Street Addressing Project Overview and Timeline

In 2015 the Office of Property Data (OPD) contracted with Berry Dunn McNeil & Parker, LLC (BerryDunn) to complete a 4-month, extensive review of Street Addressing procedures & issues within City departments. Specifically, the intent was to review the existing street addressing process to further the objective of improving the collection, maintenance, and distribution of current and accurate property data across all City agencies. BerryDunn worked with a team of City professionals from approximately 15 departments to conduct research, issue a fact-finding summary, create a comprehensive list of business requirements, and develop recommendations to streamline business processes, improve address format standards and usage, and strengthen quality control procedures to ensure data integrity across City agencies.

Recommendations

BerryDunn and the city team conducted a detailed fact-finding process that included input from almost 100 city employees and outlined key challenges and conflicts that exist in the way we currently manage addresses. After all information was gathered and current processes were benchmarked against industry best practices, the team identified 11 distinct recommendations that would improve addressing procedures and allow for better information sharing citywide.

	Improvement Recommendations	
No.	Recommendation	Priority
1	Develop and adopt a consistent citywide address database format	2
2	Develop and implement citywide address assignment policies	3
3	Identify the City Addressing Authority	1
4	Develop and implement a Master Address Repository	5
5	Define and implement a unique Parcel Identification Number (PIN) for all City parcels	4
6	Create and implement maintenance procedures for a single citywide parcel GIS data layer	9
7	Re-design and implement processes for ULRS to accommodate support for new address data and parcel identifier standards	7
8	Develop a process for documenting deed discrepancies and sharing of discrepancy information with other City agencies	10
9	Revise procedures, processes, and database format for GIS street centerline update	8
10	Ensure that systems being implemented support the address standard format	6
11	Revisit legacy systems to update and cleanse data to meet new address standard format	11

The recommendations are as follows:

Implementation Considerations

While full completion of the Addressing Project will take some time, the most critical work is done during the first phase. Phase 1 will consist of implementing the top two priority recommendations because they lay the foundation for successful completion of all others.

- The City Addressing Authority (Priority #1, Recommendation #3) will provide enforcement of address standards as well as develop guidelines and policies for how addresses should be managed citywide. It will be responsible for assigning all official City addresses (taxable and non-taxable), and managing sub-addresses that support specific business functions. Creation of this Authority will provide clarity in roles and responsibilities related to addressing processes.
- Developing and adopting a consistent citywide address database format (Priority #2, Recommendation #1) is critical to all City activities related to address data management. It will speed the data entry process and will eliminate ambiguity and the possibility of multiple addresses being assigned for the same property. Most importantly, it provides the technical environment for integration of multiple City systems with greatly reduced need for manual intervention and verification.

Timeline for Implementation

The projected implementation timeline for full build-out of Recommendations #1-10 is approximately 3 years. Of these, recommendations #1 & 3 would be done as Phase 1 as they provide a foundation for the tasks that follow. It is anticipated that Phase 1 (recommendations 1 and 3) would take approximately six months to complete. Number 11 will be an ongoing process as we continue to update and/or phase out antiquated legacy systems. A detailed chart of the implementation schedule is attached. An RFP for technical support and professional services is currently under development and will ready for release within the next 30 days. While the project team has preliminary cost estimates based upon benchmarking against other similar projects, a full budget will be developed once proposals are received from the vendor community.

ID	WBS Recommendation Project and Major Tasks	Plan Start	Plan Finish	Sep Oct N	lovDer	cJan	FebM	ar∆nr		2016 un Jul	Auds	ep Or	t Nov)ec.la	nFebM	ar Anr		2017 Jul Jul	Auas	epOr	tNo	vDec	JanF	ebMa	April)18 1 Jul A	udSe	p Oct	Novr	Dec
1	1 PROJECT PREPARATION AND SET-UP	Гhu 10/1/15				Juail		a Apl	mayJl		Augo			-cuud		a Apr	mayJ		Auga		201401		Janr	Unividi		ayour		ayse			280
2	1.1 Establish priority for recommended projects	Thu 10/1/15	Fri 10/30/15																												
3	1.2 Assign oversight team and leader	Thu 10/1/15	Wed 11/11/15																												
4	1.3 Make decisions on use of contracted resources for support	Mon 11/2/15	Fri 1/8/16			•																									
5	1.4 Select and ratify agreement(s) with contractor(s)	Mon 12/14/15	Fri 7/8/16																												
6	2WORK OVERSIGHT, MONITORING, PROGRESS REPORTING	Mon 11/2/15	Mon 12/31/18																										Ħ		
7	2.1 Monitor and coordinate overall work progress (for all individual projects)	Mon 11/2/15	Fri 12/28/18																										†	F	
B	2.2 Project team leaders prepare and submit status reports	Mon 12/14/15	Mon 12/31/18																												
9	2.3 Manage contracts and oversee performance of selected contractors	Mon 3/7/16	Mon 12/31/18				-																						—		
10	3 RECOMMENDED PROJECT WORK	Γhu 10/1/15	lon 12/31/1																											-	-
11	3.1 1. Develop and adopt a consistent citywide address database format	Mon 11/2/15	Mon 12/31/18																												
12	3.1.1 1. Assemble multi-agency project team	Mon 11/2/15	Fri 11/13/15																												
13	3.1.22. Review suggested database format	Mon 11/2/15	Fri 12/11/15																												1
14	3.1.33. Reach consensus on address database format	12/7/15	Fri 1/22/16																												
15	3.1.44. Design Oracle and ArcSDE database		Fri 2/19/16																												
16	3.1.5 5. Prioritize City systems (existing or in development) for DB schema modification	12/7/15	Fri 2/12/16																												
17	3.1.66. Populate GIS database with primary City administrative sources of address data		Fri 4/29/16																												
18	3.1.7 7. Design and set-up a database and tools for capturing address changes and history	3/14/16	Fri 7/22/16				•																								
19	3.1.88. Adjust data schemas in City systems and databases to reflect address data standards	Wed 4/20/16	Mon 5/7/18																												
20	3.1.8.1 8.1 Make database schema adjustments for high-priority City systems	Wed 4/20/16	Tue 11/1/16																												
21	3.1.8.2 8.2 Make database schema adjustments for lower priority City systems	6/15/16	Mon 5/7/18																												
22	3.1.99. Build functionality for street and address data entry validation	Wed 5/18/16	Mon 12/31/18																												
23	3.1.9.1 9.1 Build data validation functionality for high-priority City systems	Wed 5/18/16	Tue 11/1/16																												
24	3.1.9.2 9.1 Build data validation functionality for lower priority City systems	Wed 3/22/17	Mon 12/31/18													+															
25	3.22. Develop and implement citywide address assignment guidelines and policies	Mon 11/2/15	Thu 10/27/16																												
26	3.2.1 1. Assign project team and initiate process for developing addressing guidelines	Mon 11/2/15	Fri 11/27/15																												
27	3.2.22. Review examples from other municipalities and prepare Guidelines document outline.	Mon 11/23/15	Fri 1/8/16		-	•																									
28	3.2.3 3. Assign development of content areas to appropriate members of the project team and contractor (if needed).	Wed 12/9/15	Tue 2/2/16																												
29	3.2.44. Prepare draft Addressing Guidelines and distribute for review	Wed 1/6/16	Tue 3/8/16																												
30	3.2.5 5. Receive and assemble review comments and prepare revision (draft 2).	Wed 2/10/16	Tue 3/29/16				-																								
31	3.2.6 6. City Team reviews draft 2 and reaches consensus on additional revisions for broader distribution	Wed 3/30/16	Tue 4/26/16																												
32	3.2.7 7. Distribute the draft Addressing Guidelines to broader City stakeholder group	Wed 4/27/16	Tue 5/10/16																												
33	3.2.8 8. Accept and compile review comments for City stakeholders	Wed 5/4/16	Tue 5/31/16																												
34	3.2.9 9. Update draft Addressing Guidelines and prepare Final Draft								🔶																						

ID	WBS Recommendation Project and Major Tasks	Plan Start	Plan Finish	SenOc	t Nov D	ec.la	n Fehl	Mar An		2016		Sen	ctNo	Dec	Jan F	ehMa	r Anr	Mav	201 Iun J	Sen	Oct	ac la	Feb	Mar A	nrMav	201	un Sen	Octh)ec.i
35	3.2.10 10. Get formal executive review and acceptance of Addressing Guidelines.	Fri 6/10/16				ccidal					Lug			VDec	Jan	CDING		may		Joch							igoep			
36	3.2.11 11. Prepare and get approval of official ordinance referencing use of the Addressing Guidelines	Fri 6/24/16	Thu 10/13/16							-		-																		
37	3.2.12 12. Implement use of the Addressing Guidelines	Fri 6/10/16	Thu 10/27/16							-																				
38	3.3 3. Identify the City Addressing Authority	Гhu 10/1/1է	Fri 3/11/16	-		-	++	•																						
39	3.3.1 1. Identify key City stakeholders to be involved review and decision on addressing authority.	Thu 10/1/15	Wed 10/14/15	-																										
40	3.3.2 2. Assemble a multi-agency Working Group	Mon 10/12/15	Thu 10/29/15	-																										
41	3.3.3 Working Group reviews options and reaches consensus on City addressing authority and roles	Thu 10/22/15	Wed 11/18/15																											
42	3.3.4 4. Working Group submits recommendation and gets approval from City executive leadership	Mon	Fri 12/18/15																											
43	 3.3.5 5. Prepare and approve ordinance and formal policies designating addressing authority roles. 	Mon 12/7/15	Fri 2/26/16																											
44	3.3.66. Implement approved Addressing procedures		Fri 3/11/16																											
45	3.44. Develop and implement a Master Address Repository	Mon 12/7/15	Mon 12/31/18																									┢╾┿	+	-+
46	3.4.1 1. Assemble a multi-agency project team	Mon 1/25/16	Fri 2/12/16				•																							
47	3.4.2 2. City Project team prepare detailed work plan		Fri 3/18/16																											
48	3.4.3 3. Prepare specifications, RFP, and select a contractor	Mon 1/25/16	Fri 5/20/16						-																					
49	3.4.4 4. Identify all City databases containing address information.	Mon 12/7/15	Fri 2/19/16																											
50	3.4.5 5. Carry out Address Repository database design		Fri 6/17/16																											
51	3.4.6 6. Design and develop database integration and data maintenance processes.	Mon 1/18/16	Fri 7/15/16																											
52	3.4.7 7. Design and execute pilot as basis for testing and full development.	Mon 6/6/16	Fri 8/19/16																											
53	3.4.88. Make database design changes based on pilot results	Mon 8/15/16	Fri 9/30/16																											
54	3.4.99. Add all valid addresses to the Master Address Repository	Mon 10/3/16	Fri 12/23/16																											
55	3.4.10 10. Design, develop, test, and deploy custom applications for data capture and validation	Wed 5/18/16	Tue 2/21/17						1 =																					
56	3.4.11 11. Develop, test, and deploy custom applications for query, reporting, and map display	Wed 5/18/16	Tue 5/2/17						=																					
57	3.4.12 12. Develop web services for address validation for high-priority City systems	Wed 5/18/16	Tue 11/15/16						-				-																	
58	3.4.13 13. Develop web services for address validation for other City systems	Wed 3/22/17	Mon 12/31/18																									╞━┿	+	
59	3.55. Define and implement a unique Parcel Identification Number (PIN)	Fri 1/1/16				+-																-						┢╾┿	+	+
60	3.5.1 1. Review alternate PIN approaches provided in context of business needs	Fri 1/1/16	Thu 1/21/16																											
61	3.5.2 2. City project team reaches consensus on PIN format.	Fri 1/22/16	Thu 2/4/16																											
62	3.5.3 3. Prepare detailed work plan for phased implementation of the Citywide PIN.	Fri 1/29/16	Thu 2/25/16																											
63	 3.5.44. Evaluate parcel records from primary sources and prepare parcel cross-reference table. 	Fri 2/26/16																												
64	 3.5.5.5. Evaluate cross-reference table (Task 4) and identify discrepancies and initiate resolution. 	Fri 4/15/16	Thu 7/28/16																											
65	3.5.66. Add PIN database field to high-priority City databases	Fri 7/1/16									+																			
66	3.5.7 7. Create and populate data in re-designed GIS geodatabase	Fri 6/3/16																												
67	3.5.88. Add new PINs to lower priority City databases	Thu 4/28/16	Mon 12/31/18											1														-	-	

ID	WBS Recommendation Project and Major Tasks	Plan Start	Plan Finish	2016 2017 2018 ep Oct Nov Dec Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Jan Feb Mar Apr May Jun Jul Aug Sep	ł
68	3.6 6. Create and implement maintenance procedures for a single citywide parcel GIS data layer	Fri 4/1/16	Mon 10/30/17		
59	3.6.1 1. Assemble a multi-agency project team.	Fri 4/1/16	Thu 4/14/16		1
70	3.6.22. Project team prepare detailed work plan.	Fri 4/8/16	Thu 5/12/16		1
71	3.6.3 3. Prepare specifications, request proposals, and select for selected work	Wed 4/20/16	Tue 8/23/16		1
72	3.6.4 4. Design new ArcSDE parcel geodatabase database feature	Fri 6/3/16	Thu		I
73	classes 3.6.55. Identify parcel discrepancies and data errors for resolution	Fri 7/8/16	9/22/16 Tue		I
74		Fri 8/12/16	12/6/16 Fri 1/27/17		1
75	boundary and attribute errors and inconsistencies. 3.6.7 7. Design and create mapping rules (ArcSDE geodatabase) to	Fri 8/12/16	Thu		1
	support more robust parcel creation and update.		2/16/17		1
76	identification of problems for resolution		Fri 2/24/17		1
77	3.6.99. Design and build new applications to support parcel update operations for the new parcel feature class(es).	Fri 8/26/16	Thu 3/23/17		1
78		Fri 8/12/16			1
79	3.6.11 11. Train personnel and implement new parcel data update processes	Fri 3/10/17			1
80	3.6.12 12 Design and develop new applications for GIS-based parcel guery and map display.	Fri 9/23/16			1
81	3.6.13 13. Over time, identify and resolve other parcel data errors and		Mon		1
82	inconsistencies 3.77. Re-design and implement processes for AIS (ULRS	1/30/17 Mon	10/30/17 Fri 6/16/17		1
83	replacement system) 3.7.1 1. Design AIS functionality-reflecting address data format	12/7/15 Mon	Fri 2/26/16		1
84	standard and new citywide GIS parcel layer. 3.7.2.2. Design AIS data integration with current and new City	12/7/15 Mon	Fri 6/3/16		1
85	systems 3.7.3 3. Develop AIS processes for data integration with external	12/21/15 Mon 2/1/16	Fri 10/7/16		1
86	systems 3.7.4.4. Put in place new AIS capabilities.	Mon	Fri 6/16/17		1
87	3.88. Develop a process for documenting deed discrepancies	4/25/16			1
	and sharing with City agencies				1
88	3.8.1 1. Review deed discrepancy data and determine best method for GIS-based access.		Thu 7/28/16		1
89	3.8.2 2. Carry out database design to support improved capture and access to deed discrepancy data.	Fri 7/22/16	Thu 9/15/16		1
90	3.8.3 3. Carry out integration of existing deed discrepancy data into existing databases.	Fri 7/8/16	Thu 4/13/17		1
91	3.8.4.4. Design and develop revised applications for ongoing capture and maintenance of deed discrepancy data.	Fri 8/19/16	Thu 1/5/17		1
92	3.8.5.5. Put in place revised applications for deed discrepancy data.	Fri 11/11/16	Thu 6/8/17		1
93	3.9 9. Revise procedures, processes, and database format for GIS street centerline update	Mon 11/2/15	Fri 2/3/17	+ + + + + + + + + + + + + + + + + + +	
94	3.9.1 1. Select contractor based on proposals to the Department's recent RFP for Centerline upgrade.	Mon 11/2/15	Fri 1/8/16		1
95	3.9.2 2. Assemble project team led by Streets Department	Mon 11/2/15	Fri 1/8/16		
96	3.9.33. Reach consensus on recommended additions and design	Mon	Fri 1/15/16		
97	changes to the current Street Centerline database. 3.9.4.4. Negotiate work with selected contractor to include additional		Fri 2/5/16		
98		12/14/15 Mon 2/8/16	Fri 3/4/16		1
99	database. 3.9.6 6. Capture new street-like features as part of upgraded centerline database	Mon 3/7/16	Fri 7/22/16		

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100	3.9.7 7. Design, develop, and test new applications and tools for ongoing update and maintenance.	Mon 2/8/16		Sepoc		ecjai		MayJu	Jul	Augoe	poci	NOVDE	Jan	rebim	wayo		Augo	epoci	NOVDE	CJam		privay	Juli J	Sepor	DecJa
101	3.9.88. Put in place ongoing maintenance and update procedures.	Mon 7/11/16	Fri 11/11/16									•													
102	3.9.9 9. Put in place procedures for distribution of updated centerline data to City users	Mon 9/19/16	Fri 2/3/17																						
103	3.10 10. Ensure that systems being implemented support the address standard format	Mon 11/2/15	Thu 2/9/17																						
104	3.10.1 1. Engage technical representatives from City agencies involved in system design and development efforts	Mon 11/2/15	Tue 1/31/17																						
105	3.10.22. Incorporate the City's address standard format into the configuration of system implementation projects	Fri 6/10/16	Tue 1/10/17																						
106	3.10.3 3. Include a delegate of the Addressing Authority in address database work	Thu 11/19/15	Fri 12/30/16		🕇																				
107	3.11 11. Revisit legacy systems to update and cleanse data to meet new address standard format	Mon 11/16/15	Mon 12/31/18																						
108	3.11.1 1. Assemble a multi-agency project team.	Mon 11/16/15	Fri 11/27/15																						
109	3.11.22. Project team prepares detailed work plan	Mon 11/30/15	Fri 1/8/16																						
110	3.11.33. Review and assign City staff and contracted resources	Mon 12/14/15	Mon 12/14/15			1																			
111	3.11.44. Identify legacy City systems with address data.	Mon 12/7/15	Fri 2/12/16				•																		
112	3.11.55. Prioritize the legacy systems for database modification	Mon 2/1/16	Fri 4/1/16																						
113	3.11.66. Design and develop tools for database update and cleansing	Wed 4/20/16	Tue 6/28/16																						
114	3.11.7 7. Initiate data modification/update processes based on the prioritized list of systems.	Wed 6/1/16	Tue 6/28/16																						
115	3.11.88. Continue to update data across all identified systems	Wed 2/22/17	Mon 12/31/18																			-			