The Universal National Parcel Number Compliance Story

Finally, Common Land Parcel Indexing for Global Database Interoperability

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IAAO URISA GISValTech2024

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The following covers the origins, reasons, and methods for attaining **Universal Common Parcel Indexing (UCPI),** an OGC Candidate National Parcel Number ID assigned to every digital parcel boundary and related land record. It then proceeds how:

- Mounting of a national parcel layer service deployed in ArcGIS Online REQUIRED assignment of an NPN to every parcel boundary for updating to be possible
- NPN's location component is Plus Code produced by open source free Open Location Code.
- Resulting UCPI Assignment Service is in market
- Combination of its simplicity and Plus Code architecture made NPN OGC's favorite as a candidate international standard worldwide.
- Plus Code as Parcel centroid made NPN the long awaited DOE partner in streaming Assessor Data to Building UBIDs.
- To verify the espoused UNC benefits, this article ends with a 10-nation survey of UNC success stories.

The intent is to provide in a single drink a comprehensive understanding of all things Universal Parcel Indexing of digital parcel boundaries and related Land Property Records including what, why and how to get this done. However, most important is a sound understanding of the massive changes UNC will have across the board.

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1. BACKGROUND: UNIVERSAL COMMON PARCEL INDEXING

Universal Common Parcel Indexing (UCPI) is about a world where, like everyone has a Social Security Number and every auto has a VIN number, every land parcel has a NPN (National Parcel Number), a globally unique, persistent ID, assigned to every parcel and all related land records. National parcel indexing has been a mandatory cadastral requirement since the 1980 Panel on Multipurpose Cadaster NRC Report and has been a long-time requirement codified in the IAAO Guidelines. Though this has been called for in the Congressional Record for many years, NPN USA has not encountered any other comparable public or private sector efforts despite looking for one for the last five years. Key to broad adoption of UCPI is enabling all land-record-related users to understand how UCPI got started, where it is now, how to accomplish it, and universal game-changing benefits that will flow from it.

Why NPN USA?

Strictly out of necessity! The national parcel layer [NPL] service, deployed on ArcGIS Online, cannot be updated without a unique, persistent machine-driven ID assigned to every parcel. Having first-time-ever mandatory tech in place, and motivated by the broad spectrum of industry benefits cited up ahead, it is just too good not to get this Common Parcel Indexing Assignment Service [ParcelIndex©] to go from proprietary to a international standard. Another driving force is the absurdity that while over 40 other nations have achieved UCPI or are getting close, the USA has not yet taken a first step.

The first attempt at UCPI was to recruit all **data providers** via a congressional initiative to subsidize all local costs, including lost data sales revenue. Starting with great enthusiasm by many, it was stopped by counties charging the most money for their digital parcel data. Immediately thereafter, not to be deterred, all attention was redirected to recruiting all **data users** to assign NPNs to all property records everywhere.

This quickly led to requesting Open Geospatial Consortium to consider ParcelIndex service as an international standard. OGC was attracted to this National Universal Common Parcel Indexing early-on due to its:

Simplicity Driven only by the tech requirement to enable updating of a National Parcel Layer as a single hosted Feature Service on ArcGIS Online.

Neutrality No specific business need being accommodated, only tech requirements exclusively, including accounting for multi-interest parcels.

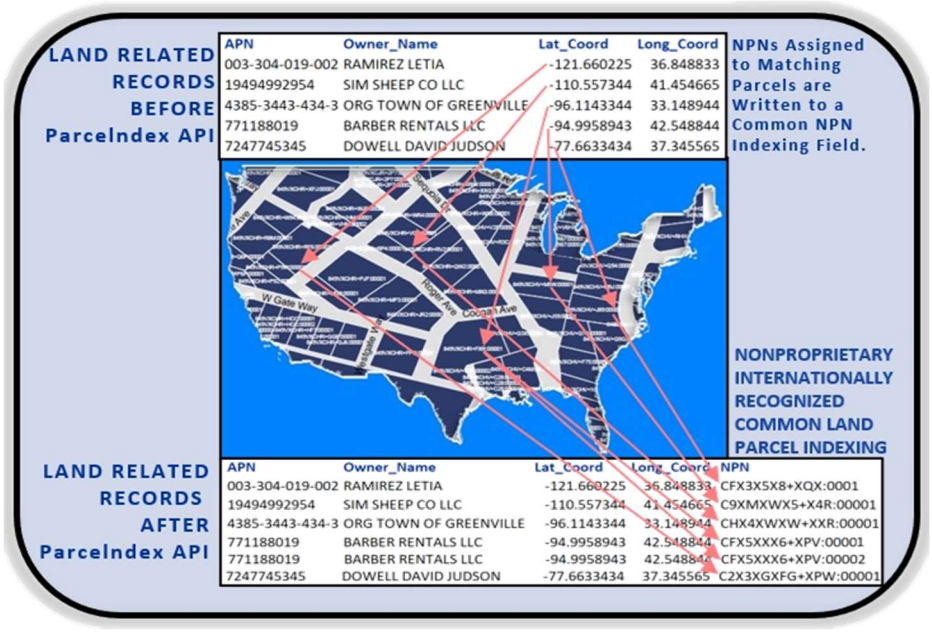
Open Source The locational component of each NPN is a Plus Code, the parcel's centroid as assigned by free Open Location Code.

2. HOW UCPI Assignment Service works

ParcelIndex©, A Universal Common Parcel Indexing Service (**NPNAS**) is commercially available. The in-seconds adding of a fully populated National Parcel Number Field to a >30M record table provided by a Universal Common Parcel Indexing Subscriber proved it's ready to go. To do what?

Point-in Parcel Lat-Long in **Source File finds pertinent parcel boundary.** NPN Assigned to that parcel written back to **NCPI Field Appended in Source File.**

NPN Values are Updated every time a parcel boundary **Spits, Joins, Adjusts or Ownership Changes.** **The LEGACY NPN TABLE Also Updated**



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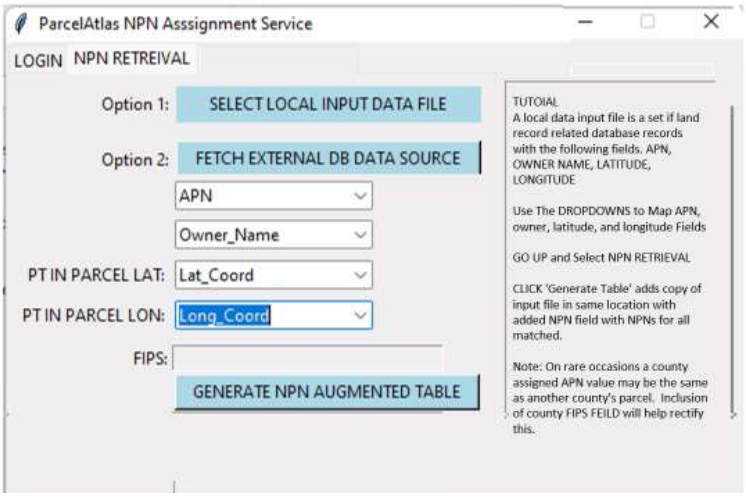
Parcel Centroid Plus Code

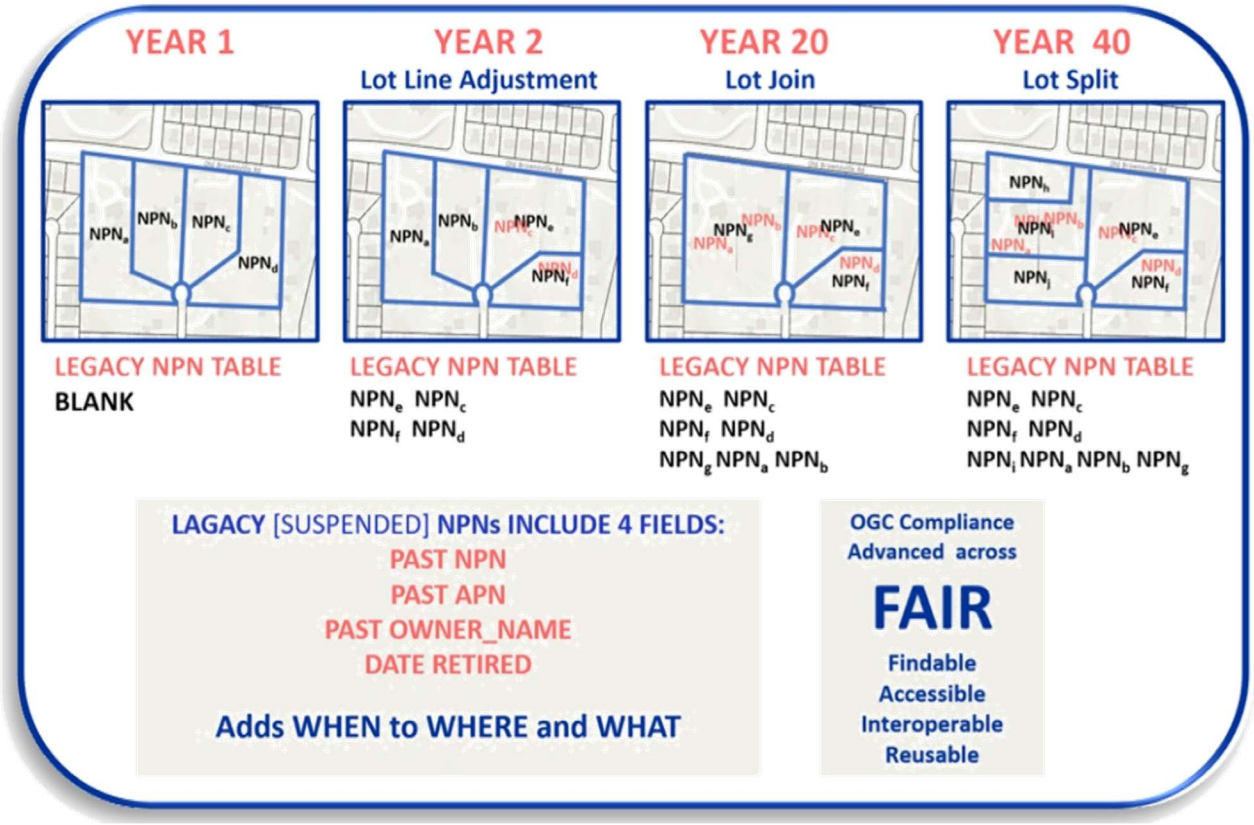
Multi-Owner Property ID [PID]

To enable anyone, anywhere to easily and privately add an Open Geospatial Consortium Candidate internationally standard parcel ID field (NPN) to property related records in any data table. Online databases are also supported by initially writing the four required fields [FIPS APN, OWN, LAT, LOG] to a stand-alone data table. Once Universal Common Parcel Indexing fields in another table are mapped to yours, pertinent Universal Common Parcel Indexing parcel polygons are point-in-polygon selected and their assigned NPNs written back to the added NPN field.

NPN Assignment Service Point-and-Shoot Operation



NCPI Updating Process Including LEGACY NPN TABLE



NPNS CONSTANTLY ADDED & RETIRED

Imagine there are only 4 parcels in America in **Year 1.** In **year 2,** there is a **lot line adjustment**. Note 2 new NPNs are created while the 2 original NPNs, no longer the centroid of any Current Parcel, are retired to a **LEGACY NPN TABLE, link listed** with the parcel NPN they are now in. Ditto, when lots split or join.

Let's Assume there are TWO NCPI Services.

On **April 5, Service A** broadcasts update of the **NCPI Field** with 2 new NPNs as well as adding 2 retired NPNs to the **LEGACY NPN TABLE.**

On April 25, Service B does the same. For 20 days there are multiple NPNs in play in a 1-NPN-per-parcel world. Impossible to update at same time, there can be ONLY BE ONE NCPI SERVICE.

3. BENEFITS OF UNIVERSAL COMMON PARCEL INDEXING

Study this image until you see why **Nonproprietary OGC** Candidate **International**

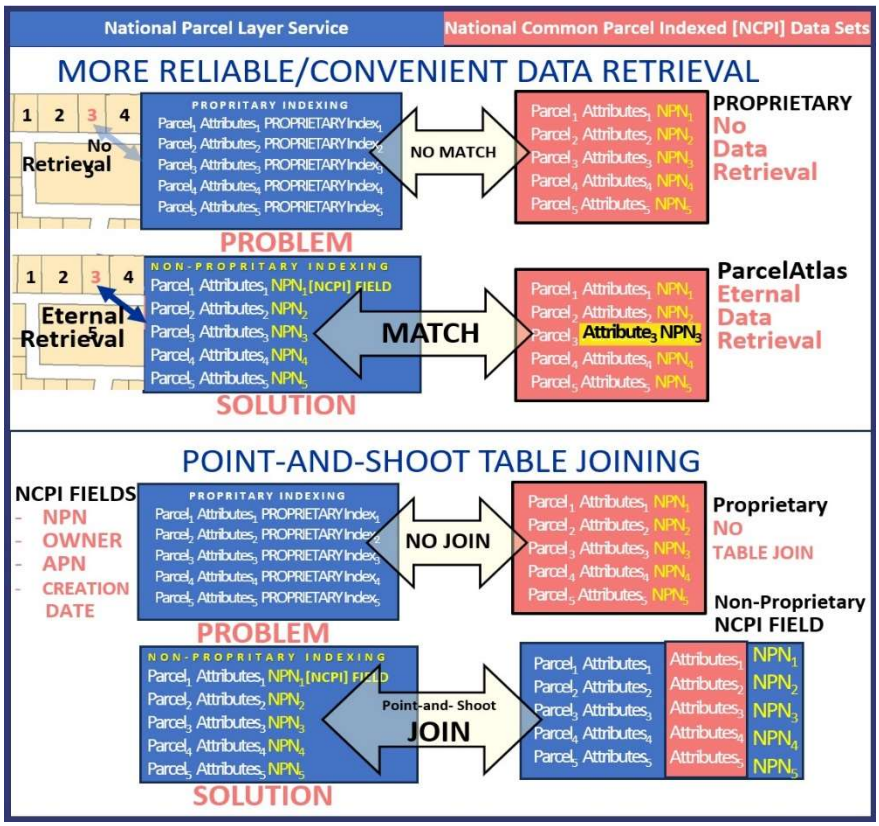
Universal Common Parcel Indexing [UCPI Fields]

easily appended to land-related data sets makes accessing and joining tables **JUST ONE CLICK**.

As each new subscriber appends an NPN field to desired databases and their data hub, ever increasing **INTEROPERABILITY**

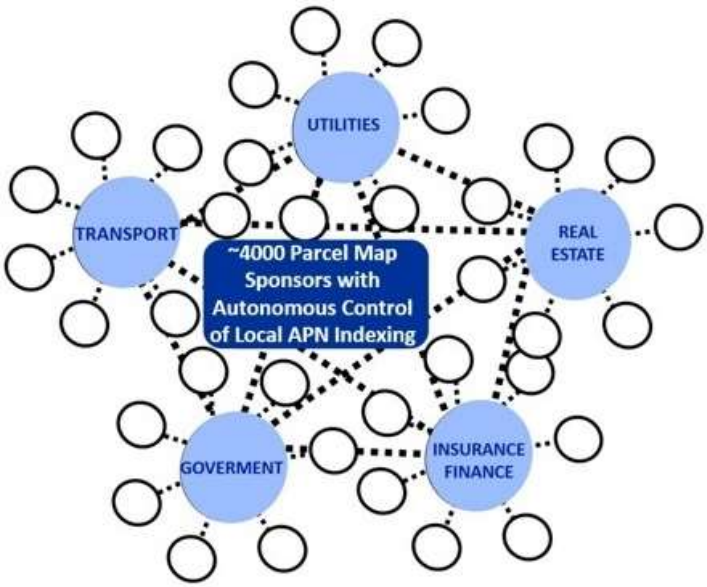
makes ParcelIndex© go from being nice-to-have to must-have.

Keep looking at the image below until you see why there can be **ONLY ONE** Universal Common Parcel Indexing Assignment/Updating Service.



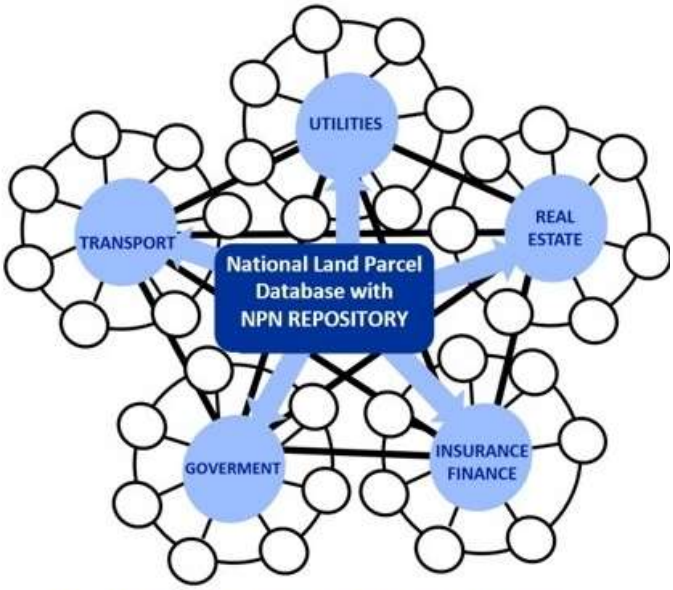
UCPI INCREASED INTEROPERABILITY RAMIFICATIONS

BEFORE UCPI



STATUS QUO
DATABASE INTEROPERABILITY

AFTER UCPI



UNIVERSAL NPN COMPLIANCE
DATABASE INTEROPERABILITY

VALUE ADD TO EXISTING REIS OPERATIONS

A Increased reliability of links between a record and ground to which it belongs; augmenting addresses.

B Expanded due diligence convenience – a single NPN value retrieves data from many sources.

C Due to LEGACY NPN TABLE, an NPN assigned to a Record 100 years ago will still point to its original location.

D Point-and-shoot interoperability between standalone datasets increases analytical rigor.

E Increased analytical rigor improves predictability, making real estate more of a sure thing.

F Real Estate being more of a sure thing causes a surge in investment and most LIGHTBOX services.

G Enabling multi-company data correlations with assessor data sharpens insurance risk/other factors.

H As UCPI goes worldwide, Real Estate Sales will be Indexed no different than Wall Street, another reason there can only be one Service.

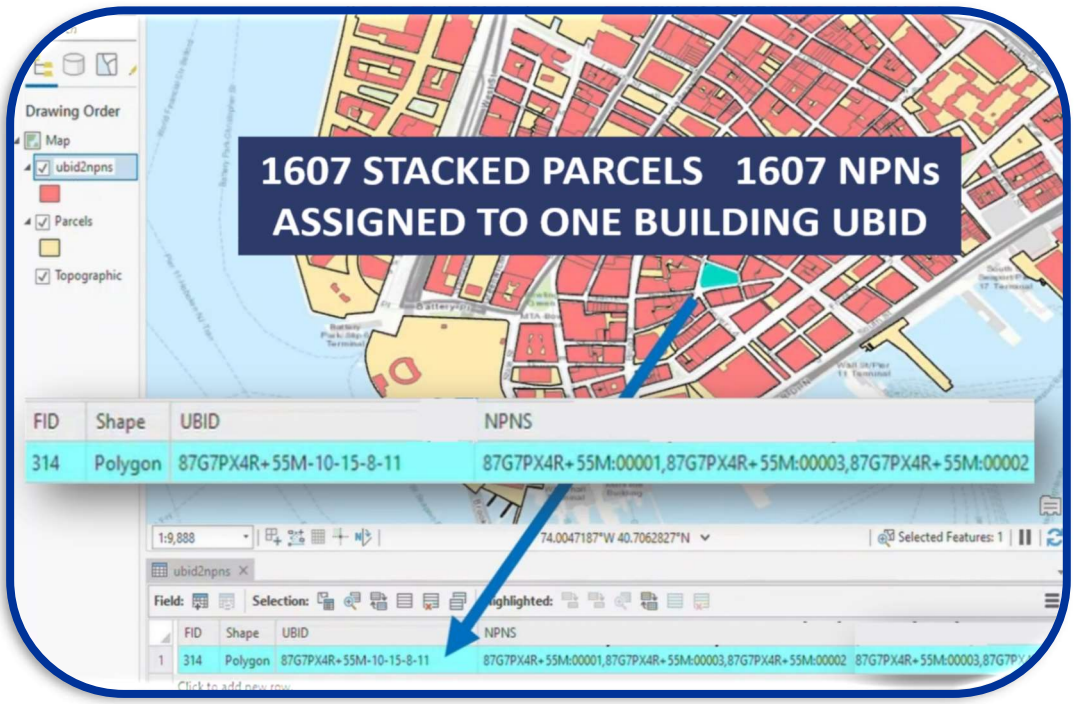
COMPANY	SEGMENT	A	B	C	D	E	F	G	H	I
ATTOM DATA	ANALYTICS	■	■	■		■			■	
BLACK KNIGHT	ANALYTICS	■	■	■		■			■	
CoreLogic	ANALYTICS	■	■	■		■			■	
Esri	ANALYTICS	■	■	■		■			■	
HubSpot	ANALYTICS	■	■	■		■			■	
LIGHTBOX	ANALYTICS	■	■	■		■			■	
Maximizer	ANALYTICS	■	■	■		■			■	
Pitney Bowes	ANALYTICS	■	■	■		■			■	
Quickbase, Inc.	ANALYTICS	■	■	■		■			■	
REDFIN	ANALYTICS	■	■	■		■			■	
REOMONY	ANALYTICS	■	■	■		■			■	
Salesforce	ANALYTICS	■	■	■		■			■	
ZILLOW	ANALYTICS	■	■	■		■			■	
Zoho	ANALYTICS	■	■	■		■			■	
American Express	FINANCE	■	■		■	■		■	■	■
AQR Capital Manage	FINANCE	■	■		■	■		■	■	■
Berkshire Hathaway	FINANCE	■	■		■	■		■	■	■
Bridgewater Associat	FINANCE	■	■		■	■		■	■	■
Citadel	FINANCE	■	■		■	■		■	■	■
Citigroup	FINANCE	■	■		■	■		■	■	■
D.E. Shaw	FINANCE	■	■		■	■		■	■	■
Elliott Investment M	FINANCE	■	■		■	■		■	■	■
Farallon Capital Mar	FINANCE	■	■		■	■		■	■	■
Goldman Sachs	FINANCE	■	■		■	■		■	■	■
Morgan Stanley	FINANCE	■	■		■	■		■	■	■
Prudential Financial	FINANCE	■	■		■	■		■	■	■
Renaissance Technol	FINANCE	■	■		■	■		■	■	■
Two Sigma Investme	FINANCE	■	■		■	■		■	■	■

COMPANY	SEGMENT	A	B	C	D	E	F	G	H	I
Bank of America	BANK	■	■		■	■		■	■	
Capital One Bank	BANK	■	■		■	■		■	■	
JPMorgan Chase	BANK	■	■		■	■		■	■	
Pnc bank	BANK	■	■		■	■		■	■	
T d Bank	BANK	■	■		■	■		■	■	
Truist Bank	BANK	■	■		■	■		■	■	
Wells Fargo	BANK	■	■		■	■		■	■	
New York Life Insurance	INSURANCE	■	■	■		■	■			
State Farm	INSURANCE	■	■	■		■	■			
AIG	MORT	■	■	■		■				
AmeriSave Mortgage	MORT	■	■	■		■				
Fannie Mae	MORT	■	■	■		■				
FedEx	MORT	■	■	■		■				
Freddie Mac	MORT	■	■	■		■				
General Electric	MORT	■	■	■		■				
MERSCORP Holdings	MORT	■	■	■		■				
Metlife	MORT	■	■	■		■				
New American Funding	MORT	■	■	■		■				
Quicken Loans	MORT	■	■	■		■				
Rocket Mortgage	MORT	■	■	■		■				
TIAA	MORT	■	■	■		■				
Veterans United Home l	MORT	■	■	■		■				
Attorney's Title	TITLE	■				■				
Chicago Title	TITLE	■				■				
Fidelity National Title	TITLE	■				■				
First American Title	TITLE	■				■				
Old Republic National T	TITLE	■				■				
Stewart Title	TITLE	■				■				

4. DOE PNNL NPN 2 UBID FORMALIZED PROCESS

A universally approved procedure has for years been in high demand for associating Property related records with Unique Building IDs (UBID) assigned to building footprints. Long has the US Department of Energy's quest to optimize the energy efficiency of all 140 million+ buildings in America has been supported by open-source Standard Efficiency Data (SEED) Platform. Long has such energy factors as utilities, appliances, insulation, and benchmark results been nationally assigned to individual buildings. Likewise, long in place are legacy tools for live streaming assessor data from parcels to the buildings located inside them. However, in DOE's interest in Open Location Code (OLC) generated UBID (Universal Building ID) becoming the global default standard for assigning IDs to buildings, only a parcel layer likewise recognized as the default global standard for assigning IDs to parcels is an eligible partner. The Universal Common Parcel Indexing National Parcel Numbers, designated by Open Geospatial Consortium as a Candidate International Standard, has proven up to the mark.

Manhattan, Ultimate Matching Parcels-to-Buildings Test



Acting on a test database provided by DOE **Pacific Northwest National Laboratory**, BSI recently applied primarily OLC tools to successfully establish a link(s) between every building on Manhattan and the parcel(s) in which they are located. Starting with an OLC supported Jaccard Similarity Coefficient tool, 84% of all the building UBIDs in New York City [the ultimate test] were assigned NPN(s) of the parcels in which they are located. Those that failed this 'filter' were matched using Esri's ArcGIS Online polygon-in-polygon intersection tools to finish the job. Use of more advanced tools is scheduled to eliminate all need for commercial GIS to do all assignments.

Considered a success, when this test was over, > 44,000 building UBIDs on Manhattan were assigned at least one NPN of the one parcel in which located. Being Manhattan, many buildings have many owners. Though such property records of each owner may have the SAME local APN, the NPNs (national indexing) are each UNIQUE.

Yes, the 12 Character locational component of each NPN, OLC generated Plus Codes, is the SAME for all, but the five-character Property ID Codes extension is UNIQUE. This enabled matching of multiple owner records to the same UBID. The largest has 1607 individually assigned NPNs, one for each owner record, requiring a 28,926-character text string.

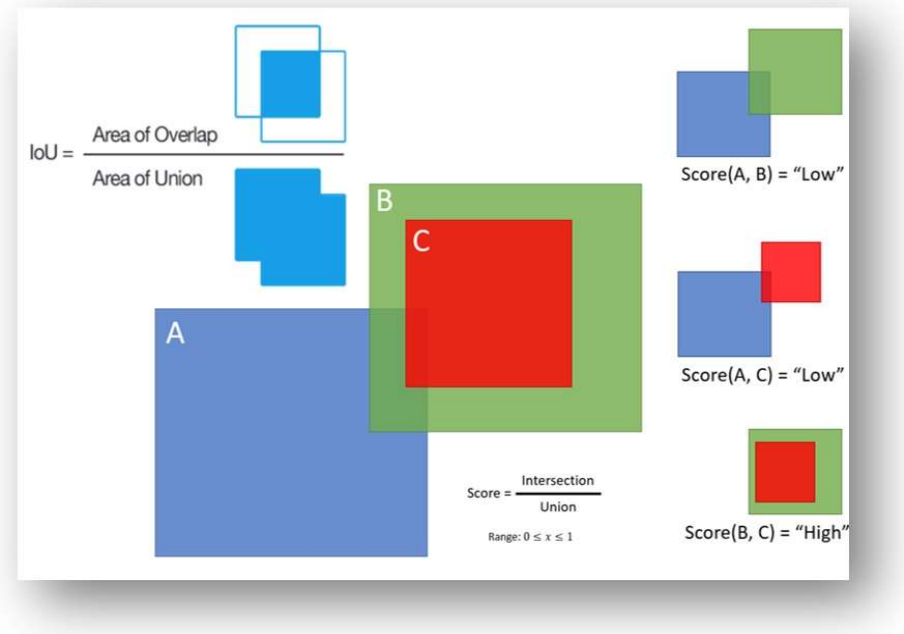
5. TURNING POINT IN UNDERSTANDING UCPI

There has been a Universal National Common Parcel Indexing (UCPI) Awareness Campaign in motion for over four years. The end game is a globally unique persistent IDs assigned to every parcel boundary and record in the USA/World. In that regard, consider yourself at a turning point in comprehending the implications of Open Location Code (OLC) serving as the locational component of every NPN. We are leaving Descartes and all those comfortable lat longs behind, replacing them with an array of tiny squares [<1.4M square]. To speed up getting your arms around what OLC means to you, it is time to meet the Jaccard Similarity Coefficient. Frequently referred to as the Critical Success Index, BSI is using this 'spatial overlap' approach to assign all Unique Building IDs (UBIDs) in a county the NPN of the Parcel in which it is located.

Why Plus Codes Aid in Universal NPN Adoption

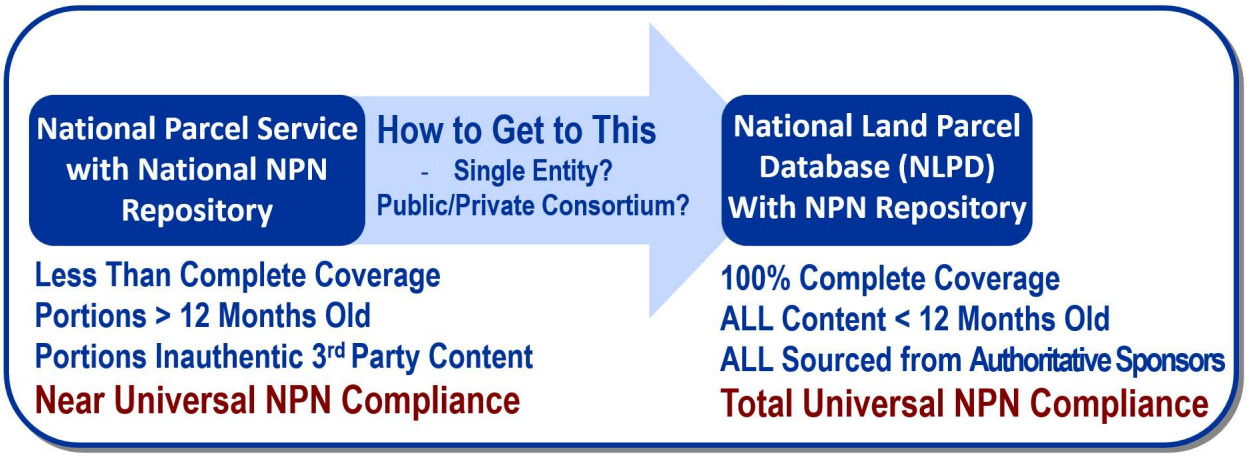
What are Plus Codes All About? Open Location Code (OLC), a geocode system for designating the location of an area anywhere on the Earth, was developed by GOOGLE but is now completely open source. "Plus Codes" is the name applied to any such located feature, be it buildings, parcel or other location. Open Location Code is a way of encoding location into a form that is easier to use than showing latitude and longitude coordinates. Driven by a fine array of grid cells, a 12-character text string signifies a parcel centroid within 1.4 meters of the Universal Common Parcel Indexing legacy NPN lat long value.

Jaccard Similarity Coefficient Derivation



In simple terms, it is a score derived by dividing the size of the common area of two rectangles [INTERSECTION] with the combined size of the two rectangles [UNION]. The higher the number the higher the likelihood this is the right parcel. Research shows that the Index score can quickly identify both good matches and those that require special handling. Please have a second look at the above image to take in this new way of perceiving location.

Road Ahead



6. UCPI BENEFITS VERIFICATION

To validate claims of systemic improvement in land record management operations, BSI compiled this **Universal Common Parcel Indexing (UCPI) Benefits Survey,** including citations from over ten countries. According to the literature, among others, have, or near have attained UCPI. That means that each has a National Land Parcel Database (NLPD) with a globally unique persistent National Parcel Number assigned to every parcel boundary. They are also in the business of migrating these NPNs to many varied record sets for ever larger return on investment. True, many of these broad and substantives benefits are not a direct result of UCPI. However, they all apply since these are all National Databases. As such, they cannot operate without globally unique persistent IDs assigned to each and every land parcel in their nation. Browse the whole survey. Note the large benefits of many outcomes. Let redundancy provide emphasis on what to expect most. Let these lessons learned pique your curiosity about the erosion of USA competitiveness and your professional possibilities until the USA attains Universal Common Parcel Indexing.

CLICK HERE TO SEE INTERNATIONAL BENEFITS SURVEY RESULTS

The Open Geospatial Consortium (OGC) is an international consortium of more than 530 businesses, government agencies, research organizations, and universities driven to make geospatial (location) information and services FAIR - Findable, Accessible, Interoperable, and Reusable.

OGC's member-driven consensus process creates royalty free, publicly available geospatial standards. Existing at the cutting edge, OGC actively analyzes and anticipates emerging tech trends, and runs an agile, collaborative Research and Development (R&D) lab that builds and tests innovative prototype solutions to members' use cases.

NPN USA, LLC is a Partnership dedicated to the implementation of UNC everywhere. Long the sponsor of The Universal Common Parcel Indexing, the only national parcel layer content service **INSIDE ArcGIS® Online**, weighing in at almost 2900 counties, 149M parcels enhanced with industry leading **Quantarium Property Attributes updated WEEKLY**. As for fUCPItionally, its analytical ability is limited only by the subscriber's mastery of ArcGIS Pro.

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Finally, Common Land Parcel Indexing for Global Database Interoperability

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OVERVIEW

ParcelIndex© National Common Parcel Indexing Assignment Service

WHAT IS UNIVERSAL COMMON PARCEL INDEXING?

We offer **ParcelIndex©** to real estate, finance, insurance, energy, utilities and government an **Open Geospatial Consortium** compliant nonproprietary **National Common Parcel indexing [NCPI]** service. Adding universally standard Parcel ID fields to data Hubs and everywhere else vastly expands interoperability across the enterprise making all land related operations one big interconnected digital collaboration.

WHAT'S NEXT

Marketing and Sales campaign recruits high-end users to form a for-fee **National Common Parcel Indexing Consortium [NCPIC]**. By its Subscribers being owners, the **NCPIC** will empower the OGC Metaverse Community by being its **Parcel Index Layer** to best advance the OGC **FAIR** principle - spatial data is **Findable, Accessible, Interoperable and Reusable.**

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PROBLEM - SOLUTION

With ONLY Proprietary Parcel Indexing, Connectivity is Hard and Labor Intensive.

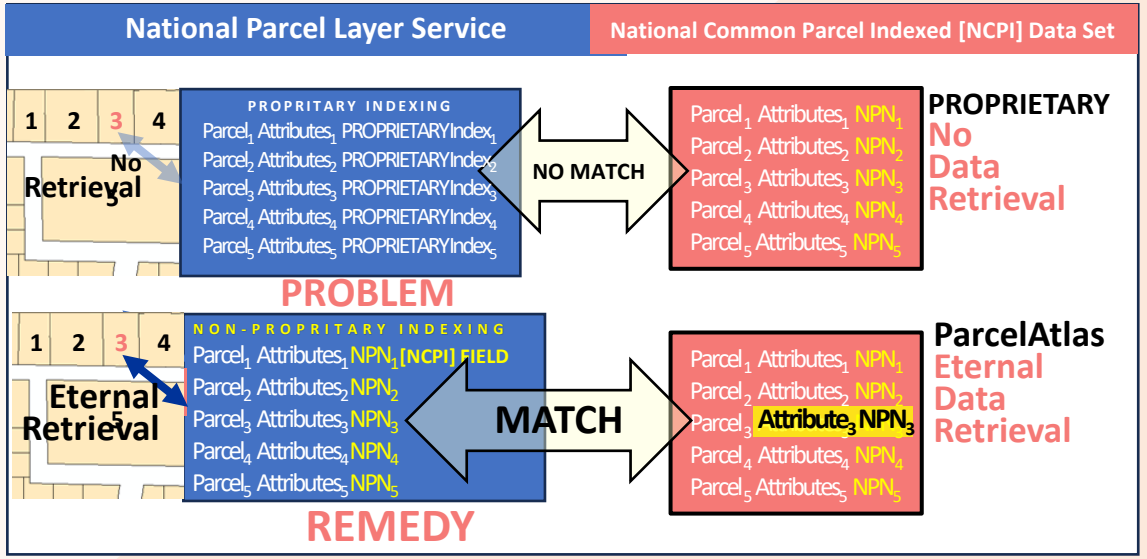
DATA RETRIEVAL

Tired of all the trouble to retrieve property records and then not even know for sure it's the right data. Likewise, joining data tables would make you much more profitable, but development and keeping them current makes them a non-starter.

WHY SO HARD?

Europe and Asia are past kingdoms/empires. National land registry is their culture. America is 4000 legislated entities making maps their way. This makes **Every link ONE-OFF and PROPRIETARY**, labor intensive to establish and **KEEP UPDATED.**

DATA MANAGEMENT MADE EASIER AND MORE RELIABLE



NPN = National Parcel Number

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PROBLEM - SOLUTION

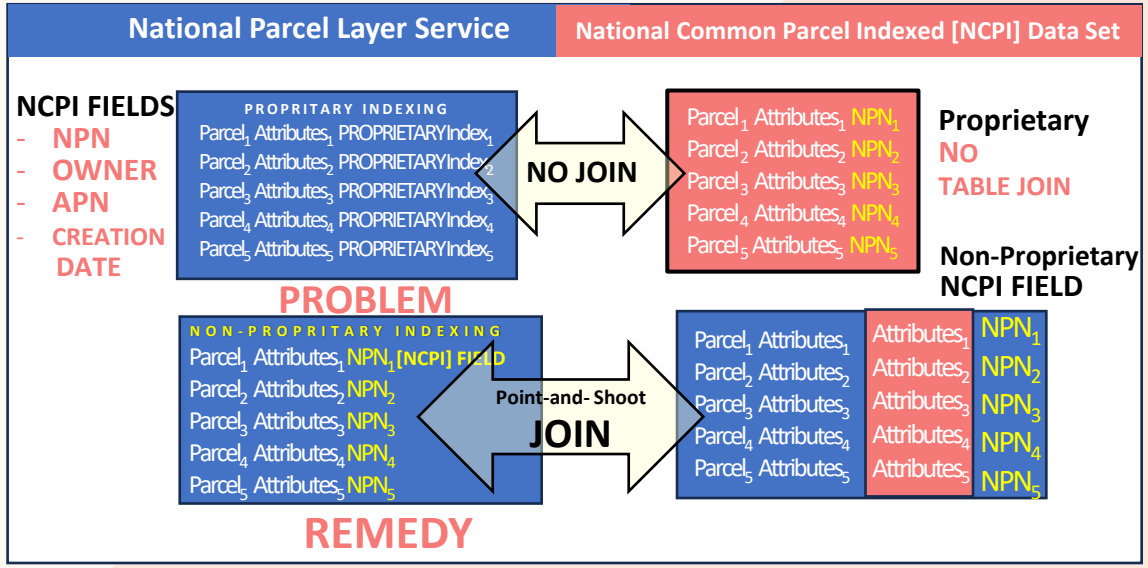
ParcelIndex© Enables Interoperability in One Click

TABLE JOINING

Use **ParcelIndex©** to easily add OGC adopted **National Common Parcel Indexing [NCPI]** Field [See Charter] to both your data HUB and other tables. Then join them together by point-and-shoot selection of the **common NCPI field** with just **ONE CLICK.**

What a relief. Everything is so much more **ACCESSIBLE, FINDABLE, INTEROPERABLE,** and OGC Compliant.

POINT-AND-SHOOT TABLE JOINING



NPN = National Parcel Number

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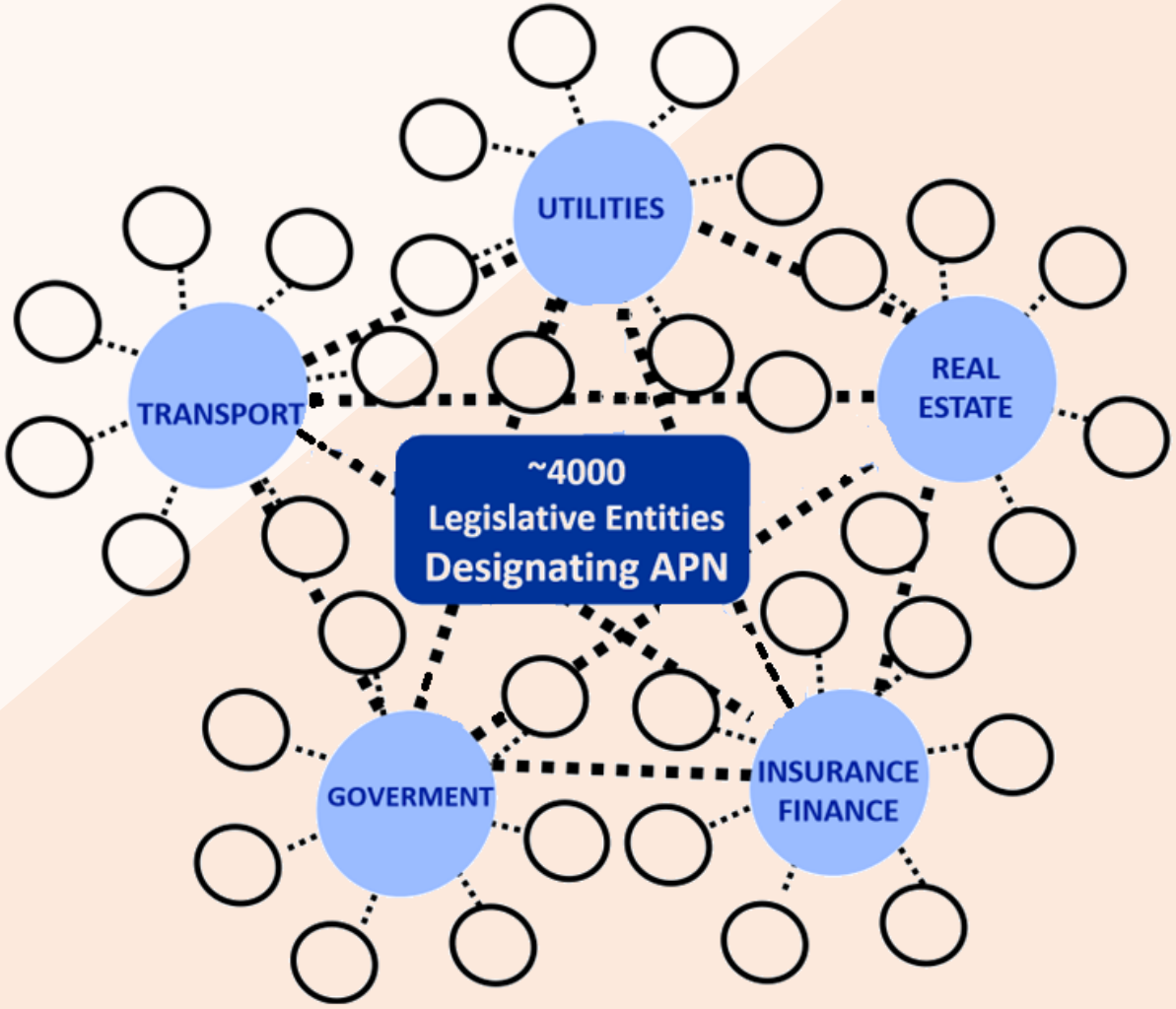
PROBLEM - SOLUTION

Nationwide / International Interoperability is THROTTLED

Do nothing. Continue systemic stove piping as ever more capital projects go offshore due to other nations achieving NCPI and attendant superior dependability and analytics while the US has not taken the first step until now.

MEANWHILE,
table joins require **proprietary**
ONE-OFF indexing creation/updating.

One Off Proprietary Inter-Database Links
[Muddling Through]



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PROBLEM - SOLUTION

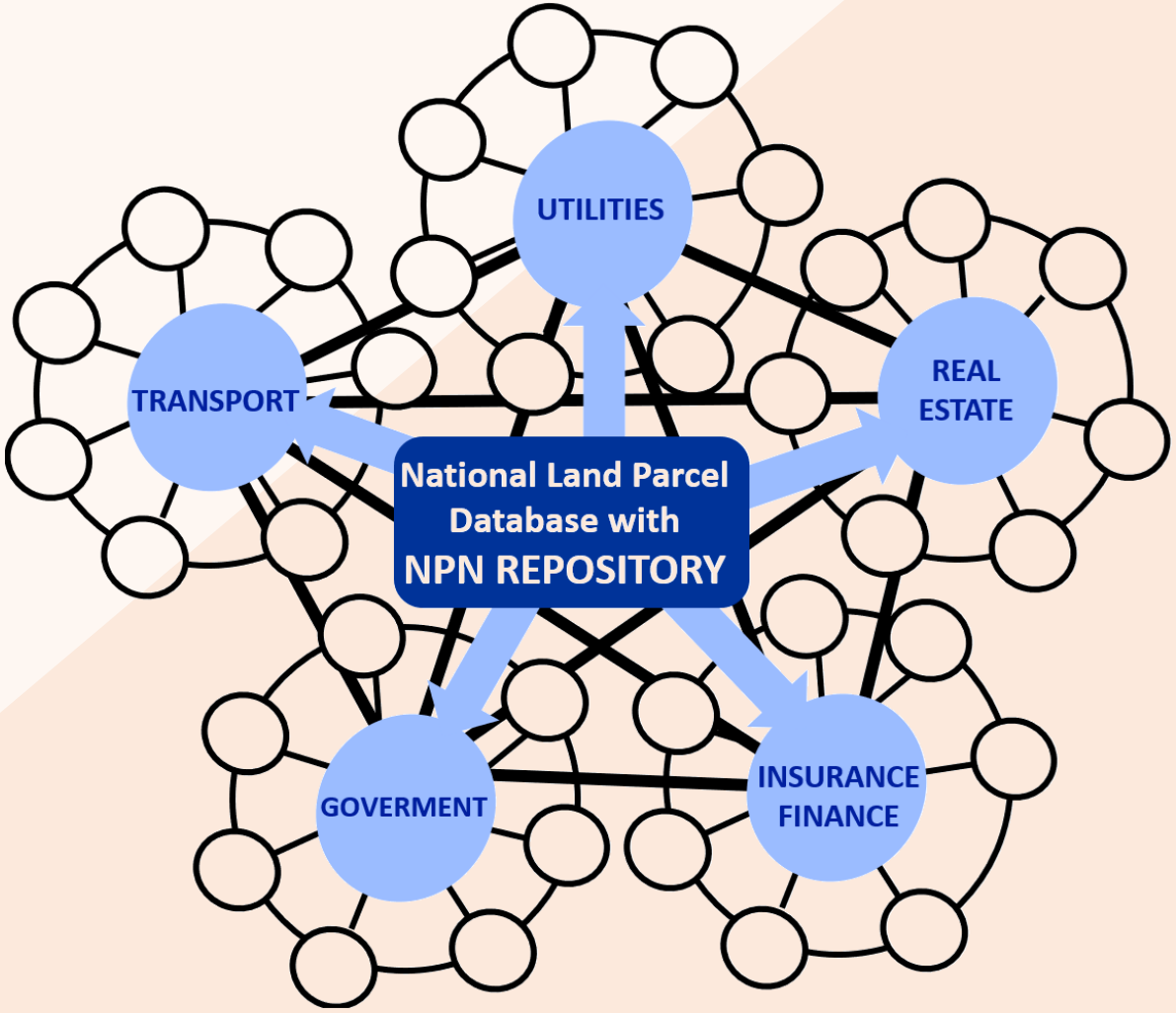
Spontaneous Interoperability. Each New User Invites More Users

OR,

Apply NCPI to establish joins between inter/intra agency/national/international database and **keep them CURRENT.**

Eventually, every land record set sees all others, making industry one **BIG HUMMING DIGITAL COLLABORATION.**

Supported NCPI-NCPI Field Link
[Global Automated Database Joining]



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MARKET SIZE

S

DEMAND

7 Economic Sectors that depend on Land Transactions are **42% US GDP**
$9,000,000,000,000/YR

By **10th Year**
Just a 10% savings/efficiency Land Information Operations
$900,000,000,000/YR

0.001% Service Fee **10th Year**
$900,000,000/YR

YEAR 10

MARKETS	EMPLOYEES	SEATS	$/SEAT	SUBSCRIPTION
REAL ESTATE SALES	1,550,000	150,000	$1,000	$150,000,000
FINANCE/ANALYTICS	33,000	30,000	$4,000	$120,000,000
INSURANCE	3,900,000	55,000	$4,000	$220,000,000
MORTGAGE	343,000	60,000	$3,000	$180,000,000
FEDERAL / STATE GOVT	6,000,000	50,000	$3,000	$150,000,000
TRANSPORTATION	30,000	30,000	$2,000	$60,000,000
UTILITIES / ENERGY	155,000	10,000	$2,000	$20,000,000
Distribution Predicated on 20 Years NPL Operations				$900,000,000

Key to success is ParcelIndex© Use Going from 'NICE-TO-HAVE' TO 'MUST-HAVE'

NOTE: An average annual rate >$2500/seat/year may seem okay on day on but a bit high thereafter. However, with increasing users expanding instan access to Land Data Sources, the seat price may hold.

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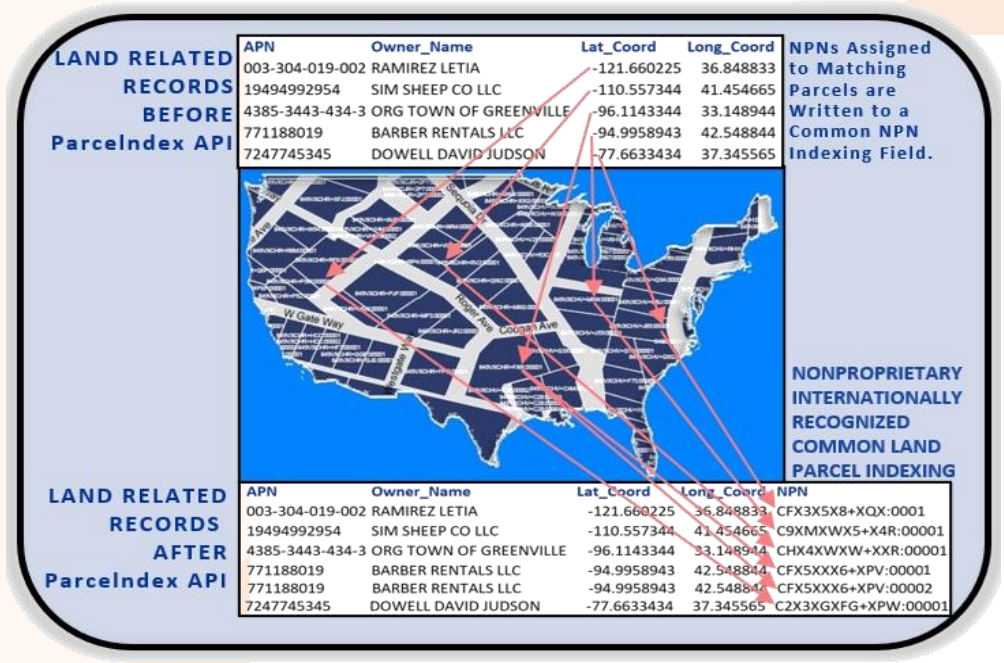
HOW IT WORKS

ParcelIndex© NCPI Assignment Process

Point-in Parcel Lat-Long in Source File finds pertinent parcel boundary. NPN Assigned to that parcel written back to **NCPI Field Appended in Source File**.

NPN Values are updated every time a parcel boundary **Spits, Joins, Adjusts or Ownership Changes.**

The LEGACY NPN TABLE Also Updated



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Parcel Centroid Plus Code

Multi-Owner Property ID [PID]

HOW IT WORKS

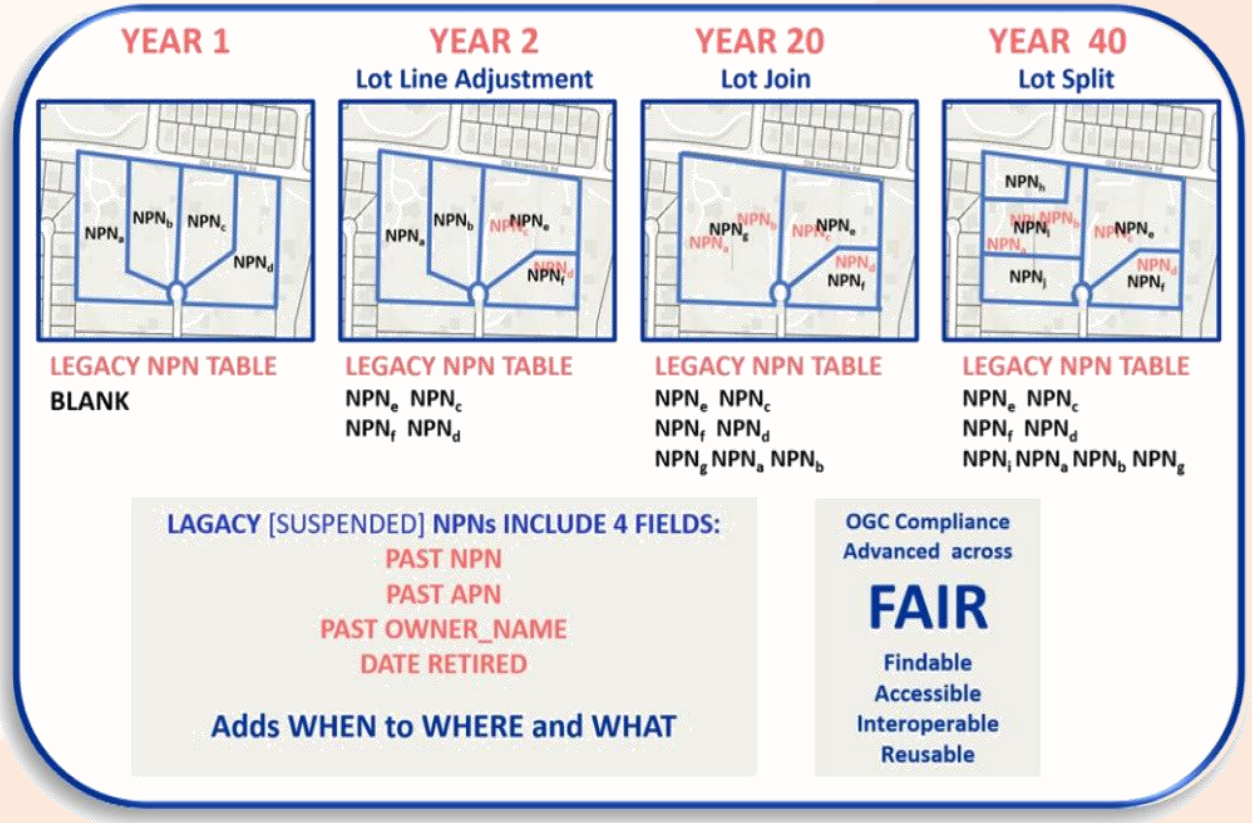
NCPI Updating Process Including LEGACY NPN TABLE

NPNs CONSTANTLY ADDED & RETIRED

Imagine only 4 parcels in America in **Year 1.** In **year 2,** there is a **lot line adjustment**. Note 2 new NPNs are created while the 2 original NPNs, no longer the centroid of any Current Parcel, are retired to a **LEGACY NPN TABLE, link listed** with the parcel NPN they are now in. Ditto, when lots split or join.

Let's Assume there are TWO NCPI Services. On **April 5, Service A** broadcasts update of the **NCPI Field** with 2 new NPNs as well as adding 2 retired NPNs to the **LEGACY NPN TABLE.**

On **April 25**, **Service B** does the same. For 20 days there are multiple NPNs in play in a 1-NPN-per-parcel world. Impossible to update at same time, **there can be ONLY BE ONE NCPI SERVICE.**



HOW IT WORKS

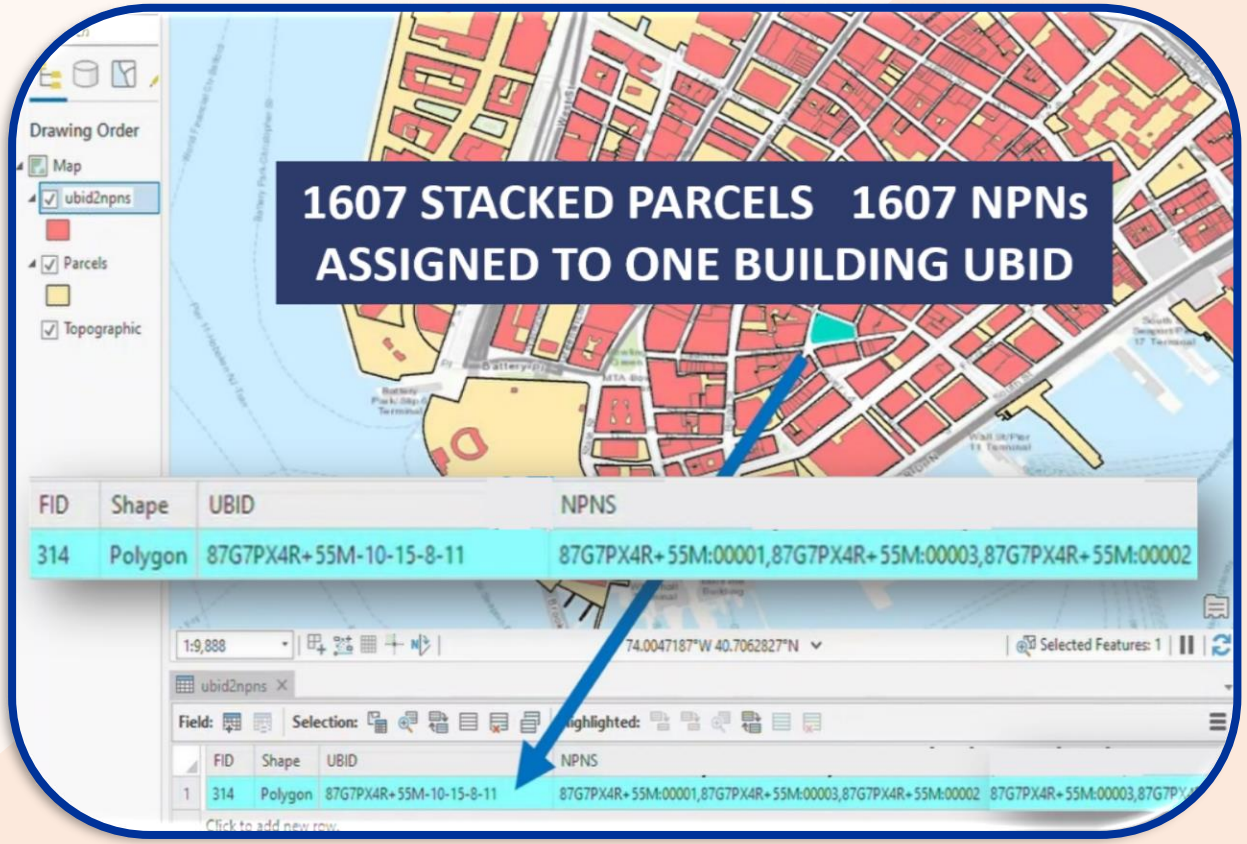
Globally Accepted Linking Building UBIDs to Parcel NPNs

US DEPARTMENT OF ENERGY
NPN2UBID PILOT PROJECT

FINALLY!

Worthy Default International **Parcel ID [NPNs]**
To partner with DOE's Default International **Building ID [UBIDs].**

Successful test of OGC Approved Standard Process for Assigning **Parcel NPNs** to the **Building UBIDs** located inside them. Manhattan was used as proof-of-concept with **One UBID assigned 1607 NPNs,** one each for the building's **1607 individual owners.**



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TITLE: National Parcel Number (NPN) Standards Working Group Charter
Author Name (s): Dennis Klein, Chuck Benton
DATE: 2023-05-18
CATEGORY: SWG Charter

To: OGC members & interested parties

A new OGC Standards Working Group (SWG) is being formed. The OGC members listed below have proposed the OGC National Parcel Number (NPN) SWG. The SWG proposal provided in this document meets the requirements of the OGC Technical Committee (TC) Policies and Procedures.

The SWG name, statement of purpose, scope, list of deliverables, audience, and language specified in the proposal will constitute the SWG's official charter. Technical discussions may occur no sooner than the SWG's first meeting.

This SWG will operate under the OGC IPR Policy. The eligibility requirements for becoming a participant in the SWG at the first meeting (see details below) are that:

- You must be an employee of an OGC member organization or an individual member of OGC;
- The OGC member must have signed the OGC Membership agreement;
- You must notify the SWG chair of your intent to participate to the first meeting. Members may do so by logging onto the OGC Portal and navigating to the Observer page and clicking on the link for the SWG they wish to join and;
- You must attend meetings of the SWG. The first meeting of this SWG is at the time and date fixed below. Attendance may be by teleconference.

Of course, participants also may join the SWG at any time. The OGC and the SWG welcomes all interested parties.

Non-OGC members who wish to participate may contact us about joining the OGC. In addition, the public may access some of the resources maintained for each SWG: the SWG public description, the SWG Charter, Change Requests, and public comments, which will be linked from the SWG's page.

Please feel free to forward this announcement to any other appropriate lists. The OGC is an open standards organization; we encourage your feedback.

1. Purpose of the National Parcel Number Standards Working Group

The purpose of this SWG is to develop a Standard for a unique National Parcel Number suitable for use at national levels, across subnational divisions. This Standard would provide the requirements for creating a globally unique persistent ID assigned to every digital parcel boundary and related land record in any political jurisdiction.

Each NPN consists of two components:

- **Locational Component** - Parcel Centroid or the parcel's boundary designated as a Plus Code generated by Open Source Open Location Code (OLC); and

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TRACTION

ParcelIndex© Market-Ready, Time to Charter NCPI Consortium

HOW FAR ALONG IS DEVELOPMENT?

Technical Infrastructure is Done. National Parcel Layer with 160M parcels, each assigned a **NPN.** Back office **automating parcel boundary, NPNs / LEGACY NPN TABLE** updating. **ParcelIndex© API** Assignment Service in commercial use.

CUSTOMER VALIDATION

Email pushes last five years > Monthly to 6,000 promoting **NCPI.**

- **ParcelIndex© Pilot Tests.**
- **Department of Energy Pilot Test**

OGC Chartering of NPN Standards Working Group
NCPI Paper to be given at **URISA/IAAO 2024**.

GROWTH

Uptake Expected to Start Slow as only a '**Nice-To-Have**'.
Each sale brings it closer to being a '**Must-Have'.**

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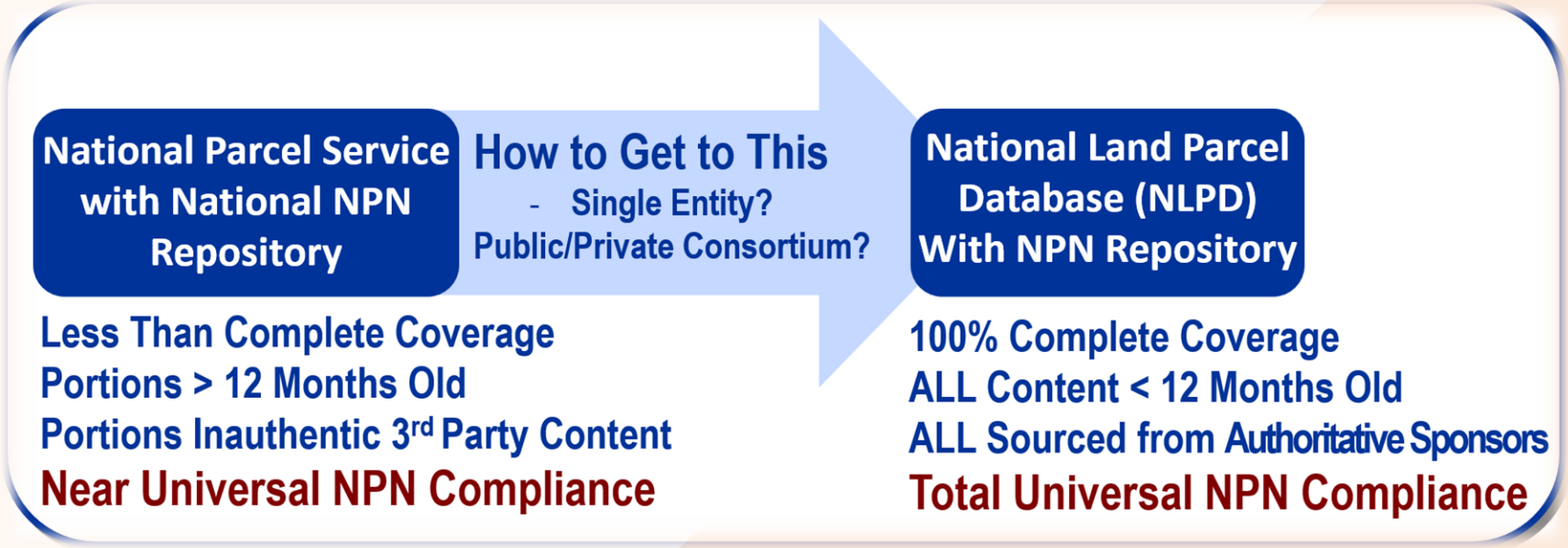
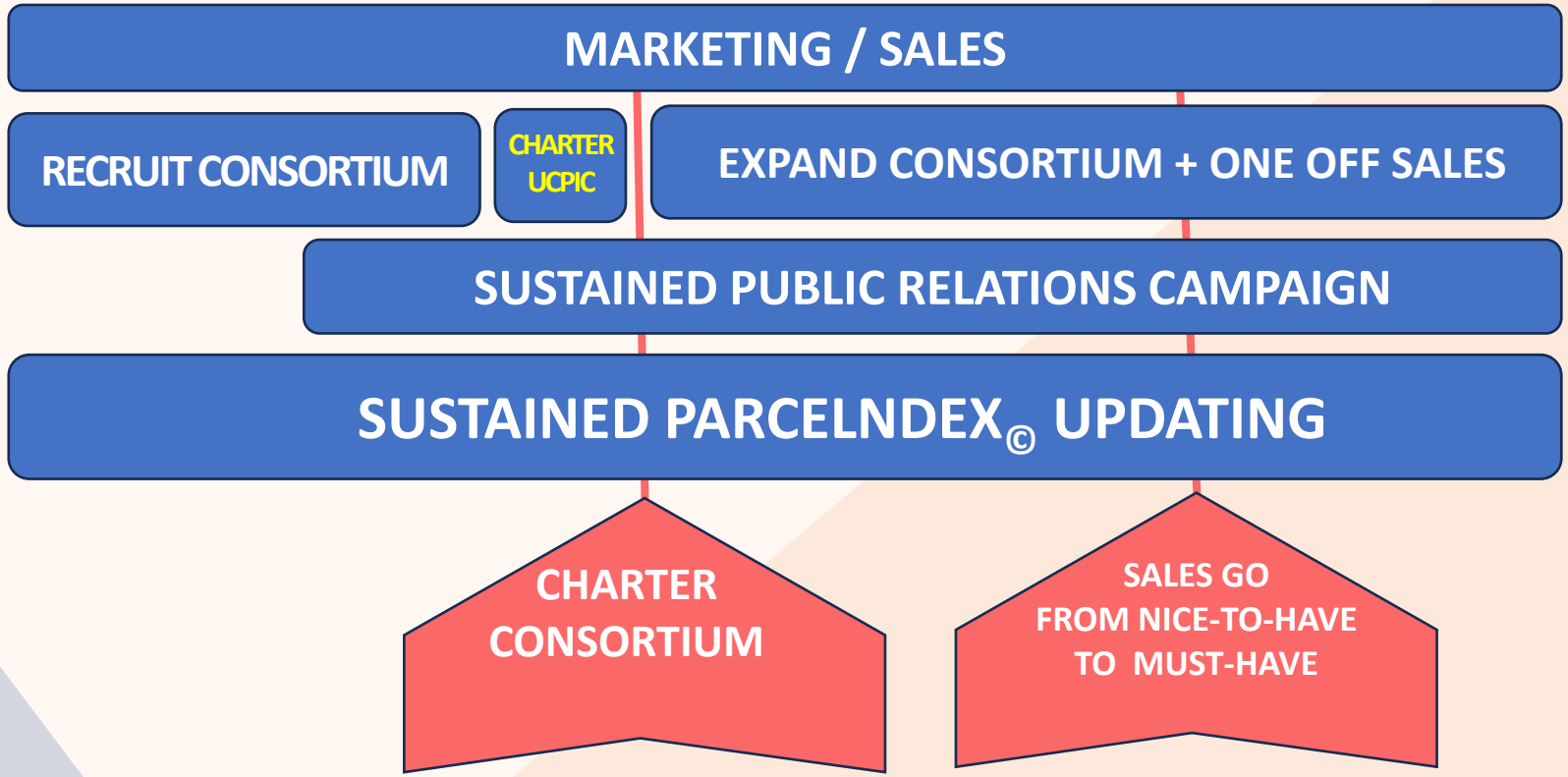
The Road Ahead



A Road For Getting There



MILESTONES