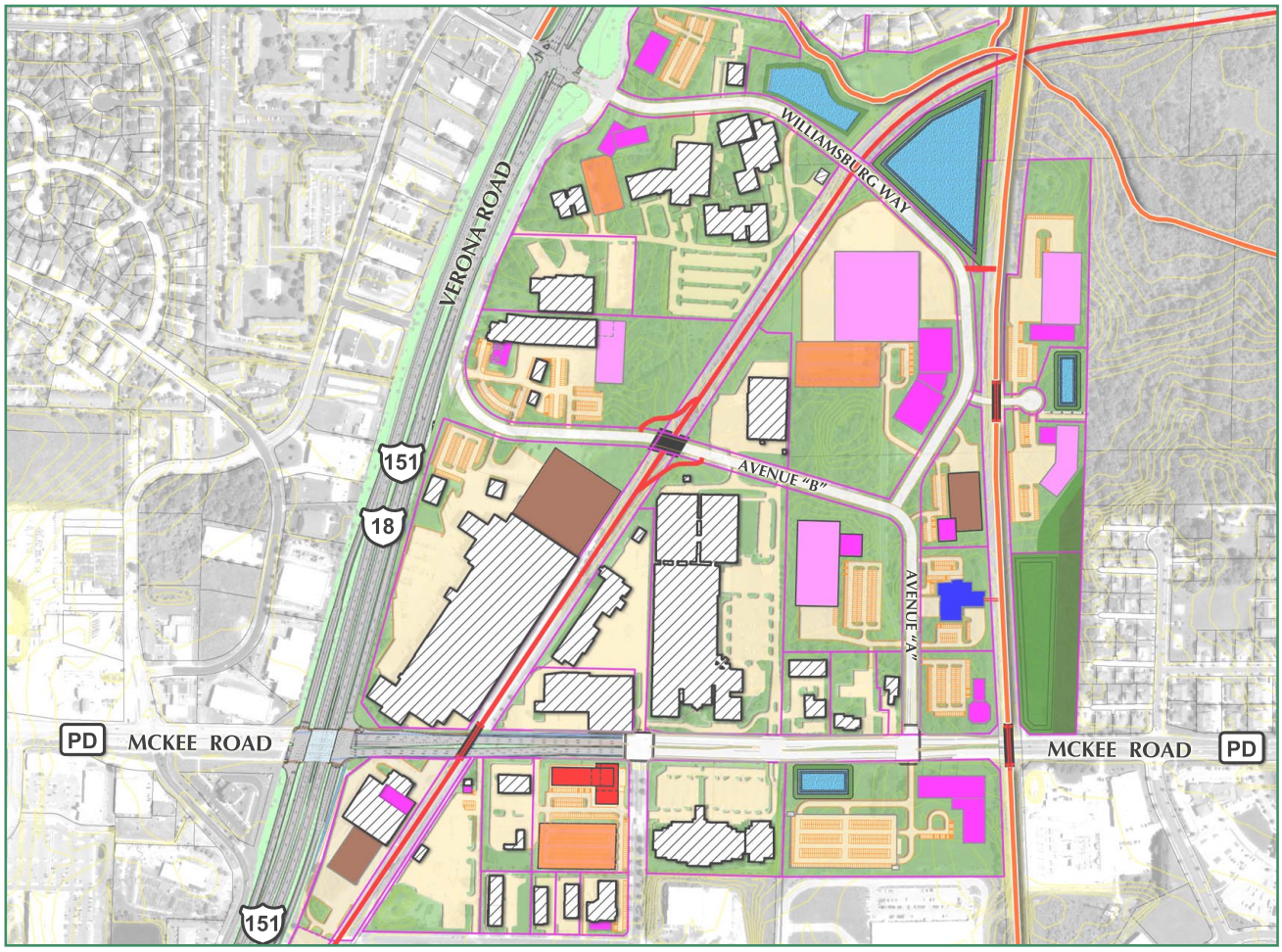
CITY OF FITCHBURG

Arrowhead Redevelopment Plan



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Prepared by:
MSA Professional Services, Inc.

ADOPTED on January 10, 2012, Latest Amendment on August 25, 2015

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ACKNOWLEDGEMENTS

The following people are responsible for the creation, refinement, and adoption of this Plan

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2nd District - Patrick Stern
3rd District - Richard Bloomquist
3rd District - Denise Solie
4th District - Steve Arnold
4th District - Becky Baumbach

Fitchburg Plan Commission
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District 1 - Ron Johnson
District 2 - Mark McNally
District 3 - James Anderson
District 4 - Ed Kinney
District 4 - Tony McGrath
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Stephen Tremlett, AICP

Fitchburg residents, property owners, and business owners attended meetings, reviewed draft materials, and submitted comments that have improved this Plan.

Contents & Acknowledgements

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Executive Summary

This plan is a guide to help City officials and economic development professionals attract and direct investment in the Arrowhead Area.

Core Objectives:

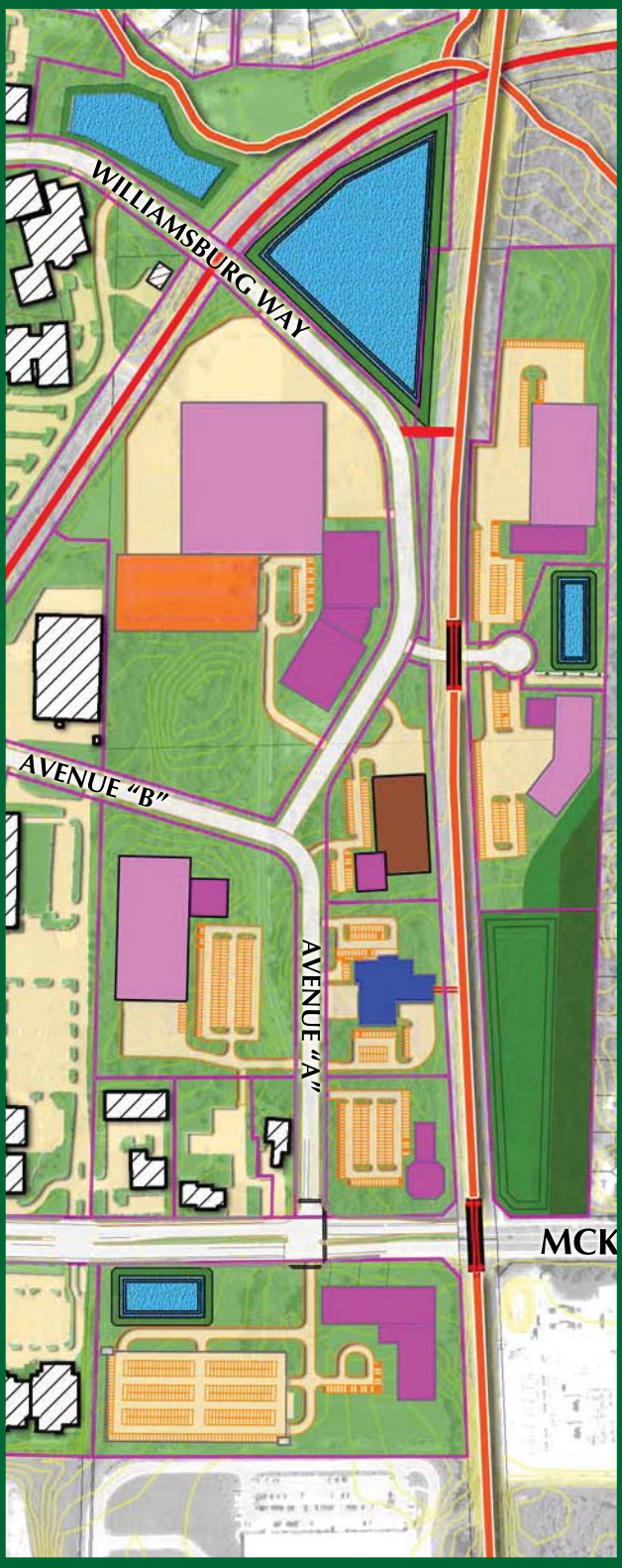
1) Support the success and growth of existing businesses in this area
2) Improve the quality and flexibility of transportation infrastructure and systems in this area
3) Facilitate infill development of underutilized land
4) Improve and maintain the quality of utility service in this area, especially including water supply and stormwater management systems

The plan was developed over approximately six months, beginning in May 2011. The process included monthly meetings with MSA Professional Services planners and engineers and City staff from the planning, engineering, and economic development departments.

Early in the process the project team met individually with most businesses in the planning area to discuss their needs and wants, especially regarding public infrastructure. Other public engagement included outreach to adjacent neighborhoods, especially the Pine Ridge Neighborhood.

The following City committees were consulted during the planning and approval process (number of meetings)

- Community and Economic Development Authority (4)
- Transportation and Transit Committee (1)
- Plan Commission (4)



Chapter 2 - Existing Conditions

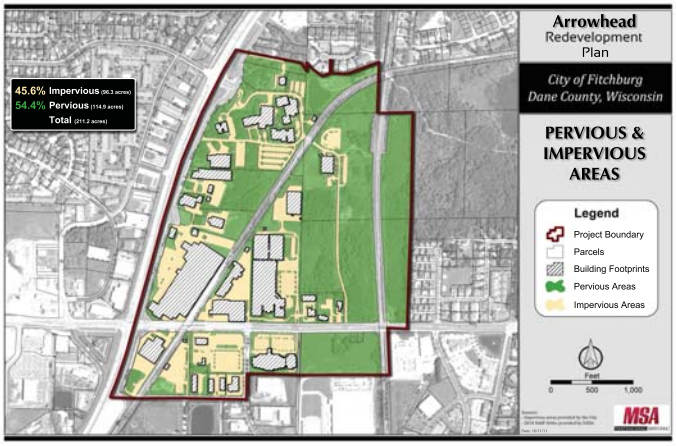
Business and Parcel Inventory

There are about 24 businesses within the plan area with an estimated 1,500 total employees. In aggregate, the existing businesses are projecting an additional 300 employees by 2021, a 20% growth rate.

As of June 2011, the primary land uses in the planning area are industrial (46%), open space and vacant land (18%), street and trail right of way (17%), and commercial (15%). The 2010 aggregate value of all taxable land and improvements in the study area is just under $75 million. Almost $50 million of this total value is attributable to four employers: Certco, Thermo Fisher, Placon, and the AMC theatre.

Development Constraints

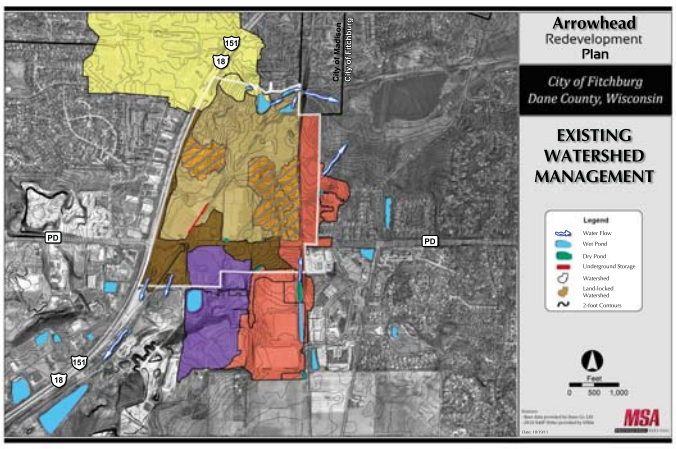
Current and Potential Lot Coverage



As indicated by the map of pervious and impervious surfaces in the planning area, the southwest parcels nearest the Verona Road/McKee Road intersection are intensely developed, while there is room for growth to the north and east, most notably the Thermo Fisher acreage north of McKee Road.

The zoning ordinance includes open space requirements and lot coverage limitations, though the open space requirements are new as of the 2010 zoning code update and do not apply unless and until parcels are rezoned. While the business districts do not have lot coverage limits, the industrial districts are capped at 65-70%. The only land that would need to be rezoned to enable infill development, and thus subject to the 10-30% open space requirements, is the portion of Thermo Fisher's property east of the Badger State Trail.

Public and Private Utilities



Business owners reported no complaints or concerns with either the water or wastewater systems. City engineering desires a water main loop through the area north of McKee Road

The planning area straddles two watersheds – the southern portion flows south toward the Badger Mill Creek and the northern portion flows north toward the Nine Springs Creek. Based on interviews and direct observation the stormwater system meets the needs of current development, with three noted exceptions:

1) Ponding at the southwest corner of AMC's western parking lot

2) Ponding in the Cannonball Trail corridor between Midwest Decorative Stone and General Beverage

3) Erosion and ponding on the Saris property.

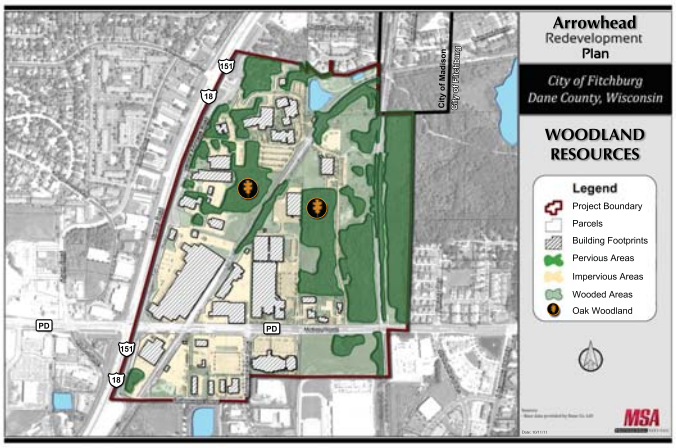
As infill development occurs, it will be necessary to meet City, County, State, and Federal regulations three aspects of stormwater management: water quality control, peak discharge rate control, and annual infiltration.

Businesses reported no problems or complaints with private energy services. The primary limiting factor is

the potential need for relocation (or burying) of electric lines along the McKee Road corridor.

Most of the larger businesses in the area have T-1 high volume voice and data service, provided through a variety of companies. Some businesses use AT&T's copper wire facilities for all communications, and some of those users reported problems with service.

Trees, Soils, and Slopes



While the intensely developed parcels to the southwest have few trees, lower-density parcels to the north and east feature a variety of woodland conditions, including a few areas dominated by mature oaks but also featuring thick underbrush.

While there are no documented wetlands in the study area, there are some "poorly drained soils" that may limit the potential for any stormwater infiltration in those areas. There are some steep slopes exceeding a 12% grade throughout the study area, many of them man-made, that may be both a limiting factor and an opportunity, depending upon the requirements of proposed development.

Chapter 3 - Transportation Analysis

Transportation Constraints

While the high traffic volumes on Verona Road and McKee Road offer great visibility for area businesses, many of the properties with the greatest visibility have the greatest access restrictions. The most important constraint is the lack of public road access within the area north of McKee Road and east of Verona Road - this limits transportation flexibility for existing businesses and development capacity for new businesses.

The adjacent section of Verona Road carries about 48,000 vehicles in average annual daily traffic, and it also features the only traffic signals in the entire 170-mile US-151 Backbone Route from Fond du Lac to Dubuque. Wisconsin DOT is planning to improve this corridor through a series of projects, including construction of a grade-separated interchange that will elevate the highway over McKee Road in about 2018, and possible conversion of the entire roadway from Williamsburg Way to the Beltline to a limited access freeway sometime around 2030.

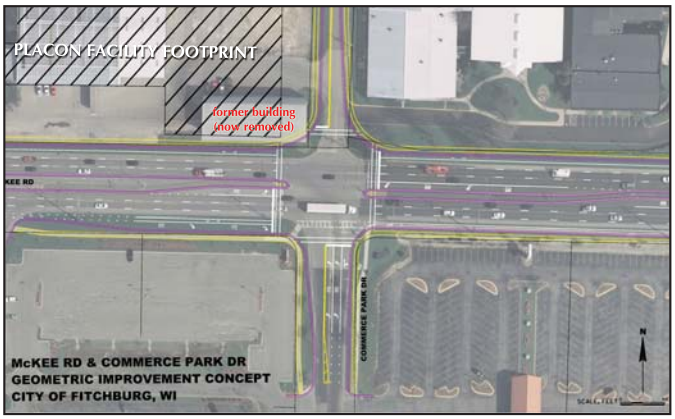
MSA collected peak hour traffic counts of cars, trucks, pedestrians and bikers using crosswalks, and bicycles on the road at each of six intersections in the study area. The AM & PM network peak hours were determined to be 7:15AM-8:15AM and 4:45PM-5:45PM. The peak period data confirms that the Verona Road & McKee Road intersection is currently experiencing significant delay and queuing during the AM and PM peak hours. Additionally, some movements at the intersection of Williamsburg Way and Verona Road are also experiencing unacceptable delay during the peak periods. Along McKee Road, the existing volumes and operations east of Verona Road raise no specific concern at this time. The peak period traffic data show only limited bike and pedestrian traffic at the major intersections, though data was not collected for the Badger State Trail as part of this study.

Arrowhead Area Trip Distribution

The trip distribution for potential Arrowhead infill development was estimated by considering both the existing peak hour traffic trip distribution and the expected access points and internal road connections for the future site. The estimate assumes that there will be a new public street through the area north of McKee Road that connects to the Verona Road Frontage Road and to McKee Road. Based on this assumption, two different trip distribution frameworks were created – one for the area north of McKee Road, from which

trips can go either north to the Verona Road Frontage Road or South to McKee Road, and one for the area south of McKee Road, from which trips can only utilize McKee Road.

POTENTIAL IMPROVEMENTS TO LOCAL INTERSECTIONS



As traffic volumes continue to grow, the primary determinant of congestion is the function of intersections in the network, especially their ability to manage turning movements. Design alternatives were generated for each of the major local intersections (not including the two Verona Road intersections) to see if and how additional lanes and turn lanes could be added. This exercise showed that it is feasible to add additional lanes, turn lanes, bike lanes, and sidewalks to McKee Road. These improvements would require additional right-of-way and the relocation of utility lines, but would not eliminate any existing buildings and may not eliminate any existing parking along the corridor.

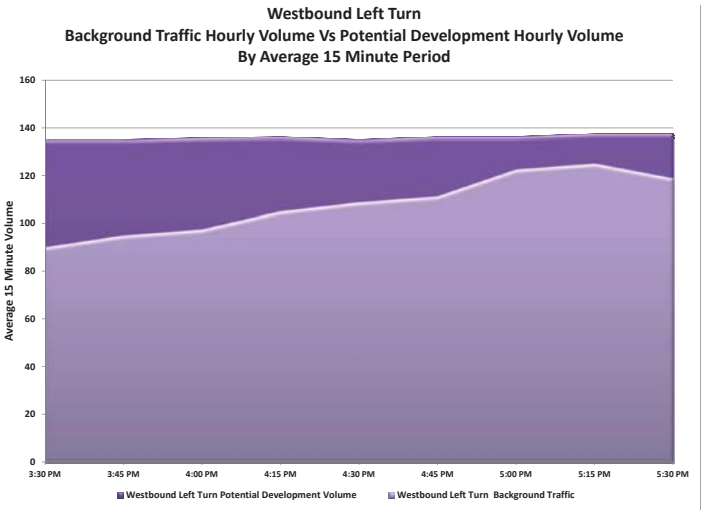
TRAFFIC FORECASTING AND FUTURE CAPACITY ANALYSIS

To estimate capacity for new trips generated in the Arrowhead study area it is necessary to project background traffic growth for the entire network. Volumes were provided by WisDOT based on the Madison MPO Travel Demand Model for the year 2030, incorporating the interchange improvements planned to occur by 2018. These background traffic estimates for 2030 were compared to the counts collected in June 2011, revealing that some of the 2011 counts are higher than the 2030 forecast volumes for certain movements.

In order to perform a more conservative future capacity analysis, the 2011 traffic volumes were forecasted at a 1.5% compounded annual growth rate out to the year 2030 for the AM and PM peak hours, and 1% compounded annual growth rate for traffic outside those one-hour peaks.

The future traffic capacity analysis focused on the Verona Road & McKee Road intersection as the limiting point of the network, as it will carry the most traffic and turning movements in the network and will have limited space for additional capacity or turn lanes once the interchange is constructed in 2017.

Level of Service (LOS) analyses indicate that the new interchange will be operating near capacity in 2030, and specific movements will be performing at Level of Service (LOS) “D” or “E”, even if no new development is added within the Arrowhead planning area. The movement of greatest concern is the westbound left onto 18/151 in the PM peak. Analysis of traffic capacity focused on this movement and concluded that this movement could accommodate approximately 250 additional trips in the PM peak period of 3:30-5:30, if ideally distributed and mostly occurring outside the peak hour of 4:45-5:45. In reality it is not feasible to achieve an ideal distribution of trips, but it is possible to shift trips entirely outside the peak period, especially for manufacturers such as Placon and SubZero/Wolf, both of which already do this.

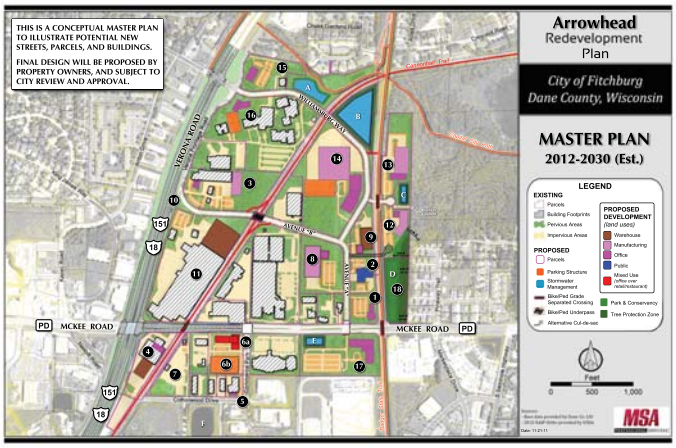


Based on the assumption that 250 peak period trips can be added to that specific turning movement, and using the trip distribution estimates, there is capacity for 2,500 additional peak period trips generated in the area north of McKee Road, or 1,250 peak period trips generated from the area south of McKee Road (including the Fitchburg Commerce Park), or some combination thereof.

Chapter 4 - Master Plan

Four preliminary draft alternatives were created to explore the various ways to provide improved street connectivity and site access through the study area. These alternatives offered a range of development intensities, with a focus on trip generation rates. The preliminary draft alternatives were shared with business owners, staff, City committees and nearby residents, and feedback from all of these stakeholders influenced the creation of a final preferred alternative.

Final Preferred Master Plan



Trip generation estimates for the master plan indicate that the proposed mix and location of new uses would generate about 1,152 peak hour trips, leaving a reserve of about 440 peak hour trips for additional Fitchburg Commerce Park growth, though traffic demand management practices can allow more development to occur in both areas. The final preferred alternative incorporates most of the preferences indicated by stakeholders in the preliminary development concept phase, and provides a reasonable balance among competing interests, including:

The development plan proposes a predominance of manufacturing and warehouse uses (and related office uses), as these uses generate less peak hour traffic than other uses.

To balance conflicting interests regarding the land east of the Badger State Trail, the plan indicates:

- *The land immediately west of the Pine Ridge neighborhood is planned for park or conservancy use.*
- *Two manufacturing lots are proposed, however the southern of the two parcels includes a 200' Park and Conservancy buffer from the nearest residential parcel.*
- *A 100' tree protection zone is provided along the edge of the Pine Ridge Neighborhood.*
- *Strict limitations on objectionable emissions, sound, and light.*
- *Two alternative methods of public street access to the east side of the Badger State Trail. The short cul-de-sac and bike path underpass is the preferred method.*

Certco Inc. and Saris Corp. would each like a connection through the planning area to McKee Road. The ideal route for this new road requires the relocation of Harder Corp. The development plan proposes a temporary cul-de-sac of Avenue "B" to allow time to help Harder relocate, and it offers a site with adequate space for a new Harder facility.

General Beverage and Midwest Decorative Stone each wish to continue growing their businesses at their current locations. Should these property owners reach an agreement on the sale or use of either parcel that is dependent on realignment of the Cannonball Trail, the City is open to working further with WDNR and WisDOT to explore viable alternatives to the current alignment.

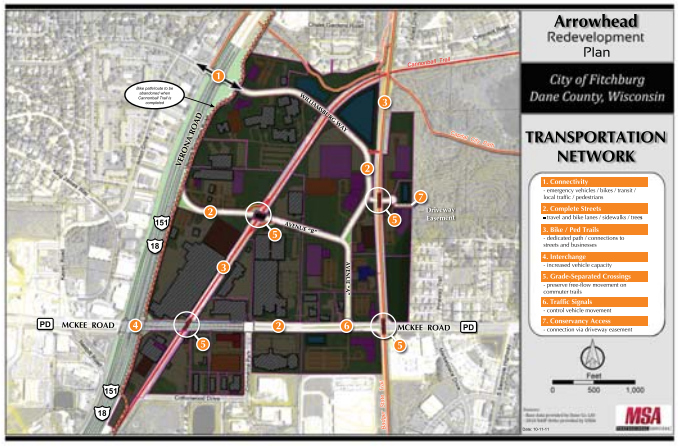
Estimated Build-Out Schedule

Build-out of the planned improvements is expected to occur over a 20-year period. The build-out period

is divided into three phases (2012-2015, 2016-2020, 2021-2030), however individual projects may occur sooner or later than suggested in this phasing plan. The phasing maps and tables (see pages 44-49) incorporate the following recommendations and cost estimates:

1. Build Avenues "A" and "B" (and associated utility infrastructure) as soon as possible. Costs for this project are estimated at $2.4 M.
2. Expand McKee Road concurrent with the 18/151 interchange project. Costs for this project are roughly estimated at $3.2-3.6M, not including any costs associated with moving ATC or MG&E power lines.
3. The Extension of Williamsburg Way is optional. Costs estimated at $2.0 million.

Proposed Transportation Network



This map is a compilation of the projects described in the preceding Section 4.5, and it also reflects policies indicated in Chapter 5.

Proposed Stormwater Infrastructure

The system design incorporates the following assumptions:

4. Water quality and rate control requirements can be balanced across multiple ponds within each of the two regional watersheds that the study is part of (Badger Mill Creek and Nine Springs Creek – see Figure 2.8). Individual ponds can provide more or less than their "share" based on the watersheds they serve as long as standards are being met for the entire study area.
5. The water quality treatment performance of Pond A will be preserved under proposed conditions even though its footprint and rate control capacity may need to be reduced to accommodate the planned development.
6. Peak discharge rate control is provided on a regional basis, but rates at discrete locations within the Arrowhead development area are not being maintained at current levels.
7. Infiltration requirements will be met using on-site facilities
8. Other stormwater management requirements such as oil and grease control will be met using on-site facilities as appropriate.

There are several landlocked areas in the study area that do not drain out to the regional watersheds under flood events of 100-yr severity or less. The proposed stormwater system assumes that most of these areas north of McKee Road would be connected to the regional watersheds via new streets and stormwater ponds.

Changes to Pond A (Arrowhead Park) may result in the need for additional rate control capacity elsewhere in the planning area, such as a possible pond on Site 18 east of the Badger State Trail, depending on how the City prefers to utilize Dunn's Marsh for peak discharge rate control purposes.

Chapter 5 - Economic Analysis

New Value Projections

Total new property value is estimated by phase based on building sizes as illustrated in the master plan and typical construction costs for various building types:

Phase 1 - $11M
Phase 2 - $35M
Phase 3 - $79M
Total - $125M

Funding Mechanisms

There are several possible sources of funding to help businesses in the study area expand, and help the City contribute to the cost of new public infrastructure to enable those expansions.

- Tax Incremental Financing (TIF)
- New Markets Tax Credits
- Industrial Revenue Bonds
- State Economic Development Tax Credit
- Surface Transportation Program (STP) Urban Transportation Grant Program

Chapter 6 - Policies and Actions

Land Use Policies

Policy #1: Amend the comprehensive plan's Future Land Use Map, as shown in *Figure 6.1*. The most significant inconsistency with the comprehensive plan is proposed development of lands currently identified as Parks and Conservancy.

Policy #2: To mitigate land use conflicts at the west edge of the Pine Ridge Neighborhood, the City will provide for a Park and Conservancy buffer, a tree protection zone, and Strict limitations on objectionable emissions, sound, and light.

Transportation Policies

The emphasis of this plan is policies and strategies that will minimize trip generation at all hours, and especially during the regional traffic peak hours.

Transportation Infrastructure Policies

Policy #1: The City strongly supports maintenance of full multimodal access to and across Verona Road at Williamsburg Way.

Policy #2: The City desires a street network that is intuitive and easy to navigate.

Policy #3: Avenue "B" is deemed a higher priority for completion than an extension to Williamsburg Way, and is therefore planned as the primary "through route" between Avenue "A" and Verona Road.

Policy #4: The City will continue to improve local bike and pedestrian facilities as feasible.

Transportation Demand Management (TDM) Programs and Policies

Policy #1: Due to traffic constraints, the recommended land uses for new infill development are manufacturing and warehousing first, limited office development second, and only a small amount of retail/restaurant development. Proposed development that would generate excess PM peak trips as compared to site development assumptions in this master plan should be accompanied by specific, feasible strategies, to be implemented by the business(es) on that site, to limit peak period trips.

Policy #2: All businesses in the Arrowhead plan area, as well as all businesses in the Fitchburg Commerce park, present and future, should be encouraged to plan their work shifts and deliveries to occur outside the peak traffic hours.

Policy #3: The City will seek partnerships with Madison College (MATC) and other local institutions to offer job training services somewhere within the Arrowhead area, either standalone or on-site at existing employers.

Policy #4: The City will work with Metro Transit to evaluate bus transit improvements to and through the study area.

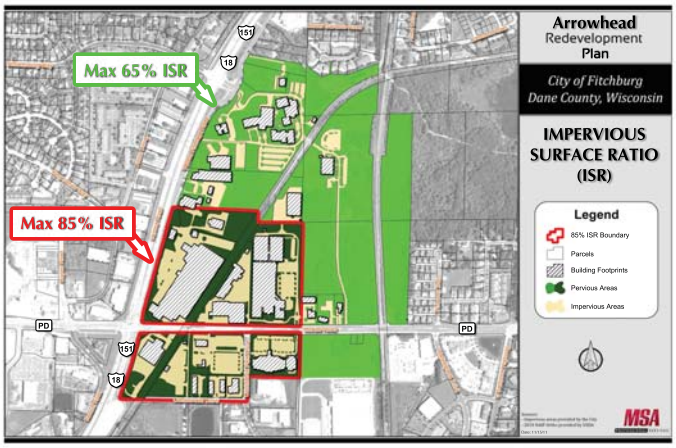
Policy #5: Businesses in the area are encouraged to consider shared parking arrangements. The City will facilitate discussions to establish a long-term shared parking agreement between United Vaccines and AMC theater.

Policy #6: All businesses in the Arrowhead and Commerce Park areas are encouraged to promote and provide incentives for commuting methods other than single-occupancy vehicles (SOVs).

Executive Summary

Stormwater Management Policies

Policy #1: Impervious Surface Ration (ISR) will be limited to 85% for sites in the southwest quadrant of the planning area, and 65% for all other sites. These limits can be exceeded if on-site stormwater detention facilities are provided.



Design Guidelines

This plan recommends the following basic design guidelines for new construction:

Site and Landscape Design

Guideline #1: Along McKee Road, locate the front building façade within 75 feet of the street right-of-way whenever possible.

Guideline #2: Preserve mature hardwood trees whenever possible, especially oaks.

Guideline #3: In wooded areas, property owners are encouraged to clear and remove understory scrub trees and bushes, especially invasive species, and to promote the growth of native grasses.

Signage

Guideline #1: A monument-style directory sign is recommended at the corner of Avenue A and McKee Road. A similar sign may be appropriate near the intersection of Williamsburg Way and the Verona Road Frontage Road if and when Williamsburg Way is extended.

Lighting

Guideline #1: All exterior lighting in the plan area should be dark-sky compliant to limit glare, light pollution, and light trespass.

Building Design

Guideline #1: Thoughtful and creative design is strongly encouraged.

Guideline #2: Multi-story design is encouraged whenever appropriate to the building use, especially office uses.

Guideline #3: Brick and/or other high-quality materials are encouraged for use on office buildings.

Action Plan

Actions are organized to correspond to the three phases of development outlined in this plan, though the timing and sequence of these actions may shift due to changes in regional transportation projects, landowner needs, or real estate market demand.

Phase 1 Actions

1) Plan Adoption
2) WisDOT Coordination
3) Fix the AMC Stormwater Problem
4) TIF District Creation
5) Subdivide Thermo Fisher Property
6) Build Avenue “A” & Avenue “B”
7) Shared Parking Agreement

Phase 2 Actions

8) Relocate Harder Corporation
9) Connect Avenue “B” to Verona Frontage Road
10) Extend Williamsburg Way

Phase 3 Actions

11) Encourage Structured Parking
12) Extend a Street to Sites 12 and 13

1 Introduction

1.1 Purpose and Objectives

The purpose of this project is to identify where and how additional development can be accommodated in this area, with a focus on the needs of existing employers. Traffic and transportation needs are a central consideration – the plan identifies new street infrastructure to provide improved access to some parts of the planning area, and the capacity of the existing street network to handle more traffic is considered.

Core Objectives

1. Support the success and growth of existing businesses in this area
2. Improve the quality and flexibility of transportation infrastructure and systems in this area
3. Facilitate infill development of underutilized land
4. Improve and maintain the quality of utility service in this area, especially including water supply and stormwater management systems

1.2 Planning Process

This plan was developed over approximately six months, beginning in May 2011. The process included the following activities.

Staff Meetings

MSA planners and engineers met with staff approximately once each month throughout the process to review and discuss draft materials. The City's planning, engineering, and economic development departments participated in these meetings.

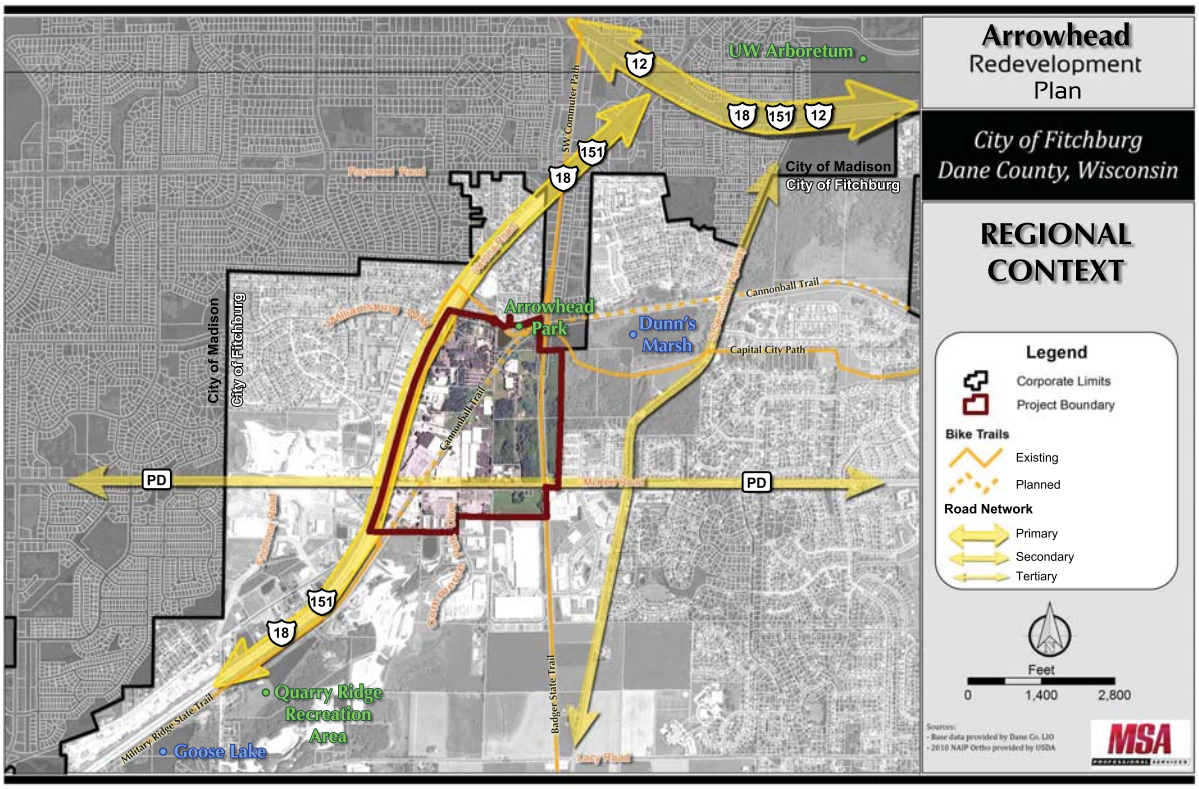
Business and Property Owner Engagement

Due to the emphasis on the needs of existing businesses, MSA planner Jason Valerius and City Economic Development Coordinator Michael Zimmerman visited almost every business in the study area together to discuss a range of issues, including current and projected employment, building and property space needs, transportation needs, public and private utility satisfaction, and any other issues of concern. The feedback from these interviews is briefly summarized in the next section.

Staff shared draft materials with business owners at each stage of the planning process, and those interested in the outcome of the plan remained engaged, providing feedback and attending meetings.

1 Introduction

Figure 1.1: Regional Context



Resident Engagement

While there are no residents or residential buildings in the planning area, there are two neighborhoods adjacent to the planning area – Pine Ridge Neighborhood (Pine Ridge Homeowners Association) to the east, and the Chalet Gardens area to the north. Any residents within 300 feet of the planning area received notice of the two public information meetings – one near the beginning of the process (July 7), and one near the end of the process (October 12). Only Pine Ridge neighbors are known to have actively participated in the process, motivated by concern about possible development of the land between the Badger State Trail and their neighborhood. These residents provided feedback about draft materials in writing and at meetings throughout the process.

Plan Commission and Other Committee Meetings

MSA presented planning process updates and plan draft material, and sought feedback on that material, at the following meetings:

Community and Economic Development Authority (CEDA)

- May 26 (Introduction)
- July 28 (Initial Findings and Employer Feedback)
- September 22 (Master Plan and Policy Review)
- October 27 (Public Hearing Draft)

Transportation and Transit Committee (TTC)

- September 29 (Master Plan and Policy Review)

Plan Commission

- July 19 (Introduction and Initial Findings)
- August 16 (Initial Redevelopment Concepts)
- September 20 (Master Plan and Policy Review)
- November 15 (Public Hearing)

Common Council Adoption

- January 10, 2012

1.3 Arrowhead Planning Area

The Arrowhead Redevelopment planning area (as shown in Figure 1.1) encompasses 261.8 acres, and is bounded by:

- US-151/18 (Verona Road) to the west,
- Dunn's Marsh Conservancy Area and the Pine Ridge Neighborhood to the east,
- Arrowhead Park and Chalet Gardens to the north, and
- Cottonwood Drive to the south.

This area is a major gateway into the City of Fitchburg from the south - US-18/151 transitions into the urban development character of the City of Fitchburg and the Madison Metro area at McKee Road. This area serves as a diverse employment district and is home to several of the City's major employers (e.g. Certco, Placon, Saris, Thermo Fisher, etc.). The planning area primarily consists of aging office, research, and manufacturing buildings with some in a campus-style format. Access to the bulk of the planning area located north of McKee Road is limited to private driveway entrances along McKee Road and Verona Frontage Road - there are no public streets within this area. However, there are significant pedestrian/bike facilities within and adjacent to the planning area, including the Capital City Path, Badger State Trail, Military Ridge State Trail, and the SW Commuter Path. The planned Cannonball Trail will further enhance the bike and pedestrian connectivity of the Arrowhead area.

1.4 Interview Feedback Summary

Business interviews were conducted in June and July 2011 using a standard set of questions addressing the following topics:

- Current and projected employment
- Current and projected building and site space needs
- Transportation activities and needs, including employee and trucking/delivery traffic
- Public and private utility satisfaction
- Other opportunities for the City to support business success

Much of the data and feedback collected has been integrated into this plan where it is relevant. Feedback included the following:

- Stormwater management – few problems reported, except flooding at the southeast corner of the AMC overflow parking lot, and occasionally along the Cannonball Trail ROW between General Beverage and Midwest Decorative Stone.
- City services – general satisfaction reported, few complaints.
- Congestion – morning and evening congestion is a problem, especially on McKee Road, especially turning movements onto McKee during the PM peak period.
- Connectivity - Multiple businesses in the area north of McKee Road would like improved street connectivity, especially including access to a signalized intersection on McKee Road.
- Alternative Commuting - Employees drive from all over the Madison Metro area and Southwestern Wisconsin. While this wide "commuter-shed" makes use of biking , busing, and carpooling more challenging, several employers expressed interest in enhanced transportation options, especially transit availability.

1 Introduction

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2 Existing Conditions & Constraints

2.1 Business Inventory

There are about 24 businesses within the plan area with an estimated 1,500 total employees. The majority of these employees work at Thermo Fisher Scientific (29%), Placon (23%), Certco (14%) and Saris (11%). In general, 80% of the employees work the first shift with the remainder evenly split between the second and third shifts. The businesses with multiple shifts are **bolded** in *Table 2.1* on the right.

While most businesses expressed uncertainty about the future, several businesses in the study area are projecting growth over the next 10 years. In aggregate, the existing businesses are projecting an additional 300 employees by 2021, a 20% growth rate.

Table 2.1 - Business and Employment Inventory

Business	Employees
CertCo	**216**
Harder Corp	16
Saris	**167**
Nedrebo's	70
Thermo Fisher Scientific	430
Town and Country Engineering	17
Charter Communications	**11**
Fitchburg Serenity Club*	5
Madison Pilates	5
Vacant	*0*
Happy Dogz	**21**
In the Dogz House	5
ReproQuest	5
Placon (+)	**341**
ADM	13
EcoStar (Placon)	See Placon (+)
General Beverage*	30
Midwest Landscape Supply	12
PDQ*	8
AMC	**67**
United Vaccines	33
Action Heating*	5
Capital Cartage	15
The RC Group	5
Sub-Zero Wolf (not in study area)	---
TOTAL	**1,497**

** Estimate - data not provided by employer*

2.2 Parcel Inventory

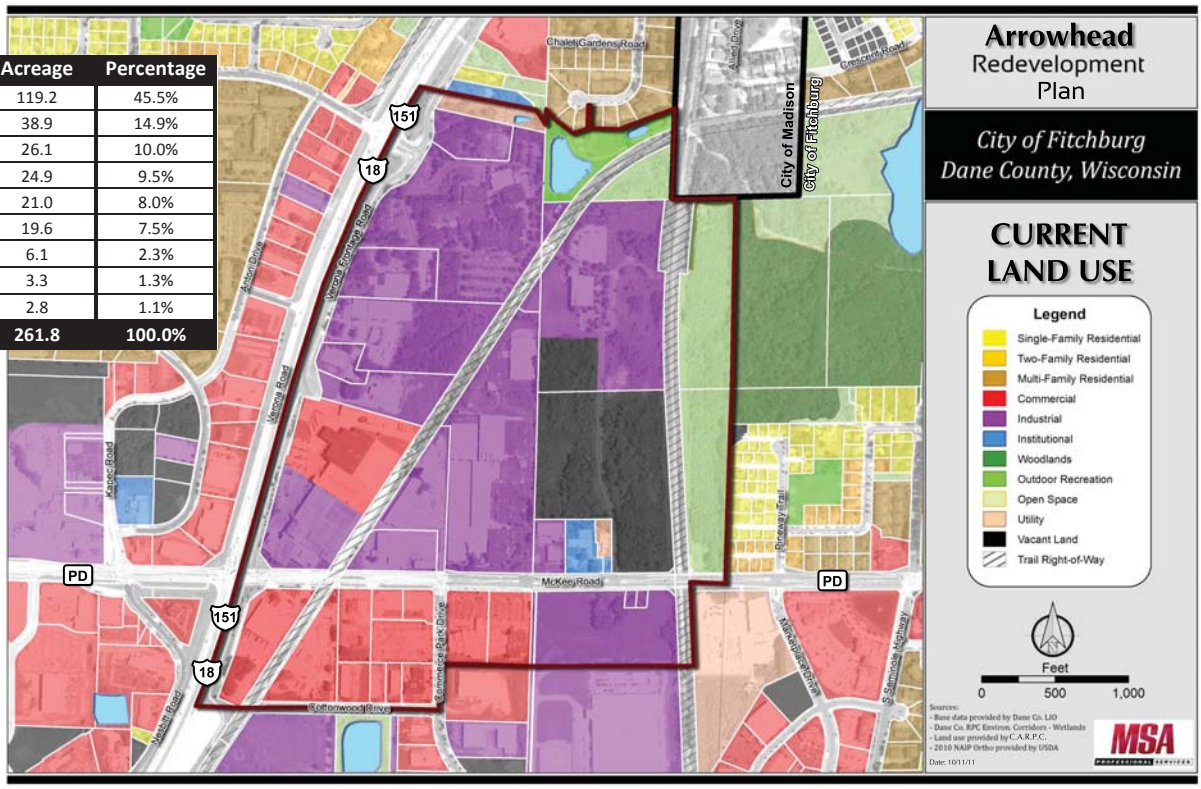
Existing Land Use

As of June 2011, the primary land uses in the planning area are industrial (46%), open space and vacant land (18%), street and trail right of way (17%), and commercial (15%). See *Figure 2.1* and the table on the next page for current land use distribution in the planning area.

2 Existing Conditions & Constraints

Figure 2.1: Current Land Use

Land Use	Acreage	Percentage
Industrial	119.2	45.5%
Commercial	38.9	14.9%
Street ROW	26.1	10.0%
Vacant Land	24.9	9.5%
Open Space	21.0	8.0%
Trail ROW	19.6	7.5%
Park / Stormwater	6.1	2.3%
Institutional	3.3	1.3%
Utility	2.8	1.1%
TOTAL	261.8	100.0%



Future Land Use

The City has an adopted Future Land Use Map (*Figure 2.2*) that shows a mixture of Business, Industrial-Commercial, Industrial-General, and Park/Conservancy areas in the planning area. Most of the planned uses are consistent with current uses, except for an area at the north end of the Thermo Fisher Scientific site that is planned for park/conservancy use but is currently developed for office use.

Current Values

2010 property values are shown in *Table 2.2* and *Figure 2.3*. The map shows combined land and improvements value for each parcel on a per-acre basis, revealing a range of total value from less than $100,000 per acre (Thermo Fisher's undeveloped acreage) to more than $1,000,000 per acre (the AMC theatre). The 2010 aggregate value of all taxable land and improvements in the study area is just under $75 million. Almost $50 million of this total value is attributable to four employers: Certco, Thermo Fisher, Placon, and the AMC theatre.

Table 2.2 - Arrowhead Property Values

ID	Business Owner	Land Value	Improvement Value	Total Value
1	Certco	$5,755,000	$9,825,000	$15,580,000
2	Certco	$860,000	$20,000	$880,000
3	Harder Corp	$650,000	$160,000	$810,000
4	Saris	$359,800	$1,790,500	$2,150,300
5	Nedrebo's	$1,615,000	$210,000	$1,825,000
6	Thermo Fisher	$847,300	$9,925,500	$10,772,800
7	Charter Communications	$1,160,000	$575,000	$1,735,000
8	Charter Communications	$720,000	$0	$720,000
9	Thermo Fisher	$13,800	$34,400	$48,200
10	Thermo Fisher	$9,600	$0	$9,600
11	Thermo Fisher	$819,600	$2,371,400	$3,191,000
12	Thermo Fisher	$9,000	$0	$9,000
13	Thermo Fisher	$781,800	$20,700	$802,500
14	Madison Pilates, Happy Dogz, In the Dogz House, ReproQuest	$625,000	$575,000	$1,200,000
15	Placon	$576,200	$8,052,100	$8,628,300
16	ADM	$169,800	$719,700	$889,500
17	EcoStar (Placon)	$1,370,000	$155,000	$1,525,000
18	General Beverage	$2,350,000	$220,000	$2,570,000
19	Madison Landscaping	$440,000	$10,000	$450,000
20	PDQ	$1,070,000	$545,000	$1,615,000
21	AMC	$355,000	$150,000	$505,000
22	AMC	$365,000	$150,000	$515,000
23	AMC	$800,000	$160,000	$960,000
24	United Vaccine	$146,700	$1,177,600	$1,324,300
25	Action Heating	$100,000	$315,000	$415,000
26	Capital Cartage	$100,000	$400,000	$500,000
27	The RC Group	$210,000	$480,000	$690,000
28	AMC	$2,165,000	$11,685,000	$13,850,000
29*	Sub Zero	$368,988	$0	$368,988
	TOTAL	$24,812,588	$49,726,900	$74,539,488

Figure 2.2: Future Land Use

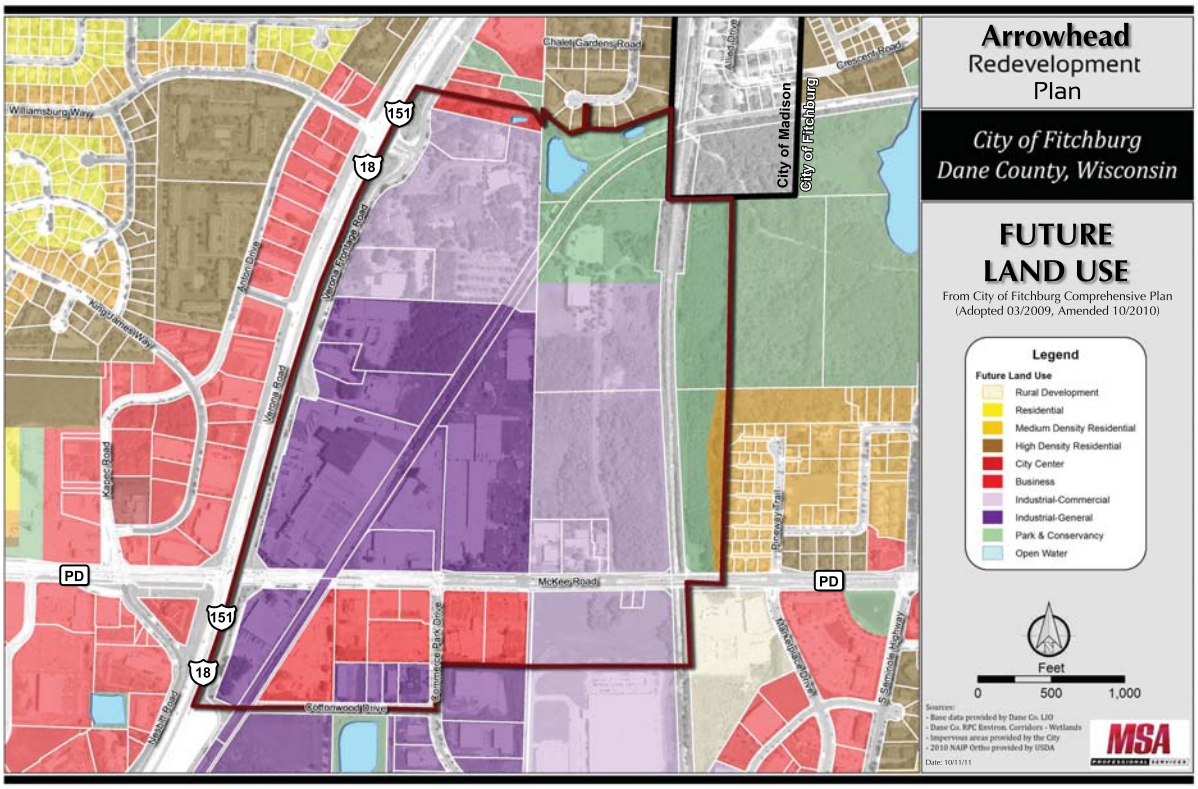
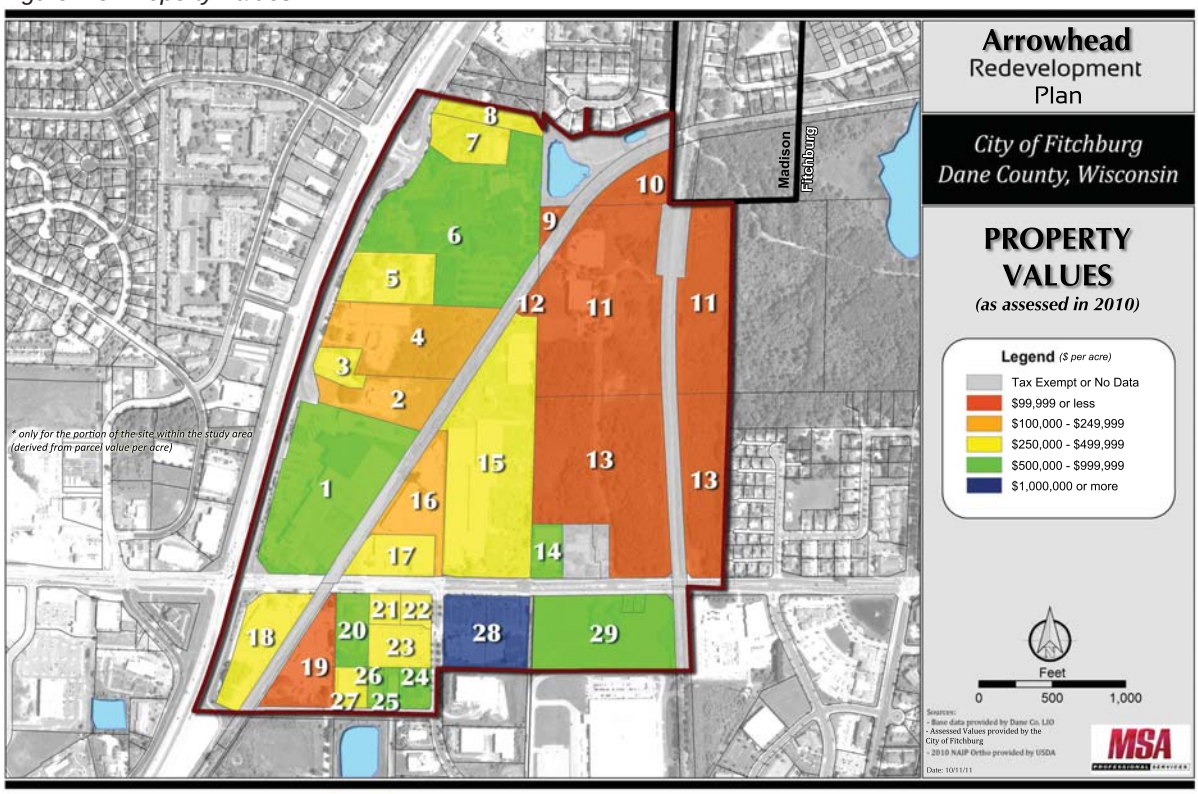


Figure 2.3: Property Values



2.3 PARCEL CONSTRAINTS

Available Space

Figure 2.4 shows pervious surfaces (e.g. woodlands, lawns, etc) and impervious surfaces (e.g. buildings and pavement) for the entire study area. It reveals a high intensity of development and lot coverage nearest the McKee Road/Verona Road intersection, and more available land to the east and north. *Figure 2.5* indicates the approximate square footage of space available on each parcel, after accounting for required setbacks.

The city's zoning ordinance sets requirements and restrictions on parcels based on their general land use (see *Table 2.3*). Requirements that limit growth potential for each site are minimum building setbacks, maximum lot coverage, minimum parking provisions, and maximum building height.

Current zoning and current building setback requirements are shown in *Figure 2.5*. Required setbacks range from 10 to 30 feet.

The zoning ordinance includes open space requirements and lot coverage limitations (see table below), though the open space requirements are new as of the 2010 zoning code update and do not apply unless and until parcels are rezoned. While the business districts do not have lot coverage limits, the industrial districts are capped at 65-70%. The only land that would need to be rezoned to enable infill development, and thus subject to the 10-30% open space requirements, is the portion of Thermo Fisher's property east of the Badger State Trail, currently zoned A-T Transitional Agriculture.

Parking Needs

On-site parking requirements, per current zoning, are indicated in *Table 2.4*. In general, most developments provide more than the required minimum off-street parking to accommodate perceived parking demand from employees, clients/ visitors, etc. Surface parking restricts development capacity by consuming land that could otherwise be used more productively. Parking footprints can be reduced by minimizing the parking demand (as discussed in *Section 6.2*) and/or building parking structures. The study area's existing parking facilities are shown in yellow in *Figure 2.4*.

Placon's EcoStar facility (Site 17, Figure 2.3) is the only business in the study area that has negotiated with the City to provide fewer parking spots than required by ordinance.

Table 2.4 - Fitchburg Off-Street Parking Requirements

Parking Standards	Ratio*
Sit-Down Restaurant	6.00
Office	3.33
Retail	3.33
Warehouse	0.75
Manufacturing	1.50
Public	*n.a.*

** 1 Space per 1,000 Gross Building (sqft)*

Table 2.3 - Fitchburg Zoning Ordinance Dimensional Standards

Zoning Requirements	B-H	I-G	B-G	I-S
Minimum Lot Area (ft)	8000*	20,000	8,000	20,000
Minimum Lot Width (ft)	60	100	60	100
Minimum front setback (ft)	25	30	20	20
Minimum side setback (ft)	10	10	10	10
Side Street setback (ft)	20	20	15	15
Rear setback (ft)	20	20	10	30
Maximum Building Height**	3 stories (42 ft)	3 stories (42 ft)	3 stories (42 ft)	3 stories (42 ft)
Minimum open space requirement	15%	10%	25%	30%

** if unsewered 1 acre*

*** higher allowed under conditional use*

Figure 2.4: Pervious & Impervious Areas

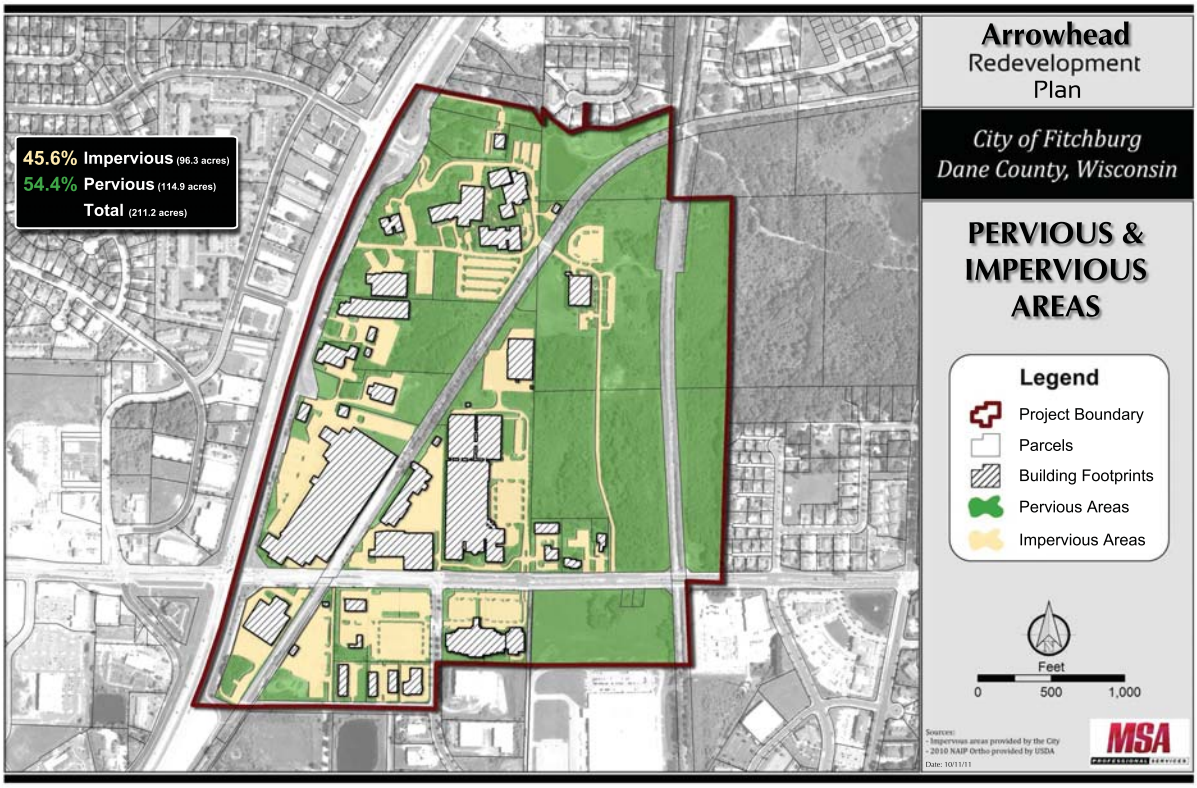


Figure 2.5: Zoning & Setbacks

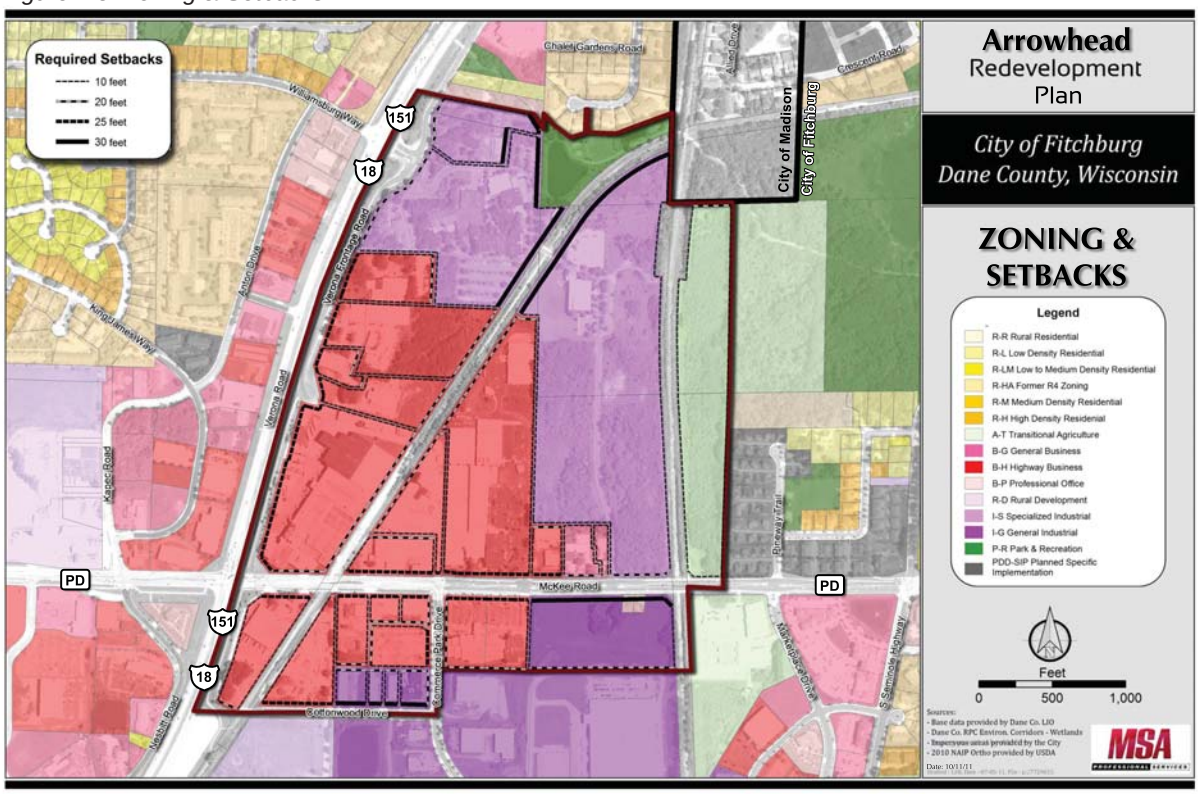
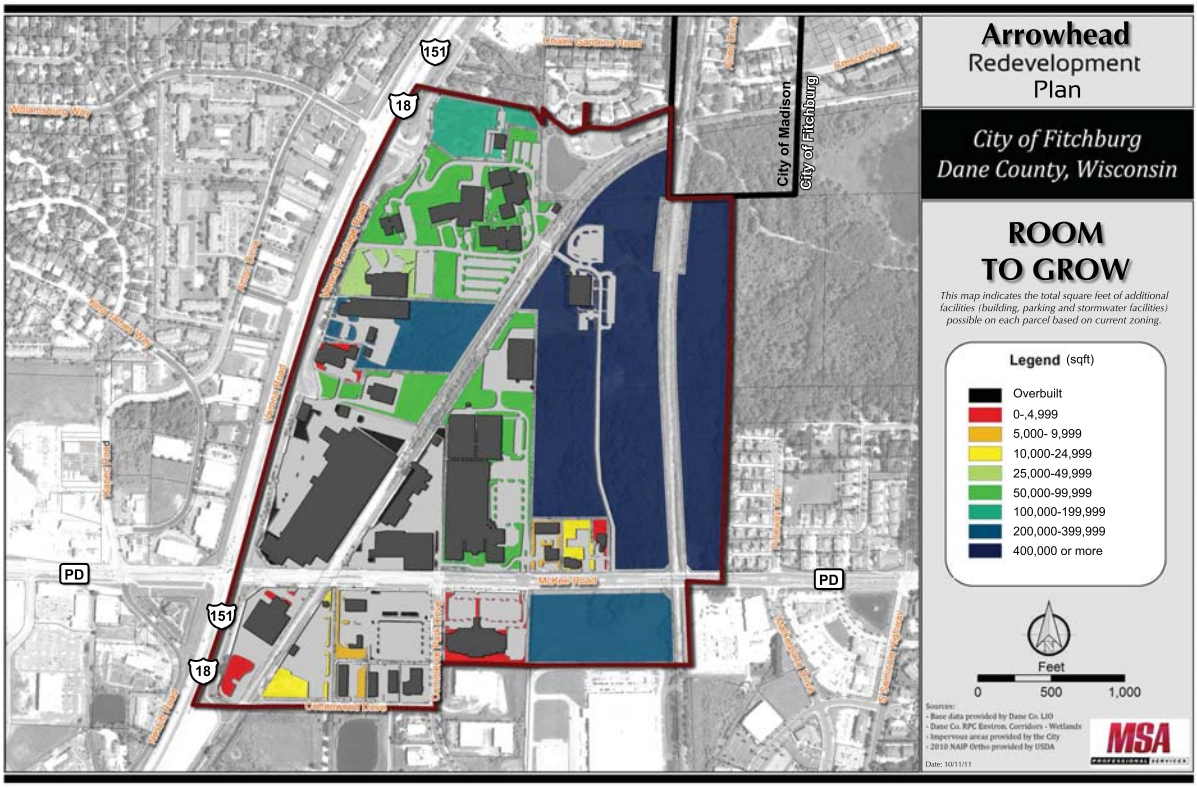


Figure 2.6: Room to Grow Map



2.4 Utility Constraints

Water and Sanitary Sewer

Figure 2.7 shows the water and wastewater systems in the study area. Business owners reported no complaints or concerns with either utility. City engineering desires a water main loop through the area north of McKee Road to ensure a resilient system that can sustain the necessary pressures as growth occurs. Any new streets through this area present an opportunity to create such a loop.

All sanitary sewer in the study area (and a wider area beyond) flow by gravity to a collector in the Cannonball Trail Corridor. This same corridor also features the Badger Mill Creek Effluent Return Line, a pressurized line carrying treated effluent in the other direction, uphill toward the City of Verona, where it is returned to the Sugar River watershed. There was some discussion during the planning process about tapping into this line to use this treated water for industrial processes as an alternative to groundwater sources. Though none of the businesses in the planning area have expressed interest in this opportunity, Madison Metropolitan Sewerage District Director of Engineering Bruce Borelli, P.E., has indicated that the system has the capacity to pump up to 100,000 additional gallons per day through this pipe that could be intercepted for other uses. Details of use would need to be worked out based on specific proposals.

Stormwater

Figure 2.8 shows that the planning area straddles two watersheds – the southern portion flows south toward the Badger Mill Creek and the northern portion flows north toward the Nine Springs Creek. Water is collected and conveyed through a series of private and public storm sewer pipes, surface swales, and detention (dry) or retention (wet) ponds.

Figure 2.7: Water & Wastewater Systems

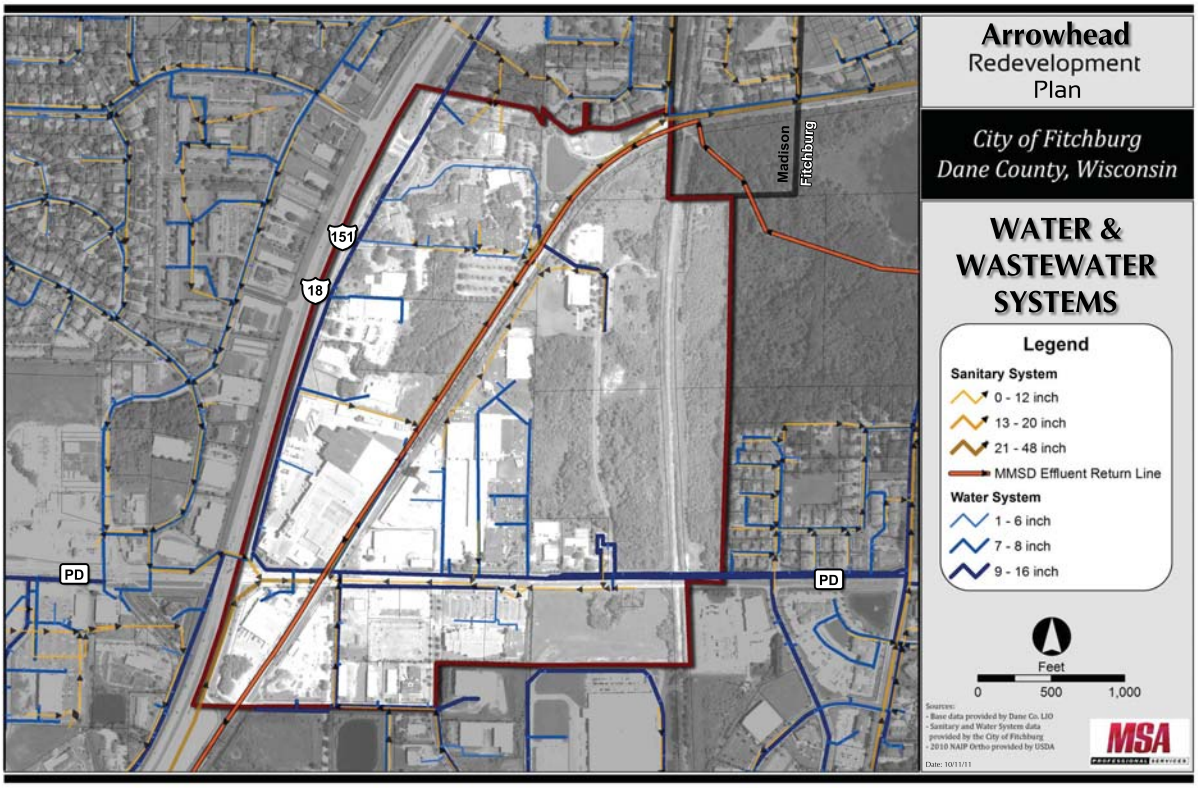
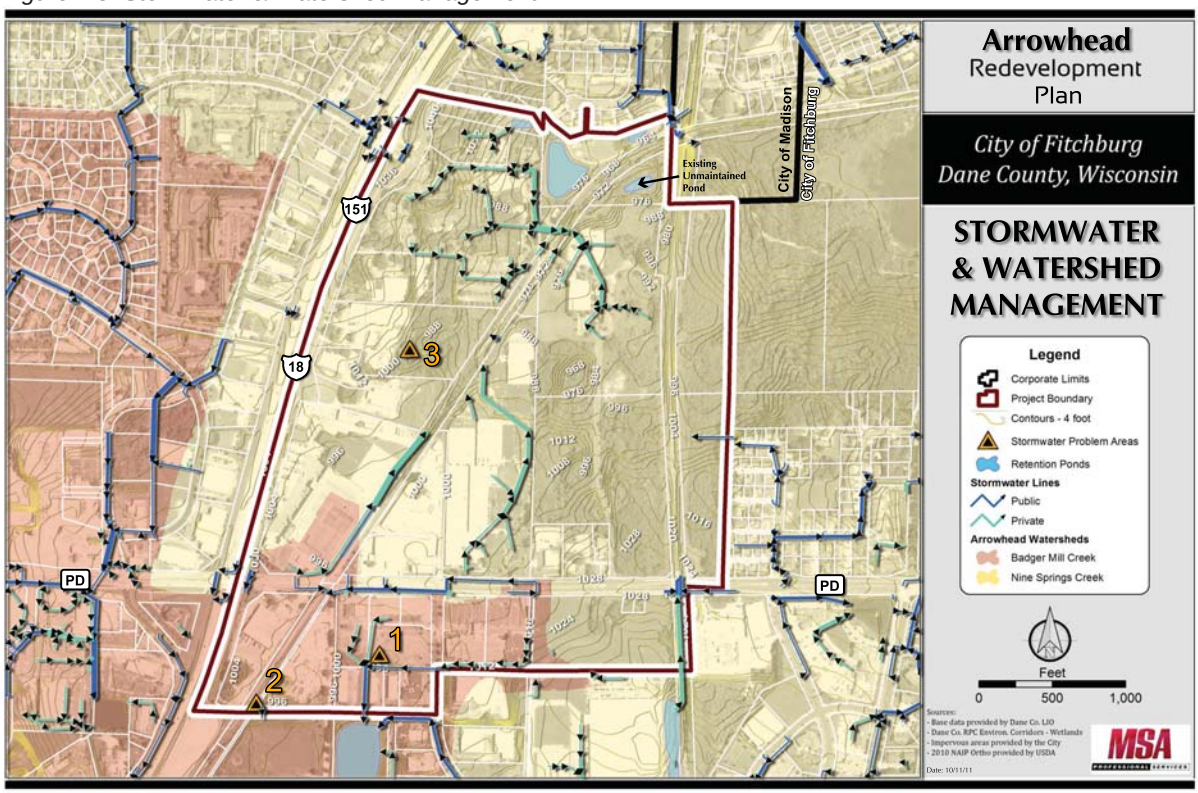


Figure 2.8: Stormwater & Watershed Management



2 Existing Conditions & Constraints

Interviews and direct observation revealed three known problems with the current function of the stormwater systems.

Problem 1) At the southwest corner of the AMC theatre overflow parking lot, there are repeated stormwater backups resulting in significant water ponding in that parking lot and into the Cottonwood Drive parcels. Based on observation of standing water in the lowest stormwater inlet (see image top right), this is a problem with the pipe that connects the inlet to the retention pond to the south. That pipe should be replaced.

Problem 2) The second problem is water ponding in the Cannonball Trail corridor between Midwest Decorative Stone and General Beverage. This problem appears to be due to poor grading and undersized culverts where the bike trail currently crosses the drainageway at Cottonwood Drive. These problems should be alleviated when the Cannonball Trail is constructed, likely in 2014.

Problem 3) The third known problem is erosion and unplanned ponding on the Saris property. The parking and loading areas currently drain to the southeast corner of the pavement and around into the woods to the east. There is a small natural kettle feature there that retains water for significant periods, killing a few trees (see image at right). This kettle then overflows to a large natural kettle where the water infiltrates more quickly. To protect the woodlands it is desirable to redirect runoff from the paved areas of the site to an engineered pond.

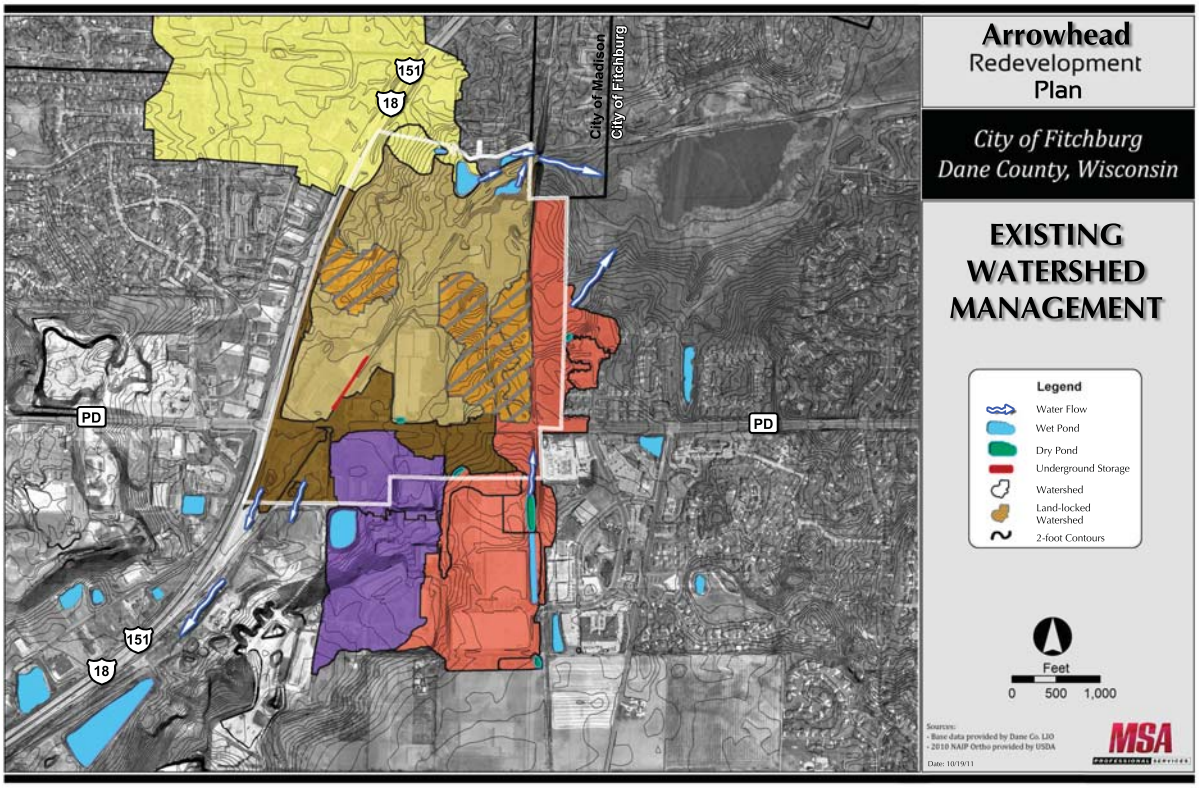
However, with the exception of these isolated issues, the system functions well and meets the needs of the current development pattern. Figure 2.9 illustrates the stormwater system as it functions today, including existing ponds and the watersheds they serve and discharge to. Note the several landlocked areas (hatched) that do not discharge except under extreme rainfall conditions (events in excess of a 100-yr flood).

Stormwater inlet, southwest corner of AMC parking lot

Saris property stormwater management problem

As infill development occurs, it will be necessary to provide additional facilities to meet post-development stormwater management standards as established by the City of Fitchburg, Dane County, the Wisconsin Department of Natural Resources (WDNR), and the United States Environmental Protection Agency (EPA). These standards address three aspects of stormwater management: water quality control (measured as reduction in post-development Total Suspended Solids (TSS)), peak discharge rate control, and annual infiltration (calculated as stay-on, or the depth of annual rainfall that does not become runoff).

Figure 2.9: Existing Watershed Management



Title III of the City's municipal code, chapter 30 describes the relevant standards for stormwater management from new and redevelopment projects. The language in Chapter 30 was originally developed by following both Dane County Ordinances (Chapter 14) and State Administrative Code NR151 as they existed at the time the City's ordinance was written. Since this time, both the Dane County Stormwater Ordinance and NR151 have been rewritten. What follows is a summary of the most restrictive standards applicable to new and redevelopment activities within the City of Fitchburg.

Water Quality Treatment

a. For new development, design practices to [achieve an] 80 percent reduction [in TSS from post-development stormwater runoff].

b. For redevelopment resulting in exposed surface parking lots and associated traffic areas, design practices to [achieve a] 40 percent reduction [in TSS from post-development stormwater runoff]. Under no circumstances shall the site's existing sediment control level or trapping efficiency be reduced as a result of the redevelopment.

Note that at the time that this document was prepared the EPA had just approved the Rock River Total Maximum Daily Load Report. The purpose of this report was to establish maximum nutrient loads that could be discharged to the Rock River and its tributaries. One of these tributaries is Nine Springs Creek; the portion of the Arrowhead development area which discharges to the north drains to Nine Springs Creek. The plan for implementing the TMDL has not been developed as yet, however, allocations within the report suggest that TSS loads from all development (existing, new, redevelopment) on an average annual basis may need to be reduced by as much as 79% compared to a no controls situation.

Peak Discharge Rate Control

Except for redevelopment, all stormwater facilities shall be designed, installed and maintained to effectively maintain predevelopment peak runoff rates under all of the following conditions:

a. one-year, 24-hour storm event (2.5 inches over 24-hour duration)
b. two-year, 24-hour storm event (2.9 inches over 24-hour duration)
c. ten-year, 24-hour storm event (4.2 inches over 24-hour duration)
d. 100-year, 24-hour storm event (6.0 inches over 24-hour duration)

Infiltration

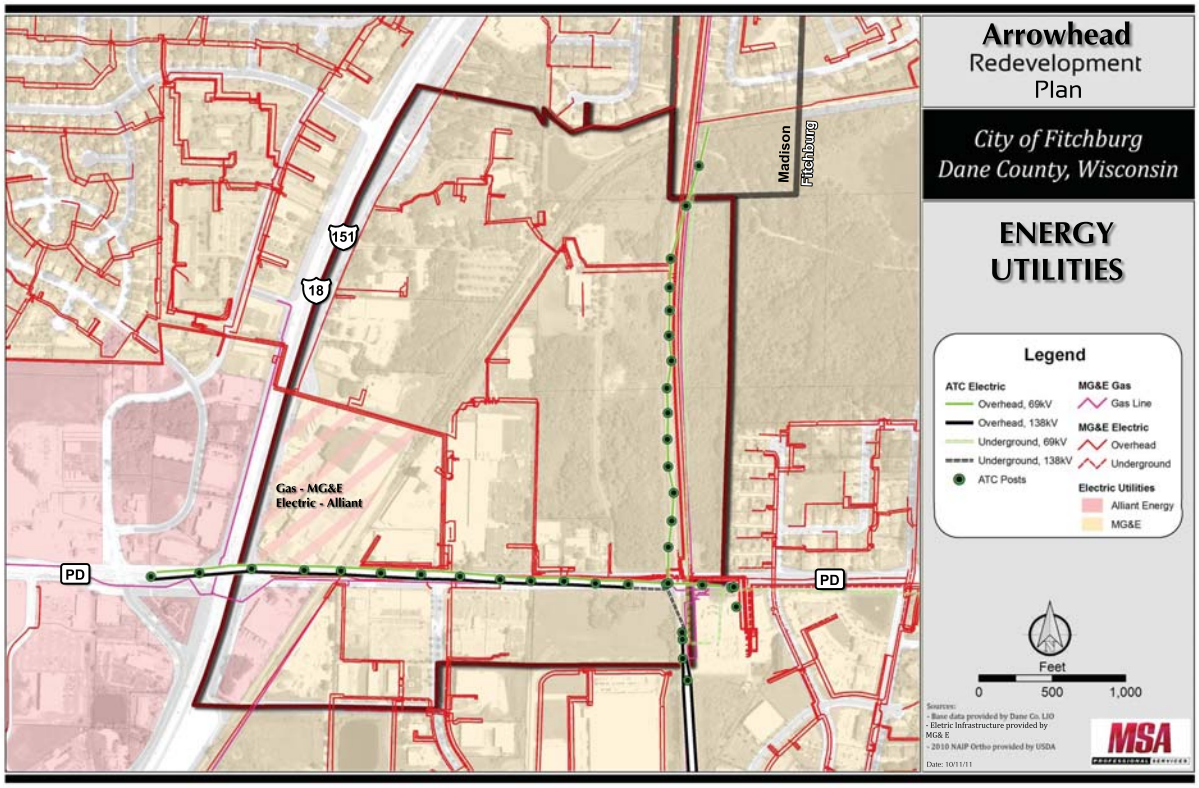
Except for redevelopment, all stormwater facilities shall be designed, installed and maintained so that postdevelopment infiltration volume shall be at least 90 percent of the predevelopment infiltration volume, based upon average annual rainfall.

Additionally there are other practices which are best applied on a site-by-site basis which include such things as oil and grease control for runoff from commercial and industrial developments.

Energy

Gas and electric lines are shown in *Figure 2.10*. Businesses reported no problems or complaints with energy services. The primary limiting factor here is the location of electric lines along the McKee Road corridor. American Transmission Company (ATC) has two high voltage lines along the south side of the road, and Madison Gas and Electric (MG&E) has multiple lines along the north side of the road. Both would likely need to be relocated if and when McKee Road is expanded to accommodate more lanes and/or improved bike and pedestrian facilities. The City has indicated an interest in burying these lines, if cost-feasible.

Figure 2.10: Energy Utilities



MG&E also has three lines that run north from the Commerce Park Drive intersection through the AMD property, and then northwest through land owned by Certco. These lines will need to be moved to allow Certco to expand their facility to the north.

Telecommunications

Most of the larger businesses in the area have T-1 high volume voice and data service, provided through a variety of companies. Some businesses use AT&T's copper wire facilities for all communications. Some of those users reported problems with service, including repeated outages sometimes lasting up to an entire day.

2.5 Natural Constraints

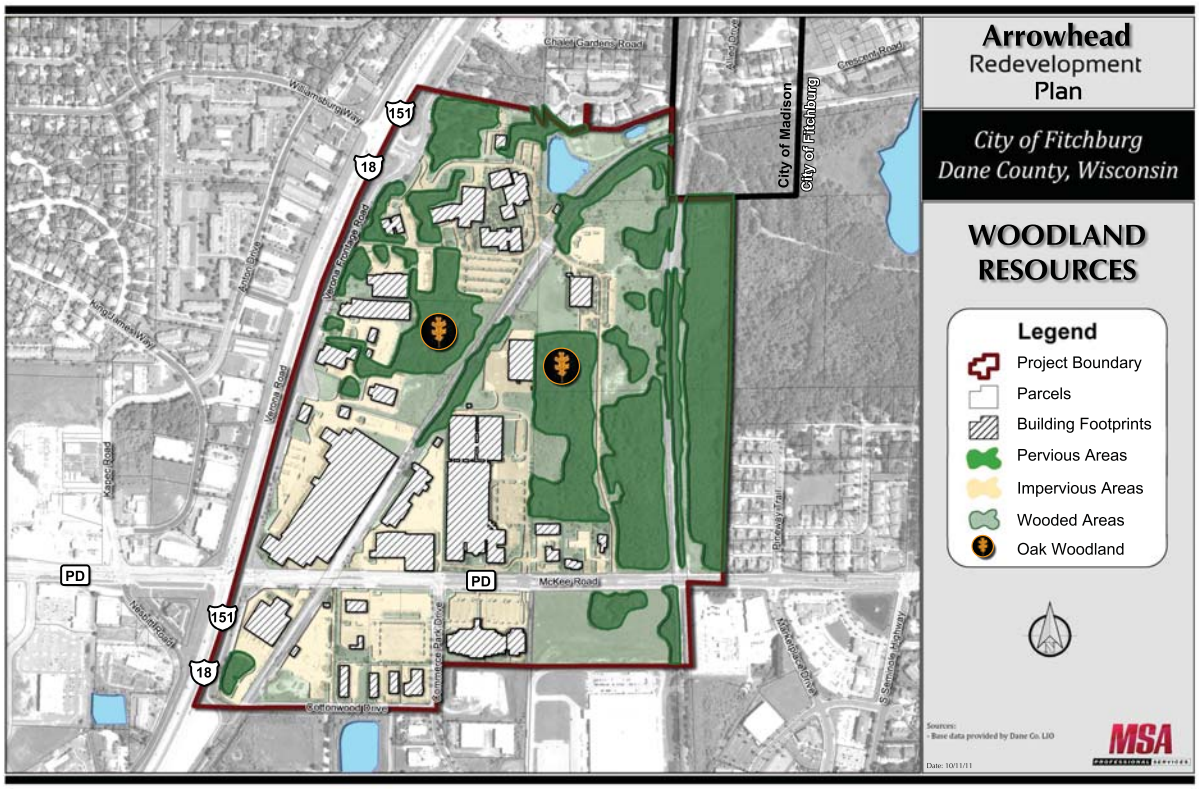
Trees and Woodlands

While the intensely developed parcels to the southwest have few trees, lower-density parcels to the north and east feature a variety of woodland conditions, ranging from a mixture of bushes and fast-growing softwoods to areas dominated by mature hardwoods, especially oaks. As shown in *Figure 2.11*, there are two such woodlands dominated by mature oaks.

Soils and Slopes

While there are no documented wetlands in the study area, there are some "poorly drained soils" evident in *Figure 2.12* (following page). This does not indicate a potential regulatory restriction, but it may limit the potential for any stormwater infiltration in those areas. There are some steep slopes exceeding a 12% grade throughout the study area, many of them man-made. These slopes may be

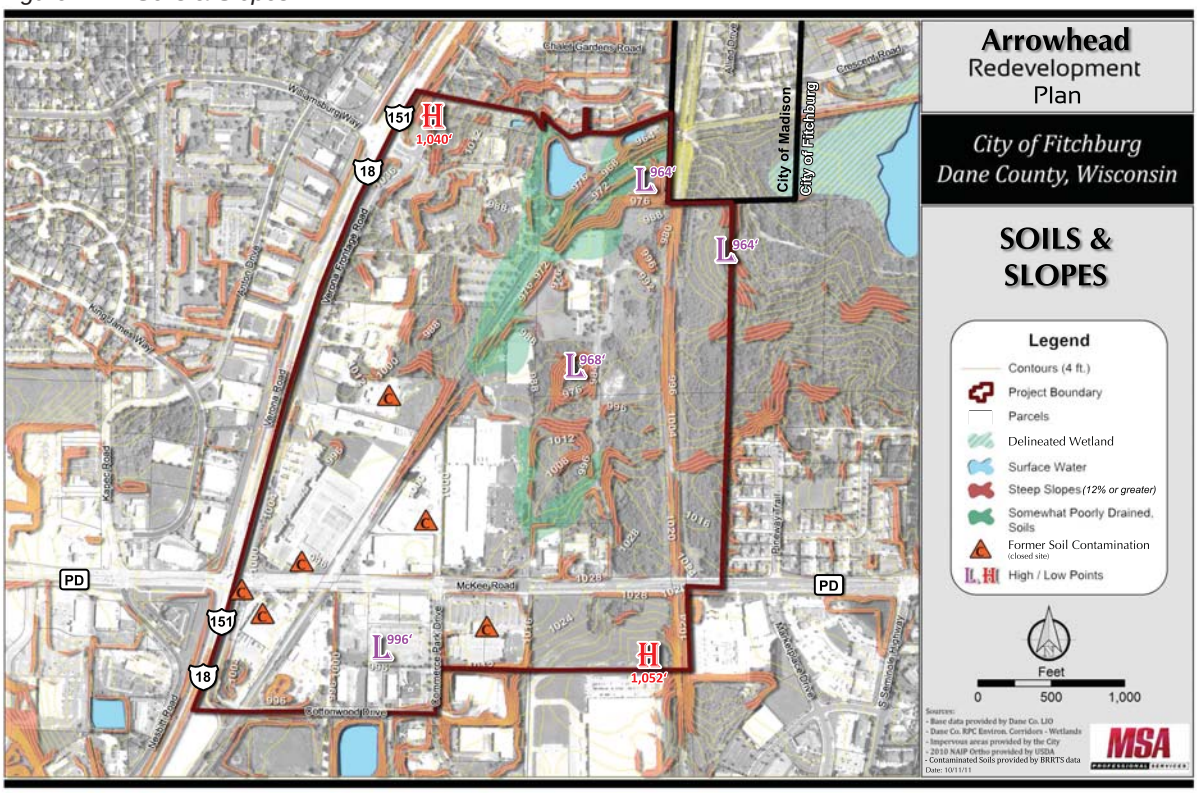
Figure 2.11: Woodland Resources



both a limiting factor and an opportunity, depending upon the programmatic requirements of proposed development on each site. Two sites that may be less desirable for development due to the slopes are the oak woodlands identified in *Figure 2.10.* Each also has steep slopes that make development more difficult (which probably explains, in part, the presence of mature woodlands).

Figure 2.12 also indicates the presence of soil contamination sites on record with the Wisconsin DNR through the Bureau for Remediation and Redevelopment Tracking System (BRRTS). While all six known sites are considered "closed", and no longer deemed a safety risk, some may pose a risk if disturbed during redevelopment. The history of manufacturing uses and the multiple known contamination sites also makes likely the possibility of additional sites not yet identified. Any redevelopment project will need to evaluate soil conditions for possible contamination.

Figure 2.12: Soils & Slopes

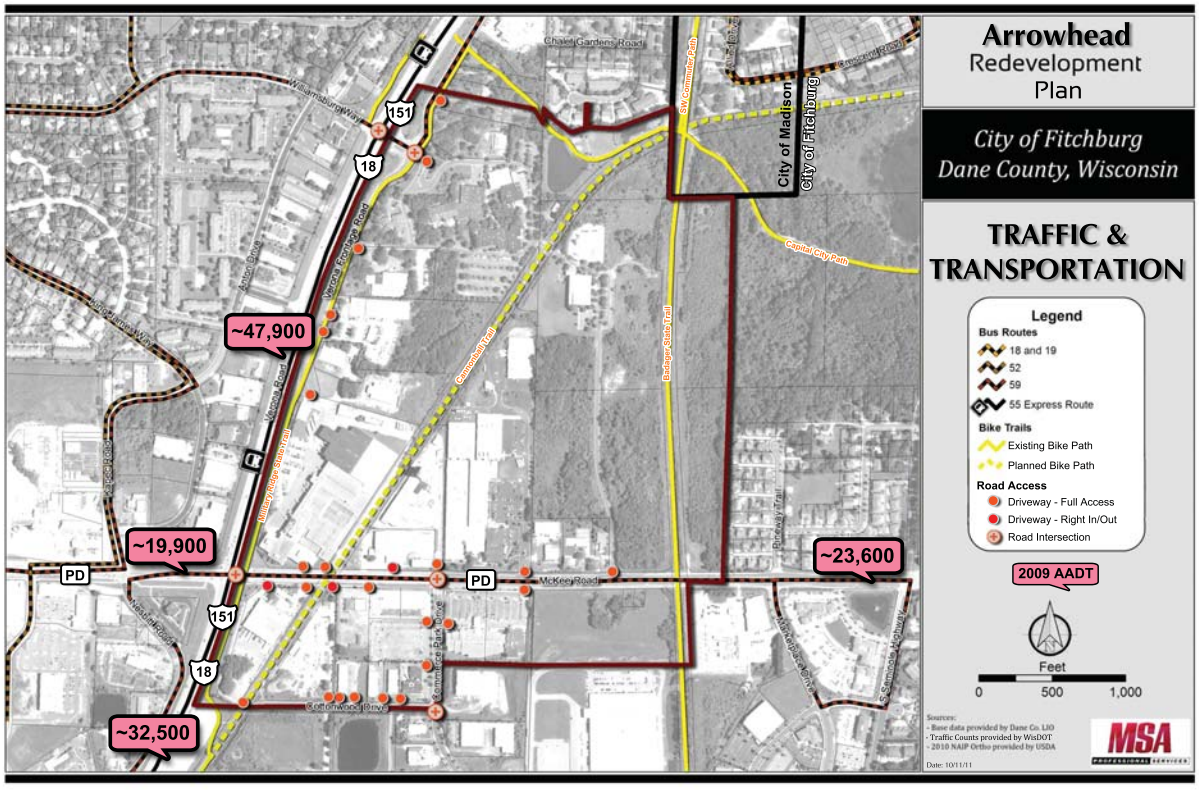


3 Transportation Analysis

3.1 Transportation Constraints

There is an inherent conflict in any commercial development area between the desire for maximum visibility from high-traffic transportation corridors, and the need to protect safety and efficiency on those corridors by limiting direct access. *Figure 3.1* shows the local transportation network, including driveway access locations. As expected, many of the properties with the greatest visibility have the greatest access restrictions. There is no direct access to Verona Road – all properties north of McKee on Verona Road use the Verona Frontage Road to access this high-volume regional arterial at Williamsburg Way.

Figure 3.1: Traffic & Transportation



3 Transportation Analysis

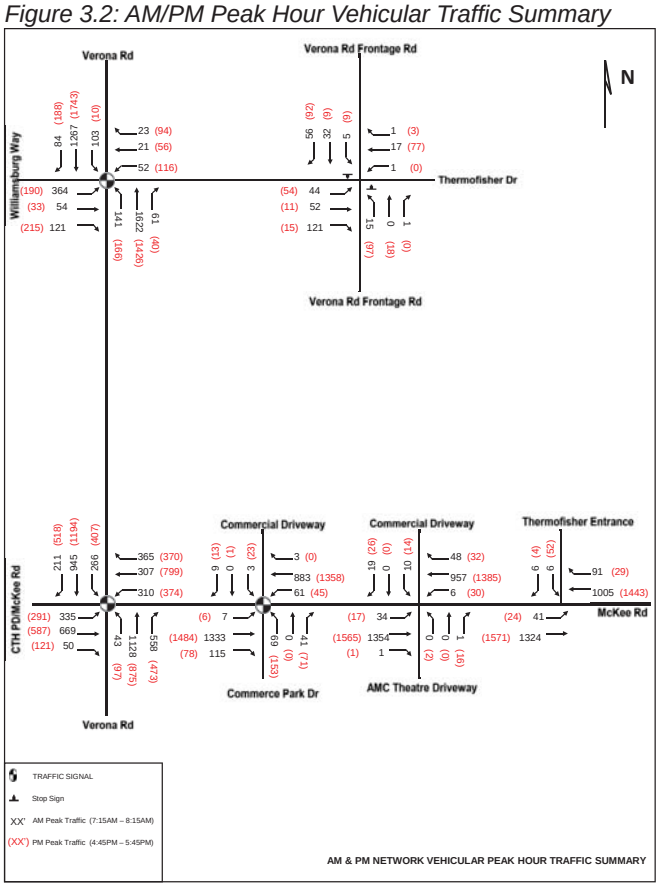
Verona Road is part of a Backbone Route as identified in the Connections 2030 State Highway Plan. It is a high volume route with significant site visibility opportunities for businesses that desire such visibility. It also offers good access to the rest of the interstate highway system – most of the time. This Verona Road segment of US-151 carries about 48,000 vehicles in average annual daily traffic, and it also features the only traffic signals in the entire 170-mile US-151 Backbone Route from Fond du Lac to Dubuque. Wisconsin DOT is planning to improve service and decrease congestion in this corridor through a series of projects, beginning with reconstruction of the Beltline interchange in 2013, construction of a grade-separated interchange that will elevate the highway over McKee Road in about 2017, and finally, potentially, reconstruction of the entire roadway from Williamsburg Way to the Beltline to convert it to a limited access freeway sometime around 2030. All traffic and transportation planning for the Arrowhead area must be pursued in the context of those significant changes to Verona Road.

It is also important to note that the lack of public roads in the area north of McKee Road and east of Verona Road restricts further development such that the larger parcels cannot be subdivided unless each new parcel meets minimum street frontage requirements (100 feet in industrial districts, 60 feet in business districts). Because this plan seeks to facilitate the creation of new streets and development in this area – and more traffic – a careful analysis of traffic conditions and capacity for additional trips is necessary.

Traffic Volume Data Collection

To evaluate traffic conditions, MSA first collected peak hour counts of traffic at each of six intersections in the study area. Unlike the data available from the DOT, which estimates average annual daily traffic (AADT) for segments of roadway, the counts collected for this study focused on just the peak hours, when congestion is most severe, and they focus on the intersections, providing separate counts for each of the movements through each intersection. These counts also include and distinguish among cars, trucks, pedestrians and bikers using crosswalks, and bicycles on the road.

Figure 3.2: AM/PM Peak Hour Vehicular Traffic Summary



The traffic volume data was collected during June 2011 at each of the study area intersections for a total of six hours: 6AM-9AM and 3PM-6PM.

- Verona Road & McKee Road (6/14/11)
- Verona Road & Williamsburg Way (6/8/11)
- Verona Road Frontage Road & Thermo Fisher Driveway (6/8/11)
- McKee Road & Commerce Park Drive (6/23/11)
- McKee Road & AMC Theatre/Placon Driveways (6/23/11)
- McKee Road & Thermo Fisher Driveway (6/23/11)

Data was collected using cameras and processing software to identify the various user types. The AM & PM network peak hours were determined to be 7:15AM-8:15AM and 4:45PM-5:45PM. *Figure 3.2* provides traffic count data at all intersections.

Of the six intersections studied, the busiest are the two Verona Road intersections (with Williamsburg Way and McKee Road) and the McKee Road/ Commerce Park Drive intersection. Peak hour traffic count summary tables were created for these three intersections (*supplemental documentation provided to the Planning and Zoning Department).*

Car and Truck Traffic Observations

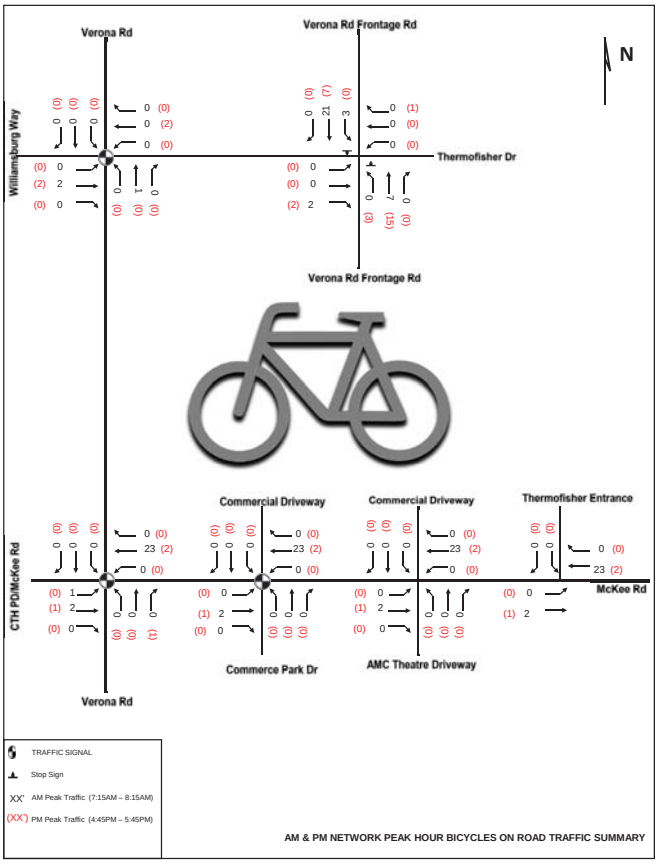
The peak period data confirms that the Verona Road & McKee Road intersection is currently experiencing significant delay and queuing during the AM and PM peak hours. Significant additional capacity is needed at this intersection in order to provide acceptable levels of service and queuing at the intersection. Additionally, some movements at the intersection of Williamsburg Way and Verona Road are also experiencing unacceptable delay during the peak periods, although the overall operations of the intersection are still acceptable. This indicates that while the problems today are not as severe as at the McKee Road intersection, there is little to no capacity for traffic growth at the Williamsburg intersection.

Along McKee Road, the existing volumes and operations east of Verona Road raise no specific concern at this time. However, the amount of potential growth on the north and south sides of McKee Road will have significant impacts and likely require capacity expansions to maintain acceptable operations. This includes the intersection at Commerce Park Drive, as well as the current Thermo Fisher Entrance.

Bike and Pedestrian Traffic Observations

Looking only at the major intersections at which data were collected, the peak period traffic data show only limited bike and pedestrian traffic. In the network peak hours (7:15AM-8:15AM and 4:45PM -5:45PM), the counts reveal about 20-30 bikers using the Verona Road Frontage Road, with the greater amount of bike traffic headed southbound past Williamsburg Way in the AM peak, and northbound through the same intersection in the PM peak. The counts also recorded a group of 21 bicyclists heading west on McKee Road through the study area. Only a handful of other bikers show up anywhere else in the study area during the peak vehicular traffic hours. See *Figure 3.3.*

Figure 3.3: AM/PM Peak Hour Bicycles on Road



The data distinguish between bikers on the road and bikes or pedestrians on sidewalks and crosswalks. Those users are also sparse during the peak periods, and the only significant flows noted are the 16-17 users crossing McKee Road at Verona Road on the Military Ridge State Trail. These are likely bicyclists also recorded as on-street bicyclists on the Verona Road Frontage Road further north. See *Figure 3.4*.

Counts were not collected for the Badger State Trail crossing of McKee Road, though this crossing was manually observed while other intersection video counts were underway. Anecdotally, during the PM peak, bicyclists looking to cross McKee Road to continue north or south along the trail had difficulty finding gaps to cross. When crossing the first half of the road bicyclists stopped and took refuge in the median before finding another gap to cross.

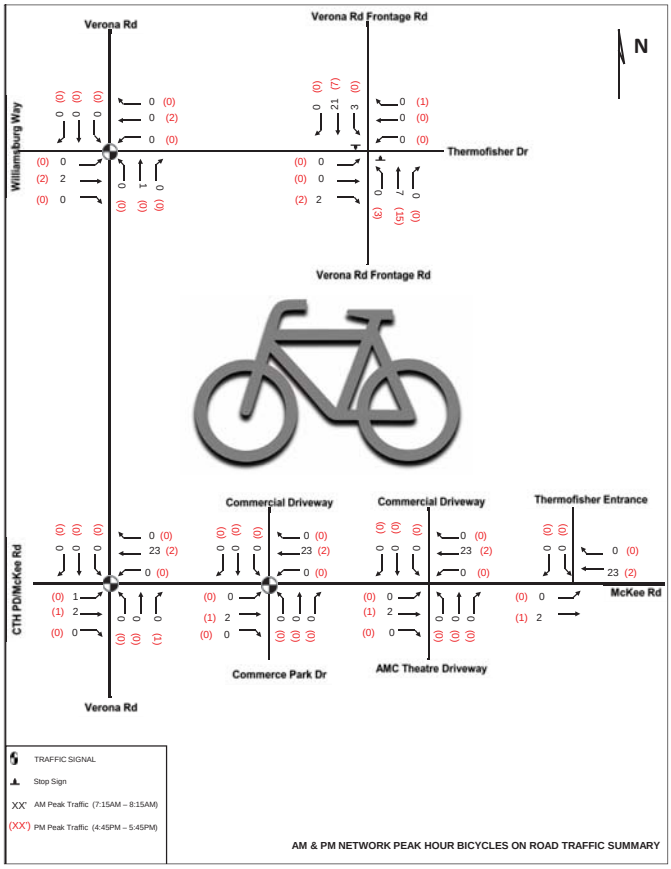
3.2 Arrowhead Area Trip Distribution

To project how new traffic generated by infill development may flow through the existing street network it is necessary to estimate the distribution of trips from that development. The trip distribution for potential Arrowhead infill development was estimated by considering both the existing peak hour traffic trip distribution and the expected access points and internal road connections for the future site. The estimate assumes that there will be a new public street through the area north of McKee Road that connects to the Verona Road Frontage Road and to McKee Road. Based on this assumption, two different trip distribution frameworks were created – one for the area north of McKee Road, from which trips can go either north to the Verona Road Frontage Road or South to McKee Road, and one for the area south of McKee Road, from which trips can only utilize McKee Road.

Distribution of Trips Generated North of McKee Road

Summarized, about 35% of the PM peak traffic is expected to depart to the north on 18/151 or the Verona Road Frontage Road, 30% to the east on McKee Road, 15% to the west on McKee Road, and 20% to the south on 18/151. Of that portion that departs to the south on 18/151, half, or 10% of all traffic from the planning area, is expected to turn left onto 18/151 at Williamsburg Way, and the other half is expected to use the westbound left turn from McKee Road.

Figure 3.4: AM/PM Peak Hour Ped/Bike Traffic on Crosswalk



Distribution of Trips Generated South of McKee Road

The regional distribution of trips generated on the south side of McKee Road is estimated to be the same as for the north side. However, almost all of the westbound, northbound, and southbound trips are expected to flow through the McKee Road-18/151 interchange. This means that new development south of McKee Road could have a greater impact on the long-term function and service of the new McKee Road-18/151 interchange. More specifically, it means that every outbound trip heading south on US 18/151 - about 20% of all PM peak trips, will need to use the westbound left turn from McKee Road.

The AM & PM peak inbound and outbound traffic expected distribution is summarized in supplemental documentation provided to the City.

3.3 WISCONSIN DOT PROGRAMMED IMPROVEMENTS

The Wisconsin Department of Transportation (WisDOT) is planning to make changes to the US 18/151 (Verona Road) corridor in the cities of Madison and Fitchburg in order to enhance, improve and preserve mobility and safety for motorized and non motorized travel in the US 151 backbone corridor.

US 151 has been designated a higher state priority Backbone Route in the Connections 2030 state highway plan. Backbone routes make only 3 percent of Wisconsin's roadways, yet carry 34 percent of all auto travel and 57 percent of all truck travel. Currently the section of Verona Road between McKee Road and the US 12 Beltline Highway is the only urban section with signals in the entire 170 mile US 151 Backbone Route from Fond du Lac to Dubuque without a freeway alternative.

Improvement Schedule

There are three stage of improvements expected on US 18/151:

Stage 1 *(construction beginning 2014)*

Reconstructing the current Verona Road/Beltline diamond interchange into a single-point urban interchange and extending the six-lane Beltline section west through the Whitney Way interchange. WisDOT has evaluated the alternatives, published the final environmental impact statement and is actively interacting with the public. The remaining steps in the project process are expected to be (1) determine final preferred improvements, (2) prepare design drawings and (3) plan for construction.

Stage 2 (*design in late 2011, construction by 2018)*

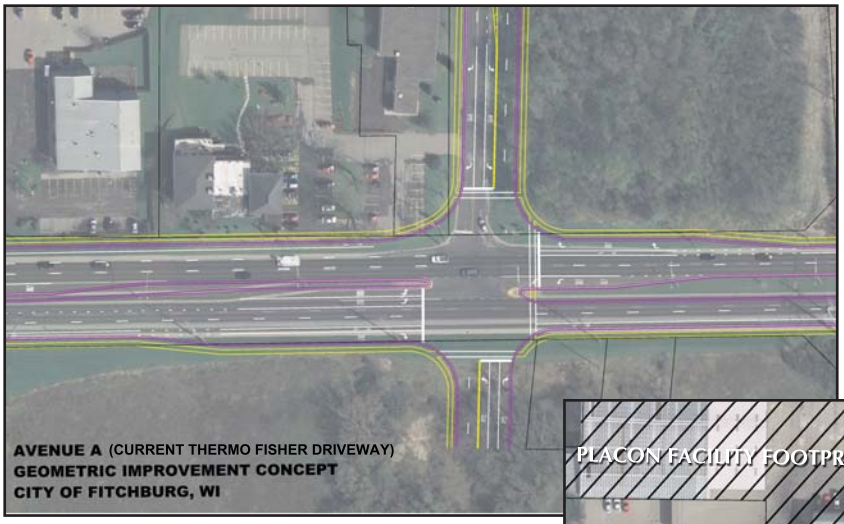
The 18/151 and McKee Road intersection will be converted to a diamond interchange with a third north/south lane added from the McKee Road interchange to north of the Williamsburg Way intersection. WisDOT does have concern regarding the function of the Williamsburg Way intersection, especially the ability to maintain an acceptable level of service for turning movements, so the design of this intersection may change to address these concerns.

Stage 3 *(anticipated to occur near 2030, or when operations and safety warrant the improvements)*

A depressed freeway between McKee Road and the beltline will separate local traffic from metropolitan and regional traffic. This design will include grade-separated crossings at Williamsburg Way, Raymond Road and Summit Drive, and a frontage road system to maintain local access. Also a US-151 free flow system interchange with depressed US-151 ramps east of the Verona Road Single-Point interchange will be constructed.

Observations

Some commuting traffic traveling between Verona and downtown Madison (or beyond) is currently using McKee Road and either Seminole Highway or Fish Hatchery Road to avoid the stoplights and congestion on 18/151. When WisDOT's Stage 2 improvements are completed, some of this traffic will likely migrate to the improved route, reducing congestion on McKee Road. This potential change in traffic patterns may add additional thru traffic at the Williamsburg Way intersection, further reducing the capacity of the east/west approaches.



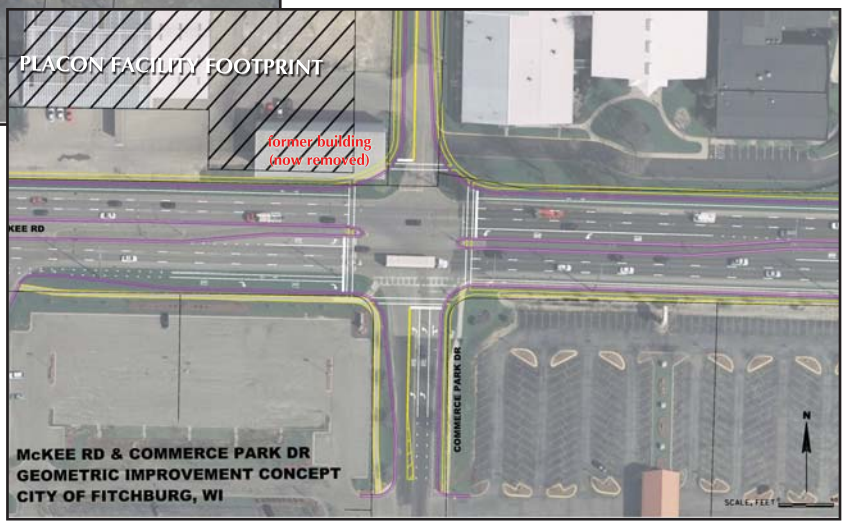


Figure 3.5: Intersection Expansion Feasibility Illustrations

3.4 Potential Improvements to Local Intersections

As traffic volumes continue to grow, the primary determinant of congestion is the function of intersections in the network, especially their ability to manage turning movements. Before estimating the amount of new traffic that might be generated by infill development in Arrowhead or could be accommodated by the regional transportation network, design alternatives were generated for each of the major local intersections (not including the two Verona Road intersections) to see if and how additional lanes and turn lanes could be added.

Figure 3.5 shows that it is feasible to add additional lanes, turn lanes, bike lanes, and sidewalks to McKee Road. These improvements would require additional right-of-way and the relocation of utility lines, but would not eliminate any existing buildings and may not eliminate any existing parking along the corridor.

3.5 Traffic Forecasting

Background

To estimate capacity for new trips generated in the Arrowhead study area it is necessary to project background traffic growth for the entire network. Volumes were provided by WisDOT based on the Madison MPO Travel Demand Model for the year 2030, incorporating the interchange improvements planned to occur by 2018. These background traffic estimates for 2030 were compared to the counts collected in June 2011 to evaluate the growth rates expected for background traffic during the 19 year period.

The peak hour volume comparison at the Verona Road intersections with McKee Road and Williamsburg Way indicates the 2011 counts are

Table 3.1: Existing Peak Hour Traffic Volumes per June 2011 counts compared to DOT Projected 2030 Traffic Volumes

		Verona Rd & CTH PD/McKee Rd											
		North Leg			East Leg			South Leg			West Leg		
	Year	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
AM	2011	265	945	210	310	305	365	45	1130	560	335	670	50
	2030	188	993	822	235	591	359	166	1918	682	860	668	101
	Difference	-77	48	612	-75	286	-6	121	788	122	525	-2	51
PM	2011	405	1195	520	375	800	370	95	875	475	290	585	120
	2030	417	1718	882	535	818	295	160	1086	296	920	700	178
	Difference	12	523	362	160	18	-75	65	211	-179	630	115	58

		Verona Rd & Williamsburg Way											
		North Leg			East Leg			South Leg			West Leg		
	Year	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
AM	2011	105	1265	85	50	20	25	140	1620	60	365	55	120
	2030	43	1814	64	62	7	5	365	2675	97	366	27	239
	Difference	-62	549	-21	12	-13	-20	225	1055	37	1	-28	119
PM	2011	10	1745	190	115	55	95	165	1425	40	190	35	215
	2030	5	2614	260	93	21	27	323	1911	66	231	13	326
	Difference	-5	869	70	-22	-34	-68	158	486	26	41	-22	111

higher than the 2030 forecast volumes for certain movements. For example, at Williamsburg Way during the AM peak hour the southbound left turn volume in 2011 is 105 compared to a forecast volume of 43 in 2030. Similarly, at McKee Road in the AM Peak hour, the southbound left turn volume in 2011 is 265, while the 2030 forecast volume is 188. *Table 3.1* shows the comparison of the 2011 traffic volumes and the projected 2030 traffic volumes provided by WisDOT at the Verona Road & McKee Road and the Verona Road & Williamsburg Way intersections.

In order to perform a more conservative analysis at the study area intersections, the 2011 traffic volumes were forecasted at a 1.5% compounded annual growth rate out to the year 2030 for the AM and PM peak hours, and 1% compounded annual growth rate for traffic outside those one-hour peaks. The resulting AM and PM peak hour traffic volumes were used as the base traffic for evaluating future conditions along Verona Road. The resulting forecasted AM and PM peak hour traffic volumes are summarized in *Tables 3.2* and *3.3* on the next page.

Based on the desired growth and development in the Arrowhead study area, it is unlikely that traffic volumes will be lower at these intersections in 2030 than they are today. Any capacity improvements planned for the Verona Road corridor should take into consideration the 2011 counts and anticipated development before preferred alternatives are selected.

Future Traffic Capacity Analysis

The future traffic capacity analysis focused on the Verona Road & McKee Road intersection as the limiting point of the network. The evaluation of possible expansions of local intersections (Section 3.4) confirmed that they can be expanded as necessary to accommodate a reasonable amount

Table 3.2: Peak Hour Traffic Forecasts (McKee Road Intersections)

		Verona Rd & McKee Rd Peak Hour Traffic Forecast											
		North Leg			East Leg			South Leg			West Leg		
	Year	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
AM	2011	265	945	210	310	305	365	45	1130	560	335	670	50
	2030	350	1255	280	410	405	485	60	1500	745	445	890	65
	Difference	85	310	70	100	100	120	15	370	185	110	220	15
PM	2011	405	1195	520	375	800	370	95	875	475	290	585	120
	2030	535	1585	690	500	1060	490	125	1160	630	385	775	160
	Difference	130	390	170	125	260	120	30	285	155	95	190	40

		McKee Rd & Thermofisher Entrance											
		North Leg			East Leg			South Leg			West Leg		
	Year	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
AM	2011	5	0	5	0	1005	90	0	0	0	40	1325	0
	Difference	2	0	2	0	382	34	0	0	0	15	503	0
	2030	5	0	5	0	1335	120	0	0	0	55	1760	0
	Difference	0	0	0	0	330	30	0	0	0	15	435	0
PM	2011	50	0	5	0	1445	30	0	0	0	25	1570	0
	Difference	19	0	2	0	549	11	0	0	0	10	597	0
	2030	65	0	5	0	1915	40	0	0	0	35	2085	0
	Difference	15	0	0	0	470	10	0	0	0	10	515	0

		McKee Rd & Commerce Park Dr Peak Hour Traffic Forecast											
		North Leg			East Leg			South Leg			West Leg		
	Year	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
AM	2011	5	0	10	60	885	5	70	0	40	5	1335	115
	Difference	2	0	4	23	336	2	27	0	15	2	507	44
	2030	5	0	15	80	1175	5	95	0	55	5	1770	155
	Difference	0	0	5	20	290	0	25	0	15	0	435	40
PM	2011	25	0	15	45	1360	0	155	0	40	5	1485	80
	Difference	10	0	6	17	517	0	59	0	15	2	564	30
	2030	35	0	20	60	1805	0	205	0	55	5	1970	105
	Difference	10	0	5	15	445	0	50	0	15	0	485	25

		McKee Rd & AMC Theatre Peak Hour Traffic Forecast											
		North Leg			East Leg			South Leg			West Leg		
	Year	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
AM	2011	10	0	20	5	955	50	0	0	0	35	1355	0
	Difference	4	0	8	2	363	19	0	0	0	13	515	0
	2030	15	0	25	5	1265	65	0	0	0	45	1800	0
	Difference	5	0	5	0	310	15	0	0	0	10	445	0
PM	2011	15	0	25	30	1385	30	0	0	15	15	1565	0
	Difference	6	0	10	11	526	11	0	0	6	6	595	0
	2030	20	0	35	40	1840	40	0	0	20	20	2075	0
	Difference	5	0	10	10	455	10	0	0	5	5	510	0

Table 3.3: Peak Hour Traffic Forecasts (Verona Road / Verona Frontage Road Intersections)

		Verona Rd & Williamsburg Way Peak Hour Traffic Forecast											
		North Leg			East Leg			South Leg			West Leg		
	Year	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
AM	2011	105	1265	85	50	20	25	140	1620	60	365	55	120
	Difference	40	481	32	19	8	10	53	616	23	139	21	46
	2030	140	1680	115	65	25	35	185	2150	80	485	75	160
	Difference	35	415	30	15	5	10	45	530	20	120	20	40
PM	2011	10	1745	190	115	55	95	165	1425	40	190	35	215
	Difference	4	663	72	44	21	36	63	541	15	72	13	82
	2030	15	2315	250	155	75	125	220	1890	55	250	45	285
	Difference	5	570	60	40	20	30	55	465	15	60	10	70

		Verona Rd Frontage Rd & Thermofisher Dr Peak Hour Traffic Forecast											
		North Leg			East Leg			South Leg			West Leg		
	Year	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
AM	2011	5	30	55	0	15	0	15	0	0	45	50	120
	Difference	2	11	21	0	6	0	6	0	0	17	19	46
	2030	5	40	75	0	20	0	20	0	0	60	65	160
	Difference	0	10	20	0	5	0	5	0	0	15	15	40
PM	2011	10	10	90	0	75	5	95	20	0	55	10	15
	Difference	4	4	34	0	28	2	36	8	0	21	4	6
	2030	15	15	120	0	100	5	125	25	0	75	15	20
	Difference	5	5	30	0	25	0	30	5	0	20	5	5

of growth. The Verona Road intersection, however, planned by WisDOT for conversion to a tight urban interchange beginning in 2017, will carry the most traffic and turning movements in the network and will itself have limited space for additional capacity or turn lanes once constructed.

Figure 3.6 (next page) shows traffic volumes through the Verona Road & McKee Road intersection during the AM and PM peaks. The graphs approximate intersection performance as volumes increase. Level of Service (LOS) C is acceptable, LOS D indicates moderate delays, and LOS E indicates congestion, such as long back-ups and drivers waiting through multiple signal cycles. The intersection is currently performing poorly from 7:15 to 8:30 AM, and 4:00 to 6:00 PM.

Figure 3.7 (next page) show the AM and PM peak periods in 2030, with the new interchange constructed. These graphs tell us that even after the construction is completed, the new interchange, considered as a whole, will be operating near capacity in 2030, and specific movements will be performing at Level of Service (LOS) "D" or "E", even if we add no new development within the Arrowhead planning area.

The expected return of congestion here by 2030 leads us to the conclusion that substantial new development to the adjacent planning area should not be added unless most of the resulting trips from additional development do not occur in the peak hours, especially 7:30-8:15 AM and 5:00-5:45 PM.

Assuming the timing of trips generated by new development in the planning area can be influenced, the question remains: how many additional trips can the Arrowhead development area add to the network? An exact answer to the question is not possible because it depends upon the timing and

Figure 3.6: McKee/Verona AM & PM Peak Traffic Volumes, 2011

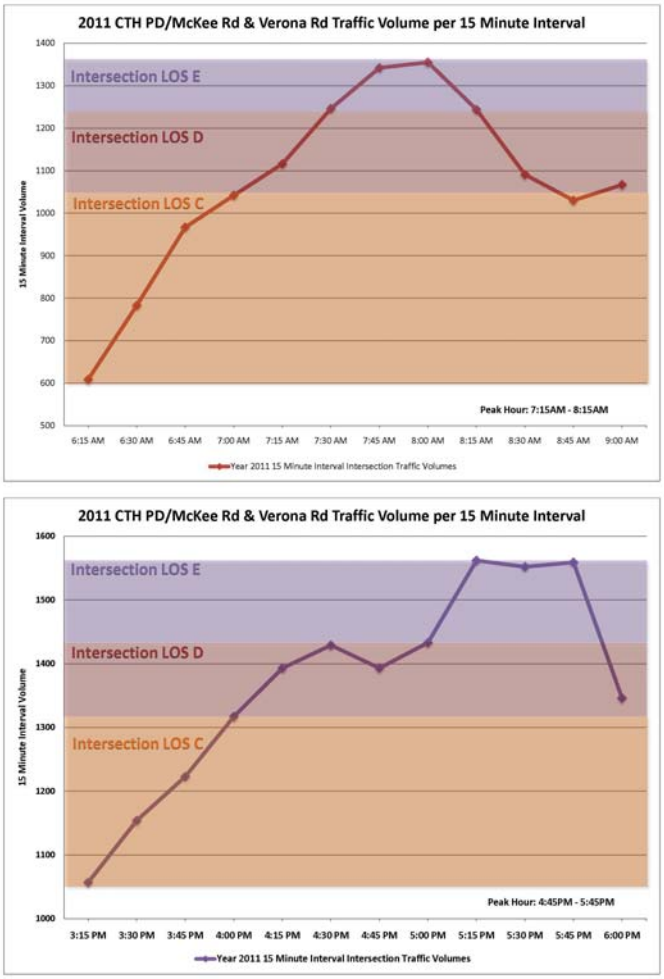
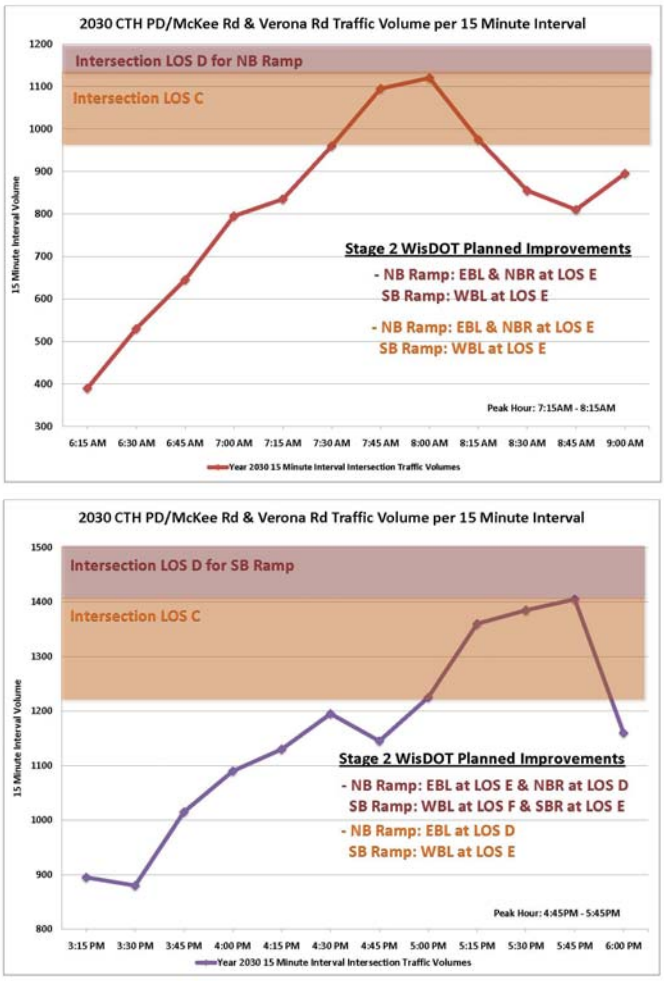


Figure 3.7: McKee/Verona AM & PM Peak Traffic Volumes, 2030



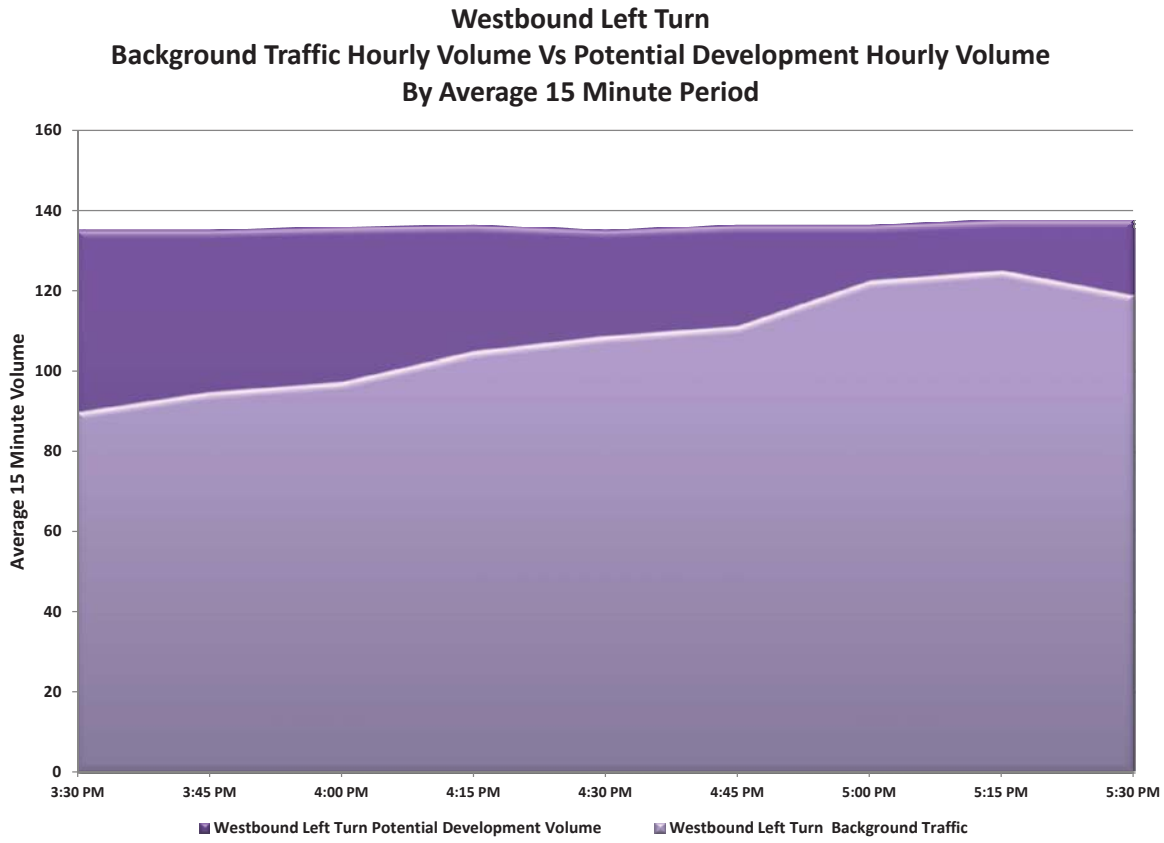
mode of the new trips. If businesses in the planning area could commit to operating and generating trips only between the hours of 7:00 PM to 6:00 AM, we could add thousands of new trips and a great deal of development without increasing congestion during the peak periods. A more realistic approach is to analyze the longer AM and PM peak periods – 6:30-8:30 AM and 3:30-5:30 PM - and determine how much additional traffic can be added to these periods, if distributed mostly outside the peak one-hour period.

The most practical method of determining the limit on new trips is to focus on the specific movements within the intersection most susceptible to severe congestion.

Of all of these potential points of congestion, the movement of greatest concern is the westbound left onto 18/151 in the PM peak. This movement is expected to be at LOS D and LOS E in 2030 during the AM and PM peak periods, respectively, even with no new development added here.

Figure 3.8 illustrates the expected hourly traffic between roughly 3:30 and 5:30 PM, just for the westbound left turn from McKee Road onto the southbound 18/151 onramp. The lower part of the graph (light purple) shows the projected volume, given background traffic growth, while the upper part of the graph (dark purple) shows the

Figure 3.8: Westbound Left Turns, Projected Volume & Potential Capacity, 2030 (estimated)



capacity for additional trips without causing this movement to degrade from LOS "E" to LOS "F". If the additional trips could be distributed ideally as shown in *Figure 3.8,* this movement could accommodate approximately 250 additional trips in the PM peak period of 3:30-5:30. The graph shows that most of those trips should occur before the peak hour begins – about 4:45 PM – to avoid severe congestion consistent with LOS "F".

In reality it is not feasible to achieve such an ideal distribution of trips. However, it is possible to limit some of those trips either earlier or later than the 3:30-5:30 PM period evaluated here. For example, the Placon shift change currently occurs at 3:00 PM, allowing most outbound trips from Placon to occur before 3:30, and Sub-Zero Wolf (just south of the planning area, accessed via Commerce Park Drive) has staggered shifts with changes that occur at 1:30 and 2:00 PM. Given this possibility, we will

AM Peak Movements Susceptible to Congestion

(LOS "D" or worse)

- **NB right onto EB McKee (movement most likely to become congested in AM peak)**
- SB left onto EB McKee
- EB left onto NB 18/151
- EB through on McKee

PM Peak Movements Susceptible to Congestion

(LOS "F" or worse)

- **WB left onto 151 (movement most likely to become severely congested in PM peak)**
- SB right onto WB McKee
- WB right onto NB 18/151
- WB through on McKee

continue to use the above estimate of 250 additional trips in the westbound left turn movement as our starting point for estimating total possible trips and building square footage possible for the Arrowhead planning area.

The next step is to estimate the total number of additional trips the system can accommodate based on how much this one movement can accommodate. An estimate of the likely AM inbound and PM outbound traffic distributions for the planning area (Section 3.2) provides the distribution of trips at each intersection by direction, approach and movement.

For new development in the area north of McKee Road, 10% of all PM peak hour trips are expected to utilize the westbound left turn from McKee Road to 18/151. If all new development within the study area were generated *only* north of McKee, the 250 trips that this movement can accommodate at LOS "E" equates to 2500 trips (250 divided by 0.1) that could be added to the PM peak period (distributed before or after the actual system peak hour) without reducing the performance of this already-congested movement to LOS "F".

For new development in the area south of McKee Road, including parcels adjacent to McKee and future expansion of the Fitchburg Commerce Park, *20%* of all PM peak hour trips are expected to utilize that same movement. By a similar calculation (250 divided by 0.2), 1250 trips could be added from this area without reducing the performance of this already-congested movement to LOS "F".

So the trips that can be accommodated, and the amount of development associated with those trips, depends upon where that development occurs - north or south of McKee Road. The theoretical maximum number of PM peak trips that could reasonably be added would therefore be something between 1250 and 2500 trips, reflecting a distribution of new development north and south of McKee.

4 Master Plan

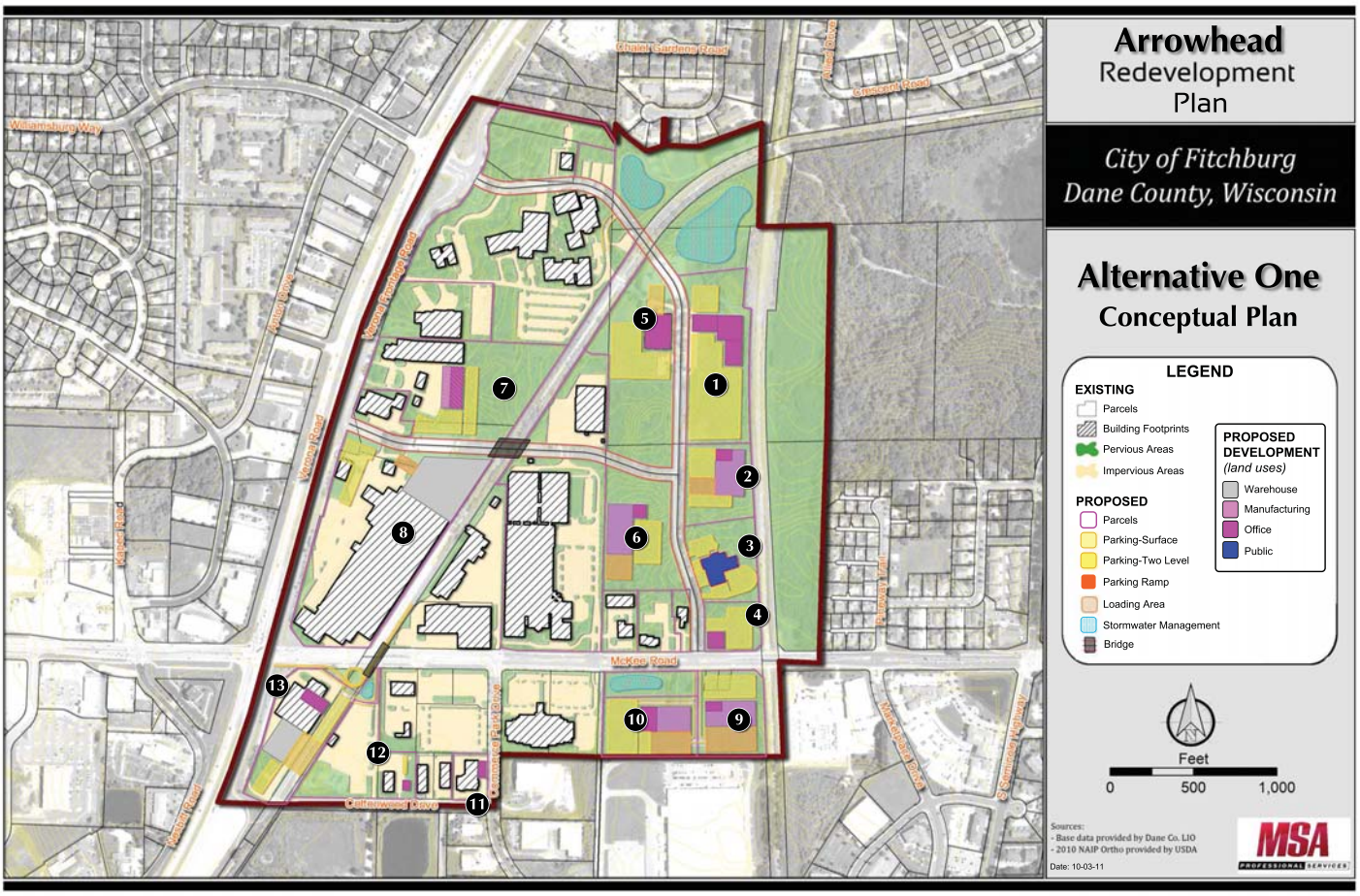
The purpose of this plan is to identify where and how additional development can be accommodated in this area, with a focus on the needs of existing employers. Traffic and transportation needs are a central consideration – the master plan needs to identify new street infrastructure to provide improved access to some parts of the planning area, and the capacity of the existing street network to handle more traffic must be considered.

4.1 Preliminary Concept Alternatives

After evaluating the existing conditions, development constraints and business owner's current concerns and future plans, four preliminary draft alternatives were created to explore the various ways to provide improved street connectivity and site access through the study area.

Each alternative is described on the subsequent pages with a summary of the advantages and disadvantages of each. These alternatives also offered a range of development intensities, with a focus on trip generation rates. Alternative Four presents the high range of proposed traffic generation, as it proposes development of all available sites and the highest amount of office uses, which generate more traffic than other uses.

ALTERNATIVE ONE



Advantages

- Utilizes existing alignment of Thermo Fisher driveway as much as possible
- Provides for the extension of Williamsburg Way
- Route of new road between Certco and Saris preserves current location of Harder Corp.
- Reroutes the Cannonball Trail around the west side of General Beverage, allowing for parking and loading in the current trail ROW
- Expands Midwest Decorative Stone with purchase of neighboring parcel to east on Cottonwood Drive, providing more office and parking space
- Least impact on Pine Ridge Neighborhood

Disadvantages

- Does not provide a site large enough for a new, consolidated Thermo Fisher facility
- Does not connect to or utilize the Thermo Fisher land east of the Badger State Trail
- Disruption of the Arrowhead Park stormwater pond
- The proposed road connecting to Williamsburg Way will be steep along the north edge of the current Thermo Fisher campus, and it will likely require that the intersection where this roads meets the Verona Road Frontage Road will need to be lowered several feet
- Route of new road between Certco and Saris obstructs Certco expansion more than other alternatives and leaves a strip of land to the north not all that useful to either company
- Moves Midwest Decorative Stone office to Cottonwood Drive, consolidates direct access from McKee for General Beverage and Midwest Decorative Stone to one shared, right-in-right-out driveway east of the Cannonball trail crossing

ALTERNATIVE 1 SITE INFORMATION *(land use, building size, parking, etc.)*

							PARKING NEEDS		PARKING PROVIDED	
Site	Business	Land Use	Spaces / k sq.ft.	Building Footprint	# of Stories	Building (sqft)	# of Spaces	Total Area*	Total Area	# of Spaces*
#1	NEW BUSINESS	Suburban Office	3.6	22,500	3	67,500	243	97,200	22,500	
	NEW BUSINESS	Suburban Office	3.6	30,000	2	60,000	216	86,400	160,000	
						127,500	**459**	**183,600**	**182,500**	**456**
#2	NEW BUSINESS	Suburban Office	3.6	7,000	1	7,000	25	10,080	16,250	
	NEW BUSINESS	Manufacturing	1.5	43,000	1	43,000	65	25,800	26,000	
						50,000	**90**	**35,880**	**42,250**	**106**
#3	NEW BUSINESS	Fire Station			2	0	0	0		
						0	**0**	**0**		**0**
#4	NEW BUSINESS	Suburban Office	3.6	10,000	3	30,000	108	43,200	42,700	
						30,000	**108**	**43,200**	**42,700**	**107**
#5	REUSE BLDG	Suburban Office	3.6	30,000	2	60,000	216	86,400	83,125	
						60,000	**216**	**86,400**	**83,125**	**208**
#6	NEW BUSINESS	Suburban Office	3.6	6,400	1	6,400	23	9,216		
	NEW BUSINESS	Manufacturing	1.5	45,000	1	45,000	68	27,000		
						51,400	**91**	**36,216**	**52,500**	**131**
#7	Saris	Suburban Office	3.6	18,750	1	18,750	68	27,000	26,000	
	Saris	Manufacturing	1.5	31,250	1	31,250	47	18,750	16,000	
						50,000	**114**	**45,750**	**42,000**	**105**
#8	Certco	Warehouse	0.7	120,000	1	120,000	84	33,600	36,600	
						120,000	**84**	**33,600**	**36,600**	**92**
#9	NEW BUSINESS	Suburban Office	3.6	6,000	2	12,000	43	17,280	39,000	
	NEW BUSINESS	Manufacturing	1.5	39,000	1	39,000	59	23,400		
						51,000	**102**	**40,680**	**39,000**	**98**
#10	NEW BUSINESS	Suburban Office	3.6	15,000	2	30,000	108	43,200	56,000	
	NEW BUSINESS	Manufacturing	1.5	30,000	1	30,000	45	18,000	7,800	
						60,000	**153**	**61,200**	**63,800**	**160**
#11	United Vaccines	Suburban Office	3.6	4,500	2	9,000	32	12,960		
						9,000	**32**	**12,960**	**0**	**0**
#12	Madison Landscapi	Suburban Office	3.6	2,000	2	4,000	14	5,760	6,000	
						4,000	**14**	**5,760**	**6,000**	**15**
#13	General Beverage	Suburban Office	3.6	12,000	1	12,000	43	17,280	21,500	
	General Beverage	Warehouse	0.7	34,000	1	34,000	24	9,520	13,000	
						46,000	**67**	**26,800**	**34,500**	**86**

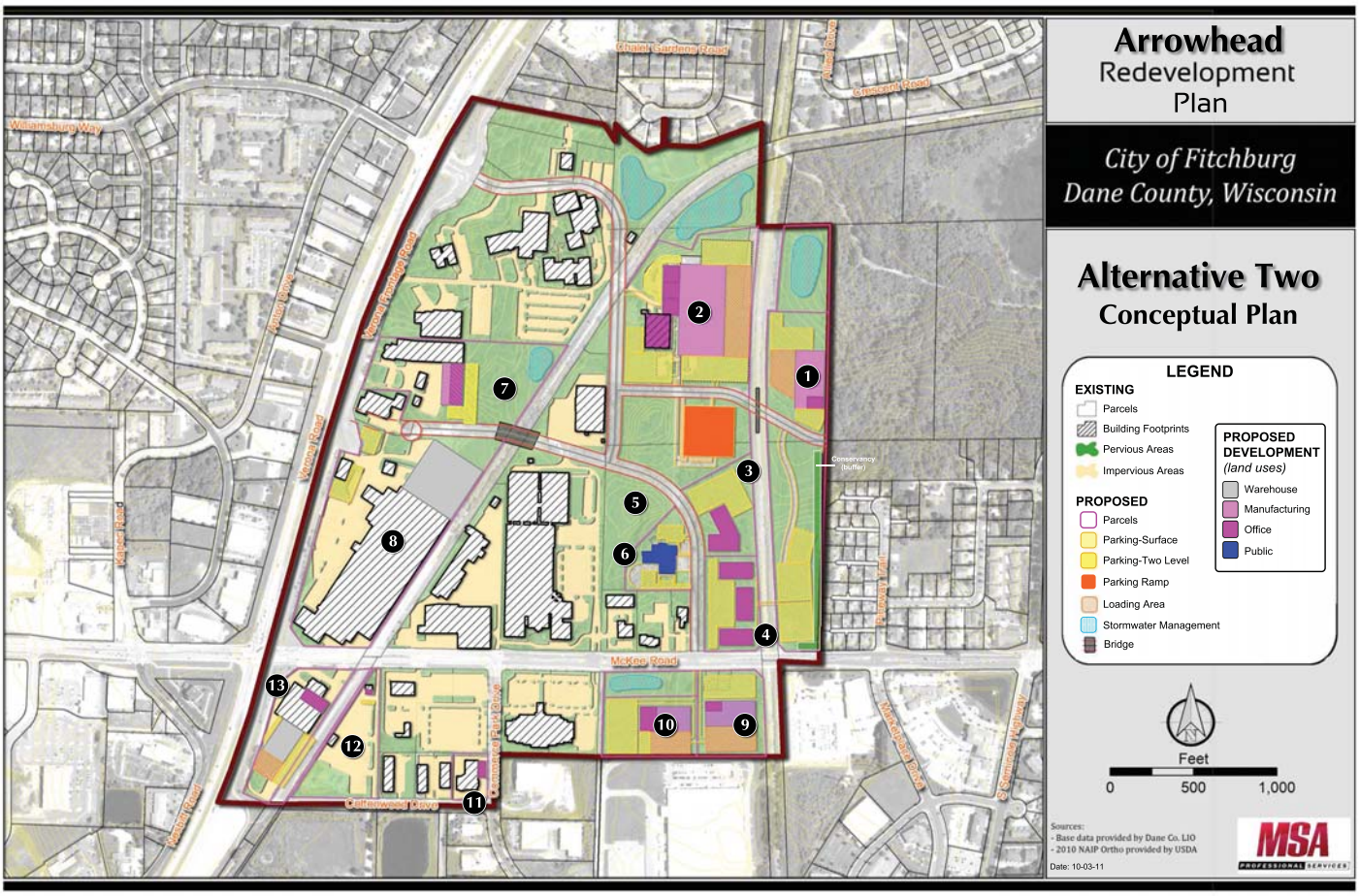
TRIP GENERATION ANALYSIS*

	Peak Period Trips	Peak Hour Outbound Trip Generation Ratio (trips/1,000 SF)	Square Feet
Arrowhead Scenario 1: Low Density	**1470**		2,180,000
Arrowhead Planning Area - Total Trip Alottment - 30% (up to 750 trips)	595		660,000
Light Industrial	160	0.85	190,000
Office	400	1.24	320,000
Warehouse	35	0.24	150,000
Future Commerce Park Expansion - Total Trip Alottment - 70% (up to 875 trips)	875		1,520,000
Light Industrial	400	0.85	470,000
Office	275	1.24	220,000
Warehouse	200	0.24	830,000

*** This analysis is based on the projected capacity of westbound left turns from McKee Road onto US 18/151 (see Section 3.5)**

ALTERNATIVE ONE

ALTERNATIVE TWO



Advantages

- Temporary cul-de-sac at end of new road between Certco and Saris preserves Harder Corp. at this location for now
- Least significant disruption of Arrowhead Park stormwater pond while still providing for extension of Williamsburg Way
- Allows for the adaptive reuse of the empty Thermo Fisher office building as part of the new Thermo Fisher facility

Disadvantages

- Northern, at-grade crossing of Cannonball trail crosses at a sharp angle, which is less safe than a 90 degree crossing
- Does not address General Beverage or Midwest Decorative Stone expansion interests
- The street extension to the east edge of planning area, east of the Badger State Trail, is not likely to be extended to Seminole Highway through Dane County land, and it exceeds the City's 600' limit on cul-de-sacs
- The proposed road connecting to Williamsburg Way will be steep along the north edge of the current Thermo Fisher campus, and it will likely require that the intersection where this road meets the Verona Road Frontage Road will need to be lowered several feet

ALTERNATIVE 2 SITE INFORMATION *(land use, building size, parking, etc.)*

							PARKING NEEDS		PARKING PROVIDED	
Site	Business	Land Use	Spaces / k sq.ft.	Building Footprint	# of Stories	Building (sqft)	# of Spaces	Total Area*	Total Area	# of Spaces*
#1	NEW BUSINESS	Suburban Office	3.6	7,500	2	15,000	54	21,600	16,800	42
	NEW BUSINESS	Manufacturing	1.5	54,000	1	54,000	81	32,400	38,000	95
						69,000	**135**	**54,000**	**54,800**	**137**
#2	Thermo Fisher	Suburban Office	3.6	60,000	2	120,000	432	172,800	191,400	479
	Thermo Fisher	Manufacturing	1.5	150,000	1	150,000	225	90,000	90,000	225
						270,000	**657**	**262,800**	**52,500**	**704**
#3	NEW BUSINESS	Suburban Office	3.6	36,000	3	108,000	389	155,520	150,000	375
						108,000	**389**	**155,520**	**150,000**	**375**
#4	NEW BUSINESS	Suburban Office	3.6	20,000	2	40,000	144	57,600	51,000	128
	NEW BUSINESS	Suburban Office	3.6	20,000	2	40,000	144	57,600	87,400	219
	NEW BUSINESS	Suburban Office	3.6	20,000	2	40,000	144	57,600	25,300	63
						120,000	**432**	**172,800**	**163,700**	**409**
#5	RESERVED (PLACON)					0	0	0		
						0	**0**	**0**	**0**	**0**
#6	Fire Station	Public			2	0	0	0		0
						0	**0**	**0**	**0**	**0**
#7	Saris	Suburban Office	3.6	18,750	1	18,750	68	27,000	26,000	
	Saris	Manufacturing	1.5	31,250	1	31,250	47	18,750	16,000	
						50,000	**114**	**45,750**	**42,000**	**105**
#8	Certco	Warehouse	0.7	125,000	1	125,000	88	35,000	32,300	
						125,000	**88**	**35,000**	**32,300**	**81**
#9	NEW BUSINESS	Suburban Office	3.6	6,000	2	12,000	43	17,280	39,000	
	NEW BUSINESS	Manufacturing	1.5	39,000	1	39,000	59	23,400		
						51,000	**102**	**40,680**	**39,000**	**98**
#10	NEW BUSINESS	Suburban Office	3.6	15,000	2	30,000	108	43,200	56,000	
	NEW BUSINESS	Manufacturing	1.5	30,000	1	30,000	45	18,000	7,800	
						60,000	**153**	**61,200**	**63,800**	**160**
#11	United Vaccines	Suburban Office	3.6	4,500	2	9,000	32	12,960		
						9,000	**32**	**12,960**	**0**	**0**
#12	Madison Landscapi	Suburban Office	3.6	1,200	2	2,400	9	3,456	1,620	
						2,400	**9**	**3,456**	**1,620**	**4**
#13	General Beverage	Suburban Office	3.6	12,000	1	12,000	43	17,280	24,600	
	General Beverage	Warehouse	0.7	34,000	1	34,000	24	9,520	3,500	
						46,000	**67**	**26,800**	**28,100**	**70**

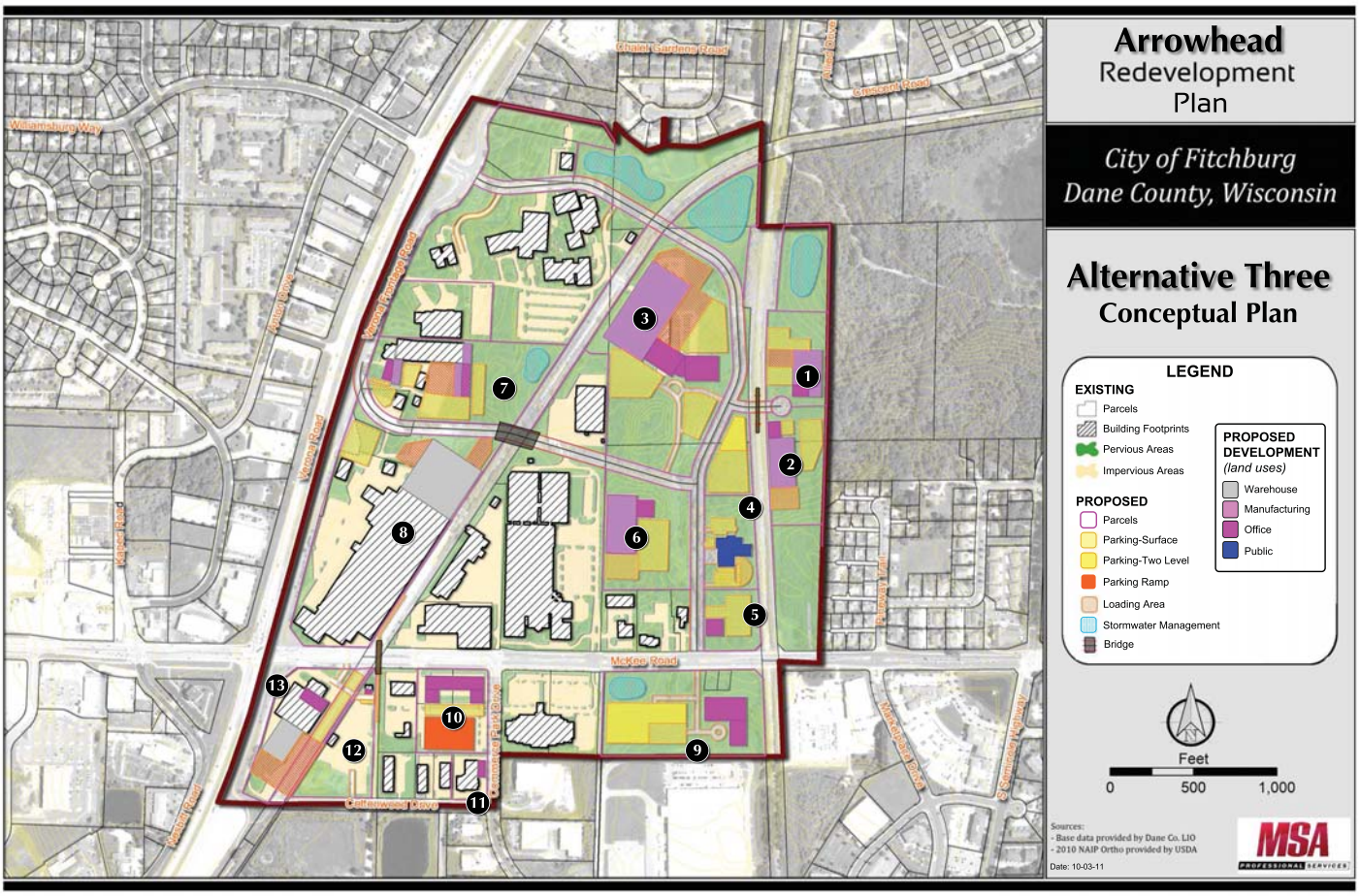
TRIP GENERATION ANALYSIS*

	Peak Period Trips	Peak Hour Outbound Trip Generation Ratio (trips/1,000 SF)	Square Feet
Arrowhead Scenario 2: Medium-Low Density	**1468**		2,230,000
Arrowhead Planning Area - Total Trip Alottment - 40% (up to 1000 trips)	718		810,000
Light Industrial	260	0.85	310,000
Office	420	1.24	340,000
Warehouse	38	0.24	160,000
Future Commerce Park Expansion - Total Trip Alottment - 60% (up to 750 trips)	750		1,420,000
Light Industrial	400	0.85	470,000
Office	150	1.24	120,000
Warehouse	200	0.24	830,000

*** This analysis is based on the projected capacity of westbound left turns from McKee Road onto US 18/151 (see Section 3.5)**

ALTERNATIVE TWO

ALTERNATIVE THREE



Advantages

- Provides for the extension of Williamsburg Way
- Provides some use of land east of the Badger State Trail, while providing a conservancy buffer adjacent to the Pine Ridge Neighborhood
- Reroutes the Cannonball Trail along the east side of Midwest Decorative Stone, allowing for General Beverage parking and loading, and some Midwest Decorative Stone parking, in the current trail ROW

Disadvantages

- Most significant disruption of Arrowhead Park stormwater pond
- The proposed road connecting to Williamsburg Way will be steep along the north edge of the current Thermo Fisher campus, and it will likely require that the intersection where this road meets the Verona Road Frontage Road will need to be lowered several feet
- Requires relocation of Harder Corp.
- Requires a new driveway access onto McKee Road east of the Badger State Trail
- Consolidates direct access from McKee for General Beverage and Midwest Decorative Stone to one shared, right-in-right-out driveway west of the Cannonball trail crossing, takes 30+ feet from east edge of Midwest Decorative Stone, eliminating their internal driveway in that strip

ALTERNATIVE 3 SITE INFORMATION *(land use, building size, parking, etc.)*

							PARKING NEEDS		PARKING PROVIDED	
Site	Business	Land Use	Spaces / k sq.ft.	Building Footprint	# of Stories	Building (sqft)	# of Spaces	Total Area*	Total Area	# of Spaces*
#1	NEW BUSINESS	Suburban Office	3.6	7,000	1	7,000	25	10,080	15,800	40
	NEW BUSINESS	Manufacturing	1.5	42,000	1	42,000	63	25,200	24,325	61
						49,000	**88**	**35,280**	**40,125**	**100**
#2	NEW BUSINESS	Suburban Office	3.6	7,500	2	15,000	54	21,600	16,250	41
	NEW BUSINESS	Manufacturing	1.5	30,000	1	30,000	45	18,000	26,000	65
						45,000	**99**	**39,600**	**42,250**	**106**
#3	Thermo Fisher	Suburban Office	3.6	60,000	2	120,000	432	172,800	136,900	342
	Thermo Fisher	Manufacturing	1.5	150,000	1	150,000	225	90,000	123,400	309
						270,000	**657**	**262,800**	**52,500**	**651**
#4	Fire Station	Public			2	0	0	0		0
						0	**0**	**0**	**0**	**0**
#5	NEW BUSINESS	Suburban Office	3.6	10,000	3	30,000	108	43,200	42,700	
						30,000	**108**	**43,200**	**42,700**	**107**
#6	NEW BUSINESS	Suburban Office	3.6	10,000	1	10,000	36	14,400		0
	NEW BUSINESS	Manufacturing	1.5	61,200	1	61,200	92	36,720		0
						71,200	**128**	**51,120**	**52,500**	**131**
#7	Saris	Suburban Office	3.6	22,800	1	22,800	82	32,832	44,100	110
	Saris	Warehouse	0.7	13,300	1	13,300				0
	Saris	Manufacturing	1.5	82,000	1	82,000	123	49,200	40,400	101
						118,100	**205**	**82,032**	**84,500**	**211**
#8	Certco	Warehouse	0.7	125,000	1	125,000	88	35,000	39,000	
						125,000	**88**	**35,000**	**39,000**	**98**
#9	NEW BUSINESS	Suburban Office	3.6	15,000	2	30,000	108	43,200	173,600	434
	NEW BUSINESS	Suburban Office	3.6	35,000	3	105,000	378	151,200	26,700	67
						135,000	**486**	**194,400**	**200,300**	**501**
#10	NEW BUSINESS	Suburban Office	3.6	12,800	2	25,600	92	36,864	144,500	361
	NEW BUSINESS	Suburban Office	3.6	28,000	3	84,000	302	120,960	22,800	57
						109,600	**395**	**157,824**	**167,300**	**418**
#11	United Vaccines	Suburban Office	3.6	4,500	2	9,000	32	12,960		0
						9,000	**32**	**12,960**	**0**	**0**
#12	Madison Landscapi	Suburban Office	3.6	1,200	2	2,400	9	3,456	1,620	4
						2,400	**9**	**3,456**	**1,620**	**4**
#13	General Beverage	Suburban Office	3.6	12,000	1	12,000	43	17,280	7,000	18
	General Beverage	Warehouse	0.7	34,000	1	34,000	24	9,520	22,000	55
						46,000	**67**	**26,800**	**29,000**	**73**

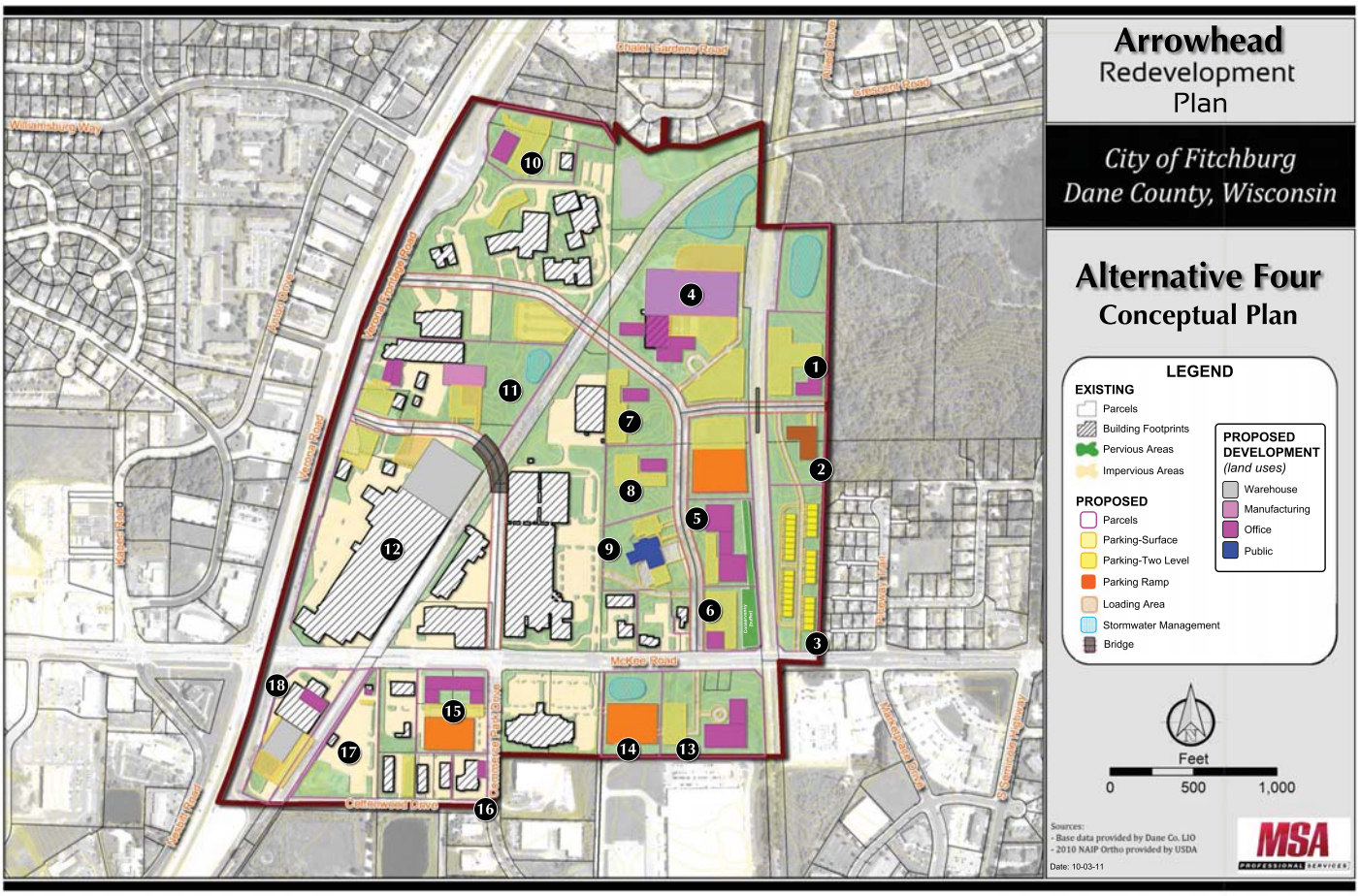
TRIP GENERATION ANALYSIS*

	Peak Period Trips	Peak Hour Outbound Trip Generation Ratio (trips/1,000 SF)	Square Feet
Arrowhead Scenario 3: Medium-High Density	**1560**		2,110,000
Arrowhead Planning Area - Total Trip Alottment - 50% (up to 1250 trips)	935		1,010,000
Light Industrial	315	0.85	370,000
Office	580	1.24	470,000
Warehouse	40	0.24	170,000
Future Commerce Park Expansion - Total Trip Alottment - 50% (up to 625 trips)	625		1,100,000
Light Industrial	250	0.85	290,000
Office	225	1.24	180,000
Warehouse	150	0.24	630,000

*** This analysis is based on the projected capacity of westbound left turns from McKee Road onto US 18/151 (see Section 3.5)**

ALTERNATIVE THREE

ALTERNATIVE FOUR



Advantages

- Utilizes existing alignment of Thermo Fisher driveway as much as possible
- Allows for the adaptive reuse of the empty Thermo Fisher office building as part of the new Thermo Fisher facility

Disadvantages

- Does not provide for the extension of Williamsburg Way
- Extension of Commerce Park Drive through ADM property is likely too disruptive to ADM functions to be feasible, and it does not provide access to a signalized intersection for Placon
- Extension of Commerce Park Drive will bring more traffic to McKee Road from the north and limit capacity for traffic growth from the south for future Fitchburg Commerce Park expansion
- The street extension to the east edge of planning area, east of the Badger State Trail, is not likely to be extending to Seminole Highway through Dane County land, and it exceeds the City's 600' limit on cul-de-sacs
- Requires relocation of Harder Corp.
- Significant office space will be more likely to add to peak hour traffic, compared to other uses

ALTERNATIVE 4 SITE INFORMATION *(land use, building size, parking, etc.)*

							PARKING NEEDS		PARKING PROVIDED	
Site	Business	Land Use	Spaces / k sq.ft.	Building Footprint	# of Stories	Building (sqft)	# of Spaces	Total Area*	Total Area	# of Spaces*
#1	NEW BUSINESS	Suburban Office	3.6	17,000	3	51,000	184	73,440	75,200	188
						51,000	**184**	**73,440**	**75,200**	**188**
#2	NEW RESIDENTIAL	Multi-Family Res.	---	26,400	3	79,200				
						79,200				
#3	NEW RESIDENTIAL	Townhomes	---	71,800	2	143,600				
						143,600				
#4	Thermo Fisher	Suburban Office	3.6	60,000	2	120,000	432	172,800	210,100	525
	Thermo Fisher	Manufacturing	1.5	150,000	1	150,000	225	90,000	55,000	138
						270,000	**657**	**262,800**	**265,100**	**663**
#5	NEW BUSINESS	Suburban Office	3.6	25,600	2	51,200	184	73,728	167,400	419
	NEW BUSINESS	Suburban Office	3.6	36,800	2	73,600	265	105,984	17,500	44
						124,800	**449**	**179,712**	**184,900**	**462**
#6	NEW BUSINESS	Suburban Office	3.6	10,000	3	30,000	108	43,200	46,000	115
						30,000	**108**	**43,200**	**46,000**	**115**
#7	NEW BUSINESS	Suburban Office	3.6	11,250	3	33,750	122	48,600	42,400	106
						33,750	**122**	**48,600**	**42,400**	**106**
#8	NEW BUSINESS	Suburban Office	3.6	11,250	2	22,500	81	32,400	34,500	86
						22,500	**81**	**32,400**	**34,500**	**86**
#9	Fire Station	Public	---	30,000	2	60,000				
						60,000				
#10	Charter	Suburban Office	3.6	17,250	2	34,500	124	49,680	50,900	127
						34,500	**124**	**49,680**	**50,900**	**127**
#11	Saris	Suburban Office	3.6	14,000	1	14,000	50	20,160	26,000	65
	Saris	Warehouse	0.7	5,000	1	5,000	10	3,920		0
	Saris	Manufacturing	1.5	31,000	1	31,000	47	18,600	22,800	57
						50,000	**107**	**42,680**	**48,800**	**122**
#12	Certco	Warehouse	0.7	125,000	1	125,000	88	35,000	38,000	
						125,000	**88**	**35,000**	**38,000**	**95**
#13	NEW BUSINESS	Suburban Office	3.6	15,000	3	45,000	162	64,800	145,600	364
	NEW BUSINESS	Suburban Office	3.6	35,000	2	70,000	252	100,800	31,200	78
						115,000	**414**	**165,600**	**176,800**	**442**
#14	AMC	(parking garage)	3.6			0	0	0	145,600	364
						0	**0**	**0**	**145,600**	**364**
#15	NEW BUSINESS	Suburban Office	3.6	12,800	2	25,600	92	36,864	144,500	361
	NEW BUSINESS	Suburban Office	3.6	28,000	3	84,000	302	120,960	22,800	57
						109,600	**395**	**157,824**	**167,300**	**418**
#16	United Vaccines	Suburban Office	3.6	4,500	2	9,000	32	12,960		
						9,000	**32**	**12,960**	**0**	**0**
#17	Madison Landscapi	Suburban Office	3.6	1,200	2	2,400	9	3,456	1,620	4
						2,400	**9**	**3,456**	**1,620**	**4**
#18	General Beverage	Suburban Office	3.6	12,000	1	12,000	43	17,280	24,600	62
	General Beverage	Warehouse	0.7	34,000	1	34,000	24	9,520	3,500	9
						46,000	**67**	**26,800**	**28,100**	**70**

TRIP GENERATION ANALYSIS*

	Peak Period Trips	Peak Hour Outbound Trip Generation Ratio (trips/1,000 SF)	Square Feet
Arrowhead Scenario 4: High Density	**1752**		2,090,000
Arrowhead Planning Area - Total Trip Alottment - 70% (up to 1750 trips)	1377		1,480,000
Light Industrial	90	0.85	110,000
Office	1215	1.24	980,000
Warehouse	40	0.24	170,000
Residential	32	0.5 trips per unit	220,000
Future Commerce Park Expansion - Total Trip Alottment - 30% (up to 375 trips)	375		610,000
Light Industrial	150	0.85	180,000
Office	150	1.24	120,000
Warehouse	75	0.24	310,000

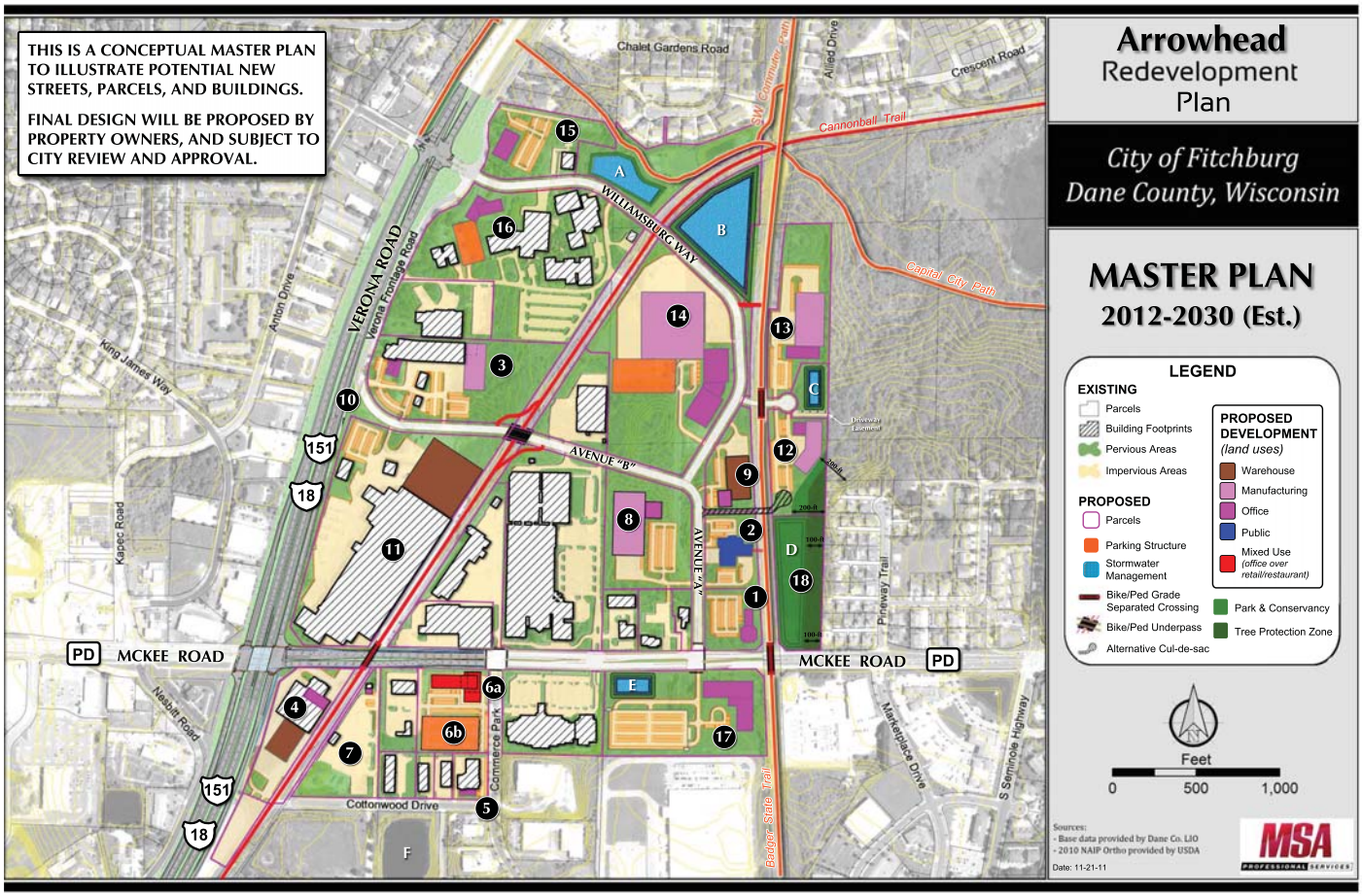
*** This analysis is based on the projected capacity of westbound left turns from McKee Road onto US 18/151 (see Section 3.5)**

ALTERNATIVE FOUR

4.2 FINAL PREFERRED MASTER PLAN

The preliminary draft alternatives created earlier in the process (see Section 4.1) were shared with business owners, staff, City committees and nearby residents, and feedback from all of these stakeholders influenced the creation of a final preferred alternative. The Master Plan shown below was first produced in a draft form and has been refined based on several additional rounds of input from those same stakeholders.

Figure 4.1: Arrowhead Redevelopment Master Plan



MASTER PLAN SITE INFORMATION *(land use, building size, parking, etc.)*

	PARCEL INFORMATION			USES	BUILDING			PARKING	
Site	Business	Parcel Size (sq.ft.)	Parcel Size (acres)	Type of Use	Building Footprint (sq.ft)	# of Stories	Building (sqft)	Spaces Provided	Parking Type
#1	**New Office Site** *(3-Story Building)*	123,000	2.8	Office	9,200	3	27,600		
				Office	5,000	2	10,000		
	Subtotal				37,600			126	Surface
#2	**New Fire Station** (2 Stories)	146,900	3.4	Public	28,000	2	56,000		
	Subtotal				56,000			74	Surface
#3	**Industrial/Office Addition**	507,250	11.6	Office	7,500	1	7,500		
	Saris Location			Warehouse	5,000	1	5,000		
	(1-Story Building)			Manufacturing	39,200	1	37,500		
	Subtotal				50,000			200	Surface
#4	**Industrial Addition**	295,000	6.8	Office	12,000	1	12,000		
	General Beverage (1-Story)			Warehouse	34,000	1	34,000		
	Subtotal				46,000			NA	Surface
#5	**Industrial Addition**	59,600	1.4	Manufacturing	2,250	1	2,250		
	United Vaccines (2 Stories)			Office	6,750	1	6,750		
	Subtotal				9,000			32	Provided on Site #6B
#6A	**New Mixed Use Site**	90,000	2.1	Sit-down Restaurant	7,000	1	7,000		
	(1st Floor)			Retail/Restaurant	22,000	1	22,000		
	(1st Floor Lobby & 2nd Floor)			Office & Lobby	36,500	1	36,500		
	(3rd Floor)			Office	21,000	1	21,000		
	Subtotal				86,500			98	Surface
#6B	**New Parking Garage** - AMC Shared Parking with U. Vaccines, AMC, & New Mixed Use Site (#6A)	123,500	2.8	Parking Garage	(70,000 sqft footprint)			4.5 Stories (~200 spaces / floor)	
	Subtotal				0			900	Structure
#7	**Office Addition** *Madison Landscaping (2 Stories)*	215,500	4.9	Office	1,200	2	2,400		
					(replacing 4 spots)				
	Subtotal				2,400			12	Surface
#8	**New Industrial Site** *(1-Story Building)*	339,200	7.8	Office	10,000	1	10,000		
				Manufacturing	72,200	1	72,200		
	Subtotal				82,200			142	Surface
#9	**New Industrial Site** *Harder Corp (1-Story)*	143,600	3.3	Office	8,000	1	8,000		
				Warehouse	35,000	1	35,000		
	Subtotal				43,000			54	Surface
#10	**Former Harder Site**		0.0	Removed	---				
	Subtotal				---			---	---
#11	**Industrial Addition** - *Certco*	947,200	21.7	Warehouse	125,000	1	125,000		
	Subtotal				125,000			94	Surface
#12	**New Industrial Site** *(1-Story Building)*	203,000	4.7	Office	14,700	1	14,700		
				Manufacturing	56,000	1	56,000		
	Subtotal				70,700			134	Surface
#13	**New Industrial Site** *(2-Story Building)*	302,000	6.9	Office	5,625	2	11,250		
				Manufacturing	31,800	1	31,800		
	Subtotal				43,050			96	Surface
#14	**New Industrial/Office Site**	819,750	18.8	Office	60,000	2	120,000		
	Thermo Fisher New Location			Manufacturing	150,000	1	150,000		
	(2-Story Building)			Parking Garage	(76,000 sqft footprint)			3-level garage (~215/floor)	
	Subtotal				270,000			670	Structure & Surface
#15	**New Office** - *Charter (2 Story)*	245,100	5.6	Office	17,500	2	35,000		
	Subtotal				35,000			118	Surface
#16	**Office Expansion Site**	851,200	19.5	Office	19,750	2	39,500		
	(3-Story Building)			Office	11,250	1	11,250		
	(2.5-Story Building)			Parking Garage	(34,500 sqft footprint)			3.5-level garage (~90/floor)	
	Subtotal				50,750			315	Surface
#17	**New Office Site**	497,000	11.4	Office	22,500	1	22,500		
	(3 Story + Basement)			Office	52,500	3	157,500	Parking Deck (~285/floor)	
	Subtotal				180,000			600	Mix of Deck & Surface
#18	**Stormwater Management**	225,000	5.2	Public	---				
	Subtotal				---			---	
TOTALS		129.52 ACRES		---	1,136,450 SQFT			3,633 PARKING SPOTS	

This table reflects the potential for new development in the planning area as shown in the Redevelopment Master Plan (Figure 4.1). It does not indicate the maximum square footage of various uses that may be permitted. See the Land Use, Stormwater, and Transportation policies in Chapter 6 for guidance on use, density, lot coverage, and trip generation.

As with the preliminary alternatives, trip generation is estimated for the Master Plan. The estimates are refined here to distinguish between development in the Arrowhead area north of McKee (some of which will access Verona Road at Williamsburg Way) and development in the Arrowhead area south of McKee (almost all of which will access Verona Road at the McKee Road interchange).

As a reminder (see Section 3.5), the trip allotments indicated are relative to the maximum number of trips that the McKee Road/Verona Road interchange can accommodate during the peak period, based on current trip distribution estimates. The table below indicates a relative limited reserve of additional trips for expansion of the Fitchburg Commerce Park (about 440 peak hour trips). However, this should not be considered a strict limit on growth. To the extent that the timing of trips from both development areas can be influenced so that they occur outside the peak congestion periods, or trips eliminated through transit or carpooling use, more development can be accommodated in both areas.

This final preferred alternative (to be referred to as the Arrowhead Redevelopment Master Plan) incorporates most of the preferences indicated by stakeholders in the preliminary development concept phase, and provides a reasonable balance among competing interests, including:

1. **High density of development and jobs vs. limited capacity for additional traffic**

   The development plan proposes a predominance of manufacturing and warehouse uses (and related office uses), as these uses generate less peak hour traffic than other uses, per square foot of building, and the peak traffic hours generated by these uses are more easily adjusted through the timing of shift changes and delivery schedules.

2. **Property owner development interests vs. residential neighbor conservancy interests**

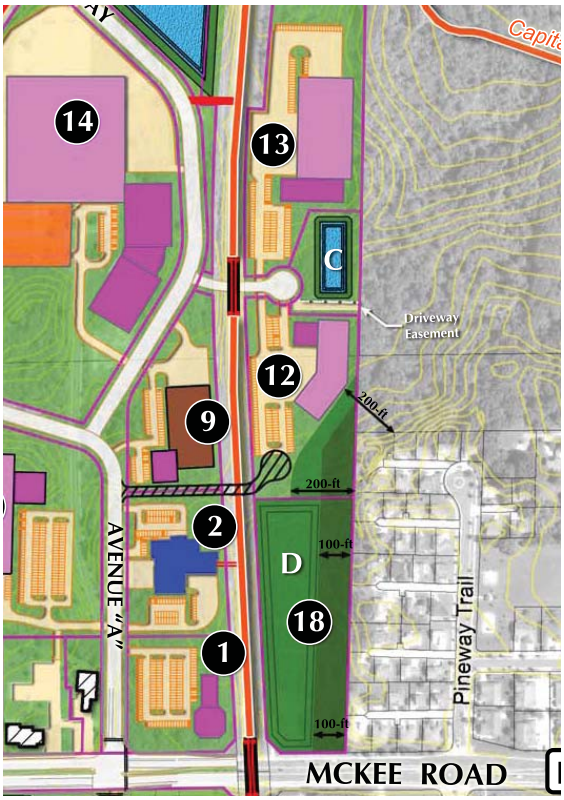
   There are competing and conflicting interests at the east edge of the study area, where the property owner would like to develop the land

TRIP GENERATION ANALYSIS

	Peak Period Trips	Peak Hour Outbound Trip Generation Ratio (trips/1,000 SF)	Square Feet
Arrowhead Final Master Plan	**1592**		1,956,450
New Development North of McKee- Total Trip Alottment - 28% (up to 690 trips)	690		814,950
Public (Fire Station)	30	0.5	56,000
Manufacturing	320	0.85	380,250
Office	310	1.24	246,450
Warehouse	30	0.24	132,250
New Development South of McKee- Total Trip Alottment - 37% (up to 462 trips)	462		321,500
Retail/Restaurant	130	4.5	29,000
Manufacturing	2	0.85	2,250
Office	320	1.24	256,250
Warehouse	10	0.24	34,000
Future Commerce Park Expansion - Total Trip Alottment - 35% (up to 440 trips)	440		820,000
Light Industrial	200	0.85	240,000
Office	100	1.24	80,000
Warehouse	140	0.24	500,000

for some sort of productive use, and neighboring residents want the land to remain undeveloped and wild. The development plan responds to this conflict by recommending development of this land, but with the following recommended limitations:

- *Site 18, immediately west of the Pine Ridge neighborhood, is now planned for park or conservancy use, and may be needed for stormwater detention purposes. If and when Thermo Fisher Scientific chooses to proceed with the extension of Williamsburg Way through their land, as shown in this Master Plan, the planned route of that street will reduce the size and capacity of stormwater Pond A and require changes to Arrowhead Park, which is dedicated public land. To gain approval from the Dane County Circuit Court for such a change to the park, and to provide for additional stormwater detention capacity, it is proposed that Site 18 (or a portion thereof) be offered to the public as park and/or stormwater management purposes.*
- *Two manufacturing lots are proposed at the north end of this area, however the southern of the two parcels, Site 12, includes a 200' Park and Conservancy buffer from the nearest Pine Ridge residential parcel. Nothing can be built in this buffer, but it could be counted as part of any required setbacks on Site 12 (no additional setbacks from the buffer required) and it may be needed as a route to pass offsite stormwater from the south around development on the site. This buffer is part of the proposed amendments to the City's future land use map.*
- *A 100' tree protection zone is provided along the edge of the Pine Ridge Neighborhood to protect the existing treeline. At it's north end, the tree protection zone ends 50' from the edge of the Park and Conservancy buffer to allow space for stormwater conveyance within that buffer. The City will allow the property owner to remove invasive species within the tree protection zone following consultation with adjacent neighborhood at a meeting of the Pine Ridge Homeowners Association. Additional tree plantings in this zone to enhance the buffer relative to future development would be appropriate, would likely be completed only at the expense of the residential neighbors, and only with the approval of the property owner. The Pine Ridge Home Owners Association and Thermo Fisher Scientific should consider purchase/sale of this land by/to the Association.*



- *All uses on the east side of the Badger State Trail should have strict limitations on objectionable emissions, sound, and light (e.g. dark-sky compliant lighting). These should be established at the time of rezoning.*
- *The Master Plan shows two alternative methods of public street access to the east side of the Badger State Trail (see image above). The short cul-de-sac and bike path underpass is the preferred method, as it*

enables the creation of two development sites and does not conflict with the trail. All further analysis of the Master Plan in this document assumes this alternative. Should the bike path underpass be determined to be cost prohibitive, relative to the development potential of Sites 12 and 13, the City will consider as an alternative an at-grade crossing of the trail at a point further south that would enable only one development lot east of the trail. This alternative is subject to further discussion and review and dependent on approval from DNR and DOT relative to impacts on the Badger State Trail.

3. Competing business interests relative to the proposed Avenue "B"

CertCo Inc. and Saris Corp. would each like a connection through the planning area to McKee Road, so that they have guaranteed access to Verona Road, no matter what eventually happens to the Verona Road Frontage Road and the Williamsburg Way intersection with Verona Road. The ideal route for this new road is along their shared property line, utilizing Certco's land. This route requires the relocation of Harder Corp. Harder Corp. has indicated a willingness to consider relocation to another site in Fitchburg, preferably in the McKee Road/ Verona Road area. The development plan proposes a temporary cul-de-sac of Avenue "B" to allow more time to help Harder relocate, and it offers a site with adequate space for a new Harder facility. Also, the route through the Placon property is configured such that no negative impacts to their operations are anticipated.

4. Competing business interests in the southwest corner of the study area

General Beverage and Midwest Decorative Stone each wish to continue growing their businesses at their current locations. Also, the Cannonball Trail is expected to be completed on the rail ROW between these two businesses, likely in 2014, and a grade separated crossing (bridge or tunnel) at McKee Road is anticipated, construction to be coordinated with the DOT construction of the McKee Road/151 interchange. This development plan proposes no change to either parcel, or the bike path, except a possible expansion of General Beverage operations to the south, using land that may be acquired from WisDOT. Should these property owners reach an agreement on the sale or use of either parcel that is dependent on realignment of the bike path, the City is open to renewing that discussion and working further with WDNR and WisDOT to explore viable alternatives to the current alignment.

4.3 ESTIMATED BUILD-OUT SCHEDULE

Build-out of the planned improvements is expected to occur over a 20-year period. The projected timing of new private expansions and development is based on a combination of three factors:

- **Projections offered by business owners**
- **Timing of necessary infrastructure improvements**
- **Expected market demand for new lots**

The build-out period is divided into three phases (2012-2015, 2016-2020, 2021-2030), however individual projects may occur sooner or later than suggested in this phasing plan. The phasing maps and tables (*see pages 44-49*) incorporate the following recommendations:

1. **Build Avenues "A" and "B" as soon as possible**

   The streets connecting McKee Road to the Verona Road Frontage Road should be built as soon as possible (though Avenue "B" can end in a cul-de-sac east of Harder Corp., initially). The most pressing need is to provide Placon with signalized access to McKee Road before congestion increases further due to reconstruction of the Verona Road/Beltline Highway interchange beginning in 2014. Certco and Saris will need this connection by 2018 to provide flexibility relative to the US-18/151 Stage 2 construction.

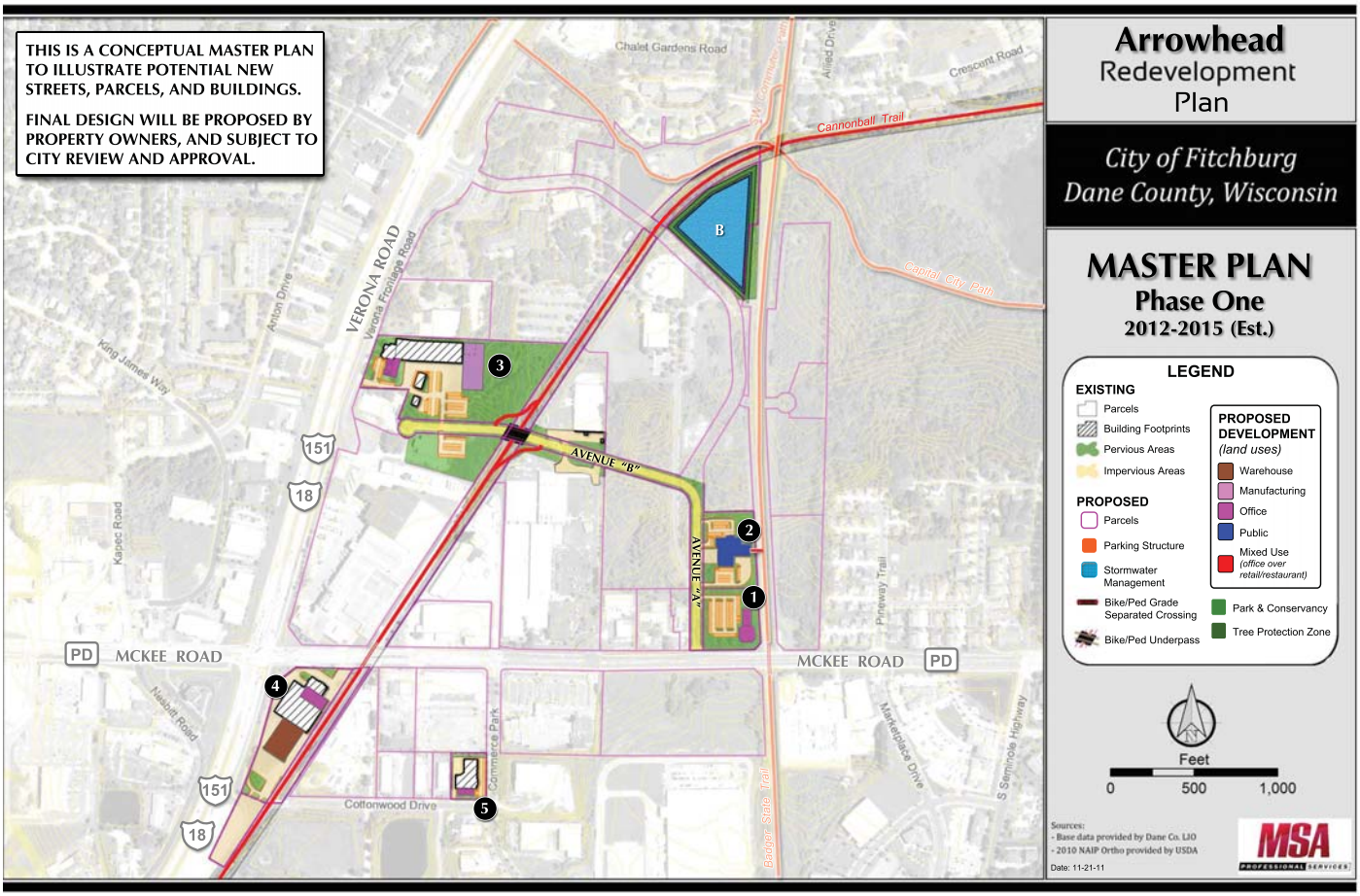
2. **Expand McKee Road Concurrent with the 18/151 interchange project**

   When the McKee Road/US-18/151 interchange is constructed, WisDOT will likely expand McKee Road to six lanes at the interchange, and will continue that width an undetermined distance from the interchange, possibly to Commerce Park Drive. We project the eventual need (2030 background traffic projections) for six lanes further east to Avenue "A". We therefore recommend that the City work with WisDOT, American Transmission Company, and Madison Gas & Electric to make the necessary right-of-way acquisitions and utility movements or burials at the same time as the WisDOT Stage 2 project. The additional lanes can remain unbuilt for some time, but we suggest the right-of-way and sidewalks be designed to accommodate the construction of the additional lanes as easily as possible whenever they are deemed necessary

3. **The Extension of Williamsburg Way is optional**

   Once Avenues "A" and "B" are constructed, there will be connectivity between Williamsburg Way and McKee Road and Thermo Fisher will have multiple saleable parcels with street frontage. If Thermo Fisher chooses to retain their current campus, there will be little compelling need for the extension of Williamsburg Way, except perhaps as a preferred route from McKee Road to Williamsburg Way west of Verona Road. The other reason to proceed with that road is that it enables access to the east side of the Badger State Trail, via the cul-de-sac shown on the Master Plan. Without the Williamsburg Way extension, only the alternative cul-de-sac route with the at-grade trail crossing would be viable relative to the City's 600' maximum length on cul-de-sacs.

MASTER PLAN - PHASE ONE



Public Infrastructure

- Avenue “A”
- Avenue “B” - ending in a temporary cul-de-sac prior to Harder Corporation
- Stormwater Facility B

Existing Business Expansion

- Saris (#3) - work with Certco to provide additional parking (south of Avenue “B”)
- General Beverage (#4) - Expand warehouse and parking options to the south
- United Vaccine (#5) - negotiate off-site parking in the AMC parking lot to enable expansion on-site

New Development

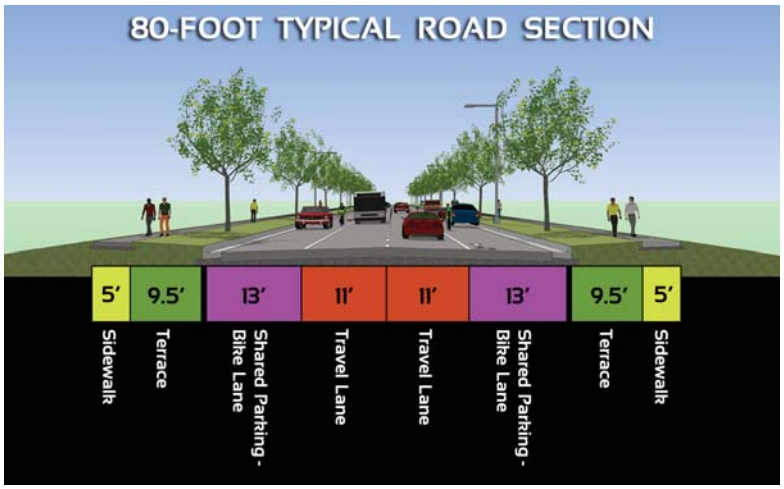
- Fire Station (#2)
- Office Development (#1)

Other Infrastructure

- Cannonball Trail - bike/ped underpass needed at intersection with Avenue “B”

Figure 4.2: Example bike underpass structure where Avenue "B" crosses the Cannonball Trail

Figure 4.3: Typical Street Section, Avenue "A" , Avenue "B", and Williamsburg Way



The cost estimates for Avenue "A", Avenue "B" and Williamsburg Way (*see Phase 3*) assumes an 80' ROW with 48' of pavement, curb-to-curb, including 11' drive lanes, 5' bike lanes, and 8' parking lanes. *Figure 4.3* shows a modified version of the City's standard street details.

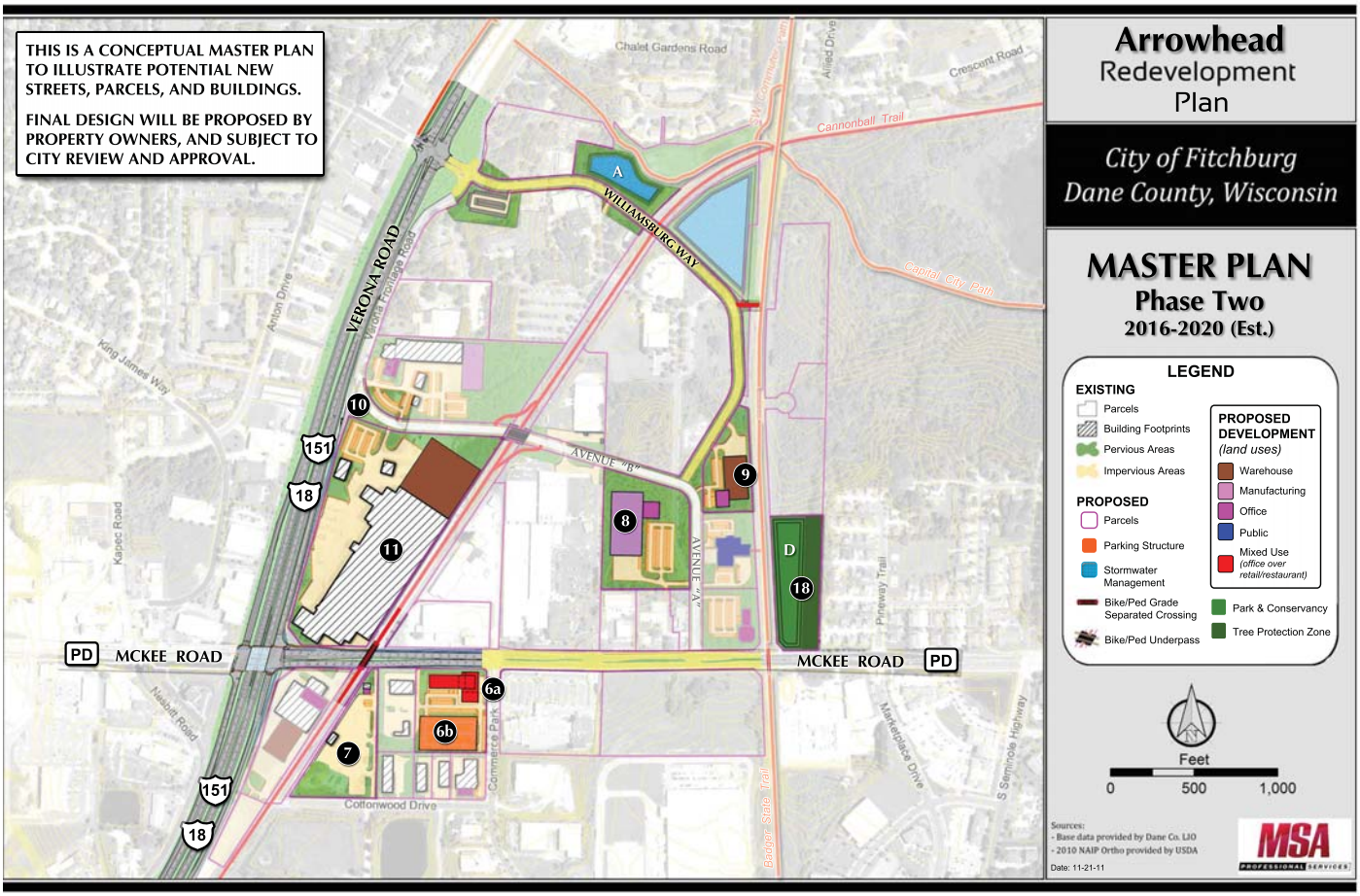
Estimated Public Infrastructure Costs

Item	*Qty.*	*Units*	*Cost Each*	*Total Cost*
Water Main	3,200	L.F.	$75	$240,000
Sanitary Sewer	1,000	L.F.	$65	$65,000
Street Work	3,300	L.F.	$250	$825,000
Underpass Structure*	1	L.S.	$275,000	$275,000
Stormwater				$515,320
Estimated Project Cost				**$1,920,000**
Engineering and Contingencies				**$480,000**
Total Estimated Cost				**$2,400,000**

** Includes an underpass structure for the Cannonball Trail. An example of the type of structure considered for this cost estimate is shown in Figure 4.2*

MASTER PLAN PH 1

MASTER PLAN - PHASE TWO



Public Infrastructure

- Williamsburg Way - see Figure 4.3
- Completion of Avenue “B” (connecting to Verona Frontage Road) - *See Figure 4.3*
- Reconstruction of McKee Road - *see page 46*
- Reconstruct Stormwater Pond A (along Williamsburg Way)
- Stormwater Pond D (near McKee Road)

Existing Business Expansion

- Certco (#11)
- Midwest Decorative Stone (#7)
- Harder Corporation (moved from #10 to #9) - relocation needed to complete Avenue “B”

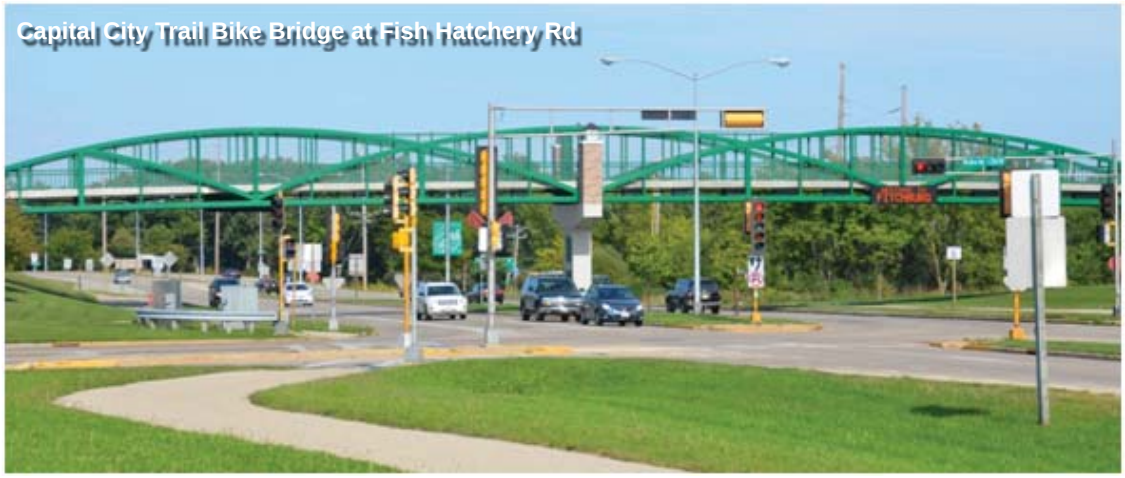
New Development

- Park and/or Stormwater Management Dedication (#18) to compensate for changes to Arrowhead Park
- Mixed-use Development (#6a)
- Parking Structure (#6b) - shared between mixed-use development (#6a), AMC, and United Vaccine (#5)
- Industrial Development (#8)

Other Infrastructure

- US-151 / McKee Road Interchange
- Thermo Fisher Parking Lot - replacing parking lost due to the stormwater facility
- Cannonball Trail Bike/Pedestrian Grade-Separated Crossing at McKee Road

Figure 4.4: Example of a potential bike/ped bridge over McKee Road for Cannonball/Badger State Trails



Bike/Pedestrian Grade-Separated Crossing

In ***Phase 2*** it is expected that a bike bridge over or tunnel under McKee Road may be built in coordination with the WisDOT construction of the McKee Road/US-18/151 interchange. The design of a bridge is unknown at this time, but it could look something like the Fish Hatchery Road bike bridge just north of McKee Road (*see Figure 4.4*). Unlike that bridge, there is no grade change here, and no opportunity to design the bridge without full ramps on each side of McKee Road. Midwest Decorative Stone will be most affected by a bridge due to their location immediately east of the trail route and their narrow frontage on McKee Road. In the interest of maintaining their visibility, a design using piers or posts is preferred to one that would use retaining walls and earthen ramps for the approaches to the bridge.

There is also a bike overpass anticipated for the Badger State Trail (see ***Phase 3***), though neither the funding nor schedule for this bridge has been identified at this time. This redevelopment plan proposes an office use on the site immediately west of the Badger State trail on the north side of McKee Road. In the interest of maintaining visibility to that site, a pier/post design is also recommended for that bike bridge.

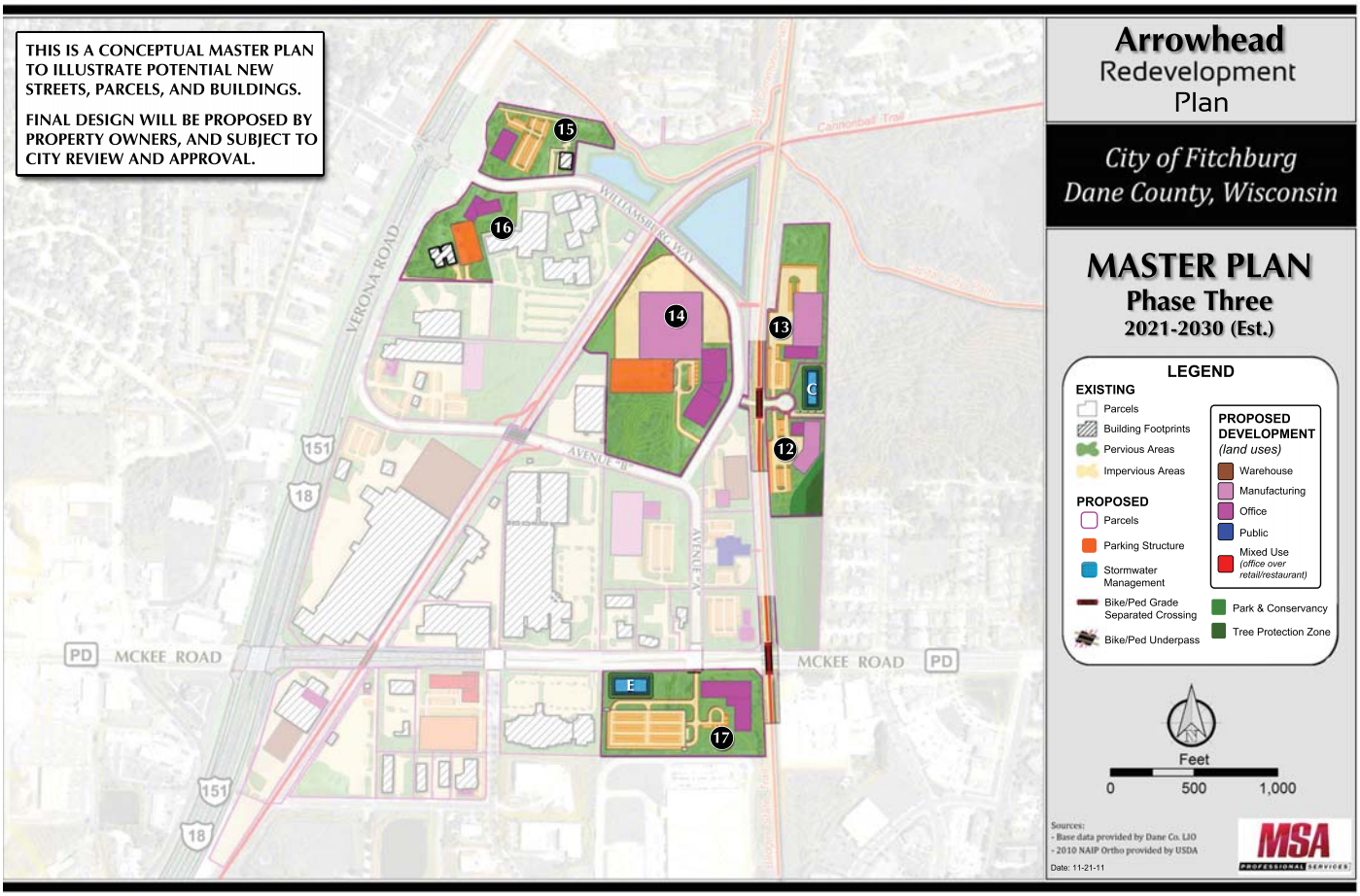
Estimated Public Infrastructure Costs

Item	*Qty.*	*Units*	*Cost Each*	*Total Cost*
Water Main*	3,200	L.F.	$75	$240,000
Sanitary Sewer*	1,950	L.F.	$65	$126,750
Street Work	3,525	L.F.	$250	$881,250
Street Rework (McKee)				$1,603,994
Stormwater				$325,672
Estimated Project Cost*				$1,574,000
Engineering and Contingencies*				$394,000
Total Estimated Cost*				**$1,968,000**

** Includes McKee Road reconstruction cost estimates*

MASTER PLAN ■ PH 2

MASTER PLAN - PHASE THREE



Public Infrastructure

- Cul-de-sac - connecting Williamsburg Way to developments #12 and #13 beneath Badger State Trail*
- Stormwater Facility C
- Stormwater Facility E

Existing Business Expansion

- Charter Communications (#15)
- Expansion of current Thermo Fisher Scientific campus west of the Badger State Trail (#16) - includes parking structure
- Significant expansion and/or relocation of Thermo Fisher Scientific to new structures east of the Badger State Trail (#14) - includes parking structure

New Development

- Industrial Developments (#12 & #13)
- Office Development (#17) - includes a two-level parking deck

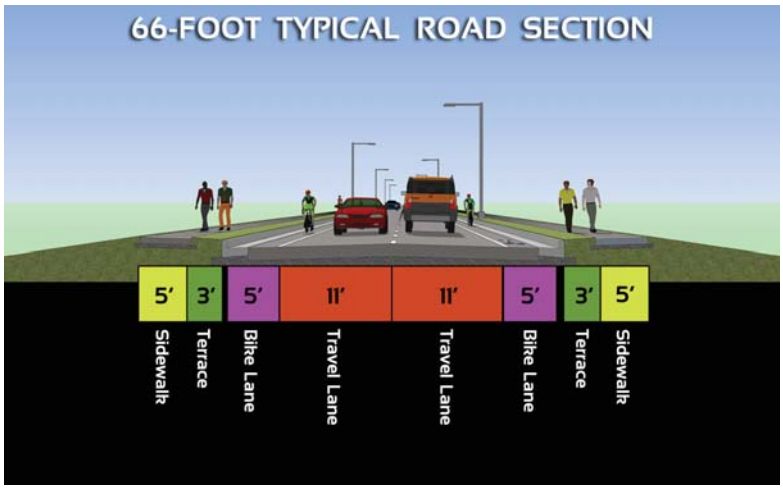
Other Infrastructure

- Badger State Trail Bike/Pedestrian Grade-Separated Crossing (over McKee) - *see page 43*
- Badger State Trail Bike/Pedestrian Grade-Separated Crossing (over cul-de-sac) - *see Figure 4.5*
- Potential driveway to Dane County parkland east of the study area

***** The Master Plan shows two alternative methods of public street access to the east side of the Badger State Trail. The short cul-de-sac and bike path underpass is the preferred method, a*s explained on page 41.*

Figure 4.5: Example of a potential bike/ped bridge over cul-de-sac for Badger State Trail

Figure 4.6: Typical Street Section, Cul-de-sac

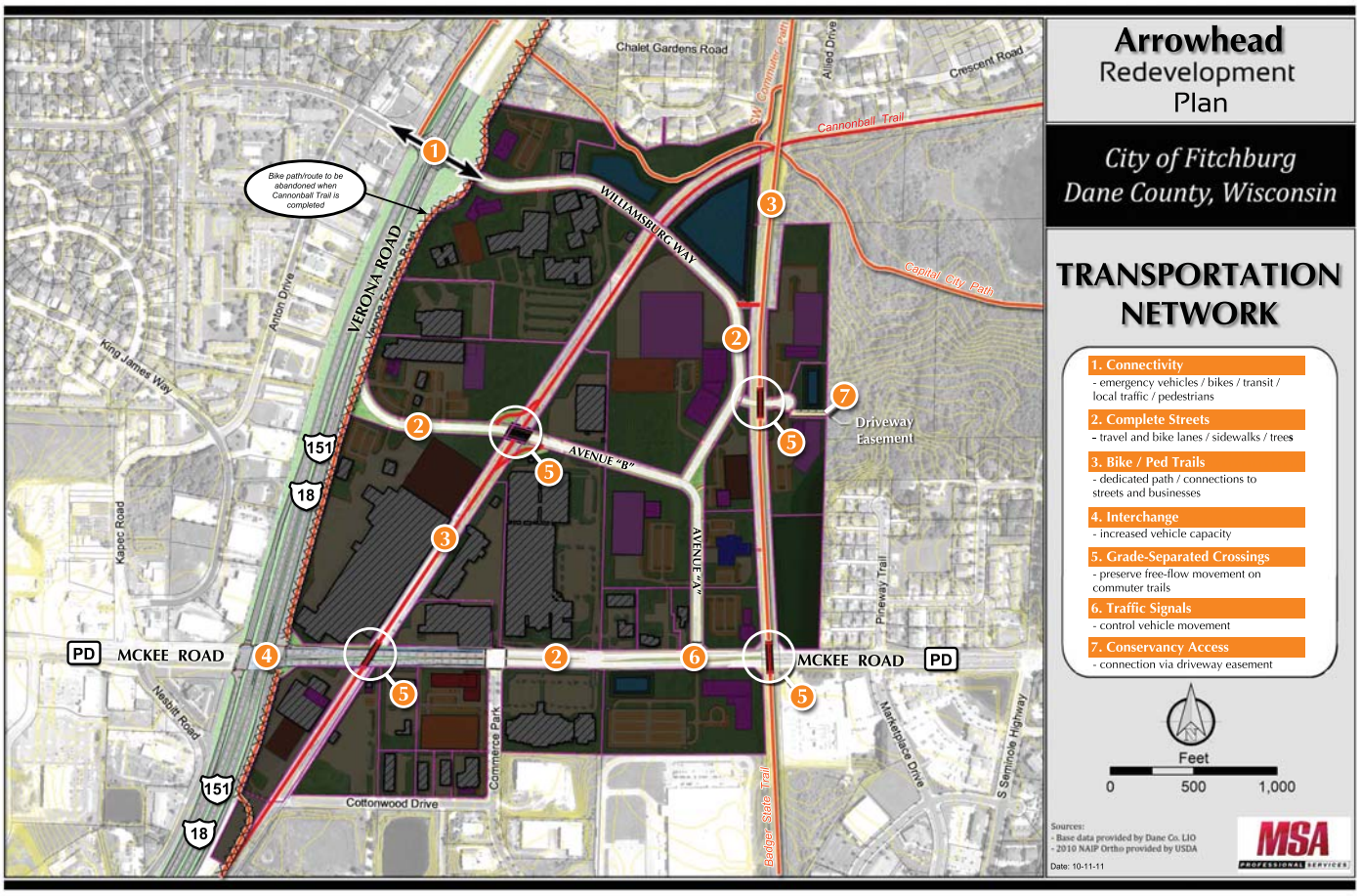


The cost estimate for cul-de-sac assumes a 66' ROW with 32' of pavement (curb-to-curb), including 11' drive lanes and 5' bike lanes. Figure 3.6 shows a modified version of the City's standard street details.

Estimated Public Infrastructure Costs

Item	*Qty.*	*Units*	*Cost Each*	*Total Cost*
Water Main	378	L.F.	$75	$ 28,350
Sanitary Sewer	332	L.F.	$65	$ 21,580
Street Work	353	L.F.	$250	$ 88,250
14' Wide Bike Bridge	1	L.S.	$295,000	$ 295,000
Stormwater				$ 65,340
Estimated Project Cost				**$499,000**
Engineering and Contingencies				**$125,000**
Total Estimated Cost				**$624,000**

Figure 4.7: Proposed Transportation Network



4.4 Proposed Transportation Network

Figure 4.7 shows the proposed transportation network. This map is a compilation of the projects described in the preceding Section 4.3, and it also reflects policies indicated in Chapter 6.

Proposed McKee Road Expansion

This project is considered part of Phase 2, but is separately itemized for clarity. The estimate is for expansion from four to six lanes, from approximately the Cannonball Trail crossing to just east of the proposed Avenue "A." The City does not yet know how far east along McKee Road the WisDOT project will extend when the interchange is constructed in 2017.

Note that the cost estimate below does not include costs to acquire right-of-way or to bury or move utility lines, especially electric transmission lines. A ballpark range for right-of-way acquisition is $600,000 to $1,000,000. American Transmission Company has offered a ballpark estimate of the cost to bury their two overhead transmission lines (69 kV and 138 kV) currently located along the south edge of the McKee Road ROW from the substation just east of the Badger State Trail to the City limits beyond the Target Superstore. The total estimate is $20 million, and the estimate for the portion within the Arrowhead study area is $8.4 million.

Estimated Public Infrastructure Costs (McKee Rd)

Item	*Qty.*	*Units*	*Cost Each*	*Total Cost*
Water Main	2,100	L.F.	$75.00	***$157,500***
Sanitary Sewer	2,100	L.F.	$65.00	***$136,500***
Street Work				**$1,603,994**
Removals				***$175,000***
Estimated Project Cost				**$2,073,000**
Engineering and Contingencies				**$518,000**
Total Estimated Cost				**$2,591,000**

In Phase 2 it is expected that a bike bridge over or tunnel under McKee Road may be built in coordination with the WisDOT construction of the McKee Road/US-18/151 interchange. The design of a bridge is unknown at this time, but it could look something like the Fish Hatchery Road bike bridge just north of McKee Road (*see Figure 4.5*). Unlike that bridge, there is no grade change here, and no opportunity to design the bridge without full ramps on each side of McKee Road. Midwest Decorative Stone will be most affected by this bridge due to their location immediately east of the trail route and their narrow frontage on McKee Road. In the interest of maintaining their visibility, a design using piers or posts is preferred to one that would use retaining walls and earthen ramps for the approaches to the bridge.

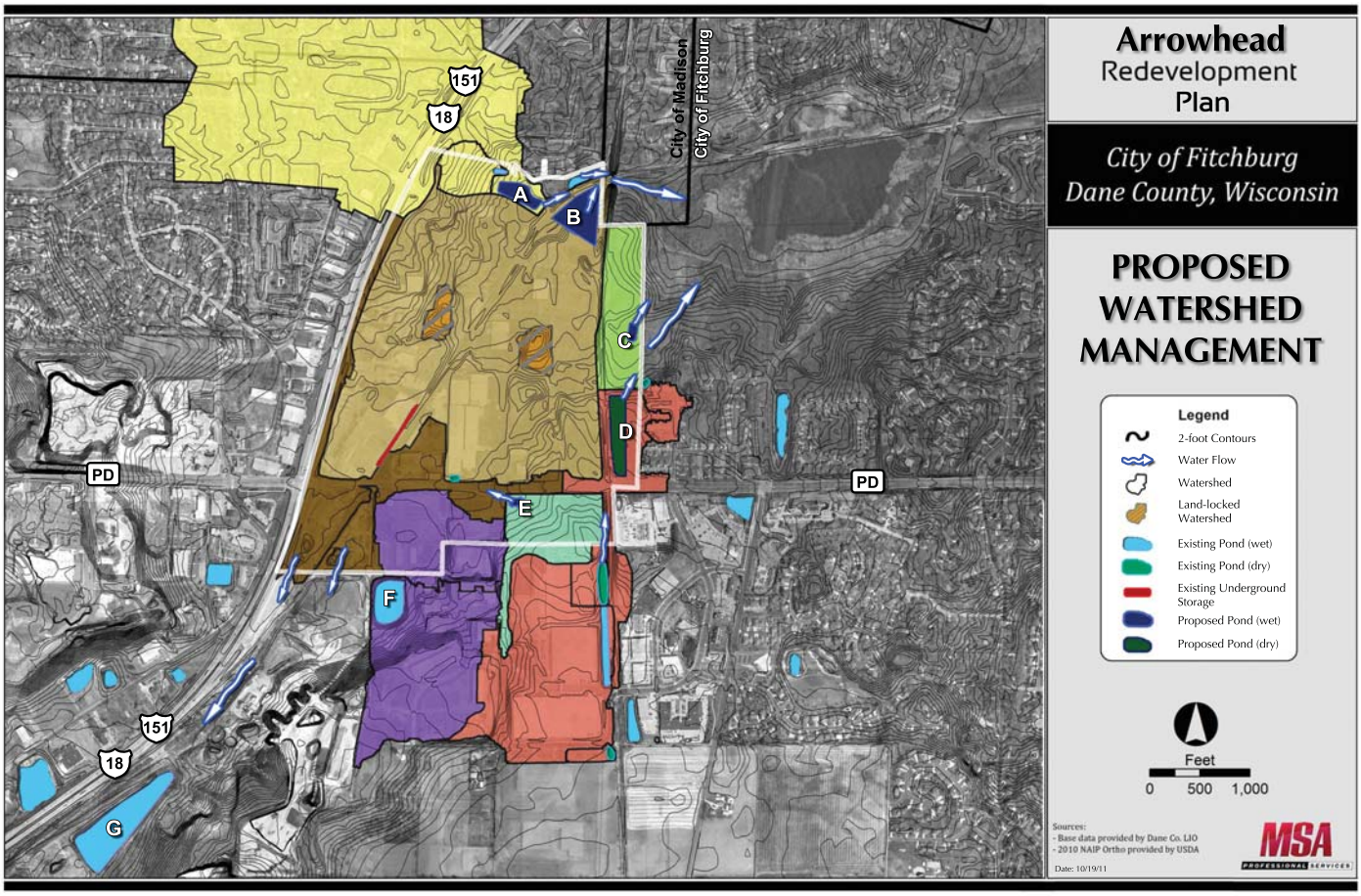
4.5 Proposed Stormwater Infrastructure

As infill development occurs, it will be necessary to provide additional facilities to meet post-development stormwater management standards as established by the City of Fitchburg, Dane County, the Wisconsin Department of Natural Resources (WNDR), and the United Stated Environmental Protection Agency (EPA) (see Section 2.2). These standards address three aspects of stormwater management: water quality control (measured as reduction in post-development Total Suspended Solids (TSS), peak discharge rate control, and annual infiltration (calculated as stay-on, or the depth of annual rainfall that does not become runoff).

Figure 4.8 (on the next page) illustrates the proposed changes to the stormwater system. This map identifies the various watersheds and management ponds within the study area based on the Arrowhead Master Plan, including existing and proposed ponds. The proposed stormwater serve the needs of multiple properties. The system design incorporates the following assumptions:

1. Water quality and rate control requirements can be balanced across multiple ponds within each of the two regional watersheds that the study is part of (Badger Mill Creek and Nine Springs Creek – see Figure 2.8). Individual ponds can provide more or less than their "share" based on the watersheds they serve as long as standards are being met for the entire study area.
2. The water quality treatment performance of Pond A will be preserved under proposed conditions even though its footprint may need to be reduced to accommodate the planned development. Maintaining the water quality treatment performance of the pond while reducing the pond size results in an increase in peak discharge rates under larger rainfall event conditions.
3. Peak discharge rate control is provided on a regional basis. That is to say that the cumulative

Figure 4.8: Proposed Watershed Management



peak flows leaving the Arrowhead development area to the north and south are maintained at current levels for the requisite design storms. Peak discharge rates at discrete locations within the Arrowhead development area are not being maintained at current levels.

4. Infiltration requirements will be met using on-site facilities.
5. Other stormwater management requirements such as oil and grease control will be met using on-site facilities as appropriate.

Figure 4.9 indicates peak discharge rate to the regional watersheds, at build-out, under various rainfall conditions. This assumes that all development and stormwater facilities are built more or less as shown in the conceptual master plan.

Figure 4.9: Stormwater Rate Control, Existing and Proposed

Peak Discharge Rate (cfs)					
Rainfall Event	Rainfall Depth (in)	All areas flowing south to Badger Mill Creek		All areas flowing north to Nine Springs Creek	
		(1) Existing	(2) Proposed	(3) Existing	(4) Proposed
1-yr	2.5	39	38	62	50
2-yr	2.9	46	45	97	90
10-yr	4.2	71	68	360	355
100-yr	6	111	109	850	845

Figure 4.10 describes the status, purpose and construction timing of each pond.

It is important to note that there are several landlocked areas in the study area that do not drain out to the regional watersheds under flood events of

Figure 4.10: Proposed Stormwater Management Facilities

Pond	Current Size *	Proposed Size *	Purpose	Collection Watershed	Discharges To	Construction Timing
A	1.9 acres	1.2 acres	Water quality (primary) and rate control (secondary)	Service area is almost entirely outside the study area (yellow)	Nine Springs Creek	Phase 2, as needed to extend Williamsburg Way
B	1.5 acres	5.2 acres	Water quality and rate control	Service area is most of the land north of McKee Road and east of Verona Road – location of most proposed development (tan)	Nine Springs Creek	Phase 1, needed to accommodate Avenue A, Avenue B, and associated infill development
C	NA	0.7 acres	Water quality and rate control	Would serve only new development east of the Badger State Trail (green)	Nine Springs Creek	As needed to accommodate new development east of the Badger State Trail
D	NA	2.6 acres	Rate Control	Service area is primarily the SubZero/Wolf site – would provide additional rate control (red) to offset reduction in capacity of Pond A	Nine Springs Creek	Phase 1 or 2, as needed for rate control when Pond A +Pond B rate control capacity is exceeded
E	NA	1.0 acres	Water quality and rate control	Would serve only new development at the north end of the Sub Zero/Wolf property (aqua)	Badger Mill Creek	As needed to accommodate new development south of McKee Road (Site 17)
F	3.2 acres	Same	Water quality and rate control	Serves the western half of the Fitchburg Commerce Park (orange)	None - landlocked	No changes needed or proposed
G	9.4 acres	Same	Water quality and rate control	Serves a large area outside the study area (not indicated on map) and a small portion of the study area with a high percentage of impervious surface (brown)	Badger Mill Creek	No changes needed or proposed

**Current size is the surface area of the pond under 100-year conditions*

Figure 4.11: Stormwater Rate Control Scenarios, Discharge to Nine Springs Creek

Peak Discharge Rate (cfs)					
Rainfall Event	Rainfall Depth (in)	Pond A Only		All areas flowing north to Nine Springs Creek	
		(1) Existing	(2) Proposed	(3) Existing	(4) Proposed
1-yr	2.5	27	37	62	50
2-yr	2.9	47	73	97	90
10-yr	4.2	253	276	360	355
100-yr	6	530	529	850	845

100-yr severity or less. The proposed stormwater system assumes that most of these areas north of McKee Road would be connected to the regional watersheds via new streets and stormwater ponds.

Figure 4.11 provides analysis showing how changes to Pond A affect the need for Pond D. If that pond is modified, changes are recommended to the outlet structure to restrict outflow more, providing for better water quality control. Because the Master plan proposes a slightly smaller Pond A, peak discharge rates would increase in most cases (compare column 1 to column 2). Column 5 shows the flow rates if Pond A is not changed and Pond D is not built – the peak discharge rate from the entire area is either lower (1-year and 2-year events) or less than 3% higher (10-year and 100-year events). However Column 6 shows a more substantial increase peak flow rates in the 10-year and 100-year events – about 9% greater in the 10-year event – suggesting the possible need for construction of Pond D if and when Pond A is modified to enable the extension of Williamsburg Way.

5 Economic Analysis

5.1 New Value Projections

The Master Plan (*see Chapter 4*) indicates both expansions of existing businesses and creation of new development parcels to accommodate new businesses. The estimated new taxable values created by this growth is shown in *Figure 5.2* on the next page, organized by development phase.

Figure 5.1: General Land & Building Costs

ESTIMATED VALUE			
BLDG & PRKG	**Low**	**High**	
Office:	$100	$150	per square foot
Warehouse:	$35	$50	per square foot
Manufacturing:	$40	$70	per square foot
Retail:	$125	$175	per square foot
Parking Garage:	$15,000	$30,000	per parking space
LAND	**Low**	**High**	
Office:	5	7	per square foot
Industrial:	3	4.5	per square foot
Retail:	10	12	per square foot

To calculate the land and building values, the following assumptions were made:

Land Value

- Land ratio for new development is based on the general ratios provided in *Figure 5.1*, and adjusted based on adjacent parcels with same land use(s)
- Properties that will benefit from public infrastructure improvements (i.e. public road) within the Master Plan will see increase comparable to adjacent parcels in the same condition (e.g. road access, land use, etc.)
- Land Ratio for properties that do not see public infrastructure improvements remain unchanged

Building Values

- Based on general construction costs using gross square footage (*see Figure 5.1*)
- Includes exterior materials, finished interiors, parking, and landscaping
- A range of low to high is provided, as materials, development type (office inside industrial building vs. separate facility), etc. affect the overall value of the building(s)

To be conservative, we used the low estimate for land improvements, and factored in a 1% inflation value using a projected "likely" completion year.

Figure 5.2: New Value Projections - Three Phases

Arrowhead Redevelopment Plan - New Value Increment Estimates - Phase 1 Projects

	PARCEL INFORMATION		ESTIMATED LAND VALUE					BUILDING		EST. IMPROVEMENT VALUE		ESTIMATED TOTAL VALUE INCREMENT		
Site	Business	Parcel Size (sq.ft.)	2011 $$ / sq. ft.	2011 Assessed Value	Improved $$ / sq.ft.	Improved Market Value	Market Value Difference	Land Use	Building (sqft)	Market Value Upon Completion (LOW)* (2011 dollars)	Market Value Upon Completion (HIGH)* (2011 dollars)	Improved Land Value Difference + LOW estimate of Improvements Values	Likely Year of completion	Total value Adjusted for Inflation (1%)
ROW	**Phase 1 ROW** (Arrowhead Pkwy)	217,000	$1.47	319,250	---	$0	-$319,250							
				$319,250		$0	-$319,250					-$320,000	2013	-$330,000
#1	**New Office Site** (3-Stories)	123,000	$0.60	73,848	$12.00	$1,476,960	$1,403,112	Office	37,600	$3,760,000	$5,640,000			
				73,848		$1,476,960	$1,403,112		37,600	$3,760,000	$5,640,000	$5,163,112	2016	$5,426,483
#2	**New Fire Station** (2 Stories)	146,900	$0.60	$88,139	$0.00	$0	-$88,139	Public	56,000	---				
				$88,139		$0	-$88,139		56,000	not on tax rolls		-$90,000	2013	-$90,000
#3	**Industrial/Office Addition** Saris (1-Story Building)	507,250	$0.80	$359,800	$0.80	$405,806	$46,006	Office	7,500	$750,000	$1,125,000			
								Warehouse	5,000	$175,000	$250,000			
								Manufacturing	37,500	$1,500,000	$2,625,000			
				$359,800		$405,806	$46,006		50,000	$2,425,000	$4,000,000	$2,470,000	2013	$2,520,000
#4	**Industrial Addition** General Beverage (1-Story)	295,000	$10.00	$2,350,000	$10.00	$2,950,000	$600,000	Office	12,000	$1,200,000	$1,800,000			
								Warehouse	34,000	$1,190,000	$1,700,000			
				$2,350,000		$2,950,000	$600,000		46,000	$2,390,000	$3,500,000	$2,990,000	2012	$3,020,000
#5	**Industrial Addition** United Vaccines (2 Stories)	58,600	$2.50	$146,700	$2.50	$146,500	-$200	Warehouse	2,250	$78,750	$112,500			
								Office	6,750	$675,000	$1,012,500			
				$146,700		$146,500	-$200		9,000	$753,750	$1,125,000	$750,000	2015	$780,000
	Phase 1 Subtotals			$3,340,000		$4,980,000	$1,640,000			$9,330,000	$14,270,000	$10,960,000		

** Based on general low-high value per sq.ft. (Office $100-150, Warehouse $35-50, $40-70, Retail $125-175), which includes parking lots, landscaping, buildings with interior finishes*

Arrowhead Redevelopment Plan - New Value Increment Estimates - Phase 2 Projects

	PARCEL INFORMATION		ESTIMATED LAND VALUE					BUILDING		EST. IMPROVEMENT VALUE		ESTIMATED TOTAL VALUE INCREMENT		
Site	Business	Parcel Size (sq.ft.)	2011 $$ / sq. ft.	2011 Assessed Value	Improved $$ / sq.ft.	Improved Market Value	Market Value Difference	Land Use	Building (sqft)	Market Value Upon Completion (LOW)* (2011 dollars)	Market Value Upon Completion (HIGH)* (2011 dollars)	Improved Land Value Difference + LOW estimate of Improvements Values	Likely Year of completion	Total value Adjusted for Inflation (1%)
ROW	**Phase 2 ROW** (Williamsburg Way)	182,750	$6.46	$1,181,075	---	$0	-$1,181,075							
				$1,181,075		$0	-$1,181,075					-$1,180,000	2016	-$1,240,000
#6A	**New Mixed Use Site** (3-Stories)	90,000	$8.00	$720,000	$8.00	$720,000	$0	Retail/Restaurant	29,000	$3,625,000	$5,075,000			
								Office	57,500	$7,187,500	$10,062,500			
				$720,000		$720,000	$0		86,500	$10,812,500	$15,137,500	$10,810,000	2020	$11,820,000
#6B	**New Parking** (3+ Stories)	123,500	$6.50	$800,000	$6.50	$800,000	$0	Parking Garage (900)	---	$13,500,000	$27,000,000			
				$800,000		$800,000	$0		0	$13,500,000	$27,000,000	$13,500,000	2020	$14,760,000
#7	**Addition** - Midwest Dec. Stone	220,000	$2.00	$440,000	$2.00	$440,000	$0	Office	2,400	$240,000	$360,000			
				$440,000		$440,000	$0		2,400	$240,000	$360,000	$240,000	2017	$250,000
#8	**New Industrial Site** (1-Story Building)	339,200	$0.60	$203,541	$3.00	$1,017,705	$814,164	Office	10,000	$1,000,000	$1,500,000			
								Manufacturing	72,200	$2,888,000	$5,054,000			
				$203,541		$1,017,705	$814,164		82,200	$3,888,000	$6,554,000	$4,700,000	2020	$5,140,000
#9	**New Industrial Site** New Harder Corp (1-Story)	143,600	$0.60	$86,160	$3.00	$430,800	$344,640	Office	8,000	$800,000	$1,200,000			
								Warehouse	35,000	$1,225,000	$1,750,000			
				$86,160		$430,800	$344,640		43,000	$2,025,000	$2,950,000	$2,370,000	2016	$2,490,000
#10	**Existing Harder Site**	(1)	$8.30	$650,000		$0	-$650,000	removed	---	-$160,000	-$160,000			
				$650,000		$0	-$650,000		0	-$160,000	-$160,000	-$810,000	2016	-$850,000
#11	**Industrial Addition** - Certco	947,200	$7.50/$4.00	$6,615,000	$8.00	$7,577,600	$962,600	Warehouse	125,000	$4,375,000	$6,250,000			
				$6,615,000		$7,577,600	$962,600		125,000	$4,375,000	$6,250,000	$5,340,000	2020	$5,840,000
#18	**Park Space**	225,000	$0.60	$135,015	$0.00	$0	-$135,015	None	---					
				$135,015		$0	-$135,015		43,000	$0	$0	-$140,000	2020	-$150,000
	Phase 2 Subtotals			$10,830,000		$10,990,000	$160,000			$34,680,000	$58,090,000	$34,830,000		

** Based on general low-high value per sq.ft. (Office $100-150, Warehouse $35-50, $40-70, Retail $125-175), which includes parking lots, landscaping, buildings with interior finishes*

Arrowhead Redevelopment Plan - New Value Increment Estimates - Phase 3 Projects

	PARCEL INFORMATION		ESTIMATED LAND VALUE					BUILDING		EST. IMPROVEMENT VALUE		ESTIMATED TOTAL VALUE INCREMENT		
Site	Business	Parcel Size (sq.ft.)	2011 $$ / sq. ft.	2011 Assessed Value	Improved $$ / sq.ft.	Improved Market Value	Market Value Difference	Land Use	Building (sqft)	Market Value Upon Completion (LOW)* (2011 dollars)	Market Value Upon Completion (HIGH)* (2011 dollars)	Improved Land Value Difference + LOW estimate of Improvements Values	Likely Year of completion	Total value Adjusted for Inflation (1%)
ROW	**Phase 3 ROW** (Cul-de-sac)	19,500	$0.60	$11,700	---	$0	-$11,700							
				$11,700		$0	-$11,700					-$10,000	2022	-$10,000
#12	**New Industrial Site** (1-Story Building)	203,000	$0.60	$121,800	$2.50	$507,500	$385,700	Office	14,700	$1,470,000	$2,205,000			
								Manufacturing	56,000	$2,240,000	$3,920,000			
				$121,800		$507,500	$385,700		70,700	$3,710,000	$6,125,000	$4,100,000	2022	$4,570,000
#13	**New Industrial Site** (2-Story Building)	302,000	$0.60	$181,200	$2.50	$755,000	$573,800	Office	11,200	$1,120,000	$1,680,000			
								Manufacturing	31,800	$1,272,000	$2,226,000			
				$181,200		$755,000	$573,800		43,000	$2,392,000	$3,906,000	$2,970,000	2024	$3,380,000
#14	**New Industrial/Office Site** Thermo Fisher New Location (2-Story Building)	839,750	$0.60	$517,680	$3.00	$2,588,400	$2,070,720	Office	120,000	$12,000,000	$18,000,000			
								Manufacturing	150,000	$6,000,000	$10,500,000			
								Parking Garage (645)	---	$9,675,000	$19,350,000			
				$517,680		$2,588,400	$2,070,720		270,000	$27,675,000	$47,850,000	$29,750,000	2022	$33,190,000
#15	**New Office** - Charter (2 Story)	245,100	$8.00	$1,880,000	$10.00	$2,451,000	$571,000	Office	35,000	$3,500,000	$5,250,000			
				$1,880,000		$2,451,000	$571,000		35,000	$3,500,000	$5,250,000	$4,070,000	2030	$4,920,000
#16	**Office Expansion** (2-Stories) (2.5-Story Building)	851,200	$10.70	$9,925,500	$12.00	$10,214,400	$288,900	Office	50,750	$5,075,000	$7,612,500			
								Parking Garage (315)	---	$4,725,000	$9,450,000			
				$9,925,500		$10,214,400	$288,900		50,750	$9,800,000	$17,062,500	$10,090,000	2025	$11,600,000
#17	**New Office Site** (4-Stories)	497,000	$0.70	$347,900	$12.00	$5,964,000	$5,616,100	Office	180,000	$18,000,000	$27,000,000			
								Parking Deck (575)	---	$4,312,500	$8,625,000			
				$347,900		$5,964,000	$5,616,100		180,000	$22,312,500	$35,625,000	$27,930,000	2027	$32,750,000
	Phase 3 Subtotals			$12,990,000		$22,480,000	$9,490,000			$69,390,000	$115,820,000	$78,900,000		

** Based on general low-high value per sq.ft. (Office $100-150, Warehouse $35-50, $40-70, Retail $125-175), which includes parking lots, landscaping, buildings with interior finishes*

TOTALS - ALL PHASES		$27,160,000		$38,450,000	$11,290,000			$113,400,000	$188,180,000	$124,690,000		

5.2 FUNDING MECHANISMS

There are several possible sources of funding to help businesses in the study area expand, and help the City contribute to the cost of new public infrastructure to enable those expansions.

Tax Incremental Financing (TIF)

At present about 5% of the City's tax base is in a TIF district, indicating that there is capacity within the 12% statutory limit to create more districts. A preliminary cash flow analysis of a hypothetical TIF district using the projected new property values (see Section 4) indicates ample borrowing capacity against this new increment. The $124M in new value increment (2011 dollars), constructed between 2012 and 2030, enables TIF expenditures of about $25 million during the life of the TID. A much more conservative approach assumes that only the Phase 1 projects are constructed. That $11.7 million in new increment, constructed between 2012 and 2015, enables TIF expenditures of $7 million during the life of the TID.

Possible projects to be included in the project plan for a new TIF district include street and sidewalk improvements, stormwater management improvements, bike paths and bridges, structured parking (public or private), and utility line burial or relocation.

New Markets Tax Credits

The New Markets Tax Credit spurs investment of private sector capital into distressed communities by providing a tax credit to corporate or individual taxpayers who make qualified equity investments in designated Community Development Entities (CDEs). The CDEs in turn, invest the capital raised into projects and businesses in low-income communities. The credit provided to the investor totals 39% of the investment in a CDE and is claimed over a seven-year credit allowance period.

The portion of the Arrowhead redevelopment area north of McKee Road is in a qualifying low-income census tract, satisfying one of the eligibility requirements for this funding tool.

In 2011 the U.S. Department of the Treasury made $3.5 billion in tax credit authority available. The 2011 application period opened May 31 and closed July 27.

See http://www.cdfifund.gov/who_we_are/index.asp

Industrial Revenue Bonds

Wisconsin's Industrial Revenue Bond (IRB) program now has more than $265 million available to assist small manufacturers with expansion projects through low-interest financing. A State agency (formerly Department of Commerce) grants the bonding authority (volume cap allocation) to cities, villages, counties and towns to issue the bonds on behalf of a business. This site provides business representatives, municipal officials, bond counsel and others with up-to-date information on the IRB program, the process of applying for volume cap, the availability of volume cap and the latest forms.

Eligible Projects

Federal law defines eligible projects. IRBs are a means of financing the construction, expansion and/or equipping of, primarily, manufacturing facilities. Manufacturing generally includes nearly every type of processing that results in a change in the condition of tangible property. The proceeds of the bond issue may be used to finance the cost of land, construction of new or expanded facilities, purchase of equipment, and the payment of certain costs incurred in the issuance of the bonds. Prospective IRB users should consult with bond counsel on project eligibility and the use of bond proceeds.

Advantages

Unlike most conventional loans, IRBs can offer businesses a convenient, long-term, and often a fixed-rate financing package. Similar to other municipal bonds, the interest earned on IRBs is exempt from federal income taxes. As a result, the bond buyer is willing to accept a lower rate of interest in exchange for tax-free income. Typically, interest rates on IRBs may be from 1.5 to 2.5 percentage points below corporate bonds. The

terms of the bond issue are negotiable and can be structured to meet the needs of the borrower. The costs of issuing the bonds, which can be sizeable, can be spread out over the term of the bond issue.

See http://commerce.wi.gov/BD/BD-IRB-overview.html (website link and program is planned to move to Wisconsin Economic Development Corporation (WEDC) in 2012)

State Economic Development Tax Credit

The Economic Development Tax Credit replaces five former Wisconsin tax credit programs - the Airport Development Zone, Agricultural Development Zone, Community Development Zone, Enterprise Development Zone and Technology Zone programs. The new tax credit program eliminates all former zone boundaries, as well as creating new ways in which existing Wisconsin businesses or businesses relocating to Wisconsin can earn tax credits.

The tax credits, which are nonrefundable and nontransferable, must be applied against a certified business's Wisconsin income tax liability. In the case of an S-Corporation, LLC or other pass-through entity, tax credits flow through to the owners in the same way as the income. The tax credits have a 15-year carryforward.

Eligible Activities

1. Job Creation – Tax credits can be earned through the creation of new, full-time positions that pay at least $10.88 per hour. Businesses must create the jobs within three years and maintain them for at least two additional years.
2. Capital investment – Tax credits may be earned through capital investment for property and equipment. Expenditures for working capital, employment costs, moving costs, intellectual property and unrelated fees and permits are not eligible.
3. Employee Training – Tax credits may be earned through many types of training provided to existing and new employees in full-time positions. Training must be related to a specific project. Eligible training costs include trainee wages, trainer costs and trainer materials.
4. Corporate Headquarters – Tax credits may be earned by businesses locating global, national divisional or regional headquarters operations to Wisconsin or by businesses whose existing Wisconsin headquarters are at risk of leaving the state. Credits will be allocated on a per-job basis.

See http://wedc.org/wedc-incentives

Transportation Enhancement (TE) Grants

The Wisconsin DOT's TE program funds projects that increase multi-modal transportation alternatives and enhance communities and the environment. Federal funds administered through this program provide up to 80% of costs for a wide variety of projects such as bicycle or pedestrian facilities, landscaping or streetscaping and the preservation of historic transportation structures.

The next program cycle will begin sometime in 2012.

See http://www.dot.wisconsin.gov/localgov/aid/te.htm

Surface Transportation Program (STP) Urban Transportation Grant Program

The Wisconsin DOT's Surface Transportation Program - Urban (STP-U) allocates federal funds to complete a variety of improvements to federal-aid-eligible roads and streets in urban areas.

The objective of STP-U is to improve federal aid eligible highways within urban areas. Communities are eligible for funding on roads functionally classified as major collector or higher.

See http://www.dot.wisconsin.gov/localgov/highways/stp-urban.htm

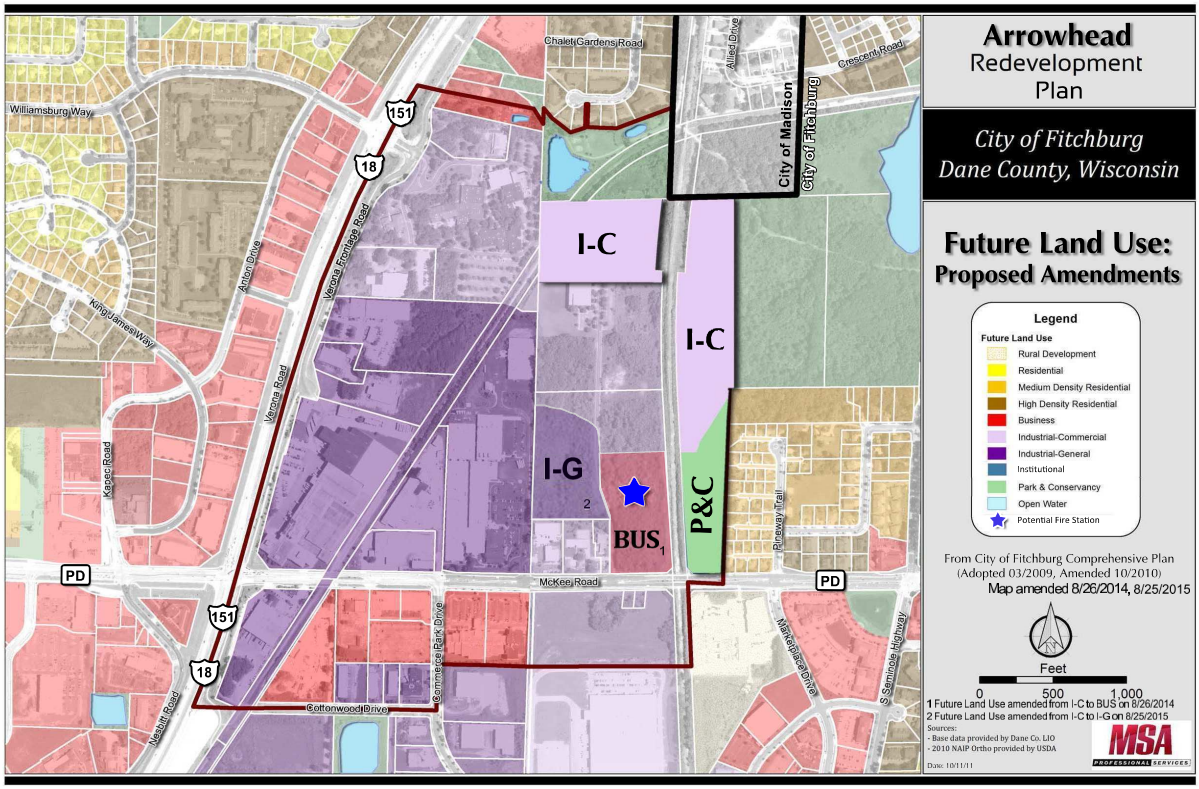
6 Policies & Actions

6.1 Land Use Policies

This plan is consistent with many of the goals, objectives, and policies of the City's Comprehensive Plan. It is promoting infill development, efficient use of land and infrastructure, multimodal transportation improvements, and support for existing businesses, to name a few.

Policy #1: Amend the comprehensive plan's Future Land Use Map, as shown in *Figure 6.1*. The most significant inconsistency with the comprehensive plan is proposed development of lands currently identified as Parks and Conservancy.

Figure 6.1: Future Land Use: Map Amendments



Policy #2: To mitigate land use conflicts at the west edge of the Pine Ridge Neighborhood, the City will provide for (see section 4.2 for more detail):

- 200' Park and Conservancy buffer
- 100' tree protection zone, with allowances for invasive species removal
- Strict limitations on objectionable emissions, sound, and light

6.2 Transportation Policies

As documented in Chapter 3, development in the Arrowhead Redevelopment Area will be constrained by the capacity of the surrounding roads and highways. Even as improved to a grade-separated, diamond interchange in 2018, the intersection of Mckee Road and US-18/151 will likely be congested during AM and PM peak traffic hours by 2030. That intersection is the "choke point" of the local network because it handles so much traffic – currently over 6,000 vehicles during the PM peak hour of 4:45 to 5:45 PM.

Our analysis shows that background traffic volumes are expected to result in Level of Service (LOS) "E" during the peak PM hour for certain turning movements, and even a small amount of additional local traffic during that hour will further degrade the function of the network. Figure 3.8 (on page 27) shows traffic capacity during the peak PM period for the most congested turning movement; the dark purple represents additional traffic that could be accommodated before that movement is rated LOS "F". Furthermore, the City has indicated an interest in expansion of the Fitchburg Commerce Park, and the majority of that traffic will also need to travel through the McKee Road-18/151 interchange. The emphasis of this plan is therefore policies and strategies that will minimize trip generation at all hours, and especially during the regional traffic peak hours.

Transportation Infrastructure Policies

Policy #1: The City strongly supports maintenance of full multimodal access to and across Verona Road at Williamsburg Way. The City recognizes that changes to the intersection may be needed to accommodate regional traffic needs, and will work with WisDOT to insure that any changes maintain all turning movements and add bike and pedestrian facilities (preferred to the underpass to the north). Connectivity is desired here to support local businesses, emergency services, future transit routes, and trips by local residents, especially to enable convenient commuting between Arrowhead businesses and the neighborhoods to the west.

Policy #2: The City desires a street network that is intuitive and easy to navigate. New streets will be designed, as feasible, such that east-west segments and north-south segments can have separate names. The Master Plan shows a north-south "Avenue A" and an east-west Avenue "B" for this reason.

Policy #3: Avenue "B" is deemed a higher priority for completion than an extension to Williamsburg Way, and is therefore planned as the primary "through route" between Avenue "A" and Verona Road. To preserve the option of making Williamsburg Way the preferred through route in the future, right-of-way should be reserved in front of Site 9 during the platting process to make this future change feasible.

Policy #4: The City will continue to improve local bike and pedestrian facilities as feasible, including:

- Sidewalks on both sides of all streets, especially the north side of McKee Road between Pine Ridge Road and Commerce Park Drive, and the east side of the Verona Road Frontage Road, from its southern end to the Design Mart site.
- Safe bike and pedestrian crossings of Verona Road at Williamsburg Way
- Complete the Cannonball Trail, and provide connections streets and businesses within the plan area (where feasible)
- Create direct connections from the Badger State Trail to adjacent uses (where possible).

Transportation Demand Management (TDM) Programs and Policies

Policy #1: The first way to manage traffic and trip generation is through land use decisions. Trip generation per square foot of building varies significantly by type of use. Warehouse uses generate just 0.24 trips per 1,000 SF of building area in the peak PM hour, 1,000 SF of light industrial use generates 0.85 trips, 1,000 SF of general office generates 1.24 trips, and 1,000 SF of retail or restaurant generates about 4.5 trips. Warehouse and manufacturing are also the most flexible and accommodating to traffic constraints because they often operate using multiple shifts and they can adjust the timing of those shifts per the limitations of the local traffic network, as Placon and Sub-Zero/Wolf already do. Office uses are more difficult to manipulate in this way, due to the common practice and expectation that the typical workday will start sometime between 7 and 9 AM and end between 4 and 6 PM.

Due to traffic constraints, the recommended land uses for new infill development in the Arrowhead Redevelopment Area are manufacturing and warehousing first, limited office development second, and only a small amount of retail/restaurant development.

This plan does not assign a maximum number of peak hour trips to individual parcels or to the entire planning area, however the transportation facility design recommendations in this plan are based on the uses and square footage estimates as shown in the Master Plan Site Information table on page 39. Should proposed new development significantly exceed the expected PM peak trip generation on any individual parcel (~ 120% or greater), due to a change in use (e.g. more office space than projected) or a change in building size compared to the Master Plan, this will impact the function of intersections in the plan area. Any such proposed increase in trip generation should be accompanied by specific, feasible strategies, to be implemented by the business(es) on that site, to limit peak period trips. See TDM policies #2 and #6.

Policy #2: All businesses in the Arrowhead plan area, as well as all businesses in the Fitchburg Commerce Park, present and future, should be encouraged to maximize their own convenience (in terms of shorter travel times) and the efficiency of the transportation network by planning their work shifts and deliveries to occur outside the peak traffic hours. Specifically, businesses are encouraged to direct their trips to occur before or after the 7:00 AM to 8:30 AM and 4:30 PM to 6:00 PM peak periods.

Policy #3: The City will seek partnerships with Madison College (MATC) and other local institutions to offer job training services somewhere within the Arrowhead area, either standalone or on-site at existing employers. The partnership agreement should include provisions for outreach to adjacent neighborhoods. This initiative can simultaneously improve the labor supply for Arrowhead businesses and increase the percentage of employees that live close enough to feasibly walk/bike/bus/carpool to work.

Policy #4: The City will work with Metro Transit to evaluate bus transit improvements to and through the study area with a route that connects to the rest of the Metro system via the South and West transfer points. The City recognizes that these improvements require an annual operational cost, and that these costs are, in part, an investment in the success of the Arrowhead area as a major employment center.

Policy #5: Businesses in the area are encouraged to consider shared parking arrangements, especially where adjacent uses have differing parking demand periods. This is considered most viable for Site 6, where movie theater parking and office parking could share spaces.

The City will facilitate discussions to establish a long-term shared parking agreement between United Vaccines and AMC theater to enable United Vaccines to grow in their current location without acquiring more land for parking.

Policy #6: All businesses in the Arrowhead and Commerce Park areas are encouraged to promote and provide incentives for commuting methods other than single-occupancy vehicles (SOVs), including carpooling, walking/biking, and Metro Transit public transit.

Suggested strategies:

- Promote use of Rideshare Etc. Online, a matching service that allows commuters to quickly find transportation options for carpooling, bike buddies, vanpooling, mass transit, and park and ride lots based on their specific circumstances.
- Offer reduced-fare bus passes to employees.
- Implement Bike-to-Work incentive programs. Saris Corp. is operating a model program and will make presentations about the design of their program on request. The City can help arrange for such presentations to occur.

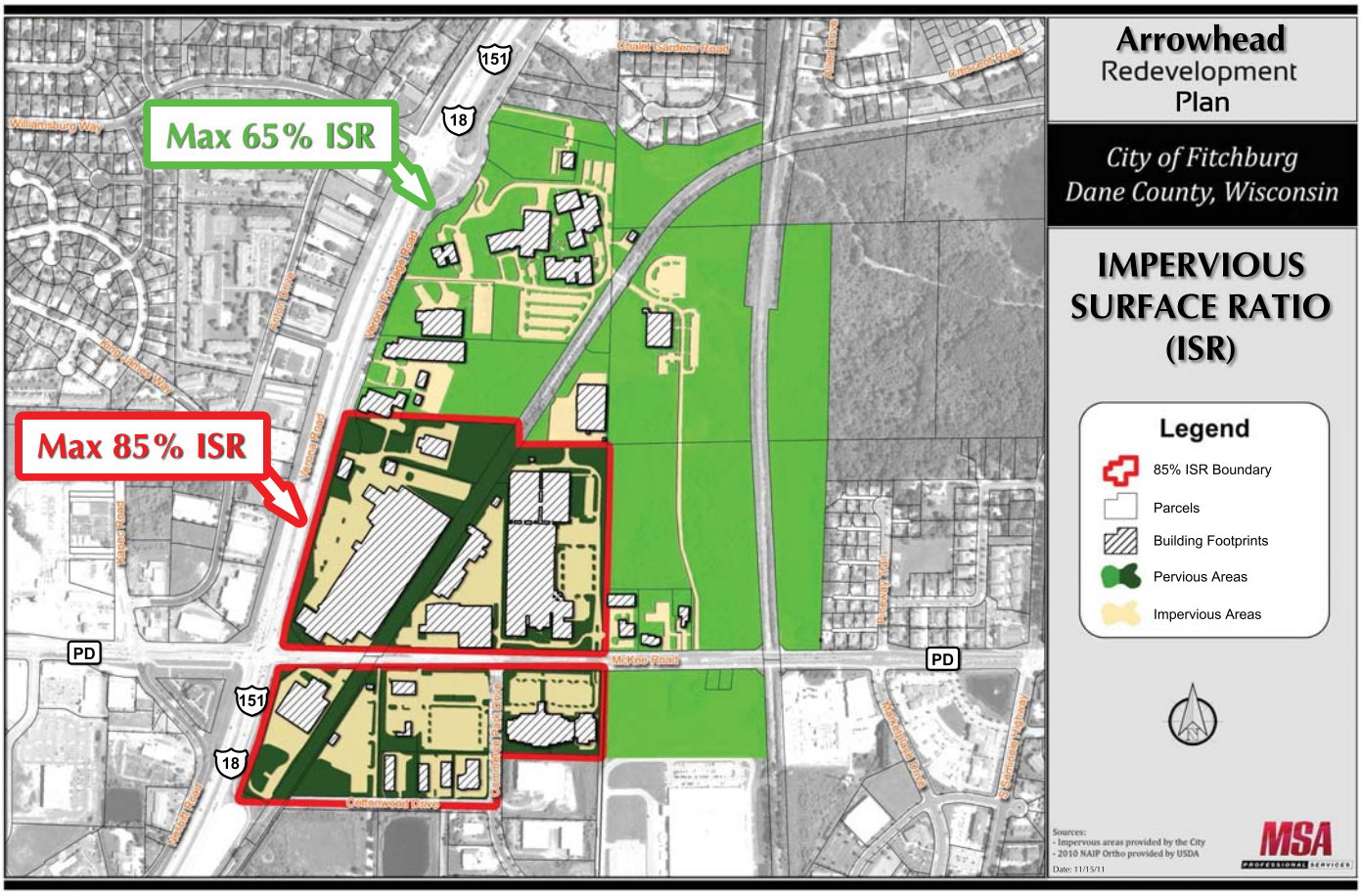
6.3 Stormwater Policy

In order to ensure and preserve the adequate function of regional stormwater facilities, all parcels have a maximum allowable impervious surface ratio (ISR) assigned to them; the planning area will have two different ISR limits.

Policy #1: For those sites in the southwest quadrant of the planning area as shown in Figure 6.2, the maximum ISR will be 85%. For all other sites the maximum ISR will be 65% (consistent with current City ordinances, Sec. 22-607). For those sites that already exceed these limits, no additional impervious surface should be approved, except as follows:

- Proposals to exceed these limits will be considered on a case-by-case basis. To ensure adequate stormwater management, on-site best management practices (BMPs) will be required for any impervious surfaces in excess of these limits.

Figure 6.2: ISR Map



The design of these BMPs will be such that the performance of the downstream regional pond(s) are not reduced in terms of regional water quality treatment or peak discharge rate control. It is expected that this performance requirement for on-site BMPs serving excess impervious surface runoff will result in detention facilities substantially larger than stormwater management ordinances would require.

6.4 Design Guidelines

Existing building and landscape design in the Arrowhead area is as varied as the mix of business types. There is some use of brick or decorative, split-faced cement blocks, but vertical-seam metal siding is the most common cladding material. Roofs are mostly flat or low-sloped. Thoughtful architectural design is evident in some buildings, while others are purely utilitarian. Some sites are nicely landscaped and maintained, and others have no landscaping of any kind. Some of the larger sites north of McKee Road have acres of wild land, some forested with mature trees, and almost all of it thick with scrub trees and bushes, including invasive species like honeysuckle and buckthorn.

This plan recommends the following basic design guidelines for new construction:

Site and Landscape Design

Guideline 1: Along McKee Road, locate the front building façade within 75 feet of the street right-of-way whenever possible

Guideline 2: Preserve mature hardwood trees whenever possible, especially oaks, when considering development in the plan area, particularly in those areas identified as oak woodlands on the Woodland Resources Map (figure 2.11, page 15).

Guideline 3: In wooded areas, property owners are encouraged to clear and remove understory scrub trees and bushes, especially invasive species, and to promote the growth of new hardwoods and native grasses. An "oak savannah" look is preferred, where feasible. The images below show an oak savannah restoration effort.

Images courtesy of Iowa Natural Heritage Foundation, http://www.inhf.org

Signage

Guideline 1: For the benefit of proposed new development sites that will not have direct access to McKee Road or Verona Road, and in the interest of reduced signage clutter, a monument-style directory sign is recommended at the corner of Avenue A and McKee Road. A similar sign may be appropriate near the intersection of Williamsburg Way and the Verona Road Frontage Road if and when Williamsburg Way is extended (Phase 2 project).

Lighting

Guideline 1: All exterior lighting in the plan area should be dark-sky compliant to limit glare, light pollution, and light trespass.

Building Design

Guideline 1: Thoughtful and creative design is strongly encouraged.

The recently-constructed EcoStar building (shown below) is a good example of thoughtful design – it uses basic metal siding and a conventional structural system, but the location of its windows provides for some "curb appeal" that contributes positively to the character of the neighborhood at minimal additional cost.

Guideline 2: Multi-story design is encouraged whenever appropriate to the building use, especially office uses.

Guideline 3: Brick and/or other high-quality materials is encouraged for use on office buildings.

6.5 Action Plan

This section identifies the various actions necessary to translate the Master Plan vision into reality. The actions are organized to correspond to the three phases of development outlined in this plan, though the timing and sequence of these actions may shift due to changes in regional transportation projects, landowner needs, or real estate market demand. Many of these actions depend upon the participation of existing land and business owners, and the City will remain flexible when pursuing these actions in order to maintain a focus on the business success of these key stakeholders.

Phase 1 Actions

1) Plan Adoption

Action 1.1: Adopt this plan as an amendment to the City of Fitchburg Comprehensive Plan, including revisions to the Future Land Use Map as described in Chapter 6.

Responsible Parties: Staff, Plan Commission, City Council

2) WisDOT Coordination

Action 2.1: Emphasize importance of full access at Williamsburg Way.

Responsible Parties: Staff, City Council, Mayor

EcoStar Facility

Action 2.2: Negotiate project boundaries along McKee Road.

Responsible Parties: Staff, WisDOT, City Council

Action 2.3: Plan upgrades to McKee Road east of the WisDOT project boundary to coincide with 18/151 construction.

Responsible Parties: Staff, City Council

Action 2.4: Share this plan and associated traffic data and projections so that ongoing design of 18/151 improvements incorporate and accommodate the planned changes.

Responsible Parties: Staff, WisDOT

3) Fix the AMC Stormwater Problem

Action 3.1: Replace the storm sewer line connecting the southwest corner of AMC's west parking lot to Pond F, south of Cottonwood Drive

Responsible Parties: Staff

4) TIF District Creation

Action 4.1: Create a Tax Incremental Financing District to assist with project funding.

Responsible Parties: Planning Staff, Plan Commission, City Council

5) Subdivide Thermo Fisher Property

Action 5.1: Ensure creation of a site for the new fire station that meets the program needs of the planned facility.

Responsible Parties: Property Owner, Staff, Plan Commission, City Council

Action 5.2: Complete preliminary design for all of Avenue B and identify the necessary alignment and connection to the adjoining Placon property .

Responsible Parties: Property Owners, Staff

Action 5.3: Complete land divisions and dedications as necessary.

Responsible Parties: Property Owner, Staff, Plan Commission, City Council

6) Build Avenue "A" & Avenue "B"

Action 6.1: Negotiate terms of public ROW acquisition and street construction costs with affected property owners.

Responsible Parties: Property Owners, Staff, Plan Commission, City Council

Action 6.2: Complete land divisions and dedications as necessary.

Responsible Parties: Property Owners, Staff, Plan Commission, City Council

Action 6.3: Secure agreements as necessary to cross Cannonball Trail (grade separated).

Responsible Parties: City Staff, DNR, DOT

Action 6.4: Design and build new streets.

Responsible Parties: City Staff, Consultant

7) Shared Parking Agreement

Action 7.1: Facilitate a shared parking agreement between United Vaccines and AMC to enable the growth of United Vaccines.

Responsible Parties: Property owners, Staff, Plan Commission, City Council

Phase 2 Actions

8) Relocate Harder Corporation

Action 8.1: Work with Harder Corporation to help find or build a new facility in the City, preferably in the planning area (e.g. Site 9).

Responsible Parties: Property owners, Staff

9) Connect Ave "B" to Verona Frontage Road

Action 9.1: Negotiate and complete the clearing, division, and sale of the current Harder property to provide the necessary street right-of-way.

Responsible Parties: Property owners (Harder Corp, Saris Corp), Staff, City Council

Action 9.2: Design and build the connection.

Responsible Parties: Staff, DOT

Action 9.3: Facilitate negotiations to sell/vacate any Verona Road right-of-way no longer needed for the cul-de-sac to Certco Inc.

Responsible Parties: Staff, Certco, DOT

10) Extend Williamsburg Way

Action 10.1: Determine Thermo Fisher Scientific's need for or interest in public street extension.

Responsible Parties: Staff, Thermo Fisher Scientific

Action 10.2: Seek permission through Dane County Circuit Court to alter the boundaries of Arrowhead Park.

Responsible Parties: Staff, City Attorney, Plan Commission, Council, Circuit Court

Action 10.3: Secure agreements as necessary to cross Cannonball Trail (at grade).

Responsible Parties: Staff, DNR, DOT

Action 10.4: Complete land divisions and dedications as necessary.

Responsible Parties: Property owners (Thermo Fisher, Charter Communications), Staff, Plan Commission, City Council

Action 10.5: If deemed necessary, dedicate and construct a new detention pond on Site 18 (Pond D) to compensate for the loss of runoff rate control capacity due to the shrinkage of Pond A in Arrowhead Park.

Responsible Parties: Staff, Thermo Fisher Scientific

Action 10.6: Design and build the new street, including modifications to the intersection of Williamsburg Way and the Verona Road Frontage Road as necessary to ensure that the new roadway does not exceed the City's 8% maximum slope.

Responsible Parties: Staff, DOT

Phase 3 Actions

11) Encourage Structured Parking

Action 11.1: Work with Thermo Fisher Scientific to enable infill development on sites 14 and 16 through the use of parking ramps.

Responsible Parties: Property owners, Staff

12) Extend a Street to Sites 12 and 13

Action 12.1: Determine Thermo Fisher Scientific's interest in developing the land east of the Badger State Trail.

Responsible Parties: Staff, Thermo Fisher Scientific

Action 12.2: Secure agreements as necessary to cross Badger State Trail (grade separated).

Responsible Parties: Property Owner, City Staff, DNR, DOT

Action 12.3: Consider the alternative alignment for the cul-de-sac allowing an at-grade crossing only if the grade-separated crossing is deemed cost-prohibitive.

Responsible Parties: Property Owner, City Staff, DNR, DOT