

Building Markham's Future Together

**Water Systems Management
Council Workshop
Presentation #4**

Stormwater Funding Options

Nov 8, 2012



Purpose and Outcomes for Meeting

- To advance decisions related to managing storm water in order to proceed to implementation in Thornhill and City-wide.
- The following directions to staff are needed at this meeting:
 - Service Level
 - Implementation timeframe
 - Funding Options (# and type) for inclusion at public consultation
- Presentation today will outline information to assist in making those decisions.

Agenda

- Introduction
- Review Flood Control Strategy
- Review Funding Options
- Combination (Blended) Funding Options
- Key Decisions
- Next steps

Introduction

- **Purpose is to report back on Workshop #3 (May 15, 2012) discussions and to provide Council with a more in-depth review of flood control funding options.**
- **To seek support for proposed flood control strategy, and funding options to advance to public consultation.**

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Flood Control Strategy

- City-wide implementation of flood control requires a strategy including:
 - level of service (affects total cost),
 - implementation timeframe (affects annual cost), and
 - funding option.
- Strategy presented in Workshop #3 included:
 - 5-year level of service for Don Mills Channel, 100-year level of service for West Thornhill, 100-year level of service for Town-wide storm sewers (\$155 M flood control funding gap)
 - 30 year implementation timeframe (\$5 to 6 M annual funding gap)

Costs and Funding

Type of Work	Estimated Cost		Funding Identified
1- Flood Control Allowances	5-year Protection	100-year Protection	
a) Don Mills Channel	\$42M	\$112M	\$0
b) West Thornhill	\$17M	\$40M	\$4M – Gas Tax
c) Town-wide	\$33M	\$77M	\$0
	<u>\$92M</u>	<u>\$229M</u>	<u>Total \$4M</u>
Total Flood Control	\$ 159 M Flood Control Cost		
	\$ 155 M Funding Gap		

Flood Strategy Implementation Time and Components

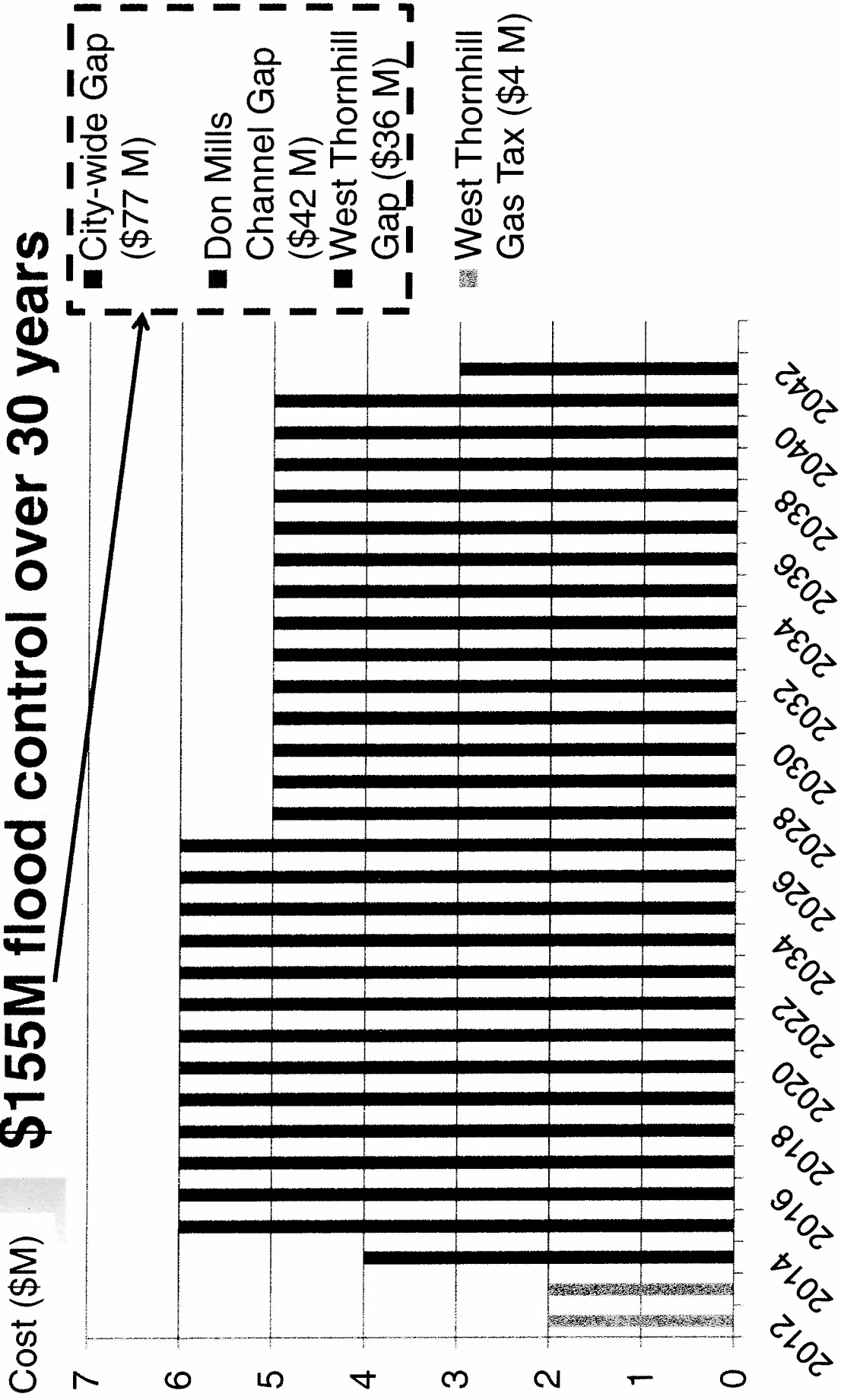
- **30-year strategy components**
 - Year 1-5 : continue West Thornhill design and construction; complete Don Mills Channel Class EA (define capital works) and continue channel maintenance; implement low-cost risk reduction measures City-wide; prioritize projects City-wide based on identified risk and cost-effectiveness of solutions.
 - Year 6-10 : complete West Thornhill implementation; initiate Don Mills capital works; initiate other City-wide Class EAs on a priority basis; continue low-cost measures and prioritization of projects City-wide.
 - Year 11+ : complete Don Mills capital works, lower priority projects and Class EA study implementation; continue low-cost measures and prioritization of projects City-wide.

Flood Strategy Implementation Time – Short Term Requirements

- **Funding is required to support completion of West Thornhill Phase 1 works and remaining works**
 - \$4M is capital project underway for design and construction in WT (supports works through 2013)
 - Further \$3M required to complete Phase 1 (\$7M total)

Example Implementation Strategy:

\$155M flood control over 30 years



Cost Comparison

- **Compared to other municipalities, a 30 year implementation for flood control results in costs per person or per year that are comparable or less than other Ontario municipalities.**
- **Using an annual funding gap for flood control implementation of \$5 – 6M is reasonable to assess impacts of funding options.**
- **Strategy and funding gap could be updated on a 5-year cycle considering to update funding requirements based on completed Class EAs and cost updates and inflation.**

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Funding Source Options

- **#1 - Stormwater Flat Fee per Water Account/Property**
- **#2 - Water Rate Surcharge**
- **#3 - Property Tax Rate Increase**
- **#4 - Local Property Owners only – A charge under Section 391 of the Municipal Act, 2001**
- **#5 - Stormwater Utility – Fees based on runoff potential considering hard surfaces on lots**
- **Assistance by Provincial/Federal Funds – e.g., Canada Gas Tax Fund**

Feedback from Workshop #3 Discussions

- **Effect of Improvements of Property Values**

Appraisers suggested estimating market value adjustments for flood control in a high demand area like Thornhill would be difficult to isolate given all other factors (corner lot, double garage). However they would agree it does add value to property.

- **Financing Duration Compared to Other Local Improvements**

10-year period was assumed in Workshop #3. Some sanitary sewer projects have been financed over 15 years (e.g., Robinson Street Laneway, Milmar Court). Longer periods are added for consideration.

- **Details on Contributing Properties Compared to Class EA Study Areas**

Local charges would include properties that contribute runoff or are within the storm improvement areas, as opposed to properties within the Class EA boundaries.

Feedback from Workshop #3 Discussions

- ‘Pros and Cons’ of funding source options presented at Workshop #3 have been updated.
- Based on advice from the City solicitor, funding options on the basis of water consumption are not recommended (legal challenges for Option #2).
- A stormwater utility approach (Option #5) was not favoured in Workshop #3 feedback due to administrative efforts/resources (e.g., detailed measurement of impervious/paved areas).
- Combining Options: Request to have staff prepare other options which are a combination of a couple City-wide and local funding sources. A single City-wide source is efficient and Option #1 flat fee (or tiered fee) is recommended over Option #3 tax increase since it is more transparent, and can be made more equitable (relate costs to property size as opposed to assessed value).

Two categories of Funding Options:

- 1. City-wide Funding Options**
- 2. Local Charges**

City-wide Funding Options

- **Option #1 – Flat Fee**
 - Residential : in the range of \$3-4/month per water account or property
 - Non-residential : in the range of \$45-60/month per water account

Or average \$ 25 / month per property (can vary by size)
- **Option #2 – Water Rate Surcharge** – legal advice
 - Residential : in the range of approximately \$3-4/month per water account
 - Non-residential : ranges from \$25/month to \$1,000/month per water account
- **Option #3 – Property Tax Rate Increase**
 - One time 4.41% increase, or phased in
 - Residential : approximately \$4/month (average single family)
 - Non-residential : varies according to current value assessment
- **Option #5 – Stormwater Utility**
 - Residential : approximately \$ 4 / month per property (can vary by size)
 - Non-residential : varies with hard surfaces, averages 6 to 7 times residential, on average \$ 25 / month per property
 - : example large properties, e.g., shopping centre \$1000/month, school \$500/month, church \$120/month

Option #4 –Local Charge 10 and 30 year financing timeframe

- Applies to properties in specific areas only (West Thornhill, Don Mills Channel and other areas), no charges outside these specific areas

Assumptions:

- Based on a 30 year implementation strategy
- Based on the estimated number of benefiting properties in the identified improvement areas
- Based on interest rate of 5%

Estimated financial implications:

- West Thornhill: 1 time payment of approximately \$5,400/property, or **\$58/month/property for 10 years or \$27/month/property for 30 years**
- Don Mills Channel: 1 time payment of approximately \$114,000/property, or **\$1,230/month/property for 10 years or \$619/month/property for 30 years**
- Other Specific Areas: 1 time payment of approximately \$6,000/property, or **\$64/month/property for 10 years or \$32/month/property for 30 years**

Option #4 –Local Charge Contributing Properties

- Flood impacts and improvement areas can represent a portion of the Class EA study area. Local charge estimates distribute costs only to properties within or contributing flow to the storm improvement areas, for example:

West Thornhill:

Class EA Study Area – 8500 properties

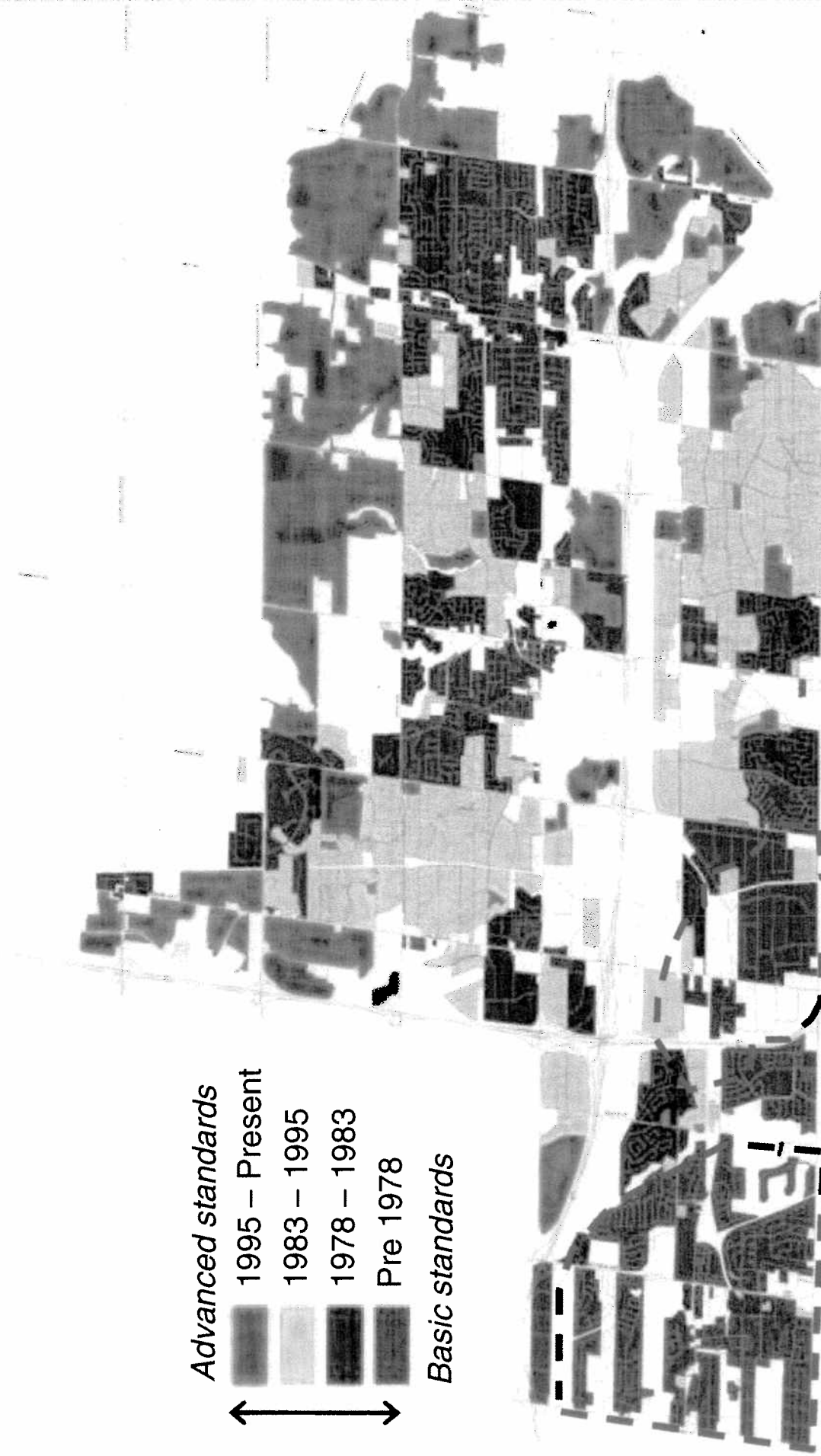
Areas contributing flow to improvement areas - 6700 properties

Don Mills Channel:

Class EA Study Area – 1300 properties

Areas contributing flow to improvement areas - 368 properties

Pre-1978 areas may require local charges



Advanced standards

1995 - Present

1983 - 1995

1978 - 1983

Pre 1978




Basic standards

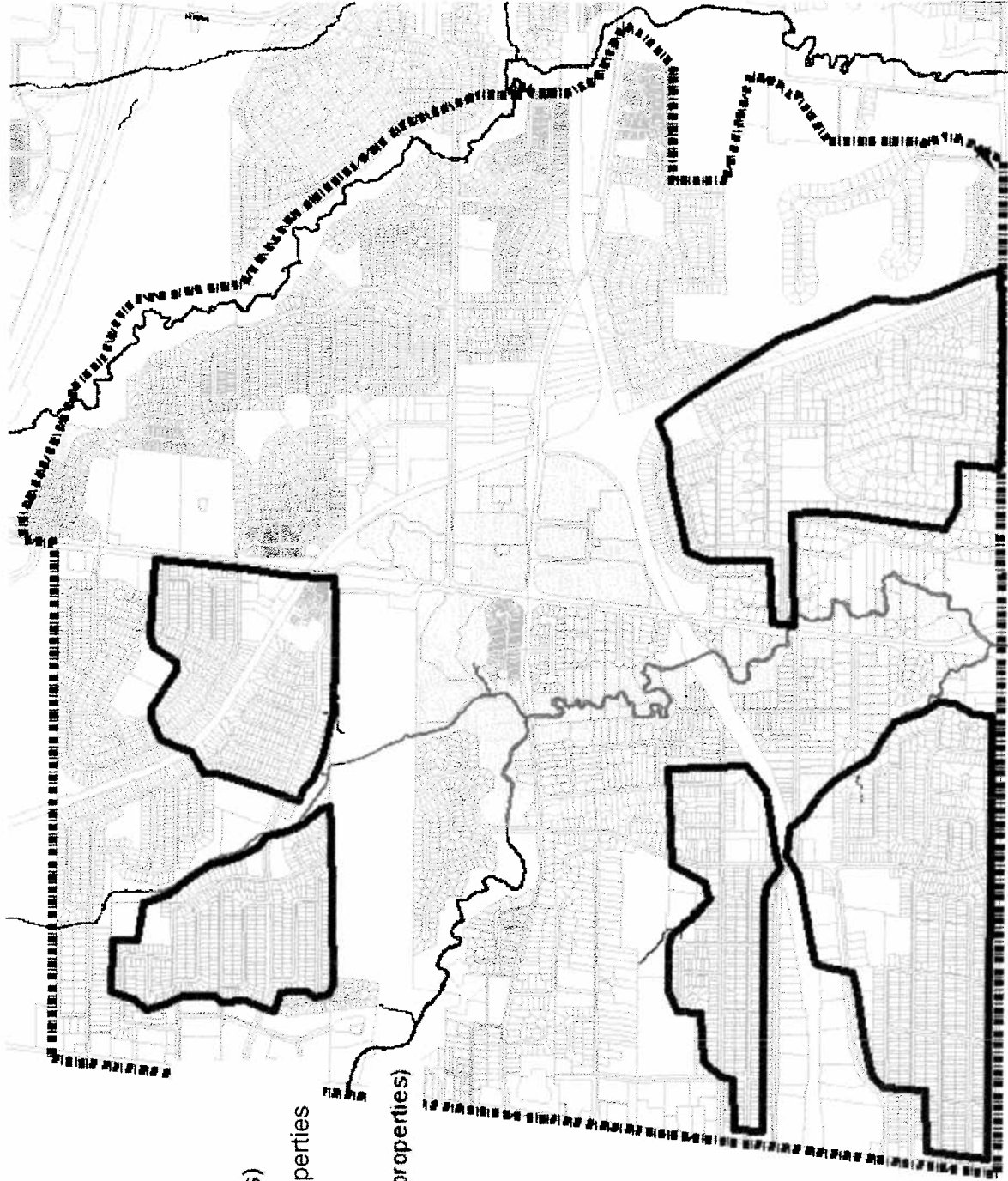
West Thornhill

Don Mills Channel

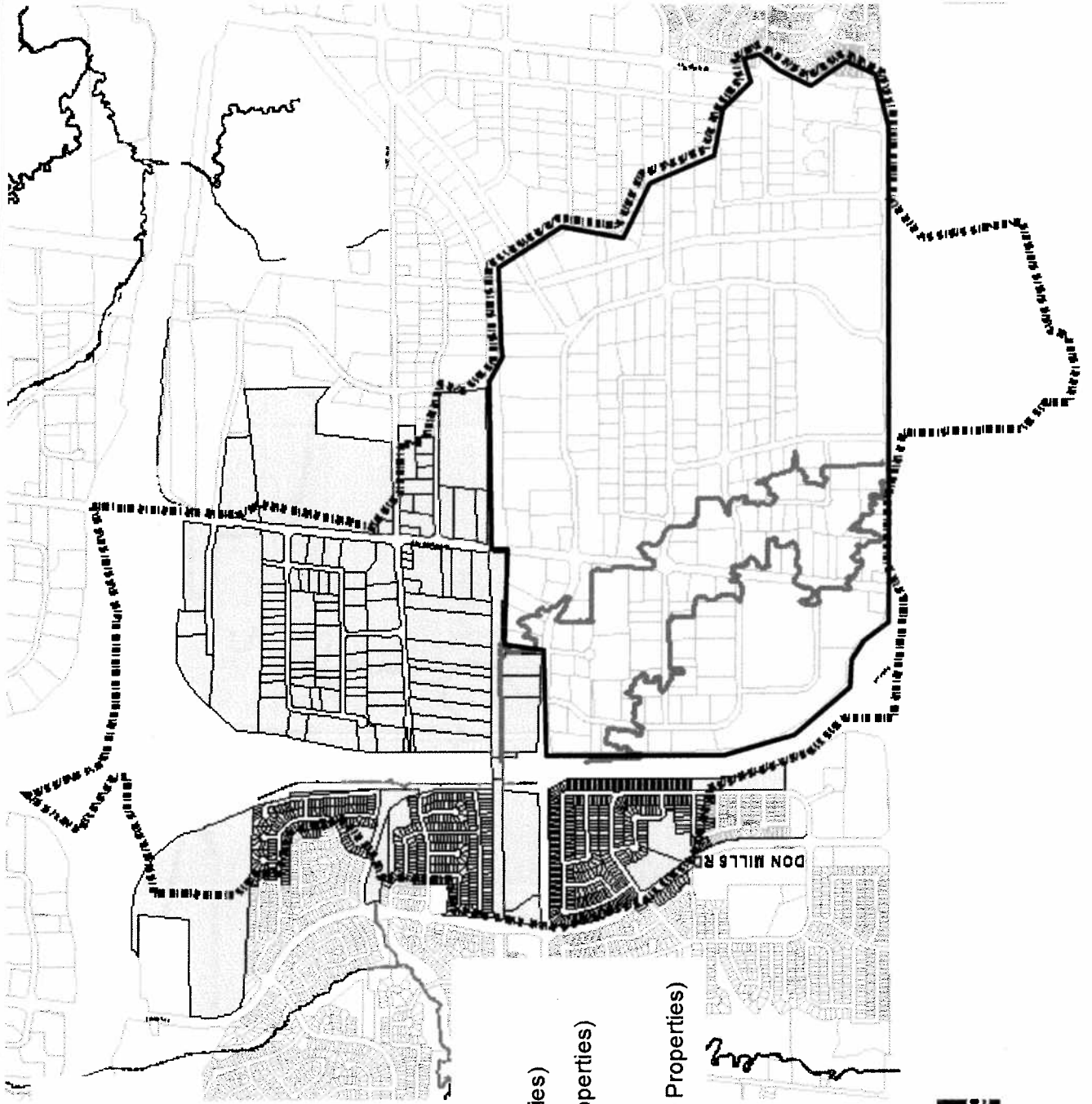
West Thornhill

Legend





-  Class EA Study Area (8500 properties)
-  Storm Improvement Areas (6700 properties within or contributing flow to areas)
-  No Flow to Improvement Area (1800 properties)



Don Mills Channel Areas



Legend

-  Class EA Study Area (1300 properties)
-  Storm Improvement Areas (368 Properties)
-  Floodplain (100 year & Regional)
-  No Flow to Improvement Area (930 Properties)

Option #4 – Local Charge Challenges Defining Contributing Properties

- Contributing Properties do not contribute runoff equally to the improvement areas and may contribute:
 - Sewer Flow Only
 - Sewer Flow and Overland Flow
 - Overland Flow Only
- Sewer contribution areas can be estimated with some confidence but the extent of overland flow contributing areas can only be estimated.
- Where local charges are considered, the divide between contributing, non-contributing, and partially-contributing properties makes allocation of costs uncertain for hundreds of properties.
- It is not common practice to allocate stormwater costs to special areas in this manner (may require field verification, partial charges, and appeals process for disputed boundaries). No other Canadian examples.

Other municipalities – funding

- **#1: Stormwater Flat Fee** – Aurora, London, St.Thomas, Saskatoon, Calgary, St. Albert, Strathcona County/Alberta (certain neighbourhoods), Richmond, Surrey
- **#2: Water/sewer rate surcharge**– Toronto, Regina, Hamilton, Peterborough
- **#3: Property Tax Rate Increase** – Hamilton, Peterborough, Stratford
- **#4: Local Property Owners only – A charge under Section 391 of the Municipal Act, 2001** – no known examples for flood control capital works
- **#5: Stormwater Utility** – Kitchener, Waterloo, Edmonton, approximately 700 US municipalities
- **Assistance by Provincial/Federal Funds** – Stratford, Saskatoon

Funding Source Comparison

Option	Pros	Cons
#1: Flat Fee	Easy to implement, aligned with focus group on sharing costs. Transparent. Can administer through water bill.	Flood control services already paid for in new areas.
#2: Water Rate Surcharge	Easy to implement, aligned with focus group on sharing costs.	Relevant with combined sewers (not appropriate in Markham). Declining revenue with conservation. Legal issues relating flood costs to water use.
#3: Property Tax Rate Increase	Easiest to implement, aligned with focus group on sharing costs, similar to non-flood stormwater funding.	Not apparent where funding goes (requires education on strategy and benefits). Relates flood control costs to property value Town-wide.
#4: Local Property Owners Charge	Consistent with user pay principle.	Contrary to focus group opinion on sharing costs Town-wide. High local costs are a barrier to advancing projects. Complex implementation. Longer timelines.
#5: Stormwater Utility	Aligned with focus group on sharing costs.	Relates flood control costs to property hard surfaces Town-wide. Extensive effort/resources required – separate calculation per property.

Agenda

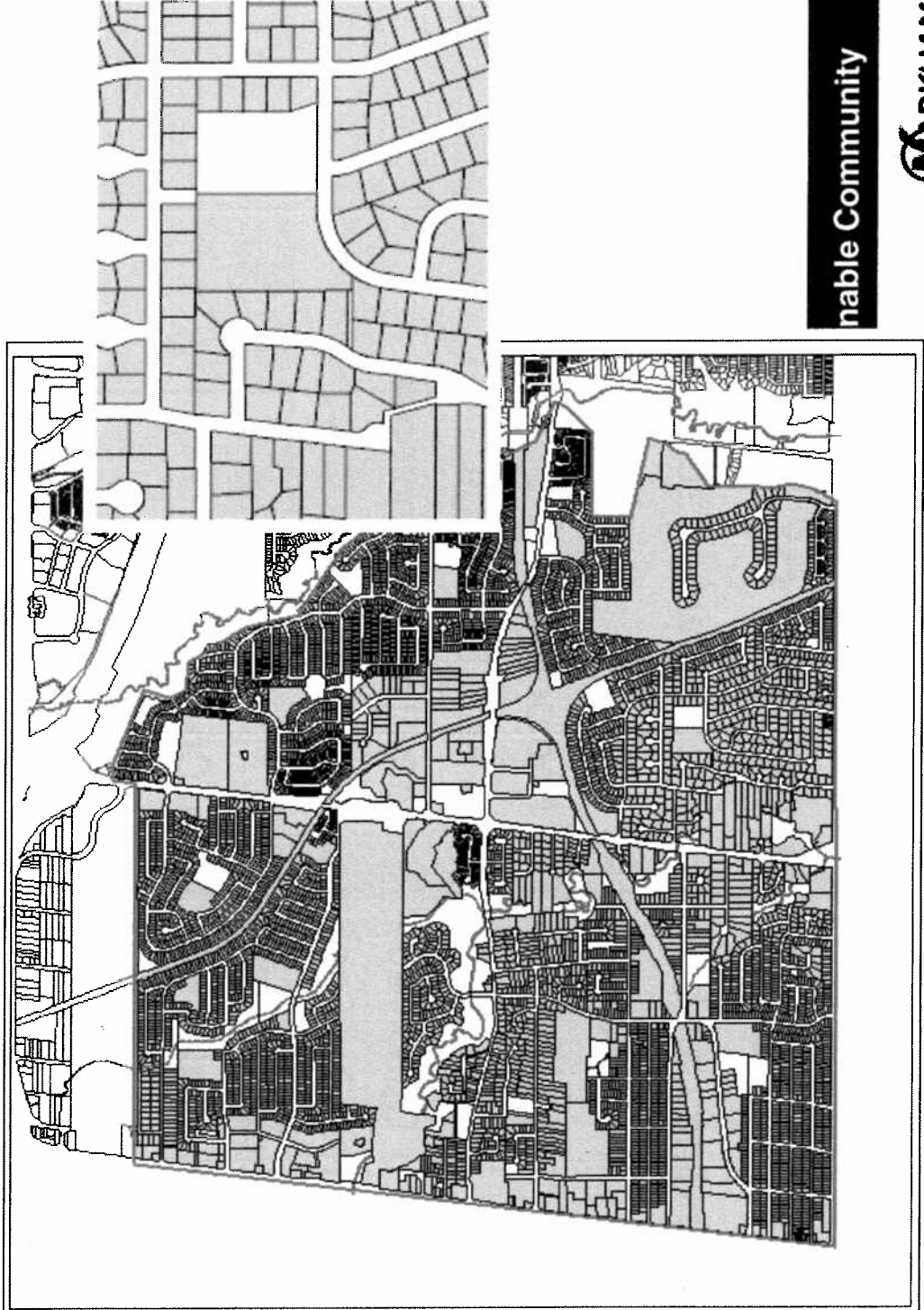
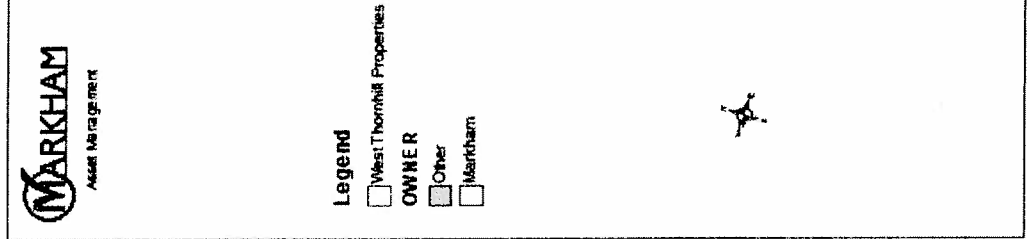
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Combination of Options

- Funding can be distributed between sources:
 - City-wide sources
 - Option #1 – Flat Fee per Water Account or Property
 - Option #2 – Water Rate Surcharge
 - Option #3 – Property Tax Rate Increase
 - Option #5 – Stormwater Utility
 - Local sources
 - Option #4 – Local Charge
- If a combination of City-wide and local sources is chosen, the percentage of the City-wide component can be related to the portion of City lands within the local remediation area (e.g., right of ways, parks).

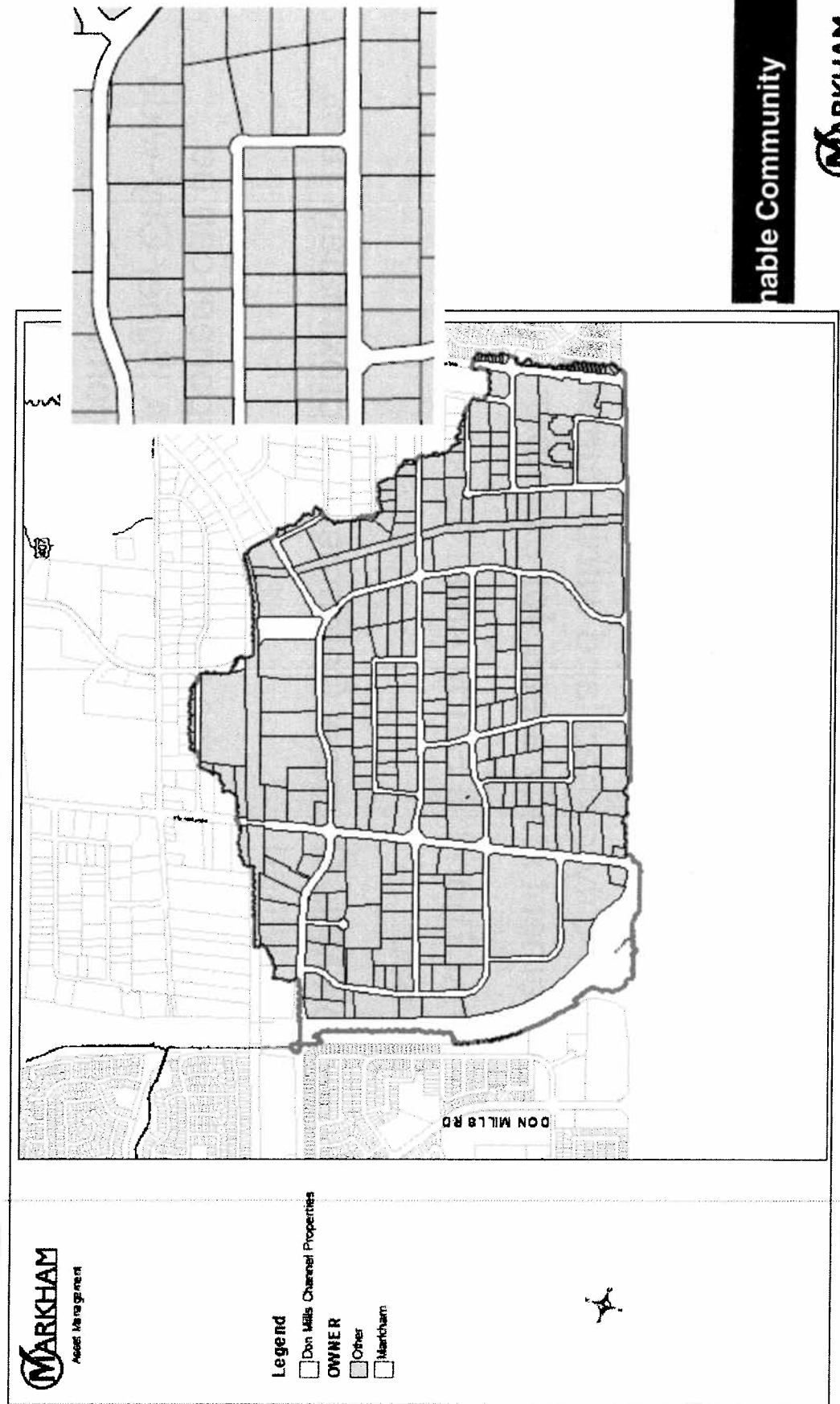
Proportion of City Lands

- West Thornhill Study Area: 26% City-owned (white areas)



Proportion of City Lands

- Don Mills Channel Area: 18% City-owned (white areas)



Combination of Options

- The portion of City-wide funding can be related to the portion of City-owned land within current flood improvement study areas, for example:
 - West Thornhill Study Area: approximately 26 % City-owned
 - Don Mills Channel Catchment: approximately 18 % City-owned
- It is suggested that the City wide component can be estimated to be approximately 25%. A higher City-wide component can be considered given community benefits including traffic safety (reduced roadway flooding) and environmental protection (reduced inflows to sanitary sewer causing spills to watercourses). These benefits could support a 50% City-wide component.

Funding Options / Combinations - Residential

Combination	Distribution of Fees			Estimated Fees per Year (average)	
	City-wide	Local		City-wide Properties	Local West Thornhill Properties
A	100 %	0 %		\$48	\$48
B	75 %	25 %		\$36	\$119
C	50 %	50 %		\$24	\$189
D	25 %	75 %		\$12	\$260
E	0 %	100 %		\$0	\$330

Funding Options / Combinations - Commercial

Combination	Distribution of Fees		Estimated Fees per Year (average)	
	City-wide	Local	City-wide Properties	Local Don Mills Channel Properties
A	100 %	0 %	\$560	\$560 (maximum \$560/yr)
B	75 %	25 %	\$420	\$2280 (maximum \$30,200/yr)
C	50 %	50 %	\$280	\$4000 (maximum \$59,700/yr)
D	25 %	75 %	\$140	\$5710 (maximum \$89,300/yr)
E	0 %	100 %	\$0	\$7430 (maximum \$119,000/yr)

• 30 year financing of local fees. 30 year strategy for city-wide fees. Maximum local approximately 16 times average in Don Mills Channel Area.



Funding Combination Comparison

Combination	Distribution of Fees		Considerations
	City-wide	Local	
A	100 %	0 %	<p>Previous flood control projects funded City-wide.</p> <p>Would support transition to City-wide funding of all stormwater management program costs over time.</p> <p>Administrative efficiency compared to local charges</p> <p>Small proportion of local charge does not warrant the significant administrative efforts/contributing area issues</p>
B	75 %	25 %	<p>Expanded City benefits given traffic safety, and risk of sewage spills to watercourses (due to stormwater entering basements and floor drains)</p>
C	50 %	50 %	<p>City land represents 25% of drainage area and contributes a proportionate fee distributed City-wide</p>
D	25 %	75 %	<p>Suitable if fees benefit only local basement flood risk reduction. Those contributing flow (but who are not flood prone) would also contribute fee.</p>
E	0 %	100 %	

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Key Decisions

- **Staff recommendations for Council in the following areas for their consideration and approval:**
 - Level of Service
 - Implementation Time
 - Funding Sources for Public Consultation

Key Decisions – Flood Strategy Level of Service

- **Previous Decisions by Council – 100 year level of service for West Thornhill**
- **Recommendations for consideration:**
 - 1) That the City's flood control strategy consider a 100-year level of service target for City-wide storm drainage systems, subject to technical feasibility and approval as part of future Class EA's.
 - 2) That the City's flood control strategy consider a 5-year level of service target for the Don Mills Channel drainage system based on its original design, subject to technical feasibility and approval as part of a future Class EA.

(Note: 100-year already approved for West Thornhill (approved Class EA), and watercourse systems are subject to special policies and floodplain management regulations)

Key Decisions – Flood Strategy Implementation Time

- **Recommendations for consideration:**
 - 3) That the City adopt a 30-year implementation timeframe for its flood control strategy
 - 4) That the flood control strategy implement City-wide flood risk reduction projects, prioritized on the basis of identified risk and cost-effectiveness of solutions
 - 5) That the flood control strategy be updated on a 5-year cycle considering projects identified in completed technical studies and updated budget requirements

Key Decisions– Funding Source

Recommendation for consideration:

- 6) That staff consult the public on the following stormwater funding sources:
 - a) 100% City-wide fees,
 - b) 100% Local Charges, and
 - c) 75% Local Charges and 25% City-wide fee
- 7) That staff report back following public consultation and recommend a funding option.

Next Steps

- **Public consultation on the City's proposed Flood Control Strategy and Funding Source options (City-wide and local aspects)**
- **Staff report on the City's Flood Control Strategy and preferred Funding Source including feedback from public consultation**
- **Council decision**
- **Implementation of the strategy**

