ADDITIONAL IT STANDARDS

DATA REQUIREMENTS, ADDRESSING, DIGITAL AND WEB CONTENT ACCESSIBILITY

If applicable, applications or solutions proposed by vendors must be in alignment with these City's Standards:

Section 1
Data Requirements Standards provide guidance for contractors developing any new data, databases or IT Systems

Section 2
Digital Standards provide the design, code, and content guidelines for City website and web application development;

Section 3
Addressing Standards should be adopted for use within all database systems, applications or tables that maintain a property address.

Section 4
Web Content Accessibility Standards - All sites produced by vendors for the City, regardless of the hosting environment, shall conform to the Web Content Accessibility Guidelines (WCAG) 2.1 AA. These guidelines will make content more accessible to a wider range of people with disabilities.

Office of Innovation & Technology **Data Requirements & Standards**

Data Access Requirements for Third-Party Systems

The City considers all information that is generated or stored in third-party information systems implemented by the Applicant or associated parties to be City property.

In accordance, the City requires non-proprietary means to access data in third-party systems implemented by the Applicant or associated Parties.

Non-proprietary means include:

A. A documented and secured web-based Application Programming Interface that meets City Standards[1].
B. Secure access to databases using non-proprietary client software that follows ODBC[2] specifications. Documentation of database elements that store City data.
C. Secure access to file systems where City information is stored.
D. Other means of securely providing third-party system data to the City, including exporting flat files.

Proposals shall include a statement of the Applicant's ability to provide access to data in context of items A, B, C and D above. The City may consider alternative means on a case-by-case basis.

In case A, B, C or D are available through proprietary components of the third-party system, the vendor shall provide, free of charge, an agreed upon number of service accounts to be used solely for programmatic retrieval of data.

Electronic documents stored in proposed third-party systems shall be exportable in non-vendor proprietary formats[3].

Proposals shall indicate the Applicant will provide data architecture documents including entity relationship diagrams documenting semantic and logical data relationships, along with a data dictionary describing datasets and data attributes. See section entitled City Metadata Standards for details.

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[1] The Current City standard API specification is RESTful web services with JSON payload.

[2] Open DataBase Connectivity is the City's standard API for directly accessing database management systems.

[3] Including but not limited to Adobe PDF, text, jpeg, png. Semi-structured documents may be exported in XML or JSON format.

Master Data Requirements for RFPs

The City's master data strategy includes initiatives to provide vendors with a single source of authoritative data, and for vendor systems to in turn contribute authoritative data back to the City's enterprise data warehouse. Accordingly, the City requests the Applicant's proposal include the following:

A. Language indicating that City authoritative data shall be leveraged in the proposed solution, if such data exists. City authoritative data is catalogued at https://metadata.phila.gov which must be used as a reference for this activity.
B. The Applicant's plan shall include the identification of all new datasets generated or stored in third-party information systems implemented under the scope of the proposed project. The plan must include metadata creation as per City Metadata Standards outlined in the next section.
C. Language indicating that the Applicant shall support the City as needed to meet data governance requirements including assistance with metadata creation and mentoring City Data Stewards on appropriate data usage and sensitivity.

In addition to the above, the Applicant shall provide references or case studies exhibiting integration with data warehouses developed in-house, or with other customers.

Systems integration software code developed by the Applicant or related parties is subject to RFP Section 2.4.4: Software Source Code.

Metadata Standards

To ensure appropriate use and interpretation of all vendor-supplied data in City systems, the City requires that Applicants provide the following minimum metadata documentation:

A. An overview of the dataset including its scope, purpose, and context for intended use.
B. Detailed description of the development process for creating the data, including data sources and/or data collection methods; algorithmic, analytical, or manual transformations of the raw data; documentation of any excluded, removed, or redacted data; and any other relevant elements that contributed to the end data product.
C. Documentation of the dates when data was collected, or the timeframe represented.
D. Data Dictionary documenting the following information for each field in the dataset:
    a. the raw field name
    b. a human-readable title for that field
    c. the type of data stored in that field (e.g., string, integer, GUID, etc.) along with any relevant details such as length, precision, geometry type, grid resolution, as applicable
    d. a complete definition of any coded values

e. identified primary and foreign keys (if applicable)
f. any other descriptive information relevant to interpreting the data such as the universe, timeframe, or exclusions specific to a given field.

E. Additional details about geospatial data, described below.

Philadelphia Common Data Elements for Geospatial Data

The City has defined common data elements, defined below, for data that can be associated with a geographic location within the City. The City requires that Applicants conform to the standards:

A. Addresses

See Addressing Standards in next section.

All systems that process or store address data must use the City's Address Information System (AIS) for Philadelphia based address standardization, validation or geocoding.

B. Land Records[1]

The City has created a standard Property Identification Number (PIN) used to uniquely identify parcels, condominiums, land rights and easements. All systems that handle land record related data or documents shall identify property records using the City's Property Identification Number (PIN.)

C. Geospatial Vector[2] Data

Systems that store geospatial data in a Relational Database Management System (RDBMS) shall store the data according to the Open Geospatial Consortium's (OGC) standards for simple feature access. The City requires implementations of the OGC standards to follow either the Esri ST_Geometry or PostGIS Geometry specifications.

Geospatial Vector data stored outside of a RDBMS shall be stored in industry standard formats including geojson, shapefile, or Esri File Geodatabase.

Geospatial Vector data shall include a Coordinate Reference System (CRS) deemed appropriate for the dataset. The City requires use of either the NAD83 or WGS84 datum. The epoch date of the chosen datum shall be documented to ensure the City can perform accurate datum transformations.

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[1] Beginning in 2020

[2] Vector data consists of points, curves (lines) and polygons and derivations thereof as defined by OGC standards.

CITY OF PHILADELPHIA DIGITAL STANDARDS

http://standards.phila.gov/

Philadelphia's digital standards provide the design, code, and content guidelines for City websites. These standards were created by the Office of Open Data and Digital Transformation for people who are designing, creating, and writing for the City of Philadelphia. Standards allow as many people as possible to access City information. Standards also help outside vendors and individual departments, offices, commissions, and agencies create a consistent identity for the City of Philadelphia.

These standards are divided into guides for:

- **Design and Development:** the visual branding elements and tools that define how City websites should look and function.
- **Content:** all the information you need to write for City websites.
- **Analytics:** as part of the City's commitment to open data, we employ a Unified Web Analytics Strategy and have included the necessary code for employing it.

Please review the guides and technical details at http://standards.phila.gov/

CITY OF PHILADELPHIA ADDRESSING STANDARDS

Prepared by the Office of Innovation and Technology in coordination and cooperation with the Office of Property Data

v.06.26.2017

GOALS

These standards are consistent with recommendations prepared for Office of Property Data and align with US Postal Service (USPS) and forthcoming Next Generation E-911 National Emergency Number Association (NENA) guidelines.

The standards should be adopted for use within all database systems, applications, or tables prepared by City departments or vendors.

ALIGNMENT AND INTEROPERABILITY WITH EXISTING NATIONAL STANDARDS

- The City will use the USPS Publication 28 for address standards whenever possible.
- The Next Generation E-911 NENA standards for addressing will be adopted to the extent possible once they are published.

GOVERNANCE

- This City has full rights to determine the street names and provide the street name to USPS.
- AIS (Address Information System) was created and is maintained by the Office of Innovation and Technology (OIT) to standardize and resolve variations of address for lookup and geographic reference across city systems.
- AIS has a component, Passyunk, that is the de facto standardizer and parser for City addresses. Departments and vendors can use this application to parse and standardize addresses according to standards set by the City (see below).
- First line addresses (the house number and street name minus city, state, ZIP Code values) can be stored in tables using either single field or parsed out into the individual components described below.
- Direct questions on this standard to the Office of Innovation and Technology at maps@phila.gov Subject line: City Address Standards

ADDRESS FIELD COMPONENTS

COMPONENT	FIELD TYPE	EXMPLE: 1234B 1/2 E Independence Mall S Ste 12A	NOTES
Address	char(12)	1234B 1/2	Cannot be a zero, no leading zeros
Address Number	num	1234	Cannot be zero
Address Suffix	char	B	Values that refer to property types should instead be in the unit designator field R(REAR), S(SIDE)
Address Fraction	char(3)	1/2	Exist in Philadelphia
Street Pre Direction	char(4)	E	N,S,E,W City doesn't have NE, SE,NW, SW
Street Name		INDEPENDENCE	Required
Street Suffix	char(4)	MALL	USPS standards. i.e. AVE not AV
Street Post Direction	char(2)	S	N,S,E,W City doesn't have NE, SE,NW, SW. The City only has 300 addresses with a post direction. Use should be deprecated if possible
Secondary Unit Designators	char(10)	STE	USPS standards. Avoid # symbol whenever possible
Secondary Unit Number	char(10)	12A	Optional
City		Philadelphia	Not used if City only address list
State	char(PA)	PA	Not used if City only address list
ZIP Code	char(5)	01234	Optional if City only address list
Zip4	char(4)	0123	Optional if City only address list

CountyFips	char(5)	42101	Optional
Status	Char(1)	A	Optional: **A**ctive, **R**etired, **T**emporary, **P**rovisional
Status Date	Date	12/20/2016	Optional

Hyphenated ranged addresses exist where tax lot consolidations have occurred. This condition exists in addresses generated by Office of Property Assessment (OPA). For hyphenated addresses, use the same Address Number component as follows. Additional fields may be used optionally

COMPONENT	**FIELD TYPE**	**EXMPLE:** 1201-05 S 58th St	**NOTES**
Address	char(12)	1201-05	Use the hyphen with no spaces between values.
Address Number Low	num	1201	Cannot be zero
Address Number High	num	1205	Optional. In OPA documentation, this is called HOUSE EXTENSION

SUPPLIMENTAL INFORMATION

1. The City has about 30,000 ranged address numbers. The format looks like this -**1201-03** S 58TH ST. This is unique to Philadelphia and will make any enterprise application development more difficult and expensive. (NYC has hyphenated addresses that have been adopted by USPS, but function differently)

2. Many datasets including Office of Property Assessment (OPA) do not have Secondary Unit Designator. They only have the Secondary Unit Number. Therefore, the default value is a hashtag "#". The Address Unit Designator must be added to all city address datasets so that the correct APT, UNIT, STE, etc., is used. These values will align with what USPS has. It is understood that buildings do not always have the same standards for this however the City and USPS should be aligned.

3. The (address) Suffix/Suff fields in OPA and Department of Records (DOR) databases are problematic to matching or geocoding operations of aggregated data from these sources as they are unique to each agency's address recording operations. See Appendices A and B.

   Address suffixes should be used for specific postal address designations that generally have an alpha character at the end of the numeric address number: 1234A Market St, 1234B Market St.

   The OPA and DOR versions of these fields are a mix values that don't match postal standards and in many cases refer to types of ownership

   a. The value '2' indicates that ' 1/2' is the address number suffix.

   b. R = REAR. Should be Secondary Unit Designator?

   c. A = Air Rights, S = Subterranean, M = Multiple, L = Leasehold, E = Encroachment, P = Parking... These are not address values and should have their own field

4. No leading zeros in street names: 1317 N **02ND** ST should be 1317 N **2ND** ST

5. Single digit range numbers should have a leading zero: **1201-3** S 58TH ST should be **1201-03** S 58TH ST

6. Address number fractions in ranged addresses need to be cleaned up and not allowed **909 1/2-11** S 9TH ST. There are 6 cases known in the city.

7. The OPA database [as of this date of the document] has a constraint on the length of street names. This affects long street names that have been abbreviated: BEN FRANKLIN PKWY, CHRIS COLUMBUS BLV.

8. Per USPS standards, the word **SAINT** should always be spelled out, not abbreviated to **ST**.

9. Per USPS standards, the word **MOUNT** should always be spelled out, not abbreviated to **MT**.

10. Per USPS standards, abbreviations should not be used in Street Names: POQUESSING **CRK** DR, wrong. POQUESSING **CREEK** DR, correct.

11. Per USPS standards, pre-directions are always abbreviated: N, E, S, W. **WEST** SOUTH ST, wrong. **W** SOUTH ST, correct. **SOUTH** ST - correct.

12. Per USPS standards, address suffix always uses the official USPS abbreviations: POQUESSING CREEK **DRIVE**, wrong. POQUESSING CREEK **DR**, correct.

13. There should be no space after MC in street names: **MC CALLUM** ST, wrong**. MCCALLUM** ST, correct.

14. The city only has 300 addresses with a post direction. Use should be deprecated, if possible.

15. County, State, and Local Highways. Not all roads in Philadelphia exist solely in Philadelphia. There is a public safety need to standardize the names of roads that cross county and state boundaries. Many of these roads do not have addresses such as Interstate 95. They still need standardized names for E-911 routing, E-911 addressing, crash reporting, etc.

16. Not all addresses will have corresponding Centerline Streets. Need to handle these exceptions: GARRISON CT, 78 S PIER, ONE PENN CENTER

17. The Street Centerline Alias table should be cleaned up to only contain Aliases and no Standardizations.

    a. Chris Columbus Ave -> Christopher Columbus Ave = **Standardization**
    b. Delaware Ave -> Christopher Columbus Ave = **Alias**

SUPPLEMENTAL DOCUMENTATION

City of Philadelphia Street Name Issues *August 10th 2016*

List of street name variations between USPS, Street Centerlines, and OPA

OPA Address Standardization Issues *August 2016 CD*

List of all the variations between the Passyunk parser and OPA addresses

Street Name Variations *May 2016*

Slide deck of Street Name variations across systems and street signs.

APPENDIX A – OFFICE OF PROPERTY ASSESSMENT SUFFIX FIELD

FROM OPA PROPERTY CD DATA DICTIONARY – 2016 CERTIFIED VALUES

PAGE #4 - SUFFIX FIELD

This is an extension of the address. In past years, because of improper planning, no space may have been left between addresses or because the width of the lot was narrow, an address with ½ was created. This is no longer permitted.

The following are the only allowable codes for suffix:

2 - to indicate ½ in address (529)
R - to indicate Rear in address (2,111)
A - to indicate Air Rights (150)
S - to indicate Subterranean Rights (55)
M - to indicate Air Rights and Subterranean Rights on a given property. (0)
E – Encroachment (1)
L - Leasehold (34)

A specific location with multiple properties in the rear will be designated by using the unit number, not the suffix. That is, a frontage property with three properties in the rear would have R1, R2 R3 in the unit number. If there are multiple Air Rights (that is the splitting of the fee simple estate on a vertical basis) they would be expressed as A-1, A-2, A-3 etc.

APPENDIX B – DEPARTMENT OF RECORDS DEED PARCELS SUF(SUFFIX) FIELD

DEPT. OF RECORDS DEED PARCEL DATABASE DOMAINS FOR SUF(SUFFIX) FIELD

Code	Description
F	Front
R	Rear
2	1/2
A	Air Rights
S	Subterranean Rights
M	Mixed (Sub and Air)
P	Parking
G	Garage
B	TBD01
C	TBD02
D	TBD03
L	TBD04
Q	TBD05
0	TBD06
1	TBD07
3	TBD08
4	TBD09
5	TBD10
6	TGD11

CITY OF PHILADELPHIA

WEB CONTENT ACCESSIBILITY STANDARDS

All sites produced by vendors for the City, regardless of the hosting environment, shall conform to the WCAG 2.1 AA Accessibility Guidelines. Click Link to view