

NCHFA's Mobi Mobile Inspection Software

North Carolina Housing Finance Agency
Rental Housing: Multifamily Management

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The North Carolina Housing Finance Agency's (the Agency) Mobi inspection software is an innovative and timely software solution in response to HUD's implementation of the National Standards for the Physical Inspection of Real Estate (NSPIRE) inspection protocol. Prior to the launch of the Mobi software, physical inspections of properties in our multifamily portfolio were a manual process. Implementation of a software solution allows for multiple efficiencies in addition to meeting the demands of changing inspection requirements.

Challenges to Overcome

The Agency's Asset Management Team inspects more than 1,200 properties encompassing more than 8,000 units scattered throughout the state's 100 counties annually. Until 2024, inspections were primarily manual and consisted of inspectors traveling to and arriving at the property, recording deficiencies on paper, taking photos on a digital camera, keying all data into the Asset Management System (AMS) and uploading the photos so a Compliance Results Letter could be issued to the property owner.

Manual processes caused problems in many areas:

- **Knowledge:** Inspectors were expected to mentally retain the details of the 317-page Uniform Physical Condition Standards (UPCS) inspection protocol, plus any updates or changes issued in the form of bulletins later. The UPCS inspection protocol was very nuanced: each deficiency had different levels of severity that impacted reports of noncompliance. For example, the level of severity of a hole varied based on the size of the hole and the location. The inspector had to remember that a hole in an interior wall that was smaller than a piece of paper was a Level 2, and larger than a piece of paper was a Level 3, but a hole in a door less than 1 inch is Level 2 noncompliance.
- **Duplicate Work:** Inspectors essentially had to complete the inspection twice: once at the property and once in the computer. While onsite, inspection findings and notes were written on paper. At times, the notes were illegible or difficult to decipher to enter the results later. The inspector couldn't simply write a Compliance Results Letter following the inspection, instead, the data from the report had to be keyed into the compliance system manually so that reports and 8823s could be generated. The manual working papers had to be scanned and uploaded so the supervisor could compare the two for consistency and accuracy. Pictures taken on a digital camera had to be located and uploaded into the system. The system pulled the data into a Compliance Results Letter to be sent to the owner once approved.
- **Inconsistencies Between Inspectors:** Each inspector used unique verbiage that made it difficult to tabulate and compare inspection findings between properties. For example, one might say "There is a hole in the door" and another might say "The door has a hole." Still another might be more detailed, saying "There is a half inch hole on the left side of the door knob of the front entry door."

There were other problems too. If paperwork was misplaced or destroyed before the data entry was complete, the inspection could not be completed. Sometimes memory cards in phones went bad, or photos were accidentally deleted before they could be uploaded. Due to the different verbiage styles, it

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was difficult for the supervisor to review the inspector's work and try to achieve consistency between inspections and staff.

The Fully Integrated Solution

When HUD announced in early 2023 that the NSPIRE inspection protocol would be mandated starting October 1, 2023, a decision regarding how and when to make the appropriate changes to our systems and processes had to be made. It was not logical to rewrite the internal software to switch from the old UPCS to the new NSPIRE standard, while leaving the inefficiencies of a manual process in place. A thorough search was conducted to see if a software solution could be purchased that could be integrated into our existing system by transferring inspection data. Due to the new protocol, the only available software could not be integrated into our existing system and would have resulted in maintaining two different systems, which was unacceptable. Once negotiations ended, a decision was reached for the Agency's internal IT team to build an integrated solution to meet the business and regulatory needs related to physical inspections of multifamily properties.

One of the first considerations was which device was the best one to use. This decision required collaboration between the software development team and the hardware support team, with input from the inspectors on the rental asset management team. The Agency settled on the Surface Pro tablets as the primary source to conduct inspections in the field. However, since the tablets would not have independent internet access, the software development team also made sure the software would work on various Apple and Android devices. This enables the staff to use their phone to access the inspection for navigational features and a property contact list in case they are running late or have difficulty finding the property. Should there be a problem with the tablet in the field (broken, lost, dead battery, etc.), staff can conduct the inspection using their phone as a backup plan. While an inspection can be conducted on a phone, this is the least desirable method because of the size of the phone. Most staff prefer the larger tablet.

Because North Carolina is largely a rural state, there are still areas without internet access. It was important to design the software to be operated without being connected to the internet. The tablet connects to the internet to download the inspections, however inspection itself can be conducted without internet access. Once complete, the tablet must connect to the internet in order to submit the inspection and provide the Preliminary Inspection Report to the property representative. This can be done after returning to the office or hotel if internet service is spotty in the field. Should the tablet need access to the internet in the field, and Wi-Fi is not available, staff can use their phone as a hotspot to provide internet access to the tablet. This functionality allows them to email the Preliminary Inspection Report immediately upon completion of the inspection without waiting until they get back to the office.

Compliance is significantly enhanced by automation of the inspections:

- Staff no longer have to remember the inspection protocol verbatim without any assistance in the field. This is particularly important because of the changes between UPCS and NSPIRE standards. After receiving appropriate training on the NSPIRE protocol, inspectors are still subject to muscle memory while in the field, relying on long term memory of past practices. By incorporating the

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NSPIRE verbiage into the software, staff can accurately report findings without having to know the nuances in the protocol by memory.

- By the end of inspection date, property owners receive a preliminary inspection report that is timely and professional. If internet access is available, the inspection is received at the end of the inspection without delay.
- By using standardized verbiage, common noncompliance issues can be compiled and reported on for training purposes. By knowing the common sources of physical inspection issues, the design standards in the Qualified Allocation Plan may be improved to help alleviate the problem, where possible.
- Noncompliance can be accurately reported to the IRS for LIHTC properties in the IRS Compliance Period because the NSPIRE standards are accurately mapped to be reported on the 8823 where applicable. State standards are separated out and not mapped to the 8823, but are reported as state noncompliance in the Compliance Results letter. By using appropriate mapping, staff are not expected to distinguish between what is reportable to the IRS and what is a state issue.
- Inspectors can easily see where they are throughout the inspection. Should they need to take a break for lunch or another reason, Mobi software prompts them on where to pick back up once the inspection resumes. If a unit selected for inspection is unavailable, they can easily substitute another unit on the fly.
- Secure upload of the inspection is completed by clicking 'Submit' once the inspection is completed. This saves multiple hours of staff time per inspection because the data does not have to be manually keyed and photos uploaded. This results in better data consistency because staff won't miss an issue cited in manual working papers.
- The inspection cannot be submitted until the appropriate number of units are inspected and data entry is complete. Once submitted, the original inspection record is preserved. Errors can be fixed prior to issuing the Compliance Results Letter, but the original record is available for comparison.
- Time and date stamps allow for supervisors to analyze staff performance and ensure shortcuts are not taken. Supervisors will also be able to evaluate and reduce inconsistencies between staff. An inspector who is struggling can be paired with someone fluent with the process for training.

Conclusion and Benefits Achieved

This technology management innovation allows Agency staff to work more efficiently. Agency inspectors now have an easy-to-use and accurate system for conducting physical inspections of multifamily properties that greatly improves work processes, accuracy and results. Workflows, dashboards and automated tools allow for a seamless end-to-end inspection process that preserves data integrity, reduces overall inspection processing time and improves consistency. Most significantly for us, the Agency can now complete inspections uniformly and in accordance with federal regulations, and improve reporting to federal agencies and others.

Supporting Documents

Initial dashboard displaying scheduled inspections for the next 2 weeks:

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Mobi TRAINING - Inspections

Inspections Samples

Training Environment: Please do NOT enter production data

Inspections for Steven James (5)

Wakefield Hills Apartments	PI 7 80 8	10702 Oliver Road Raleigh	Wed Apr 10 9:00AM
The Commons at Highland Village	PI 1 68 7	100 Highland Commons Court Cary	Thu Apr 11 11:00AM
Hadley Ridge	PI 1 84 9	237 Macon Drive, # 100 Nashville	Fri Apr 12 9:00AM
Tilghman Square Apts	PI 1 20 2	1101 Greenfield Road Dunn	Fri Apr 19 9:00AM
Tilghman Square II Apts	PI 1 23 3	100 Greenfield Dr Dunn	Fri Apr 19 11:00AM

Property landing page when you open the inspection (contacts below not displayed, clicking on address opens GPS navigation):

Wakefield Hills Apartments Close Inspection

Property

Inspection		Property	
Physical Inspection	Wed Apr 10 9:00AM	Address	10702 Oliver Road Raleigh
Required Units	8	Buildings & Units	7 80
Monitoring Status	Firm Schedule	Placed in Service	12/13/2007
Last Inspection Date	07/26/2023		

Program	
APN	9001020
Funding	BankLoan, Equity, FTC, LocPublicFunds, STC
Supportive Housing	No
Target Population	Family
TC Monitoring	Extended Use

The Buildings page provides list of buildings in the property, if the inspector needs this data:

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Wakefield Hills Apartments Close Inspection		
Buildings	Sort: Address	Filter: none
Building 1 10820 Oliver Road NC-05-08001	8 units, 0 vacant 1 Inspection Planned	📍 Building 1 10820 Oliver Road Raleigh
Building 2, 10830 Oliver Road NC-05-08002	12 units, 1 vacant 2 Inspections Planned	📍 Building 2, 10830 Oliver Road Raleigh
Building 3 , 10810 Oliver Road NC-05-08003	12 units, 0 vacant 4 Inspections Planned	📍 Building 3 , 10810 Oliver Road Raleigh
Building 4 , 10840 Oliver Road NC-05-08004	12 units, 1 vacant 3 Inspections Planned	📍 Building 4 , 10840 Oliver Road Raleigh
Building 5 , 10850 Oliver Road NC-05-08005	12 units, 0 vacant 1 Inspection Planned	📍 Building 5 , 10850 Oliver Road Raleigh
Building 6, 10801 Atticus Road NC-05-08006	12 units, 0 vacant 1 Inspection Planned	📍 Building 6, 10801 Atticus Road Raleigh
Building 7, 10901 Atticus Road NC-05-08007	12 units, 0 vacant 1 Inspection Planned	📍 Building 7, 10901 Atticus Road Raleigh

The Units page provides list of units in the property. Inspector can easily toggle the unit on or off for the inspection. Units randomly pre-selected for the inspection are shown as “Recommended”:

Units Building 1 10820 Oliver Road ▾

Unit 101	3 Bedrooms 🏠	Occupied	Plan <input type="checkbox"/>
Unit 102	3 Bedrooms	Occupied	Plan <input type="checkbox"/>
Unit 103	3 Bedrooms	Occupied	Plan <input type="checkbox"/>
Unit 104	3 Bedrooms	Occupied	Plan <input type="checkbox"/>
Unit 201	3 Bedrooms	Occupied	Plan <input type="checkbox"/>
Unit 202	3 Bedrooms	Occupied	Plan <input type="checkbox"/>
Unit 203	3 Bedrooms	Occupied	Plan <input type="checkbox"/>
Unit 204	3 Bedrooms	Occupied	Plan <input checked="" type="checkbox"/> Recommended

The majority of the inspection will begin on the Inspection Plan page. Units may also be toggled on or off from this page, so that the inspector doesn't need the Units page. If the inspection is interrupted,

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the inspector can quickly see which units have not been started, which are complete, and which are partially completed:

The screenshot shows the 'Inspection Plan' interface for 'Wakefield Hills Apartments'. At the top right is a 'Close Inspection' button. Below the title is a 'Dev Menu' dropdown. The main content is divided into two sections: 'Plan Summary' and 'Notes'. The 'Plan Summary' section contains the following data:

Required Units	8
Occupied Units	10 of 78
Vacant Units	2 of 2
Total Units	12 of 80
Total Buildings	7 of 7

The 'Notes' section is currently empty and has an 'Edit' button. Below this is a section titled 'Units planned for Inspection' with an upward arrow. It lists three units:

Unit ID	Address	Bedrooms	Status	Deficiencies	Plan
Inspect Unit 204	Building 1 10820 Oliver Road (NC-05-08001) > Unit 204	3 Bedrooms Occupied	Occupied	3 / 0 Deficiencies	Plan Recommended
Inspect Unit 101	Building 2, 10830 Oliver Road (NC-05-08002) > Unit 101	2 Bedrooms Vacant	Vacant	6 / 1 Deficiency	Plan Recommended
Inspect Unit 203	Building 3, 10810 Oliver Road (NC-05-08003) > Unit 203	3 Bedrooms Occupied	Not Started	Not Started	Plan Recommended

While within a Unit, Mobi keeps up with which rooms have been completed. Deficiencies may be added to a room by selecting from a dropdown list:

This screenshot shows the 'Add deficiency for room 'Bedroom 2'' dialog box. The dropdown menu is open, displaying a list of standard items. The background shows the unit details for 'Building 1 10820 Oliver Road' with three bedrooms, each marked as 'No Observable Deficiency'. The dropdown list includes the following items:

- select item --
- Bath tub and Shower
- Cabinet and Storage
- Call-for-Aid System
- Carbon Monoxide Alarm
- Ceiling
- Chimney
- Clothes Dryer Exhaust Ventilation
- Cooking Appliance
- Door - Entry
- Door - Fire Labeled
- Door - General
- Drain
- Egress
- Electrical - Conductor, Outlet, and Switch
- Electrical - Service Panel
- Electrical - Ground-Fault Circuit Interrupter (GFCI) or Arc-Fault Circuit Interrupter (AFCI) - Outlet or Breaker
- Fire Extinguisher
- Flammable and Combustible Item
- Floor

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Recorded deficiencies display in red, and no deficiencies display in green, to assist with easily identifying problem areas:

Wakefield Hills Apartments Return to Plan

Building 1 10820 Oliver Road (NC-05-08001) > Unit 204
3 Bedrooms Occupied


Bedroom 1 ✓

Updated Wednesday, 10 April 2024 16:54.

No Observable Deficiency Not Applicable Add Deficiency

Bedroom 2 ⓘ

Updated Wednesday, 10 April 2024 17:07.

Item	Deficiency	
Egress	Egress window blocked. Dresser blocking window	

No Observable Deficiency Not Applicable Add Deficiency

Deficiencies that are not associated with a Unit are identified as Inside or Outside. Once a deficiency is selected, more details are provided so the appropriate one may be selected. Click on the camera icon to take as many pictures as needed:

Wakefield Hills Apartments Close Inspection

Observations Add Deficiency

Add observation

Property Location
Outside

Building
-- select building (optional) --

Standard Item
Parking Lot


Parking lot has any one pothole that is 4 inches deep and 1 square foot or greater.

Parking lot has ponding. 📷

* Pooling oil.

* Damages that creates cracks/gaps/spalling/trip hazards.

Comment



Save Cancel

The Preliminary Inspection Report can be viewed for discussion during the exit conference:

Wakefield Hills Apartments Close Inspection

Preliminary Inspection Report - Physical Inspection

Wakefield Hills Apartments/9001020 04/10/2024 09:00 AM
 10702 Oliver Road, Raleigh, NC 27614

Property Observations

Outside
 Parking Lot
 Parking lot has any one pothole that is 4 inches deep and 1 square foot or greater.


Inside > Building 1 10820 Oliver Road (NC-05-08001)
 Drain
 Drain is fully blocked.

Unit Observations

Building 1 10820 Oliver Road (NC-05-08001) > 204

Bedroom 2
 Egress
 Egress window blocked.

Dresser blocking window



Building 2, 10830 Oliver Road (NC-05-08002) > 101

Kitchen
 Cooking Appliance

Property Buildings Units Plan Observations **Report**

Wakefield Hills Apartments Close Inspection

Building 2, 10830 Oliver Road (NC-05-08002) > 101

Kitchen
 Cooking Appliance
 Primary cooking appliance is missing.

Stove is missing

Building 2, 10830 Oliver Road (NC-05-08002) > 202

Kitchen
 Cooking Appliance
 Primary cooking appliance is missing.

Stove is missing

Units with no deficiencies

Building	Unit	Details
Building 3 , 10810 Oliver Road (NC-05-08003)	Unit 303	3 Bedrooms Occupied
Building 3 , 10810 Oliver Road (NC-05-08003)	Unit 304	3 Bedrooms Occupied
Building 4 , 10840 Oliver Road (NC-05-08004)	Unit 201	2 Bedrooms Occupied
Building 4 , 10840 Oliver Road (NC-05-08004)	Unit 204	2 Bedrooms Occupied
Building 4 , 10840 Oliver Road (NC-05-08004)	Unit 304	2 Bedrooms Vacant
Building 5 , 10850 Oliver Road (NC-05-08005)	Unit 203	2 Bedrooms Occupied
Building 6, 10801 Atticus Road (NC-05-08006)	Unit 301	2 Bedrooms Occupied

Property Buildings Units Plan Observations **Report**

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Once reviewed, the property representative present for the inspection is asked to sign the report. The signature must be saved before the report can be submitted:

Mickey Mouse
mmouse@disney.com

Disclaimer: Issues reported as "Other" instead of a specific category are subject to further scrutiny by leadership. After this preliminary inspection report is issued, all issues marked as 'Other' will be reviewed and possibly reclassified prior to the Compliance Report Letter being issued.

Clear Signature Save Signature Submit Report

Download Preview of Report

Property Buildings Units Plan Observations Report

Once the inspector clicks submit, the inspection and photos are automatically uploaded. Internet access is required for this step. The Preliminary Inspection Report is emailed to the property representative, and is available in the Rental Compliance Reporting System (RCRS). The next step is to complete the Compliance Results Letter and forward for supervisory review using the pre-existing process.

Wakefield Hills Apartments

Units with no deficiencies

Building

Building 3 , 10810 Oliver Road (NC-05-08003)	
Building 3 , 10810 Oliver Road (NC-05-08003)	
Building 4 , 10840 Oliver Road (NC-05-08004)	
Building 4 , 10840 Oliver Road (NC-05-08004)	
Building 4 , 10840 Oliver Road (NC-05-08004)	Unit 304 2 Bedrooms Vacant
Building 5 , 10850 Oliver Road (NC-05-08005)	Unit 203 2 Bedrooms Occupied
Building 6 , 10801 Atticus Road (NC-05-08006)	Unit 301 2 Bedrooms Occupied

Inspection Upload Progress

Uploading image 1 of 2

Cancel