continue to identify and train select officers to collect, preserve, and analyze computer hardware and software that is involved in crimes.

Please see the Bartlett Police Department section of the enclosed Tier-Based Reference (Appendix A, Pages 56-61) for a full listing of near, mid, and long-term technology recommendations and utilization action items organized by the three tiers mentioned on Pages 7-8.

8.0 Village Online Presence

The study team's findings show a significant investment in systems to provide the public with the ability to more conveniently conduct business with the Village. This is an excellent foundation to build on as electronic and mobile government systems mature. The next step in maturation would be exploring options for a standard user identity management system which can be self-managed by the individual user to access a number of portals and services. Currently available options to consider include:

- Issuing a Request for Information to determine which proprietary identity management systems are available and their interoperability with the systems the Village currently uses.
- Evaluating the use of existing social media systems to act as identity management systems. This is a less expensive option as it would entail looking into systems that can use social media platforms for the purpose of account creation/management. However, this option comes with the pitfall that social media is a preference which can change rather abruptly. Not everyone uses the same system, and not all platforms provide identity management services.

The hope is that as these government-focused systems improve, the steps to make them secure and easy to use will continue as part of the development. The following web addresses and connection avenues include the platforms the public and community can use to connect with the Village online:

- Village website: https://www.bartlettil.gov/
- Bartlett Hills Golf Club website: https://www.bartletthills.com/
- Village app: Bartlett Connect (available at Apple Store and Google Play; powered by GOGovApps, Inc)

- Village Code: https://codelibrary.amlegal.com/codes/bartlettil/latest/overview
- Freedom of Information Act (FOIA) Portal: https://mygovhelp.info/BARTLETTIL/_rs/(S(qlc1d0vmdmbgymkdclvdgjxk))/supporthome.aspx
- Metra parking space payment portal: https://bartlettpermits.rmcpay.com/#account_start
- Ordinance ticket payment portal: https://magic.collectorsolutions.com/magic-ui/Login/village-of-bartlett

Social Media:

- Facebook: Village of Bartlett; Bartlett Hills Golf Club; Bartlett Hills Golf Club Weddings; Bartlett Economic Development; Village of Bartlett Museums
- Twitter: Village of Bartlett; Bartlett Police Department; Bartlett Public Works; Bartlett Hills Golf Club; Village of Bartlett Museums

9.0 Conclusion

The Board, Administrator, IT staff, and Village Departments are commended for undertaking this review of the strategic use of technology, now and in the future, for the organization. Some organizations wait for the future and others seek to shape it. The same old way of doing things when it comes to using and adapting to technology can lead to missed opportunities for change and improvement. Time and circumstances change as does technology. By being prepared for the challenges of today and opportunities of tomorrow, the Village can strengthen its operational and administrative mission to serve the community.

The study team encourages the Village to adopt a culture that embraces adaptation, learning, and continual improvement. This kind of effort will benefit from visionary leadership and the embrace of the organization's members. It has been a pleasure to be of service to the Village. It is the hope of the Center for Governmental Studies (CGS) that the Village of Bartlett finds this strategic technology utilization plan to be of value. CGS is thankful to everyone who participated in the study process. The cooperation and courtesies extended during our site visits, interviews, and research were very much appreciated.

Appendix A | Tier-Based Reference

Unit		Tasks	Actions and Resources	Potential Impacts
Administration Department	Tier 1	1a. Improved Laserfiche search function	Modify existing software and/or provide user training	Increased productivity, workflow, and efficiency; improved user experience; legal
		1b. Regular notification from IT personnel re: known issues with connectivity, hardware (inc. phones, servers), and software (offline/outages)	Use existing software (MS Teams, MS Outlook) or acquire cloud-based collaboration suite (ex: MS Office 365, MS OneDrive); provide user training if necessary	Increased efficiency; improved communication and transparency; improved user experience; legal
		1c. Publishing/design software	Acquire software to create flyers, newsletters, etc. (ex: Adobe InDesign); provide user training	Improved communication; increased productivity; improved resident and user experience
		1d. Image manipulation software for Museums	Acquire software (ex: Adobe Photoshop); provide user training	Improved communication, productivity, and user experience
	Tier 2	2a. Improved technology in all conference rooms	Acquire projection systems or large display screens; improve connectivity inc. VPN; enable wireless connection with range of devices; compatibility with screensharing, network access, and conference phones; acquire adaptors; provide user training	Improved communication; increased efficiency and productivity; reduced paper (handouts); improved user experience
		2b. Improved communication with Village via opt-in app	Explore push notifications via Bartlett Connect or similar app vs. social media platform (Facebook, Twitter); provide user training	Improved resident experience; increased communication and transparency; alternative to external platforms in emergency

KEY: ☐ **Tier 1: Quick wins (short-term)** ☐ **Tier 2: Intermediate activities (mid-term)** ☐ **Tier 3: Horizon projects (long-term)**

Unit		Tasks	Actions and Resources	Potential Impacts
Administration Department	Tier 2	2c. Improved personnel/HR workflow system inc. digitization of payroll entry and all employee files (scanning, storage) and real-time availability (track and view time off)	Utilize current software (Munis) or acquire new; digital applicant tracking and performance evaluation similar to BPD system; digital payroll entry, onboarding, training modules, personnel files; secure storage (cloud-based archive or external drive backup); provide user training	Increased efficiency, productivity, and communication; improved workflows and user experience; reduced paperwork; legal (FOIA requests must be submitted even when employee is out of office)
		2d. Tablets and/or smartphones, esp. for Depot and Bartlett Hills Golf Course	Acquire new devices inc. rugged cases for use in field; provide user training; add golf course to maintenance and replacement schedules	Improved workflow, user experience, and productivity; increased compatibility; improved communication esp. remotely; reduced paperwork and transit
		2e. File storage for Museums	Acquire remote-hosted, cloud-based software (ex: MS OneDrive); provide user training esp. for remote datacenter access	Improved flexibility (can expand without intervention of IT personnel); increased productivity, security, and remote access; improved user experience
		2f. Laptops for remote work	Acquire laptops for staff who must communicate remotely with the community in the event of a crisis	Improved workflow, productivity, and communication; legal
		2g. Improved remote phone access inc. ability to transfer calls when forwarding vs. providing direct numbers	Modify existing hardware and software or acquire new; acquire Village-issued smartphones vs. personal cell numbers visible to outsiders; provide user training	Improved remote communication and security; improved user experience; increased productivity; legal

KEY: ☐ **Tier 1: Quick wins (short-term)** ☐ **Tier 2: Intermediate activities (mid-term)** ☐ **Tier 3: Horizon projects (long-term)**

Unit		Tasks	Actions and Resources	Potential Impacts
Administration Department	Tier 2	2h. Improved ID card system	Modify existing hardware (printer) and software (Assure ID) or acquire new; accessible by more than one staff member; provide user training	Improved workflow; increased productivity and efficiency; improved user and employee experience; increased security
		2i. Larger monitors	Acquire larger monitors	Improved efficiency and accuracy; improved user experience
		2j. Improved connectivity (Wi-Fi) across all units	Acquire or modify devices and software (local and/or virtual servers, routers) to expand coverage and provide less device attachment per access point	Increased productivity and efficiency; improved user experience; increased flexibility to improve communication
		2k. Improved remote connectivity across all units	Ensure appropriate VPN settings by meeting with users; acquire cloud-based remote subscriptions to establish remote accessibility for existing systems	Improved efficiency; improved remote communication and remote workflows; improved user experience
	Tier 3	3a. Improved collaboration across all units (inc. ability to classify data and send/receive secure emails with large file attachments)	Explore cloud-based collaboration suites with data classification systems (ex: MS Office 365, MS OneDrive); provide user training	Improved communication and workflows; increased efficiency, productivity, transparency, and innovation; improved user experience
		3b. Training, especially re: new software	Provide user training, especially prior to rolling out new software and after; obtain feedback to assess effectiveness and frequency	Improved user experience re: Munis, GovQA, etc.; increased productivity and efficiency

KEY: ☐ **Tier 1: Quick wins (short-term)** ☐ **Tier 2: Intermediate activities (mid-term)** ☐ **Tier 3: Horizon projects (long-term)**

Unit		Tasks	Actions and Resources	Potential Impacts
Administration Department		3c. Service delivery digital workflow system, inc. event, license, and permit applications available via Village website	Explore software options and service contracts; compatibility with devices such as tablets and smartphones; ability to include attachments with applications; acquire additional devices for remote access in field; improve connectivity; provide user training	Increased efficiency, productivity, and communication; improved workflows and user experience; improved resident and business experiences
		3d. Dashboard system to view activities, performance indicators, and trend data in real-time and cyclically	Explore dashboard software with range of applications inc. status of code enforcement, inspections, licenses, and permits; improve connectivity; provide user training	Increased efficiency, productivity, and communication; improved workflows and user experience; improved resident experience; reduced redundancy; legal
		3e. Improved data classification and utilization with input from all units	Acquire cloud-based system (MS Office 365, MS OneDrive) to create secure areas; integrate with Laserfiche; provide user training	Increased organization, efficiency, productivity, and security; improved user experience; legal
Unit		Tasks	Actions and Resources	Potential Impacts
Bartlett Hills Golf	Tier 1	1a. Greenskeeper AP upgrade	Explore contract/software options; provide user training	Improved greenskeeping; increased productivity; improved workflow
		1b. GolfNow upgrade to G1 version (inc. POS)	Investigate contract upgrade and related software/hardware; ensure integration with current systems; acquire mobile devices for POS access on course; provide user training	Increased efficiency, productivity, and workflows; increased revenues; improved user and patron experience

KEY: ☐ **Tier 1: Quick wins (short-term)** ☐ **Tier 2: Intermediate activities (mid-term)** ☐ **Tier 3: Horizon projects (long-term)**

Unit		Tasks	Actions and Resources	Potential Impacts
Bartlett Hills Golf	Tier 2	2a. Connectivity upgrade (GPS and Wi-Fi for entire venue, inc. greens, maintenance building, & kitchen basement)	Acquire or modify devices and software (local and/or virtual servers, routers) to expand coverage and provide less device attachment per access point; explore options for access on greens to allow POS orders	Increased productivity and efficiency; improved user and patron experience; reduced workload; increased revenues; legal
		2b. Digital procurement system	Explore QR/bar code options for inventory control; acquire software and/or devices (cellular-enabled tablets/smartphones); provide user training	Increased efficiency, transparency, and accuracy; improved tracking and workflows; improved user experience; legal
		2c. Digital time-keeping system	Utilize Munis (currently only used for course personnel) or acquire new; provide user training	Increased efficiency, transparency, and accuracy; improved user experience; legal
		2d. Digital asset management	Explore hardware/software options; integration with current systems; provide user training	Increased efficiency and workflow; improved asset management; improved user experience; legal
	Tier 3	3a. Dashboard to manage course performance	Acquire and install devices and related software and/or service; create maintenance schedule	Increased efficiency, productivity, and workflows; improved tracking and management; increased revenues
		3b. Autonomous mowers	Explore hardware/software and service options; integration with current systems; maintenance schedule; provide user training	Increased efficiency, productivity, and workflows; reduced workload; improved user experience

KEY: ☐ **Tier 1: Quick wins (short-term)** ☐ **Tier 2: Intermediate activities (mid-term)** ☐ **Tier 3: Horizon projects (long-term)**

Unit		Tasks	Actions and Resources	Potential Impacts
Bartlett Hills Golf	Tier 3	3c. Sensor-based irrigation system	Explore hardware/software and service options; integration with current systems; maintenance schedule; provide user training	Increased efficiency, productivity, and workflows; reduced workload; improved user experience; reduced water waste
		3d. GPS-enabled golf carts	Explore hardware and software to equip 76 carts; create schedule for maintenance and updates; improve connectivity; provide user training	Improved event scoring; reduced play times; improved user and patron experience; increased revenues; improved data tracking inc. locations of carts on course
Unit		Tasks	Actions and Resources	Potential Impacts
Planning and Development Services	Tier 1	1a. Increased email file size capacity (disk usage limits prevent internal and external sharing esp. re: necessary high-quality photographs for court purposes)	Explore cloud-based collaboration suites with data classification systems (ex: MS Office 365, MS OneDrive); provide user training	Increased productivity and efficiency; improved workflows; improved user experience; reduced dependency on external services; increased security; reduced transport of paperwork; legal
		1b. Improved connectivity (Wi-Fi)	Acquire or modify devices and software (local and/or virtual servers, routers) to expand coverage and provide less device attachment per access point	Increased productivity and efficiency; improved user experience; increased flexibility to improve communication
		1c. Training on new software (not after "working bugs out") and functionality improvements	Provide user training prior to rolling out new software and after; obtain feedback from staff to assess effectiveness and improve software functionality	Improved user experience re: P&D permits, Munis, GovQA, OpenGov, etc.; increased efficiency, productivity, and workflows

KEY: ☐ **Tier 1: Quick wins (short-term)** ☐ **Tier 2: Intermediate activities (mid-term)** ☐ **Tier 3: Horizon projects (long-term)**

Unit		Tasks	Actions and Resources	Potential Impacts
Planning and Development Services	Tier 2	2a. Smartphones or tablets, especially for Health/Code Enforcement	Acquire mobile devices with rugged cases to enable remote access to email, data, and large high-quality photographs from residents; provide user training	Increased productivity and efficiency; improved workflows; improved user experience; legal
		2b. Talk-to-text capability for inspection-related data entry	Acquire software (ex: Cortana); acquire devices if current ones not compatible; provide user training	Improved efficiency and workflow; improved user experience; reduced redundancy
		2c. GIS-based master address source	Use existing software; storage backup; provide user training	Increased accuracy; improved workflow and efficiency; legal
		2d. Streamlined inspection process	Utilize OpenGov to autogenerate violation notices from real-time inspection data entry vs. door hangers and letters to residences	Improved efficiency and workflow; improved user experience; reduced redundancy; legal
		2e. Digital plan review software, esp. for large projects	Acquire software (ex: Bluebeam); provide user training	Improved efficiency and workflow; improved user experience
		2f. Digital development application process	Utilize OpenGov to create digital workflow; improve connectivity to enable running reports in OpenGov without issues	Increased efficiency; improved user experience; improved workflow
	Tier 3	3a. Plan production software (vs. GIS to produce plans)	Investigate new software (ex: Microstation) and explore options re: outsourcing vs. in-house projects prior to acquisition; provide user training	Increased efficiency and productivity; improved user experience; improved workflow

KEY: ☐ **Tier 1: Quick wins (short-term)** ☐ **Tier 2: Intermediate activities (mid-term)** ☐ **Tier 3: Horizon projects (long-term)**

Unit		Tasks	Actions and Resources	Potential Impacts
Planning and Development Services	Tier 3	3b. GPS device upgrade	Utilize existing software or acquire new device to permit shooting elevations in feet vs. conversion to feet post-shoot	Increased efficiency and productivity; improved user experience; improved workflow
		3c. Additional AutoCAD Lite license(s)	Acquire additional software license(s) to make available on more than one desktop	Increased efficiency and productivity; improved user experience; improved workflow
		3d. Enhancement and continuous expansion of service delivery and internal workflow systems including processes via Village website and OpenGov to reduce paper transactions and records	Explore software and service contract options; compatibility with devices (smartphones, tablets); ability for businesses and residents to include attachments with online submissions; acquire additional devices for remote access in field; provide user training; improve connectivity	Increased efficiency, productivity, and communication; improved workflows and user experience; improved resident and business experiences
Unit		Tasks	Actions and Resources	Potential Impacts
Public Works Department	Tier 1	1a. GORequest integration with GIS to tackle compatibility requirements and options	Modify existing software to allow shared data; provide user training	Increased productivity and efficiency; improved workflow; reduced redundancy
		1b. Webcams for all desktops	Acquire hardware and software; provide user training	Improved communication and productivity, esp. remotely
		1c. Improved technology in conference rooms	Acquire large display screens or projection systems for each room; enable wireless connection with range of devices	Improved communication; reduced paper (handouts)

KEY: ☐ **Tier 1: Quick wins (short-term)** ☐ **Tier 2: Intermediate activities (mid-term)** ☐ **Tier 3: Horizon projects (long-term)**

Unit		Tasks	Actions and Resources	Potential Impacts
Public Works Department	Tier 2	2a. Smartphones and/or cellular-enabled tablets with ability to utilize GIS data	Acquire devices inc. rugged cases for daily in-field use; acquire software/apps that allow users to view work orders and assignments	Improved efficiency, productivity, workflows, and communication; improved user and customer experience; reduced paperwork
		2b. Streamlined inspection process	Utilize current software or acquire new; access to daily inspections when n/a on tablet; access to exact code/ordinance during data entry (ICC); provide user training	Increased efficiency, productivity, and communication; improved workflow; increased accuracy; improved user experience
		2c. Digital timesheet entry (currently handwritten, then entered in Munis and submitted to Finance)	Utilize existing software such as Munis or acquire new; enable in-field submission via device vs. desktop; provide user training	Improved efficiency and accuracy; improved user experience; reduced paperwork and redundancy; legal
		2d. More technology training inc. MS Office	Create repository of short videos and quick tips to permit remote access from field or home	Improved efficiency and adaptation to new technology; improved user experience
	Tier 3	3a. Improved GPS/GIS technology	Modify current database and/or software and/or contract to inc. access to elevation/topographical information; provide user training	Improved efficiency and workflow; improved user experience; increased productivity (currently a slow, expensive process)
		3b. Improved digital workflows esp. for service calls (orders in real-time)	Utilize existing software or acquire new; mobile device compatibility; real-time data entry; user training	Improved efficiency, productivity, and communication; improved user experience; reduced paperwork
		3c. Digital asset management (inc. tracking and maintenance via GIS)	Utilize existing software or acquire new; provide user training	Improved efficiency, productivity, and communication; improved user experience; reduced redundancy

KEY: ☐ **Tier 1: Quick wins (short-term)** ☐ **Tier 2: Intermediate activities (mid-term)** ☐ **Tier 3: Horizon projects (long-term)**

Unit		Tasks	Actions and Resources	Potential Impacts
Finance Department	Tier 1	1a. Continuous enhancement and improvement of connectivity and access to and availability of Wi-Fi	Acquire or modify devices and software (local and/or virtual servers, routers) to expand coverage and provide less device attachment per access point	Increased productivity and efficiency; improved user experience; increased flexibility to improve communication
		1b. Continuous enhancement and improvement of remote connectivity, security, and functionality	Ensure appropriate VPN settings by meeting with users; acquire cloud-based remote subscriptions to establish remote accessibility for existing systems; provide training	Improved efficiency; improved remote communication and remote workflows; improved user experience
		1c. Continuous improvement of collaboration tools (inc. data sharing and ability to send/receive secure emails with large file attachments)	Explore cloud-based collaboration functions offered by MS Office 365; integrate with Laserfiche; provide user training, esp. re: virtual meetings and data usage	Improved communication and workflows; increased efficiency, productivity, transparency, and innovation; improved user experience
		1d. Training, tech support, and improved functionality re: Munis and OpenGov	Enable more software features to be used; obtain user feedback; provide user training and support	Increased efficiency, productivity, and communication; improved workflows and user experience
	Tier 2	2a. Digital licensing process	Acquire software or use existing programs to process licenses for businesses and contractors; provide user training	Improved efficiency and workflow; less paperwork; improved reconciliation; legal
		2b. Dedicated payroll printer	Acquire printer suited for large-batch check printing	Improved efficiency; backup option when other shared printers in use
		2c. Larger monitors	Acquire larger monitors	Improved efficiency and accuracy; improved user experience

KEY: ☐ **Tier 1: Quick wins (short-term)** ☐ **Tier 2: Intermediate activities (mid-term)** ☐ **Tier 3: Horizon projects (long-term)**

Unit		Tasks	Actions and Resources	Potential Impacts
Finance Department	Tier 2	2d. Strategic technology procurement by IT personnel	Establish technology requirements and success metrics; provide training re: system if necessary	Improved communication esp. with vendors; increased productivity; improved user experience
		2e. Desktop scanners/printers	Acquire all-in-one scanner/printer devices for each desktop user	Improved efficiency and workflow
	Tier 3	3a. Continuous utilization of GIS and related applications Village-wide	Provide training re: GIS; determine areas where GIS can be better utilized for existing processes	Improved communication between departments; improved workflows
		3b. Vendor e-payments (currently paper checks)	Acquire software or modify Munis to enable digital vendor payments; provide user training	Improved efficiency and workflow; less paperwork; improved reconciliation; legal
		3c. Village-wide payment system within OpenGov	Integrate payment sources where possible with OpenGov; training	Reduced redundancy; improved reconciliation; increased efficiency
		3d. Continuous improvement of payroll system inc. storage of all documents by period	Enhance direct deposit functions where possible; utilize cloud-based and/or external drive storage backup; user training	Increased efficiency and security; improved user experience; legal
		3e. Streamlined invoice review process	Modify existing software or acquire new; provide user training	Improved workflow and user experience; increased efficiency
		3f. Streamlined budget review process	Modify existing software to enable data entry across multiple spreadsheets (integration)	Reduced redundancy; improved efficiency and workflow
		3g. Digital water meter reading (currently monthly drive-by)	Explore antenna-based systems; acquire and install devices and software; provide user training	Increased efficiency; improved user experience; reduced transit and workload; improved workflow

KEY: ☐ **Tier 1: Quick wins (short-term)** ☐ **Tier 2: Intermediate activities (mid-term)** ☐ **Tier 3: Horizon projects (long-term)**

Unit		Tasks	Actions and Resources	Potential Impacts
Bartlett Police Department	Tier 1	1a. After-hours IT support	Modify current help desk ticket system (email, text, call) or acquire digital workflow software; amend IT support contract and/or amend support schedule	Increased productivity and efficiency; improved workflow; shorter resolution window; prevention vs reaction; legal
		1b. Continuous improvement of connectivity (Wi-Fi/GPS) to support real-time disaster info, EOC (emergency ops ctr) communications, etc.	Acquire or modify devices and software (local and/or virtual servers, routers) to expand coverage and provide less device attachment per access point	Increased productivity and efficiency; improved user experience; increased flexibility to improve communication; legal
		1c. Enhanced collaboration and improved data classification/utilization with input from users	Utilize current software or acquire new cloud-based system (MS Office 365) to create secure areas (public, exempt, protected); provide user training	Increased confidentiality and security; improved user experience; legal
		1d. Enhancement and/or establishment of secure research capabilities via robust virtual systems (including in-vehicle and station access)	Acquire or modify software to create virtual systems with secured areas for Investigations and others to conduct research (vs. use of production desktops and laptops); provide training	Increased productivity and efficiency; increased crime prevention and solving; reduced IT support workload (currently must intervene to grant permission to access sites behind firewall); legal
		1e. Increased email file size capacity (disk usage limits) inc. inbound mail (sharing via limited-access internal drives)	Acquire hardware and software (local and/or virtual servers, file compression, etc.); increase cyber security; provide user training	Increased productivity and efficiency; improved workflows; improved user experience; reduced dependency on external services; increased security; reduced transport of paperwork; legal

KEY: ☐ **Tier 1: Quick wins (short-term)** ☐ **Tier 2: Intermediate activities (mid-term)** ☐ **Tier 3: Horizon projects (long-term)**

Unit		Tasks	Actions and Resources	Potential Impacts
Bartlett Police Department	Tier 1	1f. Increased printer access	Modify devices and software or acquire new; consider dedicated server(s); investigate system using access cards; provide user training	Increased productivity and efficiency; improved user experience; reduced workload
		1g. Wireless phone headsets for front desk reception	Acquire devices compatible with existing telephone system and/or Bluetooth; provide user training	Increased efficiency, productivity, and communication; improved user experience and workflow
		1h. Webcams for all desktops	Acquire hardware and software; provide user training	Improved productivity (officers currently purchasing webcams or using ones from home)
		1i. Digital jail tracking system	Modify existing software or acquire new (currently punch clock to track meals and cell checks); provide user training	Increased efficiency; reduced paperwork; legal
		1j. Password maintenance app	Acquire software with sufficient security; provide user training	Increased productivity; improved user experience; increased security; legal
		1k. Digital crossing guard schedule (currently paper)	Utilize existing software or acquire new; acquire mobile devices (smartphone/tablet) if necessary; provide user training	Increased efficiency and communication; improved workflow; reduced paperwork
	Tier 2	2a. Wi-Fi-compatible portable radios	Acquire devices or update current OS; enable updates pushed via program; provide user training inc. updates (currently manual process by IT personnel)	Improved user experience; reduced IT support workload; cyber security

KEY: ☐ **Tier 1: Quick wins (short-term)** ☐ **Tier 2: Intermediate activities (mid-term)** ☐ **Tier 3: Horizon projects (long-term)**

Unit		Tasks	Actions and Resources	Potential Impacts
Bartlett Police Department	Tier 2	2b. Smartphones and tablets (Village-issued vs. personal)	Acquire cellular-enabled devices inc. rugged cases for in-field use; improve connectivity (Wi-Fi, GPS) and VPN capability to access drives; increase security if necessary; provide user training; create maintenance schedule	Improved productivity, efficiency, and communication; improved user experience and workflows; reduced redundancy; legal
		2c. Improved system for field report entry, approval, and storage (to resolve multiple issues reported with Image Net, Livescan, RMS, esp. re: communication between these programs and lack of tech support after hours and on weekends)	Utilize existing software or acquire new (station desktops and in-vehicle computers) inc. 24/7 tech support; acquire mobile devices (tablets with rugged cases, wireless keyboards in vehicles); integration of current programs with each other and with LEADS, DuPage County, and related data systems; compatibility with talk-to-text software; provide user training (software and devices)	Increased productivity and efficiency; improved user experience and workflows; improved accuracy; reduced redundancy; legal
		2d. In-vehicle communication portals with talk-to-text software compatibility	Upgrade or acquire hardware and software (mics, speakers); user training; maintenance schedule	Improved communication; increased productivity; legal
		2e. Alarms for evidence storage	Acquire and install devices (water leaks, power failures, temperature fluctuations); integrate with existing software or acquire new; create maintenance schedule; provide user training	Improved notification to multiple units; improved workflow; increased evidence preservation; legal

KEY: ☐ **Tier 1: Quick wins (short-term)** ☐ **Tier 2: Intermediate activities (mid-term)** ☐ **Tier 3: Horizon projects (long-term)**

Unit		Tasks	Actions and Resources	Potential Impacts
Bartlett Police Department	Tier 2	2f. Digital storage and redundancy	Utilize existing software or acquire cloud-based service or external drive library; create long-term archive system for videos from dash cams and future BWCs and/or Tasers; acquire cyber security software; provide user training	Improved productivity; improved workflow and access; improved preservation; legal
		2g. Body-worn cameras (BWCs)	Investigate device rental vs. purchase (installment plan); acquire software and/or service; maintenance schedule; provide user training; archive videos	Increased evidentiary documentation and security; improved user experience; improved accuracy; meets 2025 state BWC requirement; legal
		2h. Livestream 911/988 calls	Investigate DU-COMM contract upgrade and/or service such as Live911; integrate with radio system; improve connectivity (Wi-Fi, GPS); provide user training	Increased efficiency and accuracy; improved access to redirected 988 calls in 2022; legal
		2i. In-vehicle citation printing capability for three counties	Explore options for multi-county e-ticket system (ex: eCitation) with participation of all parties	Increased efficiency; improved communication and workflow; increased productivity; legal
		2j. Social media app with push notifications (no need to monitor comments)	Acquire service for resident communication or utilize existing Bartlett Connect mobile app and/or Village website; ensure Village Communication Relations coordinator is receiving BPD social media communications	Improved communication; decreased workload; legal

KEY: ☐ **Tier 1: Quick wins (short-term)** ☐ **Tier 2: Intermediate activities (mid-term)** ☐ **Tier 3: Horizon projects (long-term)**

Unit		Tasks	Actions and Resources	Potential Impacts
Bartlett Police Department	Tier 2	2k. Fingerprinting service for in-field scanning vs. transport of suspects to station	Explore security-compliant livescan fingerprinting service and software/hardware (ex: iTouch Biometrics approved by ISP B of I)	Improved user experience and workflow re: suspects without IDs; increased efficiency; legal
		2l. Digital vehicle tracking	Acquire devices (smartphone or tablet app re: track towing and repossession); utilize existing software or acquire app; integrate with database utilized to report stolen vehicles; provide resident access; provide user training	Improved productivity, efficiency, and communication; improved workflow; reduced paperwork; legal
		2m. Continuous management and sharing of up-to-date emergency contact data inc. OpenGov and other databases (keyholders, local businesses, at-risk individuals, etc.)	Utilize existing software or acquire new; integrate with Bartlett Connect and services re: alarm and first response; enable push notification for scheduled updates; provide user training	Increased communication; increased productivity and efficiency; reduced workload; legal
	Tier 3	3a. Improved technology in conference room and training room	Acquire large display screens or projection systems; acquire additional laptop; adaptors and wireless connection for range of devices; provide user training	Improved communication and user experience; increased efficiency and productivity; reduced paperwork (handouts)
		3b. Taser cameras	Investigate device upgrade and/or contract amendment; acquire software if necessary; provide user training; create maintenance schedule; archive videos digitally	Increased evidentiary documentation and security; improved user experience; legal

KEY: ☐ **Tier 1: Quick wins (short-term)** ☐ **Tier 2: Intermediate activities (mid-term)** ☐ **Tier 3: Horizon projects (long-term)**

Unit		Tasks	Actions and Resources	Potential Impacts
Bartlett Police Department	Tier 3	3c. Portable radios for Records staff (esp. for jail duty)	Acquire devices compatible with existing system; add Records to existing maintenance/updates schedule; provide user training	Increased safety, security, and efficiency; improved workflow, communication and user experience; legal
		3d. In-vehicle technology maintenance inc. updates	Explore tech support options for achieving fully operational fleet; maintenance schedule based on patrol shifts; provide user training	Increased vehicle usage; improved asset management; increased productivity; improved user experience; legal
		3e. Replacement of current mobile video recorders (MVRs)	Acquire new MVRs for patrol vehicles (ex: Axon); compatibility with BWCs; provide user training; archive videos (drive backup)	Improved video quality; increased evidentiary documentation and security; improved user experience; legal
		3f. In-house training videos (inc. repository with secure remote access)	Acquire hardware and software; provide training re: video production; create schedule	Increased productivity and efficiency; improved access; improved user experience; legal
		3g. License plate readers (LPRs)	Acquire and install devices and related software and/or service; create maintenance schedule	Increased crime prevention and solving; increased data access and security; legal inc. privacy issues

IT Survey Responses - Completed June 23, 2021 by IT Coordinator	NIU Regional Technology Group
(61)	**Social Media Platform (system availability):** Community Relations Coordinator; IT Coordinator
(62)	**Government/Public Access Channel / YouTube Channel:** Community Relations Coordinator; IT Coordinator
(63)	**Phones:** IT Coordinator; Network Administrator
(64)	**Email/Collaboration:** IT Coordinator; Network Administrator
(65)	**Other Value Added Services:** (no reply)

Appendix C | Representative Comparative Data

Source: Data compiled in January 2022 from municipal websites

(1) **Village of Bloomingdale, IL** *FY21/22 Budget* *No fire department; water reclamation facility (WRF)*
- IT is a part of the Administration Department that reports to the Village Administrator
- Staffing Profile: Director of Information Systems (IS), IS Technician
- IT-Related Line Item(s): Purchased Services - $45,830

(2) **Village of Carol Stream, IL** *FY21/22 Budget* *No fire department; contracted water reclamation center*
- IT is a part of Village Administration and reports to the Village Manager
- Staffing Profile: IT Director, IT Network Engineer, Database Developer, IT Technician (2), contracted IT Technician paid by Carol Stream Library
- IT-Related Line Item(s): Contractual Services - $722,354

(3) **Village of Carpentersville, IL** *FY21 Budget* *Fire department; wastewater treatment plant (WWTP)*
- IT is a separate department that reports to the Village Manager
- Staffing Profile: IT Director, Public Safety IT Systems Administrator (reports to IT Director, Police, and Fire), Seasonal Support Technician (part-time)
- IT-Related Line Item(s): Contractual Services - $311,086
- Police Department's Support Services Division includes IT within its Staff Services Bureau

(4) **Village of Elk Grove, IL** *FY22 Budget* *Fire department; no WWTP*
- IT is a part of the Village Manager's Office and reports to the Village Manager
- Staffing Profile: Director, Public Safety Technician, Database Systems Analyst
- IT-Related Line Item(s): Professional Services - $157,500; Service Agreements - $306,100

(5) **City of Elmhurst, IL** *FY21 Budget* *Fire department; WWTP*
- IT is a part of the Finance/Collections Department and reports to the Assistant City Manager
- Staffing Profile: IT Director, IT Supervisor, GIS Specialist, IT Tech II, IT Tech I, IT Tech I (part-time), Systems Analyst (Vacant), Project Manager (Vacant), IT Intern (2 part-time - Vacant)
- IT-Related Line Item(s): Contractual Services - $162,200; Repairs and Maintenance - $280,000

(6) **Village of Glen Ellyn, IL** *FY22 Budget* *Volunteer fire department; no WWTP*

- IT is a part of the Village Manager's Office and reports to the Village Manager
- Staffing Profile: IT Manager, Systems Engineer, PC Technician (0.75)
- IT-Related Line Item(s): Professional Services – Other - $49,100; Computer Equipment/Projects - $65,500

(7) **Village of Hanover Park, IL** *FY22 Budget* *Fire Department; no WWTP*

- IT is a separate department that reports to the Village Manager; IT also within PD's Support Services Division
- Staffing Profile: Director, Public Safety Technician, Database Systems Analyst
- IT-Related Line Item(s): Consulting Services - $77,644; Maintenance Agreements - $450,538

(8) **Village of Hoffman Estates, IL** *FY21 Budget* *Fire Department; no WWTP*

- IT is a separate department that reports to the Village Manager
- Staffing Profile: Information Systems (IS) Director, GIS Specialist, Business Systems Analyst, IS Specialist (2), GIS Administrator, Software Specialist, Senior IS Specialist
- IT-Related Line Item(s): Contractual Services – Operations - $305,050 and Administration - $46,850

(9) **City of Rolling Meadows, IL** *FY22 Budget (proposed)* *Fire department; no WWTP*

- IT is a separate department that reports to the City Manager
- Staffing Profile: IT Coordinator, IT Support (2)
- IT-Related Line Item(s): Contractual Services - $154,850

(10) **City of St. Charles, IL** *FY21/22 Budget* *Fire Department; WWTP (2)*

- IT is a separate department that reports to the City Administrator
- Staffing Profile: IS Director, IT Program Manager, Network Manager, Systems Administrator, PC & Network Specialist, Network Engineer; also Records Management and GIS Divisions

(11) **Village of Streamwood, IL** *FY22 Budget* *Fire department; no WWTP*

- IT is a separate department that reports to the Village Manager
- Staffing Profile: Director, Public Safety Technician, Database Systems Analyst
- IT-Related Line Item(s): Professional Services - $448,851

(12) **City of West Chicago, IL** *FY22 Budget* *No fire department; WWTP*

- IT is not in-house; contracted services
- Staffing Profile: GIS (.50)
- IT-Related Line Item(s): Contractual Services - $273,000; GIS – Overall - $64,100

(13) **City of Wheaton, IL** *FY22 Budget* *Fire department; no WWTP*

- IT is a separate department that reports to the City Manager
- Staffing Profile: IT Director, IT Assistant Director, Senior Systems Analyst, Systems Specialist - Public Safety, Systems Specialist - GIS, Systems Technician (part-time), Systems Data Analyst (2)
- IT-Related Line Item(s): Charges and Services - $479,638