

Paul's comments & figures
On my Intro.

5-5-64

SITE-CAPACITY AS A TAX BASE:

PROBABLE LAND-USE IMPACTS IN MILWAUKEE COUNTY

by

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FIRST DRAFT

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I. Milwaukee County Background (continued)

C. Major Land and Fiscal Problems

1. Uneven utilization of the land's capacity

Many lots and acres in Milwaukee County are vacant: 46% of the land area to be exact, was "vacant or in farms" in 1958.¹ (More detail)

That would be of little moment if the vacant lands were entirely peripheral and without street improvements, but that is not the situation. There are 10,356 and 1961 196 sold in 1961 vacant lots in the County with street improvements in; and much of the vacant land, both lots and acres, is more central than other land which is developed and ~~improved~~ ^{exploited}. Vacant land is mixed in with improved. There is a great difference in the intensity of use of neighboring sites.

Any land in Milwaukee County is scarce urban land in at least two senses. First, urban demand has reached out beyond the County line, with fragments of Milwaukee broadcast over large areas of Waukesha County to the west and Ozaukee to the north, and in smaller measure over Washington County to the northwest and Racine County to the south. About 20% of the inhabitants of the Milwaukee SMSA now live beyond the County line, and 23.9% of the 1963 residential building in the SMSA was outside the County lines. ^{② higher % land cons.} Most land inside the County, therefore, is of premium location compared to much land currently being pressed into urban service. It sometimes seems that remote outlying land is actually preferred because of topography, exclusiveness, prestige, or other exotic factors. But, if that is so, it does not show up in market prices. As noted earlier, land prices per square foot decline in a steady gradient with distance from the CBD.

	MILW. Co.	Waukasha	SOURCE: METROPOLITAN BUILDERS ASSOCIATION. 1963 HOUSING STARTS
2. SINGLE FAMILY	2,326	1,507	
DUPLEX	414	38	
APARTMENTS	2,918	233	
TOTAL	5,658	1,778	

1. Cite Ball, Chas. . . .

how about other cities?
Traffic Quarterly 10-59 Table 1, p. 583

Second, urban demand blankets the County so that no acreage is available at farm prices. The minimum sales price uncovered in our survey from 1958-63 was about \$2,000 per acre, and most of the vacant land is higher-priced. There is a great deal of vacant land in the heart of downtown Milwaukee in the zone of highest land values. This land usually finds a sort of use for parking, but in this age of multi-story parking structures, a mere two-dimensional parking lot downtown is largely unused space. It is possible to build an entire building over, and basements under, a street-level parking area, as has indeed been done at E. Mason and N. Jackson streets.

The County in fact presents a typical example of mid-century American urban sprawl. Figure 1, an aerial of the Milwaukee-Greenfield city limits (Twsp. 6 N, Range 21 E, Sections 17, 18, 19 and 20.) shows a pattern w.s.w. from the CBD. It is miles inside the County line, and some ten or twenty miles inside that undefinable line that bounds the "metropolitan area." Within the area of four sections or square miles may be seen four-family apartments, single-family residences in planned subdivisions with their own streets, residences fronting only on section line and radial highways with minimal use of interior lands, vacant lots, and vacant acreage. It represents a sort of transition zone from high intensity to low, but is as remarkable for the interruption as the transition. The transition that could and seemingly should take place over a mile or so is stretched over several.

But vacant land is only the top of the iceberg of land abuse. Many "improved" lands are not made useful to the standard set by some of their neighbors, contemplated by their zoning, or seemingly appropriate to their location. That is implicit in the uneven betterment of and output from

adjacent and otherwise comparable lands: the broken skyline, and centrifugal CBD; the mixed-quality blocks; the patchy neighborhoods; the errant subdivisions. Over wide areas, the improvement of individual lots varies as much within blocks as among neighborhoods, -- an observation hereinafter called "Downing's Law."¹ Relative underdevelopment appears on several scales, indeed, from the individual lot up to whole municipalities.

Every parcel of land has a "capacity" to render useful services. The economic "capacity" is not the maximum possible output, for that would require the application of capital and labor until their marginal returns became zero. Economic capacity is rather the maximum excess of output over costs: what the Europeans call "rentability," the capacity to yield a net income.

The economic theory of combining inputs tells us quite clearly that in a perfect market the intensity of improvement and use of adjacent and otherwise similar lands will tend toward equality. (See Appendix.) It is possible for land to be misused both by overuse and underuse, and the net return to land can be reduced below its maximum in either way. Richard T. Ely went so far as to conclude that high and low buildings might exist side by side, each yielding the same net return to land, without evidencing any misallocation of resources. He was, however, failing to distinguish between the marginal returns and the average returns to resources. Between a low and a high building there are many intermediate heights. If it is economical to build the high one at all, it must be true that the marginal returns from the intermediate floors exceed their marginal costs. That would leave a higher return to the land under the higher building.

1. In recognition of research assistant Paul Downing's persistent attention to it.

If the high building is too high, and the low too low, then there is an intermediate height that is optimal for both. Capital should move from the overused to the underused site.

We need not dwell here on the issue whether the problem is "under-use" of the lightly-used land or "overuse" of the heavily used. There are elements of each, indeed the two are complementary halves of a whole problem. The essential evidence of misallocation of the resource is unevenness of use among neighbors. Let us survey the scene.

A fraction of the land houses, employs, and otherwise serves most of the people. It is also these hard-used lands that pay most of the taxes. Housing, to begin, preempts 31% of the County, but 1.1% of the County, or 3.3% of the land devoted to housing, houses about 20% of the people. That is the 1,700 acres occupied at densities above 25 families per acre. (Table I.) These are not slum densities, on the whole, for slums are largely two-story detached buildings which, crowded though they may be in respect to floor area and quality, are not that crowded relative to the land. These are, rather, apartments. A modern three-story apartment houses about forty families per acre, and 15-story high rises house correspondingly more. The newest luxury units along Prospect Avenue rise 20 stories and house 145 families per acre.

By contrast, 9% of the County (13,900 acres), or 29% of the residential land, verges on disuse. It houses about 4% of the people (families?) at densities below 3 families per acre. Actually, these figures understate the contrast a good deal because they are average densities based on rather large area units (census tracts?) within which lot-by-lot density varies widely. If we consider merely ~~the~~ individual parcels with 15-story apartments, 1,700 acres at that density would house 340,000 families, that is,

HP

the whole population of the County. At the other extreme there are some farms of several hundred acres with only one family. Or let us consider, without

going to the absolute extreme, the suburb River Hills, which zones for a minimum of five acres per family, - and is not half-filled at that density.

its population of 350 ~~hundred~~ families on 3,189 acres average 9.1 acres per

family, at which density the 303,500 families of Milwaukee County would require

3,761,850 acres, slightly less than the area of Connecticut.
4,315 sq. miles

Another small fraction of the land provides most of the basic employment. Manufacturing and heavy industry occupy only 5.75 square miles, or 2.40% of the County area of 240 square miles, a modest requirement for activities that pay 16% of the property taxes. Industry would require a good deal less land than that if all plants employed as many men on a few blocks as the following multi-story plants, all located well outside the central area: Briggs & Stratton, 2700 N. Teutonia; Allen-Bradley, 1200 S. 1st; Johnston Baking Co., 2800 W. National; Cudahy Packing, 4700 S. Packard; Nunn-Bush Shoe, 2800 N. 5th; A-C Spark Plug, 2100 N. Prospect, A. O. Smith, 3900 N. 27th; or American Motors, 3900 N. Holton.¹

When industrial plants in the city of Milwaukee are ranked in order of employees per acre, it is discovered that the most labor-intensive _____

1. Some other multi-story plants are: American Paper and Plastic, 4425 N. Port Washington rd.; Globe-Union Centralab, 900 E. Keefe ave.; Paul-Lewis Labs, 4215 No. Port Washington rd.; Lakeside Labs, 1707 E. North ave.; Trostel Tannery, 1776 N. Commerce st.; Gallun Tannery, 1818 N. Water st.; Pfister & Vogel Tannery, 1531 N. Water st.; Cornell Paperboard, 1514 E. Thomas avd.; Harnishfeger Corp., 4400 W. National ave.; Miller Brewery, 4000 W. State st.; Mid-States Shoe, 539 W. Wright st.; and many others.

acres employ _____ men (at an average intensity of _____ men per acre.)
 In percentages, the most intensive _____% of the industrial acres employ _____%
 of the men.

Ranking the plants by output per acre, the most intensive _____
 acres, of _____%, produce _____ of the gross output, and _____% of the value
 added.

One of the more intensive operations is that of American Motors
 at N. Holton and W. Capitol. It covers about 20 acres and employs about
 12,000, including supervisory. That is an intensity of about 600 men per
 acre, 3,000 per five-acre block, or 384,000 per square mile. At the American
 Motors standard, one square mile would employ 384,000 men, and 5.75 square
 miles, the area actually devoted to manufacturing and heavy industry, would
 employ 2,208,000 men, over twice the population of men, women, and children
 in the County. Putting it the other way, at the American Motors standard
 the 141,545 ^① men who actually are employed in manufacturing and heavy
 industry in Milwaukee County would need only 0.37 square mile, or 1/155
 of the 5.75 square miles they actually cover.

There has been concern lest enough industrial sites were being
 reserved for industrial growth. Yet there are 22.7 square miles zoned
 for industry in Milwaukee County, and if that were worked as hard as American
 Motors' 20 acres -- whose location, recall, is by no means central -- the
 County would employ 8,716,800 workmen and be without rival the greatest
 beehive of industrial activity in the world. But of course the fact is that
 the few oases of concentrated production and employment and fiscal surplus
 are studded about in a relative desert of torpor and fiscal deficit.

① Stefaniak data cards

One can only conclude that most of the land available for manufacturing and heavy industry, scanty though the area is, is used much less intensively than the better known places. This is confirmed by inspection of land use and zoning maps. (Add detail.)

Another large class of underused land is institutional (and completely tax-exempt.)

(Add section with detail.)

Among lands zoned and/or well-situated for commerce, the same kind of problem obtains.

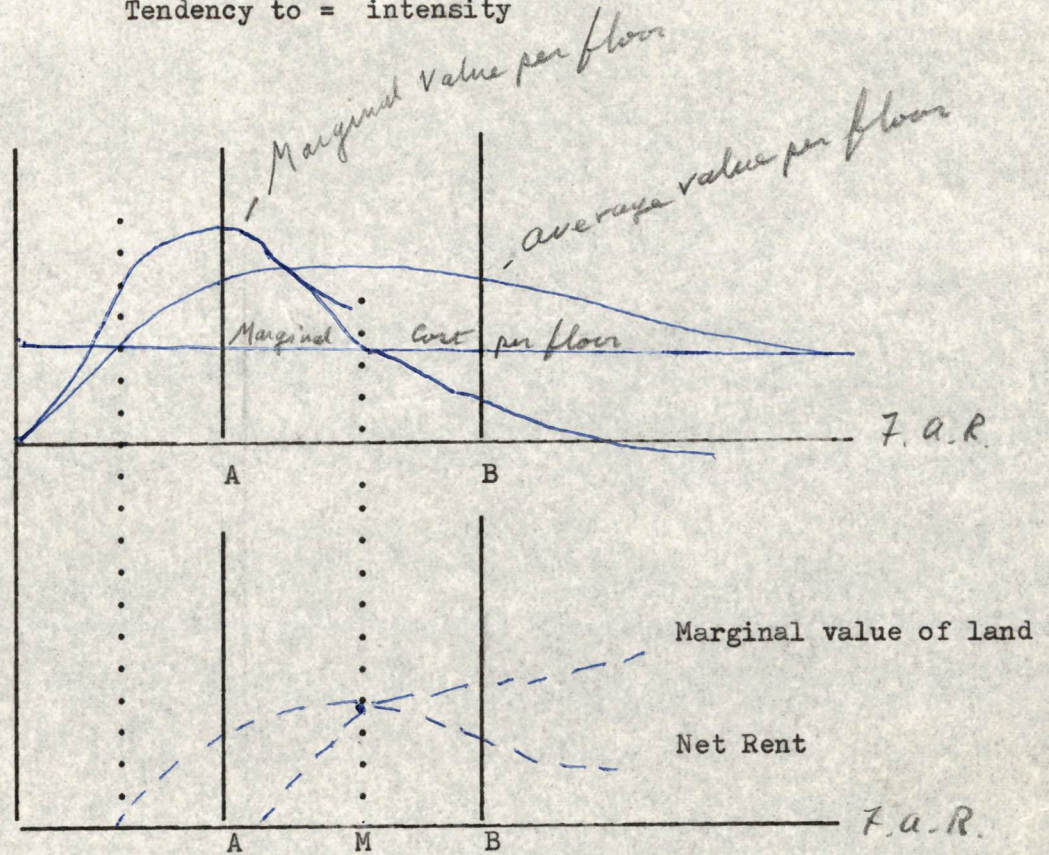
(Add detail. Mention preemptive buying; assembly problems, etc.)

The areas involved are less impressive, but prime commercial sites partly compensate in unit value what they lack in dimensions. A 100 x 125 vacant lot near the 100% location, at about \$25 p.s.f., represents about \$300,000, or 500 lots of the same size at \$2,000 an acre. Each vacant or derelict acre at \$10 p.s.f. measures in at over \$400,000, and equals the value of 200 acres of the \$2,000 class. While the number of vacant acres at \$25 p.s.f. is small, there are many at \$10 p.s.f. in the CBD, and at a few strategic secondary nodes scattered through the denser peopled areas.

APPENDIX 1.

Tendency to = intensity

Method A.

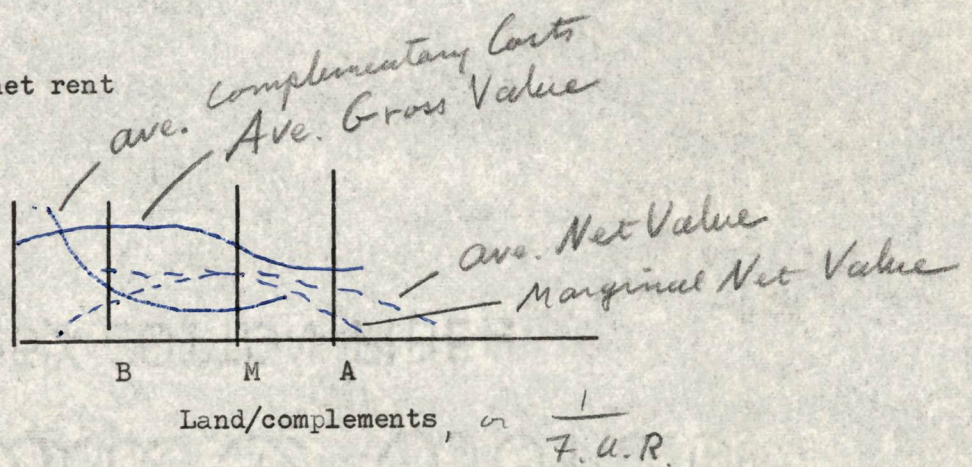


A = Underuse

B = Overuse

M = Maximum net rent

Method B.



Land/complements, or $\frac{1}{F.A.R.}$

SITE-POTENTIAL AS A TAX BASE:
PROBABLE LAND-USE IMPACTS IN MILWAUKEE COUNTY

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F I R S T D R A F T

Installment No. 1
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Site-potential as a Tax Base: Probable land-use impacts in Milwaukee County.

INTRODUCTION

The use of site-potential as the base for real estate taxation was a burning issue in this country and abroad for many years before the First World War. The movement scored a few electoral successes -- in Denmark, Australia, New Zealand, western Canada, the Irrigation Districts of California, and elsewhere -- and, where it lost, still often won concessions from assessors who brought up their land valuations to meet or forestall criticism, or because they themselves believed in it. The idea tended to travel with the Progressive Movement, and, like that Movement, succumbed to the postwar return to Normalcy. The New Deal synthesis, by no means a carbon copy of Wilson's New Freedom, excluded the idea almost entirely.

Economic analysts on the whole flagged in interest in tune with the times, so that now two generations of economists have shattered old icons, and embraced new, without much relieving the general ignorance of this subject that had become ritualized by 1920. Recent economic literature may give one a nodding acquaintance with the idea as an abstraction, but none at all with its practical application in the age of freeways, or any age. The issue has been, for most economists, dead and buried.

Now it seems the obsequies were premature. The last five years have seen an unexpected revival of popular and professional interest in the use of site-potential as a tax base. In part this is a reaction to the disproportionate inflation of suburban land prices after 1950, with land assessments lagging far behind price increases, and new buildings carrying the major tax burden. In part it is a general malaise over the inefficacy of the social reforms of the 1930's to contain urban sprawl or check the inexorable spread of blight. In part it is the recent rapid increase of real estate taxes which has raised them over the "squawk threshold," and heightened the need to levy them on a base which cannot leave town. In part it is the rise of tax rates generally, with a concomitant popularization of the sport of tax-avoidance that has left few scoffers unconvinced of the force of taxation in perverting economic motivations. And in part it is the growth of a new generation seeking, as all generations, to write its own economics from its own experiences.

The revival of interest has long since reached the point when many responsible officials and consultants are asked, and asking, just what would happen if the proposed change were wrought: if real estate taxes were levied on site-potential regardless of present structures and uses. They seek in vain for much professional economic guidance based on modern conditions and modern analytical techniques. This monograph purports to fill a part, at least, of the need, by seeking to foretell the likely land-use changes that would follow from use of site-potential as a tax base.

The monograph covers a broad subject by focusing on only one of its many aspects. It avoids as much as possible embroilment in the more incendiary and subjective ideological aspects, like fiscal equity, or intergovernmental relations. It illumines only incidentally vital questions of capital-output ratios, public vs. private investment, and aggregate economic activity. It limits itself simply to laying out the specific, objective effects on land use that would follow from levying local real estate taxes on site-potential ^{alone} instead of, as now, on site and building combined.

That is a sufficient task, and a useful prerequisite to broader discussions which hopefully will follow. For if half the cacaphony that has sounded about this issue manifests only discordant premises and incompatible grand ideologies, the other half betrays sheer technical uncertainty of what is being proposed, and what it would effect. This monograph seeks harmony by restricting itself to a range of objectively resolvable questions of the form "If this, then that." Whether the results are on the whole mellifluous is another question which individuals will answer according to their lights. The objective method guarantees no infallibility, and reflects no lack of concern, but it does reduce the scope for error. If it serves to clarify the issues involved, it will serve its purpose.

The narrow and specific focus of the present monograph should not blind us to the wider implications of the subject, which ramify throughout all of economics. Probably the most ~~exciting and~~ important of those is the effect on the enormous construction and allied industries, and of course the indirect reverberations of such effects throughout all business and employments. Exempting from taxes the products of the building business

a stimulus to invest

would obviously constitute quite ~~an economic stimulant~~, a 2% yearly tax on buildings being roughly the equivalent of a ³⁶~~2%~~ lump sum sales tax on a new building ^{and 3% = 54%} *on aggregate investment*. Yet the net aggregate impact of a change to the site-potential base ^{the site tax} is not so simply discerned, for ~~it~~ would also tend to consolidate settlement and thus reduce the volume of investment in transportation and utility extensions. Which of these effects ^{on aggregate investment} would prevail is a question the macro-economist cannot answer very well without benefit of some micro-economic and land use studies. And so the present study should hopefully serve as background to later wider-ranging aggregative studies, and that would be one of its highest potential uses. Meantime, it should have uses enough at the local level where the issue is most often drawn today.

I. Milwaukee County as a testing ground.

Milwaukee County on the whole is neither better nor worse than several other testing grounds on which the probable results of taxing site-potentials might be traced out, and that representative quality is precisely its virtue for the assignment. It is an average sort of metropolis in many ways, as to size, age, rate of growth, vigor, conservatism, percentage of home ownership, divisiveness, concentration of wealth, sprawl, taxes, minorities, budgets, standards, etc. It is even representative in that it cherishes its idiosyncracies.

Milwaukee County's greatest virtue for study is the way it wears its heart upon its sleeve. Milwaukeeans love to talk Milwaukee, and their newspapers, governments, and citizens' groups cater to this garrulous civic disposition with a heavy factual diet. Milwaukeeans like to keep a clean house, and they watch their public officials with suspicious and piercing eyes. There is, indeed, a gnat-straining quality in Milwaukee's civic rectitude, with more ado over petty pilferage than grand misdirection, but the civic character at least manifests a basic honesty, and generates the data by which

to judge and correct itself. ~~Where essential facts are accessible, pettiness can be ignored and obfuscation dispelled. Milwaukee offers us no ready answers, but a fair chance to find them.~~ Public officials here rank high in professionalism and probity, *which minimizes any defensive secrecy.* ~~by any national standard.~~ Many of them have cooperated gladly in supplying the grist for this study, and encouraged it in many ways.

Milwaukee County analysis is facilitated, too, by the relatively small number of suburbs, 18 in all. *(There are more outside the county.)* These run the usual gamut of suburban types, from an industrial enclave like West Milwaukee to *an exurbanite* ~~a mink and manure~~ subtopia like River Hills, but in few enough numbers that the analyst need not be drowned in detail.

A. Representative trends and problems.

Milwaukee County manifests the same trends and problems as all modern municipalities, differing only in degree. Let us note those trends that most bear on our study.

- - - decentralization and disintegration. Milwaukeeans joined the nation in the suburban flight, and the building and land booms after World War II. A few unfinished suburbs, notably Whitefish Bay, filled out compactly in this era, but elsewhere the boom strewed itself in bits over the whole County and its neighbors. Industry, commerce and institutions accompanied the movement, and highways and utilities perforce were extended too, the outer lines being modernized and enlarged as a rule before the central ones. Central areas underwrote the expansion in several ways, supplying the capital, and bearing the deficits of extending transport and utilities. New buildings outside the central city escaped the fiscal deficit areas of the old city behind them, but assumed the load of duplicating the city's social overhead capital.

---immigration. The inventory of old houses seeking resale created a low-rent vacuum to attract rural low-income immigrants, among whom southern Negroes are conspicuous. The Negro ghetto burst its northern dam and coursed nearly to Capitol Drive, the secondary east-west axis of Milwaukee, with appreciable block-by-block mixing on the expanding fringe. There are even about 200 Negro families sprinkled in the blocks northwest of Capitol Drive and Sherman Avenue, an area of postwar buildings. But on the whole, Negroes live in houses built before 1920, and it is the urban sprawl of that time that accounts for much of the neighborhood integration of today. Density about held its own, but with growing vacancies in the "inner core." Building values tapered off as buildings aged and obsolesced, lost their insurability, or made way for parking lots and expressways, and land values weakened as neighborhoods deteriorated, but immigrant demand for cheap rentals maintained a floor under values, *of old buildings* forestalling abandonment and renewal.

---recentralization. By about 1960 the suburban boom lost its vim as high land pricing and restrictive suburban zoning conspired to price detached homes out of the market, and old homes lost 15-20 per cent of their resale value. *The vim reappeared in* ~~It was replaced by~~ an apartment boom that could bear high land prices. Many of these apartments are walkups in units of 4 - 20, scattered almost as widely as the detached dwellings, where zoning permits. But elevator apartments and some walkups can bear the cost of demolishing old houses and so have revived building near the central city. New high-rise apartments on the near north-east side and the near west side give those neighborhoods the city's highest per acre population densities and residential land values, reversing the trend toward lower

densities [and belying any correlation of density with poverty.] By 1963 the expressway system, which was built from the outside in, began to reach downtown and acquire land to loop it, while downtown was beginning more new office space than in any year since the 1920's, clearing large acreages under Urban Renewal and Public Housing, experimenting with assessment freezes to spark renewal, enlarging its utility line capacities, and in general going through a second childhood. Recentralization has not quite reached the center, as the CBD grows north, south, east and west while the old 100 per cent location around Third Street and Wisconsin Avenue sleeps on. There is even some incipient revival of central area industry, in the "lower Third Ward" renewal project on the southeast of the CBD, although industry is reviving only weakly, and storage and wholesaling not at all.

B. Idiosyncracies

While Milwaukee County obviously has been following national trends, it has its *localisms* ~~peculiarities~~. Let us note some of them that bear on our subject.

---strong county. Revival of county government to provide metropolitan government, so often advocated, has quietly occurred in Milwaukee. The County presides over parks, recreation and culture, sewerage, *airports,* health and welfare, expressways, etc. It budgets nearly one-third of local spending and levies nearly one-third of the real estate tax. This creates a motive towards competitive underassessment. Local assessments are equalized at the county level, but zoning is locally controlled and competitive underassessment takes the form of competitive underzoning and delayed subdivision, whereby municipalities sacrifice immediate resale values in return for lower county taxes, making a sort of community project out

of land speculation. The strong county permits of an ample park and recreation system, free from the usual restraint of municipalities fearing exploitation by outsiders, amounting to 4.1 acres per 1000 population in the city and 23.1 in the suburbs. Most of the lake front in the city and southwards to the Oak Creek line is publicly owned, so that private riparian rights are not as great a factor in land value there as in Chicago, for example.

---complete incorporation. Every square foot of land in Milwaukee County is now in an incorporated municipality, a circumstance not unique but a little unusual. Some of the suburban jurisdictions are primarily to be regarded as preclusive or defensive incorporations, however, to fend off the city, its compulsory services, its people, and its taxes. Forty-six per cent of the county area is vacant or in "farms." Much incorporation and annexation is so recent that the areas' development has gotten well started without benefit of municipal services, and shows it.

---strong central city. Milwaukee, with 750,000 population, is indisputably the central city, eleven times more populous than its nearest rival, West Allis, and with eight times more land area. Blocked on most boundaries by suburbs, it has broken through to the northwest and annexed vast empty territories, in the line of fastest growth. Despite its liability of aged central buildings and deficit fiscal areas, its per capita tax base is higher than several suburbs. Its city schools have managed to remain well above the blackboard jungle level, with per pupil expenditures of \$434.64^①, better than the blue collar suburbs of Cudahy, South Milwaukee, and rich West Allis, and 2/3 as high as the "lighthouse school" districts of Shorewood and northwards. The lion's share of new industry is being built inside Milwaukee, in spite of its

① Milwaukee School Board, Annual Report 1963

high tax rate, because of its superior services, superior land, and receptive zoning. The city contains the two major higher educational institutions, Marquette University and UW-M, the latter in a stage of extremely fast growth. It contains the stronger two of four postwar regional shopping centers and most of the smaller ones. Rail, water, and highway routes focus unambiguously on its CBD, around which the Interstate Expressway system will form a loop with many local access ramps, in contrast to the sterility of limited access at other junctions. The city has a history of building inspection stricter than the national norm, which has helped limit blight and release sites for renewal.

---simple jurisdictions. Milwaukee County has a simpler major jurisdictional structure than most other large metropolitan areas, most of its school districts following the lines of its 19 municipalities, as shown in Figures 1 and 2. The county school board can initiate consolidations, subject to majority approval in the proposed consolidated district. Thus, West Allis has succeeded in tapping the surpluses of the tiny industrial fiscal enclave West Milwaukee, while posh River Hills has joined with almost-as-posh Bayside and Fox Point, and industrial-enclave Glendale, forestalling consolidation with its poor and populous western neighbor, Brown Deer. But those are exceptions; congruence is the rule.

---shared state income taxes. Wisconsin municipalities receive a share of state income taxes. Many Milwaukee suburbs therefore levy only nominal real estate taxes, although Milwaukee City still requires a real rate of 1.2%, on top of another 1.3% for schools and yet another .9% for County. Since many suburban municipalities subsist mainly on shared state income taxes, school districts and the County consume the bulk of suburban real estate taxes, and so municipalities in consolidated school districts feel a strong impulse toward competitive underzoning and

forestalling of subdivisions, which may help account for the five-acre minimum residential zoning of River Hills. River Hills is in consolidated elementary and high school districts, but convenient to two excellent private day schools and parochial schools, which many of its children attend. Real estate taxes are largely an unrequited export ^{to the County,} and the municipality has every motive to minimize its tax base.

---comparable per capita tax bases. Per capita tax bases range from ~~\$3,500~~ ^{\$18,500} in St. Francis to ~~\$18,000~~ ^{\$18,500} in West Milwaukee, (Table 2), ^{with a mean of \$4,700} This compares with a range of 4,030 to 19,800, found in Allegheny County by Pickard. There are no really desperate orphan areas in the County. Even the plight of St. Francis is temporary, this being a thwarted power plant parasite, which lost its plant by a change of the state allocation formula. It will probably join Milwaukee soon. The importance of the County meliorates inequalities, of course. The tax sharing formula also helps in one way, because real estate income is shared with the municipality of the site, rather than the owner's residence, which helps Milwaukee City and the industrial suburbs. The corporation income tax is also shared. On the other hand, in an important sense the per capita bases differ more than shown, because the equalized values shown for the rich north shore suburbs are much below the latent values suppressed by their low-density zoning. And many recent low-equity buyers, usually in humbler new areas, are in trouble from having underestimated future development costs and bought unwisely at overinflated land prices. They are now hard-pressed to pay taxes plus debt service.

---historical decentralization. The second automobile boom did not put as great a strain on Milwaukee as on many cities, which helps account for its slow building of modern expressways. Decentralization had already preceded it. Major employers, export-oriented manufacturers with few

linkages, had led the flight out decades ago, taking their front offices with them. The Milwaukee CBD has long been weak, containing only 5% the assessed value of the city, and even today there is no terror in rush hour traffic. The shadow of Chicago, 1¼ hours away by train, hangs heavily over the CBD, inhibiting many specialized functions that would burgeon in a more isolated metropolis. The city's trade territory is perforce small, and oriented northwards, (which is also the direction of dominant growth); storage and wholesale commerce and the professions are weak. The city is a large machine shop, brewery, and insurance underwriter, in the Chicago orbit. The CBD is further weakened by its eccentric lake front location. As the center of population shifts westward, the CBD is pulled apart. Its centrality is further weakened by the predominance of northern over southern growth, which gives Capitol Court, at Fond du Lac, North 60th and Capitol Drive, a growth advantage hard to deny, the more so as city annexations and utility extensions proceed northwestwards while most of the south is held by adamant septic-tank suburbs.

---linear patterns. Peripheral retail strips developed strongly as secondary centers in the old Milwaukee: North Third Street, Mitchell Street, Vliet Street, North Avenue, South 16th Street, Greenfield Avenue, and others, accompanied by a policy of strip commercial zoning whose excesses can only be conveyed in superlatives. Strip zones shoot out on a score of radials and cross-town section-line ^{avenues} roads. The thought seems to be that anything financed at a higher level of government for through traffic will be a wider, better street and should be commercial. Even the CBD is essentially linear, evincing more strength 25 blocks west on Wisconsin Avenue than one block north or south of it. Industrial zoning is also linear, following the rails, even today when many new plants use no railroad service, and even

many plants with sidings no longer use them. The lake front, too, exerts a strong linear influence on settlement. As far as zoning permits it, the lake front is the densest settled area. North of the high-rise zoning, it is true, density is distinctly lower along the lake front, but only on a micro-scale inside each north shore suburb. On a macro scale, the shore suburbs are denser settled than their western neighbors, Glendale and River Hills. On the south side, the shore line sector is populous while the neighboring sector to the west is another howling wilderness.

---low range of land prices. Linear decentralization and commercial overzoning have produced a surplus of scattered commercial frontage so that no area has an enormous advantage over others. Single family residences compete with commerce for frontage on many busy streets, so low is the premium for commerce. Underdevelopment of many choice sites has diverted demand outwards and diffused values over wide areas rather than focusing them in well defined specialized high-intensity commercial zones. That applies as well to high-rise apartments, the next in the hierarchy of land uses, and to those still numerous industries, distributors, institutions, service and storage and supply and exchange and congregation and assembly functions which favor location with good general access. Sharply defined *steep* high gradients of change of land prices are found only *in a few areas* around Wisconsin Avenue; on the near north-east side, declining westwards from the lake bluff back down to the river; and on the near north side, the older southern end of the negro ghetto, where deep sinks in the land-value surface are found in residential wedges among converging radials, contrasting with highs on the radials themselves. Elsewhere, prices stay within a narrow range over wide areas, punctuated by special zoning or major crossroads, or the importunate expansion demands of a settled institution or industry. The

lake front premium one might expect is neutralized by low density zoning in the north, and County parks on the south. In general, unit values simply slope off gently with time-distance from the center in a surprisingly uncomplicated macro-relief, from \$5 a square foot just off the high rent ^{CBD,}

district, down to values around 2½¢ a square foot, or \$1,000 an acre, in the "farm" areas (Fig. 3). ^{The percentage difference, to be sure, seems a large (one)} Negative neighborhood influence is paramount in

some blighted areas, but by and large is overborne by higher central densities, so there is no major trough in the grey areas. ^{only} The ~~major~~ ridge

intruding in this gentle declivity is the secondary east-west axis of

Capitol Drive, 32 blocks and 4 miles north of Wisconsin Avenue. ^{Capitol Drive}

---strong public transit. (Question: how reconcile with decentralization?)

is the first unobstructed east-west artery north of North Ave. which has become badly obsolete and congested, and the last until Silver Spring, which is still new territory, so Capitol Drive has inevitably become something of a phenomenon, with its own major industries and commerce and offices.

one between those two figures. It is even larger if we compare $2\frac{1}{2}$ psf with the small area along Wisc. Ave. near the Milwaukee River where land values run up to \$30 psf, or 1200 times more.

But such contrasts are an urban commonplace, and Milwaukee's range is low relative both to what it used to be, and what still obtain in other cities where CBD values mount as high as \$200 psf.

b. Contact with people, goods, and facilities, for sociability, exchange, stimulation, education, etc.

Many people vying for land accessible to basic urban attractions are in a sense in competition and conflict. The wonder of cities is that their proximity becomes more asset than liability. Indeed, the original locational forces may weaken and the city remain on location from the inertia of established economies of congregation.

Disintegration is the denial of access and contact, the antithesis of the essence of the city.

Ed. Ullman's thesis on increase of city efficiency with scale. Scale is lost through subnucleation. J. H. Denton on cultural poverty of English New Towns. Struggle of Fred Miller Theatre, saved by provision of CBD stage. Other illustrative examples.

Neighborhood provincialism in Milwaukee. Aggregate purchasing power never brought to focus to support outstanding facilities. Neighborhood isolation defended as increasing variety, but it does the opposite. There is an essential dull uniformity, marked by only minimal diversity. Low common denomination^{ors} of taste are all the neighborhood markets are big enough to support. Many of them offer no more options than a country town of 20,000. The diversity, the indulgence of individuality of a live CBD is denied. Thus, Milwaukee not taking advantage of its size.

Industrial provincialism. Industry¹⁰ so far from CBD^{that} few have offices there. Is that because they have no need for contact with each other? On contrary, subcontracting is the s.o.p., and custom work requiring high degree of coordination among firms.

A large share of metal working and allied firms export little directly, but sell to other firms in Milwaukee. They make dies or supply die-makers, supply steel, or hoists, electric motors, conveyors, displays and supplies, drafting and supplies, bearings, bronze, copper tubing, gray iron castings, forgings, industrial hose, elevators, material handling equipment, metal [cleaning and equipment, cutting, cutting shears, cutting tools, fabrication, finishing and equipment, powder fabrication, specialties, spinning, spraying (or "metalizing") and equipment, stamping, etc., ad. inf.] There are tool designers, tool makers and supplies, tool grinding and sharpening, hardening, etc. There are firms in enameling, cylinders, cranes, copper, controls, data processing, chemicals, bushings, boxes, plating, wheels and casters and dollies, abrasives, acoustics, dust control, adhesives, air compressors, aluminum (ingo, sheet, rod, bar, wire cable, shapes, tubing, pipe, conduit, castings, extrusions, forgings) automation systems, industrial balancing, containers, belting, blowers, boilers, fasteners, chains, coatings, foundries (aluminum, brass, bronze, and iron) foundry equipment and supplies, industrial furnaces, galvanizing, gaskets, gates, gauges, gears, glass, grinding and supplies, heat treating and supplies, hydraulic machinery, impregnating metals, jacks, janitors and supplies, jigs and fixtures,

fencing, junk and scrap, ~~collectors~~, testing labs, lathes, lead burning, lift trucks, lighting, lithography, locks, lubricating, machine shops, machine tools, cams, machine tool repairing and rebuilding, general machinery, machinery moving, magnets, nameplates, screws, nuts and bolts, office furniture and equipment, fuels, oil seals, cutting oils, industrial ovens, oxygen, packaging and machinery and materials, packing and materials, paint, paper products, patent drawing, pattern makers, pipe (threading, ~~binding~~, cleaning, covering, fitting, hangers, used,) layouts, plastics, (extruders, fabricating, finishing, decorating, fabrics, films, sheets, foam, high pressure laminates, molders, rods, tubes, vacuum forming,) pneumatic tube systems, power transmission equipment, presses, pumps, racks, refractories, relays, resistors, rivets, rubber, rubbish removal, safety devices, safes, sand blasting and supplies, scaffolding, scales, schools of technology, scrap iron, screening and sifting, screw machine products, screws, o-ring seals, industrial sewing, pulleys, sheet metal (products, fabrication, and work) shelving, shipping room supplies, skids and pullets, slings, smelters, smoke stacks, solder and fluxes, solenoids, solvents, speed reducers, spraying equipment, springs, stapling equipment, ~~xxxxxxx~~ steam cleaning, steel, power sweepers, electric switches, tags, tank linings, tanks, testing apparatus, thermometers, thermostats, industrial threading, timing devices, tinning, tools (designers, grinding, hardening, makers, makers' supplies, salvage, steel, carbide, cutting, electric, pneumatic, powder actuated, repairing) technical translators, industrial trucks, tubing, tumbling, industrial vacuum cleaners, valves, vibrators, warehouses,

rental floor space, wrought-iron washers, wasterpaper and salvage, watchmen, welding, welding equipment and supplies, wire, wiping cloths, wire products, wire rope, management consultation, engineering consultation, appraisal, labor relations, plant security, finance, insurance, and a hundred general services, and the whole range of building and construction. Of course, let us not take for granted the availability of water, streets, gas, power, telephone, flood control, pest control, public health, schools, police, fire protection, libraries, rail and water access, airports, street lights, and - well one must stop somewhere. The point is, urban location means something.

That all constitutes quite a range of options in industrial supply. A man with nothing but an idea could, in such an environment, conceivably have it materialize using nothing but hired inputs. Many firms, indeed, do buy most of their components. They are selling the value added by design, assembly, and engineering, storage and salesmanship. This is an ideal milieu for a competitive system to flourish. Capital requirements for entry are minimized.

It is especially important to have the services nearby. Goods are movable fairly cheaply. Moving people is costly. Moving cheap inputs is also costly: cheap labor, scrap, etc.

By passing middlemen is easier when everyone is nearby.

Buying small items in small numbers from far away runs into big cost. Must come by common carrier as part of a load. That requires: packaging; draying to terminal (or special pickup); unloading; storage and handling, and assembly in

terminal; loading; moving; unloading; storage, handling, classification in receiving terminal; loading, drayage, unloading; unpackaging; inspecting. It is ever so much handier to get many little items by pickup truck from local suppliers without formality.

Map location of some industrial service and supply specialists. Steel fab. Note how many carry "full line" - how few specialize. Consult Stefaniak study. Put steel fabrication and steel distributors on one map, in two colors.

Tool complex map: designers, grinding and sharpening, makers, makers' supplies, salvage, tool steel, tools (general, carbide, cutting, electric, manufacturers, pneumatic, powder actuated, rental, repairing and recondition, used.) Perhaps with transparent overlays.

Not scattered because there is no central land remaining. Recall problems of selling lower 3rd ward, etc. Not scattered because everything else is - that is circular.

Aspects of industrial supply. Many are ^{marginal} management firms, low overhead, part time character. Serve important functions. Provide flexibility - carry peak loads, survive with low fixed costs during slow periods. Non-union, non-institutionalized, free from cost-multiplying work rules, seniority, etc. Provide medium whereby minority and other excluded workers can make contact with the market, salvage the unemployed. Specialize in odd components and parts, undersell major firms.

Major contractors cannot well buy from such firms if they are far away. Their continuity and reputation are unsure, must be known from personal contact. Major go to Minneapolis, Chicago, or Cleveland for components of high value from nationally reputed firms or unassailable patentees, at high prices plus freight and delays. They can do better from a marginal in their own city - if they know the supplier well enough to take the chance.

But a buyer in Oak Creek is nearer Racine than north Milwaukee industrial areas, and is unlikely to know much about either. They are no longer in the same economic city.

9 Thus the south side buyer has the options of half the city, and less, because the south side is also split and scattered. He goes shopping in less than half the counters, *disposes over* less than half the services and equipment that the full city has to offer.

Neighborhood provincialism is accentuated by physical barriers, especially the wide part of the Menominee Valley and the Milwaukee River. Low population density accentuates these barriers. Downtown, e.g. the Milwaukee River barrier is bridged at every street. But north of Van Buren, bridges become a scarce commodity and the river constitutes a real barrier.

Rail lines are another barrier where population is sparse. The CNW tracks, e.g., are bridged at almost every street as they traverse the densely populated close-in East side, but badly disrupt auto circulations as one proceeds northwest. Same on south side. Some areas are horribly chopped up in this way - the northwest area especially.

The broad Menominee Valley poses a greater problem, where it broadens west of 2nd street. Failure adequately to bridge it is one of Milwaukee's major liabilities. Here the declining population density is compounded by the large number of rail and water crossings to contend with. But this area which should be the industrial axis of Milwaukee is neither that nor a passageway. It is not only a barrier but an industrial cipher. It favors neither north nor south, but is hardly linked with either.

Motor access is remarkably bad from either bank. No doubt there are several factors at work, including the hostility of rail and water interests to trucking. But a major problem is the diversion of capital improvement funds to peripheral areas, and the thinning of population along the Menominee, to demand and justify expanding ^{bridging} ~~bridging~~ and motor access. To be sure it has rail and water access, but labor, Milwaukee's greatest resource, comes by street, and streets are lacking.

Another such barrier, of growing importance, is the expressway. Near in, Expressways are overpassed at short intervals, but farther out this grows prohibitive. The frequency of overpassing does not fall off as fast as the intensity of overpass use, because there is an institutional bias in that direction. But that only means that part of the cost of sprawl is borne by the center, whose needed improvements are sacrificed to the outskirts.

Power Lines. In midtown they are buried, but at low density they go onto huge aerial rights-of-way. ✓

Large landholdings - golf courses, airport, cemeteries, parks, institutions with park-like grounds, and a few large industries. It is not that these should ^{not} exist at all, (necessarily,) nor be traversed. But if they cannot be traversed they should be out of the way. Sprawl requires that they either be (a) removed too far out to be accessible, or (b) be in the way. We have on the whole taken a little of each solution.

Telephone. At high density, buried, but at sprawl density elevated and unsightly - a visual barrier.

The effect on social and cultural life is quite stultifying. Halls for hire as an example, small, unspecialized, scattered, underutilized. Specialized restaurants - c'est a rire - reliable standard fare. Theater - avant garde cant's quite make it, road shows survive with popular musicals. Radio - TV: sparse population raises cost of reaching given population, limits number of specialty stations. Newspapers - high distribution costs limit numbers to a municipality, plus vacuous neighborhood rags. (This may be good to epitomize whole thing.) Music - can't mount a major symphony. Churches - standard brands primarily. Every walk of life, cultural poverty, limited options, low common denominators, low stage of specialization. Associations on basis of propinquity rather than common interests. Suppression of talent of gifted children.

Association of knowledgeable specialists for mutual stimulation is again seriously hampered by urban disintegration. Map location of hospitals and allied specialists.

2. Urban disintegration

The counterpart of the indolent acres is dispersion of the busy ones. Urban buildings including apartments and factories and stores, are found from one county line to another. Fig. 2 is an aerial photo of 92nd and Silver Spring showing apartments, and all the land is priced for urban use. Yet of 19 municipalities in Milwaukee County, only two are completely filled out, and Milwaukee City is not one of them. Those are Shorewood and Whitefish Bay, with densities of 10,000 and 9,000 psm, the highest in the County despite their being villages of predominantly single-family residences. Compact as they are, even these municipalities are sparsely settled east of Lake Drive., -R. Wenzlick having recommended to Shorewood increased density, and new apartments at Oakland and Capitol increasing density to 9,994 psm, and in Whitefish Bay perhaps one in 15 residents keeps an extra 50' lot to hold back his neighbors.

Sprawl in Milwaukee County is not spectacular in comparison with the excesses of our more buoyant boom areas in Florida or the "slurbs" of California, but it is quite bad enough, and more typical of what obtains in most of the country.

Sprawl is not, to be sure, so extreme that the central city area has become as vacuous as the outlying lands. Density declines noticeably from the center out, as an overall tendency, and vacant leapfrogged squares on the checkerboard tend ultimately to be improved. This has led most economists, at least until quite recent times, to regard land speculation, scatter, etc., as only temporary aberrations on the growing outer fringe

of society, soon to be rectified. (Netzer still does.)

It is true, one finds sprawl and scatter in their most visible manifestations along the broad outer frontier of the city, in that turbulent, dynamic zone where the city is first breaking the wild horse of raw land, bridling it with p.w., saddling it with bonds, and spurring it with ad val. taxes. Once thus tamed, the land may settle down for a generation of steadfast service. But the wild horse of land speculation only sleeps, it never dies.

At the distant approach of new demands, the seductive murmur of traffic, the exciting rumor of new p.w., the incendiary pounding of jack-hammers on a nearby apartment, the faithful beast rears up with the old bloodshot eyes.

There are at any one time several frontiers of land use in a city, as many as there are different intensities of use, a large number. While the city's ragged outer fringe extends back in toward the center, several of the inner frontiers of intensive high-rent downtown use probe outwards. As they probe, they find many weak spots, because the scatter of earliest development has created uneven-aged neighborhoods, in which, by the time the last vacant lots are filled, the first buildings are overripe for demolition.

The central city frontiers and their sprawl and scatter are less visible to the naked untrained eye than the peripheral sprawl. Yet they are, in proportion to their area, much more dispersed and sprawling. That is largely because they generally entail land assembly, rather than subdivision, and assembly is the harder of the two, something like breaking and team-training several wild horses at once.

In addition to the invasion of ordinary residential areas by their own contemporary central area uses, there is a continual evolution of uses so that modern central uses are invading yesterday's, and yesterday's outlying uses as well. Thus there are frontiers between generations as well as between intensities, and these frontiers, too, are ragged with streamers flying out here and empty pockets reaching back there. The intensive inner frontiers reach out to lap over the outer frontiers in each generation, and the inter-generation frontiers overlap the intensity frontiers, until the whole has become a melange of uneven ages and uneven intensities from the innermost heart to the outermost reaches, from the oldest saddlery to the newest drive-in.

Different kinds of sprawl tend to reinforce and seemingly to explain one another. Thus, factory sprawl abets residential sprawl, and that helps motivate and explain commercial sprawl, etc., so that if one perceives only one sector of the whole it seems perfectly economical in the context of the others. But one obviously cannot explain sprawl as a whole in that circular way.

The recent apartment boom manifests urban sprawl and scatter in the extreme, when the area actually used by apartments is compared to the area over which they are scattered, and over which they dominate asking prices for land. The developer typically begins by buying an old rooming house, then seeks options on adjoining lots. "Ma Schultz," the mythical frumpy owner of old rooming houses, is not always eager to sell, or even easy to deal with when she gets wind of great projects stirring. Frustrated in one try, the developer moves 3 - 4 blocks out where he sees

another weak spot, and so on until he assembles what he needs for an optimal apartment, or builds what he can on too small a parcel. Thus the apartment boom hops, skips, and jumps all over (the near west side beyond M.U.) confirming as it goes the suspicions of Ma Schultz that the entire area is scheduled for new life, and those first few brokers offered her too little.

Apartment sprawl is felt almost everywhere. Two areas are most affected, the near west side from Marquette University out to the river, and the northeast side from Kilbourn to Edgewood. But northwest and southwest, apartments predominate on most active growing fringes, surrounded by vacant land and far out beyond uses of much lower density.

Nor is one developer above buying key parcels preclusively, to forestall rivals. A small investment can thus do much to help reserve the cream of local patronage for the preclodor. Preclusive buying is probably more common where it is shopping centers that are projected, the developer of one junction and his financiers having every interest in sterilizing other crossroads for some distance roundabout.

Influences like those help explain why the apartment boom reaches clear out to the county line, and why modern shopping centers are so ~~xxx~~ scarce in near-in areas of highest income per acre.

Major Outline

Copy 2

"Site-potential as a Tax Base"

June 26, 1964

1. Milwaukee County as a proving-ground
 - A. Representative Trends and Problems
 - B. Idiosyncracies
 - C. Major Land and Fiscal Problems
 1. Uneven development of land capabilities
 2. Spatial disintegration
 - a. Peripheral sprawl and scatter
Aerial fotos
Def.: low-density below opt.; uneven density
Land-use studies, % vacant

Several stages between raw land and fully improved city-lot all kinds of degrees of relative underuse. High stages out beyond low stages.

Stress complexity of causation, but also common patterns and common responsiveness to tax.

- b. Overlapping frontiers; the scrambled inner city
Between intensities, use-types, and generations
- c. Public and social costs of urban disintegration.
Some say it's good - Lessinger; Ely.
 1. Begin with positive: Why cities?
 - a. Many people want to live and work near some basic attraction - a point of access to outside world. Auto may have weakened this - now a farmer can go anywhere, direct. But auto also increases mobility inside cities. Ullman credits auto with raising relative attractiveness of cities.
 - b. Maximum contact, people and goods and facilities, for sociality and exchange e. Linkages.
 - c. Maximum alternatives or options - give substance to free choice. Comparative shopping, pianos.
 - d. Share common costs ... thus cheapen what you would have anyway, and permit higher quality and entirely new things.
 - e. Pool "risks" or variability
 - f. Enable higher specialization of people, land, buildings, equipment and wares.
 - g. Assemble variety of inputs to enable complex combinations in production
 - h. Store variety and volume of raw materials for creative innovations; also maximum contact of knowledgeable specialists, mutual stimulation
 - i. Maximum flexibility. Through subcontracting, bring dozens of specialized firms to bear on one operation or custom job, with major contractor as assembler, financier and seller.

2. Costs and lost opportunities from disintegration

a. Access to basic urban attractions

Port

Rail heads

Bus terminals

Airport

Lakeshore

Common truck terminals, as represented by warehouses serving many firms. (Utility load centers - they represent access to lake water, coal, gas, long-distance phone lines, etc.)

Port:

Loss of access shown by decline

Decline of above, generally attributed to auto and truck. Much too simplistic. Which is cause, which effect? Urban disintegration antedates auto, forces much higher reliance on it.

Frequency of service is basic to good port, and ample storage, and tie-in with other exportation. (Also, reliance on this form of export by other cities... same problems there contribute to problem here.) Frequency requires volume. But waterside sites in shambles. Preempted by open storage of low-value crude goods - coal and salt, cement and scrap - minimizing property taxes. Divorced from CBD - takes no advantage of proximity.

Public improvements are fine. A E and Harbor Commission spend lots. Private response lacking. That is bottleneck - are plenty of A E works all around Lakes. So service infrequent, and most shippers avoid.

Case of increasing returns to volume, if more waterside sites developed. City should foster.

Also, Harbor development suffers its own internal sprawl. Is no cheap matter for ocean vessel to poke around all nooks of the three rivers to assemble loads. High terminal costs need less frontage - probably was killed, some years back, by channel sprawl. Now, with closing of Milwaukee Road, and city development of prime sites, maybe has the needed focus. Consult Brockel.

Thus, maybe Milwaukee can read in its own harbor the tale of sprawl, devaluation, and a sort of regrouping and renewal - under municipal ownership of land.

Loss of access to port doesn't show in high l.v., now, but in loss of focus.

Railheads

Same story. Reduced frequency killed passengers. High switching costs killed freight. Sites within switching zone not developed, cheaper

cheaper outer sites were, zone expanded. Higher costs and delays borne by all, uniform rate and service principle. (Check with George Hilton, Thor Hultgren.)

It is probable railroads themselves encouraged this, under illusions a) They were thus expanding their empires which would soon fill in solid; b) They could pass on higher costs to customers; c) They should reserve best sites for generators of high value traffic, so they held back land themselves; d) They could make \$ bringing value to outer lands they held by bringing service.

Now so much land has rail siding, commands no premium, and "resulting ~~in~~ high costs are shared by all."

They should have integrated with and encouraged local drayage to public terminal and loading. But they treated "team track" as an orphan, forced on them by law or sense of public duty. They thought by encouraging sprawl they could in effect get the drayage themselves, in higher switching rates, and increasing the capital investment on which they were allowed 6%.

Bus Terminals

As city sprawled, they split into several, each offering poorer service. Express busses lost their express quality when forced to increase pickups.

Airport

In serious trouble, for too little traffic. Poor ground access a problem. Lack of enough reasons for enough people to visit Milwaukee.

Lakeshore

Access severely limited by low-density zoning on attractive north shore, and underdevelopment of Prospect Ave, where zoning allows high density. South shore, area in parks is probably excessive - allows casual recreational access, but in excess of demand, and denies residential access.

Utility Load Centers

Insofar as these represent imported resources, they represent access to resources of the outside world by using the Milwaukee location. Sprawl multiplies local distribution costs, and "the resulting poverty is shared by all."

In general, congregation around points of high demand does not ruin them, but enhances their usefulness. Focussed demand enables full development of the basic attractions - a harbor is good, but a harbor with daily service to London is

ever so much better. In our local policies, we are in danger of becoming obsessed with our petty annoyances with our neighbors and losing sight of how much we need them.