

Boonton Township  
v CH

~~Boonton~~  
Township  
Denville Hanover

~~Direct Examination~~ Deposition  
~~(i.e. Q&A)~~ of Fletcher  
Platt - re:

Pages 76 evaluating <sup>the impact</sup> ~~the design~~ of drainage ~~facilities~~ from developments  
his work for the Twp. of Hanover

CH 0000735

- This doc. is 76 pages of Q&A between Mr. Platt and Mr. Onsdorff.
- There is a certificate, i.e., an affirmation on the last page.

SUPERIOR COURT OF N  
LAW DIVISION - MORRIS COUNTY  
DOCKET NUMBER: L-6001-78-P.W.

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25

MORRIS COUNTY FAIR HOUSING :

COUNCIL, et al, :

Plaintiffs : DEPOSITION OF:

vs. : FLETCHER PLATT

BOONTON TOWNSHIP, et al, :

Defendants :

-----:

J.Crisitello  
2/5/80

January 28, 1980  
Monday, 1:30 p.m.

2 Valley Road  
Denville, New Jersey

A P P E A R A N C E S:

STANLEY C. VAN NESS, Public Advocate  
BY: KEITH A. ONSDORFF, ESQ.  
Attorneys for the Plaintiffs

MESSRS: YOUNG, DORSEY & FISHER  
BY: JOHN H. DORSEY, ESQ.  
Attorneys for Hanover Township

Reporting Services Arranged Through:  
ROSENBERG & ASSOCIATES  
CERTIFIED SHORTHAND REPORTERS  
769 Northfield Avenue  
West Orange, New Jersey 07052  
Phone: (201) 678-5650

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25

I N D E X

Witness

Direct

FLETCHER PLATT

By Mr. Onsdorff

2

E X H I B I T S

<u>No.</u>	<u>Description</u>	<u>For Iden.</u>
FPH-1	Resume of Fletcher Platt	3
FPH-2	Report prepared by Killam Associates dated November 2, 1979.	12
FPH-3	Township of Hanover, N.J. Flood Hazard Boundary Map, H-01 Flood Insurance Rate Map I-01.	17
FPH-4	Flood Insurance Study, Township of Hanover.	18
FPH-5	Map of Hanover Township separated into 7 separate areas.	53

PENGAD CO., BAYONNE, N.J. 07002 - FORM 2048

1 F L E T C H E R P L A T T, having been duly sworn,  
2 testified as follows:

3  
4 DIRECT EXAMINATION

5 BY MR. ONSDORFF:

6 Q Mr. Platt, as you know, I'm Mr. Onsdorff,  
7 counsel for the plaintiffs in the litigation of the  
8 Morris County Fair Housing Council versus the Township  
9 of Boonton, et al.

10 Today, I'm going to ask you a series of questions  
11 regarding your work on behalf of the Township of Hanover.  
12 to produce a record which may be used at subsequent stages  
13 of this litigation. If, at any time, a question is not  
14 clear, please let me know and I will endeavor to restate  
15 it so we know what we're talking about.

16 Have you been deposed before?

17 A Yes, I have.

18 Q I show you a copy of this document which  
19 appears to be your resume and ask if that's an accurate  
20 and updated copy of your resume?

21 A Yes, it is.

22 MR. ONSDORFF: I ask that we mark this and  
23 all the documents in this afternoon's deposition  
24 as exhibits FPH for Fletcher Platt-Hanover, just  
25 for sake of clarity. This would be FPH-1 for

1 identification.

2

3

4

(FPH-1 for identification is a resume of  
Fletcher Platt.)

5

6

7

8

Q I see that on your resume you received a  
Bachelor of Science degree in Civil Engineering at the  
University of Vermont in 1965.

9

Is that correct?

10

A That's correct.

11

12

Q What were the primary academic disciplines  
which you studied as part of this degree program?

13

14

A Structural engineering, hydrolic engineering and  
sanitary / engineering primarily, with other courses to round  
out the general engineering curriculum.

15

16

17

Q Did you pursue any further academic studies  
after you graduated from the University of Vermont in 1965?

18

19

A I have taken a couple of graduate courses in  
sanitary engineering at NCE, several years ago, I believe  
that was in '72.

20

21

22

I am presently taking business administration courses  
towards an MBA at Fairleigh Dickinson University.

23

24

25

Q In the areas of hydrolic engineering, could  
you elaborate briefly on the nature of those studies and  
what they encompassed?

1 A The basic hydrolic courses involved the flow of  
2 water in both pipelines and open channels. And, I believe  
3 there was a total of three courses in that area that I  
4 took.

5 This was a number of years ago and remembering  
6 exactly what the curriculum was is a little difficult.

7 Q With regard to the flow of water in open  
8 channels, what precise, if you can recall -- did that  
9 incorporate as to what were the scientific principles?

10 A The scientific principles deal with the energy of  
11 water, the flow on both critical and sub-critical stages.

12 Generally, most channel work is designed in sub-cri-  
13 tical stages which is relatively slow velocities with  
14 stable water conditions. Steeper channels, you get into  
15 super critical flow which is unstable and that's where the  
16 greatest chance for hazard occurs.

17 Q In essence, what we're talking about here  
18 is designing structural mechanisms for safe movement of  
19 surface waters in confined areas.

20 Is that correct?

21 A That's correct, as well as the hydrolics that is  
22 utilized to develop the quantity of flow of water.

23 Q After your graduation from the University  
24 in 1965 you began employment with the California Depart-  
25 ment of Water Resource?

1 A That is correct.

2 Q What were your responsibilities with this  
3 department of California government?

4 A The first area of responsibility was the planning  
5 for delivery of water from the California Aqueduct into  
6 the Los Angeles area.

7 Secondly, it was the design of relatively large  
8 storm drainage facilities which crossed the Aqueduct which  
9 brought the water down from northern California.

10 This was relatively large structures and the major  
11 portion of work was in super critical flow, we were going  
12 through mountainous areas.

13 Q In 1968, I believe you left California to  
14 take employment with the Killam Associates.

15 Is that correct?

16 A That is correct.

17 Q Where was that employment located?

18 A That was in Millburn.

19 I was in Millburn from 1968 through 1971.

20 Q What were your responsibilities during this  
21 period of time?

22 A I had a wide range of responsibilities in almost  
23 all phases of hydrolic and sanitary engineering.

24 Several storm drainage projects were included, pre-  
25 paration of computer programs to analyse both hydrolic and

1 structural problems.

2 Also, several basic planning studies for water supply,  
3 waste water treatment.

4 Q In 1971 you moved your employment to the  
5 Purcell Associates?

6 A Yes, sir.

7 Q Was there any specific reason that you chang-  
8 ed employers, at that time?

9 A I guess, basically, itchy feet, wanted a change of  
10 scenery, wanted to convince myself that where I was was  
11 the best -- or, wasn't the best. And, I had a good oppor-  
12 tunity. It was a young growing firm and I was in charge  
13 of a very large project, storm management project for the  
14 City Of Newark, which was a great experience.

15 Q Your feet got itchy, again, in 1973?

16 A Yes, they got a little itchy in 1973, and I realized  
17 that Killam Associates was a good place to work. So, I  
18 went back.

19 Q Since 1973, what have your responsibilities  
20 been at Killam Associates?

21 A From, approximately, 1973 to 1975, I was project  
22 engineer and then associate in the Denville office working  
23 under Gifford Boyce who was then in charge of the office.

24 Mr. Boyce has left and now I'm in charge of the  
25 branch office in Denville, handling a number of clients in



1 the general Morris County area as far west as Warren County.  
2 And, in all phases of hydrolic sanitary engineering except  
3 for heavy treatment design which is done out of the main  
4 office.

5 Q Over this period of time either in academic  
6 studies or your professional experience, have you done any  
7 work specifically in evaluating flooding and land suscepti-  
8 bility to flood hazards?

9 A I had done quite a few drainage studies, the largest  
10 being for the City of Newark. That was mostly urban runoff.

11 We have done minor drainage study -- I have done  
12 minor drainage studies, one in Hanover and also the County  
13 College of Morris.

14 Quite a while ago there was some down in the Westfield  
15 area that I participated in, and the writing of the computer  
16 programs to analyse the problems.

17 Q Have you ever been involved in any work in  
18 delineating flood plains?

19 A The detailed delineation of flood plains, no. I  
20 have not been directly responsible for the preparation  
21 of flood plain delineation. However, I am familiar with  
22 the mechanics of it and know what the meaning of the results  
23 is.

24 Q Have you published any papers within your  
25 area of expertise at any time during your career?

1 A I have not published any papers.

2 Q Have you given testimony in your area of  
3 expertise either before administrative agencies or in any  
4 courts of the United States?

5 A Formal testimony, I would say: no.

6 I have had a number of stream encroachment appli-  
7 cations to the State of New Jersey. They have involved  
8 meetings, and so on, with technical level people at the  
9 State.

10 But as far as court testimony, no, I have not.

11 I have given a few seminar type of courses, one  
12 to the Municipal Engineers Council a few years ago on  
13 storm water drainage design.

14 Q Were there any papers or course outlines  
15 for your seminar with the Municipal Engineers?

16 A Yes, there was a course outline and some general  
17 notes.

18 Q Would copies of these papers be available?

19 A Yes, I believe I could make them available to you.

20 I don't have them right here, but I believe they're  
21 still in the file.

22 Yes.

23 MR. ONSDORFF: Would that present any  
24 problem?

25 MR. DORSEY: No.

1 Q Would you be in a position to basically  
2 characterize what you envision as your specific field of  
3 expertise in which you qualify as an expert?

4 MR. DORSEY: In this litigation or in  
5 general?

6 MR. ONSDORFF: In general.

7 A In general, a good broad background in all fields  
8 of hydrolic and sanitary engineering. Particularly, as  
9 they relate to planning of facilities, and so on.

10 My strong point is in the planning of hydrolic and  
11 sanitary engineering rather than in the detailed design  
12 and detailed mechanics of it.

13 Q When you refer to facilities, what type of  
14 facilities does that encompass?

15 A Any type of facilities development, whether it be  
16 site specific to the development of an industrial park  
17 or residential, or on a broad scale, to the planning of  
18 development of a municipality as far as drainage and sani-  
19 tary facilities are concerned.

20 Q That would encompass your expertise as  
21 pertains to this particular litigation.

22 Would it not?

23 A Yes, it would.

24 Q There's nothing you would add as far as your  
25 expertise in regards to the present lawsuit.

1           Would there be?

2           A       Not that I can think of, at this time.

3           Q       Could you briefly describe the work that  
4 you actually performed for the defendant Township of  
5 Hanover in this case?

6           A       We basically attended several meetings with the  
7 other consultants including Mr. Dorsey and Mr. Catlin to  
8 obtain general information on this suit and what it was  
9 all about. We then obtained copies of the vacant land  
10 maps from Catlin Associates and then analyzed those vacant  
11 tracts of land in relatively broad general terms as to  
12 local problems of runoff, site specific -- site related  
13 problems in general terms. Then, also, evaluated the impact  
14 on downstream drainage and flooding from development of  
15 those particular tracts or general areas and prepared a  
16 report summarizing our conclusions.

17          Q       Based on your work, then, what is the nature  
18 of the relief sought by the plaintiffs in this case, as  
19 far as you perceive it to be?

20          A       I'm sorry, would you rephrase that?

21          Q       You indicated that you had a meeting to  
22 discuss the nature of the litigation.

23                   Did you form an understanding based upon those  
24 meetings as to what it is in regards to the Township of  
25 Hanover that if the plaintiffs prevail in this litigation,

1 the relief they will ask the Court to grant to them?

2 MR. DORSEY: Just plaintiffs in the State  
3 of New Jersey.

4 A Okay.

5 If the case is found in your behalf?

6 Q If the Judge does?

7 A If the Judge finds in your behalf --

8 Q What will be the consequences as far as the  
9 land use --

10 A Oh.

11 Well, my understanding is that you are seeking some  
12 definition of areas -- or areas and number of units -- least  
13 cost housing units to be developed within the Township of  
14 Hanover.

15 Does that answer the question?

16 Q That answers it.

17 As far as the report that you prepared, you examined  
18 the land in the context of its suitability to be devoted to  
19 the development of such least cost housing.

20 Is that correct?

21 A That is correct.

22 Q I show you this document and ask if you can  
23 identify it?

24 A Yes.

25 This is the report which was prepared and dated

1 November 2, 1979 which summarizes our conclusions and  
2 findings.

3 MR. ONSDORFF: I would ask that we mark that  
4 as FPH-2 for identification.

5  
6 (FPH-2 for identification is the report  
7 prepared by Killam Associates, dated November 2,  
8 1979.)

9  
10 Q In regards to the scope of your study, you  
11 indicated it was examining the vacant lands, the various  
12 parcels in the context of least cost housing -- that land  
13 suitability developed and being devoted for the develop-  
14 ment of least cost housing.

15 Does that also incorporate any analyses of the  
16 suitability of these various tracts for the development  
17 as authorized under the present zoning ordinance?

18 A Specifically, no.

19 We did not comment directly upon suitability to  
20 existing ordinance or to any other zoning.

21 Q Would you be in a position to offer an  
22 opinion as to the suitability of specific parcels of land  
23 for their development for single family homes at one to  
24 the acre or lower densities?

25 A Possibly.

1 I don't think I could make the blanket statement  
2 that I could, but there might be cases that I have the  
3 familiarity.

4 We have to be specific.

5 Q Overall, you restricted your analyses to the  
6 high density housing types consistent with the least cost  
7 principle?

8 A That is correct.

9 Q Do you recall what the lowest densities  
10 you examined are as far as the housing developments that  
11 the plaintiffs in this suit are seeking?

12 A We did not really approach it from that standpoint.

13 Let's see, multi-family at 15 units per acre or  
14 multi-family at 10 units per acre. We took -- which was  
15 a general understanding to begin with.

16 I think even before there was a definition of the  
17 objective of maybe 15 units per acre we took an objective  
18 on what we understand to be relatively dense or quite  
19 dense multi-family development without concerning ourselves  
20 with exact numbers, just the general concept. And, our  
21 understanding of what that type of development generally  
22 results in and approach it from that standpoint.

23 We made no distinction and have no recommendation  
24 as to whether 15 or 10 or any other number is the right  
25 number. We took the basic concept of dense multi-family

1 development, and that was it.

2 Q All I'm trying to do is get a clear picture  
3 of what cutoff point you moved from moderate or low density  
4 and what you characterize as dense housing?

5 A The only designation that I can make, at this point  
6 in time, is the distinction between separate dwellings --  
7 separate dwelling sites under the existing zoning which I  
8 believe gets down to as small as 10-15,000 square foot lots,  
9 and a multi-family development probably of a minimum of  
10 eight or ten units.

11 That was the only distinction that was important  
12 to me in concept.

13 We were comparing multi-family units to the general  
14 present zoning within the Township in concept.

15 Q Did your analyses also incorporate a number  
16 of governmental controls and regulations designed to pro-  
17 tect and preserve the flood plain?

18 A Yes, we made general reference to several laws and  
19 regulations dealing with flood plain to really highlight  
20 what we feel is the recent trend in the law as far as regu-  
21 lations of development within the flood plains and flood  
22 fringe areas.

23 We certainly didn't offer any legal opinion concern-  
24 ing any of these. We tried to highlight what we felt was  
25 the result of these laws from a technical standpoint, that



1 these laws do guide development within the flood plain  
2 to some degree.

3 Q Based upon your review and analyses of the  
4 Township of Hanover's ordinance, I believe it's Number 26-70?

5 A '70 or '77?

6 Q Excuse me, '77.

7 Could you summarize from a technical and planning  
8 standpoint as to what are the salient or significant pro-  
9 visions of this land use control ordinance as it pertains  
10 to development in flood prone areas of the municipality?

11 A Basically, that ordinance sets -- establishes limits  
12 of the flood plain and floodway. It then regulates the  
13 development within that defined flood plain from an adminis-  
14 trative standpoint, and then also sets guidelines for any  
15 development which is to occur within those areas.

16 Q Are you satisfied from a professional stand-  
17 point as to the controls adopted by Hanover in this ordin-  
18 ance to the extent of being able to say that they adequately  
19 preserve and protect the flood prone areas of this munic-  
20 ipality?

21 A That's a very difficult question to answer.

22 I believe that from an engineering standpoint --  
23 from a technical hydrolic engineering standpoint they do  
24 provide, in general terms, adequate protection for develop-  
25 ment within those areas. I feel, however, from an

1 environmental standpoint, they may not go far enough and  
2 that from other aspects -- maybe from the general public  
3 safety --

4 From my opinion, they don't quite go far enough,  
5 either.

6 I think, basically, this ordinance has been adopted  
7 based on the federal requirements of the ordinance. I  
8 think many of these standards are set as a minimum by the  
9 federal government in the development of these flood plain  
10 delineations.

11 Q I believe your testimony is to the effect  
12 that from the hydrolic standpoint they should be adequate,  
13 but from an environmental and safety standpoint they don't  
14 go far enough, in your mind?

15 A That's correct.

16 Q Could you elaborate on what other environ-  
17 mental aspects there are that you envision needing further  
18 attention?

19 A From an environmental aspect, the flood plains are  
20 generally acknowledged as an environmentally sensitive  
21 area, from a wildlife standpoint and vegetation standpoint,  
22 and so on.

23 I'm sure today the trend environmentally is not  
24 to develop in flood plain, at all.

25 This ordinance does not totally prohibit development

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25

in the flood plain.

I think from an environmental standpoint that there may be justification to totally exclude development within the flood plain.

Q Beyond the needs of flood control there are other environmental interests you're referring to?

A That's correct.

Q I believe you also mentioned that in essence Ordinance 26-77 adopted the Department of Housing and Urban Development flood insurance delineations.

Is that what it did, to your mind?

A Yes.

Q I'll show you a copy of this HUD map and ask you if you can identify it as the one used by the Township in this ordinance?

A Yes.

It's my understanding that this is the one used in the ordinance.

MR. ONSDORFF: I would ask that we mark that as FPH-3 for identification.

(FPH-3 for identification is the Township of Hanover, N.J. Flood Hazard Boundary Map H-01 Flood Insurance Rate Map I-01.)

1 Q I'd like to show you this study and ask if  
2 you can identify the one that is reflected in the HUD Flood  
3 Insurance Map which we've identified as FPH-3?

4 A Yes, I believe it is.

5 MR. ONSDORFF: At this time, we'll have  
6 this marked as FPH-4 for identification.

7  
8 (FPH-4 for identification is the Flood  
9 Insurance Study, Township of Hanover.)

10  
11 Q If I understand your testimony correctly,  
12 the Township of Hanover Ordinance 26-77 which implicates  
13 and incorporates the HUD Flood Study and Map is sufficient  
14 protection as far as insuring the regulation of flood  
15 prone areas, but you would see other environmental stresses  
16 in regulating the flood plain areas.

17 Is that correct?

18 A That is correct.

19 Q If I direct your attention to Page 4 of  
20 the HUD Flood Study, the table on the second half of  
21 that page identifies a portion of the municipality as  
22 being undeveloped and designated as swamp and water and  
23 indicates, I believe, that's apparently or approximately  
24 17 percent of the municipality within that category.

25 Is that correct?

1 MR. DORSEY: Is that a sample municipality  
2 or a given municipality?

3 MR. ONSDORFF: This is within the Township  
4 of Hanover.

5 A Let me take a look at it, please.

6 MR. ONSDORFF: Certainly.

7 A (Continuing) It says, "The current population and  
8 land use in the Township and its projected population are  
9 given below."

10 Your question was concerning swamps and -- percent-  
11 age of swamp and water?

12 Q Yes.

13 A It does appear to indicate that 17 percent of the  
14 total area of the Township is swamps and water and it  
15 happens to fall under the undeveloped category. But, I  
16 believe it's 17 percent of the total land areas of the  
17 Township.

18 Q In regards --

19 MR. DORSEY: Let me see that, please.

20 MR. ONSDORFF: Sure.

21 Q In regards to the Flood Insurance Map that  
22 was prepared in conjunction with this flood insurance study,  
23 do you know how the swamp and water percentages of the  
24 municipality interface with these areas delineated on the  
25 HUD Insurance Map as being flood prone areas?

1 A Not specifically. No, I don't.

2 I'm not sure what characteristics were utilized to  
3 determine that 17 percent.

4 I'm not aware of that.

5 Q Are you aware in what manner the HUD Flood  
6 Insurance Study and maps define the flood prone areas?

7 A Yes, I am.

8 Q In what manner do they do that?

9 A The first task is to develop a -- generally, to  
10 develop a theoretical flow for a 100 year frequency storm.  
11 Most of the flood plain delineation is based on the 100  
12 year flood.

13 Very few rivers from a period of record equal to  
14 that 100 year frequency -- and, therefore, theoretically  
15 the approaches are utilized to develop that flow. Then,  
16 the existing conditions of the water courses are determined  
17 through field surveys, in general.

18 Some of the initial surveys were done off of topo-  
19 graphic maps rather than field surveys. But, the proper  
20 approach is to take field surveys. Then, computer programs  
21 are generally utilized today to pass the 100 year flow  
22 through those stream and river corridors to develop a  
23 water surface profile. That water surface is then super-  
24 imposed on top of the topographic to develop the limits  
25 of the flooding area, the floodway and the flood fringe

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25

areas.

Q As far as the flood plain is concerned, these areas which are susceptible to flood hazard or are within a flood hazard area, what is the outer boundaries of that flood plain?

A The outer boundaries of the flood plain are generally the limits that the water would reach on the ground during a 100 year frequency storm.

Q In addition to the flood plain, are there additional lands which you believe are also susceptible to a flood risk?

A In addition to the floodway?

Q The flood plain.

MR. DORSEY: Plain. He said "flood plain."

A In addition to the flood plain, are there additional--

Q Yes.

A In the case of Hanover, particularly, I'd say "yes," because the delineation does not include all of the streams. It includes the Whippany River and two major tributaries. There are a lot of other water courses within the municipality which are also subject to flooding.

Q I believe your testimony was that the Township of Hanover had endeavored to regulate and control the flood hazards based upon the delineations of the flood plain prepared by HUD?

1 A Yes.

2 Q Is it your understanding that those other  
3 streams which are not delineated by HUD are not so regulat-  
4 ed by the Ordinance 26-77 of the Township of Hanover?

5 A No.

6 You're -- I think, you're right.

7 Let me phrase it.

8 The other streams are generally regulated through  
9 other ordinances, not this particular ordinance.

10 Q Do you know in what manner they are regulated?

11 A I would believe that, generally, it would be through  
12 site plan review by the planning board and board of adjust-  
13 ment. And, through review of the Township's engineering  
14 department of site plans, and so on.

15 Q Are you aware of any standards in these  
16 other ordinances setting forth the basis for making develop-  
17 ment decisions during this site plan and engineering review  
18 process?

19 A I'm not specifically aware of the requirements, no.

20 Q Do you recall the identifying number for these  
21 ordinances?

22 A No, I do not.

23 MR. DORSEY: It's the Land Use Ordinance  
24 for the Township of Hanover which was adopted on --  
25 I think it's Ordinance 31-1976. It was adopted



1 December 30 of 1976.

2 MR. ONSDORFF: December 30?

3 MR. DORSEY: Yes.

4 Off the top of my head I think that's it.

5 MR. ONSDORFF: Thank you.

6 MR. DORSEY: Do you want me to send you a  
7 copy?

8 We've already submitted copies of that with  
9 the Interrogatories.

10 MR. ONSDORFF: No, that's fine.

11 Q In addition to the flood prone areas delineated  
12 and controlled by HUD, are you aware of the state  
13 program for flood protection applicable to streams and  
14 water courses in Hanover?

15 A In the way you word your question, I would have to  
16 say: no.

17 I'm not familiar with exactly what you're talking  
18 about. Maybe if you expand on it, I will. But --

19 Q Sure, I'll rephrase it.

20 If I wanted to develop a particular parcel of land,  
21 vacant tract anywhere within Hanover which was in the  
22 vicinity of a water course, initially I would examine the  
23 municipal ordinances to see what the requirements were for  
24 getting approval of development.

25 Is there anything similar at the state level that I

1 need to be concerned about as far as getting state author-  
2 ization?

3 A Absolutely there is.

4 Q For building in a flood -- possibly a flood  
5 prone area?

6 A Yes, there is.

7 The State has a stream encroachment permit require-  
8 ment.

9 MR. DORSEY: And that comes into play based  
10 upon the flood plain as layed out by HUD.

11 Is that right, Keith?

12 Q In what manner does the stream encroachment  
13 permit program of the State --

14 I assume that's the Department of Environmental  
15 Protection?

16 A DEP.

17 Q How is that program, that jurisdiction  
18 established?

19 A Its jurisdiction is established by State law. But,  
20 they will first, of course, look to see if there is a flood  
21 plain delineation being completed. When they find that  
22 one has not been completed they normally -- they will go  
23 through their files and see if similar permits have been  
24 filed in adjacent areas which will give an indication of  
25 what the flows might be or the conditions of the stream

1 might be.

2 Typically, they will ask the applicant to go back  
3 and prepare a delineation of one sort or another to analyze  
4 very specifically to that independent site what the flood-  
5 ing potential might be from the stream.

6 Q When you say, "First they check their files  
7 to see if a delineation has been prepared --"

8 A That's correct.

9 Q Are they referring to anything specific?  
10 Do they use the HUD delineation?

11 A Yes, they -- they will use the HUD delineation if  
12 they're convinced that it is accurate.

13 Some of the very, very early HUD delineations were  
14 poor and some of them are being updated now. The most  
15 recent ones are very accurate and they will start with  
16 those accepted and approved delineations where available.

17 Q As far as state action for development in  
18 the Township of Hanover, are you aware of what delineations,  
19 if any, the DEP accepts as far as this municipality is con-  
20 cerned?

21 A The State, at this time, does accept the HUD delinea-  
22 tions that we have referred to previously.

23 Q In other words, if I wanted to go to the DEP  
24 for an approval, the flood plain as delineated by HUD at the  
25 100 year flood frequency elevation would be the outer limits

1 of where I need to be concerned for State DEP jurisdiction?

2 A No, that's only for development on those particular  
3 stream corridors.

4 The Whippany River, Malapardis Brook, which is analy-  
5 zed, and this unnamed tributary in the Township on Ridgedale  
6 Avenue, only on these streams will they consider the HUD  
7 delineation. On any other water course there has not been  
8 a delineation done, so site specific analysis would be  
9 required.

10 Q For those three water courses which you've  
11 enumerated, the DEP accepts the 100 year flood delineation  
12 from HUD.

13 Is that correct?

14 A To the best of my knowledge, yes.

15 Oh, there's one more, Black Brook, which is really a  
16 tributary of the Whippany River in the Morristown Airport.

17 Q Four water courses have been delineated by  
18 HUD?

19 MR. DORSEY: By HUD?

20 MR. ONSDORFF: Correct.

21 A Let me check the map to make sure there wasn't any  
22 others.

23 There's one additional and that is they've designat-  
24 ed the area of Bee Meadow Pond and the two tributary ponds  
25 as being within the flood plain.

1 I believe that delineation was done by approximate  
2 methods rather than a detailed analysis because there's no  
3 delineation on Westbrook which comes out of Bee Meadow Pond.

4 And, that's all.

5 Q As pertaining to any other parcel of land  
6 not within these areas so delineated by HUD and accepted  
7 by DEP, if I wanted to develop a parcel of land and I  
8 wanted to determine whether or not I had to go through the  
9 DEP permit process, in what manner would I determine if I,  
10 as a developer, was to submit to the DEP jurisdiction under  
11 the statutes and the regulations?

12 A In general terms, any tract of land which is on a  
13 water course that has less than 50 tributary acres, the  
14 DEP will abide by the review of the municipal engineer.

15 I believe if there's public opposition, DEP may  
16 get involved. Even on ones under 50 acres, if public  
17 opposition is concerned -- anything over 50 acres, any  
18 work along a water course must be applied -- an application  
19 must be filed with the DEP, an encroachment must be accom-  
20 plished.

21 I went through one where they did a delineation  
22 showing we were outside the flood plain and the DEP requir-  
23 ed us to submit it, anyway.

24 Q What project was that?

25 A This was in the Township of Morris, another

1 municipality.

2 We were bordering the flood plain but we showed we  
3 were outside and they wanted it submitted.

4 Q Your elevations were higher than those of  
5 the 100 year flood elevations for that frequency storm?

6 A (The witness nods his head.)

7 Q And the DEP still requested it?

8 A That we submit an application and offer back up  
9 calculations and a fee.

10 I asked them why and I didn't get an answer to that.

11 Q Do you know what water course that was?

12 A Loantaka Brook, which is tributary to the Great  
13 Swamp and the upper Passaic River.

14 Q If I understand you correctly, what normally  
15 the DEP policy is is to cut its reviews off at the extent  
16 of the flood plain, the 100 year flood hazard areas except  
17 in, apparently, unusual situations?

18 A If you're bordering it, generally they want an  
19 application submitted, particularly if there's any public  
20 interest or concern.

21 Q Bordering the 100 year flood elevation, this  
22 area that DEP concerns itself with --

23 A As far as a delineation goes.

24 Also, any work within that area is also subject to  
25 their regulations. Even installing a water main across a

1 stream is subject to their regulations, even though you may  
2 not permanently change the channel configuration, you're  
3 subject --

4 Q Any development below that elevation?

5 A That's correct.

6 Q I understand.

7 If my understanding is correct, we've discussed the  
8 municipal controls, the State controls and HUD which are  
9 the federal controls.

10 Does that constitute, to your knowledge, the gambit  
11 of governmental programs for the protection of flood prone  
12 areas that would be found in Hanover?

13 A No, there are others which come to play in specific  
14 cases.

15 On Page 2 of our report we refer to Executive Order  
16 11-9-88 signed by President James Carter, May 24, 1977.

17 MR. ONSDORFF: Off the record.

18

19 (An off the record discussion takes place.)

20

21 Q I am sorry, you started to tell us about  
22 Executive Order 11-9-88?

23 A That Executive Order sets guidelines which, to the  
24 best of my knowledge, are being adhered to concerning the  
25 development within any flood plain or wetland, and that

1 development being undertaken directly by the federal govern-  
2 ment -- or with financial participation by the federal  
3 government. And, basically, what it says is that the federal  
4 government shall not participate or undertake development  
5 within the flood plain area or wetland if there are any  
6 viable alternatives.

7 Q Pursuant to this Executive Order you defined,  
8 essentially, two categories of land: the flood plain which  
9 I assume is the same flood plain that we've been discussing  
10 right along, the 100 year elevation?

11 A Right.

12 Q "Wetlands," is that a term of art which is  
13 defined specifically for purposes of this restriction on  
14 federal funding?

15 A I don't recall, at this point, that wetlands are  
16 defined in this regulation. There are additional regulations,  
17 I believe, that have been quoted to me recently concerning  
18 wetlands, specifically.

19 Q In terms --

20 A In terms of this ordinance, I read it specifically  
21 to refer only to flood plains and not wetlands, to answer  
22 your question.

23 Q In terms of the Township of Hanover, we have  
24 the HUD delineated flood plain which the government --  
25 federal government will not fund any development in.



1           Are there any wetlands which are situated within  
2 Hanover which would be within the scope of Executive Order  
3 11-9-88, to your knowledge?

4           A           Specifically, no. I don't know of any area that's  
5 been designated as a wetland, technically. And, I believe  
6 that designation is the responsibility of the Corp of  
7 Engineers.

8           Again, it's one of the new recent regulations and  
9 I have to admit I'm not thoroughly familiar with it from  
10 a working standpoint. And, I'm not aware that any portion  
11 of Hanover has been so designated by the Corp of Engineers.

12           Q           In addition to Executive Order 11-9-88,  
13 are there any other governmental regulatory statutes or  
14 codes or regulations or rules applicable to the Township  
15 of Hanover designed to preserve and protect flood hazard  
16 and flood zoned areas of this municipality?

17           A           There's one more that comes into play in some cases.  
18 And, that's the Morris County Planning Board Review which  
19 applies principally to development on county roads or  
20 major tracts of land when they're developed.

21           Generally, their review is of the site plan type  
22 of standards. They consider -- and I think, also, they  
23 refer all developments to the County Soil Conservation  
24 Survey for major developments.

25           Their review is somewhat -- let's say repetitious

1 of the standard municipal review, and they do definitely  
2 make specific comments in the cases of the significant  
3 development and in the cases of any development. Even just  
4 a driveway -- single family home and driveway. And, in  
5 some cases, as they may affect the local drainage.

6 I did not specifically refer to that in the report  
7 in that it was somewhat repetitious of the other types of  
8 laws I was referring to and I really wanted to show the  
9 broad range.

10 Q As far as the review for the Township of  
11 Hanover that you performed, the areas of land which you  
12 have analyzed and delineated as far as flood hazards and  
13 their being flood prone, are these the same lands as are  
14 incorporated in the several governmental regulations that  
15 we've been discussing, or is this something more than those  
16 areas encompassed by the local ordinance, the State statute  
17 on stream encroachments and the federal HUD program?

18 A All of the lands within the Township of Hanover  
19 are subject to site plan review, planning board review,  
20 and so on. So, all of the lands are subject to these drain-  
21 age reviews, and so on, to some degree.

22 We acknowledge that if you had a tract of land with  
23 less than 50 acres of tributary areas to a stream, it may  
24 not be subject to the State. If it's outside the defined  
25 flood plain as defined in the exhibit we've referred to

1 before which is FPH-3 and 4, that they would not be subject  
2 to that ordinance. But, certainly all those lands are  
3 subject to at least the local site plan review, and so  
4 on, which does consider drainage.

5 Q Specifically directing your attention to  
6 Page 1 of FPH-2, the last full paragraph on that page, the  
7 last sentence, the statement appears, "From a storm water  
8 drainage standpoint the majority of the remaining lands  
9 have severe restrictions."

10 What precisely is the perspective from storm water  
11 drainage that you're referring to in the context of that  
12 statement?

13 A Either -- that each of the sites -- the greatest  
14 majority of each of these sites is either subject to  
15 direct flooding as a result of being within the flood plain,  
16 or as a result of its location has difficulty disposing of  
17 its storm waters without resulting in downstream problems,  
18 or without having to undertake what we feel are very signi-  
19 ficant on site steps to control that runoff.

20 Q Did you perform a quantitative analysis as  
21 regards to the dense developments that you analyzed as far  
22 as this report was concerned to evaluate and determine the  
23 additional runoff that would be generated at each site  
24 from a dense residential development as far as the water  
25 courses downstream?

1 A No, we did not do a specific individual site analysis  
2 on each of the tracts.

3 At this point we really reviewed it from a concept  
4 standpoint. We've tried to identify what we feel are  
5 major problems -- major difficulties, and we had a specific --  
6 very specific development requested. Including a site plan  
7 it would be -- would not be worth the time or effort to try  
8 and refine it and do a very site specific analysis.

9 Q In other words, you couldn't tell me how  
10 much more runoff there would be from a dense housing  
11 development as opposed to the maximum density that would  
12 be permitted at a specific site under the current ordinance  
13 to tell me whether or not there would be a hundred cubic  
14 feet per second --

15 A I can tell you in generalities and order of magnitude,  
16 and that's it.

17 Q Even the generalities or the order of magni-  
18 tude would be susceptible to change based on site plan  
19 which might involve mitigating measures: onset control  
20 or retention ponds?

21 A That's correct.

22 Throughout this report we often made reference to  
23 onsite controls such as local retention, and so on, and  
24 acknowledged those certainly as a very viable means of  
25 controlling the runoff.

1 Q As far as the methodology of your approach,  
2 how many sites did you analyze and investigate in Hanover  
3 Township?

4 A We took a broad look at mapping, aerial photographs  
5 and site investigations on --

6 I won't say every individual site that has been  
7 identified by number on the exhibit attached to our report,  
8 but certainly the greatest majority of it. And, I believe  
9 there's 151 of them -- sites that have been given numbers  
10 or something like that.

11 Q One hundred fifty-one vacant sites which were  
12 in the scope of your report.

13 Is that what you're referring to?

14 A Yes.

15 Q You mentioned site investigations.  
16 How many sites were personally examined?

17 A I couldn't give you a specific number. I was in  
18 the field as recently as last Friday and drove through --  
19 got out of the car and walked around a significant number  
20 of the sites.

21 Q Your report was completed on November 2.  
22 How many --

23 A As of that time, as of November 2?

24 Q That's right.

25 A James McGregor from our office did the investigation,

1 and I can't say how many sites he visited, at that time.

2 I have worked with the Township of Hanover period-  
3 ically over a number of years. So, I am quite familiar  
4 with the greatest majority of these sites. Many of them  
5 have been walked in the past by me, personally.

6 Q But as far as in preparation for the November  
7 2 report, how many sites did you personally visit?

8 A Specifically, I did not go into the field immediate-  
9 ly prior to November 2 for a specific site review.

10 Q You mentioned that the methodology included  
11 examination of certain maps. What maps were analyzed in  
12 preparation of this report?

13 A The U.S. Geological Survey Topographical Maps,  
14 the map which is before us which is a part of our report,  
15 Exhibit FPH-2, and other exhibits prepared by Robert Catlin  
16 and Associates which I had believed had been submitted as  
17 a result of this study.

18 Q Whatever they are you examined  
19 them.

20 Q You also testified, Mr. Platt, as to examin-  
21 ing certain aerial photographs.

22 Is that correct?

23 A That's correct.

24 Q Which photographs were these?

25 A These are photographs of an aerial survey conducted

1 by the Morris County Planning Board in 1976.

2 Q Directing your attention to FPH-2, starting  
3 on the bottom of Page 1 the statement appears, "The limita-  
4 tions imposed by these drainage conditions make the greatest  
5 majority of the vacant lands in the Township of Hanover  
6 inappropriate for dense residential development."

7 Based on your study would you have an opinion that  
8 these same lands would be inappropriate for commercial  
9 development?

10 A I think we have to go through it pretty much site  
11 by site. I don't think I could make a meaningful overall  
12 evaluation. I think we have to address it site by site  
13 whether they're appropriate for commercial development or  
14 industrial development, or whatever, and define what we  
15 mean by "commercial" development.

16 Q In the context of the inappropriateness  
17 for dense residential development, what are the factors  
18 which led you to the conclusion that these greatest majority  
19 of lands are inappropriate for dense residential development?

20 A A lot of that is detailed in the following sections  
21 of our report.

22 Q Just briefly, summarize, if you can?

23 A Public safety as it relates to around the clock  
24 occupancy by residents including the elderly and children,  
25 which includes access by emergency vehicles of all types:

1 utility protection, and so on, I think <sup>maybe</sup> a very signifi-  
2 cant distinction between residential development and, let's  
3 say, commercial, particularly industrial development or  
4 office.

5 If you're including office type of development as  
6 commercial -- an office set up is occupied eight hours a  
7 day or twelve hours a day maximum and it's not essential  
8 to human health and safety that somebody be there around  
9 the clock.

10 I think there's a definite distinction between those  
11 two types of occupancy.

12 Q In addition to the public safety factors as  
13 far as exacerbating the flood hazards, do you not draw the  
14 same distinction there as far as the differences between  
15 residential and, say, comparable density or land coverage:  
16 commercial and industrial uses?

17 A If we talk about only the effect upon, let's say,  
18 the flood flows, ignoring public safety, if you only talk  
19 about flood flows themselves, you're right.

20 If you develop 50 percent coverage of a tract of  
21 land with commercial development and you have 50 percent  
22 coverage through residential development, the people down-  
23 stream aren't going to do what caused the additional flood-  
24 ing -- it will result from either. And, that's what I  
25 agree with.



1 Q The water displacement?

2 A The water displacement is identical.

3 Q In an industrial siting, then, your concern  
4 would be you wouldn't want a business located there that  
5 had shift work that possibly operated on a 24 hour basis?

6 A No, no, that's not what I'm saying. I'm saying with  
7 a business or industry they can afford to close down during  
8 a flood. They can protect their facilities and set things  
9 off the floor and do any number of things. The only thing  
10 it costs there is money. The only thing it costs an industry  
11 or commercial establishment is money.

12 I think with residential development the costs can  
13 be things more important than money.

14 Q As far as protecting their facilities, if  
15 certain marginal -- or industries with less than surplus  
16 profits located, would you have any concerns if they didn't  
17 implement these types of flood protective measures as to  
18 water quality impacts if --

19 A Certainly, it would be.

20 I'm not saying that it's preferable for industry  
21 to develop in a flood plain or develop in areas subject  
22 to flooding. As I said before, there still are environmental  
23 reasons that say maybe there should be no development. But,  
24 to my way of thinking, it's preferable to having an industry  
25 in there, the monetary standpoint as well. And, particularly

1 when we're talking about least cost housing where industry  
2 hopefully may be able to afford to make -- to extend the  
3 additional funds for protection, where under the concept  
4 of least cost housing we shouldn't spend any more than we  
5 have to.

6 Q Directing your attention to Page 4 of your  
7 report of November 2, you talk about the defined floodway  
8 and also an area described as the flood fringe.

9 How do you distinguish those two land areas?

10 A The floodway is the portion of the stream or river  
11 channel which is necessary to carry its flow. The flood  
12 fringe is the portion of the overall flood plain where  
13 water is really standing, it's not part of the conveyance  
14 capacity of the stream. The flood plain includes both the  
15 floodway and the flood fringe.

16 MR. DORSEY: You said the floodway, the  
17 channel to carry the water. You mean to carry  
18 during normal time or during the 100 year storm?

19 THE WITNESS: The 100 year storm.

20 Q As far as the flood fringe being an area  
21 which is occupied by standing water as opposed to being  
22 a portion of the channel and adjoining areas which the  
23 moving water flows over, is this also subject to storms  
24 of a specific frequency?

25 A Well, in the context here, I'm referring to flood

1 fringe as we define it generally through here which is  
2 the 100 year storm adopted by HUD.

3 I guess you could have a flood fringe associated  
4 with the 50 year storm, but the context of the report is  
5 dealing with the one major technique or basis for Hanover.  
6 And, that's the HUD studies. So, I'm referring to the  
7 hundred year delineation, and that's certainly the largest  
8 area-wise of flood plain within the Township.

9 Q Within that HUD flood delineation we would  
10 have both the floodway and the flood fringe within the  
11 100 year --

12 A Yes.

13 Q -- flood elevation?

14 A Yes.

15 Q You talk about the environmental distresses  
16 associated with the preservation of the flood fringe area.

17 Could you elaborate, briefly, on what the environ-  
18 mental concerns are respecting development within the flood  
19 fringe areas?

20 A Are you referring to some specific statement in the  
21 report, now, or --

22 Q Well, to your mind, whether you reduced it  
23 to writing or just based upon your experience and knowledge,  
24 what would you envision as the concerns if I were to pro-  
25 pose a development of any nature within an area delineated

1 as within the flood fringe of a particular water course in  
2 Hanover Township?

3 A Specifically environmentally?

4 Q That's correct.

5 A Well, environmentally, we have in flood fringe --  
6 we usually are concerned about wildlife habitats and  
7 unique vegetation, that sort of thing.

8 Generally -- well, in Hanover, anyway, we're talk-  
9 ing about general swampy areas. We have flood fringe al-  
10 though it's generally much more narrow in the steeper  
11 river and stream sections.

12 If you'll notice on the delineations where the  
13 river is steepest -- or for instance, Malapardis Brook  
14 where it's steep, the flood plain and flood fringe are  
15 relatively narrow.

16 Q Since it's a rather narrow area as far as  
17 occupying and displacing flood water, the flood fringe is  
18 not significant of the areas within the municipality.

19 Is that correct?

20 A No, that's not what I said. That's not what I said.

21 I think flood fringe is significant in that we're  
22 talking generally in the flood fringe about displacing  
23 storage volume which will increase downstream flooding  
24 or increase levels of flooding upstream.

25 Q Have you quantified the amount of flood waters

1 which would be displaced should all the flood fringe areas  
2 in the Township be built upon?

3 A No, we have not.

4 Q In addition to displacement of flood waters,  
5 is there any other environmental interest indicated by  
6 development on flood fringe areas?

7 A There may be. There are the -- truly, the environ-  
8 mental concerns of unique habitats, and so on.

9 Stream corridors are generally accepted as environ-  
10 mentally sensitive areas whether they be wetland or what.

11 I would say: yes, that there are other environmental  
12 concerns generally associated with --

13 Q Would there be any concerns that you would  
14 have with regards to recharge aquifer areas?

15 A Not so much specifically within the flood fringe  
16 areas.

17 In Hanover -- let's limit it to Hanover.

18 Q I'm hoping they all are.

19 A Yes.

20 I think, generally, in Hanover where we have the  
21 broad flood plains and flood fringe areas, we have standing  
22 water. The greatest majority of the year -- or at least  
23 it's very close to the surface of the ground. Therefore,  
24 in those areas are recharge type of areas -- recharge type  
25 of areas, we're still going to get the recharge.

1           The recharge that you would get during a flood event  
2 would be minuscule compared to the day in and day out  
3 recharge that you would get from a small precipitation.

4           Those wetlands are recharge areas and in many cases  
5 they are not. It's surface water which is contained and  
6 protected from getting down into the aquifers.

7           Q           Specifically on Page 4 of your report you  
8 discuss the typical -- this is the last paragraph on that  
9 page. "The typical residential development within the  
10 Township of Hanover results in an average of, approximate-  
11 ly, 35 percent of the rain falling being discharged as  
12 storm runoff."

13           How did you arrive at that estimate of the level  
14 of storm water runoff from a typical residential develop-  
15 ment within the Township?

16           A           We are familiar with the type of residential develop-  
17 ment within Hanover and the -- probably the most widely  
18 accepted method of evaluating storm runoff from -- let's  
19 say, is the rationale formula.

20           The rationale formula relates runoff to rainfall  
21 intensity, the overall area and then a coefficient of  
22 runoff. And, it is generally accepted that single family  
23 development of a density which is accepted in Hanover has  
24 a runoff coefficient of, approximately, 35 percent, or  
25 .53. And, there are any number of texts which will give a

1 range of numbers for residential development.

2 I could easily provide those to you if you desire.

3 Q In other words, it appears to me that we're  
4 talking about the extent of impervious cover?

5 A That has a very significant effect on it.

6 I think natural topography can have a significant  
7 effect, also. But, we're talking about a given geographi-  
8 cal area.

9 Then, yes, land coverage has the greatest determinate  
10 upon runoff once the natural soils or natural ground is  
11 set at a specific.

12 Q In addition to the impervious cover you would  
13 have to find out whether the open land, in and of itself,  
14 is of such a soil type so that if it wasn't covered <sup>with</sup> man's  
15 endeavors the water would penetrate as opposed to runoff.

16 Those seem to be the two major factors?

17 A (The witness nods his head.)

18 Q Do you recall the impervious coverage figure  
19 that was used for arriving at the 35 -- I mean, how many  
20 square feet are we talking about that represents a typical  
21 residential development within the Township of Hanover?

22 A I don't recall specifically --

23 Again, it is an order of magnitude. I can't say  
24 that we went through the Township of Hanover and took off  
25 each zone -- we didn't take off each zone -- let's say

1 R-25, and then from --

2 Just generally reviewing it, it's presented as a  
3 general bench mark, a broad indication. It could be .30,  
4 it could be .4. And, I'm presenting general concepts  
5 here, not real specifics.

6 Q In otherwords, a fair range for the develop-  
7 ment as found now can be from 30 percent to 40 percent?

8 A I would say so, yes.

9 Q Continuing on Page 4, you have the estimate  
10 of approximately 70 to 80 percent of the rainfall being  
11 discharged as runoff if the lands were developed at the  
12 very small lot development as proposed by an agency in  
13 Morris County.

14 What was the square footage of impervious cover  
15 that you used in arriving at that estimate, assuming that  
16 the soils are the same since the lands to be developed  
17 would be the same as for the existing development?

18 A Our understanding was that the Fair Housing Council  
19 wanted to, in essence, put as many units on as small a  
20 tract of land as possible, in the neighborhood of maybe  
21 15 or even more. And, at 15 units per acre --

22 Again, without any specific site plans of how it  
23 would be done, we assumed it wouldn't be high rise. We  
24 assumed it would be generally a two story type of develop-  
25 ment, that type of thing.



1           Reviewing some other site plans that we saw at 10  
2 units per acre and calculations we did there, we felt that  
3 where in those cases at eight to ten, you might be in the  
4 range of a runoff coefficient of .55. If you're 15 or more,  
5 you might well be in the 70 to 80 percent range.

6           Again, we acknowledge that if mitigating measures  
7 are taken, that if clustering of development is implemented  
8 or that if transfer of development rights, or whatever you  
9 want to call it, one of those techniques are utilized, <sup>in</sup>the  
10 course of magnitude of things, it will be reduced.

11           Our understanding was that to develop truly a  
12 least cost housing program that the approach and the intent  
13 was to get as many units on as small a tract of land as  
14 possible.

15           Q           In other words, your 70 to 80 percent runoff  
16 figure would start at densities of 15 units -- apartment  
17 units per acre?

18           A           I would say so, yes, in that range. That's correct.

19           Q           As far as square footage for impervious  
20 cover, if I endeavored to duplicate the analysis that  
21 you've done, would you be able to give me the figure that  
22 you're talking about?

23           A           As I said, before -- we did not go through a specific  
24 analysis because we had nothing specific before us. We had  
25 a broad range of objectives presented to us by Mr. Dorsey

1 and Mr. Catlin as being those of the Fair Housing Council.

2 If you give me a specific site plan or more specific  
3 objectives, then, yes, I could go through and develop a  
4 specific runoff coefficient for a specific tract of land.  
5 But, if I'm working with broad objectives and goals and  
6 guidelines, there's no way that it makes sense to try to  
7 pin it down more than an order of magnitude.

8 Q In other words, your figure could be substan-  
9 tially altered if we took into account the absence or reduc-  
10 tion of parking areas in addition to the actual dwelling  
11 units that we're talking about.

12 Would that be correct?

13 A I would say so, yes.

14 Certainly, parking areas have an affect and it  
15 depends whether we add them or subtract them and to what  
16 degree.

17 Q On Page 5 of your report in the first full  
18 paragraph you discuss certain engineering techniques which  
19 can be utilized to reduce the storm runoff problems that  
20 we've just discussed. And, you refer to their taking up  
21 significant land areas as much as one-third of the surface  
22 area of a tract. This appears as an estimate.

23 Is that correct?

24 A Yes.

25 Q What was the basis for arriving at that

1 one-third figure?

2 A We took a look at, again, broad concepts of dense  
3 development. The one-third pertains, generally, to a small-  
4 er sized tract where the peak grade of runoffs from the  
5 tract is greatest, where the provision of a retention basin  
6 and land area which must border it becomes the greatest  
7 proportion.

8 I acknowledge that if the areas are maybe 100 acres  
9 or so, it can be as little as 5 percent under ideal topo-  
10 graphic conditions.

11 It has significant range and, again, it can be very  
12 much site specific. And, it depends very much, also, on  
13 the frequency of design.

14 If we talk about a hundred year frequency design,  
15 certainly the effect of land area becomes the greatest.  
16 And, if you have limited depth or limited topography on  
17 the site, you have to store the water in very relatively  
18 shallow holding facilities. It's either that or put in a  
19 pumping station.

20 In this case the one-third was a small tract of land  
21 with shallow retention and with no pumping facility to get  
22 it back into local drainage.

23 Q In other words, in order to do more than a  
24 generalized evaluation you would have to do an engineering  
25 study of the specific site?

1 A That's correct. That's correct.

2 Q That type of site specific work has not been  
3 done because you don't have the site plans as to what type  
4 of development might be associated with what of --

5 A That's correct.

6 Q Moving on to Page 6 of your report, you again  
7 discuss some of the public safety and environmental concerns  
8 for development of a residential nature within flood hazard  
9 areas. And, that statement appears in the middle, "Not  
10 only does the danger from drowning exist, but the mixing  
11 of sanitary waste water with the storm water runoff in  
12 flooded areas creates health hazards which may persist  
13 for a great period of time after the flooding has ended."

14 A Whenever a sanitary sewage system is flooded the  
15 sanitary sewers become surcharged and storm water entering  
16 or leaving the system mixes with the sanitary waste. It  
17 can also occur within the house when sanitary systems  
18 within the house become flooded. You end up with sanitary  
19 waste mixing with the flood waters, and as they recede  
20 some of them may be on the ground surface in the immediate  
21 area.

22 Q You're talking about two different things  
23 in that answer.

24 One is if you located a sewerage treatment plant  
25 in a flood hazard area --

1 A I'm talking about the sewers, themselves, the fact  
2 that the sewer is underground. If the sanitary sewers are  
3 not installed with water type conditions then the storm  
4 water can go down the manhole, exceed the capacity of the  
5 sanitary sewer and then the sanitary sewage comes out a  
6 down street manhole along with the storm water.

7 Q As far as the placement of sewers within  
8 flood hazard areas, is it the policy of the DEP to insure  
9 their water type capabilities?

10 A Yes, it is.

11 Q The other concerns which you have raised,  
12 then, is from mixing of flood waters with sanitary wastes  
13 actually within the home itself?

14 A That is possible. But, again, as I said, if you  
15 comply with the theoretical HUD Flood Plain -- again, that  
16 mixing couldn't occur because all foundations must be  
17 above that flood level or protected by diking from that  
18 flood.

19 If you exceed the 100 year storm, these conditions  
20 could occur.

21 Q In essence, the flood protection measures  
22 as implicated through the municipal ordinance should ade-  
23 quately protect against the sanitary health hazards which  
24 you've identified.

25 Is that correct?

1 A From a 100 year storm if they're installed properly.  
2 Unless there are septic tanks installed in the area we  
3 don't necessarily have to have sanitary sewers. In Hanover,  
4 I believe we do.

5 Q Directing your attention to Page 7 you have  
6 begun a discussion of I believe -- is it five or six areas  
7 of the municipality?

8 A Seven, I believe.

9 Q That's correct.

10 A Seven, yes.

11 Q Seven areas?

12 What was the basis for dividing the municipality into  
13 seven separate areas?

14 A Generally, the seven areas have characteristics  
15 which are similar. Not only geographically within the  
16 Township but also the problems associated with each of  
17 the sites are generally common.

18 Q As far as Area 1 is concerned, what conclus-  
19 ion did you reach in respect to that area?

20 A Generally, those sites have high seasonal ground  
21 water conditions.

22 Occasionally, streams overflow and there are limited  
23 existing drainage facilities -- limited existing drainage  
24 facilities in the area to provide adequate conveyance of  
25 the runoff.

PENGAD CO., BAYONNE, N.J. 07002 - FORM 2045

1 Q On Exhibit --

2 A It is part of the report, FPH-2.

3 MR. ONSDORFF: Let's mark that FPH-5. This  
4 is a separate exhibit.

5

6 (FPH-5 for identification is a map of  
7 Hanover Township separated into 7 separate areas.)

8

9 Q Mr. Platt, directing your attention to FPH-5,  
10 in what manner are the seven areas which you have examined  
11 delineated on that map?

12 A They are not specifically delineated on that map.

13 In the report each parcel falling within an area  
14 is identified.

15 Again, the areas were simply used for general  
16 reference and ease in finding the specific tracts of land.

17 MR. DORSEY: By parcel numbers within the  
18 areas.

19 Q Area 1 includes certain parcels which are  
20 shaded and numbered by the work of Catlin Associates?

21 A That's correct.

22 Q The parcels in Area 1 are one through six?

23 A That's correct.

24 Q As far as development potential, what was  
25 your conclusion with Parcel<sub>s</sub> 1 through 6?

1 A That extensive local -- on the top sentence on  
2 Page 8, "Extensive local storm water retention facilities  
3 as well as off site structural improvements would be  
4 required to adequately provide for storm drainage for this  
5 area."

6 Q As far as in a comparative sense, how would  
7 you rank this area in comparison to other areas in the  
8 municipality as to drainage problems: most severe, moder-  
9 ately severe, least severe?

10 A Probably moderate.

11 Q Area 2 --

12 MR. DORSEY: You mean relative to other  
13 areas?

14 THE WITNESS: That we investigated in the  
15 report.

16 MR. DORSEY: Of the undeveloped parcel?

17 MR. ONSDORFF: Yes.

18 MR. DORSEY: Okay.

19 Q Area 2 incorporates Parcels 75 through 99  
20 and, approximately, 290 acres?

21 A That's correct.

22 Q What was your conclusion as to the environ-  
23 mental conditions found at these locations in regards to  
24 your work?

25 A 75 through 99 -- particularly, Parcels 78 through 84,

PENGAD CO., BAYONNE, N.J. 07002 - FORM 2046



1 the greatest majority of those are wetlands or flood plain.  
2 This is in the area between Route 10, Route 287 and the  
3 Township of Parsippany - Troy Hills.

4 Q Let me interrupt at that point because you  
5 used a word which we discussed before "wetlands" and my  
6 understanding was that as far as the Federal Wetland Program  
7 was concerned there was no wetlands within the municipality  
8 of the Township of Hanover?

9 A We may exclude that word. Let's call it "flood plain."

10 Q Fine.

11 As far as the remaining sites --

12 A Remaining parcels?

13 Q What was your evaluation of that?

14 A Let's go on to 77-75.

15 Those two areas drain across Route 287. They also  
16 are very wet. There's a pond on the tract -- on 77, that  
17 is. Portions of that are also very wet and even though they  
18 are not indicated B Flood Plain on the delineation that was  
19 done, I certainly would anticipate that there's significant  
20 occasional flooding.

21 On Sites 84, 85, 86, there are streams running  
22 through the tract. No detailed delineation was done there.

23 Again, significant portions, we feel, are subject  
24 to occasional flooding.

25 Let's go to 95, 96, 97, 98. Those areas are by

1 themselves, relatively high and dry. I do not feel they  
2 are in the flood plain. I feel the problems with those  
3 sites are more related to offsite problems than onsite  
4 problems in that the downstream drainage facilities are  
5 quite limited. And, certainly detailed investigation --  
6 and based on what I've seen and believe, that significant  
7 offsite work would have to be done or major onsite mitigating  
8 circumstances such as detention to provide for the drainage  
9 for that area.

10 Q If the site itself is a high and dry area  
11 suitable for development without causing problems to the  
12 flooding on the site, then what we're talking about are  
13 secondary impacts dispursed throughout the drainage area,  
14 throughout the Town, downstream from this location?

15 A That's correct.

16 Q Is that correct?

17 A That's correct.

18 MR. DORSEY: But you still have that same  
19 secondary impact on the other lands that are onsite  
20 problems, if, in fact, they're built on.

21 THE WITNESS: I am sorry.

22 I have tried to highlight the main problems.  
23 Certainly, the rest of the areas -- particularly  
24 here Area 2, all of these areas are tributary to --

25 I think we've referred to it as Malapardis

1 Brook. Maybe that should be clarified.

2 The plan does identify the brook flowing  
3 from Area 2 as Stoney Brook. I think in the report  
4 we call it Malapardis Brook.

5 Certainly Malapardis Brook had a documentation  
6 of being flood prone, and that shown by the delinea-  
7 tion --

8 Certainly, any development in the watershed  
9 is going to aggravate that condition if it's not  
10 mitigated by something else.

11 Q My endeavoring to make a distinction between  
12 onsite water conditions and flooding as opposed to secondary  
13 impacts downstream or offsite from a particular development  
14 would be whether or not normally the onsite problems are  
15 clearly the responsibilities of the land owner or developer  
16 or ultimate purchaser. Whereas, in the condition of dry  
17 property where a development might go in and the impacts are  
18 dispursed away from the specific development they might not  
19 be classified as the ultimate responsibility of the munici-  
20 pality or the county, or whatever roadway authority, has  
21 jurisdiction over the area subjected to the increased --

22 MR. DORSEY: Wait a minute. I have yet  
23 to object.

24 Are you really asking him now for a legal  
25 conclusion?

1 THE WITNESS: Okay.

2 MR. DORSEY: Even if what you say is true --  
3 I understand what you're saying.

4 For instance, Parcels 95 through 98, they're  
5 high and dry. If, in fact, they cause problems  
6 downstream they may not be in immediate problems  
7 with the developer but they're going to be his  
8 problem because he's going to be caught up with the  
9 offsite improvements.

10 Q As far as your planning work that you have  
11 done, was there a situation where you've had to do offsite  
12 work as far as the developer is concerned, Mr. Platt?

13 A (No response.)

14 Q In the Township?

15 A I hold a planning license. I do not practice as  
16 a planner, I practice in hydrology and sanitary engineering  
17 and planning in those areas. I specifically have not been  
18 involved with the planning for the Township of Hanover and  
19 I'm not involved in detailed site review. Their township  
20 engineer does that.

21 MR. DORSEY: But you're also --

22 A (Continuing) My understanding is that, yes, a  
23 developer with significant types of development is obligated  
24 under many ordinances --

25 I'm not sure specifically here --

1 To provide for mitigation of secondary impacts or  
2 offsite impacts, that many municipalities have such ordin-  
3 ances. Whether they require local retention facilities or  
4 not, or require improvements of culverts downstream, I know  
5 it has been done and is done, but in Hanover, I can't tell  
6 you.

7 Q On Page 9 of your report of November 2 --

8 A Yes.

9 Q -- you state in the first paragraph on that  
10 page, "It is our opinion that this tract is not compatible  
11 with the objective of least cost housing."

12 Which specific parcels are you referring to  
13 as to their incompatibility in that statement?

14 A In reading the rest of the paragraph it appears that  
15 in this case I'm referring specifically to Parcels 78 through  
16 83.

17 If you go up a couple of sentences it says, "In our  
18 opinion a very significant portion of Parcels 78 through 83  
19 will have to be dedicated to storm water retention facilities  
20 and significant fill or diking will have to be placed to  
21 adequately protect structures."

22 Then I continue on for a couple of sentences, and  
23 I believe that final sentence you referred to was referring  
24 back to those specific parcels.

25 Q Since you have identified those as not being

1 compatible with least cost housing objectives, are there  
2 any other parcels which likewise are incompatible with those  
3 objectives but you have not identified in your report?

4 A Yes, there are other parcels which we feel are not  
5 compatible: Parcels 75 through 77, in the following para-  
6 graph also, generally, are not compatible in that they  
7 do also have potential for seasonal stream overflow and --

8 Q You indicated in the lower area of the tract.  
9 Would not clustering in the upper areas then satisfy those  
10 concerns?

11 A I'm not certain on the -- the portion of these tracts  
12 that is high and dry and the portions that are low and wet.

13 Again, as you say, if you could cluster in suitable  
14 high and dry land, yes, the high and dry lands of those  
15 tracts may be suitable from a drainage standpoint.

16 Q You need to do a site specific evaluation?

17 A In more detail than we have, yes, with a number of  
18 soil investigations and borings and good topographic mapping.

19 Q How would you rank Area 2 in relation to the  
20 other areas, then?

21 A Overall, I'd rank it as very severe.

22 You may be able to pick out specific sites -- portions  
23 of so-called parcels which are not that severely limited,  
24 but I think overall it's one of the most highly limited  
25 areas in the Township.

1 Q Moving on quickly to Area 3, then, how did  
2 you characterize these tracts which from the report contain  
3 Parcels 27 through 40, 70 through 74, 76 and 124, compris-  
4 ing a total of 190 acres?

5 A Again, the best way to really do it is to go through  
6 a rather specific -- there's one surprise in there which  
7 is 124. This is a relatively isolated parcel -- group of  
8 parcels, some onsite limitations and some offsite limitations,  
9 although maybe not really severe.

10 24, 25 and 26 -- no, that's the next group.

11 40, 41 are relatively steep and isolated, probably  
12 not significant drainage problems. They're probably not a  
13 big problem.

14 The group in the 30's: 31, 32, 33, 34, there's some  
15 excavation and landfill going on on that site. Malapardis  
16 Brook flows through the center which has a defined flood  
17 plain from the HUD mapping.

18 Sites 37, 38 -- 36 and 35, again, are contiguous  
19 areas. Some of it is low, some offsite drainage problems.  
20 Some of it may -- may not present a drainage problem al-  
21 though to convey the water offsite.

22 39, I don't believe any --

23 70 through 74, substantial portion of it -- of 74,  
24 in particular again, the flood plain.

25 Q Prior to moving along it would appear that

1 before you get to Parcel 74 which is within the flood  
2 plain of Malapardis Brook, you seem to have analyzed areas  
3 which are good for development on drainage grounds.

4 Is that not accurate?

5 A I wouldn't say good and I wouldn't say they're all  
6 good. I would say, maybe, some portions of tracts --

7 I guess you're specifically referring to 34, 36,  
8 may not be real severe. Onsite -- certainly the portions  
9 of it may not be real severe.

10 36 and 35 do have some offsite difficulty in getting  
11 the flow to Malapardis Brook. And secondary impacts in  
12 that basin, again, are some of the most severe in the  
13 Township in that the center of Whippany does flood rather  
14 severely.

15 And I think substantial mitigation through local  
16 retention, or whatever, would have to be done on any of  
17 these sites.

18 Q As far as actual problems with the flood areas  
19 on 34, is there significant areas away from the actual flood  
20 plain that development could be clustered to preserve as  
21 open spaces, the flood plain along Stoney and Malapardis  
22 Brooks?

23 A Yes, there is.

24 Q As far as ranking Area 3, how would it compare  
25 overall with the other areas?



1 A I would say: moderate.

2 Q Controls are available to mitigate even the  
3 moderate problems that are presented in these areas.

4 Is that also correct?

5 A I would say on a general basis, yes.

6 I think you may find some site difficulties, but  
7 I think they would be overcome with expenditure of appro-  
8 priate funds.

9 Q Area 4, you're talking about Parcels 106  
10 through 159?

11 A Yes.

12 Q Comprising, approximately, 150 acres.

13 Is that correct?

14 A Yes.

15 Q In fact, all of the areas we've discussed  
16 so far are in excess of 100 acres.

17 Are they not?

18 A Yes.

19 The sum of the parcels within each of these areas  
20 has exceeded 100 acres.

21 That's correct.

22 Q In most cases we're talking about contiguous  
23 tracts.

24 Are we not?

25 A Generally, the contiguous -- there are significant

1 contiguous tracts, some of those have significant problems.  
2 And, as we've talked about before, 34 and 36 may be some  
3 lesser degree.

4 Q Area 4, as far as locating that, what water  
5 course --

6 A It's in the western portion of the Township bounded  
7 generally by Ridgedale Avenue, Hanover Avenue and right of  
8 way for Route 24.

9 Q As far as any water courses involved there --

10 A Yes, there's an unnamed tributary which flows through--  
11 quite a few of the parcels in this area.

12 Detailed delineation was done on it and shows that  
13 109, 111, portions of 113 -- a good portion of 111 and 113  
14 are within the defined flood plain.

15 Q As far as the delineation, is there sufficient  
16 lands on these tracts to cluster development away from the  
17 flood plain to preserve that area for flood retention and  
18 floodway conveyance?

19 A It depends on what we're going to accept as cluster-  
20 ing.

21 You may end up with a greater portion of the land  
22 undeveloped then you do land being developed.

23 Again, you have to do a site specific analysis  
24 and decide there whether the clustering concept is going  
25 to provide enough suitable lands compared to that which

1 is not suitable.

2 Q As far as the present zoning ordinance, are  
3 you aware of whether that mandates clustering development  
4 outside of the flood delineation areas or whether or not  
5 flooding -- excuse me, development can go forward in those  
6 areas as well as outside, as long as the maximum density  
7 permitted on the flooding ordinance is respected?

8 A It's an industrial zone subject to the flood delinea-  
9 tion and also New Jersey Stream Encroachment.

10 I would assume they certainly would encourage  
11 clustering outside of the flood plain. Whether they could  
12 totally require it or not, I'm not sure. But, they certain-  
13 ly could attempt to obtain it.

14 Again, I think the concept of finances of what  
15 we're building come into play when we talk about true  
16 least cost housing. The concept is to get as much as we  
17 can for as little as possible. And, you talk about cluster-  
18 ing. We're talking about expenditures for land and improve-  
19 ments, and so on, that kind of go counter to it. They go  
20 counter to the concept of the cluster type or the least  
21 cost housing.

22 Q I'm sorry, I'm a little confused as to what  
23 goes counter to that concept.

24 A The fact that we're buying twice as much land as  
25 we need to have. The development industry can afford to

1 expend additional sums for land which they are not going  
2 to use which is evident here in Morris County, and even in  
3 Morris Township where the industrial centers and complexes  
4 are set up very much like a park with very low occupancy  
5 rates or land coverage rates because they want a nice setting.  
6 And, all they do is raise the price of their product to  
7 cover whatever they have.

8 In the concept of least cost housing we -- I assume  
9 you don't want to have to spend any more for land acquisi-  
10 tion that is necessary.

11 Here we talk about buying 100 acres where only 50  
12 acres is suitable for that type of development. I think  
13 that goes counter to what we're trying to obtain in the  
14 least cost housing.

15 Q How would you rank Area 4 as compared to the  
16 other areas in the drainage and flood problems presented?

17 A Four has a little bit of a mix.

18 Certain of the tracts are severe. 121, where we  
19 have a major gravel pit that's now abandoned; portions of  
20 109, 111, 113 because of the main and maybe some of the  
21 fringe areas; 112, 114, portions of 119 may not be that  
22 severe.

23 Q It would require, in essence, a site specific  
24 analysis?

25 A To pin it down.

1 I would say portions of the sites most probably  
2 are suitable for development from a drainage standpoint.

3 Again, with the concept that there may be some  
4 downstream problems that you have to mitigate.

5 Q The next area discussed in your report is  
6 Area 5 containing Parcels 43 through 58 and Parcels 122 and  
7 123.

8 Is that correct?

9 A That is correct.

10 Q This area comprises, approximately, 360 acres?

11 A Yes, it does.

12 Q This area is situated in and about the  
13 Morristown Airport.

14 Is that correct?

15 A That's correct.

16 Q What are the drainage and flooding conditions  
17 prevalent on these parcels of land?

18 A Approximately, 85 percent is within the defined  
19 flood plain.

20 Q What is the present zoning for these lands?

21 A The greatest majority is industrial.

22 Q Have you done any analyses of the flood  
23 and drainage problems that would be associated with the  
24 industrial development of these parcels of land?

25 A Specifically with the industrial development, no.

1 Q Area 6 I believe contains Parcels 42, 65  
2 through 69, 72, 88 through 92 and 100 through 105, compris-  
3 ing approximately 110 acres.

4 Is that correct?

5 A That's correct.

6 Q Generally, what area of the town are they  
7 located in?

8 A In the central portion of the Township.

9 Q What are the water courses that we're referr-  
10 ing to associated with these properties?

11 A 65 through 69 are along -- generally along the  
12 Whippany River. However, I believe they're outside of  
13 the flood plain.

14 Parcel 72 is a relatively isolated parcel which  
15 I'm not familiar with.

16 88 through 92 are between South Jefferson Road and  
17 Route 287.

18 Generally, all of these tracts have inadequate  
19 local drainage. Some have seasonal high ground water table,  
20 and so on.

21 There are local drainage channels and swales along  
22 287 and along the easterly side of the entrance road to  
23 the County of Morris maintenance yard, the Road Department  
24 Maintenance Yard.

25 Generally, there would be very significant offsite

1 drainage improvements required to service those parcels.

2 Q That's 88 and 99?

3 A 88 through 92. They're pretty much the same.

4 Q As far as 66 through 69, what is your  
5 appraisal as to their development potential?

6 A In a drainage standpoint I would say they're probab-  
7 ly the least severe.

8 Q I think in Area 5 we just need to pick up  
9 a couple of parcels: 100 through 104?

10 A Yes, 100 through 105.

11 These are relatively small parcels. They all  
12 exhibit, to some degree, local drainage problems. There's  
13 a local -- small stream that crosses Eden Lane right along-  
14 side Route 287.

15 Offsite improvements would be required -- portions  
16 of tracts 103 through 105 have seriously high ground water  
17 and would require significant drainage.

18 100 is well away from drainage facilities and would  
19 require a combination of local retention and offsite drain-  
20 age improvements to provide adequate drainage there.

21 Q Area 7 includes Parcels 12 through 18 and  
22 Parcel 20 which land area comprises, approximately, 60  
23 acres.

24 Is that correct?

25 A Yes, that is correct.

PENGAD CO., BAYONNE, N.J. 07002 FORM 2046

1 Q Would you locate these properties, generally,  
2 within the municipality?

3 A 12 through 16 are off of Parsippany Road, generally,  
4 and upstream of the Township's Bee Meadow Pond and park  
5 area. Portions are quite high, portions are low and wet.

6 There are tributaries to the municipal park and there  
7 may be some offsite drainage problems associated with them.

8 Again, a site specific analysis would be required.

9 Q As far as the areas which are quite high and  
10 dry, you would anticipate that they may be very favorable  
11 for development?

12 A From a drainage standpoint, possibly. Except,  
13 they're isolated and no drainage possibilities near them.

14 Certainly, there are portions of those tracts not  
15 subject to frequent flooding.

16 Q Were there other --

17 A Tract 50?

18 Q Yes.

19 A 17 and 18?

20 Q Right, those are the other ones?

21 A I think 16-17 probably generally fall within the  
22 same category. No major significant problems have been  
23 identified.

24 Certainly, there would be local drainage work and  
25 possibly some offsite work required.



1 Q Parcel 20?

2 A Parcel 20 is relatively high and dry and not local  
3 to flooding.

4 There, again, there's no storm drainage possibilities  
5 in the immediate area. There's limited streams -- one, I  
6 guess, going through the school yard off of Reynolds Avenue.  
7 That would require some improvement although it may not be  
8 too extensive.

9 Q Have you shown that stream all on your --

10 A There's a stream indicated. It doesn't come all the  
11 way up. This is a stream that -- also, the stream that  
12 comes out of Bee Meadow Pond.

13 I don't see a name on it.

14 Q In general, how would you rank lands within  
15 Area 7 as far as their development suitability?

16 A From a drainage standpoint, somewhere probably in  
17 the slight to moderate range.

18 MR. DORSEY: Slight to "moderately severe"?

19 THE WITNESS: Yes.

20 A Few difficulties, but they certainly would  
21 require evaluation.

22 Q These drainage controls and appurtenances  
23 associated with the development of vacant parcels, are these  
24 the type of development appurtenances that have been required  
25 in the Township for some period of time?

1           In other words, flooding is not a new phenomena  
2 in Hanover, is it?

3           A       No, it didn't start yesterday.

4           I think the awareness of flooding of environmental  
5 concerns has really come to the forefront in the last  
6 ten years on the small municipal scale.

7           Certainly, the major drainage problems -- flooding  
8 problems have been addressed by the Corps of Engineers and  
9 other federal agencies for a long period of time. But,  
10 as far as local retention and requirements for offsite  
11 improvements go, I think it's somewhat a recent thing.  
12 Not only in Hanover, but in the rest of New Jersey.  
13 Particularly, in discussions of retention.

14           I know retention facilities have been required  
15 within Hanover. I couldn't even state, though, that it's  
16 been done as part of an existing ordinance.

17           I think some of the recent industrial development --  
18 I've seen retention facilities --

19           Q       In the last page of your report you discuss  
20 your estimate of 34 percent of the vacant land being  
21 within the defined flood plain which, I believe, we've  
22 discussed as a 100 year flood elevation.

23           Is that correct?

24           A       That's correct.

25           Q       In addition to those lands we've analyzed

1 these remaining vacant lands to varying degrees containing  
2 significant drainage problems which you have indicated in-  
3 cludes seasonal stream overflow, high ground water table,  
4 inadequate downstream drainage facilities as being examples  
5 of development limitations pertaining to them.

6 Is that correct?

7 A Yes.

8 Q Your conclusion appears in the last sentence.  
9 "The greatest majority of the remaining vacant land in the  
10 Township is not suitable for development of least cost  
11 high density residential development."

12 Is that correct?

13 A That's correct.

14 Q Have you done a specific analysis to be  
15 able to say, as you did with the delineated flood plain,  
16 what percentage of these remaining vacant lands are in-  
17 corporated in what you've quantitatively defined as the  
18 "greatest majority of remaining lands"?

19 A No.

20 At this point in time, we have not gone into real  
21 site specific evaluation as we discussed before, and that's  
22 why we presented it in general terms and not specifics.

23 I can't say it's exactly X acres because it takes  
24 a lot of detailed specific work that was not done, at this  
25 time.

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25

Q In order to determine just how much land is actually available for least cost development you would have to do this more site specific analysis?

A That's correct.

MR. ONSDORFF: No further questions.

MR. DORSEY: No questions.

(The deposition adjourns at 3:55 p.m.)

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25

C E R T I F I C A T E

I, Roxanne Malanga,  
a Notary Public and Shorthand Reporter of the  
State of New Jersey, do hereby certify that  
prior to the commencement of the examination

FLETCHER PLATT

was duly sworn by me to testify the truth, the  
whole truth and nothing but the truth.

I DO FURTHER CERTIFY that the foregoing  
is a true and accurate transcript of the testimony  
as taken stenographically by and before me at the  
time, place and on the date hereinbefore set forth,  
to the best of my ability.

I DO FURTHER CERTIFY that I am neither  
a relative nor employee nor attorney nor counsel  
of any of the parties to this action, and that I  
am neither a relative nor employee of such attorney  
or counsel, and that I am not financially interested  
in the action.

---

Notary Public of the State of New Jersey