



WALKER
CONSULTANTS

PARKING ACCESS AND REVENUE CONTROL SYSTEM (PARCS)
LICENSE PLATE RECOGNITION (LPR)
AUTOMATED PARKING GUIDANCE SYSTEM (APGS)

Town of Chapel Hill, North Carolina



BUILDING ENVELOPE

FORENSIC RESTORATION

PARKING DESIGN

PARKING & MOBILITY

OPERATIONS & TECHNOLOGY

PARCS TECHNOLOGIES

- ACCESS CONTROL SYSTEMS
 - PROXIMITY CARD (PROX)
 - AUTOMATIC VEHICLE IDENTIFICATION (AVI)
 - BLUETOOTH® TECHNOLOGY
 - LICENSE PLATE RECOGNITION
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- REVENUE CONTROL SYSTEMS
 - TRADITIONAL CASHIERING
 - INTEGRATED CREDIT CARDS
 - PAY-ON-FOOT (POF) TECHNOLOGY
 - CREDIT CARD EXIT VERIFIER
 - CREDIT CARD IN/OUT
 - APPLE / GOOGLE PAY
 - QR BARCODE READER
 - PAY BY MOBILE DEVICE
 - RESERVATIONS
 - FREQUENT PARKER PROGRAMS

- VALIDATION SYSTEMS
 - OFFLINE VALIDATIONS
 - CHASER TICKETS
 - ONLINE VALIDATIONS



AUTOMATED VEHICLE IDENTIFICATION VS PROXIMITY CARDS



Ticketless entry

- SPEEDS INGRESS/EGRESS
- MOST CONVENIENT
- BETTER AUDIT CONTROL IF STICKER TAGS ARE USED
- MOST EXPENSIVE

- BLUETOOTH AS AN OPTION:
- ADDED EXPENSE
- SLOWER INGRESS/EGRESS RATE

- LEAST EXPENSIVE
- MOST COMMON
- MUST STOP AND ROLL DOWN WINDOW
- MUST CAREFULLY APPROACH READER

CREDIT CARD EXIT AND INTEGRATED CARDS



- QUICKER EGRESS TIME WITH POF INTEGRATION
- INCREASED REVENUE CONTROL
- MEETS EXPECTATIONS OF TECHNOLOGY-BASED CUSTOMERS



- ALLOWED FOR CREATION OF POF AND EXIT VERIFIERS
- PCI P2PE EMV COMPLIANCY
- LOWER PCI COMPLIANCE AUDIT REQUIREMENTS AND EXPENSE

PAY-ON-FOOT TECHNOLOGY



- QUICKER EGRESS TIMES – TRANSACTION REMOVED FROM THE EXIT LANE
- CONVENIENT FOR CUSTOMER – PAY WHILE WAITING FOR ELEVATOR
- PROVIDES 24/7 PAYMENT OPTION WITH CASH AND CREDIT CARDS
- PAYROLL SAVINGS – LESS LABOR EXPENSE EVEN WITH EMPLOYEE RETENTION
- AUDIT CONTROL – LESS POSSIBILITY OF HUMAN ERROR OR SHRINKAGE

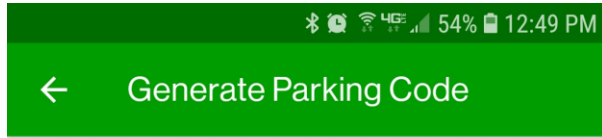
APPLE / GOOGLE PAY, CONTACTLESS CARDS, QR BARCODES

- CONTACTLESS CREDIT CARDS AND APPLE / GOOGLE PAY UTILIZE SAME READER TECHNOLOGY
- MORE SECURE – NO SKIMMER CAN BE INSTALLED
- MEETS THE EXPECTATIONS OF THE TECHNOLOGY-BASED CUSTOMER



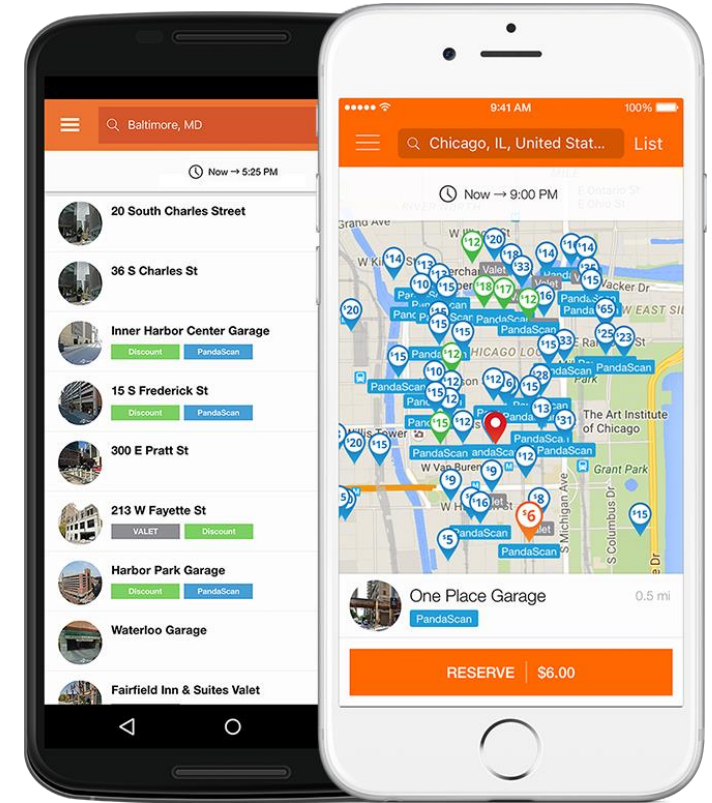
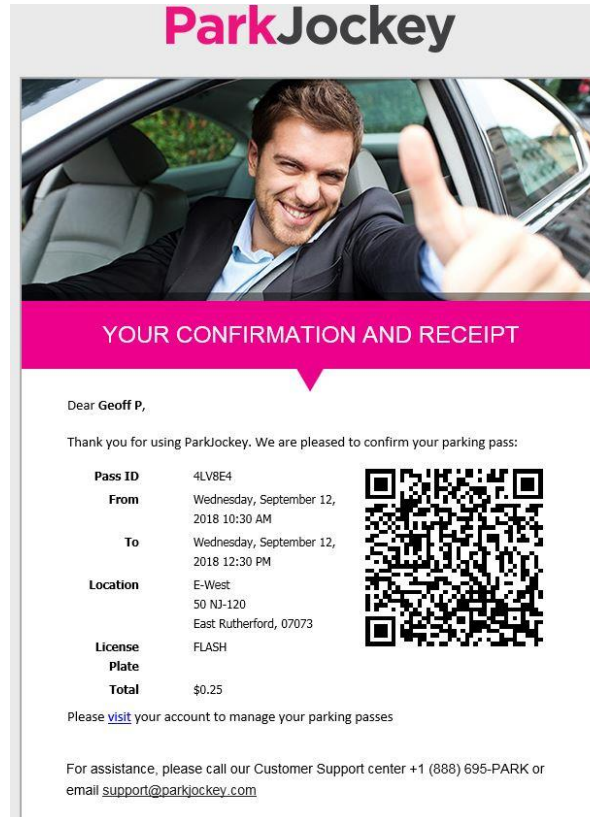
- INCREASED CUSTOMER SERVICE AND CONVENIENCE FOR CUSTOMERS
- INCREASED INGRESS/EGRESS TIMES
- ALLOWS FOR RESERVATIONS AND MOBILE APPLICATION PAYMENT

PAY BY MOBILE DEVICE, RESERVATIONS, FREQUENT PARKER



How To Use

1. Hold phone face-up with secure grip.
2. Carefully move phone under scanner.
3. When you hear a beep you can remove phone from scanner.
4. Wait for gate to raise.



- BUILD CUSTOMER LOYALTY
- INCREASE POTENTIAL CUSTOMER BASE
- MEET EXPECTATIONS OF TECHNOLOGY-BASED CUSTOMERS
- RECURRING EXPENSE TO WPA
- CUSTOMER ALSO PAYS FEES
- POTENTIAL ISSUE IF CAR COUNTS ARE NOT ACCURATE

LICENSE PLATE RECOGNITION (LPR)



LPR COMMENTS

- LPR USES OPTICAL CHARACTER RECOGNITION (OCR) TO EXTRACT THE NUMBER FROM THE LICENSE PLATE IMAGE
 - AS THE VEHICLE APPROACHES, THE LPR CAMERA CAPTURES AN IMAGE OF THE LICENSE PLATE
 - SOFTWARE CONVERTS IT TO A TEXT FILE WHICH IS USED AS THE PARKING CREDENTIAL
 - IF AUTHORIZED/PREPAID/PREREGISTERED, THE BARRIER OPENS WITHOUT STOPPING
- BENEFITS INCLUDE:
 - IMPROVED INGRESS/EGRESS TIMES
 - IMPROVED CUSTOMER SERVICE WITH QUICK TRANSACTION TIMES
 - MONITORING AND NOTIFYING WHEN CERTAIN VEHICLES ENTER THE FACILITY
 - CALCULATING PROPER FEES FOR LOST TICKET TRANSACTIONS
- PROBLEMS INCLUDE:
 - EXISTING STRUCTURE LIMITATIONS
 - IS THERE ROOM FOR THE CAMERAS?
 - WILL WE LOSE PARKING SPACES?
 - ADDITIONAL CONSTRUCTION COSTS
 - NEED ADDITIONAL COMPUTER SERVER, CONDUITS, AND CABLING
 - MISREADS REQUIRE A BACKUP PLAN
 - PROXIMITY CARDS – WILL THE CUSTOMER HAVE IT IF THE SYSTEM MALFUNCTIONS?
 - POTENTIAL ABUSE – MONTHLY CONTRACTS CAN REGISTER FRIENDS/COWORKERS

LPR FOR GATELESS PARKING FACILITY WITH MULTI-SPACE PAYMENT SYSTEMS

- DECREASED INGRESS/EGRESS TIMES
- NON-CAPTURE OF “EXCEPTION PLATES”
- NO GATES TO FAIL CAUSING DELAYS AND/OR BROKEN GATE ARMS
- RELIES ON ENFORCEMENT
- ADMINISTRATION OF TICKETS AND PAYMENTS
- NO ABILITY TO CONTROL CAPACITY AND ENSURE AVAILABLE SPACES FOR CONTRACTS



VALIDATION SYSTEMS



- REDUCE OR ELIMINATE PARKING FEES TO CUSTOMERS
- PRE- OR BACK-BILL TO VALIDATION PROVIDERS
- OFF-LINE VALIDATORS – ENCODE TICKET PHYSICALLY
- ON-LINE VALIDATORS – VALIDATE TICKET “REAL TIME” IN THE PARCS
- CHASER TICKETS – INEXPENSIVE OPTION TO VALIDATION PROVIDER

APGS TECHNOLOGIES



WHERE IS MY CAR? I KNOW IT IS BLUE...

- FACILITY COUNTS
 - INTEGRAL TO PARKING ACCESS AND REVENUE CONTROL SYSTEM
 - TRACKS TOTAL OF MONTHLY CUSTOMERS AND DAILY CUSTOMERS
 - “RESERVES” AVAILABILITY FOR MONTHLY CUSTOMERS
 - “FULL STATUS” DISPLAYED AT ENTRY PREVENTS DAILY TRAFFIC

- LEVEL OR ZONE COUNTS
 - PROVIDES THE FACILITY COUNTS, BUT ONLY BY TOTAL SPACES
 - TRACKS SPACES BY LEVEL OR ZONE WITHIN THE GARAGE
 - PROVIDES QUICK ACCESS TO PARKING SPACES PER LEVEL
 - REQUIRES DAILY COUNTING AND/OR RESETTING
- SINGLE-SPACE GUIDANCE
 - PROVIDES THE SAME LEVEL OF SERVICES AS ABOVE, PLUS:
 - PROVIDES EXACT DIRECTION TO AVAILABLE PARKING
 - REDUCES TIME SPENT HUNTING FOR SPACES – REDUCING CARBON EMISSIONS
 - INCREASED OCCUPANCY USAGE CAN BE CORRELATED TO RETURN ON INVESTMENT
 - CAMERA-BASED SINGLE-SPACE SYSTEMS PROVIDE PARKED CAR LOCATOR KIOSKS VIA LICENSE PLATE TECHNOLOGY
 - REDUCES STRESS AND PROVIDES A BETTER EXPERIENCE TO CUSTOMERS
 - ALLOWS FOR THE BEST LEVEL OF OCCUPANCY TRACKING AND DATA ANALYTICS CAPABILITIES

HOW IT WORKS: ULTRASONIC APGS

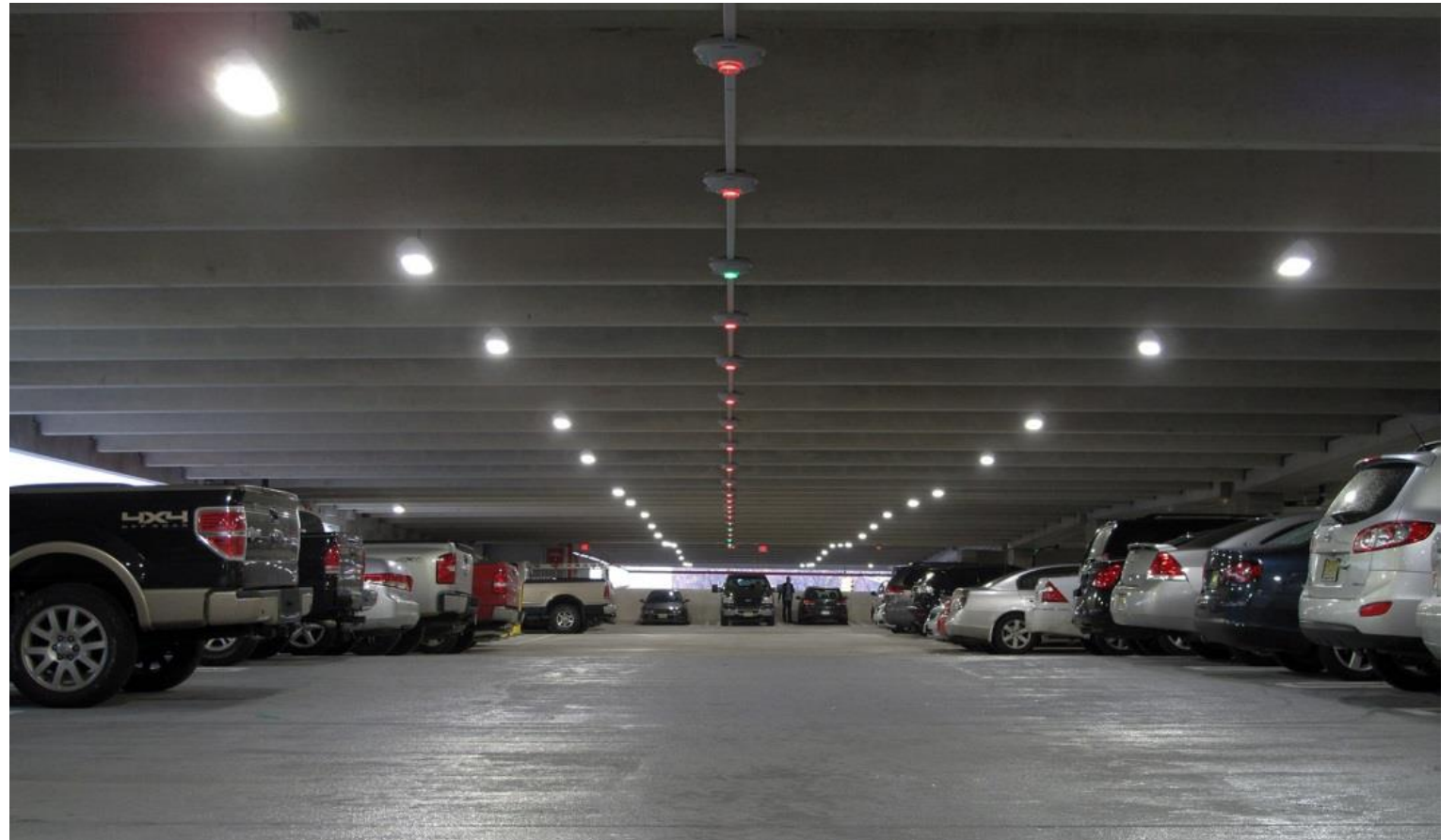


LEVEL COUNT SYSTEM



SINGLE SPACE SYSTEM

CAMERA-BASED APGS (LICENSE PLATE RECOGNITION)



PARKING AVAILABILITY DISPLAYS



Photo courtesy
TCS Intl

By facility



By floor/zone

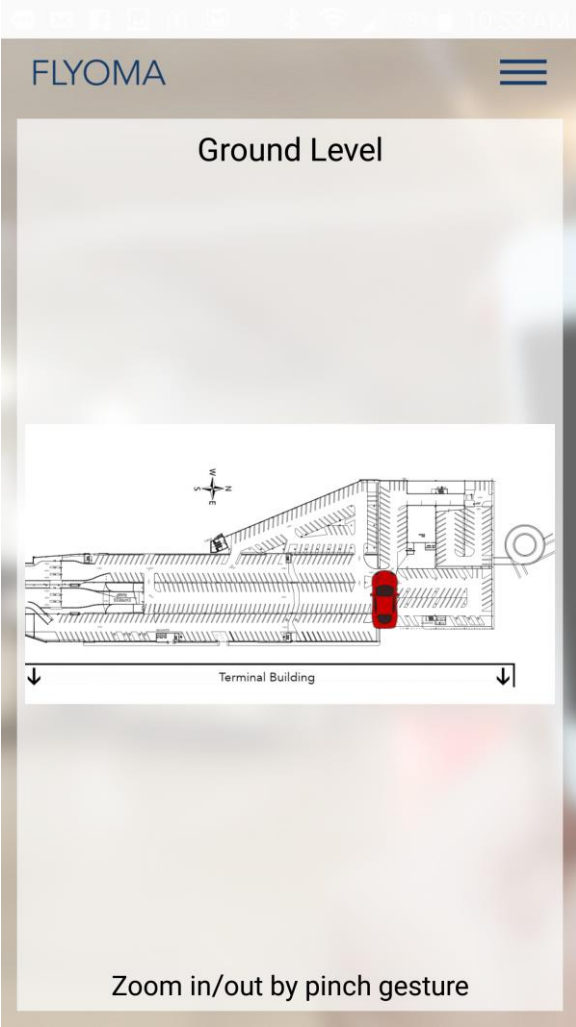
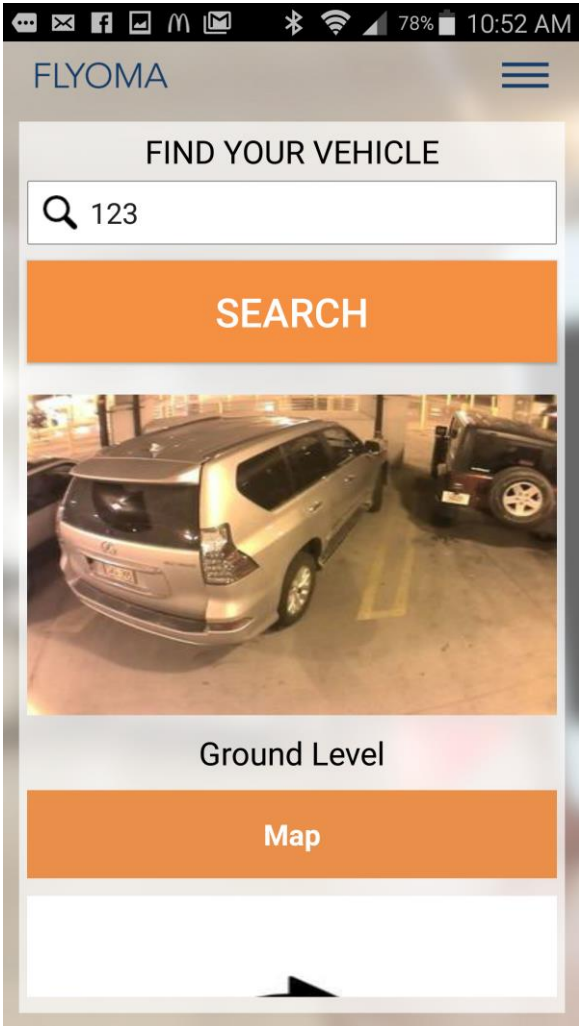


By aisle



By space

CUSTOMER AMENITY: FIND YOUR CAR



AUDIENCE QUESTIONS?



PARCS AND APGS TECHNOLOGIES

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