goBerkeley Parking Pricing & Technology Pilot

City of Berkeley Public Works
Transportation Division

Andrew R. Heidel, AICP

December 8, 2014

Agenda

1. Overview of goBerkeley Pilot (2 min)
2. Technology Demonstration (10 min)

goBerkeley at a Glance

Goals:

↓ Congestion and Emissions ↑ Economic Activity

** Test value-pricing in medium-sized City

Methods:

1. Push alternative modes
2. Improve parking by changing parking rates and time limit

Updating Technology with goBerkeley

Updating Technology with goBerkeley

It Works! Could keep going…but how?

If City Council continues goBerkeley, the city needs parking data, but how?

Current Methods	Cost	Accuracy Problems
Manual counting	$$$	Extensive QA/QC
Parking meter records	Free	Only cars that pay

To continue demand-responsive parking, the City is seeking a permanent data collection method that is accurate and affordable.

The hypothesis:

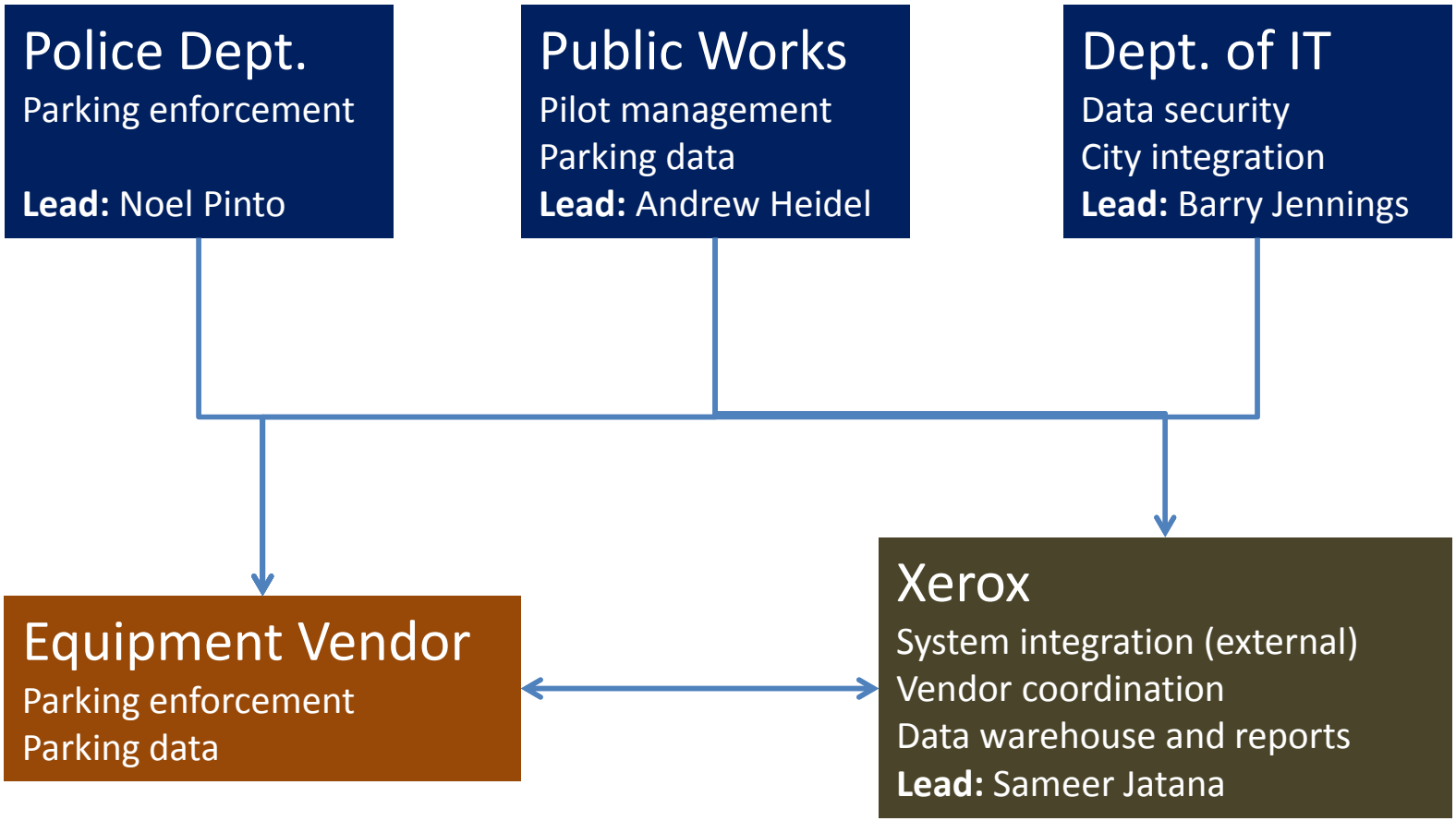
To be affordable: share equipment with parking enforcement

To be accurate: new method for occupancy / duration information to calibrate parking meter records

To make decisions: Provide integrated reports for Public Works and Police Dept.

Challenge Parking Industry and Hold Technology Demonstration

Pilot team


Police Dept.
Parking enforcement
Lead: Noel Pinto
Public Works
Pilot management
Parking data
Lead: Andrew Heidel
Dept. of IT
Data security
City integration
Lead: Barry Jennings
Equipment Vendor
Parking enforcement
Parking data
Xerox
System integration (external)
Vendor coordination
Data warehouse and reports
Lead: Sameer Jatana

What are we asking of the Industry?

What we Have

Meters:

- Collect Payment
- Provide Transaction Data
  - Number of Transactions per Blockface/Space
  - Time Purchased

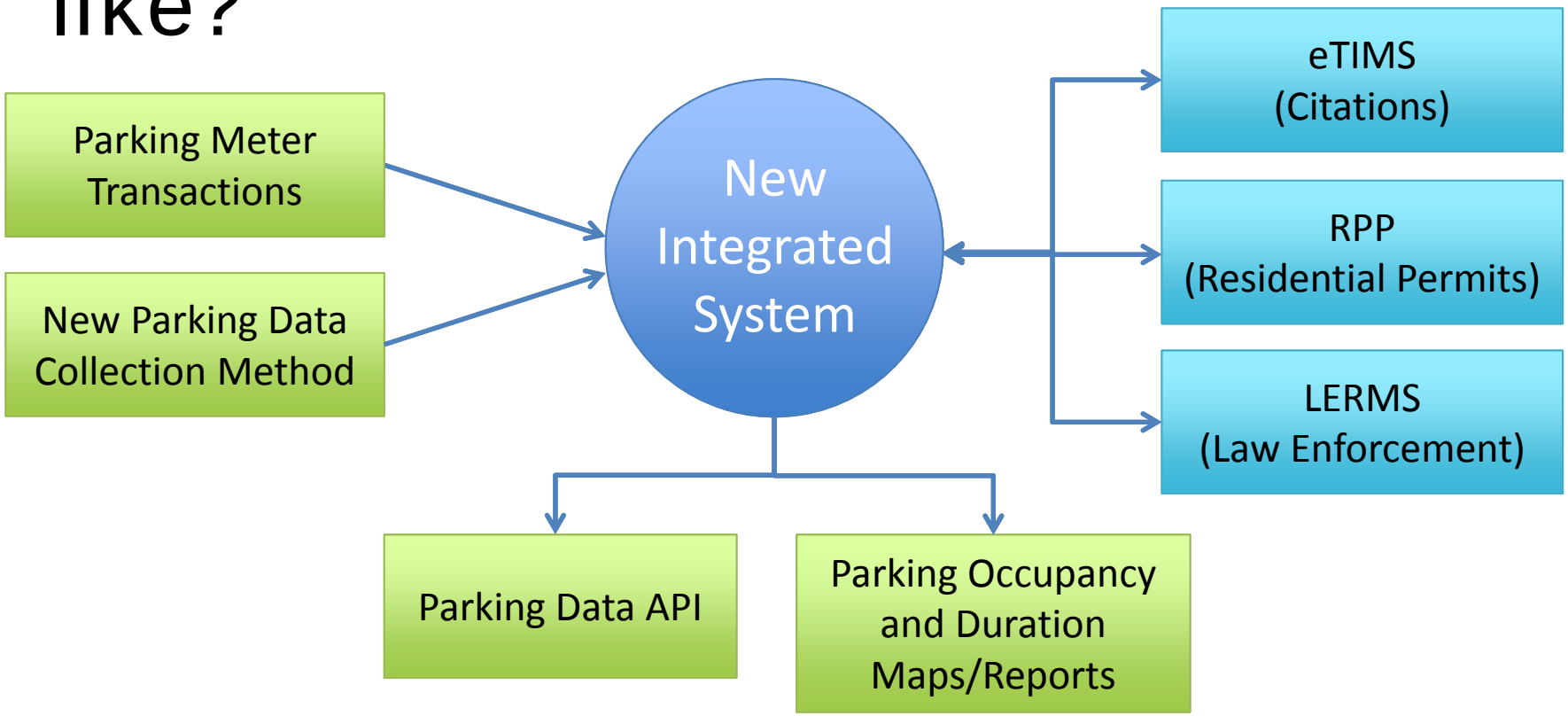
Enforcement:

- LPR Technology
- Scofflaw List
  - Read Plates Matched to List

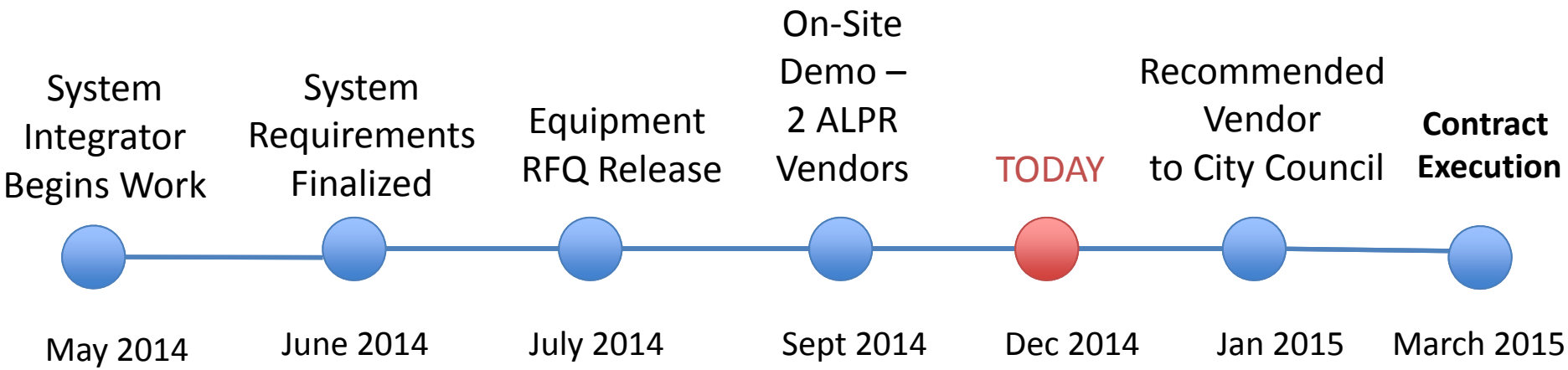
What we Want

Use enforcement equipment to augment meter data to give occupancy and turnover data to drive policy changes

What does the overall system look like?



Timeline


System Integrator Begins Work
May 2014
System Requirements Finalized
June 2014
Equipment RFQ Release
July 2014
On-Site Demo – 2 ALPR Vendors
Sept 2014
TODAY
Dec 2014
Recommended Vendor to City Council
Jan 2015
Contract Execution
March 2015

The On-Street Demonstration

- Testing Factors:
  - Occupancy – New Ground
    - Number of Legally Parked Vehicles On-Street
    - Number of Legally Parked Vehicles in Off-Street Lot
    - Length of Stay
  - Enforcement – Existing Products
    - License Plate Read Accuracy
    - Residential Permit Enforcement
    - Length of Stay Enforcement
    - Scofflaw List Matching

The On-Street Demonstration

- Where: Berkeley Street - Diverse Environments

The On-street Demonstration

77 on-street block faces + 2 parking lots
Parallel and angled parking
Demarcated and non-demarcated parking
Left and right hand side parking
Metered + RPP
Varying building heights
14,000 data points for evaluation

System A

System B

Both vendor systems…

- Provide accurate parking occupancy data
- Detect time limit violations (overstays)
- Are scalable to City-wide operation
  (metered + non-metered)
- Are physically compatible with City's vehicles
- Meet IT security standards
- Are acceptable to city's PEOs

Some vendor systems…

- Detect a vehicle without a license plate
- Accurately read license plate numbers with consistency
- Provide a hosted solution for data warehousing
- Automatically map vehicles to a blockface
- Detect vehicles on both sides of the street simultaneously
- Are preferred by the city's PEOs

Technical Performance

	System A	System B
Parking occupancy COUNT accuracy	86%	92%
License Plate READ accuracy (n-2 characters correct)	88%	61%

Cost of Ownership (5 yrs – 5 units)

	System A	System B
Initial cost	~$200K	~$300K
Ongoing cost	~100k	~300k
Hosted solution	~20k	Not offered
Total	**$$$$**	**$$$$$$**

Desired outcomes for Berkeley

- **Immediate**
  - A financially viable system
  - Robust yet low-manpower occupancy data
  - Ability to continue demand-based parking management and potentially expand to additional areas
- **Setting up for the future**
  - Parker guidance or real-time availability
  - Continuous occupancy and turnover data collected as a matter of course in enforcement

Questions we'll answer for other cities

- Will value-priced parking work in medium-sized cities?
- Can the equipment you already have (meters, enforcement equipment, etc.) give you the data you need to change rates?
- How do you do that? (Formulas, software)
- Can you do it with existing staff?
- How much will it cost you?

Potential Pitfalls

- Does combination of equipment with law enforcement make sense?
- Integration costs may be significant
- Is there a data privacy policy in place?
- What is the visual impact of the system?

Questions

Visit: www.goberkeley.info
Contact: aheidel@cityofberkeley.info