



► Sustainable Transportation & Land Use Integration Study

Local Toolkit Development Prototypes Catalogue

February 2013



SUSTAINABLE TRANSPORTATION
& LAND USE INTEGRATION STUDY





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Introduction to the Development Prototypes Catalogue

The Sustainable Transportation and Land Use Integration Study (ST-LUIS) supports the growing prosperity of the region's people and businesses through greater walk, bike, and transit use, along with more efficient vehicle use.

THE PROJECT

- Provides municipalities with guidance on creating walkable and transit-oriented communities while respecting local land use decision-making.
- Highlights the need for regional coordination and cooperation.
- Uses an integrated approach to transportation and land use.
- Explores alternative scenarios for the region's transit investments and development pattern.

THE DEVELOPMENT PROTOTYPES CATALOGUE

- Works with the interactive tool, "Communities Pathways to Sustainable Transportation," to help users consider their community's present status and future vision for land use, urban design and transportation with development prototypes and local examples that illustrate types of buildings and site design that support a sustainable transportation system.
- Demonstrates that varied architectural and landscape styles can support increased walk, bike and transit use provided the densities, connectivity and transportation characteristics are consistent with the Place Types presented in the ST-LUIS interactive tool.
- Reflects development experience within the region to illustrate both idealized designs and actual precedents.

THE ST-LUIS PLACE TYPES

Introduced to help local planning "synch up" with regional investment and service decisions, the ST-LUIS uses three Place Types to group areas based on dominant land use, design, and transportation system characteristics.

A place type describes characteristics generally present in an area such as a neighborhood, station area or

downtown, focusing on those characteristics that stimulate walk, bike and transit use. Single sites and single development projects contribute to place types.

The three ST-LUIS Place Types offer the best opportunities for supporting sustainable transportation in the MAG region. They are:

- **Compact Walkable**
Compact places accommodate a range of housing styles, typically on smaller lots. These places have pedestrian and bicycle-friendly streets, better connected street networks, and a mix of uses.
- **Transit Served**
Transit served places have small blocks, highly connected streets, mixed uses, and walk- and bike-friendly streets. Some corridors can support high-quality transit service.
- **High Capacity Transit (HCT) Oriented**
HCT Oriented places have the highest levels of activity, a diverse mix of uses, including employment centers. Small, highly connected blocks make walking and biking attractive. High capacity transit is conveniently located nearby.

Detailed definitions of Place Type characteristics are provided in the ST-LUIS Interactive Tool for Advancing Sustainable Transportation, available on the MAG website (<http://www.azmag.gov/>) along with other study results. In addition, summary materials describing Place Type characteristics are included in the Reference Materials section in this catalogue as well as in the interactive planning tool .

Typical ways to use Place Types

- To describe an ideal condition that "synchs up" multiple characteristics,
- To characterize existing conditions, and
- To communicate a future vision as a basis for action.

Introduction (continued)

LOCAL PRECEDENTS IN THE DEVELOPMENT PROTOTYPES CATALOGUE

- Provide descriptions, data and photographs of locations and projects that can support sustainable transportation so users of the ST-LUIS project materials can more easily understand and visualize the development project types that match the Place Types
- Were selected because they are projects – generally on single sites – that can contribute to the growth and development of ST-LUIS Place Types in their communities, though they do not illustrate every desired characteristics
- Demonstrate that the region has successful experience with projects that have the characteristics needed to support sustainable transportation.

DEVELOPMENT PROTOTYPE APPLICABILITY TO PLACE TYPES

The table on the following page serves as both a Table of Contents and a guide to applicability of the different development types to the Place Types. The applicability column is by necessity general, and site-and-context specific analysis will be needed to determine how best to create the Place Type characteristics in different locations. For each development type, the table indicates an answer to the question: “Is the development type supportive of the indicated Place Type?” The indications of yes, no, and conditional should be interpreted as follows:

-  **No:** The development type is typically outside the density range that contributes to the success of the Place Type.
-  **Conditional:** Appropriate if the development type is part of an area-wide development pattern that achieves the density and dominant characteristics of the specified Place Type, though the individual project may be lower or higher density than desired on an area-wide basis.
-  **Yes:** The development type is typically within the density range that contributes to the success of the Place Type, when density is combined with other dominant characteristics as presented in the interactive tool and the catalogue reference materials.

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**DEVELOPMENT PROTOTYPE:
5- TO 7-STORY MIXED-USE**



Elements of Success

- Buildings are thoughtfully arranged in order to take advantage of shade and breezes and to create comfortable outdoor spaces.
- Pedestrian walkways are safe and provide direct connections to transit.
- Retail street frontages are open and inviting along property edges.
- Parking is typically structured and screened from pedestrians with consolidated access points.
- Scale and massing of buildings is modulated and varied to respond to the context.
- Walkways and sidewalks are shaded at the hottest time of day.

Pedestrian design integrated with public open spaces and rights of way



Convenient access to services and retail



Sample Project Plan

- Mixed-Use Office
- Mixed-Use Residential
- Single Family Residential
- Multi-Family Residential
- Surface Parking
- Structure Parking
- Public Transit Stops

Applicable Place Types

- Compact Walkable
- Transit Served
- HCT Oriented

Recommended Ranges

Percentage Open Space	10% - 15%
FAR (Office and Retail)	0.75 - 1.0
Dwelling Units per Acre	50 - 60
Average Block Dimensions	400' x 300'
Average Acres per Block	2.75 +/-

LOCAL PRECEDENT OF 5- TO 7-STORY MIXED-USE:

GRIGIO METRO

Grigio Metro is a transit-oriented development that wraps apartments around a 6-story, 860-space parking garage. The garage offers 300 park-and-ride spaces next to the light rail station. This joint development was made possible by a public-private partnership with the City of Tempe. The project also includes ground floor retail spaces to activate the street frontages surrounding the project. Significantly denser than the surrounding development, Grigio demonstrates the possibility for transitioning toward transit-supportive developments around stations.

Project Contacts

Developer	Gray Development Group
Contractor	Clark-Wayland Builders
Architect	Studio 15
Address	1811 Apache Blvd East Tempe, AZ 85281
Year Built	2009

Project Details

Parcel Acres	4.56
FAR (Office and Retail) (gross)	0.23
Dwelling Units per Acre (gross)	90
Total Units	408
Mixed-Use Acres	4.56
Dwelling Units per Acre (net)	90
Average Block Dimensions	*600' x 400'
Average Acres per Block	*5.5
Retail Square Feet	16,000
Office Square Feet	30,000
Parking Spaces	860 (300 shared)

*Block dimension is larger than recommended.

Applicable Place Types

Compact Walkable Transit Served HCT Oriented

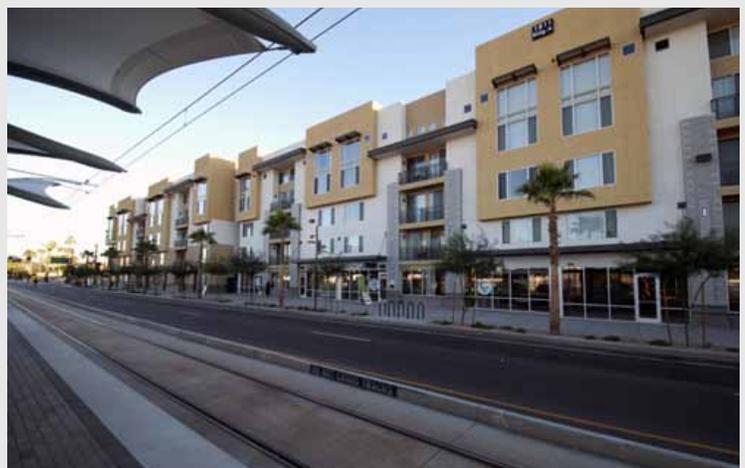


Photo: Google Earth

Street front entrances



Convenient access to light rail



**DEVELOPMENT PROTOTYPE:
3- TO 4-STORY MIXED USE MULTI-FAMILY RESIDENTIAL**



Sample Project Plan

- Mixed-Use Office
- Mixed-Use Residential
- Single Family Residential
- Multi-Family Residential
- Surface Parking
- Structure Parking
- * Public Transit Stops

Applicable Place Types

- Compact Walkable
- Transit Served
- HCT Oriented

Recommended Ranges

Percentage Open Space	10% - 15%
FAR (Office and Retail)	1.0 - 1.5
Dwelling Units per Acre	30 - 40
Average Block Dimensions	350' x 275'
Average Acres per Block	2 +/-

Elements of Success

- Buildings are designed to provide views and access to community outdoor spaces.
- Pedestrian walkways are safe and provide clear connections to transit and to adjacent properties.
- Street frontages are either active retail storefronts or ground-related residential with front doors on the street.
- Parking may be structured or surface and screened from pedestrians including consolidated access points to reduce conflicts.
- Scale and massing of buildings is modulated and varied to respond to the context and reduce the perception of mass.

Ground floor retail activates the street



Walkable, friendly streetscapes



LOCAL PRECEDENT OF 3- TO 4-STORY MIXED USE MULTI-FAMILY RESIDENTIAL:

DEVINE LEGACY

Located on Central Avenue in downtown Phoenix, Devine Legacy consists of 65 affordable residential units. Adjacent to the busy street, light rail and multiple bus services, this project plays two roles: a component of urban life and a home. The five floors of residences are built on top of a concrete podium that addresses the street by providing covered parking and retail shops. The central courtyard separates residents from the busy city street while allowing them to be outside. By opening the courtyard to both the east and west sides of the building, cross ventilation offers a sustainable approach to cooling in the hot city.

Project Contacts

Developer	Native American Connections
Contractor	Adolfson & Peterson Construction
Architect	Pyatok Architects & Perlman Design Group
Address	4570 N. Central Avenue, Phoenix, Az 85012
Year Built	2012

Project Details

Parcel Acres	4
FAR (Office and Retail) (gross)	0.05
Dwelling Units per Acre (gross)	16
Total Units	65
Mixed-Use Acres	4
Dwelling Units per Acre (net)	16
Average Block Dimensions	*680' x 260'
Average Acres per Block	4
Retail Square Feet	N/A
Office Square Feet	10,000
Parking Spaces	246

*Block dimension is larger than recommended.

Applicable Place Types

- Compact Walkable
- Transit Served
- HCT Oriented



Photo: Google Earth

Prominent street corner and access to public transportation

Legend

- Bus Stops *
- LRT Stops ●
- LRT Lines —
- Bike Lanes —
- Sidewalks —
- Canal —



Street frontage and pedestrian colonnades



**LOCAL PRECEDENT OF 3- TO 4-STORY MIXED USE MULTI-FAMILY RESIDENTIAL:
ORCHID HOUSE LOFTS**

Orchid House brings the brownstone style to Tempe. It combines two styles of living the traditional urban apartment with parking spaces outside your front door and the more modern lofts with underground parking. By placing parking underground Orchid House uses the extra ground spaces to create a plaza for gathering. As a mixed-use project Orchid House contains ground floor restaurants and retail with a second floor of offices creating a buffer between residences and the street as well as creating a lively street scene.

Project Contacts

Developer	Brownstone Residential
Contractor	Joe E. Woods
Architect	Warner Group Architects
Address	21 E. 6th Street, Tempe, Az 85281
Year Built	2002

Project Details

Parcel Acres (partial)	2.5
FAR (Office and Retail) (gross)	0.75
Dwelling Units per Acre (gross)	47
Total Units	119
Mixed-Use Acres	2.5
Dwelling Units per Acre (net)	47
Average Block Dimensions (partial)	430' x 260'
Average Acres per Block	2.5
Retail Square Feet	42,000
Office Square Feet	42,000
Parking Spaces	810

Applicable Place Types

- Compact Walkable
- Transit Served
- HCT Oriented

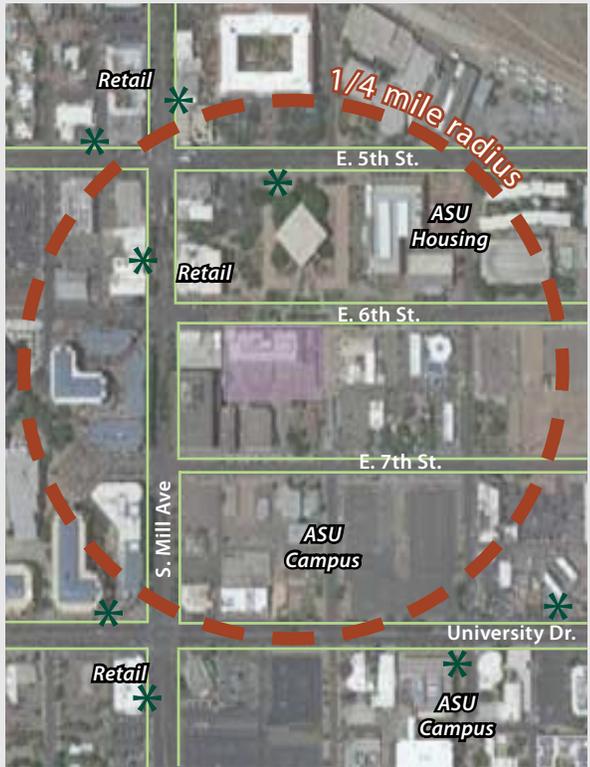


Photo: Google Earth

Underground parking allows for park space.

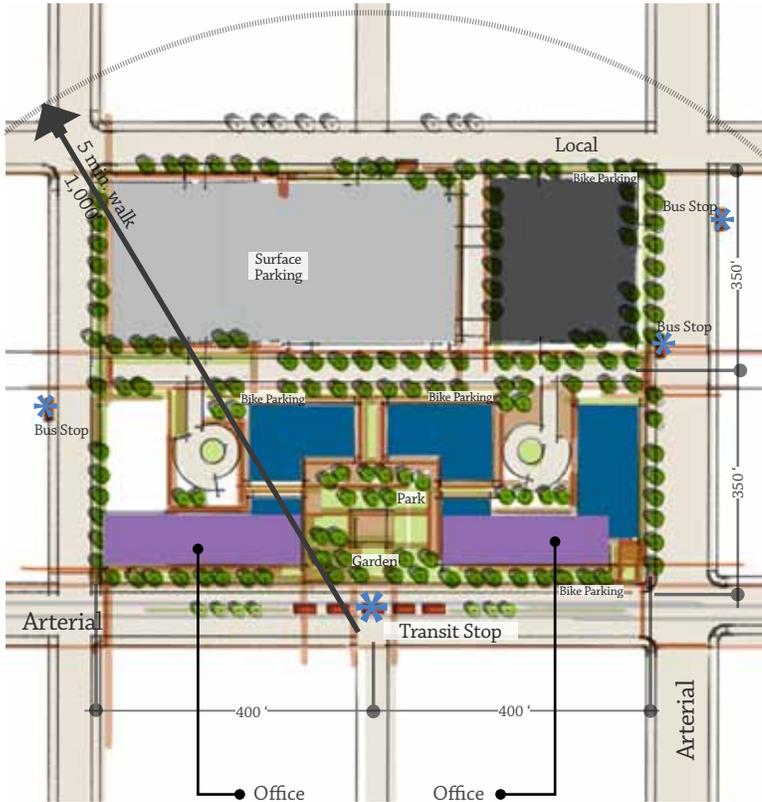
Legend	
Bus Stops	* (green asterisk)
LRT Stops	● (green circle)
LRT Lines	— (green line)
Bike Lanes	— (green line with white center)
Sidewalks	— (green line with white center)
Canal	— (blue line)



Integration of upper story lofts and traditional brownstone apartments



**DEVELOPMENT PROTOTYPE:
3- TO 4-STORY RETAIL/OFFICE PARK**



Sample Project Plan

- Mixed-Use Office
- Mixed-Use Residential
- Single Family Residential
- Multi-Family Residential
- Surface Parking
- Structure Parking
- Public Transit Stops

Applicable Place Types

- Compact Walkable
- Transit Served
- HCT Oriented

Recommended Ranges

Percentage Open Space	20% - 25%
FAR (Office)	0.75 - 1.0
Dwelling Units per Acre (gross)	N/A
Average Block Dimensions	335' x 260'
Average Acres per Block	2 +/-

Elements of Success

- The urban office park layout is used to emphasize building location along major street frontage.
- Surface parking lots and parking structures are located behind major building forms and away from active street scenes.
- Vehicle drop-off zones are set apart from active street frontage corridors.
- Ground floor retail is strategically located to enhance the street environment.
- Open space and plazas are strategically located to provide a strong civic presence and reinforce the overall urban setting.
- Pedestrian access and circulation provide safe, attractive and functional connectivity to transit.

Vertical mixed-use building opportunities



Pedestrian oriented "Main Street" settings



LOCAL PRECEDENT OF 3- TO 4-STORY RETAIL/OFFICE PARK:

TEMPE TRANSPORTATION CENTER

Tempe Transportation Center orchestrates the process of commuting creating a safe hub for traveling. Buses have a pull-off from the main street for loading and unloading, creating safety for pedestrians as well as leaving an open street for cars. This drop-off also creates a buffer between the street and pedestrians accessing the light rail. The building meets pedestrians as they cross the street with windows and leads them safely to a ticketing window, bike storage facility and waiting platforms for buses and trains. This mixed-use facility offers two floors of office space above the retail shops as an efficient use of space in the city.

Project Contacts

Developer	Valley Metro
Contractor	Adolfson & Peterson
Architect	Architekton & Otak
Address	200 E. 5th Street, Tempe, Az 85281
Year Built	2008

Project Details

Parcel Acres	3.9
FAR (Office and Retail) (gross)	0.4
Dwelling Units per Acre (gross)	N/A
Total Units	N/A
Mixed-Use Acres	N/A
Dwelling Units per Acre (net)	N/A
Block Dimensions	*680' x 380'
Acres per Block	*5.9
Retail Square Feet	22,000
Office Square Feet	50,000
Parking Spaces	120 (Bicycle Parking)

*Block dimension is larger than recommended.

Applicable Place Types

- Compact Walkable
- Transit Served
- HCT Oriented



Photo: Google Earth

Contemporary integration of building mass, public space and retail

Legend

- Bus Stops *
- LRT Stops ●
- LRT Lines —
- Bike Lanes —
- Sidewalks —
- Canal —



Pedestrian safe, orchestrated design



**DEVELOPMENT PROTOTYPE:
2- TO 3-STORY MULTI-FAMILY**



Sample Project Plan

- Mixed-Use Office
- Mixed-Use Residential
- Single Family Residential
- Multi-Family Residential
- Surface Parking
- Structure Parking
- Public Transit Stops

Applicable Place Types

- Compact Walkable
- Transit Served
- HCT Oriented

Recommended Ranges

Percentage Open Space	20% - 25%
FAR (Office and Retail)	N/A
Dwelling Units per Acre (gross)	18 - 22
Average Block Dimensions	335' x 385'
Average Acres per Block	2.9 +/-

Elements of Success

- Multiple multi-unit structures repeated over a site, designed to include alternative configurations organized in a more responsive way to the urban environment.
- Units that are located along an active urban street front have front doors accessing the street.
- Internal vehicular circulation incorporates a careful layout of streets and alleyways to provide backside garage access.
- The circulation framework includes internal pedestrian connections and access to the public street frontage.
- Small pocket parks and plazas provide visual variety as well as social gathering places for residents.

Multi-family housing options



Safe and attractive entry areas



LOCAL PRECEDENT OF 2- TO 3-STORY MULTI-FAMILY: ARTISAN VILLAGE

Located at Roosevelt Street and 7th Street, these urban row house style condominiums offer a sense of community with a park like central courtyard, street front retail and easy access to downtown activities and events. Units average approximately 2,000 square feet and many provide a live/work setting. Careful layout of streets and alleys intertwine the development, separating street and pedestrian traffic from vehicular traffic and parking.

Project Contacts

Developer	Artisan Homes Inc.
Architect	William Hezmalhalch Architects Inc.
Address	615 E. Portland St. Phoenix, AZ
Year Built	2006

Project Details

Parcel Acres	7.6
FAR (Office and Retail) (gross)	0.03
Dwelling Units per Acre (gross)	28
Total Units	105
Mixed-Use Acres	7.6
Dwelling Units per Acre (net)	28
Block Dimensions	*690' x 480'
Acres per Block	*7.6
Retail Square Feet	10,000
Office Square Feet	N/A
Parking Spaces	210

*Block dimension is larger than recommended.

Applicable Place Types

- Compact Walkable Transit Served HCT Oriented



Photo: Google Earth

Retail frontage creates an active street scene

Legend
Bus Stops *
LRT Stops ●
LRT Lines —
Bike Lanes —
Sidewalks —
Canal —



Park nodes for gathering away from the city



Photo: Google Earth

**LOCAL PRECEDENT OF 2- TO 3-STORY MULTI-FAMILY:
PORTLAND PLACE**

Portland Place is Phase One of a three phase condominium project in the Arts District of downtown Phoenix. The completion of 54 units allows residents to live in the city within a five minute walk from public transit, shopping, restaurants and the office. It is adjacent to Margaret T. Hance Park, providing plenty of open space. Underground parking allows the building to have no interruption between the sidewalk and grassy boulevard in the front and the adjacent park behind. It also leaves more space for building in a tight urban environment.

Project Contacts

Developer	Habitat Metro
Architect	Davis Architects
Address	208 W. Portland St. Phoenix, AZ
Year Built	2007

Project Details

Parcel Acres	2.7
FAR (Office and Retail) (gross)	N/A
Dwelling Units per Acre (gross)	20
Total Units	54
Mixed-Use Acres	N/A
Dwelling Units per Acre (net)	20
Block Dimensions	350' x 340'
Acres per Block	2.7
Retail Square Feet	N/A
Office Square Feet	N/A
Parking Spaces	200

Applicable Place Types

- Compact Walkable
- Transit Served
- HCT Oriented



Walkable streetscape with ground related entries



Building steps down to the street to reduce appearance of mass



**DEVELOPMENT PROTOTYPE:
2- TO 3-STORY TOWNHOMES**



Sample Project Plan

- Mixed-Use Office
- Mixed-Use Residential
- Single Family Residential
- Multi-Family Residential
- Surface Parking
- Structure Parking
- * Public Transit Stops

Applicable Place Types

- Compact Walkable
- Transit Served
- HCT Oriented

Recommended Ranges

Percentage Open Space	20% - 25%
FAR (Office and Retail)	N/A
Dwelling Units per Acre	8 - 12
Average Block Dimensions	335' x 320'
Average Acres per Block	2.75 +/-

Elements of Success

- This design solution introduces true street frontage with building fronts and entrances along perimeter streets.
- Alley loaded design and backside garage access transitions to building structures beyond the frontage with careful integration of walkways, open space, plazas and parking.
- Access into and out of parcel incorporates both pedestrian walkways and additional opportunities for street fronting building design.
- Minimization of perimeter walls.

Shared open space and ground related entrances



Semi-private outdoor patio space



**LOCAL PRECEDENT OF 2- TO 3-STORY TOWNHOMES:
ARTISAN PARKVIEW**

Artisan Parkview consists of 35 town homes on 7th and Washington streets. The project creates pedestrian connections through design and location. The town homes are located adjacent to the light rail and within walking distance of shops, restaurants and Phoenix entertainment. Pedestrian circulation and vehicular circulation are separated on either side of the building. There is a back alley for parking and garage access leaving the front entrance for pedestrians and patio space.

Project Contacts

Developer	Artisan Homes Inc.
Address	706 E. Washington Street, Phoenix, Az 85281
Year Built	2003

Project Details

Parcel Acres	2.5
FAR (Office and Retail) (gross)	N/A
Dwelling Units per Acre (gross)	30
Total Units	35 units
Mixed-Use Acres	N/A
Dwelling Units per Acre (net)	14
Average Block Dimensions	*475' x 200'
Average Acres per Block	2.5
Retail Square Feet	N/A
Office Square Feet	N/A
Parking Spaces	105 spaces

*Block dimension is larger than recommended.

Applicable Place Types

- Compact Walkable
- Transit Served
- HCT Oriented



Photo: Google Earth

Urban streetscape



Pedestrian front entries



DEVELOPMENT PROTOTYPE: 2-STORY OFFICE/RETAIL



Sample Project Plan

- Mixed-Use Office
- Mixed-Use Residential
- Single Family Residential
- Multi-Family Residential
- Surface Parking
- Structure Parking
- *
 Public Transit Stops

Applicable Place Types

- Compact Walkable
- Transit Served
- HCT Oriented

Recommended Ranges

Percentage Open Space	15% - 20%
FAR (Office and Retail)	0.20 - 0.25
Dwelling Units per Acre	N/A
Average Block Dimensions	345' x 395'
Average Acres per Block	2.5 +/-

Elements of Success

- Traditional smaller scale office and retail centers organized to embrace the urban setting with true building frontage along the street edge.
- Easily accessible backside parking configured with several points of entry.
- On-street customer parking provides a buffer between pedestrians and moving traffic.
- Building access is designed to have two-way entrances (front and back) for effective management and security.
- Adjacent buildings are designed with zero side yard lot lines so true storefront settings can be developed.
- Building separation along the street can provide opportunities for effective open space to be used for access, outdoor dining and open space.

Key urban parks and open space



Carefully integrated surface parking pods



LOCAL PRECEDENT OF 2-STORY OFFICE RETAIL:

NEC PLAZA

NEC Plaza creates an urban, walkable mall while providing safety from busy streets and intersections. The building creates a prominent, intersection corner while beckoning pedestrians in through its open center and tree lined entrance. Providing a buffer between the street and the back parking NEC Plaza is able to advertise to drivers as well as creating inner pedestrian walkways and a second story promenade allowing shoppers to wander freely through the complex.

Project Contacts

Address	920 E. University Dr., Tempe, Az 85281
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Project Details

Parcel Acres	10
FAR (Office and Retail) (gross)	0.5
Dwelling Units per Acre (gross)	N/A
Total Units	N/A
Mixed-Use Acres	10
Dwelling Units per Acre (net)	N/A
Average Block Dimensions	*600' x 745'
Average Acres per Block	*10
Retail Square Feet	180,000
Office Square Feet	10,000
Parking Spaces	378

*Block dimension is larger than recommended.

Applicable Place Types

- Compact Walkable
- Transit Served
- HCT Oriented



Photo: Google Earth

Duel pedestrian entrance

Legend

- Bus Stops *
- LRT Stops ●
- LRT Lines —
- Bike Lanes —
- Sidewalks —
- Canal —



Pedestrian walkways and promenade



**DEVELOPMENT PROTOTYPE:
SMALL LOT SINGLE FAMILY**



Sample Project Plan

- Mixed-Use Office
- Mixed-Use Residential
- Single Family Residential
- Multi-Family Residential
- Surface Parking
- Structure Parking
- * Public Transit Stops

Applicable Place Types

- Compact Walkable
- Transit Served
- HCT Oriented

Recommended Ranges

Percentage Open Space	10% - 15%
FAR (Office and Retail)	N/A
Dwelling Units per Acre	8 - 10
Average Block Dimensions	400' x 385'
Average Acres per Block	3.5 +/-

Elements of Success

- Lots are less than 5,000 square feet with a variety of housing styles.
- All streets have street parking and sidewalks on both sides including safe crossings at intersections.
- Garages and on-site parking accessed via alleys or if the garage is accessed from the front then the garage does not dominate the character of the home facade.
- Small blocks allow local streets to be accessed from arterials and traffic calming is used to reduce cut-throughs.
- Minimization of perimeter walls.

Attractive, safe and comfortable perimeter sidewalks



Open space



LOCAL PRECEDENT OF SMALL LOT SINGLE FAMILY:

ARTISAN COMMONS

Artisan Commons is a small urban neighborhood community of 38 “Tuscan” style, detached single family homes, all with private garages (most, but not all, of which have direct access) built in 2003 with floor plans ranging from approximately 2,000 to 3,000 square feet. These homes are vertical with small footprints (meaning there is a lot of square footage on relatively small lots). Most homes have a kitchen and family room great room, with small separate living and dining rooms, on the ground floor with all bedrooms upstairs. In many cases the side or rear garden/yards open right up from the family room giving the home a courtyard feel.

Project Contacts

Developer	Artisan Homes Inc.
Address	2923 N. 48th Place Phoenix, Az 85018
Year Built	2002

Project Details

Parcel Acres	8.7
FAR (Office and Retail) (gross)	N/A
Dwelling Units per Acre (gross)	4
Total Units	38
Mixed-Use Acres	N/A
Dwelling Units per Acre (net)	4
Average Block Dimensions	450' x *860'
Average Acres per Block	*8.7
Retail Square Feet	N/A
Office Square Feet	N/A
Parking Spaces	175

*Block dimension is larger than recommended.

Applicable Place Types

- Compact Walkable
- Transit Served
- HCT Oriented

Building facades are articulated with added architectural details for visual interest



Photo: Google Earth



Garage access is minimized and understated



**DEVELOPMENT PROTOTYPE:
COURTYARD SINGLE FAMILY OR COTTAGE 6-12 DU/ACRE**



Sample Project Plan

- Mixed-Use Office
- Mixed-Use Residential
- Single Family Residential
- Multi-Family Residential
- Surface Parking
- Structure Parking
- * Public Transit Stops

Applicable Place Types

- Compact Walkable
- Transit Served
- HCT Oriented

Recommended Ranges

Percentage Open Space	10% - 15%
FAR (Office and Retail)	N/A
Dwelling Units per Acre	6 - 12
Average Block Dimensions	380' x 400'
Average Acres per Block	3.5+/-

Elements of Success

- Single family units located in an urban setting that are compact, pedestrian oriented, and in sync with the urban fabric.
- The units have a modest footprint and fit six to twelve units per acre.
- A system of pocket parks and pedestrian paths are added for recreation and easy movement.
- Multiple and frequent access points allow the neighborhood to blend with the city fabric.
- Multiple pedestrian entrances and paths to the main arterials encourage walking and use of public transportation.
- Minimization of perimeter walls.

Pocket parks throughout provide common open space



Pedestrian pathways provide safe access to and from transit



**LOCAL PRECEDENT OF COURTYARD SINGLE FAMILY OR COTTAGE 6-12 DU/ACRE:
WILLO NEIGHBORHOOD, PHOENIX**

The Willo Neighborhood in downtown Phoenix is composed of small lot cottages all within walking distance to public transit and city life. With modest house square footage and small lots the neighborhood provides affordable options and a walkable community. Small alleyways behind the houses provide a space for trash pick-up away from the streetscape keeping sidewalks clean. Each home has its own distinct character providing design diversity and a sense of individuality and home ownership. Multiple entrances to the community without access gates allow Willo to blend into the city fabric.

Project Details

Parcel Acres	400
FAR (Office and Retail) (gross)	N/A
Dwelling Units per Acre (gross)	6
Total Units	2400
Mixed-Use Acres	N/A
Dwelling Units per Acre (net)	6
Average Block Dimensions	*950' x 320'
Average Acres per Block	*7
Retail Square Feet	N/A
Office Square Feet	N/A
Parking Spaces	6000

*Block dimension is larger than recommended.

Project Contacts

Address	3rd Ave. & Virginia Ave., Phoenix, Az
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Applicable Place Types

- Compact Walkable
- Transit Served
- HCT Oriented



Compact footprints

Legend

- Bus Stops *
- LRT Stops ●
- LRT Lines —
- Bike Lanes —
- Sidewalks —
- Canal —



Green streetscape with yard individuality



**DEVELOPMENT PROTOTYPE:
1-2 STORY OFFICE/RETAIL**



Sample Project Plan

- Mixed-Use Office
- Mixed-Use Residential
- Single Family Residential
- Multi-Family Residential
- Surface Parking
- Structure Parking
- * Public Transit Stops

**Applicable
Place Types**

- Compact Walkable
- Transit Served
- HCT Oriented

Recommended Ranges

Percentage Open Space	30 - 35%
FAR (Office and Retail)	0.15 - 0.25
Dwelling Units per Acre	N/A
Average Block Dimensions	395' x 375'
Average Acres per Block	3.5 +/-

Elements of Success

- Small scale office and retail buildings carefully organized to maximize integration with surroundings.
- Key intersections and critical corners used as the starting point for development and design.
- Buildings engage the street scene and provide true frontage with access.
- Buildings are vertically mixed use with retail on the ground level and office space above or can be horizontally integrated (office building next a retail building).
- In all instances, a well integrated pedestrian network of sidewalks provides safe and comfortable access.

Secondary entrance treatments



Ground floor retail promotes pedestrian traffic



**LOCAL PRECEDENT OF 1-2 STORY OFFICE/RETAIL:
DOWNTOWN CHANDLER**

These downtown Chandler shops use layers of parking, sidewalks and open space to create a safe, walkable environment away from traffic. The corridor brings traffic off the street with a secondary roadway for drop off and parking access encouraging drivers to slow down and yield to pedestrians. The parking spaces are mixed with open space to break up the parking and provide areas of respite for pedestrians. Covered pedestrian walkways make up the frontage of the buildings allowing shop owners and restaurants to spill into the pedestrian realm with cafe seating and goods displayed to entice shoppers.

Project Contacts

Address	Boston St. & Arizona Ave., Chandler, Az
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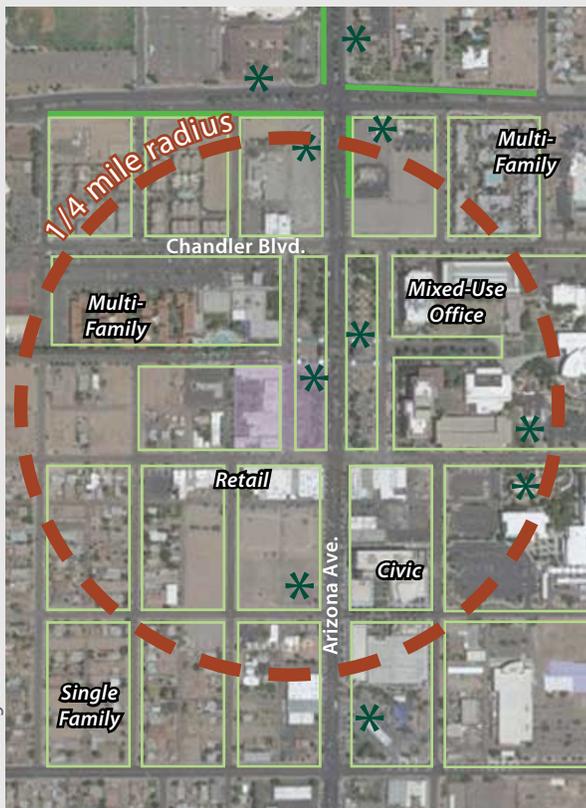
Project Details

Parcel Acres	5
FAR (Office and Retail) (gross)	0.37
Dwelling Units per Acre (gross)	N/A
Total Units	N/A
Mixed-Use Acres	N/A
Dwelling Units per Acre (net)	N/A
Average Block Dimensions	*500' x 450'
Average Acres per Block	*5
Retail Square Feet	20,500
Office Square Feet	10,800
Parking Spaces	106

*Block dimension is larger than recommended.

Applicable Place Types

- Compact Walkable
- Transit Served
- HCT Oriented



Covered pedestrian streets



Legend

- Bus Stops *
- LRT Stops ●
- LRT Lines —
- Bike Lanes —
- Sidewalks —
- Canal —

Layers of parking/walking/open space

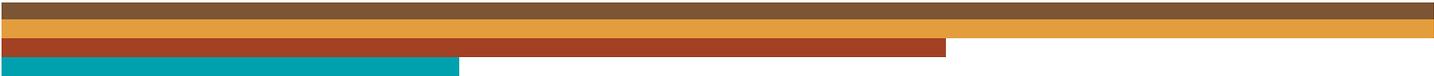




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Reference Materials

The following reference materials are replicated from the MAG ST-LUIS Local Toolkit interactive tool, *Community Pathways to Sustainable Transportation*.

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Glossary

TERM	DEFINITION
Bikeability	The comfort, safety, and appeal of cycling in a given place. Highly bikeable places have “comfortable” (or safe, pleasant, and convenient) environments for cyclists, including nearby destinations, a network of bicycle lanes, vehicle door buffers, protected turn lanes, high visibility signage and pavement markings to alert drivers to the presence of cyclists, secure bicycle parking (e.g. bicycle racks, lock boxes), and well-lit streets and sidewalks.
Centrality	A place’s proximity to the core of the metropolitan area, the densest concentration of jobs and housing near the geographic center of the region, or other job center. Places with high centrality have a significant number of jobs in transit-supportive categories (see below). The highest centrality places are downtown employment centers like Downtown Phoenix or places with major institutional uses like Tempe.
Density	The number of residents and/or jobs in a given area; defined as “people per acre” for this study, combining the number of residents and jobs together. Density is typically regulated through controls on units per acre for residential development or floor area ratio (FAR) for commercial development.
Development Prototype	An illustrative building description that fits the density and urban design parameters of one or more specific Place Type(s).
Dwelling Units per Acre (DU)	The number of residential units divided by the number of acres of property on which they are located. This is a measure of residential density.
Floor Area Ratio (FAR)	The ratio between the area of a building and the area of the parcel on which it sits; typically measured in square feet. This is a measure of commercial density.
High Capacity Transit (HCT)	A frequent, reliable, high-speed, and high capacity form of transit that operates in a fixed guideway (such as rails), typically within a semi- or fully-segregated right-of-way. HCT systems have enhanced and branded passenger stations that may include amenities such as level boarding, real-time information provision, and off-board fare payment. HCT systems are considered more “permanent” and have the potential to generate land use and development impacts at stations and along corridors. In 2013, the types of HCT under consideration for the ST-LUIS are Light Rail Transit (LRT) and Streetcar.
High Quality Transit Service	Bus or rail service that provides all day (peak and off-peak) service with a long span of service and frequencies of at least 15 minutes during daytime hours, with high reliability, safety and customer experience, providing access to job centers and other major regional destinations.

Glossary (continued)

TERM	DEFINITION
Local Serving Employment	Jobs associated with local serving businesses and services, including schools, local retail businesses, personal services, medical offices not associated with major hospitals, real estate offices and bank branches. Home-based businesses and small-scale craft-based businesses may also be included.
Neighborhood land uses (or “land use mix”)	Housing mixed with local serving uses including parks, schools, places of worship, community centers and child care, neighborhood retail and services.
Place Type	Classification of an area based on land use, design, and transportation system characteristics. Describes current conditions and future vision, and helps guide local planning decisions with regional goals.
Station Area	An area with a radius of 1/4 or 1/2 mile around a transit station. A 1/2 mile station area covers approximately 503 acres.
Transit-Supportive Jobs	Jobs in industry sectors that have a tendency to cluster near transit, based on national studies from the Center for Transit-Oriented Development. Sectors include: Government; Information; Finance and Insurance; Real Estate; Professional, Scientific and Technical Services; and Management of Companies and Enterprises; Arts, Entertainment, and Recreation; and Accommodation and Food Services.
Walkability	The comfort, safety, and appeal of walking in a given place. Highly walkable places have “comfortable” (or safe, pleasant, and convenient) environments for pedestrians, including features like very close-together destinations, small blocks, continuous sidewalks, shade, safe street crossings, and buffers from adjoining traffic (e.g. planting strips, street furniture).

Place Type Characteristics Definitions

Each ST-LUIS Place Type represents areas in Maricopa County with a unique blend of seven land use and transportation characteristics. Each of the characteristics is defined below.

DENSITY	CENTRALITY	EMPLOYMENT	CONNECTIVITY	WALKABILITY	BIKEABILITY	TRANSIT
Residential population and/or jobs on a per-acre basis, averaged over an area such as a station area with a 1/2 mile radius (~500 acres). ST-LUIS Place Type density refers to combined population and jobs.	Closeness to the region's core or other job center with both relatively high job density and a significant number of jobs in transit-supportive categories (see Employment).	Presence of transit-supportive jobs (those jobs that typically cluster near LRT or other high capacity transit). These jobs include region-serving office, medical, cultural and higher education.	Ability to easily and efficiently connect between modes, connect between destinations located close together, and choose alternate routes because of small block sizes.	Favorable conditions for walking, including very close-together destinations, wayfinding signage, continuous sidewalks, shade, safe crossings, buffering from adjoining traffic, and small blocks.	Favorable conditions for cycling, including nearby destinations, a network of bicycle lanes, wayfinding signage, safety buffers, high visibility signage and pavement markings, and secure bicycle parking.	Transit service available nearby offering a long daily span of service, frequent service, good coverage and transfer opportunities that reach job centers and other important destinations with at most a single transfer.

Place Type Characteristics Summary



	COMPACT WALKABLE	TRANSIT SERVED	HCT ORIENTED
AREA-WIDE DENSITY	15-30 persons per acre	30-45 persons per acre	45+ persons per acre
DOMINANT LAND USE	Neighborhood land uses with mix of local serving employment	Neighborhood land uses with mix of employment	Mixed use, employment/office, regional uses (universities, centers)
CONNECTIVITY	Streets: High Transit: Low	Streets: High Transit: Moderate	Streets: High Transit: High
WALK ACCESS	Walk access (1/2 mile) from few homes and jobs; park-and-ride	Walk access (1/2 mile) to bus service from many homes and jobs	Walk access (1/2 mile) to HCT and bus service from many homes and jobs
CENTRALITY	Varied; may be found in low, medium or high centrality locations provided they are outside of existing and planned HCT station areas and in most cases outside corridors with all day frequent bus service	Varied; may be found in low, medium or high centrality locations provided they are in most cases within corridors with all day frequent bus service and outside of existing and planned HCT station areas	Highest centrality – close to region’s core and in most cases within existing or planned HCT station areas
TRANSIT	Local, Commute services (RAPID & Express), Dial-a-Ride	Link bus, Local bus, Commute services (RAPID & Express), Link, Dial-a-Ride	Light rail, Link bus, Local, Commute services, Dial-a-Ride
LOCATION: OTHER FACTORS	Nearness to local downtowns and popular destinations is an advantage	Locations along corridors with high quality bus service	Within 1/2 mile of HCT stops
REAL ESTATE MARKET	Sufficiently strong to support density indicated	Sufficiently strong to support density indicated	Strong markets
EMPLOYMENT* (SHARE OF TRANSIT-SUPPORTIVE JOBS)	Low	Moderate	High

* Transit Supportive Jobs: Jobs in industry sectors that have a tendency to cluster near transit, based on national studies from the Center for Transit-Oriented Development. Sectors include: *Government; Information; Finance and Insurance; Real Estate; Professional, Scientific and Technical Services; and Management of Companies and Enterprises; Arts, Entertainment, and Recreation; and Accommodation and Food Services.*

Minimum Densities

Population and employment density are major factors in transit demand and in creating walkable communities.

ST-LUIS Place Type densities are shown below, measured as people per acre and converted to dwelling units per acre and floor area ratios using the sources as noted.

PLACE TYPE	PLACE TYPE DENSITY RANGE ¹	RESIDENTIAL: DWELLING UNITS PER ACRE ²	+	COMMERCIAL: FLOOR AREA RATIO (FAR) ³
COMPACT WALKABLE	15-29	7-14	+	0.5-0.9
TRANSIT SERVED	30-44	15-29	+	1.0-1.9
HCT ORIENTED	45+	30+	+	2.0+

Note: All ranges are based on net density (i.e. not inclusive of streets, parks, or other public uses)

1 Measured as people per acre

2 Based on Maricopa County 2010 US Census People per Household

3 Based on Maricopa County transit-supportive employment average gross square foot per employee (See ST-LUIS Employment Memo)

Maximum Block Size

Block size and distance between intersections have a significant impact on walkability and efficient vehicle use. Smaller blocks, grid layouts, and a higher density of intersections provide better accessibility. Small block size is an essential feature of each ST-LUIS Place Type.

OPTIONS FOR STANDARDS SUPPORTING ST-LUIS PLACE TYPES

MAXIMUM ACRES PER BLOCK	MAXIMUM LENGTH OF ANY ONE BLOCK SIDE	MINIMUM INTERSECTIONS PER SQUARE MILE	PROJECT PERIMETER WALLS (IN LIMITED LOCATIONS)
4	400 feet	150	Maximum height of 4', pedestrian openings at least every 200'

RETROFITTING

Areas that already have large blocks can be candidates for retrofitting with pedestrian and bicycle pathways that link between buildings, sidewalks, and public open spaces to provide a safer, more attractive, and more convenient circulation network.

REGULATING BLOCK SIZE

Block size can be regulated directly through standards in zoning or subdivision ordinances, or through incentives for smaller blocks such as density bonuses or reduced parking minimums that both increase density and create more accessible neighborhoods.

BLOCK DIMENSIONS FROM NATIONAL SAMPLE OF RECENT PROJECTS

	PEARL DISTRICT* PORTLAND, OR	ADDISON CIRCLE DALLAS, TX	STAPLETON DENVER, CO
			
Block Dimensions	250' X 250'	400' X 300'	650' X 250'
Block Acreage	1.4	2.8	3.7
Block Perimeter	1,000'	1,400'	1,800'

* Measured from street centerlines

Parking

Parking management and pricing has been demonstrated to stimulate the use of transit, walking, and biking. Proper parking design enhances interest and comfort for walkers.

PLACE TYPE	PARKING CHARACTERISTICS
COMPACT WALKABLE	<ul style="list-style-type: none">On-street parking is available on almost all streets, and frontages are not dominated by garages, driveways or surface parking lots
TRANSIT SERVED	<ul style="list-style-type: none">On-street parking is available on almost all streets and may be managed (time limited) in retail coresPrivately owned parking is consolidated and structured in some instances
HCT ORIENTED	<ul style="list-style-type: none">On-street parking is available on almost all streets and is predominantly managed through time limits and/or metersMajority of privately owned parking is consolidated and structuredParking minimum and maximum establishedSecure bike parking is widely available

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