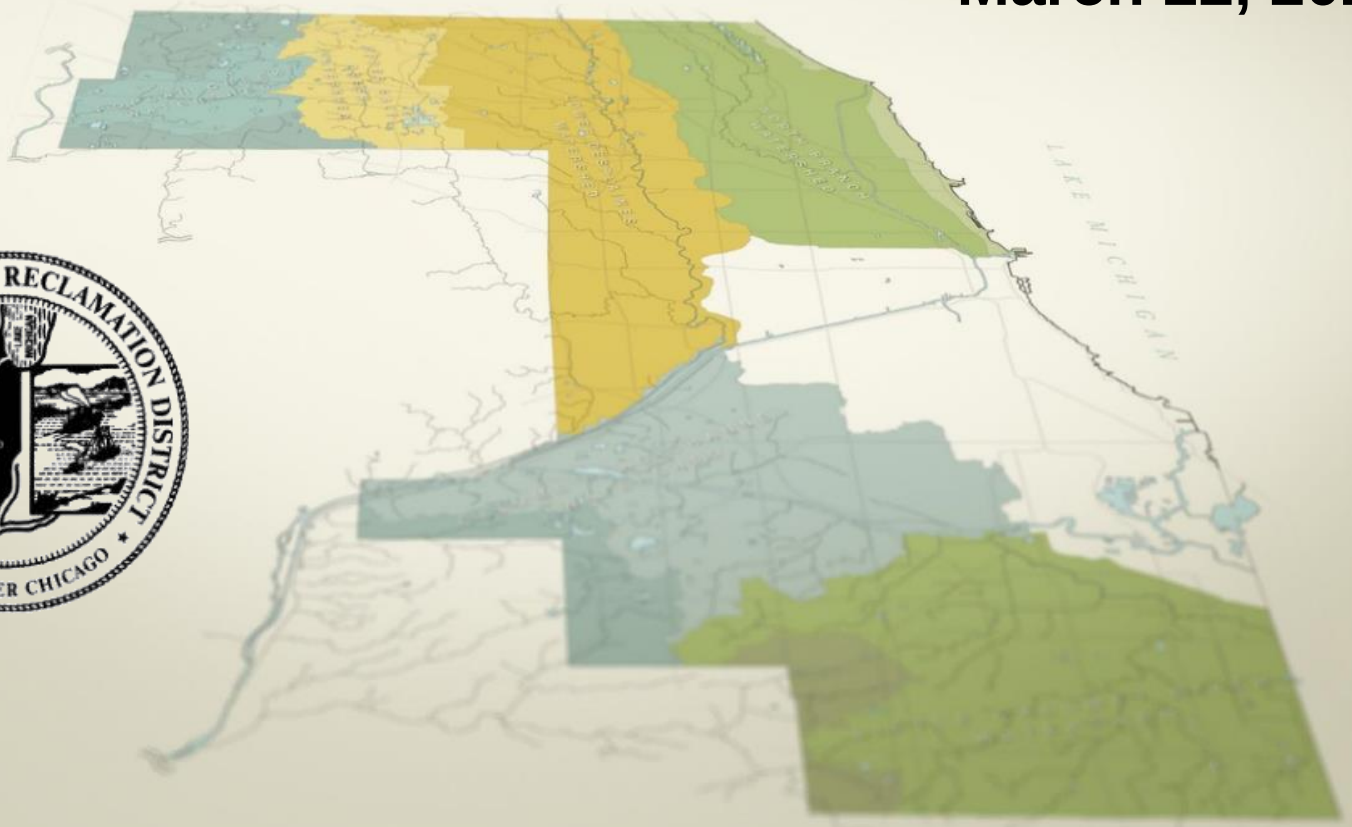
MWRD Volume Control and Detention Trading Seminar

A Training on MWRD's Pilot Project

March 22, 2023



Presented by:
Suhail Patel

Introduction to Stormwater Trading

- Watershed Management Ordinance (WMO) amended on 5/16/19 and 5/7/2020 to allow for volume control and detention trading.
- Technical Guidance Manual (TGM) Article 5 was updated to provide guidance on complying with the technical requirements for offsite volume control and detention facilities.
- The WMO allows for trading to occur throughout Cook County when site constraints or site limitations prevent the development from installing volume control practices or detention facilities onsite.
- The Pilot Program was created to allow trading to occur in the Des Plaines River Watershed and the Little Calumet River Watershed without having to demonstrate a site constraint or a site limitation.
- The Pilot Program is available for projects that submit a permit application and are accepted by MWRD prior to January 1, 2025.

Introduction to Stormwater Trading

Define nomenclature:

- **Supply site** – Provides volume control and/or detention for trading. The facilities must serve areas that are not currently served by a volume control facility or detention facility that complies with current WMO standards (Bulletin 75 rainfall data).
- **Demand site** – The development site that has a *site constraint* or *site limitation* and cannot comply with the volume control or detention requirements and will trade with the "supply site."
- For the Pilot Program, *site constraints* or *site limitations* do not need to be demonstrated within the Des Plaines River and the Little Calumet River Watersheds.

Introduction to Stormwater Trading

- **Site Constraint** (*Volume Control*) – A condition within the development that limits the use of retention-based practices. Site constraints include:
  - Contaminated soils
  - Estimated seasonal high groundwater table
  - Shallow depth to bedrock
  - Floodway
  - Existing wetlands or riparian environments
- **Site Limitation** (*Detention*) – A condition within the development that limits the use of a detention facility. Site limitations include:
  - Floodway
  - Shallow bedrock
  - Extreme topography
  - Existing, fully-developed property holdings without at-grade or underground space

VC Trading Requirements

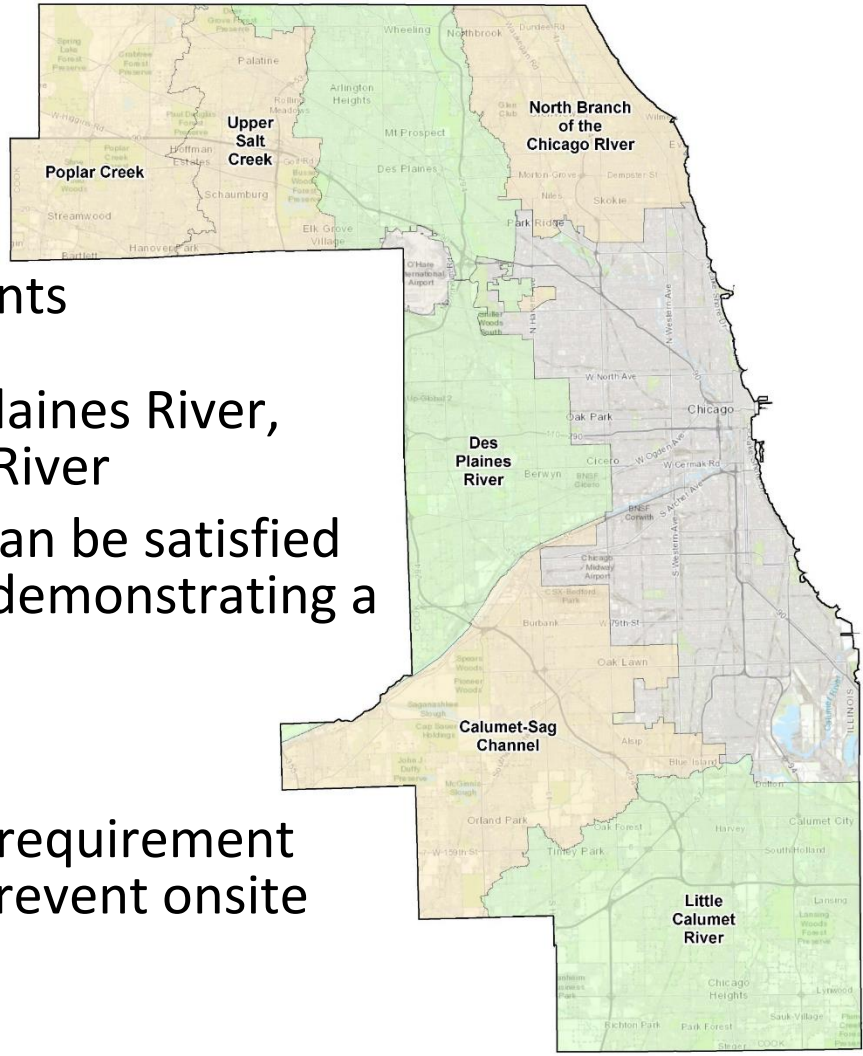
Offsite Volume Control (VC) Requirements - WMO § 503.4 (B)

- **Supply Site** requirements:
  - Same for all Watershed Planning Areas
  - Must be permitted by MWRD

  - Volume Control is sized for 1-inch of stormwater runoff over the existing impervious area
  - The existing impervious area cannot be subject to the VC requirements and unlikely to require VC in the future (cannot provide volume control for same area twice)
  - Normal volume control design requirements apply (See TGM)

VC Trading Requirements

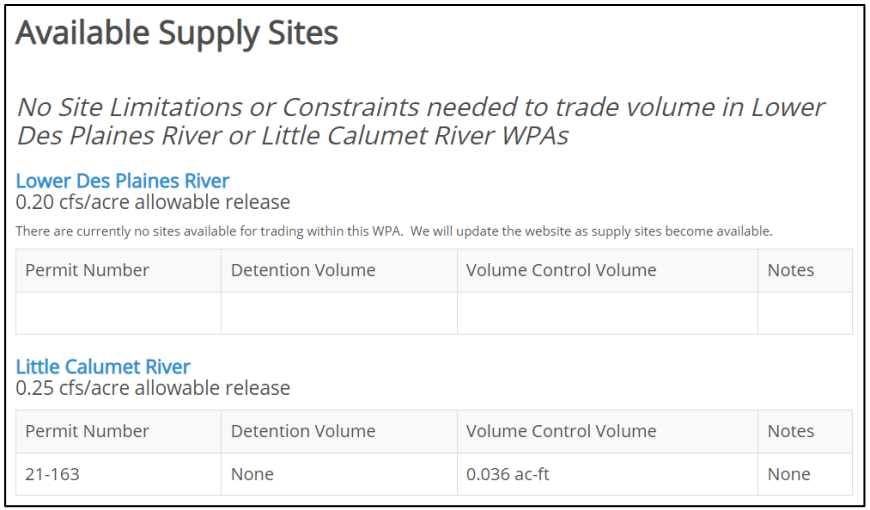
- **Demand Site** requirements:
  - Trades must occur within the same watershed planning area
  - Multiple offsite facilities may be utilized to meet storage requirements
  - Pilot Program Areas (Green): Des Plaines River, Little Calumet River
    - Up to 50% of VC requirement can be satisfied with an offsite facility <u>without</u> demonstrating a *site constraint*
  - All Watershed Planning Areas
    - May provide up to 100% of VC requirement offsite where *site constraints* prevent onsite facilities



VC Trading - WMO Permit Review

As part of the WMO permit review process:

- When an applicant claims a site constraint, the MWRD requires the applicant to contact the municipality about whether offsite volume control is available
  - Use of offsite volume control facility is preferred prior to granting a site constraint
- Owners of supply sites are asked whether they would like their site to be listed on our website



Available Supply Sites

No Site Limitations or Constraints needed to trade volume in Lower Des Plaines River or Little Calumet River WPAs

Lower Des Plaines River
0.20 cfs/acre allowable release

There are currently no sites available for trading within this WPA. We will update the website as supply sites become available.

Permit Number	Detention Volume	Volume Control Volume	Notes

Little Calumet River
0.25 cfs/acre allowable release

Permit Number	Detention Volume	Volume Control Volume	Notes
21-163	None	0.036 ac-ft	None

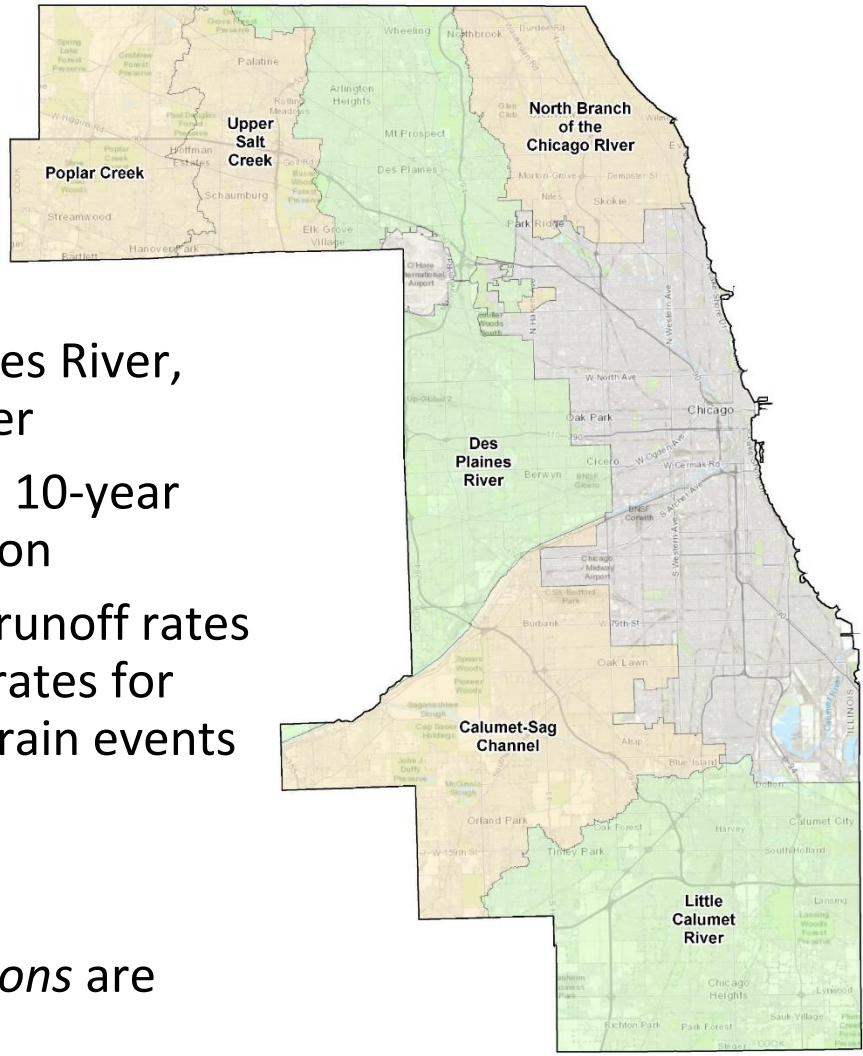
Detention Trading Requirements

Offsite Detention Requirements - WMO § 504.16

- **Supply Site** requirements:
  - Same for all Watershed Planning Areas
  - Must be permitted by MWRD
  - Existing detention volume approved by the District cannot be reduced
  - Tradeable (supply) volume is determined by calculating the runoff volume generated by the area detained
  - The supply site must provide detention for an area which is not expected to be redeveloped and not currently served by a detention facility that complies with current WMO standards (Bulletin 75 rainfall data, cannot provide detention for same area twice)
  - Normal detention design requirements apply (See TGM)

Detention Trading Requirements

- **Demand Site** requirements:
  - Trades must be in same watershed planning area
  - Multiple offsite detention facilities can be utilized to meet requirements
  - Pilot Program Areas (**Green**): Des Plaines River, Little Calumet River
    - Minimum onsite detention for the 10-year storm event with a 24-hour duration
    - Demonstrate that proposed peak runoff rates do not exceed the existing runoff rates for the 2-year, 10-year, and 100-year rain events
    - Calculate runoff volume for trade
  - All Watershed Planning Areas
    - May use offsite where *site limitations* are present and documented



Detention Trading Requirements

- The offsite detention facility (supply site) must obtain a WMO Permit and provide detention for an area that does not require detention
- The offsite detention facility (supply site) and development (demand site) must provide a copy of the perpetual maintenance agreement and the traded runoff volume quantity
- Supply Site must provide detention for traded runoff volume in perpetuity
- If the traded area is developed in the future, and is required to provide detention for that development, the runoff volume from that area can no longer be traded

Pilot Area Detention Trading

- Guidance for detention trading in the Pilot Program areas when detention volume for the 10-yr 24-hour storm event must be provided onsite:
  - Hydrologic modeling software must be used for this analysis
  - Minimum detention volume must be provided onsite for the 10-year 24-hour storm using the watershed specific release rates
  - Demonstrate that proposed peak runoff rates do not exceed the existing runoff rates for the 2-year, 10-year, and 100-year rain events (runoff test)
    - Start with providing volume for the 10-year 24-hour storm
    - Check that the runoff test is satisfied
    - If not, increase detention volume until the runoff test is satisfied
  - Determine runoff volume required for trading with supply sites
    - The runoff volume is based on the difference between the amount detained by the pond and what would normally be detained for the 100-year 24-hour storm
    - A pre-application meeting is recommended for developments planning to utilize offsite detention

Pilot Area Detention Trading

- Additional information can be found in Article 5 of the TGM. View or download the TGM from our website at mwrd.org/wmo
- Applicants seeking offsite volume control or detention trade are also advised to visit our website to find out about available supply as well as contact Metropolitan Planning Council (MPC) / The Nature Conservancy (TNC)

Cut development costs. Generate revenue. Reduce flooding.

StormStore™

contact@stormstore.org | stormstore.org

Attract Development. Generate revenue. Reduce flooding.

StormStore is a marketplace where **public and private landowners** can meet stormwater requirements in a cost-effective way through **buying or trading credits from landowners selling stormwater credits**. Through pro-bono consultation, StormStore helps you enter your project into the marketplace and matches you with a buyer or seller.

Metropolitan Planning Council

The Nature Conservancy

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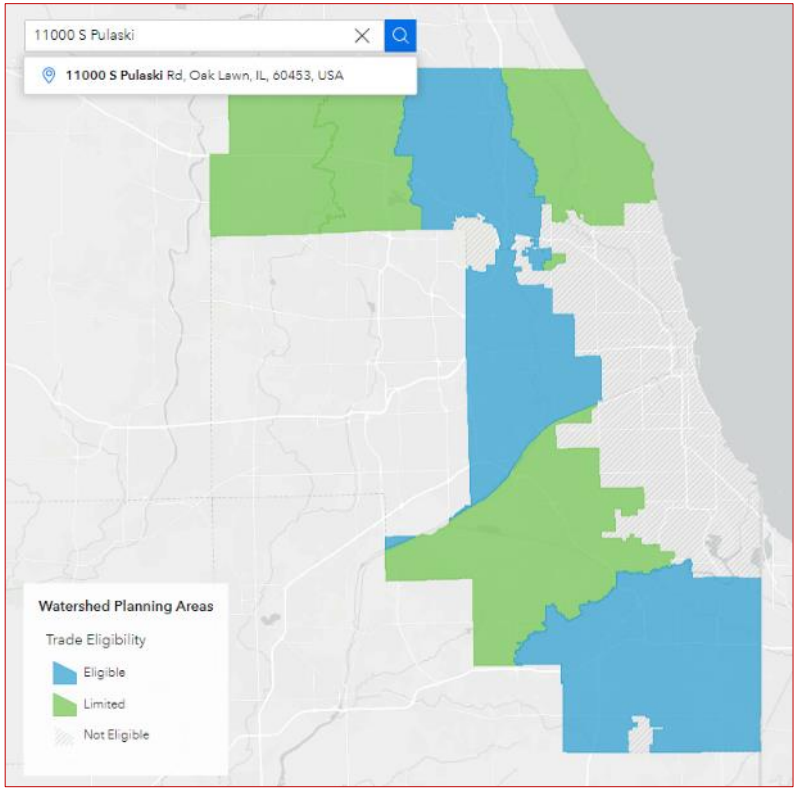
Eligible Areas

Eligible areas. Little Calumet and Lower Des Plaines are the pilot areas that allow landowners in the same watershed to meet their stormwater management requirements offsite.

Limited areas. Landowners may be eligible to purchase credits if the project demonstrates site constraints or limitations

Over 120 Municipalities
eligible to benefit from trading

**Projects funded through MWRD's Stormwater Partnership Programs are not eligible for trading*



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Benefits of Stormwater Trading

- 1 in 5 development projects in Cook County could benefit from StormStore.
- Reducing costs related to site constrains due to stormwater management.
- Non-monetary Benefits of Green Infrastructure.

27,000+ sq. ft.

Average site area freed for development when using StormStore to meet stormwater management requirements

$170,000+

Average development cost savings when using StormStore to meet stormwater management requirements

$100,000+

Average expected income for landowners generating credits for sale

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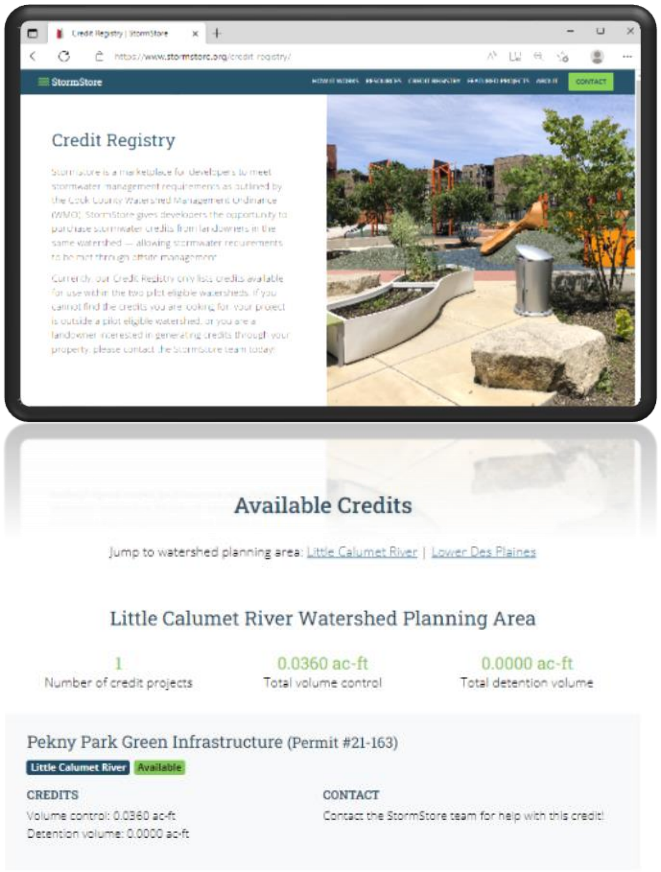
Credit Registry

StormStore is a marketplace for developers to meet stormwater management requirements as outlined by the Cook County Watershed Management Ordinance (WMO). StormStore gives developers the opportunity to purchase stormwater credits from landowners in the same watershed — allowing stormwater requirements to be met through offsite management.

Currently, our Credit Registry only lists credits available for use within the two pilot eligible watersheds.



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Riverdale

Type of project: Rain Garden

Credits Available

Detention	0.0000 ac-ft
Volume Control	0.0360 ac-ft

Purpose: Identified projects via resident-driven community flood assessment. Purpose-built rain garden to generate Stormwater Credits

Purpose-built GSI can ***generate credits and meet a community need***

Franklin Park

Type of project: Detention Pond

Credits Available

Detention	2.4000 ac-ft
Volume Control	0.0000 ac-ft

Purpose: Create a revolving fund for future green infrastructure projects that helpt to reduce heat island effects within community

***Turn stormwater into an asset by** selling credits to developers working within the community*

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Niles

Type of project: Permeable Pavers

Credits Available

Detention	0.0000 ac-ft
Volume Control	0.1460 ac-ft

Purpose: Incentive package for new developments.

The cost difference between pavers and permeable pavers makes it ***a competitive option when there is an opportunity of generating stormwater credits.***

Start your StormStore journey today! Call us or go to stormstore.org to learn more.

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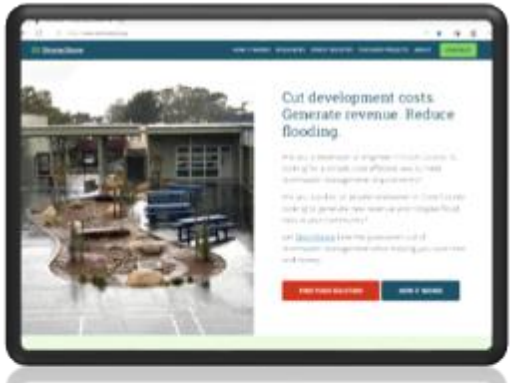

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Thank You!

Questions?

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