HUD IT Summit

Washington, D.C.

June 4, 2018

IT SUMMIT

Agenda:

Welcome Remarks (DJ LaVoy)
ISDV Overview (George Forbes)
Protocol (Brendan Dowd)
Decision Trees (Kim Scoles)
Break
VEDGA Overview (Eric Krapf)

June 4, 2018

What to Expect

- HUD will be discussing where we are today.
  - HUD will be discussing a plethora of technical topics, such as Decision Tree logic, the Defect Dictionary, and forecasted architecture.
  - Participants are asked to provide information, feedback, and comments on these topics.
  - The goal is to help HUD better shape future IT solutions and business processes surrounding UPCS-V.
- Participant/Industry input
  - There is no intent or expectation to reach agreement or consensus.
  - All comments/concerns/alternative ideas are welcomed.
  - This session does not constitute an agreement of an IT solution or change in business process, but the session is designed to share information to help HUD shape future system builds.
- HUD encourages PHA and industry partner engagement throughout future development processes.
- The topics being discussed throughout the agenda are not finalized.
- Any development made by industry is at the vendor discretion.

Other Items

- Cell Phones
  - Please remember to turn off cell phones or put your phone on vibrate.
  - If you need to leave in the middle of a discussion, please do so quietly.
- Valuables and Materials
  - Please take valuables (phones, purses, etc.) with you on break.
- Questions and Comments
  - Feel free to ask questions throughout the presentation.

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Inspection Standards & Data for Vouchers Update

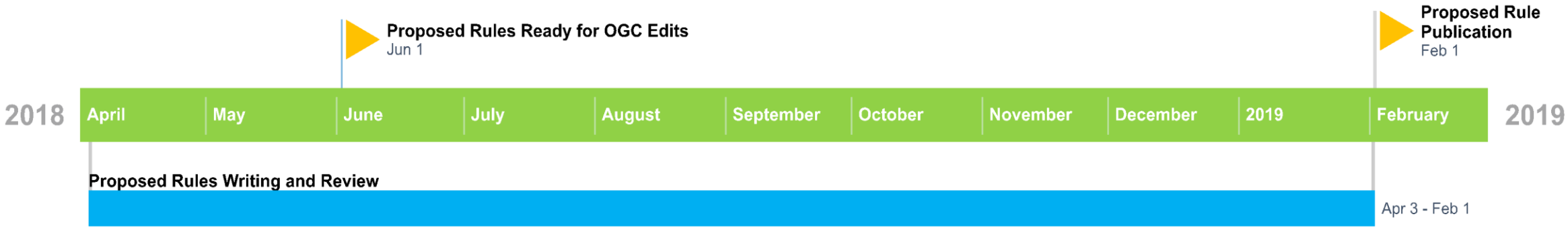
Why

- Vast majority of inspections on paper
- OIG 90+ direct findings for HQS
  - Over 2,200 indirect findings
- FY15 Sample (27,000 units) study discovered lack of:
  - Objectivity
  - Consistency
  - Accuracy
- FY16 Appropriations authorized UPCS-V Demonstration

What

- UPCS-V Protocol established
- Software – Salesforce transition to open source
- Data – analysis and dissemination
  - Capture 3 million inspections
  - Utilize Oracle tools
  - Enable feedback loop

Protocol Timeline – Proposed Rule

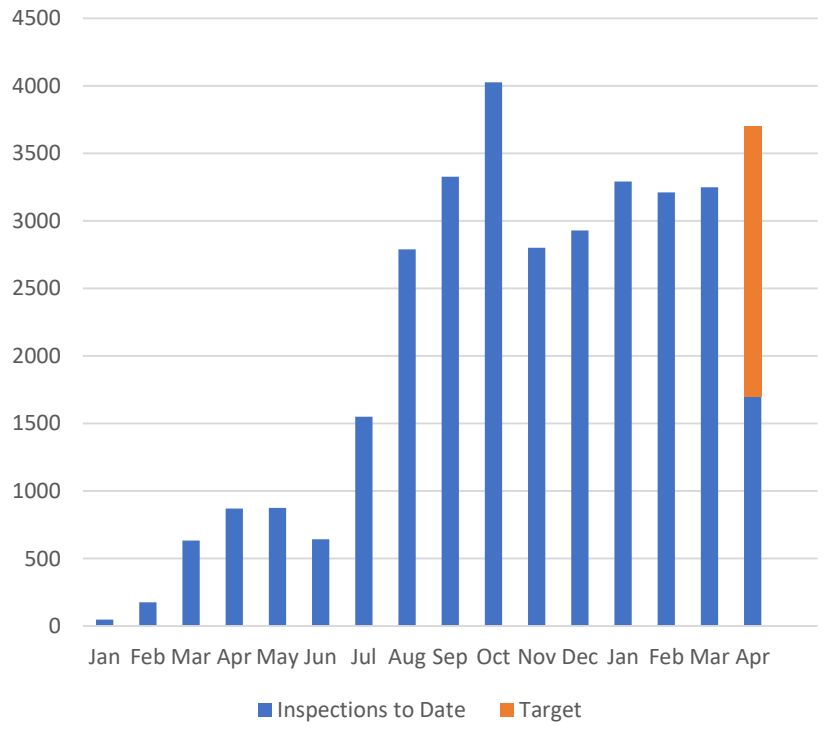


UPCS-V Inspections Summary

Milestones

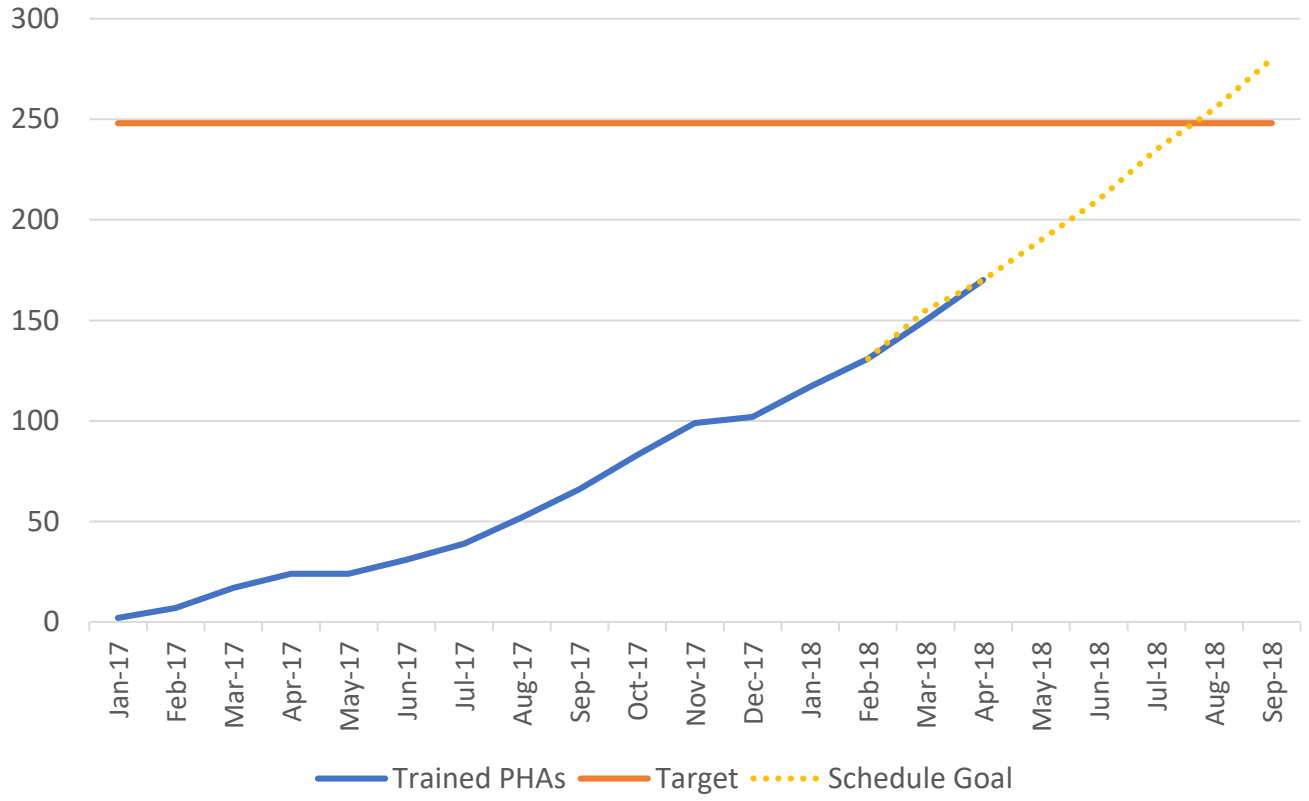
# Inspections Conducted	Target PHAs Trained: April	# PHAs Participating
29,132	170	247

Inspections of Record



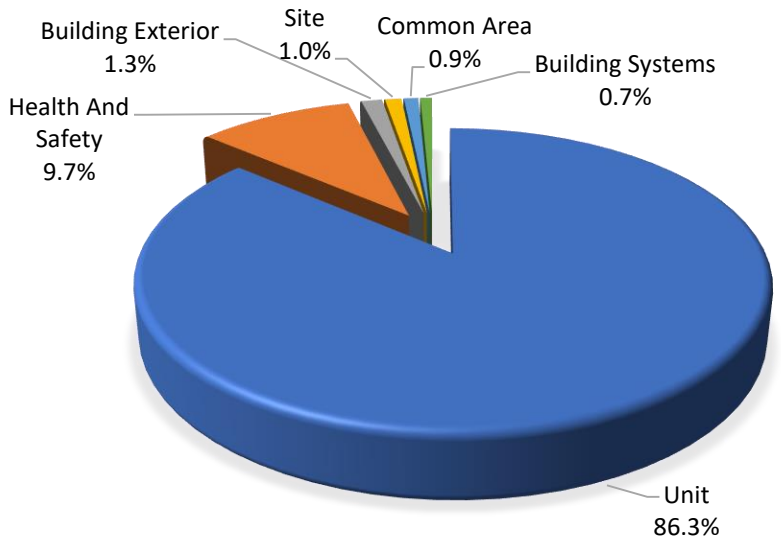
PHA Training

PHA Training Trends



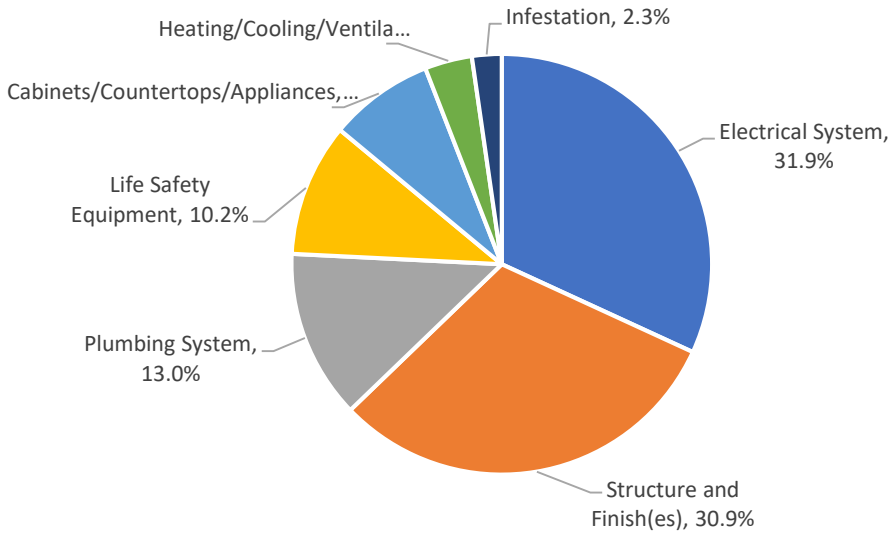
UPCS-V Defect Summary

Defects By Inspectable Area



Inspectable Area	Percentage of Total
Unit	86.3%
Health And Safety	9.7%
Building Exterior	1.3%
Site	1.0%
Common Area	0.9%
Building Systems	0.7%
Grand Total	100.0%

Defects In Unit



Unit Defect Type	Percentage of Total
Electrical System	31.9%
Structure and Finish(es)	30.9%
Plumbing System	13.0%
Life Safety Equipment	10.2%
Cabinets/Countertops/Appl.	8.1%
Heating/Cooling/Vent.	3.6%
Infestation	2.3%
Grand Total	100.0%

Defect Examples: Real Cases

Structure and Finishes

Entry Door Broken
Inspector 2
Maricopa Housing Authority (AZ009)
1624 S 114th Dr.

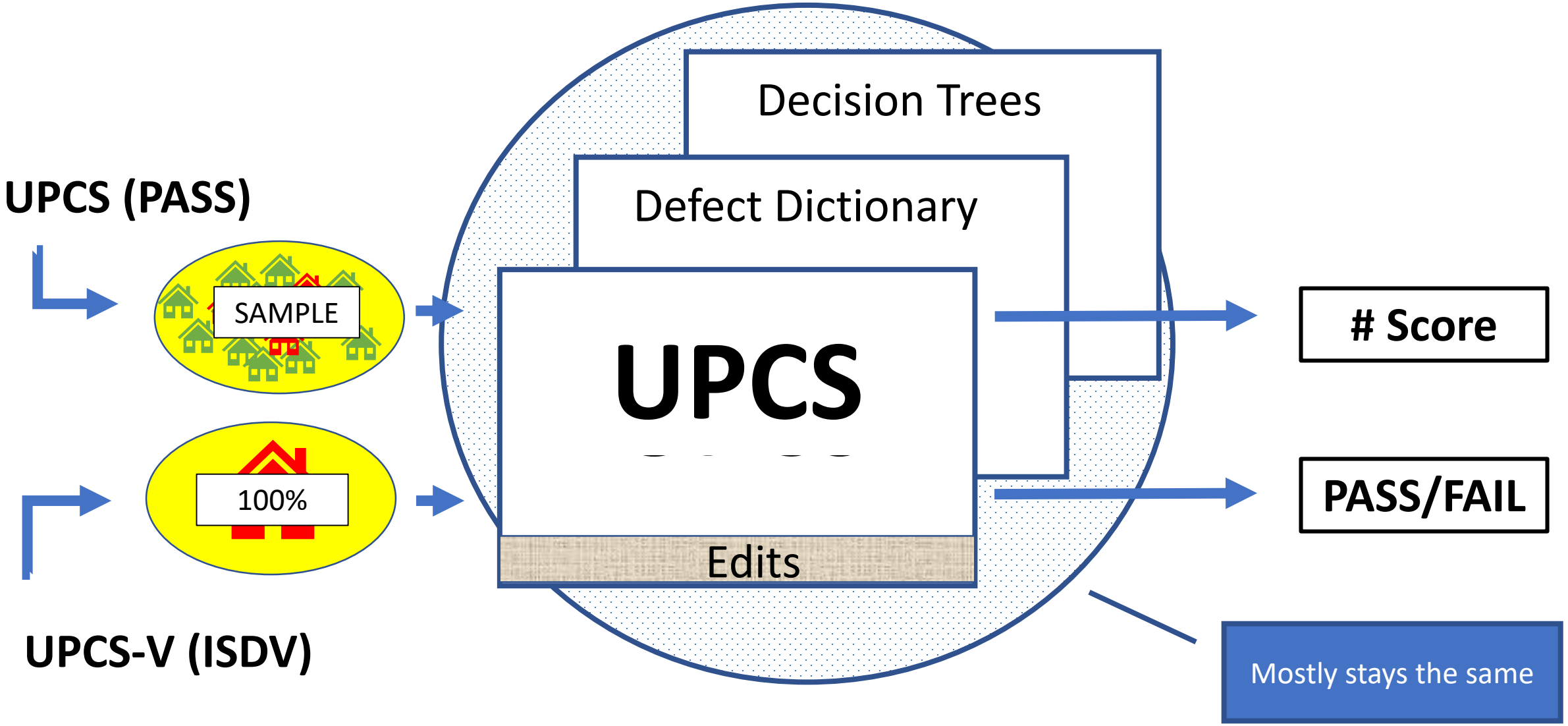
Electrical Systems

Cover Plate Broken
Inspector 11
Edinburg Housing Authority (TX062)
1908 AGUA FINA Apt. 1

Plumbing Systems

Leaking Sink
Inspector 3
Weatherford Housing Authority (TX349)
1212 W. Ball St. B

UPCS v. UPCS-V Comparison



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Why is HQS Changing?

- HUD was directed by Congress to implement a single inspection protocol for public housing and voucher units.
- HUD decided to update HQS and to align to UPCS.
- ISDV is operating under a Demonstration to create and test a new housing standard for voucher units.
- The Demonstration Period ends in July 2019.

What is the UPCS-V Protocol

- It is the set of rules and standards for conducting UPCS-V inspections.
- It includes specific Pass/Fail language for inspectable items.
- The UPCS-V Protocol is much more specific and inclusive than HQS in order to produce more accurate, consistent, and objective results.

How Did HQS Evolve Into UPCS-V?

- To build a new standard for voucher units, the initial UPCS-V drafters turned HQS' requirements and standards into the UPCS-V Fundamental Requirements.
- The UPCS-V Fundamental Requirements serve as a basic standard for HCV units in addition to inspections of individual inspectable items.

HQS Space and Security Acceptability Requirement	UPCS-V Protocol Fundamental Requirement
"At a minimum, the dwelling unit must have a living room, a kitchen and a bathroom."	*"All Units must have a living room, a kitchen, and a bathroom at a minimum."*

Inspectable Items in UPCS-V

- Each UPCS-V inspectable item (sinks, walls, doors, etc.) has a possible deficiency with a Pass/Fail threshold.
- Additionally, UPCS-V has adopted a list of **Life Threatening or Emergency (LTE) deficiencies.**
- Policy items, such as timelines for repair of deficiencies, will remain the same unless changed by the Housing Choice Voucher (HCV) program office.

What's new in Protocol Beta?

Version Number

- This protocol is called "Beta" because the document is a work-in-progress.
- It is currently being reviewed and tested.

Guiding Principles

- ISDV defined a set of Guiding Principles as common themes for the protocol.
  - Simplicity & Transparency
  - Alignment to UPCS
  - Meeting the Objective of National Housing Policy

What's new in Protocol Beta?

Other Changes

- Alignment to UPCS, the standards used for Public Housing inspections
- The addition of a glossary of terms
- An updated LTE (Life Threatening or Emergency) deficiency list
- The inclusion of carbon monoxide detectors as an inspectable items
- A 53% decrease in total length of the document mainly due to consolidation of redundant information
- The alphabetization of the Defect Dictionary
- An overall reorganization of the document to be more clear and consistent and to avoid redundancies

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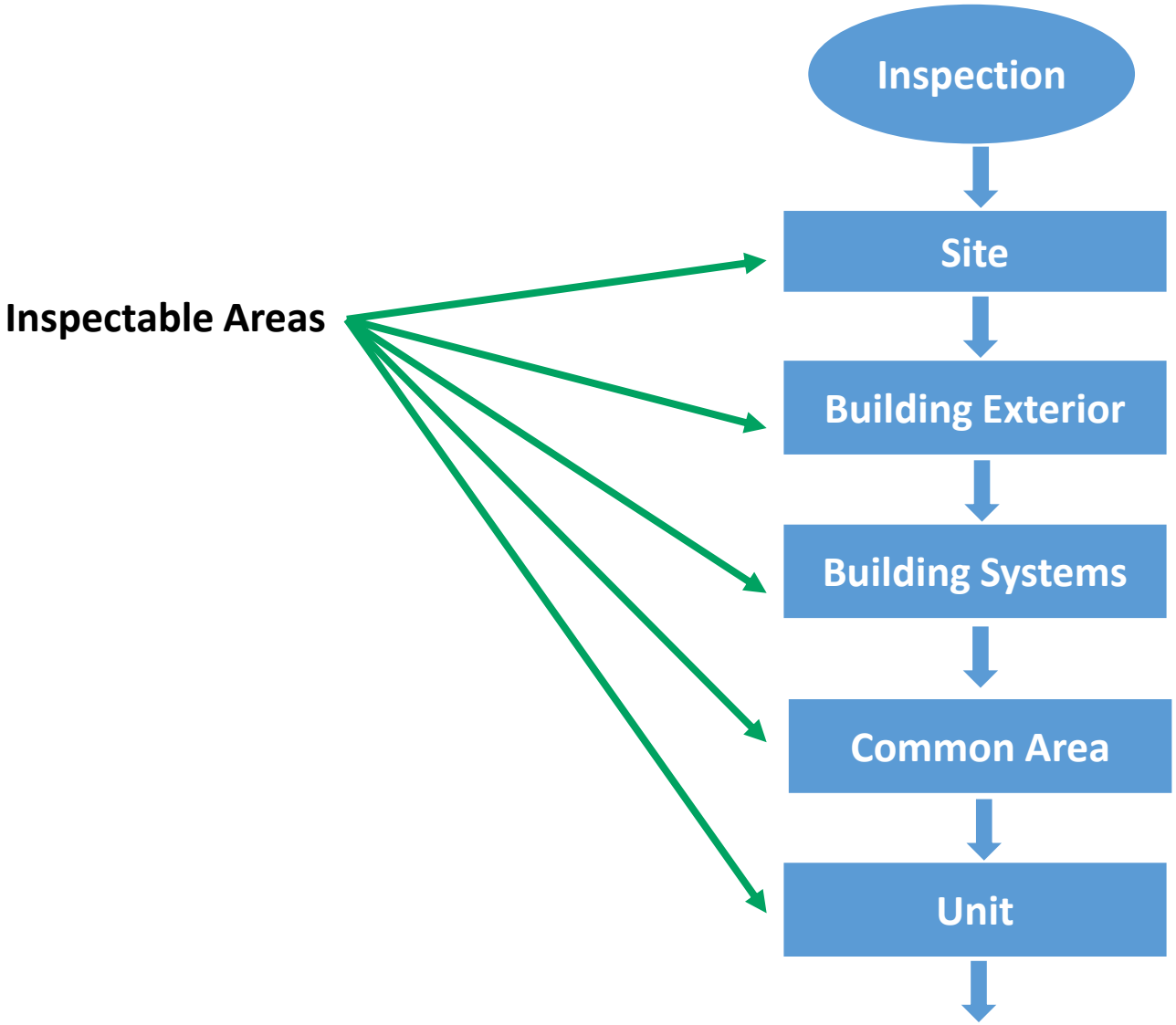
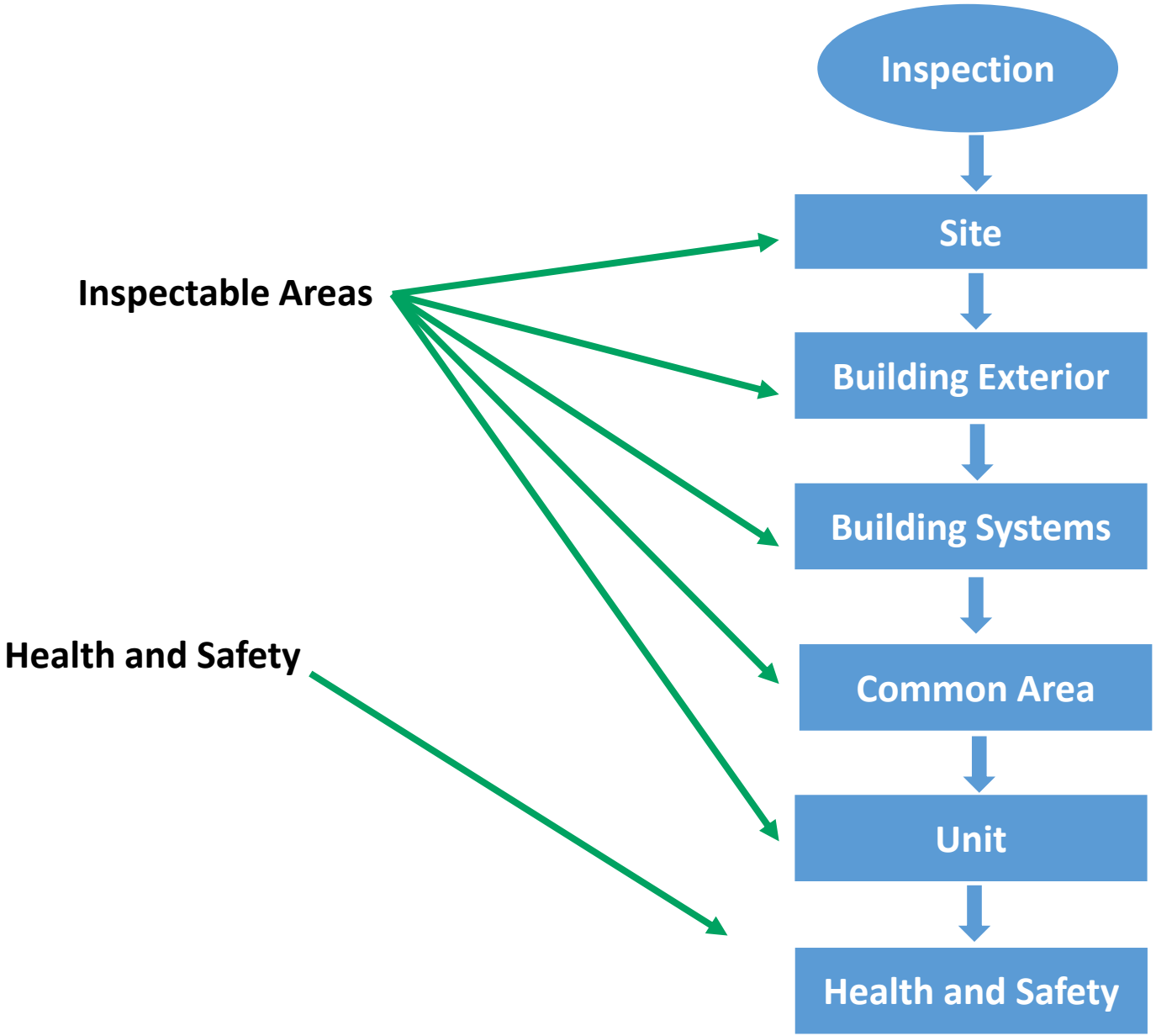
Decision Trees

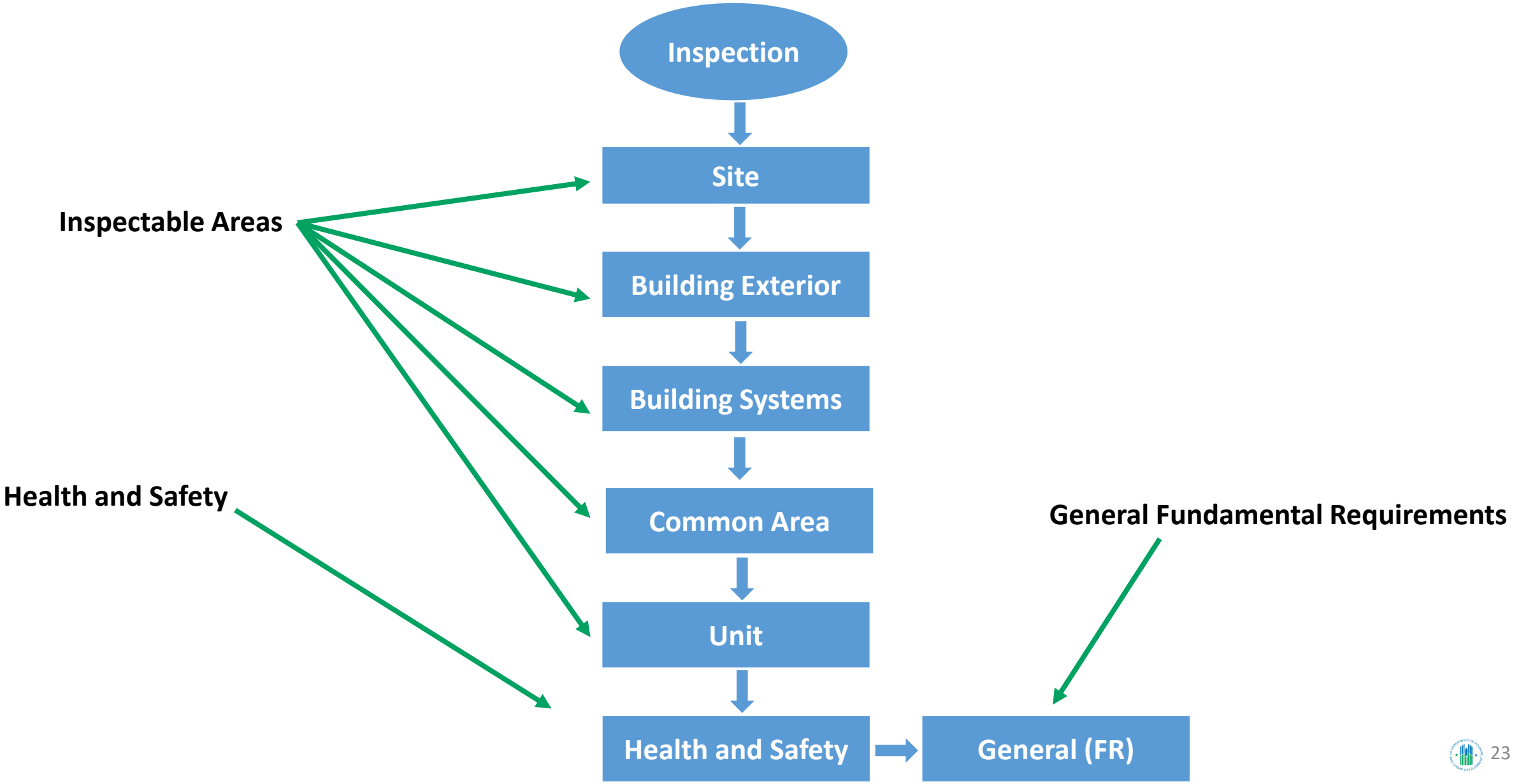
Five Inspectable Areas



Five Inspectable Areas



Five Inspectable Areas



Inspectable Areas and Associated Inspectable Items

HEALTH AND SAFETY

- Air Quality - Electrical Hazards - Elevator - Emergency/ Fire Exits
- Garbage and Debris - Hazards - Infestation - Lead-based Paint

BUILDING SYSTEM

- Domestic Water
- Electrical System
- Elevator
- Emergency Power
- Fire Protection
- HVAC
- Sanitary System

BUILDING EXTERIOR

- Doors
- FHEO/ UFAS
- Fire Escapes
- Foundations
- Lighting
- Market Appeal
- Roofs
- Walls
- Windows

SITE

- Fencing and Gates
- FHEO/ UFAS
- Grounds
- Mailboxes
- Market Appeal
- Parking Lots/ Driveways/ Roads
- Play Areas and Equipment
- Pools and Related Structures
- Walkways/ Steps

UNIT

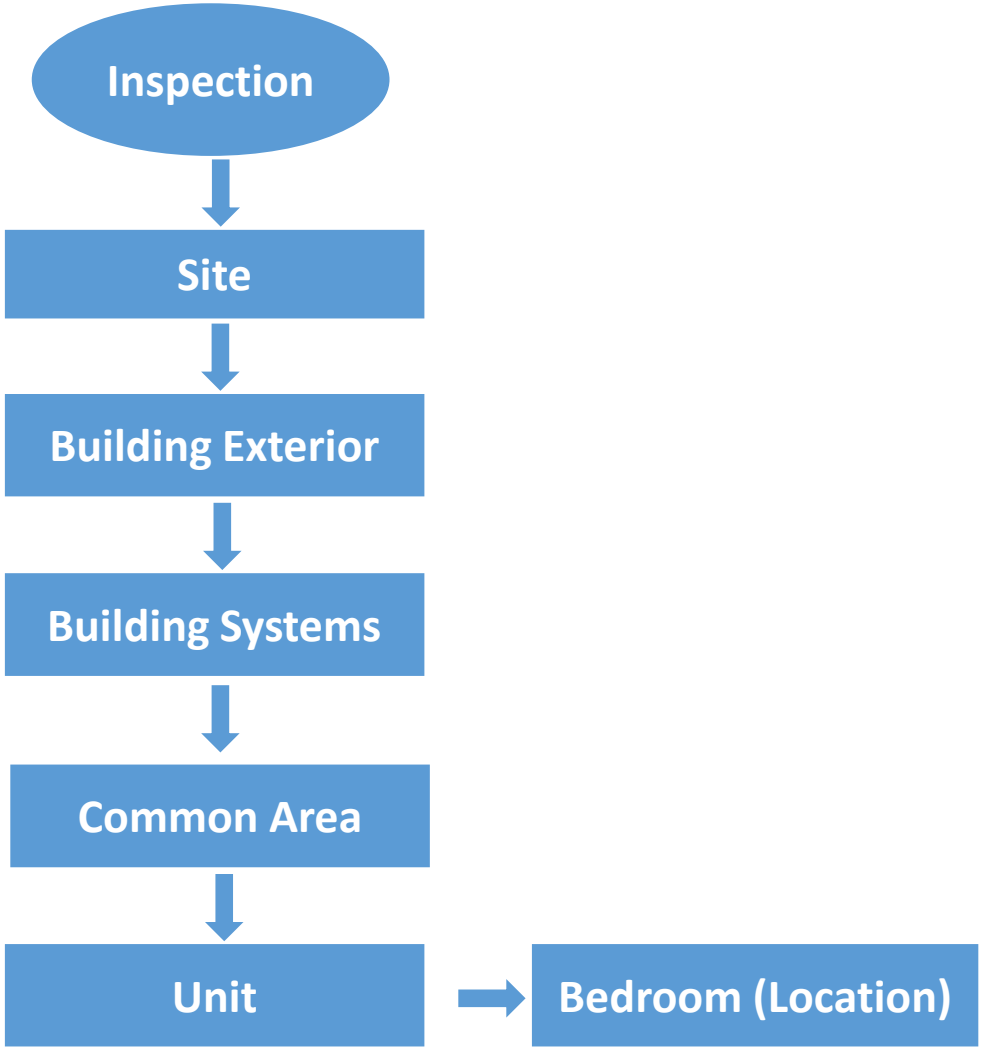
- Bathroom
- Cabinets
- Call-for-Aid
- Ceiling
- Countertops
- Doors
- Electrical
- FHEO/ UFAS
- Floors
- Hazards
- Hot Water Heater
- HVAC
- Kitchen
- Laundry Area
- Lighting
- Market Appeal
- Outlets/ Switches/ Cover Plates
- Patio/ Porch/ Balcony/ Deck
- Sink
- Stairs/ Handrails
- Walls
- Walkways/ Steps
- Windows

COMMON AREA

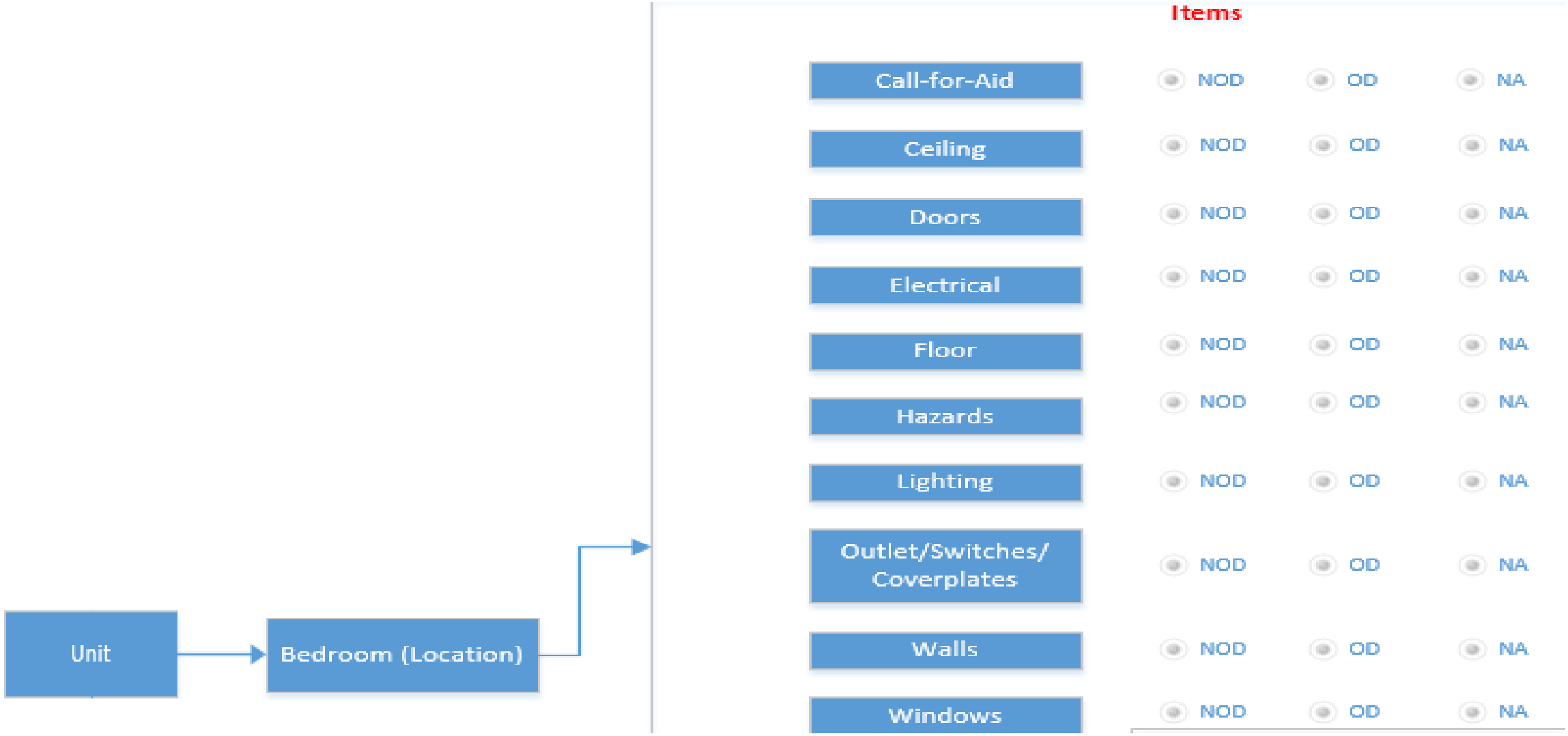
- Bathroom
- Cabinets
- Call-for-Aid
- Ceiling
- Countertops
- Doors
- Electrical
- FHEO/ UFAS
- Floors
- Garbage and Debris
- Hazards
- Hot Water Heater
- HVAC
- Kitchen
- Laundry Area
- Lighting
- Mailboxes
- Market Appeal
- Outlets/ Switches/ Cover Plates
- Pools and Related Structures
- Sink
- Stairs/ Handrails
- Walls
- Walkways/ Steps
- Windows

BETA

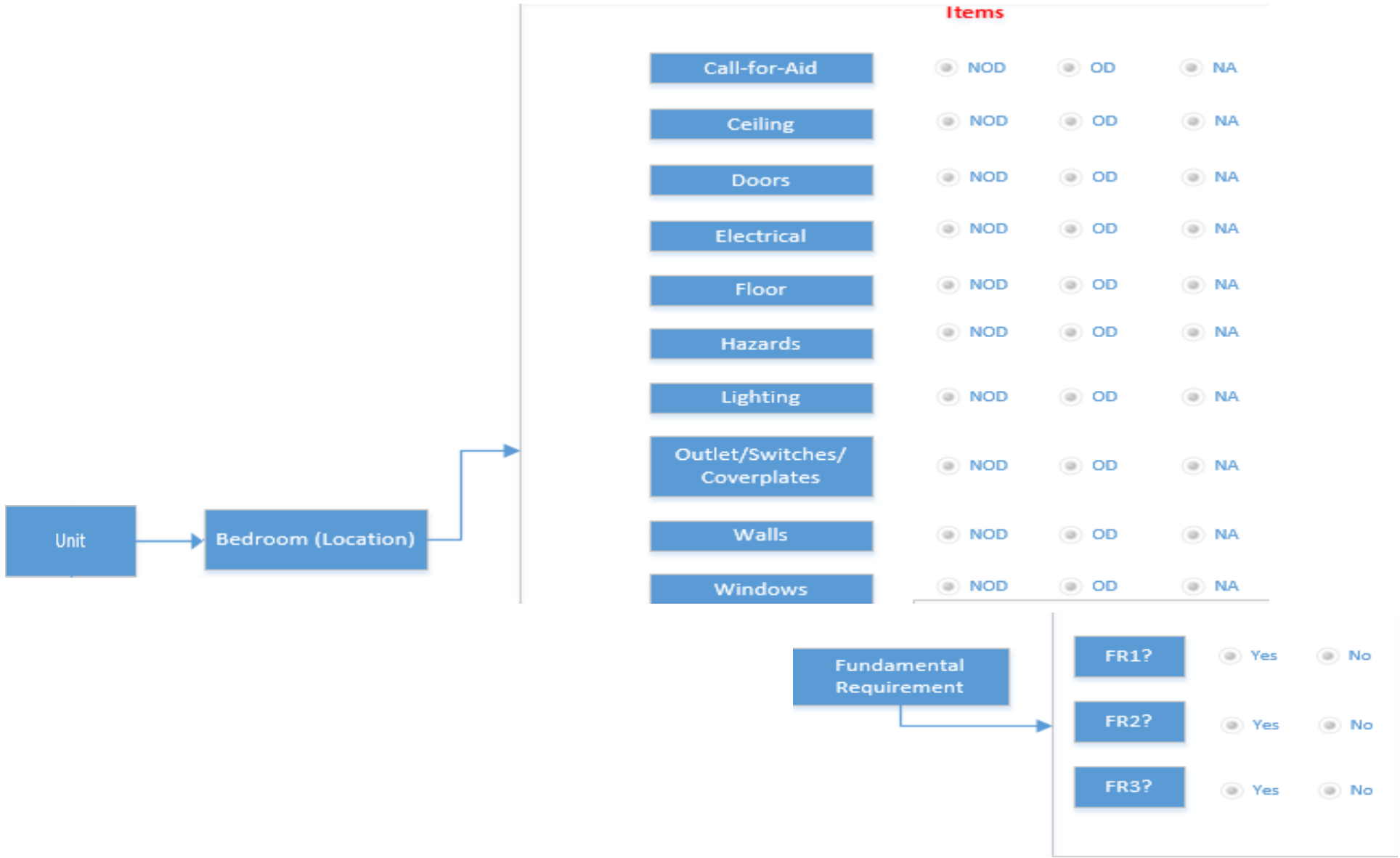
Locations Within Units and Common Areas



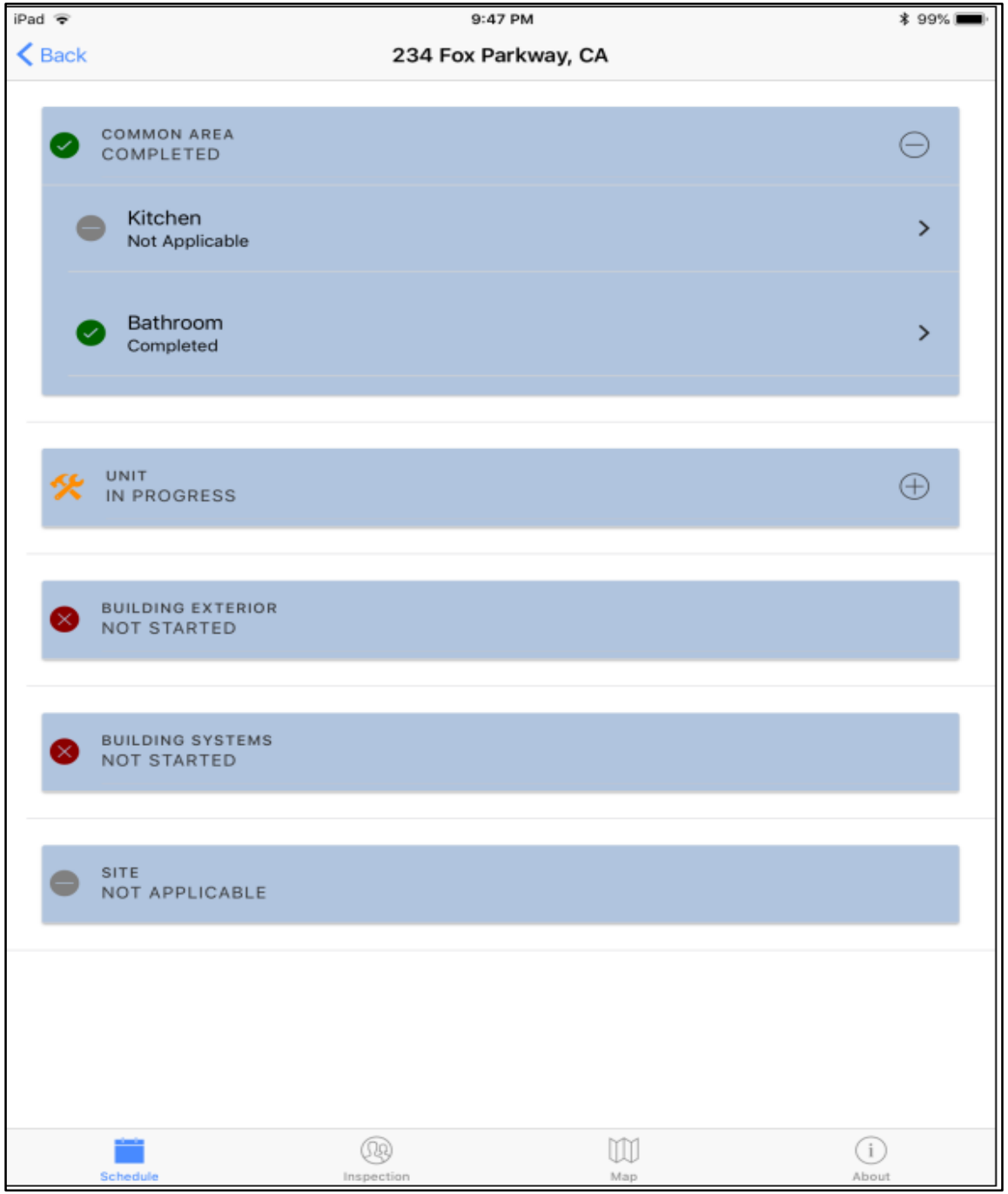
Inspectable Items



Inspectable Items



Examples


iPad
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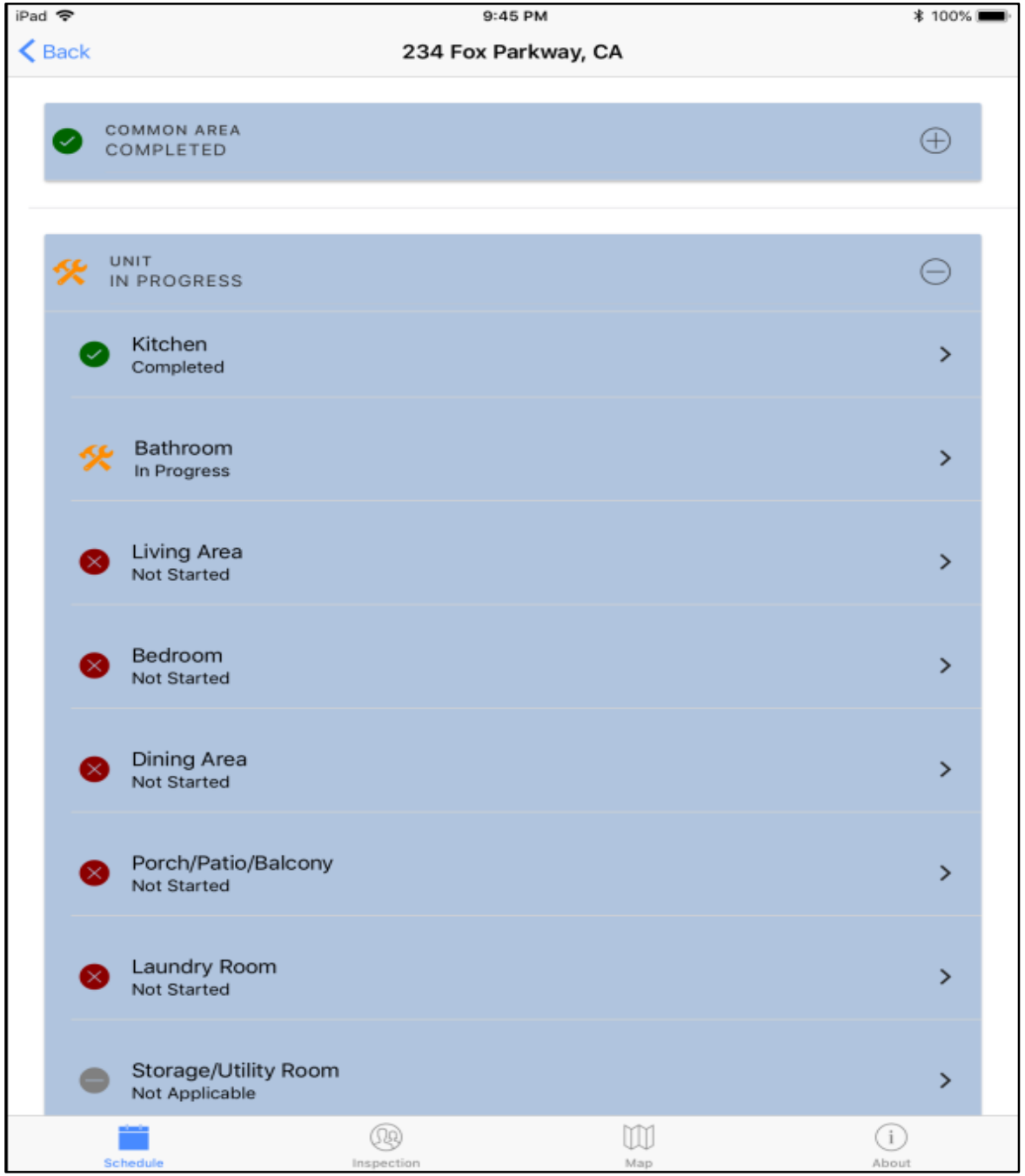
Back
234 Fox Parkway, CA
COMMON AREA
COMPLETED
Kitchen
Not Applicable
Bathroom
Completed
UNIT
IN PROGRESS
BUILDING EXTERIOR
NOT STARTED
BUILDING SYSTEMS
NOT STARTED
SITE
NOT APPLICABLE
Schedule
Inspection
Map
About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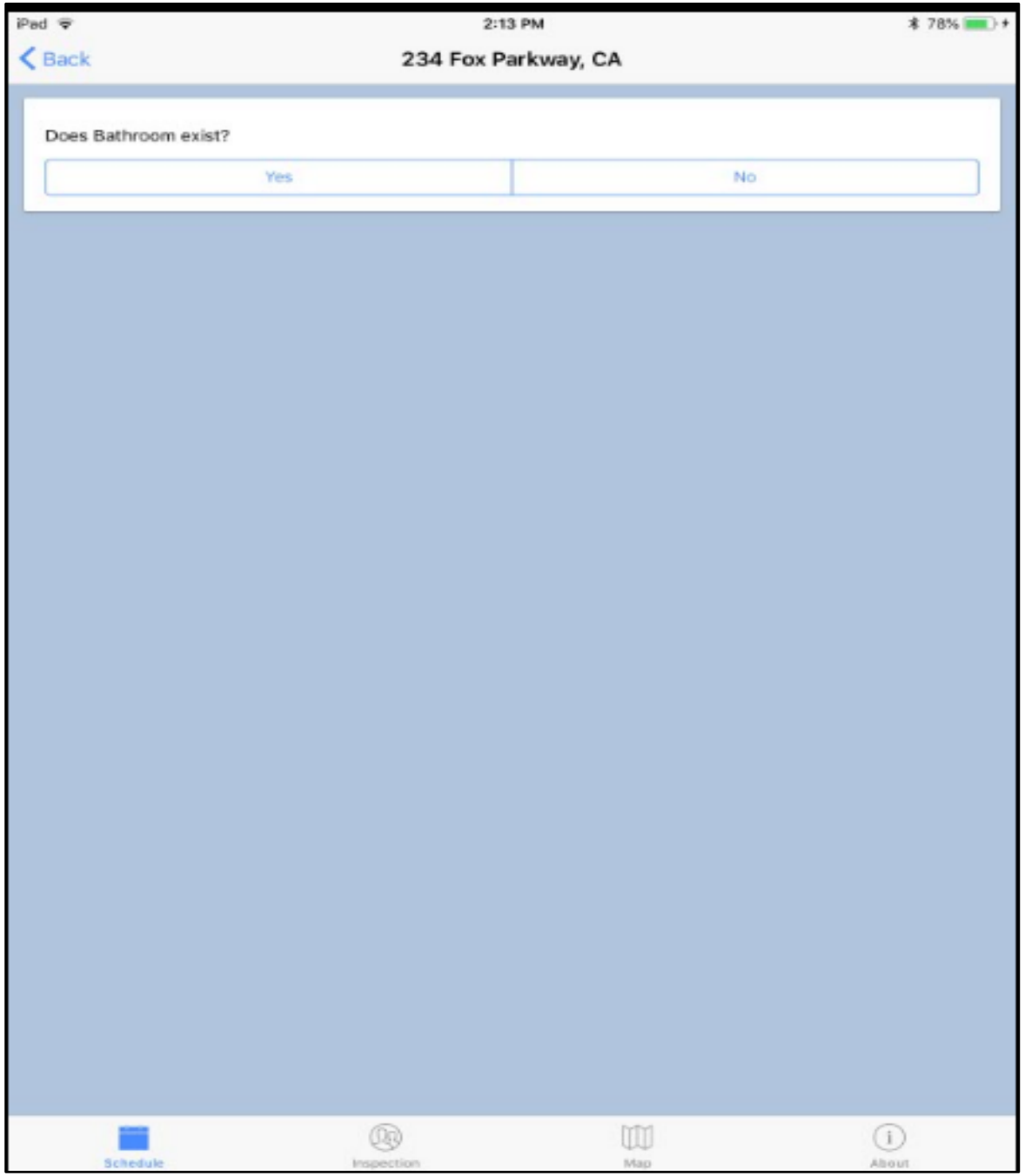
Back
234 Fox Parkway, CA
COMMON AREA
COMPLETED
UNIT
IN PROGRESS
Kitchen
Completed
Bathroom
In Progress
Living Area
Not Started
Bedroom
Not Started
Dining Area
Not Started
Porch/Patio/Balcony
Not Started
Laundry Room
Not Started
Storage/Utility Room
Not Applicable
Schedule
Inspection
Map
About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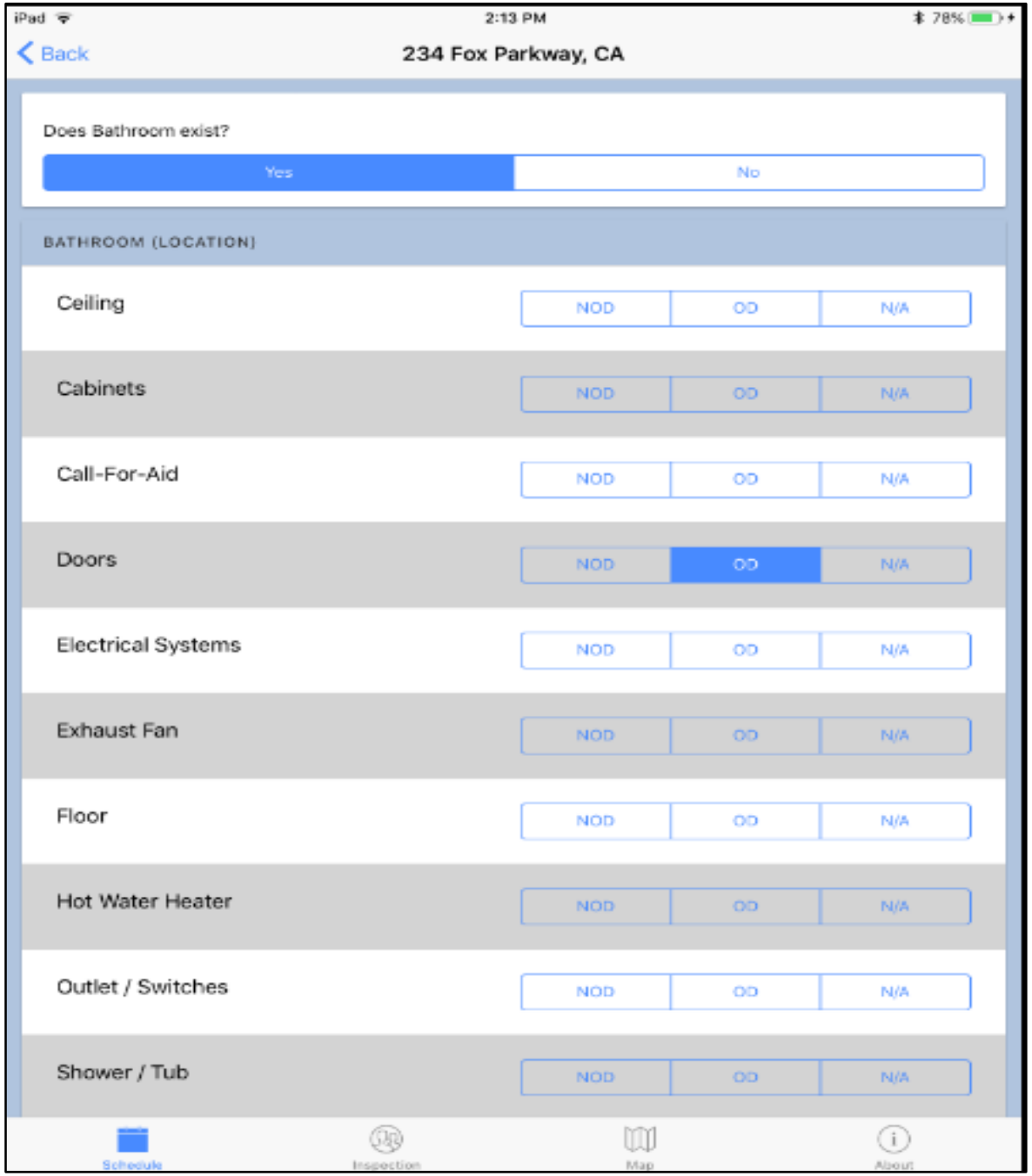
Back
234 Fox Parkway, CA
Does Bathroom exist?
Yes
No
Schedule
Inspection
Map
About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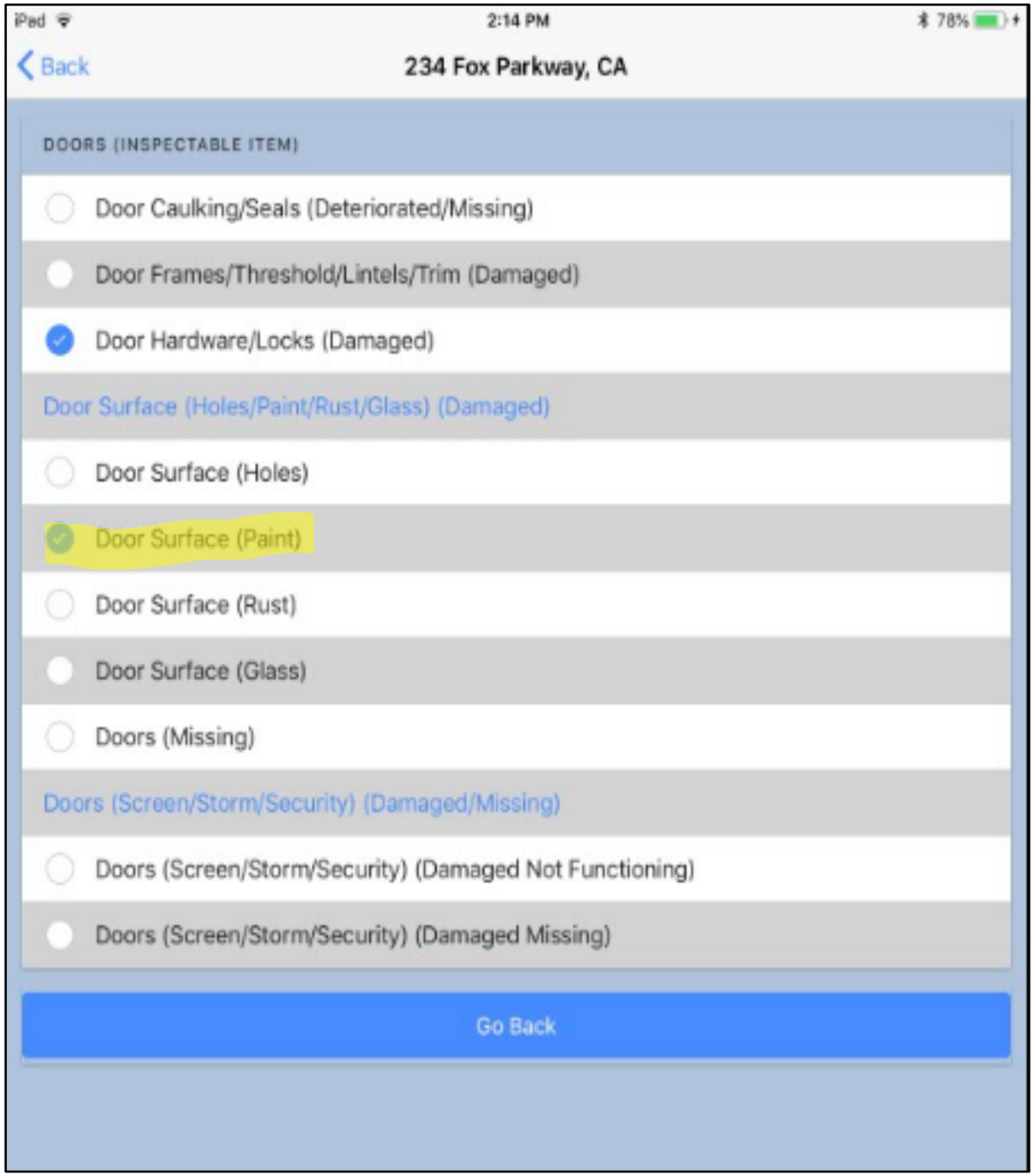
Back
234 Fox Parkway, CA
Does Bathroom exist?
Yes
No
BATHROOM (LOCATION)
Ceiling
NOD
OD
N/A
Cabinets
NOD
OD
N/A
Call-For-Aid
NOD
OD
N/A
Doors
NOD
OD
N/A
Electrical Systems
NOD
OD
N/A
Exhaust Fan
NOD
OD
N/A
Floor
NOD
OD
N/A
Hot Water Heater
NOD
OD
N/A
Outlet / Switches
NOD
OD
N/A
Shower / Tub
NOD
OD
N/A
Schedule
Inspection
Map
About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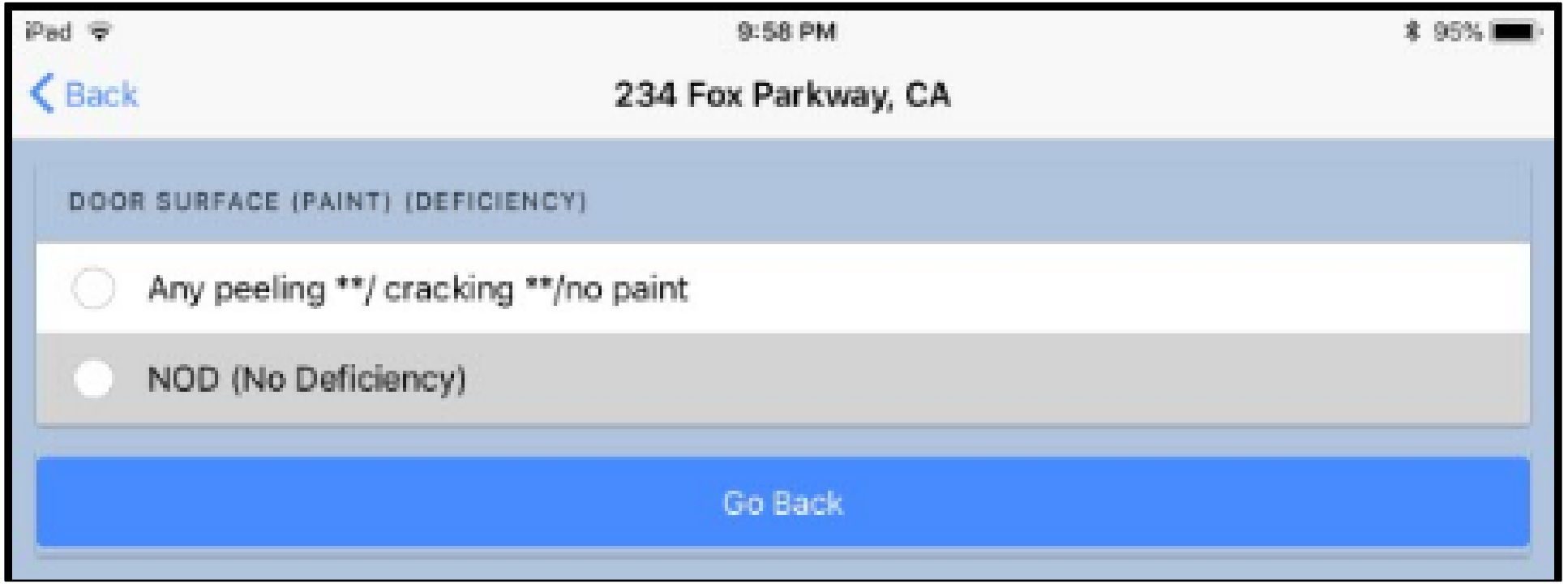
Back
234 Fox Parkway, CA
DOORS (INSPECTABLE ITEM)
Door Caulking/Seals (Deteriorated/Missing)
Door Frames/Threshold/Lintels/Trim (Damaged)
Door Hardware/Locks (Damaged)
Door Surface (Holes/Paint/Rust/Glass) (Damaged)
Door Surface (Holes)
Door Surface (Paint)
Door Surface (Rust)
Door Surface (Glass)
Doors (Missing)
Doors (Screen/Storm/Security) (Damaged/Missing)
Doors (Screen/Storm/Security) (Damaged Not Functioning)
Doors (Screen/Storm/Security) (Damaged Missing)
Go Back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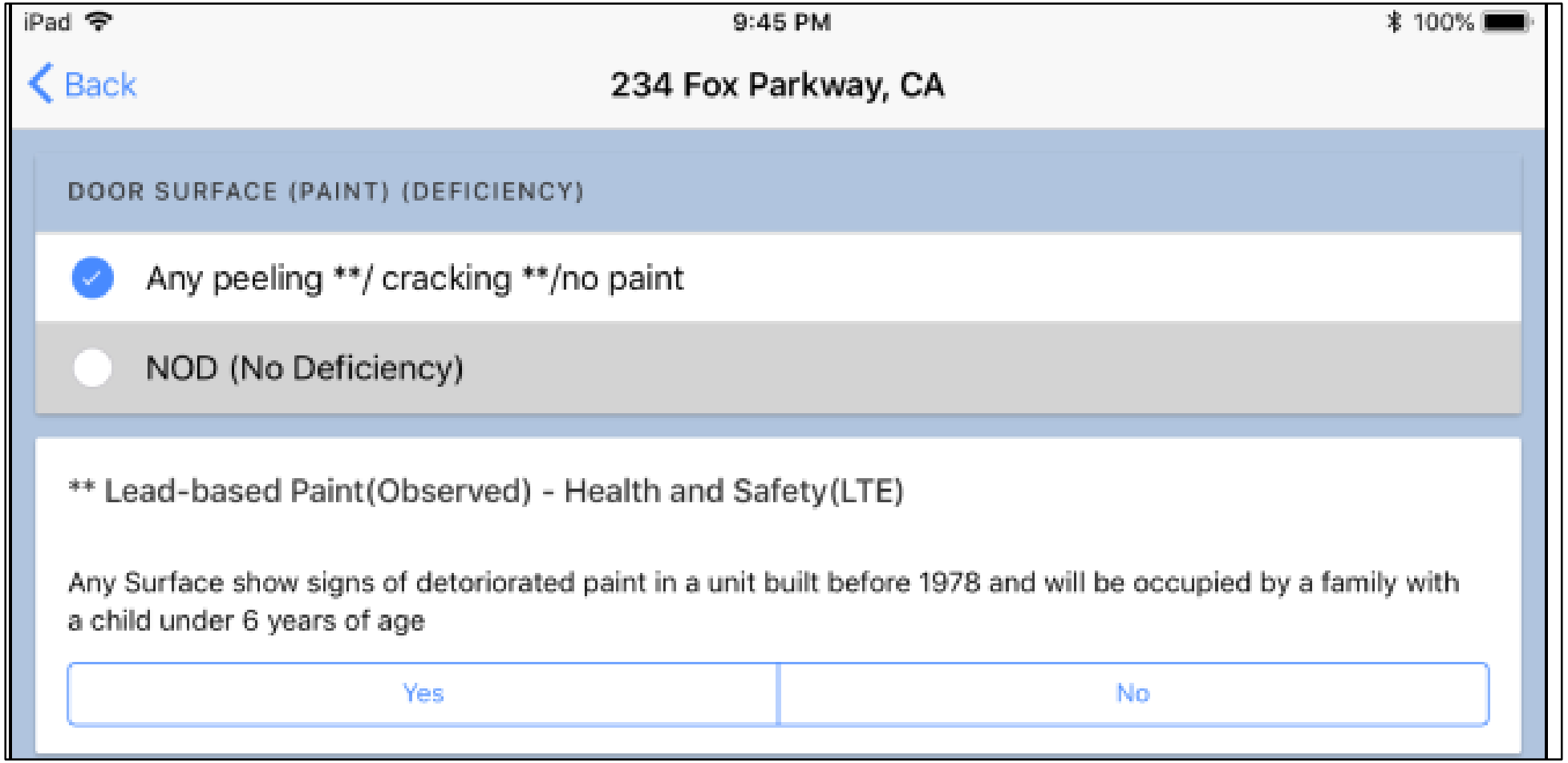
234 Fox Parkway, CA
DOOR SURFACE (PAINT) (DEFICIENCY)
Any peeling **/ cracking **/no paint
NOD (No Deficiency)
Go Back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Back
234 Fox Parkway, CA
DOOR SURFACE (PAINT) (DEFICIENCY)
Any peeling **/ cracking **/no paint
NOD (No Deficiency)
** Lead-based Paint(Observed) - Health and Safety(LTE)
Any Surface show signs of detoriorated paint in a unit built before 1978 and will be occupied by a family with a child under 6 years of age
Yes
No

DOOR SURFACE (PAINT) (DEFICIENCY)

- [x] Any peeling **/ cracking **/no paint
- [ ] NOD (No Deficiency)

** Lead-based Paint(Observed) - Health and Safety(LTE)

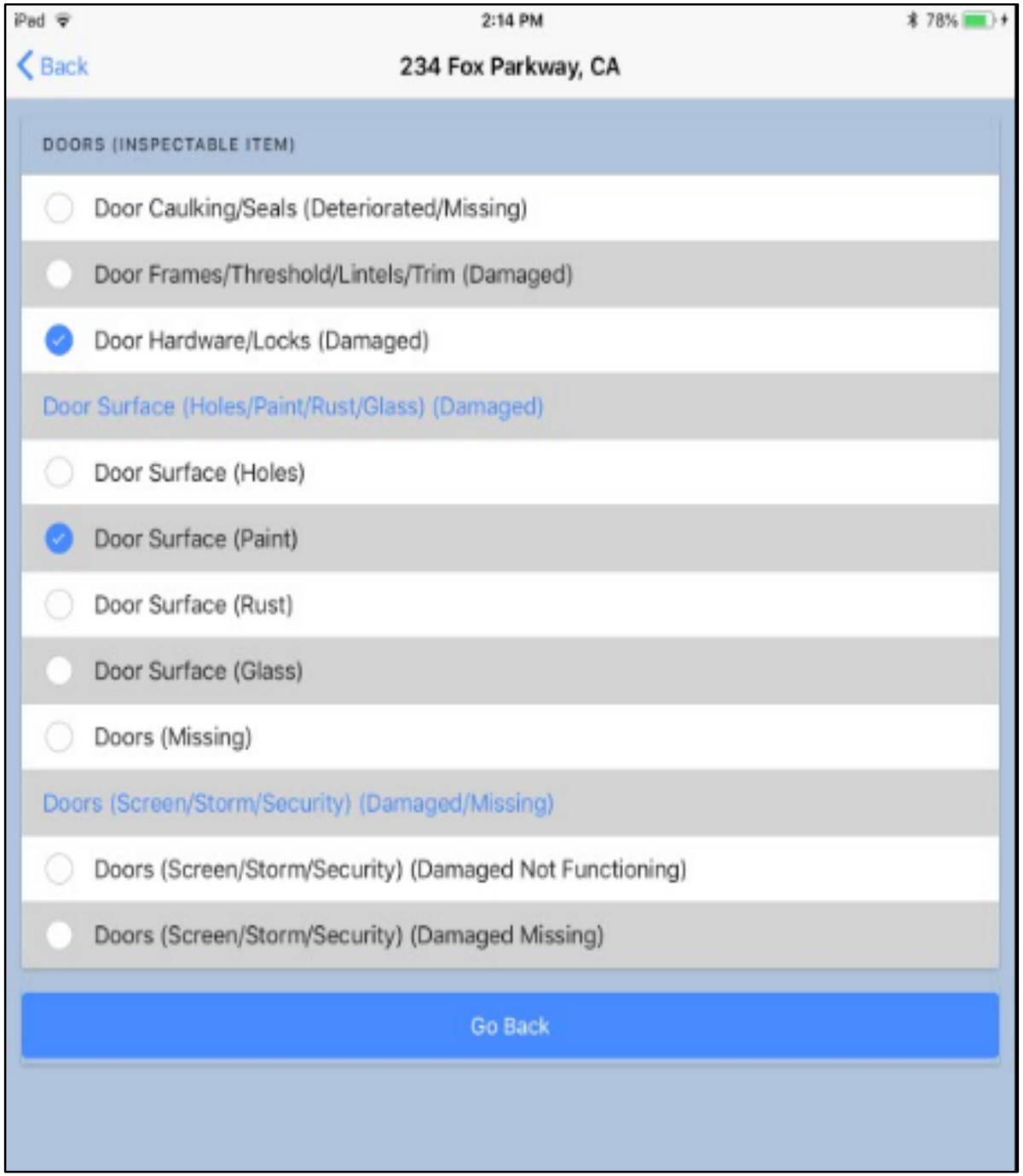
Any Surface show signs of detoriorated paint in a unit built before 1978 and will be occupied by a family with a child under 6 years of age

Yes | No

Photo

Photo/s Taken

Select Image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Back
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Door Caulking/Seals (Deteriorated/Missing)
Door Frames/Threshold/Lintels/Trim (Damaged)
Door Hardware/Locks (Damaged)
Door Surface (Holes/Paint/Rust/Glass) (Damaged)
Door Surface (Holes)
Door Surface (Paint)
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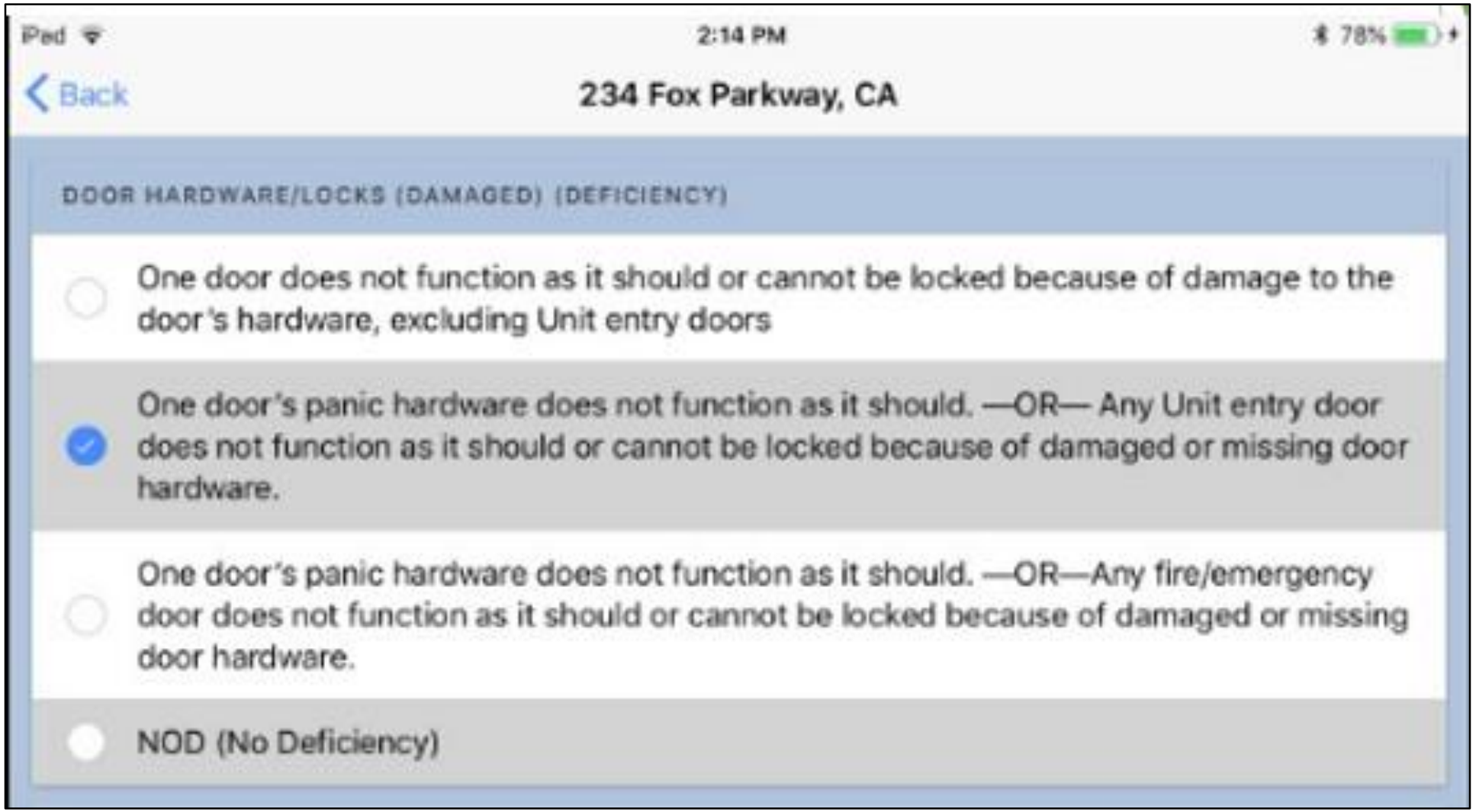
Go Back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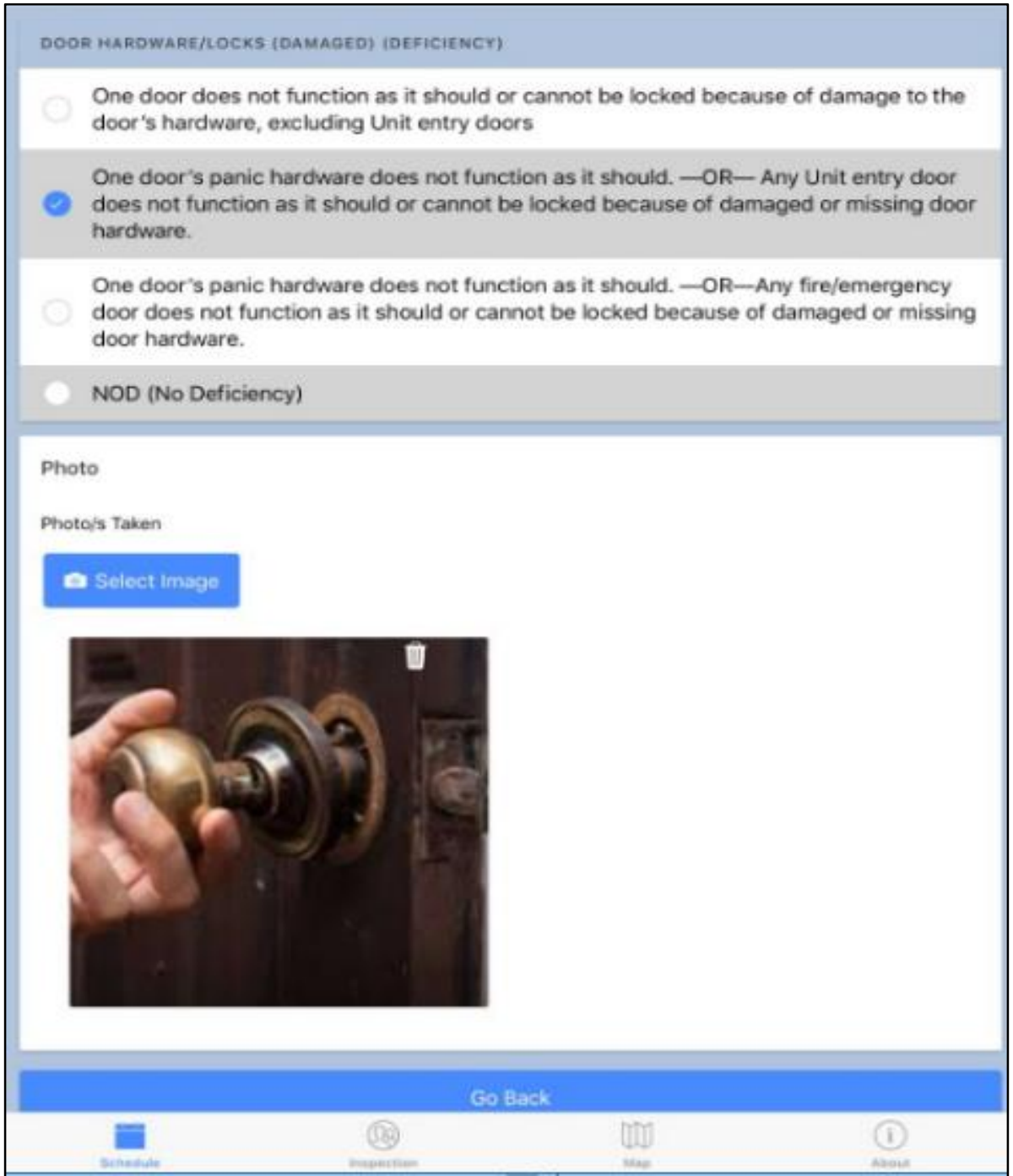
Back
234 Fox Parkway, CA
DOOR HARDWARE/LOCKS (DAMAGED) (DEFICIENCY)
One door does not function as it should or cannot be locked because of damage to the door's hardware, excluding Unit entry doors
One door's panic hardware does not function as it should. —OR— Any Unit entry door does not function as it should or cannot be locked because of damaged or missing door hardware.
One door's panic hardware does not function as it should. —OR—Any fire/emergency door does not function as it should or cannot be locked because of damaged or missing door hardware.
NOD (No Deficiency)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NOD (No Deficiency)
Photo
Photo/s Taken
Select Image
Go Back
Schedule
Inspection
Map
About

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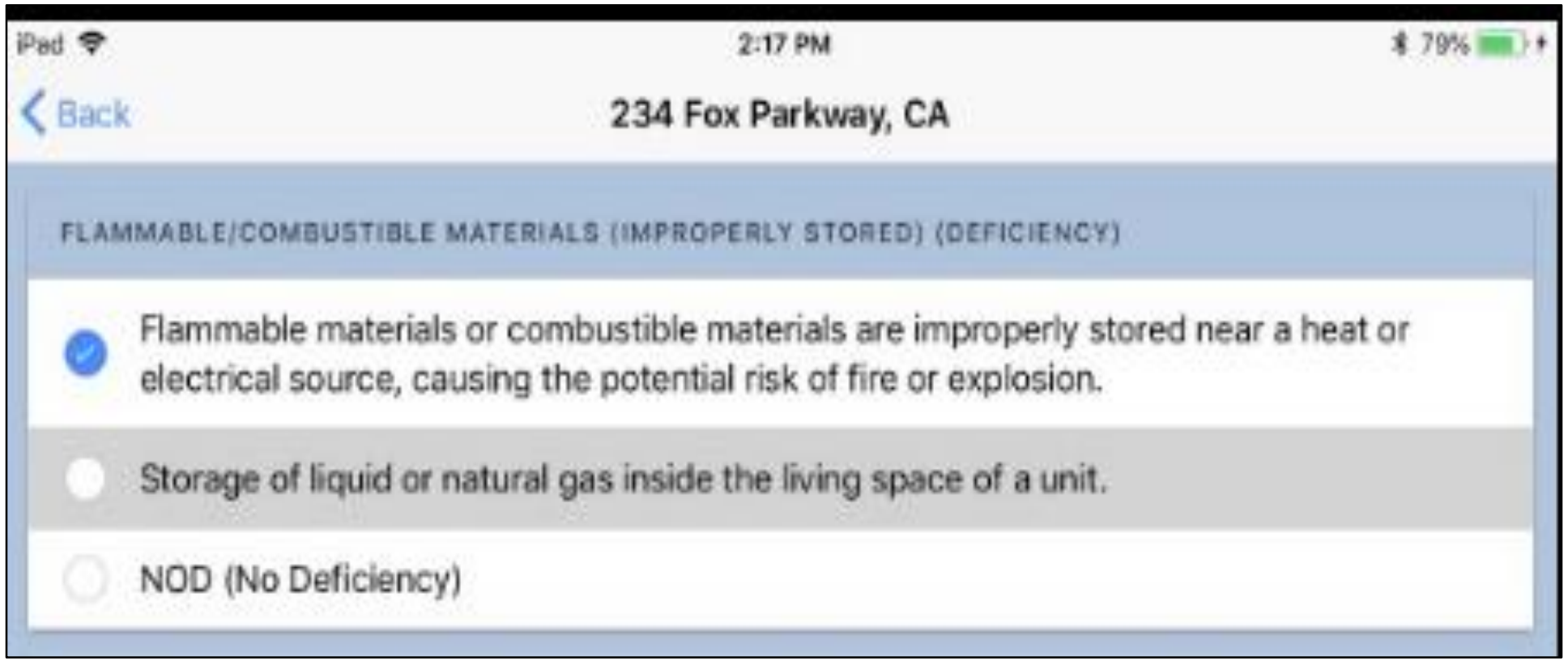
Back
234 Fox Parkway, CA
HEALTH AND SAFETY (INSPECTABLE ITEM)
Air Quality – Health and Safety
Mold and/or Mildew (Observed)
Propane/Natural Gas/Methane Gas (Detected)
Sewer Odor (Detected)
Electrical Hazards – Health and Safety
Wires/Panels (Exposed)
Wires/Panels (Open/Cover Missing)
Water Leaks (on or Near Electrical Equipment)
Other Electrical Hazards
Elevator – Tripping – Health and Safety
Elevator – Tripping
Emergency/Fire Exits – Health and Safety
Emergency/Fire Exits (Blocked/Unusable)
Exit Signs (Missing) – Emergency/Fire Exits
Exit Signs (Inoperable Illumination) – Emergency/Fire Exits
Garbage and Debris – Health and Safety
Garbage and Debris (Indoors)
Garbage and Debris (Outdoors)
Hazards – Health and Safety
Schedule
Inspection
Map
About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234 Fox Parkway, CA
FLAMMABLE/COMBUSTIBLE MATERIALS (IMPROPERLY STORED) (DEFICIENCY)
Flammable materials or combustible materials are improperly stored near a heat or electrical source, causing the potential risk of fire or explosion.
Storage of liquid or natural gas inside the living space of a unit.
NOD (No Deficiency)

FLAMMABLE/COMBUSTIBLE MATERIALS (IMPROPERLY STORED) (DEFICIENCY)

- [x] Flammable materials or combustible materials are improperly stored near a heat or electrical source, causing the potential risk of fire or explosion.
- [ ] Storage of liquid or natural gas inside the living space of a unit.
- [ ] NOD (No Deficiency)

Photo

Photo/s Taken

Select Image

Go Back

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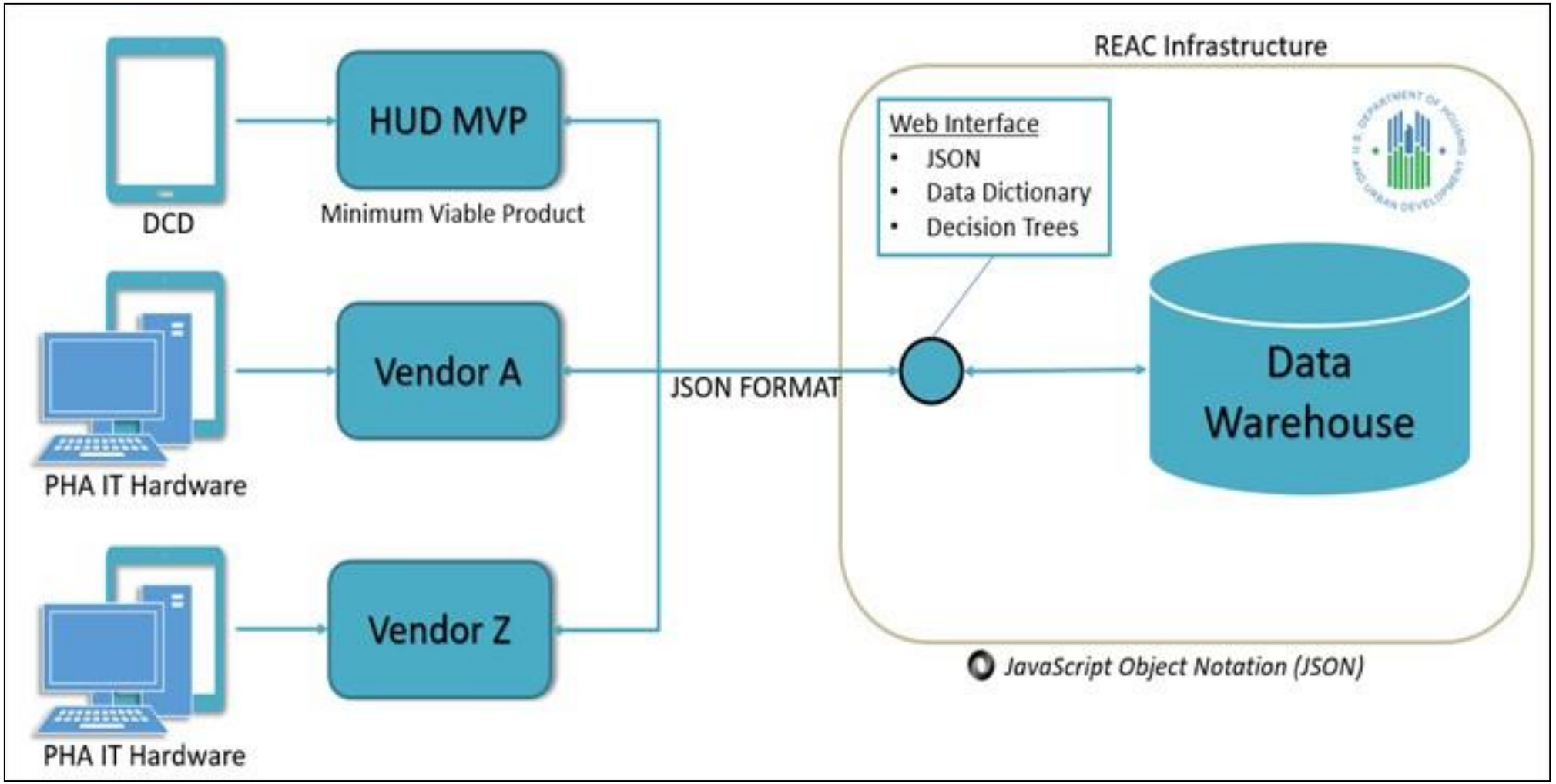
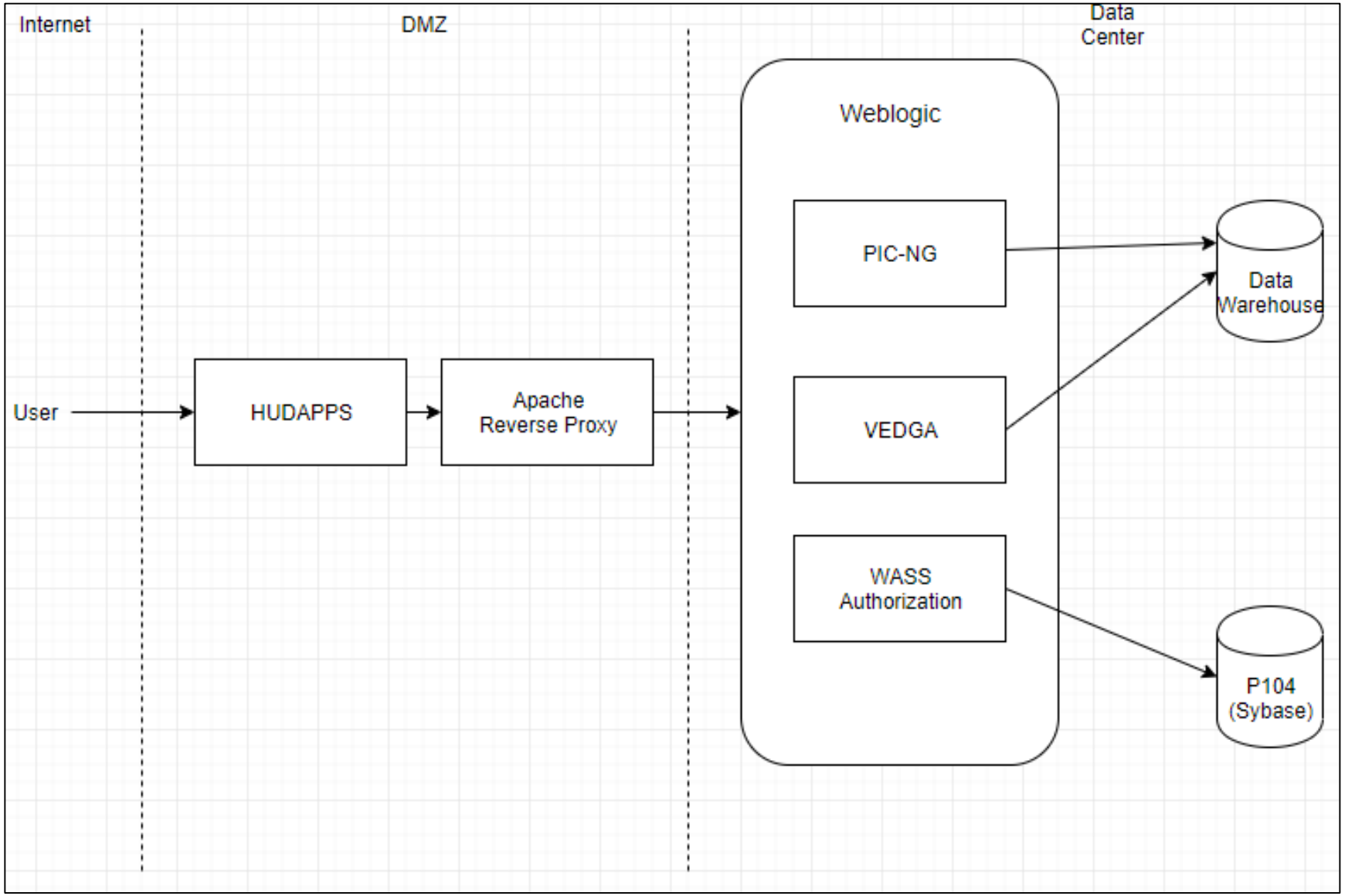
Overview


REAC Infrastructure
DCD
HUD MVP
Minimum Viable Product
Web Interface
• JSON
• Data Dictionary
• Decision Trees
PHA IT Hardware
Vendor A
JSON FORMAT
Data Warehouse
Vendor Z
PHA IT Hardware
JavaScript Object Notation (JSON)

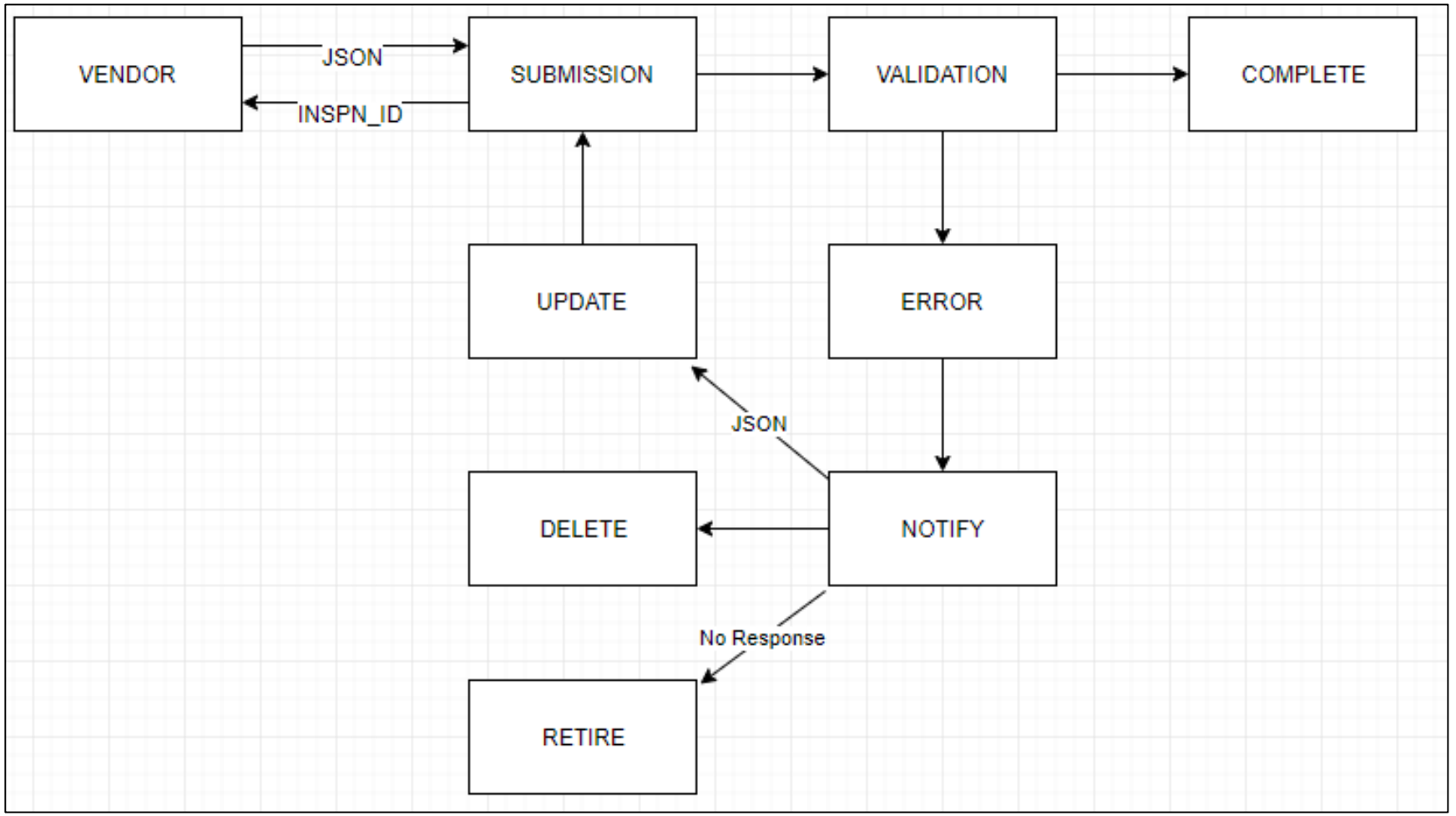
VEDGA Components (Currently)

- Web Services
- Inspection Mobile Application

Architecture



Flow


VENDOR
JSON
INSPN_ID
SUBMISSION
VALIDATION
COMPLETE
UPDATE
ERROR
JSON
DELETE
NOTIFY
No Response
RETIRE

Security

- Authentication and Authorization are necessary to access the web service APIs and swagger page.
- Authentication is performed (currently) by Siteminder.
- Authorization is performed (currently) by WASS.
- Vendors will need to have access to a HUD ID and provide it to IT Team.
- We set up access for that HUD ID in WASS for VEDGA.
- Certification Process TBD

Web Services in Development

- POST /inspections/vedga/ - allows submission of Inspection in JSON (will contain associated pictures).
- GET /inspections/vedga/status/{inspectionId} - allows get of the status of the Inspection submission.
- GET /inspections/vedga/validate/ - allows pre-validation of the Inspection JSON before final submission to HUD.

Web Services Planned

- PUT /inspections/vedga/{inspectionId} - This will allow for partial submissions and updates to an existing Inspection.
- DELETE /inspections/vedga/{inspectionId} - allows deletion of an already submitted Inspection.
- GET /inspections/vedga/data/{inspectionId} – allows get of an already submitted inspection.
- GET /inspections/vedga/status/ - allows get of the status of all inspections submitted by the logged in PHA.
- GET /inspections/vedga/decisiontree/{versionId} – provides the requested decision tree in JSON.

Swagger Page Demo

URL: https://hudapps.hud.gov/picngdemo/inspection/swagger-ui.html#/inspections

Sample JSON:

{"header":{"submissionType":"INSPN"},"agency":{"phaName":"Kihn LLC","phaCode":"CA001"},"unitOccupied":{"address":{"street":"123 Street","apartment":"123","city":"New York","state":"NY","zip":"1234","zipPlus":null}},"defect":{"phaInspectionId":"7777","inspectableArea":"unit","location":"kitchen","item":"sink","defect":"broken","decision":"fail","healthSafetyHazard":null}}

Protocol Conversion

- Inspection
- Observation
  - Inspectable Area
  - Location
  - Item
  - Defect
  - Decision

Inspection

- Inspection ID – Generated by HUD-REAC
- PHA's Inspection ID – PHA's unique identifier for the inspection (optional)
- The Unit Information (Address / HUD-REAC Unit Identifier)
- The Owner Information (Name / TIN)
- The Inspector Info (Name / Inspector ID)

Defect Index Number System

- INSPN_AREA_LCTN_ID – Inspection Area Location ID
- AREA_ID – Area ID (Site, Unit, Common Area)
- LCTN_ID – Location ID (Bedroom, Bathroom, None)
- LCTN_CNT – Location Count (Bedroom 01, Bedroom 02, NULL)

Defect Index Number System

- OSRVTN_ID – Observation ID
- ITEM_ID – Item ID (Ceiling, Wall, Toilet)
- CNDTN_ID – Condition ID (OD, NOD, N/A)
- DFCT_ID – Defect ID (Water Stain, Broken, Leaking)
- DFCT_DCSN_ID – Defect Decision ID
- (Hole in wall is greater than 1 inch, Hole in wall is smaller than 1 inch)
- CMNT - Comment

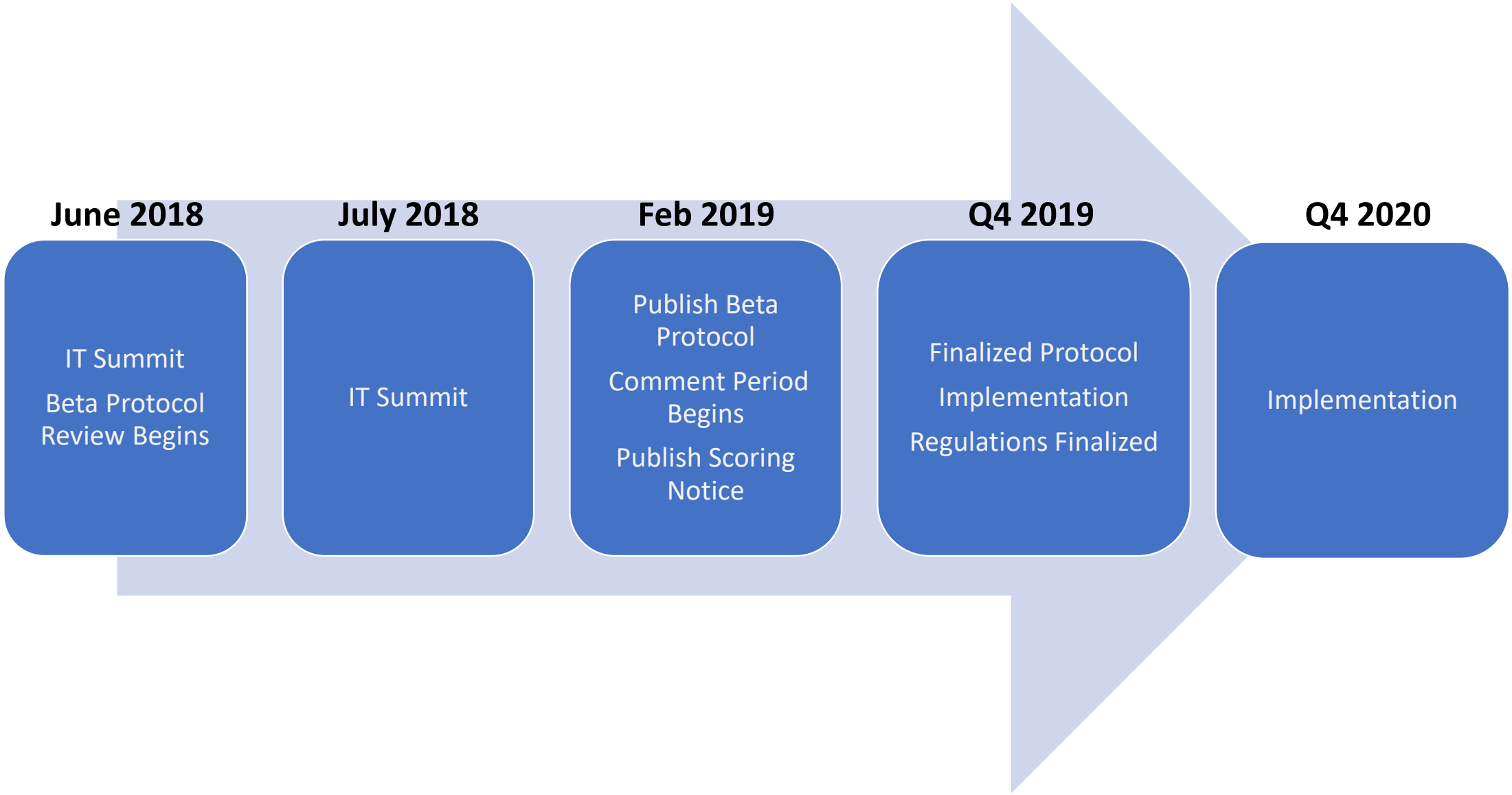
Versioning

- The Beta version of UPCS-V will be the first version released.
- Future versions of the decision tree will be published as needed.
- Previous versions of the decision tree will be maintained for past Inspections.

Communication with SWAT

- The VEDGA team can be reached on:
  - Email: ISDV@HUD.GOV
  - Slack Channel: PIC-NG (request an invite)

Next Steps – Target Timeframe



Conclusion

- Final Thoughts
- Questions and Answers
- Continue to provide your thoughts and feedback at ISDV@hud.gov.

Thank You!