

DATE: April 11, 2005

TO: John Szerlag, City Manager

FROM: Brian Murphy, Assistant City Manager/Services
Douglas J. Smith, Real Estate and Development Director
Steve Vandette, City Engineer
Mark F. Miller, Planning Director

SUBJECT: AGENDA ITEM – PRELIMINARY SITE CONDOMINIUM REVIEW –
Oak Forest South Site Condominium, east side of Willow Grove,
south of Square Lake Road, Section 11 – R-1C.

RECOMMENDATION

At the March 8, 2005 Regular Meeting, the Planning Commission recommended approval of the Oak Forest South Site Condominium, with the following conditions:

1. Submission of the landscaping information required by the Landscape Analyst in the Planning Department report dated March 3, 2005 (prior to Final Approval).
2. The applicant must receive appropriate permits from the MDEQ prior to dredging, filling, or completing any other improvements within a State-regulated wetland.
3. The applicant must receive appropriate permits from the Oakland County Drain Commissioner and the City of Troy prior to completing any improvements to the Fetterly Drain.

The petitioner can submit landscape information prior to Final Approval. MDEQ permits and permits related to the Fetterly Drain are required prior to Final Approval. City Management concurs with the Planning Commission recommendation and recommends approval of the Oak Forest South Site Condominium.

GENERAL INFORMATION

Name of Owner / Applicant:

The owner and applicant is Dale Garrett of Ladd's Inc.

Location of subject property:

The property is located on the east side of Willow Grove, south of Square Lake Road, in Section 11.

Size of subject parcel:

The parcel is approximately 10.03 acres in area.

Description of proposed development:

The applicant is proposing a 23-unit site condominium. The applicant proposes a layout with a future road stubbing at the northern property line. This layout is consistent with the City 's policy of inter-connection whenever feasible.

The City received a Petition for Temporary Street Barricade signed by 211 residents of the Golf Trail Subdivision (see attached). The petition requests the City place a temporary diagonal (NW to SE) street barricade at Trevino and Willow Grove. The petition requests that the barricade be removed when Oak Forest and Oak Forest South developments are inter-connected by planned stub roads and Willow Grove is black topped. See attached memorandum for City Management's response to the petition.

Current use of subject property:

The property is presently vacant.

Current use of adjacent parcels:

North: Single family residential.

South: Jaycee Park (City of Troy).

East: Single family residential.

West: Single family residential.

Current zoning classification:

The property is currently zoned R-1C One Family Residential.

Zoning classification of adjacent parcels:

North: R-1C One Family Residential.

South: E-P Environmental Protection.

East: R-1C One Family Residential.

West: R-1C One Family Residential.

Future Land Use Designation:

The property is designated on the Future Land Use Plan as Low Density Residential and Open Space.

ANALYSIS

Compliance with area and bulk requirements of the R-1C One Family Residential District:

Lot Area: Minimum lot area in the R-1C district is 10,500 square feet. However, the applicant is utilizing the Lot Averaging Option, which permits a 10 percent reduction in lot area to 9,450 square feet with lot sizes averaging 10,500 square feet.

Lot Width: The minimum required lot width is 85 feet. The applicant has utilized the lot averaging option, which permits a 10 percent reduction in lot widths, to 76.5 feet.

Height: 2 stories or 25 feet.

Setbacks: Front: 30 feet.
Side (least one): 10 feet.
Side (total two): 20 feet.
Rear: 40 feet.

Minimum Floor Area: 1,200 square feet.

Maximum Lot Coverage: 30%.

The applicant meets the area and bulk requirements of the R-1C One Family Residential District.

Off-street parking and loading requirements:

The applicant will be required to provide 2 off-street parking spaces per unit.

Environmental provisions, including Tree Preservation Plan:

A Tree Preservation Plan was submitted as part of the application.

Stormwater detention:

The applicant is proposing two storm water detention basins. One will serve the 9 units on the east side of the drain, one will serve the 14 units on the west side of the drain.

Natural features and floodplains:

The Natural Features Map indicates there are wetlands, woodlands and a drain on the property. The applicant has provided a Preliminary Environmental Impact Statement. The applicant has provided a Wetland Determination Report prepared by Holloway Environmental Planning, Inc., dated December 8, 2004. The applicant has provided a Wetlands Assessment Report prepared by the MDEQ on December 28, 2001. The report indicates that there are a number of wetlands regulated under Part 303 of PA 451 of 1994, however the findings are not binding after October 17, 2004. Any construction activity such as dredging, filling, or draining within a regulated wetland will require a permit from the MDEQ prior to the activity commencing.

Subdivision Control Ordinance, Article IV Design Standards

Blocks: The applicant proposes an approximately 1,100-foot road that ends in a cul-de-sac. A stub road is proposed to the north east of unit 18.

Lots: All units meet the minimum area and bulk requirements of the Zoning Ordinance.

Streets: The paved portion of the street will be 28 feet wide, located within a 60-foot wide public right-of-way.

Sidewalks: The applicant is proposing an 8-foot wide sidewalk along John R and Square Lake Roads. The applicant also proposes a 5-foot wide sidewalk on both sides of the proposed interior roads.

Utilities: The applicant is proposing to extend the sanitary sewer line under the drain to units 9 through 17.

Attachments:

1. Maps.
2. Preliminary Environmental Impact Statement.
3. Petition for Temporary Street Barricade.
4. Memorandum - Oak Forest South Traffic Concerns and Request to Close Trevino at Willow Grove Using Temporary Barricades.
5. Public comment.

cc: Applicant
File/Oak Forest South Site Condominium

Prepared by RBS/MFM

G:\SUBDIVISIONS & SITE CONDOS\Oak Forest South Site Condominium Sec 11\Prelim CC Approval Oak Forest South Site Condo 04 18 05.doc

CITY OF TROY

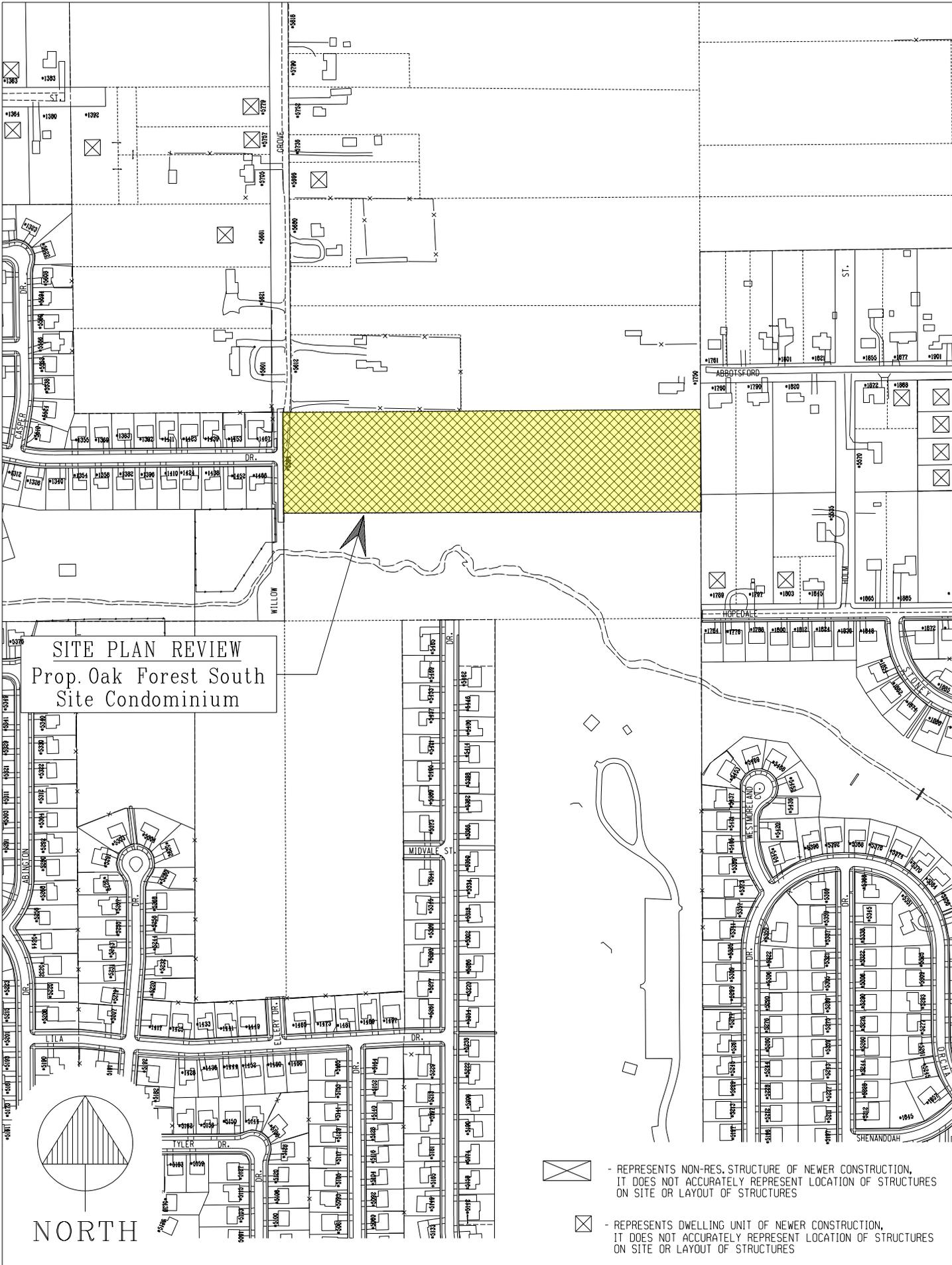


SITE PLAN REVIEW
PROPOSED OAK FOREST SOUTH
SITE CONDOMINIUM
E SIDE OF WILLOW GROVE, S OF SQUARE LAKE
SEC. 11 (24 UNITS/LOTS)

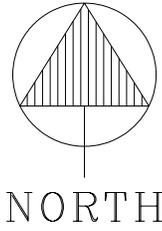


SITE PLAN REVIEW
OAK FOREST SOUTH
SITE CONDOMINIUM

0 50 100 200 300 400 Feet



SITE PLAN REVIEW
 Prop. Oak Forest South
 Site Condominium



-  - REPRESENTS NON-RES. STRUCTURE OF NEWER CONSTRUCTION, IT DOES NOT ACCURATELY REPRESENT LOCATION OF STRUCTURES ON SITE OR LAYOUT OF STRUCTURES
-  - REPRESENTS DWELLING UNIT OF NEWER CONSTRUCTION, IT DOES NOT ACCURATELY REPRESENT LOCATION OF STRUCTURES ON SITE OR LAYOUT OF STRUCTURES



SITE PLAN REVIEW
PROPOSED OAK FOREST SOUTH
SITE CONDOMINIUM

R1C

R1C

CF

CF

NORTH

Oak Forest South Condominium

MAR 15 2005

Part of Section 11, City of Troy Oakland County, Michigan

07.11.0 PRELIMINARY ENVIRONMENTAL IMPACT STATEMENT

Oak Forest South Subdivision is a proposed single-family residential development in Section 11 that will encompass 10.03 acres and contain 24 lots. The Fetterly Drain, an open ditch, under the jurisdiction of the Oakland County Drain Commissioner, bisects the site in a north/south direction. This site is an area zoned R-1C. The development of the site is scheduled for 2005. The planned development of the proposed subdivision is under the "lot averaging" concept that allows 76.5 feet wide minimum lots with a minimum area of 10,327 square feet and a minimum "average" lot area of 12,175 square feet.

07.20.0 PHYSICAL CONDITIONS

- 07.20.01 A. Legal description and survey - See Site Plan
- 07.20.02 B. Location Map - See Site Plan or Figure 1
- 07.20.03 C. General Development Plan - See Figure 1
- 07.20.04 D. Site Conditions - See Site Plan
- 07.20.05 E. There is no limitation applicable to the development of the property as single family residential due to the proximity of airports.

07.30.0 PROJECT DESCRIPTION

- 07.30.01 A. The intended use is for single-family residential lots.
- 07.30.02 B. There are 24 lots proposed to be developed in this subdivision.
- 07.30.03 C. The total number of residents expected is $24 \times 3.75 = 90$ persons.
- 07.30.04 D. The anticipated vehicular generation is as noted in section 7.41.10A.

07.40.0 PROJECT IMPACT ANALYSIS

07.41.0 IMPACT ANALYSIS: SYSTEMS

07.41.01 A. THOROUGHFARES

Based upon similar studies in the City of Troy, peak hour vehicular movements onto Willow Grove Road through the adjacent proposed development would be as follows:

<u>A.M. PEAK HOUR</u>		<u>P.M. PEAK HOUR</u>	
<u>IN</u>	<u>OUT</u>	<u>IN</u>	<u>OUT</u>
5	14	16	9

07.41.02 B. WATER SERVICE FACILITIES

The site will be served by an existing 12" water main on the west side of Willow Grove Road.

The expected water usage by the subdivision for a maximum daily demand is 250 gallons per capita per day. Total demand:
 $24 \text{ lots} \times 3.75 \text{ persons/lot} \times 250 = 22,500 \text{ gallons per day.}$

07.41.03 C. WASTE WATER SYSTEMS

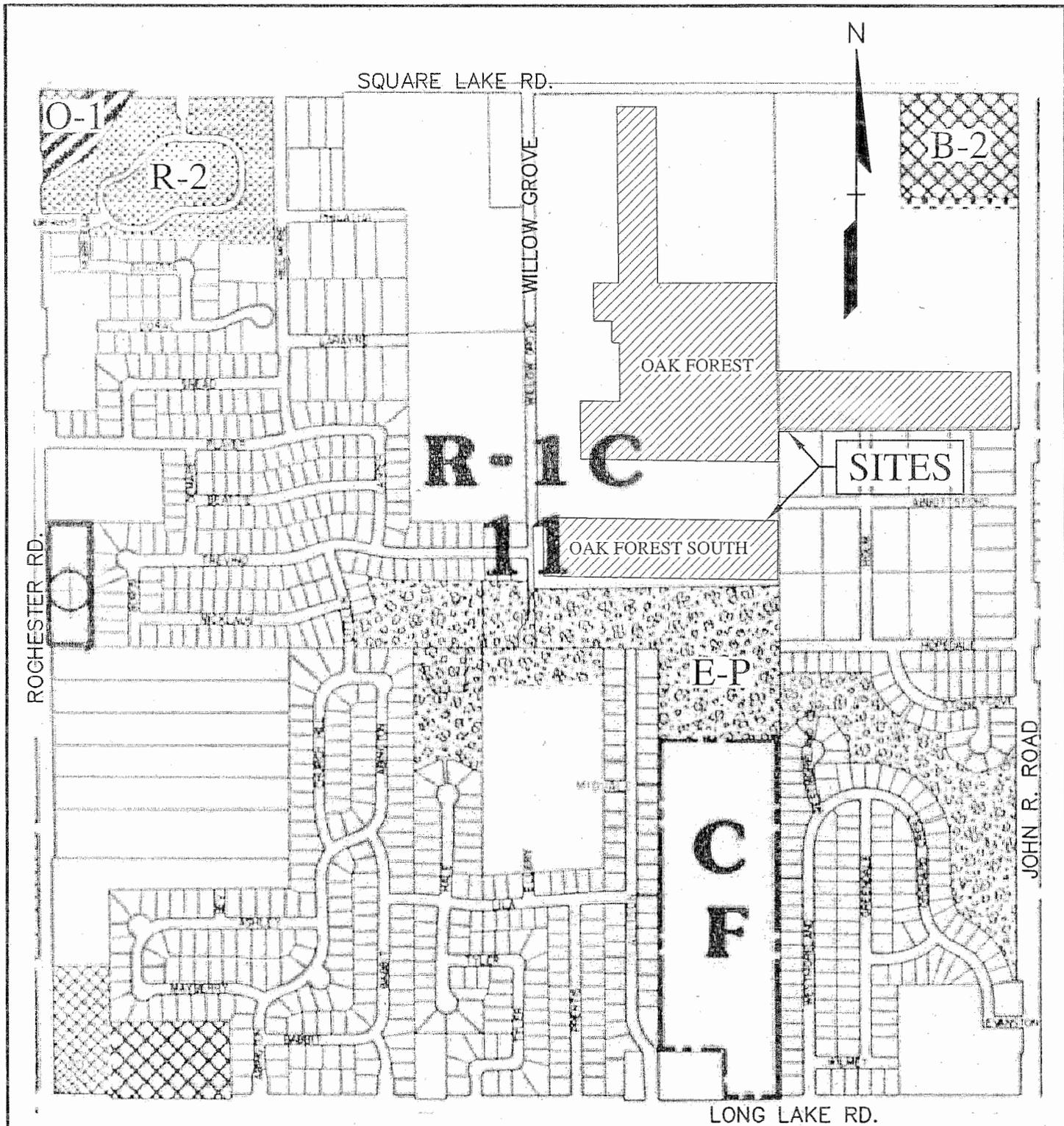
A sanitary sewer that currently ends at the west end of Hopedale Street, approximately 400 feet south of the southeast property corner will serve the development. A northerly extension of this sewer is proposed through the City property to the southeast portion of Oak Forest South Subdivision. The sewer will then extend north across the proposed drive and then west through the entire site.

Average flow: $100 \text{ gpcpd} \times 24 \times 3.75 = 9,000 \text{ gpd} = 0.014 \text{ cfs.}$

Peak flow: $500 \text{ gpcpd} \times 24 \times 3.75 = 45,000 \text{ gpd} = 0.070 \text{ cfs.}$

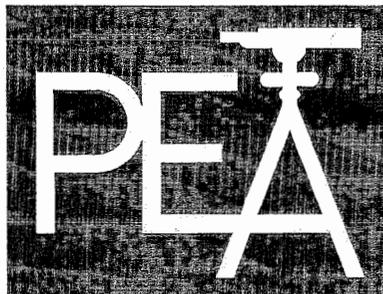
07.41.04 D. STORM DRAINAGE AND DETENTION

Internal storm sewer systems on either side of the Fetterly Drain will drain the property to detention areas adjacent to the drain that will be sized to accommodate the runoff from this development. Discharge will be by gravity to the proposed Fetterly Drain enclosure that will be constructed prior to this development. The discharge will be limited to the agricultural rate of runoff.



SCALE: 1" = 800'	JOB No: 2000250
DATE: 10-28-04	DWG. No: 1 of 1

LAND USE AND GENERAL
DEVELOPMENT PLAN
FIGURE 1



PROFESSIONAL
ENGINEERING
ASSOCIATES

2430 Rochester Ct. Suite 100
Troy, MI 48063-1872
(248) 689-9090

2) 1067 211

PETITION FOR TEMPORARY STREET BARRICADE

We the undersigned homeowners of Golf Trail Subdivision request the Troy City Council approve a temporary diagonal (NW to SE) street barricade at Trevino and Willow Grove to protect the health, safety and welfare of Golf Trail residents from the potential 240 vehicle trips per day generated by the 24 planned units of Oak Forest South site condominiums. The barricade would be removed at such time as Oak Forest (north) and Oak Forest South developments are inter-connected by planned stub roads and Willow Grove has been black-topped.

	Signature	Print Name	Street Address	Date Signed
1	<i>Carol Ann Saionz</i>	CAROL ANN SAIONZ	1423 TREVINO	3-16-05
2	<i>James L Saionz</i>	JAMES L SAIONZ	1423 TREVINO	3-12-05
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	Signature	Print Name	Street Address	Date Signed
1	<i>[Signature]</i>	Tatiana Bologna	1410 Trevino	2-24-05
2	<i>[Signature]</i>	JAMES A. Bologna	1410 TREVINO	2-24-05
3	<i>[Signature]</i>	CECILIA ROSTER	5547 DEMARET	2-24-05
4	<i>[Signature]</i>	ALLEN ROSEN	5561 DEMARET	2-24-05
5	<i>[Signature]</i>	SANDRA ROSEN	5561 DELMARCT	2-24-05
6	<i>[Signature]</i>	NIMI SKINNER	1100 TREVINO DR	2-24-05
7	<i>[Signature]</i>	JANE SKINNER	1100 TREVINO DR	2-24-05
8	<i>[Signature]</i>	Camille Geck	1183 Player	2-24-05
9	<i>[Signature]</i>	ANDREW J. YERZASKY	1239 PLAYER	2-24-05
10	<i>[Signature]</i>	KAREN J. GARD	1113 Player	2-24-05
11	<i>[Signature]</i>	THERESA SLATER	1396 TREVINO	2-24-05
12	<i>[Signature]</i>	JACK KOJAWANIKO	1070 SNEAD	2-24-05
13	<i>[Signature]</i>	LILLIAN Z. KOJAWANIKO	1070 SNEAD	2-24-05
14	<i>[Signature]</i>	Victor Pokornski	1155 Player	2-24-05
15	<i>[Signature]</i>	Thomas P Gumbarski	1291 Trevino DR	2-24-05
16	<i>[Signature]</i>	GREG FAUBERT	1099 PLAYER DR	2/24/05
17	<i>[Signature]</i>	DEBORAH TESCH	1098 SNEAD DR	2/24/05
18	<i>[Signature]</i>	MINERKA BRAY	1207 PLAYER	2/24/05
19	<i>[Signature]</i>	Allan J. Landosky	1452 Trevino	2/24/05
20	<i>[Signature]</i>	ANDREW SLATER	1396 TREVINO	2/24/05
21	<i>[Signature]</i>	AHMED J. KHAN	5575 Demaree	2/24/05
22	<i>[Signature]</i>	PLEUROKE TINKWALD	1208 PLAYER	2/24/05
23	<i>[Signature]</i>	ARNIE D'AMORE-BRAWLEY	1165 SNEAD	2/24/05
24	<i>[Signature]</i>	Sel Grabarski	5903 BOWS	2/24/05
25	<i>[Signature]</i>	Patricia Hughes	1234 Player	2/24/05
26	<i>[Signature]</i>	LAWRENCE KASICA	1169 NICKLAUS	2/24/05
27	<i>[Signature]</i>	DANIEL GOUSSY	1223 Trevino	2/24/05
28	<i>[Signature]</i>	Diane Landosky	1452 Trevino	2-24-05
29	<i>[Signature]</i>	PHILIP TODOR	1453 TREVINO	2-24-05
30	<i>[Signature]</i>	DREG. CAUSINS	1201 BETTIE	2-24-05
31	<i>[Signature]</i>	Kathleen Thompson	1199 Trevino	2-24-05
32	<i>[Signature]</i>	Therese Racklyeft	5448 LITTLER	2-24-05
33	<i>[Signature]</i>	Ida Edmunds	1304 Player	2-24-05
34	<i>[Signature]</i>	Don Edmunds	1304 Player	2-24-05
35	<i>[Signature]</i>	SUSAN FAUBERT	1099 Player	2-27-05
36	<i>[Signature]</i>	SATYAM VEMPATI	1126 SNEAD	2-27-05
37	<i>[Signature]</i>	Lalithani Vempati	1126 SNEAD	2-27-05
38	<i>[Signature]</i>	JACK MALESZNA	1170 SNEAD	2-27-05
39	<i>[Signature]</i>	David Guffy	1182 SNEAD	2-26-05
40	<i>[Signature]</i>	YIN ZHANG	1171 Player	2-27-05



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	Signature	Print Name	Street Address	Date Signed
41	<i>G. Rossi</i>	Goffrey Rossi	5566 Casper	2-24-2005
42	<i>Billie Calabro</i>	BILLIE CALABRO	1204 TREVINO	2-24-2005
43	<i>Roger O. Powell</i>	ROGER O. POWELL	1382 TREVINO	2-24-2005
44	<i>Joanne C. Powell</i>	JOANNE C. POWELL	1382 TREVINO	2-24-2005
45	<i>Kurt David</i>	Kurt David	1113 TREVINO	2-24-2005
46	<i>Anna Koehler</i>	ANNA KOEHLER	1216 TREVINO	2-24-2005
47	<i>Kathleen Brent</i>	Kathleen Brent	5594 CASPER	2-24-2005
48	<i>Tim J. Chute</i>	TIM J. CHUTE	1091 SNEAD DR.	2/24/2005
49	<i>Marianne Huesing</i>	MARIANNE HUESING	1195 SNEAD	2/24/05
50	<i>Stanley Chan</i>	STANLEY CHAN	5444 BOROS DR.	2/24/05
51	<i>Thomas R. Lane</i>	THOMAS R. LANE	5477 BOROS	2/24/05
52	<i>Margaret Kasica</i>	MARGARET KASICA	1169 NICKLAUS	2/24/05
53	<i>Joe Manenti</i>	JOE MANENTI	1248 PLAYER	2-24-05
54	<i>Tanya Satsen</i>	Tanya Satsen	1466 TREVINO	2-24-05
55	<i>Elena Hazerigan</i>	ELENA HAZERIGAN	1186 BERRIE	2-27-05
56	<i>Sajid Syed</i>	SAJID SYED	1186 TREVINO	2-24-05
57	<i>Penn Jennings</i>	Penn Jennings	1439 TREVINO	2-24-2005
58	<i>Chunhao Leu</i>	Chunhao Leu	1141 PLAYER	2-27-2005
59	<i>Hsinhui Tsai</i>	Hsinhui Tsai	1141 PLAYER	2-27-05
60	<i>Marcel J Gard</i>	MARCEL J GARD	1131 PLAYER	2-28-05
61	<i>Robert Brenner</i>	ROBERT BRENNER	1056 SNEAD	2-28-05
62	<i>Alane Brenner</i>	ALANE BRENNER	1056 SNEAD	2-28-05
63	<i>Mary Gunn</i>	Mary Gunn	1061 SNEAD	2-28-05
64	<i>John Blair Clark, Jr</i>	John Blair Clark, Jr	1067 SNEAD	2-28-05
65	<i>Kimberley Clark</i>	Kimberley Clark	1067 SNEAD	2-28-05
66	<i>James La Bay</i>	James La Bay	1087 SNEAD	2-28-05
67	<i>Meghan La Bay</i>	Meghan La Bay	1087 SNEAD	2/28/05
68	<i>Tammie Chute</i>	Tammie Chute	1091 SNEAD	2/28/05
69	<i>Dennis De Palma</i>	DENNIS DE PALMA	1085 SNEAD	2/28/05
70	<i>Eric Thomas</i>	Eric Thomas	1079 SNEAD	2/28/05
71	<i>Inna Thomas</i>	INNA THOMAS	1079 SNEAD	2/28/05
72	<i>Albert Ross</i>	Albert Ross	1073 SNEAD	2/28/05
73	<i>Glunda Ross</i>	GLUNDA ROSS	1073 SNEAD	2/28/05
74	<i>Rosa M. Roberts</i>	ROSA M. ROBERTS	1073 SNEAD	2/28/05
75	<i>Katherine Ochs</i>	Katherine Ochs	1169 PLAYER	2/28/05
76	<i>Robert Raehman</i>	ROBERT RAEHMAN	1281 PLAYER	3-4-05
77	<i>Sandra La Torre</i>	SANDRA LA TORRE	1222 PLAYER	3-4-05
78	<i>Paul La Torre</i>	PAUL LA TORRE	1222 PLAYER	3-4-05
79	<i>Eileen Shovlin</i>	Eileen Shovlin	1160 PLAYER	3-4-05
80	<i>Mohammad Ali Shariati</i>	MOHAMMAD ALI SHARIATI	1127 PLAYER	3-5-05

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	Signature	Print Name	Street Address	Date Signed
81	Kim Hunt	Kim Hunt	1141 Nicklaus	3-5-05
82	Kay A. Pedersen	Kay Pedersen	1155 Nicklaus	3-5-05
83	Kathy Pronovich	Kathy Pronovich	1129 Nicklaus	3-5-05
84	Jacklyn Pronovich	Jacklyn Pronovich	" "	" "
85	Guy Pronovich	Guy Pronovich	" "	" "
86	Jim Pronovich	James Pronovich	" "	" "
87	Andrea D. Murtola	Andrea D. Murtola	1115 Nicklaus	3/5/05
88	Hina Shah	Hina Shah	5459 Bobos	3/5/05
89	Nilech Shah	Nilech Shah	5459 Bobos	3/5/05
90	Ronald Fink	Ronald Fink	5417 Bobos Dr.	3-5-05
91	Debra Shattuck	Debra Shattuck	5403 Bobos Dr.	3-5-05
92	Mary Mathew	Mary Mathew	1172 Nicklaus	3-5-05
93	Elizabeth Leslie	Elizabeth Leslie	1172 Nicklaus	3-5-05
94	Elizabeth Leslie	Elizabeth Leslie	1136 Nicklaus	3-5-05
95	Larry Fierwick	Larry Fierwick	1136 Nicklaus	3-5-05
96	Don McEachern	Don McEachern	1192 Nicklaus	3-5-05
97	Margie McEachern	Margie McEachern	1192 Nicklaus	3-5-05
98	Robert Fieldman	ROBERT FIELDMAN	1211 Nicklaus	3-5-05
99	Gregory Kaminski	GREGORY KAMINSKI	1221 Nicklaus	3-5-05
100	Mike Jenkins	MIKE JENKINS	1221 Nicklaus	3-5-05
101	M. Watkins	M. Watkins	1113 Nicklaus	3/5/05
102	Judy Luskus	Judy Luskus	1187 Nicklaus	3/5/05
103	Sherly Vogel	Sherly Vogel	1201 Nicklaus	3/5/05
104	Jeff Vogel	Jeff Vogel	1201 Nicklaus	3/5/05
105	Kevin Choff	Kevin Choff	1212 Nicklaus	3/5/05
106	Margaret Jeffrey	Margaret Jeffrey	1094 Nicklaus	3/7/05
107	Sue Parks	Sue Parks	1086 Nicklaus	3/8/05
108	Donald Handlen	Donald Handlen	1101 Nicklaus	3/13/05
109	Nancy Handlen	NANCY HANDLEN	1101 Nicklaus	3/13/05
110	David A. Pedersen	DAVID A. PEDERSEN	1155 Nicklaus	3/13/05
111	Tyson B. Bellinger	Tyson B. Bellinger	1261 Beattie Dr.	4/4/05
112	Thomas A. Greenlee	THOMAS A. GREENLEE	1154 SNEAD	4/4/05
113	Thomas A. Greenlee	THOMAS A. GREENLEE	1154 SNEAD	4/4/05
114	William J. Swanteck	WILLIAM J. SWANTECK	1262 PATER	4/4/05
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	Signature	Print Name	Street Address	Date Signed
121	Emily Kirk	Emily Kirk	1089 Trevino	3/6/05
122	Maryloue Bazin	Maryloue Bazin	1114 Trevino	3/6/05
123	Constance Davin	CONSTANCE DAVIN	1113 Trevino	3/6/05
124	Philip C. Lewis	Philip C. Lewis	1178 Trevino	3/6/05
125	Kristen Bader	Kristen Bader	1171 Trevino	3/6/05
126	James Tischler	James Tischler	1235 Trevino	3/6/05
127	Natalie Tischler	Natalie Tischler	1235 Trevino	3/6/05
128	Michael McCormick	MICHAEL MCCORMICK	1249 Trevino	3/6/05
129	Rika Bosnack	Rika Bosnack	1277 Trevino	3-6-05
130	Wei You	WEI You	1284 Trevino	3-6-05
131	Wagner McComick	Wagner McComick	1294 Trevino	3-6-05
132	Diane Landasky	Diane Landasky	1452 Trevino	3-6-05
133	Philip Todor	PHILIP TODOR	1453 Trevino	3-6-05
134	Pat Todor	PAT TODOR	1453 Trevino	3-6-05
135	John Mach	JOHN MACH	1411 Trevino	3-6-05
136	Dan Murphy	Dan Murphy	1397 Trevino	3-6-05
137	Traci Murphy	Traci Murphy	1397 Trevino	3-6-05
138	Blair Schulz	BLAIR SCHULZ	1385 Trevino	3-6-05
139	Andy Salinger	Andy Salinger	1355 Trevino	3-6-05
140	Laura Dettloff	LAURA DETTLOFF	1298 Trevino	3-6-05
141	Laura Dettloff	Laura Dettloff	" "	" "
142	Brian Vocheen	BRIAN VOCHEN	1358 Trevino	3-6-05
143	Lynn Vocheen	LYNN VOCHEN	" "	3-6-05
144	Joanne Powell	JOANNE POWELL	1382 Trevino	3-6-05
145	Roger O. Powell	ROGER O. POWELL	1382 Trevino	3-6-05
146	Matthew Powell	Matthew Powell	1382 Trevino Dr	3-6-05
147	Scott Swinick	Scott Swinick	1099 Trevino Dr	3-6-05
148	Trina Bidar	Trina Bidar	1263 Trevino Drive	3-6-05
149	Pamela Dillard	Pamela Dillard	1263 Trevino Drive	3-6-05
150	Kristopher K. Hultberg	Kristopher K. Hultberg	1289 Beattie Dr.	3/23/05
151	Cheryl A. Herzog	Cheryl A. Herzog	5431 Bonus Dr	4/9/05
152	HALA KONDARAPALDU	HALA KONDARAPALDU	6538 Casper Dr	4/4/05
153	Erin Covert	Erin Covert	1157 Trevino	4/4/05
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PETITION FOR TEMPORARY STREET BARRICADE

We the undersigned homeowners of Golf Trail Subdivision request the Troy City Council approve a temporary diagonal (NW to SE) street barricade at Trevino and Willow Grove to protect the health, safety and welfare of Golf Trail residents from the potential 240 vehicle trips per day generated by the 24 planned units of Oak Forest South site condominiums. The barricade would be removed at such time as Oak Forest (north) and Oak Forest South developments are inter-connected by planned stub roads and Willow Grove has been black-topped.

	Signature	Print Name	Street Address	Date Signed
201	Jane Kegerman	JANE K EGERMAN	1303 BEATTIE	3/2/05
202	Ken Kegerman	Ken Kegerman	1303 BEATTIE	3/2/05
203	Mary Holmberger	MARY HOLMBERGER	1289 BEATTIE	3/02/05
204	Barry Locke	Barry H. Locke	1275 Beattie	5-102/05
205	C. Vanderhoof	C. Vanderhoof	1261 Beattie	5/2/5
206	T. Vanderhoof	Tom Vanderhoof	1261 Beattie	5/2/5
207	Gail Komendera	Gail Komendera	1233 Beattie	3-2-05
208	David Komendera	David Komendera	1233 Beattie	3-2-05
209	John J Berra	JOHN J BERRA	1193 BEATTIE	3-2-05
210	Jean Berra	JEAN BERRA	1193 BEATTIE	3-2-05
211	Edward Exner	EDWARD EXNER	1145 BEATTIE	3-2-05
212	Mark King	MARK KING	1144 BEATTIE	3-2-05
213	Maureen King	Maureen King	1144 BEATTIE	3-2-05
214	Bozena Boziel	Bozena Boziel	1158 Beattie	3-2-05
215	Martha Ruff	Martha Ruff	1192 Beattie	3-2-05
216	Patricia Noble	PATRICIA NOBLE	1220 Beattie	3/2/05
217	Chris R. Sirbu	CHRIS R. SIRBU	1246 Beattie	3/2/05
218	Viorica Sirbu	VIORICA SIRBU	1246 BEATTIE	3/2/05
219	Crane Kumpan	CRANE KUMPAN	1260 BEATTIE	3/2/5
220	Mimi Wu	MIMI WU	1274 BEATTIE	3/2/5
221	Donna Curtis	DONNA CURTIS	5589 DEMAREST	3/2/5
222	Ronald Curtis	Ronald Curtis	5587 Demarest	3/2/05
223	Kristina Arapi	KRISTINA ARAPI	5533 Demarest	3/3/05
224	Ellen O'Hare	Ellen O'Hare	1172 Beattie	3/3/5
225	Michael J O'Hare	MICHAEL J O'HARE	1172 BEATTIE	3-3-5
226	Hafidh Kamil Othman	HAFIDH KAMIL OSMAN	1295 PLAYER	2-4-05
227	Nada Shokaji	NADA SHOKAJI	1290 PLAYER	3-4-05
228	Adam Sinutka	ADAM SINUTKA	1288 BEATTIE	3/4/05
229	David L. Grenville	David L. Grenville	1323 Player Dr.	3/5/05
230	Carol J Grenville	Carol J Grenville	1323 Player Dr.	3/5/05
231	Jarime Sinutka	Jarime Sinutka	1288 Beattie	2/5/5
232	Susan E Creamer	SUSAN E CREAMER	1247 Beattie	3/5/05
233	Scott Creamer	Scott Creamer	1247 BEATTIE	3/4/05
234	Ronald J. Ruit	Ronald J. Ruit	1192 Beattie	3/6/05
235	Daniel R. Duncan	DANIEL R. DUNCAN	1232 BEATTIE	3/12/05
236	John R. Chalk	JOHN R. CHALK	1202 NICKLAUS	4/4/05
237	Mary Chalk	MARY CHALK	1202 NICKLAUS	4/4/05
238	Ken Ochs	KEN OCHS	1169 PLAYER	4/4/05
239	John B. Dyer	John B. Dyer	1354 MEUNING	4/4/05
240	Maria Dye	MARIA DYE	5552 CASPER	4/4/05

23

1/17

PETITION FOR TEMPORARY STREET BARRICADE

We the undersigned homeowners of Golf Trail Subdivision request the Troy City Council approve a temporary diagonal (NW to SE) street barricade at Trevino and Willow Grove to protect the health, safety and welfare of Golf Trail residents from the potential 240 vehicle trips per day generated by the 24 planned units of Oak Forest South site condominiums. The barricade would be removed at such time as Oak Forest (north) and Oak Forest South developments are inter-connected by planned stub roads and Willow Grove has been black-topped.

	Signature	Print Name	Street Address	Date Signed
301	<i>Trevor McLintock</i>	TREVOR McCLINTOCK	1057 SNEAD	3-5-05
302	<i>Laura McLintock</i>	LAURA McCLINTOCK	1057 SNEAD	3-5-05
303	<i>Karina Yatawara</i>	KARINA YATAWARA	1093 PLAYER	3-5-05
304	<i>Ralph Richards</i>	RALPH RICHARDS	1097 SNEAD	3/5/05
305	<i>Pratap Sakhardane</i>	PRATAP SAKHARDANE	1111 SNEAD	3/5/05
306	<i>Marcia Jahn</i>	MARCIA JAHR	1153 SNEAD	3/5/05
307	<i>Kristen Stachura</i>	KRISTEN STACHURA	1167 SNEAD	3/5/05
308	<i>Mahipal Kakarua</i>	MAHIPAL KAKARUA	1196 SNEAD	3/5/05
309	<i>Lawrence Turner</i>	LAWRENCE TURNER	1209 SNEAD	3-5-05
310	<i>Jonathan Turner</i>	JONATHAN TURNER	1209 SNEAD	3-5-05
311	<i>Dianne Turner</i>	DIANNE TURNER	1209 SNEAD	3-5-05
312	<i>Brenda Kellett</i>	BRENDA KELLETT	5782 WILMORE	3-5-05
313	<i>Kevin Curley</i>	KEVIN CURLEY	1210 SNEAD DR	3-5-05
314	<i>Karen Curley</i>	KAREN CURLEY	1210 SNEAD DR	3-5-05
315	<i>Elizabeth Curley</i>	ELIZABETH CURLEY	1210 SNEAD DR	3-5-05
316	<i>Robert Brest</i>	ROBERT BRETT	5594 CASPER	3/12/05
317	<i>Dan Zitny</i>	DAN ZITNY	5580 CASPER	3-12-05
318	<i>Jeff Metz</i>	JEFF METZ	5552 CASPER	3-12-05
319	<i>Janet Matsura</i>	JANET MATSURA	5510 CASPER	3-12-05
310	<i>Jamal Alijah</i>	JAMAL ALIAH	1253 PLAYER	3-12-05
311	<i>David W. Fickley</i>	DAVID W. FICKLEY	1139 SNEAD	3-12-05
312	<i>Linda Barthowicz</i>	LINDA BARTHOWICZ	1119 SNEAD	3-12-05
313	<i>Frank Barthowicz</i>	FRANK BARTHOWICZ	1112 SNEAD	3-12-05
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April 13, 2005

TO: John Szerlag, City Manager

FROM: Brian Murphy, Assistant City Manager / Services
Steve Vandette, City Engineer
Charles Craft, Police Chief
William Nelson, Fire Chief
John Abraham, Deputy City Engineer/Traffic Engineer

SUBJECT: Oak Forest South Traffic Concerns and Request to Close Trevino at Willow Grove Using Temporary Barricades.

This is in response to some traffic concerns raised by the residents of the Golf Trail Subdivision regarding the new Oak Forest South development proposed near the south end of Willow Grove. We have also received a petition from the homeowners in Golf Trail Subdivision requesting to close Trevino at Willow Grove by temporary barricades arranged in a diagonal fashion as shown in the diagram below. The request is that the temporary barricades stay until Willow Grove is paved and the proposed Oak Forest and Oak Forest South developments have interconnection.



The proposed Oak Forest South site condominium is a small residential development that will have 23 units on the proposed Brookwood Street. Per the Institute of Transportation Engineers' Trip Generation Manual, 23 homes may generate around 220 vehicle trips in a day. The Golf Trail homeowners are concerned that all of the 220 trips will "cut-through" streets in their subdivision to access major roads, since Willow Grove is unpaved. The homeowners also feel that if the developer can pave Willow Grove to Square Lake, majority of the traffic from the development may use Willow Grove rather than the existing subdivision streets. Therefore, they request that Trevino be closed off temporarily.

- a. In estimating the 220 trips from the new development the manual includes trips by school buses, police patrol, mail service, snow plows, garbage pick-up and other utilities, who may already be using and serving the Golf Trail subdivision streets. The estimated peak hour traffic is around 18 trips in the morning and around 22 in afternoon peak hour from the new development; the remaining trips are spread over the rest of the day. Further, regarding construction traffic, it has been City policy to restrict the use of existing residential streets by heavy construction vehicles.
- b. The Golf Trail homeowners consider all traffic from the new development to be "cut-through" traffic. In general, the definition of "cut-through" traffic is: vehicles that traverse residential streets to get from one Major Street to another Major Street to avoid delays due to traffic congestion. Traffic within a residential mile section is still considered "neighborhood traffic", and does not fit the most popular definitions of "cut-through" traffic.
- c. Traffic volumes on Golf Trail streets range between 600 and 1600 trips in a day. Traffic volumes on Troy residential streets range between 300 and 5000 trips in a day. The Troy Police Department and City staff take their role in addressing traffic concerns very seriously, yet the ultimate burden of children's safety rests on the motorists and parents in the City of Troy. Thankfully in Troy, largely due to diligent parents & drivers, and effective enforcement of traffic laws, we do not see many pedestrian related crashes. An analysis of all crashes reported in 2003 indicates that out of the total 3196 crashes reported, 6 were pedestrian related. Out of which only one crash occurred on a residential street, and involved a parent backing from their driveway striking their own child. This is not to discount the concerns of the parents in the Golf Trail subdivision, but as information that even though we have residential streets with traffic much higher than the streets in question, traffic crashes involving pedestrians are very few.
- d. Ordinances and the development standards do not require the developer to pave an existing street all the way to a major road. Normal process for paving the street is the Special Assessment District, where residents on the street petition and pay for the paving of the street. It should be noted that whenever the street is paved, related utility work would also have to be completed such as sewers. The developer is required to pave their

- portion of the existing street frontage, which is currently shown on the development plans. As information, paving Willow Grove with 9 inch asphalt would cost approximately \$300,000 (inclusive of engineering design, inspection, paving, drainage work and exclusive of sanitary and storm sewers)
- e. It is the Fire Department's position that any kind of closure of Trevino at Willow Grove will affect their response times when attending to emergencies. The closure would result in a single access to homes on Willow Grove, in other words, create a half-mile long dead end street. Presently, fire apparatus responding to homes on Trevino have access from Willow Grove. Any blockage on the street would result in slower response times of emergency vehicles to gain access to anything past the blockage. The closure would also result in single access to the homes on Trevino east of Casper. Once again, any blockage on the existing access points would result in the inability to reach the houses east of the blockage. The Police and EMS also share similar concerns on the potential for delayed response in case of emergencies.
 - f. The petition proposes to close Trevino off at Willow Grove using temporary barricades. It was suggested that they could be movable, by the petitioner, to address some of the Fire Department concerns. From our experience, if the temporary barricades are movable, they will more likely be moved often than necessary for emergency services. This poses a concern with maintenance of the closure. Therefore if the purpose of the closure is to prevent traffic from entering/exiting Trevino, the barricades have to be somewhat semi-permanent.
 - g. Even though a temporary barricade is proposed, during winter months, snow will have to be plowed to the barricade on both Trevino and Willow Grove creating large snow accumulation that may make the street impassable at the barricade. This would have the effect of a permanent closure at the end of these streets, heightening the emergency access concerns.
 - h. Placing a barricade at Trevino may adversely affect all of the 'services' mentioned earlier, such as, school buses, garbage pick-up and other utilities, police patrol, snow plowing, mail service and others.
 - i. Our Police Department and City staff have worked with the Golf Trail Subdivision on many occasions in the past to enhance residential area traffic safety and will continue to do so.

For the above reasons, City staff recommend that the temporary barricade not be placed at the end of Trevino at Willow Grove. It should also be noted that, all streets in question in the Golf Trail subdivision and Willow Grove are public streets, maintained by public funds, for public use.

Paula P Bratto

From: Don Edmunds [don@edmundsfamily.com]
Sent: Tuesday, February 08, 2005 4:21 PM
To: Mark F Miller; Paula P Bratto
Subject: Golf Trail Resident Concerns - Oak Forest South Site Condominiums

February 8, 2005

Mr. Mark Miller, Planning Director
Members of Troy Planning Commission

RE: Golf Trail Homeowners Association Concerns - Oak Forest South Site Condominiums

Dear Mr. Miller and Planning Commission Members,

Golf Trail Homeowners Association began in 1978 and continues to be an active association of 196 homes with a 5.26 acre private park.

Golf Trail resident concerns with the proposed Oak Forest South Site Plan Condominium Review for 24 units include:

- We share the concerns voiced by some of the Planning Commission as well as other Troy citizens regarding development of this property due to the significant portion of wetlands and natural features contained thereon. Many of these concerns were communicated by the City Engineer, Mr. Steve Vandette in his letter of December 23, 2004.
- We believe that the developer has not fully considered the 'cluster option' available for development of the property, which would allow the same density, but would also retain more of the wetlands and natural features. Several Planning Commission members as well as the City staff have said that the site plan does not include innovative or creative solutions for the development of the property.
- We believe the Planning Commission and the Planning Department have an obligation to promote health, safety and welfare for the 196 residents of Golf Trail as well as the 14 residents on Willow Grove and 24 residents planned for Brookland Drive in Oak Forest South. These 24 new homes will generate from 7-10 vehicle trips per day that will be essentially be borne by Golf Trail streets. For this reason, Golf Trail residents believe that the Planning Commission and the City should request that the developer pay for black top paving of Willow Grove to meet the intent of dispersing increased traffic loads generated by Oak Forest South. The 24 homes of Oak Forest South would benefit by the paving of Willow Grove to provide improved access to Square Lake Rd.
- We also request that if and when Oak Forest South should be approved, that construction deliveries be prohibited from Golf Trail streets.

Thank you for considering our comments.

Respectfully submitted,
Don Edmunds, President
Golf Trail Homeowners Association
1304 Player Drive
Troy, MI 48085
Tel 248-879-8287
Email don@edmundsfamily.com

2/21/2005

Paula P Bratto

From: Don Edmunds [don@edmundsfamily.com]
Sent: Tuesday, February 08, 2005 4:30 PM
To: Vr112987@aol.com; Mark F Miller; Paula P Bratto
Subject: FW: Public meeting reg. Oak Forest South Sbu

Dear Mrs. Rosiek,

Thank you for your comments regarding Oak Forest South and the impact on Golf Trail residents. I am forwarding your comments to the City Planning Director and Planning Commission members.

Sincerely,
Don Edmunds, President
Golf Trail Homeowners Association
1304 Player Drive
Troy, MI 48085
Tel 248-879-8287
Email don@edmundsfamily.com

From: Vr112987@aol.com [mailto:Vr112987@aol.com]
Sent: Monday, February 07, 2005 7:12 PM
To: don@edmundsfamily.com
Subject: Public meeting reg. Oak Forest South Sbu

Dear Mr. Edmunds,

Thank you for your hard work and dedication working for our subdivision to be a better home to live in.

I live at 5547 Demaret Drive and am concerned about the traffic flow entrances and exits when the Oak Forest South sub is built.

I am unable to attend the public meeting on February 8, regarding the concerns the Planning Commission will address. If you can bring my concern to the meeting, please do.

I live on Demaret and the traffic off Player to Demaret is just horrific. The speed limit 25 per hour on these two streets, alone, is hardly driven according to the law. Our children are at danger as are we who even go to our mailboxes to pick up our mail.

The traffic on Rochester Road are driven at expressway speeds. The lineups during heavy volume traffic are miles long bumper to bumper. I speak from driving onto and off Rochester to Player to Demaret. I live behind the church, so I hear traffic speeding from early morning to late night. Please believe me, I live in a home where traffic and night traffic lights are my irritation life in Golf Trail Sub (at the age of 68 years and a widow living alone).

For safety sake, the City has to require the developer to pave Willow Grove. There has to be a detour in the traffic flow that we are now deluged with. I have to be heard by the City what 48 more cars in a new subdivision and the developer not paving Willow grove will involve for our safety.

Please, use my request as a citizen's concern at the February 8th. meeting.

Again, thank you for your hard work, I really appreciate your efforts.

Sincerely,
Cecilia Rosiek
5547 Demaret Dr.
Troy, Mi 48085
248-879-3475

2/21/2005

Paula P Bratto

From: Don Edmunds [don@edmundsfamily.com]
Sent: Tuesday, March 08, 2005 6:47 PM
To: Mark F Miller; Paula P Bratto
Subject: Golf Trail Resident Concerns - Oak Forest South Site Condominiums

March 8, 2005

Mr. Mark Miller, Planning Director
 Members of Troy Planning Commission

RE: Golf Trail Homeowners Association Objections - Oak Forest South Site Condominiums

Dear Mr. Miller and Members of the Planning Commission,

Golf Trail homeowners object to the the proposed 23-unit Oak Forest South Preliminary Site Condominium Plan Review for the following reasons:

- We share the concerns expressed by Mr. Ullmann and the residents of Willow Grove. Some of the same concerns have been made by members of the Planning Commission. We believe the development of this property is inappropriate due to the significant portion of wetlands and natural features. Even though engineering and permits are addressed during the next phase, there are serious concerns as to whether even sanitary sewer hookup can be achieved since Golf Trail sanitary sewers are not large enough to accommodate Oak Forest South.
- We understand that the City or the Planning Commission cannot ask or require the developer to pave Willow Grove. However, we did request that the developer, Mr. Dale Garrett pay to pave Willow Grove at a February 24 meeting at Troy Union Elementary. Approximately 60 Golf Trail homeowners attended the meeting and nearly 15 additional homeowners sent emails in support of our request to the developer. Even though Mr. Garrett said he would get back to us regarding our request, he has not yet done so.
- At the meeting we asked the developer why he had not chose to use the cluster option to develop the property. His response was that it would not save more than ten percent (10%) of the wetlands. Is this really the case? We would appreciate an answer from the City to this question.
- Mr. Dale Garrett did say at the meeting that construction traffic would be contained to Willow Grove and we request that any approval granted include this specific restriction.
- Golf Trail residents are very concerned about the 184 additional vehicle trips per day that will be essentially borne by Golf Trail streets from Oak Forest South if Willow Grove is not paved. We also believe that the Planning Commission has an obligation to protect the health safety and welfare of all the residents including Golf Trail. The 23 new homes of Oak Forest South would directly benefit by the paving of Willow Grove.
- If Oak Forest South is approved by the Planning Commission, Golf Trail residents will submit petitions to the City Council for a temporary diagonal (NW to SE) street barricade at Trevino and Willow Grove. Most of our homeowners have already signed the petitions. The barricade would be removed whenever Willow Grove was paved and the two Oak Forest subs were connected. We understand that only the City Council can approve the temporary barricade.

Thank you for considering our comments and objections.

Respectfully submitted,
 Don Edmunds, President
 Golf Trail Homeowners Association
 1304 Player Drive
 Troy, MI 48085
 Tel 248-879-8287
 Email don@edmundsfamily.com

3/9/2005

April 10, 2005

RECEIVED

Mayor Louise E. Schilling
Troy City Hall
500 W Big Beaver
Troy MI 48084

APR 12 2005

CITY OF TROY
CITY MANAGER'S OFFICE

Dear Mayor Schilling,

As one of our elected officials, we implore you to use all your "position power" to stop the trend of rapid and seemingly boundary-less consumption of undeveloped land. Use your role to halt any development plan that substantially clears trees, fills wetland and removes wildlife, such as Oak Forest sub-division.

We have been Troy residents and registered voters for fourteen years. Our commitment to the city is strong and we have just completed a significant investment in our house (of course, with the full disclosure of building permits). Our family appreciates the safety and services of this fine city, and our children benefit from outstanding schools. While we are without regret about our decision to settle in Troy, we are deeply concerned about the above mentioned trend. It is fast deteriorating this city and, if left unchecked, will eventually drive us away.

Please rigorously enforce current ordinances, or create new ones, to protect the little undeveloped land that is left. We want you, within legitimate boundaries of governance, to make it extremely difficult for developers to convert private unused land. If it is true that developers can clear-cut trees with no replanting reciprocation, then we ask you to create updated ordinances that prevent this. If it is true that wet-lands can be filled with only a token reciprocation elsewhere in the state, then we ask to create updated ordinances that prevent this. And if it is true that other cities are tougher on this land consuming behavior, then we ask you to create similar ordinances to make Troy the hardest place in Michigan to clear land.

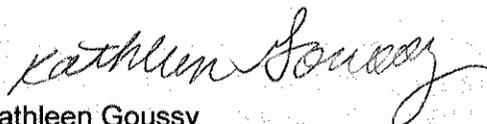
There really is only one side to be on when it comes to the continued destruction of the earth. Author Daniel Quinn asserts in his philosophical novel titled "Ishmael" that mankind is at war with the earth and we pretend we are winning. The reality instead is that mankind is methodically destroying ourselves by killing off our habitat. We watch, with genuine horror, the clear-cutting of trees and the bulldozing of unspoiled earth to make room for ubiquitous condos, sub-divisions and strip-malls.

We will vote for any proposal, tax increase and politician that sensibly preserves green-space.

Sincerely,



Daniel Goussy



Kathleen Goussy

1228 Trevino

Paula P Bratto

From: Cynthia A Stewart
Sent: Monday, April 11, 2005 8:37 AM
To: Cristina Broomfield (E-mail); Cynthia A Stewart; Dave Lambert (E-mail 2); David Eisenbacher (E-mail); Jeanne Stine (E-mail); John Szerlag; Louise Schilling (E-mail); Martin Howrylak (E-mail); Robin Beltramini (E-mail)
Cc: Mark F Miller
Subject: FW: Oak Forest South Sub

-----Original Message-----

From: Niles Shah [mailto:nshah0123@comcast.net]
Sent: Sunday, April 10, 2005 5:38 PM
To: Louise Schilling; dave@lambert.net; rbeltram@wideopenwest.com
Cc: Cynthia A Stewart; don@edmundsfamily.com; lon_ullmann@yahoo.com; abolling@campbell-ewald.com; kumpulafamily@comcast.net; don@edmundsfamily.com; shearlockssalon@ameritech.net; kgard7@comcast.net; khulliberger@comcast.net; waterchaser2@aol.com; thebigsalmon@wideopenwest.com; gsfaubert@aol.com
Subject: Oak Forest South Sub

Council Members

I am the resident of Golf Trail subdivison. Like most of the resident of this subdivison I do oppose the new development.

One of the concern is loosing the wetlands and making Troy a jungle of houses and at the cost of the natural jungles and trees.

At the same time - more important concern is the increased traffic through the streets of Golf Trail subdivision that would put the kids and residents at increased risk.

We would request atleast to approve temporary diagonal (NW to SE) street barricade at Trevino and Willow Grove till Willow Grove was paved and the two Oak Forest subs were connected.

Niles Shah
5459 Boros Dr

Paula P Bratto

From: Mark F Miller
Sent: Monday, April 11, 2005 3:57 PM
To: Paula P Bratto
Subject: FW: Development concerns - Oak Forest & Oak Forest South

-----Original Message-----

From: Cynthia A Stewart
Sent: Monday, April 11, 2005 2:32 PM
To: Brian P Murphy; Mark F Miller
Cc: John Szerlag
Subject: FW: Development concerns - Oak Forest & Oak Forest South

-----Original Message-----

From: Murfey, Dan [mailto:murfeyd@bnpmedia.com]
Sent: Monday, April 11, 2005 1:59 PM
To: Louise Schilling; dave@lambert.net; rbeltram@wideopenwest.com; talk2cristina@aol.com; david@eisenbacher.org; Mfhowryl@umich.edu; stinejm@wwnet.net
Cc: Cynthia A Stewart; lon_ullmann@yahoo.com; Ann Bollinger; Craig Kumpula; JoAnn Bologna; Karen J. Gard; Kris Hulliberger; Margaret Kasica; Ron & Michelle Spisak; Susan Faubert; don@edmundsfamily.com; The Murfey's
Subject: Development concerns - Oak Forest & Oak Forest South

Dear Members of the Troy City Council:

Thank you for your service to the residents of our fine city. The reason for my email is to bring to your attention concerns that my family and I have regarding two proposed developments - Oak Forest and Oak Forest South.

My family lives in the far east end of the Golf Trails subdivision at 1397 Trevino Drive. The Planning Commission recently voted to approve two developments in some nearby property on the south side of Square Lake, east of Willow Grove and west of John R. For details, please see meeting minutes from March 8, items no. 5 & 6 on pages 3 to 9 of the pdf, found here <http://www.ci.troy.mi.us/committees/minutes/Planning20050308.pdf>. Specifically, please read the comments from Planning Commission member, Mr. Wright. He lived in the Golf Trails sub for years and likely has more knowledge of this property than anyone else on the planning commission. Please note that Mr. Wright voted against approving the development.

Most reasons I am against the developments are highlighted in the meeting minutes (wetlands, flooding issues, potential liability to the city, etc). I expect you will hear from others with valid arguments concerning those points.

However, the issue that concerns me most is safety. Particularly, the safety of the children in our subdivision. This issue is paramount. My two children are ages 3 1/2 years and 21 months, with a third baby due to arrive this fall. There are many other young families in the neighborhood. Seeing those kids playing in the neighborhood is one of the reasons we moved into Golf Trails last summer. The nearly 200 estimated added vehicle trips per day that the development will send through our streets scares me. And here are many reasons why...

According to a study conducted by Connecticut SAFE KIDS, pedestrian injury is the second leading cause of unintentional injury-related death among children ages 5 to 14. Motor vehicle crashes account for approximately 80 percent of all childhood pedestrian deaths with children ages 5 - 9 at highest risk. Children are especially vulnerable to pedestrian death because they face traffic threats that exceed their cognitive, developmental, behavioral, physical and sensory abilities. Speed also plays a critical role in pedestrian injury.

According to a study conducted by RoSPA, The Royal Society for the Prevention of Accidents (UK):

- When hit by a car at 40mph, 9 out of 10 pedestrians will be killed
- When hit by a car at 30mph, about half of pedestrians will be killed
- When hit by a car at 20mph, 9 out of 10 pedestrians will **survive**.

This was conducted in the UK, where average car size is considerably smaller than here in metro Detroit. One can only assume

4/11/2005

the fatality rates would be higher with SUVs and trucks that dominate our roads. We must take measures to keep cars in our neighborhoods rolling at SAFE speeds.

With the current proposed Oak Forest South development, Trevino Drive would be extended straight through Willow Grove. According to a 1999 study conducted by the National SAFE KIDS Campaign and Fed Ex:

- 47% of observed motorists do not obey stop signs in residential areas or school zones.
- More telling, is that with children pedestrians present, nearly 1 in 3 cars still do not stop.
- 24% do not stop even when pedestrians are crossing the street.
- 7.3% do not slow down.

Currently Trevino ends at Willow Grove so cars that do not stop at least have to slow down for the turn. Extend Trevino and cars no longer need to slow down. At 185 extra cars per day, that means 13 to 14 people per day entering Oak Forest South will not even slow down for the stop sign at Willow Grove.

Jon Osterberg, spokesman for PEMCO Insurance, concluded from a PEMCO-conducted study, "higher-income people tend to speed more." The Oak Forest developments are targeting higher-income people. I don't intend to single out anyone. However, if facts show that higher income people tend to speed more and they'll be speeding by my house and my children, then I think it is fair to mention in order that safeguards are put in place to protect the children.

Combine all the above with the fact that homes on Trevino are not set back very far from the road, children do wind up on the street occasionally chasing basketballs, riding bikes, etc; and the result is danger for kids.

The final goal listed on the city's mission statement page (<http://www.ci.troy.mi.us/managers/MissionVisVal.asp>) is to "protect life and property." Therefore, I ask that you, members of the Troy City Council, do not approve the proposed Oak Forest developments as they have been approved by the Planning Commission. Please consider alternate plans. Consider paving Willow Grove where homes are set further back from the road to provide an alternate exit for Oak Forest South residents. Consider blocking Trevino at its end to send Oak Forest South traffic out via Willow Grove.

Consider larger measures that can positively effect the city for years to come:

- Consider an ordinance that would require the replacement of trees when they're torn down during development (see city of Novi).
- Consider a long-term plan to protect some of the remaining green space in the city before it has all disappeared. While development is great, smart-development is critical for the long-term success of suburbs like Troy. And making green space an integral part of the long-term development plan will make Troy a desirable location to live and work for years to come. Many studies demonstrate that parks, greenways and trails increase nearby property values, thus increasing local tax revenues. Such increased revenues often offset acquisition costs. Please consider making the property east of Willow Grove, west of John R and south of Square Lake part of this long-term plan.

In closing, thank you for taking the time to read my concerns. Thank you for serving the city of Troy. And I ask respectfully that you vote **against** the Oak Forest and Oak Forest South proposed developments.

Kind regards,

Dan Murfey
1397 Trevino Drive
Troy MI 48085

Paula P Bratto

From: Cynthia A Stewart
Sent: Tuesday, April 12, 2005 7:52 AM
To: Cristina Broomfield (E-mail); Cynthia A Stewart; Dave Lambert (E-mail 2); David Eisenbacher (E-mail); Jeanne Stine (E-mail); John Szerlag; Louise Schilling (E-mail); Martin Howrylak (E-mail); Robin Beltramini (E-mail)
Cc: Brian P Murphy; Mark F Miller
Subject: FW: Golf Trail Homeowner's Objection: Oak Forest South Side Condos

-----Original Message-----

From: John Shea [mailto:belvedere01@yahoo.com]
Sent: Tuesday, April 12, 2005 12:05 AM
To: INVALID_ADDRESS@.SYNTAX-ERROR
Cc: Cynthia A Stewart; lon_ullmann@yahoo.com; don@edmundsfamily.com
Subject: Golf Trail Homeowner's Objection: Oak Forest South Side Condos

April 11, 2005

Dear Mayor Schilling and Troy City Council Members:

I am a home owner in the Golf Trail subdivision (address, 1142 Trevino Dr., off Demaret.) As you continue deliberations for the Oak Forest South Side condo proposal, I respectfully ask you to find the following:

- * Reject the proposal outright, both to protect the environment and to protect the lots of existing homes that will almost certainly take on too much water if the condos are built to current plans.

Should you find other arguments more compelling and you do decide to allow the new condos, I then ask you to consider the following:

- * Put a temporary diagonal street barricade at the east end of Trevino at Willow Grove;
- * Insist that the developer use only Willow Grove for construction vehicles
- * Put pressure on the developer to pave Willow Grove so that our children within Golf Trail aren't put at further risk due to an additional 184 vehicle trips per day.

In more detail:

WHY THE PROPOSAL SHOULD BE REJECTED It is my understanding from the Troy Wildlife & Wetlands Coalition that if the condos are built, it will be the end of the largest woodland and wetland complex in Troy.

Further, if this project is built as proposed, there will be filling of high risk floodplains, filling of lots on site to raise their grade with the likelihood of flooding neighboring homes and properties. I have lived on Trevino Dr. for three years now. Every spring, the lowest part of my yard is ALWAYS flooded from excess water. I can't take on any more water without experiencing substantial damage. I am afraid of what these new condos would do to my home.

THE ISSUE WITH WILLOW GROVE

Willow Grove needs to be paved. It's a mess. You can't drive down the street without hitting a big pothole that will tear up your car's alignment. (It is so bad, in fact, you can hardly walk down it without twisting an ankle.) It is my understanding than more than 60 Golf Trail homeowners met the with developer, Dale Garrett, on Feb. 24, to ask him to consider paving the road. It is my understanding he said he would consider it. As of Sunday, we have still not heard from Mr. Garrett. From his silence on this issue, it is obvious he does not want to pave the road. He wants you to approve the project without having to go to this expense.

The dilemma is this: If he doesn't pave the road, all these new condo residents will not want to drive down it. They will drive through Golf Trail streets, instead. We estimate there would be 184 vehicle trips per day through our streets if Willow Grove isn't paved. I really object to this. Our streets right now are quite and safe. If we have all these extra vehicle trips per day, our streets will be neither. We have too many kids in our subdivision. Our kids and their parents shouldn't have to put up with this additional risk because the developer is too cheap to do what needs to be done. Of all the many potential problems with this development, I worry about this one the most.

If the board wants to approve this project, can't you make passage contingent upon him paving the road? I understand you can't order this done once you've approved the project ... but can't you withhold approval until it's done?
I fully support Don Edmunds, Lon Ullmann, and our other Golf Trail board members in our opposition to this proposed development. I hope you'll take my views into account. If you have any questions, feel free to e-mail or call me (248.879.0092)
Respectfully,

John Shea
1142 Trevino
Troy

Do you Yahoo!?
Yahoo! Small Business - Try our new resources site!
<http://smallbusiness.yahoo.com/resources/>

Paula P Bratto

From: Cynthia A Stewart
Sent: Tuesday, April 12, 2005 7:51 AM
To: John Szerlag; Brian P Murphy; Mark F Miller
Subject: FW: Developement of Oak Forest South Subdivision

-----Original Message-----

From: Don Edmunds [mailto:don@edmundsfamily.com]
Sent: Monday, April 11, 2005 10:43 PM
To: Louise Schilling; dave@lambert.net; rbeltram@wideopenwest.com; talk2cristina@aol.com; david@eisenbacher.org; Mfhowryl@umich.edu; stinejm@wwnet.net
Cc: Cynthia A Stewart
Subject: FW: Developement of Oak Forest South Subdivision

From: JohnC66455@aol.com [mailto:JohnC66455@aol.com]
Sent: Monday, April 11, 2005 10:26 PM
To: don@edmundsfamily.com
Cc: lon_ullman@yahoo.com
Subject: Developement of Oak Forest South Subdivision

Members of the City Council

As a resident of Troy and Golf Trails subdivision I am very distressed that some developer would be allowed to develop the Oak Forest subdivision located at John R and Square Lake road. This property has substantial wet lands with 5000 hardwood trees that would be removed. It would also threaten the existence of the Blue Heron rookery that is near by. Building on this property would cause flooding to near by properties

Changes need to be made to our ineffective Ordinance and other Ordinances that would protect the wet lands. Troy has recently been designated Tree City USA yet we would allow 5000 trees to be removed. And besides that we are having to remove thousands of trees through out our city.

Finally if this development is allowed to be built and the only exit from that subdivision is through Golf Trails this would make our subdivision unsafe. It would cause an increase of traffic through our streets. Especially Player and Trevino that outlet to Rochester Road.

There fore I am for the City Council to authorize the installation of a temporary street barricade at the east end of Trevino at Willow Grove if this plan is approved. Thank You.

JOHN CHALK
1202 Nicklaus Dr.
Troy, Mi. 48085

Mark F Miller

From: Cynthia A Stewart
Sent: Wednesday, April 13, 2005 7:48 AM
To: John Szerlag
Cc: Brian P Murphy; Mark F Miller
Subject: FW: Oak Forest South Subdivision

-----Original Message-----

From: a4dbfamily [mailto:a4dbfamily@comcast.net]
Sent: Tuesday, April 12, 2005 8:23 PM
To: Louise Schilling; dave@lambert.net; rbeltram@wideopenwest.com; talk2cristina@aol.com; david@eisenbacher.org; Mfhowryl@umich.edu; stinejm@wwnet.net
Cc: Cynthia A Stewart; don@edmundsfamily.com
Subject: Oak Forest South Subdivision

To the members of Troy City Council:

We understand that the approval for Oak Forest South and Oak Forest North Subdivisions is on your agenda for April 18th, 2005. I am a Golf Trail resident opposed to these proposed site condominium plans.

We are opposed for many reasons, primarily the impact on the dwindling amount of remaining wetlands in Troy. We are very concerned that this proposed development will not only impact the wildlife in the area, but will also reduce the natural presence of trees, grasses and the small amount of remaining undeveloped property in Troy.

We understand that a legislative solution is required to resolve the permit and planning issues involved in reviewing this project and similar ones. However, we would anticipate a great deal of flooding of basements from this development, as well as disruption to traffic flows.

We are also very concerned about the impact on traffic, as well as safety issues. We anticipate a great deal of additional traffic through Golf Trail streets, especially given the unwillingness of the developer to pave Willow Grove. Our children enjoy playing hockey and other sports on the streets of Golf Trail and will be in danger with the additional 184 daily trips anticipated.

As you know, Golf Trail residents plan to submit the petitions signed by over 200 Golf Trail residents to request that the City Council authorize the installation of a temporary diagonal (NW to SE) street barricade at the east end of Trevino at Willow Grove. The barricade would be removed when Willow Grove is paved and the two Oak Forest subs are connected.

We are hopeful that the Council will consider the comments and concerns of Golf Trail residents in evaluating these proposals.

Thank you for your time and consideration.

Arnold R. D'Amore-Braver and Andrea D'Amore-Braver

Oak Forest South
S.C.

January 10, 2005

To: Members of the Planning Commission

I am writing to you because of a concern I have in regard to the proposed Oak forest development. I write this not as someone that doesn't want a development in my backyard, but rather as someone that is concerned about the effects of this development on my property, my neighbors properties, the properties of potential buyers in this development and all the taxpayers in Troy.

The land we live on is low lying, wet with little or no drainage. You don't need to be a wetland consultant or scientist to know we live in a swamp. Willow Grove does not have ditches because ditches need an outlet and Willow Grove is high on both ends with water lying in the middle. The drainage to the West was eliminated over 30 years ago when Golf Trail subdivision builders raised the grade by filling at least 2' and filling in the drainage ditch and blocking my field tile. The reason I know it is 2' is because at the back of my property there is a vertical bank 2' high with a backyard drain - for subdivision. My drainage was illegally destroyed. When I questioned what went on here a young engineer at the City of Troy told me we were a developing community and they couldn't be concerned about drainage on adjoining properties. He cared not for my problems. The result of this was a property that formerly could be plowed in May and planted for a large garden. Today it is mid July before one can venture out on a tractor. The land has gone from a grassy field to a swamp. It is a restoration that the U.S. Fish and Wildlife Service do all the time - if asked by property owners. I didn't volunteer; I was drafted to "restore" my wetland.

In 1987 illegal filling occurred at the end of Willow Grove. The peat moss was sold off the property on the east side of Willow Grove and replaced by fill dirt. The owner on the west side filled the marsh and eliminated all drainage from my property and the other properties on west side of Willow Grove. Our land became even wetter.

Three years ago a house was constructed at Square Lake and Willow Grove. 30 pipes - read wells - were placed and pumping began to "dry out" the site. Everything around here including the street flooded. Every neighbor on the street noticed and commented that things were even wetter than before.

Enclosed you will find a list of "hydric" or saturated soils. According to the Oakland County Soil Book and the Department of Environmental Quality all soils in this drainage area are hydric. The enclosed exhibit A verifies this. These soils have water tables that from October or November to June have water tables that vary from 1-2 ft. below ground level to at or above the surface. As my neighbor on the east side of Willow Grove can testify the water table is at or near the surface in the wettest months of the year. Right now the water is lying in my yard. Soil borings done by Mr. Garret in the end of

September when it is dry show water levels as close as 6" below the surface.

The potential for water problems and flooding are acute. These wetlands are natural retention areas that have been functioning here since glaciers passed through. Now we are proposing removing 1,000,000 cubic feet of water storage area for basements and sewers. The remaining land will be compressed by heavy equipment and space between particles will be reduced or eliminated. All trees and vegetation will be removed eliminating water removal by evapotranspiration.

Detention or storage area is very limited by these high water tables. Detention pond levels shown on plans show 2' of storage area while in actuality there will be .5 to at best 1.7 feet according to borings. My pond is full and the detentions ponds will be full as well, at times. Careful and realistic calculations are necessary before this project proceeds. Exhibit B shows that water pits dug by the Department of Environmental Quality in July 2000 during the drought. Water levels varied from 2 areas with water at the surface (in July) to pit levels of saturation of 6 inches, 8 inches, 10 inches, 10 inches and 13 inches. Believing there will be 2' of storage area is unduly optimistic based on experience and observation here.

The Oakland County Drain Commission has insisted since 1998 that the Fetterly Drain must be improved to develop around it. See exhibit C. The widening and deepening of the Fetterly Drain, called in-line detention, is not allowed by the Department of Environmental Quality or the Oakland County Drain Commission because it doesn't work. Mr. Garret doesn't have access to all parts of the Fetterly Drain as the existing easements are for maintenance only. The construction easement expired in 1946.

Backyard drains cannot drain adjoining wetlands. The eastern section of Oak Forest is dead flat as is the land adjoining it. The grading plan shows raising the grade of the Garret property, which will stop north-south flow of water and divert water onto adjoining property - both are in violation of Troy ordinances.

As Mark Miller points out if Mr. Garret meets all requirements and ordinances he must be allowed to develop. The operative word is all ordinances especially those dealing with detention and potential diversion. There is an obligation for you to protect the property rights of adjoining property owners as well. We should not need to hire counsel after damage is done to correct problems caused by poor planning. If the City of Troy approves this project they become responsible if problems occur as well.

We need to move slowly and with great caution to ensure all parties are protected as this project moves forward. It is sad that my experience causes me to not trust or depend on our engineering department and that is why I am asking you to require Mr. Garret to demonstrate the water carrying capacity of this land and to address all the issues before any approvals are given.

Lon M. Wellmann

Part 303, Wetland Protection, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended.

Applicant <u>Walter Squires, Inc.</u>	DEQ File # <u>00-63-0006WA</u>
Address <u>4086 Rochester Rd., Suite 202, Troy, MI</u>	Wetland Area # <u>A</u>
T <u>2N</u> R <u>11E</u> Section: <u>11</u> <u>48098</u>	Sheet <u>1</u> of <u> </u>
Tax Identification #: <u>20-11-201-018-015 012 1/2</u>	Date <u>7/18/00</u>
Reviewer: <u>20-11-226-006, 007</u>	<u>Level III</u>

IN-OFFICE:

- a. Y (Y/N) Is any portion of the area mapped as wetland on NWI or MIRIS maps?
- b. Y (Y/N) Is any portion of the area, mapped as a hydric soil or non-hydric soil with hydric soil inclusions on the county soil survey map? If yes, list hydric soil(s) and/or hydric soil inclusions: Brookston's Colwood loam & all soils are hydric

FIELD REVIEW:

- c. Y (Y/N) Do normal circumstances exist on site? If no, describe: Dixboro loamy fine sand w/ Colwood inclusions
- N (Y/N) Is the site significantly disturbed? If yes, describe: Gilford sandy loam
- N (Y/N) Is there a potential Problem Area? If yes, describe: Silt/clay loamy sand w/ Grassy soils
- d. Y (Y/N) Is the area wetland?
 - 1. Y Visible signs of hydrology or hydric soil characteristics
 - 2. Y Predominance of wetland vegetation
- e. Y (Y/N) Is the area regulated pursuant to Part 303
 - 1. the area is contiguous to the Great Lakes or Lake St. Clair, an inland lake or pond, or a river or stream. (Waterbody is over 1 acre of permanent open-water. Watercourse has defined banks, bottom, and at least an occurrence of flow)
 - a. wetland connected to an inland lake or pond, a river or stream, one of the Great Lakes, or Lake St. Clair.
 - b. Y wetland within 500 feet of an inland lake, pond, river or stream
 - c. wetland within 1000 feet of the Great Lakes or Lake St. Clair
 - d. Two or more areas of wetland separated only by barriers, such as dikes, roads, berms, or other similar features, but with any of the wetland areas contiguous. Explain:
 - 2. the entire wetland complex is five acres or larger in size and is in a county with a population of 1000,000 or greater. Size based on:
 - 3. the department has determined that protection of the area is essential to the preservation of the natural resources of the state from pollution, impairment, or destruction and the department has notified the owner

Comments:

up in COFT of tributary of Gibson Drain

INSTRUCTIONS:

Fill out all pertinent information on the following worksheets to substantiate your review. Not all of the following sheets or items need to be completed to make an appropriate review of an area. Additional worksheets can be used where there is more than one wetland area within a review area and/or where variability of the site necessitates such use. Identify the number of worksheets used for each review area, regardless of whether individual wetland areas are recorded jointly or individually.

11/20/98
11/20/98

To: James C. Bacon Jr., City Manager

From: John Szerlag, Assistant City Manger, Services
Rick Augustine, Parks and Recreation Director RA
Charles R. Barnes, Interpretive Programs Manager CRB
Susan L. Raymer, Naturalist SLR

Subject: Report, heron rookery, section 11

Report: Section 11 - Great Blue Heron Rookery

Summary Recommendations: Following the U.S. Fish and Wildlife Service's recommendation of preserving a zone of approximately 810 feet around the heronry, the amount of recommended land would be around fifty acres. Since the 810 foot radius extends to the existing buildings and across Square Lake and John R Roads, staff would suggest the buffer zone be extended south to make up the difference, since there is potential heronry habitat in that direction. †

Supporting Information

General Site Description:

Field Date: June 26, 1998

Location: The heronry (rookery) is located in the state of Michigan, Oakland County, City of Troy, Section 11, northeast quarter.

Land Description: The area around the heronry is bounded on the north and east by commercial development and Square Lake and John R Roads. There are residential homes on the southeast, along Abbottsford and on the west along Willow Grove Road.

To the south and west are mixtures of young and older forest communities. The older forest stands are climax mixtures of oak/hickory and beech/sugar maple and other species. Diverse stands of ferns and wildflowers comprise the forest floor in many areas. Scattered through this area are impoundments of standing water and there is evidence of seasonal standing water throughout much of the area up to about 8 inches.

By the soil classifications, this area was originally wetlands; before the installation of the Fetterly Drain and are wetlands today.

Heronry Description: The heronry contains 24 nests and has fledged approximately 53 young (Campbell, personal communications). The area occupied by the heronry is approximately 300 feet E to W and 150 feet N to S for an estimated total area of 1.03 acres. The nests are located in dead American elms (*Ulmus americana*) where there is standing water, small impoundments and areas of emergent aquatic vegetation. Elms likely died of Dutch elm disease.

Natural History Of The Great Blue Heron (*Ardea herodias*):

Description: A large bird, 39 - 52 inches tall depending on the posture. They are grayish blue with a black and white crown, long legs and beak. Wing span reaches six feet.

soil is well suited to use as cropland, pasture, and woodland. It is fairly suited to most recreation uses.

This soil is poorly suited to building site development because of wetness and generally is not suited to use as septic tank absorption fields because of wetness and moderately slow permeability. If this soil is used as a site for buildings, surface or subsurface drainage is needed to lower the water table and well compacted fill is needed to raise the site. Sanitary facilities should be connected to public sewers and sewage treatment facilities.

If this soil is used as cropland, the main management concerns are removing excess water and maintaining good tilth. Surface and subsurface drains help to overcome wetness. Conservation tillage, which does not invert the soil and leaves all or part of the crop residue on the surface, helps to reduce compaction and maintain good tilth.

This soil is in capability subclass IIw and Michigan soil management group 2.5b.

12—Brookston and Colwood loams. This map unit consists of nearly level, very poorly drained soils in broad, flat areas and in drainageways. These soils are subject to frequent ponding. Areas are irregular in shape and are 2 to 200 acres or more in size. In many areas of this map unit, the Brookston soil is the only major soil. In other areas the Colwood soil is the only major soil. Both soils are present in some areas.

Typically, the surface layer of the Brookston soil is very dark gray loam about 11 inches thick. The subsurface layer is very dark gray, mottled, friable loam about 5 inches thick. The mottled subsoil is about 20 inches thick. In the upper part it is grayish brown, firm clay loam; in the middle part it is grayish brown, friable clay loam; and in the lower part it is grayish brown, firm silty clay loam. The substratum to a depth of about 60 inches is mottled gray, calcareous loam. In some places the surface layer is lighter in color and is less than 10 inches thick.

Typically, the surface layer of the Colwood soil is very dark brown loam about 11 inches thick. The mottled, friable subsoil is about 26 inches thick. In the upper part it is dark grayish brown loam, in the middle part it is light olive gray loam and silty clay loam, and in the lower part it is light brownish gray silt loam. The substratum to a depth of about 60 inches is gray, mottled, calcareous, stratified silt loam and very fine sand. In some places the surface layer is lighter in color and is less than 10 inches thick.

Included in mapping are small areas of Sebewa and Gifford soils that are more droughty than the Brookston soil and are on landscape positions similar to those of the Brookston soil. Also included are small areas of somewhat poorly drained Capac, Kibbie, Metamora, and Selfridge soils that are on low knolls and ridges. The included soils make up 5 to 15 percent of the map unit.

Permeability is moderate in the Brookston and Colwood soils, and available water capacity is high.

Runoff is very slow or ponded. Both soils have a high water table that is at or above the surface from October to May.

In most areas these soils are used as woodland or pasture or are idle land. In a few areas they are used for crops. They are well suited to use as cropland and pasture if excess water is removed. They are poorly suited to use as woodland or pasture and to recreation uses because of wetness.

These soils are poorly suited to building site development and generally are not suited to use as septic tank absorption fields because of wetness. They should not be used as sites for buildings with basements. If they are used as sites for buildings without basements, the use of surface or subsurface drainage to lower the water table and the use of well compacted fill to raise the site help to overcome the wetness limitation. Sanitary facilities should be connected to public sewers and sewage treatment facilities.

If these soils are used as cropland, the main management concerns are removing excess water and maintaining good tilth. Surface and subsurface drains help to overcome wetness. Tilling only when the soils are not wet and using tillage practices that do not invert the soil and that leave all or part of the crop residue on the surface help to improve tilth.

If these soils are used as woodland, the major limitation is wetness. The main management concerns are equipment restrictions, seedling mortality, and windthrow. The use of heavy equipment for planting, tending, and harvesting trees is restricted during wet periods. Woodland operations should be timed to seasons of the year when the soils are relatively dry or frozen. Seedling loss can be high because of wetness. In some areas special site preparation, such as bedding, helps to reduce seedling mortality. The use of harvesting methods that do not leave trees standing alone or widely spaced helps to control windthrow.

These soils are in capability subclass IIw and Michigan soil management groups 2.5c and 2.5c-s.

13B—Oshtemo-Boyer loamy sands, 0 to 6 percent slopes. This complex consists of nearly level and undulating, well drained soils that are on broad knolls and ridges. Slopes are smooth and convex and are less than 100 feet long. Areas of this complex are irregular in shape and are 2 to 320 acres in size. The Oshtemo soil makes up 40 to 55 percent of the complex, and the Boyer soil makes up about 30 to 40 percent. The areas of these soils are so intermingled or are so small that it was not practical to separate them at the scale of mapping used.

Typically, the Oshtemo soil has a surface layer of dark brown loamy sand about 7 inches thick. The subsurface layer is yellowish brown loamy sand about 9 inches thick. The subsoil is about 37 inches thick. The upper part is reddish brown, friable sandy loam; and the lower part is yellowish brown, very friable loamy sand. The

convex and are less than 75 feet long. Areas are irregular in shape and are 2 to 100 acres in size.

Typically, the surface layer is very dark grayish brown sandy loam about 9 inches thick. The subsurface layer consists of grayish brown and pale brown sandy loam and is about 19 inches thick. The subsoil is grayish brown, mottled, firm clay loam and is about 8 inches thick. The substratum to a depth of about 60 inches is grayish brown, mottled, calcareous loam. In the southern part of the county, this soil has a clayey substratum.

Included in mapping are small areas of Dixboro and Selfridge soils that are on landscape positions similar to those of the Metamora soil. The Dixboro and Selfridge soils are more droughty. Also included are small areas of the very poorly drained Brookston, Colwood, Thomas, Houghton, and Adrian soils that are in depressions and drainageways. The included soils make up 2 to 10 percent of this map unit.

Permeability is moderately rapid in the surface soil and moderately slow in the subsoil and substratum. The available water capacity is high. Runoff is slow. The seasonal high water table is at a depth of 1/2 foot to 2 feet from November through May. The shrink-swell potential is moderate.

In most areas this soil is used as pasture or woodland or is idle land. In a few areas it is used for crops. This soil is well suited to use as cropland, pasture, and woodland. It is fairly suited to most recreation uses.

This soil is poorly suited to building site development because of wetness and is poorly suited to use as septic tank absorption fields because of wetness and moderately slow permeability. If this soil is used as a site for buildings, the use of surface or subsurface drainage to lower the water table and the use of well compacted fill to raise the site help to overcome the wetness limitation. For septic tank absorption fields, special construction, such as filling or mounding the absorption field site with suitable soil material, may be needed to raise the field above the water table.

If this soil is used as cropland, the main management concerns are removing excess water and maintaining soil tilth. Surface and subsurface drains help to overcome wetness. Conservation tillage, which does not invert the soil and leaves all or part of the crop residue on the surface, helps to reduce compaction and maintain good soil tilth. Also, keeping tillage operations to a minimum helps to maintain good tilth.

This soil is in capability subclass IIw and Michigan soil management group 3/2b.

38—Napoleon muck. This nearly level, very poorly drained soil is on lowlands. It is subject to ponding. Areas are irregular in shape and are 3 to 40 acres in size.

Typically, the surface layer of the Napoleon soil is black muck about 10 inches thick. The material below that, to a depth of 60 inches, is dark reddish brown mucky peat in the upper 38 inches and very dark gray

muck in the lower 12 inches. In some places the material below a depth of 40 inches is sandy or loamy.

Permeability is moderate or moderately rapid. The available water capacity is high. Runoff is very slow. The high water table is near or above the surface from September to June.

In most areas this soil is covered by brush. It is poorly suited to woodland use, to use as habitat for openland wildlife, and to recreation uses. Generally it is not suited to use as pasture and cropland. It is not suited to use as a site for buildings and to use as septic tank absorption fields. The hazard of ponding is the main limitation of this soil for most uses.

If outlets are available, this soil can be drained and used for specially crops such as blueberries.

This soil is in capability subclass VIw and Michigan soil management group Mc-a.

39—Granby loamy sand. This nearly level, poorly drained soil is in broad, flat areas and drainageways and is subject to frequent ponding. Areas are irregular in shape and are 2 to 60 acres in size.

Typically, the surface layer is black loamy sand about 11 inches thick. The subsoil is mottled and is about 27 inches thick. In the upper part it is dark gray, very friable loamy sand; and in the lower part it is gray, loose sand. The substratum to a depth of about 60 inches is light gray, mottled sand. In some places loamy or clayey material is at a depth below 40 inches. In some places the surface layer is muck less than 16 inches thick.

Included in mapping are small areas of poorly drained Sebewa soils and very poorly drained Gilford soils that are on landscape positions similar to those of the Granby soil. The Sebewa and Gilford soils are less droughty than the Granby soil. Also included are small areas of the somewhat poorly drained Tedrow, Thetford, and Wasepi soils that are on low knolls. The included soils make up 1 to 10 percent of the map unit.

Permeability is rapid in this Granby soil, and the available water capacity is low. Runoff is very slow or ponded. The high water table is at or above the surface from November through June.

In most areas this soil is used as woodland or pasture or is idle land. This soil is fairly suited to use as pasture or cropland and poorly suited to woodland use and to recreation uses.

This soil is poorly suited to building site development because of wetness. It should not be used as a site for buildings with basements. If this soil is used as a site for buildings without basements, the use of surface or subsurface drainage to lower the water table and the use of well compacted fill to raise the site help to overcome the wetness limitation. This soil is generally not suited to use as septic tank absorption fields because of its wetness and poor filtering capacity. Sanitary facilities should be connected to public sewers and sewage treatment facilities.

If this soil is used as cropland, the management concerns are removing excess water and maintaining

good soil tilth. If drained, this soil is droughty and subject to soil blowing. The use of cover crops, green manure, and crop residue and the use of conservation tillage, which does not invert the soil and leaves all or part of a crop residue on the surface, help to conserve moisture, maintain good soil tilth, and control soil blowing.

If this soil is used as woodland, the major management concerns are equipment limitations, seedling mortality, and windthrow. The use of heavy equipment for planting, tending, and harvesting trees is restricted during wet periods. Woodland operations can be timed to seasons of the year when the soil is actively dry or frozen. Seedling loss will be high because of wetness. Special site preparation, such as mulching, can be used in some areas to help reduce seedling loss. The use of harvest methods that do not leave trees standing alone or widely spaced helps to prevent windthrow. This soil is in capability subclass IVw and Michigan soil management group 5c.

40B—Udorthents, loamy, undulating. This map unit consists of moderately well drained or well drained soils that have been so altered that classification at the series level is not feasible. These soils range in texture from sandy loam to clay loam. They make up areas of 3 to 75 acres. In some areas, soil material has been excavated. In other areas, the soils have been covered by fill material.

Included in mapping are strongly sloping to very steep soils along the outer edges of the mapped areas. These soils are more erodible. In a few areas the soils are sandy or clayey or have organic material below 5 feet. The included soils make up 2 to 15 percent of this map unit.

Permeability, reaction, and available water capacity are variable. Surface runoff is slow to medium. The high water table is at a depth of 2 to more than 5 feet. The soil material generally is very low in content of organic matter.

In most areas the soils are idle land. In a few areas they are used for pasture or for recreation uses. These soils generally are poorly suited to cropland use. Onsite evaluation is needed to determine their suitability for woodland, pasture, and recreation uses and for building site development. These soils are not assigned to interpretive groupings.

40C—Udorthents, loamy, rolling. This map unit consists of moderately well drained or well drained soils that have been so altered that classification at the series level is not feasible. These soils range in texture from sandy loam to clay loam. They make up areas of 3 to 75 acres. In most areas, soil material has been excavated. In a few areas, the soils have been covered by fill material.

Included in mapping are gently sloping or undulating soils. Included also are a few areas of sandy or clayey

soils. The included soils make up 4 to 10 percent of this map unit.

Permeability, reaction, and available water capacity are variable. Surface runoff is medium to rapid. The soil material generally is very low in organic matter content.

In most areas these soils are idle land. In a few areas they are used for pasture or for recreation uses. These soils are poorly suited to cropland use. Onsite evaluation is needed to determine their suitability for woodland, pasture, and recreation uses and for building site development.

These soils are not assigned to interpretive groupings.

41B—Aquents, sandy and loamy, undulating. This map unit consists of somewhat poorly drained and poorly drained soils that have been so altered that classification at the series level is not feasible. These soils range in texture from sand to clay loam. They make up areas of 3 to 50 acres. In most areas, these soils have been covered by fill material. In a few areas, soil material has been excavated.

Included in mapping are moderately sloping to very steep soils along the outer edges of the mapped areas. They are more erodible. Included also are a few areas of marl or clay and some areas where organic material is below 2 to 4 feet or the fill material is a mixture of organic and mineral materials. The included soils make up 5 to 20 percent of this map unit.

The high water table is at a depth of 2 feet to near the surface from October to May. Permeability, reaction, and available water capacity are variable. Surface runoff is slow to ponded. The soil material is generally very low in organic matter content.

In most areas these soils are idle land. In a few areas they are used for urban development, pasture, or recreation uses. These soils generally are poorly suited to cropland use. Onsite evaluation is needed to determine their suitability for woodland, pasture, and recreation uses and for building site development.

These soils are not assigned to interpretive groupings.

42—Pits. This map unit consists of areas that have been excavated for sand or for sand and gravel. Areas range from 3 to 120 acres.

Included in mapping are some strongly sloping to steep soils that are subject to erosion. Also included are a few areas of Aquents and Udipsamments that have not been excavated and some pond areas.

The high water table ranges from near the surface to more than 5 feet in depth. Surface runoff is medium to ponded.

Most areas are used as wildlife habitat or are still being mined.

This miscellaneous area is not assigned to interpretive groupings.

43—Sloan-Marlette association. This association consists of nearly level, very poorly drained Sloan soils

45C—Arkport loamy fine sand, 6 to 12 percent slopes. This moderately sloping or gently rolling, well drained soil is on knolls and ridgetops. Most areas of this soil are dissected by shallow drainageways. Slopes are smooth and convex and are generally less than 100 feet long. Areas are irregular in shape and are 2 to 150 acres in size.

Typically, the surface layer is dark grayish brown loamy fine sand about 8 inches thick. The subsurface layer is yellowish brown loamy fine sand about 11 inches thick. The next layer consists of light yellowish brown, very friable loamy fine sand and thin strata of dark brown very fine sandy loam, and it is about 20 inches thick. The next layer to a depth of about 60 inches consists of very pale brown and brownish yellow, very friable loamy very fine sand and thin strata of yellowish brown very fine sandy loam. In places the subsoil has a higher clay content, and in places there is gravelly sand below 50 inches.

Included in mapping are small areas of the somewhat poorly drained Dixboro soils and the well drained Spinks soils. The Spinks soils are more droughty than the Arkport soil and generally are on landscape positions similar to those of the Arkport soil. The Dixboro soils are in narrow drainageways and on foot slopes. Also included are small areas of the very poorly drained Gilford and Thomas soils that are in small depressions. The included soils make up 3 to 10 percent of the map unit.

Permeability is moderately rapid in this Arkport soil. The available water capacity is moderate. Runoff is medium.

In most areas this soil is used as pasture or woodland or is idle land. In a few areas it is used as cropland. This soil is well suited to use as pasture and woodland. It is fairly suited to cropland use and to recreation uses.

This soil is suited to building site development and to use as septic tank absorption fields, but slope is a limitation. For buildings, land shaping and installing retaining walls help to overcome the slope limitation. For septic tank absorption fields, installing the absorption field on the contour can overcome this limitation.

If this soil is used as cropland, the major management concerns are controlling soil blowing, overcoming droughtiness, and maintaining organic matter content. Cover crops, such as rye, protect fields from soil blowing. Contour tillage helps to slow runoff. The use of grasses and legumes in the crop rotation and the use of conservation tillage, which does not invert the soil and leaves all or part of the crop residue on the surface, can help to maintain the content of organic matter and overcome droughtiness.

If this soil is used as woodland, the major management concern is seedling mortality. Special site preparation, such as furrowing, helps to overcome this problem in some areas.

This soil is in capability subclass IIIe and Michigan soil management group 3a-s.

45D—Arkport loamy fine sand, 12 to 25 percent slopes. This moderately sloping to very hilly, well drained soil is on knolls, side slopes, and ridgetops. Some areas of this soil are dissected by shallow drainageways. Slopes are smooth and convex and are commonly less than 100 feet long. Areas are irregular in shape and are 2 to 150 acres in size.

Typically, the surface layer is brown loamy fine sand about 7 inches thick. The subsurface layer is yellowish brown loamy fine sand about 15 inches thick. The next layer consists of yellowish brown, very friable loamy fine sand and thin strata of brown, friable very fine sandy loam; and it is about 21 inches thick. The next layer to a depth of about 60 inches is very pale brown and yellowish brown, friable very fine sandy loam. In places the subsoil has a higher clay content. In some places gravelly sand is below 50 inches.

Included in mapping are small areas of the well drained Spinks soils. The Spinks soils are more droughty than the Arkport soil and generally are on landscape positions similar to those of the Arkport soil. These included soils make up 3 to 8 percent of the map unit.

Permeability is moderately rapid in this Arkport soil, and the available water capacity is moderate. Runoff is medium to rapid.

In most areas this soil is used as woodland or pasture or is idle land. This soil is fairly suited to woodland use. It is poorly suited to use as pasture and to recreation uses. This soil generally is not suitable for building site development and for use as septic tank absorption fields because of slope.

If this soil is used as woodland, the major management concerns are equipment limitations and seedling mortality. Some seedling loss can be expected during dry summer months. Special site preparation, such as furrowing, helps to overcome the seedling mortality problem. Normal planting and logging equipment can be used, but careful planning of roads, landings, and skid trails is necessary.

This soil is in capability subclass IVe and Michigan soil management group 3a-s.

46A—Dixboro loamy fine sand, 0 to 3 percent slopes. This somewhat poorly drained soil is on broad, nearly level areas or low knolls. Slopes are slightly convex and are generally less than 50 feet long. Areas are irregular in shape and are 2 to 100 acres in size.

Typically, the surface layer is very dark grayish brown loamy fine sand about 8 inches thick. The subsurface layer is pale brown loamy very fine sand about 8 inches thick. The subsoil is strong brown, mottled, friable very fine sandy loam about 19 inches thick. The substratum to a depth of about 60 inches is grayish brown, mottled, calcareous, stratified very fine sand, loamy very fine sand, and very fine sandy loam. In some places the surface layer is lighter colored. In some places the subsoil contains thin layers of gravelly sand or contains thin strata with more clay.

inches thick. The subsoil is dark brown, firm gravelly sandy clay loam and is about 13 inches thick. The substratum to a depth of about 60 inches is brown, calcareous gravelly sand.

Typically, the Riddles soil has a surface layer of dark grayish brown sandy loam about 9 inches thick. The subsurface layer is brown sandy loam about 7 inches thick. The subsoil is sandy clay loam about 35 inches thick. In the upper part it is yellowish brown and friable; in the middle part it is dark yellowish brown and firm; and in the lower part it is yellowish brown and friable. The substratum to a depth of about 60 inches is brown, calcareous sandy loam.

Included in mapping are small areas of well drained Boyer soils that are on landscape positions similar to those of the Fox or Riddles soils. These Boyer soils are more droughty than the Fox or Riddles soils. Also included are the somewhat poorly drained Capac, Matherton, and Metamora soils in drainageways and on low knolls and ridges at lower elevations and the poorly drained Sebewa soils and very poorly drained Thomas soils in small depressions or narrow drainageways. The included soils make up 8 to 20 percent of the complex.

Permeability is moderate in the subsoil and rapid in the substratum in the Fox soil. It is moderate in the Riddles soil. The available water capacity is moderate in the Fox soil and high in the Riddles soil. Runoff is slow. The shrink-swell potential is moderate.

In most areas these soils are used as woodland or pasture or are idle land. In a few areas they are used as cropland. These soils are fairly suited to cropland use and to recreation uses. They are well suited to use as pasture and woodland.

These soils are suited to building site development, but slope is a limitation. Land shaping and installing retaining walls help to overcome the slope limitation for buildings. These soils are suited to use as septic tank absorption fields, but slope is a limitation. Land shaping and installing the absorption field across the slope help to overcome this limitation. Poor filtering capacity is an additional limitation to the use of the Fox soil as septic tank absorption fields. The effluent drains satisfactorily, but there is a hazard of ground water pollution.

If these soils are used as cropland, the major management concerns are controlling runoff and erosion, maintaining organic matter content, and keeping the soil in good tilth. Contour tillage helps to reduce erosion and runoff. Crop residue and green manure help to maintain the organic matter content and improve the tilth of the soil.

These soils are in capability subclass IIIe and Michigan soil management groups 3/5a and 2.5a.

48—Gilford sandy loam. This nearly level, very poorly drained soil is in broad, flat areas and in drainageways. It is subject to frequent ponding. Areas are irregular in shape and range in size from 2 to 100 acres or more.

Typically, the surface layer is very dark brown sandy loam about 11 inches thick. The subsoil is friable sandy

loam and is about 27 inches thick. In the upper part it is dark gray, and in the lower part it is gray and mottled. The substratum to a depth of about 60 inches is gray, calcareous gravelly sand. In some areas, the surface layer is thinner, or the subsoil consists of alternate layers of sand, loamy sand, and sandy loam.

Included in mapping are small areas of the very poorly drained Houghton and Adrian soils that are in small depressions. The Houghton and Adrian soils are less stable than the Gilford soil. Also included are small areas of the somewhat poorly drained Wasepi soils that are on low knolls. The included soils make up 2 to 8 percent of this map unit.

Permeability is moderately rapid in the subsoil of this Gilford soil and very rapid in the substratum. The available water capacity is low. Runoff is very slow or ponded. The high water table is at or above the surface from December to May.

In most areas this soil is used as woodland or pasture or is idle land. This soil is well suited to use as cropland and pasture. It is poorly suited to woodland use and to recreation uses.

This soil is poorly suited to building site development because of wetness and generally is not suited to use as septic tank absorption fields because of wetness and poor filtering capacity. It should not be used as a site for buildings with basements. If the soil is used as a site for buildings without basements, the use of surface or subsurface drainage to lower the water table and the use of well compacted fill to raise the site help to overcome the wetness limitation. Sanitary facilities should be connected to public sewers and sewage treatment facilities.

If this soil is used as cropland, the main management concerns are removing excess water and maintaining good tilth. Surface and subsurface drains help to overcome the wetness limitation. Tilling when the soil is not wet and using conservation tillage, which does not invert the soil and leaves all or part of the crop residue on the surface, help to improve tilth.

If this soil is used as woodland, the major management concerns are equipment limitations, seedling mortality, and windthrow. The use of heavy equipment for planting, tending, and harvesting trees is restricted during wet periods. Woodland operations can be timed to seasons of the year when the soil is relatively dry or frozen. Seedling loss will be high because of wetness. Special site preparation, such as bedding, can be used in some areas to help reduce the loss of seedlings. The use of harvest methods that do not leave trees standing alone or widely spaced helps to prevent windthrow.

This soil is in capability subclass IIIw and Michigan soil management group 4c.

49—Cohoctah fine sandy loam. This nearly level, poorly drained or very poorly drained soil is on flood plains and is subject to frequent flooding. Areas are

This soil is in capability subclass IIIs and Michigan soil management group Ga.

51C—Leoni gravelly sandy loam, 6 to 12 percent slopes. This moderately sloping or gently rolling, well drained soil is on knolls and ridges. Slopes are smooth and convex and are less than 100 feet long. Areas are irregular in shape and are 5 to 70 acres in size.

Typically, the surface layer is brown gravelly sandy loam about 7 inches thick. The subsoil is friable and is about 37 inches thick. In the upper part it is yellowish brown gravelly sandy clay loam, and in the lower part it is dark yellowish brown gravelly sandy clay loam. The substratum to a depth of about 60 inches is light yellowish brown gravelly sand. In some places the soil is severely eroded.

Included in mapping are small areas of the very poorly drained Gilford, Thomas, and Houghton soils and the poorly drained Sebewa soils that are in depressions. These soils make up 2 to 8 percent of the map unit.

Permeability is moderate in the subsoil of this Leoni soil and moderately rapid or rapid in the substratum. The available water capacity is low. Runoff is medium to rapid. The shrink-swell potential is moderate.

In most areas this soil is used as woodland or pasture or is idle land. In a few areas it is used as cropland. This soil is well suited to woodland use. It is fairly suited to cropland use and poorly suited to recreation uses.

This soil is suited to building site development, but slope and cobbles are limitations to this use. Land forming and installing retaining walls can help to overcome the slope limitation. The cobbles may have to be removed. This soil is suited to septic tank absorption fields, but slope is a limitation. Land shaping and installing the absorption field across the slope help to overcome the slope limitation for septic tank absorption fields.

If this soil is used as cropland, the major management concerns are overcoming droughtiness, controlling runoff and erosion, maintaining the organic matter content, and keeping the soil in good till. The use of conservation tillage, which does not invert the soil and leaves all or part of the crop residue on the surface, helps to conserve moisture. Practices that help prevent erosion and runoff are the use of a crop rotation that includes hay, the use of cover crops and grassed waterways, and the use of conservation tillage. Crop residue and green manure help to maintain the organic matter content and improve the till of the soil.

This soil is in capability subclass IIIe and Michigan soil management group Ga.

52A—Selfridge loamy sand, 0 to 3 percent slopes. This nearly level, somewhat poorly drained soil is on broad, flat areas or low knolls. Slopes are slightly convex and are less than 50 feet long. Areas are irregular in shape and are 2 to 80 acres in size.

Typically, the surface layer is very dark grayish brown loamy sand about 9 inches thick. The subsurface layer is

brown loamy sand or light yellowish brown sand about 23 inches thick. The subsoil is brown, mottled, friable loam about 9 inches thick. The substratum to a depth of about 60 inches is grayish brown, mottled, calcareous loam. In the southern part of the county, this soil is clayey below a depth of 40 inches.

Included in mapping are small areas of Capac and Metamora soils on landscape positions similar to those of the Selfridge soil. These soils are not as droughty as the Selfridge soil. Also included are small areas of the very poorly drained Brookston, Houghton, and Thomas soils that are in depressions and drainageways and small areas of the well drained Metea soils that are on higher knolls and ridges. The included soils make up 5 to 10 percent of the map unit.

Permeability is rapid in the sandy surface soil and moderately slow in the loamy subsoil and substratum. The available water capacity is moderate. Runoff is slow. The seasonal high water table is at a depth of 1 to 2 feet from November through May.

In most areas this soil is used as woodland or pasture or is idle land. In a few areas it is used as cropland. This soil is well suited to use as pasture. It is fairly suited to use as cropland and woodland and to recreation uses.

This soil is poorly suited to building site development because of wetness and is poorly suited to use as septic tank absorption fields because of wetness and moderately slow permeability. If the soil is used as a site for buildings, the use of surface or subsurface drains to lower the water table and the use of well compacted fill to raise the site can help to overcome the wetness limitation. For septic tank absorption fields, special construction, such as filling or mounding the absorption field site with suitable soil material, may be needed to raise the field above the water table and into more permeable soil material.

If this soil is used as cropland, the major management concerns are wetness, water erosion and soil blowing, droughtiness, and organic matter content. Subsurface drainage helps to reduce the wetness limitation. Cover crops, such as rye, protect fields from water erosion and soil blowing. The use of conservation tillage, which does not invert the soil and leaves all or part of the crop residue on the surface, helps to conserve moisture. The use of crop rotations that include grasses and legumes and the use of crop residue management can help to maintain organic matter content.

If this soil is used as woodland, the major management concern is seedling mortality. Some seedling loss can be expected due to droughtiness during dry summer months. Exposing soil just prior to the production of the seed crop can help desirable tree seedlings become established quickly and get a head start on competing vegetation.

This soil is in capability subclass IIIw and Michigan soil management group 4/2b.

53A—Tedrow loamy sand, 0 to 3 percent slopes. This nearly level, somewhat poorly drained soil is on

LOG OF HAND AUGER BORINGS

PEA JOB NO. 96075G & 94158G

HAB NO.	DEPTH	SAMPLE NO.	SOIL DESCRIPTION	REMARKS
HAB #1	0' to 4.0'	1-D at 2.0'	Very Stiff Mottled Brown/Gray SILTY CLAY with Trace of Gravel	Dry at completion *4,500 psf at 1.5' *7,000 psf at 3.0'
HAB #2	0' to 1.7'		TOPSOIL: Very Soft Dark Brown SILTY CLAY	Water at 1.7 feet
	1.7' to 2.5'		Stiff Brown/Gray SILTY CLAY with Trace of Gravel	3,000 psf
	2.5' to 4.0'	1-D at 3.0'	Very Stiff Brown/Gray SILTY CLAY with Trace of Gravel	6,000 psf
HAB #3	0' to .4'		TOPSOIL: Very Soft Dark Brown SILTY CLAY	Water at 1.5 feet
	0.4' to 2.0'	1-D at 1.5'	Very Soft Brown/Gray SILTY CLAY with Some Roots	5,000 psf
	2.0' to 3.7'	2-D at 2.5'	Very Stiff Mottled Brown/Gray SILTY CLAY	Refusal on cobble at 3.7 feet
HAB #4	0' to 0.5'		Soft Dark Brown SILTY CLAY (Topsoil)	Water at 0.5 feet
	0.5' to 4.7'	1-D at 3.0'	Very Stiff Mottled Brown/Gray SILTY CLAY	6,000 psf
HAB #5	0' to 1.0'		TOPSOIL: Very Soft Dark Brown SILTY CLAY	Water at 1.0 feet
	1.0' to 6.0	1-D at 4.0'	Very Stiff Gray SANDY CLAY	4,000 to 6,000 psf
HAB #6	0' to 0.7'		TOPSOIL: Very Soft Dark Brown SILTY CLAY	Water at 0.7 feet
	0.7' to 1.5'	1-D at 1.0'	Medium Gray SANDY SILTY CLAY	3,500 psf
	1.5' to 6.5'	2-D at 3.5'	Stiff Gray SANDY CLAY	

- NOTES:
1. Hand auger borings drilled adjacent to stream flow with 2-1/2-inch diameter hand augers.
 2. Visual soil classification only.
 3. *PP - Pocket Penetrometer Value in pounds per square foot (psf).

DRILLED BY: Doug Gucwa

DATE: 9/25/96

SHEET NO: 1

July 10, 1998

Attachment *C*

TO: The Honorable Mayor and City Council

FROM: James C. Bacon, Jr., City Manager *B*
John Szerlag, Assistant City Manager/Services *SS*

SUBJECT: Fetterly Drain Issues

Questions about the Fetterly Drain have been raised primarily in two arenas: engineering and environmental. Both of these arenas are underpinned by financial considerations. At this point in time, there are things we know about this issue and things we don't know. Let's start with things we know.

From an engineering perspective, we know that:

1. The drainage district for the Fetterly Drain includes approximately 310 acres, of which approximately 175 acres are undeveloped. The Fetterly Drain does not currently have sufficient capacity to handle a ten-year storm event within the channel or the existing 40-foot wide easement.
2. The scope of work currently proposed will cover the entire 3,730 linear feet of the Fetterly Drain. The southern 1,280 linear feet will be enclosed with a 42-inch diameter pipe, with a swale over the pipe. The northern 2,450 linear feet will consist of a swale over a 21-inch diameter pipe enclosure. Improving the drain in this fashion means that there will be a ten-year storm capacity at full development within the district.
3. The benefits realized by performing only a drain clean-out are limited. Most importantly, a clean-out of the drain will not provide the ten-year storm capacity.
4. We cannot have an open drain improvement within the existing 40 foot easement because the cross-section's steep side slopes would be dangerous, would be difficult to maintain, and soils are not conducive to supporting steep side slopes (i.e. 1:1, 1:2).
5. An open drain improvement project would require adding up to 60 feet of easement width.

From an environmental perspective, we know that:

1. A heron rookery is located within the drainage district.
2. Rookeries should have an area of isolation.
3. The U.S. Fish and Wildlife Services recommends an isolation zone of approximately 810 feet around the rookery. Thus, the amount of recommended area to remain