

MINNEHAHA CREEK WATERSHED DISTRICT

Rulemaking Task Force

June 26th 2008

6:30 pm

City of Minnetonka Community Center

14600 Minnetonka Blvd

Minnetonka, MN 55345

(952) 939-8390

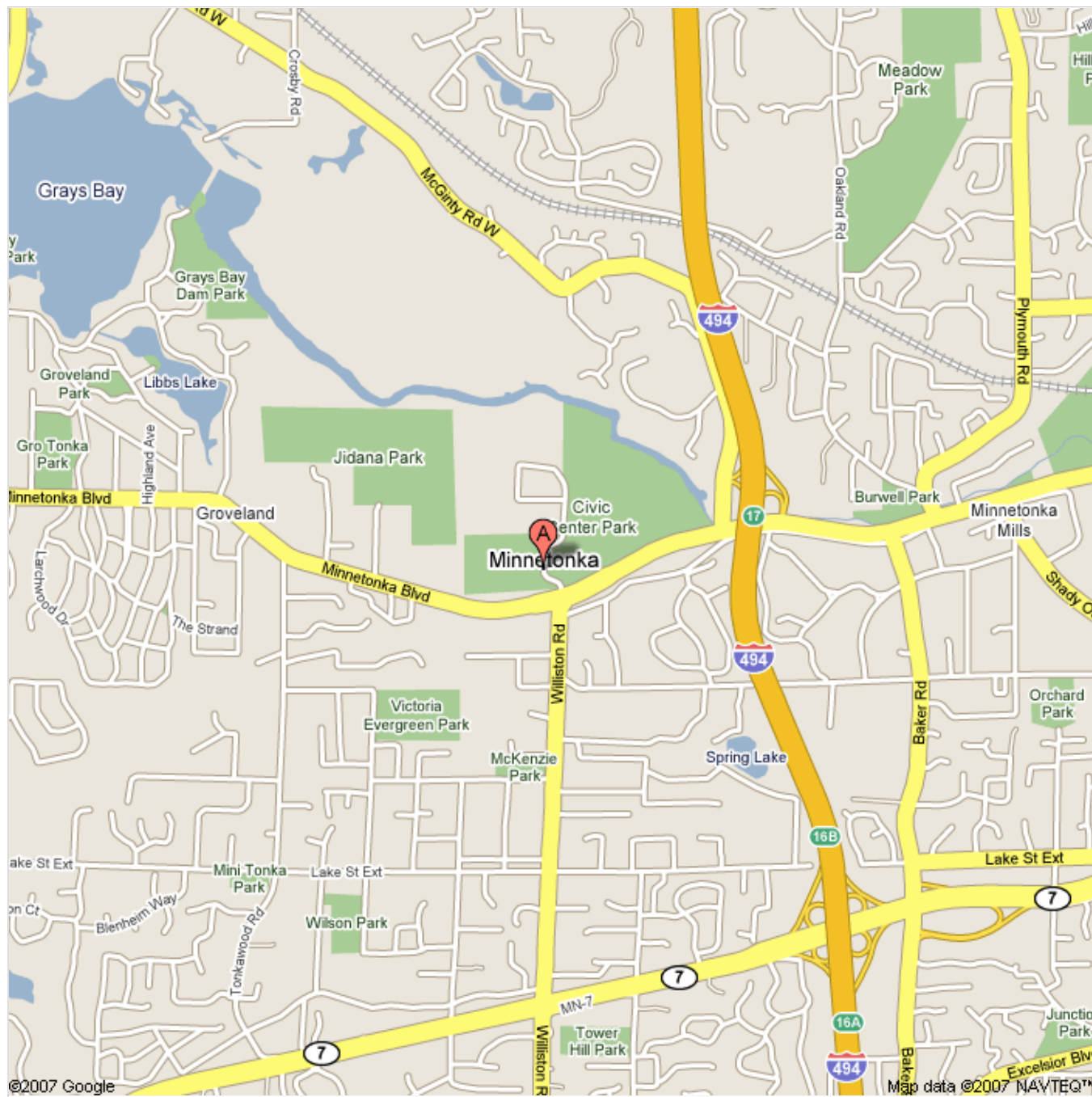
Minnetonka Mills Room (Lower Level)

AGENDA

1. Review Meeting Summary from 5-22-08 (Louis Smith) 10 min
2. Present Formulas for Determining Wetland Buffers (James Wisker) 20 min
3. Discuss Wetland Buffer Formulas 60-120 min



Results 1-1 of about 1 for
**community center near
Minnetonka, MN**



A. Minnetonka **Community Center**
14600 Minnetonka Blvd, Minnetonka, MN
(952) 939-8390

MINNEHAHA CREEK WATERSHED DISTRICT

RULEMAKING TASK FORCE

Summary of May 22, 2008 Meeting

Task Force Members Present: Ginny Black, Tom Cesare, Carole Toohey, Jim Johnston, Jacob Westman, Hal Ulvestad, Steve Mohn, Ethel Smith, Tony Goldstein, Duncan Steinman, Tom Bakritges.

MCWD Managers Present: Jim Calkins, Jeff Casale.

Citizens Present: Jill Crafton, Mark Kjolhaug.

MCWD Staff Present: James Wisker, Louis Smith.

Review of March 27, 2008 Meeting Summary

The Task Force reviewed the summary of the March 27, 2008 meeting and approved it as distributed.

Discussion of Rule D – Wetland Protection

The Task Force reviewed policy issues arising under Rule D, including Buffer Vegetation Performance Standards, Acceptable Wetland Buffer Vegetation, Location of Required Wetland Mitigation, Location of Wetland Banks for Mitigation, and Wetland Excavation. The Task Force generally supported the proposed policies as distributed in the staff report dated May 22, 2008.

Mr. Wisker reported that a proposed approach to a wetland buffer formula – matrix would be presented to the Task Force at the next meeting.

Memorandum

DATE: June 19th, 2008
TO: MCWD Rulemaking Task Force
FROM: James Wisker
RE: June 26th Rulemaking Meeting

During the May 2008 meeting, the Rulemaking Task Force discussed various facets of District Rule D: Wetland Protection. The discussion during the May meeting focused specifically on the following topics within Rule D:

1. Defining performance standards and maintenance obligations for acceptable wetland buffer vegetation.
2. Defining acceptable locations for wetland buffer mitigation and wetland banking.
3. Incorporating restoration standards into the section of Rule D that relates to wetland excavation.

Some minor changes were recommended, however the policy proposals were generally accepted by the Rulemaking Task Force.

The June 26th Rulemaking Meeting will be dedicated primarily to discussing three options for determining appropriate wetland buffer widths for a specific wetland.

The original policy proposed to the Rulemaking Task Force was to base the required wetland buffer width on the management classification of a particular wetland and not on the acreage of the wetland as is the case under the current rule.

This would divide wetland buffer widths into discrete categories associated with the management classifications; Preserve, Manage 1, Manage 2 and Manage 3.

This proposal was rejected by the Rulemaking Task Force on the rationale that wetlands within the same management classification could be placed within that category for different reasons.

For example: a wetland is classified as Preserve if it is rated as ‘exceptional’ for, *vegetative diversity, wildlife habitat, fisheries habitat, aesthetics* or *sensitivity to stormwater impacts*. Likewise, a wetland could be classified as Preserve if it rates as ‘high; for, *shoreline protection* or is rated as ‘high’ in both *vegetative diversity* and *water quality*.

The Rulemaking Task Force asserted that wetland buffer widths should be based on the specific criteria that make up the four management classifications. This would result in a continuous scale of wetland buffers that was performance based and provided a larger buffer for a wetland that rated high in multiple categories rather than just one.

The Rulemaking Task Force also requested that the criteria highlighted in the Westwood Professional Buffer Study also be incorporated to provide an additional level of flexibility within the final rule. These criteria were identified as:

1. Soil Type within the wetland buffer
2. Vegetation Management within the wetland buffer
3. Slope of the wetland buffer
4. Flow Type within the wetland buffer

District staff worked with Wenck Associates to compile three frameworks for determining the required width of a wetland buffer that incorporate the criteria used to determine a wetlands management classification. These criteria are listed below:

1. Vegetative Diversity
2. Wildlife Habitat
3. Fisheries Habitat
4. Aesthetics, Recreation, Education, Cultural
5. Stormwater Susceptibility
6. Wetland Water Quality
7. Hydrologic Regime
8. Flood Storage
9. Wetland Area
10. ‘Special Status’ – Key Conservation Area or Outstanding Resource Value

A brief summary of each framework is provided below. Also included in the packet are three test cases in which each of the three frameworks were applied to a high value wetland. These results are attached as spreadsheets in the back of the packet.

Option 1:

Option 1 is a Weighted Average Criteria method. Each of the ten criteria listed above was assigned a weight. This weight correlates to the relative impact that a wetland buffer will have on that specific criteria. For example; a large wetland buffer may have a greater positive impact on *vegetative diversity* than it would on *fisheries habitat*.

In addition, each Criteria Rating, determined by the District's Function and Value Assessment, (Exceptional, High, Moderate, Low) was assigned a required wetland buffer width.

By multiplying the Weight by the Required Buffer Width a 'Weighted Buffer Width' is determined. These widths are totaled to obtain the required 'Minimum Wetland Buffer Width'.

A similar table was crafted for variable, site specific criteria identified in the Westwood Professional Buffer Study. The total determined from this table is 'Additional Required Buffer'. These widths could be reduced by actions taken by a developer on site. For example, slope could be modified and runoff flow could be concentrated or sheet flow.

The total from Table 1 and Table 2 are added together for a total wetland buffer width.

Option 2:

Option 2 operates much in the same way as Option 1. However, Option 2 utilizes a score rather than a required buffer width.

The scores correlate to tables with discrete buffer widths for a range of scores. This results in five categories of wetland buffer widths while Option 1 results in a more continuous scale of buffer widths.

Option 3:

Option 3 is not a weighted method, consequently, each of the ten criteria carry equal weight. This method focuses primarily on the number of criteria that are ranked high for a given wetland. Similar to Option 2, this option utilizes a scoring system with discrete wetland buffer widths broken into five categories.

Summary:

All three options are performance based options that rely on the specific criteria rankings of an individual wetland.

Option 1 provides a continuous scale of wetland buffers and does not break buffers into discrete categories. This option most closely represents the Rulemaking Task Forces direction provided during previous meetings.

It is important to note that the required buffer widths and weights assigned to each criterion may be adjusted up or down depending on recommendations from the MCWD Board of Managers, Rulemaking Task Force and Technical Advisory Committee.

Adjusting these values will not materially impact the proposed framework.

Statistical Analysis:

District staff in conjunction with Wenck Associates also performed a statistical analysis of each of the three options. This analysis was performed to illustrate the frequency of various wetland buffers using specific wetland information found in the District's Functional Assessment of Wetlands. These were then compared against the existing Rule D framework which bases the width of the wetland buffer on the size of the wetland basin.

These distributions can be found in the packet.

Requested Action by the Rulemaking Task Force:

District staff is asking the Rulemaking Task Force to consider the three options presented and provide feedback on which option most closely represents the direction originally provided during previous meetings.

Once a preferred option is established, specific modifications to that option can be discussed.

Option 1: Weighted Average Criteria

Step 1: Determine minimum required buffer width from Table 1 by summing Weighted Buffer for wetland criteria.

Step 2: Determine additional buffer width from Table 2 by summing Weighted Buffer for buffer criteria.

Step 3: Determine the total required buffer width by summing the minimum buffer width and additional buffer widths from steps 1 and 2.

Step 4: Determine whether the proposed buffer is impacted in any location downgradient from disturbed areas. If no impact, no further action is required. If impacted, buffer mitigation must be provided.

Table 1: Wetland Criteria

Criteria	Buffer Benefit ²	Criteria Rating	Recommended Buffer (ft)	Weighted Buffer ³
Vegetative Diversity	0.3	Exceptional	24	7.2
Wildlife Amphibian Habitat	0.3	Exceptional	24	7.2
Fisheries Habitat	0.2	Exceptional	24	4.8
Aesthetics Recreation Education Cultural	0.1	Exceptional	24	2.4
Stormwater Susceptibility	0.2	Exceptional	24	4.8
Wetland Water Quality	0.1	High	20	2
Hydrologic Regime	0.1	High	20	2
Flood Storage	0.1	High	20	2
Wetland Area	0.2	≥ 5 acres	24	4.8
Special Status ¹	0.4	Yes	20	8

¹ Outstanding Resource Value, Key Conservation Areas, etc.

Total = 46.0

² Buffer Benefit: Comparative benefit that buffer provides to protect specific criterion

³ Weighted Buffer: Product of Buffer Benefit and Recommended Buffer Width

Table 2: Buffer Criteria

Criteria	Treatment Benefit ⁵	Criteria Rating	Recommended Buffer (ft)	Weighted Buffer ³
Buffer Soil Type	0.1	C/D	16	1.6
Buffer Vegetation	0.3	Mowed	16	4.8
Buffer Slope (%)	0.2	≥ 18 %	24	4.8
Inflow Flow Type	0.2	Shallow Concentrated Flow	16	3.2

⁵ Treatment Benefit:

15.0

Minimum Buffer Required: 46 feet

Additional Buffer Required: 15 feet

Total Required Buffer: 61 feet

Criteria Rating	Buffer Width (ft)
Exceptional	24
High	20
Moderate	16
Low	8
≥ 5 acres	24
< 5 acres	20
< 2.5 acres	16
< 1 acre	8
Special Status = Yes	20
Special Status = No	10

Criteria Rating	Buffer Width (ft)
Soil A/B	8
Soil C/D	16
Vegetation Mowed	16
Vegetation Unmowed	8
≥ 18 %	24
< 18 %	20
< 12 %	16
< 6 %	8
Sheet Flow/Curb Gutter	8
Shallow Concentrated Flow	16

Option 2: Weighted Average Criteria

Step 1: Determine minimum buffer score from Table 1 by summing the score for each wetland criterion.

Step 2: Determine minimum buffer width from Table 2 based on the average Wetland Criteria Score (Step 1).

Step 3: Determine additional buffer score from Table 3 by summing the score for each buffer criterion.

Step 4: Determine additional buffer width from Table 4 based on the average Buffer Criteria Score (Step 3).

Step 5: Determine the total required buffer width by summing the minimum buffer width and additional buffer widths from steps 2 and 4.

Step 6: Determine whether the proposed buffer is impacted in any location downgradient from disturbed areas. If no impact, no further action is required. If impacted, buffer mitigation must be provided.

Table 1: Wetland Criteria

Criteria	Buffer Benefit ²	Criteria Rating	Score ³	Weighted Score ⁴
Vegetative Diversity	0.15	Exceptional	4	0.6
Wildlife Amphibian Habitat	0.15	Exceptional	4	0.6
Fisheries Habitat	0.1	Exceptional	4	0.4
Aesthetics Recreation Education Cultural	0.05	Exceptional	4	0.2
Stormwater Susceptibility	0.1	Exceptional	4	0.4
Wetland Water Quality	0.05	High	3	0.15
Hydrologic Regime	0.05	High	3	0.15
Flood Storage	0.05	High	3	0.15
Wetland Area	0.1	≥ 5 acres	4	0.4
Special Status ¹	0.2	Yes	3	0.6

¹ Outstanding Resource Value, Key Conservation Areas, etc. (Yes = 3, No = 1) 3.65

² Buffer Benefit: Comparative benefit that buffer provides to protect specific criterion

³ Score: For example, Exceptional = 4, High = 3, Medium = 2, Low = 1

⁴ Weighted Score: Product of Value and Score

Table 3: Buffer Criteria

Criteria	Treatment Benefit ⁵	Criteria Rating	Score ³	Weighted Score ⁴
Buffer Soil Type	0.125	C/D	2	0.25
Buffer Vegetation	0.375	Mowed	3	1.125
Buffer Slope	0.25	≥ 18 %	4	1
Inflow Flow Type	0.25	Shallow Concentrated Flow	3	0.75

⁵ Treatment Benefit: 3.13

Minimum Buffer Required:	40	feet
Additional Buffer Required:	15	feet
Total Required Buffer:	55	feet

Table 2: Minimum Wetland Buffer

Wetland Criteria Score ²	Buffer Width (ft)
< 1.50	20
< 1.75	25
< 2.00	30
< 2.50	35
≥ 2.50	40

Table 4: Additional Wetland Buffer

Buffer Criteria Score ²	Buffer Width (ft)
< 2.0	5
< 3.0	10
≥ 3.0	15

Criteria Rating	Buffer Width (ft)
≥ 18 %	4
< 18 %	3
< 12 %	2
< 6 %	1
Concentrated Flow	3
Sheet Flow/Curb & Gutter	1
Mowed	3
Unmowed	1

Option 3: Equal-Weighted Average Criteria

Step 1: Determine minimum buffer score from Table 1 by averaging the score for each wetland criterion.

Step 2: Determine minimum buffer width from Table 2 based on the average Wetland Criteria Score (Step 1).

Step 3: Determine additional buffer score from Table 3 by averaging the score for each buffer criterion.

Step 4: Determine additional buffer width from Table 4 based on the average Buffer Criteria Score (Step 3).

Step 5: Determine the total required buffer width by summing the minimum buffer width and additional buffer widths from steps 2 and 4.

Step 6: Determine whether the proposed buffer is impacted in any location downgradient from disturbed areas. If no impact, no further action is required. If impacted, buffer mitigation must be provided.

Table 1: Wetland Criteria

Criteria	Criteria Rating	Score ²
Vegetative Diversity	Exceptional	4
Wildlife Amphibian Habitat	Exceptional	4
Fisheries Habitat	Exceptional	4
Shoreline Protection	High	3
Aesthetics Recreation Education Cultural	Exceptional	4
Stormwater Susceptibility	Exceptional	4
Wetland Water Quality	High	3
Hydrologic Regime	High	3
Flood Storage	High	3
Downstream Water Quality Protection	High	3
Wetland Area	≥ 5 acres	4
Special Status ¹	Yes	3

¹ Outstanding Resource Value, Key Conservation Areas, etc. (Yes = 3, No = 1) 3.50

² Score: For example, Exceptional = 4, High = 3, Medium = 2, Low = 1

Table 3: Buffer Criteria

Criteria	Criteria Rating	Score ²
Buffer Soil Type	C/D	2
Buffer Vegetation	Mowed	3
Buffer Slope	< 18 %	3
Inflow Flow Type	Shallow Concentrated Flow	3.0

2.75

Minimum Buffer Required: 40 feet

Additional Buffer Required: 10 feet

Total Required Buffer: 50 feet

Table 2: Minimum Wetland Buffer

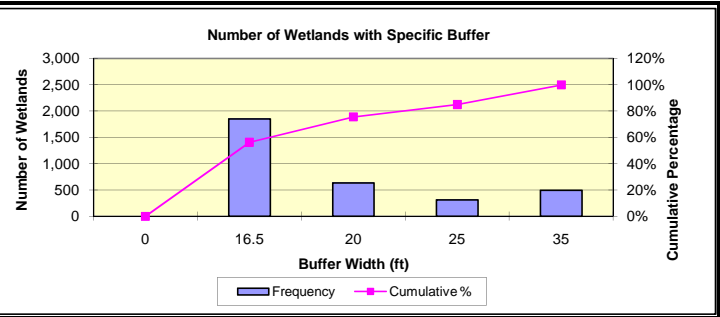
Wetland Criteria Score ²	Buffer Width (ft)
< 1.50	20
< 1.75	25
< 2.00	30
< 2.50	35
≥ 2.50	40

Table 4: Additional Wetland Buffer

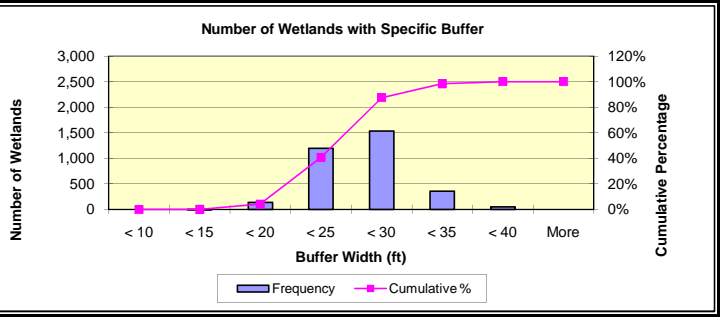
Buffer Criteria Score ²	Buffer Width (ft)
< 2.0	5
< 3.0	10
≥ 3.0	15

Criteria Rating	Buffer Width (ft)
≥ 18 %	4
< 18 %	3
< 12 %	2
< 6 %	1
Concentrated Flow	3
Sheet Flow/Curb & Gutter	1
Mowed	3
Unmowed	1

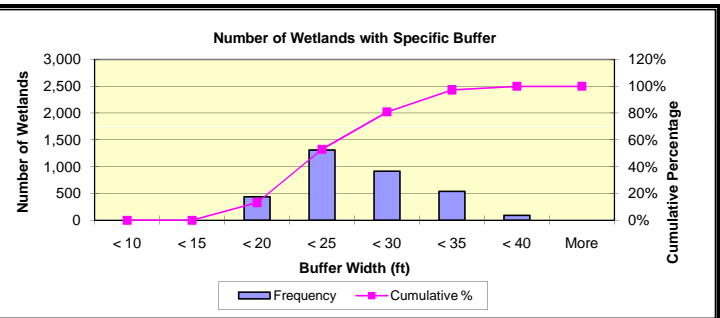
Current Rule - Total Buffer		Bin	Frequency	Cumulative %
		0	0	0.00%
Mean	20.73689823	16.5	1849	56.34%
Standard Error	0.113540443	20	635	75.69%
Median	16.5	25	308	85.07%
Mode	16.5	35	490	100.00%
Count	3282	More	0	100.00%



Option 1 - Minimum Buffer		Bin	Frequency	Cumulative %
		< 10	0	0.00%
Mean	26.49542962	< 15	2	0.06%
Standard Error	0.059785065	< 20	137	4.24%
Median	26	< 25	1197	40.71%
Mode	24	< 30	1538	87.57%
Count	3282	< 35	357	98.45%
		< 40	51	100.00%
		More	0	100.00%



Option 2 - Minimum Buffer		Bin	Frequency	Cumulative %
		< 10	0	0.00%
Mean	27.77726996	< 15	0	0.00%
Standard Error	0.087402214	< 20	434	13.22%
Median	25	< 25	1307	53.05%
Mode	25	< 30	915	80.93%
Count	3282	< 35	536	97.26%
		< 40	90	100.00%
		More	0	100.00%



Option 3 - Minimum Buffer		Bin	Frequency	Cumulative %
		< 10	0	0.00%
Mean	31.20048751	< 15	0	0.00%
Standard Error	0.088253334	< 20	164	5.00%
Median	30	< 25	633	24.28%
Mode	35	< 30	989	54.42%
Count	3282	< 35	1243	92.29%
		< 40	253	100.00%
		More	0	100.00%

