

RE-IMAGINE  
RE-INVEST  
RE-MAKE

# RE-STATE

A MASTER PLAN FOR STATE STREET  
WEST LAFAYETTE, IN  
JULY 2014



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# Acknowledgements

## OPENING THOUGHTS

Now is a great time to be thinking of West Lafayette's future. There is a new attitude through local leadership advocating for a better place by taking back streets from the Indiana Department of Transportation (INDOT); embracing and implementing a "Completing Our Streets" philosophy; actively thinking of Greater Lafayette as a Community of Choice; and choosing to support local arts and culture through permanent and temporary art installations. Bubbling up from residents is a strong and passionate belief in a better West Lafayette. Residents, businesses, and students are engaging in and forming strong advocacy groups; celebrating and supporting a burgeoning arts, entertainment, and local food scene; and mobilizing to protect and build special districts and neighborhoods. There is an emerging framework for the City and Purdue University that changes long-standing norms, evidenced already by the recent annexation of county land and Purdue University into city limits. Purdue has announced the Purdue Moves campaign, which recommends, among other initiatives, substantial investment in on-campus housing. The city is studying a new location for City Hall, potentially along or very near State Street, and has recently adopted the New Chauncey Land Use Plan, which seeks to stabilize and increase owner-occupied houses in this historic neighborhood.

Within this excitement, folds **RE-STATE**, a master plan that seeks to **RE-imagine, RE-invest, and RE-make** State Street through Downtown West Lafayette, Purdue University, and a newly opened western gateway. It is a plan that seeks to functionally, artistically, and strategically consider a new State Street as a place where people want to live, work, and play – connected to recreational, educational, natural, and cultural assets; connected to neighborhoods and transportation networks; and most importantly, connected to the heritage, character, and people of West Lafayette.

## THANK YOU!

**RE-STATE** is a collaboration between the City of West Lafayette, Purdue University, and Purdue Research Foundation; each entity equally engaged in the development of this plan. The product represents a common vision for State Street. Moreover, this Plan is a reflection of a planning process that engaged countless people who generously donated countless hours to help craft a vision for a different State Street. We are indebted to those who contributed as stakeholders during four different sessions over a six-month period; interested residents and business owners who enthusiastically participated in six public sessions and online through social media and community surveys; and members of our Project Working Group who guided our work and steadied us in navigating differing opinions. We are also appreciative of the guidance and direction received from our collaborative client team, which consisted of seven individuals representing the City of West Lafayette, Purdue University, and Purdue Research Foundation. The contribution of this team, insight, and creativity is foundational and ever-present throughout this work.

Throughout the process, we were privileged to also work with representatives from the West Lafayette Redevelopment Commission, West Lafayette City Council, and the Tippecanoe County Area Plan Commission. Their input, wisdom, and unique knowledge of local issues helped to shape this Plan and align its recommendations with other initiatives and priorities. Last, but certainly not least, we also wish to specially thank The Honorable John Dennis, Mayor of West Lafayette. Mayor Dennis shaped, shared, and supported this vision of a new corridor lending a new identity and opportunity to the City of West Lafayette. **THANK YOU TO ALL!**



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An aerial photograph of a city, likely a university campus, showing a dense grid of buildings, roads, and green spaces. A semi-transparent horizontal band is overlaid across the top portion of the image, containing the text "EXECUTIVE SUMMARY" in a bold, black, sans-serif font. The city below features a mix of modern and older architecture, with a prominent road interchange and a body of water visible on the right side.

# EXECUTIVE SUMMARY

# INTRODUCTION

**RE-STATE** is a vision and strategy seeking to **RE-IMAGINE, RE-INVEST,** and **RE-MAKE** State Street through Downtown West Lafayette, Purdue University, and a newly opened western gateway. It is a commitment to a new State Street – as a place where people want to live, work, and play – connected to recreational, educational, natural, and cultural assets; connected to neighborhoods and transportation networks; and most importantly, connected to the heritage, character, and people of West Lafayette and Purdue University. This is a shared vision, crafted in 2014 by the City of West Lafayette, Purdue University, the Purdue Research Foundation, and community residents and business owners, facilitated by consultants MKSK.



Because State Street is no longer a state highway and is now City-owned, we can create OUR street, one that: favors resident, business, student, and visitor needs over highway transportation objectives; addresses modal disparities; encourages economic development; and establishes a true sense of place and center to the City – a long-needed downtown West Lafayette. As an outcome, we anticipate transformational implementation to include: thriving, vibrant,

and economically diverse commercial districts that withstand the cyclical nature of the academic calendar; thoughtful integration of all modes of travel – vehicular, pedestrian, bicycle, and transit; a cohesive street character that is of West Lafayette; distinct identifiers for the special districts along State Street; a continuous tree canopy supporting social, environmental, and economic vibrancy; and creative use of green infrastructure tying to both functional and placemaking aspects of the street.

## EIGHT THEMES

Within the initial phases of the project, a consistency emerged among consensus-building sessions. Commonly heard comments and concerns about challenges and opportunities were synthesized with team impressions and then identified and categorized as “Eight Themes”.

These themes were presented in subsequent consensus-building sessions as “what we’ve heard”. The intent with this phrasing was to check that we were “on the right track”. Positive feedback from these sessions solidified these “Eight Themes” as the foundation for the work to follow.

## CHARACTER + IDENTITY

There persists a lack of identity to the City of West Lafayette and, to varying degrees, the districts along the corridor as well.

Each district is given a street character as well as identity through different methods of placemaking varying from allocation of roadway to changes to site furnishings and/or the addition of art as a gateway identifier.

This plan begins to establish those identities by recognizing three main districts along the State Street corridor: the Downtown District, which encompasses both the Riverfront and Village Districts on the east end; the University District; and lastly, the emerging, Gateway District to the west.

## IMPLEMENT + DEVELOP

Implementation of proposed changes may be phased to align with other transportation projects throughout the City. It is thought that certain portions of the street could be re-constructed soon and as funding allows.

Investing in the transformation of State Street encourages new development opportunities along the corridor where market data suggests current unmet demand. In concert with a new State Street, new development will help to create a vibrant, economically diverse corridor with a strong sense of place – a Downtown West Lafayette.

# FIGHT THEMES

01

## OF THIS PLACE

CONTEXT-APPROPRIATE SOLUTIONS AND AN INCLUSIVE PROCESS



02

## YOU ARE HERE

A DOWNTOWN WEST LAFAYETTE EMBRACING, REINFORCING, AND STRENGTHENING DIVERSE DISTRICTS



03

## COLLABORATION

A COMMON VISION BETWEEN THE CITY, PURDUE, AND PURDUE RESEARCH FOUNDATION



04

## COHESIVENESS

MORE CONSISTENCY FROM DISTRICT TO DISTRICT



05

## STREETS FOR ALL

INTEGRATION OF ALL TRAVEL MODES - PEDESTRIAN, BIKES, CARS AND BUSES



06

## OPEN SPACE & TREE CANOPY

WELL-CONNECTED SIGNIFICANT OPENS SPACES AND A STRONG URBAN STREET CANOPY



07

## VIBRANCY

THRIVING AND ECONOMICALLY DIVERSE MIXED-USE DISTRICTS



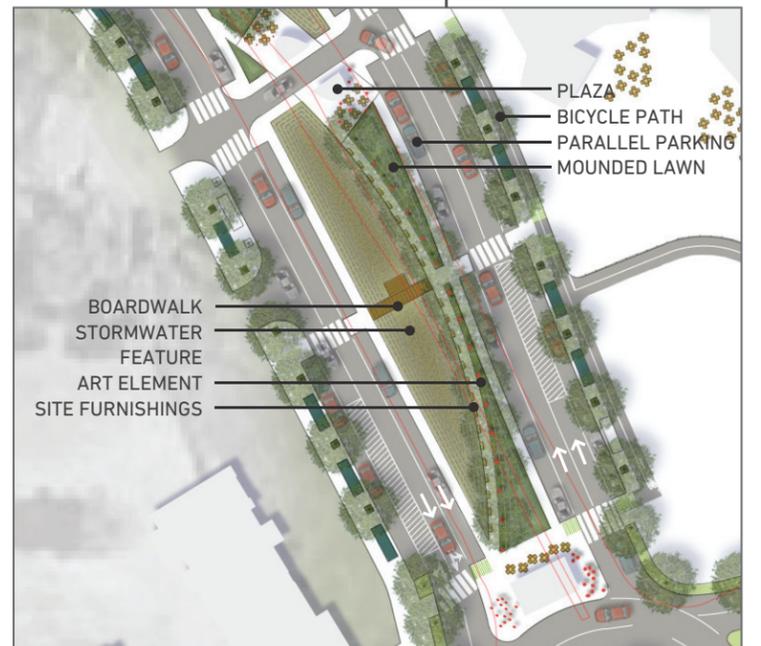
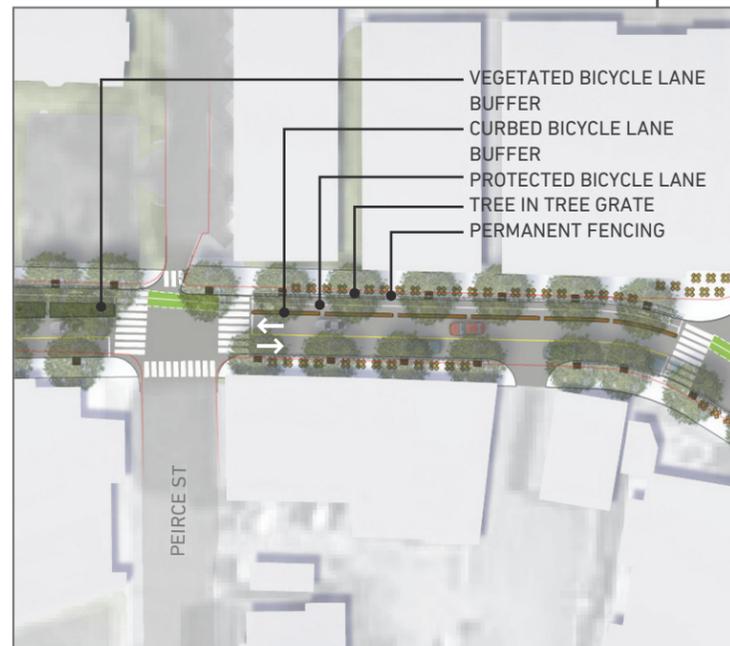
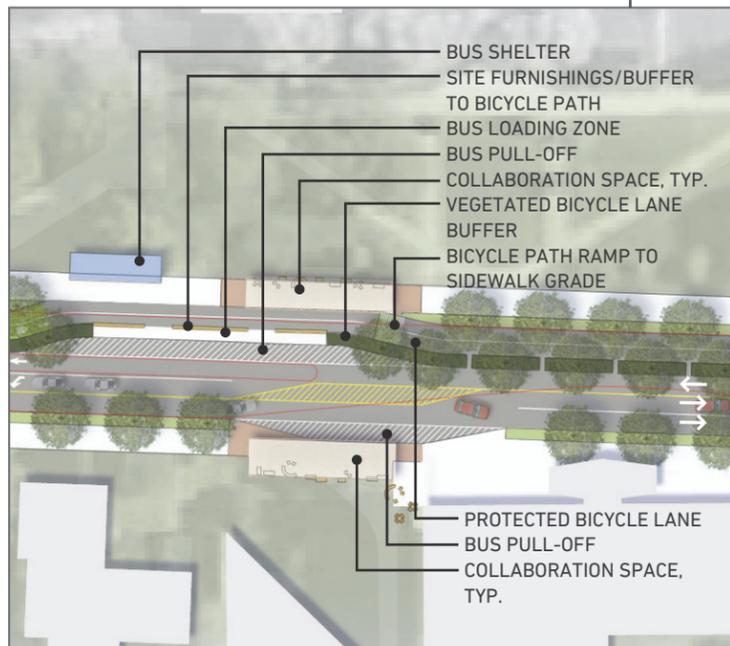
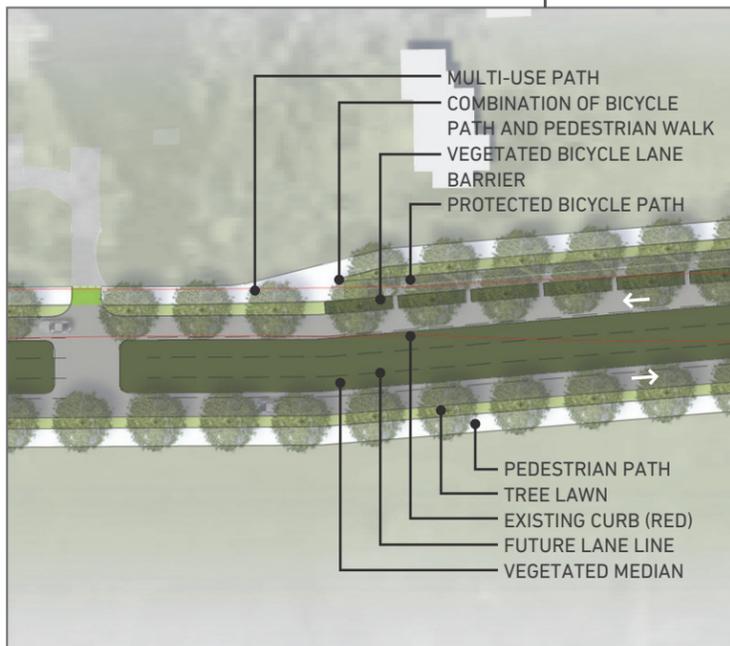
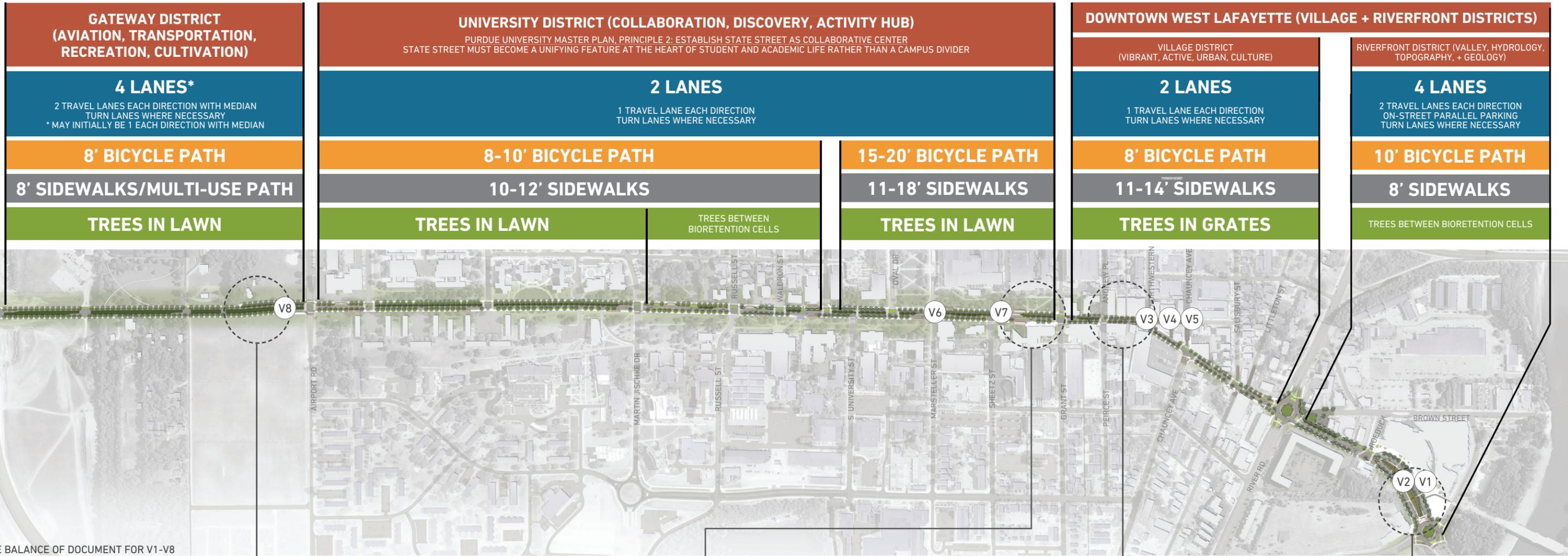
08

## GOING GREEN

ENVIRONMENTALLY RESPONSIBLE INFRASTRUCTURE



# CHARACTER + IDENTITY



# CHARACTER + IDENTITY: DISTRICTS

## RIVERFRONT DISTRICT: STREET CHARACTER

Dramatic changes to the Riverfront District address a number of existing challenges. Reconfiguring this segment of State Street to make space for a boulevard, widening sidewalks for outdoor dining and display space, running the bicycle path between the widened sidewalks and parallel parking would activate and revitalize Wabash landing.

The plan recommends changing Tapawingo Drive's signalized intersection to a roundabout and creating a new boulevard and park space in place of the surface parking lot in front of Wabash Landing. This configuration will place thousands of daily westbound vehicular travelers at the front doors of existing Wabash Landing shops and businesses.



## CHAUNCEY VILLAGE DISTRICT: STREET CHARACTER

Re-introducing two-way vehicular traffic, providing wider sidewalks, and safely integrating bicycle travel throughout the Chauncey Village District will correctively contribute to a more resilient the business district.

Proposed enhancements, such as wider walks to accommodate outdoor dining and merchant displays, the bicycle path, and street trees help to create a comfortable, multi-modal environment. These changes, along with abundant new seating opportunities, embrace the notion of vibrancy by providing places for people to meet, mingle, gather, and spend time in this unique urban environment.



## RIVERFRONT DISTRICT: IDENTITY + PLACEMAKING

The boulevard is envisioned as a passive open space, expressive of natural riverine attributes: geology, hydrology, ecology, and topography. It is seen as an opportunity to promote connectivity to the river, wellness through new trail and path systems, social interaction within new gathering spaces, and economic development at its edges.

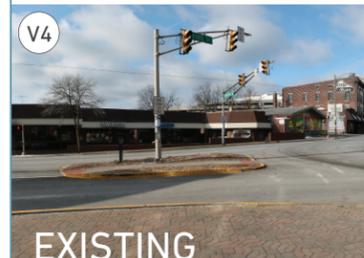
The boulevard is proposed to include a productive landscape – a space dedicated to managing stormwater runoff from the street and sidewalks, gathering areas, walkways, undulating landform, stone outcroppings, and a potential Welcome Center at the east end of the boulevard. Meaningful, commissioned public art is envisioned as an integrated element reinforcing the character and identity of this space.



## CHAUNCEY VILLAGE DISTRICT: IDENTITY + PLACEMAKING

Integrated placemaking elements celebrate the wonderful attributes associated with the Village; new gathering spaces invite residents to visit more often and stay longer.

The proposed new gathering space at the Northwestern Avenue, South Street, and State Street intersection is one such element. It is envisioned that this space will be frequently programmed with live music, dance, and other visual performances that attract a diverse range of people and ages.

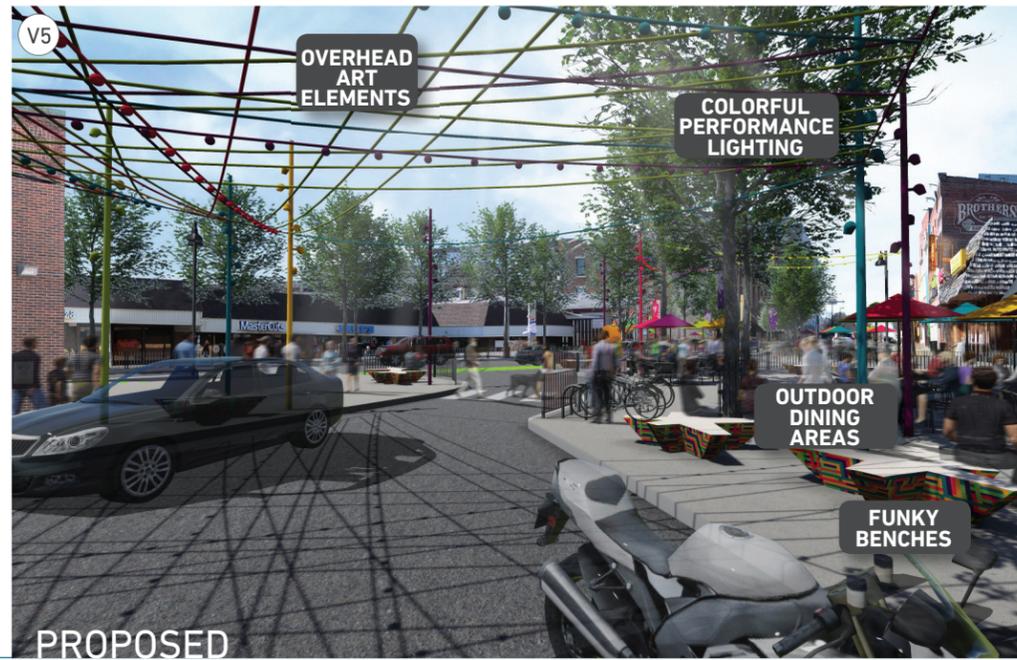


# CHARACTER + IDENTITY: DISTRICTS

## CHAUNCEY VILLAGE DISTRICT: IDENTITY + PLACEMAKING

South Street today is home to several festivals, during which the street is closed. New overhead elements and lighting support these events, and create a year-round festive atmosphere.

Colorful cables randomly strung from light poles across spaces and streets create interesting overhead and ground plane shadow patterns. Some strands include small, colorful lights which decorate the street during evening hours and events.



## UNIVERSITY DISTRICT: IDENTITY + PLACEMAKING

Often, establishing a true hub of activity can be challenging because those places need people to create social energy and animate the space. However, within campus is an abundant mix of people, constantly walking along or crossing State Street. This source of energy and animation fuels collaboration.

State Street can be home to campus collaborative spaces as outdoor opportunities of learning, sharing, and cooperation for campus students, faculty, staff, and visitors. These spaces, distributed along State Street, coincide with established centers of activity which already enjoy a steady stream of people.



## UNIVERSITY DISTRICT: STREET CHARACTER

The proposed condition through campus envisions tree-lined, broad, animated sidewalks; a generous, two-way bicycle path, protected and separated from vehicular traffic and pedestrian traffic; safe and well-marked pedestrian crossings at intersections; and a calmed street, functional and appropriately-scaled for local traffic.

This vision of an integrated State Street not only balances travel modes, but also begins to address how the street can become, as campus master planners proposed, the “collaborative center” and “unifying feature at the heart of student and academic life rather than a campus divider”.



## GATEWAY DISTRICT: STREET CHARACTER

West of Airport Road, a new district is emerging. In its initial stages, reconstruction of this segment of State Street may include two vehicular travel lanes and a wide, planted median. Over time, as traffic volumes dictate, additional travel and turn lanes can be taken from the median, while still preserving long-term a narrow, green boulevard.

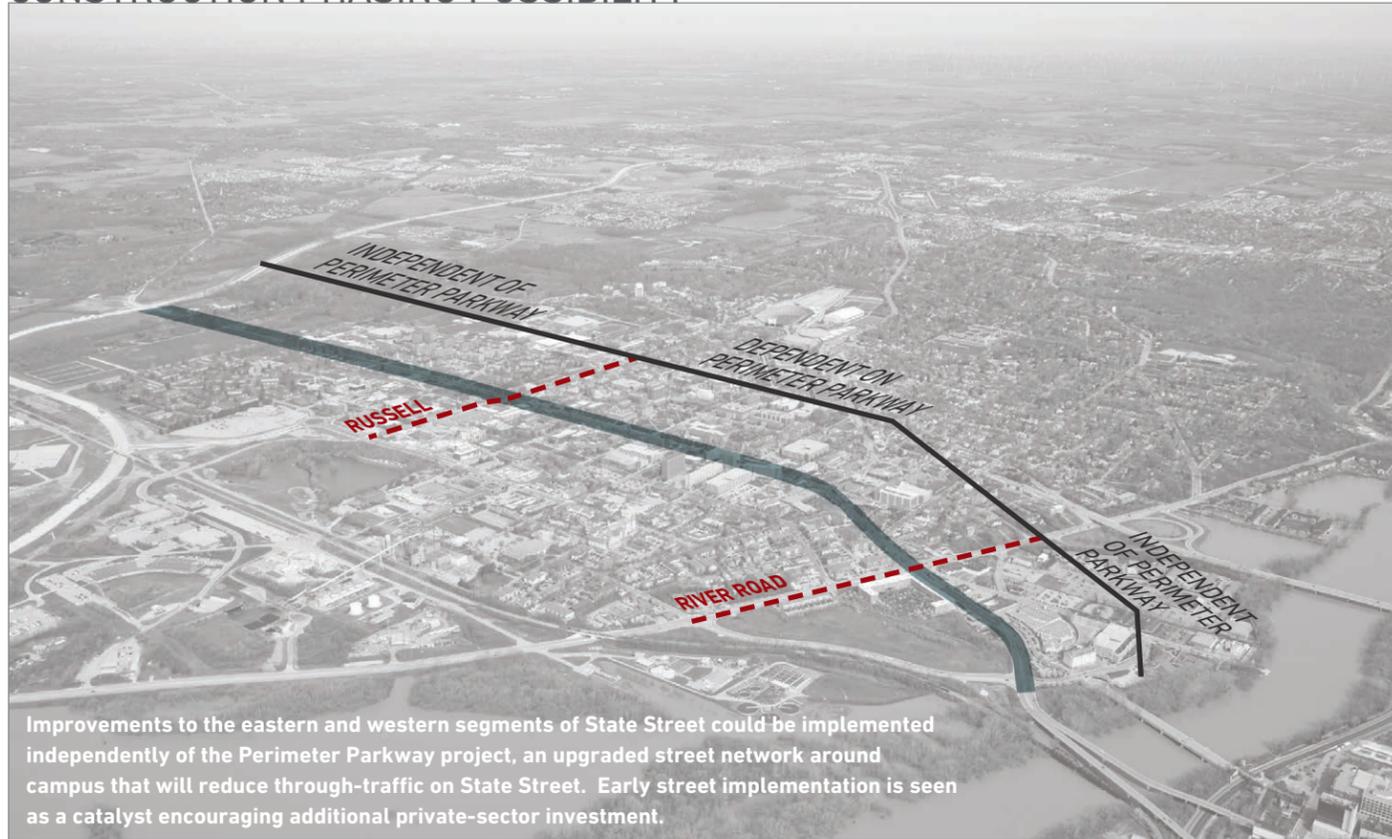
This district of State Street is characterized by linear/geometric themes that reflect current land use patterns: cultivation (Horticulture Park and Purdue Student Farms), aviation (Purdue Airport), transportation (US 231 and the Perimeter Parkway), and recreation (Intramural Fields). They provide a starting point for thinking about future public art.



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# IMPLEMENTATION + DEVELOPMENT

## CONSTRUCTION PHASING POSSIBILITY



## MARKET ANALYSIS

Tippecanoe County and West Lafayette are undergoing significant changes in line with national trends. As a smaller, yet dynamic metropolitan area, this market is experiencing healthy population and white- and blue-collar job growth. Changing demographics, market trends, and consumer preferences can help to shape a different West Lafayette experience for the future.

Demographic trends will drive demand for new housing types which are undersupplied in the market. Smaller attached residences in walkable environments, where more daily needs can be met by transportation options other than the car, will be needed to meet this new demand.

In addition to housing, the retail experience needs to also shift to meet the changing preferences of West Lafayette consumers, and the changing character of a "downtown" West Lafayette. Conventional suburban shopping centers are oversupplied in West Lafayette presenting a market opportunity for more urban character retail that helps bolster a "sense of place" along State Street.

Urban character office space is also under-supplied in West Lafayette and can greatly establish downtown West Lafayette as an urban place with a mix of users throughout the day. A new downtown with office space, new housing and retail options, improved urban form and transportation options will keep West Lafayette on a positive trajectory.

## ANNUAL DEMAND SUMMARY

Opportunities exist to capture expenditures with a higher quality downtown along State Street and strategic tenancing to achieve an optimal retail mix.

More housing options and downtown office space will also support a vibrant mix of commercial services.

Projected 5-Year Demand		
DEMAND	HIGH	LOW
ATTACHED HOUSING	75 UNITS	30 UNITS
DETACHED HOUSING	135 UNITS	50 UNITS
RETAIL (CURRENT UNMET)	55,000 SQ. FT.	25-000 SQ. FT.
GROWTH (PER YEAR)	30,000 SQ. FT.	15-000 SQ. FT.
OFFICE (ANNUAL)	34,000 SQ. FT.	13,000 SQ. FT.



## HISTORIC BUILDINGS ALONG STATE ST.



## RETAIL: POTENTIAL USES

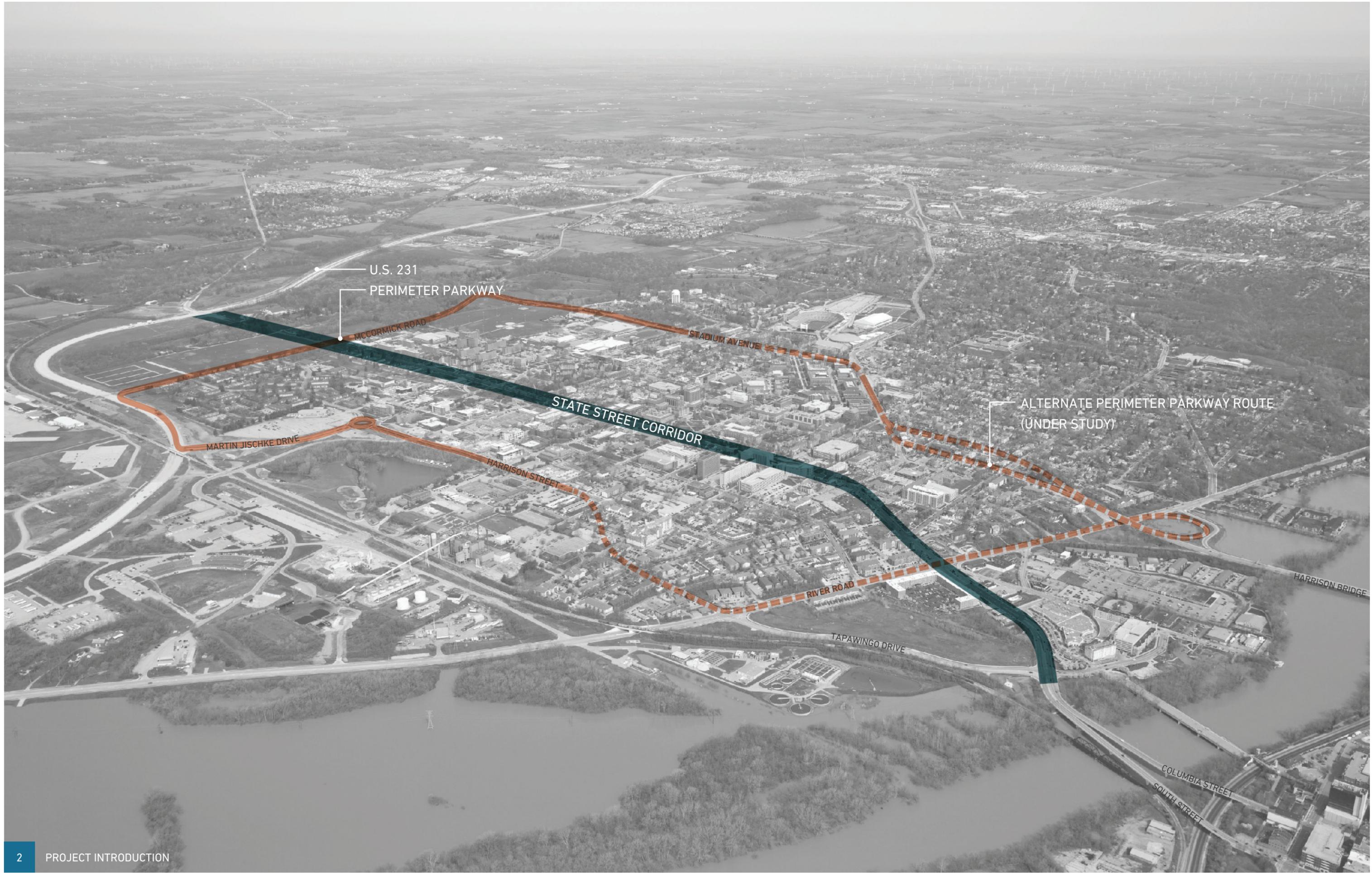
	← HIGHLY ACTIVE				→ LESS ACTIVE
ACTION	EAT	SHOP	EXERCISE	GATHER	
USE	Restaurant, Cafe	Store, Credit Union, Gallery	Gym, Yoga, YMCA	Co-Working, Computer Lab, Lounge, Conference, University Office	
OFFERS	Food, Drink, Internet	Goods, Services	Membership, Exercise Equipment, Training, Classes	Memberships, Rentable Space, Tables, Chairs, Internet	
USERS	Residents, Students, Employees, Visitors	Residents, Students, Employees, Visitors	Residents, Students, Employees	Residents, Students, Faculty/Staff	
EXAMPLE	Bar/Grill, Espresso Royale	CVS, Urban Outfitters, Contemporary Art Gallery	YMCA, Yoga Studio, LA Fitness, Rec Center	Co-working Space, Student Union, Lounge, Conference Space, Career Services	





# PROJECT INTRODUCTION + PROCESS + EIGHT THEMES





U.S. 231

PERIMETER PARKWAY

MCCORMICK ROAD

STADIUM AVENUE

MARTIN JISCHKE DRIVE

HARRISON STREET

STATE STREET CORRIDOR

ALTERNATE PERIMETER PARKWAY ROUTE  
(UNDER STUDY)

RIVER ROAD

TAPAWINGO DRIVE

HARRISON BRIDGE

COLUMBIA STREET

SOUTH STREET

# Project Introduction

## THE NEED, THE OPPORTUNITY, AND WHY NOW

The need for this study is apparent to the many people who have chosen to participate in this planning process. Unfortunately, State Street, today, is identified by:

- » Bygone patterns of transportation and development which are more appropriate for highway-oriented travel and automobile-dominated environments, but less responsive to an integrated, walkable, livable, sustainable, and economically vibrant downtown West Lafayette. These patterns are not conducive to creating a positive “sense of place”, the impression of a “community of choice” for West Lafayette’s residents or visitors, or the “downtown West Lafayette” that should occur along one of the community’s main commercial spines.
- » An unbalanced approach to travel modes gives high priority to cars and busses, and low priority to pedestrians and bicycles. As a result, pedestrian and bicycle infrastructure is severely lacking, as are elements, such as two-way connected streets, and urban character that are critical to creating economically stable and vibrant urban districts.
- » A lack of cohesiveness exists where numerous types and styles of street treatments, road widths, pavements and street elements are present. A vast array of suburban, urban, and rural development patterns exist with little consistency of scale, use, materiality, or way in which the street is addressed. The resulting hodgepodge ignores the special qualities of the districts that align State Street, the City, and the community as a whole.

Through this Plan, we can explore a new opportunity: to create a street that favors residents’, businesses’, students’, and visitors’ needs over narrowly-focused, highway-related transportation objectives; to address modal disparities; to encourage economic development; and, to establish a true sense of place and center to the City – a long-needed downtown West Lafayette. The understandable question about this study is, why now? The easiest answer is that the timing is perfect given recent and ongoing activities.

- » Through INDOT’s relinquishment, the City (in December 2013) took ownership and now controls State Street, meaning State Street is no longer a state highway and INDOT standards applied to the street are not applicable to future street changes. Additionally, the opening of US 231 is already resulting in reduced traffic volumes on State Street; presumably from travelers passing through the City or only wishing to access certain portions of campus or West Lafayette. Taken together, the City can now create a new vision for State Street.
- » Now is the time to coordinate with and inform refinements to the proposed West Lafayette/Tippecanoe County Transportation Plan and an ongoing Purdue University Bicycle Master Plan. The West Lafayette/Tippecanoe County Transportation Plan, adopted by the Tippecanoe County Area Plan Commission in 2005, proposes a loop road system, the Perimeter Parkway. This system helps to distribute destination-based and thru-traffic, campus-related traffic along McCormick/Airport Roads, Stadium Avenue, and Harrison Street. Diverting destination-based traffic onto the Perimeter Parkway allows State Street to be thought of as a multi-modal local street serving business districts. Currently-under-study refinements to the Perimeter Parkway Plan include, among other ideas, moving the eastern leg of the Perimeter Parkway to River Road, which would allow two-way traffic on streets throughout Chauncey Village. Re-establishing two-way traffic function on streets throughout Chauncey Village will increase visibility and accessibility to commercial property; thus, strengthening economic viability and decreasing confusion and unnecessary traffic patterns.

This is needed now to guide future capital projects through a phased approach that: identifies potential projects, funding sources, time horizons, partnerships, lead agencies, action items, and maintenance- and programming-support entities; leverages public investment in catalytic projects for spin-off private sector investment (and its resulting increased tax base); and establishes a vision for the corridor that, in turn, informs private sector development decisions and proposals.

The State Street Master Plan is the opportunity to **RE-imagine, RE-invest, and RE-make** State Street. To **RE-STATE**.

CHAUNCEY HILL MALL



WABASH LANDING PARKING



MCDONALD'S



CITGO STATION





## PROJECT BOUNDARIES

The project study area extends along State Street, from the Wabash River to the new US 231, through areas of:

- » Suburban character, such as the Riverfront District, Chauncey Hill Mall, and Purdue West
- » Urban character, such as near State Street Towers, University Terrace, and the majority of Chauncey Village
- » Institutional/collegiate character, throughout Purdue University
- » Rural character, at the west end of State Street

Though this effort is a street master plan focused on changes within the State Street right-of-way, this study is also conscious of the positive and negative influences at the edges of the corridor, including existing and future development, parks and open space resources that could serve to activate State Street, and anchor destinations such as Tapawingo Park, Wabash Landing, River Market, State Street Towers, Chauncey Hill Mall, the Purdue Memorial Union, Visitor Parking Garage, Stewart Center, Discovery Park, and Horticulture Park.

## ANTICIPATED OUTCOMES

The planning effort sought to meaningfully engage the public and craft a community-inspired vision for State Street. The outcomes of that process included ideas for changing the function and character of State Street and a detailed strategy for implementing changes in the near-, mid-, and long-term. As an outcome of the planning process, we anticipate transformational implementation to include: a thriving, vibrant, and economically diverse commercial district that withstands the cyclical nature of the academic calendar; thoughtful integration of all modes of travel – vehicular, pedestrian, bicycle, and transit; a cohesive street character of West Lafayette; distinct identifiers for the special districts along State Street; a continuous tree canopy supporting social, environmental, and economic vibrancy; and creative use of green infrastructure tying to both functional and placemaking aspects of the street.

## STUDY ITEMS

### Street Function

- » Number of vehicular lanes, direction of vehicular travel
- » Intersection control
- » Sidewalk widths and use
- » Gathering spaces
- » Bicycle infrastructure
- » Bus stops
- » Street tree plantings
- » Green infrastructure
- » Street utilities

### Street Character

- » District identity, placemaking, and public art
- » Cohesive street elements

### Special Conditions

- » Event management
- » Breakfast Club management

### Implementation Strategy

- » Phasing
- » Funding
- » Catalytic projects

CHAUNCEY HILL, 1922



VILLAGE AREA, 1949



NEAR ROEBUCK DRIVE, 1960



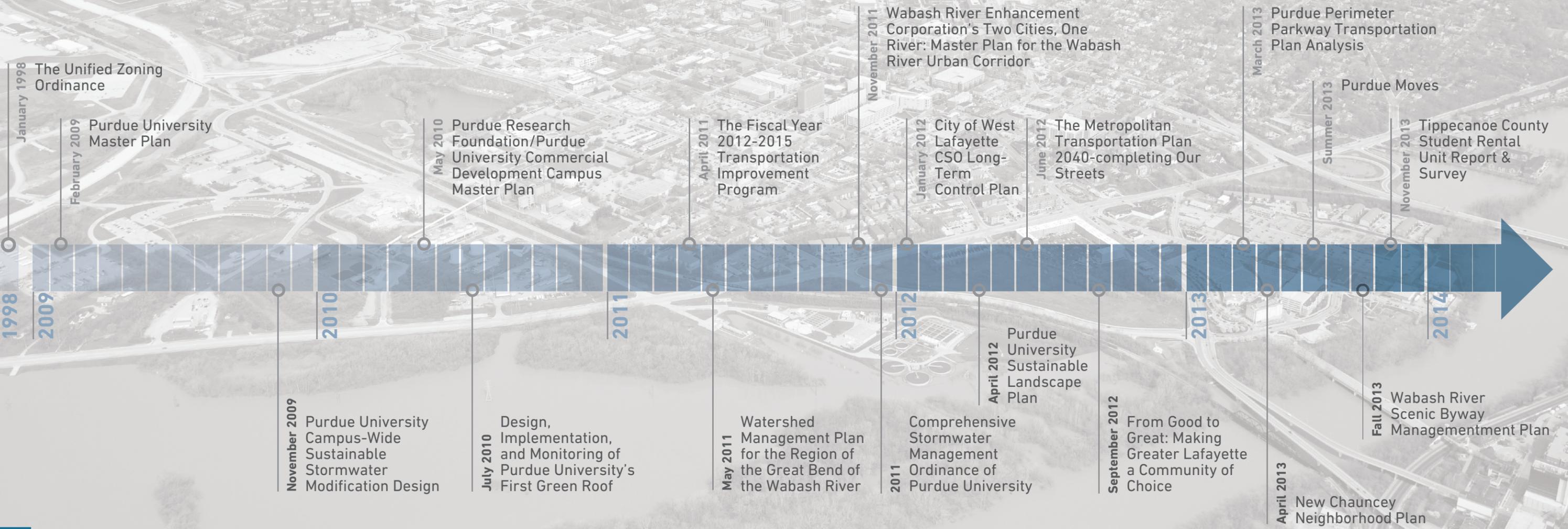
THE VILLAGE, MID-1990S



# PREVIOUS STUDIES

At the onset of this effort, a review of previous studies was undertaken to understand prior recommendations relating to State Street and to serve as a starting point for the planning work ahead. In all, a total of approximately twenty studies were reviewed, each with a varying degree of focus on State Street. In the Appendix is a summary of each reviewed study and its applicability to State Street. After review of these studies, common themes were discovered. These themes about State Street were shared by many groups over several years:

- » State Street as a central spine, unifying feature, and collaborative center through campus
- » The need for broad sidewalks; safer, plentiful, well-marked crossings; urban landscape; wayfinding
- » Recommendations for converting to two-way traffic, at-grade plazas, and multi-purpose trails
- » Strong mixed-use districts
- » Elevating West Lafayette's competitive position against other Big Ten and Top Tier Universities
- » Communities as best-practice examples – Ann Arbor, MI; Madison, WI; Urbana-Champaign, IL; Asheville, NC; Bloomington, IN; Eugene, OR; Iowa City, IA; Raleigh-Durham-Chapel Hill, NC; Greenville, SC
- » Support for bicycle- and pedestrian-friendly programs
- » Emphasis on zoning standards
- » Lessening, through green stormwater infrastructure, stormwater and debris diverted to the Wabash River



# Process and Consensus-Building

## STAKEHOLDER GROUPS

Five stakeholder groups were identified to represent diverse interests. Among these groups: Residents, Purdue University Representatives, Business and Property Owners, Landlords/Apartment Owners, and Real Estate/Development Community. Through four individual sessions, distributed over all phases of the project, each group was tasked to critically think about content and recommendations through the lens of their particular interest. This process led to focused discussion and discovery of issues important to each group. Between the second and third sessions, the apartment owners and local development community groups were merged to stimulate additional discussion.

## PROJECT WORKING GROUP

Over the course of this planning effort, the Project Working Group provided invaluable insight into overlapping, and sometimes competing interests uncovered during stakeholder group sessions. It was during the Project Working Group meetings, four total distributed throughout each phase of this project, that those varying viewpoints were reconciled. Additionally, the Project Working Group served as a sounding board for ideas prior to their presentation at public meetings. This panel challenged and tied together the work.

## PUBLIC MEETINGS

At three points during the planning process, the general public was invited to participate in open community forums. These sessions were held during the daytime on campus, as well as in the evening at the West Lafayette Public Library. At all six sessions, turnout was robust and discussion was lively. Sessions held on campus were open-house format: informal discussion with members of the consultant and client teams at tables displaying project content and ideas. At the first two evening sessions, small group discussion on three topics followed a brief presentation of content. Each small group was asked to share their table's discussions with the entire room. This format was used to quickly understand the varying viewpoints and to share those viewpoints in context with one another. The format of the third evening session included a brief presentation followed by an open house-style arrangement of content and ideas at tables. This format allowed for specific, detailed discussion between attendees and project representatives.

## SOCIAL MEDIA

Reaching beyond typical engagement methods, this planning effort used social media outlets (Twitter and Facebook) to reach a wider audience. As of this writing, the Facebook page has 622 "likes" and tremendous public interaction; the project's Twitter account has 137 "followers." Use of these platforms has expanded the outreach to include those who cannot make all scheduled public sessions. Additionally, these outlets have further publicized the content of the work throughout to other "friends" and "followers", thus further growing outreach efforts.

## COMMUNITY SURVEYS

At two points during the project, online community surveys were conducted. Surveys were publicized through social media, at public meetings, and by local media. In total, close to 700 responses were gathered between the two surveys. The first survey sought to understand impressions of State Street. The second survey gauged respondents' reception to ideas that had been developed. Both surveys included demographic questions to determine the mix of respondents. The full surveys (questions and responses) are included in the Appendix.

# Highlights of Previous Studies

## PURDUE UNIVERSITY MASTER PLAN (2009)

- » Consider State Street a front door, a unifying feature, a collaborative center
- » Restore two-way traffic on State Street
- » Encourage a simple integrated transportation system with the Perimeter Parkway Plan
- » Encourage student and faculty recruitment/retention through enhanced sense of place
- » Create program synergies through strong mixed-use districts
- » Incorporate environmentally sustainable practices, encourage quality of life through enhanced trail systems
- » Foster community through the Purdue/West Lafayette collaboration

## TWO CITIES, ONE RIVER: MASTER PLAN FOR THE WABASH RIVER URBAN CORRIDOR (2011)

- » Address stormwater issues through green stormwater infrastructure
- » Lessen stormwater volume and debris piped to the Wabash River
- » Promote infiltration and groundwater table re-charge
- » Encourage pervious pavement, rain gardens and infiltration trenches
- » Address administrative issues to attract development and encourage economic growth in the urban core
- » Address high speed vehicular travel, poor pedestrian infrastructure, large mega-blocks, poor visual quality, suburban style development, and a lack of tree canopy along State Street

## THE METROPOLITAN TRANSPORTATION PLAN 2040-COMPLETING OUR STREETS (2012)

- » A trail extension from the new US 231 corridor along State Street to Grant Street is recommended

## FROM GOOD TO GREAT: MAKING GREATER LAFAYETTE A COMMUNITY OF CHOICE (2012)

- » Improve and promote better quality of life
- » Support bicycle- and pedestrian-friendly programs, design standards, and zoning modifications
- » Promote ambitious sustainability standards and practices

## PURDUE PERIMETER PARKWAY TRANSPORTATION PLAN (ONGOING)

- » Convert State Street to two-way operation for its entire length
- » Convert Sheetz and Wood Streets as well as Chauncey Avenue to two-way operation
- » Establish River Road as eastern leg of Perimeter Parkway

## NEW CHAUNCEY NEIGHBORHOOD PLAN (2013)

- » Focus business development in Chauncey Village and along the Northwestern corridor; encourage mixed-use development
- » Support development and density in Wabash Landing and Levee
- » Protect/expand the natural urban environment; add passive and active recreational open spaces and public art

## PURDUE MOVES (2013)

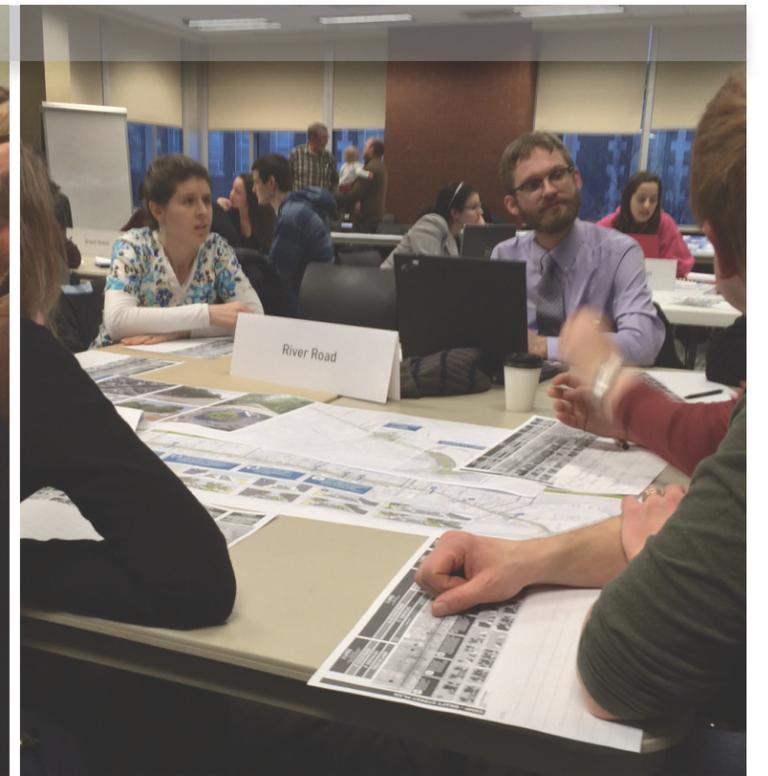
- » Increase student success by adding housing options so at least half of students live on campus.
- » Become a year-round university

## STAKEHOLDER GROUP PARTICIPANTS

- Ann Brandyberry
- Ashley Darnell
- Ben Anderson
- Bess Witcosky
- Beth McCuskey
- Bill Miller (W.R. Miller)
- Bob Troyer
- Bobby Egan
- Charlie Shook
- Chris Kulesza
- Deputy Chief Chris Leroux
- Cindy Ream
- Curt Ashendel
- Dale Dixon
- Dale Whittaker
- David Hodde
- Dawn Walker
- Dennis Carson
- Doug Anderson
- Erin Whittaker
- Gary Evans
- Glen Robyne
- Greg & Carrie Ehresman
- Jackie Matthews
- Jason Tennenhouse
- Jeremy Sinkus
- Jessie Charles
- Jim Cochran
- Jo Wade
- Joe Payne
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- Salli Dell Fahey
- Scott Hanback
- Sean Rotar
- Sgt. Keene Red Elk
- Stan Lambert
- Steve Curtis
- Tammy Loew
- Terry Clayton
- Terry Smith
- Fire Chief Tim Heath
- Tom Frey
- Tony Gillund
- Deputy Chief Tony Schutter
- Vicki Burch
- Vikki Watkins
- Wendy Field
- William & Liesl Shen
- Zachary Baiel

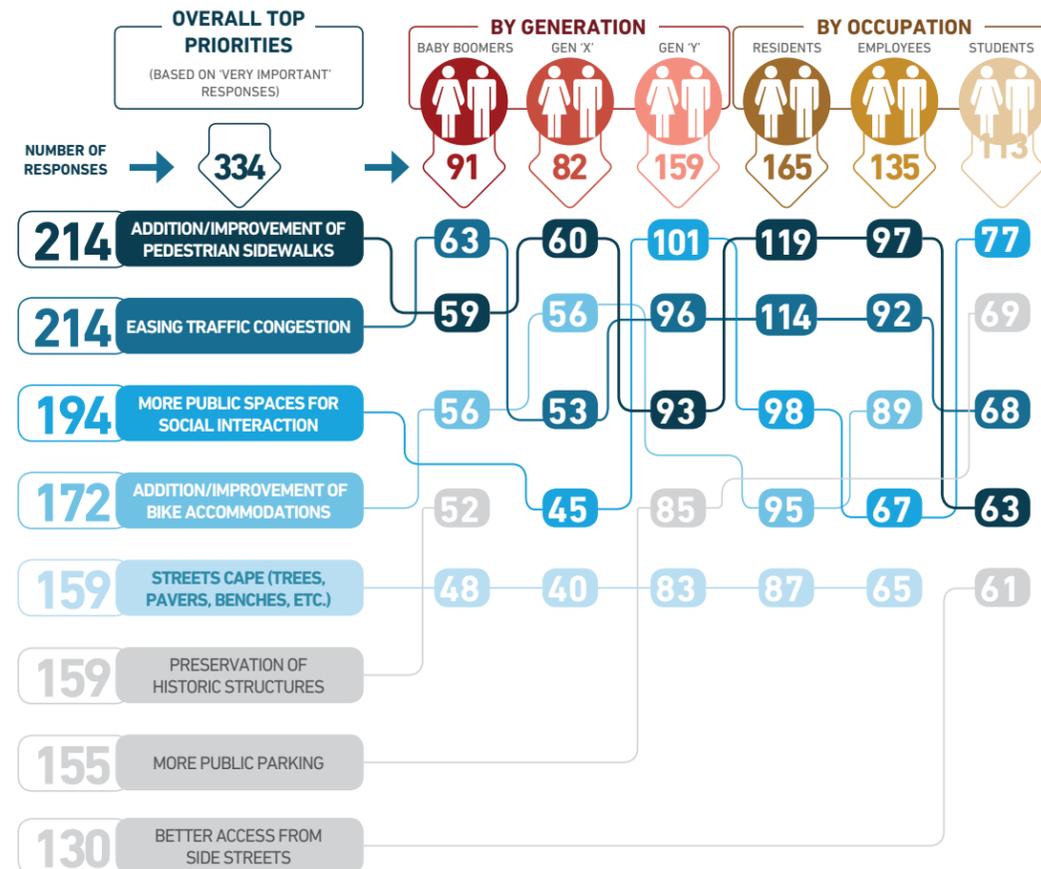
## PROJECT WORKING GROUP PARTICIPANTS

- Beth McCuskey
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- Charlie Shook
- Dave Buck
- Erin Whittaker
- Greg Napier
- Jason Tennenhouse
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- Ryan O'Gara
- Steve Curtis
- Terry Smith
- William & Liesl Shen
- Zachary Baiel

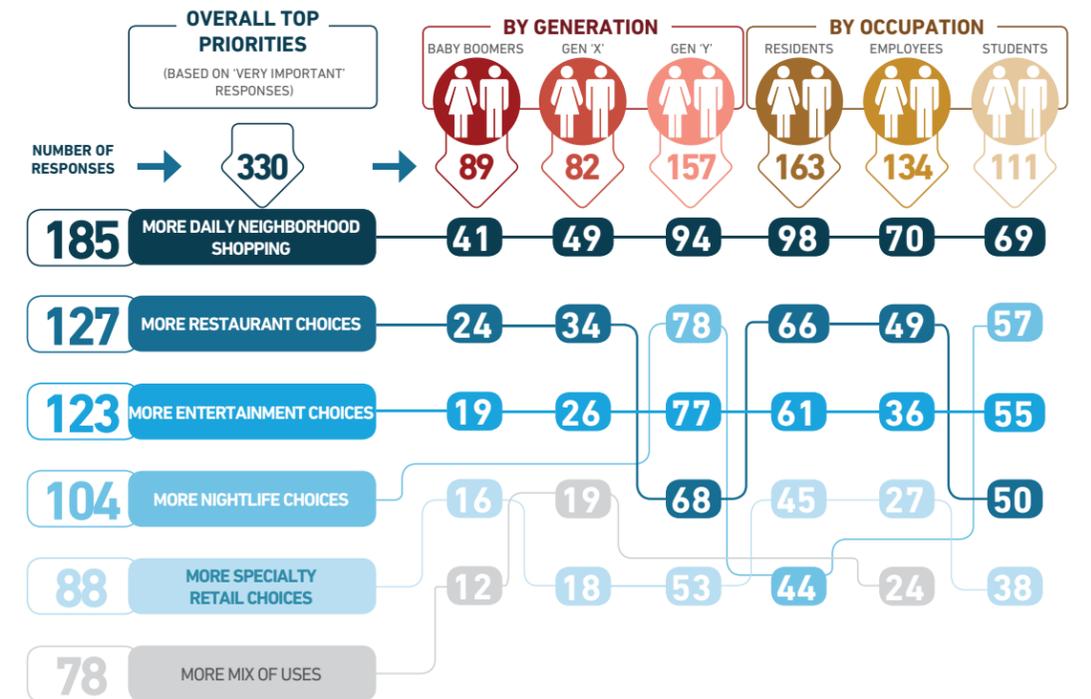


## COMMUNITY SURVEY #1 RESULTS

### IMPORTANT FOR FUNCTION AND CHARACTER OF STATE STREET

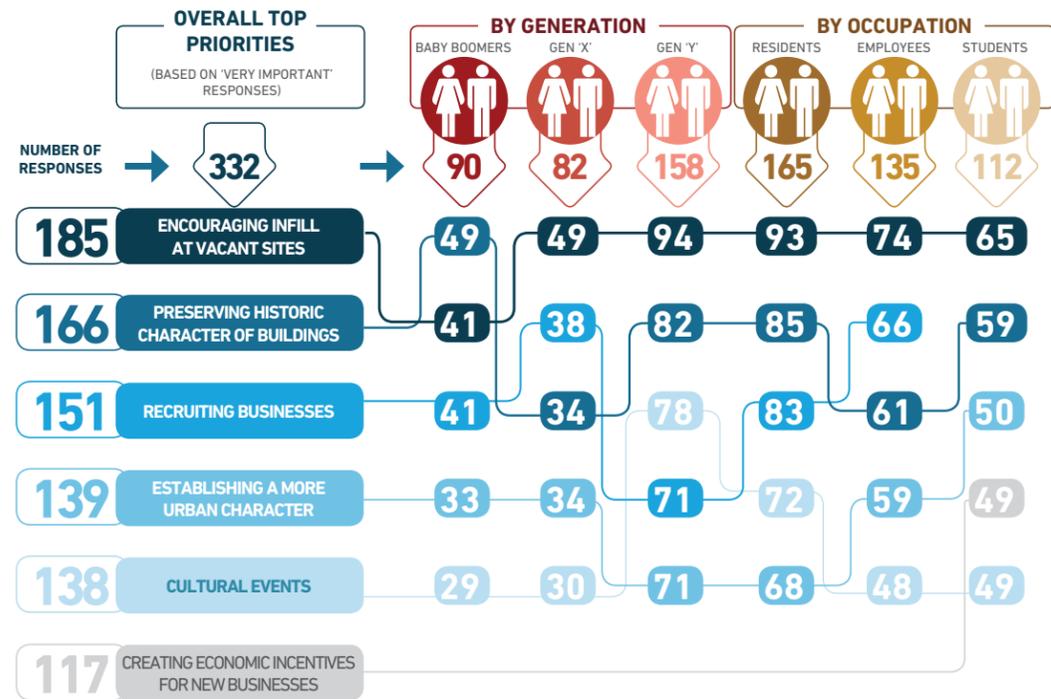


### IMPORTANT FOR RESIDENTS' NEEDS





IMPORTANT FOR FUTURE DEVELOPMENT



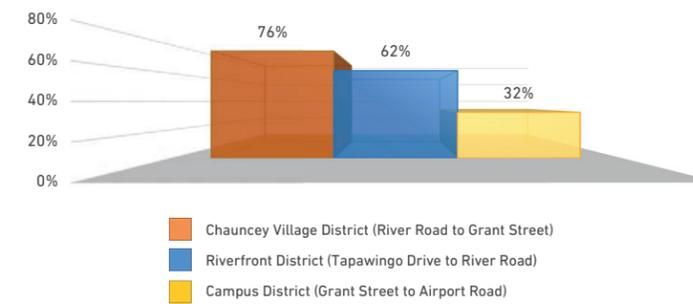
**Baby Boomers:** Serving, housing and employing boomers have dominated the economy for the last 40 years. Boomers tend to be born between 1946 and 1964;

**Generation X:** Serving, housing and employing have dominated and are dominating the economy for the last 20 years. Xers are generally born in the 1964 to early 1980s;

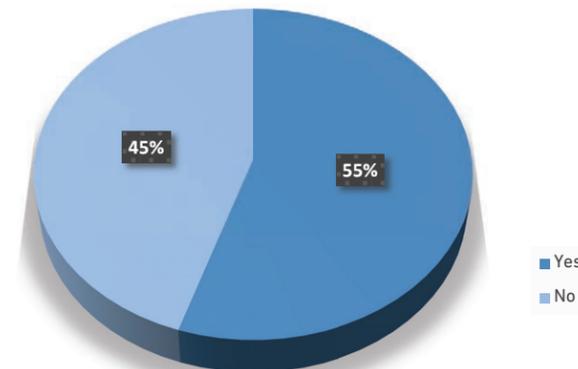
**Generation Y, also known as Millennials:** Serving, housing and employing will generally dominate the economy for the next 20 years. Millennials are generally born in the 1980s to early 2000s.

COMMUNITY SURVEY #2 RESULTS

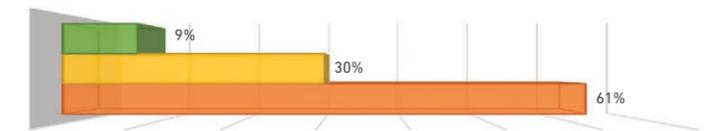
Given a re-imagined State Street, which areas would you most likely shop/dine/visit more frequently than you do today? (Choose any/all that apply)



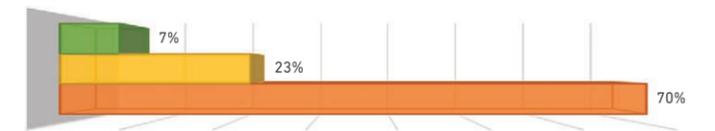
Given a re-imagined State Street, would you consider living along, or within two blocks of State Street?



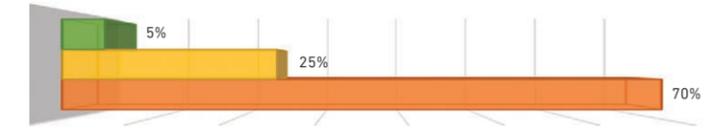
For those who said "I frequently ride my bike to work/school/destinations (I'm an avid bicyclist)", they answered that they prefer certain types of bike facilities along State Street



For those who said "I occasionally ride my bike to work/school/destinations (I'm a casual bicyclist)", they answered that certain types of bike facilities would encourage them to bike more frequently along State Street



For those who said "I don't ride my bike to work/school/destinations (I'm not a bicyclist)", they answered that certain types of bike facilities would encourage them to bike more frequently along State Street



- Integrated bike travel with vehicular travel lane and painted share-the-road arrows (sharrows) only
- Painted bike lanes within the street but outside of vehicular travel lanes
- Separated bicycle path (bike lanes protected from automobile travel lanes and sidewalks by a low barrier or planted buffer)

# Eight Themes

Early in the planning process, consistent themes were seen within previous planning recommendations and within this project's consensus-building public sessions. These themes were synthesized with consultant team impressions to guide further work. The resulting "Eight Themes" were presented in subsequent public and stakeholder sessions as "what we've heard". The intent with this phrasing was to check that we were "on the right track". Positive feedback from these sessions solidified these "Eight Themes" as the foundation for the work to follow.



**OF THIS PLACE**  
CONTEXT APPROPRIATE  
SOLUTIONS AND AN  
INCLUSIVE PROCESS



Important to all involved was that solutions developed during the State Street Master Plan should reflect the values, characteristics, and interests of the community. The community advocated for robust public engagement in order to ensure this goal.



**COLLABORATION**  
A COMMON VISION



The community expressed interest in a collaborative, shared vision between the City of West Lafayette, Purdue University, and the Purdue Research Foundation. Public meeting and stakeholder participants expressed a strong desire for the three entities to work together in crafting this Plan.



**YOU ARE HERE**  
A DOWNTOWN WEST  
LAFAYETTE EMBRACING,  
REINFORCING, AND  
STRENGTHENING DIVERSE  
DISTRICTS



A handful of districts are present along State Street. The community expressed a strong preference towards preserving and celebrating these districts. The community did not wish to see special characteristics within districts disappear, but rather that these unique characteristics be enhanced and strengthened.



**COHESIVENESS**  
MORE CONSISTENCY FROM  
DISTRICT TO DISTRICT



The community identified that treatments along State Street currently lack consistency. Section-by-section, surface materials, site furnishings, and placemaking elements greatly vary. The community expressed a preference toward creating a cohesive street character through materials, furnishings, and elements while still maintaining unique identity in each district.



**STREETS FOR ALL**  
INTEGRATION OF  
ALL TRAVEL MODES  
(PEDESTRIAN, BIKES, CARS,  
AND BUSSES)



Perhaps the most common concern with State Street today is the high priority placed on automobile travel, at the expense of other safe and adequate sidewalks and bicycle infrastructure. A major theme emerged of balancing the priorities of all travel modes to thoughtfully integrate wider walks, safe bicycle paths, and well-placed bus stops and pull-offs.



**VIBRANCY**  
THRIVING AND  
ECONOMICALLY DIVERSE  
COMMERCIAL/MIXED-USE  
DISTRICTS



Many times over, local merchants relayed that folks avoid making vehicle-based trips to the Chauncey Village District and Riverfront District commercial areas due to confusing street patterns. A theme emerged to encourage more shopping and dining visits by simplifying street patterns and by creating outdoor gathering spaces. This theme of economic vibrancy and stability is critical to local merchants who must compensate for the absence of Purdue University students over the summer months.



**OPEN SPACE &  
TREE CANOPY**  
WELL-CONNECTED,  
SIGNIFICANT OPEN SPACES  
AND A STRONG URBAN  
STREET TREE CANOPY



Today's State Street is well-shaded through campus, but other portions of the street lack a significant "canopy" of street trees. The community expressed a desire to establish a strong canopy of street trees along the corridor in an effort to lend shade and scale to the street. Moreover, the community agreed that significant City and University open spaces that adjoin the corridor should be better integrated with State Street. Consider Horticulture Park as a teaching garden, community gateway, and regional visitor destination; develop it as a significant botanic garden. Consider Tapawingo Park as a significant regional destination and economic development catalyst/tool; develop it as West Lafayette's signature riverfront park.



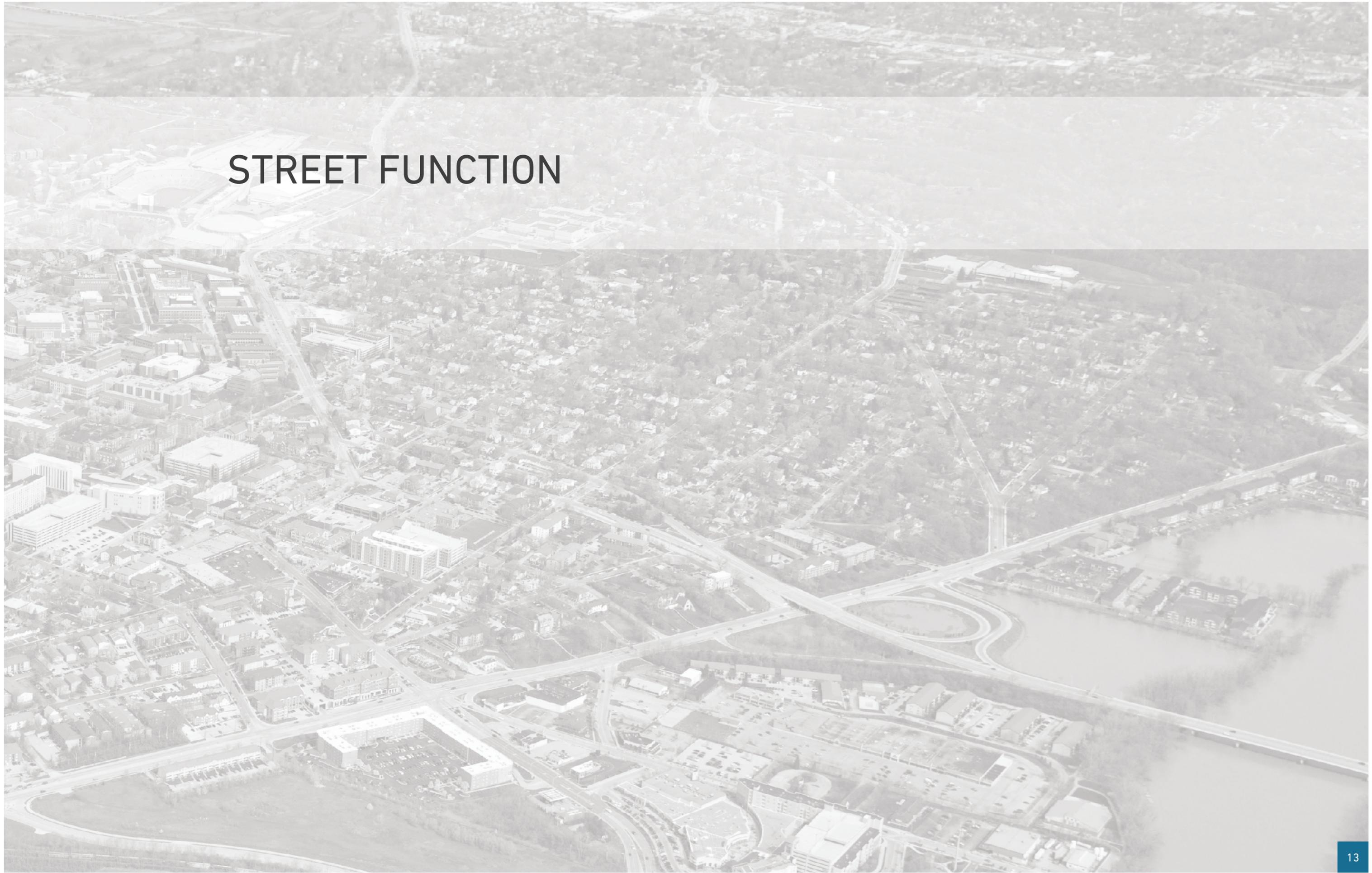
**GOING GREEN**  
ENVIRONMENTALLY  
RESPONSIBLE  
INFRASTRUCTURE



When appropriate and feasible, the community supports integrating "green infrastructure" solutions into State Street. This preference is consistent with goals and ongoing projects within the City as well as the University.



# STREET FUNCTION





- PERIMETER PARKWAY
- PERIMETER PARKWAY UNDER STUDY
- EXISTING ONE-WAY STREETS

# Street Function

## VEHICULAR TRAVEL

This Plan supports ongoing West Lafayette/Tippecanoe County Transportation Plan refinements which suggest converting existing one-way streets to two-way streets on and connecting to State Street. During the course of many stakeholder and public sessions, the existing network was often referred to as confusing and as a deterrent to visiting the Chauncey Village District. Through traffic volume reductions, a more balanced State Street with fewer vehicular travel lanes is possible. Roundabouts at Tapawingo Drive and River Road are recommended, as are boulevards at the east and west ends of the corridor.

## PEDESTRIAN TRAVEL

Significant changes to pedestrian accommodations are proposed. Among the recommendations are wider sidewalks, buffers that separate pedestrians from vehicular and bicycle travel, additional pedestrian crossings, and pedestrian actuated flashers. Proposed larger sidewalk widths are envisioned to accommodate street elements, such as benches, trash receptacles, and bike racks, as well as outdoor dining and merchant display areas. All improvements shall adhere to applicable Public Rights-of-Way Accessibility Guidelines (PROWAG) and Americans with Disabilities Act Accessibility Guidelines (ADAAG).

## BICYCLE TRAVEL

Today, bicycle infrastructure is virtually non-existent along State Street. This Plan recommends a continuous, separated, dedicated bicycle path that connects US 231 to the Wabash River. The path is recommended to be located on the north side of State Street, the same side of the street as many of the major trip generators (Horticulture Park, Purdue dormitories, Purdue Stewart Center and Libraries, Purdue Memorial Union, West Lafayette Public Library, Morton Community Center, Wabash Levee, Wabash Landing, Tapawingo Park, and the John T. Myers Pedestrian Bridge). Two-way traffic is proposed along the path, which would be separated from both vehicular and pedestrian travel. The separated, dedicated facility is intended to serve the needs of bicyclists with the intent of increasing ridership at each level: expert, casual, and beginner. The path is also seen as an economic development tool, linking residential districts to commercial/retail districts.

## BUS TRAVEL

The already-robust CityBus system is further strengthened by proposed bus infrastructure along State Street. Enhancements include many, but not in every location, bus pull-offs that reduce stopped busses in travel lanes. At the Purdue Memorial Union and Lilly Hall, major bus stops with significant bus and bike shelters are proposed. New bus stops are proposed within segments of State Street that are to be converted from one-way to two-way.

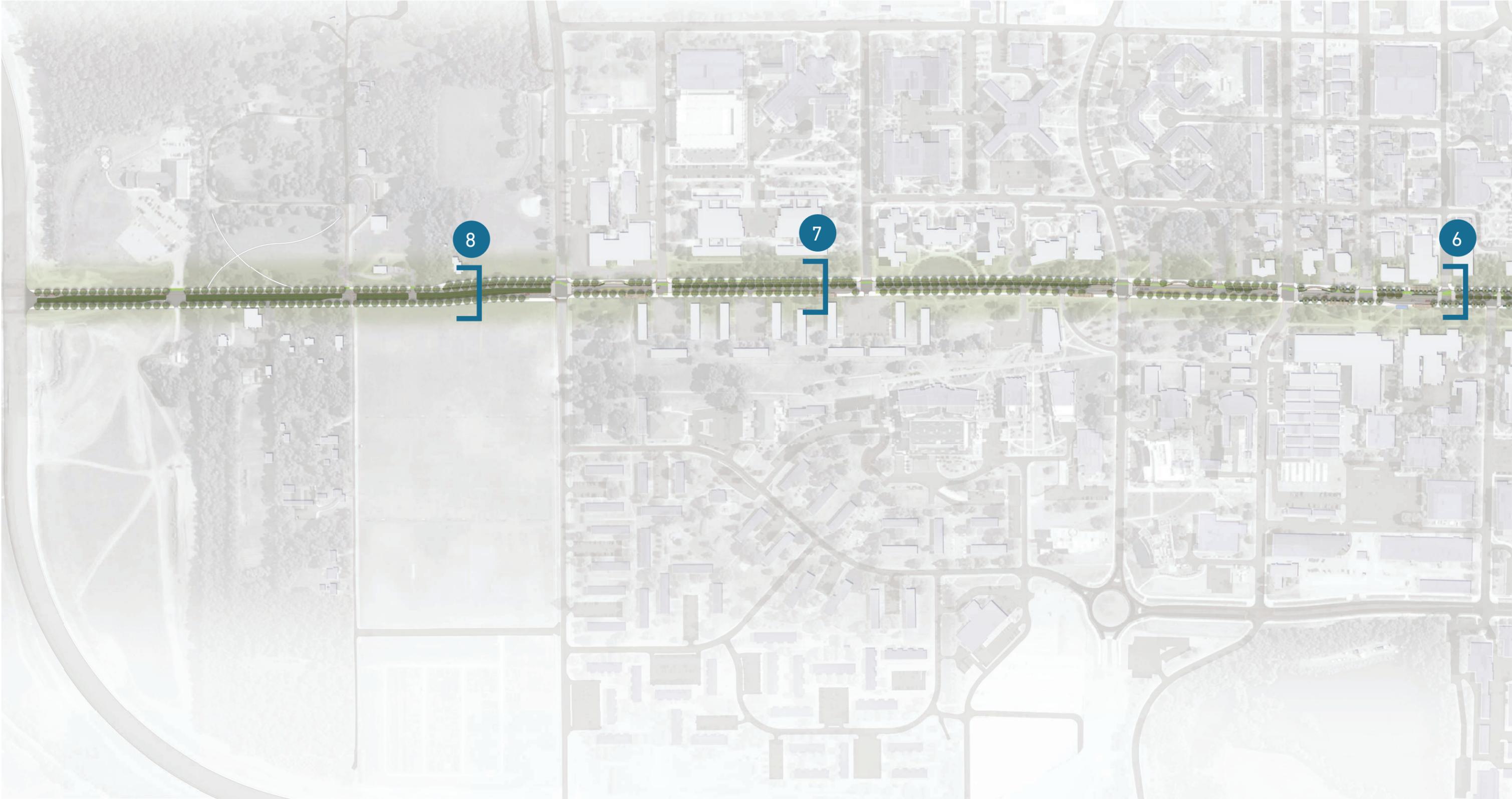
## UTILITIES

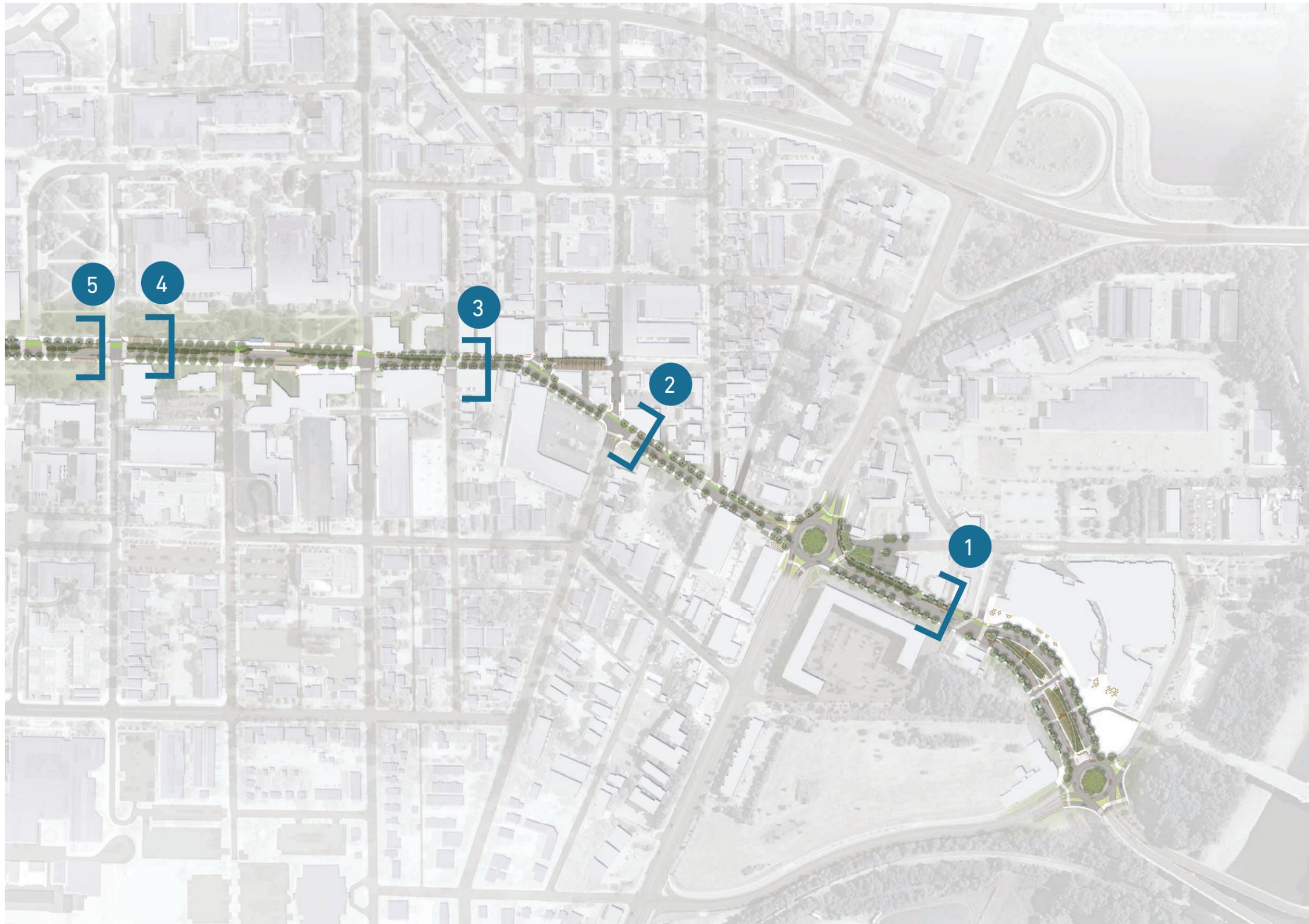
Existing City and private utilities are proposed to remain within State Street. Additionally, State Street is a major Purdue University utility corridor and several tunnels cross and run parallel with State Street. This Plan recommends maintaining curb, road profile, and drainage infrastructure from Airport Road to Sheetz Street. West of Airport Road, the proposed alignment of a widened State Street is intended to shift south, to avoid impacts to the open drainage ditch which exists on the north side of State Street. In a handful of areas, remaining overhead utilities are proposed to be relocated underground. New, energy-efficient, LED-lamped street lights are recommended along the length of State Street.

## STREET TREES & GREEN INFRASTRUCTURE

This Plan recommends a substantial increase in the amount of tree canopy along State Street, especially in the Riverfront District. Tree lawns, tree planters, and tree grates are indicated throughout various places along the street, each used to respond to contextual conditions. For each condition, proposed planting methods provide substantial soil volumes necessary to support street tree vitality and longevity. Bioretention cells (stormwater gardens) are proposed to clean and temporarily store stormwater runoff from the street and sidewalks. Additionally, light-colored pavements are intended to reduce summertime heat gain.

# Street Function



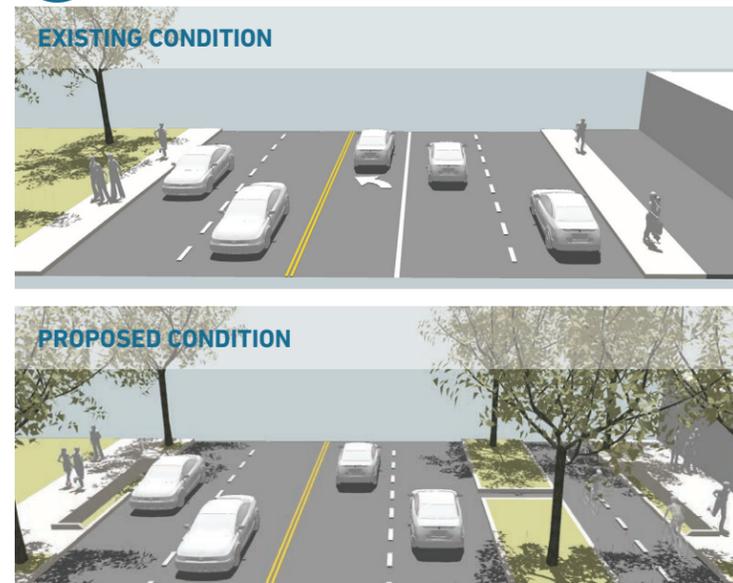


## LEGEND

- 1 Between Roebuck Drive + River Road
- 2 Between Littleton Street + Chauncey Avenue
- 3 Between Northwestern Avenue + Peirce Street
- 4 Between Sheetz Street + Marsteller Drive
- 5 Between Marsteller Drive + Oval Drive
- 6 Between Oval Drive + Martin Jischke Drive
- 7 Between Martin Jischke Drive + Airport Road
- 8 Between Airport Road + Dexter Lane

Taken together, proposed changes to vehicular, pedestrian, bicycle, and bus travel, along with proposed enhancements to street utilities, street tree canopy, and green infrastructure, represent a significant transformation of State Street. This transformation represents a philosophical shift from vehicular-priority street design to a balanced, complete-streets approach valuing all modes of travel and components of street vibrancy. At the heart of the shift is an understanding that populations are moving back to urban communities, and society is demanding more livable environments. In this sense, the street function is not just about vehicular travel, but about quality of life, and recruitment and retention of students, residents, and businesses.

### 1 ROEBUCK DRIVE TO RIVER ROAD

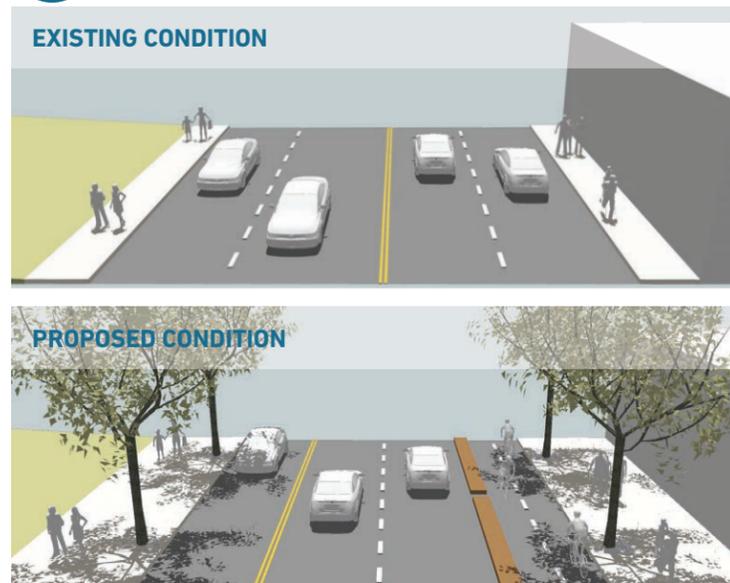


Within the Riverfront District, State Street today is a four-lane (minimum), high-speed thoroughfare, uninterrupted from Tapawingo Drive to River Road – the equivalent of four city blocks in downtown Lafayette. Sidewalk widths are minimal, bicycle infrastructure is non-existent, and street trees are sporadic. This is a visitor’s first impression of West Lafayette.

The future condition proposes:

- » The same number of vehicular travel lanes, but wider sidewalks, street trees, bioretention cells\*, a bicycle path separated from vehicular travel by a planted barrier (in some cases a non-planted barrier), and a signalized intersection at Roebuck Drive are introduced to create a street that functions for local needs more so than highway performance.
- » A boulevard with on-street parking is proposed from Tapawingo Drive to Roebuck Drive as a replacement of the troublesome parking lot in front of Wabash Landing.
- » At Tapawingo Drive and River Road, roundabouts are proposed to address unsafe pedestrian crossings while preserving vehicular levels of service.
- » The proposed roundabout at Tapawingo Drive is not anticipated to require right-of-way acquisition. Further design of the proposed roundabout at River Road will determine land acquisition requirements. In areas west of Roebuck Drive, right-of-way acquisition or sidewalk easements may be necessary on the north side of the street to achieve proposed project objectives.

### 2 LITTLETON STREET TO CHAUNCEY AVENUE

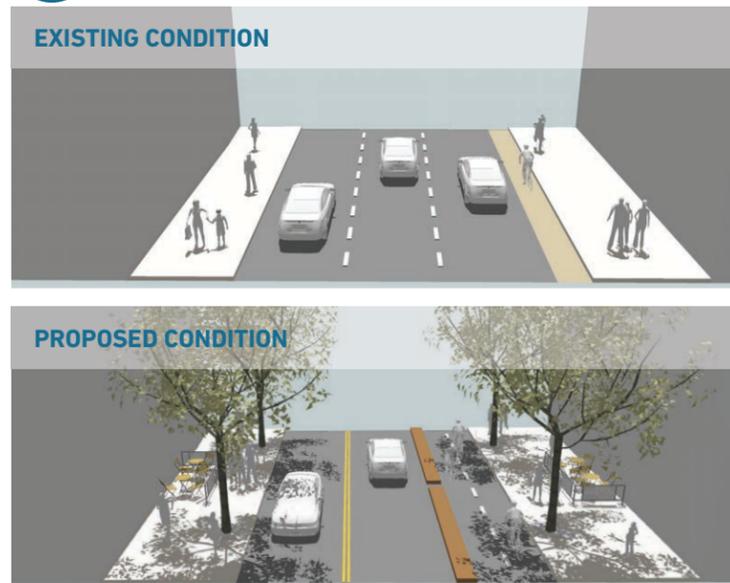


At the east end of the Chauncey Village District, from Chauncey Avenue to River Road, State Street today is a four-lane (minimum), thoroughfare, uninterrupted from Chauncey Avenue to River Road – the equivalent of about three city blocks in downtown Lafayette. This segment of State Street experiences heavy pedestrian volumes, particularly on event weekends, yet suffers from very narrow sidewalk conditions. Bicycle infrastructure is non-existent and street trees are sporadic.

The future condition proposes:

- » A reduction in vehicular travel lanes, one in either direction with a center turn lane.
- » Wider sidewalks, street trees, a cycle-track separated from vehicular travel by a non-planted barrier, and a signalized intersection at Chauncey Avenue are introduced to create a street that functions for local needs more so than highway performance.
- » In order to safely allow a future left turn from North Salisbury Street onto State Street, proposed turning onto Littleton Street is limited to right-in only.
- » Full-access intersections are envisioned at Salisbury Street and Chauncey Avenue.
- » In front of University Lutheran Church, right-of-way acquisition or sidewalk easements may be necessary to achieve proposed project objectives.

### 3 NORTHWESTERN AVENUE TO PEIRCE STREET

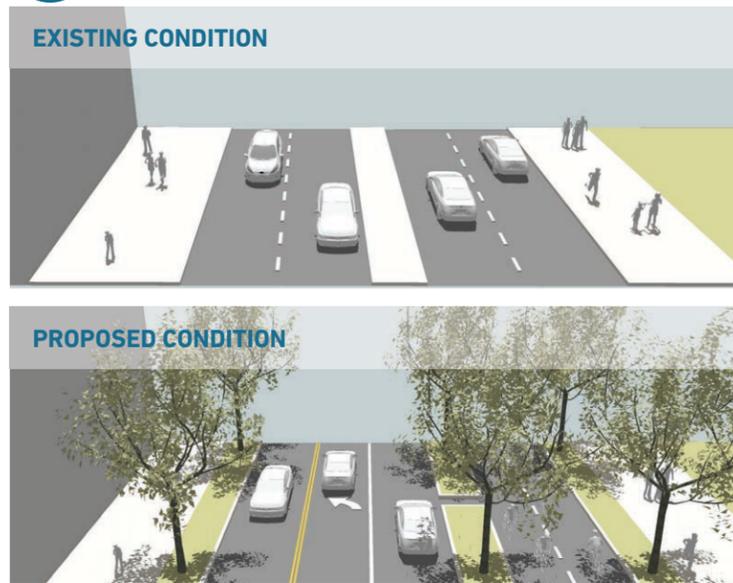


In the heart of the Chauncey Village District, from Chauncey Avenue to Grant Street, State Street today is a three-lane one-way road interrupted by a traffic signal at Northwestern Avenue. This segment of State Street experiences heavy pedestrian volumes throughout the week, yet suffers from very narrow sidewalk conditions. On gameday weekends, temporary barriers are used to narrow the street, funnel pedestrians to crosswalks, and create wider sidewalks. In some places, an on-street westbound bicycle lane exists. Street trees are sporadic.

The future condition proposes:

- » A reduction in vehicular travel lanes, one in either direction.
- » Wider sidewalks, street trees, and a cycle-track separated from vehicular travel by a non-planted barrier are introduced to create a street that functions for local needs more so than highway performance.
- » The possibility of a future left turn from eastbound State Street onto Northwestern Avenue and South Street will require further analysis when future traffic counts are better known.
- » A pedestrian actuated flasher is proposed at Peirce Street/Andrew Place.
- » The potential for an all-way stop at the Peirce Street/Andrew Place intersection should be investigated when the proposed improvements are being planned in detail.

### 4 SHEETZ STREET TO MARSTELLER STREET



Within campus, from Grant Street to Marsteller Street, State Street today transitions from a three-lane one-way road to a two-way, four-lane street with a center paved median. This segment of State Street experiences heavy campus-based pedestrian volumes throughout the week, and suffers from jaywalking that is facilitated by the paved median serving as an area of refuge. South of State Street, a two-way, off-street bicycle path exists. Street trees are not present.

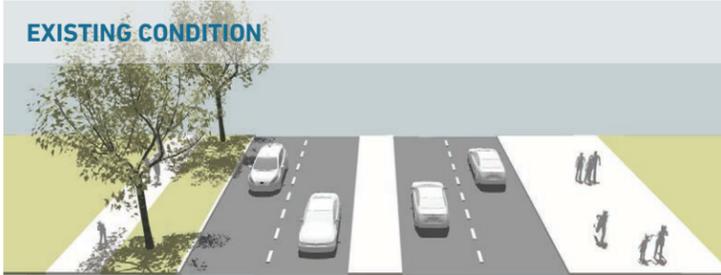
The future condition proposes:

- » A reduction in vehicular travel lanes, one in either direction with a left turn lane at key intersections.
- » Wider sidewalks, street trees, and a cycle-track separated from vehicular travel by a planted barrier are introduced to create a street that functions for local needs more so than highway performance.
- » The center median is removed and replaced by the planted barrier between the separated/dedicated bicycle path and vehicular travel lanes, thus discouraging random pedestrian crossings and encouraging use of crosswalks. Further encouragement of crosswalk use is supported by a proposed pedestrian actuated flasher at Sheetz Street.
- » In front of St. Thomas Aquinas Church, Phi Delta Tau, and Wesley Foundation/Greater Lafayette Chinese Alliance Church, right-of-way acquisition or sidewalk easements may be necessary to achieve proposed project objectives.
- » In some places, relocation of the Purdue fence may be required to achieve proposed project objectives.

5

## MARSTELLER STREET TO OVAL DRIVE

## EXISTING CONDITION



## PROPOSED CONDITION



In front of Purdue's Memorial Mall, from Marsteller Street to Oval Drive, State Street today is a two-way, four-lane street with a center paved median. This segment of State Street experiences heavy campus-based pedestrian volumes throughout the week, and suffers from frequent jaywalking that is facilitated by the paved median serving as an area of refuge. South of State Street, a two-way, off-street bicycle path exists. Street trees are present on the south side of the street.

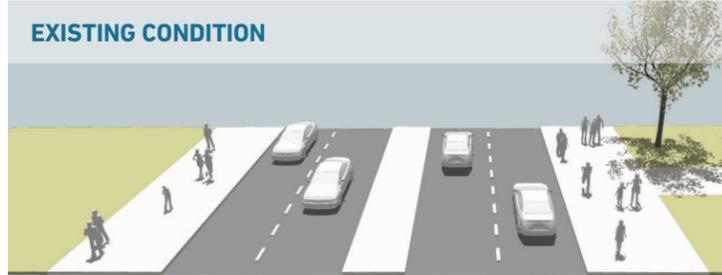
The future condition proposes:

- » A reduction in vehicular travel lanes, one in either direction with a left turn lane at key intersections.
- » Wider sidewalks, street trees, and a cycle-track separated from vehicular travel by a planted barrier are introduced to create a street that functions for local needs more so than highway performance.
- » The center median is removed and replaced by the planted barrier between the separated/dedicated bicycle path and vehicular travel lanes, thus discouraging random pedestrian crossings and encouraging use of crosswalks. Further encouragement of crosswalk use is supported by a proposed pedestrian actuated flasher at Oval Drive.
- » Future conversion to two-way vehicular travel on South Marsteller Street is anticipated; a full-access intersection is proposed. Oval Drive is anticipated to remain one-way southbound, but a left-turn from Oval Drive onto State Street is proposed.
- » In some places, relocation of the Purdue fence may be required to achieve proposed project objectives.

6

## OVAL DRIVE TO MARTIN JISCHKE DRIVE

## EXISTING CONDITION



## PROPOSED CONDITION



Within campus, from Oval Drive to Russell Drive, State Street today is a two-way, four-lane street with a center paved median in most places. This segment of State Street experiences heavy campus-based pedestrian volumes throughout the week, and suffers from frequent jaywalking that is facilitated by the paved median serving as an area of refuge. South of State Street, a two-way, off-street bicycle path exists. Street trees are present in a handful of areas.

The future condition proposes:

- » A reduction in vehicular travel lanes, one in either direction with a left turn lane at key intersections.
- » Wider sidewalks, street trees, bioretention cells\*, and a cycle-track separated from vehicular travel by a planted barrier are introduced to create a street that functions for local needs more so than highway performance.
- » The center median is removed and replaced by the planted barrier between the separated/dedicated bicycle path and vehicular travel lanes, thus discouraging random pedestrian crossings and encouraging use of crosswalks. Further encouragement of crosswalk use is supported by proposed pedestrian actuated flashers at Oval Drive, South University Street, and Waldron Street.
- » Future conversions to two-way vehicular travel on North University Street, Waldron Street, and Russell Drive is anticipated; full-access intersections are proposed.
- » In some places, relocation of the Purdue fence may be required to achieve proposed project objectives.

7

## MARTIN JISCHKE DRIVE TO AIRPORT ROAD

## EXISTING CONDITION



## PROPOSED CONDITION



Within campus, from Russell Drive to Airport Road, State Street today transitions from a two-way, four-lane street to a two-way, two-lane street. This segment of State Street experiences moderate campus-based pedestrian volumes throughout the week, and suffers from frequent jaywalking. South of State Street, a two-way, off-street bicycle path exists in some places. Mature and newly planted street trees are present throughout this segment of State Street.

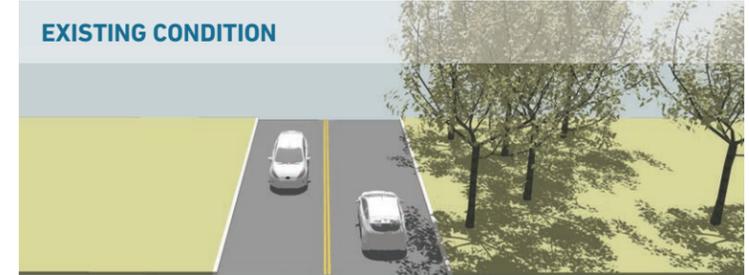
The future condition proposes:

- » A reduction in vehicular travel lanes, one in either direction with a left turn lane at key intersections.
- » Wider sidewalks, street trees, and a cycle-track separated from vehicular travel by a planted barrier are introduced to create a street that functions for local needs more so than highway performance.
- » The planted barrier between the separated/dedicated bicycle path and vehicular travel lanes discourages random pedestrian crossings and encourages use of crosswalks. Further encouragement of crosswalk use is supported by proposed pedestrian actuated flashers at some places.
- » In some places, relocation of the Purdue fence may be required to achieve proposed project objectives.

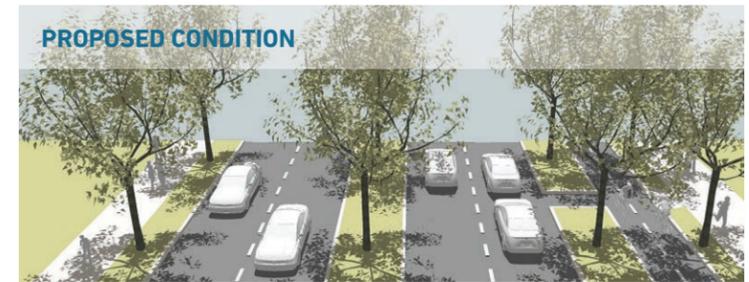
8

## AIRPORT ROAD TO DEXTER LANE

## EXISTING CONDITION



## PROPOSED CONDITION



Beyond the campus core, from Airport Road to US 231, State Street today is a two-way, two-lane rural road with overhead utilities and open drainage ditches. This segment of State Street also lacks sidewalks and bike paths. Street trees are not present.

The immediate future condition proposes:

- » Two vehicular travel lanes, one in either direction with a left turn lane at key intersections.
- » A wide planted median, wider sidewalks, street trees, and a cycle-track separated from vehicular travel by a planted barrier are introduced to create a fully-functional street.
- » Between Airport Road and Dexter Lane, on the north side of the street, the proposed sidewalk and the separated/dedicated bicycle path merge to form a shared-use path that extends to US 231.
- » In this immediate condition, it is proposed that the outer curbs be set in their long-term positions.

The long-term future condition proposes:

- » Four vehicular travel lanes, two in either direction with a left turn lane at key intersections.
- » Paving needed for added travel lanes and turn lanes would be taken from the wide planted median, installed in the immediate future condition. A narrow planted median would remain where turn lanes are not necessary.

\* Refer to Street Trees/Green Infrastructure



**MULTI-MODAL INTEGRATION**



**DOWNSIZING STREET ALLOWS ROOM FOR VEGETATION (PREVIOUS FOUR LANE STREET IN COLUMBUS, OH)**



**TRAFFIC CALMING THROUGH LANE SHIFTS**

# Vehicular Travel

## TRAVEL DIRECTION

In concert with the ongoing Purdue Perimeter Parkway Transportation Plan, this Plan recommends a return of two-way vehicular traffic from Chauncey Avenue to Sheetz Street. In addition, this Plan sees other street conversions from one-way to two-way operation in and around Chauncey Village District as vital to the district’s economic resiliency and viability.

## ANTICIPATED VOLUMES

Traffic volume projections are based upon the ongoing Purdue Perimeter Parkway Transportation Plan. Anticipated traffic volume reductions, a product of the new US 231 highway and the future Perimeter Parkway, support the reduced number of vehicular travel lanes recommended in this Plan. The Appendix includes a table indicating estimated traffic volumes at key intersections, as well as diagrams of key intersections with associated current and anticipated (after implementation of the Perimeter Parkway) peak traffic volumes.

## INTERSECTION CONTROL

Existing traffic signals at Northwestern Avenue, Grant Street, University Street, Russell Street, Jischke Drive, and Airport Road are proposed to remain. A new traffic signal is proposed at Roebuck Drive to accommodate a full-access intersection and offset the loss of Brown Street connecting to River Road. This change at Roebuck Drive also calms traffic between Tapawingo Drive and River Road. An additional, new traffic signal at Chauncey Avenue should be further investigated if City Hall moves to Morton Community Center.

In general, traffic signals function well with their current phasing, though several will require modifications associated with converting one-way streets to two-way streets. Particularly throughout campus, many traffic signals should have pedestrian-only phases due to the nature of both vehicular and pedestrians in the area. Traffic signals with pedestrian-only phases are recommended at Northwestern Avenue, Grant Street, and University Street. Marsteller Street could also be considered for such phasing.

Due to high pedestrian activity, additional pedestrian crossings with pedestrian actuated flashers are recommended at a number of intersections. These devices should be linked to the nearby traffic signals so that they are not “on demand” and therefore do not impact traffic flow significantly.

## ROUNABOUT OPERATIONS

A preliminary analysis of the roundabout performance at Tapawingo Drive and River Road were modeled using traffic data from the March 2013 draft Perimeter Parkway report.

Using projected design year traffic for the PM peak (rush hour) the River Road intersection functions at a Level of Service (LOS) C (desirable for most roadways) and Tapawingo Drive functions at LOS B (desirable for some roadways). It is difficult to model event traffic as current counts were not available nor are there any projections. To simulate game day traffic, future PM peak hour traffic data was increased by 10%. Using this estimation, River Road intersection functions at LOS D (desirable for most urban areas) and Tapawingo Drive functions at LOS D. Increasing future PM peak hour traffic by 20% River Road functions at LOS F (desirable for very low speeds) and Tapawingo Drive functions at LOS E (desirable for low speeds).

### Level of Service (LOS) Definitions/Implications

- LOS A: Free Flow
- LOS B: Reasonably Free Flow
- LOS C: Stable Flow (desirable for most roadways)
- LOS D: Approaching Unstable Flow (desirable for urban areas, some drops in operating speed, tolerable for short periods)
- LOS E: Unstable Flow (operating at lower speeds and near volume capacity)
- LOS F: Breakdown Flow (low speed and in extreme cases traffic stoppage for short periods)

## EVENT MANAGEMENT

During events that result in a concentrated volume of vehicles, such as football or basketball games, or events at Elliott Hall of Music or the Purdue Memorial Union, State Street is seen as a component of an overall strategy. Messaging associated with sporting events directs regional travelers to other routes, and not necessarily along State Street. Moreover, as street patterns are converted to two-way, better connectivity will give motorists route alternatives that are not available today. This connected grid will better distribute traffic, particularly during peak times.

For certain events, the City could experiment with converting State Street, to one-way operation from River Road to Jischke Drive. Traffic could flow westbound prior to the event, then change to eastbound after the event. Doing this would allow increased vehicular traffic volume use of the entire roadway.

EXISTING 4-LANE CONDITION WITH MEDIAN NEAR TAPAWINGO DRIVE + STATE STREET



EXISTING 5-LANE CONDITION NEAR RIVER ROAD + STATE STREET



EXISTING 6-LANE CONDITION NEAR RIVER ROAD + STATE STREET



EXISTING 3-LANE, ONE-WAY CONDITION THROUGH CHAUNCEY VILLAGE



EXISTING 4-LANE, TWO-WAY CONDITION WITH PEDESTRIAN REFUGE BUFFER THROUGH PURDUE'S CAMPUS



EXISTING SHIFT FROM 3-LANE, ONE-WAY CONDITION TO 4-LANE, TWO-WAY CONDITION WITH PEDESTRIAN REFUGE MEDIAN NEAR SHEETS STREET + STATE STREET



EXISTING 3-LANE CONDITION NEAR RUSSELL STREET + STATE STREET



EXISTING SHIFT FROM 3-LANE CONDITION TO 2-LANE CONDITION NEAR AIRPORT ROAD + STATE STREET



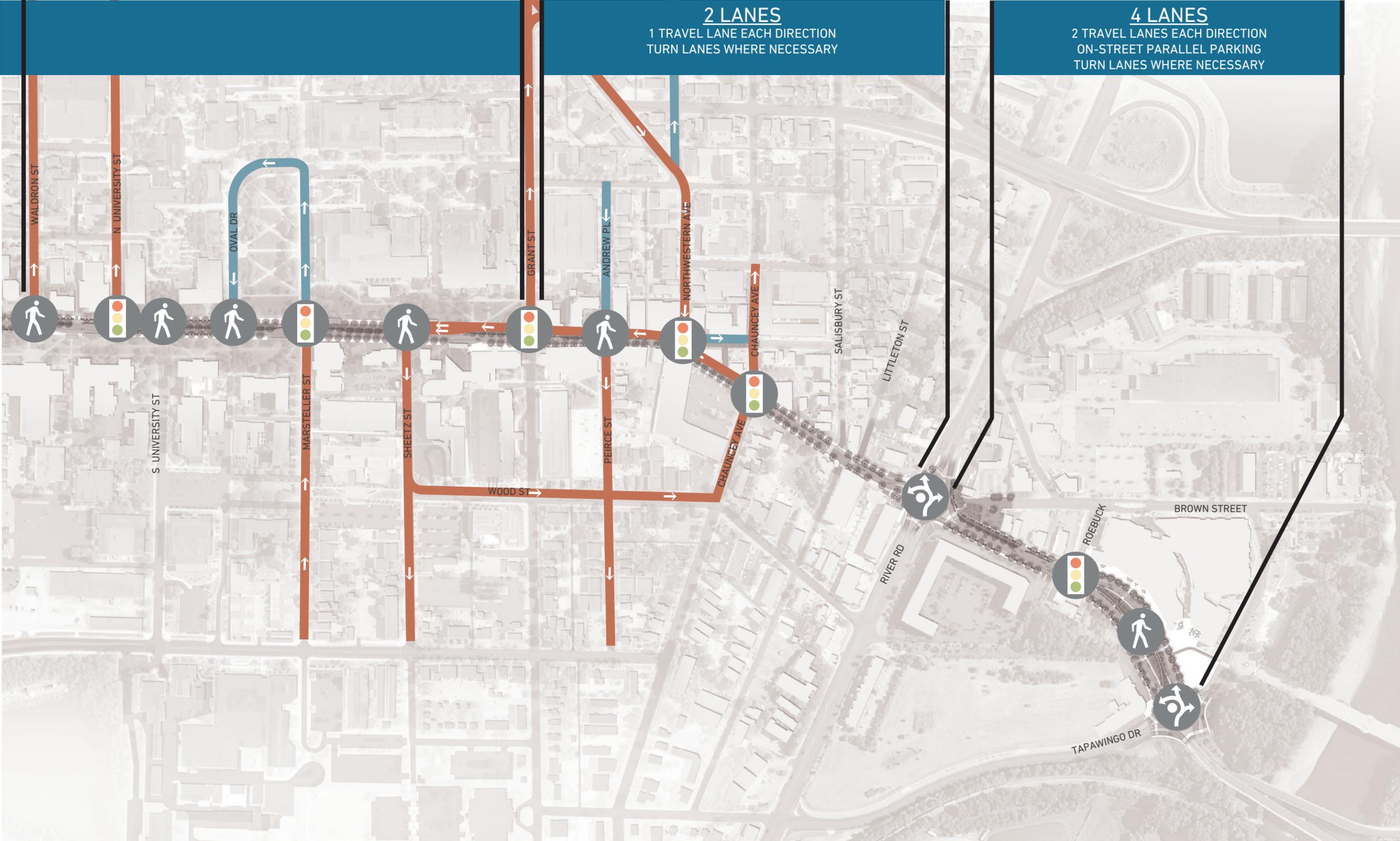
EXISTING 2-LANE CONDITION WEST OF AIRPORT ROAD



# Vehicular Travel



-  PEDESTRIAN/HAWK SIGNAL
-  SIGNALIZED INTERSECTION
-  ROUNDABOUT INTERSECTION
-  ONE-WAY STREET TO REMAIN
-  ONE-WAY STREET CONVERSION TO TWO-WAY TRAFFIC





INTERSECTIONS WITH SEPARATED CROSSINGS



SIGNAGE INDICATES BICYCLE YIELDS TO PEDESTRIAN



SEPARATED 2-LANE BICYCLE PATH



WAYFINDING SIGNAGE INDICATES STREETSCAPE ETIQUETTE

# Bicycle Travel

## PURPOSE/LOCATION/BARRIER/WIDTH

The Plan proposes a continuous two-way separated, dedicated bicycle path to safely accommodate everyday bicyclists and to encourage/promote increased bicycling among casual and beginner bicyclists. The separated/dedicated bicycle path is proposed on the north side of the street, the same side of the street as many of the major trip generators (Horticulture Park, Purdue Residence Halls, Purdue Stewart Center and Libraries, Purdue Memorial Union, West Lafayette Public Library, Morton Community Center, Wabash Levee, Wabash Landing, Tapawingo Park, and the John T. Myers Pedestrian Bridge).

Between the separated/dedicated bicycle path and vehicular travel lanes, a physical barrier is proposed to clearly separate the two modes of travel. In some places, this is a planted barrier of shade trees and low-growing shrubs. A temporary or permanent fence may be installed within the shrub areas to deter jaywalking. In constricted portions of the corridor, a low, non-planted barrier is proposed. In either case, the separated/dedicated bicycle path is in most instances proposed to be positioned at roadway elevation to eliminate ramp conditions and to utilize the existing street infrastructure – curbing, street crown, and stormwater drainage – where possible. This condition appears likely on both sides of the street from Airport Road to Sheetz Street and on the south side of the street between Grant Street and Salisbury. East of Roebuck Drive, the separated/dedicated bicycle path is located at sidewalk level, but separated from pedestrians (bollards) and parked cars (planted buffers).

The separated/dedicated bicycle path varies from a minimum width of eight feet (8') to a maximum width of twenty feet (20'). Closer to the core of campus, the width increases to accommodate higher volumes of bicyclists. In the heart of campus, between future separated/dedicated bicycle path connections (North University Street and Grant Street, per the ongoing Purdue Bicycle Master Plan), and near major trip generators (Purdue Stewart Center and Libraries, Purdue Memorial Union), the separated/dedicated bicycle path reaches its maximum width.

## CONNECTIONS

An overwhelming amount of participants in stakeholder and public sessions advocated for a connection from the new trails along US 231 to those along the Wabash River. The proposed separated/dedicated bicycle path along State Street is not only intended to provide that connection, but is also intended to connect with trails in Horticulture Park, Purdue's current and future bicycle infrastructure, the Chauncey Village District, Wabash Landing development, Tapawingo Park, and the John T. Myers Pedestrian Bridge. This connectivity links bicyclists to recreational and commercial destinations, and becomes a tool for economic development along State Street.

## INTERSECTION BEHAVIOR

Through intersections, bicyclists on the separated/dedicated bicycle path are required to behave as pedestrians. Bicyclists traveling through the intersection approach the intersection and await a safe-crossing message from pedestrian crossing signal heads on the opposite side of the intersection. In this signal phase, cars turning off of State Street are required to yield to bicyclists traveling through the intersection. Turning bicyclists crossing State Street approach the intersection, position to turn, and await a safe-crossing message from pedestrian crossing signal heads on the south side of the intersection. Crosswalks are separately striped for bicyclists (green) and pedestrians (white). Bicyclists turning north approach the intersection, position to turn, and await a safe-crossing message from pedestrian crossing signal heads on the south side of the intersection. All turning bicyclists must yield to through bicyclists and pedestrians when entering and departing crosswalks. The potential for bicycle turn lanes within the separated/dedicated bicycle path should be investigated when the proposed improvements are being planned in detail.

Should bicycle traffic resuscitate dedicated signalization, the traffic signals along the corridor have the ability to utilize a separated/dedicated bicycle path-only phase. Further consideration is required before implementing this improvement. First, the Level of Service at intersections, and possibly along the entire corridor, would likely drop. Adding the new signal phase would stop vehicular traffic for a longer period and lead to increased queues. Second, the cyclist would lose the opportunity to cross the intersection while vehicular traffic is crossing as they would have a red light if they were completely on their own cycle. The separated/dedicated bicycle path could have a green cycle along with vehicular traffic but there would then be no real need for a dedicated green for the separated/dedicated bicycle path. A dedicated signal phase would help avoid accidents between a through bicycle and a turning vehicle that is required to yield to through bicycles. With no vehicles turning during the bicycle green the conflict point is eliminated.

To discover the effects on Level of Service for both vehicles and bicycles, the potential for separated/dedicated bicycle path-only signal phases should be investigated when the proposed improvements are being planned in detail.

## ROUNDBABOUT BEHAVIOR

In general, bicyclists on the roadway with vehicles navigate the roundabout in the same manner as those vehicles. They yield to traffic in the roundabout before entering and use the same rules of the road while in the roundabout.

For those bicyclists using the proposed separated/dedicated bicycle path, the most convenient and safe way to navigate the roundabout is to use the pedestrian crossings. Entering the roundabout as a bicyclist adds another conflict point with vehicles. Vehicles entering the roundabout are then required to look to their right which is not standard at roundabouts. This leads to more accidents.

Bicyclists should never enter the landscaped center of the roundabout as this would create multiple conflict points with vehicles, create confusion, interrupt vehicle flow, and introduce stop conditions on the roadway thus reducing the efficiency of the roundabout.

Traffic signals along River Road (at Tapawingo Drive/Williams Street and Howard Avenue) will send vehicular traffic to the River Road roundabout in "pulses". Vehicular traffic arriving at the roundabout will line up behind the yield line, but are not permitted to block the crosswalk. Bicyclists will cross vehicular traffic at the crosswalk, located directly behind the lead car position. When the lead car enters the roundabout, remaining bicyclists will wait until the next car stops at the yield line. In periods when the signals are red and preventing traffic from arriving in a pulse the approach leg may be clear of traffic allowing bicyclists to cross.

Due to high bicyclist activity, user-activated flashers are recommended on two-lane roundabouts. These devices should be linked to the nearby traffic signals so that they are not "on demand" and therefore do not impact traffic flow significantly.

## INTERACTION WITH PEDESTRIANS & BUSESSES

The separated/dedicated bicycle path is intended to safely accommodate bicyclists, but not at the expense of pedestrians. At intersections, bicyclists behave as and yield to pedestrians (see INTERSECTION BEHAVIOR, left). At bus stops, the separated/dedicated bicycle path changes its vertical position (from road elevation to sidewalk elevation) and horizontal position (from inside the road curb to outside the road curb). These vertical and horizontal positioning changes are proposed to eliminate crossing conflicts with busses entering pull-offs, and to define a separate boarding area for bus passengers. This boarding area, located against the street curb and physically separated from the separated/dedicated bicycle path by benches and trash receptacles, provides a safe place for passengers to board or depart the bus. Clearly defined pedestrian crossings (defined by openings in bench placement) to loading zones eliminate random pedestrian movement across the separated/dedicated bicycle path. This solution proved more practical than providing ADA accessible ramps from sidewalk/boarding area elevations to a separated/dedicated bicycle path at roadway elevation.

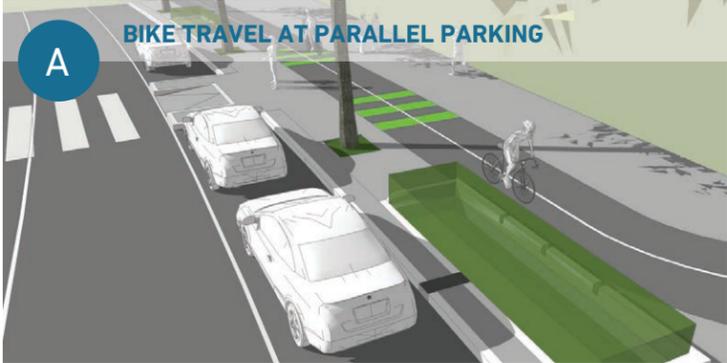
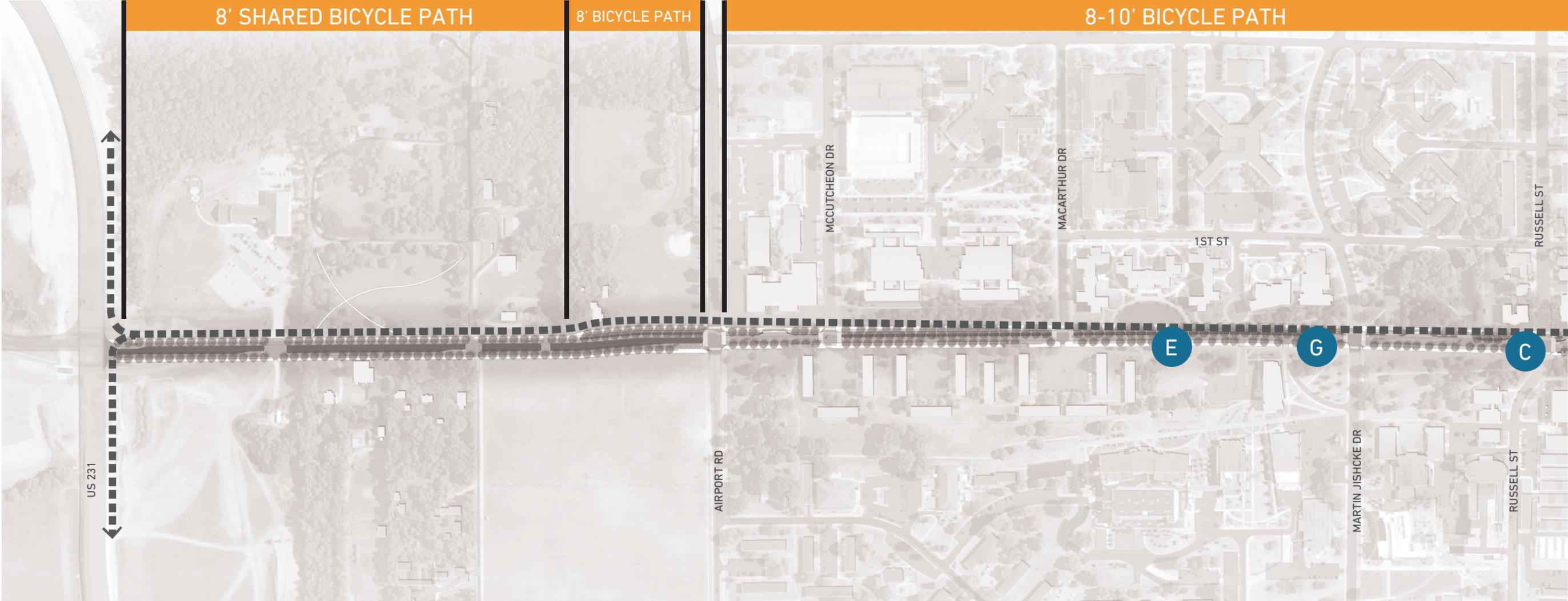
## MATERIALITY & SIGNAGE

To clearly communicate requirements to bicyclists, a multitude of signage will be required along the separated/dedicated bicycle path. This is common to separated/dedicated bicycle paths, as such facilities are still emerging throughout the United States. Signs are intended to guide motorists, bicyclists, and pedestrians along the route and inform behavior at intersections. The number, type, size, and location of signs should comply with AASHTO, NACTO, MUTCD requirements and/or guidelines.

The surface of the separated/dedicated bicycle path is proposed to be asphalt. Cost-effective asphalt also provides a smooth, cushioned riding surface which is easily repaired and plowed, and can readily accept pavement markings. At a minimum, pavement markings are envisioned to occur at intersections and driveways (solid green markings along State Street and zebra crosswalks across State Street), approaching intersections (white directional and bicycle indicator symbols), and at bus stops (textured, zebra-type green markings). Pavement marking symbols, colors, reflectivity, and abrasion index should comply with all MUTCD and AASHTO requirements and/or guidelines.



# Bicycle Travel



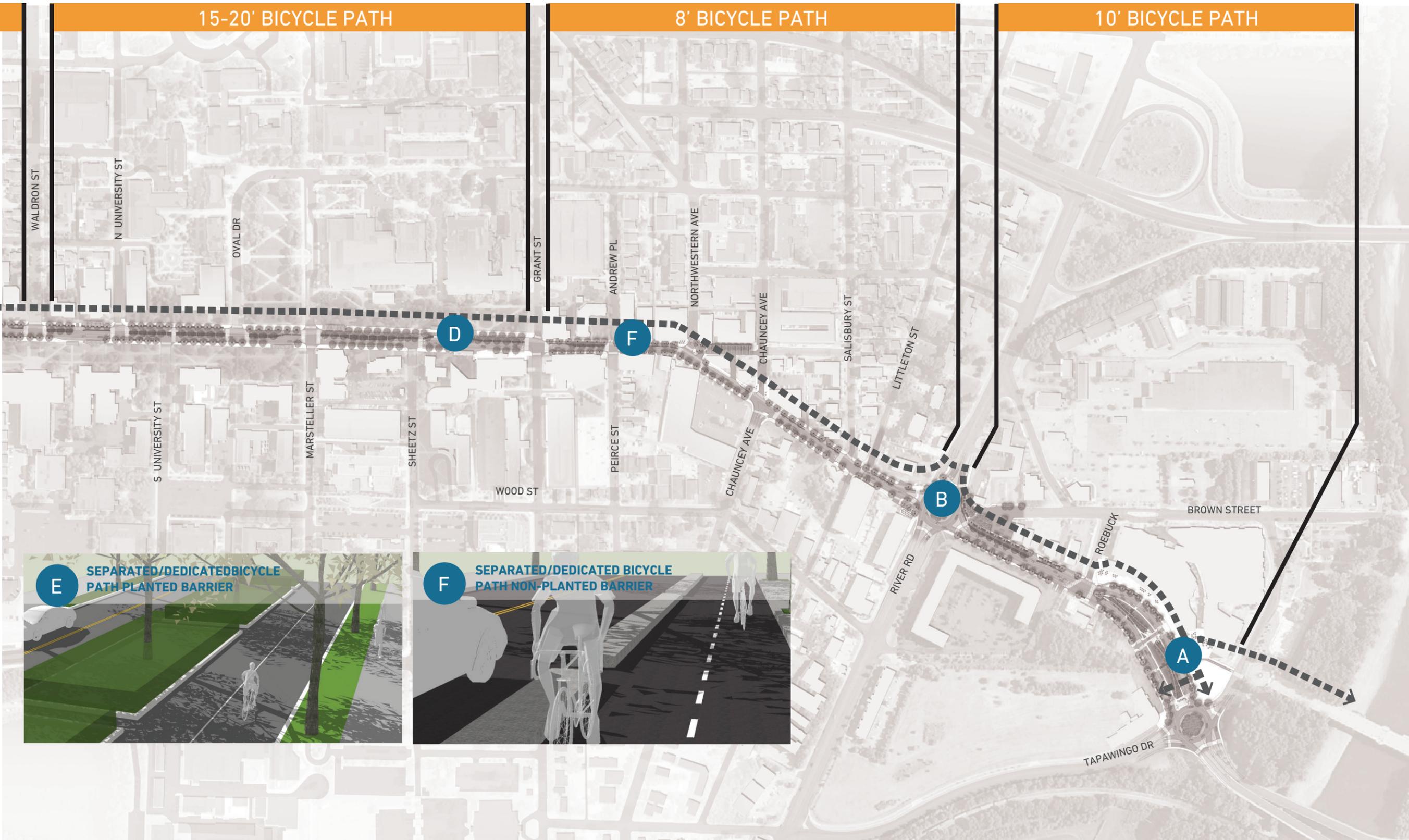
← → CONNECTION TO EXISTING TRAIL SYSTEMS



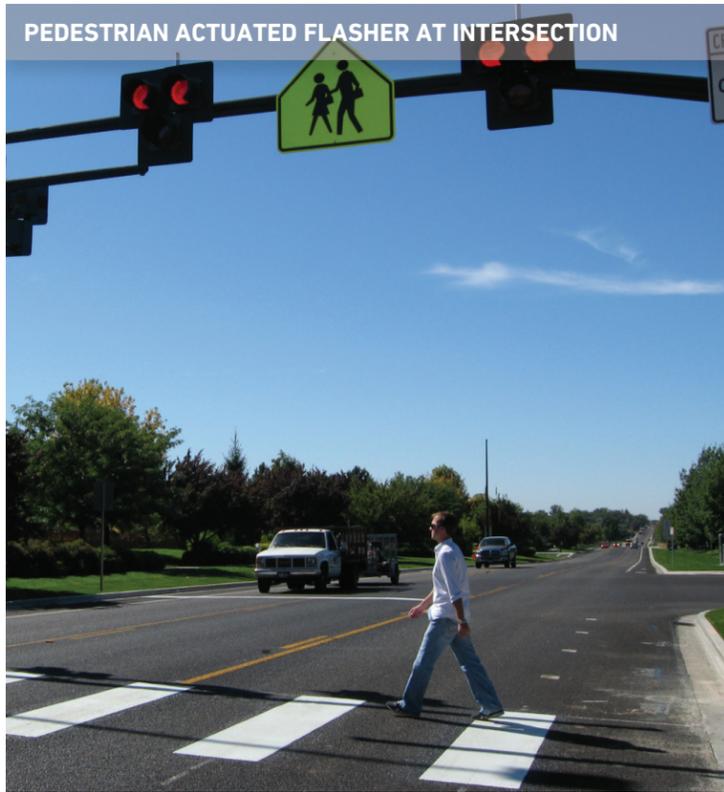
15-20' BICYCLE PATH

8' BICYCLE PATH

10' BICYCLE PATH



PEDESTRIAN ACTUATED FLASHER AT INTERSECTION



PEDESTRIAN YIELD CROSSINGS



PEDESTRIAN ACTUATED FLASHER AT ROUNDABOUT



## Pedestrian Travel

### WIDENED SIDEWALKS

Throughout the entire length of State Street, pedestrian enhancements are recommended. At the west end of the corridor, new eight foot (8') wide walks are proposed from US 231 to Airport Road. On the north side of the street, between Airport Road and Dexter Lane, the walkway merges with the separated/dedicated bicycle path to form a shared-use path. These walks do not exist today. From Airport Road through campus, walks vary in width from ten feet (10') closer to Airport Road to twenty feet (18') where higher volumes of pedestrians traverse the heart of campus on a daily basis. Within the Chauncey Village District, proposed sidewalk widths are increased over today's narrow widths, to accommodate high volumes of pedestrians, outdoor dining and display areas, and street element areas. Within the Riverfront District, proposed sidewalk widths are increased as well; at the Wabash Landing site, widths are increased to comfortably accommodate outdoor dining and merchant display areas.

### SAFETY IN THE VILLAGE

Unique to the Chauncey Village District (from Chauncey Avenue to Peirce Street/Andrew Place) is the concentration of bars and nightclubs within proximity to one another and along the most constricted segment of State Street. Here, temporary barriers are currently erected from Thursday to Sunday during gameday weekends to narrow the street (by one vehicular travel lane), confine crowds to sidewalks, and funnel pedestrians to crosswalks. The management associated with this operation is costly and cumbersome. The Plan recommends a permanent solution in the form of metal fencing. This fencing, further described later in this document, would be placed just behind the future street curb location, and remain continuous to crosswalk locations, thus confining crowds to sidewalks and funneling pedestrians to intersections.

### INTERSECTION CONTROL

In general, though traffic signals function well with their current phasing, several will require modifications associated with converting one-way streets to two-way streets. Particularly throughout campus, many traffic signals should have pedestrian-only phases due to the nature of both vehicular and pedestrians in the area. Traffic signals with pedestrian-only phases are recommended at Northwestern Avenue, Grant Street, and University Street. Marsteller Street could also be considered for such phasing.

Due to high pedestrian activity, additional pedestrian crossings with pedestrian actuated flashers are recommended at a number of intersections. These devices should be linked to the nearby traffic signals so that they are not "on demand" and therefore do not impact traffic flow significantly.

### ROUNDAABOUT BEHAVIOR

Roundabouts provide refuge islands on all four legs of the intersection. The pedestrian only needs to look for traffic in one direction when crossing the lanes as opposed to a signalized or stop controlled intersection where two-way traffic must be considered.

Traffic signals along River Road (at Tapawingo Drive/Williams Street and Howard Avenue) will send vehicular traffic to the River Road roundabout in "pulses". Vehicular traffic arriving at the roundabout will line up behind the yield line, but are not permitted to block the crosswalk. Pedestrians will cross vehicular traffic at the crosswalk, located directly behind the lead car position. When the lead car enters the roundabout, remaining pedestrians will wait until the next car stops at the yield line. In periods when the signals are red and preventing traffic from arriving in a pulse the approach leg may be clear of traffic allowing pedestrians to cross.

Pedestrians should never cross the roundabout lanes to the center island as this would create multiple conflict points with vehicles, create confusion, interrupt vehicle flow, and introduce stop conditions on the roadway thus reducing the efficiency of the roundabout.

Each leg of the State Street/River Road intersection has signals or a signal is proposed. These signals will tend to send traffic to the roundabout in "pulses". This should not adversely affect pedestrian use of the roundabout. Traffic arriving in a pulse will line up behind the yield line. Pedestrians will cross behind the lead car as usual. When the lead car enters the roundabout, remaining pedestrians will wait until the next car stops at the yield line. In periods when the signals are red and preventing traffic from arriving in a pulse the approach leg may be clear of traffic allowing pedestrians to cross.

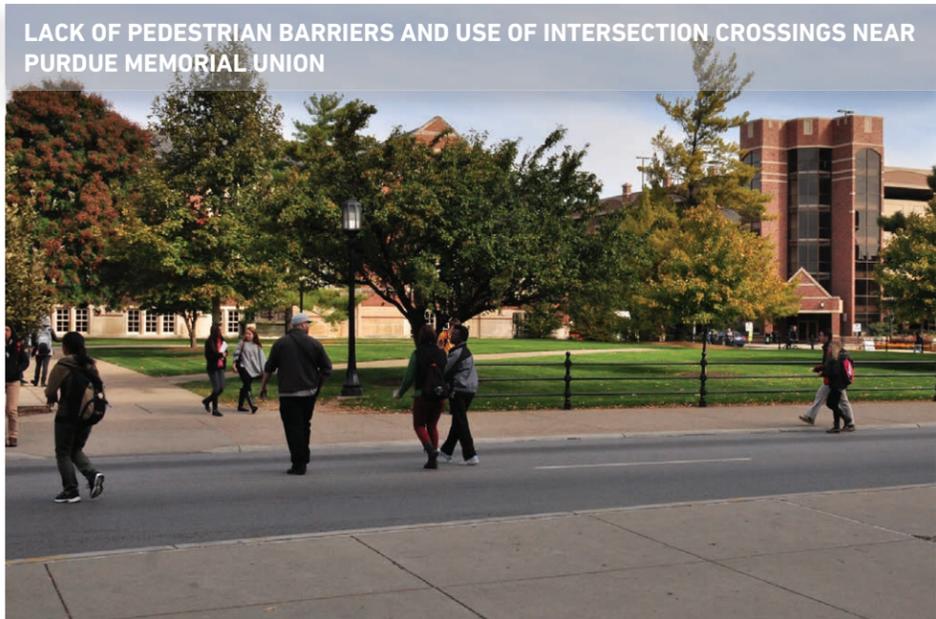
Due to high pedestrian activity, actuated flashers are recommended at two-lane roundabouts. These devices should be linked to the nearby traffic signals so that they are not "on demand" and therefore do not impact traffic flow significantly.



**SIDEWALK CONDITION CLOSEST TO STATE STREET AT WABASH LANDING**



**NEED FOR PEDESTRIAN CROSSING AT CHAUNCEY AVENUE**



**LACK OF PEDESTRIAN BARRIERS AND USE OF INTERSECTION CROSSINGS NEAR PURDUE MEMORIAL UNION**



**SMALL SIDEWALKS NEAR SALISBURY STREET INTERSECTION CREATE DANGEROUS PEDESTRIAN ENVIRONMENT**



**SAFETY BARRIERS FOR EVENTS IN CHAUNCEY VILLAGE SHOW NEED FOR WIDER SIDEWALKS**



**EXISTING SHIFT FROM 3-LANE, ONE-WAY CONDITION TO 4-LANE, TWO-WAY CONDITION WITH PEDESTRIAN REFUGE MEDIAN**



**SMALL SIDEWALKS NEAR CHAUNCEY AVENUE INTERSECTION CREATE DANGEROUS PEDESTRIAN ENVIRONMENT**

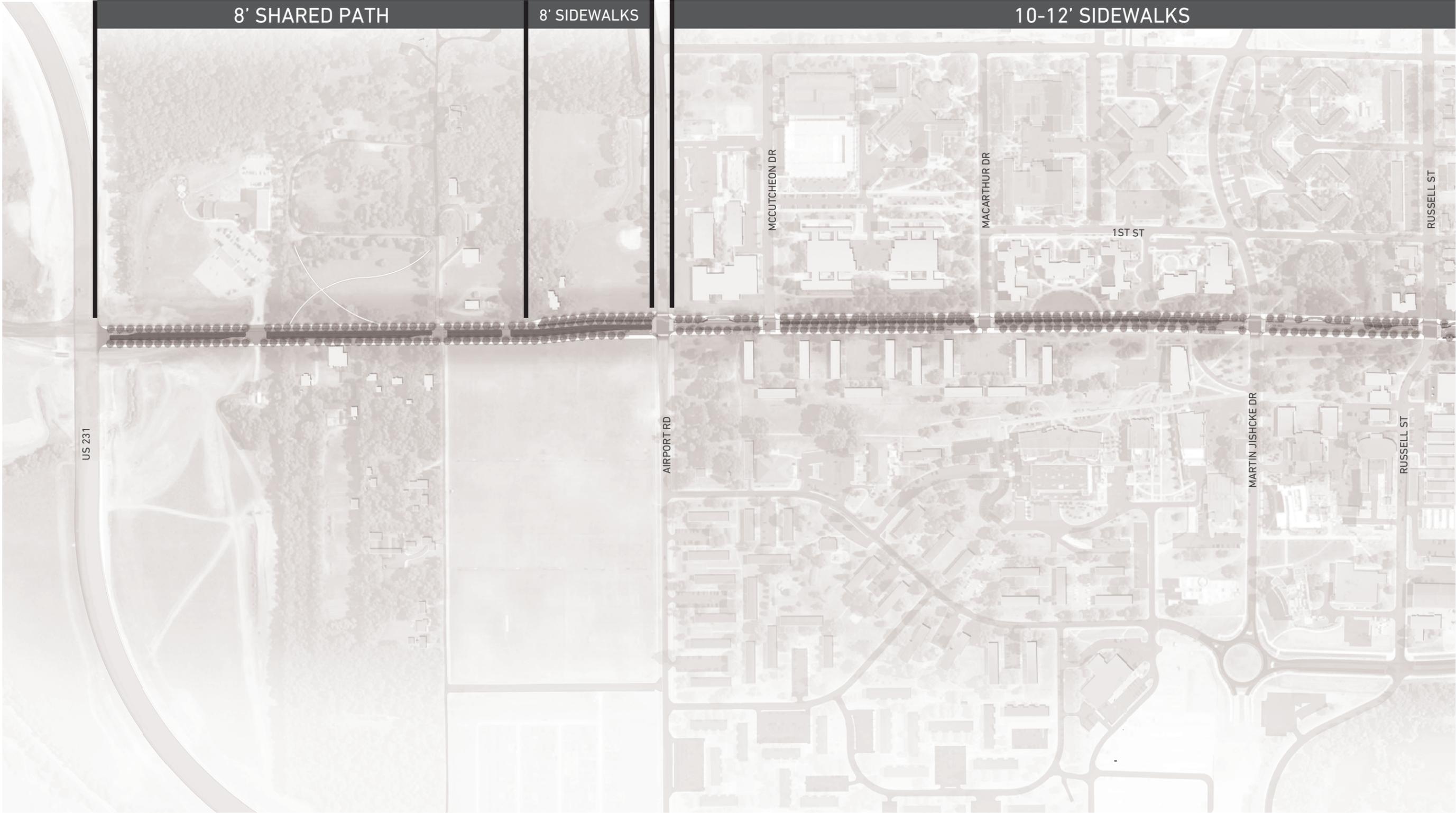


**EXISTING SIDEWALK ENCOURAGING CURRENT MID-BLOCK CROSSINGS**



**NO SIDEWALKS WEST OF PURDUE INTRAMURAL FIELDS**

# Pedestrian Travel





MULTI-MODAL TRANSIT EXAMPLES WITH BUS PULL-OFFS + SEPARATED/DEDICATED BICYCLE PATHS





EXAMPLE OF BUS SHELTERS



EXAMPLE OF BUS SHELTERS



EXAMPLE OF BUS SHELTERS

## Bus Travel

### EASTBOUND BUS STOPS

In many places, eastbound bus stops are accommodated through pull-offs. This provides a safe place for boarding busses to be out of vehicular traffic flow. At three stops (between Chauncey Avenue/Salisbury Street, between River Road/Roebuck Drive, and between Roebuck Drive/Tapawingo Drive), pull-offs are not possible without additional land acquisition, significant grade modifications, or significant loss of proposed on-street parking. However, in each location, a second vehicular travel lane can be used to bypass stopped busses.

### WESTBOUND BUS STOPS

Similarly, in many places, westbound bus stops are accommodated through pull-offs. This provides a safe place for boarding busses to be out of vehicular traffic flow. At two stops (near Roebuck Drive and near Tapawingo Drive), pull-offs are not possible without significant loss of proposed on-street parking. However, in both locations, a second vehicular travel lane can be used to bypass stopped busses. Westbound bus stops are also integrated with the separated/dedicated bicycle path, which is located on the north side of the street. Refer to Bicycle Travel: INTERACTION WITH PEDESTRIANS & BUSES, above.

### SIGNIFICANT CAMPUS BUS STOPS

Two bus stops along State Street, within campus, experience a significant volume of riders: Purdue Memorial Union and Lilly Hall. At Purdue Memorial Union, the Plan recommends, in consultation with CityBus, consolidating three existing westbound stops (between Oval Drive and the Purdue Memorial Union) into one. In doing so, a long bus pull-off is proposed to accommodate three parked busses (two standard busses and one articulated bus, as requested by CityBus). At Lilly Hall, a similar treatment is proposed for eastbound busses. In both locations, large, architecturally significant bus shelters are envisioned. These shelters should be transparent, and could be heated and include electronic route information, large seating areas, and covered bicycle parking. Smaller bus shelters could be added at all other stops.

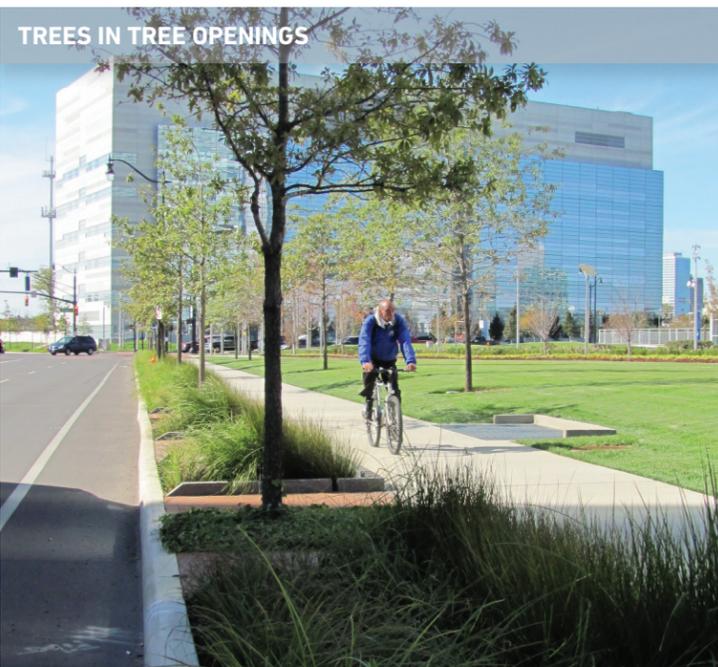
# Bus Travel



← WESTBOUND BUS STOPS  
→ EASTBOUND BUS STOPS



**D BIKE TRAVEL AT WESTBOUND BUS STOP**



# Street Trees/Green Infrastructure

## STREET TREES

In its present condition, State Street lacks a consistent tree canopy. Conditions vary from a consistently managed street tree program on campus to few trees through other districts. Street trees are important elements of urban infrastructure that help to create memorable, vibrant places and spaces. Street trees filter airborne pollution, cool pavements, capture stormwater, provide shade for pedestrians, lend scale and character, and promote gathering. Street trees help to create environments in which people wish to spend time.

The Plan recommends a continuous street tree canopy from US 231 to Tapawingo Drive. Within blocks, a diversity of tree species (perhaps three to four species) is recommended as good arboriculture/urban forestry practice safeguarding against catastrophic disease/pest losses targeted at particular species. Deciduous shade trees tolerant of urban conditions are recommended; evergreen and flowering trees are not recommended.

West of campus, it is recommended that trees be planted between street curbs and walkways in wide (six foot minimum) tree lawns. Street trees are also recommended in planted separated/dedicated bicycle path barriers.

Throughout campus areas, it is recommended that trees be planted between street curbs and walkways in wide (6' minimum) tree lawns. Between Russell Drive and Airport Road, existing street trees planted in tree lawns are proposed to remain, with the exception of the mature honey locust trees near Airport Road, which are scheduled for removal. When removed, proposed replacements are recommended within low (6" tall) planters which should be large enough to support significant soil volumes (approximately six feet (6') wide by fifteen-twenty feet (15-20') long). This planting recommendation, on both sides of State Street from McCutcheon Drive to Airport Road, anticipates a more vibrant, mixed-use district (which could include outdoor dining and street element areas) associated with future Purdue Village redevelopment plans. This condition is also proposed on the north side of State Street at Purdue Memorial Mall. Here, festivals and events require large expanses of paving, so planters may be slightly shorter. Between Oval Drive and Russell Drive, street trees are proposed in five foot (5') square tree openings, between bioretention cells. This planting recommendation assumes a continuous soil trench connecting bioretention cells to tree openings. To make this solution possible, paving between the tree opening and the bioretention cell curbing will need to be suspended above below-grade soils. Within the campus area, street trees are also recommended in planted separated/dedicated bicycle path barriers.

Within the Chauncey Village District, space is at a premium, yet street trees are desired for their social, environmental, and economic value. Given space constraints, street trees are recommended in 4' square tree grates from River Road to Grant Street. This planting recommendation assumes a continuous soil trench below the surface of the paving, connecting tree grates to one another. To make this solution possible, paving between the tree grates will need to be suspended above below-grade soils. To protect against vandalism, tree guards are recommended where tree grates are used.

Similar to areas within campus, tree plantings within the Riverfront District are proposed in five foot (5') square tree openings, between bioretention cells. This planting recommendation assumes a continuous soil trench connecting bioretention cells to tree openings. To make this solution possible, paving between the tree opening and the bioretention cell curbing will need to be suspended above below-grade soils. Within this area, street trees are also recommended in planted separated/dedicated bicycle path barriers.

## GREEN INFRASTRUCTURE

Given close proximity to the Wabash River, the Plan recommends installing bioretention cells (the technical term for stormwater raingardens) in two segments of the street. These elements help to clean, temporarily store or detain, and promote infiltration of stormwater runoff from the street and sidewalk. Bioretention cells for urban environments are properly sized to store the required amount of stormwater runoff, at an appropriate depth. Generally, cells with a 6-12" drop from sidewalk level (preferable in urban environments) can become quite long. Planting within the cells should be simple, one to two species of rush or iris. Species should be able to withstand constant inundation or dry conditions. A filtering device should intercept stormwater to remove sediment and debris, prior to stormwater entering the planting area.

In addition to bioretention cells, the Plan proposes energy-efficient, LED-lamped street lights for the entirety of State Street. Compared to traditional lighting sources such as high-pressure sodium or metal halide, LED-lamped lighting generally is more expensive to install, but less expensive to power and maintain. Sidewalk pavement throughout the project is intended to be concrete, a highly-reflective surface color that reduces heat-gain during warm summer months. Street trees, proposed along the entire corridor, will filter airborne CO2 and fine particulate matter, take-up stormwater through leaves and roots, and cast cooling shade to hot pavements.

Within the proposed boulevard between Roebuck and Tapawingo Drives, a wetland area is proposed. This element is expected to functionally and aesthetically storing and treating street and sidewalk stormwater runoff, and include educational aspects explaining the process and benefits. Simple plantings of sedges, rushes, iris, and canopy trees are proposed.



CONTINUOUS SOIL TRENCH AT BACK OF CURB



INSTALLATION OF CURBING DEFINING TREE AND BIORETENTION AREAS



INSTALLATION OF STRUCTURAL SOIL AT SIDEWALK ZONE



SUSPENDED PAVING FRAMING



SOIL INSTALLATION



PAVING INSTALLATION OVER FRAME AND OVER STRUCTURAL SOIL

# Street Trees/Green Infrastructure



## TREES IN LAWN

## TREES IN GRATES

## TREES IN OPENINGS BETWEEN BIORETENTION CELLS

## BOULEVARD/WETLAND

## RECOMMENDED STREET TREES

- Acer myabi* 'Morton' (State Street Maple)
- Celtis occidentalis* (Hackberry)
- Cladrastis kentukea* (Yellowwood)
- Ginkgo biloba* 'Princeton Sentry' (Princeton Sentry Ginkgo)
- Gymnocladus dioica* 'Espresso' (Espresso Kentucky Coffeetree)
- Liquidambar styraciflua* 'Happi Daze' (Happi Daze Sweetgum)
- Liriodendron tulipifera* (Tuliptree)
- Quercus bicolor* (Swamp White Oak)
- Quercus rubra* (Northern Red Oak)
- Quercus shumardii* (Shumard oak)
- Ulmus parvifolia* 'Emer II' (Allee Lacebark Elm)
- Ulmus* 'Morton' Accolade (Accolade Elm)
- Ulmus* 'Frontier' (Frontier Elm)
- Ulmus* 'Homestead' (Homestead Elm)

## UTILITIES REVIEW

### General

Existing utility infrastructure has been reviewed and recommended improvements are detailed below. As the plan is implemented, in-depth analysis of utility impacts will be necessary. This plan recommends, where practical during future utility improvements or modifications, utilities be located to reside under the roadway and outside of the sidewalk and planting areas.

### Water

Water mains run along the north and south sides of State Street for most of the mapped area and fall within the footprint of proposed construction. Except for some spot repairs or improvements, the water line is fairly old. Fire hydrants are located throughout, but can in most cases be easily relocated. Water line crossings occur at thirteen different locations within the mapped area, generally occurring at intersections. Given the level of design in this Plan and the available mapping, no apparent major conflicts were identified. Depending on the age of the main, the water supplier may wish to consider replacing the line during future implementation of the State Street Master Plan.

### Sanitary Sewer

Most of the sanitary sewer infrastructure appears to be set back enough to fall outside of proposed improvements. As with the water lines, aside from spot repairs, the sanitary sewer lines have aged. One sanitary sewer line crossing occurs between McCormick Drive and McCutcheon Drive; another occurs just west of Jischke Drive. A run of sewer labeled WLAF (West Lafayette) is shown in the street between Grant Street and Peirce Street/Andrew Place. State Street passes through a combined sewer area, CSO #007 and borders CSO #004. The area of State Street within the CSO #007 is from Grant Street to River Road. CSO #004 touches the project at Grant Street. This plan recommends the separation of these systems during future infrastructure improvements.

### Gas

Gas lines are present and tend to be located on the south side of the street, within proposed improvement areas. Except for some potential repairs, the lines are the original infrastructure and fairly old. No apparent, significant, above ground gas infrastructure was observed within the project footprint. Based on the available mapping there are gas line crossings at eight locations. At a few locations, crossings appear to have been capped and/or abandoned.

### Cable

Cable is classified as direct buried or underground. The underground cable is on the south side of the street west of Airport Road, and on the north side of the roadway east of Airport Road. For the most part, these cables are within the proposed improvement areas. West of Waldron Street, the direct buried cable runs on the south side of the roadway. Except for areas where cable is within the utility tunnel, it appears to be outside of the project area. East of Waldron Street, two lines parallel the roadway and fall within the project footprint. It appears these two lines stop just east of University Street. There appear to be a handful of relatively small above ground boxes that could be in conflict. The mapping indicates four crossings for the underground cable.

### Storm Sewer

There doesn't appear to be a major trunk line paralleling the corridor. Most existing storm water inlets, except for a majority of those through campus, will need to be relocated with the new construction. An analysis of the existing collection system will be necessary to determine if proposed storm water flows can be accommodated. The mapping indicates 10 storm sewer crossings. As mentioned, State Street passes through a portion of Combined Sewer Overflow areas CSO #004 and #007. Stormwater from the corridor utilizes the drainage basins west of the airport, the gravel pit and the Wabash River itself. This plan recommends the separation of these systems during future infrastructure improvements.

### Electric

Street lights on both the north and south side of the existing street fall within the proposed improvements. A relatively new switch gear exists at the southwest corner of Airport Road; it is likely in conflict with the proposed improvements. Several underground vaults are mapped on the south side of the street between MacArthur Drive and Russell Street. In particular, a vault west of Jischke Drive appears to fall within the proposed improvements. The vaults appear to be underground and may or may not be able to be adjusted to grade. A visual inspection shows what appears to be above ground electrical equipment on the north side of the roadway at the Game Stop retailer. Both of these will need to be mapped to determine whether they conflict with the proposed improvements. Twelve electrical crossings are mapped. Electric facilities are owned and maintained by both Purdue University and Duke Energy. Both entities provide street lighting as well.

### Steam

A significant steam crossing occurs in the utility tunnel west of Oval Drive.

### Chilled Water Systems

Provided mapping did not indicate any chilled water systems in the area of the State Street corridor. However, there are facilities that use these services and a more in-depth investigation will be needed to discover any potential conflicts.

### Traffic Signals

Most signal infrastructure is very close to the existing back of walk. In most cases the signal infrastructure will be in conflict with the proposed improvements.

### Utility Tunnels

Mapping indicates the presence of utility tunnels located immediately below pavement. A tunnel runs parallel to the roadway from west of Jischke Drive to Oval Drive. The tunnels cross in three different locations between Jischke Drive and Oval Drive.

### Overhead Utilities

A run of overhead utilities parallel the south side of the corridor west of McCutcheon Drive. This area has potential for relocating those utilities below ground.

PEDESTRIAN LIGHTS AT WABASH LANDING



STREET LIGHTS IN CHAUNCEY VILLAGE



STORMWATER DITCH WEST OF AIRPORT ROAD



OVERHEAD UTILITIES IN CHAUNCEY VILLAGE



OVERHEAD UTILITIES WEST OF AIRPORT ROAD



TRAFFIC SIGNALS AND STREET LIGHTS THROUGH CAMPUS





# STREET CHARACTER: IDENTITY + PLACEMAKING



# Overall Plan





## TODAY'S DISTRICTS

As was made evident during the stakeholder and public sessions, there persists a lack of identity to the City of West Lafayette and, to varying degrees, the districts along the corridor as well.

The Riverfront District (from the Wabash River to River Road) is mostly characterized by its suburban-patterned developments of two varieties: small, one-story, single-use, restaurant/retail buildings with parking lots located along State Street, and larger footprints with ground floor commercial space, upper-level student housing, and parking lots located along State Street. Other characteristics of the district relate to the high-speed nature of State Street and lack of walkable, bikeable infrastructure. In defining identity, most overlook the presence of the Wabash River and its natural characteristics that define the district, city, and region. This treasure, and its associated geology, hydrology, ecology, and topography, offers a unique and contextually-appropriate identity for this District.

The Chauncey Village District (from River Road to Grant Street) is an eclectic mix of development patterns. These range from urban (the historic areas and new developments such as State Street Towers and University Terrace) to suburban patterns (such as the single-level Chauncey Hill Mall with parking along State Street). The street itself today can be characterized as high-energy – lots of people and cars – and somewhat confused patterns of circulation due to the presence of one-way streets. The “Village” is home to many international shops, groceries, and restaurants, it is the cultural hub of State Street, and arguably, West Lafayette. The energy and activity, cultural diversity, and urban vibrancy define this District.

The University District is best known for its sturdy, dependable buildings of brick facades and red roofs, sweeping collegiate open spaces and front yards filled with mature trees. The street through campus is a wide thoroughfare with multiple travel lanes – an interruption that defines northern and southern portions of campus. As the University continues to promote a compact campus, the land along State Street becomes more critical to organized growth. This is evident in Purdue’s 2009 Master Plan, where the University proclaimed that State Street would become a “collaborative center...and a unifying feature at the heart of student and academic life rather than a campus divider.” This plan suggests the concept of establishing collaboration spaces along State Street. “Collaboration” and “hub” of activity are terms that can give a new identity to State Street through campus, replacing the current negative connotations tied to the Street.

Beyond Airport Road, a new district is emerging. Today known as a rural, two-lane road with many different adjoining uses, this district could be on the verge of a new identity. The area can today be characterized by cultivation (Horticulture Park and Purdue Student Farms), aviation (Purdue Airport), transportation (US 231 and the Perimeter Parkway), and recreation (Intramural Fields). A linear art element is suggested for this district.

# RIVERFRONT DISTRICT: STREET CHARACTER



STREET TREES

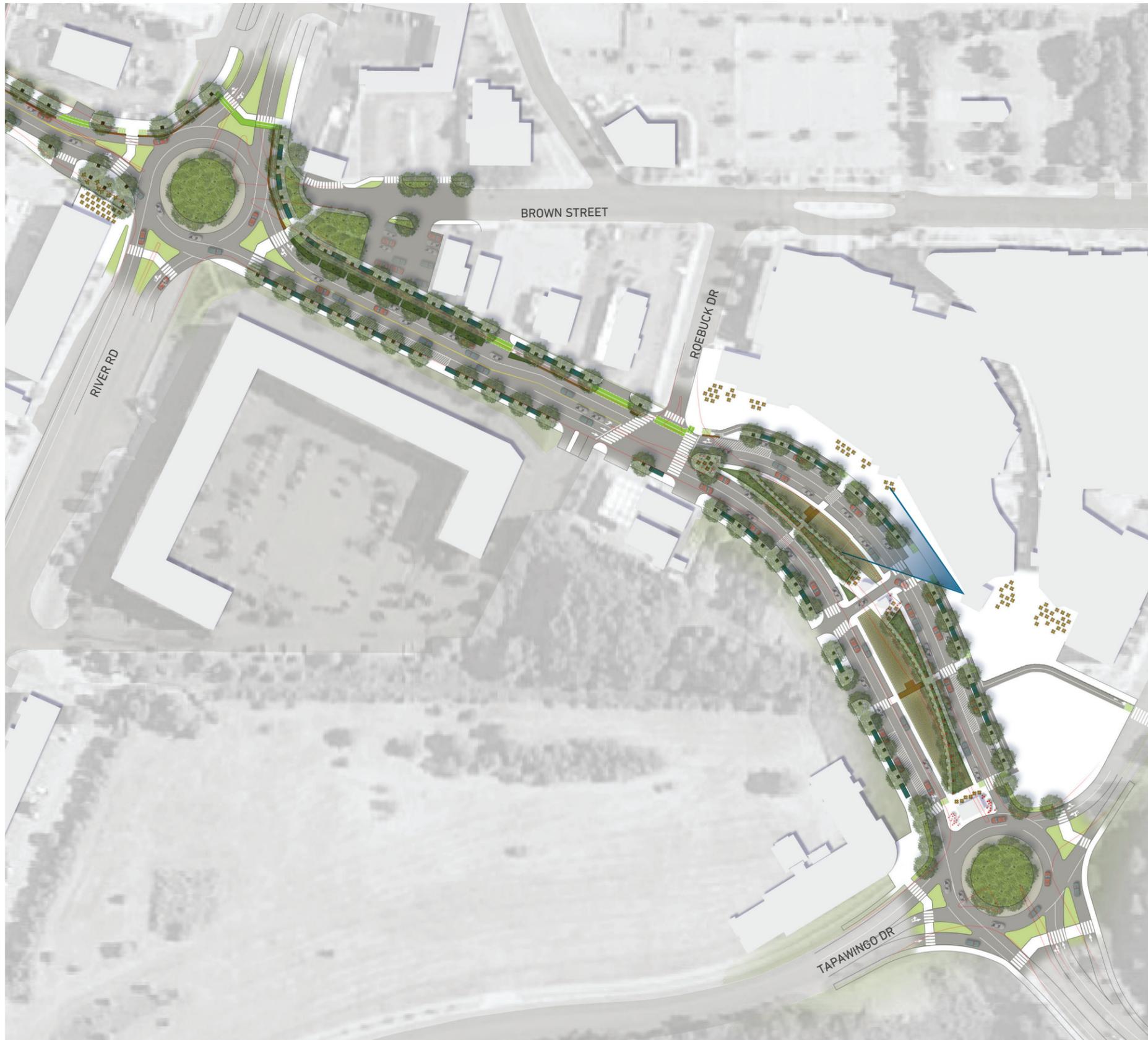
2 TRAVEL LANES WITH PARALLEL  
PARKING ON BOTH SIDES

BOULEVARD PARK

RAINGARDENS

SEPARATED  
BICYCLE PATH

WIDER WALKS WITH OUTDOOR  
DINING/DISPLAY AREAS

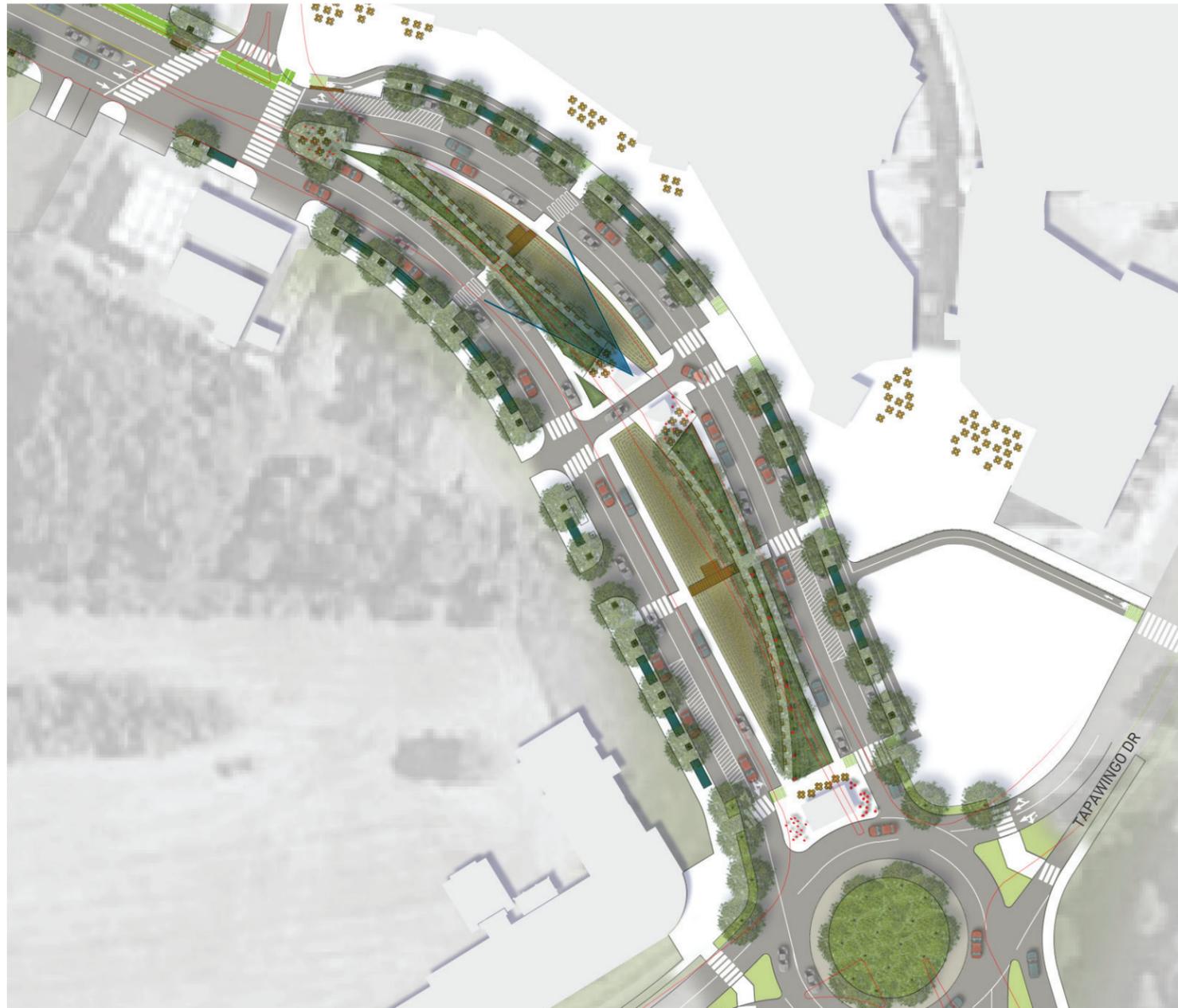


Dramatic changes are recommended to the Riverfront District to address a number of existing challenges. Among the challenges is the troublesome parking lot between Wabash Landing and State Street. Cars circling the parking lot are known to back up onto Roebuck Drive and State Street, thereby clogging traffic on both streets. A second, related challenge is that the large parking garage across from Tapawingo Park goes largely unused because of the availability of surface parking and the inconspicuously located garage entrance.

To address these challenges, the plan recommends changing Tapawingo Drive's signalized intersection to a roundabout and creating a new boulevard and park space in place of the surface parking lot in front of Wabash Landing. The proposed boulevard would split two eastbound and two westbound travel lanes around a new park space. On-street parallel parking is proposed on both sides of the eastbound and westbound travel lanes. The proposed configuration will place westbound vehicular traffic, thousands of cars on a daily basis, at the front doors of existing Wabash Landing shops and businesses. Additionally, wider sidewalks along these businesses will accommodate outdoor dining and display areas. The separated/dedicated bicycle path will run between the sidewalks and parallel parking, safely and comfortably separated from both uses. This strategy attempts to use State Street to activate and revitalize Wabash Landing, which has seen high vacancy rates. The Tapawingo Drive roundabout will efficiently move traffic, reduce overall road widths and crossing distances for pedestrians and bicyclists, and include a "bypass" lane to more directly funnel westbound vehicular traffic to the existing Tapawingo Drive parking garage. From the west and the east, signage should be placed in advance of the roundabout, alerting travelers to the location of the garage, and potentially of the number of available parking spaces.

The River Road intersection was cited by many project participants as a major deterrent in connecting the Riverfront District and the Chauncey Village District. At this intersection, pedestrian and bicycle crossings are intimidating and dangerous. To address this concern, a second roundabout is proposed here in-lieu of the existing signalized intersection. The proposed roundabout also removes the awkward intersection created by Brown Street at River Road and State Street.

Throughout the Riverfront District, the proposed separated/dedicated bicycle path, wider walks, tree plantings, and bioretention cells create a new, vastly different character in comparison to what exists.



The proposed boulevard provides a distinct placemaking opportunity within the Riverfront District. The boulevard is envisioned as a passive open space, expressive of natural riverine attributes: geology, hydrology, ecology, and topography. The park is proposed to include a productive landscape – a space dedicated to managing stormwater runoff from the street and sidewalks – gathering areas, walkways, undulating landform, stone outcroppings, and a small pavilion/public restroom/self-service information kiosk at the east end of the boulevard. The boulevard is seen as an opportunity to promote connectivity to the river, wellness through new trail and path systems, social interaction within new gathering spaces, and economic development at the edges of the space. Meaningful, commissioned public art is envisioned as integral to the spirit, character, and identity of this space. Guidelines for the art should be developed by the West Lafayette Public Arts Team, and seek to reflect and interpret the natural characteristics of the riverine environment.

The roundabouts offer a secondary opportunity to establish district identity. As a rule of thumb, roundabout centers are to be simply treated, as to not distract motorists. The Plan recommends simple plantings at the ground plane (low shrubs or groundcover), and canopy trees planted in a grid-like pattern. Long, linear, low stone, brick, or precast concrete walls may be considered as opportunities for signage announcing districts.



**UNDULATING  
LAWN**

# RIVERFRONT DISTRICT: IDENTITY + PLACEMAKING



STREET TREES

ON-STREET PARKING

SEATING AREAS

STORMWATER GARDEN

WALKING PATHS

# CHAUNCEY VILLAGE DISTRICT: STREET CHARACTER



STREET TREES

2 TRAVEL LANES

SEPARATED BICYCLE PATH

PERMANENT RAILING

WIDER WALKS WITH  
OUTDOOR DINING/  
DISPLAY AREAS



Re-introducing two-way vehicular traffic through the Chauncey Village District is an important step in establishing year-round resiliency to the business district. Simpler circulation patterns will address a challenge often identified during the planning process: that many people from West Lafayette and the Greater Lafayette community avoid the Village because of its confusing street network.

Additionally, proposed enhancements, such as wider sidewalks to accommodate outdoor dining and merchant displays, the separated/dedicated bicycle path, and street trees, help to create a comfortable, integrated environment of cars, busses, bicycles, and pedestrians. Proposed changes to the Northwestern Avenue, South Street, and State Street intersections will create a new, outdoor performance and gathering space in the heart of the Village. These changes, along with abundant new seating opportunities, embrace the notion of vibrancy by providing places for people to meet, mingle, gather, and spend time in this urban environment.

To replace the labor-intensive system of installing and removing temporary barriers every week, a permanent fence is proposed from Andrew Place/Peirce Street to Chauncey Avenue. The 3'-6" tall fence will open at crosswalk locations, to funnel pedestrians to safe crossings. Damage to the fence is anticipated, so it is proposed that each fence section be manufactured and installed separate from the next fence section. With this strategy, a fence can be damaged and independently removed and replaced. Similarly, anchorage should be designed to allow posts to "break-away" from bases if struck by a vehicle, thus limiting damage to fence panels, and not pavements or curbing.

See HISTORIC PRESERVATION, for further information regarding significant structures in this District.



# CHAUNCEY VILLAGE DISTRICT: IDENTITY + PLACEMAKING



COLORFUL  
PERFORMANCE  
LIGHTING

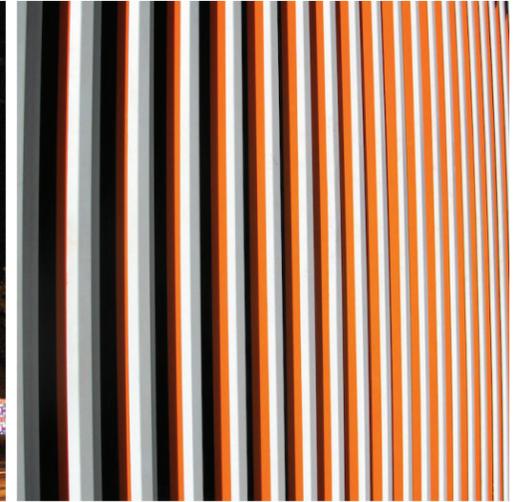
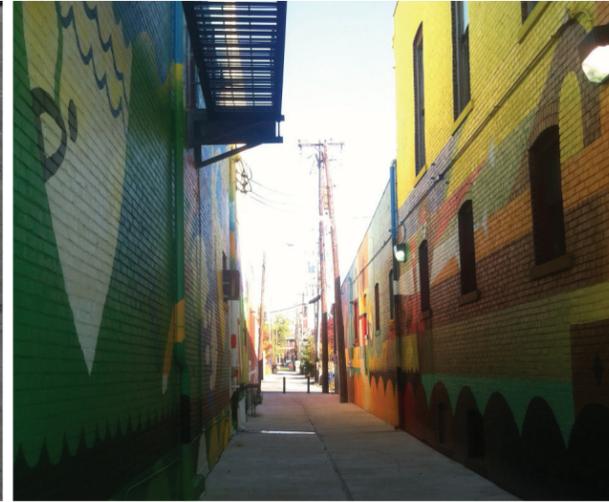
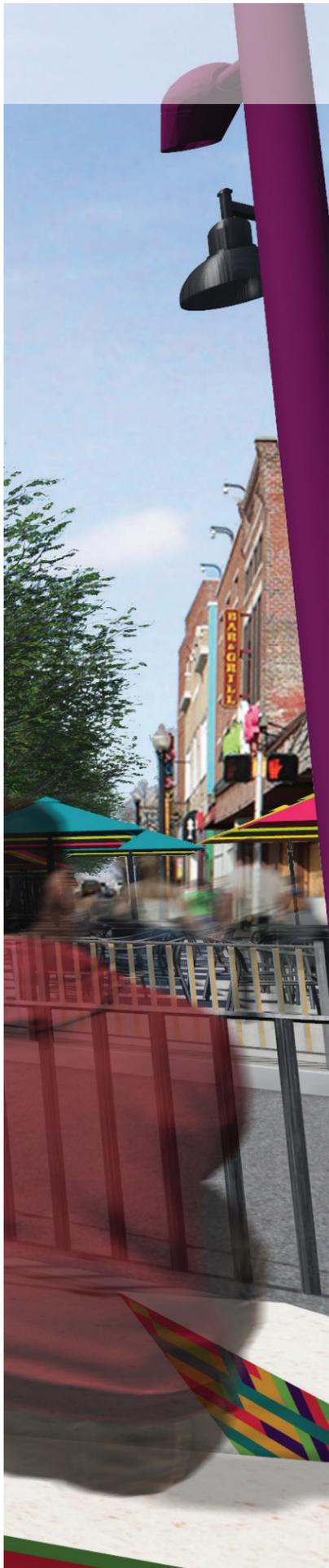
OVERHEAD  
ART ELEMENTS

CULTURAL  
DIVERSITY

OUTDOOR  
DINING AREAS

FUNKY BENCHES

NEW PLAZA/SMALL PERFORMANCE SPACE



Descriptors of energy and activity, cultural diversity, and urban vibrancy define this District. The Village is perhaps the most unique place in all of West Lafayette, a favorite spot for students, visitors, and increasingly, residents. Additionally, the possible move of City Hall to Morton Community Center will introduce a new population, and potentially new daytime spending, to the Village. Through thoughtful integration of placemaking elements, this Plan seeks to build upon the wonderful attributes associated with the Village and provide unique experiences that attract customers from across the City and area throughout all times of the year.

The proposed new gathering space at the Northwestern Avenue, South Street, and State Street intersection is one such element. It is hoped that this space will be frequently programmed with live music, dance, and other visual performances that attract a diverse range of people and ages.

Color is used throughout the District to embody energy and activity, cultural diversity, and urban vibrancy. Color is proposed on new street light banners, new performance lighting, new umbrellas, along the base of funky benches, in overhead light strands, and even on the permanent fencing.

On fencing, it is thought that color can be introduced in the form of reflective elements. Vertical fence pickets, placed on an angle to oncoming traffic and adorned with reflective elements, add color during the day, but come alive when illuminated by car headlights during evening hours. This evening expression of color adds interest, but also helps to identify the fence location to oncoming motorists.

On street light banners, faces celebrating the cultural diversity of West Lafayette are colorfully displayed. This contextual expression integrates art with principles of CPTED (Crime Prevention through Environmental Design) – which state that undesirable, mischievous, or criminal behavior is less likely if one feels that he or she is being observed.



South Street today is home to several festivals, during which the street is closed. To support these festivals, and in an attempt to create a year-round festive atmosphere, the Plan proposes overhead elements of color and light. These elements can be colorful cables, strung from light poles across spaces and streets. The strands may be randomly attached, creating interesting overhead and shadow patterns. Some strands may include small, colorful lights, extending the element's impact to evening hours. To better accommodate events, new electrical panels should be added on South Street between Northwestern Avenue and Chauncey Avenue, as well as on Chauncey Avenue from South Street to Columbia Street.

This plan recommends maintaining the vehicular traffic along the segment of South Street between State Street and Chauncey Avenue. However, this plan also supports the current practice of closing South Street, to vehicular traffic, for local events and festivals (from State Street to Chauncey Avenue). The City should continue conversations with property owners along South Street and adjoining streets to further explore making the street more pedestrian-oriented, and less automobile-oriented, as well as accommodating to large festivals. Additionally, a strong physical and symbolic relationship between the West Lafayette Public Library and Morton Community Center should be explored.

# CHAUNCEY VILLAGE DISTRICT: IDENTITY + PLACEMAKING (CONT'D)

OVERHEAD ART  
ELEMENTS

COLORFUL  
PERFORMANCE  
LIGHTING

OUTDOOR DINING  
AREAS

FUNKY BENCHES



# UNIVERSITY DISTRICT: STREET CHARACTER



STREET TREES

2 TRAVEL LANES AND  
TURN LANE

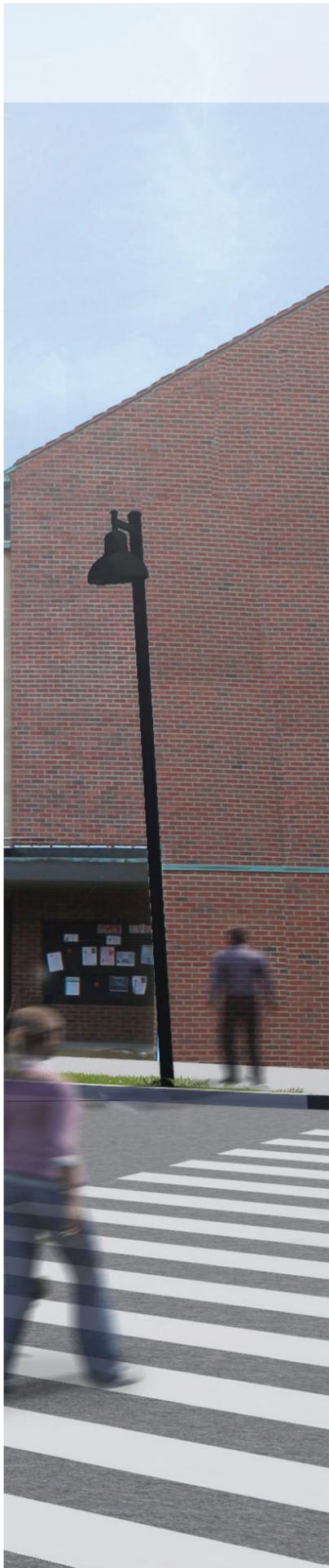
PLANTED BARRIER

EXISTING CURB  
LOCATIONS MAINTAINED

SEPARATED BICYCLE PATH

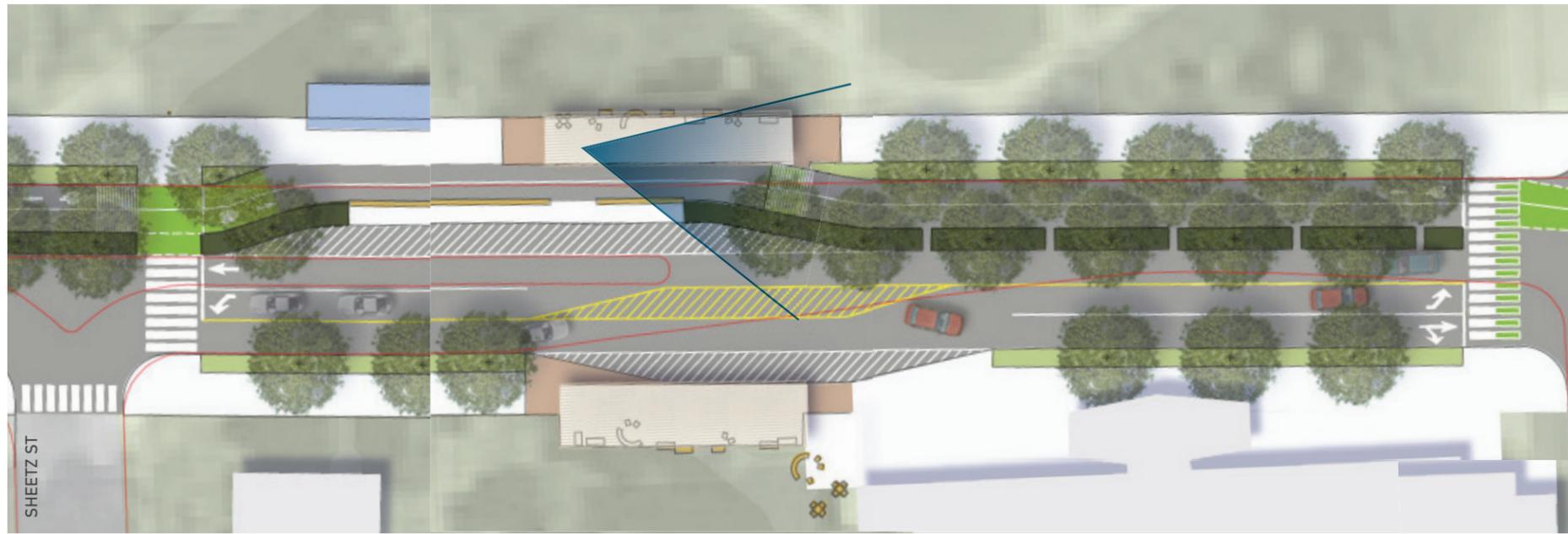
CLEARLY MARKED AND DEFINED  
CROSSWALKS

APPROPRIATELY  
SIZED WALKS



Notable for distinct architecture and wonderful open spaces, the character of the University District is well-known. Within the right-of-way, however, the stately appearance is replaced by the remnants of a state highway. Here, the character is defined by wide expanses of pavement, varying presence of street trees, and scant bicycle infrastructure. The impression is that one should do whatever is necessary to quickly cross State Street – including using the paved medians as a touchdown point. Very likely, little thought is ever given to actually spending time along State Street.

The proposed condition through campus envisions tree-lined, broad, animated sidewalks; a generous, two-way cycle track, protected and separated from vehicular traffic and pedestrian traffic; safe and well-marked pedestrian crossings at intersections; and a calmed street, functional and appropriately-scaled for local traffic. This vision of an integrated State Street not only balances travel modes, but also begins to address how the street can become, as campus master planners proposed, the “collaborative center” and “unifying feature at the heart of student and academic life rather than a campus divider”.



Through a reimagined State Street, notions of State Street as a “collaborative center” and “unifying feature” are possible. Often, establishing a true hub of activity can be challenging because those places need people to create social energy and animate the space. However, within campus is an abundant mix of people, constantly walking along or crossing State Street. This source of energy and animation fuels collaboration.

The Plan recommends the creation of campus collaborative spaces as outdoor opportunities of learning, sharing, and cooperation for campus students, faculty, staff, and visitors. These spaces, distributed along State Street, are proposed to coincide with established centers of activity which already enjoy a steady stream of people: busy bus stops, high pedestrian-volume intersections, and in front of high-visibility and high-visitation buildings.

Campus collaborative spaces are proposed to be long and linear in nature, some approaching 100’ in length, aligning with the back of the sidewalk. Modular seating elements, perhaps precast concrete, are proposed as a basic building block that can be arranged in numerous configurations, engaging the sidewalk, landscape, and other seating elements. Their positioning is intended to comfortably accommodate small or large groups. Simple, overhead elements, lightweight and cost-effective, are proposed as a “ceiling” to the space which filters shade and lends scale.

# UNIVERSITY DISTRICT: IDENTITY + PLACEMAKING

OVERHEAD SHADE ELEMENTS

COLLABORATIVE GATHERING SPACE

CLEARLY DEFINED BIKE AND PEDESTRIAN AREAS AT BUS STOPS



# GATEWAY DISTRICT: STREET CHARACTER



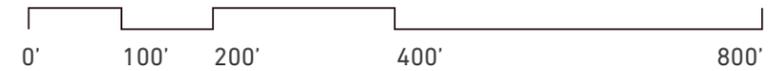
STREET TREES

2 TRAVEL LANES  
AND TURN LANE

PLANTED BARRIER

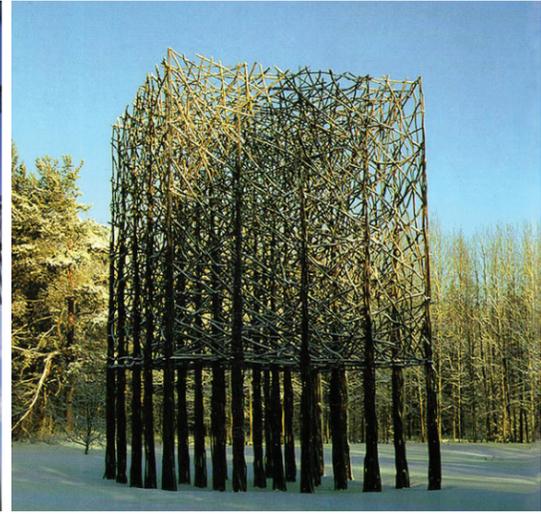
SEPARATED BICYCLE PATH

NEW WALKS



West of Airport Road, a new district, creatively dubbed the “Gateway District” for now, is emerging. Today, this area is characterized by rural conditions: narrow, uncurbed road, open drainage ditches, overhead utilities, and missing sidewalks. In support of the future development that will undoubtedly begin to occur, the Plan recommends widening the road and extending new treatments of curbing, street lighting, sidewalks, separated/dedicated bicycle path, and street trees. Additionally, the Plan is sensitive to the open drainage ditch on the north side of the street, and proposes all future widening and construction to occur south of this natural element. Future, more detailed planning efforts should investigate integrating the ditch into the street design as a functional stormwater feature.

In its initial stages, reconstruction of this segment of State Street may include two vehicular travel lanes and a wide, planted median. Over time, as traffic volumes dictate, additional travel and turn lanes can be taken from the median, while still preserving long-term a narrow, green boulevard. Over time, the rural character of this area will change significantly to resemble a more urban-oriented entrance into the City of West Lafayette and Purdue University.



Today, the Gateway District can be characterized by themes that reflect current land use patterns that define this district: cultivation (Horticulture Park and Purdue Student Farms), aviation (Purdue Airport), transportation (US 231 and the Perimeter Parkway), and recreation (Intramural Fields). These themes, though vastly different from one another, are all linear or geometric in nature. They provide a starting point for thinking about future public art, which could occupy the planted barrier between separated/dedicated bicycle path and vehicular travel lanes, and/or the planted median.

The Gateway district provides a connection between US 231 and campus in the same way Jischke Drive does to the southeast. Consideration should be given to coordinating the treatment of both campus approaches.

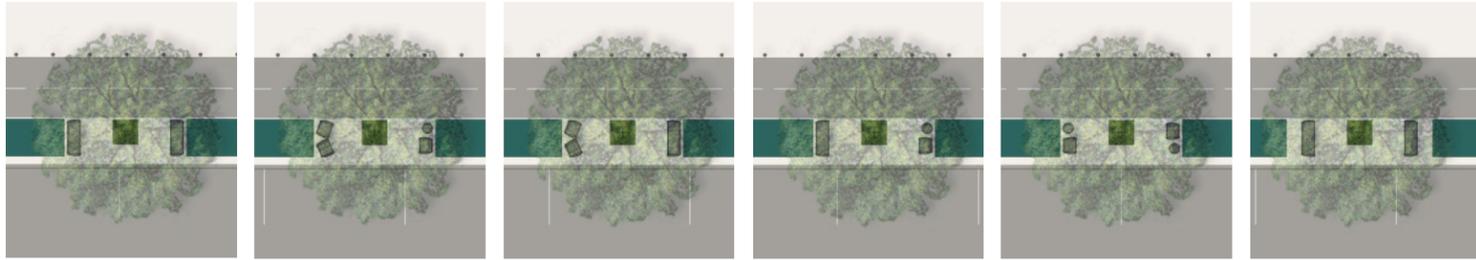


# GATEWAY DISTRICT: IDENTITY + PLACEMAKING

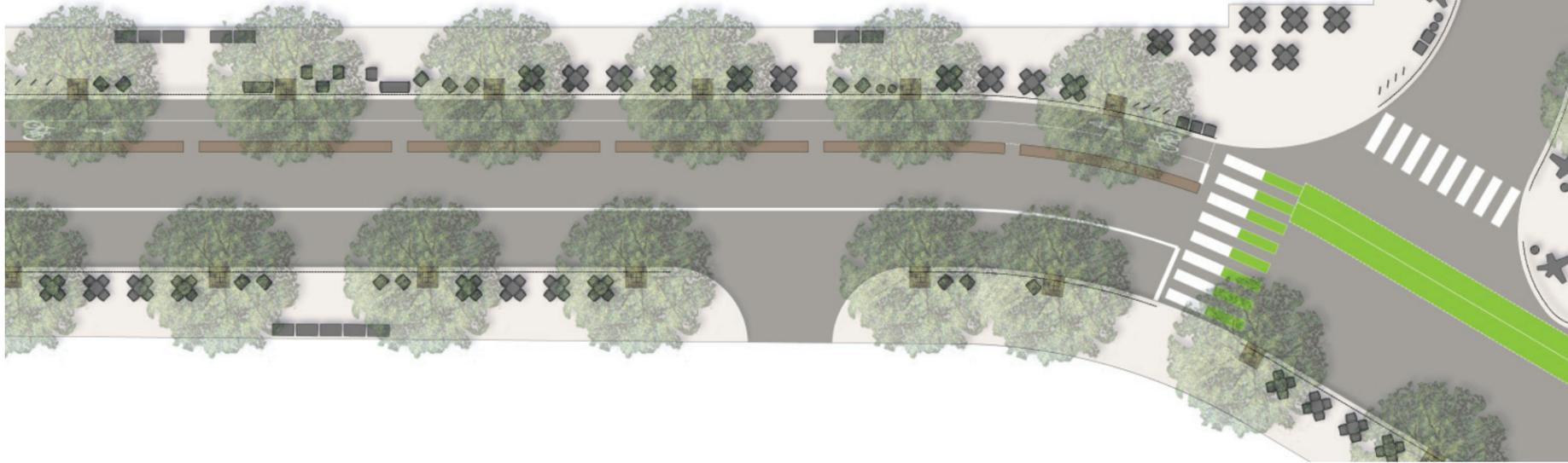


LINEAR ART ELEMENT

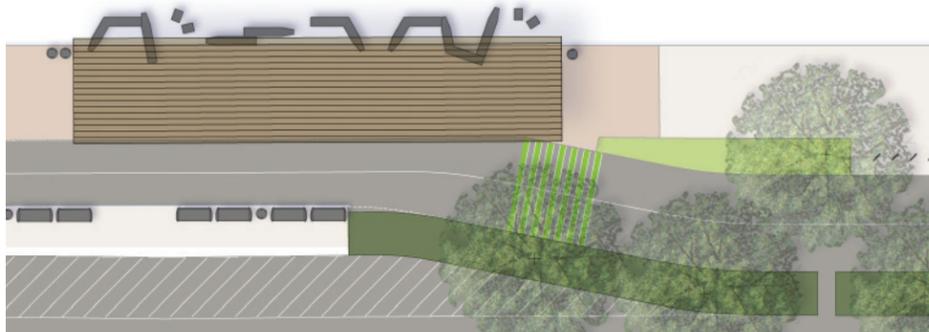
## TYPICAL ARRANGEMENTS AT BIOCELL LOCATIONS



## TYPICAL ARRANGEMENTS WITH FENCING AT EDGE OF PAVEMENT



## TYPICAL COLLABORATION AT INTERSECTION



## TYPICAL COLLABORATION WITH BUS STOP

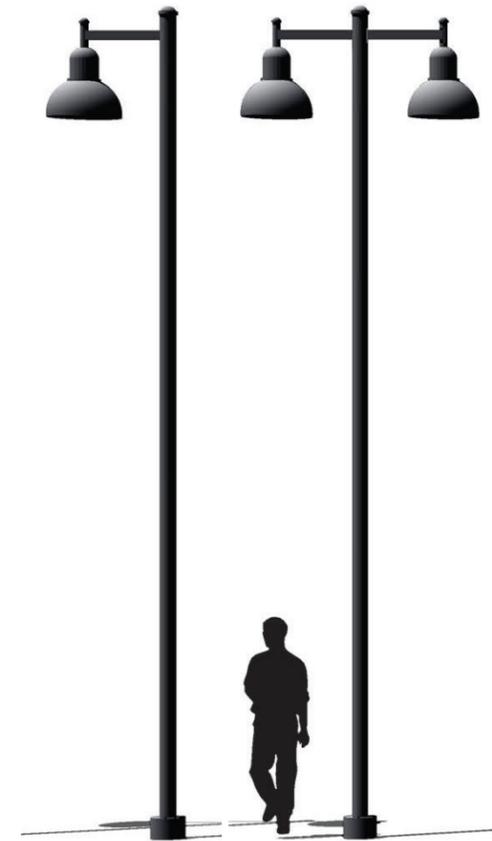
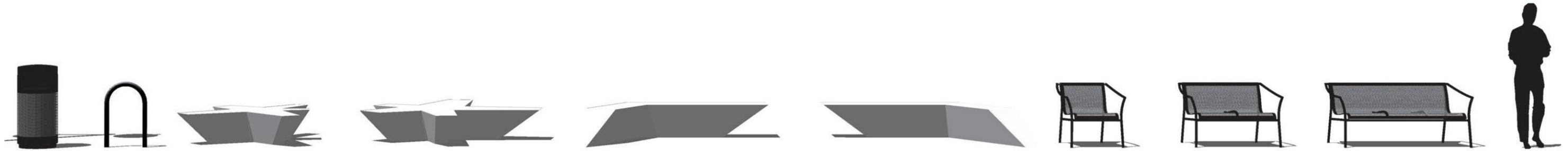


## Street Elements

Proposed street elements are intended to complement existing elements used by Purdue University and the City of West Lafayette. Proposed elements are intended to withstand intense urban use and are selected to reflect a timeless sensibility – not too traditional nor too modern. Proposed street element arrangements vary, but are intended to provide a range of choices for small and large groups.

- » Robust, black metal benches are available in a wide variety of sizes, which include center bars to deter sleeping.
- » Heavy, black metal tables are available in two sizes; corresponding chairs are available with and without armrests. Tables can accommodate an umbrella through center hole.
- » Hinged, top-opening, black metal trash receptacles are compact in size and match the Purdue standard used throughout campus.
- » Solar-powered trash compactors, recommended in high-traffic areas within the Village, have a larger footprint, but can accommodate more refuse between collection times.
- » LED-lamped, black metal street lights, are proposed in single-headed configuration (south side of street throughout project and north side of street in the Village) and double-headed configuration (north side of street in planted separated/dedicated bicycle path barrier).
- » Black metal bike loops that match the City and University standards
- » Unique furniture is recommended in the Chauncey Village and University District
- » Funky, star-shaped precast concrete seating elements in the Village, with custom color motif at bench base
- » Modular, precast concrete seating elements in campus collaboration spaces

Sidewalk paving is proposed to be simple: concrete with saw-cut score joints. At Collaboration Spaces a refined, pavement such as clay brick should be considered.



EDDIE GEORGE'S GRILLE

*Callie 77*



# IMPLEMENTATION + DEVELOPMENT





## MEET THE MILLENNIALS (GENERATION Y) (born 1980-2000)

Serving, housing and employing the Millennials will dominate the economy for the next 20 years

Millennials want diversity, walkability and proximity to jobs and 1/3 will pay more for it

77% of Millennials cite a preference to urban living

Neighborhoods will be denser, homes will be smaller; emphasize design over size

Design: tech-savvy, third-places, low-maintenance, green, pet-friendly, flexible spaces



## MEET THE BABY BOOMERS (born 1946-1964)

Serving, housing and employing Boomers has dominated the economy for the last 40 years

About 60% of all seniors will change housing type between ages 65 and 85

A majority want “safe urbanism,” or walkable communities with urban amenities, culture, and education

Willing and able to pay for what they want where they want it (even though many will delay retirement)

Sources of generation profiles: The National Association of Realtors 2013 Consumer Preference Survey, Arthur C. Nelson from University of Utah, and Robert Charles Lesser & Co. (RCLCO)

## ANNUAL DEMAND SUMMARY

Projected 5-Year Demand

DEMAND	High	Low
ATTACHED HOUSING	75 UNITS	30 UNITS
DETACHED HOUSING	135 UNITS	50 UNITS
RETAIL (CURRENT UNMET)	55,000 SQ. FT.	25-000 SQ. FT.
GROWTH (PER YEAR)	30,000 SQ. FT.	15-000 SQ. FT.
OFFICE (ANNUAL)	34,000 SQ. FT.	13,000 SQ. FT.

## MARKET ANALYSIS

Along the State Street corridor, a market analysis was prepared. This analysis was based upon five-year population and employment forecasts, as well as household income and retail spending trends. The outcome of this analysis determined five-year potential absorption (what must be met with new supply) of residential, office, and retail demand. This forecasted demand was then applied against the current inventory of residential, retail and office, to identify gaps and unique product segment opportunities along State Street. (Refer to Annual Demand Summary at left)

Tippecanoe County and West Lafayette are undergoing significant changes, most of which are in-line with national trends. As a smaller, yet, dynamic metropolitan area, this market is experiencing healthy population growth and white- and blue-collar job growth. Key trends that are affecting West Lafayette’s future include:

- » Tippecanoe County population is projected to grow from approximately 176,000 in 2012, to 250,000 in 2040, for a 42% gain. By comparison, the State of Indiana is projected to experience a more modest 12% gain over the same period.
- » Household growth is projected to be 93,000 by 2040, an increase of 39% from 2012. Most growth in the past decade has been in smaller childless households, driven largely by Millennials (Gen Y) and Baby Boomers. This is likely to continue, mirroring state and national trends.
- » Millennials makes up 63% of West Lafayette’s population, compared to 26% in Indiana, reflecting the relative impact of Purdue University.

Demographic trends will drive demand for new housing types which are undersupplied in the market. Smaller attached residences in walkable environments where more daily needs can be met by transportation options other than the car, can be developed to meet some of this new demand. According to a 2013 survey, 45% of Central Indiana residents declared a preference to live in suburban mixed-use, urban residential, or downtown city neighborhoods, reflecting a growing desire for places that are mixed-use, walkable and higher density.

Universities nationally are placing a higher priority on vibrant campus edges and successful retail districts, finding them to be “mission critical” to recruitment and retention of faculty, staff and students. Most urban retail districts are driven by spending from daytime workers and resident households. Retail districts in college towns are also able to capture spending from students, a larger share of visitors, and regional traffic due to athletic and cultural events.

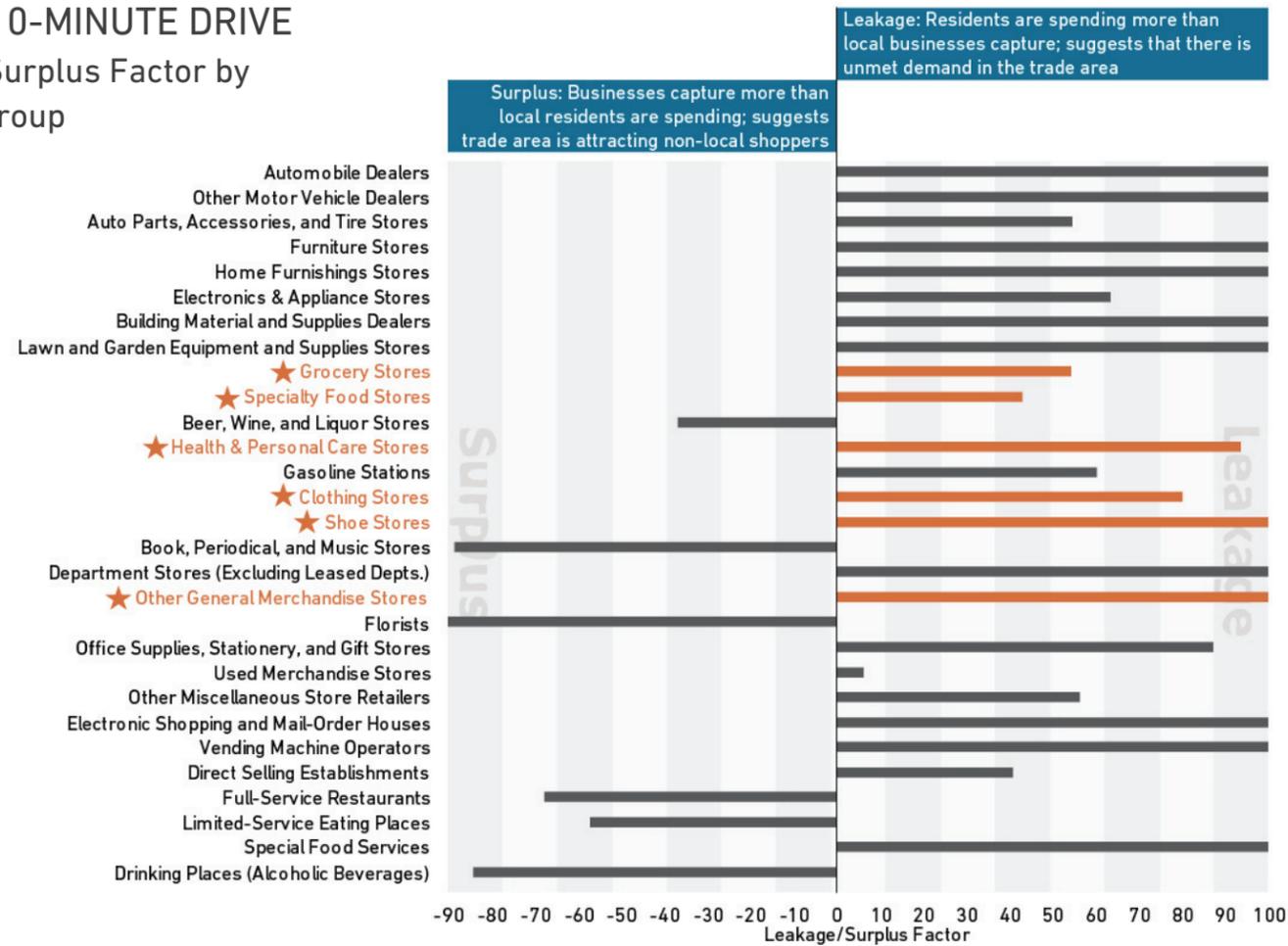
In addition to housing, the retail experience should shift to meet the changing preferences of West Lafayette consumers and the changing character of a “downtown” West Lafayette. Conventional suburban shopping centers are oversupplied in West Lafayette presenting a market opportunity for more urban character retail that helps bolster a “sense of place” along State Street. To counter the significant growth in on-line sales as a share of total retail sales, successful bricks and mortar retail, particularly in college towns, must emphasize both place and experience. A significant amount of dining, retail, and lodging spending “leaks out” from the West Lafayette market. An opportunity exists along State Street to capture a larger share of those expenditures. That opportunity can be bolstered by a higher-quality downtown character and a strategic commercial tenanting mix. Further, more housing options and downtown office space would support a vibrant commercial tenanting mix.

Projected white-collar job growth can support new office space along State Street. At the east end of State Street, new office space should be more open, flexible, and collaborative than conventional office space. This type of urban character office space matches emerging demands, is under-supplied in West Lafayette, and can assist in further establishing a “downtown West Lafayette” with a mix of uses throughout the day. On the west end of State Street, where a new gateway is taking shape near the new US 231 corridor, new office space should be positioned differently, perhaps more conventional in form. Through a combination of market forces and a reimagined State Street, more visits to corridor retail districts are expected. These additional visits could result in a 30% projected increase in retail demand through 2017, from the baseline amount projected in 2012.

On a macro-scale, changes to the economic health of Purdue University, the metropolitan area, the state, and the country can positively or negatively impact these projections. On a micro-scale, improvements to State Street will support a vibrant “downtown West Lafayette” comprised of new office, housing, and retail options.

## RETAIL: 10-MINUTE DRIVE

### Leakage/Surplus Factor by Industry Group



Leakage/Surplus measures the balance between retail sales (supply) and retail potential (demand). A positive value represents 'leakage' of retail opportunity outside the trade area. A negative value represents a surplus of retail sales, a market where customers are drawn in from outside the trade area.

Not all industry groups shown as leakage are appropriate along State Street. The envisioned urban form for State Street would not necessarily be appropriate and/or successful for retail segments such as auto parts, accessories, and tire stores. Additionally, while retail leakage in the 10-minute drive is indicated for certain industry groups, such as office supplies, some of those retail offerings are provided elsewhere in the community, outside of the region, or even online. Until additional residential development occurs along or in the vicinity of State Street, the number of residents (current and five-year projected) within a 10-minute drive of State Street do not trigger the need for new development to capture that leakage.

★ STATE STREET RETAIL OPPORTUNITY SEGMENTS

## RETAIL: ACTIVITY SPECTRUM AND POSSIBLE USES

For State Street, retail opportunities segments (see above), the spectrum below illustrates highly active uses with a high degree of traffic/turnover and less active uses with a lesser degree of traffic/turnover. More active uses are more appropriate in more active Districts.

	← HIGHLY ACTIVE		→ LESS ACTIVE	
ACTION	EAT	SHOP	EXERCISE	GATHER
USE	Restaurant, Cafe	Store, Credit Union, Gallery	Gym, Yoga, YMCA	Co-Working, Computer Lab, Lounge, Conference, University Office
OFFERS	Food, Drink, Internet	Goods, Services	Membership, Exercise Equipment, Training, Classes	Memberships, Rentable Space, Tables, Chairs, Internet
USERS	Residents, Students, Employees, Visitors	Residents, Students, Employees, Visitors	Residents, Students, Employees	Residents, Students, Faculty/Staff
EXAMPLE	Bar/Grill, Espresso Royale	CVS, Urban Outfitters, Contemporary Art Gallery	YMCA, Yoga Studio, LA Fitness, Rec Center	Co-working Space, Student Union, Lounge, Conference Space, Career Services



POSSIBLE DISTRIBUTION OF USES ALONG STATE STREET



GATEWAY

GATEWAY DISTRICT

- Medium-Density Attached Housing (graduate students, young professionals, young families, empty nesters)
- Community-Oriented Retail (more auto-oriented, larger-footprint form such as grocery, gym, etc.)
- Campus-Supportive Office
- Office (more conventional space)
- Live/Work (entrepreneurs, artists, small businesses)
- Hotel
- Civic Spaces (parks, recreation)

UNIVERSITY

UNIVERSITY WEST

- Research
- Campus-Supportive Office
- Active Ground Floor Uses
- University Residences (student housing)
- Mixed-Use Neighborhood-Oriented Retail near Airport Road

UNIVERSITY CORE

- Non-Residential Campus Uses
- Campus Supportive Office
- Active Ground Floor Uses

US 231

AIRPORT RD

MCCUTCHEON DR

MACARTHUR DR

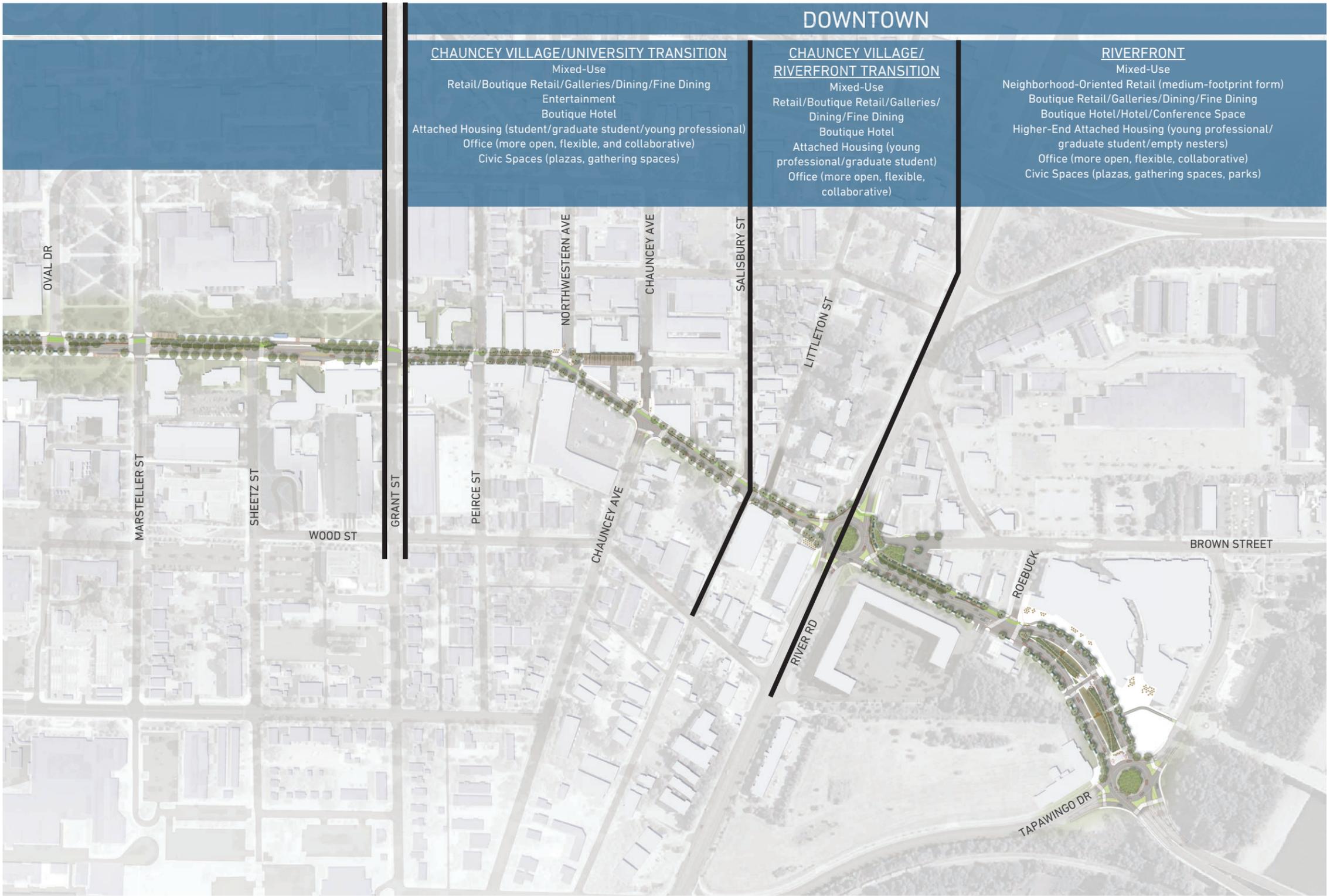
MARTIN JISCHE DR

RUSSELL ST

WALDRON ST

N UNIVERSITY ST

S UNIVERSITY ST



This diagram illustrates current market opportunities and their relationship to the districts along State Street. This proposed distribution of market opportunities attempts to demonstrate how development patterns within districts can be distinct, and complementary to development in other districts. This diagram does not attempt to illustrate market opportunities, such as detached single-family or affordable housing, that may be possible beyond the State Street corridor.

## X-FACTORS

The projected market opportunities for retail, housing, and office are based upon employment and population growth trends, demographic shifts, and consumer preferences. Projections are also based upon the current, unimproved condition of State Street. A number of "X-Factors", listed below, could positively alter these projections.

- Implementation of the State Street Master Plan
  - » High-quality public realm space with new opportunities for outdoor dining and gathering
  - » Integrated bicycle and pedestrian facilities
  - » Possible programming (festivals, weekly events, performances) of new public realm spaces
  
- Continued Downtown and Economic Development Momentum
  - » Possible City Hall relocation to Morton Community Center, introducing a new daytime population adjacent to the corridor
  - » Compact growth and mixed use with recently approved/constructed development projects
  
- Improved City/University Infrastructure
  - » Walks, and bicycle lanes/paths that connect neighborhoods to State Street
  - » Investment in adjacent open spaces - Tapawingo Park and Horticulture Park - as east and west "anchors" of State Street that could become regional attractions



All images are of developments along High Street in Columbus, Ohio. Development along this street must comply with the City's Urban Commercial Overlay code.

## ENCOURAGING DEVELOPMENT

In addition to understanding the corridor's function, character, and market opportunities, this Plan proposes strategies for encouraging development along State Street. The proposed public right-of-way improvements will lead to an amenity-rich, and pedestrian- and bicycle-friendly street. While addressing functional needs and creating a new sense of place, public investment in right-of-way improvements is also seen as a broader, economic development catalyst. As the market analysis suggests, current un-met and future demand for housing, retail, and office is relative to today's, unimproved condition of State Street. Public investment in State Street can quicken the pace of the development associated with that demand, and may create additional demand beyond that which has been projected. To further encourage development, the Plan recognizes the need to address certain physical and regulatory challenges.

### Addressing Physical Challenges

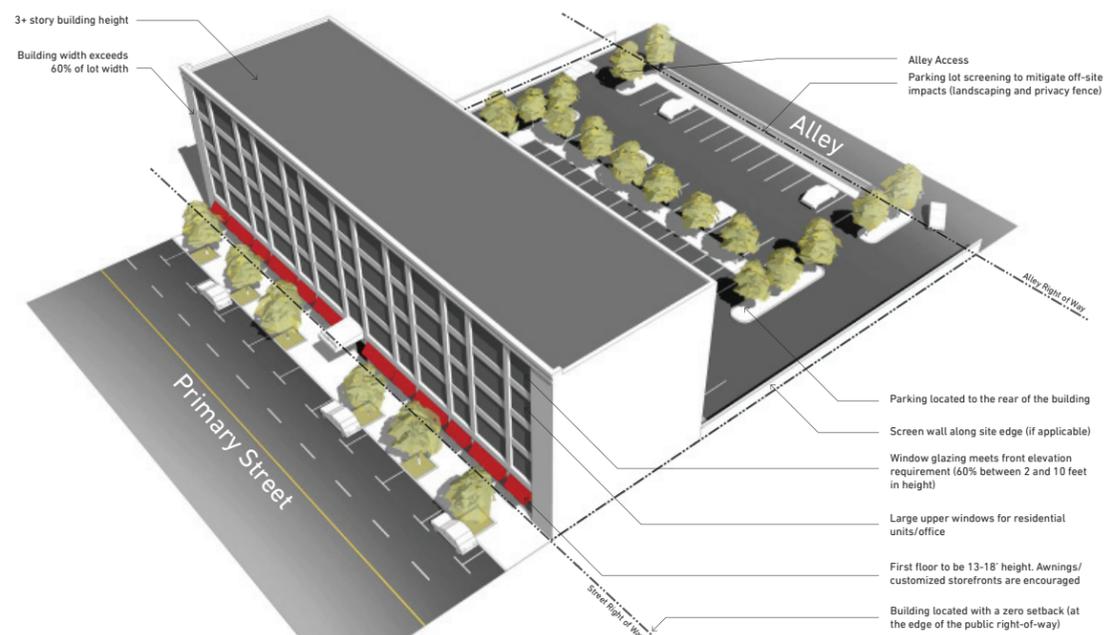
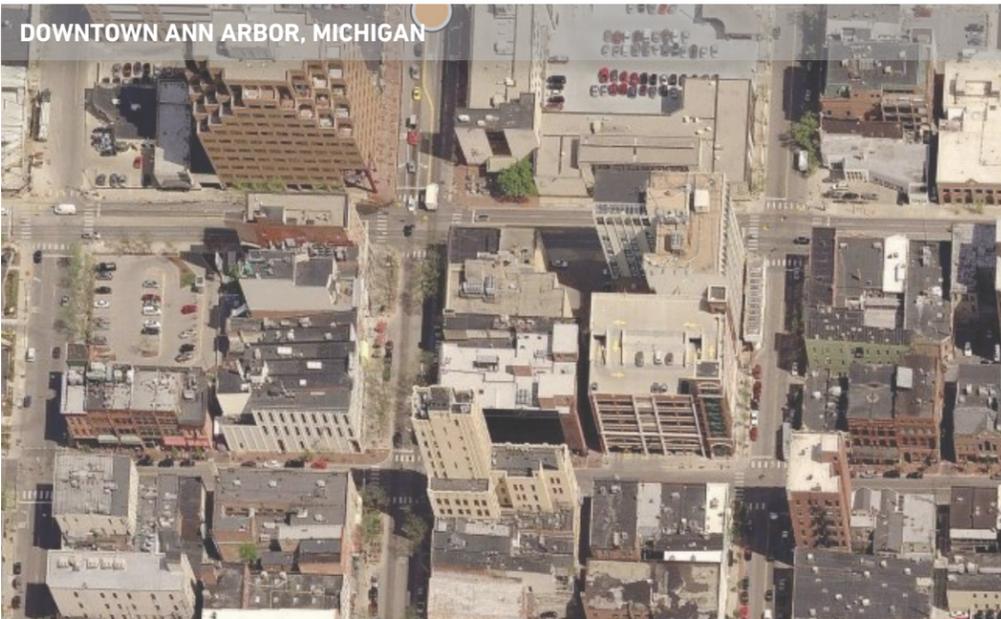
- » **Challenge:** Confusing network of one-way streets that deter visits to the Chauncey Village and Riverfront Districts.  
**How to Address:** Change adjoining streets from one-way to two-way traffic flow.
- » **Challenge:** Awkwardly-shaped and -sized parcels that constrain more significant development opportunities.  
**How to Address:** Encourage assemblage of land and promote taller buildings on smaller footprints.
- » **Challenge:** Topography that can, in places, make development more difficult.  
**How to Address:** Integrate structured parking into vertical grade changes, thus allowing lower and upper parking levels to be accessed by adjacent streets.

### Addressing Regulatory Challenges

- » **Challenge:** Suburban-oriented zoning ordinance is incongruent with the urban character of a reimagined State Street.  
**How to Address:** Develop a set of design guidelines and requirements that will ensure new development, redevelopment, and property improvements will appropriately coordinate with the design intent for the planned public improvements within the corridor. These design guidelines and requirements often take the form of a formalized "Overlay District".
- » **Challenge:** Due to the suburban-oriented zoning ordinance, development projects often proceed through the plan approval process as "Planned Developments" (PD). The PD process can be time-consuming and often requires significant up-front investment from developers in order to craft plans that will meet City and County expectations. This process leads to strong regulatory control, but it can also lead to inconsistent application of development requirements, which can cause marketplace uncertainty. The expense, time, and uncertainty associated with this process can be a development deterrent.  
**How to Address:** Create a formalized "Overlay District", so, private development can proceed with known expectations or "ground rules", thus lessening the expense, time, and uncertainty associated with the current process.

In addition to physical and regulatory development challenges, marketplace development challenges exist along State Street. High land costs can discourage development/redevelopment. Often, the cost of land will trigger the need for development/redevelopment to become more dense (taller building(s) on reduced footprint sites). Within the emerging "Downtown West Lafayette", taller buildings heights, calibrated to the character of sub-districts, should be considered. As a point of comparison and as illustrated on the following page, building heights in Lafayette, Bloomington, and Ann Arbor can reach eight to ten stories in the downtown core, with numerous buildings falling within the three to six story height range. For West Lafayette, ultimate building height recommendations within the "downtown" should be considered during the creation of a formalized "Overlay District".

Addressing the known physical, regulatory, and marketplace challenges will solidify State Street as a place for economic development in West Lafayette. With future development comes increased tax base and the ability to capture that growth in the established TIF (tax-increment financing) districts. This captured revenue represents the opportunity to continue investment in other necessary or catalytic public infrastructure projects.



An example of how development form can be informed through guidelines within an "Overlay District". Along State Street, a number of Districts and development conditions exist. Specific guidelines would need to be developed to respond to those varying situations.. This particular example gives guidance to:

- » Building height, relationship to lot and street
- » Parking location, access, and screening
- » Architectural features such as windows and ground floor treatments

## AN OVERLAY DISTRICT

This Plan recommends the creation of a formalized, adopted regulatory Overlay District. This regulatory document would establish requirements that appropriately respond to and complement the various conditions along State Street. Care should be taken to preserve development flexibility while also establishing clear expectations and predictable processes. The creation of an Overlay District with appropriate guidelines, can:

- » Set a vision for "downtown West Lafayette" that communicates the community's goals for development along the corridor
- » Establish simple development guidelines that (1) provide clarity to the development community and (2) protect the public investment in right-of-way improvements
- » Encourage development by simplifying the plan approvals process, and to a degree, lessening up-front development expense, time, and uncertainty

Creation of an 'Overlay District' should involve community input, therefore demonstrating support for its eventual adoption and codification as an amendment to the Tippecanoe County Unified Zoning Ordinance. The resulting guidelines should be simple, yet broad enough to clarify zoning and development expectations along State Street. Items that may be included:

- » Building scale/proportion & maximum building height
- » Setbacks & build-to limits
- » Architectural elements (including building fenestration/window transparency, entrance features, roof type, materials, etc.)
- » Buildable areas and public realm spaces
- » Vehicular and bicycle parking
- » Pedestrian access considerations
- » Landscaping
- » Corner lot conditions
- » Service and utility elements
- » Lighting and signage
- » Allowable uses and mixed use conditions
- » Development review procedures

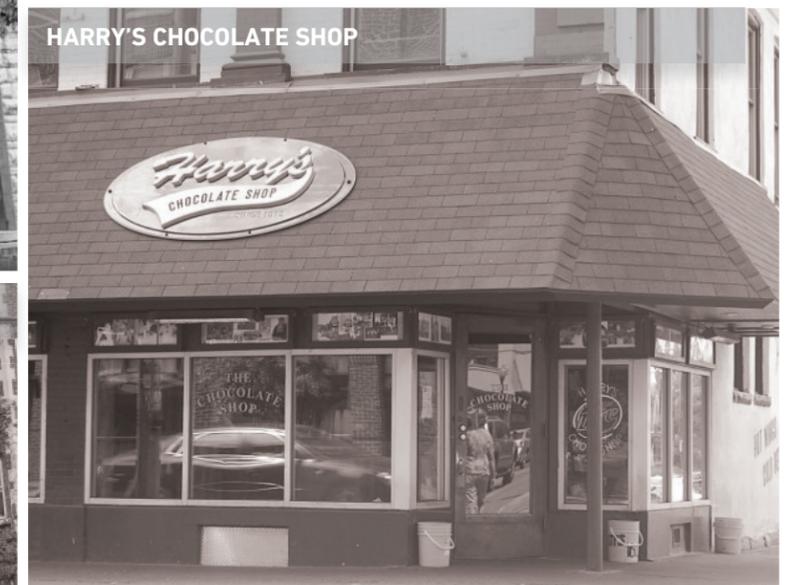
MILLER BUILDING



VON'S SHOPS



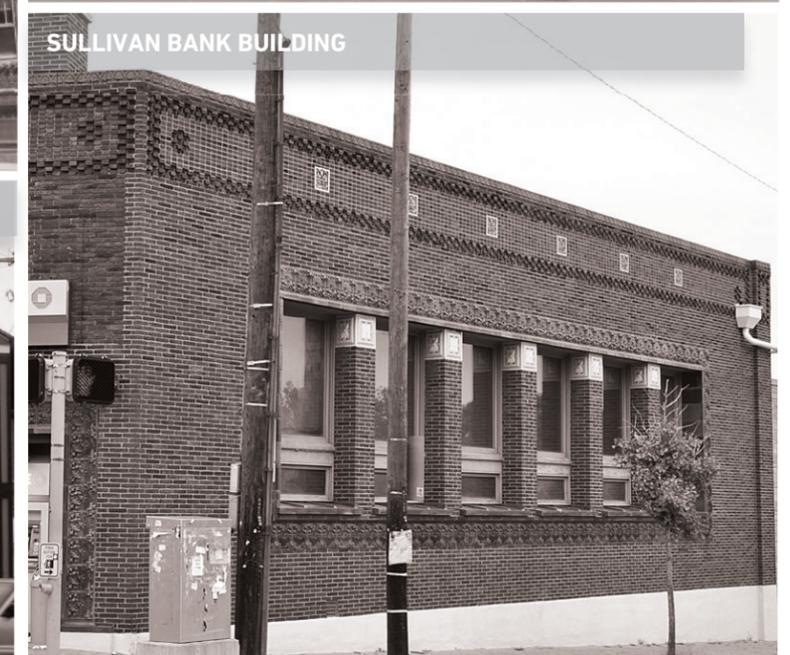
HARRY'S CHOCOLATE SHOP



VARSITY APARTMENTS



SULLIVAN BANK BUILDING



TRIPLE XXX FAMILY RESTAURANT



## HISTORIC PRESERVATION

The handful of historic structures present along State Street contribute significantly to the sense of place in the Chauncey Village District. This district is the original settlement that became West Lafayette. The district stretches from River Road to Grant Street at the edge of the Purdue campus and includes a number of historic buildings. Notable historic structures along State Street include the Sullivan Bank Building, built in 1914 at the corner of State Street and South Street, and the Varsity Apartment Building, built in 1928 at the corner of State Street and Andrew Place. Both buildings are on the National Register of Historic Places (NRHP). Other nearby historic buildings include the Morton Community Center and Eclectic Hair Salon. Though not on the National Register, the Triple XXX Family Restaurant, located on State Street at the juncture of Littleton and Salisbury Streets, has been in operation since 1929 and is part of West Lafayette's cultural history. Other contributing historic structures along the corridor include the Miller building at the corner of Northwestern Avenue and State Street, Southworth building (currently Brother's Bar & Grill), Jaques building (currently Amused Clothing, and Underground Printing), and Von's Shops building (includes Harry's Chocolate Shop).

Some existing structures built in the latter part of the 20th Century do not significantly contribute to historic or aesthetic character of Chauncey Village and may be incompatible with the goals of creating a vibrant, pedestrian-friendly State Street; these are potential candidates for redevelopment over time. However, the City should identify structures that should be preserved, whether or not they are on the National or State Historic Registers, and should develop programs and standards to encourage preservation and reinvestment in historic structures. Potential design standards and regulations that will apply to new development and redevelopment along State Street should also address the goals of preserving historic and architecturally significant structures and ensuring that improvements and modifications to these structures will maintain their historic character. The City should also encourage property owners to take advantage of state and federal historic tax credits for eligible structures and grant programs such as the Historic Preservation Fund managed by the Indiana Department of Natural Resources. The City could also consider the use of municipal tax credits or grant programs to further incentivize preservation and reinvestment.

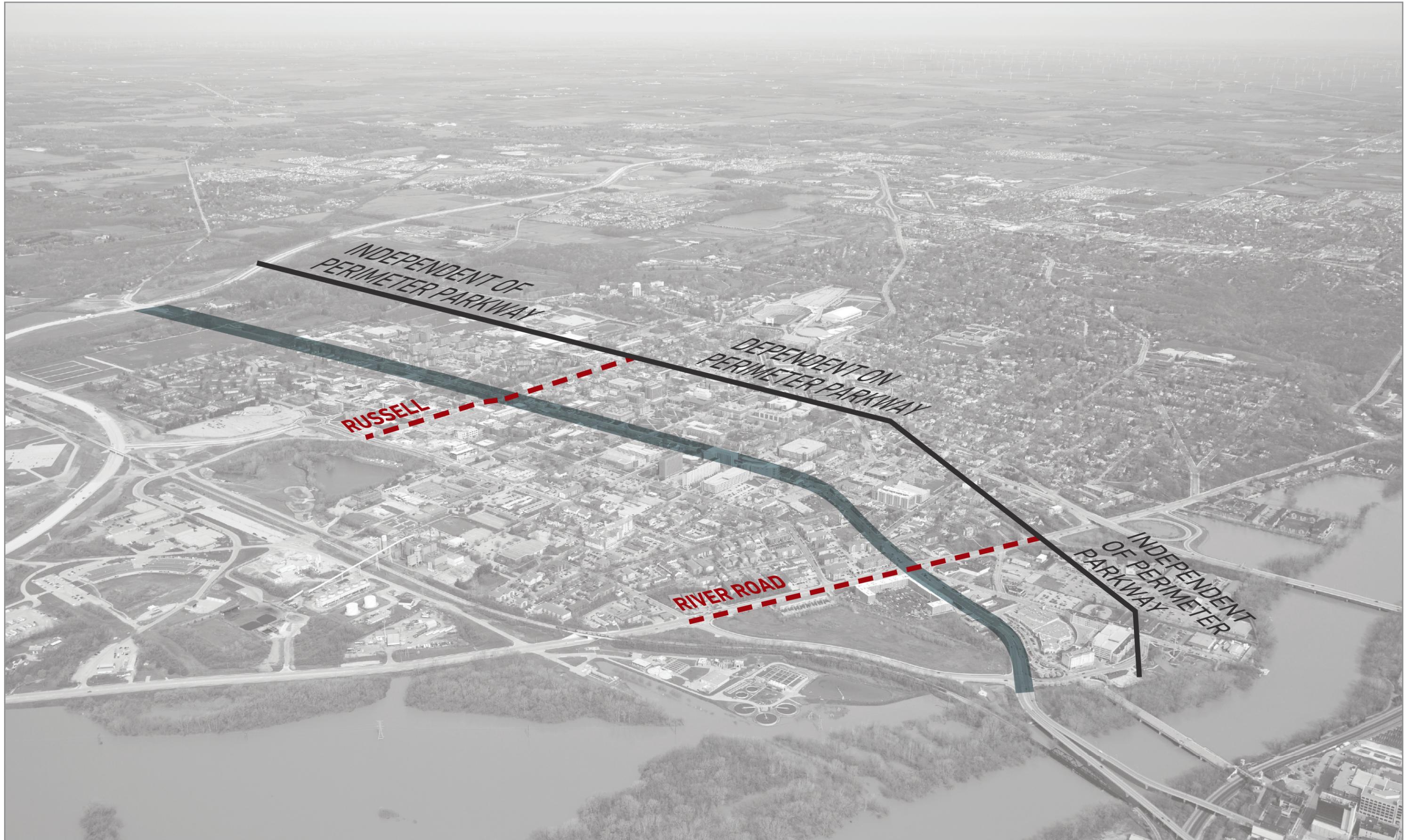
## ECONOMIC IMPROVEMENT DISTRICT

Economic Improvement Districts (EID) - also known as Business Improvement Districts (BID) and Municipal Service Districts (MSD) - are another tool that could be used to maintain, program and market the State Street corridor. EIDs are an area of land within which local businesses and property owners elect to pay an additional assessment or fee in order to fund improvements and services within the district's boundaries. Created by property owners who want to self-fund and control maintenance, management and improvements, EIDs represent a mechanism that traditional downtowns can use to compete with newer shopping centers and districts that often fund supplemental services through mandatory tenant fees. Forming an EID requires a petition signed by both a majority of the real property owners and those representing more than 50% of the assessed value within the proposed district.

The funds gathered by an EID are controlled by a board made up of property owners and can be self-directed to engage in a number of supportive activities that ensure the longevity and proper management of the improvements made to the State Street corridor. The amount of the property assessment can be right-sized to the desired effort. EIDs are staffed by a full-time or part-time director and typically perform the following services and activities:

- Street cleaning
- Maintenance and snow removal
- Security
- Additional capital improvements
- Marketing
- Event coordination

Forming an EID could unify property and business owners around a common purpose and build on the existing momentum along State Street. As the State Street project moves toward implementation, property owners should be canvassed to educate and evaluate interest in forming an EID for State Street.



## PHASING AND FUNDING

Major capital improvements such as the reconfiguration of State Street can be funded through a variety of mechanisms including state and federal funding programs such as the INDOT Transportation Enhancement program (TE) and FHWA programs such as the Highway Safety Improvement Program (HSIP), Transportation Alternatives Program (TAP), and Surface Transportation Program (STP). Funding through programs such as these will require adherence to specific roadway design criteria, which could alter design recommendations outlined in this Plan. If federal and state funding sources are sought, potential design implications should be discussed with federal and/or state officials. These discussions should center on the context of State Street in an urbanized area and the multi-modal challenges identified in this Plan. Additionally, if federal and/or state funding sources are sought, the recommended improvements will compete with other roadway improvement projects funded and prioritized in the Tippecanoe County Area Plan Commission's Transportation Improvement Program, likely resulting in delayed implementation.

To overcome these limitations, this Plan recommends funding be derived from the City of West Lafayette and, as a potential partner, Purdue University. From the City of West Lafayette, funding options could include tax increment financing (TIF) and municipal bonds. Tax increment financing allows a local government to establish districts in which infrastructure improvements are funded through the increased property tax revenues created by new development, redevelopment and reinvestment within the district. Municipal bonds are issued by a local government to secure project funding in a lump sum, and are repaid to bond holders over time with interest. For the State Street corridor, a combined approach that leverages the benefits of both TIF and bonds would be particularly effective.

In the early 1990's, the City created a TIF district for eastern portions of the State Street corridor. Recently, the City created a TIF district for the western portions of the State Street corridor. A TIF district incentivizes private investment by ensuring that the increased property taxes (generated by increased property values) will be reinvested in infrastructure improvements that will directly benefit the area. The 'value-add' of a better, human-scaled and aesthetically pleasing State Street will provide an additional positive impact on property values, reinforcing the effectiveness of the TIF as a catalyst for both public infrastructure improvements and private investment. However, the accumulation of TIF revenues in sufficient amounts to fund the State Street improvements will likely take a number of years, and some property owners may be less inclined to make key investments without certainty of when the project will begin.

The opportunity to achieve quick implementation of the Plan through early construction phases will help spur private investments that will generate TIF revenue. For this reason, the City should consider issuing bonds to begin reconstruction of State Street in the near term, as bonds can be issued quickly (and strategically by coordinating debt obligations with individual phases of construction). This will help to encourage development and redevelopment along the corridor, from which the increased tax revenues can in turn be used to service the municipal debt. Prior to implementation efforts, a detailed fiscal analysis should be conducted to ensure the potential bond/TIF funding strategy will be financially prudent for the City, Purdue University, and the Purdue Research Foundation. This analysis should include an assessment of the planned and anticipated private-sector and public-sector projects within the TIF districts to gauge projected TIF revenues relative to potential municipal debt obligations.

Construction phasing is beyond the scope of this plan, but is actively being considered by the City of West Lafayette and Purdue University. If funding can be secured to implement critical segments of the Perimeter Parkway, then the entirety of State Street can be reconstructed at one time. However, if funding for critical segments of the Perimeter Parkway can not be secured, then the implementation of State Street must be phased. In a phased approach, improvements to the eastern and western segments of State Street could be implemented independently of the Perimeter Parkway project. The prioritization of these segments is in alignment with redevelopment opportunities and further TIF growth. Improvements in the middle of the corridor (from Grant Street to approximately Russell Street), would follow implementation of critical segments of the Perimeter Parkway.

