



# City of McKinney Design & Construction of a Downtown Parking Structure

December 18, 2014



# Introductions



*Carl Walker* is a Full-Service Parking Consulting Firm:

- Studies and Operations Consulting
- New Parking Structure Design and Engineering
- Parking Functional Design
- Restoration Engineering



# Carl Walker Experience



- 1,000 Parking Structures
- 300 Municipal Parking Studies
- 185 Municipal Parking Structures
- 115 Mixed Use Parking Structures



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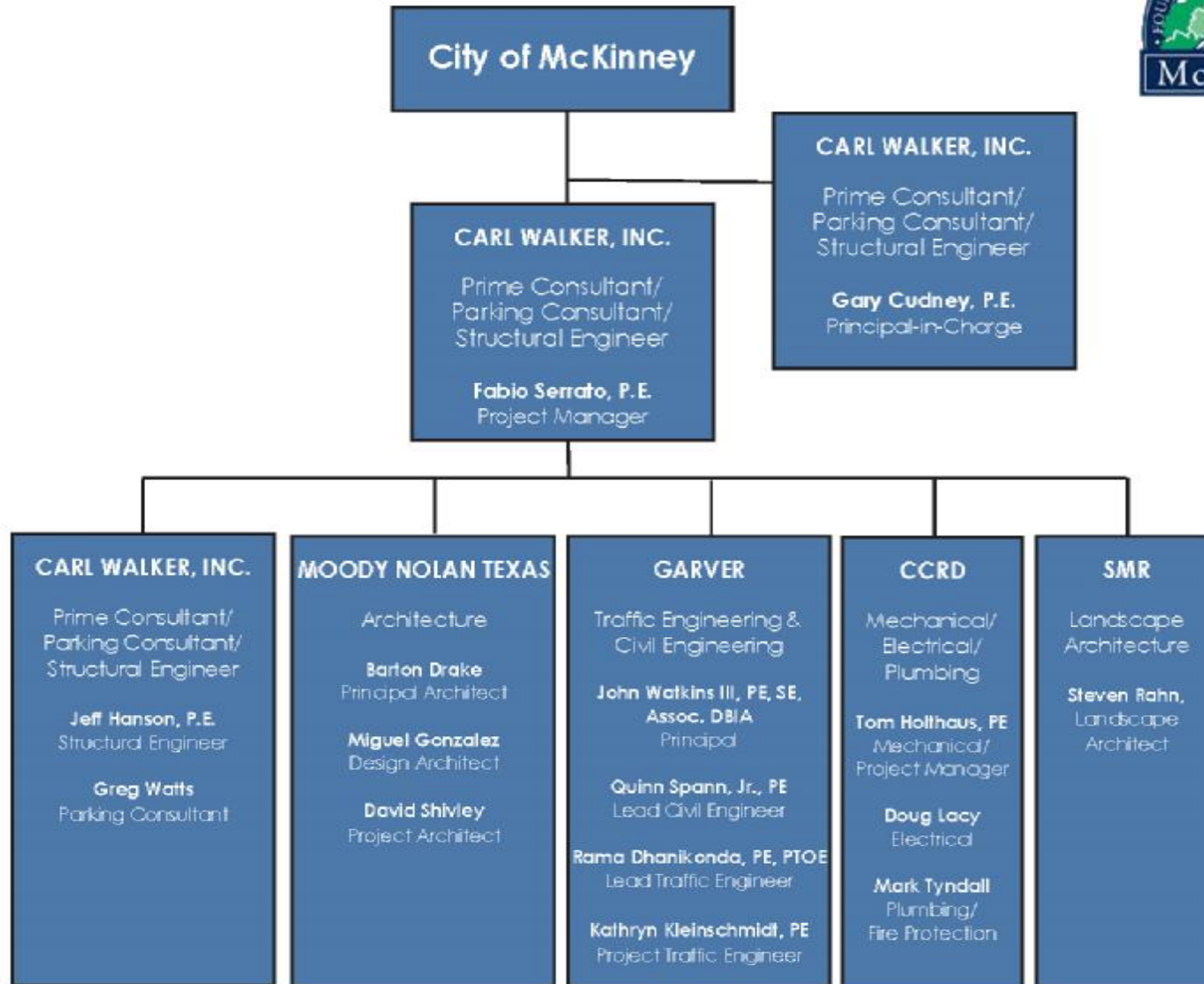




# Carl Walker Texas Experience



# The Team



# Moody•Nolan Texas



## Architectural Services:

- Partnership of Moody•Nolan & VAI Architects
- Local office in north Dallas
- Previous experience with *Carl Walker*
- Experience with Historically sensitive
- Garages in urban historic districts
- Environmental Graphics capability





# Moody Nolan Texas Experience



## Garland City Center, TX



## Urban Environments

- Context
- Operations
- Design and Process



# Moody Nolan Texas Experience



Parker Square,  
Flower Mound, TX





# Garver



## Civil & Transportation Engineering Services:

- Local office in Frisco – 17 offices total
- Previous experience with *Carl Walker*
- Familiarity with McKinney



# SMR Landscape Architects

## CCRD – MEP Engineers



- Local office in Dallas
- Previous experience with *Carl Walker*







# Project Management Approach

- Project Coordination
- Monitor Scope of Services & Schedule
- Coordinate Meetings & Prepare Minutes
- Follow QA/QC Process
- Oversee Compliance with:
  - Master Plan
  - Downtown & Town Center Design Guidelines
  - Zoning Ordinance



# Parking Structure Design Approach



## User Acceptance

- Safe & Secure – Bright Lighting, Openness
- Pedestrian Friendly & Short Walking Distances
- Convenient/Easy Vehicle Circulation
- Multi-Use Function

## City of McKinney Acceptance

- Follow Master Plan & TCDG
- Economical First & Operating Costs
- Durable & Low Maintenance
- Secure Environment

## Community Acceptance

- Meets Parking Demand
- Appealing Aesthetics
- Low Traffic Impact
- Sustainable

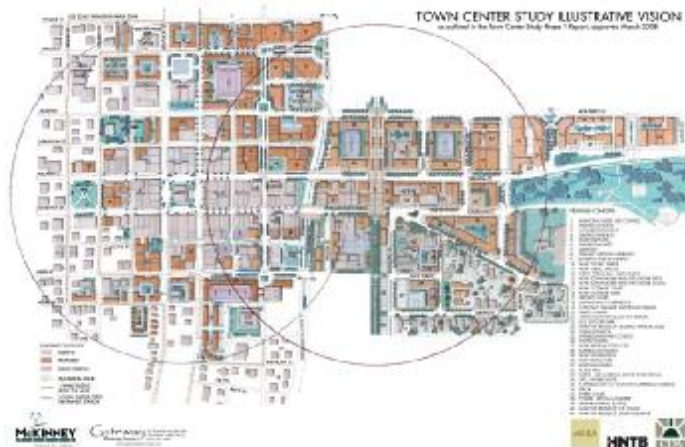




# Town Center Study & Design Regulations



- Town Center Study Key Concepts:
  - Municipal Mixed Use Complex Anchor
  - Maintain Adequate Parking
  - Connectivity Between Destinations
  - NE Quadrant Entertainment District
  - Maintain Scale & Transition of Uses
  - More Pedestrian & Street Amenities



8.5.4 All off-street loading, unloading, and trash pick-up areas shall be located along service streets only unless permitted in the character district Building Form and Site Development Standards in Section 7. Screening of any off-street loading, unloading, or trash pick-up areas shall be regulated pursuant to Section 146-112 of the City of McKinney Zoning Regulations.

#### 8.6 Design of Parking Structures

8.6.1 All frontages of parking structures located on Pedestrian Priority "A" and "B" Streets shall be faced by active commercial uses on the ground floor to a minimum depth of 25'.

8.6.2 Parking structure facades on all public streets (except service streets) shall be designed with both vertical (by a minimum of 20' - 30') and horizontal (aligning with horizontal elements in the block) articulation.

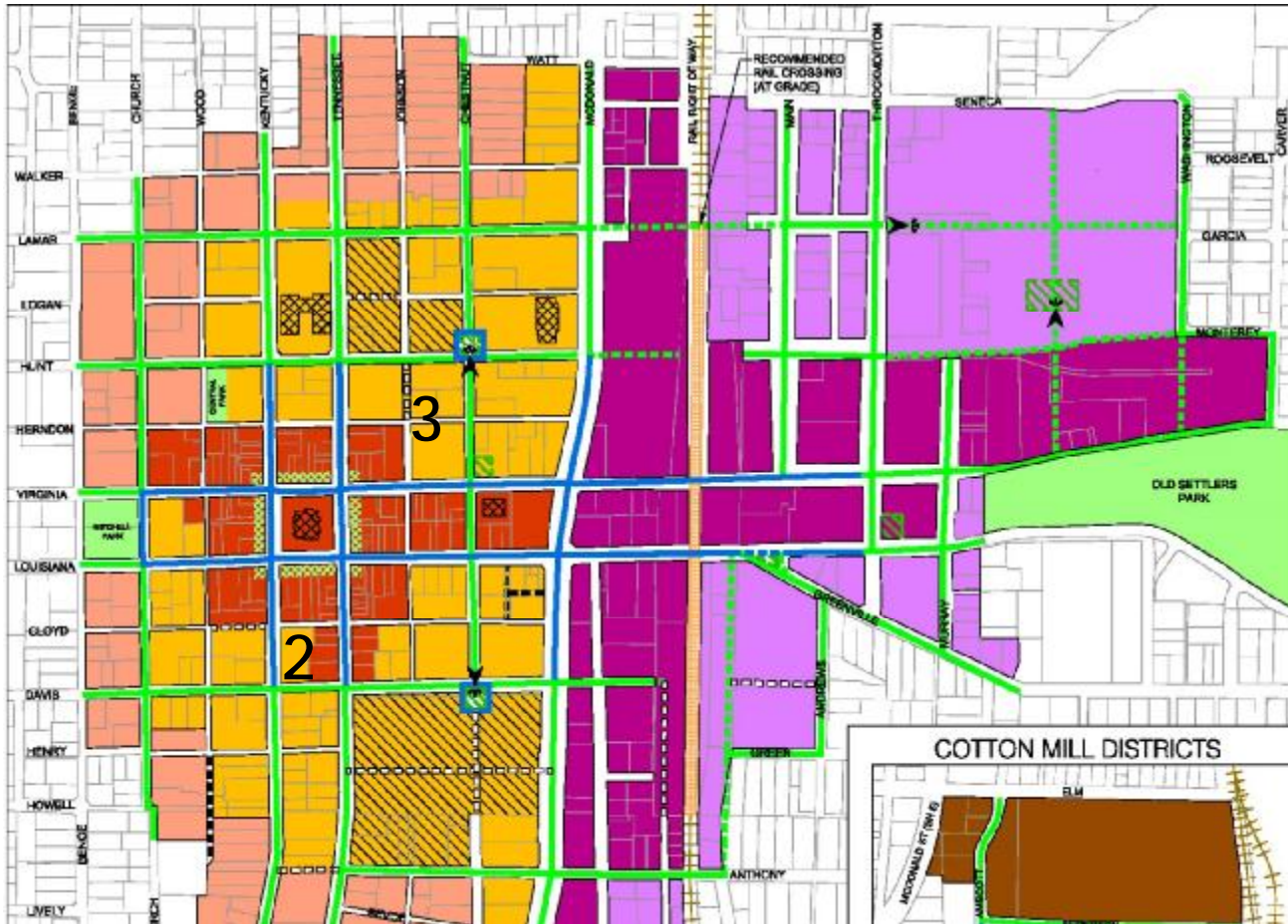
8.6.3 Where above ground structured parking is located at the perimeter of a building, it shall be screened in such a way that cars on all parking levels are not visible from adjacent buildings or the street. Parking garage ramps shall not be visible from any public street. Ideally, ramps shall not be located along the perimeter of the parking structure. Architectural screens shall be used to articulate the facade, hide parked vehicles, and shield lighting.



Images showing appropriate design of parking structure



# Town Center Regulating Plan



CHARACTER DISTRICTS	
Historic Core	Transit Village Edge
Downtown Core	Cotton Mill Core
Downtown Edge	Cotton Mill Edge
Transit Village Core	

STREET DESIGNATIONS	
Pedestrian Priority 'A'	Recommended Priority 'A'
Pedestrian Priority 'B'	Recommended Priority 'B'
	Recommended Service Street
	Recommended Street Vacation

Note: Streets with no designation are service street

SPECIAL REQUIREMENT	
Required Commercial Frontage	

OTHER	
Existing Civic Building	Recommended Civic Building Site
Existing Civic/Open Space	Recommended Civic/Open Space
	Recommended Passenger Rail Station & Platform
	Recommended Vista Terminus

COTTON MILL DISTRICTS	
Cotton Mill Core	

LOCATOR MAP	

GATEWAY PLANNING  
Design • Implementation • Value Capture

McKINNEY  
Unique by nature.

McKinney Town Center Regulating Plan



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# Parking Structure Project Approach

## Important Elements of the Process...

- Consider Stakeholder/Community Input
  - Steering Committee?
  - Stakeholder Meetings (Group and/or Individuals)?
  - General Public Meeting?
  - Online Survey?
- Consideration of Prior Studies
- Apples to Apples Comparison
- Traffic Impact & Mitigation
- Draft & Final Report Review

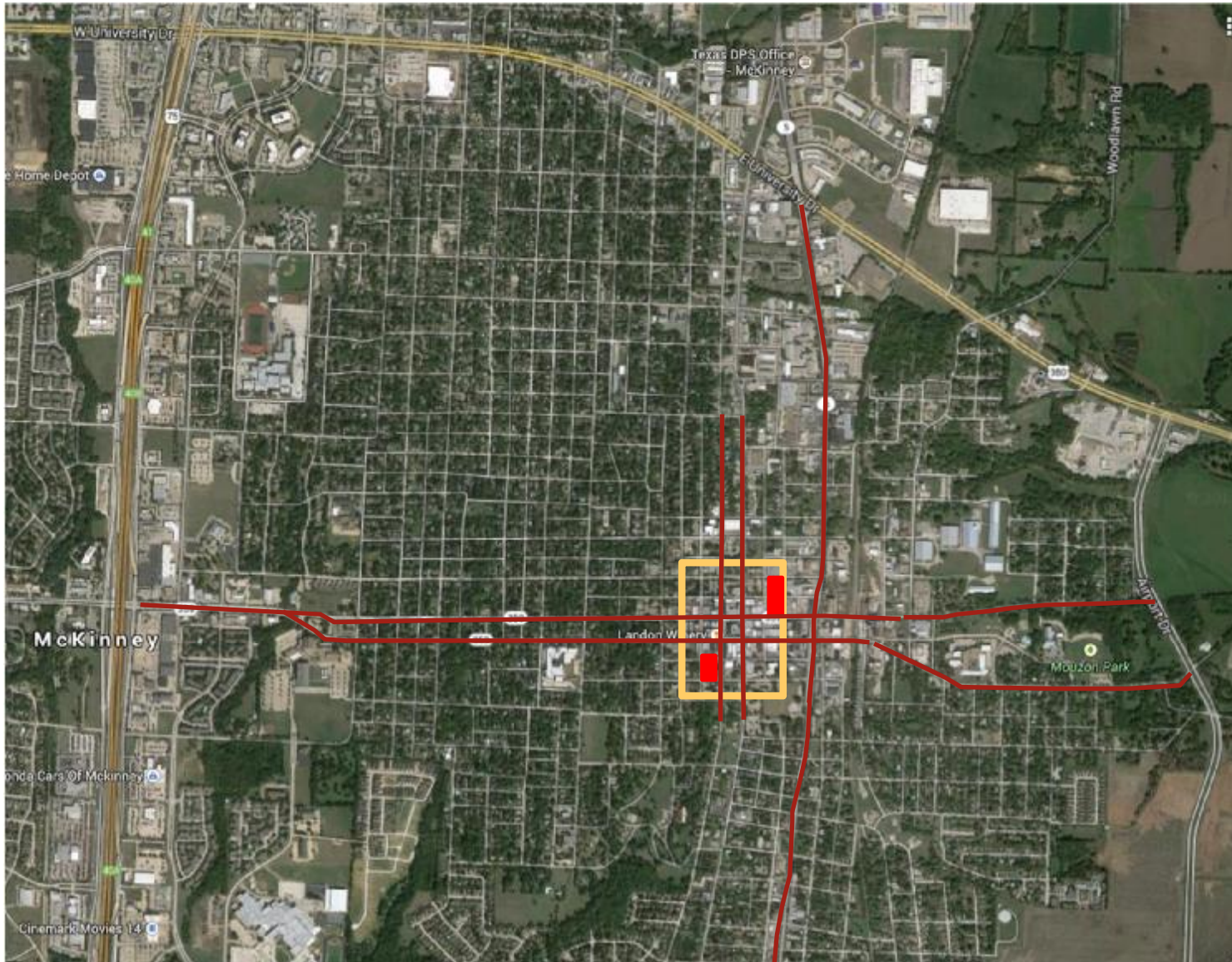


# Current Parking Resources





# Downtown McKinney Traffic Access



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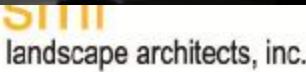
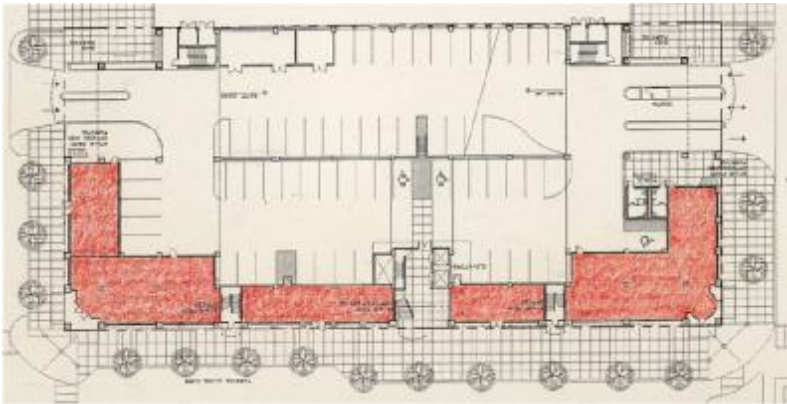


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# City of Boulder Historic Pearl St. Mall



# City of Missoula, MT



## Park Place Parking Structure

- IPI 2014 Award of Excellence
- 5 Levels = 341 Spaces
- 3,000 SF Retail & Artwork
- Solar Panels



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# Staunton, VA Parking Structure Example



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# Historic Parking Structure Architecture



# 3D Computer Rendering



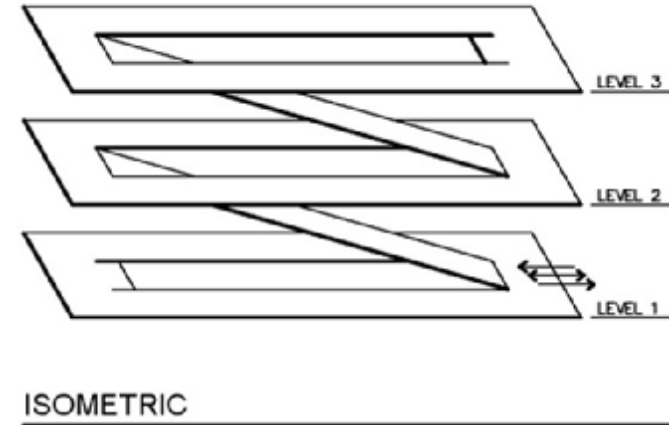
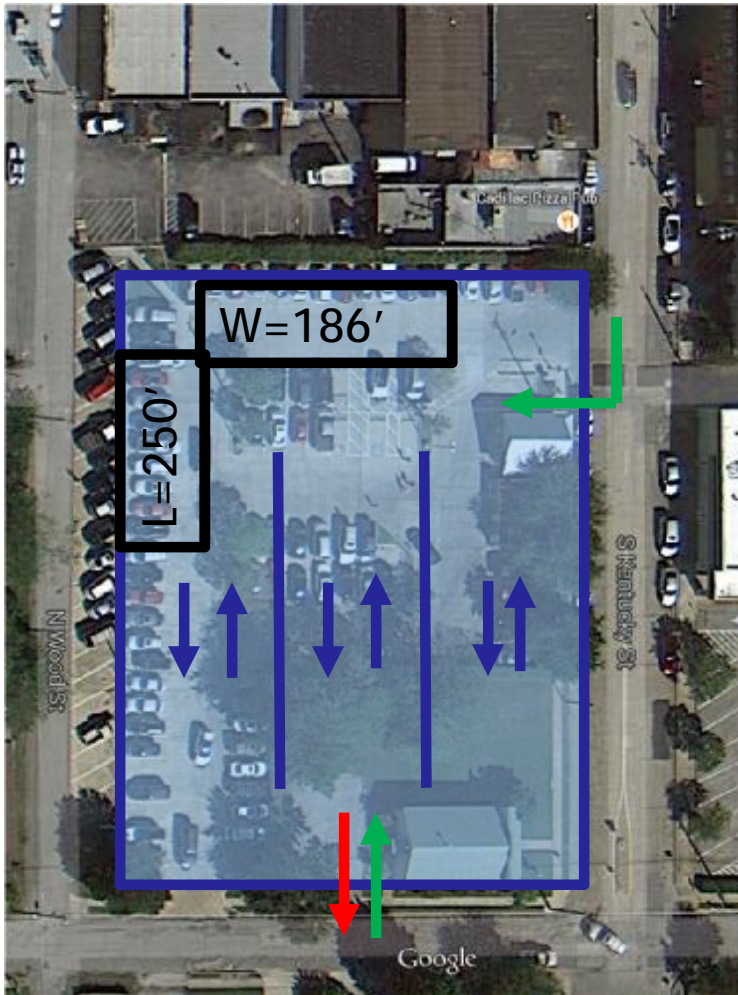


# Site 2 – Kentucky & Davis





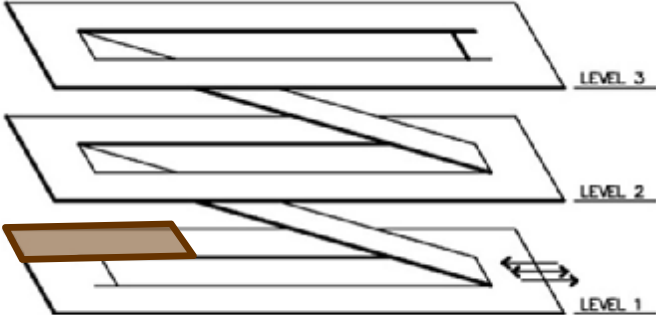
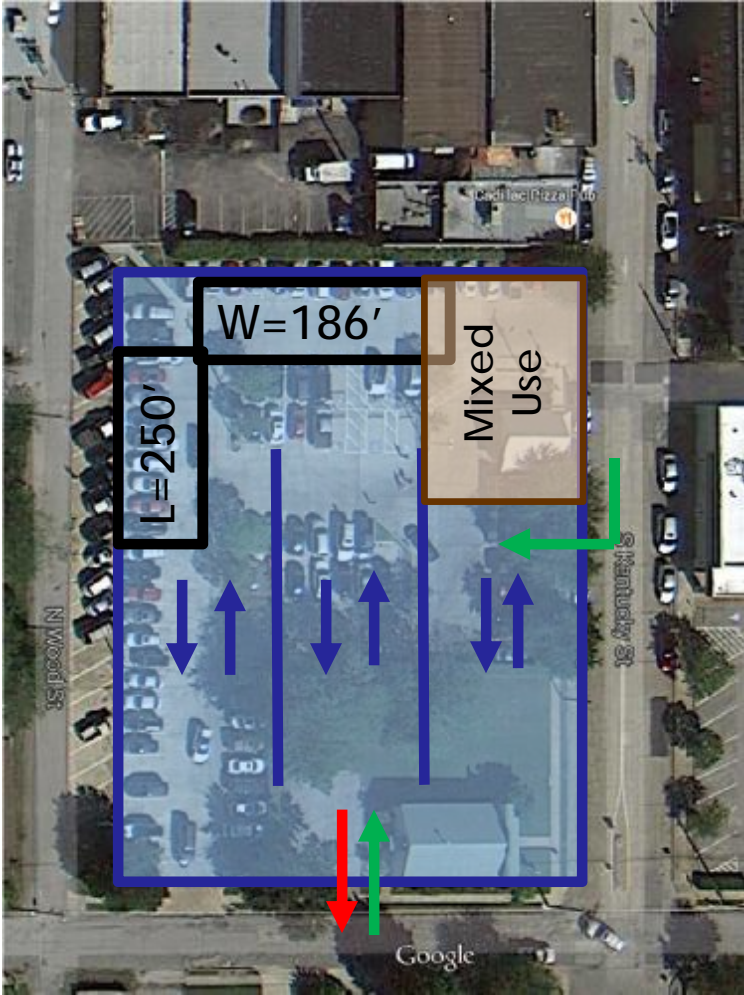
# Site 2 – Kentucky & Davis



## Site 2 – 3 Bay

- 3 Levels = 400 Spaces (Net 293)
- 4 Levels = 540 Spaces (Net 437)

# Site 2 – Kentucky & Davis



ISOMETRIC



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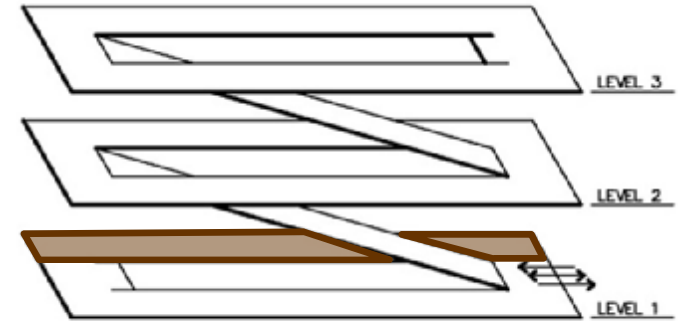
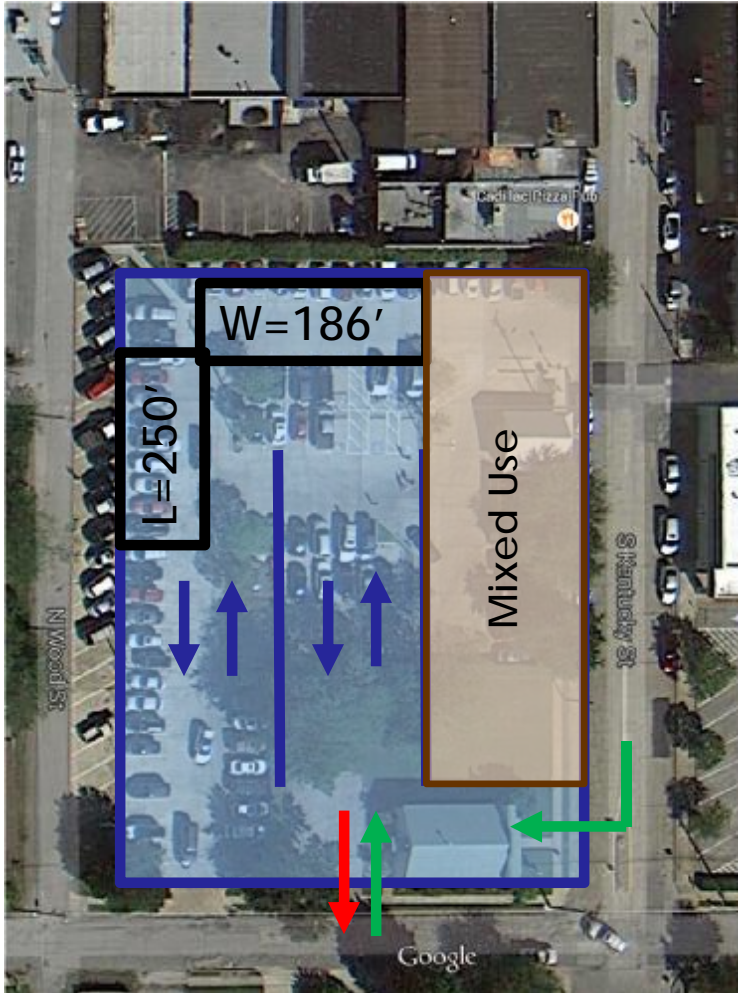


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# Site 2 – Kentucky & Davis



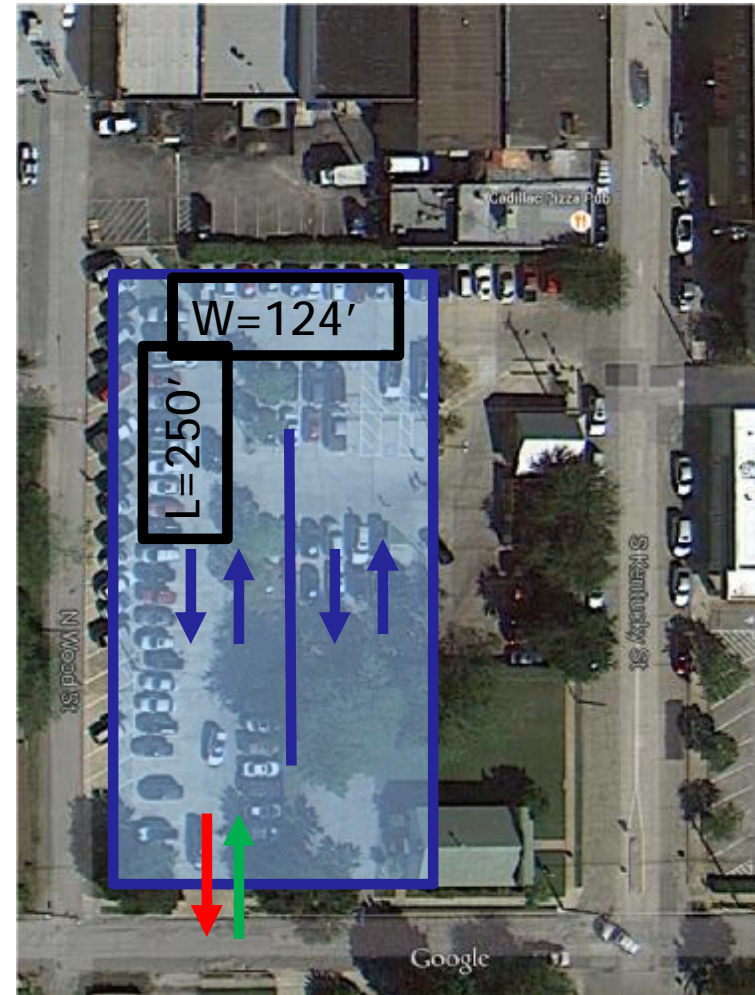
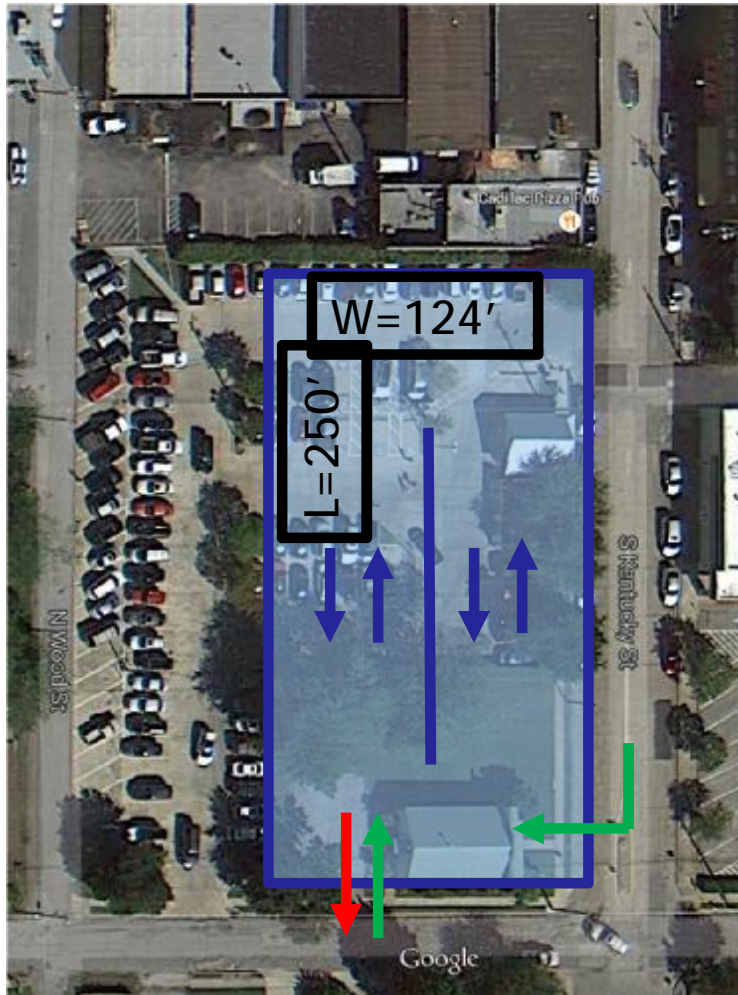
ISOMETRIC



## Site 2 – 3 Bay

- 3 Levels = 340 Spaces (Net 234)
- 4 Levels = 480 Spaces (Net 372)

# Site 2 – Kentucky & Davis – Horz. Exp.

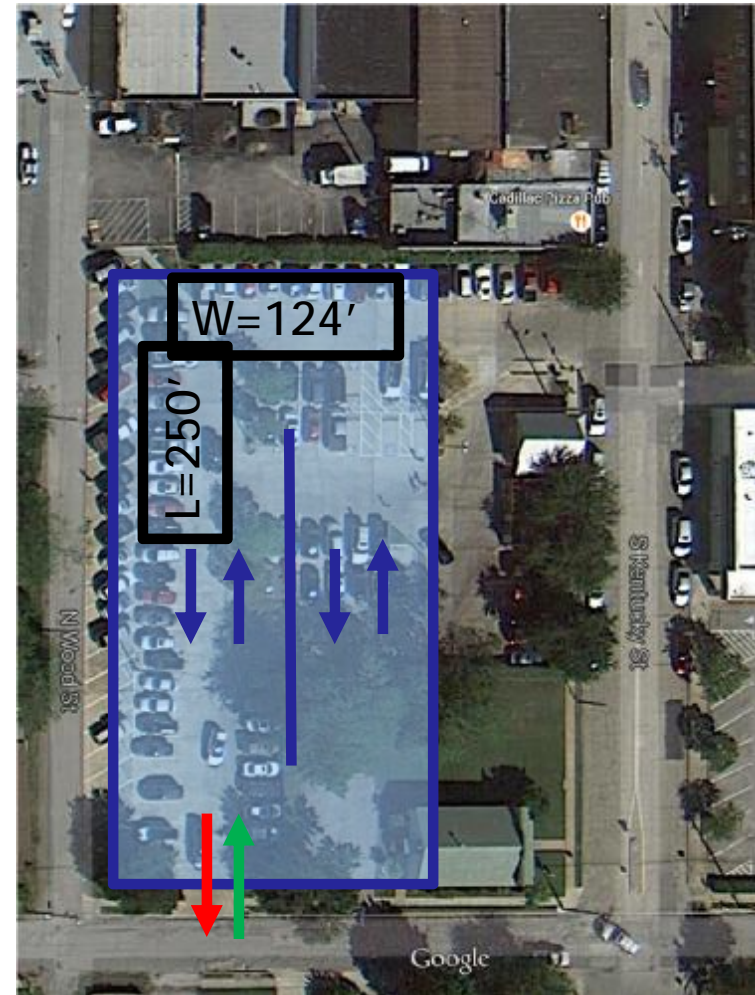
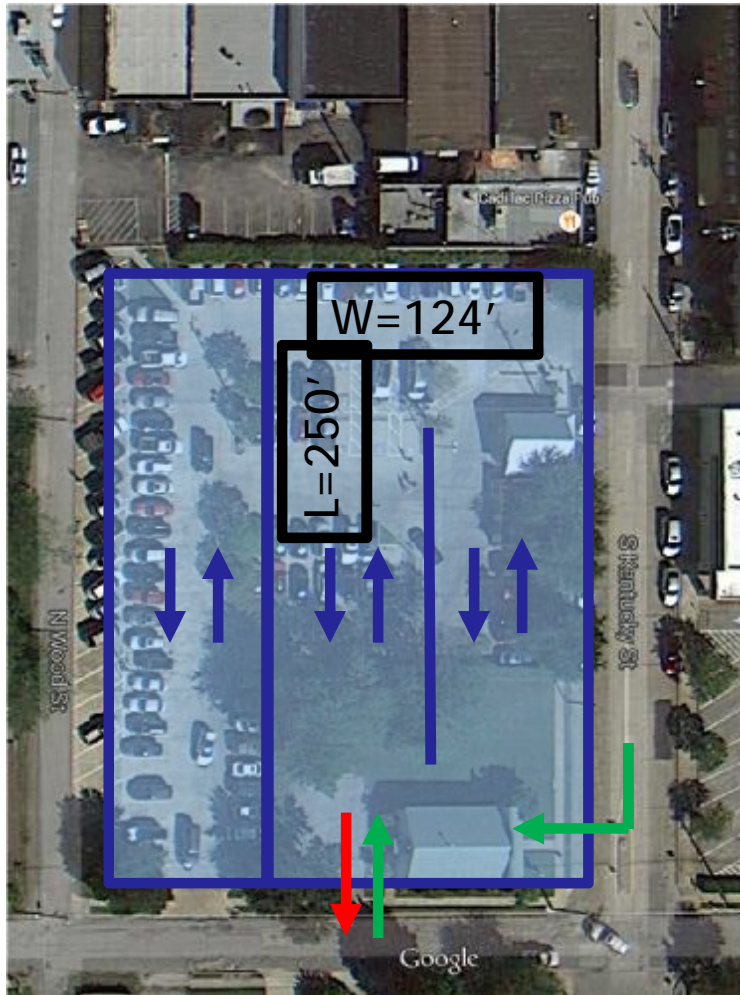


## Site 2 – 2 Bay

- 3 Levels = 320 Spaces (Net 210)
- 4 Levels = 410 Spaces (Net 306)



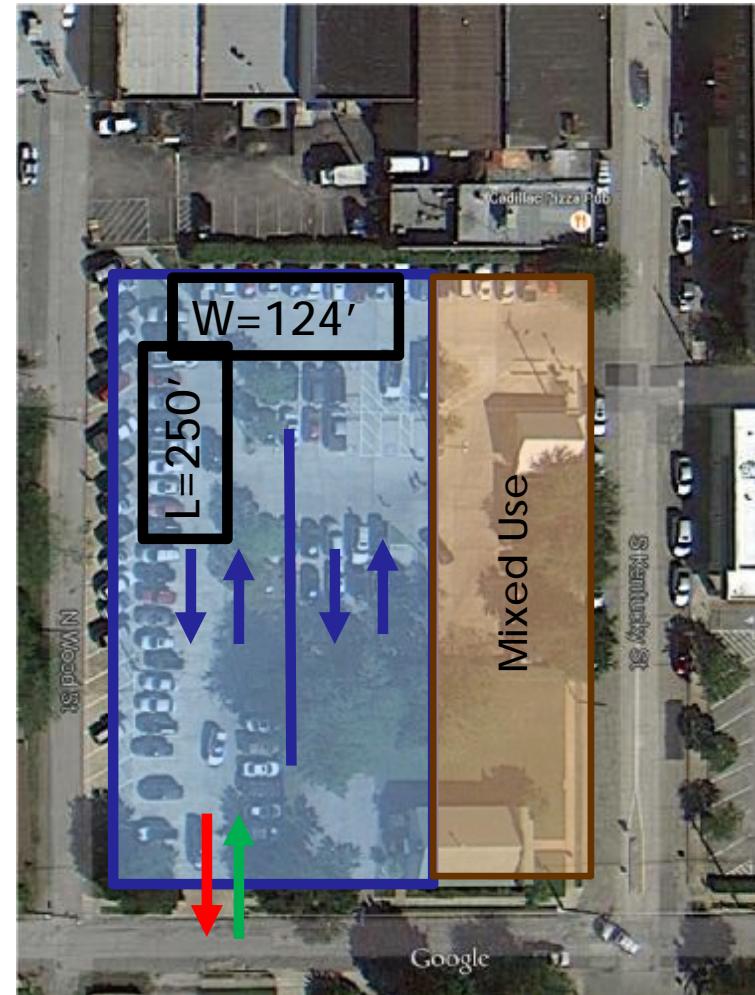
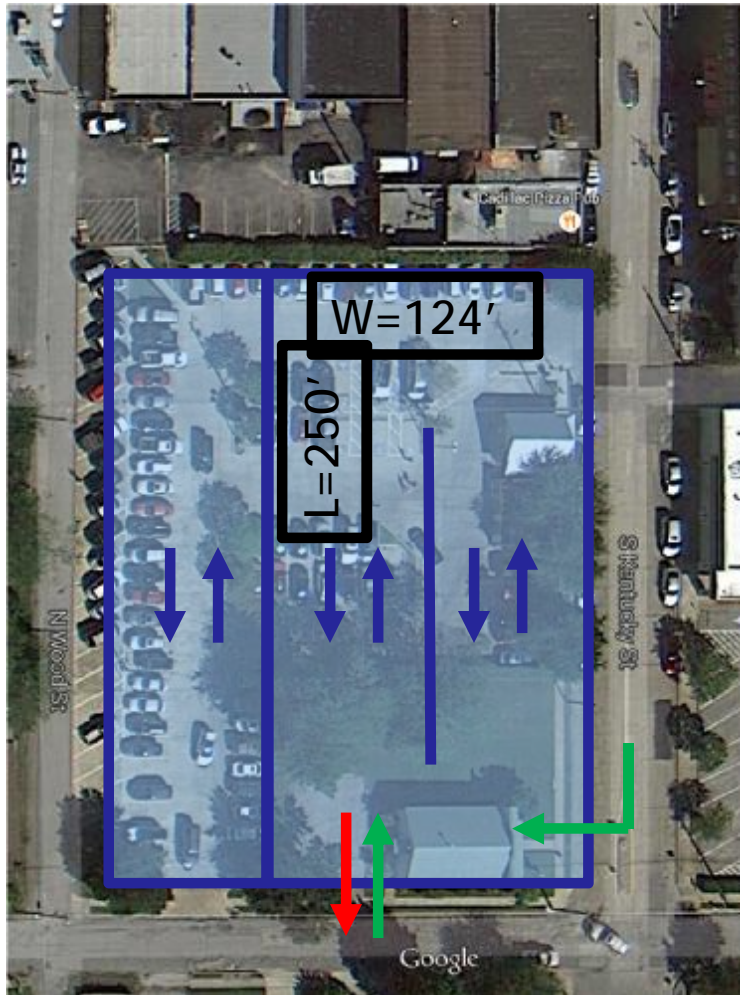
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## Site 2 – 2 Bay

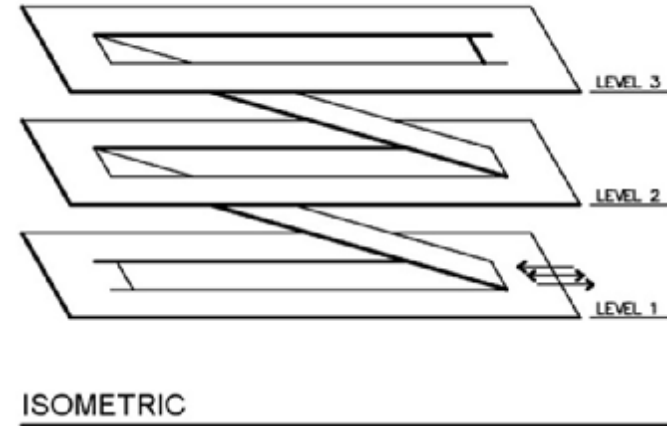
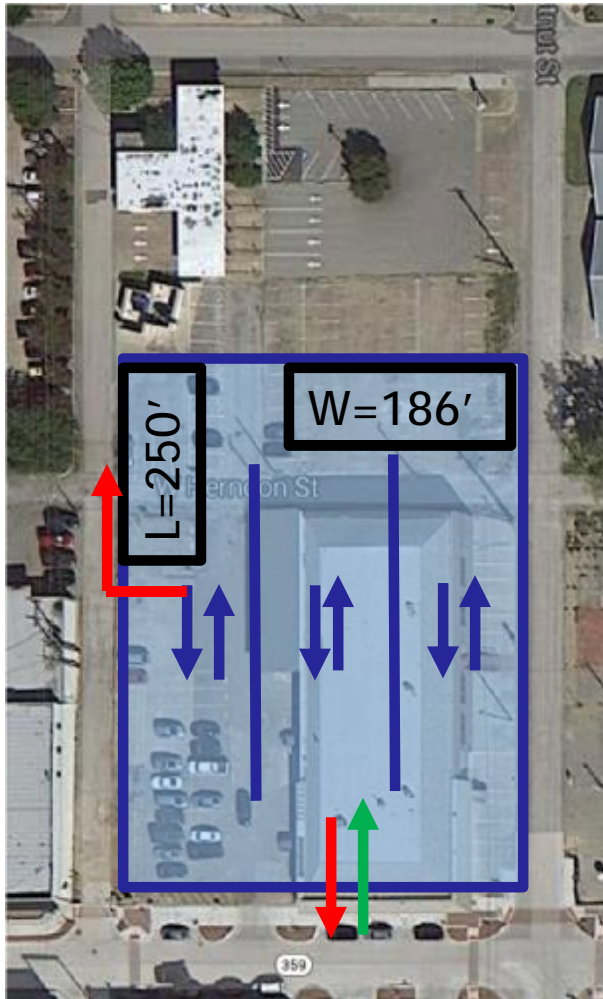
- 3 Levels = 320 Spaces (Net 210)
- 4 Levels = 410 Spaces (Net 306)



# Site 3 – Virginia & Chestnut



# Site 3 – Virginia & Chestnut

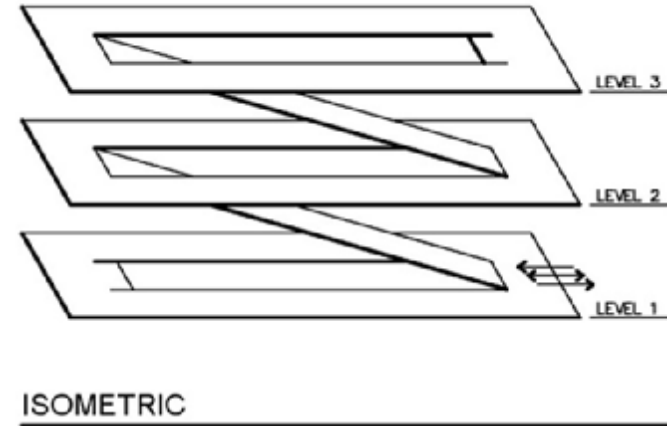
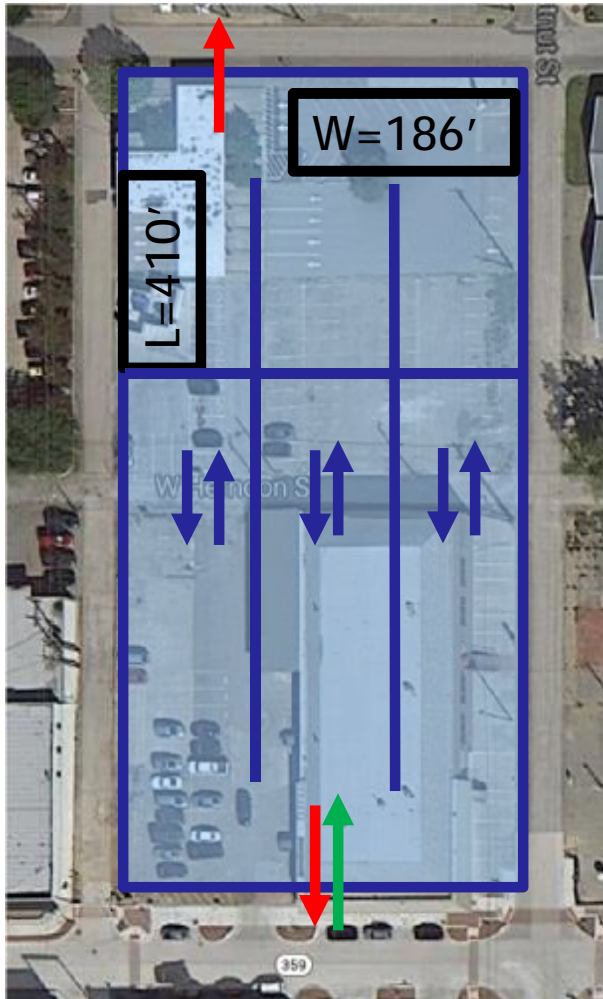


## Site 3 – 3 Bay

- 3 Levels = 450 Spaces
- 4 Levels = 620 Spaces



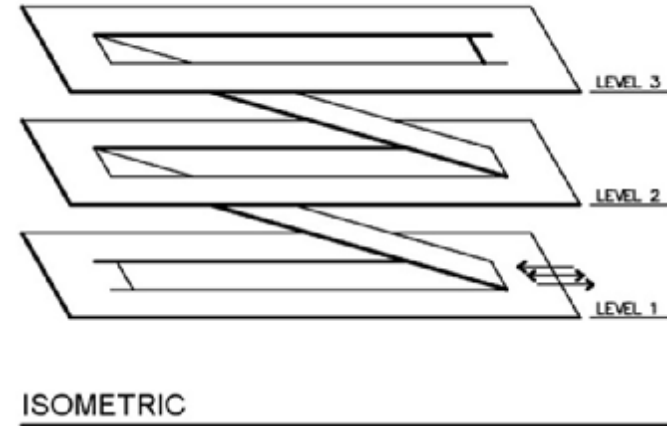
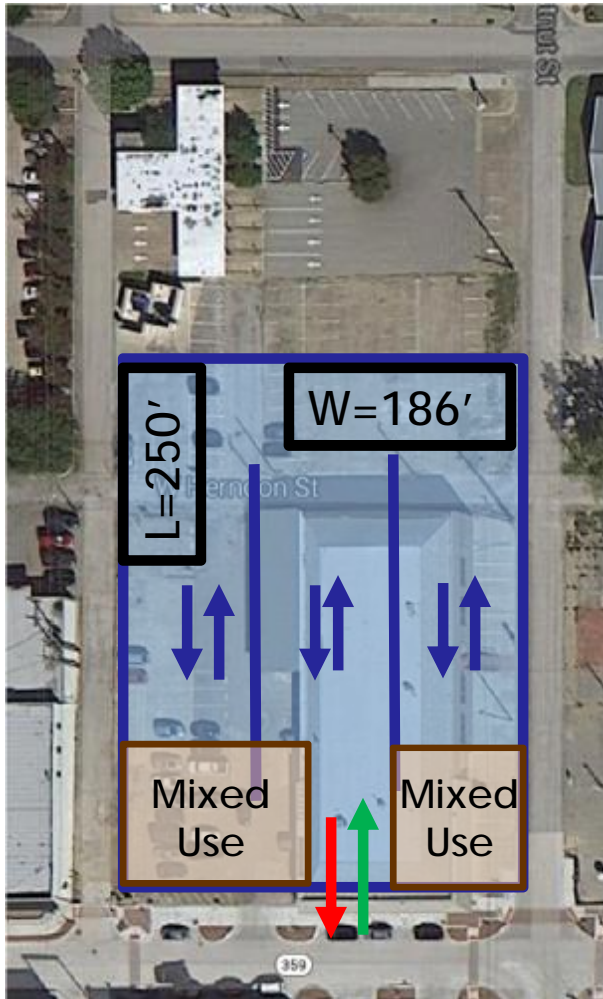
# Site 3 – Virginia & Chestnut



## Site 3 – 3 Bay

- 3 Levels = 685 Spaces
- 4 Levels = 930 Spaces

# Site 3 – Virginia & Chestnut

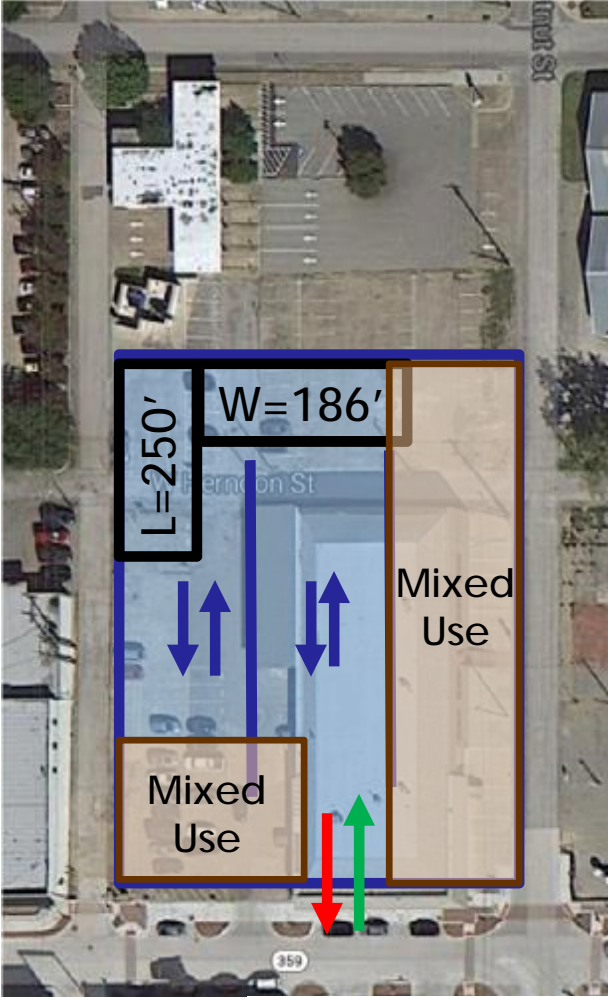


## Site 3 – 3 Bay

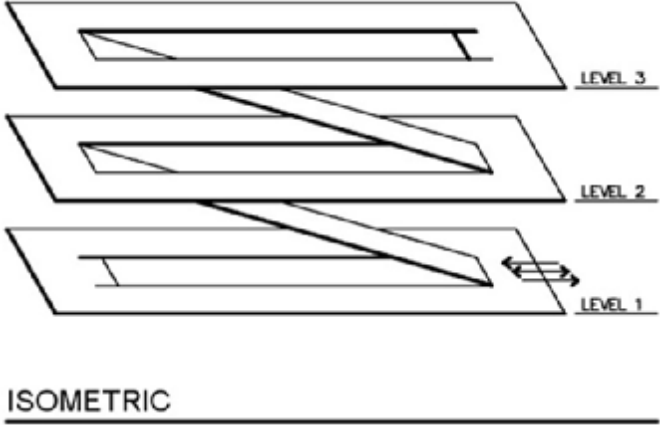
- 3 Levels = 390 Spaces
- 4 Levels = 550 Spaces



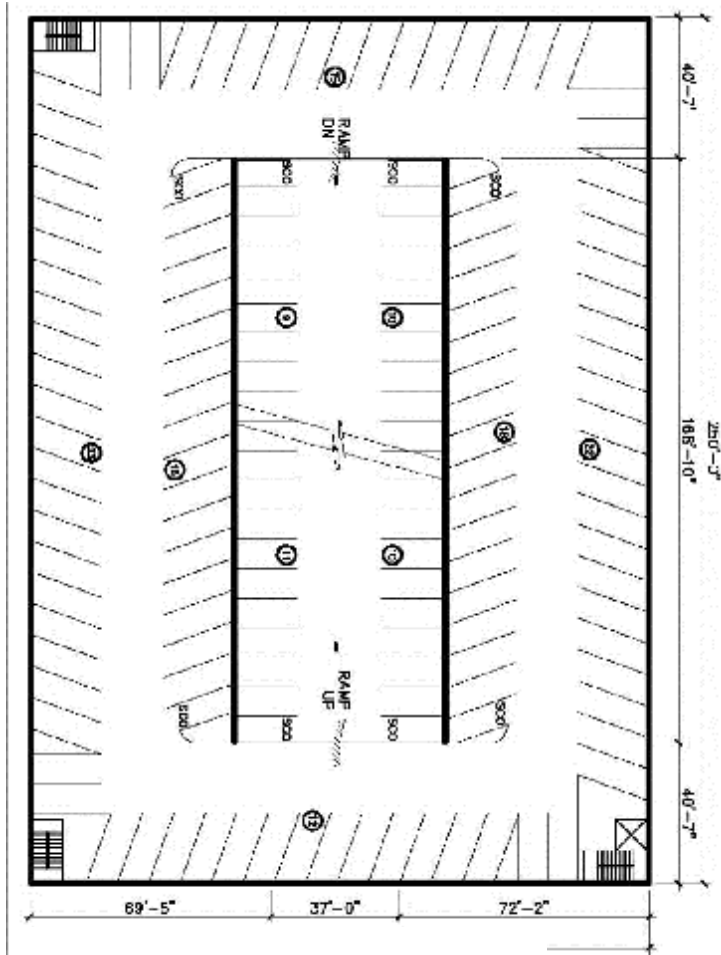
# Site 3 – Virginia & Chestnut



Site 3 – 3 Bay



# Example Conceptual Parking Plans



**LEVEL 2 FUNCTIONAL PLAN**

SCALE: 1"=30'  
NOTE: SCO (SMALL CAR ONLY)

## SPACE TABULATION CHART

LEVEL	STANDARD SPACE	COMPACT SPACE		TOTAL
1	123	6	-	129
2	143	8	-	151
3	120	6	-	126
<b>TOTAL</b>	<b>386</b>	<b>20</b>	<b>-</b>	<b>406</b>

126,420 TOTAL sq. ft. = 311 sq. ft. PER SPACE

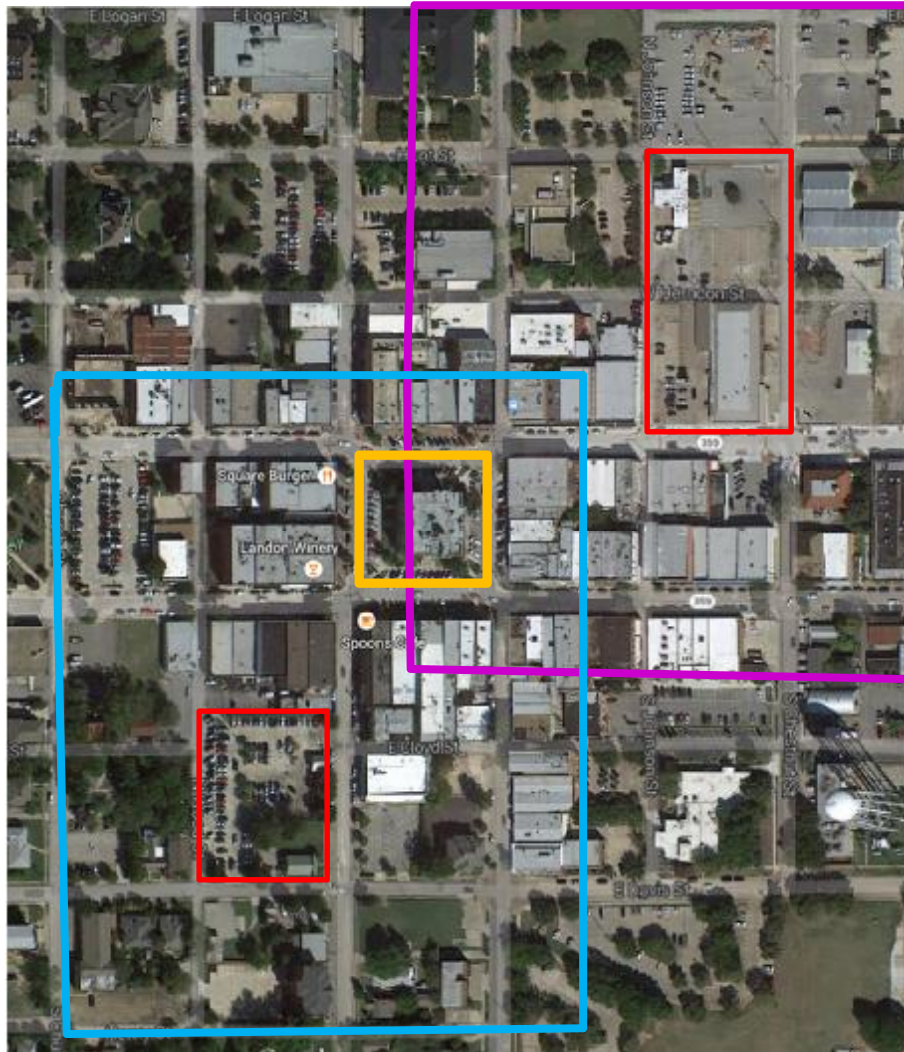
## Number of Spaces vs. Height

- 3 Levels = 406 Spaces (Net 218)
- 4 Levels = 560 Spaces (Net 372)





# Parking Site Evaluation



## Site Evaluation Criteria

- Unmet Parking Demand
- City vs. Private Ownership
- Mixed Use Potential
- Consistency w/ MTC Master Plan
- Visual Impact
  - Height & Massing
  - Appearance
  - Historic Integrity
- Vehicular Access & Traffic Impact
- Pedestrian Walking Distances
- Parking Circulation & Layout
- Cost (Efficiency, Land, Utilities)
- Existing Parking Spaces "Lost"
- Future Flexibility & Expansion



# Typical Parking Structure Costs



## Construction Cost Per Space

**Structured Parking**                      \$10,000 to \$20,000

- National Median Cost Today is \$18,000 per space
- McKinney is  $\approx$  80% of Average = \$14,400 for a Basic Median Garage at an average of about \$43.25/SF





# Typical Parking Structure Costs



## Enhanced Parking Structure Cost EXAMPLE

- Basic Parking Structure Construction Cost = \$43.25/SF
- Historic Architectural Treatment + \$5.00/SF
- Durable CIP P/T Structural System + \$2.00/SF
- Lighting Upgrades + \$1.00/SF
- Painted Ceilings + \$1.50/SF

**SUBTOTAL = \$52.75/SF**

- Efficiency of Layout (SF / Space) IF the Cost is \$52.75/SF
  - At 335 SF/Space = \$17,800 / Space
  - At 350 SF/Space = \$18,500 / Space (+4%)
  - At 365 SF/Space = \$19,300 / Space (+8%)



# Q & A



## Parking Structure Success Factors

- User Friendly – Safety and Comfort
- Easy Access, Convenient & Simple
- Consider Mixed Use Integration
- Attractive Aesthetic Treatment
- Sustainable by Design
- Flexibility of Operations
- Cost Effective
  - Efficient S.F. per Space
  - Easily Maintainable





# City of Missoula, MT



Season's Greetings  
From Carl Walker, Inc.  
Best Wishes for a Joyous Holiday  
and a Happy New Year!



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# Reference Slides





# Current Parking Resources

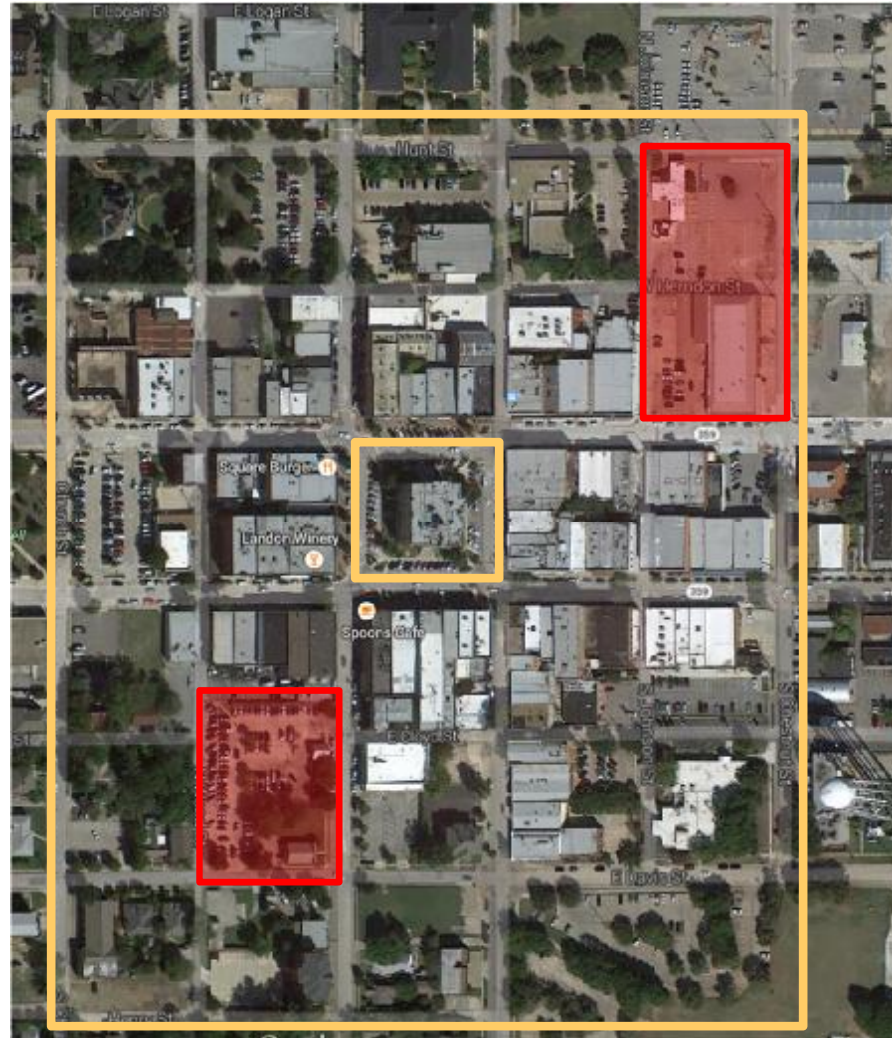


Site 2

Site 3



# Town Center & Parking Structure Sites



# Project Schedule



## City of McKinney, Texas

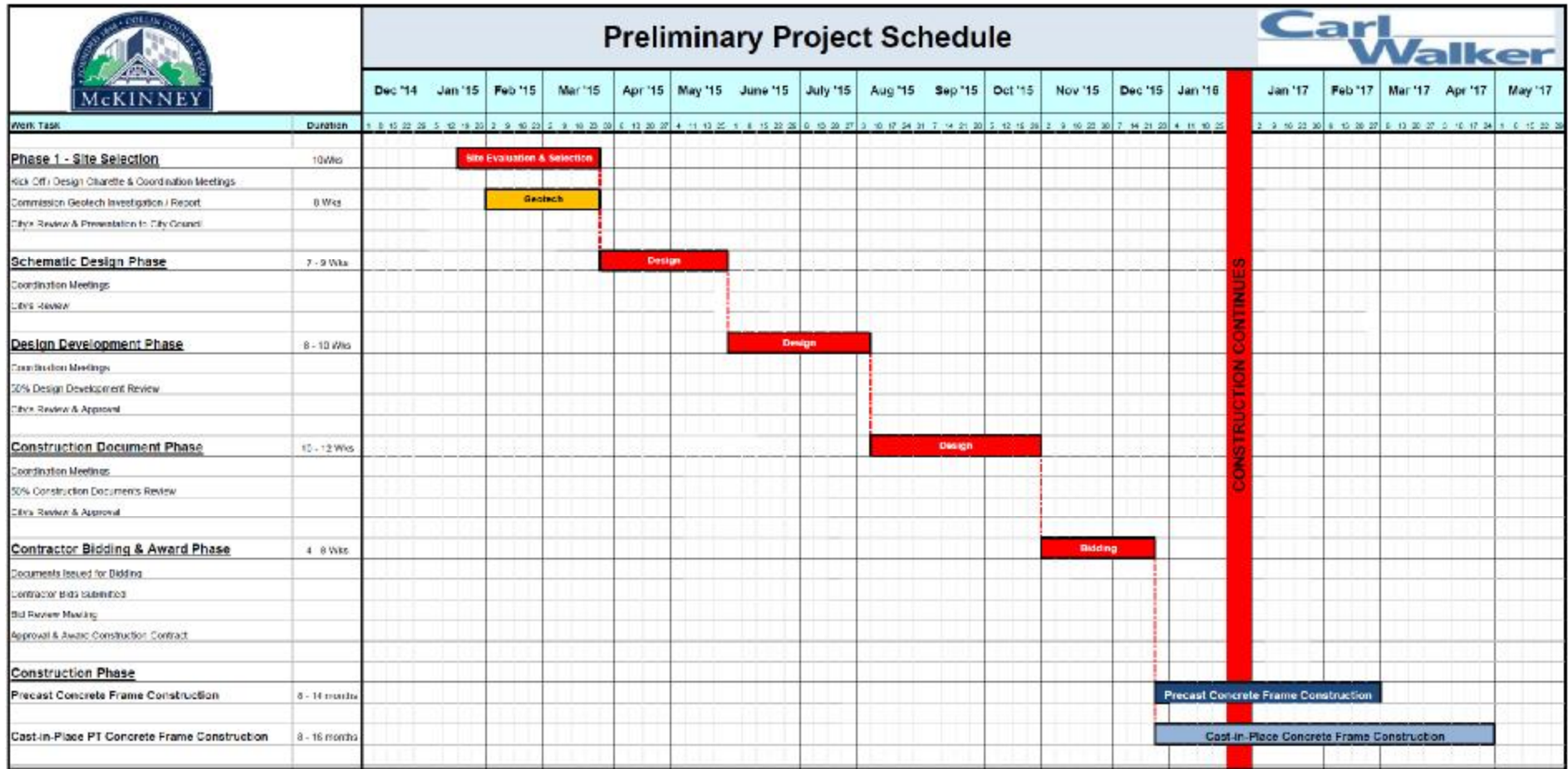
### PHASE 1: Parking Structure Site Evaluations and Recommendations

TASK	WEEKS											
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10		
<b>Phase 1 Tasks - Site Evaluation and Recommendations</b>												
ISSUE REQUEST FOR INFORMATION	█	█	█	█								
CONDUCT REVIEW OF AVAILABLE INFORMATION/DATA		█	█	█								
KICK OFF MEETING			█									
ANALYZE SITE OPTIONS & CODE REVIEW			█	█	█	█						
PRELIMINARY CONCEPTUAL DESIGN OF ALTERNATIVES				█	█	█	█					
TRAFFIC DATA COLLECTION & ASSESS TRAFFIC IMPACT			█	█	█	█	█					
PRESENT SITE OPTIONS TO CITY AND OTHER GROUPS							█					
CITY OF MCKINNEY REVIEW						█	█					
REFINE SELECTED CONCEPTUAL DESIGN FOR EACH SITE							█	█	█			
PREPARE CONSTRUCTION COST ESTIMATES							█	█	█			
PREPARE DRAFT REPORT							█	█	█			
PRESENT CONCEPT DESIGNS - FORUMS & GROUPS AS DIRECTED									█	█		
CITY OF MCKINNEY REVIEW									█	█		
FINALIZE REPORT AND DELIVERABLES										█	█	
ASSIST CITY TO PRESENT TO CITY COUNCIL & OTHER GROUPS											█	█





# Project Schedule



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# Site 2 – Kentucky & Davis



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# Site 3 – Virginia & Chestnut





# Sustainability Features



- Encouraging Alternate Energy Vehicles
  - Electric Vehicle Charging Stations
  - Preferred Parking Location
- Sustainable Site Development
  - Storm Water Reuse and Detention
- Energy Efficiency
  - Energy Efficient Lighting & Controls
  - Day Lighting & Natural Ventilation
  - Solar Panels & Canopies
- Materials and Resource Selection
  - Recycled and Local/Regional Materials
  - Low VOC Waterproofing and Sealants
- Design Considerations
  - Efficient Entry/Exit Processing

