DC Parking Meter Program

Soumya Dey, P.E.
Acting Associate Director

d.
District Department of Transportation

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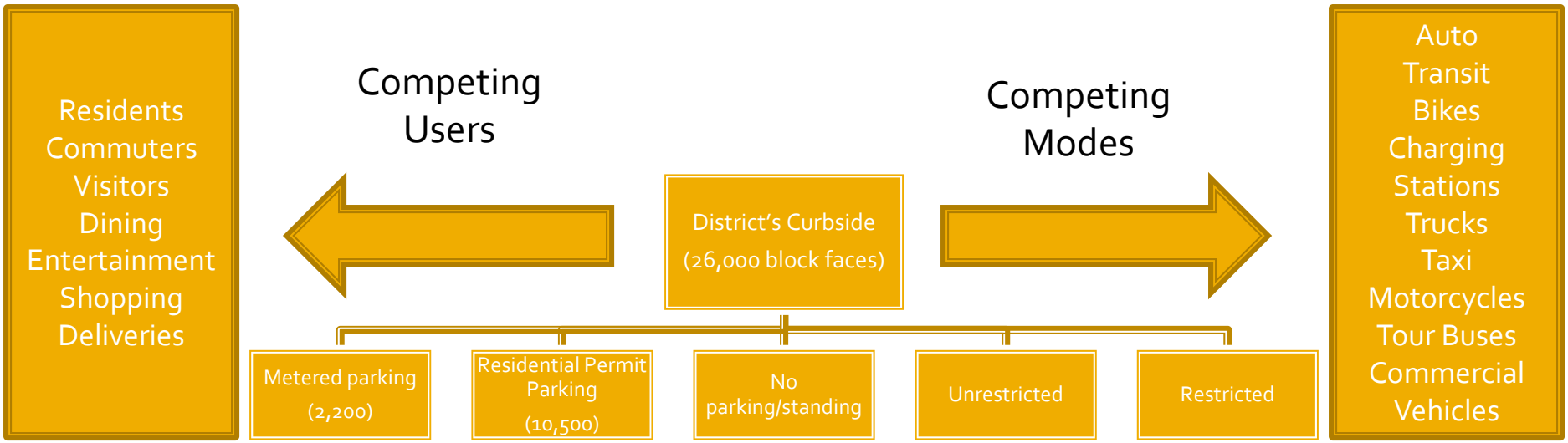
Presentation Outline

- Overview of parking meter program
- Discussion of parking pilots
- Implications on congestion management and traveler information
- Next steps

Curbspace – A Precious Asset

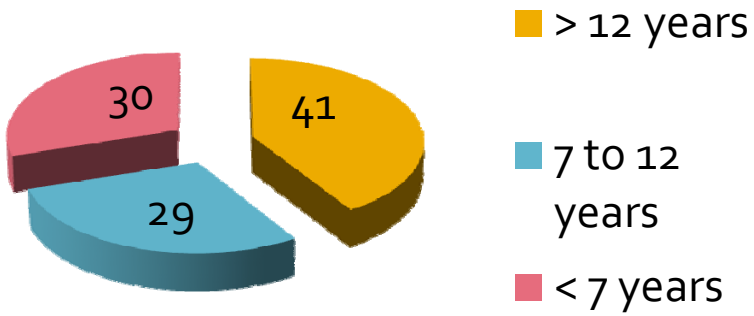


District's Parking Meter Assets

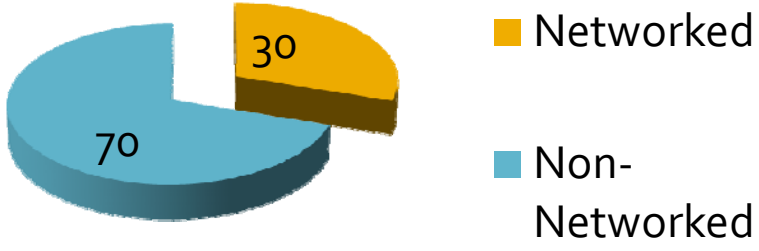
Meter Type		Meters	Spaces	% of Spaces
Multi space Pay & Display (Parkeon Stelio)		514	3923	23%
Single space – Duncan Eagle 2000		7040	7040	41%
Single space – Mackay Guardian XL		4994	4994	29%
Single Space – IPS Meters		1200	1200	7%
TOTAL		**13,748**	**17,157**	Asset/Space = 0.80

Asset Characeristics

AGE DISTRIBUTION



NETWORK/PAYMENT OPTIONS



Parking Meter Statistics

RATE STRUCTURE

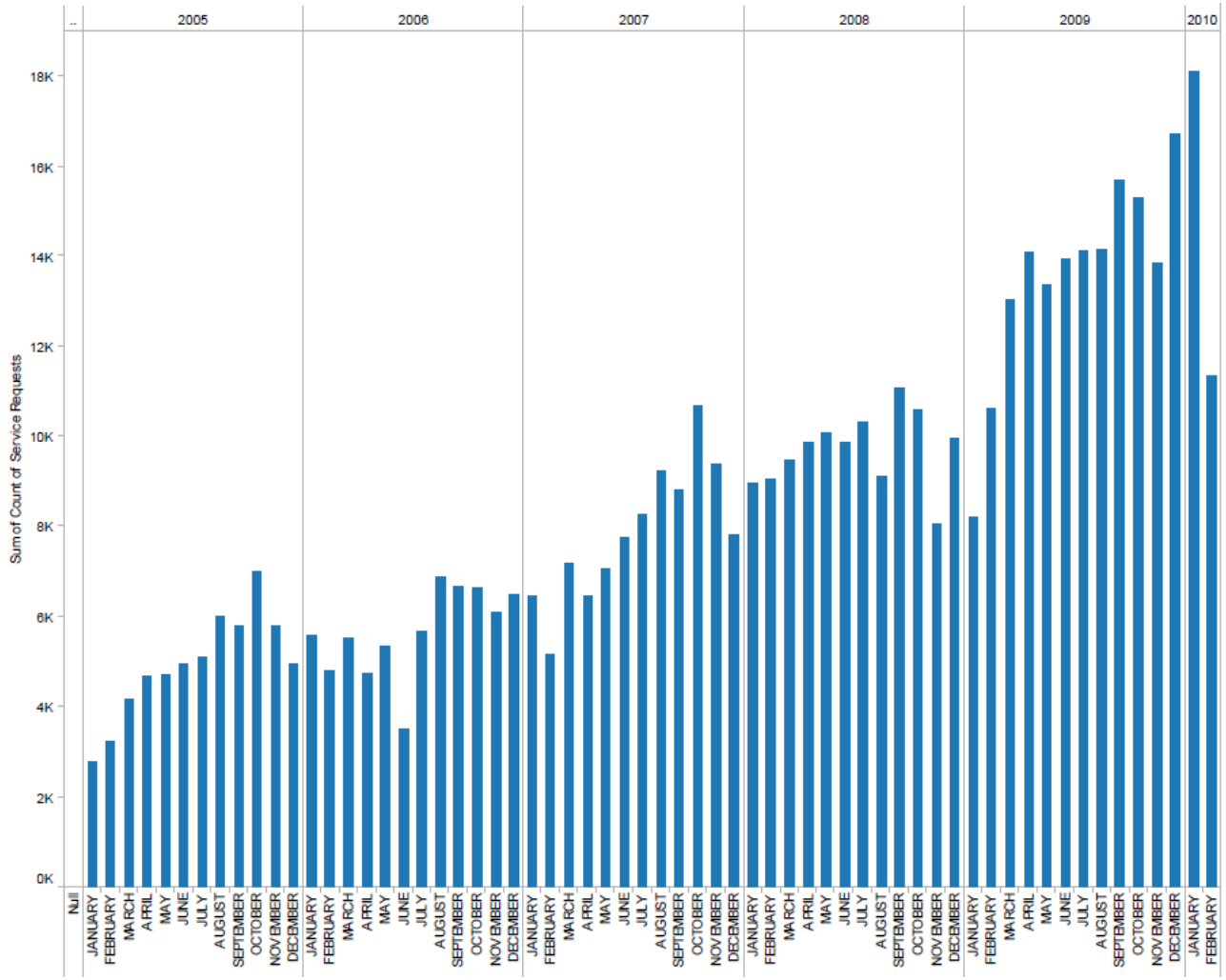
Rate	Parking Spots	Percentage
$2.00/hour	14,749	86%
$0.75/hour	2,408	14%
TOTAL	17,157	

~ 100 million+ coin transactions/year

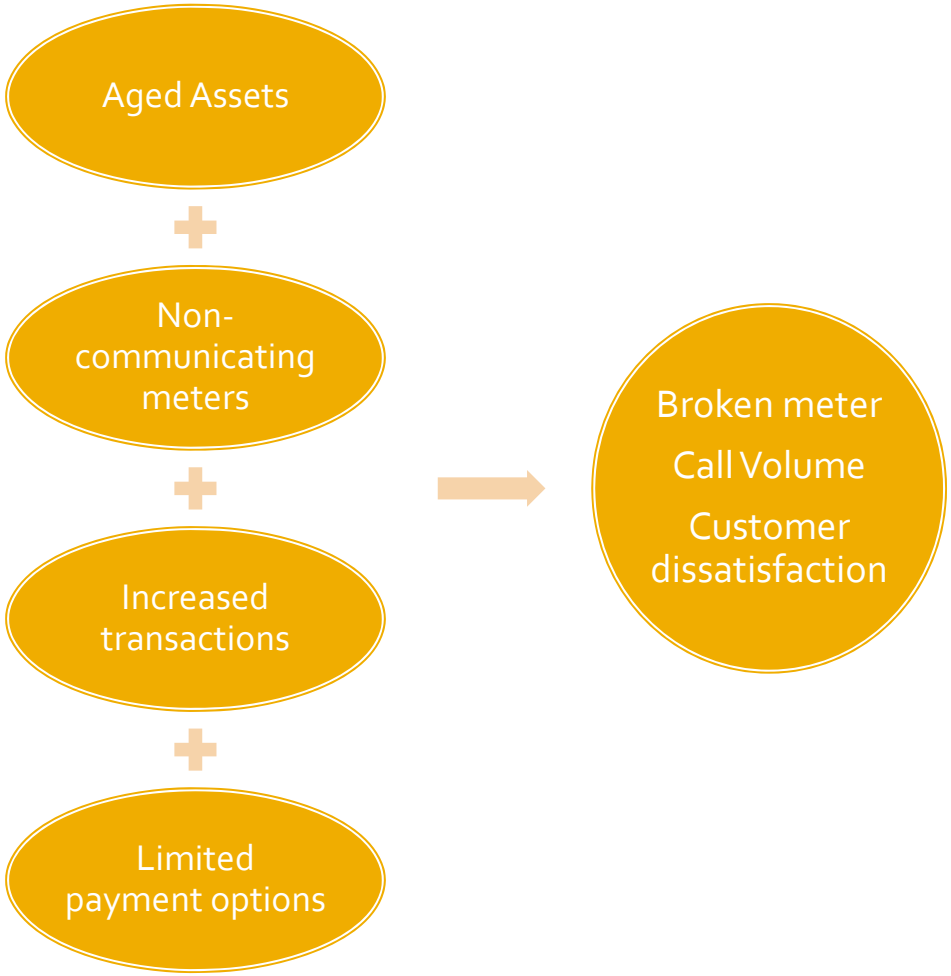
GEOGRAPHICAL DISTRIBUTION

Ward	% Metered Spaces
1	9%
2	65%
3	9%
4	4%
5	3%
6	9%
TOTAL	100%

Parking Meter Call Volume



Root Cause Analysis



Parking Program Goals & Objectives

Goals of DC Parking Program

- Improved customer service
  - Multiple payment options
  - Maximize convenience
  - Real-time parking availability
  - Fewer broken meters
- Enhanced operational efficiency
  - Dynamic pricing
  - Real-time operational status
  - Exception based enforcement
  - Better uptime
  - Lower operating cost
- Better revenue management
  - Minimize coin transaction
  - Real-time auditing

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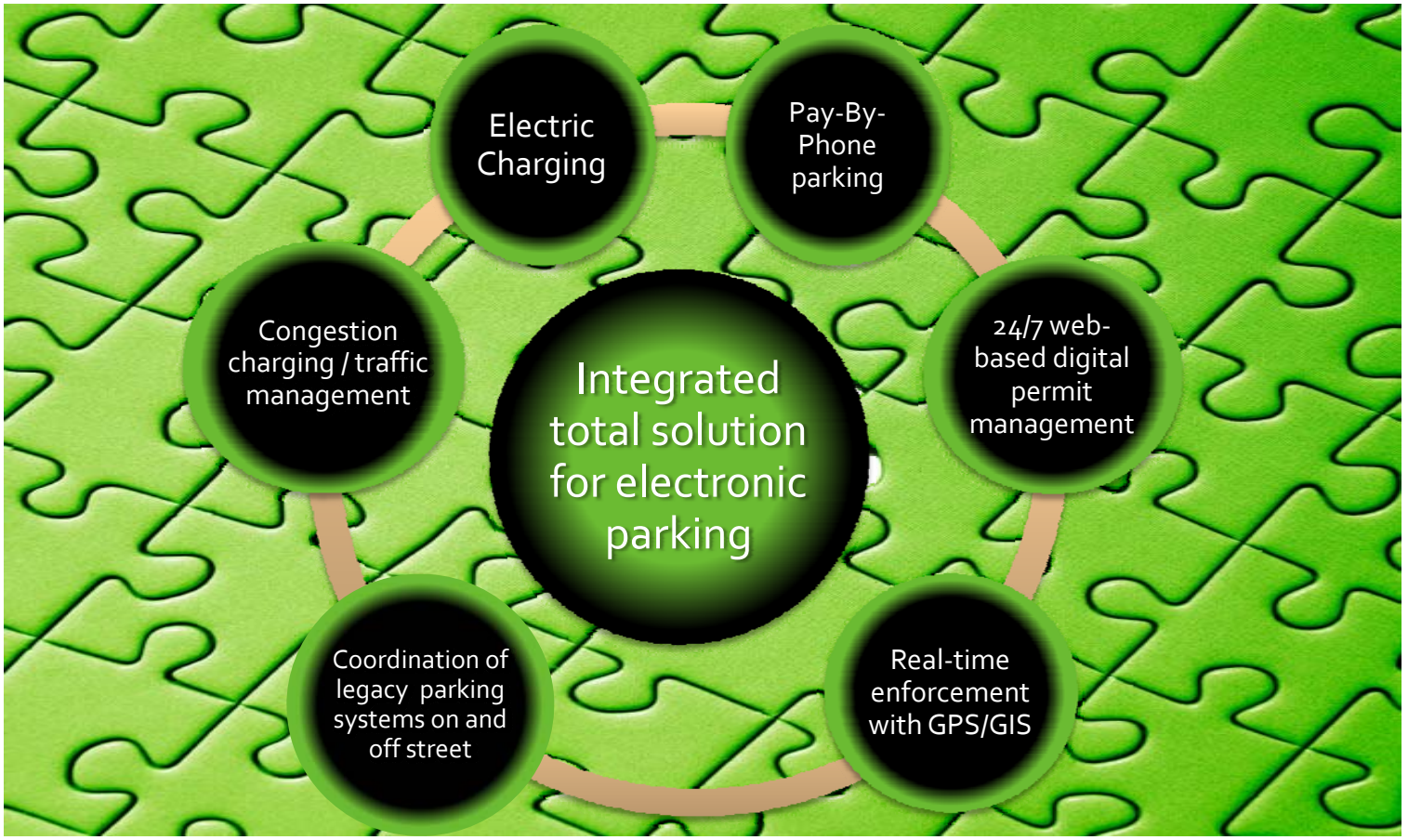
A Holistic Parking Solution



Principal Parking Stakeholders

Parking Pilots

Scope of Pilot Projects

- State-of-the art meters with multiple payment options and real-time transaction monitoring systems
  - Single space
  - Multi-space
- Next generation payment options
  - Pay-by-cell solutions
  - Other
- Systems to assess meter occupancy, financial audit function and mechanical transaction
- Additional innovations

"Must Haves"

- No cost to the District
- User fees allowable
- Turnkey solution
- Ability to be operational within 30 days of NTP
- Integrated solution
- 90 day pilot

May have multiple awards per category if technology and functionality is different enough

Vendors Selected for Pilot

- Multispace meter
  - Duncan pay-by-space
  - Parkeon pay-by-space
  - Cale pay-by-license plate
- Occupancy sensing
  - StreetSmart
- Pay-by-Cell
  - Verrus
  - ParkMobile

VENDOR		FEATURES	LOCATIONS
Parkeon		● Pay by space ● Pay by cellphone ● Accepts paper money	● 900 through 1200 blocks of Independence Avenue SW
Duncan Solutions		● Pay by space	Friendship Heights ● 5300 block of Wisconsin Avenue NW ● 4300 block of Jenifer Street NW ● 4200 block of Jenifer Street NW ● 5200 block of 44th Street NW (north side)
Cale Parking Systems USA		● Pay by license plate ● Pay by cellphone ● Enforcement using license-plate recognition	● 1300 block of U Street NW
Parkmobile		● Pay by cellphone	● Foggy Bottom ● Reservoir Road NW (near Georgetown University Hospital) ● Nationals Park area
Verrus Mobile Technologies		● Pay by cellphone	● Dupont Circle ● Union Station ● Downtown on K and I Streets, New York Avenue NW

Source: Washington Post

Pilot Launch

Source: Washington Post

Multi-Space Meters

Multi-Space Meter Metrics

	Cale	Duncan	Parkeon
Configuration	Pay-by-license plate	Pay-by-space	Pay-by-space
Meters	4	6	7
Spaces	42	69	61
Revenue	$39,482	$65,311	$46,759
311 Calls	15	5	23

Other Metrics

- Meter uptime
- Revenue capture
- Transaction mix
  - coin vs. cash (if applicable) vs. credit card
- Revenue/transaction
  - Coins vs. cash (if applicable) vs. credit card
- Calls to vendors

Assessment of Configurations

	Pay-and - Display	Pay-by-Space	Pay-by-Plate	Smart Single Space
Payment Options	2	2/3	2	2
Customer Convenience (to be further refined from survey)	Very High	High	Low	Low
Traveler information	Not accurate	Accurate	Not accurate	Accurate
Curbside Utilization	Maximized (10-20% higher)	Fixed	Maximized (10-20% higher)	Fixed
Dynamic Pricing Capability	Not accurate	Accurate	Not accurate	Accurate
Public Space Clutter	Minimized	Minimized	Minimized	No positive impact
Real-time operational status	Yes	Yes	Yes	Yes
Historical operational status	Yes	Yes	Yes	No
Real-time financial audit function	Yes	Yes	Yes	Yes
Ease of enforcement (need DPW input)	No change	Targeted enforcement	Targeted enforcement	No change
Cost	Higher capital/lower operating	Higher capital/lower operating	Higher capital/ lower operating	Lower capital/higher operating

Customer Survey Results (Interim)

- Based on initial survey response
  - Multi-space preferred over smart single space (72% vs. 44%)
  - Preferred MSM configuration
    - Pay and display (53%)
    - Pay by space (43%)
  - Least preferred MSM configuration
    - Pay by license plate (49%)

System Operations

- System reliability will most likely not be a discriminating factor
- Discriminating factor will be how well the system functionality meets stated or agreed upon policy goals
- Need feedback from DPW on enforceability
  - Ready for change (vs. status quo)?
  - Targeted enforcement

Pay-by-Cell

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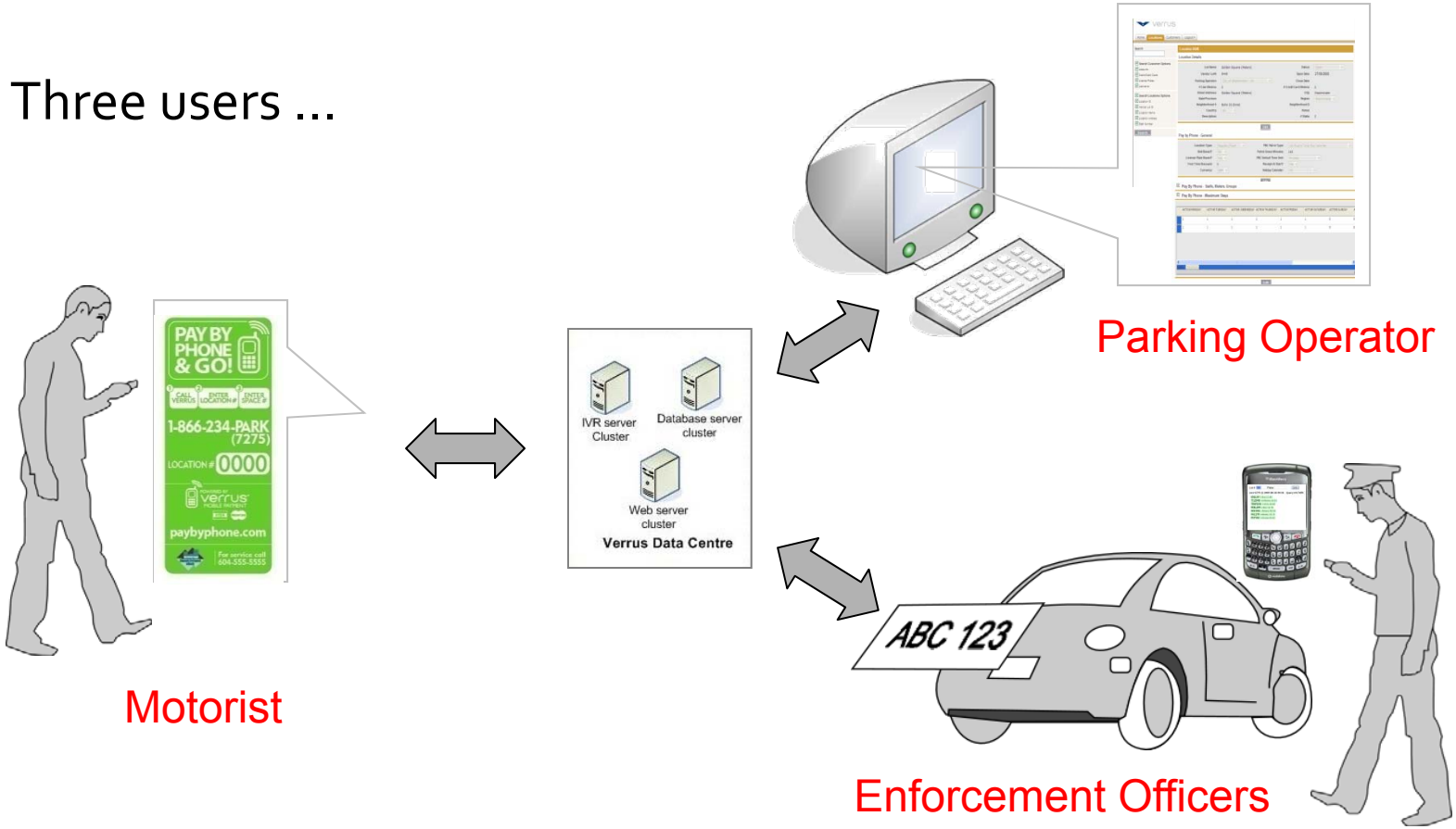
Pay-by-Cell Concept

Three users …



Pay – by- Cell Statistics

VERRUS

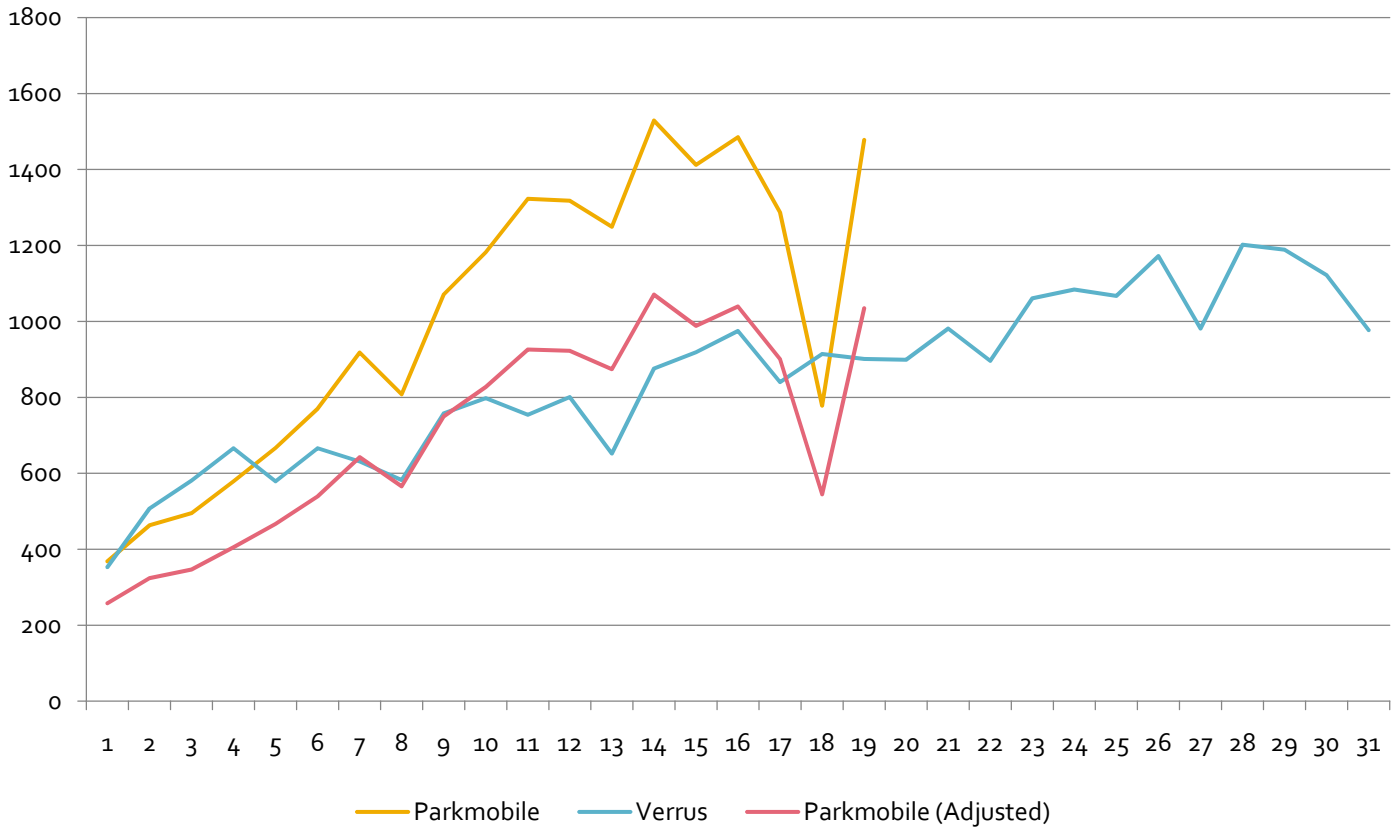
- Initiated April 2010
- 700 spaces
- 10,000 users
- 29,000 transactions
- Revenue/transaction ~ $2.77

PARKMOBILE

- Initiated July 2010
- 1008 spaces
- 6,900 users
- 20,000 transactions
- Revenue/transaction ~ $3.32
- Pay by smartphone ~ 9%

Data through 12/10/2010

Pay-by-Cell Adoption Rates

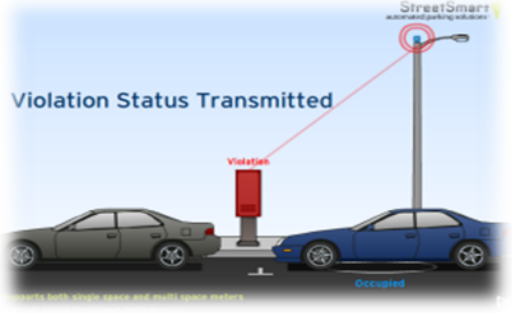


Occupancy Sensors

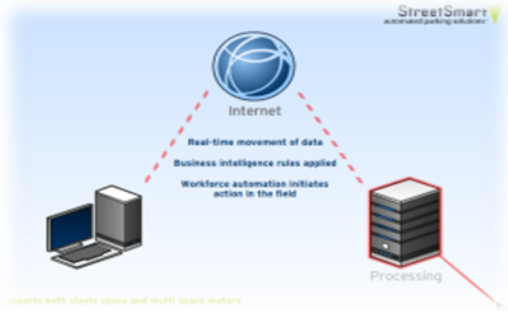
Real Time Occccupancy Monitoring & Targeted Enforcement

Vehicle Occupancy Detected

Payment Status Detected



Violation Notice Issued to NOC

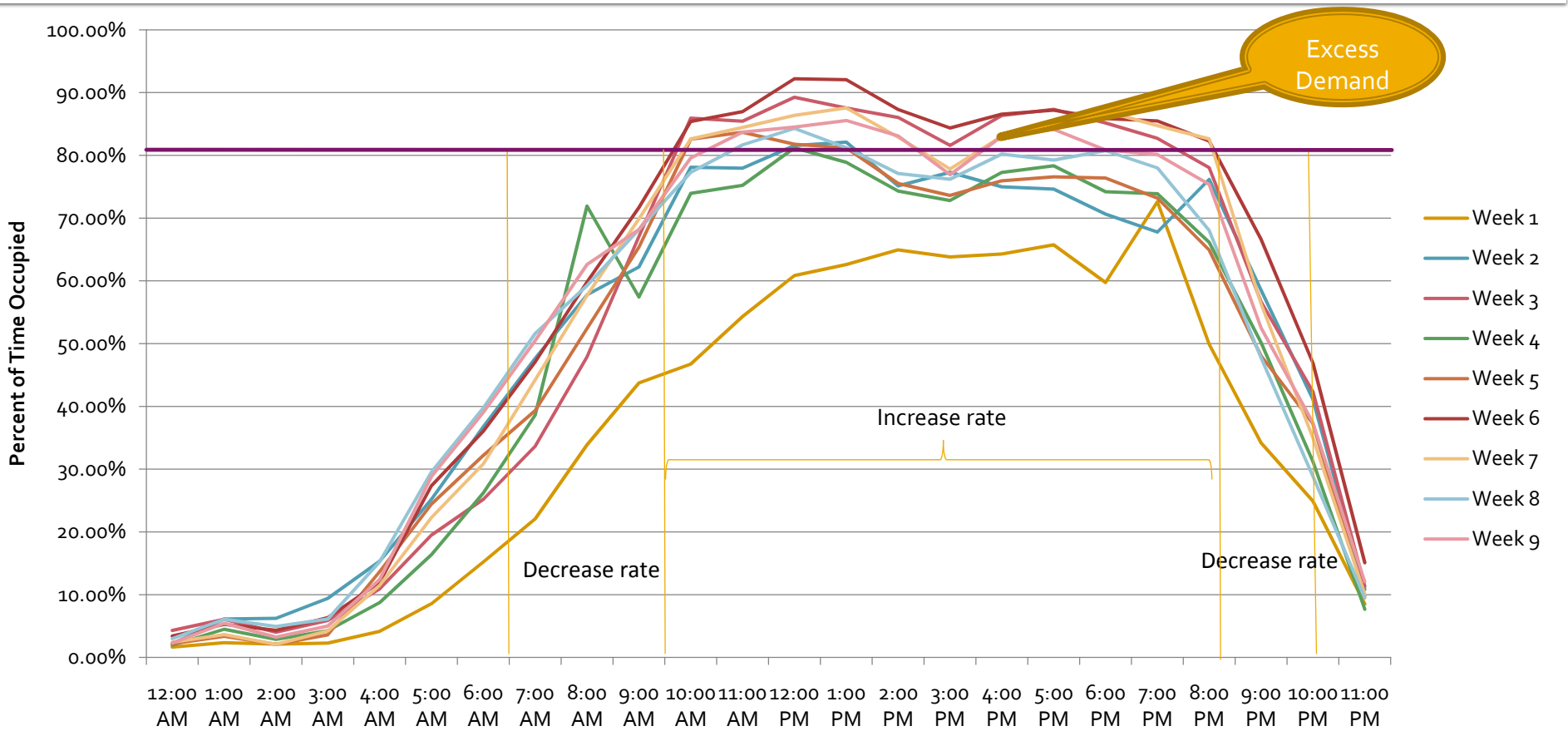


The NOC Communicates over the Internet and Applies Parking Rules. The Status of Each Space is Posted on Customer Web Portal

Field Force Automation Notices Go Out To Handheld Devices in Real Time

Citation Issued with Improved Efficiency and Better Details

StreetSmart - Real-Time Occupancy Sensing



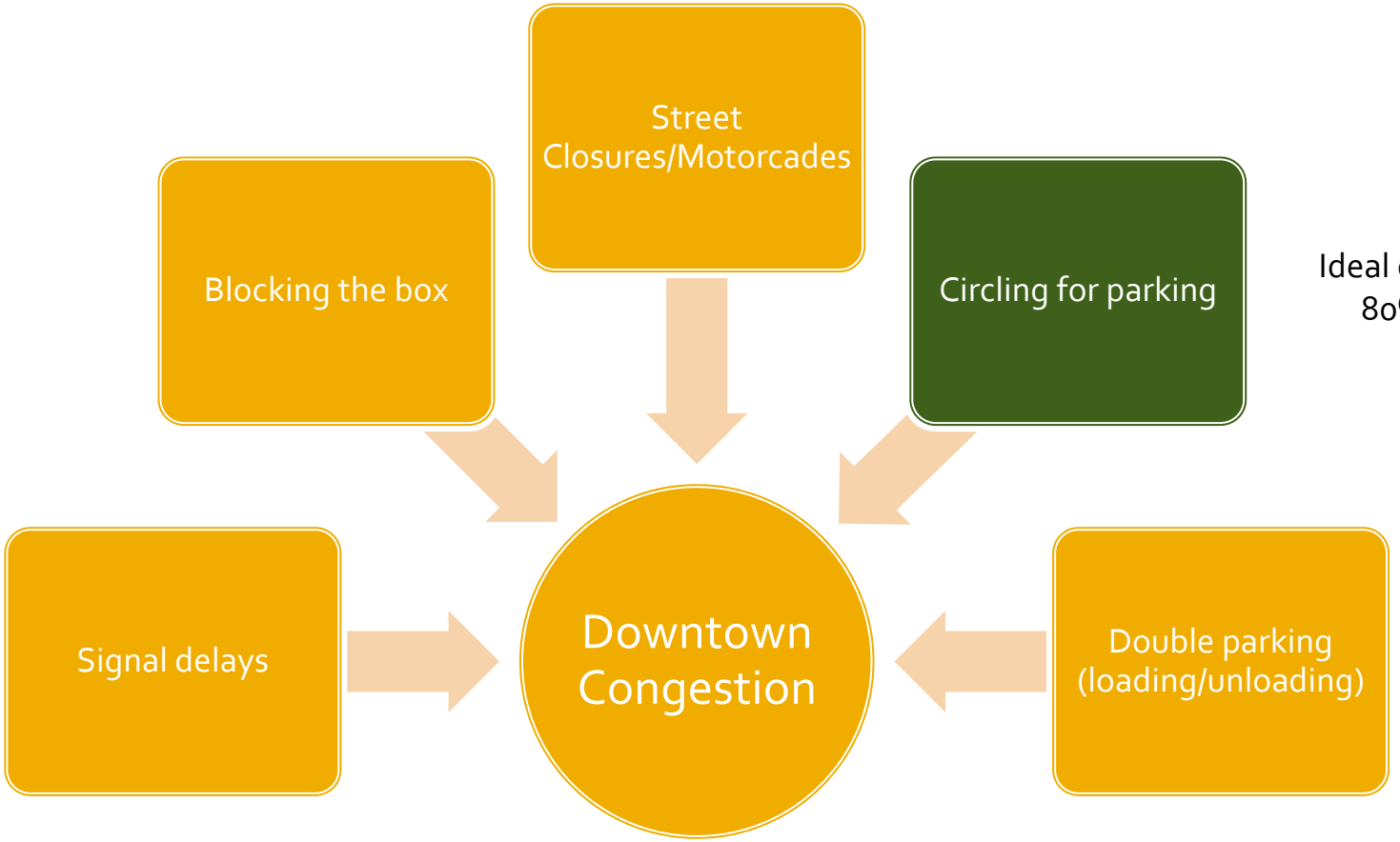
Similar to HOT Lane Pricing Concept

Other Metrics from Streetsmart Sensors

Week of September 13, 2010

Metrics	U Street	Independence Avenue	Friendship Heights
Occupancy	68.88%	46.95%	86.20%
Turnover- Vehicles per space per day	9.69	3.11	7.61
Average Duration	1:03:59	1:30:35	1:18:09
Number of Over Limit Violations Total - all spaces	429	325	886
Number of Over Limit Violations Per Space Per Day	1.46	0.76	3.33
Average overall stay of over limit violators	4:55:37	3:21:39	3:05:46

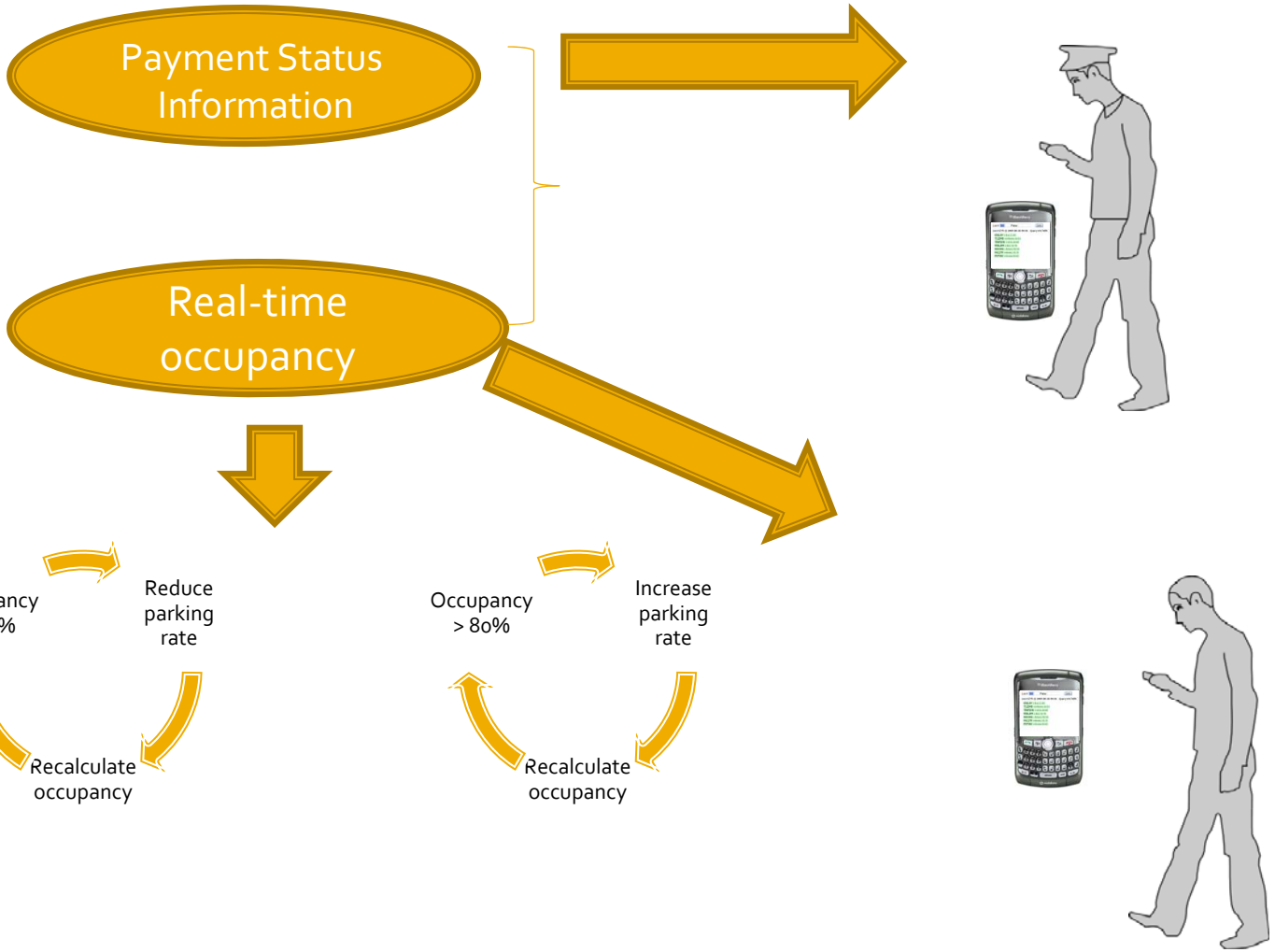
Causes of Downtown Congestion



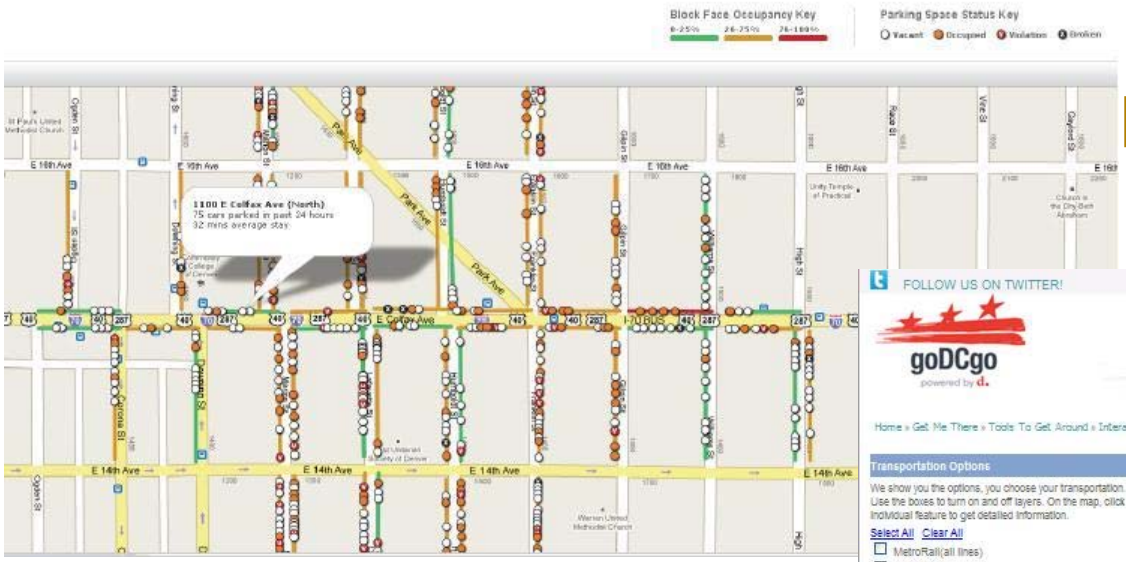
Ideal occupancy ~ 80% to 85%

Source: Downtown Congestion Task Force Final Report, December 2004

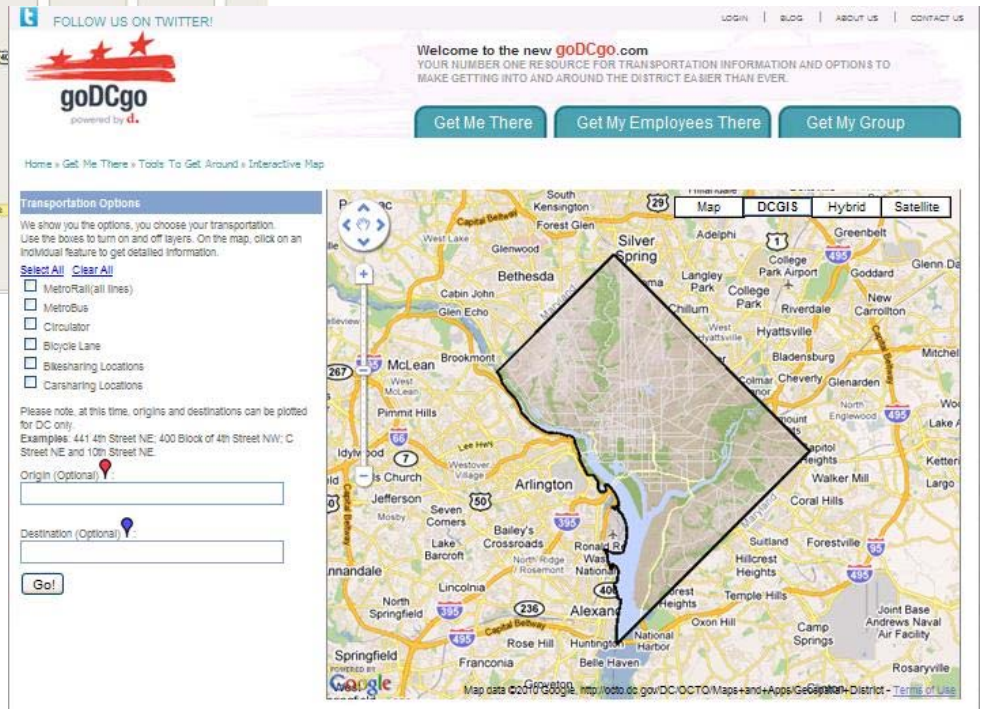
Real-Time Traveler Information



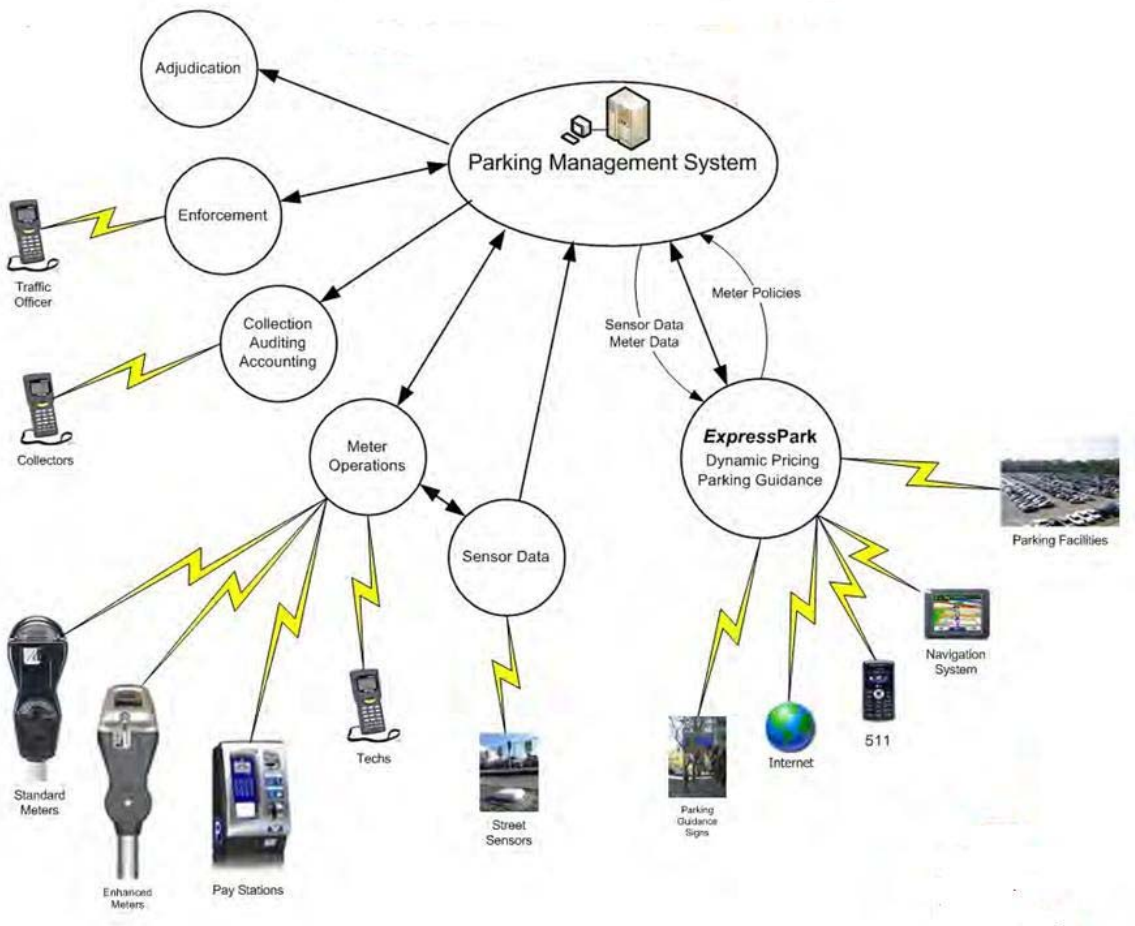
Real-Time Parking Availability



Curbside congestion map



Parking Meter Management System



DC's Migration Path

- Asset intensive program to "asset lite" solutions
- Non-communicating assets to networked "smart" assets
- Coin transactions to virtual transactions
- Reactive maintenance to proactive
- Fixed rate structure to dynamic pricing
- Limited occupancy/demand information to real-time
- Enforcement – "walk the beat" to targeted

Next Steps

- 1200 new IPS meters installed in November
- Final stages of negotiation on citywide in-car meter contract
- Citywide pay by cell RFP issued early December.
- RFP for multi-space meter to be issued this month

Goal Assessment

Program Goals	Pay –by-cell	In car meter	Smart SSM	Smart MSM	Space Occupancy
Multiple payment options	☑	☑	☑	☑	
Customer convenience	☑	☑	☑	☑	☑
Real time parking availability					☑
Fewer broken meters			☑	☑	
Dynamic Pricing					☑
Real-time operational status			☑	☑	
Better uptime	☑	☑	☑	☑	
Lower operation cost	☑	☑	☑	☑	
Minimize coin transaction	☑	☑	☑	☑	
Real-time auditing	☑	☑	☑	☑	☑

Putting the Pieces Together

Questions?