CITY OF FLAGSTAFF

Parking Demand Study Update

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Methodology

- Updated Land Use Data (provided by City)
- Updated Building Inventory / Parking Supply Inventory (Rich & Associates)
- One day of occupancy counts (Thursday (August 2, 2018)
  - Conducted during peak tourist season
- Development of Parking Demand Tables based on existing conditions
- Project for potential higher volume days (+5% to +15% greater than observed)

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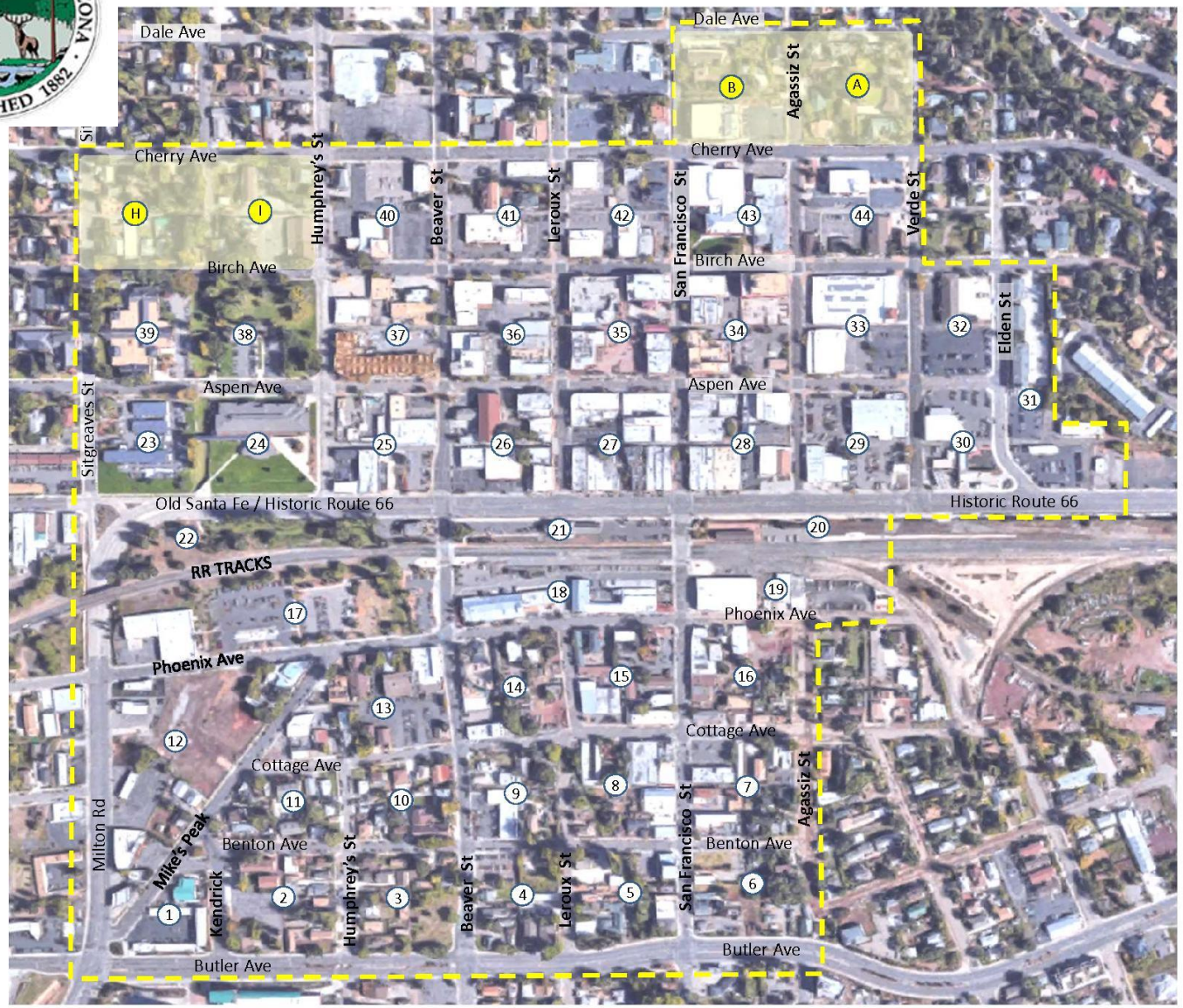

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ARIZONA

Parking Study Update

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LEGEND:

(#) Block Numbers

Study Area

Sheet Title:

STUDY AREA

File No.	1907
Scale	n/a
Date	10/10/18
Checked by	DWB
MAP Number:	1
Page Number	

Parking Analysis separated into North side assessment and separate south side assessment
Bisected by Historic Route 66

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North Side Downtown

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Summary

North Side of Downtown

Parking Demand uses dominated by high proportion of government uses (33% of total occupied sf) and functions which have a significant impact on the peak need for parking

Parking Supply shows more than **two-thirds** of total available parking supply is **privately controlled** which limits ability of patrons to park once and walk to multiple destinations. Has an affect on the "true" surplus / deficit calculations.

Occupancy Results show 58% of total parking occupied. When deducting surplus private parking spaces, the existing conditions (correlated to observed day) shows a net surplus of 184± spaces at the overall peak hour (3:00 – 4:00 pm). Adjusting the calculations to account for the high proportion of government parking shows an 11:00 am – 12:00 noon peak. At this time the "net surplus" which discounts surplus private parking is reduced to 118± spaces.

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Parking Supply
North Side Downtown

North Side of Downtown						
	Public		Private		Total	
On-Street	576	100.0%	0	0.0%	**576**	24.5%
Off-Street	166	9.4%	1,606	90.6%	**1,772**	75.5%
Total	**742**	**31.6%**	**1,606**	**68.4%**	**2,348**	**100.0%**

More than two-thirds of North Side parking privately provided. Rich's best practice is City should have 50 percent publicly available.

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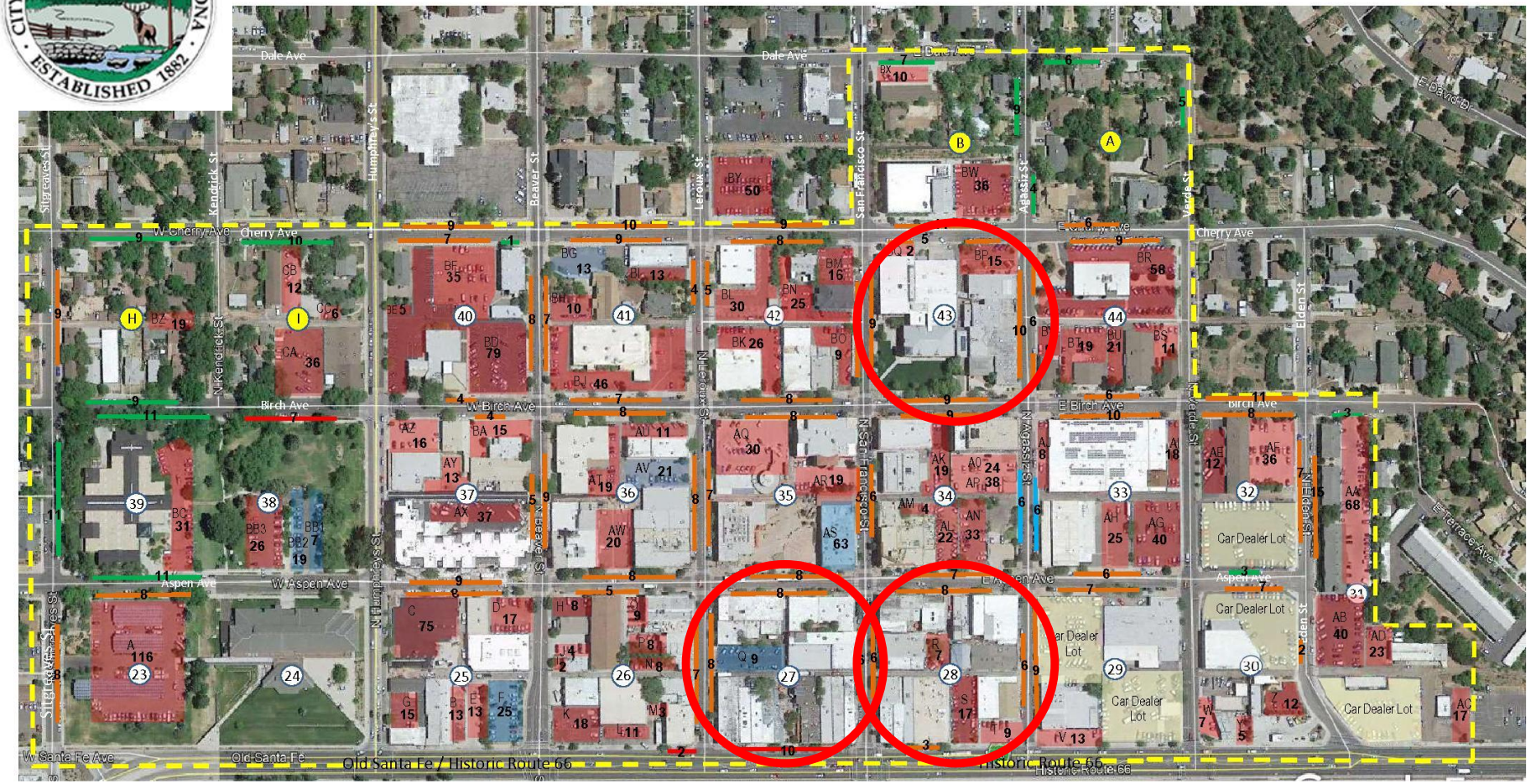

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Flagstaff, Arizona

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LEGEND:
STUDY AREA
BLOCK NUMBER

BLOCK FACE KEY PLAN:

On-Street: Metered, Unmarked, 15-Minute, 2-Hour
Off-Street: Public, Private

Sheet Title: NORTH STUDY AREA

MAP Number: MAP 2

Page

Public Parking (blue on map) – Can park and visit any destination

Private Parking (red on map) – Only for staff, customers or visitors of owning entity

On-Street Metered Parking (orange on map) – unlimited stay $1.00 per hour

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Downtown Occupancy Counts

- Used to both observe how the existing parking is being used
- Serve as a means to calibrate the parking demand model
- By correlating the demand model to observed conditions, a more accurate forecast of parking demand can be prepared

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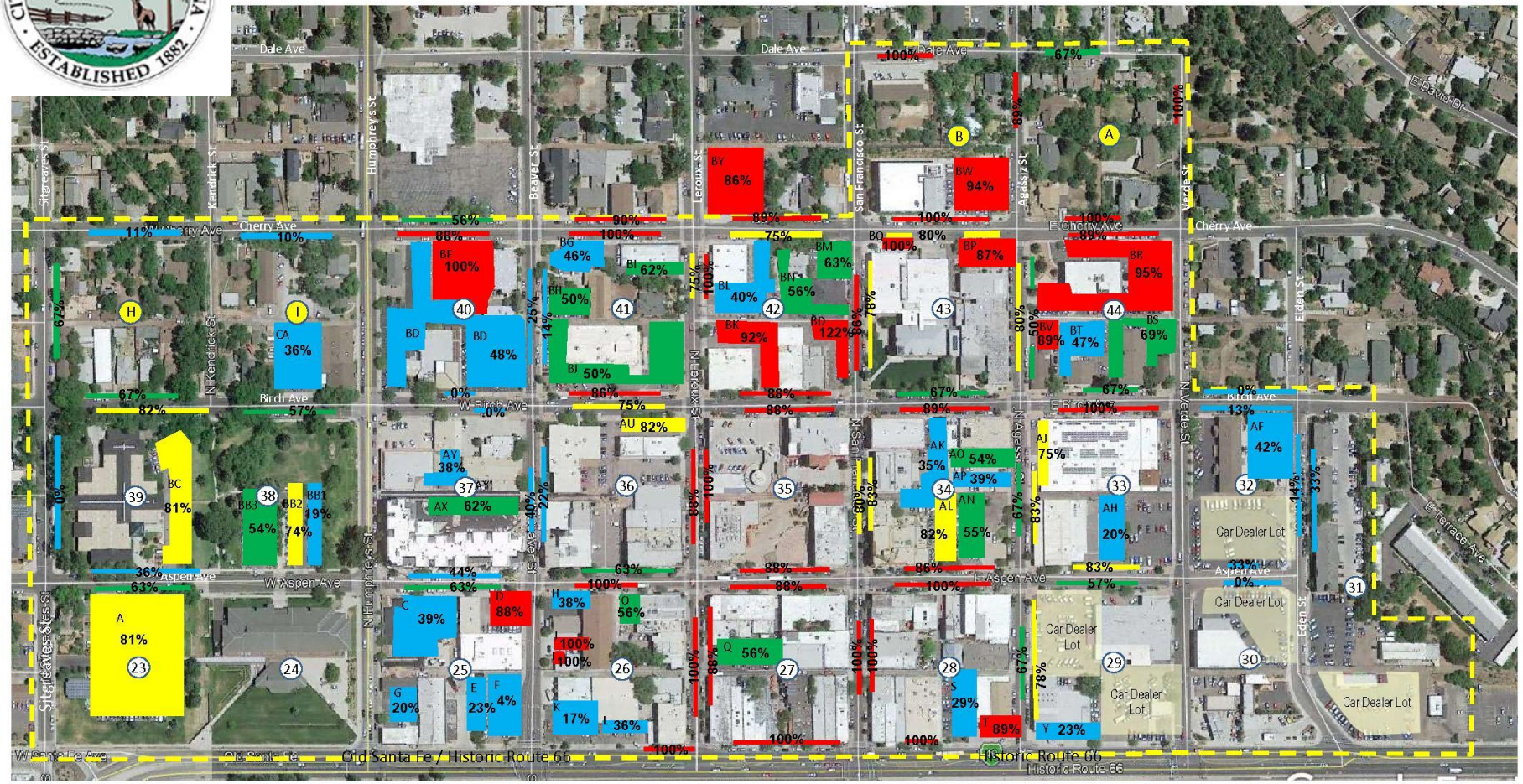
Peak Hour – North Downtown 3:00 pm – 5:00 pm



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LEGEND:
STUDY AREA
BLOCK NUMBER

BLOCK FACE KEY PLAN:

PARKING OCCUPANCY:
85% Through 100%
75% Through 84%
50% Through 74%
0% Through 49%

Sheet Title:
NORTH STUDY AREA
PEAK OCCUPANCY
3:00 PM – 5:00 PM

MAP Number:
MAP 3

Page

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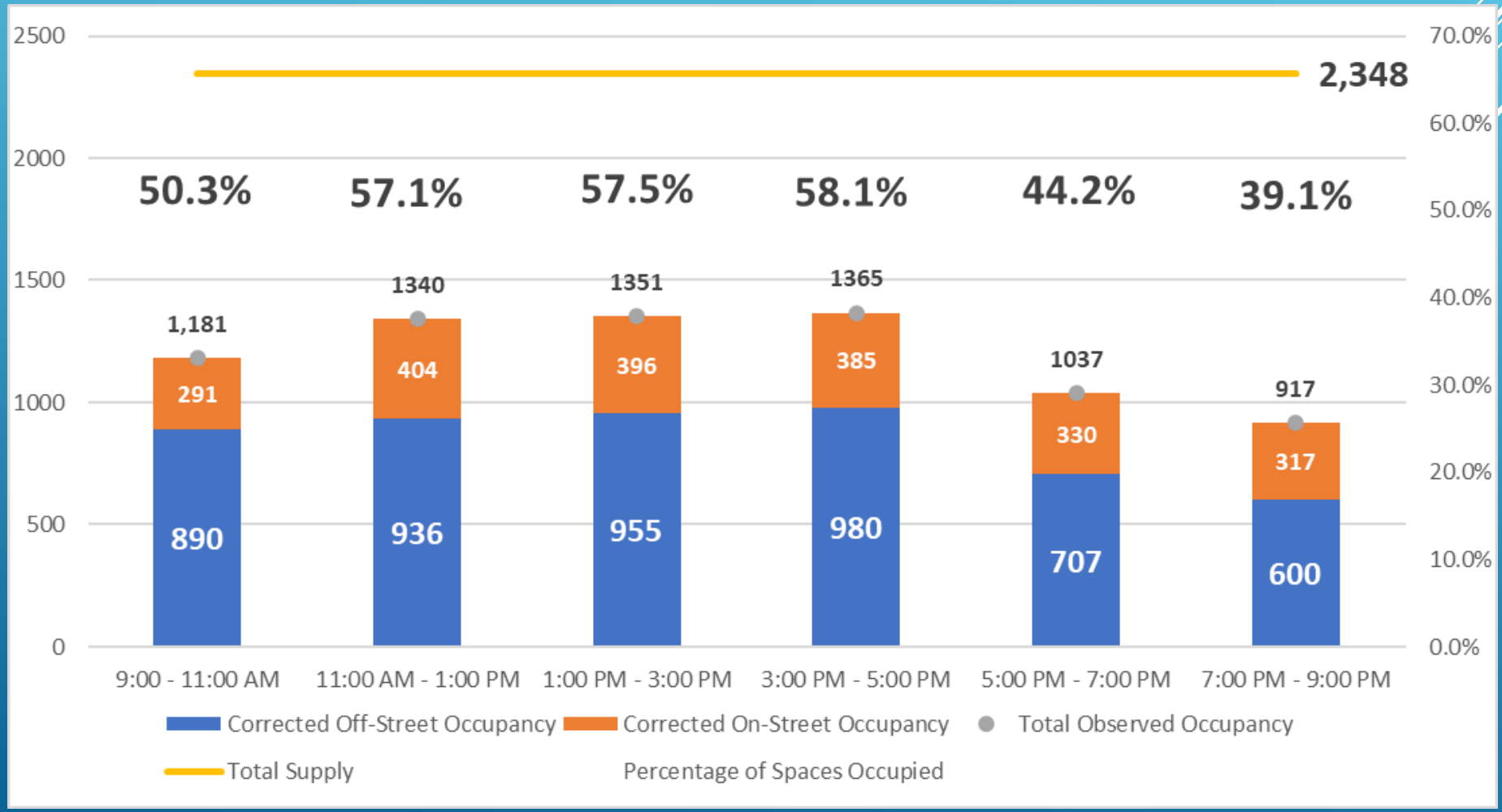
North Side Downtown Observed Parking Occupancy



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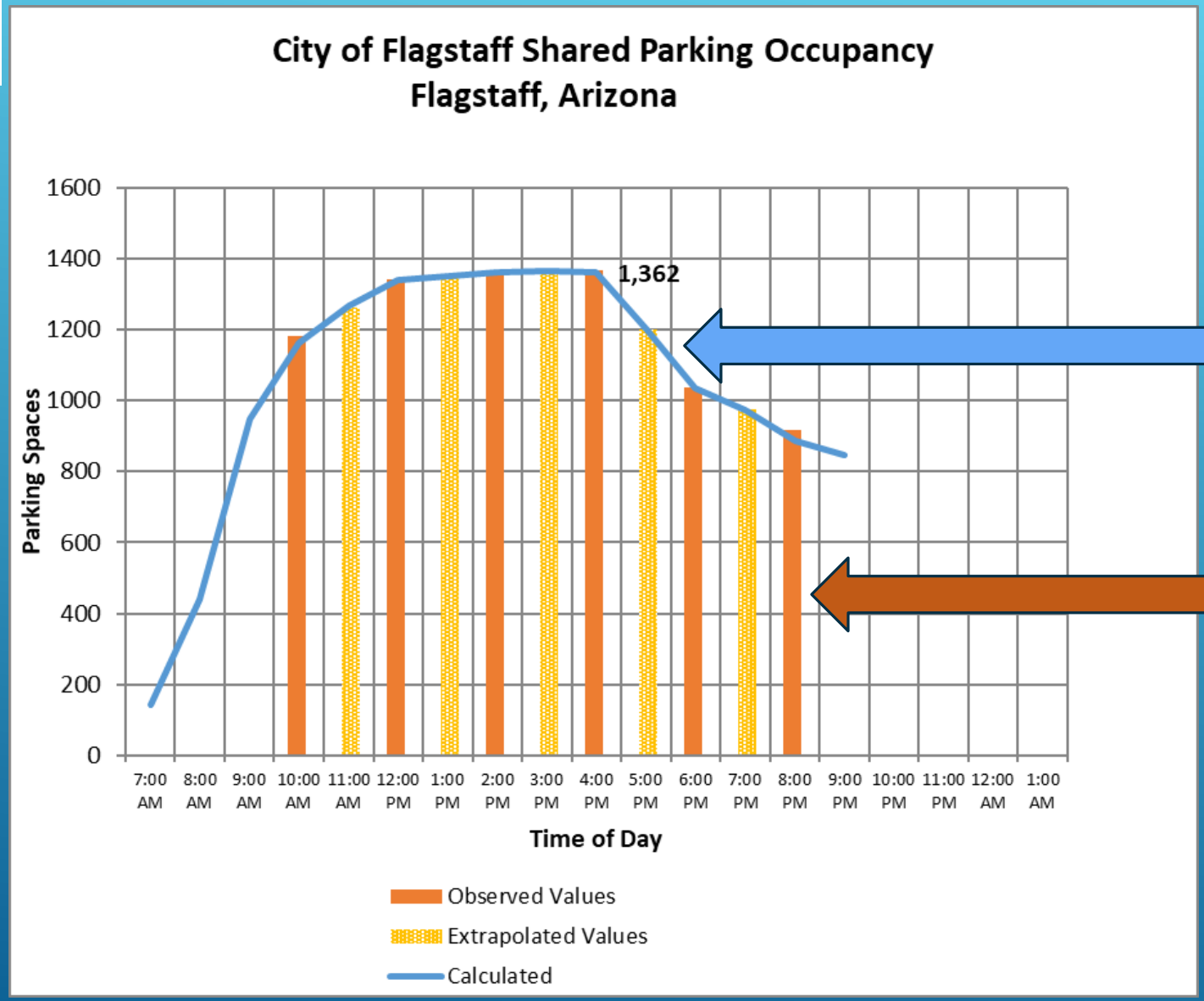
Comparison of Calculated Parking Demand to Observed Parking Occupancy



Calculated Parking Demand

Observed Parking Occupancy

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In Assessing the adequacy of the parking supply there are TWO ways of comparing the demand for parking to the available supply of parking

❑ Gross Surplus / Deficit

(Total Parking Supply minus Total Parking Demand)

- Does not consider public or private parking. Surplus private spaces are assumed to be available to anyone

❑ Net Surplus / Deficit

Applies parking demand to private spaces on each block first

- "Extra" private spaces are discarded from calculation under the premise that these spaces are not available to others.
- Provides a truer representation of patrons experience.

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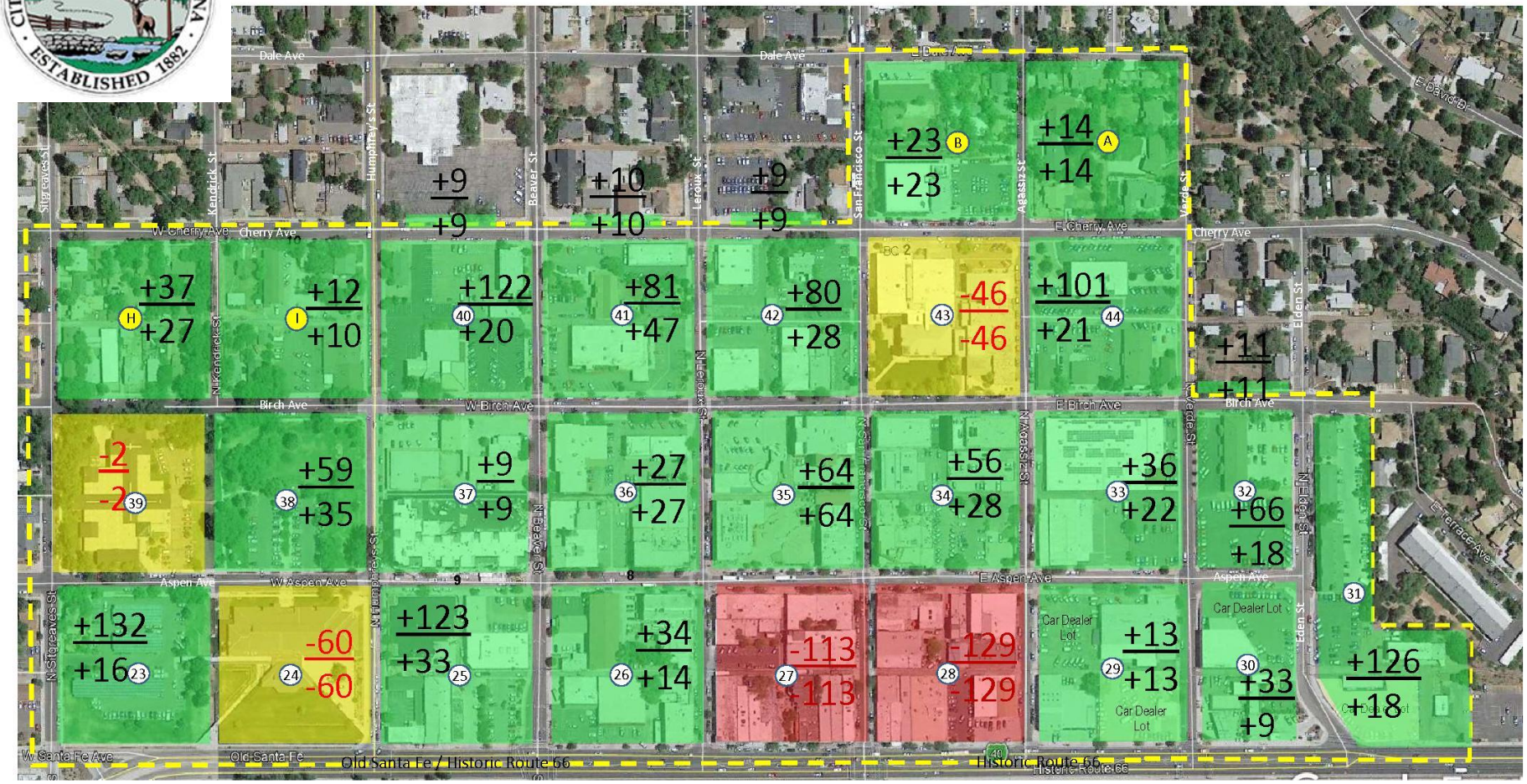

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Gov't Peak Hour

- Calculated because of high proportion of parking that is privately provided (example, City Hall)
- Significant proportion of government offices and functions
- Rich applied the parking generation rates as calculated for the 11:00 am – 12:00 noon period
- This showed that although the TOTAL demand was only slightly lower, the impact on the net surplus of parking was significant.

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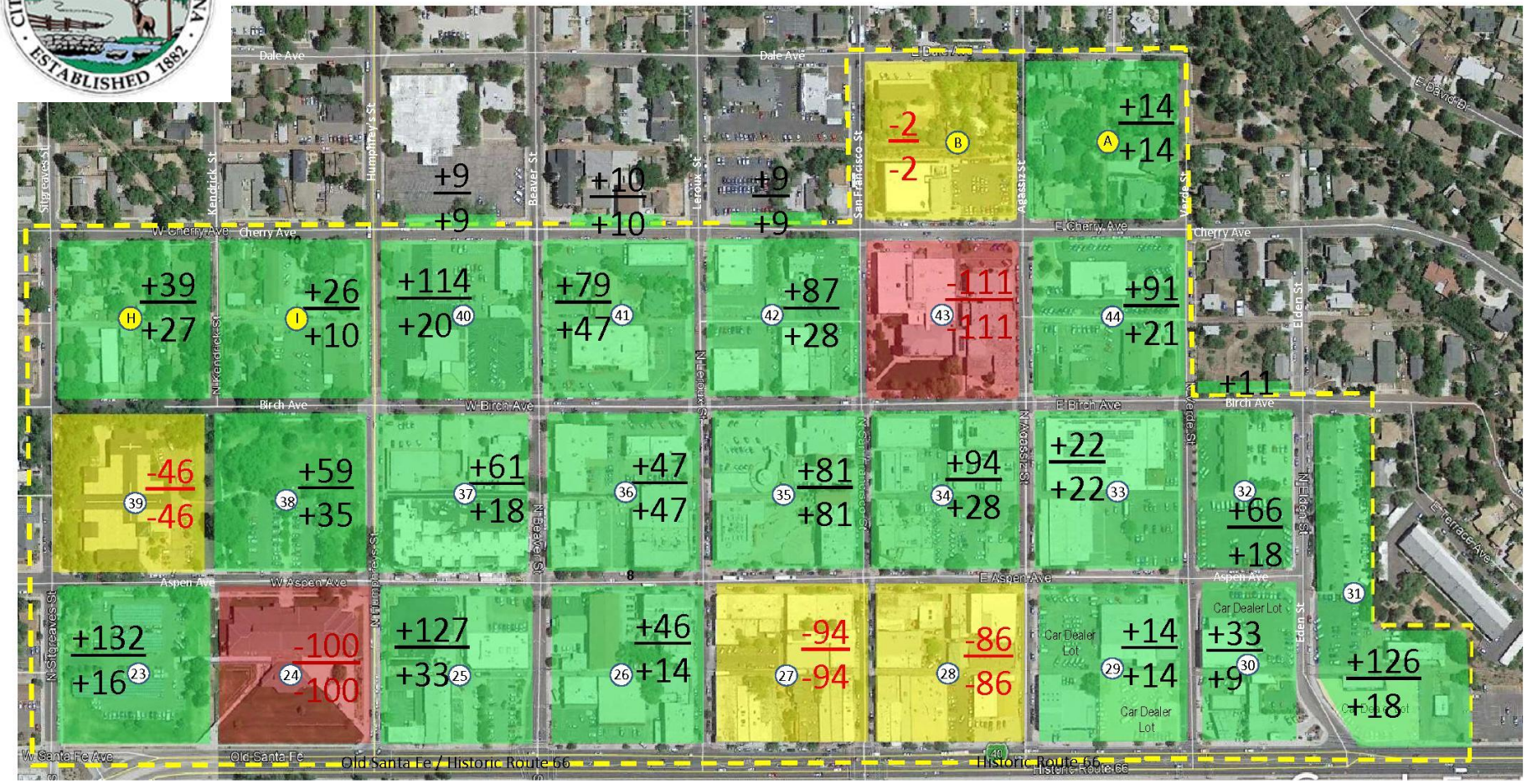

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	Overall Peak Hour (3:00 - 4:00 PM)			(Based on Gov't Peak Hour (11:00 AM - 12:00 Noon)		
Pct Change Observation Day	Peak Demand (Shared)	Gross Surplus / (Deficit)	Net Surplus / (Deficit)	Peak Demand (Unshared) +20%	Gross Surplus / (Deficit)	Net Surplus / (Deficit)
0%	1,362	986	184	1,341	1007	118

Note how even though the peak demand is lower using the gov't peak hour and thus the gross surplus is greater, because of the high proportion of private parking, the "net" surplus is actually less at the government peak hour.

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Peak Parking Adjustments

- Shown because unlikely selected survey date = peak planning day
- Adjustments of +5%, +10% and +15% over "observed" (Thursday August 2, 2018) day.
- Designed to demonstrate potential higher volume days

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Alternative Values / Peak Times Comparison

	Overall Peak Hour (3:00 - 4:00 PM)			(Based on Gov't Peak Hour (11:00 AM - 12:00 Noon)		
Pct Change Observation Day	Peak Demand (Shared)	Gross Surplus / (Deficit)	Net Surplus / (Deficit)	Peak Demand (Unshared) +20%	Gross Surplus / (Deficit)	Net Surplus / (Deficit)
0%	1,362	986	**184**	1,341	1007	**118**
5%	1,430	918	**140**	1,408	940	**70**
10%	1,499	849	**93**	1,475	873	**23**
15%	1,567	781	**47**	1,542	806	**(25)**

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Public Parking

Parking operates most efficiently when about 85 percent of the parking is occupied. The 15% vacancy rate means that patrons should be able to find parking relatively convenient to their destination without the high expense for excessive surplus parking.

Calculations show that the north side of downtown is short of public parking by:

- Has just 9± public spaces more than needed based on the observed day
- Is 50± spaces short if the observed day demand is increased by 5%
- Is 105± spaces short if the observed day demand is increased by 10%
- Is 162± spaces short if the observed day demand is increased by 15%

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South Side Downtown

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Summary

South Side of Downtown

Parking Demand reflects impacts from restaurants that affect the peak hour need for parking, pushing it to early evening

Parking Supply reflects Rich's best practice of at least 50 percent of parking be publicly available. Facilitates a more walkable community.

Occupancy Results show 47 percent of total available parking supply occupied at peak time.

South Side Downtown

South Side of Downtown						
	Public		Private		Total	
On-Street	462	100.0%	0	0.0%	462	30.6%
Off-Street	302	28.8%	745	71.2%	1,047	69.4%
Total	**764**	**50.6%**	**745**	**49.4%**	**1,509**	**100.0%**

South Side Downtown meets Rich's best practice that at least 50 percent of parking should be publicly available.

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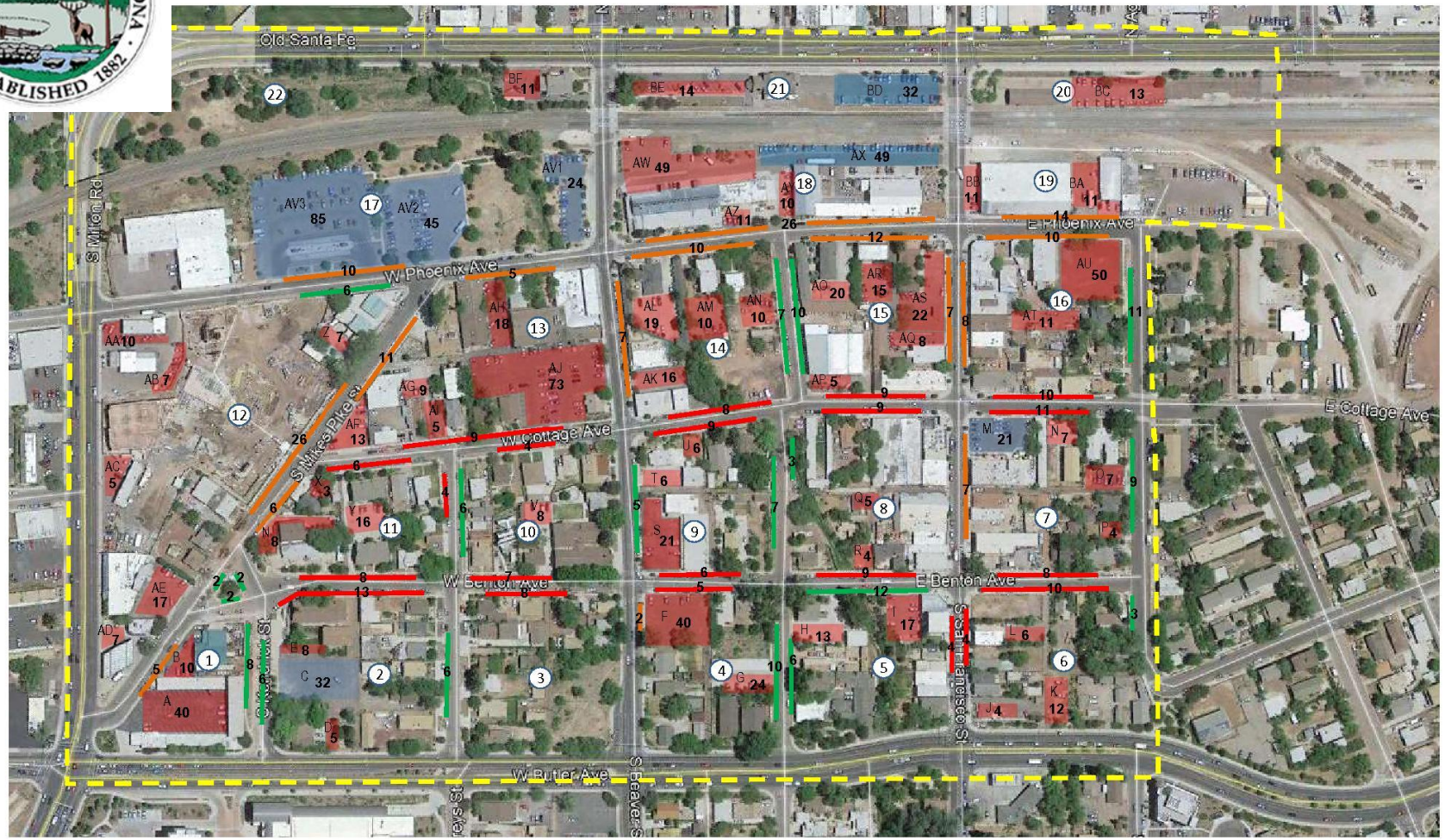

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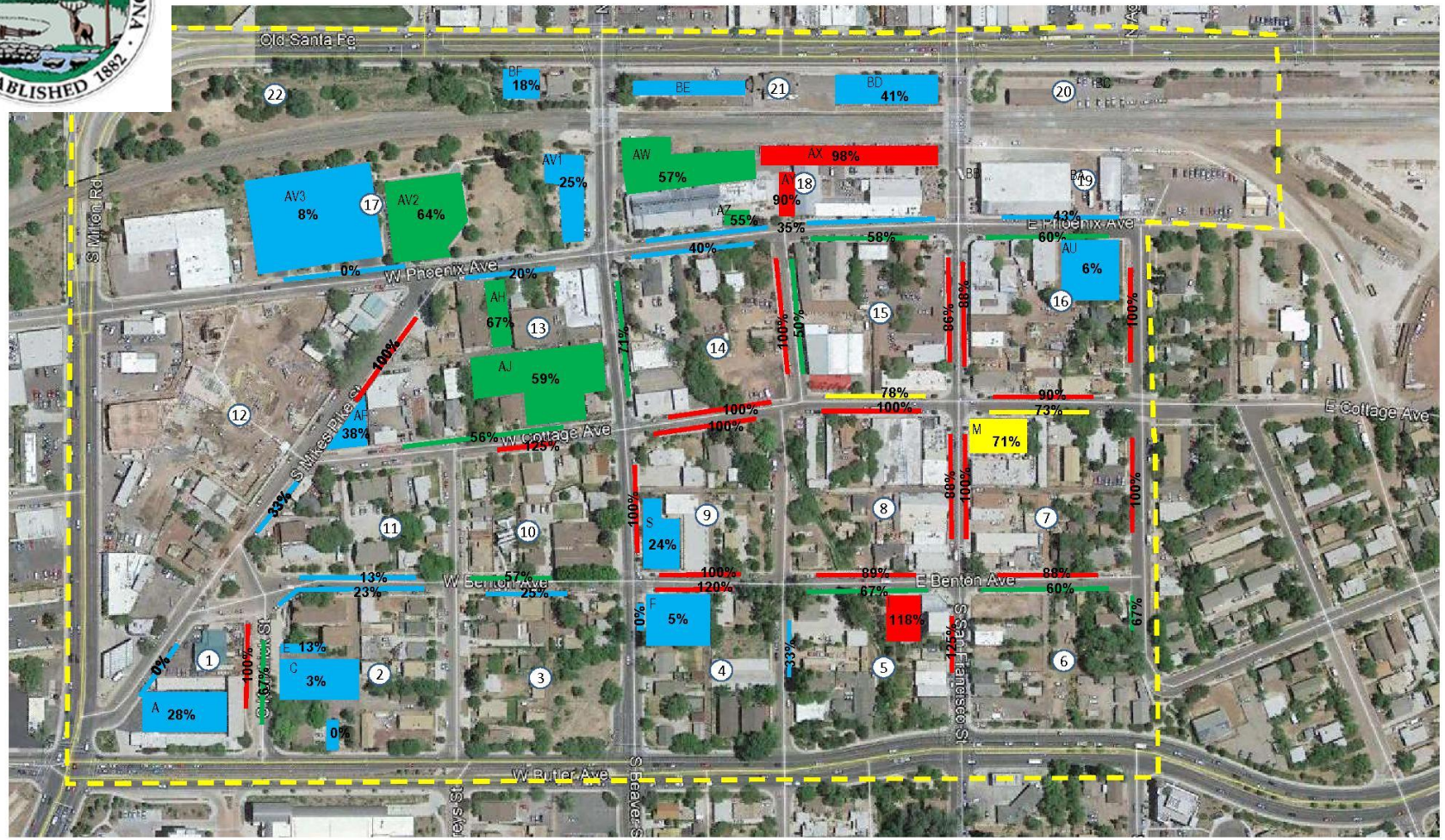
Public Parking (blue on map) – Can park and visit any destination

Private Parking (red on map) – Only for staff, customers or visitors of owning entity

On-Street Metered Parking (orange on map) – unlimited stay $1.00 per hour

On-Street 2-hour Parking (red on map)

Peak Hour – South Downtown 5:00 pm – 7:00 pm



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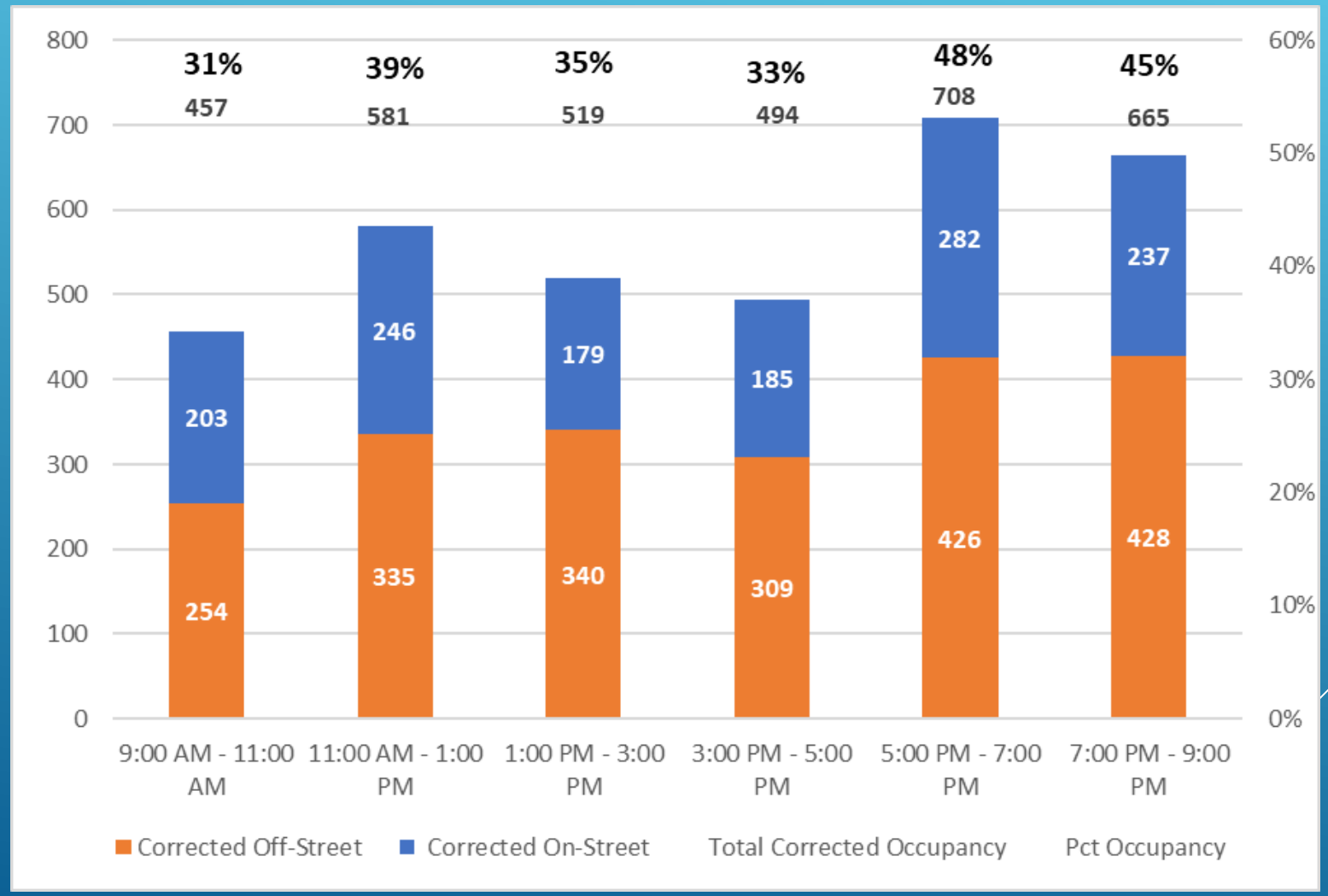
South Side Downtown Parking Occupancy



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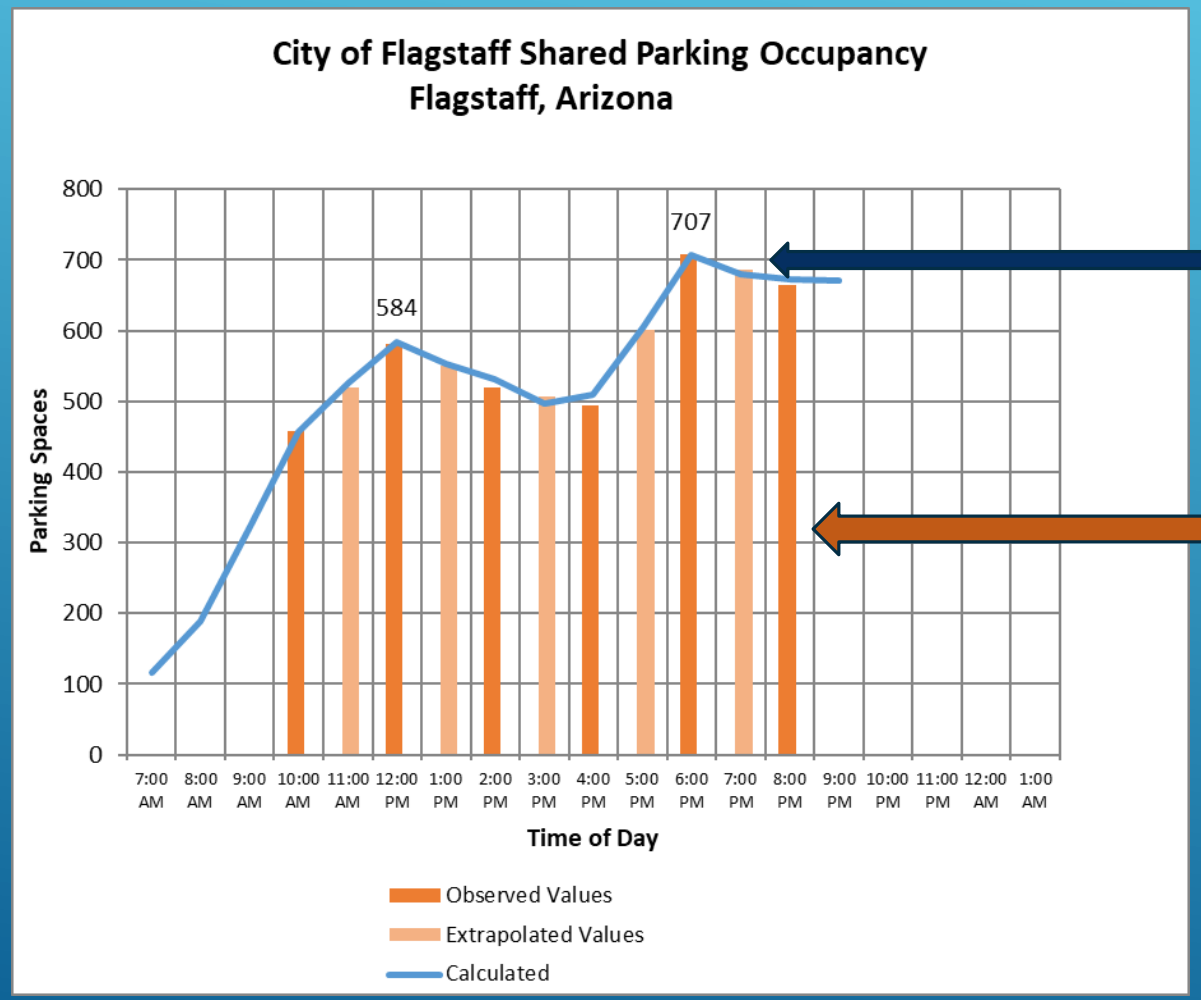
Comparison of Calculated Parking Demand to Observed Parking Occupancy



Calculated Parking Demand

Observed Parking Occupancy

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Peak Parking Adjustments

Adjusting for the potential condition that actual peak day parking demand for the south side will be higher than the conditions observed on Thursday August 2, 2018.

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Peak Parking Adjustments

Pct Change Observation Day	Peak Hour Demand (5:00 PM - 6:00 PM)				
		Private Parking		Public Parking	
	Peak Demand (Shared)	Expected # Spaces Occupied	Pct of Private Supply	Expected # Spaces Occupied	Pct of Public Supply
0%	707	303	**41%**	404	**53%**
5%	743	313	**42%**	430	**56%**
10%	778	321	**43%**	457	**60%**
15%	813	326	**44%**	487	**64%**

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Conclusions – North Side

North side of Downtown Flagstaff has a minimal surplus (118± spaces) of parking on the net basis during the late morning/early afternoon peak hour based on observed day. At values 10% higher surplus reduced to just 23± spaces

The public parking on the north side of downtown is likely short between 50± and 160± spaces for the public parking to operate at an 85% occupancy level.

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Conclusions – South Side

South side of Downtown has an existing surplus on the "net" basis of nearly 600± spaces at the peak hour.

Even with parking demand projected to be 15% greater than conditions observed on August 2, 2018, the total on and off-street **public parking** supply would likely be only 64% occupied at the peak hour.

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