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" ANALYSIS OF THE NON-FORMAL POLITICAL FACTORS IN THE
DEVELOPMENT OF A COMMUNITY ENVIRONMENTAL ORDINANCE

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ANALYSIS OF THE NON-FORMAL POLITICAL
FACTORS IN THE DEVELOPMENT OF A
COMMUNITY ENVIRONMENTAL ORDINANCE

by

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A thesis submitted in partial fulfillment
of the requirement for the degree of
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Professor William B. Stapp, Chairman
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CHAPTER 1

INTRODUCTION

As American urban areas explode into the countryside and convert former rural lands into suburban areas, extensive alteration of the landscape creates great increases in the instability of the soil and water characteristics of the area resulting in serious problems of soil erosion and sedimentation. Soil erosion may be defined as the displacement of soil by moving water, wind, or gravity. Sedimentation, everpresent twin of erosion, is the process by which mineral or organic matter is transported or deposited by moving water, wind or gravity.

Two inches of rainfall on one acre of ground releases 6,000,000 ft.-lbs. of kinetic energy. As this energy strikes uncovered soil, it loosens the fine materials, breaks up aggregates and produces turbid water. The muddy water sinks into the ground for only a short distance before the interparticle passages in the soil are closed through the deposition of mud in suspension. The remainder of the rainfall then flows away on the surface loaded to capacity with fine sediments.¹

It has been calculated that the total amount of sediment deposited in the nation's rivers, lakes, and other water bodies is in the order of four billion cubic yards each year.² Estimates are that the amount of sediment

¹Twenhofel, W. H., *Principles of Sedimentation*, McGraw-Hill Book Company, Inc., New York, 1950, p. 50.

²Powell, Mel D., Winter, William C. and Bodwitch, William P., *Community Action Guidebook for Soil Erosion and Sediment Control*, National Association of Counties Research Foundation, Washington, 1970, p. 2.

carried by the Mississippi River *daily* past the city of New Orleans is the equivalent of nearly 80,000 gondola cars, each loaded with twenty-five tons of sediment. This would amount to a loaded gondola car passing a given point every eleven seconds.³

Sedimentation increases the chance of flooding due to impaired capacity of streams and rivers to carry off rainwater. Flooding brings standing water to newly swamped areas and kills the trees. It may bring sand sediment to formerly fertile lands and destroy their productivity.⁴ Flood prevention reservoirs are rendered useless as they become filled with sediment while reservoirs for electric power generation lose their efficiency as they become silted. Water supply reservoirs lose storage capacity as sediment replaces their water.⁵ The cost of dredging the sediment from waterways alone approximates 500 million dollars annually. Sixteen million dollars is spent each year removing sediment from irrigation ditches.⁶

³Twenhofel, *op. cit.*, p. 223.

⁴Happ, Stafford C., Rittenhouse, Gordon and Dobson, G. C., *Some Principles of Accelerated Stream and Valley Sedimentation*, Technical Bulletin No. 695, 1940, U. S. Department of Agriculture, Washington, D. C., Superintendent of Documents, U. S. Government Printing Office, Washington D. C., p. 51.

⁵"Sediment - It's Filling Harbors, Lakes, and Roadside Ditches", Agriculture Information Bulletin No. 325, Soil Conservation Service, United States Department of Agriculture, Superintendent of Documents, U. S. Government Printing Office, Washington D. C., 1967.

⁶Powell, *op. cit.*, p. 2.

Sedimentation destroys stream habitats and stream life. Soil particles suspended in the water reduce light penetration and prevent the growth of aquatic plants. Silt covers the stream bottom smothering the habitats of insect larvae. Caddisflies and mayflies are replaced by bloodworms. Siltation kills fish by clogging the gill filaments with silt. Fine particles of suspended feldspar may also cut the gill filaments. Oxygen-carbon dioxide exchange is impeded and the fish die of carbon dioxide retention, insufficient oxygen, or both. Mollusks are similarly affected. Thousands of miles of trout and salmon streams have been destroyed by siltation. Silt clogs the spaces in the gravel nests of trout and salmon reducing the water flow and settling on the eggs. With insufficient water washing them, the eggs die from lack of oxygen.⁷

Sedimentation destroys the spawning beds of other desirable fish and reduces their food supply. Muddy water reduces light penetration and thus hinders the growth of microscopic plants which are the first link in the food chain of game fish. Sediment fills the deep pools that provide refuge for fish during hot or dry seasons and less desirable fish, such as carp, dominate turbid waters as the game fish disappear.

Almost all of the phosphate carried by streams is carried on sediment. Since phosphate is the main cause

⁷Smith, Robert L., *Ecology and Field Biology*, Harper & Row, Publishers, New York, 1966, p. 205.

of eutrophication of streams and lakes, sedimentation is in large part responsible for the eutrophication and loss of many of our fine waters. Similarly, most of the pesticides carried into our lakes are brought there absorbed in sediment particles.⁸

A somewhat surprising effect of sedimentation is the health hazard it presents. Both harmless and pathogenic bacteria are carried either on or with sedimentary particles. Nematodes, also transported on or with sediment, carry within their bodies as many as sixty-five different disease-causing viruses including those causing polio and hepatitis. Further, the nematodes are not affected by chlorination and filtration, the usual treatment for domestic water supplies. The nematodes, in fact, can transport viruses safely through the water treatment processes and deliver them unharmed to the people drinking the water.⁹

Recreation opportunities for boating and swimming are impaired or lost. Lake Barcroft is a 135 acre private lake located near Washington D. C. The lake is so severely sedimented that the community association has spent \$300,000 in four years for dredging the lake and periodic dredging will have to be continued. Not far distant is Lake Accotink, a publicly-owned lake of 130 acres. In recent years sediment from construction has reduced the surface of this

⁸Hale, Daniel, "A Country Doctor Looks at Conservation and Health," *American Forests*, Vol. 76, No. 1, p. 58.

⁹*Ibid.*, p. 58.

lake to less than 90 acres. Much of the present lake cannot be navigated even by flat-bottom boats without running aground.¹⁰

We may categorize three types of erosion and sedimentation. The first is natural and is that which occurs or would occur in the absence of man. The second is rural and is that which is caused by man through agricultural, forestry, or mining activities. The third type is urban and is caused by the disturbances of the landscape in suburban development.

This study is concerned with the third type of erosion and sedimentation. More than 4,000 acres each day are being converted from agricultural land to houses, roads, schools, shopping centers, industries, and other "improvements".¹¹ Such massive development requires massive disturbance of the land involving the movement of millions of tons of topsoil and vegetation. Figure 1.

The effect of road construction on sedimentation has been vividly documented by the consequences of building logging roads in an Experimental Forest in the Northwest. In a 250 acre watershed, 1.7 miles of logging roads were constructed. This construction exposed the mineral soil of 6.2 percent of the area. Rains began shortly after the road was built and the suspended sediment of the stream flow

¹⁰Anderson, Glenn B., "Soil & Water Conservation Comes to Suburban Fairfax County," *Urban Sediment Can Be Controlled*, Proceedings 1966-1, Winter Meeting, Interstate Commission on the Potomac River Basin, Washington, 1966, p. 29.

¹¹Powell, *op. cit.*, p. 3.

reached over 1,700 parts per million. After the same rainstorm streams in an adjacent control watershed without roads had a sediment content of only 22 parts per million. Thus, the watershed with the road construction had a sedimentation rate 81 times greater than the watershed with undisturbed soil.¹²

While sedimentation rates vary both in rural areas and in suburban areas, current research suggests that sedimentation in areas undergoing suburban development can be from five to five hundred times greater than in rural areas. One study on the Potomac River Basin indicated sediment from urban development was 50 times greater than that from agricultural areas. In areas undergoing development, sedimentation reached thirty-nine tons per acre per year.¹³ In the piedmont region of the Potomac River Basin rural areas yielded on the average of 200 to 400 tons of sediment per square mile annually. In the same area from 25,000 to 50,000 tons of sediment were lost annually from each square mile that had changed from rural to urban use.¹⁴

¹²Copeland, Otis L. Jr., "Land Use and Ecological Factors in Relation to Sediment Yields" (Paper Number 11), from *Proceedings of the Federal Inter-Agency Sedimentation Conference 1963*, Miscellaneous Publication No. 970 Prepared by Agricultural Research Service, U. S. Department of Agriculture, Washington, D. C. Issued June 1965. U.S. Government Printing Office, Washington, D.C.

¹³Powell, *op. cit.*, p. 3.

¹⁴Wark, J. W. and Keller, F. J., *Preliminary Study of Sediment Sources and Transport in the Potomac River Basin*, Technical Bulletin 1963-11, Interstate Commission on the Potomac River Basin, Washington, D. C., p. 19.

Since sedimentation is such a costly and enlarging problem and since man is responsible for an increasingly greater share of this burden on the environment, particularly in urbanizing areas, man must begin to conduct his affairs in such a way as to minimize his share of the sedimentation taking place.

The institution of government has developed over centuries to control the activities of large groups of people. We turn next to a brief survey of the city government of Ann Arbor, Michigan, which has attempted to deal with the problem of urban sedimentation.

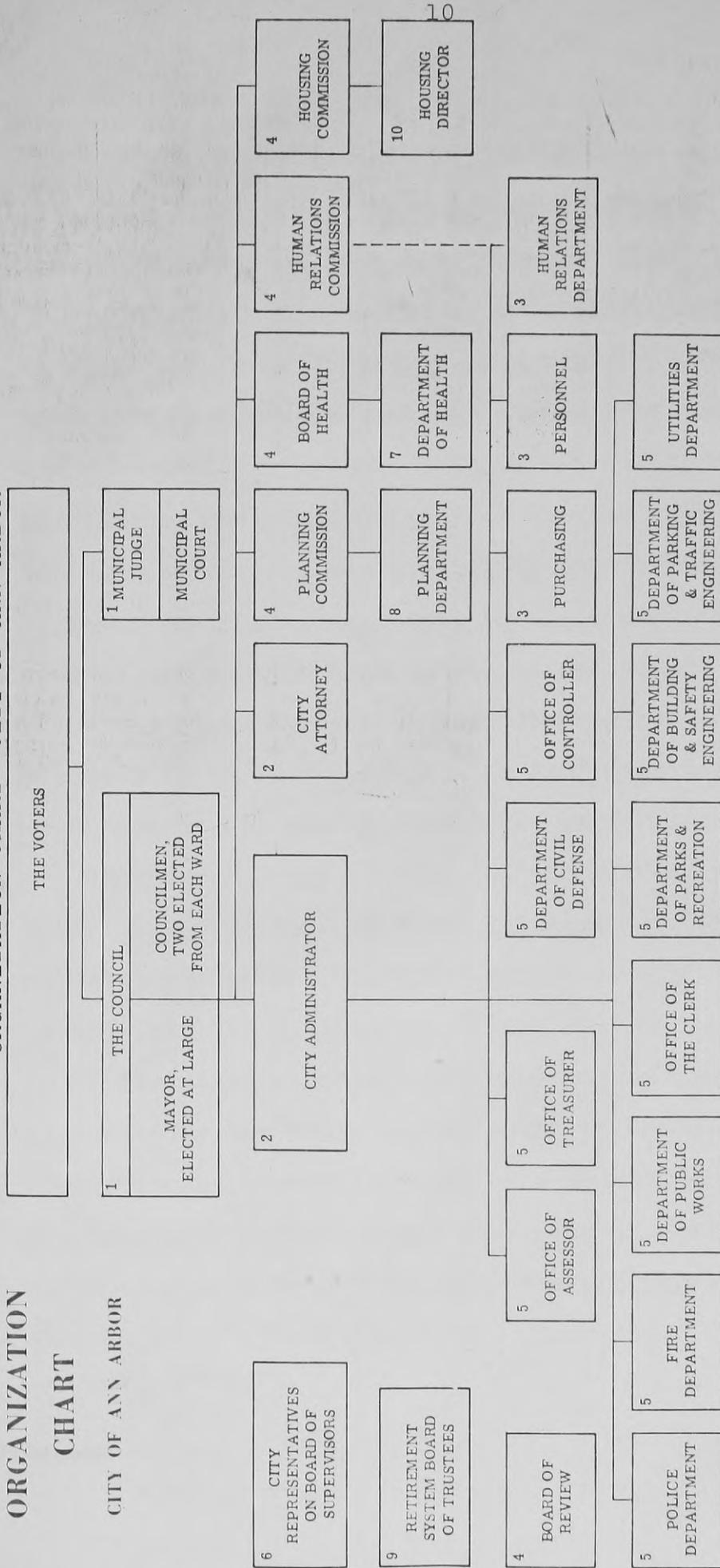
The City of Ann Arbor operates under a charter which has been in effect since 1956.¹⁵ It should be noted here that all the powers of local governments are granted by the State Constitution and state government. Local governments are such as are not recognized by the Federal Constitution and receive no direct authority from it. Ann Arbor is governed by a council of 10, two councilmen being elected from each of five wards designated by areas, and a mayor who is elected by the city at large.¹⁶ Figure 2. Both councilmen and mayor are elected for two year terms, one councilman in each ward being elected each year.¹⁷ The system provides for both continuity and opportunity for

¹⁵*Know Your Town*, League of Women Voters of Ann Arbor, Ann Arbor, 1967, p. 11

¹⁶*Ibid.*, p. 13.

¹⁷*Ibid.*, p. 25.

FIGURE 2
ORGANIZATION CHART CITY OF ANN ARBOR



LEGEND: Manner in which positions are filled. (In case of departments, appointments are those of department heads.)

1. Elected by the voters
2. Appointed by the council
3. Appointed by the city administrator
4. Appointed by the mayor with council approval
5. Appointed by the council on the recommendation of the city administrator
6. The city assessor, and other members appointed by the mayor with council approval
7. Appointed by the council on the recommendation of the Board of Health with advice of the city administrator
8. Appointed by the council on the recommendation of the Planning Commission with the advice of the city administrator
9. The mayor and controller, ex officio, three members appointed by council, two members elected by general city employees from their own number, and two members elected by police and fire forces from their own forces
10. Appointed by The Housing Commission

change. The mayor is paid \$3,000 per year while the councilmen serve without pay. Councilmen also serve on numerous boards, commissions, and special committees.¹⁸

Providing the executive and administrative leadership function for the city is the city administrator who is appointed by and serves at the pleasure of the council. The city administrator is responsible solely to the council. He suggests goals and objectives for the city, directs and coordinates various administrative departments, presents budget recommendations, provides the council with information and performs other functions the council may request.¹⁹

The city attorney is appointed by the council and is responsible to it. He serves as parliamentarian and provides legal advice at council meetings. He prepares or reviews all ordinances, regulations, and other legal instruments and gives legal opinions on these instruments. The city attorney also represents the city when it becomes involved in litigation.²⁰

The planning commission consists of nine commissioners appointed by the mayor and approved by the council. One member of the commission must be a councilman and the rest are supposed to represent a diversity of professions. The planning commission at the time the soil erosion and sedimentation control ordinance was passed included two

¹⁸ *Ibid.*, p. 14.

¹⁹ *Ibid.*, p. 14.

²⁰ *Ibid.*, p. 15.

housewives (one of whom was a former councilwoman), an attorney, a county supervisor, a developer, a University of Michigan professor, a realtor, an educator from the Ann Arbor public school system and a businessman who was also the council representative on the commission. The planning commissioners serve overlapping three year terms with the exception of the council representative who is limited to a one year term. They are unpaid and meet twice a month with the planning director and members of his staff.

The planning department has a paid professional staff headed by the planning director. It prepares plans and projects for review, discussion and approval by the planning commission and carries out studies requested by the commission. It gives advice on site plans being prepared by developers and is currently working on the final phases of a comprehensive or master plan for Ann Arbor.²¹

The department of building and safety engineering issues permits and is responsible for inspection in the areas of housing, building, electrical, plumbing, and heating work, smoke abatement, sign control, and sedimentation control. This department also consists of a paid professional staff.

The council meets every Monday evening. All meetings are public and citizens are given a reasonable opportunity to be heard. The proceedings must be printed and made

²¹*Ibid.*, p. 75.

available to the public.²²

Ordinances involve subjects of a more permanent nature and general application while resolutions pertain to subjects of a less permanent and more specific nature. An ordinance must pass two readings at two separate meetings, be signed by the mayor and be published within ten days after its enactment. Zoning ordinances must be published in advance and a public hearing held before final action is taken. Resolutions require only a simple majority of the council and six members of the council constitute a quorum. Most city legislation requires six or more affirmative votes to pass and the budget needs seven affirmative votes for passage. Any council action except the appointment and removal of officers can be vetoed by the mayor but his veto can be overridden by eight votes of the council.²³

The city clerk keeps records of council meetings, signs legal documents, publishes notices and is the custodian of city documents. He is the city's chief election officer.²⁴

A Natural Resources Citizens Advisory Committee of six citizens is appointed by the mayor and approved by the council. Its members serve an unspecified term. It was

²²*Ibid.*, p. 13.

²³*Ibid.*, p. 13.

²⁴*Ibid.*, p. 15.

established in June of 1964 by resolution to preserve natural areas and concern itself with future park planning. Together with the department of parks and recreation, it presents recommendations regarding the care of present natural areas and development of areas to be acquired in the future.²⁵

STATEMENT OF THE PROBLEM

On March 30, 1970, the city council of Ann Arbor, Michigan, passed an ordinance for the control of soil erosion and sedimentation by a unanimous vote.

The following study deals with the dynamics of the forces involved on both sides of the question, their motivations and strategies, and an analysis of the developmental stages of the ordinance.

The purpose of this study is to give insight into the actual functioning of local government rather than a generalized textbook outline of how local government operates, to examine some of the factors which may enter into decision making in local government.

METHODOLOGY

This study was conducted mainly on the basis of interviews with councilmen, members of the city planning commission and others in city government who had or will have a

²⁵*Ibid.*, p. 71.

role to play in its passage and enforcement. Several citizens, who were influential in the passage of the ordinance, were also contacted. These citizens were identified in interviews with other respondents as well as from discussions with Dr. William Stapp.

Three sets of interview questions were developed: one set for councilmen and planning commissioners; one set of general questions; and an additional set for a few people most actively involved in the passage of the ordinance.

Originally, the interview was to be conducted with a rigid interview schedule. During the course of the study, however, it became evident that a more open-ended procedure was more appropriate for this research. It became apparent that information flowed more freely in the natural course of conversation than if constricted by adherence to the questions, that after about an hour respondents began to grow restless and that time was thus limited, that repetition of some questions in subsequent interviews was a waste of time and that some questions were inappropriate in terms of the actual conditions surrounding passage of the ordinance. The question sets therefore were used only as a general guideline with questions deleted or added on the basis of previous interviews for those subsequently interviewed. In some cases respondents were contacted a second time to clarify certain points or as a result of information gained in subsequent interviews. The question sets with which the interviews were initiated follow.

Name _____

QUESTIONS TO COUNCILMEN AND PLANNING COMMISSION

1. Who brought the sedimentation problem to your attention?

2. When was the sedimentation problem first brought to your attention?

3. Were you contacted at home or outside of "city council hours" on the sedimentation control ordinance?
 - a. By Phone?

 - b. In person?

4. What was the ratio of contacts for and against the ordinance?

5. What was your reaction to these contacts?

6. What inputs went into the development of the first draft of the ordinance? (Who was involved in contributing to the first draft?)
 - a. What elements or groups did they represent?

QUESTIONS TO COUNCILMEN AND PLANNING COMMISSION;

b. What measures did they propose or oppose?

c. What were the most controversial sections?

d. What changes or compromises were made in preparing the first draft?

7. What effect did these changes have on possible votes?

QUESTIONS TO COUNCILMEN AND PLANNING COMMISSION:

8. Why did you vote as you did?

a. What were the most influential arguments for the ordinance?

b. What were the least influential arguments for the ordinance?

c. What were the most influential arguments against the ordinance?

d. What were the least influential arguments against the ordinance?

9. What changes would you personally like to see in the ordinance as it presently stands?

QUESTIONS TO COUNCILMEN AND PLANNING COMMISSION:

10. Does the ordinance cover disturbances of the land by public agencies such as in road building or improvement?

Why?

11. Do you think the ordinance can (or will) be enforced?

a. Does the Building Official retain the fees in whole or in part for enforcement?

b. Is there sufficient money for enforcement?

c. What problems, if any, are anticipated in training enforcement personnel?

12. What discussions took place in caucuses?

GENERAL QUESTIONS:

Name _____

1. How did you become interested or involved in the erosion-sedimentation ordinance?
 - a. Who or what involved you?
 - b. Who started the sediment ordinance movement?
 - c. Who were the leading forces in the sediment control ordinance?

- 2a. What made you decide there should be a sediment ordinance?

(or)

- b. Why were you opposed to this ordinance?

3. Have there been any previous moves for a sediment ordinance?

What were they?

4. What were your first steps in this effort?

5. What were your succeeding steps?

GENERAL QUESTIONS:

6. Whom did you contact or try to convince that a sedimentation ordinance was necessary (or undesirable)?
 - a. What officials?
 - b. What groups?
 - c. What private citizens?
 - d. What means did you use?

- 7a. Apart from the city council, what people played the largest role in the passage of this ordinance?
- b. As you see it, what role did these people play?
(What did they do?)

- 8a. Apart from the city council, what people played the largest role in opposing the ordinance?
- b. As you see it, what role did these people play?
(What did they do?)

GENERAL QUESTIONS:

9. What inputs went into the development of the first draft of the ordinance? (Who was involved in contributing to the first draft?)
 - a. What elements or groups did they represent?
 - b. What measures did they propose or oppose?
 - c. What were the most controversial sections?
 - d. What changes or compromises were made in preparing the first draft?

10. Do you think the ordinance was weakened or strengthened during the revision stages?

GENERAL QUESTIONS:

- 11a. What changes did you advocate that were not included in the ordinance?
- b. Why were they not included in the ordinance?
12. What were the most effective moves you made?
13. What were the least effective moves you made?
14. What were the greatest obstacles in your efforts?
15. How did you overcome these obstacles?
16. Do you think the ordinance can (or will) be enforced?
 - a. Does the Building Official retain the fees in whole or in part for enforcement?
 - b. Is there sufficient money for enforcement?

GENERAL QUESTIONS:

- c. What problems, if any, are anticipated in training inspection and enforcement personnel?

17. How might the ordinance have been strengthened?

18a. If you were just beginning the process of creating a sedimentation control ordinance, what would you do differently this time?

(or)

b. If you were again opposing a sedimentation control ordinance, what would you do differently this time?

19. What changes would you like to see in the present ordinance?

20. Does the ordinance cover disturbances of the land by government agencies such as in road building or improvement?

Why?

GENERAL QUESTIONS:

21. Do you feel the passage of recent environmental legislation in Ann Arbor had any effect on passage of the sedimentation ordinance?

22. Do you feel the ordinance would have been passed three years ago?

Why?

23. What effect, if any, did the ENACT movement have on the passage of this ordinance?

24. What effect will the ordinance have on the environment?

25. What other comments would you like to make?

ADDITIONAL QUESTIONS:

Name _____

1. Would you characterize your efforts as "step by step" or did you have an advance "plan of action"?
2. If you had an advance "plan of action", what was it?
3. What alternatives, if any, were considered?
4. Why was a city rather than a county or watershed ordinance pursued?
 - a. What is the effect of the ordinance on Ann Arbor?
 - b. What is the effect of the ordinance downriver?
 - c. What is the effect of the lack of ordinance upriver on Ann Arbor?
 - d. Is there any interest in a geographically broader ordinance?
 - e. What is your opinion of the future of the geographic broadening of the ordinance in the Huron River watershed?

CHAPTER 2

INVESTIGATION

The investigation was begun with a survey of the records of council meetings at city hall. This was not as illuminating as had been anticipated. There were copies of letters sent and speeches made before the council but these had all been prepared by the letter writer or the speaker and left with the council. If these individuals did not leave written copies, no record was made of what they had to say. There were people listed on the agenda as scheduled to speak but no indication as to whether or not they did speak and if they did, what was said. For some meetings there were no lists of people speaking and for some there were lists on pieces of scrap paper but no indication as to what they said or even if they were for or against a given question. Letters from the League of Women Voters and the Huron River Watershed Council supporting the sedimentation ordinance were on file. Communications from the Ad Hoc Citizens' Committee, the Northeast Area Planning Review Committee, and the Mayor's Committee on Natural Resources supporting sedimentation controls were also present.

Mrs. Robert C. Hendrix

Interviewing began with Mrs. Robert C. Hendrix, a member of the Mayor's Committee on Natural Resources. When questioned about how she had become interested or involved in the sedimentation control ordinance, she indicated that she had been interested for some time but

conservationist, Mr. John Trustdorf, spent a whole afternoon of the trip in the city of Ann Arbor pointing out the problems of sedimentation deriving from development. Mrs. Hendrix earlier in the interview stated that she did not agree with the people who say the experts should do it. "If you care enough you become an expert. If something really gets you, you become an expert; you keep asking questions." She felt she would have to concentrate her energies on the project for an extended period of time and that she would need "durability". Realizing the scope of the problem, she sought advice, information, and addresses from Mr. Robert Halstead and Mr. Clark Eacker, Area Conservationist and District Conservationist respectively of the U. S. Soil Conservation Service, and wrote for information and model soil erosion ordinances from areas in the east such as Prince George's County and Baltimore, both in Maryland, which had already had some experience with soil erosion controls. Mr. Halstead's presence was particularly fortuitous since he had recently been transferred from Maryland where the pioneer work in sedimentation studies and control had been done.

Much information from these sources was made available to council members and others in city government. Over an extended period of time Mrs. Hendrix spoke and showed slides to various groups such as Kiwanis and garden club groups. Gentle pressures and reminders to councilmen were maintained. At one point she wrote a sample ordinance and resolution to

"get the ball rolling" and provide evidence of citizen interest. In 1968 the same builder who intended to develop the Kuebler property had developed another property on which considerable area had been put under roof and blacktop pavement and the drainage funneled to a culvert which went under an expressway. The extra water draining off the developed land resulted in sedimentation and flooding of the neighbors' land across the expressway. It was feared similar consequences might result from the development of the Kuebler property.

The Sierra Club and Audubon Society wrote letters and spoke before the council. Dr. Ross Tocher and the Ad Hoc Citizens' Committee, residents of the area around the Kuebler property, prepared maps and drawings and wrote a document presented to the city council and planning commission. Mrs. Hendrix acted as liason between township citizens in the area of the Kuebler property and the council for if the property were annexed it would be city. The Mayor's Committee on Natural Resources invited the council and mayor to walk the land. Only three or four councilmen accepted the invitation to inspect the land first hand but Mrs. Hendrix felt it was very important. Later, the mayor indicated it was one of the most important factors in his decision to back the ordinance. She stated, "Then he realized what we had been pushing." Mrs. Hendrix feels one problem with city government is that the decisions are made on the third floor of city hall and that the people

making the decisions do not see the problems first hand.

After the council requested that an ordinance be drafted, the main problem in the passage of the ordinance developed when the planning department began to prepare standards and specifications specifically for Ann Arbor. The Soil Conservation Service had given the planning department a set of its standards but the department felt they were oriented more toward rural situations and attempted to draw up its own, drawing upon models from around the country. Mr. Eacker felt the standards as they were being prepared would be unworkable. First the planning department personnel had no expertise in this field and secondly it was time consuming and the proponents of the ordinance felt there was a movement to stall the ordinance. At this point some rather harsh charges were made. Ultimately, under pressure from council, and particularly Councilman LeRoy Cappaert, the planning department abandoned efforts to draft its own standards and incorporated those of the Soil Conservation Service.

Another point of controversy developed when the planning department sent the ordinance to the general development committee for its recommendations. The general development committee consists of the city administrator, the planning director and various department heads. Its function was to make decisions on projected development plans. This committee met informally and neither councilmen nor citizens knew what it was doing until its decisions

were announced. It was felt developers had private access to city government and that agreements were being made in private between developers and city administrative units in this manner about which the council and citizens knew nothing.

Mrs. Hendrix said there was little or no opposition to the ordinance. She credits the lack of opposition to the fact that the ordinance was kept "simple" to minimize opposition and that it makes sense to the conscientious developer. She thinks everyone thought "it was such a good and logical thing to do that we should have done it years ago". She indicated that Mr. Halstead and Mr. Eacker thought it would take longer for good will to build up. The ordinance is an "ordinance by title" referring to the Standards in the Land Development Regulations Supplement. To her knowledge there was no known influence by developers in the preparation of the ordinance. The greatest obstacles in her efforts she regards as the minor irritations of "educating" elected and appointed officials.

Mrs. Hendrix is both optimistic and concerned about enforcement of the ordinance. She feels most developers want to do the things required by the ordinance but is concerned about there being sufficient money for enforcement and the need for technical training of enforcement personnel. There were discussions about releasing Mr. Eacker to work part time with the city and to lead a workshop to train officials of both the city and county in the

technical matters involved. She is satisfied that the ordinance is good and can think of no changes she would like to see in the ordinance. She praised the work of Mr. Monroe and Mr. Prochaska of the planning department and Mr. Lax, the city attorney. She also referred to Mr. Cappaert as "one of our best councilmen".

The recent environmental legislation including sign control and air pollution control in Ann Arbor is felt to have had an effect on the passage of the sedimentation ordinance. The time was right and the right parcel of land provided a focal point for action. Ann Arbor is running out of easily developed land. The remaining land needs a special approach, understanding, and planning. Mrs. Hendrix sees a growth on the part of developers in recent times in recognizing these problems. She does not feel that the ordinance would have passed three years ago; the time was not right, there was no focal point. The ENACT movement is felt to have had only an indirect effect on the passage of the ordinance. The effect of the ordinance will be felt on the Huron River, on the attitude of people toward the land in recognizing assets of natural beauty rather than just drainage, and in the improvement of the environment. She emphasized the importance of an attitude change on the part of everybody in recognizing the necessity of having to work with the land.

When questioned whether her efforts would better be characterized as "step by step" or "advance plan of action",

she replied that she had a long range goal but the approach was one of keeping track of things as they developed. With reference to seeking a city rather than a county or watershed ordinance, Mrs. Hendrix felt the city was a more workable unit at this point, that "it is possible to start small and let things grow. One should do what one can where one is and the ripple effect of such action can spread elsewhere. People should feel an obligation to their city and their river and each community should do its part." The Washtenaw County Planning Department is working on a sedimentation ordinance for the county and "word is getting up and down the river".

Mr. Clark Eacker

Mr. Clark Eacker, District Conservationist of the Soil Conservation Service, pointed out that his office is not an action oriented body in the sense of initiating change through political activity. It is rather a technical resource agency which provides technical assistance to both private citizens and other governmental units. The Soil Conservation Service is an agency of the U. S. Department of Agriculture and is on loan here to the Washtenaw County Soil Conservation District which is a local unit of state government whose primary responsibility is resource conservation. It is concerned not only with soil but also with water, wildlife and other conservation related to the soil. The Washtenaw County Soil Conservation District is controlled by a board

of directors of lay people.

Mr. Eacker pointed to the Kuebler site as a critical one for development and that he was contacted by Mrs. Hendrix and the Mayor's Committee on Natural Resources in this connection. The Mayor's Committee met with the Board of Directors of the Washtenaw County Soil Conservation District and discussed the erosion problems of the Kuebler site and the potential dangers to the Huron River. Meetings were also held with the Ann Arbor planning commission and council. He indicated that Mr. Robert Halstead, Area Conservationist with the Soil Conservation Service had come to this region from Maryland, the pioneer area in sediment control. Mr. Eacker referred to Mrs. Hendrix as a "driving force all the way". He indicated support for the ordinance had also come from the League of Women Voters, the Sierra Club, the Audubon Society and some members of the Board of Realtors. The Lakewood Estates Conservation Association, a citizen group from a development in western Ann Arbor which has suffered serious drainage and flood problems, was also supportive of the sediment control ordinance. The city officials most directly involved in its passage were Councilman LeRoy Cappaert, Mayor Robert Harris and Planning Director Michael Prochaska.

There was no opposition to the ordinance although some questions were raised as to the stringency of the regulations, how it was to be enforced and who was to enforce it. Developers and engineers endorsed it as something

needed. From previous experiences developers had in working with the Soil Conservation Service, they had learned that the procedures required were not involved nor were the expenses great. A survey by the American Home Builders' Association indicated sediment control measures added from \$25 to \$50 to the cost of the average home site. The Annual Report of the Washtenaw County Soil Conservation District was devoted to sediment control and the environment. This helped sustain the momentum of the movement. The Washtenaw County Planning Department is in the process of preparing soil erosion and sediment control legislation for county use.

Mr. Eacker feels the ordinance as passed contains adequate, workable standards. The greatest obstacles in the passage of the ordinance were getting information and education programs moving, showing the need and getting people to realize this was a problem and that there was a solution. He is optimistic about enforcement of the ordinance but that much depends on the department of building and safety. The Soil Conservation Service has offered to train inspectors of that department, to work with them, and to give them any assistance. Mr. Eacker feels a new landscape ordinance and the sediment control ordinance together might require one additional inspector in the building and safety department if he spent all of his time in these two areas.

Not having been here three years ago, Mr. Eacker does

not know whether the ordinance would have been passed or not but he does not feel society was keyed up on the environment the way it is now. The ENACT movement helped keep the focus on environmental problems. The Soil Conservation Service took part in ENACT presentations including the sedimentation problem. Of the annual Soil Conservation bus trips for citizens, Mr. Eacker said they focus on conservation needs or new developments in conservation. Last year they included visits to sites where the county soil survey was being made to illustrate procedures involved and to areas of flooded basements on both country and urban sites. Erosion control measures for keeping soil in place during a construction year are said to cost three cents per cubic yard. In contrast, to remove sediment by dredging costs from \$1.50 to \$3.00 per cubic yard depending on how far the dredged material has to be transported.

Finally, Mr. Eacker indicated that erosion control was not new to the Soil Conservation Service, that it was for this purpose that it had been created in 1933. Erosion problems tend to follow concentrations of people. The Soil Conservation Service provides assistance regardless of where the land is located, in the country or in the city. The same techniques applied to rural land can be applied to urbanizing land. The only difference is that urbanizing areas change the character of the land to hold water and this requires enlarging techniques to handle new problems. Sediment control is primarily to protect off-site resources.

Sediment control measures provide specific benefits to the developer. The appearance of the area is enhanced during the construction stage and makes a better impression on potential customers. Gullies do not have to be filled in later and houses are more easily cleaned up for showing.

Mr. LeRoy Cappaert

Mr. LeRoy Cappaert, Councilman, stated a slowly growing awareness of environmental problems and national literature pointed to sedimentation problems and their costs. He referred to the Lakewood Subdivision problems in western Ann Arbor which involved floods and erosion three times a year. The Lakewood Subdivision problems were currently high-lighted by a request for annexation of another 120 acre projected development adjacent to it which it was felt would intensify the problems. He was concerned with sedimentation before the Kuebler property issue but does not remember exactly when he first became concerned. Numerous calls were received at home on the sediment control ordinance, almost none of which were against the proposal.

Mr. Cappaert related that an ordinance could initiate with the city administration, the council, or outside groups. Usually they are drafted by the city attorney with guidelines from appropriate departments, but a councilman, the administration, or citizen may bring in a complete law for consideration. Ordinances require two readings for passage. Certain

ordinances such as changes in zoning require public hearings. A planning commission is required by state law but if it chooses, a city council can be its own planning commission. The same situation exists in regard to a board of appeals. The second reading of the ordinance can take place at the time of the public hearing if no substantial points or desired changes are indicated by the hearing. Apart from zoning, there are no specific rules as to which ordinances require public hearings except that they tend to be those of a major nature.

Mr. Cappaert felt that there was a strong need for a sediment control ordinance and he wanted an ordinance whether it be good or bad. If it contained undesirable features it could be improved later. If it was delayed on questions of possible illegality the ordinance could be delayed indefinitely. If it was illegal, he felt it should be passed and then tested in court. He doesn't know specifically what the provisions of the ordinance are but relied on the technical people to provide the drafts. Mr. Cappaert felt that if there were undesirable features somebody would come and make a case against them as was the case on a proposed underground wiring ordinance. He has heard no attack on the ordinance in its technical form although there was a controversy as to whether the city should write its own standards or adopt those of the Soil Conservation Service. The city planning department felt the standards should relate specifically to the city and that those of the Soil

Conservation Service were not entirely appropriate in this regard. The planning department did not have sufficient technical competence in this area, however, and the drafting of standards would have been a long, drawn-out affair. Early attempts by the planning department had been described by Mr. Eacker as being unworkable. Mr. Cappaert felt there could be no delay and that the Soil Conservation Service standards should be adopted. He has no suggested changes for the ordinances as passed, although he hopes the technical people might.

Mr. Cappaert believes the ordinance covers city activities, such as road building, although control may be questioned. As to enforcement, he expressed some concern and feels that it depends on the council and training of inspectors. He also pointed to the need for judgment on the part of inspectors who sometimes create difficulties by adhering needlessly to the letter of the law instead of pointing out possible alternatives and appeals or suggesting to superiors that changes in the regulations may be advisable. With reference to possible money problems for enforcement, Mr. Cappaert felt there was no problem if the citizens wanted something. No plans were made at the time of passage of the ordinance for training of inspection personnel.

In caucus, the discussion of the ordinance was in the nature of the general importance of the ordinance rather than specific features. He does not know of any arguments

made at caucuses by non-council members nor does he know if recent environmental legislation in the city had any effect on passage of the sedimentation ordinance. In his opinion the ordinance would not have passed three years ago because of the difference in both public and leadership attitudes in recognizing and controlling environmental problems.

A peripheral but significant development involved the development committee to which the ordinance had been referred and which Mr. Cappaert was informed might study the ordinance for "a couple of months". The development committee consists of the city administrator, the planning director, the city attorney, and the heads of the major departments. It reviews and discusses major development projects with developers and, if necessary, recommends changes. Reports from the planning commission always contained recommendations from the development committee. The development committee had no regularly scheduled meetings and the council was not informed of its meetings except for the results and recommendations. Mr. Cappaert and others felt that developers had an undue influence in the operation of city government through meetings where both the public and council were excluded. He requested that the members of the city council be notified of the meetings and meeting agenda of the development committee and that councilmen or their representatives be allowed to attend these meetings. Shortly after this request he was informed by the city administrator, Mr. Larcom, that the development

committee was no longer in existence.

When questioned about the possible effect on the passage of the sediment control ordinance of the law suit against the city resulting from the Culp law suits (which are discussed in more detail later), he indicated that he knew nothing about such law suits and as far as he knew they have had no effect on council votes.

Mayor Robert Harris

Mayor Robert Harris related that he had been vaguely aware of sedimentation problems earlier but he became specifically aware of the sedimentation problem after he became mayor in April of 1969. He wanted to have a sediment control ordinance passed before an annexation vote on a development on the western edge of the city took place this spring. He felt the ordinance would allay fears of people opposed to the annexation on the basis of probable increased drainage and flooding problems in the Lakewood area. The annexation move lost even though the ordinance had been passed.

The mayor was not up on the details of the ordinance. He wanted to get the ordinance passed in a hurry and depended upon the technicians in the planning commission for technical competence and the city attorney for legal competence. He felt both the city attorney and the planning director were supportive but that there was a reluctance somewhere in the department, although he did not know where. He also indicated the question of whether to use Soil Conservation

Service standards which were not specific for Ann Arbor or to develop the city's own standards was resolved on the basis that it would take too long to develop a totally new set of standards for Ann Arbor.

With reference to relying on the technical staff for the details of the ordinance he made an analogy to a man who wanted to buy an elephant but knew nothing about elephants and thus had to rely on an elephant expert for advice on whether or not an elephant under consideration was a good elephant -- the right age and temperament considering the intended purpose, and of sound health.

Mayor Harris does not know if the ordinance has had any effect on the proposed development of a large shopping center. Mr. Cappaert had indicated earlier that he had received reports city hall officials were concerned passage of the sediment control ordinance might negatively affect the proposed shopping center. Mayor Harris feels if there was opposition, developers probably felt it would be futile to oppose it on the basis of an eight to three democratic majority strongly committed to environmental legislation.

The mayor and seven other Democrats came into office in April of 1969. Previously there had been a Republican majority and mayor for seventeen years. The Democrats had both good party and good campaign organization in 1969. He also cited the "anti" vote factor, people felt it was time for a change. The mayor said he could have been a "two-headed goat" and still received a certain number of votes

because of this "anti" factor. Currently the Democrats have only a six to five majority, having been hurt by the "law and order" and related issues going back to events of last summer.

Mayor Harris also expressed a number of other thoughts on government and politics. Annexation involves the whole philosophy of growth. Is growth per se desirable? Do you encourage, discourage or merely cope with growth? Do you encourage city growth at the periphery or do you encourage growth in the surrounding villages and thus maintain some open space between population concentrations? Increasing city growth and the supply of housing decreases the pressure on available housing and tends to hold down property values and rents. Thus a councilman from a ward in which most people own their homes may have a different perspective from one in which people tend to be renters.

Public hearings are required only on zoning changes. In practice, hearings are held on any important or controversial law or if any council member requests a public hearing be held. Mayor Harris had some reservations about the value of public hearings generally. Seldom do they bring any new or worthwhile information on the subject. The mayor feels he and the councilmen are generally better informed on the subject than the people at the hearing. People are bringing their own personal feelings rather than information. There may be only one or two people who show up for a hearing or there may be swarms attempting to pressure

the council. Pressure attempts by citizens are less effective in terms of city-wide issues than on local ward issues. They also vary in effect in terms of whether a given councilman sees it his duty to vote as the people of his ward want him to vote or sees it as his duty to vote in terms of what he feels is right even if it runs counter to the expressed views of some of his constituents. The council may sit dutifully through a public hearing even if it is non-productive to give the citizen his right to be heard. Comments from experts may cause a councilman to reconsider whether his position is correct or to seek the advice of other experts. If the experts agree, he may change his mind. If they disagree, he has to attempt to judge the relative merits of the experts. On the question of the policy-making and administration functions and their separation, the mayor compared it to a "love-lust relationship". In some common meeting area they merge and it is impossible to completely separate the two.

Mr. Melvin Larson

Mr. Melvin Larson of the Northeast Area Planning Review Committee stated that he had little to do with the sediment control ordinance, that his organization was more concerned with the overall planning and beauty of the city. He did, however, volunteer a few comments and described Mrs. Hendrix as a "driving force". He felt citizens speaking before the council can be effective if they represent large groups.

On the other hand he indicated that some citizens feel they can speak more freely if they are not a member of an organization. Mr. Larson suggested that "foot-dragging" by city administration can slow the progress of an ordinance, that an administrator can tell a department head to "go slow" on the development of an ordinance because builders have committed large funds and cannot afford the cost of unanticipated expenses caused by a new ordinance. Another respondent mentioned similar thoughts and answered them with the fact that at any given time there would be developments in progress which would be affected by an ordinance passed at that time. Mr. Larson felt there should be a Citizens' Natural Resources Commission of similar status to the planning commission with powers of systematic review of developments from environmental aspects. He also suggested that a comprehensive or master plan is needed for Ann Arbor.

Mr. and Mrs. Luman Culp

Mr. and Mrs. Luman Culp are the people whose land has suffered from sedimentation and flood damage as the result of improper drainage control by a new adjacent development. Drainage from the development has been channeled to a culvert which flows under the expressway and onto the Culp property. Low land has been covered with sediment and there has been extensive flooding. Flooding has reached a height of seven feet and the driveway has been blocked. Numerous trees have been killed by the flooding. It has become a neighborhood

attraction to children who have even brought canoes to the flooded area. From the standpoint of neighborhood recreation this is fine but from the standpoint of legal liability in case of accident it subjects the Culps to extreme hazard in the climate of present day legal suits. The Culps instituted a \$100,000 damage suit against the developer about two years ago but the trial has been repeatedly postponed. The Culps returned from vacation last spring the day before the trial was to be held only to find it had been postponed the day before. Trial is now set for September.

The developer in turn has instituted suits against the City of Ann Arbor, the Michigan State Department of Highways, the Washtenaw County Drain Commissioner, the Washtenaw County Road Commission and the Commission on Professional and Hospital Activities on the grounds that these units did not tell the developer that he could not act as he did in handling the drainage situation.

Mr. Jerold Lax

Mr. Jerold Lax, the city attorney, stated that he was asked to draw up a sediment control ordinance in November of 1969. The planning commission and the city attorney worked together on the drafting of the ordinance, the planning commission providing for the technical considerations and the city attorney providing for the legal considerations in possible remedies, accuracy of wording, making sure the law would be brought to bear at all possible points, etc.

The ordinance was backed by the Sierra Club, the League of Women Voters, Douglas Fulton, Professor Donald Grey of the University of Michigan College of Engineering and Mrs. Hendrix. The main controversy centered upon the question of whether to use Soil Conservation Service standards and personnel to enforce the ordinance, as proposed by Mrs. Hendrix, or to develop standards more applicable to city requirements and enforcement. Professor Gray, in a written communication to the city endorsed the standards as "minimum" but suggested in writing certain technical improvements which should be incorporated into the ordinance. Mr. Lax described the ordinance as having been passed with "lightning speed".

At the present time there has not been sufficient experience with the ordinance to determine what changes Mr. Lax would like to see but that enforcement in the future may indicate some weaknesses. In regard to disturbances of the land by public agencies, such as in road building activities, he indicated that although it was not specifically stated, it was probably the intent of council that they be included. There may be some jurisdictional question about authority over other government agencies. Under the citizen pressure on the ordinance, some possible questions such as this were not raised. Mr. Lax feels the ordinance will be enforced. He indicated that he tries not to pass ordinances that "will sit on the books and not go anywhere" -- that laws should be responsible. While the development committee

is no longer in existence, its essential functions are still being performed.

The advantages of separating the general ordinance from the development regulations and standards are that it reduces the size of the codebook and that since standards are likely to be modified frequently, modification is more easily accomplished by changing regulations than by attempting to modify an ordinance.

With reference to the Culp law suits and law suits in general, Mr. Lax indicated that law suits against the city are fairly common, that more than half of them are dismissed before they get to court and of those that do get to court, the city wins more than half.

Councilman Robert Faber

Councilman Robert Faber is also the council representative on the planning commission. He identified Mrs. Hendrix as bringing the sedimentation control ordinance to his attention and as being its strongest voice. He had numerous contacts by people supporting the ordinance and none from anyone against it. The most controversial part was the desire of Mrs. Hendrix to have the Soil Conservation Service have authority. Mrs. Hendrix had some distrust of city government and felt the Soil Conservation Service would be less subject to pressures. Mr. Faber indicated that the Soil Conservation Service may not be flexible enough to adapt to varied conditions. Council, while subject to more

pressures, is also more flexible and because the area is so new, would like to maintain flexibility. With reference to desired changes, Mr. Faber stated the ordinance was still too new, that there was not enough experience with it to make such decisions. He felt the ordinance does cover ground disturbances such as road building by the city, but not for the state. He feels the ordinance can be enforced, but money is tight. There is some problem in providing the technical knowledge required by enforcing personnel. Consideration was given to hiring the Soil Conservation Service but the city is trying to do it on its own.

Mr. Faber feels the sediment control ordinance and other recent environmental control legislation in Ann Arbor are "all one and the same". The ordinance may not have been passed three years ago. Three years ago the city was just beginning to become aware of the city as a whole rather than concentrating on the individual developer. There has been a shift from concern for the developer and his needs to the realization that what happens concerns everyone. "There has been a change in public attitudes about private responsibilities."

When questioned about who decided how stringent the ordinance was to be, Mr. Faber answered the planning commission and its staff. The Culp lawsuit had no effect on the passage of the ordinance as far as Mr. Faber was concerned for he was not aware of it. When asked why there was such an apparent rush to push the ordinance through,

he replied that after the April elections in 1969 Mrs. Hendrix began contacting the mayor and himself about a sediment control ordinance, it had been "hanging fire" for a long time, and that spring and the coming building season were about to break. Asked if it might be a political issue in the April election, Mr. Faber replied in the negative as it was too sophisticated an issue and there was not enough widespread interest in it to become an issue of consequence. He added this was one of the least controversial ordinances passed by council.

Mr. Harold Rothbart

Mr. Harold Rothbart is the assistant city administrator who is responsible for the Department of Building and Safety Engineering which issues permits and makes inspection under the sediment control ordinance. Ten new ordinances, the enforcement of which falls under his department, were passed last year. The budget of the department has increased from about \$250,000 to about \$450,000 in the past year. The new ordinances include housing code, sediment control, landscape and land use buffer, underground wiring and historical preservation. Mr. Rothbart, who came to Ann Arbor last year, expressed the opinion that you cannot do the job without resources and that he accepted his position only with the understanding that he would have the resources to do the job necessary. There is about a 20% lag between the costs of running the department and the income

from fees. This is due largely to the fact that there is no fee on housing inspection. He stated that about \$15,000 had been budgeted for enforcement of the sediment control ordinance.

Mr. Rothbart was just beginning to study the provisions of the sediment control ordinance when I talked with him. He said they would enter into a training program with the Soil Conservation Service which would involve his department's administrative people, engineers, and inspectors. This program will probably consist of weekly meetings of several hours each carried on over a period of months.

Mr. John Kurkjian

Mr. John Kurkjian is a member of the planning commission, a realtor and a developer. The sedimentation control ordinance was brought to his attention by Mrs. Hendrix calling him in connection with the Kuebler property. While in favor of sediment control, he was against the ordinance as it was rushed through at this time. He stated he did not know what was in the ordinance and did not believe anyone else on the planning commission knew what was in the ordinance either. He felt it was a political move by the Democrats who, having done nothing most of the year, wanted to have an environmental law they could point to as having passed.

Though he was against the ordinance as passed at that time, he voted for it with other members of the planning commission. Mr. Kurkjian stated that he had adopted the

philosophy that if he were the only commissioner against a given issue and all the other commissioners were for it, he would not use his one negative vote to block passage. The evening the vote was taken on recommending the sediment control ordinance for passage by council there were only six members on the planning commission present. Of nine members on the commission, six must give affirmative votes for a motion to pass. He knew that all of the other commissioners were in favor of the ordinance and because of absences he had the power to prevent passage that evening. In spite of being against the ordinance personally, he voted for it so as not to obstruct the will of the other eight commissioners.

Mr. Kurkjian stated that every developer, when he became aware of the problem, was willing to work with Mr. Eacker. He favored voluntary compliance with sediment control measures for perhaps a year and if this did not work, then a sediment control ordinance should be passed which was better prepared. He stated that a developer may want to do a better job but cannot do so because of restrictions by specifications. He cited an instance in which he wanted to put down a sidewalk in broad curves which would sweep around trees otherwise in the path of the sidewalk. Because of specifications regulating the distance of the sidewalk from the curb, he was forced to maintain this constant distance from the curb until the sidewalk reached the tree and then make a sharp horseshoe around the tree. His other

alternative was to cut down the obstructing trees. The inspector told Mr. Kurkjian that he could put in the sweeping sidewalk if he insisted but that he, the inspector, did not like it and this message was conveyed in a manner which threatened later problems elsewhere if Mr. Kurkjian insisted on putting in the sweeping sidewalks. Mr. Kurkjian put in the straight sidewalks with horseshoes around the trees. He does not know if the trees will survive or not. Mr. Kurkjian strongly criticized this type of inflexibility which he claimed followed standards and felt voluntary controls by the developer allowed flexibility to deal with problems. He stated that if voluntary controls did not work, standards are necessary. He also criticized perfunctory inspections and stated too often inspectors do not know what they are doing and cannot give advice on a problem.

Mr. Kurkjian pointed out that developed land cannot absorb the same amount of water as undeveloped land and that future ordinances should deal with easements to handle the extra runoff from developed areas and possible ponding areas in greenbelt or open space areas and that these problems have to be handled in an integrated manner.

Mr. Kurkjian stated that too often the developer is regarded as the villain and is not given a chance to be heard or have his viewpoint considered. He is regarded as a grabber of profit. Little thought is given to the fact that his costs must ultimately be born by the home owner or renter. Mr. Kurkjian warned against mixing politics and

planning, by politics referring not only to Democrats and Republicans, but also to developers, naturalists, and area planning groups. He felt that the planning commission and staff should retain its independence and objectivity and not be too closely identified with any one of these groups.

Mrs. Eunice Burns

Mrs. Eunice Burns, member of the planning commission and a councilwoman from 1962 to 1968 stated that the Kuebler property zoning question pointed up the need for sediment control. This dates back to August of 1968. Neighborhood people were concerned about density, traffic and drainage on the site. Mr. Douglas Fulton, Dr. Ross Tocher, and the Mayor's Committee on Natural Resources were involved. The planning department had been aware of the sediment control problem but it had been a low priority item. After the Kuebler property issue it became a highly priority item.

The two controversial aspects were what standards to use and who was to enforce it. The planning commission felt the Soil Conservation Service standards were more for rural than urban use. Mrs. Hendrix was pressuring the council and the council introduced another ordinance when the planning commission had already done most of the work on its own ordinance. Mrs. Hendrix wanted Mr. Eacker to enforce the ordinance because he was experienced in this area. The planning commission felt city people should enforce the ordinance and utilize Mr. Eacker as a consultant.

The department of building and safety is now responsible for enforcing the ordinance.

Mrs. Burns expressed the opinion that sometimes "follow-through" is lacking after an ordinance is passed although she was not referring to the sediment control ordinance in particular. She stressed the need for judgment on the part of inspectors in enforcing the ordinance, the need for support of such judgment by the head of the department responsible for enforcement, and the need for council members to refrain from jumping on a deviation from specifications as a political issue. She also made the comment that too often we do not see a need until it is brought forcefully to our attention.

Mr. Charles Reinhart

Mr. Charles Reinhart is a member of the planning commission and in the real estate business. He stated that the sediment control ordinance was due "basically to one crusading gal who put heat on the council". It was necessary for builders to become more conscious of the sediment problem than they had been. He does not know if the ordinance provisions are good, if they can be enforced, or if the staff is trained for the inspection required. It is easy to put an ordinance on the books but the city may have problems in enforcing it. He feels the council passed three or four pieces of legislation for political reasons which will have to be straightened out later. He suggests the

city should do more in its own operations with respect to sediment control. Mr. Reinhart feels there is too long a delay in beginning street sweeping operations after the winter snow melts and that much of the accumulated debris finds its way to the sewer and drainage system before operations are begun. The effect on sedimentation of leaving a gravel road base for a year prior to paving should be investigated. There is also a time lag in seeding roadsides of new roads built for the city.

Mr. Michael Prochaska

Mr. Michael Prochaska, Director of Planning, stated that the sediment control problem was brought to his attention about a year ago by the Mayor's Committee on Natural Resources. Inputs into the first draft of the ordinance came from the Mayor's Committee on Natural Resources which pointed out the problem, collected data and information, furnished models of ordinances from other localities and "bird-dogged" the development of the ordinance and the Soil Conservation Service which furnished technical advice and review. The first draft was drawn mainly from the soil erosion and sediment control ordinances of Prince George's County and Baltimore, both in Maryland. The only changes made after the first draft were minor changes in wording and separation of some sections into the separate regulations where they can be more easily changed.

Mr. Prochaska felt the whole ordinance, rather than a

specific part, was controversial in the sense that citizen groups felt the city was subverting their efforts at getting a sediment control ordinance passed and could not understand why the city had to write it rather than the citizens' committee or some other agency. Mr. Prochaska first attempted to write controls on a voluntary basis. All the developers processing developments through the planning commission at the time agreed but this was unsatisfactory to the citizens' committee which felt the planning commission was being coerced by the developers. Mr. Prochaska feels indications were that it would work on a voluntary basis. Another point of difference concerned who was going to enforce the ordinance. The citizens' group wanted the Soil Conservation Service to enforce the ordinance. This was opposed by Mr. Prochaska who felt that the city had the enforcement power and the law should be enforced by the city. Some individuals felt the Soil Conservation Service standards should be used but Mr. Prochaska felt these were inappropriate in some instances. He cited as examples the reference to wheat and oat plantings and some rip-rap provisions.

With regard to changes he would like to see in the ordinance, Mr. Prochaska stated that he would like to see in some of the wording straightened out and the standards and specifications simplified. No one can understand the specifications unless he is a soil engineer. He made the point that the professional creditability of the department is endangered by poor law.

The planning director stated that the law implies that city activities such as road building come under the ordinance but that it cannot be enforced legally. Any city as a whole can ignore any statute. Public works, utilities, and the other departments of the city, however, are asked to conform to city ordinances and generally do. He feels that the ordinance can be enforced. The city does not have the staff and training to enforce it today but will have soon.

Regarding the roles of the planning commission and the city attorney in the drafting of this ordinance, he stated that the planning department wrote it and the city attorney reviewed it for the legal aspects.

As a result of Councilman Cappaert's request that the meetings of the development committee be opened to council members and others, the development committee was abolished. Mr. Prochaska feels its functions are being carried out presently in a more efficient manner. It was felt that free and open criticism and discussion would be impaired by the presence of council members or others. Formerly the committee met every two weeks to discuss development plans. Recommendations and opinions were given verbally. If changes were to be made, it might take another two weeks. Present operating procedure is for a copy of a proposed development to be sent to the head of every department and the departments have five days in which to make a reply in writing. Decisions and recommendations are then made upon a review

of these written replies. It is a technical review system.

Mr. Prochaska stated he did not know the reason for the rush on this ordinance. When asked what fees a developer must pay, Mr. Prochaska listed site plan fees, area plan fees, building permits, zoning fees, soil inspection fees, and building inspection fees. In closing, Mr. Prochaska said he felt the ordinance was a good one; it was unfortunate that animosities were built up but it was finally shown that the interests of all were the same.

Mr. James Stephenson

Mr. James Stephenson, Councilman, recalled that the sediment problem was first brought up about six months or a year ago. He was not contacted in regard to the ordinance outside of council meetings. He mentioned the Soil Conservation Service inputs on standards in connection with the drafting of the legislation. He pointed out the basic question of how far the government can interject itself in the way a property owner rearranges the contours of the land in order to use the land. The problem thrashed around so long in the non-action stage that by the time it came before council all had agreed that the interest in preserving the land and water resources overrode other considerations. It was mainly a problem of putting into words the controls which were to be applied to land development.

While he would have preferred giving more thought to

the ordinance before passing it, his vote was really immaterial to the outcome. There was no good reason for opposing it -- everybody was for it -- so his reaction was to adopt it and see how it works. He felt the rush for passage was due in part to the publicity given the environment in recent months. He pointed out that city hall was "pulling at both ends of the string" -- decrying the high cost of housing on one hand and at the same time increasing the cost of housing by making building more costly. Mr. Stephenson feels the ordinance will be enforced but does not think the ordinance would have been passed three years ago; there was not the awareness or public concern with this type of problem at that time.

Mr. Guy Larcom

Mr. Guy Larcom, City Administrator, stated that in a city such as Ann Arbor, much legislation is spearheaded by citizen groups. The council referred the drafting of the ordinance to the planning commission and he as city administrator had little to do with it. The building and safety department has been expanded and staffed for enforcement and experience will indicate what enforcement problems there are. The city administrator is the agent of the council but he can recommend and advise it in legislation and other areas.

Mr. Douglas Fulton

Mr. Douglas Fulton is chairman of the Mayor's Committee on Natural Resources. The Mayor's Committee is a loosely organized committee which holds no regular meeting. It is an advisory group and may be asked by the city to look into certain problems. Citizens may come to the committee or members of the committee may come to it with problems they feel should be investigated or solutions to be promoted. Different members of the committee undertake different projects. As a committee it endorsed the sediment control ordinance, spoke before and prepared reports for the city council on the ordinance. Mrs. Hendrix took the assignment to do the research, coordination and handle most of the work of the committee on the sediment problem and ordinance. This ordinance was tied in with the Kuebler development annexation problem.

The committee has been concerned with preserving and developing the Huron River area, the purchase of Bird Hills, increasing the urban fishing resources, building the full bridge of the Huron River Parkway, increasing the ponds and recreation potential of the area, the purchase of other areas and promoting canoe and walking trails.

CHAPTER 3

CONCLUSION

This study must first of all be indicative of what can be accomplished through the efforts of one determined, dedicated, and tenacious individual. Most of the respondents involved in the passage of the sediment control ordinance, both those in favor of its present form and timing and those with reservations about it, pointed out one individual, some with reference to the "driving force", one to the "crusading gal who put heat on the council". That individual is, of course, Mrs. Robert C. Hendrix.

The second factor most evident is that of trust or distrust among citizen groups, council, and city administration, and the basis or possible basis for such trust or distrust. The planning commission was given the responsibility of drafting a highly technical piece of legislation by the council but also charged later by citizens with acting in a manner to thwart the ordinance. The citizen groups and some councilmen were highly suspicious of the influence of developers on the city administration, particularly in the operations of the development committee, and the effect of such influence both on passage and enforcement of the ordinance.

After receiving the reply of Mr. Larcom to his request for information regarding the function and operation of the development committee, Mr. Cappaert stated that he felt the committee performed a valuable function and praised Mr. Larcom for his administrative acumen. However, upon Mr.

Cappaert's request to open development committee meetings to council members, the development committee was disbanded. Abolishment of the committee might also be taken as evidence of undesirable activities on its part. Mr. Prochaska indicated the development committee was abolished because it was felt the presence of councilmen or others would inhibit free and open discussion and criticism. While he did not state this, one can see opportunities for councilmen attending such meetings to take some point brought up there and turn it into a political issue.

Both those suspicious of the development committee and members of the city administration felt that the committee performed a valuable function, the difference being that those suspicious felt there were nefarious manipulations while the members of the committee maintained the committee was performing its duties in a forthright manner. Mr. Prochaska did indicate that while it was not the case as operated, such a committee could conceivably be used in a nefarious manner. On the other side, council interference and conceivable political "footballing" in the operation of the development committee are a basis or possible basis for administrative distrust of council.

Part of the operation of government is thus a result of the trust-distrust factor and the bases or possible bases for this factor. Government operations are becoming exceedingly complex and there is a need for interreliance. Thus minimizing distrust and possible bases for distrust is vital.

A salient feature of the passage of the ordinance was a sense of "rush". All respondents indicated a felt need for sediment controls yet there was a sense of rush to pass an ordinance the exact content and requirements of which no one in the city council or administration knew. Some charge (obviously these are not Democrats) that the Democratic majority had done nothing during the year and now wanted an environmental law passed as evidence of their activity. The mayor indicated the ordinance was wanted to help influence votes on an annexation proposal in the spring election.

Mr. Faber points out simply that after the April 1969 elections Mrs. Hendrix began contacting the mayor and himself on the proposed ordinance, that it had been "hanging fire" for a long time, and that spring and the coming building season were about to break. Mr. Lax states that what is "lightning speed" by city hall standards may not seem very fast for someone who has been pushing for an erosion and sediment control ordinance for a long time. The sense of rush is heightened by the indication of Democratic councilmen of a desire for almost any ordinance on sediment control so long as it was passed and that improvements could be made later. One gets the impression that the Democratic majority was deeply committed to this ordinance and its environmental benefits. Perhaps some perspective is gained by a perusal of the local newspapers of last summer which describe marches on city hall on "law and order" and other issues. The ordinance was passed on March 30. On April 6 elections

were held in which the Democratic majority of eight to three was cut to six to five. One of the factors in the "rush" may have been anticipation of possible negative election results by the Democratic majority.

The sediment control ordinance in fact consists of three parts: (1) the ordinance which was passed by the council, (2) the land development regulations supplement referred to in the ordinance and adopted by council, and (3) standards and specifications which are referred to in the land development regulations supplement. The ordinance and land development regulations supplement are derived primarily from the models of Prince George's County and Baltimore in Maryland. The standards and specifications as finally adopted are those of the U. S. Soil Conservation Service. The ordinance itself seems well constructed and provides for compliance by denying site plan or plat approval, by denying a certificate of occupancy, by forfeiture of bond, by \$500 fines per violation, and stop work orders. It provides for flexibility on the part of the "Building Official" who is in charge of enforcement of the ordinance.

Evidence of haste appears in the land development regulation supplement with sections referring to such factors as "mean low tide". While the land development regulations are somewhat technical, the bulk of the problems of comprehension seem to lie in the standards and specifications which Mr. Prochaska stated no one but a soil engineer could understand. While most respondents felt the ordinance would be

enforced, it is at present unenforced because neither the developers nor the enforcing agency knows what is required.

Whether the fault for this situation lies in passing for immediate application an ordinance of unknown requirements without a prepared enforcing agency or in not arranging for enforcement by an outside agency which is technically prepared may be debated. Since the city has enforcement powers, it seems not unreasonable to expect the city to want to do its own enforcing. On the other hand, arrangements for Soil Conservation Service participation in enforcement have been considered and entered into elsewhere where technical competence was lacking.²⁶ The department of building and safety seems to have adequate resources to enforce the ordinance in the future but there is and will be a time lag before technical competence can be achieved both in terms of advice and enforcement. The ordinance makes its effective date ten days after its legal publication. Possible compromises may have been to delay the effective date of the ordinance and work through voluntary cooperation or specific agreements for perhaps a year or to make arrangements with the Soil Conservation Service for enforcement for a year by which time the city enforcement personnel would presumably have sufficient competence to

²⁶*Progress Evaluation Meeting in the Matter of Pollution of the Interstate Waters of the Potomac River and Its Tributaries - (Washington Metropolitan Area) - District of Columbia - Maryland - Virginia, November 6-7, 1969, Federal Water Pollution Control Administration, U. S. Department of the Interior, p. 159.*

assume responsibility. Where voluntary compliance has been used as in Montgomery and Prince George's Counties in Maryland, it was eventually decided that ordinances were needed. A period of voluntary compliance does however provide an opportunity for the "meshing of gears" in the operation of the following ordinance.

At this point this writer does not feel that it is a "responsible" law although it will undoubtedly become so in time. The question of present "irresponsibility" must be balanced by the question of the possibility of a more responsible law in the future coupled with interim safeguards for sediment control. The question of undue influence by builders on a city enforcing agency relates back to the issue of trust and distrust and the possible bases therefore.

The political environment with reference to environmental issues is felt to have been influential in the passage of the sediment control ordinance. The concern of the Lakewood Estates Conservation Association, the Ad Hoc Citizens' Committee, the League of Women Voters, the Sierra Club and others is indicative of the local political climate which earlier had produced air pollution and sign control legislation. The "mood" of the city and the country were right particularly at the time of the passage of the ordinance when public concern and publicity about environmental problems were at their zenith. As Mrs. Hendrix stated, "the time was right".

Another contributory factor was the presence of a resource person with experience in governmental approaches to sedimentation control, Mr. Robert Halstead.

The need for adequate financial backing and training for enforcement personnel, judgment on the part of enforcement personnel in applying the law and support for such judgment by superiors has been indicated.

Under the city charter, the city administrator is responsible to the city council. The city administrator tends to hold his position for a period of years while a councilman must run for reelection after two years in order to remain on the council. This combination allows a tendency for stability through constant administration of the government and a flexibility allowing for changes through the election of new councilmen. One senses a slight difference of political orientation, the administrator being sensitive to the needs of his government and the elected officials being more sensitive to the believed needs of the electorate. This subtle difference in political orientation may lead to a slight dispolarity on some issues and tensions between these two forces.

While much improvement is needed in environmental and other matters, it is an error to point a finger at certain groups as the instigators of our problems. We need a broader perspective in some instances. Developers, for example, could not exist if they did not provide a service for the public, that of providing housing, in addition to

seeking a profit for themselves. Some of the problems related to building have only fairly recently become evident and mature thinking requires that it should be realized that the costs of remedying these problems will ultimately be paid for by the public consumer.

The city should set an example and perhaps various suggestions such as earlier spring street cleaning, study of the sedimentation effects of allowing gravel road bases to remain a year before they are paved, and the time lag in seeding city roadsides should be looked into. It is suggested that more complete records of the proceedings at city council meetings be kept. The names of people speaking, their organizations if any, and a brief summary of their statement should be recorded.

There seems to be a variety of opinions about the effectiveness of various citizen activities in influencing the government. Some feel citizens are more effective speaking as a representative of a group while others indicate the greater freedom of an independent allows greater forcefulness and impact. Much of the citizen rhetoric at city hall seems to be wasted according to the mayor but the effect may be different on different individuals of the council. Generally, little new information is brought to council meetings by citizens. In spite of the variety of opinion, as this study would indicate, much depends on the characteristics and methods of the individual involved.

It is only in recent years that efforts have been made

to curb soil erosion and sedimentation from urbanizing areas. Yet, back in 1938 a study by the Soil Conservation Service of a lake created by damming a stream in 1936 pinpointed the source of severe sedimentation of the lake in the intervening year and a half as being a recreational development where extensive areas had been cleared for buildings, roadways, and sewers.²⁷

Improved communication of such findings and their implications from scientists to governmental officials at various levels may have resulted in beginning sedimentation control a quarter of a century ago.

²⁷Barnes, Farrell F. and Brown, Carl B., *Advance Report on the Sedimentation Survey of Greenbelt Lake, Greenbelt, Maryland, January 27 - February 8, 1938*, Division of Research, SCS-SS-33, Soil Conservation Service, U. S. Department of Agriculture, Washington D. C., April 1939, p. 7.

APPENDIX A

SOIL EROSION ORDINANCE

First Reading March 23, 1970
Public Hearing March 30, 1970
Passed March 30, 1970

SOIL EROSION ORDINANCE

AN ORDINANCE TO AMEND THE CODE OF THE CITY OF ANN ARBOR BY
RENUMBERING CHAPTERS 63 THROUGH 67 OF TITLE V OF SAID CODE
AND BY ADDING A NEW CHAPTER, WHICH NEW CHAPTER SHALL BE
DESIGNATED AS CHAPTER 63 OF TITLE V OF SAID CODE.

The City of Ann Arbor ordains:

Section 1. That Chapter 63 through 67 of Title V of the Code of the City of Ann Arbor be, and hereby are, renumbered Chapter 64 through 68 of Title V of said Code.

Section 2. That the Code of the City of Ann Arbor be and the same hereby is amended by adding a new Chapter, which new Chapter shall be designated as Chapter 63 of Title V of the Code of the City of Ann Arbor and which shall read as follows:

CHAPTER 63

SOIL EROSION, SEDIMENTATION CONTROL AND
LAND BALANCE ORDINANCE

- 5:650 FINDINGS. The City Council hereby finds that excessive quantities of soil are eroding from certain areas that are undergoing development for non-agricultural uses such as housing developments, industrial areas, recreational uses, and roads. This erosion makes necessary costly repairs to gullys, washed out fills, roads, and embankments. The resulting sediment clogs storm sewers and road ditches, muddies streams and silts in lakes and reservoirs, and is considered a major water pollutant.
- 5:651 PURPOSE. The purpose of this Ordinance is to prevent soil erosion and the resulting sediment within the City of Ann Arbor by requiring proper provisions for water disposal and the protection of soil surfaces during and after construction, in order to promote the safety, public health, convenience and general welfare of the community.

5:652 DEFINITIONS

- (1) "BUILDING OFFICIAL" is the Assistant Administrator in charge of Environmental Engineering, or his authorized representative.
- (2) "CERTIFICATION". A signed, written statement by the Building Official that specific constructions, inspections or tests where required have been performed and that such comply with the applicable requirements of this Ordinance or regulations adopted pursuant thereto.
- (3) "EROSION". The process by which the ground surface is worn away by the action of wind or water.
- (4) "EXCAVATION OR CUT". Any act by which soil or rock is cut into, dug, quarried, uncovered, removed, displaced or relocated and shall include the conditions resulting therefrom.
- (5) "FIFTY YEAR FLOOD PLAIN". That area which would be inundated by storm runoff or flood water equivalent to that which would occur with a rainfall or flood of fifty (50)-year recurrence frequency after total development of the watershed.
- (6) "GRADE". Any stripping, excavating, filling, stockpiling or any combination thereof and shall include the land in its excavated or filled condition.
- (7) "GRADING PERMIT". A permit issued to authorize work to be performed under this Ordinance.
- (8) "STRIPPING". Any activity which removes or significantly disturbs the vegetative surface cover including clearing and grubbing operations.

5:653 Compliance with Chapter required for site plan or plat approval. No site plan or plat shall be approved under Chapter 57 of this Code unless said site plan or plat shall include soil erosion and sediment control measures consistent with the requirements of this Chapter and related land development regulations.

5:654 Compliance with Chapter required for occupancy. No certificate of occupancy for any building will be issued under Chapter 98 of this Code unless the applicant for said certificate shall have complied substantially with the requirements of this Chapter and related land development regulations and shall have substantially completed any soil erosion and sediment control measures contained in any plat or site plan approved for said applicant.

5:655 PERMITS AND FEES

(1) PERMIT REQUIREMENT. Except as exempted by section 5:664 of this Ordinance, no person shall do any grading, stripping, excavating or filling unless he has a valid grading permit issued by the Building Official.

(2) PERMIT APPLICATION. A separate application shall be required for each grading permit. Plans, specifications and timing schedules shall be submitted with each application for a grading permit. The plans shall be prepared or approved and signed by a Professional Engineer or by an Architect. The Building Official may waive the preparation or approval and signature by the Professional Engineer or Architect when the work entails little hazard to the adjacent property and does not include the construction of a fill upon which a structure may be erected.

(3) APPLICATION DATA REQUIRED. The plans and specifications accompanying the grading permit application shall contain the following data:

- (a) A vicinity sketch at the scale of 1"=200' indicating the site location as well as the adjacent properties within 250' of the site boundaries.
- (b) A boundary line survey of the site on which the work is to be performed.
- (c) A plan of the site at a scale of 1"=100' showing:
 - I. Name, address and telephone number of the owner, developer, and petitioner.
 - II. A timing schedule indicating the anticipated starting and completion dates of the development sequence and the time of exposure of each area prior to the completion of effective erosion and sediment control measures.
 - III. A certification of the quantity of excavation and fill involved.
 - IV. Existing topography at a maximum of five (5) foot contour intervals.
 - V. Proposed topography at a maximum of five (5) foot contour intervals.
 - VI. Location of any structure or natural feature on the site.

- VII. Location of any structure or natural feature on the land adjacent to the site and within fifty (50) feet of the site boundary line.
 - VIII. Location of any proposed additional structures or development on the site.
 - IX. Elevations, dimensions, location, extent and slope of all proposed grading (including building and driveway grades).
 - X. The estimated total cost of the required controls.
 - XI. Plans of all drainage provisions, retaining walls, cribbing, planting, anti-erosion devices, or other protective devices to be constructed in connection with, or as a part of, the proposed work together with a map showing the drainage area of land tributary to the site and estimated runoff of the area served by any drains.
 - XII. Other information or data as may be required by the Building Official, such as a Soil Investigation Report which shall include but not limited to: data regarding the nature, distribution and supporting ability of existing soils and rock on the site.
- (4) FEES. At the time of filing an application for a grading permit, a plan checking fee shall be paid to the Building Official, non-refundable and at a rate of ten (\$10.00) dollars per acre of site area involved with a fifty (\$50.00) minimum.

5:656 BOND REQUIREMENT. A grading permit shall not be issued for grading involving the movement of more than 1,000 cubic yards of soil unless the permittee shall first post with the Building Official a bond executed by the Owner and a Corporate Surety with authority to do business in this state as a surety.

The bond shall be in a form approved by the City Attorney and in the amount of the estimated total cost of the work authorized by the permit. The Building Official may waive all or part of the amount to the extent that he determines that the hazard or danger created by the work does not justify the full amount.

The total cost shall be estimated by the Building Official. The bond shall include penalty provisions for failure to complete the work on schedule as specified on the grading permit. In lieu of a surety bond the applicant may file with the City a cash bond or an instrument of credit approved by the City Attorney in the amount equal to that which would be required for the surety bond.

Every bond and instrument of credit shall include and every cash deposit shall be made on the conditions that the permittee shall comply with all of the provisions of this Ordinance with all of the terms and conditions of the grading permit to the satisfaction of the Building Official, and shall complete all of the work contemplated under the grading permit within the time limit specified in the grading permit, or if no time limit is so specified, within 180 days after the date of the issuance of the grading permit.

- 5:657 EXTENSION OF TIME. If the permittee is unable to complete the work within the specified time he may, prior to the expiration of the permit, present in writing to the Building Official a request for an extension of time setting forth the reasons for the requested extension. If in the opinion of the Building Official, such an extension is warranted, he may grant additional time for the completion of the work.
- 5:658 FAILURE TO COMPLETE WORK. In the event of failure to complete the work or failure to comply with all the requirements, conditions and terms of the permit, the Building Official may order such work as in his opinion, is necessary to eliminate any dangerous conditions and to leave the site in a safe condition or he may order the work authorized by the permit to be completed to a safe condition to his satisfaction. The permittee and the Surety executing the bond or person issuing the instrument of credit or making the cash deposit shall continue to be firmly bound under a continuing obligation for the payment of all necessary costs and expenses that may be incurred or expended by the City in causing any and all such work to be done. In the case of a cash deposit, any unused portion thereof shall be refunded to the permittee.
- 5:659 DENIAL OF PERMIT. Grading permits shall not be issued where, in the opinion of the Building Official:
- (1) The proposed grading would cause hazards to the public safety and welfare; or

- (2) the work as proposed by the applicant will damage any public or private property or interfere with any existing drainage course in such a manner as to cause damage to any adjacent property or result in the deposition of debris or sediment on any public way or into any waterway or create an unreasonable hazard to persons or property; or
- (3) the land area for which grading is proposed is subject to geological hazard to the extent that no reasonable amount of corrective work can eliminate or sufficiently reduce settlement, slope instability or any other such hazard to persons or property; or
- (4) the land area for which the grading is proposed may lie within the fifty (50) year flood plain of any stream or watercourse not specifically designated and delineated by the City as an area subject to flood hazard, unless hydrologic report, prepared by a Professional Engineer, is submitted to certify that the proposed grading will have, in his opinion, no detrimental influence on the public welfare or upon the total development of the watershed.

5:660 MODIFICATIONS OF APPROVED PLANS. All modifications of the approved grading plans must be submitted and approved by the Building Official. All necessary substantiating reports shall be submitted with any proposal to modify the approved grading plan. No grading work in connection with any proposed modification shall be permitted without the approval of the Building Official.

5:661 RESPONSIBILITY OF PERMITTEE. During grading operations the Permittee shall be responsible for:

- (1) The prevention of damage to any public utilities or services within the limits of grading and along any routes of travel of the equipment.
- (2) The prevention of damage to adjacent property, no person shall grade on land so close to the property line as to endanger any adjoining public street, sidewalk, alley or any public or private property without supporting and protecting such property from settling, cracking or other damage which might result.

- (3) Carrying out the proposed work in accordance with the approved plans and in compliance with all the requirements of the permit and this Ordinance.
- (4) The prompt removal of all soil, miscellaneous debris or other materials spilled, dumped or otherwise deposited on public streets, highways, sidewalks, or other public thoroughfares during transit to and from the construction, where such spillage constitutes a public nuisance or hazard.

5:662 MAINTENANCE REQUIREMENTS. Persons carrying out soil erosion and sediment control measures under this Chapter, and all subsequent owners of property concerning which such measures have been taken, shall maintain all permanent anti-erosion devices, retaining walls, structures, plantings, and other protective devices.

5:663 MINIMUM DESIGN STANDARDS FOR EROSION AND SEDIMENT CONTROL. All grading plans and specifications including extensions of previously approved plans shall include provisions for erosion and sediment control in accordance with but not limited to the minimum control measures contained in the "Land Development Regulations", duly approved by the City Council together with supplements and amendments thereto and which are hereby adopted by reference. Copies of said Land Development Regulations shall be available for inspection in the offices of the City Clerk and the Building Official.

5:664 VARIANCES AND EXCEPTIONS. The Zoning Board of Appeals shall have the authority to interpret this Chapter and may in specific cases grant variances and exceptions to these requirements providing such variance or exception is in harmony with the general purpose and intent of the requirements. The procedural requirements for appeals under Section 5:102 of Chapter 55 shall be applicable to appeals under this Chapter.

5:665 INSPECTION AND ENFORCEMENT. The requirements of this Chapter shall be enforced by the Building Official. The Building Official shall inspect the work and shall require adequate inspection of compaction by a soil engineer or by a soil testing agency, approved by the Building Official, unless he determines that such inspection requirements may be waived due to the non-hazardous nature of the grading. If the Building Official finds any existing conditions not as stated in any application, grading permit or approved plan, he may refuse to approve further work until approval of a revised grading plan which will conform to the existing conditions.

5:666 VIOLETIONS AND PENALTIES. Whenever, by the provisions of this Chapter, the performance of any act is required, or the performance of any act is prohibited, a failure to comply with such provisions shall constitute a violation of this Chapter. Any person who violates the requirements of this Chapter shall be guilty of a misdemeanor, punishable by fine of no greater than \$500.00 per violation. The Building Official may issue a Stop Work Order on the remaining portion of the construction and/or may refuse the issuance of a Certificate of Occupancy.

5:667 SEVERABILITY. If any section, subsection, sentence, clause, phrase or portion of this Ordinance is for any reason held invalid or unconstitutional by any court of competent jurisdiction, such portion shall be deemed a separate, distinct and independent provision and such holding shall not affect the validity of the remaining portion of this Ordinance; it being the intent of the Council that this Ordinance shall stand, notwithstanding the invalidity of any section, subsection, sentence, clause, phrase or portion hereof.

Section 3. This Ordinance shall take effect on and after ten (10) days from date of its legal publication.

APPENDIX B

LAND DEVELOPMENT REGULATIONS SUPPLEMENT

ANN ARBOR, MICHIGAN
GENERAL DEVELOPMENT PLAN

LAND DEVELOPMENT REGULATIONS

SUPPLEMENT

1970

Adopted: March 23, 1970

Certified: City Council, City of Ann Arbor
Washtenaw County Register of Deeds

March, 1970

Ann Arbor City Planning Commission

Preface

This supplement to the 1965 edition of the Land Development Regulations contains changes approved by the City Planning Commission on March 19, 1970 and the City Council on March 23, 1970. The changes represent the minimum design standards for Soil Erosion, Sedimentation Control and Land Balance.

Section 1:4 Definitions

Add new definitions as follows:

1:4-27 "COMPACTION." Shall mean densification of a soil or rock fill by mechanical or other acceptable procedures.

1:4-28 "EXCAVATION OR CUT." Shall mean any act by which soil or rock is cut into, dug, quarried, uncovered, removed, displaced or relocated and shall include the conditions resulting therefrom.

1:4-29 "EXISTING GRADE." Is the vertical location of the existing ground surface prior to excavating or filling.

1:4-30 "EMBANKMENT OR FILL." Is a deposit of soil, rock or other materials placed by man.

1:4-31 "FIFTY-YEAR FLOOD PLAIN." Is that area which would be inundated by storm runoff or flood water equivalent to that which would occur with a rainfall or flood of Fifty (50)-year recurrence frequency after total development of the watershed.

1:4-32 "FINISHED GRADE." The final grade or elevation of the ground surface conforming to the proposed design.

1:4-33 "LOAD BEARING FILL." Shall be defined as fill placed in a controlled manner to support structure foundations, vehicle traffic or any facility or earthwork which the instability thereof would constitute a public hazard or nuisance.

1:4-34 "NATURAL GROUND SURFACE." Shall mean the ground surface in its original state before any grading, excavation or filling.

1:4-35 "PERMITTEE." Shall mean any person to whom a permit is issued pursuant to this Chapter.

1:4-36 "PROFESSIONAL ENGINEER." Is an Engineer duly registered or otherwise authorized by the State of Michigan to practice in the field of civil engineering.

1:4-37 "REGULATED GRADING." Any grading performed with the approval of, and in accordance with criteria established by the Building Official.

1:4-38 "SEDIMENT." Shall mean soils or other surficial materials transported by surface water as a product of erosion.

1:4-39 "SOTE." Is any lot or parcel of land or combination of contiguous lots or parcels of land where grading is performed or permitted.

1:4-40 "SLOPE." Shall mean the inclined exposed surface of a fill, excavation or natural terrain.

1:4-41 "SOIL." Is all earth material of whatever origin that overlies bedrock and may include the decomposed zone of bedrock which can be readily excavated by mechanical equipment.

1:4-42 "SOIL ENGINEER." Shall mean a Professional Engineer who is qualified by education and experience to practice applied soil mechanics and foundation engineering.

1:4-43 "STRUCTURAL ROCK FILLS." Shall mean fills constructed predominantly of rock materials for the purpose of supporting structures.

1:4-44 "WATERCOURSE." Shall mean any natural or artificial watercourse, stream, river, creek, ditch, channel, canal, conduit, culvert, drain, waterway, gully, ravine or wash, in which waters flow in a definite direction or course, either continuously or intermittently, and which has a definite channel, bed and banks; and shall include any area adjacent thereto subject to inundation by reason of overflow or flood water.

Section 1:8 Preliminary Plat

Add new item to subsection 1:8-2b "Proposed Conditions":

(10) The plans, specifications and timing schedules of all proposed grading, cutting, filling, and soil erosion control devices in accordance with Soil Erosion, Sediment Control and Land Balance Ordinance.

Section 2 Development Standards

Add new subsections:

2:1-12 Erosion and Sediment Control. All grading plans, specifications and timing schedules including extensions of previously approved plans shall include provisions for erosion and sediment control in accordance with the Wash-tenaw County Soil Conservation District Standards.

- (a) The design, installation and maintenance of erosion and sediment control measures shall be accomplished in accordance with guide standards on file with the City Clerk's Office.

- (b) The face of all cut and fill slopes shall be planted or otherwise protected from erosion as soon as practicable prior to the final approval of grading and shall be maintained until such planting is well established in accordance with the Soil Erosion, Sedimentation and Land Balance Ordinance.
- (c) Other graded surfaces susceptible to erosion shall be similarly protected.

2:1-13 FILLS - CLASSIFICATION. The grading plans and specifications shall specify and delineate the use and extent of fills in accordance with the following classifications.

CLASS 1 FILL - Load bearing fills proposed for support of buildings, walls, and other structures, the function thereof which would be especially impaired by settlement, as determined by the Building Official.

CLASS 2 FILL - Load bearing fills proposed for support of roadways, pavements, utility lines and structures which would not be especially impaired by moderate settlement, as determined by the Building Official.

CLASS 3 FILL - Common fills proposed for landscaping or for other non-load bearing usage.

2:1-14 FILLS - MATERIAL. All load bearing fills shall consist of readily compactible materials meeting the following minimum requirements.

- (a) No inclusions of organic or other deleterious materials which may be subject to decay shall be permitted. All fills shall also be free of inclusions of ice or snow.
- (b) No rock or similar irreducible material with a maximum dimension greater than eight (8) inches shall be buried or placed in any load bearing fill within two (2) feet of finished grade or within two (2) feet of foundation base elevation unless permitted by the Building Official after receipt of a report by a Soil Engineer certifying that he has investigated the property and the fill material and that a fill including over-sized materials may be constructed to meet the requirements of this Chapter. When such material is placed in fills it shall be done under the direction and supervision of a Soil Engineer.

2:1-15 FILLS - PREPARATION OF GROUND. The natural ground surface shall be prepared to receive fill by removing all

significantly organic surface materials, non-complying fill and unsuitable soils and shall be benched into competent materials approved by the Building Official where existing surface slopes are five (5) horizontal to one (1) vertical or steeper.

- (a) Prior to placing CLASS 1 and CLASS 2 Fills, the ground surface - if within five (5) feet of finished grade or foundation base elevation shall be compacted so as to achieve a density of not less than 90 percent of maximum density as defined under Section 1:4 within the top six (6) inches.
- (b) No load bearing fill shall be placed on frozen ground. Class 3 Fills may be placed on frozen ground subject to prior written approval of the Building Official.

2:1-16 FILLS - COMPACTION. All CLASS 1 and CLASS 2 Fills shall be compacted to a minimum of 95 and 90 percent, respectively, of maximum density as determined in the laboratory by ASTM Test Method D1557-66T. CLASS 3 Fills shall be compacted sufficiently to prevent an erosion hazard as approved by the Building Official.

- (a) Lower degrees of compaction may be permitted by the Building Official after receipt of a report by a Soil Engineer certifying that he has investigated the subsoils of the site, has tested representative fill materials and that in his opinion such lower degree of compaction will be adequate for the intended use of the fill, which use shall be described in the report.
- (b) In-place (field) density shall be determined by ASTM Test Method D1556-66T method or by an equivalent test approved by the Building Official.
- (c) All CLASS 1 and CLASS 2 Fills shall be placed in approximately horizontal layers, each layer having a loose thickness of not more than eight (8) inches. Thicker lifts may be permitted by the Building Official upon submittal of adequate density test documentation of limited test fills.

2:1-17 FILLS - STRUCTURAL ROCK. Fills constructed predominantly of large rock will be permitted only if the specification for such fill are prepared by and construction done under the direction and supervision of a Soil Engineer. Large rock fills will not be permitted within six (6) feet of finished grade or within two (2) feet of the bottom of any utility pipeline.

2:1-18 FILLS - MAXIMUM SLOPE. No fill shall be made which creates an exposed surface steeper in slope than two (2) horizontal to one (1) vertical unless permitted by the Building Official after receipt of a report by a Soil Engineer certifying that he has investigated the property and that in his opinion such steeper slope will not endanger any public or private property or result in the deposition of debris or sediment in any public way or interfere with any existing drainage course.

- (a) The Building Official may require that the fill be constructed with an exposed surface flatter than two (2) horizontal to one (1) vertical or may require such other measures as he deems necessary for stability and safety.

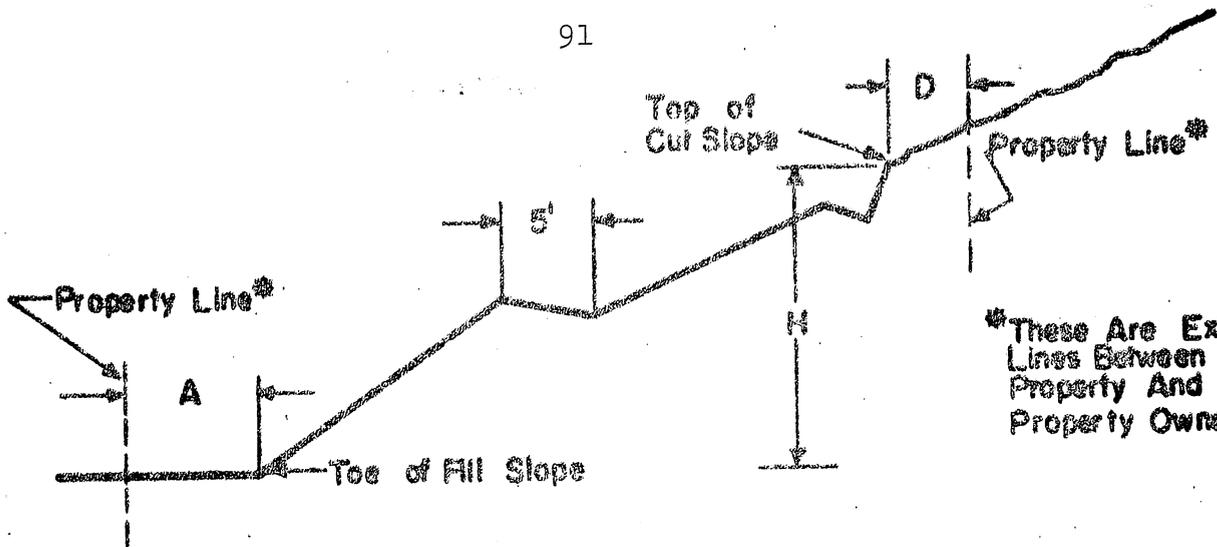
2:1-19 FILLS - SLOPES TO RECEIVE. Fills toeing out on natural slopes steeper than three (3) horizontal to one (1) vertical shall not be made unless approved by the Building Official after receipt of a report by a Soil Engineer certifying that he has investigated the property, made soil tests and that in his opinion such steeper slopes will safely support the fill proposed to be made.

2:1-20 CUTS - MAXIMUM SLOPE. Cuts shall not be steeper in slope than two (2) horizontal to one (1) vertical unless the Building Official approves such steeper slope after receipt of a report by a Soil Engineer certifying that he has investigated the property and in his opinion the proposed steeper slope will not endanger any public or private property or result in the deposition of sediment or debris on any public way or interfere with any existing drainage course.

- (a) The Building Official may require at any time that the excavation be made with a cut face flatter in slope than two (2) horizontal to one (1) vertical or require such other measures as he deems necessary for stability and safety.

2:1-21 CUT AND FILL SLOPES - DRAINAGE TERRACES. Cut and fill slopes in excess of thirty (30) feet but not more than sixty (60) feet in vertical height shall be terraced at approximate midheight. Terraces in slopes with a vertical height greater than sixty (60) feet shall be made at equal vertical intervals not more than thirty (30) feet apart. Drainage terraces shall be a minimum of five (5) feet wide and must convey water to a safe disposal area.

2:1-22 SETBACKS. Cuts and fills shall be set back from property lines and buildings shall be set from cut or fill slopes in accordance with Figures 1 and 2 of this Section.

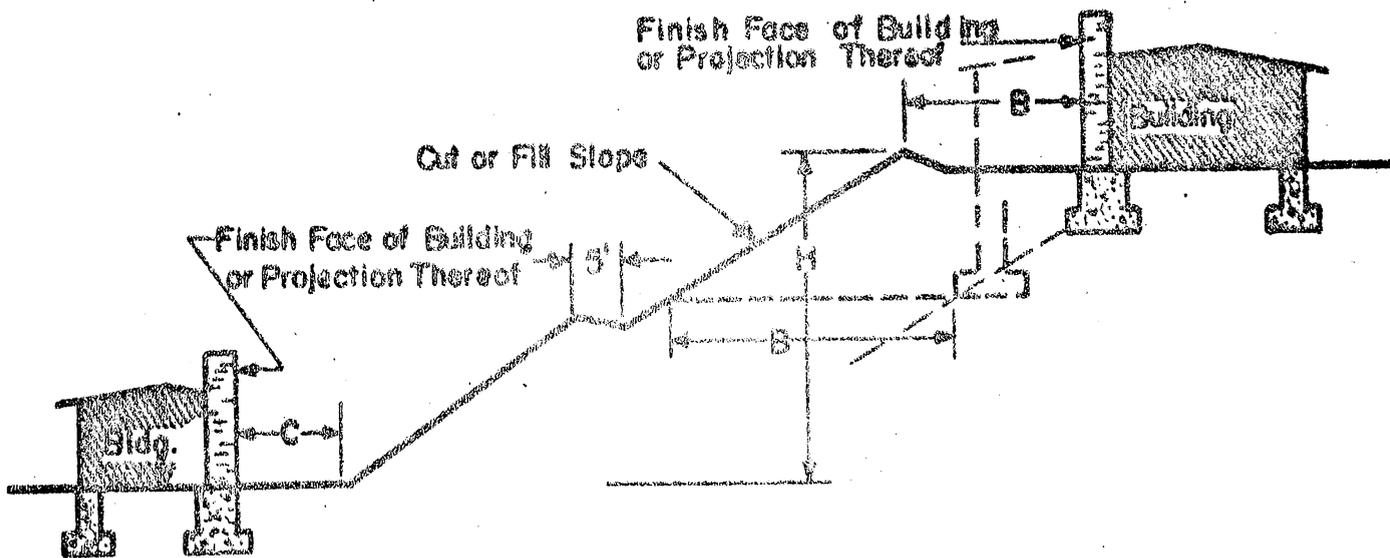


SLOPE SETBACK FROM PROPERTY LINE

Fig 1

MINIMUM SETBACK REQUIREMENTS

H In Feet	TOE OF FILL FROM PROPERTY LINE	TOP OF CUT FROM PROPERTY LINE	BUILDING FROM TOP OF SLOPE	C
	A	D	B	
0 - 10	2'	2'	5'	15' MIN.
10 - 30	3'	3'	7'	
OVER 30	5'	3'	10'	



BUILDING SETBACK

Fig 2

- (a) Fill placed above the top of an existing or proposed surface with a slope steeper than three (3) horizontal to one (1) vertical shall be set back from the top of the slope a minimum distance of six (6) feet.
- (b) The setbacks established by this Section are minimum and may be increased by the Building Official if he deems it necessary for safety or stability or to prevent possible damage from water, soil or debris.
- (c) The Building Official may reduce the required setback where: (1) He determines the necessity for the setback to be eliminated or reduced by the construction of retaining walls or because the owner has the right to extend slopes onto the adjacent property; or (2) after receipt of a report by a Soil Engineer certifying that he has investigated the property and that in the Engineer's opinion the reduction in the setback will not endanger any public or private property or result in the deposition of sediment or debris on any public way or interfere with any existing drainage course.

2:1-23 DRAINAGE - DISPOSAL. The following provisions apply to the conveyance and disposal of stormwater runoff.

- (a) All drainage facilities shall be designed to convey surface water in such a manner to prevent detrimental erosion, overflow or ponding, to the nearest practical street, storm drain, or other watercourse in accordance with such applicable design criteria, standards and procedures as may be required by the Public Works Department and by the Health Department.
- (b) The ponding of water shall not be permitted above cut or fill slopes or on drainage terraces. Adequate drainage facilities shall be provided to prevent such ponding.

2:1-24 DRAINAGE - EROSION PREVENTION. The Permittee and the Owner shall make adequate provisions to prevent any surface waters from materially damaging the face of any excavation or fill. All slopes shall be protected from surface water runoff from above by berms, swales or brow ditches unless upon the recommendation of the Wash-tenaw County Soil Conservation District, the Building Official determines such berms, swales or brow ditches are unnecessary to provide such protection and waives this requirement.

2:1-25 DRAINAGE - BUILDING PADS. All areas designed for buildings shall be graded to provide at least a two (2) percent grade for a horizontal distance not less than ten (10) feet away from the building toward the approved disposal area unless waived by the Building Official where the terrain is so flat as to make such grade unnecessary or impractical.

2:1-26 DRAINAGE - DRAINAGE FACILITIES. All drainage terraces, berms, swales and brow ditches shall be designed and constructed, and when required, shall be paved or otherwise improved to the satisfaction of the Building Official. If the drainage discharges onto natural ground, the Building Official may require that such natural ground be protected from erosion by an adequate amount of riprap or other measures.

2:1-27 FLOOD PLAIN DEVELOPMENT - UNREGULATED AREAS. Grading of land within the Fifty (50)-year flood plain of watercourses not designated and delineated as being subject to flood hazard will not be permitted unless sufficient topographic and hydrologic data is presented to the Building Official to indicate that such alteration will have no detrimental influence on the flow characteristics of the stream.

2:1-28 HYDROLOGIC REPORT. The Building Official may require that a report be submitted by a Registered Engineer specializing in the practice of hydrologic engineering. The report shall include the following data and any other data, conclusions and recommendations as necessary to define and evaluate potential flood, erosion or geologic hazards which may be associated with development within the flood plain.

- (a) Delineation of the water surface profile and the extent of the flood plain as determined both before and after the proposed development in accordance with a Fifty (50)-year flood frequency recurrence, consistent with a fully developed watershed.
- (b) Conclusions relative to flood hazard considering the effect of the depth, duration and frequency of overbank flow and the average velocity of flood flow within the site.
- (c) Conclusions concerning the influence of the proposed construction on both upstream and downstream flood hazards and recommended remedial measures to preclude any such hazards if applicable.

2:1-29 FLOOD PLAIN DEVELOPMENT - REGULATED AREAS.

Grading of land within the Fifty (50)-year flood plain of watercourses specifically recognized and designated as being subject to flood hazard shall be denied or shall be regulated as determined by the Building Official.

2:1-30 SITE GRADES. Site and building grades shall be adapted to established street grades and to the existing topography, preserving to the extent possible the natural contour and site features and insuring satisfactory surface and groundwater drainage, proper function of sanitary and storm sewer systems and adequate driveway gradients.

2:1-31 BUILDING FLOOR GRADES. All buildings and structures erected or relocated in areas subject to inundation by flood water or tide water shall have floor elevations as set forth by the following subsections.

- (a) All floors (including basement and storage area floors) of residential dwellings shall be built at least two (2) feet above the Fifty (50)-year flood level as determined in accordance with the requirements of this Chapter.
- (b) Buildings other than for residential use may have basement, storage area, and crawl space floor levels below flood level providing the enclosure walls and floors that are below a level two (2) feet above the Fifty (50)-year flood level are specifically designed for water tightness and for hydrostatic pressure.
- (c) Where buildings are erected in areas subject to flood by tidewaters, the first or main floor elevation shall not be lower than ten (10) feet above mean low tide as established by the Building Official.
- (d) In the event that buildings subject to inundation by tidewaters have basements, crawl spaces or other floors which are planned to be less than ten (10) feet above mean low tide, all enclosure walls and floors less than ten (10) feet above mean low tide shall be specifically designed for water tightness and hydrostatic pressure.

- (e) In the event that basements, crawl spaces or other floors extends below existing or projected future groundwater level, all enclosure walls and floors less than one (1) foot above the existing or projected future groundwater level shall be specifically designed for water tightness and hydrostatic pressure or shall be provided with an adequate subdrainage system subject to the approval of the Building Official.

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