Metered Parking Payment Technology

The Los Angeles Perspective

September 22, 2011

Dan Mitchell, P.E., PTOE
City of Los Angeles Department of Transportation
Overview

- Additional stakeholder perspective
- Los Angeles experience
- Payment options
- Discussion
Stakeholder Perspective: Collection

- One pay station vs. 5-10 single meters
- L.A. cost: 17x single-space
- Collection verification
  - Handheld
  - Keypad
  - Electronic lock
  - Card
  - Proximity
- Collection revenue data
  - Audit collection amounts
  - Supports collection route and frequency determination
Stakeholder Perspective: Security

- Coin Fraud
  - Analysis and software prevention
- Credit Card Fraud
  - Blacklist
- Theft
  - Heavy-duty housings
  - Electronic locks
  - Auto-reporting collection system
    - New for single-space meters
Stakeholder Perspective: Policy Makers & Data Analysts

- Communication to report operational data
  - Automatic and (near) real-time
  - Reliability
- Central management systems
  - Overview, high-level reporting
  - Detailed reporting for all stakeholders
  - Integrated reporting systems
- Space-level data
  - Policy decision to improve granularity
  - Reduces number of spaces to increase management ability
L.A. Experience

- Overview
- Lessons Learned
  - Essential Features
  - Extended Features
LADOT Metered Parking

- **On-Street Parking**
  - 37,000 on-street spaces in 73 Parking Meter Zones

- **Off-Street Parking**
  - 2,500 off-street spaces in 62 lots

- **77% of spaces with “smart” meters**

- **Rates**
  - On-street: $1 to $4 per hour
  - Council authority to adjust ± 50% for Downtown ExpressPark

- **Revenue: $41 million and growing**
Operational and policy changes have grown meter revenue 93% over the last three years, totaling an additional $40 million.
Essential Feature: Communication

- Networking metered parking assets is essential to effective management
- (Near) real-time operational data
- Communication types
  - Ultra low-power network
  - Cellular data
  - Wi-Fi
Essential Feature: Multiple Payment Options

- Combined with communication allowed for enforcement policy change
  - Pay to Park Policy
    - Must successfully pay or move
    - Undermines vandalism
Impact of Card & Coin Meters
Comparing April 2010 to August 2011

- Meter uptime >99%
- Meter revenue up 54%
- Contested citations down 63%
- Meter Hotline complaints down 83% (Citywide)

![2010-2011 Meter Hotline Calls](chart.png)
Extended Feature: Integrated Sensing

- **Types**
  - Surface-mounted or embedded
  - Connects to meter or separate network

- **Benefits**
  - Enforcement, Parking Guidance, Policy
  - Potential to clear time
  - Potential to charge only time used
Extended Feature: Integrated Sensing

- **Types**
  - Surface-mounted or embedded
  - Connects to meter or separate network

- **Benefits**
  - Enforcement, Parking Guidance, Policy
  - Potential to clear time
  - Potential to charge only time used
Current Payment Options

- Coins
  - Still essential for now
  - Can limit to certain coins, but higher rates generally encourage higher value coins

- Bills
  - Nice to have, but generally not necessary
  - Expensive, additional maintenance, security risk

- Credit Cards
  - High convenience, but high transaction fees

- Smart Cards
  - No fees, but requires management of program
  - Gift cards are now readily available as alternative

- Mobile Payments
  - Convenience fee to customer (or shared)
  - Main benefit for extending time where credit card is available
Future Payment Options

- Integrated transit card
- Credit (Card)
  - Near-field communication
    - RFID Sensor
      - Card
      - Phone
      - Anywhere else
    - Google Wallet
  - Check-in, check-out
    - Card
    - Sensor
- Transponder – FasTrak
- In-vehicle GPS (using VMT payment system)
Metered Parking Payment Technology: Summary

- Move from “dumb” to “smart” meters
- Technology has come a long way in the last few years
- Continued innovation and development is needed to satisfy all stakeholders
- Opportunities abound and the future is bright
Metered Parking Payment Technology

Questions & Discussion

Dan Mitchell, P.E., PTOE
City of Los Angeles
Department of Transportation
Dan.Mitchell@lacity.org