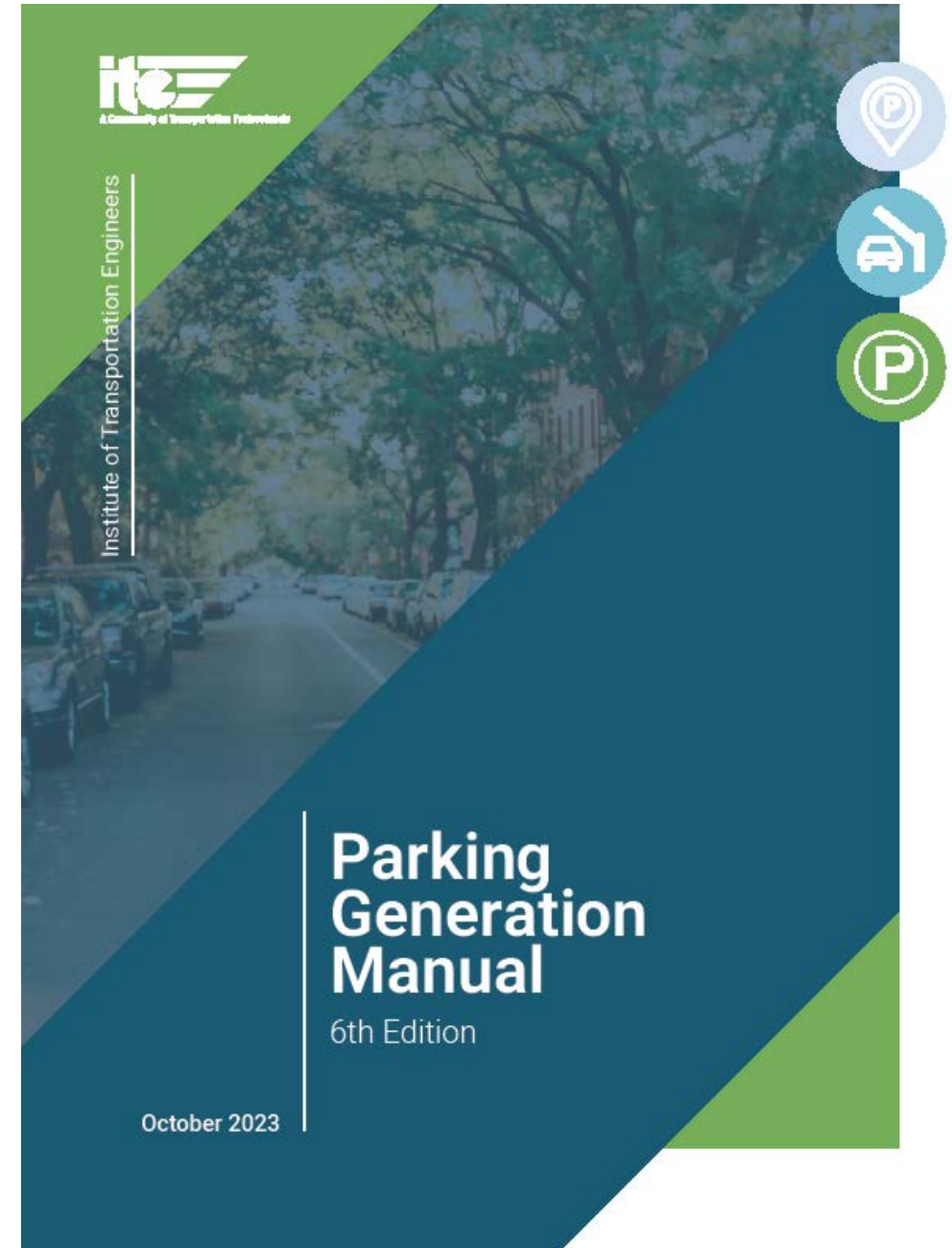


Parking Generation Manual, 6th Edition

November 28, 2023



My Objective is for You to Understand ...

- New elements & format of Parking Generation Manual, 6th Ed.
- New or updated land uses
- How to estimate parking demand
- How to use ITEParkGen web app
 - create parking generation data plots and statistics
 - access supplemental materials
 - filter data by age of data, region, and size of independent variable

PGM Advisory Panel

Brian Canepa

Fernando Sotelo

Peter Terry

Brian Dempsey

Gerald Salzman

Randy McCourt

Daniel Hardy

Gordon Meth

Rebecca Goldberg

Darlene Danehy

Justin Barrett

Scott Schell

David Nevarez

Kathrin Tellez



LUCs in Residential Group (200)

- 215 Single-Family Attached Housing
- 220 Multifamily Housing (Low-Rise)
 - 1 to 3 levels of residence
- 221 Multifamily Housing (Mid-Rise)
 - 4 to 10 levels of residence
- 222 Multifamily Housing (High-Rise)
- 223 Affordable Housing
- 252 Senior Adult Housing—Multifamily
- 253 Congregate Care Facility
- 254 Assisted Living
- 255 Continuing Care Retirement Community

LUCs in Residential Group (200)

- 215 Single-Family Attached Housing
- 217 Multifamily Housing – 1 BR (Low-Rise)
- 218 Multifamily Housing – 1 BR (Mid-Rise)
- 219 Multifamily Housing – 1 BR (High-Rise)
- 220 Multifamily Housing – 2+ BR (Low-Rise)
- 221 Multifamily Housing – 2+ BR (Mid-Rise)
- 222 Multifamily Housing – 2+ BR (High-Rise)
- 223 Affordable Housing
 - Income Limits
 - Senior
 - Special Needs
- 252 Senior Adult Housing - Multifamily
- 253 Congregate Care Facility
- 254 Assisted Living
- 255 Continuing Care Retirement Community

LUCs in Residential Group (200) with Proximity to Rail Transit as Subcategory

- 215 Single-Family Attached Housing
- 217 Multifamily Housing – 1 BR (Low-Rise)
- 218 Multifamily Housing – 1 BR (Mid-Rise)
- 219 Multifamily Housing – 1 BR (High-Rise)
- 220 Multifamily Housing – 2+ BR (Low-Rise)
- 221 Multifamily Housing – 2+ BR (Mid-Rise)
- 222 Multifamily Housing – 2+ BR (High-Rise)
- 223 Affordable Housing
- 252 Senior Adult Housing - Multifamily
- 253 Congregate Care Facility
- 254 Assisted Living
- 255 Continuing Care Retirement Community

LUCs in Lodging Group (300)

- 310 Hotel
- 311 All Suites Hotel
- 312 Limited-Service Hotel
- ~~320 Motel~~
- 330 Resort Hotel

LUCs in Recreational Group (400)

- 411 Public Park
- ~~420 Marina~~
- 430 Golf Course
- 433 Batting Cages
- ~~435 Multipurpose Recreational Facility~~
- 437 Bowling Alley
- 438 Billiard Hall
- 440 Adult Cabaret
- 441 Live Theater
- 444 Movie Theater
- ~~445 Multiplex Movie Theater~~
- ~~464 Roller Skating Rink~~
- 465 Ice Skating Rink
- 466 Snow Ski Area
- 473 Casino
- 481 Zoo
- 482 Water Slide Park
- 488 Soccer Complex
- 490 Tennis Courts
- 491 Racquet/Tennis Club
- 492 Health/Fitness Club
- 493 Athletic Club
- 495 Recreational Community Center

LUCs in Recreational Group (400)

- 411 Public Park
- 430 Golf Course
- 433 Batting Cages
- 437 Bowling Alley
- 438 Billiard Hall
- 440 Adult Cabaret
- 441 Live Theater
- 444 Movie Theater
- 465 Ice Skating Rink
- 466 Snow Ski Area
- 473 Casino
- 481 Zoo
- 482 Water Slide Park
- 488 Soccer Complex
 - Tournament
 - Non Tournament
- 490 Tennis Courts
- 491 Racquet/Tennis Club
- 492 Health/Fitness Club
- 493 Athletic Club
- 495 Recreational Community Center



LUCs in Institutional Group (500)

- 520 Elementary School
- 522 Middle School/Junior High School
- 530 High School
- 536 Private School (K-12)
- 538 School District Office
- 540 Junior/Community College
- 550 University/College
- 560 Church
- 561 Synagogue
- 562 Mosque
- 565 Day Care Center
- 580 Museum
- 590 Library
- 595 Convention Center

Schools (520-540)

Public	Elementary School (520)			Middle/Jr High School (522)			High School (525)		
Private	K – 8 (530)						9 – 12 (534)		
	K – 12 (532)								
Charter	K – 8 (536)								
	K – 12 (538)								

LUCs in Medical Group (600)

- 610 Hospital
- 612 Surgery Center
- 620 Nursing Home
- 630 Walk-In Clinic
- 640 Animal Hospital/Veterinary Clinic
- 650 Free-Standing Emergency Room
- 660 Urgent Care Center

LUCs in Office Group (700)

- 710 General Office Building
- 712 Small Office Building (<10k GFA)
- 714 Corporate Headquarters Building
- 715 Single Tenant Office Building
- 720 Medical-Dental Office Building
- 730 Government Office Building
- ~~732 United States Post Office~~
- 735 Judicial Complex
- 750 Office Park
- 760 Research and Development Center

LUCs in Office Group (700)

- 710 General Office Building
- 712 Small Office Building
- 714 Corporate Headquarters Building
- 715 Single Tenant Office Building
- 720 Medical-Dental Office Building
 - Standalone
 - Within/Adjacent to a Hospital Campus
- 730 Government Office Building
 - Municipal
 - State/Federal
- 735 Judicial Complex
- 750 Office Park
- 760 Research and Development Center

LUCs in Retail Group (800)

- 812 Building Materials & Lumber Store
- 813 Free-Standing Discount Superstore
- 814 Variety Store
- 815 Free-Standing Discount Store
- 816 Hardware/Paint Store
- 820 Shopping Center
- 840 Automobile Sales (New)
- 841 Automobile Sales (Used)
- 842 Recreational Vehicle Sales
- 843 Automobile Parts Sales
- 845 Motorcycle Sales
- 848 Tire Store
- 850 Supermarket
- 851 Convenience Store
- 857 Discount Club
- ~~860 Wholesale Market~~

LUCs in Retail Group (800)

- 812 Building Materials and Lumber Store
- 813 Free-Standing Discount Superstore
- 814 Variety Store
- 815 Free-Standing Discount Store
- 816 Hardware/Paint Store
- 820 Shopping Center (>150k GLA)
- 821 Shopping Plaza (40-150k GLA)
- 822 Strip Retail Plaza (<40k GLA)
- 840 Automobile Sales (New)
- 841 Automobile Sales (Used)
- 842 Recreational Vehicle Sales
- 843 Automobile Parts Sales
- 845 Motorcycle Sales
- 848 Tire Store
- 850 Supermarket
- 851 Convenience Store
- 857 Discount Club
- ~~860 Wholesale Market~~

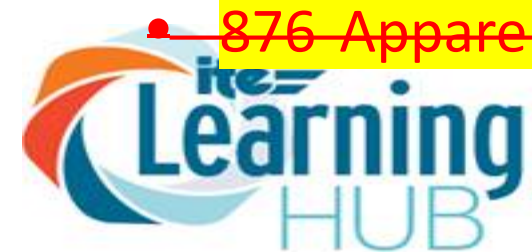
LUCs in Retail Group (800)

- 812 Building Materials & Lumber Store
- 813 Free-Standing Discount Superstore
- 814 Variety Store
- 815 Free-Standing Discount Store
- 816 Hardware/Paint Store
- 820 Shopping Center
- 821 Shopping Plaza
 - With Supermarket
 - Without Supermarket
- 822 Strip Retail Plaza
- 840 Automobile Sales (New)
- 841 Automobile Sales (Used)
- 842 Recreational Vehicle Sales
- 843 Automobile Parts Sales
- 845 Motorcycle Sales
- 848 Tire Store
- 850 Supermarket
- 851 Convenience Store
- 857 Discount Club

LUCs in Retail Group (800)

- 861 Sporting Goods Superstore
- 862 Home Improvement Superstore
- 863 Electronics Superstore
- 864 Toy/Children's Superstore
- 866 Pet Supply Superstore
- 867 Office Supply Superstore
- 868 Book Superstore
- 869 Discount Home Furnishing Superstore
- 880 Pharmacy/Drugstore without Drive-Through Window
- 881 Pharmacy/Drugstore with Drive-Through Window
- 882 Marijuana Dispensary
- 890 Furniture Store
- 892 Carpet Store
- 899 Liquor Store

• ~~876 Apparel Store~~



LUCs in Services Group (900)

- 912 Drive-in Bank
- 920 Copy, Print, and Express Ship Store
- 930 Fast Casual Restaurant
- 931 Quality Restaurant
- 932 High-Turnover (Sit-Down) Restaurant
- 933 Fast-Food Restaurant without Drive-Through Window
- 934 Fast-Food Restaurant with Drive-Through Window
- 936 Coffee/Donut Shop without Drive-Through Window
- 937 Coffee/Donut Shop with Drive-Through Window
- ~~939 Bread/Donut/Bagel Shop without Drive-Through Window~~
- ~~940 Bread/Donut/Bagel Shop with Drive-Through Window~~
- 941 Quick Lubrication Vehicle Shop
- 943 Automobile Parts and Service Center
- 960 Super Convenience Market/Gas Station
- 970 Winery

LUCs in Services Group (900)

- 912 Drive-in Bank
- 920 Copy, Print, and Express Ship Store
- 928 Food Hall
- 930 Fast Casual Restaurant
- 931 Fine Dining Restaurant
- 932 High-Turnover (Sit-Down) Restaurant
- 933 Fast-Food Restaurant w/o D-T Window
- 934 Fast-Food Restaurant w/ D-T Window
- 936 Coffee/Donut Shop w/o D-T Window
- 937 Coffee/Donut Shop w/ D-T Window
- 941 Quick Lubrication Vehicle Shop
- 943 Automobile Parts and Service Center
- 945 Convenience Store/Gas Station
- 970 Wine Tasting Room
- 971 Brewery Tap Room

LUCs in Services Group (900)

- 912 Drive-in Bank
- 920 Copy, Print, and Express Ship Store
- 928 Food Hall
- 930 Fast Casual Restaurant
- 931 Fine Dining Restaurant
- 932 High-Turnover (Sit-Down) Restaurant
 - Serve Breakfast
 - Do Not Serve Breakfast
- 933 Fast-Food Restaurant w/o D-T Window
- 934 Fast-Food Restaurant w/ D-T Window
- 936 Coffee/Donut Shop w/o D-T Window
- 937 Coffee/Donut Shop w/ D-T Window
- 941 Quick Lubrication Vehicle Shop
- 943 Automobile Parts and Service Center
- 945 Convenience Store/Gas Station
- 970 Wine Tasting Room
- 971 Brewery Tap Room

Land Use Group	Number of Land Uses	
	Total	With Parking Supply & Occupancy
100 – Industrial	7	6
200 – Residential	12	12
300 – Lodging	5	3
400 – Recreational	19	15
500 – Institutional	14	10
600 – Medical	7	6
700 – Office	9	9
800 – Retail	29	27
900 – Services	15	10

Added
Parking Supply &
Peak Parking
Occupancy Rates
in Database

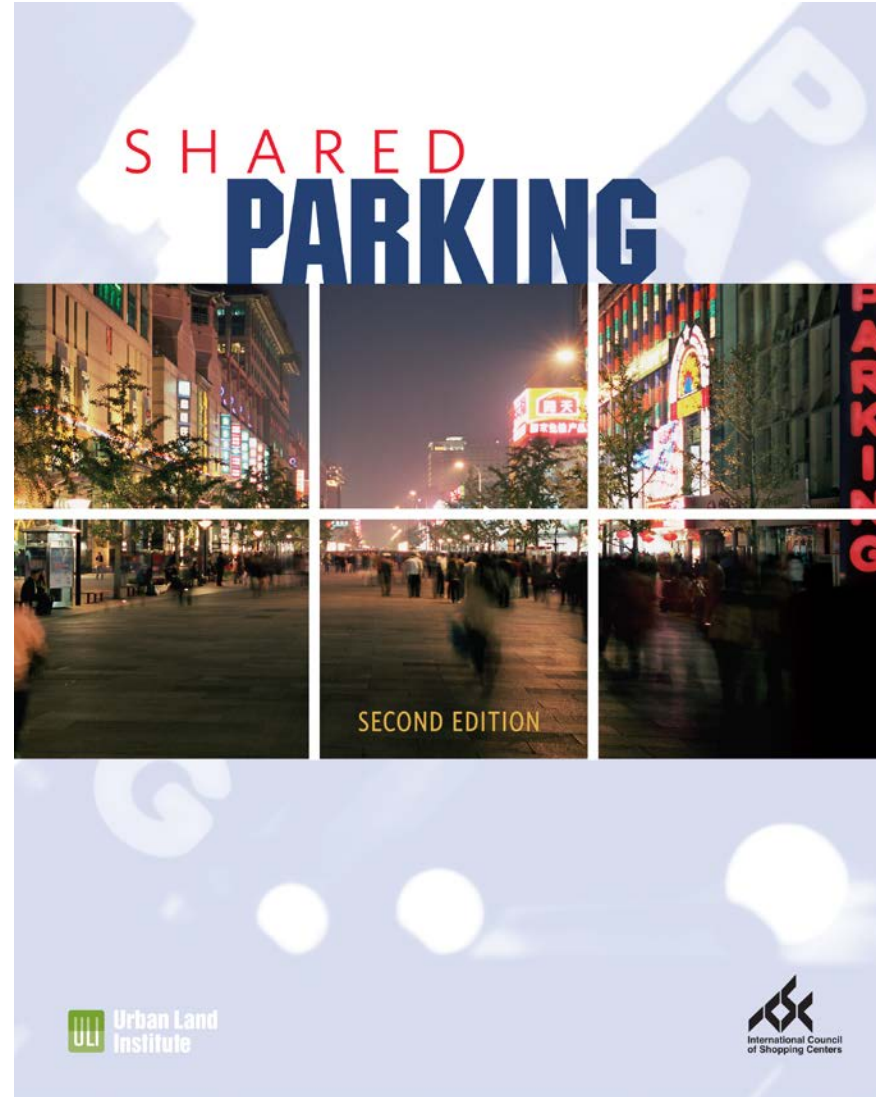
Added Detail to Day of the Week Choices

- Weekday (Monday through Friday)
- Weekday (Monday through Thursday)
- Friday
 - 12 land uses with Friday & Monday-Thursday Distinction
 - Shopping Center/Shopping Plaza, Supermarket, Restaurants, Brewery Tap Room
- Saturday
- Sunday

Land Use Group	Number of Land Uses	
	Total	With Time of Day Table
100 – Industrial	7	7
200 – Residential	12	7
300 – Lodging	5	4
400 – Recreational	19	12
500 – Institutional	14	10
600 – Medical	7	7
700 – Office	9	9
800 – Retail	29	26
900 – Services	15	13

Added
Time of Day
Distribution
Tables

ULI Shared Parking



Removed December as a Time Period

- Movie Theater
- Free-Standing Discount Superstore
- Variety Store
- Free-Standing Discount Store
- Shopping Center
- Shopping Plaza
- Strip Retail Plaza
- Discount Club

Added Chapter: “Understanding & Applying PGM Data”

- Consider
 - Number of data points
 - Range of independent variable values
 - Quality of data fit to average or equation
 - Data plot statistics
 - Is study site within data cluster?

Steps for Estimating Parking Generation

1. Select Land Use Code
2. Select Setting/Location
3. Select Independent Variable
4. Select Time Period
5. Evaluate Data Plots and Statistics
6. Consider Filtering Data