

# **ANACONDA SITE STUDY**

**FOR THE VILLAGE OF HASTINGS-ON-HUDSON**

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OF HASTINGS · ON · HUDSON**

## **SUMMARY REPORT**

**Peter Gisolfi**

Architect · Landscape Architect · Planner

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**September, 1976**



# PARTICIPANTS

## VILLAGE OF HASTINGS-ON-HUDSON

Mayor:	Julius Chemka
Village Manager:	Robert McEvoy
Acting Village Manager:	Elizabeth T. Bankowitz
Board of Trustees:	Benedict Caccia F. Paul Cardaci Michael Clohessy John Gavin
Planning Board:	Paul Edelman, Chairman Carl S. Forcheski George Masumian Alex Rakotz Marvin Weinberg
Village Engineer:	Gilbert L. Burns
Village Attorney:	Martin Leaf

## NEW YORK STATE DEPARTMENT OF STATE

James K. VanDervort, Director  
Albany Regional Office  
Division of Community Affairs

## CONSULTANTS

Architect/Planner, Principal:	Peter Gisolfi
Project Architect/Planner:	Megan Lawrence
Planner:	Barbara Gerard
Traffic Engineer:	Robert Flahive

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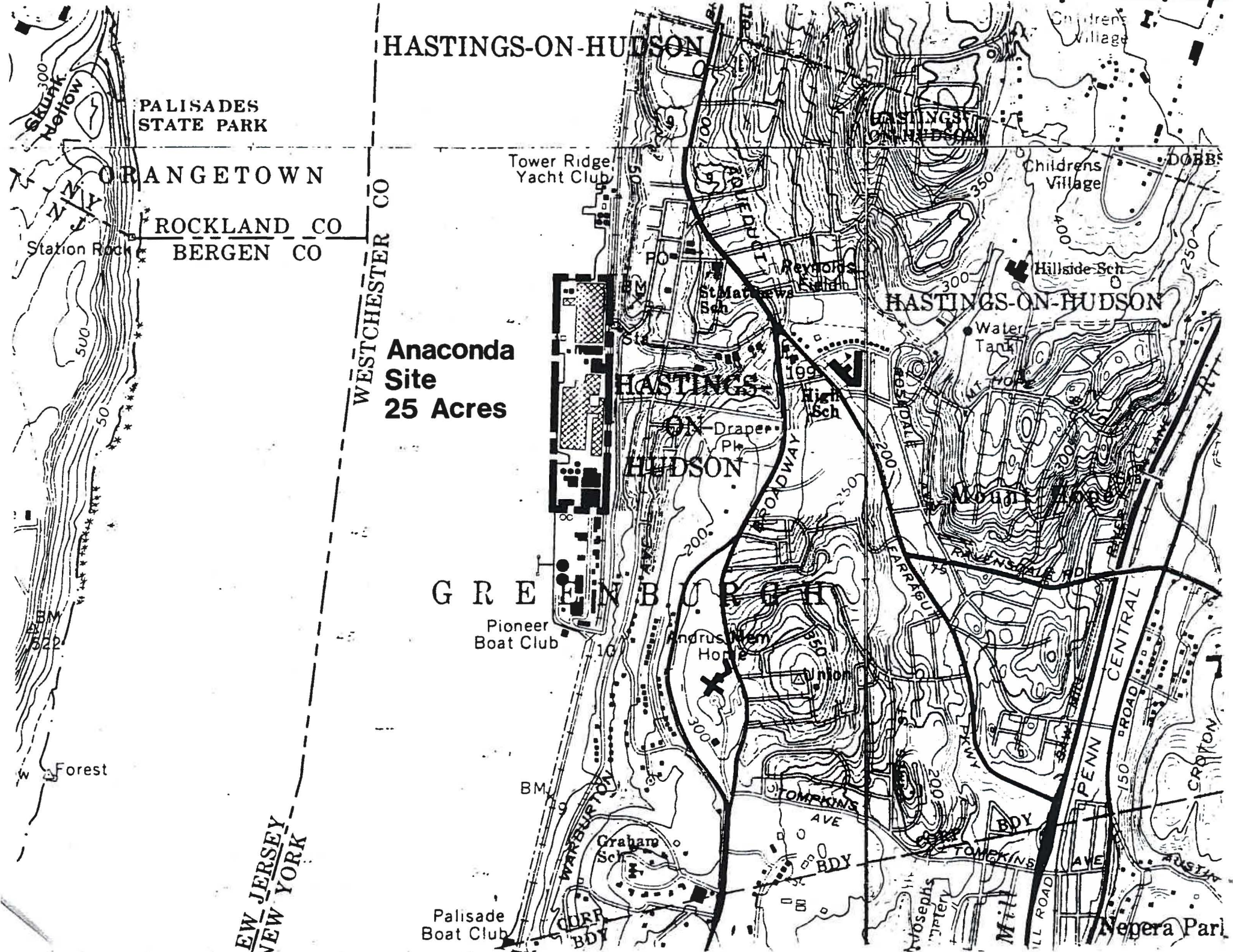
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# I OVERVIEW





HASTINGS-ON-HUDSON

PALISADES  
STATE PARK

ORANGETOWN

ROCKLAND CO  
BERGEN CO

WESTCHESTER CO

Anaconda  
Site  
25 Acres

HASTINGS-  
ON-HUDSON

GREENBURGH

Pioneer  
Boat Club

Palisade  
Boat Club

HASTINGS-ON-HUDSON

Hillside Sch

Water  
Tank

High  
Sch

Drape  
Ph

Andrus  
Home

TOMPKINS  
AVE

BDY

BDY

PENN  
ROAD

CENTRAL

AVE

Nepera Parl

# OVERVIEW

## A. The Site

The Anaconda Site in the Village of Hastings-on-Hudson is a 25 acre parcel of filled land on the Hudson River owned by the Anaconda Wire and Cable Company. (see map opposite) The Anaconda property constitutes twenty-four percent of the Hastings river frontage, and 57% of the riverfront land (West of the railroad tracks). The structures existing on the site include the manufacturing plant, research facility, offices and warehouses for Anaconda's copper wire factory, and a building which has been partly leased by the River Tennis Club.

To the East, the site is bounded by the Hudson River Division of the Penn Central Railroad (Conrail), and beyond that is the Hastings Central Business District. The only access to the Village center from the site is by a vehicular bridge adjacent to the railroad station. On the waterfront to the South of the site is the 15-acre site formerly owned by Tappan Tanker, of which a 6-acre tank farm has been recently purchased by Mobil Oil, and a 9-acre warehousing and manufacturing facility recently purchased by Ulich Dye Company. On the filled land North of Anaconda are situated a marina, a small oil tank farm and a yacht club.

## B. Background

The Anaconda Wire and Cable Co., which operated on the site since 1919, formed the industrial base of Hastings and in recent years has supplied 11% of the Village's tax revenues. In June of 1975 the company closed down its operations in Hastings.

In 1974 the Village of Hastings undertook a "Waterfront Study", which recommended the construction of a public promenade along the entire waterfront, the creation of several park areas, and the establishment of an Industrial Development Agency (I.D.A.). Although the I.D.A. was formed, none of the development proposals have yet been implemented. Because at that time Anaconda expected to continue operations, the site was not included in the overall plan.



Anaconda retained the firm of Howard Hoffman Associates, in New York, to conduct a study to determine if there was a market for selling the site for continued industrial use. The study indicated that there was no market for industrial use, but that there was a market for luxury housing and offices. Howard Hoffman Associates is now undertaking for Anaconda a detailed feasibility study for redevelopment of the site for non-industrial uses. Although the results of the study are not expected to be made public until 1977, it is known that they are recommending primarily luxury residential development, with possibly office and commercial as secondary uses.

Since the Anaconda site is zoned for General Industrial use (GI) and since Hastings' zoning ordinance is not cumulative, development of non-industrial uses will require a zoning amendment. This means that the Village has the opportunity to control the maximum amount and type of development. Because the site is crucial to the Village's tax revenues, its relationship to the river, and its future character, this opportunity warrants considerable investigation of impacts, discussion of goals, and public concern. This study has been undertaken on behalf of the Village to begin that process.

#### C. Objectives of the Study

The report is intended as a working tool to assist the Village in assessing proposals for redevelopment of the site, and for determining what type of development would be most beneficial to the Village. The purposes of the study are threefold:

1. To assist the Village in defining its goals for the future development of the Anaconda site.
2. To provide the Village with clear working standards with which to assess proposals for development. The comparisons of the impacts of population, traffic, building densities and heights, and revenues should enable the Village to understand the relative impacts of various development alternatives.

3. To suggest possible mechanisms for achieving the goals for development, and providing for orderly change.

The study focuses primarily on luxury residential development on the site, for which there appears to be the best market. It also analyzes office and retail commercial development as secondary uses. In addition, because the site affords an excellent opportunity for the Village to develop its waterfront for public recreation, the potential for such development, also as a secondary use, has been investigated.

#### D. Results

The results of the study, presented in the report and summary report, include:

1. Findings

Section III presents the findings concerning the impacts of various types of developments on costs and revenues, population, traffic and the physical aspects of the site.

2. Recommendations

Section IV presents the major recommendations to the Village and outlines the policy decisions to be made.

3. Framework for Analysis

The report as a whole provides a framework for the rational analysis of proposals for the site in terms of their impact on the Village.

The summary report omits sections III B-E which contain the detailed analysis, assumptions and calculations on which the summary graphs and conclusions are based. It is important to note that the numbers shown in the graphs and tables represent comparative, not absolute, magnitudes.

When specific development proposals are made, the detailed numbers should be substituted for the assumptions contained in the full report, and analyzed for more precise conclusions. Through use of the method of analysis developed for this study, specific development proposals can be compared for maximum benefit to the Village.

# **II CURRENT REVENUE**



## II CURRENT REVENUE

For 1976-77 the total real property tax levied by all taxing jurisdictions amounted to \$143.38 per thousand assessed value for residents of Hastings-on-Hudson. This figure comprises taxes paid not only to the Village, but also to the Hastings school district and the Town of Greenburgh. Greenburgh collects \$25.10 per thousand in property taxes; however, all but \$0.95 is passed through to the County of Westchester and the sewer district.

### Current Tax Rates:

<u>Jurisdiction</u>	<u>Rate</u>	<u>% of Total Tax</u>
Village of Hastings	\$ 31.40	22.1%
School District	85.88	60.2%
Westchester County	21.90	15.4%
Greenburgh	0.95	0.7%
Sewer District	2.25	1.6%
	<u>\$142.38</u>	<u>100%</u>

The current tax role in Hastings is \$57,585,750. \$12,884,850 of this is tax exempt, reducing the taxable real property to \$44,700,900.

### Anaconda Parcel:

Following the \$750,000 assessment reduction granted to Anaconda in 1975, the Anaconda parcel is currently valued on the tax roles at \$4.8 million. This is nearly 11% of the total taxable base.

<u>Total Assessment:</u>	<u>\$4,800,000</u>
Land	800,000
Improvements	4,000,000

Total taxes currently being paid by Anaconda to the Village and Town of Greenburgh amount to \$683,424., which is broken down as follows:

<u>Anaconda Tax Breakdown</u>		
<u>Jurisdiction</u>	<u>Rate</u>	<u>Tax</u>
Village of Hastings	\$ 31.40	\$150,720
School District	85.88	412,224
Westchester County	21.90	105,120
Greenburgh	0.95	4,560
Sewer District	2.25	10,800
	<u>\$142.38</u>	<u>\$683,424</u>

The total amount accruing to the Village and School District is \$562,944.

In 1976 Anaconda again appealed for an assessment reduction. An offer of \$1,000,000 this year and an additional \$1,000,000 for 1977-78 was made. This was refused by Anaconda officials who indicated the assessment would be appealed in the Courts. If the proposed two million dollar assessment reduction were to be awarded by the Courts, Village and School District revenues would be reduced by \$234,560. Assuming the same level of expenditures and no other tax role changes, the effect of this would be to increase the municipal tax and school tax rates by \$1.47 and \$4.02 per thousand respectively.

In the decision-making process concerning the preferred use of the Anaconda site, it would be wise to make policy decisions based not on what Anaconda is presently contributing to the community in tax revenue, but in terms of what the community can realistically expect in the future. Recent assessing trends, court decisions and legislation mandating changes in local assessing practices point to the fact that income properties - such as Anaconda or new offices - cannot be expected to yield as great a percentage of local tax income as heretofore. Translated into policy concerning land-use intensity, this would mean that for each tax dollar to be received from assessments on income properties, a greater intensity of use must be expected.

# III IMPACTS

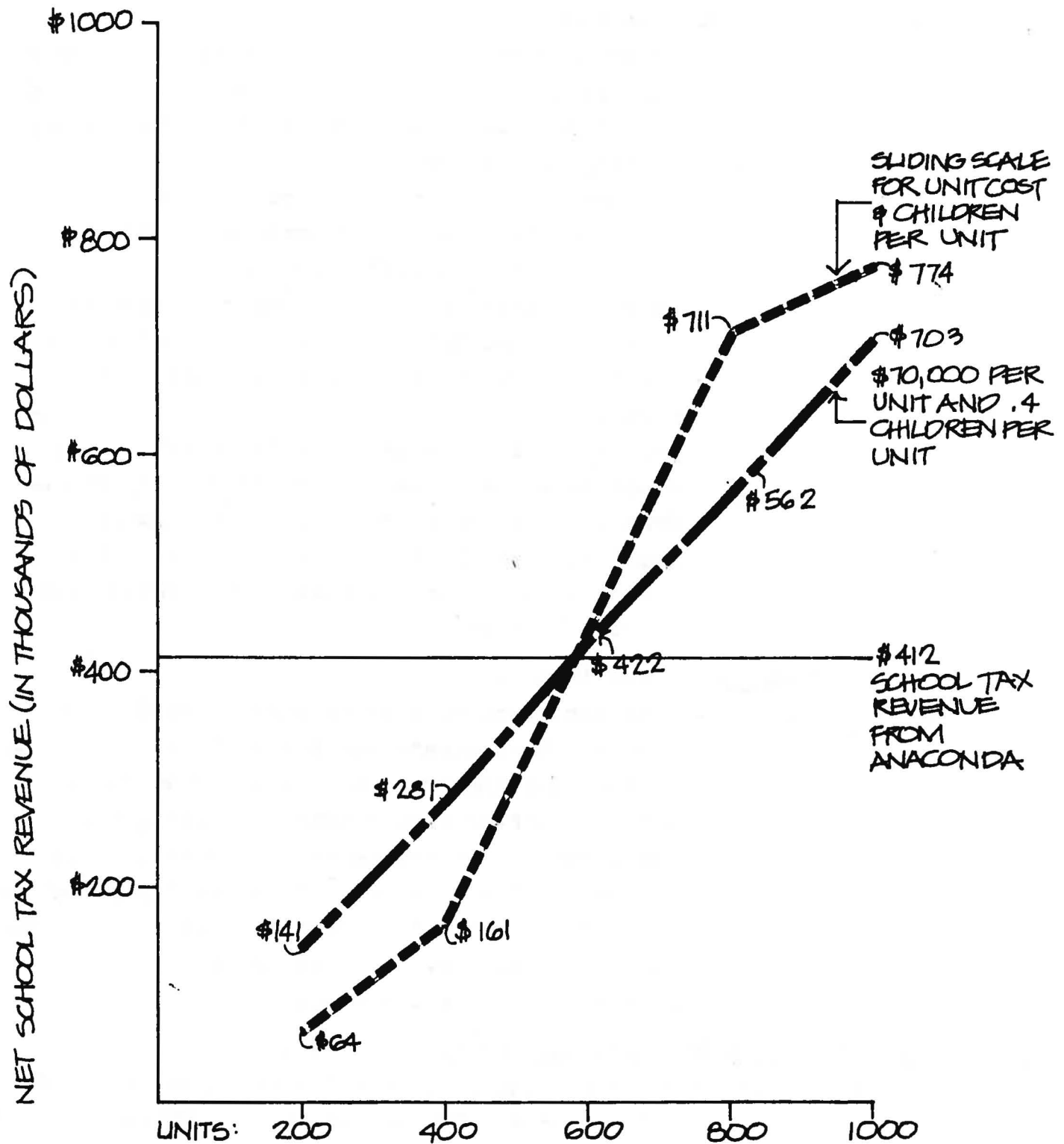
# IIIA SUMMARY OF FINDINGS

The following are the major findings from the study of development impacts:

## Residential Development (Section B)

1. Population - Projected population increases range from a 7% increase for 200 units of housing (620 people), to a 28% increase for 1000 units (2500 additional people).
  - Almost as many children could be expected from a 200-unit townhouse development as from a 800-1000 unit highrise development unit with smaller apartments.
  - If the existing Zoning Ordinance were applied to the site:  
RC-1 would allow a maximum of 435, 2-story units.  
RC-2 would allow 726 3-story units.  
These densities assume that no public open space would be provided.
2. Schools and School Tax Revenues
  - All densities and types of residential development considered would produce fewer school children than the Hastings School system can absorb without new capital construction.
  - All densities of residential development considered would produce a net surplus revenue from School Taxes.
  - About 600 units of housing would be required to produce surplus net school tax revenue equal to that currently received from Anaconda. (See chart: Residential School Tax Revenue.)
3. Assumptions on Municipal Services and Costs
  - The municipal services which would require the largest cost increases for residential development are police protection and traffic control

# Residential School Tax Revenue



SCHOOL CHILDREN:

.4 PER UNIT	80	160	240	320	400
SLIDING SC.	140	220	240	160	150
	(.7)	(.55)	(.4)	(.2)	(.15)



and refuse collection.

- The municipal services which would require the largest cost increases for office development are traffic control, fire protection, and public road maintenance.

#### 4. Municipal Costs and Revenues

- Luxury residential construction would pay more per capita in property taxes and cost less per capita for municipal services than the average Hastings residence.
- All densities and types of residential development considered would generate a net surplus revenue from municipal taxes.
- About 450 units of housing would be required to replace the net municipal tax revenue from Anaconda. (See chart: Residential Net Tax Revenue)
- The total net revenue currently generated by Anaconda would be equaled by total net revenue from approximately 568 units of new luxury housing. This is not practicable in a 100% townhouse development. (See chart: Residential Net Tax Revenue.)

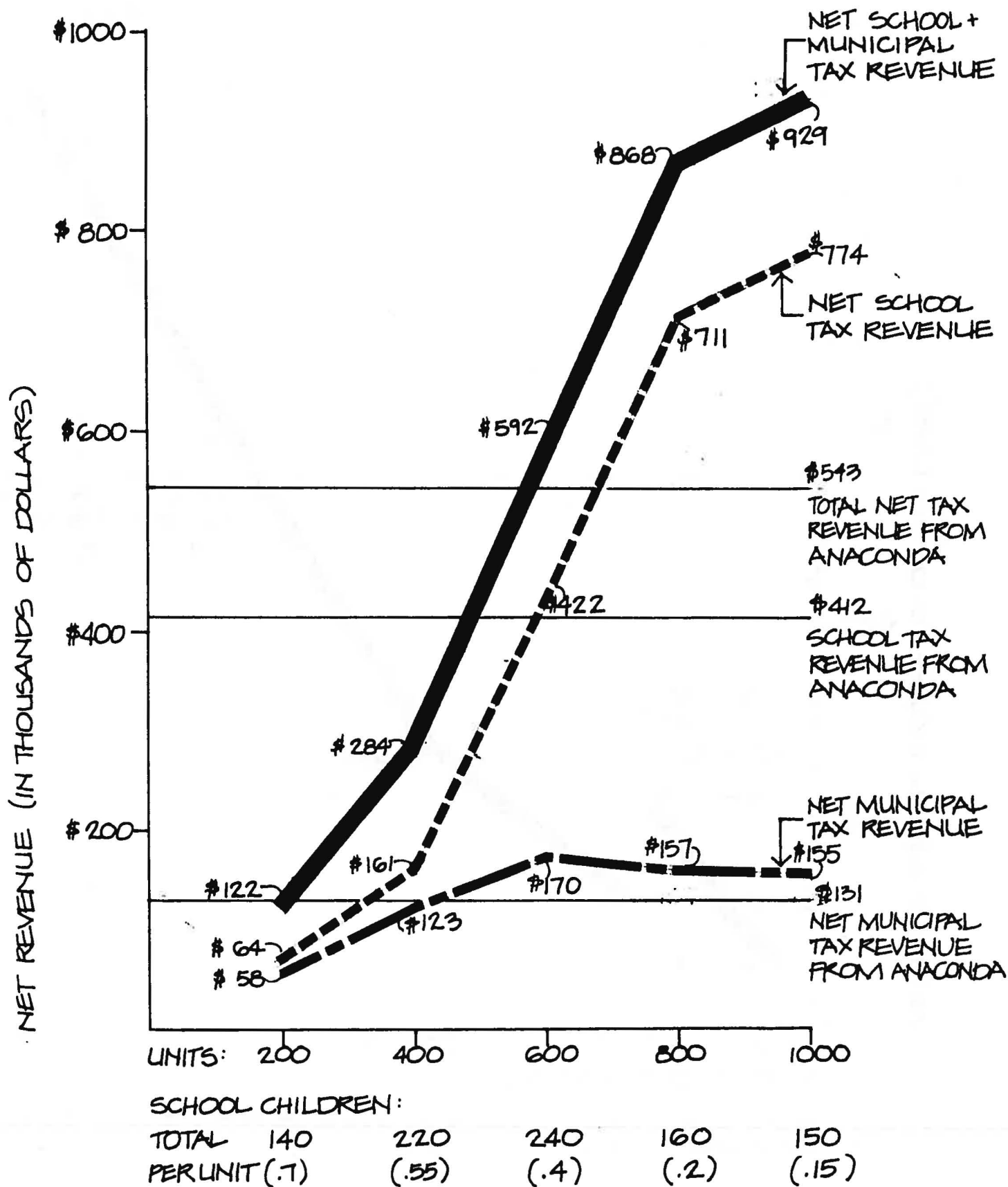
#### Office Development (Section C)

- Considerations of traffic impact and the limited market eliminate the possibility of a large office development or "Office Park" on the site.
- Although office development produces greater tax revenues per square foot than residential, no practicable level of office development alone will generate net tax revenue equal to that produced by Anaconda. (It would require 375,000 square feet of office space.)

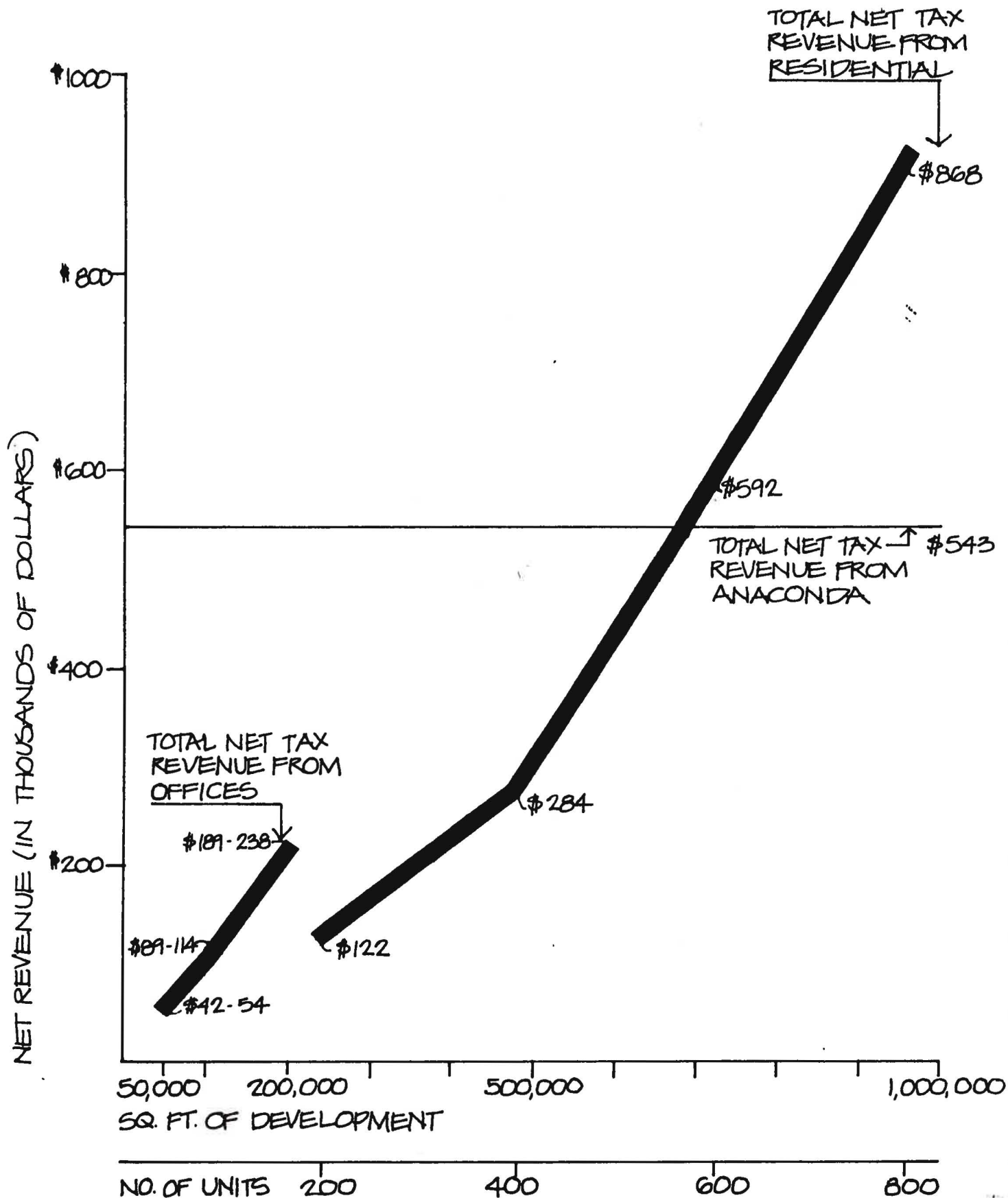
#### Commercial and Recreational Development (Section D)

1. Commercial - With new luxury residential construction, there will be demand for additional commercial space at a rate of about 43 square feet per unit.

# Residential Net Tax Revenue



# Comparative Tax Revenues



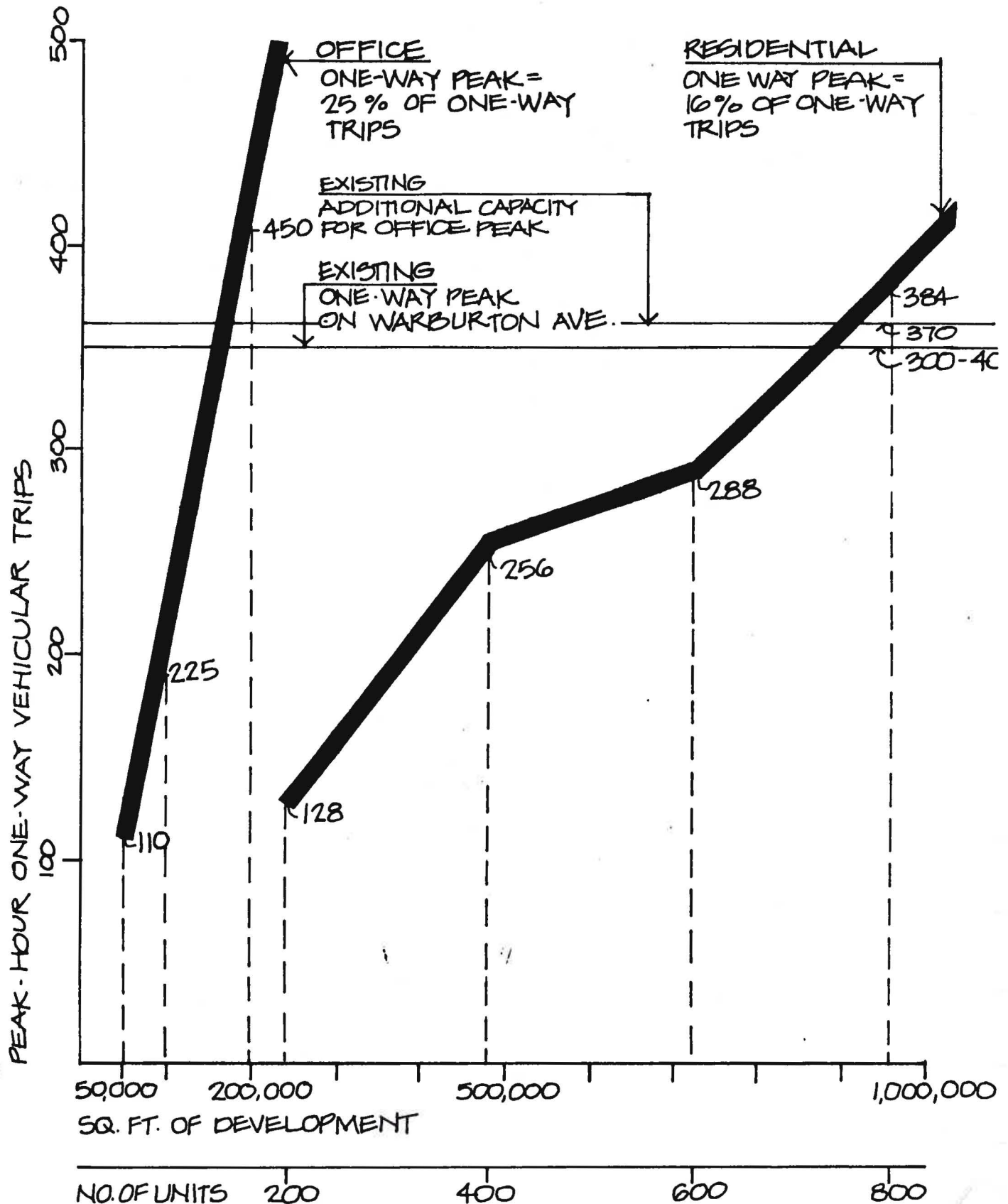


- The existing vacant and ground-floor office space in the Hastings CBD, if converted, could theoretically absorb the demand from 500 new units.
  - Because of opportunities for absorbing additional commercial demand in the existing CBD, the site should be zoned for less new commercial space than the new demand would indicate.
2. Recreation
- Cost for expanded recreational facilities and programs on-site could range from \$600,000 for a seven-acre waterfront park, upwards to \$1,200,000 for a park plus a complete package of new recreational facilities.
  - Larger developments would produce more revenue for expanded recreation facilities but less land area to build them on.

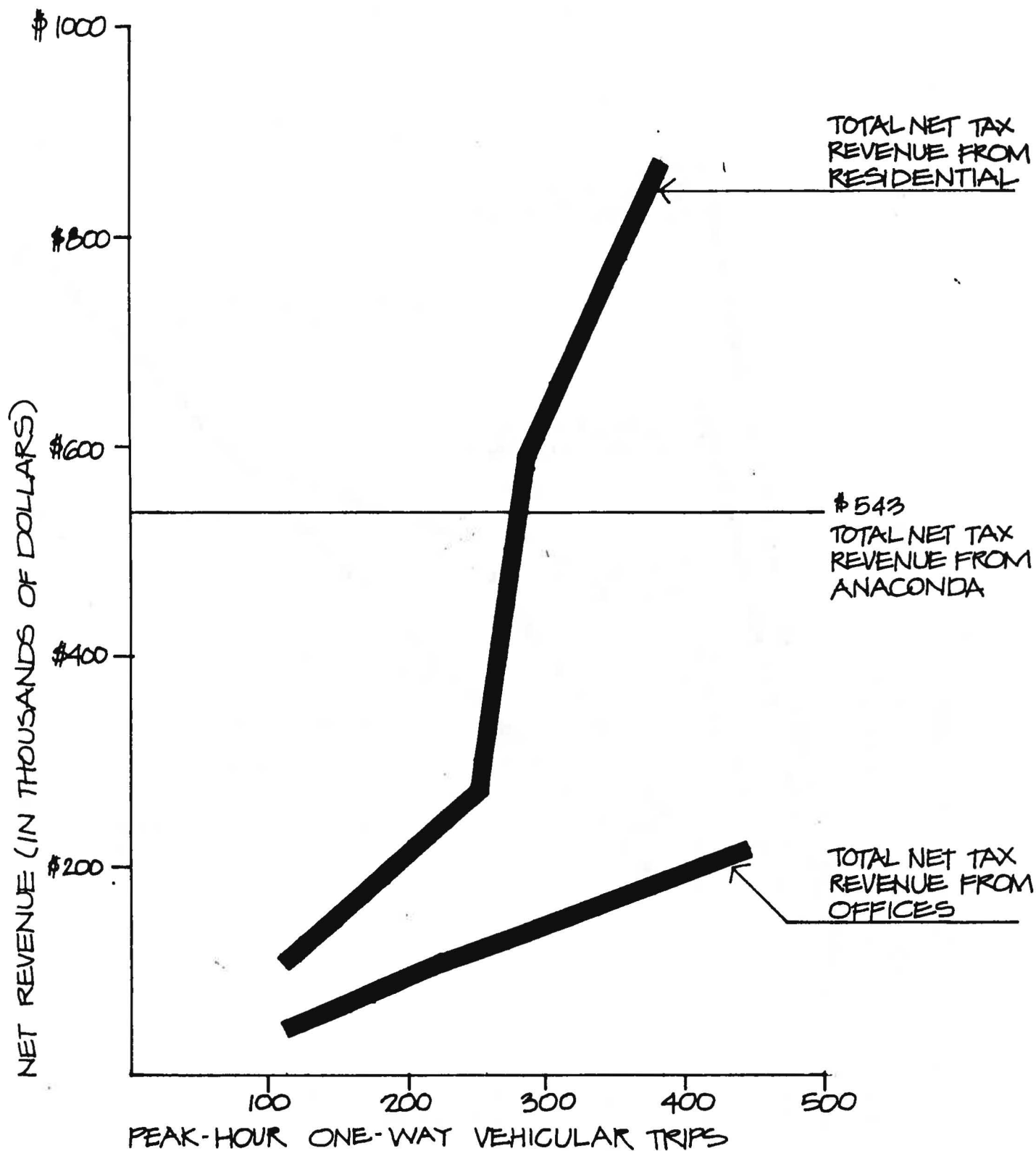
#### Traffic (Section E)

- The access bridge to the site must be rebuilt to prevent safety and traffic problems.
- A second means of site access is advisable for emergency vehicles.
- Peak hour traffic would become a problem at levels of office development between 140,000 - 190,000 sq. ft.
- Peak hour traffic would probably double on Warburton Avenue with residential development of 600-800 units.
- At 200,000 sq. ft. of construction, office development would produce more than four and a half times as many peak hour trips as residential development. (See Chart: Comparative Vehicular Trips)
- For the same level of peak hour traffic produced, residential development would produce from two to four and a half times as much net tax revenue as office development. (See Chart: Comparative Traffic vs. Revenues)

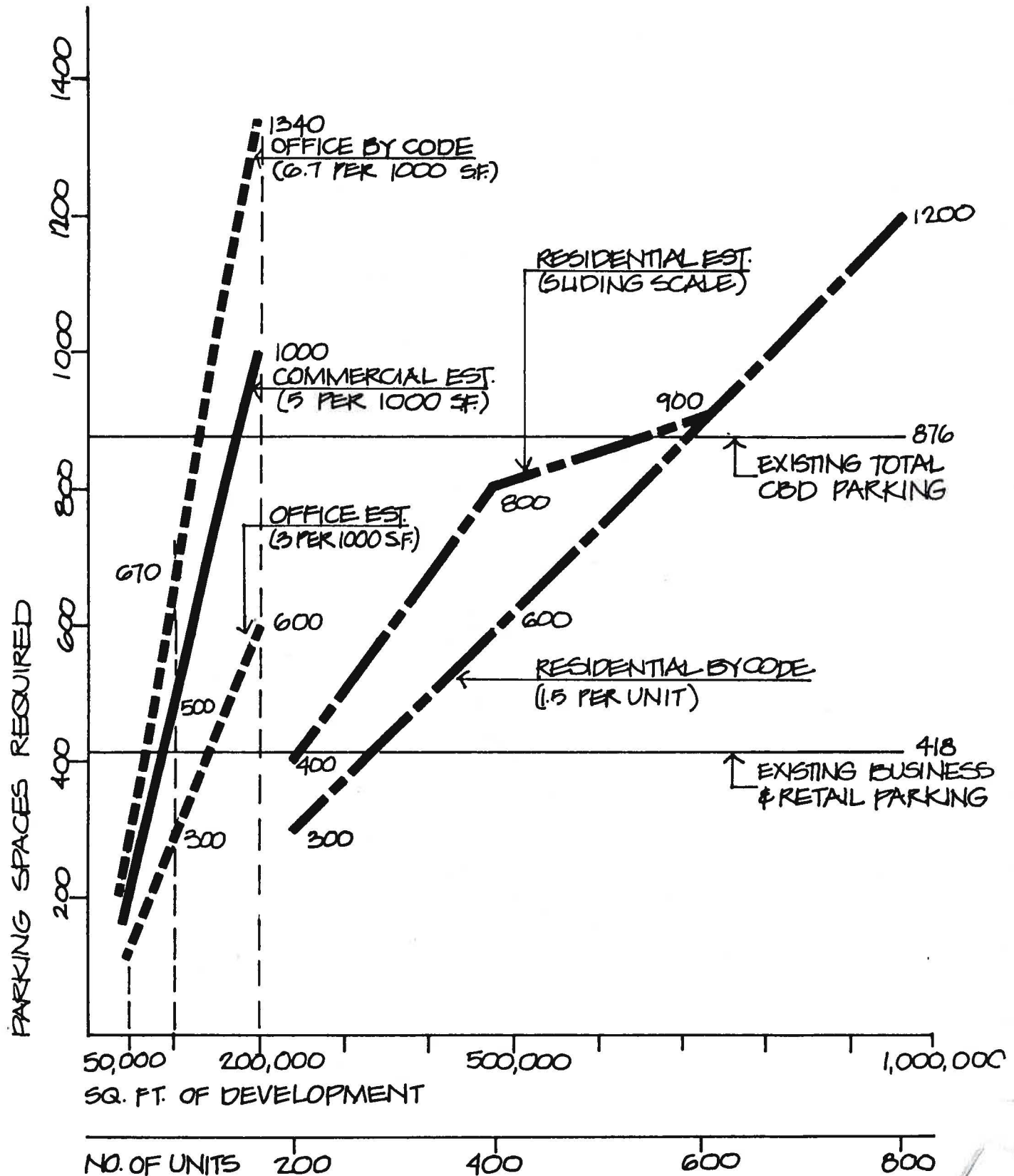
# Comparative Vehicular Trips



# Comparative Traffic vs Revenues



# Comparative Parking



### Physical Impacts

- The major public views from the CBD are over the North end of the site, thus this end should be restricted to low-rise development.
- With a seven-acre public park on the site, the maximum density reasonable for a 2-story town-house development with two parking spaces per unit is 240 units. The maximum for a 4-story garden apartment development with 1.6 parking spaces per unit is 450 units. At greater densities, the possibilities are less limited.

# III B RESIDENTIAL

## B-1 IMPACT OF RESIDENTIAL DEVELOPMENT ON POPULATION

The current population of Hastings-on-Hudson is estimated to be 9000.<sup>1</sup> This represents a decrease of almost 8% from the 1970 Census count of 9749,<sup>2</sup> which reflects the general pattern of declining populations in the older, inner-ring suburbs of large metropolitan areas.

If the Anaconda site were to be substantially redeveloped for residential purposes, there would be local population growth, the size of which would depend on the type of residential development and the number of units of housing. In this report, single-family detached dwellings were eliminated from consideration due to the small land area involved, higher costs of construction, and resultant lower investment return. This study will examine residential development for townhouse, low-to-mid-rise apartments and high-rise apartment units.

Household size and number of children per household were estimated for the three different types of dwellings. Population and children-per-unit are very dependent on numbers of bedrooms-per-unit. In these estimates, various mixes of bedrooms-per-unit were averaged. At low densities, for example, 200 units of housing, it was assumed development would be of the three-bedroom townhouse type and population figures would approach those of typical single-family housing. An average of 3.1 persons per household was used. In the range of 400-600 units, it was assumed that the dwellings would be of the low/mid-rise apartment type, averaging two bedrooms per unit, with 2.75 to 2.8 persons per household; and for 800 or above, high-rise units with 2.5 to 2.55 persons per household. As density increases, the size of the individual unit generally decreases, as does the household size per unit and number of children.

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<sup>1</sup>Westchester's Population, 1975-85, A Changing Profile: Westchester County Department of Planning, 1975.

<sup>2</sup>U.S. Bureau of the Census, Census of Population, 1970.

On this basis, for 200 units of town-house type development, total population would increase over the present 9000 by approximately 6.9%. For 400 to 600 apartment-type units, population would increase by about 12% to 18%. 800-1000 new high-rise type dwellings would generate an approximate population growth of 23% to 28%.

A secondary impact of residential population growth would be the number of school-age children (ages 5-19) generated by different types and densities of development. While not a substantial component of total population, this is of importance in considering school finances.

For townhouse densities of 200 units, .7 school-age children per unit has been assumed; 140 children would be expected from this type of development. As densities increase from townhouse to garden apartment type, smaller units and fewer children per unit are anticipated. In this range, .55 to .4 children per unit have been projected for a total of 220 children at 400 units, increasing to 240 at 600 units.

Very few children per unit can be expected from high-rise units. 160 to 150 children are anticipated from 800 to 1000 such units, only 10-20 more than expected from one-fifth the number of units of townhouses.

If the existing Hastings Zoning Ordinance regulations for multiple dwelling residential use were to be applied to this site, two levels of density would be possible. Under the RC-1 Zone, 435 new units of multiple dwellings, two stories high with an average size of 1252 square feet could be erected on 25% or 6.25 acres of the 25 acre site. This would generate approximately 1218 new residents, assuming the units were of the garden apartment type. Under present zoning category RC-2, 726 new units three stories high with an average size of 1350 square feet could be erected on 30% or 7.25 acres of the site. This would produce an estimated new population between 1851 and 1997 people in mid-rise/or high-rise units.

## Residential Population Summary

Number of Units	200	400	600	800	1000
<u>Population</u>					
2.75 Avg.	550	1100	1650	2200	2750
Sliding Scale(1)	620	1120	1650	2040	2500
<u>% Increase over Present Population (9000)</u>					
2.75 Ave.	6.1%	12.2%	18.3%	24.4%	30.6%
Sliding Scale	6.9%	12.4%	18.3%	22.7%	27.8%
<u>Pupils</u>					
.4 Avg.	80	160	240	320	400
Sliding Scale(2)	140	220	240	160	150
<u>Parking Spaces</u>					
Sliding Scale(3)	400	800	900	1200	1250

## Assumptions

- (1) Persons per Unit Multiplier:    200 Units = 3.1  
   400 Units = 2.8  
   600 Units = 2.75  
   800 Units = 2.55  
   1000 Units = 2.5
- (2) Pupils per Unit Multiplier:    200 Units = .7  
   400 Units = .55  
   600 Units = .4  
   800 Units = .2  
   1000 Units = .15
- (3) Parking Spaces per Unit  
    Multiplier:    200-400 Units = 2  
   600-800 Units = 1.5  
   1000 Units = 1.25
- Hastings' current average = 1.5 cars per household



## B-2 IMPACT OF RESIDENTIAL DEVELOPMENT ON SCHOOLS AND SCHOOL TAX REVENUE

### Assessment

The current assessing practice for the town of Greenburgh<sup>1</sup> is to assess multifamily units at 25% of market value. An average market value of \$70,000 has been estimated for this project to reflect comparable price levels in Westchester. Precise sales prices will depend on the size of each unit, amenities offered, type of financing, etc. At this rate, the average assessed value has been assumed to be \$17,500. Tax rates have been held constant at 1976-77 levels of \$31.40 per thousand for municipal purposes and \$85.88 for school district purposes.

### School Costs

The most important factor in estimating the impact of new residential development on educational costs is the projection of the number of public school age children per household. The exact figures would depend on the price and type of housing, and the proportional mix of one, two and three bed-room units. For this study, an overall average of .4 children per unit was assumed. As a maximum, an average of .7 per unit was used for developments consisting solely of townhouses and low-rise apartments; as a minimum, an average of .15 per unit was used for high-density apartment development.<sup>2</sup>

In arriving at an estimated school cost per unit, the present ratio of 70% local to 30% State funding of school costs was assumed.

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<sup>1</sup>Interview with George Hill, Assessor Town of Greenburgh (including Hastings). July 14, 1976

<sup>2</sup>Bedroom multipliers used to estimate school age children per household unit were estimated using data from several sources, and updated for recent trends in Westchester.

- a) School Taxes and Residential Development - Westchester County Dept. of Planning, Summer 1973.
- b) Sternlieb, George; School and Municipal Costs; Center for Urban Policy Research; 1972.  
Sternlieb, George; The Garden Apartment Development; A Municipal Cost-Revenue Analysis, Bureau of Economic Research; Rutgers; 1974.

Of a total educational cost per year of \$2850 per student, the Village provides \$2000. With an average of .4 students per unit, this would amount to a local cost per unit of \$800.

School officials have indicated a current and projected slack in school district facilities due to declining enrollments. By 1980 enrollments are projected to drop by approximately 20% or 375 pupils.<sup>3</sup> Moreover, the district is presently operating at approximately 90% of 1970 level enrollments. This will result in a total excess school facilities capacity by 1980 of 400-500 students. No level of residential development projected under the above assumptions would require expansion of the school facilities. This conclusion would not necessarily apply if the Hastings and Dobbs Ferry school districts should decide to merge because of declining enrollments.

#### Cost/Revenue Summary

The cost/revenue impact at different levels of development have been projected in the following table: School Cost/Revenue Summary for Residential Development. Analysis of this table shows the tradeoffs between residential density and expected revenue: as density increases, net revenue increases. The table also demonstrates how manipulation of the unit prices and children per unit figure can have a substantial impact on net revenue. The Village must keep this clearly in mind when considering alternatives for allowable unit sizes and bedrooms per unit.

At present the Anaconda parcel is generating over \$400,000 in school tax revenue. In order just to meet this 1976-77 level, a minimum of 600 low to mid-rise units (with .4 pupils per unit) would be required. No practicable level of development in townhouses would meet or exceed present Anaconda school revenues.

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<sup>3</sup>Enrollment history and projections issued by Office of the Superintendent of Schools, Hastings-on-Hudson.

# School Tax Cost/Revenue Summary for Residential Development

No. of Units	200	400	600	800	1000
Market Value					
\$70,000 Avg.	\$14,000,000	\$28,000,000	\$42,000,000	\$56,000,000	\$70,000,000
Sliding Scale(1)	\$16,000,000	\$28,000,000	\$42,000,000	\$48,000,000	\$50,000,000
Assessed Value					
\$17,500 Avg.	\$ 3,500,000	\$ 7,000,000	\$10,500,000	\$14,000,000	\$17,500,000
Sliding Scale(1)	\$ 4,000,000	\$ 7,000,000	\$10,500,000	\$12,000,000	\$12,500,000
School Tax Revenue					
\$1,503 Avg.	\$ 300,580	\$ 601,160	\$ 901,740	\$ 1,202,400	\$ 1,502,900
Sliding Scale(1)	\$ 343,520	\$ 601,160	\$ 901,740	\$ 1,030,560	\$ 1,073,500
Local Share of School Costs					
\$800/unit Avg. <sup>(3)</sup>	\$ 160,000	\$ 320,000	\$ 480,000	\$ 640,000	\$ 800,000
Sliding Scale(2)	\$ 280,000	\$ 440,000	\$ 480,000	\$ 320,000	\$ 300,000
Net School Tax Revenue					
Average <sup>(3)</sup>	\$ 140,580	\$ 281,160	\$ 421,740	\$ 562,400	\$ 702,900
Sliding Scale(2)	\$ 63,520	\$ 161,160	\$ 421,740	\$ 710,560	\$ 773,500

## Assumptions:

- (1) Based on Average Cost per Unit:
- 200 units = \$80,000
  - 400 units = \$70,000
  - 600 units = \$70,000
  - 800 units = \$60,000
  - 1000 units = \$50,000
- (2) Based on sliding scale of Pupils per Unit:
- 200 units = .7
  - 400 units = .55
  - 600 units = .4
  - 800 units = .2
  - 1000 units = .15
- (3) Based on .4 pupils per unit average.

### B-3 ASSUMPTIONS ON MUNICIPAL SERVICES AND COSTS

To determine the impact of different types of development on the cost of Village services, the major items appearing in the Village budget were analyzed and separated into three categories:

- a. Costs which would remain fixed for all levels of projected population increase.
- b. Costs which are related to population (traffic, school children, etc.).
- c. Costs which are related to land area (or miles of road, acreage, etc.).

Based on broad assumptions about the present level of service, the capacity for expansion, and the demand from new development, estimates were made about how the service would change to respond to development and what it would cost. Since there has been a decline in population over the last few years, some services at present have an excess capacity.

Two additional assumptions deserve mention: first, that the present level of services provided by the Village will be maintained. Whether the Village does this or not will be a policy decision. Second, that the capital costs of improving vehicular access to the site (which would be required for any substantial level of development) will be borne by the development. The capital and maintenance costs of new Village amenities such as a waterfront park or expanded recreation programs are not considered here as costs associated with development, but are included in the section on Commercial and Recreational Development.

#### a. COSTS ASSUMED FIXED FOR ALL LEVELS OF PROJECTED POPULATIONS

- (1) All general Government expenditures except the following

. Election expenses were increased to allow for one additional election district for 200-400 units; and two new election districts for 600-1000 units. Cost assumed: \$200 per E.D.

. "Assessing" allocation, under local Finance, was increased by \$4000 to \$8000 for residential uses based on two factors: First, compared to other communities with similar populations, the amount Hastings now allocates to this item seems low. Second, with a projected large-scale development, these expenses would probably increase.

.Costs for Town Engineer and Safety Inspection were increased for lower residential densities and/or office development by \$3500 (Engineer) plus \$3500 (Safety Inspection) to allow for increased part-time help. At higher densities, expenses were increased by \$7500 (Engineer) and \$7500 (Safety Inspection) to allow for an additional full-time assistant to the Superintendent of Public Works, who now also serves as Town Engineer.

.Zoning and Planning Costs are estimated to increase by about \$10,000 per year during the project development phases, and decrease thereafter.

- (2) Other accounts held as fixed include: Civil Defense, Vital Statistics, Narcotics Program, Youth Employment, Celebrations and Historia, current debt service and employee benefits.

b. COSTS WHICH ARE RELATED TO POPULATION

- (1) POLICE AND TRAFFIC CONTROL: Costs for residential development were calculated on the assumption that the community would wish to maintain the current police to population ratio. At present in Hastings there is one police officer for each 640 residents. This compares to one per 480 in Dobbs Ferry and one per 350 in Tarrytown.<sup>1</sup> Expenses were calculated for each level of residential development based on one additional police officer for each 600 additional residents.

For secondary development of non-residential uses, costs of additional police for traffic control in the downtown area at rush hours were estimated at between \$15,000 and \$40,000 per annum. Costs allocated include beginning-level salaries, plus a benefits and equipment allowance, plus a per capita increase in other police department expenses.

- (2) ANIMAL CONTROL: Animal (dog) population is assumed to be a function of population in single-family units. Present cost of animal control is \$.60 per capita. Increased animal control expenses were allowed for in townhouse, but not in apartment or office developments.
- (3) RECREATION PROGRAMS: Public youth recreation costs were projected as a function of the expected number of new school age children, ages 5-19, in the commun-

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1 1976-77 Municipal Budgets, Village of Dobbs Ferry and of Tarrytown.

ity. Current average costs are \$13 per child.

Costs associated with maintenance of existing local parks and playgrounds were increased to reflect increased use, plus an allowance for administration. At lower densities (400-600 units) an assumption was made that an additional part-time (1/3) maintenance person would be required, plus benefits. At higher densities, an additional  $\frac{1}{2}$  of a workperson is assumed. While new residents would no doubt use local parks, it can be safely assumed that for luxury condominium development, much of the need for parks and recreation would be met internally. Office development is not expected to increase the recreation budget.

- (4) LIBRARY SERVICES: Demand for library services rises not only with increased population but also with increasing income and education level of those to be served. Both factors would probably create new demand from luxury residential development on the site. At 200-400 units, estimated costs were to allow for additional clerical help (\$9500); at over 400 units, costs for an extra clerk plus junior librarian were allocated. In both cases, there was also included an allocation for increased books, equipment and services (\$3000 - \$6000). Office development would not be expected to increase this budget.

- (5) REFUSE COLLECTION: These costs are considered to be a function of the number of residents and the conditions under which collections are made: distances, topography, curb vs. backyard service, etc. Refuse collection for offices is assumed by private contract.

For the purposes of this study, it has been assumed that backyard service would continue for existing dwellings but that new units would be required to containerize and/or compact residential garbage. Current carting charges are about \$16 per ton, and average refuse per resident is about 2.5 pounds per day.



The Department of Public Works<sup>2</sup> believes that with containerization it can absorb servicing of 200-400 new units, allowing only for an increased charge for dumping and incineration. For 600-800 new units, allowance must be made for larger capacity equipment (\$10,000), plus one employee at \$18,000, including benefits; for over 800 units, a new three-man crew (\$52,000) and additional equipment (\$47,500 for large chassis truck plus packer) would be required. Equipment was estimated as being financed through two notes issued at 7% interest. Total capital recovery costs for the equipment, depreciated over a five-year life was estimated for an annual cost of equipment replacement.

- (6) FIRE PROTECTION: The cost of maintaining a fire alarm system and fire hydrant system was considered a function of housing density. The fire alarm system currently costs \$1.15 per dwelling unit and the hydrant rental \$13.00 per dwelling unit. Assuming the hydrants would be on public roads on the site, this same cost was projected as a Village expense. (If the roads are private, the development pays the costs.) With four volunteer fire companies in the Village which formerly serviced the Anaconda complex, and with the Village's ability to sell its fire protection services to other communities, it is assumed that excess capacity now exists for fire-fighting. Further, the existing fire-fighting equipment is adequate to service high-rise buildings.<sup>3</sup> Cost of improved emergency access is discussed under the section on traffic.
- (7) AMBULANCE: The present annual per capita cost of ambulance service, \$.30, was projected on the basis of expected increases in residential population. \$.10 per capita was projected for office population.

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<sup>2</sup>Interview with R.G. Burns, D.P.W., July 30, 1976.

<sup>3</sup>Conversation with S. Caruso, Fire Chief, Village of Hastings.

c. COSTS WHICH ARE RELATED TO LAND AREA

- (1) PUBLIC ROAD MAINTENANCE: Interestingly, increased road maintenance costs due to more intense use of the local road system would not be borne, for the most part, by Hastings. Major commuter roads, with the exception of Ravensdale Road, are either State (Broadway) or County (Warburton and Farragut Parkway) roads and maintenance costs are borne by those jurisdictions.

Additional expenses to Hastings for snow removal, storm sewers, road maintenance, street cleaning and shade tree maintenance were considered to be a function of the number of new miles of public road added as a result of development. Two new miles of road were estimated for all types and densities of development as the minimal required for fire and police protection, plus community access to the waterfront. There was also an allowance for improving the maintenance of South Side Avenue.

The average current cost of maintaining local roads is \$1100 per mile per annum; the average cost of snow removal for all roads - local, county and state - is \$2500 per mile; the average cost of maintaining storm sewers is approximately \$250 per mile. For all new development considered, additional costs were estimated to be less than \$20,000 per annum.

- (2) SANITARY SEWERS: The Village of Hastings is responsible for building and maintaining the lateral sewer system only. The County Sewer District is responsible for sewage treatment and trunk lines. The District now owns and operates a pumping station on the Anaconda site which pumps directly into a trunk line running South to North Yonkers. The District treatment facilities are more than adequate, and if a new pumping station were required, the cost would be borne by the District. Since the cost of on-site sewers to the pumping station would be paid by the development, no cost to the Village is anticipated for sanitary sewers for a new development.<sup>1</sup>

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<sup>1</sup>Conversation with Richard Schultz, Deputy Commissioner of Environmental Facilities, for Westchester County.



## B-4 IMPACT OF RESIDENTIAL DEVELOPMENT ON MUNICIPAL COSTS AND REVENUES

### Present Residential Cost/Revenue Picture

For the current year 1976-77, the budgeted expenditure for municipal services for Hastings is \$1,403,608,<sup>1</sup> or \$155.95 per resident. It compares favorably with average expenditures for similar services in neighboring communities such as Dobbs Ferry (\$170.40) and Tarrytown (\$216.68).

Of this municipal service budget, about 25% or \$350,000 is realized from non-residential taxes,<sup>2</sup> including the Anaconda site, railroads, and public utilities. 75% is from residential taxes, which amounts to \$117 per capita. This proportion of local property taxes paid by residential and non-residential uses is not necessarily proportional to the benefits they receive; while some proportion of the benefits from police and traffic control, fire protection, street maintenance, etc. accrue to non-residential uses, almost all of the benefits from local educational services, public recreation, library, animal control, etc. accrue to residential uses. In general, the benefits realized by non-residential uses are proportionately less than the amount they pay in taxes.

Therefore, although residential uses pay \$117 per capita for services, they presently receive closer to \$156 in benefits. New residential development which replaces a non-residential user could not economically continue this cost/benefit pattern.

### Municipal Costs of Residential Development

Fortunately, as population increases, the average per capita cost of municipal services tends to fall, up to a point where increased densities require large capital investments for new or expanded municipal services.

The municipal costs of new residential development on the Anaconda site were projected on the basis of a detailed analysis of the present budget. The assumptions and findings are presented

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<sup>1</sup>This is a net figure; it represents the amount which must be funded from local real property taxes.

<sup>2</sup>Town of Greenburgh, Property Classification Code, Village of Hastings, 1975.

in section B-3 of this report.

In summary, new residential development on the site will not increase municipal costs proportionately to existing residential uses in Hastings. The municipal services which would require the largest new expenditures as a result of new population are (in declining order): Police protection (including traffic control), refuse collection, and library services. Other services are increased proportionately.

It is estimated that the current annual municipal service expenditure (which must be funded by Village property taxes) of \$156 per capita would drop to \$152 per capita at 200 units, and to as low as \$125 per capita at 1000 units.

#### Municipal Revenues from Residential Development

A sliding scale of assumed market values for residential units was used, on the assumption that at lower densities the average unit size and market value would be greater than at higher densities. An assessing rate of 25%, and the current municipal tax rate of \$31.40 per \$1000 assessed valuation, were used, and municipal revenues projected for each type and density of development.

Municipal revenues ranged from a total of \$125,600 in real property taxes for 200 units (at \$80,000 market value each) to a total of \$392,500 in real property taxes for 1000 units of high-rise apartments (at \$50,000 market value each). Because of the higher assumed unit prices, this projected revenue compares very favorably with current per capita revenues: present property tax revenue is \$117 per capita; at 200 new units, the projected revenue is estimated at \$203 per capita; at 1000 new units, the projected revenue is \$157 per capita. To these tax revenues were added estimates of additional Village income derived from other sources. Results are tabulated on the "Municipal Cost/Revenue Summary for Residential Development."

#### Summary of Net Impact of Residential Development on Municipal Revenue

For all types and densities of new residential development considered, there would be a net surplus of revenues for municipal services. This compares to an existing situation in which there is a net deficit from residential use.

If the Anaconda site is developed, the municipal tax income which Hastings now derives from Anaconda will be eliminated. This amounts to \$150,720 annually in local property taxes. Since there is at present no active use of the site except for a tennis club, the costs to the Village of the development are minimal. Therefore, the \$130,720 is considered to be net municipal revenue to Hastings. In order to equal this net municipal revenue with new residential development on the site, approximately 450 units would be required. (See table: "Municipal Cost/Revenue Summary for Residential Development").

When the expected net municipal tax revenues, and net school tax revenues from residential construction, are added together, it can be seen that approximately 568 units of new housing would be required to equal the current total net revenue from Anaconda. (See the Chart: "Residential Net Tax Revenue.")

It must be recognized that once the site is cleared for construction, and possibly for several years thereafter while construction is underway, the Village will receive taxes based on only the assessed land value. This period of decreased revenues will also have to be compensated for by the expected eventual revenues when calculating the "break even" point.

Municipal Cost/Revenue Summary for Residential Development

Units	200	400	600	800	1000
Market Value	\$80,000	\$70,000	\$70,000	\$60,000	\$50,000
Assessed Value	\$20,000	\$17,500	\$17,500	\$15,000	\$12,500
Municipal Tax	\$125,600	\$219,800	\$329,700	\$376,800	\$392,500
Other Mun. Rev.(1)	\$ 9,045	\$ 16,620	\$ 24,218	\$ 29,890	\$ 36,000
Total Mun. Rev.	\$134,465	\$236,420	\$353,918	\$406,690	\$428,500
Total Mun. Cost(2)	\$ 76,800	\$113,100	\$184,400	\$249,800	\$274,000
Net Mun. Revenue	\$ 57,665	\$123,320	\$169,518	\$156,890	\$154,500

(1) Other Municipal revenue includes: state per capita aid, federal aid, department income, and fees from the sale of fire services.

(2) See Section B-3 on Municipal Services and Costs

# III C OFFICE DEVELOPMENT

The primary impacts of office development would be felt on local revenues (both school and municipal), traffic, and certain municipal service costs. Although in the long run a substantial office development could have secondary impacts such as increased population and demand for housing, schools, and other population-related services, estimation of these impacts is complicated by many unknown factors. An average of one employee for each 275-300 square feet of leasable office space can be expected.<sup>1</sup> Thus, for a building of 100,000 square feet, one could expect an addition of approximately 333-364 members to the local work force. The composition of the new work force, its income structure, etc., would all influence how many of the new employees would eventually reside in Hastings.

## Impact on Tax Revenues

The current market for rental office properties is between \$9.25 and \$10.00 per square foot, leasable area.<sup>2</sup> This is the rate for what is termed "superior" space and includes new construction in the White Plains center and space directly accessible to major Westchester highways. Despite the panoramic view of the river and Palisades from the Anaconda site, it is questionable if the site could command top rents. The site suffers from severe problems of access and distance from major highways. Reinforcing this problem is the fact that there currently exists in Westchester a surplus of very good office space available at competitive rates.

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<sup>1</sup>This multiplier derives from multipliers commonly used in Westchester County for calculating the changes in employment arising from office space construction which were checked against Westchester Department of Planning figures on commercial space and employment in the County.

Statistical analysis of these figures indicate that up to a 25% error can be expected, as work force projections are heavily dependent on such factors as whether the space is for research, business, etc.

<sup>2</sup>Studley, Julien J., Inc., Comparative Costs of Rents, Taxes, Wages and Electricity in New York City, Westchester, Conn., Nassau/Suffolk, Metropolitan New Jersey, 1976.

Within Hastings there is also an undeveloped 22-acre parcel (the Board of Education site) which is zoned for Limited Office use, which would permit 250,000 square feet of office construction. This site also has access problems, although less severe.

With this in mind, a rent of \$7.50-\$9.00 per square foot per year is proposed as a realistic estimate of potential gross revenue per square foot leasable area. The "rule of the thumb" regarding assessment for office space and potential tax recovery is that approximately 20%<sup>3</sup> of gross rent is recovered in total local property taxes - i.e., village, school, town, county, sewer. This total tax must then be redistributed to the various taxing jurisdictions in accordance with their relative proportions. The Village would receive 22.1% of each tax dollar; the school district 60.3% - for a total of about 82.4 cents per tax dollar.

At a rental of \$9.00 per square foot a total property tax of \$1.80 per square foot would be estimated, of which \$1.48 would accrue to the Village and school district. Estimates of gross tax revenue, before allowance for any allocable expenses, are projected at various levels of development in the following table: "Tax Revenue from Office Development:"

Gross Leasable area in S.F.	50,000	100,000	200,000
Rental at \$7.50-\$9.00 per sq.ft.	375,000-450,000	750,000-900,000	1,500,000-1,800,000
Tax Recovery	75,000-90,000	150,000-180,000	300,000-360,000
Village Share(2)	16,575-19,890	33,150-39,780	66,300-79,560
School District Share (3)	45,225-54,270	90,450-108,540	180,900-217,080
Total Hastings Tax Recovery(4)	61,800-74,160	123,600-148,320	247,200-296,640

Assumptions:

- (1) Tax Recovery = .20 x Gross Rent
- (2) Village Share of Tax Recovery = .221
- (3) School District Share of Tax Recovery = .603
- (4) Total Hastings Tax Recovery = Village Share + School District Share = .824

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<sup>3</sup>Interview with John Levy, Westchester County Planning, and George Hill, Town of Greenburgh Assessor.



### Impact on Municipal Costs

From the Hastings municipal budget, it is difficult to calculate the costs attributable to non-residential uses as separate from residential uses. However, it is possible to identify the areas in which a primary impact would be felt from office development. These areas include: police and traffic control; fire protection, public road maintenance (snow removal, street lighting and storm sewer maintenance); and some part of general government functions. The costs of development were estimated according to the assumptions and method outlined in section B-3 on Residential Development.

### Cost/Revenue Summary

The following table "Impact of Office Development on Net Tax Revenues" shows that the cost of municipal services for office development are expected to equal the income from municipal taxes, except for projects of 200,000 square feet or greater. However, school taxes would be produced even though there would be no school costs expected as a primary impact. (The secondary effects of office development on population growth would be taxed independently and so are not included here.) Because of the excess net school tax revenues, net total revenues would be generated for the Village at all projected levels of development, and would rise rapidly with increased size of the project.

Although the excess revenue from school taxes makes large scale office development appear most lucrative for the Village, other considerations, namely traffic and the character of the Village, limit the desirable amount of office construction.

Net Tax Revenue Summary for Office Development

S.F. Construction	50,000	100,00	200,000
Gross Municipal Tax Revenues <sup>(1)</sup>	\$16,575 to \$19,890	\$33,150 to \$39,780	\$66,300 to \$79,560
Cost of Municipal Services <sup>(2)</sup>	\$19,720	\$34,335	\$58,570
Net Municipal Tax Revenue	-\$ 3,145 to +\$ 170	-\$ 1,185 to +\$ 5,445	+\$ 7,730 to +\$20,990
Net School Tax Revenue (=Gross)	\$45,225 to \$54,270	\$90,450 to \$108,540	\$180,900 to \$217,080
Total Net Tax Revenue	\$42,080 to \$54,440	\$ 89,265 to \$113,985	\$188,630 to \$238,070

(1) From the Table "Tax Revenue from Office Development."

(2) See Section B-3 "Assumptions on Municipal Services and Costs."

### Office Development Summary

Gross Leasable Area	10,000 square feet	25,000 square feet	50,000 square feet	100,000 square feet	200,000 square feet
Employees(1)	33-36	83-91	167-182	333-364	667-727
Estimated Parking Spaces Required(2)	30	75	150	300	600
Parking Required by Zoning	67	167	333	666	1333
Gross Tax Revenue(3)	\$13,596	\$33,990	\$67,980	\$135,960	\$271,920

### Assumptions:

- (1) 1 employee per 275-300 square feet office floor area.
- (2) 3 parking spaces per 1000 square feet floor area.
- (3) Based on average rental of \$8.25 psf; gross tax recovery rate of 20%; and Hastings tax recovery rate of \$.824 per total tax dollar.

# IIID COMMERCIAL AND RECREATIONAL

## D-1 COMMERCIAL DEVELOPMENT

Commercial development on the Anaconda site should be proposed only as a secondary use -- resulting from new demand generated by primary development of new residences or offices. The amount of new commercial development should be sufficient to absorb excess demand generated by new uses on the site above that which the existing center can support, but not so great as to provide competition. It must be designed to reinforce and supplement the existing CBD, making it a more attractive shopping center. The location on the site of new commercial space and its physical connection to the existing CBD, as well as the amount of new space, will be important in assuring its reinforcing, rather than competing, role.

For this study it will be assumed that new demand for local retail sales and services is largely related to new residences on the site. Office development, with its expansion of the local employment base, would also be expected to increase retail demand; however, without more detailed knowledge of the income structure, proportion of males to females, or location of residence of the potential employees, it is impossible to make any dollar figure estimate per employee concerning the effect on the local Hastings economy. If a substantial office development is proposed, this impact should be determined.

To arrive at a program for the desirable level of new commercial development associated with any level of new residential development, the demand generated by new development must be determined, and the amount which the existing town center can absorb, subtracted. New demand for retail space is calculated as a function of the current level of local retail sales per capita and new residents' projected disposable income.

### Hastings CBD's Current Capture Rate of Residents' Disposable Income

From the 1970 census of population, the average 1970 Hastings household income is estimated to be \$22,886. From this figure,

the amount which would be allocated to personal income and social security taxes, about 20% at this income level, is deducted, leaving an average disposable income per household of \$18,309.

Approximately 80% of the total income from retail sales in Hastings represents purchases by Hastings residents, or about \$6,340,000 per year. (Figures from the 1975 CBD study based on the 1972 census of Business Retail Trade, New York) This amounts to \$2,095 spent on local purchases per household, or a capture rate for Hastings of 11.4% of the residents' available disposable income.

#### Projected Local Retail Sales per New Household

For this study it is assumed that the spending patterns of new residents will resemble those of present residents. In fact, since rental costs of new retail space will probably be higher than existing rentals, the new resident's dollar may support less space. However, since the new residents will be a "captive audience," within walking distance to shops on-site and in the existing CBD, they are likely to spend a higher proportion of their incomes on local retail purchases. These two considerations are assumed to balance out.

The average sales price of a new unit on the Anaconda site is projected at \$70,000. This would indicate an average household income of \$30,000. Assuming 25% of this is allocated to taxes, the average disposable income for a new resident would be \$22,500. Using the current 11.4% capture rate of disposable income, a new household would be expected to spend \$2,565 per year on local retail purchases.

#### Demand for New Commercial Development

It is assumed that new retail expenditures will translate into demand for commercial space at the current rate. If the 1975 estimated level of retail sales per square foot of retail space, which amounts to \$86 per square foot (calculated from the CBD Study estimates), is divided into the \$2,565 expected retail sales per new household (1976), it indicates a demand for approximately 30 square feet of retail space per new unit.

To estimate additional commercial space required for sales

of services, the demand for retail space may be multiplied by a factor of 1.43. (This represents the existing ratio of retail space to total commercial space in Hastings.) This produces a total estimated demand for commercial space of 43 square feet per new household.

Some of the considerations which may alter the direct relationship between new units and demand for new on-site commercial space are:

1. The existing Hastings CBD has the capacity to absorb some of the new demand. There are at present (1975 CBD Study) 9,600 square feet of vacant space, some of which undoubtedly is substandard, which could theoretically absorb the demand from 225 new units at 43 square feet per unit. An additional 13,000 square feet of ground floor commercial space is used for offices, some of which could be converted for commercial use if new office space were provided on site. This could theoretically absorb the demand of 302 more units, for a total absorption of demand from 527 units.
2. Other locations in Hastings may also be suitable to absorb new commercial development. Possible sites are shown in the plan "Expansion" which follows.
3. Secondary effects, such as development of new nearby shopping centers, would diminish the Hastings CBD's capture rate. On the other hand, the strengthening of the Hastings CBD could increase shopping in Hastings by residents of adjacent towns.

Because of these considerations, it would be better initially to err on the low side in zoning for commercial use on the site. Convenience shops such as a drug store, or uses specifically related to the site, such as a waterfront restaurant, would be most appropriate. Any on-site commercial development should be located as convenient to the existing CBD and to site residents as possible to discourage people from using vehicles from shopping on-site. A strong pedestrian connection to the CBD or a shuttle-bus, as proposed in the section on "Traffic," should be provided.



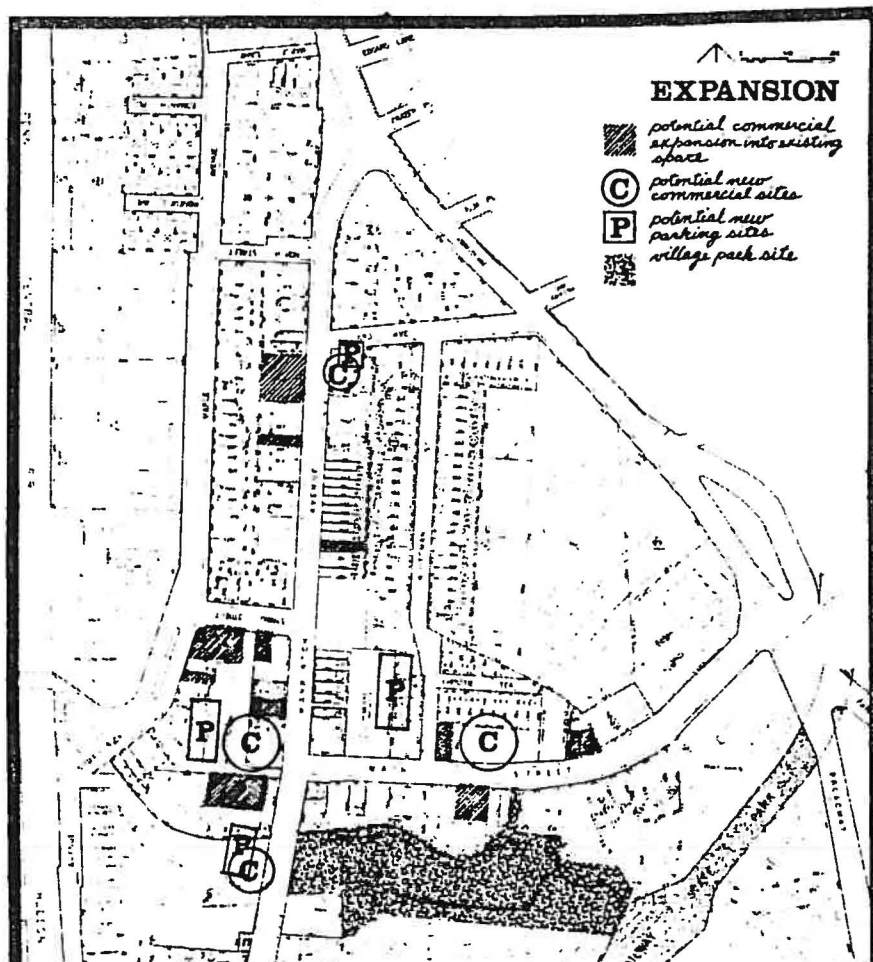
Additional off-site commercial development to strengthen the existing CBD should be encouraged.

#### Impact of New Commercial Development on Revenue

Currently prime retail sites in Westchester are renting at \$9.00 per square foot. This rate, however, is competitive only for sites with superior market and traffic access, such as new Central Avenue shops. It is felt therefore that the \$9.00 figure should be revised downward to \$7.50 for new retail space in a Hastings location. At present many locations within the Hastings central commercial area are renting for as little as \$2.50-\$3.00 per square foot, although many are renting in the area of \$6.00. At \$7.50 per square foot, \$1.50 in total taxes would be recovered of which about \$1.25 would accrue to the Village and school district. Gross tax revenues are projected on the following table: "Commercial Development Summary."

#### Impact of Commercial Development on the Work Force

For each 1000 square feet of enclosed selling area, 2.5 employees can be expected. For additional retail space of 50,000 square feet, about 125 new employees should be anticipated.



Commercial Development Summary

Number of Units (1)	200	400	600	800	1000
Demand for gross leasable area of 8600 S.F. commercial space (2)	17,200	25,800	34,400	43,000	
Employees(3)	22	43	65	86	108
Parking spaces required(4)	30	60	90	120	150
Gross Tax Revenue(5)	\$10,630	\$21,259	\$31,889	\$42,518	\$53,148

Assumptions:

- (1) Average gross income per unit of \$30,000.
- (2) Demand of 43 S.F. per unit.
- (3) 2.5 employees per 1000 S.F. gross leasable area (Existing Hastings ratio).
- (4) 3.5 parking spaces per 1000 S.F. gross leasable area (assuming 20% of shoppers will walk to shop).
- (5) Based on average rental of \$7.50 psf; gross tax recovery rate of 20%; and Hastings tax recovery rate of \$.824 per total tax dollar.

## D-2 RECREATIONAL DEVELOPMENT

Redevelopment of the Anaconda site will be a unique opportunity for the Village of Hastings to provide new waterfront recreational amenities for its citizens. It can be Hastings' first step in creating continuous park and recreational area along the Hudson River, as was proposed in the Hastings Waterfront Study of 1974. An intelligent development plan could both make the land available and provide the revenues to build and maintain new recreation facilities as secondary site uses.

Hastings' recreation budget (approximately \$123,000 per year<sup>1</sup>), reflecting a gradually declining population, has not changed substantially in the last six years. At present, more staff could be used to supervise existing playgrounds, and additional playing fields and tennis courts would be welcome. New residential development on the site would create additional demand for recreational facilities and programs. There are two options for satisfying this demand: as in many luxury developments, much of it could be met by private facilities within the development. However, recreational facilities can serve as excellent mixing-places for old and new residents. It is strongly recommended that new public recreational facilities be planned jointly by the Village and developer to serve this function.

One challenge is to balance the size of recreational facilities to the new densities and revenues: as site population increases, revenues increase, but land area available for recreational use diminishes.

To assist the Village in determination of projected recreational needs and costs, and in its negotiation with a developer over joint facilities, the possible types of new facilities which the Village could consider are outlined below, with approximate projected costs. All costs assume the land would be deeded to

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<sup>1</sup>Information on existing recreational facilities from interview with Patrick Duggan, on 8/2/76.

the Village by the developer.

#### Waterfront Park

The Village should negotiate for a minimum donation of seven acres of the Anaconda site for a waterfront park. This amount would provide for a 100-foot wide band of parkland along the water's edge with two 100-foot wide public easements connecting the park to the Village. The park should include, as a minimum, planting, seating, lighting, and paths with adequate width for maintenance vehicles. Adjacent to the park should be located any active recreational facilities such as playing fields, tennis courts, paddle tennis courts, playgrounds, a marina, etc., as described below. The recreational areas should be easily accessible, and preferably visible, from the Village Center.

As well as benefiting present Hastings' residents, a substantial and beautiful waterfront park could be a sales incentive for the new housing.

The size of the park would depend on the development plan and total revenue picture. Assuming, as a minimum, a seven acre park, the costs (in 1976 dollars) would be approximately \$600,000 to \$750,000.

#### Tennis Courts

The Village has seven actively-used tennis courts, and could use another four to fulfill present demand. New residential development would require courts at a rate of about one per 200 units. Night lighting would increase the courts' usefulness.

Assuming between 200-1000 new units, the total number of courts could be between five and nine. At \$16,000 per court, the cost of tennis court construction could cost from \$80,000 to \$144,000, and would require between .7 and 1.25 acres.

#### Swimming Pool and Bathhouse

The Village public pool now has 475 family memberships and has capacity for another 125, which is adequate for the foreseeable future. Membership has recently dropped due to an increase in fees, and possibly due to competition from the county pool at Sprain Ridge Park. The pool fee of \$90 now pays for the construction loan debt service and pool maintenance.

A new development would probably incorporate a new pool

which could be private. If the Village anticipates the need to replace its pool due to structural problems, a combined public facility could be built on the Anaconda site for the Village as well as on-site residents. A facility slightly larger than the Hillside Pool would cost between \$200,000 and \$300,000, and would require 1.25 acres.

#### Boating

Some facility for boating on the Hudson should be incorporated into the waterfront plan. Whether this is simply a boat-launching ramp, slips for docking boats, or a more elaborate marina facility will have to be decided later. It should be a public facility for Hastings residents. A fifty-slip marina would cost approximately \$100,000.00.

Another possibility would be for Hastings to initiate a sailing program with classes in sailing and a fleet of small boats.

#### Maintenance

At present, there are two park maintenance personnel and two summer helpers. About  $\frac{1}{4}$  of their time is spent repairing vandalism and the rest on general maintenance, both of which will certainly increase in proportion to new residents. To maintain a new intensively-used waterfront park, and possibly expanded and consolidated recreational facilities at the waterfront, an estimate of one additional maintenance worker would be required at the cost of \$15,000.00 per year.

#### Parking

Adequate parking must be provided to facilitate use of the new park by Hastings residents. To minimize the visual impact and on-site traffic it is recommended that it be located off-site. The underutilized commuter parking lot could be ideal. Provision of a mini-bus around the Village in connection with other site activities could lessen the parking required.

#### Total Costs

The rough cost estimates for recreational facilities have been assembled as a tool for negotiations with the developer of the site. It has been assumed that land for these facilities would be donated to the Village. Construction and maintenance

costs might be paid by the developer, by the Village with increased tax revenues from the waterfront, by the imposition of user fees, or by any combination of the above. The estimated range of construction costs would be from \$600,000.00 for a passive waterfront park to \$1,200,000.00 for a waterfront park plus all of the active recreation facilities described above.



# III E TRAFFIC

The traffic analysis for this study includes an assessment of the site access, the present Village traffic, and predictions of the changes which could be expected from development. The scope of the study only allowed for a preliminary look at the traffic situation; it is strongly recommended that when a proposal for development is made, the Village will undertake a thorough traffic impact study. It will then fall to the Village to decide what level of traffic would be acceptable and in keeping with the character of the Village.

## 1. Site Access

At present there is one means of vehicular access to the site: across the two-lane overpass bridge. If the number of vehicles using the bridge were to increase sharply, safety problems and a traffic bottleneck could be expected. It is recommended that the roadways at both ends of the bridge be redesigned: At the West end the "T" intersection should be eliminated and site traffic be directed straight onto the site or in a gradual turn to the left or right. The undesignated paved area at the East end should be redesigned to clearly channel traffic up onto Maple Avenue and to eliminate the blind turn. Pedestrian access should be improved by, as a minimum, combining the two small bridge sidewalks into one larger one; by improving the existing pedestrian overpasses at the railroad station and Washington Street; or by providing a new pedestrian overpass which would strongly connect the site with the CBD. The projections for road capacities assume that these redesign recommendations will be followed.

## Second Means of Access

The possibility of requiring a second means of access to the site has been considered from several standpoints: as far as traffic is concerned, improving the existing bridge should be adequate. In terms of fire safety, a second means of access is

advisable.<sup>1</sup> The Village now has an agreement with Tappan Tanker to use the bridge to their property, which is owned by Tappan Tanker, and an easement across their property as a second means of emergency access to the Anaconda site. However, this bridge is now in disrepair and may be closed at the discretion of the owner, so it is not a reliable access.

Alternatives for providing a second means of access, depending on the size of the development and cost, might be:

- a. Constructing a new overpass bridge at the south end of the Anaconda site, ramping up from Southside Avenue.
- b. Reconstruction and public ownership of the Tappan Tanker bridge with an improved fire easement across that site.
- c. Inclusion of the Tappan Tanker site in the development plan. If this happens, a larger development might be expected, and the possibility of extending Southside Avenue south to connect to Warburton Avenue should be studied.

In any case, the portions of Southside Avenue between the railroad station and Washington Avenue should be reconstructed.

## 2. Existing Traffic

The available published data on Hastings' traffic date from 1970 and are inconsistent.<sup>2</sup> New estimates were based on selective new counts by the Traffic Consultant to this study, discussions with the Lieutenant of the Hastings Police Department, John Ooman, and with the traffic consultant who is undertaking a full-scale traffic analysis for Howard Hoffman, Associates. Detailed new counts should be made during the winter months to assess the impact from the oil trucks from Tappan Tanker.

The worst conditions were examined: P.M. peak hour traffic through the most restricted parts of the road system from the Anaconda site through the Village. Present traffic was compared to the total theoretical capacity of the system to determine how many additional cars could be absorbed without back-ups.

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<sup>1</sup>From discussion with Hastings Fire Chief, S. Caruso.

<sup>2</sup>The data is from The New York State Department of Transportation survey of 1970, and the Frederick P. Clark Associates report of 1970.

The Hastings street system was determined in the 1920's when the traffic volumes were smaller than those today. The street system's efficiency is also hampered by the Village's topography which, because of its steep grades, hinders East-West circulation. Bus and truck traffic create an additional burden on the system. However, the traffic level in the CBD has decreased considerably since 1970 when Anaconda and Cosmetically Yours were still active on the site. Lt. Ooman points out that there are few traffic problems now and that traffic police and signalization have been reduced to reflect this. Lt. Ooman estimated the traffic is half what it was in 1970. Conservatively, an estimate of a 20% decrease from the DOT figures was used.

The areas which are critical for restricting total vehicular capacity are the three routes from the site to Warburton Avenue: Spring, North and Washington Streets; and the turning motions from Warburton onto Main Street and Broadway. The following charts summarize the conditions at the P.M. peak for traffic leaving the site (i.e.: from office or commercial development). Residential P.M. traffic would run counter to traffic from the railroad parking lot and would thus not be cumulative; it is discussed later.

Capacity of Streets Between the Site and Warburton Avenue

P.M. Peak-hour one-way vehicles	DOT estimate(1970)	New estimate(-20%)	Total Assumed Capacity	Additional Assumed Capacity
Spring Street	250	200	400-450	200-250
North Street	166	130	240-265	110-135
Washington Street	100	80	175-200	95-120
Total one-way vehicles per hour		410	815-915	405-505

The vehicles using Spring and North Streets will also be restricted by the capacity of the intersections shown below:

P.M. Peak-hour one-way vehicles	Existing(3)	Total Capacity	Additional Capacity
Warburton/Main	120	270-320	150-200
Warburton/Broadway	300	375-400(4)	75-100
Total	420	645-720	225-300

Since the additional capacity of these intersections is less than the additional capacity of the three access roads up the hill, the intersection capacity of 225-300 additional vehicles would be the limiting factor.

In summary, the additional number of P.M. peak hour vehicles which could exit from the Anaconda site without serious traffic problems is:

Spring + North Streets	225-300 vph
Washington Avenue	95-120 vph
	<u>320-420 vph</u>

### 3. Traffic Generation From Office Development

Because of the concentration of traffic during the morning and evening peak hours, office development has the most severe traffic impact of the development types analyzed. For each 1,000 square feet of office floor area, 3.3-3.6 employees, and eight and a half one-way car trips per day are estimated. 26% of the trips are expected at each of the morning and evening peak hours. (See the chart following)

The parking requirement is assumed to be three spaces per 1,000 square feet of floor area. It should be noted that most local zoning ordinances have more stringent parking regulations. The 1960 Hastings zoning ordinance requires one parking space for each 250 square feet of floor area. A comparison of the two parking requirements is made in the table: "Office Development Summary" in Section C.

In considering the revenue impact of this type of development on the Village, it was determined that in order to replace the

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<sup>3</sup>Estimate by Robert Flahive, Traffic Engineer, on Thursday, August 19, 1976.

<sup>4</sup>Spillback to North Street intersection would be expected at this level.

current Anaconda tax revenues, a building with a gross leaseable area of approximately 375,000 square feet would be necessary. An office building or complex of this magnitude would generate about 3188 daily trips -- 839 per hour at both the morning and evening peak hours. Present weekday afternoon peak hour traffic on Warburton Avenue between Spring Street and Main Street is estimated at 300-400 vehicles per hour in each direction. Traffic generation is clearly the limiting factor in the amount of office development feasible for the site.

Based on the previous estimate of the street system capacity, for an additional 320-420 vehicles per hour leaving the site at the P.M. peak, 140,000-190,000 square feet of space would be the maximum feasible for an office development.

These estimates are preliminary and would be affected by other factors:

1. With development, there will be increased pedestrians as well as vehicles, which will increase the traffic and safety problems.
2. To achieve this magnitude of traffic increases, additional traffic police and changes to the signalization at critical intersections would be required.
3. The traffic consultant to Howard Hoffman, Associates has suggested that to facilitate office construction, which generates the most peak hour traffic, an office parking garage could be constructed below the Warburton Avenue bridge with a pedestrian connection to the site. Exiting vehicles would bypass the Warburton/Main left-hand turn, allowing a higher level of development without congestion at that intersection. The Main/Broadway/Farragut ("Five Corners") intersection would then be the critical limitation.
4. Staggered work hours could decrease the peak hour traffic.

## OFFICE TRAFFIC

SF Construction	10,000	25,000	50,000	100,000	200,000
Parking Spaces(1)	30	75	150	300	600
Car Trips Per Day(2) one-way total	85	210	425	850	1700
One-way Peak Hour P.M. (26%)	22	55	110	225	450
Truck Trips per day, Two-way total	6	15	30	65	130

### Assumptions

- (1) 3 parking spaces per 1000 SF floor area.
- (2) National Cooperative Highway Research Program, Report 62-Urban Travel Patterns for Hospitals, Universities, Office Buildings. 1969.

Assume: 6 one-way employee trips, and 2.5 one-way visitor trips, per day per 1000 sq. ft. of office construction, and 10% of employees take mass transit or walk.



#### 4. Traffic Generation from Residential Development

Residential car trips are more evenly spread over the day than office trips, hence a much greater level of development is possible before the traffic becomes a problem. The following table shows the total trips and peak hour trips which may be expected.

In addition, the peak residential traffic would be travelling in the opposite direction from the traffic to and from the railroad station. As site residents who commute by car are returning from work down the hill in the evening, Village residents who commute by train are driving up the hill from the commuter parking lot. Thus the two peaks are not cumulative.

As with office development, the expected bottleneck would be at the turns onto Warburton and from Warburton onto Spring Street. Sufficient data is not available to determine at what level of development traffic jams would occur. As a comparison, there are now approximately 300-400 vehicles travelling in each direction on Warburton Avenue between Main and Spring at the evening peak hour. This would be expected to double with a development of 600-800 units. (This assumes that the present pattern of 75-80% of the cars select the Spring Street route to the site.)<sup>5</sup>

It should be emphasized that at any substantial level of development a new system of traffic signalization and intersection design would be necessary to improve the control of traffic moving through these intersections.

Another unknown factor is the effect which oil truck traffic in the winter would have on residential traffic. When a specific proposal for development is made, a detailed traffic impact study, which will include winter truck traffic, must be undertaken by the Village.

Residential vehicular trips from the site could be reduced by a shuttle-bus operating between the site and other locations in Hastings. A similar service is being provided in Pleasantville, New York and subsidized by Westchester County. Since many of the residential vehicular trips are local, this could reduce the total trip number, but might not have a dramatic effect on the peak, which would include many commuters.

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<sup>5</sup>From survey by Robert Flahive, traffic engineer, on 8/19/76.

### Residential Traffic

No. of Units	200	400	600	800	1000
<u>Car Trips Per Day</u>					
Total (1)	1600	3200	3600	4800	6000
Peak Hour(2)	160	320	360	480	600
One-Way Peak Hour(3)	128	256	288	384	480

- (1) Car trips per day Multiplier: 200-400 units = 8 trips/unit  
600-1000 units = 6 trips/unit
- (2) Each A.M. and P.M. Peak hour = 10% of total daily trips.
- (3) One-way peak = 80% of total peak hour trips.

## 5. Traffic Generation and Parking from Commercial Development

Commercial development does not generate the same bimodal peak hour traffic pattern as office use. The 1975 Hastings CBD study indicated that the largest volume of traffic and parking for commercial purposes was experienced in the early afternoon both weekdays and Saturdays. The traffic generated by the amounts of on-site commercial development being considered would not be large enough to have a significant impact on the traffic estimates.

In order to establish estimates for required parking, the standard shopping center multiplier of five spaces per 1000 gross square feet of leasable area is used<sup>6</sup> as a maximum. Since new demand for commercial space could be allocated entirely to the new site, or split between the existing downtown and the site, a policy decision on this matter would determine the relative need for new parking spaces both on site and in the village center. The map in the section on "Commercial Development" identifies areas in the CBD which could be used for new retail parking.

It should also be kept in mind that the Anaconda site can be accessible by foot from the existing CBD. If the physical connections for pedestrians can be strengthened in the development plan, it can encourage people to walk to and from the site to shop and can reduce the traffic and parking problems. Traffic and parking could be further reduced by running a shuttle bus between the site and the CBD.

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<sup>6</sup> Traffic generation estimates are derived from several technical sources: a.) Urban Land Institute Technical Bulletin 53, Parking Requirements for Shopping Centers, 1975; b.) Lynch, Kevin; Site Planning; M.I.T. Press; 2nd Edition; 1971.

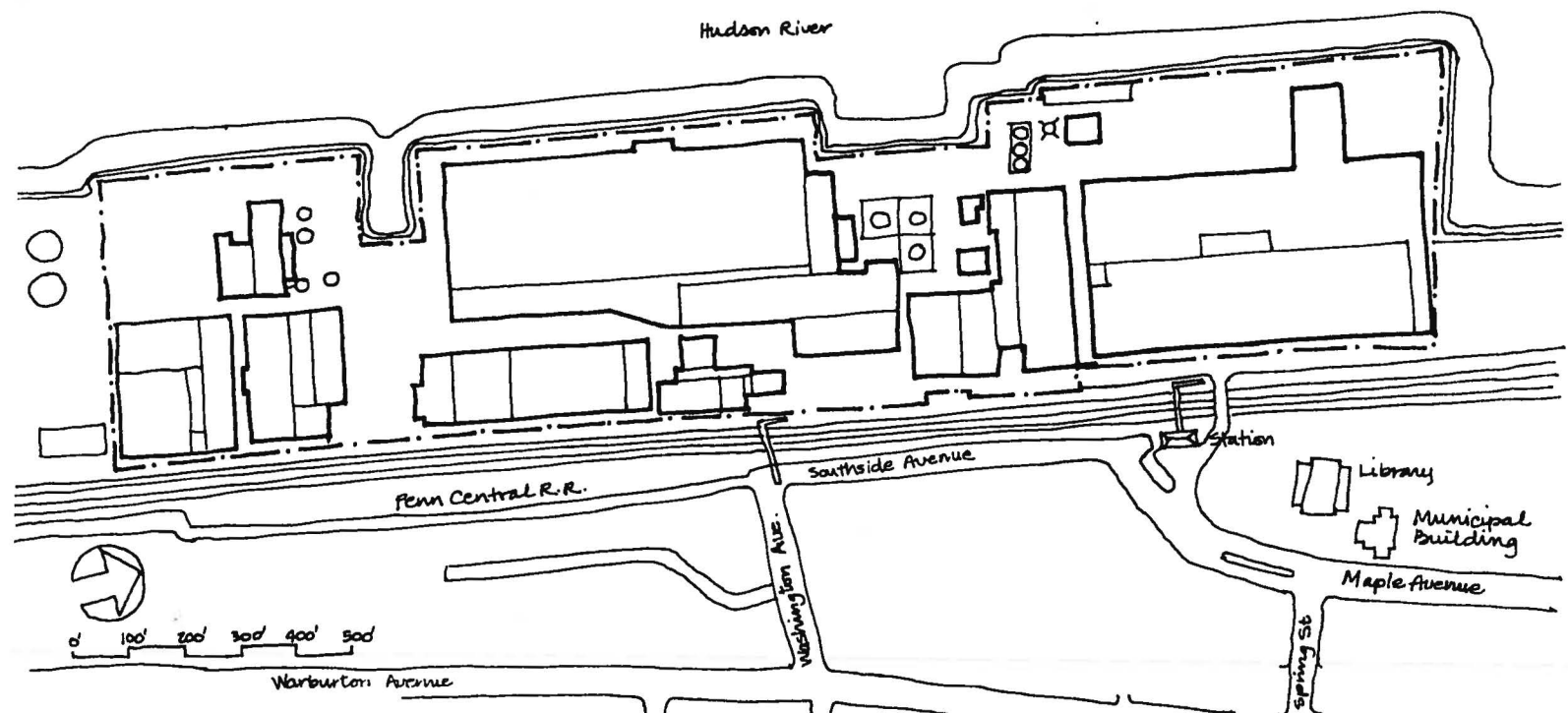
# III F PHYSICAL IMPACTS

## 1. Site Coverage Diagrams

The following site coverage diagrams show in plan and section the sizes and areas required for buildings, parking, roads and open spaces for various types of development. They are not designs; they are diagrams to assist in visualizing the relative physical impacts of programs for development which were discussed previously in terms of their financial, traffic and other impacts. Many other configurations for each plan would be possible.

Four programs for housing with recreation and limited commercial facilities were tested on the site with 2 story, 4 story, 6 story and 12 story buildings. The 2 story and 4 story diagrams represent the maximum reasonable density for those height restrictions.

Below: Existing Site Coverage Plan showing Anaconda's buildings on the site:



## Diagram A

### 1. Housing

Total Units:	240 Townhouses
Height:	2 - story
Size:	1400 gross sq. ft. average
Land Area Covered:	3.9 acres
Density:	14 units per acre

### 2. Parking

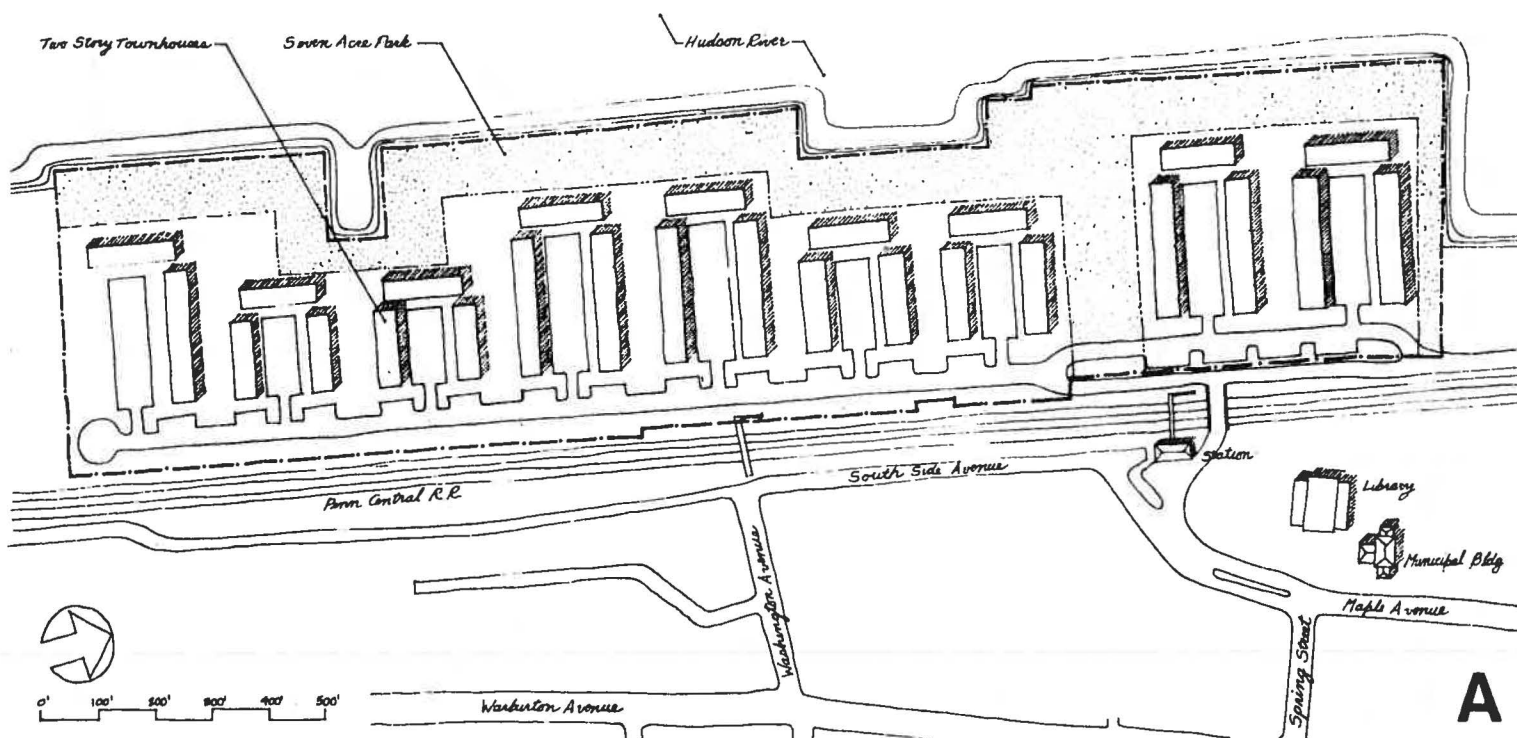
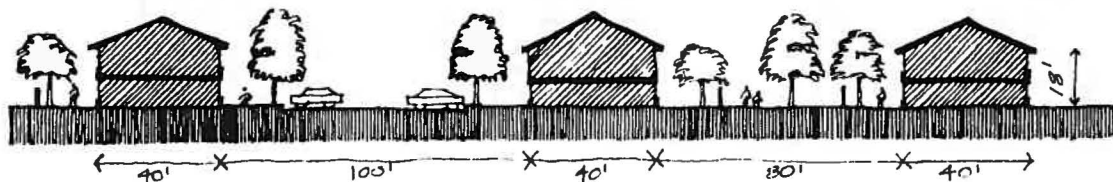
Total spaces:	480 (2 per unit)
Type:	100% On-grade (50% could be covered)
Land Area Covered:	3.3 acres

### 3. Commercial Space

None

### 4. Riverfront Park

Land Area:	7 acres
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## Diagram B

### 1. Housing

Total Units:  
Height:  
Size:  
Land Area Covered:

450 garden apartments  
4 story (2 stacked duplexes)  
1400 gross sq. ft. average  
3.6 acres

### 2. Parking

Total spaces:  
Type:  
Land Area Covered:

720 (1.6 per unit)  
100% on-grade (50% covered-under unit)  
5.3 acres

### 3. Commercial Space

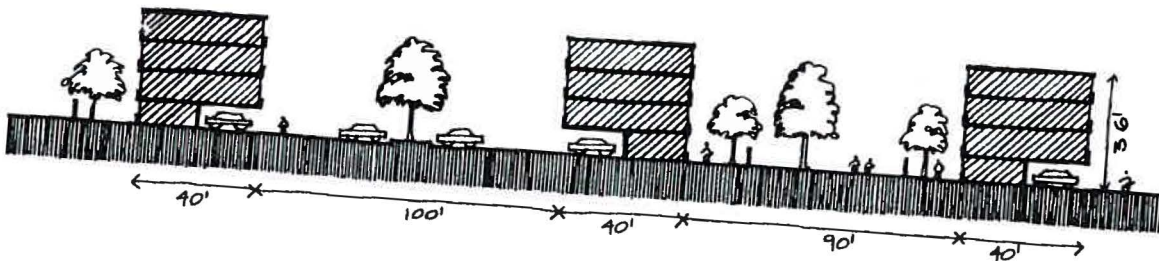
Total area:  
Height:

10,000 sq. ft. ( $\pm 20$  sq.ft./unit)  
1 story

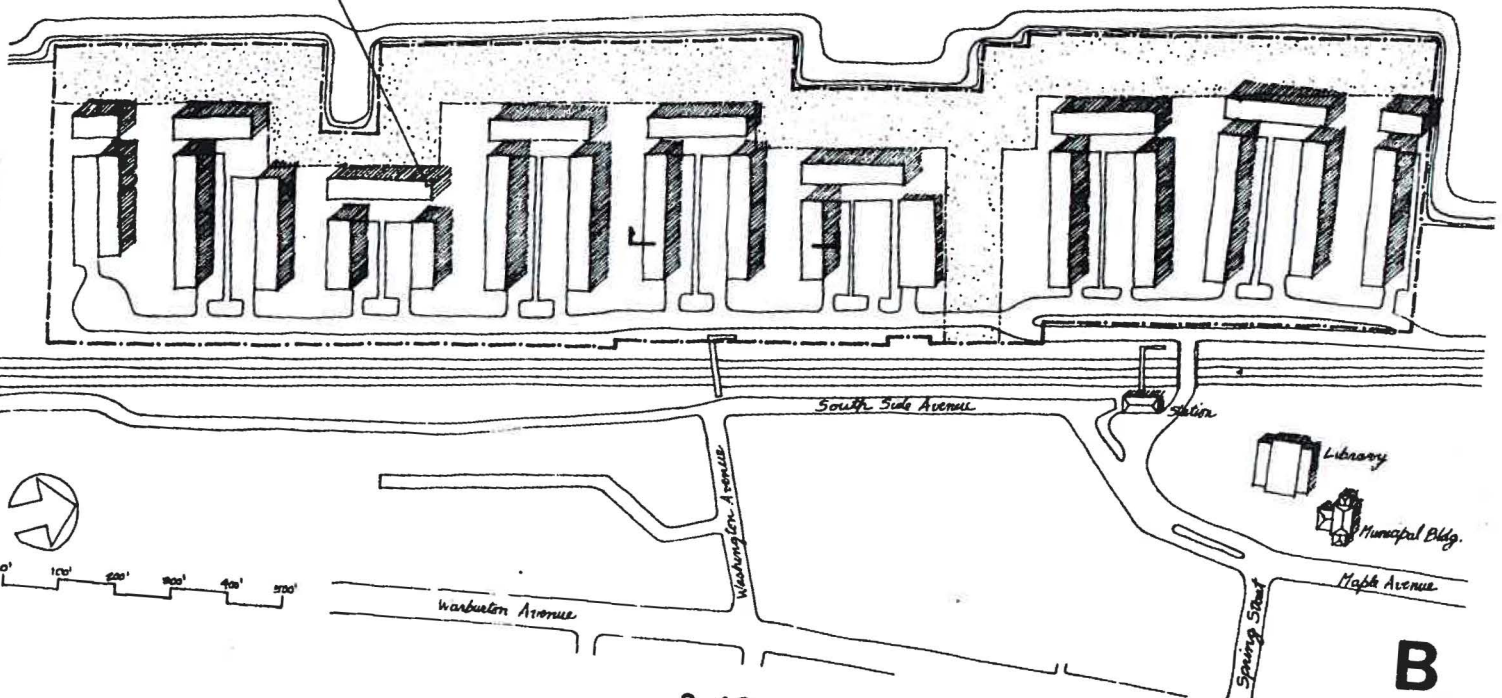
### 4. Riverfront Park

Land Area:

7 acres



Four Story Garden Apartments





## Diagram C

### 1. Housing

Total Units:	600 apartments
Height:	6 story (mid-rise)
Size:	1300 gross sq. ft. average
Land Area Covered:	3 acres

### 2. Parking

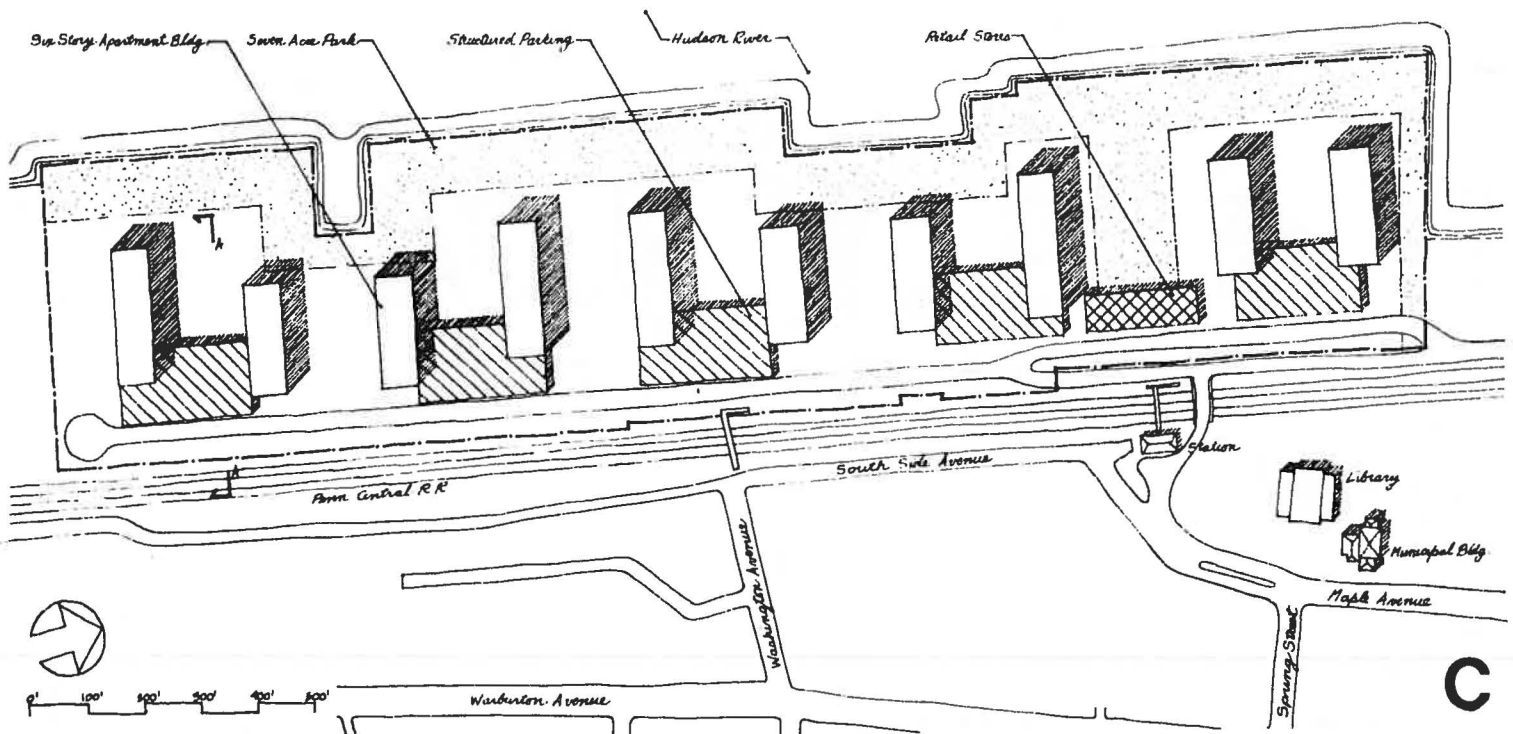
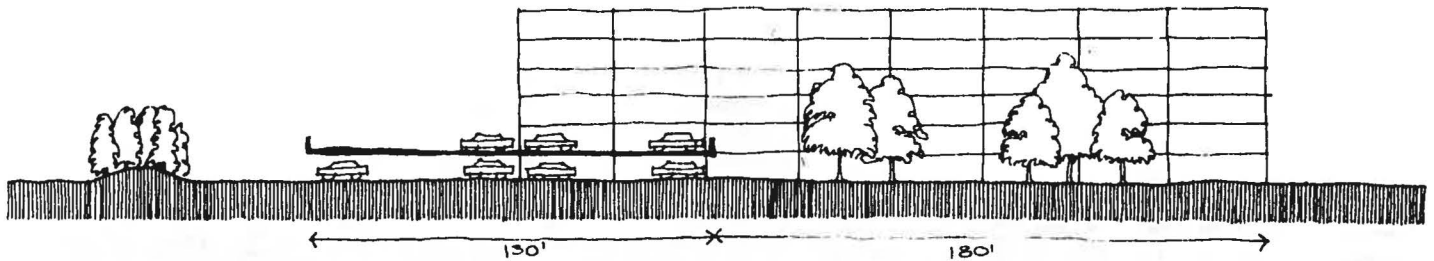
Total Spaces:	900 (1.5 per unit)
Type:	2-story structured (50% covered)
Land Area Covered:	3.6 acres

### 3. Commercial Space

Total Area:	12,000 sq. ft. (20 sq. ft./unit)
Height:	1 story

### 4. Riverfront Park

Land Area:	7 acres
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## Diagram D

### 1. Housing

Total Units: 800 apartments  
Height: 12 and 6 story (high and mid-rise)  
Size: 1300 gross sq. ft. average  
Land Area Covered: 3.2 acres

### 2. Parking

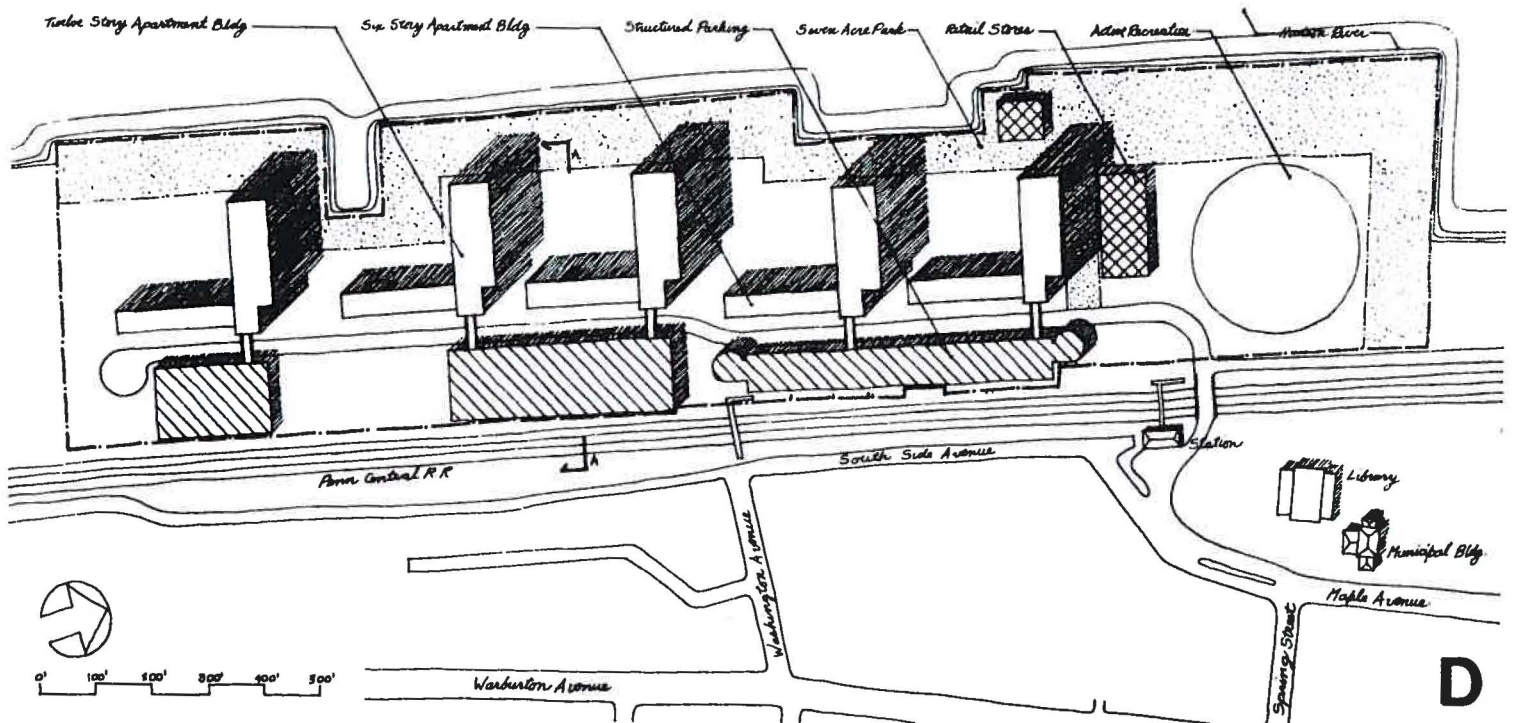
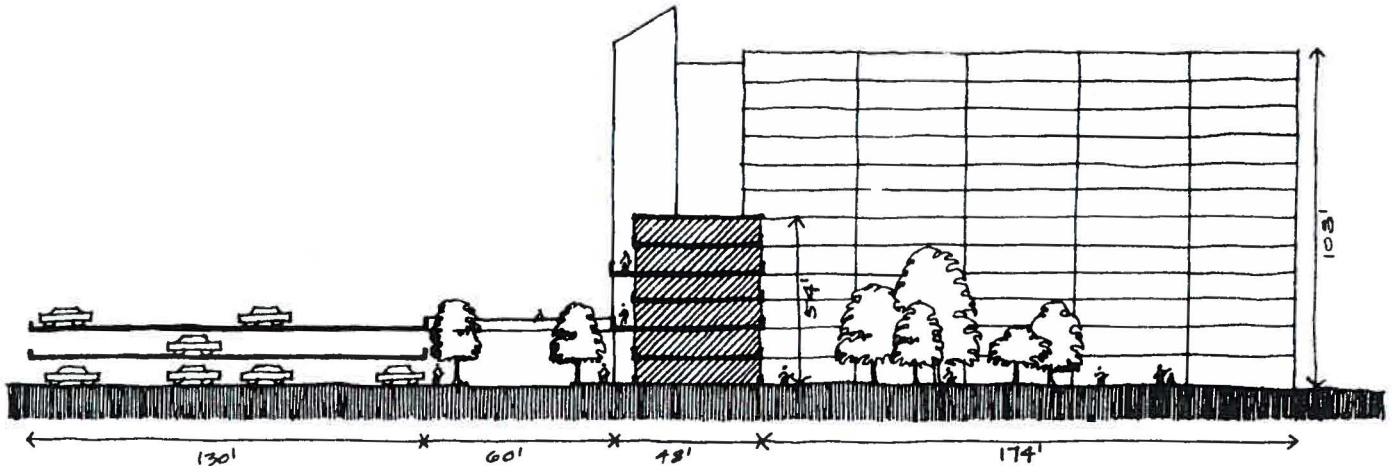
Total Spaces: 1200 (1.5 per unit)  
Type: 3 story structured (67% covered)  
Land Area Covered: 3.2 acres

### 3. Commercial Space

Total Area: 16,000 sq. ft. (20 sq. ft./unit)  
Height: 1 story

### 4. Riverfront Park + Recreational or Other Use

Land Area: 7 acres + 2.4 acres

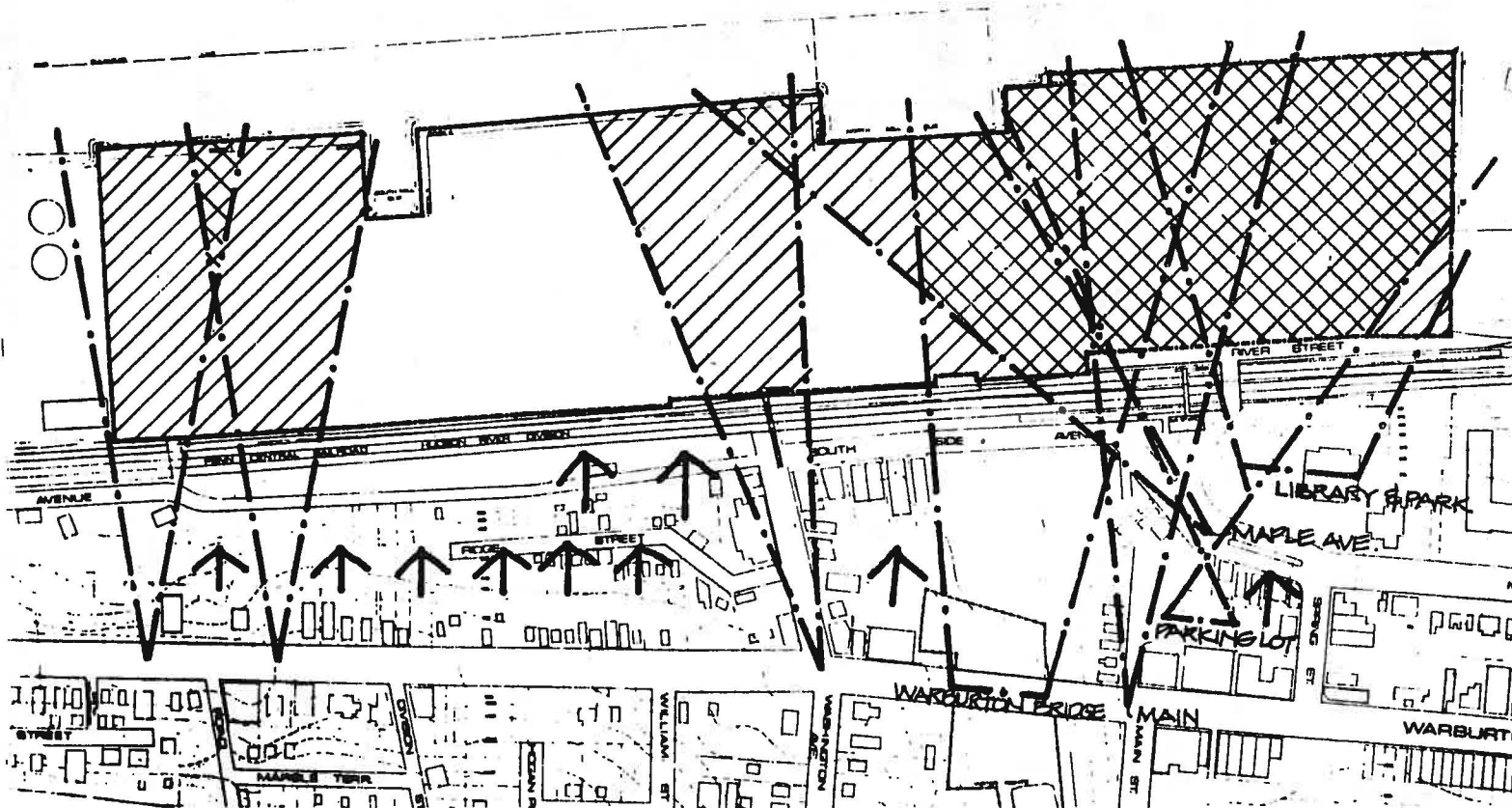


### 3. SHORT-RANGE VIEWS

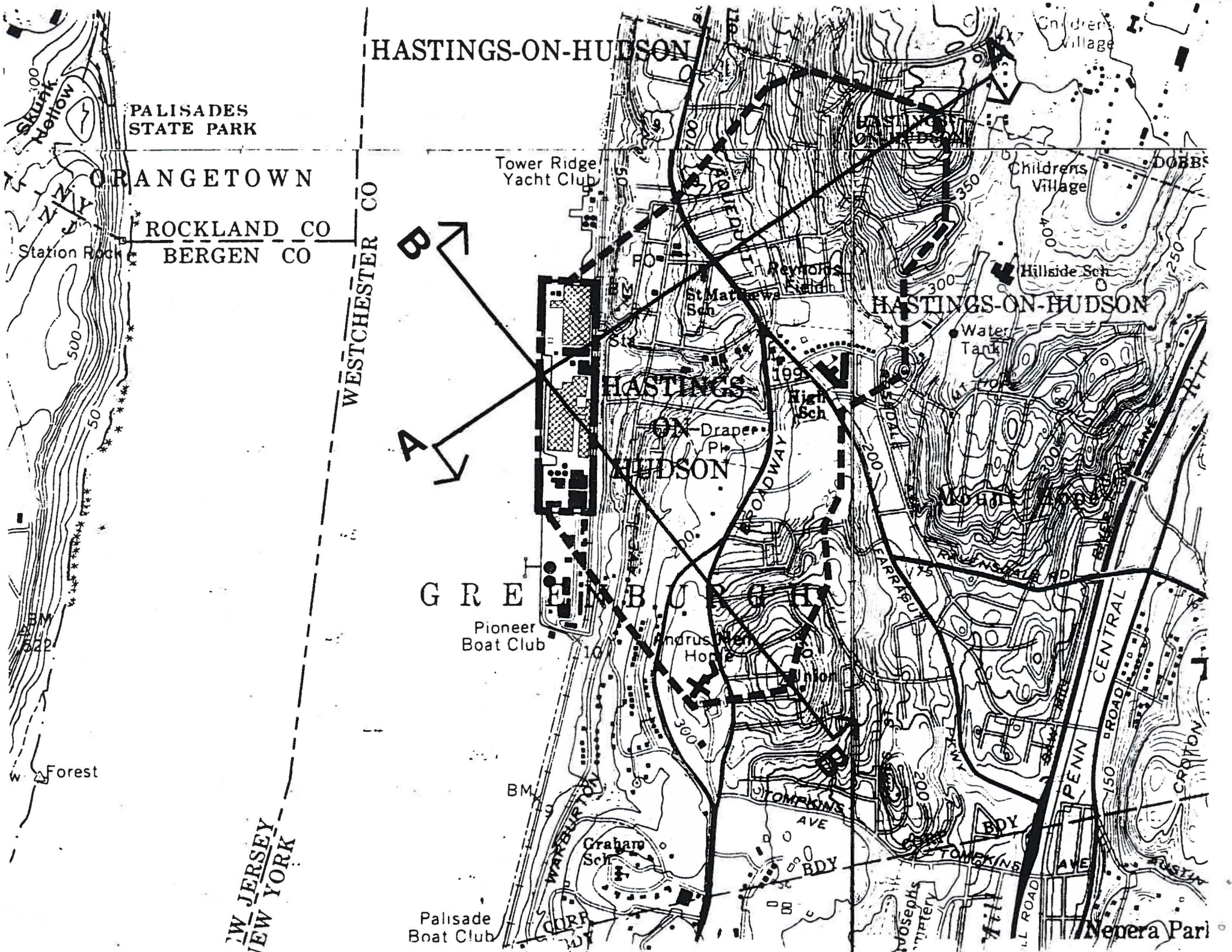
- Private Views
- - - Public Views
- //// Site Area Overlooked by public views.

This diagram shows that the main public views from the Hastings Central Business District, such as from the Public Library, the Steinschneider Parking lot or Main Street, are over the Northern part of the site. The Southern portion is overlooked mainly by private views, except for glimpses from Warburton Avenue. To protect the CBD's public short-range views only low density development should be proposed for the Northern portions of the site, and higher density development should be located to the South.

HUDSON RIVER







HASTINGS-ON-HUDSON

PALISADES  
STATE PARK

ORANGETOWN

ROCKLAND CO  
BERGEN CO

WESTCHESTER CO

Tower Ridge  
Yacht Club

Childrens  
Village

DOBBS

Hillside Sch

HASTINGS-ON-HUDSON

HASTINGS-ON-HUDSON

GREENBURGH

Pioneer  
Boat Club

Andrus  
Home

Graham  
Sch

Palisade  
Boat Club

Nepera Park

## 2. LONG-RANGE VIEWS

■ ■ ■ ■ ■ Area of Hastings with potential views overlooking the site (90° angle to the slope, 30° angle to the site)

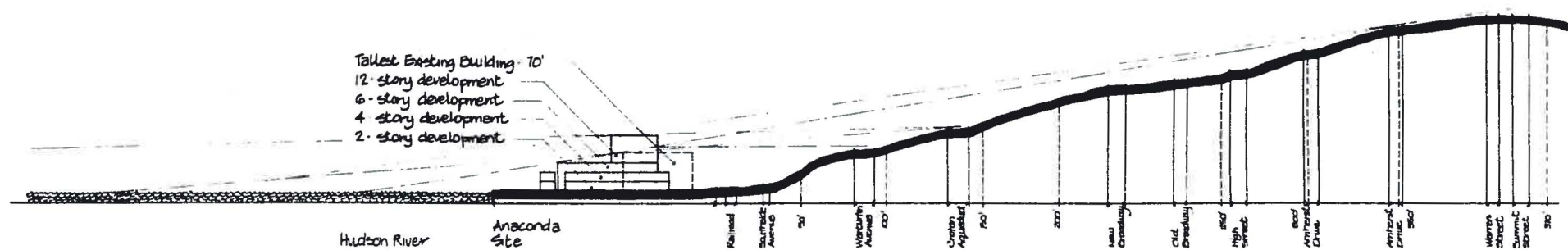
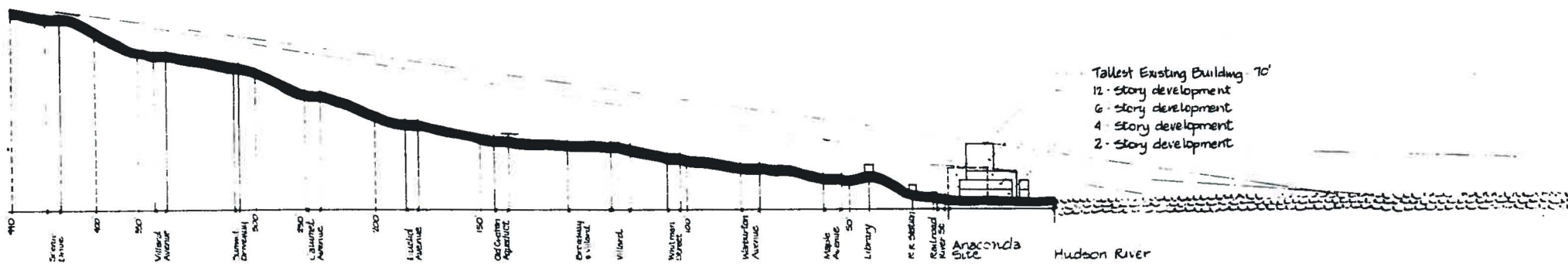


Lines of sections A-A and B-B through Hastings, as shown on following pages.

The map opposite outlines the general area of Hastings which has the potential for views directly overlooking the Anaconda site. These views could be affected by development.

Sections AA and BB following are taken through the two main hills in Hastings and show the line of view across the site. The vertical dimensions have been exaggerated to show more clearly the relationships between building heights and views. By drawing a straight view line from any point on the section, the effect of various new building heights on views can be determined and compared to the interference from the tallest existing building.







# **IV RECOMMENDATIONS**

# IV RECOMMENDATIONS

## A. PLANNING PROCESS

In order to intelligently guide the future development of the Hastings waterfront, the Village should undertake the following:

1. Public Education.

Citizens and public officials should become informed about the potential impact of new development on the Anaconda site. This process has been initiated with this planning study and report.

2. Definition of Goals.

From public education and discussion a consensus should be reached which will allow the Village to define its goals for the Anaconda site. The questions and the recommendations in section C of this chapter concerning policy decisions which are raised in section B should assist in this effort.

3. Evaluation of Development Proposals.

Using the procedures and tools for analysis which have been presented in this study, specific proposals for development of the site should be carefully evaluated in order to more precisely project their impacts and to determine if the proposals conform to the Village's goals for the waterfront.

4. Negotiation.

The Village's strength in negotiations derives from its ability to rezone the site for development. The objective of the negotiations should be to arrive at a plan which is mutually beneficial to the Village and the owner/developer. Several of the issues for negotiation are mentioned in sections B and C of this chapter. Other issues will arise as the project proceeds.

5. Zoning Changes.

Rezoning of the site by the Village is essential for

development to proceed. Two approaches to zoning should be considered: the discretionary approach in which the area would be zoned for "planned development" at a certain density with guidelines for site plan review; and the mandatory approach in which the site would be zoned as a "special zoning district" and the final site plan, with all of its controls and guidelines, would become a part of the ordinance. A final decision on rezoning should not be made until negotiations with a developer have been successfully completed.

## B. POLICY DECISIONS

The following issues, which require policy decisions by the Village, were raised in the course of this study. Many of the questions cannot be resolved until a developer is actively involved with the project.

### 1. Revenues.

- a. What level of net revenue does the Village wish to generate from development of the Anaconda site. Should the Village adapt to a lower level of revenues or encourage new development at a level which will equal or exceed the current revenue from Anaconda.
- b. Does the Village wish to maintain its present level of municipal services; should they increase or can they decrease.
- c. What would be the impacts of raising taxes.
- d. By what arrangement between the Village and developer will new amenities such as a river-front park, improved site access, or recreational facilities be constructed, paid for, and maintained.

2. Residential Development.

- a. Does the Village want to grow; how large and how fast. (What is the trade-off between higher density and higher revenues vs. lower density and lower revenues.)
- b. What income and age level or levels should new housing be aimed at.
- c. What bedroom-per-unit mix would be appropriate.

3. Office Development.

Should office development be encouraged on this site in preference to other locations in the Village.

4. Recreational Development.

- a. How much new parkland does the Village want.
- b. What types of recreational ammenities does the Village wish to provide.

5. Traffic.

What level of traffic increase would be acceptable to Village residents. (What are the trade-offs between more traffic and higher revenues vs. less traffic and lower revenues.)

6. Physical impacts.

Should the Village permit higher buildings on the site than are presently allowed under the zoning ordinance.

7. Tappan Tanker Site.

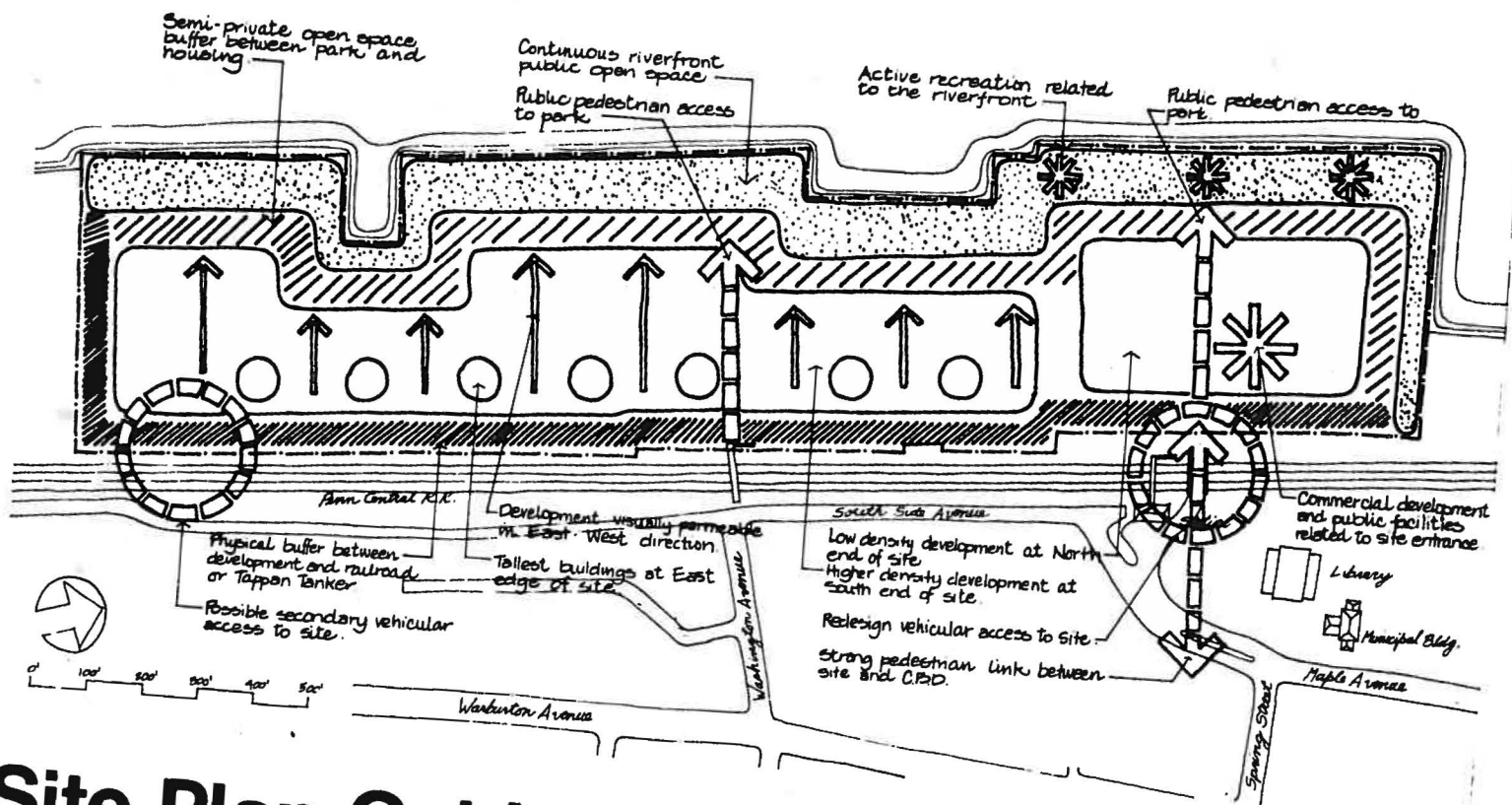
Should the Village encourage redevelopment of The Tappan Tanker site and if so, for what type of development.

### C. RECOMMENDATIONS

1. Any development should be integrated in every way possible with the Village; for example, through shared facilities, public uses on the site, and strong physical connections with the business district.
2. If Hastings is to grow it should try to do so in an orderly way, by phasing the development to avoid a sudden change of character.
3. Of the uses examined in this study, residential development appears to be most beneficial in terms of revenues, traffic, and compatability with the Village's character. Therefore the Village should encourage housing as the primary use.
4. Large-scale office development is not recommended due to the high level of traffic generated per revenue dollar.
5. Limited commercial development of convenience shops and waterfront restaurants is recommended, though not to the degree that increased demand would indicate. Absorption of most of the new demand by the existing business district should be encouraged. This could be facilitated by strong pedestrian and/or shuttle bus connections between the site and the business district.
6. The developer should be encouraged to deed a minimum of seven acres to the Village for a riverfront park.
7. Hastings should use this opportunity to expand and consolidate its recreational ammenities. New facilities should be public; shared by on-site and other Village residents.
8. The Village should consider encouraging the incorporation of the Tappan Tanker site into the development. If it is to be rezoned at all, it should be done in conjunction with the rezoning of the Anaconda site.

9. If a sizeable development is proposed, traffic recommendations include: redesign of the existing access bridge, intersection signalization, discouraging use of cars for trips to the business district, off-site parking for public facilities on-site, and a second means of site access.
10. It is strongly recommended that a thorough traffic analysis which takes into account the impact of winter oil truck traffic be made once a plan for development is proposed.
11. Site plan guidelines include the following (see drawing: "Site Plan Guidelines"):
  - a. Physical buffers should be placed between the development and the railroad, and between the development and Tappan Tanker.
  - b. Open space should include a continuous public riverfront park with adequate public pedestrian access; semi-private open space should buffer the public park from the residential development.
  - c. The development should be constructed with lower density and recreation facilities at the north end of the site and high density towards the south. Construction should be visually permeable in an east/west direction with higher buildings at the eastern edge.
  - d. Commercial uses and major shared recreational facilities should be located at the north end of the site with a strong pedestrian link to the central business district.





# Site Plan Guidelines