



NCREIF

Document Name: Farmland Property Submission Template – User Guide

I. TABLE OF CONTENTS

I. TABLE OF CONTENTS	2
III. INTRODUCTION	3
A. NCREIF Contacts	3
IV. OVERVIEW	3
A. History of the NCREIF Farmland Indexes.....	3
B. Inherent Limitations	3
V. QUALIFICATION	4
A. Qualification as a Data Contributing Member.....	4
B. General Definition of a NCREIF Farmland Index Qualifying Property.....	4
C. To qualify for inclusion in the NCREIF Farmland Index, a property must be:.....	4
VI. DATA SUBMISSION	5
A. Data Contact	5
B. Timing.....	5
C. Initial Property Setup Overview	5
D. Submission File Overview – change from prior submission	6
1. Tabs	6
2. Templates	6
3. Data Types	7
4. List of Values	7
E. Submission File Tabs.....	7
1. Static Data	7
2. Status Data	8
3. Activity Data	8
4. Transactions	9
VII. APPENDICES	11
A. Appendix 1: Calculation of Net Farm Income	11
B. Appendix 2: Expanded Field Definitions.....	12
C. Appendix 3: Index Formulas.....	17
D. Appendix 4: Market Value Clarification	18
E. Appendix 5: Clarification Statement Regarding Valuation of Equity Interests.....	19
F. Appendix 6: Definition and Calculation of Annualized Rates of Return	20
1. Compounding Income and Appreciation Components of Total Returns	21
2. The Mathematics	21
3. Alternative Solutions	22
4. Conclusion	23
G. Appendix 7: FAQ.....	24

III. INTRODUCTION

Welcome to the National Council of Real Estate Investment Fiduciaries (NCREIF) data submission process.

This manual is your guide to the data collection and submission process used by NCREIF in the production and maintenance of the NCREIF Farmland Index (NFI) and the NCREIF Farmland Database (Database). This manual provides step-by-step instructions on:

- Initial Property Submission
- Quarterly Data Submission
- Property Disposition Submission

You will find within this manual all of the procedures and illustrations of all screens used to submit property data. Contact the NCREIF office if you have any questions regarding any portion of the data submission procedure. There is also valuable information in the appendices, including a 'Commonly Asked Questions' section.

It is our intent to make this manual compatible with the Real Estate Information Standards (REIS). However, the REIS is an ever-changing document, and inconsistencies may occur. These items will be addressed on an ongoing basis as we periodically revise this data collection manual.

Please take the time to read this manual thoroughly, and always feel free to contact our office with any questions you may have.

A. NCREIF Contacts

NCREIF
200 E Randolph
Suite 5135
Chicago, IL 60601

Phone: 312-819-5890
Fax: 312-819-5891
Website: www.NCREIF.org

IV. OVERVIEW

A. History of the NCREIF Farmland Indexes

The NFI is the result of a collective effort of the farmland members of NCREIF to develop a historical measure of the rate of return from institutional farm real estate investments over time. Prior to this effort, no comprehensive ongoing measure of returns for actual farm properties existed. The NFI reflects an aggregate and historical rate of return since the first quarter of 1991.

B. Inherent Limitations

The NFI represents data collected from the Data Contributing Members of NCREIF. Such data, once aggregated, may not be representative of the performance of the farmland property universe. In addition, the data is limited

by the data collection process, including NCREIF's changing membership and changing member portfolios. As indicated below, membership requires that all eligible properties be reported.

The NFI reflects an aggregate and historical rate of return within a limited time horizon--since 1991--and from specific portfolio investments made during that time period. It is not intended to be indicative of single property or portfolio results which can be expected by an investor at any particular time.

The number of observations increases the statistical validity of any index. The users of regional and property type sub-indices are cautioned to consider the number of observations in the data sets.

V. QUALIFICATION

A. Qualification as a Data Contributing Member

In order for your company to maintain status as a Data Contributing Member, you must report quarterly on all properties whether eligible for the NFI or Database or both.

NFI Qualifying Data Contributing Members are investment managers that manage or own institutional real estate that qualifies for inclusion in the NFI, with a market value of at least \$50 million held in a fiduciary setting.

Non-NFI Qualifying Data Contributing Members are investment managers or other corporations who own or manage institutional real estate with a market value of at least \$50 million in a fiduciary setting, but do not currently own or manage properties qualifying for inclusion in the NFI, but with data qualifying for the database.

As a condition of membership, all members must contribute all data relating to their publicly and privately held institutional farmland real estate investments. All data will be reported in the Database and NFI qualifying properties will be reported in the NFI.

B. General Definition of a NCREIF Farmland Index Qualifying Property

To qualify for inclusion in the NCREIF Farmland Index, a property must be:

- An existing wholly owned or joint venture investment in agricultural real estate
- Operating (i.e., not under development)
- Held in a fiduciary environment
- REIS compliant (available at www.NCREIF.org under "Standards") including, but not limited to:
 - Accounted for in the manner described within the NCREIF Market Value Accounting Policy Manual
 - Valued at least quarterly (internally or externally)
 - Externally appraised at least once every three years

C. To qualify for inclusion in the NCREIF Farmland Index, a property must be:

- An existing wholly owned or joint venture investment in agricultural real estate
- Operating (i.e., not under development)
- Held in a fiduciary environment
- REIS compliant (available at www.NCREIF.org under "Standards") including, but not limited to:

- Accounted for in the manner described within the NCREIF Market Value Accounting Policy Manual
- Valued at least quarterly (internally or externally)
- Externally appraised at least once every three years

VI. DATA SUBMISSION

A. Data Contact

You must determine who will be your company's Data Contact. NCREIF strongly recommends that your contact be an individual who is familiar with farmland real estate data, attends the NCREIF conferences, and participates in committee sessions. The individual should have a strong personal computer and technical background with experience in performance measurement. In addition, the individual should have a close proximity to the compilation of the numbers (e.g., an individual from the accounting or portfolio management department).

It is also strongly recommended that the NCREIF Designated Representative, the Data Contact, and an alternate Data Contact read this manual, discuss the procedures, and devise a timely quarterly data submission plan. Quarterly, the Data Contact's responsibilities typically include:

- Completing Submission File
- Reviewing data submission for accuracy
- Understanding and explaining significant return variances
- Reporting and repairing data errors on a timely basis
- Preparing the Data Transmittal letter to facilitate NCREIF's data review
- Submitting completed files and comments to NCREIF
- Responding to questions from NCREIF about submitted data

B. Timing

Approximately two weeks before your data is due, NCREIF will notify you via a submission notification email that the user portal is available to data contributing members. The completed data should be uploaded to the NCREIF website no later than the 15th day of the month following the end of each quarter.

On or around the 18th day of the month following the end of the quarter after the data has been compiled and reviewed by NCREIF staff, a Prelim Index, along with Proof Sheets are made available to the Data Contributor Members from the dimensional model. It is the responsibility of the data contact to approve the proof sheets. This further ensures that the published returns and data are reasonably stated. Once that process is complete and all Farmland Data Contributors send approval via email, the NFI information is posted on the NCREIF web site.

C. Initial Property Setup Overview

PLEASE NOTE REGARDING INITIAL PROPERTY SUBMISSION:

A full quarter of ownership is not required before submitting a new property, provided that you are able to submit a valid end-of-quarter market value along with the initial property submission data. **PLEASE NOTE: Two quarters of data are required before a return is included in the Farmland Index.**

Information should be submitted for a new property when:

- A firm investment cost is available and suitable for use as the initial, valid end-of-quarter market value, or:
- An end-of-quarter appraised, or fair market value is available after acquisition (via purchase or transfer). This may be after a full or partial quarter of ownership.

The property will then enter the NFI when it consecutively amasses either: 1) one partial quarter with a fair value end-of-quarter market value followed by one full quarter of data, or 2) two full quarters of data.

D. Submission File Overview – change from prior submission

1. Tabs

The original excel submission template has been redesigned and now splits the required data into meaningful collections that help you to more easily identify the fields that need to be completed.

It contains four tabs:

Static	Infrequently changing data
Status	Used to record the current metrics/ valuation of the entity
Transaction	To record detailed transactional information for entities that are affected in this submission
Activity	Used to record financial transactions or additional metrics for the entity

Each tab will be explained in further detail in the Submission File Tabs section of this document.

The header in each tab of the submission template, is structured the same way

- Row 1 Meta Data about the template
- Row 2 Name of Data Field to be submitted
- Row 3 Legacy field (name of field in the old templates)
- Row 4 Description of the field
- Row 5 Data Type
- Row 6 Whether data point is compulsory
- Row 7 Example data

2. Templates

Two files are available in the Portal for this submission

Farmland Property Submission Template	This is the base template that should be populated. It contains only those tabs required for submission.
Farmland Property Packaged Template	The packaged version provides additional information; it includes the List of Values, Chart of Accounts, Business rules and a change log (details of changes from version to version of the template)

3. Data Types

Numbers	Must be supplied as numbers; can also contain commas, decimal points, and minus signs, but cannot include any other characters e.g. \$
Text	Alphanumeric values including special characters
ID	Can be alphanumeric. Used as an identifier for Properties or Portfolio
Percentages	Percentage values must be supplied as decimals e.g. 1 represents 100%, 0.8 represents 80%
Lists	You should refer to the List of Values provided for this field and ensure that you are providing a value that matches one of these.

4. List of Values

The list of Values, sometimes referred to as a Value List, is provided as part of the packaged template.

In each tab of the template there are columns identifying the data that is required. In the 5th row is the data type. When the datatype is shown as List, you should refer to the List of Values provided in the LOV Tab (packaged version of the template) for this field and ensure that you are providing a value that matches one of these.

LIST OF VALUES					
Farmland Property	Farm				
Legacy Field	Currency	State	Region	County	Property Type
Tab	New	State	Region	CountyName	Ptype
Constraints	Status	Static	Derived	Static	Static
Notes	Required	Required	Derived	Required	Required
	AED	Alaska	PNW	ABBEVILLE	Developmental Farmland
	AFN	Alabama	Mountain	ACADIA	Mixed-Use Farmland
	ALL	Arkansas	Northern Plains	ACCOMACK	Permanent Farmland
	AMD	Arizona	Lake States	ADA	Annual Farmland
	ANG	California	Corn Belt	ADAIR	
	AOA	Colorado	NE	ADAMS	
	ARS	Connecticut	Other	ADDISON	
	AUD	Washington DC	Annularhian	AIKFN	

- The accepted values for each field are listed from row 8.
- Row 5 details the tab where the value list is used. If the list is noted as being derived, then these are the values used e.g. Region is derived from the supplied County value
- Row 2 details the field that the list is being validated against
- Row 4 shows the legacy field used in the old template

E. Submission File Tabs

1. Static Data

The static tab is provided for you to record the data that changes infrequently for a property. You must include data on a property when you first wish to record its status. You only need to complete data for an existing property if any fields have changed. If nothing has changed e.g. static data remains unchanged and no properties have been acquired/ merged/ split/ renumbered, this tab can be left empty.

New properties (or properties with a new code) will be rejected without the accompanying transaction record.

New fields

Currency	Reporting currency for the property. Refer to the list of Values to populate the correct Currency code.
Farming Method	Record whether the management of the Farmland is Organic or Conventional. Refer to the list of values to populate the correct Farming Method.
Irrigation Type	Record what type of irrigation is used on the land. Refer to the list of values to populate the correct Irrigation Type.

2. Status Data

The status tab contains the fields required to record the valuation/ performance of the property.

New fields

Currency	Must match the Reporting currency for the property Refer to the list of Values to populate the correct Currency code.
Begin Market Value	Beginning Market Value of Quarter. This field should equal the ending market value (End Market Value) from the previous quarter unless there has been a revision in previous period market value this quarter.
Prior Period End Market Value Adjustment	Any adjustments made to the market value of the property as at the end of the prior period.

3. Activity Data

The Activity tab contains the financial metrics/ measures for the property. The Chart of Accounts tab in the packaged template provides the list of expected accounts (type field) and each listed account must be supplied for each property, even if the value is 0.

New fields

Currency	Must match the Reporting currency for the property Refer to the list of Values to populate the correct Currency code.
Type	The name of the accounts that must be provided for each property. Refer to the Chart of Accounts tab in the packaged template for the list of valid Types.
Current Value	
Period Duration	Any adjustments made to the market value of the property as at the end of the prior period.

4. Transactions

The Transactions tab is a new inclusion for the submissions process. It has been added to reduce the number of queries/ issues that have historically been raised through the varying changes to properties.

The transactions tab needs to be completed when

1. This is your first submission, then an acquisition transaction is required to register each property you are submitting
2. Properties have been acquired or disposed in the current reporting period
3. Properties have been merged/ Split in the current reporting period
4. Properties have been renumbered in the current reporting period

Each of the above should be identified by the 'transaction type'. Each type is explained below.

a) Default Fields required for all transaction types

These fields are required for every transaction.

Manager Property ID	Provide the identifier you use for the property
Reporting Period	Date for the reporting period in yyyy-mm-dd format.
Transaction Date	Date the transaction completed
Transacting Member	This will be your organization or the organization you are transacting with. Provided for informational purposes.
Transaction Type	A valid transaction must be included, this must match one of the values provided in the Transaction Type value list.
Ownership percentage	The percentage of legal ownership must be supplied as a decimal value. E.g. 1=100% (following an Acquisition) 0=0% (following a True Sale).
Gross Price	Record the Gross Acquisition or Sale price
Net Price	Record the Net Acquisition or Sale price
Transaction Cost	Record the costs of Acquisition or Sale

b) Non-Default field required for an internal sale

Prior Manager Property ID	Manager Property ID of the split property or Manager Property ID's that have been consolidated/merged
---------------------------	--

c) Acquisition

Each new property is required to have an acquisition transaction. This includes your first submission and for any new property acquired. Two types of transaction are possible and must be recorded

External

When a property is acquired from an external party the default fields listed above should be completed.

The transacting Member will be recorded as the organisation you are buying from.

Internal

An internal Acquisition is used to record the transfer of ownership of a property between Funds/ portfolios that you hold. In the case of farmland, there are no funds, so this is not expected to be required.

The default fields should be completed; it is expected that there is an accompanying disposition record.

- If the property was previously submitted, the Prior Manager Property ID should be provided to assist the tracking of the transaction.
- The transacting Member will be your organization
- Ownership percentage is set to 1

d) Disposition/ True Sale

When a property is sold, the transaction must be recorded. Two types of transaction are possible:

External

When a property is sold to an external party the default fields listed above should be completed.

The transacting Member will be recorded as the organisation you are selling to.

Internal

An internal sale record (True Sale) is used to record the transfer of ownership of a property between Funds/ portfolios that you hold. In the case of farmland, there are no funds, so this is not expected to be required.

- The default fields should be completed
- The Transacting Member will be recorded as your organization
- Ownership percentage is set to 0
- Sales figures are supplied

e) Renumbering

It is possible that you have been required to change the identifiers you use for your properties. When this occurs, you are required to provide a renumbering transaction for each property affected.

- Fill in the default fields
- Manager Property ID will reflect the new identifier for your property
- Prior Manager Property ID will hold the identifier previously used in submissions

f) Consolidation/ Merging of properties

A consolidation transaction is used to record the merging of properties. For each property that is being merged, there will a record recorded in the transaction tab. The transactions are used to identify which properties have been merged and what the new identifiers will be.

- Prior Manager Property ID will contain the identifier of the property that one or more properties are being merged into.
- Any transacting figures should be recorded

g) Split into Multiple Properties

A "split into multiple properties" transaction is used to record the creation of new properties from a single entity.

- Prior Manager Property ID will contain the identifier of the original property that is being split.
- Any transacting figures should be recorded.

VII. APPENDICES

A. Appendix 1: Calculation of Net Farm Income

Net Farm Income Calculation	
Income (+)	
Crop Sales	
Inventory Change (less beginning inventory, plus ending inventory)	
Government Payments	
Rent	
Other (Gas, mineral, hunting, etc.)	
Leased Ranchland Income less Non-prorated	
Revenues Equals GROSS FARM INCOME	_____
Direct Expenses (-)	
Accumulated Cost of Growing Crops (Change)	
Inventory and Storage Costs	
Farm Management Fee	
General Farming Expense	
Repair and Maintenance	
Insurance	
Real Estate Taxes	
Leased Ranchland Expenses	
Appraisal Costs *	
less Non-prorated Expenses	
Equals GROSS FARM EXPENSE	_____
Equals	NET FARM INCOME =====

* Appraisal costs should be handled in accordance with the established accounting practice of the fund or investment

B. Appendix 2: Expanded Field Definitions

FIELD	DEFINITION
Acres - Initial Gross Acres	<p>The total acres acquired, rounded to the nearest full acre as of the initial acquisition date (e.g., 319.85 acres would be 320 acres). The acreage will change for any partial sales, or additional purchases/acquisitions considered part of the original property for accounting purposes.</p> <p>In reporting the number of acres in a Pastureland/Ranchland investment, only the number of deeded acres should be included. The number of leased acres (regardless of whether they are owned privately or by a government agency) to which an owner of deeded acres is entitled may increase or decrease over the life of the investment and should, therefore, be excluded.</p>
Acres - Initial Useable Acres	<p>Enter the number of acres used in the actual production of agricultural commodities, rounded to the nearest full acre at the initial acquisition date. Excluding wetlands, roads, farmsteads but include land set aside in a government program.</p> <p>For acquisitions, this indicates the initial acreage acquired or the acreage at the Beginning Market Value Date for existing properties entering the database from new Data Contributing Members.</p>
Acres - Usable Acres	<p>The number of acres used in the actual production of agricultural commodities rounded to the nearest full acre as of the end of the quarter. Excluding wetlands, roads, farmsteads but include land set aside in a government program. The acreage will change for any partial sales, or additional purchases/acquisitions considered part of the original property for accounting purposes.</p>
Acres - Useable Gross Acres	<p>Total acres acquired, rounded to the nearest full acre as of the end of the quarter.</p>
Appraisal Type	<p>The type of appraisal for the period:</p> <ul style="list-style-type: none"> • External - an appraisal by an independent appraiser. • Internal - or in-house appraisal • None - no appraisal has been performed
CapEx Total	<p>The reported total of all expenditures that are capitalized to the property (as opposed to expensed) in accordance with the policy of the fund or investment. If tenant improvements and leasing commissions are capitalized, these should be included.</p> <p>Such costs include those items which become part of the land (trees, irrigation, etc.). Periodic cultural care costs that are capitalized (as inventory or deferred assets) do not affect the property's market value and should not be reported here. Report as capital costs any partial purchases. Partial purchases consist of additional acreage acquired during the quarter and considered a part of the original property for accounting purposes.</p>
Cost Basis	<p>Cost basis is comprised of acquisition cost plus capital improvements, less partial sales. No previously reported unrealized appreciation or negative appreciation should be included in this amount.</p>

FIELD	DEFINITION
County Name and State	The property state and county. If acquisition involves properties in more than one county, enter the county with the most gross acres. If acquisition involves properties in more than one state, it is up to the manager's best judgment as to which state to enter. Factors to consider include acres, rent, and value.
Crop Type	The primary type of crop or crop rotation grown on the property.
Crop Sub Type 1-4	Additional crop type entry for 25% or more of the Farm's total acreage from highest to lowest percentage.
Farming Method	Record whether the management of the Farmland is Organic or Conventional
Fund Name	The name of the fund or single client account the property belongs to
Fund Type	<p>The type of fund the property belongs to:</p> <ul style="list-style-type: none"> • Open-end Fund - A commingled fund* with no finite life that allows continuous entry and exit of investors and typically engages in ongoing investment purchase and sale activities. • Closed-end Fund - A commingled fund* with a finite life (i.e., with a stated maturity or termination date) and few or no additional investors after the initial formation of the fund. • Single Client Account - A separate account established for a singular investor (e.g., a pension fund, a foundation, or an endowment) and in which is held only the properties or property interests purchased by that investor. • Not Elsewhere Classified - The fund is not classified in the above three types. <p>* A commingled fund is a pooled investment vehicle designed for institutional tax-exempt investors. It may be organized as a private REIT, group trust, partnership, corporation, insurance company separate account, or other multiple ownership entities.</p>
Gross Farm Expense	All property-related expenses
Gross Farm Income	All property-related income

Gross Price	<p>The gross sales price paid/received for a property sale before deduction for selling costs and expenses.</p> <p>For an acquisition, indicate the total dollars expended (or total consideration paid for the property) on the date of acquisition by the purchasing entity. Any additional costs related to the purchase of the property incurred after closing are capitalized and are reported in the Capital Expenditures field in the quarterly operating data submission in the period they are paid.</p> <p>Examples include a legal bill or engineering bill that is received, paid, and capitalized at some point after closing, which is directly related to the purchase of the property. If a property is purchased in a series of staged takedowns, report only the dollars expended during the initial stage. Subsequent takedowns are reported in the Partial Purchase field in the quarterly operating data submission.</p> <p>When a new NCREIF member begins reporting data for a property, the Beginning Market Value is the property's value at the beginning of the first quarter for which quarterly operating results are reported. Both Acquisition Cost and Beginning Market Value for leveraged properties is the sum of equity and debt interests.</p>
Investor Type	<p>The investor type for the property:</p> <ul style="list-style-type: none"> · Taxable-Property is held exclusively for taxable investors. · Non-Taxable-Property is held exclusively for non-taxable investors.
Irrigation Type	Record what type of irrigation is used on the land
Management Type	<p>Property management method:</p> <ol style="list-style-type: none"> a. Fixed Rent - Properties that are rented to tenants and the amount of income received in a given period is fixed and will not vary with actual crop production and/or commodity prices. b. Variable Rent - Properties rented to tenants and the amount of income received in a given period can vary with actual crop production and/or commodity prices. c. Directly Operated - The property does not have a farm tenant, and all risks and management responsibilities are assumed and directed by the property owners. d. Fixed Rent All e. Variable Rent All
Manager Property ID	Unique ID used to identify the property. It must be unique in your accounting system and not change from quarter to quarter.
Market Value - Begin Market Value	Beginning Market Value of Quarter is the property's value at the beginning of the first quarter for which quarterly operating results are reported. This field should equal the ending market value (End Market Value) from the previous quarter unless there has been a revision in the previous period market value this quarter.
Market Value - End Market Value	The end of the quarter's current appraised market value, excluding the impact of any mortgage financing. The property's current appraised market value (carrying value) is determined by either an internal or external appraisal as if it were being sold without existing financing.

Market Value - Prior Period End Market Value Adjustment	Any adjustments made to the market value of the property as at the end of the prior period.
Net Operating Income	<p>The net operating income reported should be calculated based on the established accounting practice of the fund or investment and consistent with the results of the property's operations. Where alternative accounting treatments exist, the reports to the Database and Index should be consistent with the accounting practices generally accepted in the United States upon which the audit report for the entity is based. The components of revenues and expenses will be different (as appropriate) based on whether the property is leased or directly operated. (See Management Type below for definitions.) You must enter for net farm income if there has been no activity for the quarter.</p> <p>a. For leased properties, $\frac{1}{4}$ of the fixed annual income is accrued each quarter, regardless of how the amounts are billed. The variable component is accrued when received. These amounts are reported as rental income.</p> <p>b. For directly operated properties, the recognition and reporting of net income depending on whether the property is under development or income-producing.</p> <p>i. For properties under development, gross income is recognized after the harvest is known and reduces the reported market value of the investment. (Balance sheet effect only.)</p> <p>ii. For mature income-producing properties, gross income is recognized after the harvest is known, and such amounts are matched with associated cultural care costs and reported as net income in the income statement. So that the balance sheet account –inventory or deferred asset- is reduced for the associated costs and the appropriate income statement expense accounts are increased.</p> <p>c. Appraisal costs and fund-level asset management fees charged by members are excluded, but property management fees are included in this calculation.</p>
Net Price	Gross Price net of any selling costs and expenses, and before debt. This is mathematically determined, taking into account Adjustments, Gross Adjusted Sales Price, and Selling Expenses. Prorating of operating expenses and any holdbacks should not affect this amount.
Ownership Percentage	Percentage of Asset owned after the transaction. The percentage is represented as a decimal e.g. 1=100% 0.8 = 80%
Partial Purchase	Total purchase cost/price of additional acreage obtained during the quarter. If a partial purchase on an existing farm is purchased during the quarter, indicate cost here. Update acres field as appropriate.
Partial Sales	<p>A partial sale is reported if a portion of the property is sold and the remainder continues under the old ownership and management arrangements. This will change the amounts reported in the acreage fields.</p> <p>Partial sales may include items such as the sale of an easement, a parcel of land, or a single building in an industrial park. Indicate in this column the consideration received, less any selling expenses incurred.</p> <p>For total sales, input as True Sale.</p>

Property Name	Indicate the in-house name of each property (e.g., Fischer Estate Farm). Note that a property is defined as an aggregation of farmland acreage classified as a single unit for market value appraisal.
Property Type	<p>Land use property type</p> <p>a. Annual Cropland - Land that produces a crop that is planted and completely harvested within a specific short-term time period, typically an annual cycle.</p> <p>b. Permanent Cropland - Land used for crops that are planted once and subsequently harvested many times over a period of several years.</p> <p>c. Development - Annual Cropland or existing permanent cropland being totally redeveloped into new permanent cropland. Property would be considered under development until the time it is Income Producing (Mature). (Note: These properties will be included in the database but not the published Index.)</p>
Reporting Period	End date of reporting period YYYY-MM-DD
Transaction Type	<p>Type of transaction:</p> <ul style="list-style-type: none"> • Acquisition - When a property is acquired from an external party or the internal transfer of ownership of a property between funds/portfolios. • Consolidation into Existing Properties - Property reporting is consolidated into the operations of another new or existing property. • No Longer Qualifies - Property does not qualify for entry into the NFI or Database. This disposition code is typically only used for recent properties entered that are found not to be eligible properties or were incorrectly entered as properties. • Owner Exited the database - The manager has discontinued membership or no longer qualifies as a member; properties are disposed with this code. • Property Destroyed - Property has been entirely destroyed and no longer operates. • Renumbered – The property identifier has changed from the prior submission. • Reclassified property type or subtype – Property type or subtype has changed from prior submission. • Split into Multiple Properties - Property reporting is split out into two or more other properties. • Transfer of Ownership -Transfer of ownership to another manager. • True Sale - Full sale of property. If chosen, Gross Price and Net Price should also be entered. Note that partial quarter financial data up to the date of sale is required for true sales.
Transacting Member	Provide the name of the portfolio for internal sales, splits, and merges. For an external sale or acquisition, provide the company name of the buyer or seller.
Transaction Cost	Selling and acquisitions costs - Prorations closing statement, money to buyer and seller and prorated costs

C. Appendix 3: Index Formulas

The NFI formula differs from the NPI with respect to the treatment of net operating income. The quantity in the denominator of each equation is multiplied by 0.5 to reflect a "mid-point assumption" that these flows of cash occur randomly throughout each quarter.

<p>Income Return:</p> <ul style="list-style-type: none">• Measures the portion of total return attributable to each property's net operating income or NOI. Net operating income (NOI) is gross income less operating expenses• It is computed by dividing NOI by the average daily investment for the quarter• The formula takes into consideration any capital improvements and any partial sales that occurred during the quarter $\frac{\text{Net Operating Income}}{\text{Beginning Market Value} + 1/2 (\text{Capital Improvements} - \text{Partial Sales} + \text{Partial Purchases} - \text{NOI})}$
<p>Capital Appreciation Return:</p> <ul style="list-style-type: none">• Measures the change in market value adjusted for any capital improvements or partial sales or purchases that occurred during the quarter• A property's value can go up (appreciation), or it can decline (depreciation) depending on market forces• When a property enters the Index, the appreciation return is not impacted until the second quarter of inclusion $\frac{(\text{Ending Market Value} - \text{Beginning Market Value}) + \text{Partial Sales} - \text{Capital Improvements} - \text{Partial Purchases}}{\text{Beginning Market Value} + 1/2 (\text{Capital Improvements} - \text{Partial Sales} + \text{Partial Purchases} - \text{NOI})}$
<p>Total Return:</p> <ul style="list-style-type: none">• Includes appreciation (or depreciation), realized capital gain (or loss), and income• It is computed by adding the Income return and Capital Appreciation return on a quarterly basis $\text{Total Return} = \text{Income Return} + \text{Capital Appreciation Return}$

Annual and Annual Returns: Computed by chain-linking quarterly rates of return to calculate time-weighted rates of return for the annual and annualized periods under study. For periods over one year, returns are expressed on a return per-year basis.

D. Appendix 4: Market Value Clarification

NCREIF endorses the definition of Market Value as approved and adopted by the Appraisal Foundation, as well as by the Appraisal Institute.

Market Value: Market Value is the major focus of most real property appraisal assignments. Both economic and legal definitions of Market Value have been developed and refined. A current economic definition agreed upon by federal financial institutions in the United States of America is:

The most probable price which a property should bring in a competitive and open market under all condition's requisite to a fair sale, the buyer and seller each acting prudently and knowledgeably, and assuming the price is not affected by undue stimulus. Implicit in this definition is the consummation of a sale as of a specified date and the passing of title from seller to buyer under conditions whereby:

1. buyer and seller are typically motivated.
2. both parties are well informed or well advised and acting in what they consider their best interests.
3. a reasonable time is allowed for exposure in the open market.
4. payment is made in terms of cash in United States dollars or in terms of financial arrangements comparable thereto; and
5. the price represents the normal consideration for the property sold unaffected by special or creative financing or sales concessions granted by anyone associated with the sale.

While the use of "investment (or investor) value" may aid a manager in formulating investment strategies, such as "hold vs. sell" decisions, it is not Market Value. The Market Value of a property represents the best estimate of a transaction price in the current market.

As a further clarification, NCREIF believes that it is reasonable under current market conditions, to assume up to one year to sell a property. Conversely, a marketing period of three years would typically not be appropriate under the Market Value definition. Further, Market Value does not assume a "liquidation sale" (forced sale), which would place undue emphasis on time and cash.

NCREIF recognizes that Market Value is subject to market forces and will experience volatility based on such factors as oversupply, higher perception of risk, etc. It is the intent of NCREIF to promote fair, equitable and timely valuations throughout the institutional community.

Farmland Valuation

Required

1. Consistent with REIS, external independent valuations must be completed every 36 months in accordance with USPAP (Uniform Standards of Professional Appraisal Practice).
2. "Quarterly Value Reporting" is required by REIS. For Farmland data contributors this means that the valuation of each property submitted to the database must be reviewed each quarter. Documentation of such review must be maintained.
 - a. Quarterly reviews should be conducted at the beginning of each quarter (January, April, July, and October). If the quarterly review indicates a material change (greater than $\pm 5\%$ of the latest carrying value) has occurred, the property must be revalued during that quarter.

Recommended

1. Annual valuations.
2. Internal valuation work should be performed in accordance with USPAP

E. Appendix 5: Clarification Statement Regarding Valuation of Equity Interests

Over the years, there have been various discussions regarding the valuation of equity interests in real estate. In an effort to promote greater uniformity and consistency in the valuation process, NCREIF issues the following statement:

In the valuation of equity interests of leveraged properties, the critical premise that must be recognized is that the total value of a property is not influenced by the level and terms of debt. The total value of a property is the value of the equity plus the value of the mortgage. The value of the property may differ from the purchase or the transaction price. The transaction price is the amount of the equity plus the face amount or balance of the existing loan.

Since property value is predicated upon the monetary benefits to be derived from the property as a whole, the capitalization structure dictates only the allocation of these benefits, not the total amount of benefits to be derived.

Just as the relationship of values varies between leasehold and leased fee interests depending upon contractual agreements and market conditions, the portion of overall value to be allocated to the mortgage and equity positions fluctuates with the changes in market interest rates and financing structure. For example, was one to analyze identical industrial properties located side by side and leased to the same tenant at equivalent lease terms with different debt structures, there would be no difference in total property value. However, the allocation of value to the equity interest would be greater for the property enjoying the more favourable debt structure. This enhanced equity position obviously results from a higher level of cash flow after debt service accruing to the equity interest as a result of the favourable financing. Likewise, if the equity holder enjoys a higher participation in the cash flow, the mortgagee's value is diluted as his allocation of cash flow is decreased. In any event, the total value of the properties is identical regardless of debt structure because the cash flow before debt service and property reversion is equal.

NCREIF recognizes that there are several different methods to value equity interests that may be employed. Given proper judgment, the use of these various methods should yield similar results. Regardless of the methods chosen, the value of the debt and the value of the equity should not exceed the value of the property free and clear.

F. Appendix 6: Definition and Calculation of Annualized Rates of Return

The annualized rate of return is sometimes technically called the geometric annual rate of return. It is comparable to the rate quoted by a savings and loan. For example, if you were to invest \$1.00 at 5% per year compounded annually, you would have \$1.05 at the end of the year. The ending value of your investment would be 1.05 times its value at the beginning of the year.

If you were to leave the full amount (original investment plus interest) invested for another year, it would be worth 1.05 times as much at the end of the second year. You would have $1.05 \times \$1.05 = \1.1025 at the end of two years. If you would subtract your original \$1.00 you would find that you had earned \$.1025 or 10.25%. Your total rate of return for the two-year period is 10.25%. Your annualized rate of return would still be 5.0% (the rate at which you invested your \$1.00).

In the example above, we knew the annual compound rate of return and found the rate of return for two years. More commonly, we know a two-year rate of return and need to find the annualized rate, the equivalent of a compound rate. For instance, we might know that we had in the bank \$1.1025 from an investment of \$1.00 exactly two years ago. The ending market value of \$1.1025 is 1.1025 times the original value of \$1.00. The figure 1.1025 is called the return relative. The total two-year rate of return of 10.25% is calculated from the return relative as follows:

$$100(1.1025 - 1) = 10.25\%$$

The annualized rate of 5% can be calculated by taking the square root of the two-year return relative in this manner:

$$1.1025^{.5} = 1.05$$

$$100(1.05 - 1) = 5\%$$

The idea of an annualized rate of return for a portfolio of securities is a little more complex than that for a fixed-income investment because of the uneven earnings pattern. The annualized rate of return is calculated from four or more quarterly rates of return. Portfolio A is a hypothetical portfolio with the following rates of return as of September 30, 2021:

PORTFOLIO A	2019	2020	2021
1st Quarter	-3.0%	20.0%	10.0%
2nd Quarter	(8.0)	15.0	2.5
3rd Quarter	(25.0)	(10.0)	2.0
4th Quarter	9.0	5.0	0.0

The first step in calculating an annualized rate of return is to find the return relative of each quarterly rate. The return relatives for the third quarter of 2021 and the first quarter of 2019 are calculated from the rates of 2.0% and -3.0% respectively, below:

$$1 + (2.0/100) = 1 + .020 = 1.020$$

$$1 + (-3.0/100) = 1 - .030 = 0.970$$

The return relatives for January 2002 through September 2021 are:

PORTFOLIO A	2019	2020	2021
1st Quarter	0.970%	1.200%	1.100%
2nd Quarter	0.920	15.0	2.5
3rd Quarter	0.750	(10.0)	2.0
4th Quarter	1.090	5.0	0.0

To find the annualized rate of return for the year ending September 30, 2021, use the last four quarterly return relatives as follows:

- 1) $1.050 \times 1.100 \times 1.025 \times 1.020 = 1.208$
- 2) $100(1.208 - 1) = 20.8\%$

The portfolio earned 20.8% during the year ending September 30, 2021.

To find the annualized rate of return for the last two years requires an additional step. First, find the two-year return relative:

- 1) $1.090 \times 1.200 \times 1.150 \times 0.900 \times 1.050 \times 1.100 \times 1.025 \times 1.020 = 1.635$

The total two-year return is $100(1.635 - 1) = 63.5\%$. The annualized rate of return is calculated from the square root of the two-year return relative:

- 2) $1.635^{1/2} = 1.279$
- 3) $100(1.279 - 1) = 27.9\%$

The annualized rate of return of 27.9% tells you that you would have been equally well off at the end of the two years to have had your funds in the portfolio with the uneven return earned in the example given above, or in a fund with a return of 27.95% in each of two years.

1. Compounding Income and Appreciation Components of Total Returns

Linking Component Returns Beyond One Quarter

Institutional investors often require that total performance results from real estate be separated into income and appreciation components. Component return information is helpful in understanding the source of performance and this is particularly important with real estate because real estate is relatively less liquid than alternative asset classes. A majority of institutional investment managers and consultants follow an industry practice of calculating time-weighted returns on a quarterly basis and subsequently linking the quarterly returns over longer time periods using a geometric mean linking methodology.

An inherent limitation of component return presentation in conjunction with the current industry practice of linking quarterly returns is that, for time periods beyond one quarter, the sum of the cumulative compounded income return plus the cumulative compounded appreciation return will not equal the cumulative compounded total return. This article examines the problem of compounding component returns beyond one quarter.

2. The Mathematics

The compounding problem may not be intuitive, although it can be described mathematically as shown by the two period geometric mean return linking formula below:

$$(1+I_1+A_1) \times (1+I_2+A_2) = (1+I_1) \times (1+I_2) \times (1+A_1) \times (1+A_2)$$

Where I = income return (decimal) and A = appreciation return (decimal)

The left side of the equation represents the compounding of total investment return over two periods while the right side separately compounds the income and appreciation returns and adds the results together. Multiplying out the terms on the left shows that there are two missing terms on the right: income earned on appreciation and appreciation earned on income:

$$(I1 \times A2) + (A1 \times I2)$$

This may be clearer with an example:

Year	Income	Appreciation	Total Return
1	4.0%	6.0%	10.0%
2	2.0	3.0	5.0
3	5.0	7.0	12.0

Using the same geometric mean return linking methodology, over the three-year period, the average annual total return is 29.4% ($1.10 \times 1.05 \times 1.12 - 1$) and the average annual appreciation return is 16.8% ($1.06 \times 1.03 \times 1.07 - 1$). The difference between these two is 12.6%. Applying the compounding formula to the annual returns produces an average annual income return of 11.4% ($1.04 \times 1.02 \times 1.05 - 1$). In this example, the difference between the compounded average annual total and appreciation returns exceeds the compounded average annual income return by 1.2%.

In Other Words

The compounded total return represents the average annual growth rate of dollars invested if income is reinvested each period and the compounded appreciation return represents the average annual growth rate of dollars invested if income is distributed each period. The compounded income return is the average annual growth rate of dollars invested if income is reinvested but appreciation is distributed each period. Distributing appreciation quarterly is not a feasible investment policy and for that reason, compounded income returns may not be meaningful to investors.

3. Alternative Solutions

Some investment managers and consultants have adopted a practice of manually adjusting either the compounded income return or compounded appreciation return, forcing the return components to add up to the total. While the results "add up", adjusting the calculated returns is a subjective process, which will most likely vary from manager to manager. These differing adjustment approaches lead to a lack of performance comparability between investment managers. For this reason, adjusting component returns in order to make them "add up" is not recommended by NCREIF.

As an alternative, some investment managers do not present component return information for time periods beyond one quarter. These investment managers may present component returns for each annual period and year-to-date for the current year, although, for time periods beyond one quarter, only total return is presented. This approach is consistent with the presentation of returns for alternative asset classes (e.g., the S&P 500 Index for common stocks or the Lehman Brothers Bond Index). While this type of return presentation is theoretically sound and not disputed by NCREIF, it may not satisfy institutional investors' desire for real estate component return data.

A third and final alternative is to calculate and present component returns for extended time periods, without making adjustments that force the components to "add up." As stated previously, compounded income returns may not be meaningful to investors.

4. Conclusion

In conclusion, the sum of the component parts does not always equal the whole. NCREIF recognizes the need to be responsive to the needs of institutional investors. We also need to make them aware of what performance numbers really mean and whether or not the calculations are meaningful. We believe the preferred approach to presenting performance components is to show each component separately, but not to attempt to compound the income component so the numbers "add up."

G. Appendix 7: FAQ

Question Topics
i) Data Deadline
ii) NFI-Eligible Properties
iii) New Property Submission
iv) Property Disposition

i) Data Deadline

1. Question: The data deadline is the 15th of the month following quarter-end. If the 15th falls on a Saturday, Sunday, or holiday, when is the data submission due?

Answer: The submission is always due on the 15th, whether it falls on a weekday, weekend, or holiday. Data submissions are expected to be posted to the NCREIF website on or before the 15th.

ii) NFI-Eligible Properties

1. Question: Are all properties submitted to NCREIF included in the NFI?

Answer: No. Only properties:

- 1) in Permanent or Annual property types

All other properties submitted are included in the NPD and used for research and analysis projects but are not eligible for inclusion in the NFI. See Appendix 1 for a complete table of qualifying characteristics of properties included in the NFI and NPD.

iii) New Property Submission

1. Question: Should 'InitialCost' include all acquisition costs?

Answer: It includes only those recorded when the property is newly reported through the 'Enter New Property' form. Any subsequent to that date should be included in the 'Initial Acquisition Costs' quarterly spreadsheet field.

iv) Property Disposition

1. Question: How should sales of "excess land" associated with a property be reported? Sale of the land/retention of the property? Sale of the property/retention of the excess land?

Answer: The sale of excess land should be reported as a real estate transaction as a partial sale on the quarterly spreadsheet.

2. Question: Is the Gross Sales Price before or after selling expenses?

Answer: It is before reduction for selling expenses and debt obligation.