

3-1-1972

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### Recommended Citation

George Sternlieb, Robert W. Burchell, and James W. Hughes, *Planned Unit Development: Environmental Suboptimization*, 1 B.C. Env'tl. Aff. L. Rev. 694 (1972), <http://lawdigitalcommons.bc.edu/ealr/vol1/iss4/2>

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# PLANNED UNIT DEVELOPMENT: ENVIRONMENTAL SUBOPTIMIZATION

*By George Sternlieb, Robert W. Burchell, and  
James W. Hughes\**

## PREFACE

Planned Unit Development (PUD), an innovational mechanism of land use control, has been seen as the new community equivalent in America, an adaption to the severe cash flow requirements involved in New Town development. As such it is destined to assume a greater role in terms of the dynamics of the shifting spatial organization of metropolitan areas. Any mechanism of this sort, consequently, has important environmental implications. The purpose of this study is to examine the concept of PUD, its antecedents and present processual form, and its potential environmental impact. The internal controls provided by this mechanism make it possible to effectively optimize the environmental package of each PUD project. However, in terms of the broader environmental framework, the optimization must be viewed as problematical. Since the control mechanism is restricted to limited spatial domains, secondary effects may be generated in the encompassing region. Although these potential effects are in line with present trends, they may represent important acceleration components.

Thus we will be examining the environmental advantages and disadvantages of the PUD land development mechanism. To do this, it is necessary to set down the definition and workings of this process.

### *Definition*

Planned Unit Development (PUD)<sup>1</sup> is a means of *residential* land development which sets aside traditional preset land use controls in favor of more administrative discretion to local au-

thorities. It permits a mixture of land uses (i.e., residential, commercial, and industrial), creativity in design (including both the clustering and mixing of dwelling types), and finally the provision of open space to be used by and *maintained* for the residents of the proposed development. The tract of land is developed as a whole according to a plan with one or more of its nonresidential elements potentially able to serve regional as well as local needs.<sup>2</sup>

#### THE ENVIRONMENTAL PACKAGE

##### *PUD and the Environment*

“Environment” is a word with many connotations. In one sense it may refer only to the physical and ecological structures that exist around us. But also it denotes the culture in which we live with its social atmosphere, institutions and sets of values of which it is composed. Generally speaking, man’s ability to control the quality of his environment is directly related to the degree that he can isolate a segment of it. Planned Unit Development is an isolation of the residential subsystem. As such, environmental control within the subsystem is possible, yet externalities may be produced which make this internal control a suboptimization. The control within the subsystem is the topic of this section; the resultant externalities are the topic of the following section.

Environmental concern in the more densely urbanized areas follows the above definition and thus is not merely concerned with waste, sanitation or the effect of effluents but additionally, with the quality and organization of all the essential physical aspects required to constitute a neighborhood. The term neighborhood, as used here, does not necessarily mean a specific geographically defined area that is identical for all features of the residential context but rather, a functioning socioeconomic subsystem in harmony with the environment. In the ideal case such a subsystem should be capable of providing viable local services and facilities, promoting community interaction and participation, and, finally, functioning adequately so as to contain most of the daily family activities. Planned Unit Development is one of the more recent movements towards a residential/environmental subsystem.

##### *Planned Development*

The specific elements of the concept’s name allude to its environmental potential. *Planned* development in this case refers to

physical development via midrange (4–8 years) programming. The time span embraced here is sufficiently large to make it worthwhile for a community to attempt to control its *tempo* and *sequence* of development, yet sufficiently small to make the developer's cash flow requirements and management capabilities realistic.

Thus we have a departure from the "pie-in-the-sky" master plan for the entire community with its attendant unrealistic objectives and time span, to an action program for a more limited area, yet one which contains legitimately achievable physical objectives. For PUD, the program plan keys on *balance*: a balance in the *use* of land in terms of residential and non-residential requirements; balances among public open space, commons to be used and maintained by groups and associations, and private lands; variation in location and grouping of buildings to create a choice of physical environments; and walkways, roads and highways of different types to ensure safe and convenient movement of people and vehicles.<sup>3</sup>

A *legally binding* plan for an area permits community control of both its tempo and sequence of development. This is important to a local area because for the first time a community can experience growth without experiencing its accompanying deleterious side effects. It is possible now to schedule services at a time when they are needed yet do so in a way which makes their cost least burdensome. *Tempo* and *sequence* of development within the PUD are controlled in such a way that land uses providing only moderate local revenues yet requiring large municipal and school service costs are scheduled simultaneously with those that provide larger local revenues yet are not as costly to service. Scheduled development makes inroads on previously undeveloped areas in both a steady and calculable manner enabling a municipality to plan and service growth regularly. In addition, housing elements are accompanied by sufficient shopping and industry, such that the development is in the position of "paying its own way."

In a PUD the *tempo* of development is accomplished by setting certain standards as to how much of the development may be developed at one time. This may be accomplished through administratively streamlined platting<sup>4</sup> requirements which offer the option of staged development yet which call for definite proportions of the development to be constructed during specified time periods. In New Jersey's first PUD, "Twin Rivers," at East Windsor, the tempo of development is controlled through four

main stages, termed "quads", wherein residential development occurs in approximately 25 percent increments.

The *sequence* of development is controlled by setting specific percentages in the local PUD ordinance for the various residential, commercial and industrial land uses and additionally by a requirement that the development, for subsequent stage approval, continue to demonstrate a favorable local revenue/cost relationship. In terms of both *tempo* and *sequence* requirements, taking the four stage (25 percent increment) procedure for example, if a developer wishes to construct 4,000 housing units, the municipality is assured that he must build self-contained sections of approximately 1,000 residential units each<sup>5</sup> while providing ample square footages of industrial and/or commercial facilities to generate sufficient taxable assets to cover the municipal and school costs of each of these land uses.<sup>6</sup>

#### *Supervised Development*

"Unit" development envisions a *single* agency dealing with a single representative of an area's growth. The one to one relationship evidenced here serves to develop the land area as a *whole* providing sufficient design and service criteria to meet internal needs and desires of the prospective populace. Besides the basic servicing hardware (water supply, utilities, sewerage and storm drainage) additional elements such as recreation facilities, park school and church sites, neighborhood centers, etc. become part of the neighborhood mosaic; not incidentally, this occurs as a demand emerges for such services.

Both parties to the bargaining process, i.e., the developer and the planning board, individually represent solidified bargaining strength: the planning board in its relative freedom to say what may be done with the land in the PUD zone and when; and the developer in his subsequent determination of what form this development will take. Environment factors may potentially become a part of the bargaining process. A wetland, as a potential generator of animal and plant growth and thus a relatively dormant area from a recreation viewpoint, may well be preserved as part of a package including an active open space area, whereas previously it might have had to be sacrificed in accordance with the rear/side yard or setback requirements normally found in the "automatic disposal" features of standard zoning ordinances or subdivision regulations. Additionally, the environmental protection elements, the liquid and solid waste disposal systems, are

efficiently examined and packaged via this one to one bargaining situation. Environmental safeguards are thus an active element of the decision-making process, not a secondary appendage.

### *Design Flexibility*

Design flexibility has the potential of removing the characteristic suburban stigma of a monolithic environment. This may be accomplished in terms of variety in land use elements, dwelling types and, potentially, in population subgroups.

The inclusion of multiple land uses within the same development (a movement away from the "use" districting in classic zoning), allows residential, commercial, and industrial uses to coexist; it emphasizes their compatibility rather than incompatibility. This allows residential areas to be accessible to commercial areas providing services, shops, clubs and social groupings indispensable to a true community. Design requirements in turn mandate that sufficient parking, buffer and waste requirements be met to eliminate some of the potential nuisance and/or health (vermin) byproducts which originally occasioned the separation of residential and commercial uses.<sup>7</sup>

The "garden factory," industrial facilities which have sought suburban locations simultaneously for their interstate transportation accesses and white collar labor force, through design and effluent control have become acceptable suburban fixtures. These facilities, now included as part of the PUD development process primarily for fiscal packaging, potentially, may permit at least some of the residents to walk to work, where housing occupancy costs and occupational categories dovetail.

A mixture of dwelling types within the same district is again a step away from the multiple zone gradation common to traditional zoning ordinances. Single family homes, townhouses, adult condominiums, garden apartments, high rise structures and apartments over stores, all available within a single development, provide a housing mix rarely experienced before. There are new perspectives of form, space utilization, shape and enclosure. Townhouse clusters provide contrast to low density single family homes, taller structures provide accents against the lower horizons of two story homes or shops, areas of intensive activity are balanced against places of serene and restful utilization.

The "balance" exhibited here, *if* sufficient to capture the imagination of a small portion of the upper class and *if* additional provisions are made to house the working poor, has the potential of eliminating the classic sterility of *newly-forming* suburban areas. Carefully considered proportions may be established in the residential mix, yielding a variety of living patterns, activities and social contacts. Accommodations for the elderly, for mobile families, and for home-owning families—i.e., provisions for wide ranges of age groupings and family styles and sizes—can make a newly developing PUD a microcosm of the larger social environment.

### *Open Space Protection*

The garnering of open space on anything less than a state-wide level in the United States is increasingly achieved through the eleemosynary activities of a few individuals or via a limited and ill-defined municipal/developer bargaining process appearing within the confines of subdivision control.<sup>8</sup> While the dedication of a portion of a developer's lands for parks, recreation areas, schools, etc. appears to be proliferating, the land garnered via this procedure is often fragmented and increasingly difficult to maintain.

An additional concern is the question of what is to be done with open space (i.e., how is it to be managed) if more innovative acquisition mechanisms subsequently become available. The planned unit development procedure simultaneously provides for both the orderly acquisition of usable open space and for its future control and maintenance. The PUD utilization of easements, deed covenants, and management trusts currently makes use of instruments of demonstrated past effectiveness which are applicable to the solution of essentially similar present problems and future needs or demands.

Not only is a section of the environment which is of such scale as to be usable for recreation or visual purposes being withdrawn from the development arena, but the maintenance of these areas need not become a part of the municipal burden.<sup>9</sup> A mid-stage environmental space is thus created. It has the advantage of being larger than the easily maintained single family lot, yet has very few of the disadvantages of the much larger, publicly controlled recreation spaces.

## THE EVOLUTIONARY FRAMEWORK

*Theoretical Origins*

The "planned unit" process of land development is often confused with other less sophisticated techniques and as a result, frequently misunderstood. *PUD is the natural extension and melding of a maturing but heretofore separate system of land use controls.*

PUD is a derivative of the most current ideas in *planning* which call for a program-oriented, mid-range plan, legally binding upon participants. PUD also follows from modern *zoning*, continuing a trend towards flexibility in land use and thereby emphasizing a mixture of land uses, unit development and wide ranging administrative discretion to local officials. Finally, PUD also continues the movement away from preset regulation in *subdivision control* by fostering new interest in the municipal developer bargaining process. As a result, it offers a more streamlined platting process and potentially larger developer profits in exchange for increased municipal site plan review powers and a procedural mechanism for assembling usable amounts of contiguous open space. PUD even goes one step farther, however; for the first time it presents a land use control that will enable a municipality to control effectively both the tempo and sequence of an area's development.<sup>10</sup>

*Innovational Linkages: Lingerin Problems*

The advantages of planned unit development follow basically from its definition and origins. PUD offers a mid-range program of land development which is legally recognized and thus methodically followed by the local governing body and developer alike.

Development is *not* cast in advance by the local regulatory ordinances but awaits an institutionalized bargaining process between developer and planning board. The municipality receives sorely needed design and development control within the specified development area in return for potential developer gains in the form of more intensive land uses, greater land efficiency, and increased residential densities.<sup>11</sup> The development supports a variety of residential dwelling types, common open space for the use of its residents, inclusive shopping and employment facilities, preplanned schools, recreation areas, and local municipal services.



To these considerations are usually added the as yet unrealized advantages of curtailing urban sprawl and moving lower income groups in close proximity to the growing suburban job market.<sup>12</sup> Roger Scattergood and Daniel Mandelker aptly sum the existing literature.

PUD is advantageous since it fosters:

*Scattergood*<sup>13</sup>

*Mandelker*<sup>14</sup>

- |   |  |
|---|--|
| 1) Improved design with greater variety.  | 1) Improved design.                      |
| 2) A wider choice of housing available to more people in one community.           | 2) Mixing of residential building types. |
| 3) Better use of open space permitted by the economy of cluster.                  | 3) More useful open space.               |
| 4) More convenient shopping facilities.   | 4) Increased density.                    |
| 5) Economy in space for streets and in lengths of utility, water and sewer lines. | 5) Lower costs.                          |

The *disadvantages* of planned unit development posed by Norman Williams, Jr. and others, center not on the concept itself, but rather on the ability of the participating agents to adequately embrace the conceptual changes which PUD actually represents. Specific criticisms are directed to:<sup>15</sup>

- 1) The planning board for its continued lack of development sophistication;
- 2) The governing body for (a) the creation of a bargaining process which excludes the ultimate consumer, (b) the possible misuse of PUD legislation to forestall *all* local growth and (c) the severe economic requirements, necessitating a middle class housing vehicle which continues the existing pattern of center-city outmigration;
- 3) *The developer* for his continued embracement of long range management tasks too sophisticated for his organizational structure and too prolonged for his limited cash flow.

*The Conceptual Diffusion and Adaptation*

Notwithstanding a primary vacant land and commutershed or recreation/retirement requirement for peripheral areas, the PUD/PURD development concept offers a variety of options

for other areas.<sup>16</sup> In suburban areas PUD allows moderate-sized tracts of land, which may separate such disparate elements as highway commercial development and quiet residential areas, to be developed through employing mixed land uses in a way which provides both an acceptable transitional mechanism and maximum utilization of the particular site.

Additionally, in urban areas PUD provides a means of developing smaller areas of land into multiple land uses usually unavailable in conventional zoning. This process, furthermore, is unencumbered by the bureaucratic delays currently hampering traditional modes of center-city land development.

PUD can thus serve as a *potentially large generator of housing. It is applicable in many instances and in most geographic areas.* A realistic appraisal of PUD acknowledges that the concept's local acceptability, especially in fringe areas, is tied to its employment of multiple land uses, thus allowing residential development to proceed with minimal impact on the local property tax. Additionally, PUD may be viewed as an acceptable alternative to large lot, single family zoning and a possible escape from the legal repercussions which may arise therefrom.

Notwithstanding the concept's innovation and flexibility in land use matters, the above two reasons either directly or indirectly affect, or to a large degree become, the causative agents which spur any type of *sustained* local interest in PUD. Thus it must be realized that any restructuring of the state financial system which would deemphasize the property tax as the prime revenue source, or any court decisions failing to limit severely any attempt at exclusionary zoning, would cause a lessening of whatever favor PUD now enjoys.

#### *Historical Origins: Development Antecedents*

While it is current fashion to trace the American new *community* movement, i.e., the large scale pre-PUD experience typified by Reston, to British origins, this has been recently cast by Max Wehrly as somewhat incorrect, and rightly so.<sup>17</sup> Wehrly makes the point that the location of the *industrial* elements of British new towns were publicly dictated in advance, thus assuring a threshold economic base. American new communities, controlled by the private market, had to attract industry often after the residential elements were constructed and occupied, rendering them, from a municipal standpoint, at an economic

disadvantage from their outset. *Nevertheless, the PUD should still be traced in this respect to the British experience, for the PUD too has had a relatively assured industrial base.* While industrial location is not preset by a public "industrial commission," necessary industrial acreage percentages must be adhered to and a residential/nonresidential balance maintained before sustained development is permitted.

It should be realized, however, that most current PUD or PURD activities, linked frequently with eccentric or idealistic antecedents of the past, evolved more directly from unrestrained private market forces articulated by unplanned government policies. These are manifested in the hard realities of suburban expansion. The precursors of this movement are the Levittowns and Park Forests which emerged as whole communities within the orbits of large metropolitan centers after World War II.<sup>18</sup> This was the beginning of the "tooling up" of large organizations and the accompanying sophisticated merchandising and packaging methods necessary to move housing in quantity.

The legal origins of planned unit development were not derived from the original suburban construction form, i.e., the single family home, but rather from its successor, the garden apartment and the accompaniment to both, the suburban shopping center.<sup>19</sup> If anywhere, the British influence may be noticed here—in design and layout.

In the case of garden apartments the developer received special approval usually from the governing body, to bypass specific lot and yard requirements if: (1) the type of land use introduced into the area was basically the same, (2) the height limits of the district were not exceeded, (3) the overall density remained essentially similar, and finally (4) the required setbacks were observed on tract boundaries. As ICMA notes: "the next logical step was the extension of variable density provisions to *subdivisions*, thereby waiving rigid lot and yard requirements as had been done in low-rise apartment complexes."<sup>20</sup>

A less formal platting procedure somewhat analogous to what the PUD currently undergoes was the result of recommendations by ASPO for shopping center rezonings in 1959.<sup>21</sup> This three stage approval process allows the developer to come in with an inexpensive *concept* or *sketch plan* for approval by the *legislative body*. If not approved at this stage little is lost; if approved, more sophisticated *preliminary* and *final* plans must be presented to

the *planning board* before construction can begin. According to Mandelker, in planned development this early legislative review is essential: "The developer needs early assurance that his project has been approved in principle, so that he can safely proceed with the expensive preparation of more detailed plans."<sup>22</sup>

#### THE PUD PROCESS: A SERIES OF GUARANTEES

##### *Generalizations*

The PUD *process* is a series of *guarantees* beginning with the adoption of the local ordinance and extending through post-development control of a specific project. Several authors point to the current manifestation of PUD legislation as offering more guarantees to the participants involved than most other current planning tools.<sup>23</sup> The PUD regulatory device *bridges* the land use system and in so doing, attempts to promote planned, self-sufficient and wholly functional environments. Its key is *mutual* protective control which terminates the effort at the first indication of unsustained participant satisfaction.

Protection begins with the selection of the regulatory technique within which the PUD legislative mechanism will be exercised. The continued relationship of the governing body and planning board, synonymous with policy and administration, is assured if the PUD ordinance becomes an amendment to the zoning ordinance.

The procedure for introducing a specific proposal extends this protection to the developer, as he is guaranteed both prompt and singular action on his proposal and nonchanging standards over the period of its development.

The plat approval process, if the singular final plan is opted for, provides for the municipality assurance that the developer's final plan is in substantial agreement with what was initially proposed and given tentative local approval. If the staged procedure is chosen, similar agreement insurance is at hand and accompanies additional guarantees that each completed stage will be self contained and well within the gross density requirements.

The conditions upon which a PUD approval is granted further extend this protective blanket, as they assure the municipality that: (1) it will be dealing with a single developer, uniformly responsible for all land use aspects of his project, (2) the development will be of sufficient size and, therefore, in sufficient need of specialized land use treatment, (3) a maximum overall density

will not be exceeded even though specific sectors may vary considerably, (4) there will be a definite land use balance which attempts to match service costs with anticipated revenues, (5) usable and non-fragmented open space is provided and maintained for a significant segment of the population, (6) community public facilities supporting necessary services are integral parts of the planned development package and finally, (7) the development and its community mechanisms will remain intact in basic fulfillment of the agreement under which it was permitted.

### *Specifics*

#### Initial Regulatory Technique

As is now clearly evident the nature of planned unit development involves substantial contributions from both zoning and subdivision control. The literature, once somewhat uncertain as to the regulatory aegis under which the legislative mechanism for PUD would lie, has now solidified about the former, in general agreement that the PUD ordinance should be an adjunct of (amendment to) the zoning ordinance.<sup>24</sup> The distinction is only important here to the effect that it neither limits innovation nor subverts continuing relationships between the legislative body and the planning board in land use matters. It was felt that innovation would be least limited if the PUD provision was external to and not tied down by the main regulatory document.<sup>25</sup> It was similarly felt that since a "use" change was nominally involved, the public through elected representatives should approve its concept and the appointed members of the planning board be left to iron out its subsequent details.<sup>26</sup>

Once the general nature of the regulatory device is known there are many possible avenues for exercising legal control. PUD may be treated as a floating zone or as a conditional use or possibly several other controlling mechanisms. In a study of state, county, and local PUD ordinances conducted by the New Jersey Department of Community Affairs (1966), 65 percent of the sample ordinances placed planned development in floating zones.<sup>27</sup> The other most frequent example was that it be handled as a conditional use.<sup>28</sup> Actually, the distinction between the two methods of dealing with PUD may be more nominal than real. In fact in New Jersey, a combination of the above procedures is used, whereby the *conditions imposed* on PUDs resemble the *conditional use* and whereby the *fixing of PUD boundaries* at the

time of approval resembles the *floating zone*.<sup>29</sup> Basically the New Jersey procedure combines the best of both worlds. To some degree the general location of potential PUDs are known, i.e., within a specified district, but there is no assumption that land will be assembled under unified control nor any requirement that owners of such land must develop it as a PUD.

#### Specific Approval Procedure

In terms of procedure, the way most specific proposals were treated (again as a result of the NJDCA study) is that a proposal is submitted directly to the planning board, which confers with other government agencies and then recommends approval or disapproval to the governing body. In this case, PUD substitutes a single review process for the heretofore existing three stage review.<sup>30</sup>

- 1) platting approval under subdivision regulations;
- 2) land use reclassification under zoning; and
- 3) site review under building and zoning codes.

Within a certain time period after application, a public hearing is held and the project is either approved or disapproved. The PUD ordinance spells out in detail what evidence is required to be presented at this hearing.

If the project is granted tentative approval, application for final approval may be made at once or in stages. No hearing is required for the final plan if it is in substantial compliance with the previous plan given tentative approval. If the staged plan is opted for, upon compliance with the tentative plan and additionally upon a showing of the production of functionally self contained units, final stage approval is also given without hearing.<sup>31</sup>

#### *Conditions to be Met Prior to Approval*

In brief review, the grant of approval of a planned unit development is based on the fulfillment of certain conditions. These are general standards covering such areas as type of control (both during and after development), minimum size, permitted uses, maximum density and the provision of open space and public facilities. Each of these are formidable and basically essential parts of the PUD "process."

In the case of development *control*, approval is based upon

demonstration that the area is under unified rather than fragmented control. This may be accomplished either by single ownership, long term lease, agency or other legal device.<sup>32</sup>

The *minimum size* requirement, as mentioned earlier, is a requirement less often found than others for project approval. Minimum size will vary depending upon the type of development and specific location. It may be stated either in terms of dwelling units or acres. In the latter, for peripheral areas, a minimum of 1000 acres for PUDs employing the three main land use categories does not seem unreasonable. It should be emphasized here that the peripheral PUD, in less than significant dosages and in the absence of an adjacent holding zone, may actually foster rather than retard sprawl.

A *maximum density* requirement is a more frequent provision in PUD ordinances. In 60 percent of the ordinances examined by NJDCA, density is strictly regulated by either a maximum number of units per acre or by a minimum lot area for each dwelling unit including a share of common open space. A smaller number (18 percent) permitted increases in density as a bonus for meeting certain design criteria, whereas an even smaller number (15 percent) permitted increases in density at the discretion of the local planning board.<sup>33</sup>

*Permitted land uses*, again a subject of approval, are usually found in the form of acceptable percentages of residential, commercial, and industrial land usage. In most cases the amount of permitted nonresidential uses are related to the extent of residential development, which additionally has a prior linkage with the quantity of acreage involved.<sup>34</sup> Developments with large numbers of residential units for sustained economic balance in many cases are accompanied by commercial and industrial uses so massive as to be regional in nature. The PURD as mentioned previously is much smaller and in most instances not involved in the current regional/non-regional controversy.<sup>35</sup>

The requirements for *open space*, if a condition of approval, contain provisions covering its quantity, location, and maintenance. The first requirement is either stated as a minimum acreage requirement per "X" dwelling units or as a direct percentage of the gross acreage. The second requirement frequently calls for the planning board to approve the proposed location of open space. Finally, maintenance of the open space may be assigned to the residents of the development in the form of a

“Homes Association” or “Community Trust” or to the municipality upon the land’s allocation for public use. The former appears to be the legal device most extensively used.<sup>36</sup>

The provision of *community services* as needs arise is an essential part of the PUD process. Most of the necessary utility “hardware” is mandated by referral of the developer to the subdivision ordinance. Other requirements such as *land* for schools and emerging facilities or the capital structures themselves become part of the municipal/developer bargaining process.

Finally, the on-going preservation of the PUD development as planned is an essential guarantee. The final development plan controls the development after it is finished. No subsequent major structural or use change will be permitted unless approved by council; similarly, minor changes, although also discouraged, must be approved by the planning board. Subsequent subdivision of the land is also frowned upon, yet if permitted, must meet the basic requirements of the local subdivision ordinance.<sup>37</sup>

In summation, PUD, as an instrument of land use control, while permitting certain increases in local administrative discretion, also provides sufficient safeguards to insure that this discretion is not used unwisely. This does not mean, however, that a lay planning board completely lacking professional assistance should attempt to embrace a PUD. PUD is a *major* local undertaking and while it employs a considerable number of municipal safeguards, its rigor only partially compensates for lack of sophistication at the local level.

#### THE BROADER ENVIRONMENTAL FRAMEWORK

##### *Societal Trends & PUD: An Acceleration*

“. . . the suburbs of the United States have become the New America of the twentieth century: the growth area of private economy, the locus of most of the nation’s new jobs, housing, and population . . .<sup>38</sup>

A metropolitan phenomenon of the latter half of the 20th century is the massive decentralization, not only of population, but of employment opportunities from urban centers to exclusive suburban locations. Although technological innovations may dictate such commercial industrial moves, a maldistribution of the job-worker relationship nevertheless becomes the end result. While the recipients, i.e., the suburbs, of this new form of economic life readily accept the concrete employment facilities and the associated tax benefits, they do not relish having to house the



associated blue collar work force.<sup>39</sup> The benefits are readily accepted while the costs, obviously, are easily shunned. And since there is a lack of substantial transportation linkages, a clearcut separation of suburban jobs and central city workers is evolving. Thus there is not only an imbalanced population distribution, but also an imbalanced employment-worker distribution. In total, widespread discernable changes are evident in the spatial arrangement of urban metropolitan social systems, changes which have considerable environmental as well as socioeconomic implications.

Although in general PUD patterns follow these areal precursors, the unique aspect concerns the magnitude of the produced housing, via the PUD option, leading to an acceleration of the decentralization trends cited above. Compounding the effect of the rapid infusion of middle-class housing into the outer extremities of the metropolitan housing supply, and the attendant population shifts therein, is the associated development of secondary and tertiary economic facilities within the overall confines of the PUD. The developer, as a private profit seeking individual and because of the requirements of balanced staging and cost revenue equalizations, must actively seek tenants for occupancy and to provide required non-residential ratables. Thus we have another locational "pull" force within the metropolitan formation, reinforcing the general decentralization trends of secondary and tertiary economic activities. In order to fill his commercial/industrial shells, which may not have had a strong market potential initially, the developer may have to provide financial incentives to induce such relocations; thus providing an extramarket, non-technological, rationale for firms to leave a perhaps weakening, yet essentially acceptable, central city location.

A particular significance of this PUD spatial redistribution is that the job-worker maldistribution is further emphasized. Outside of the commercial and service facilities, the economic activities included within the PUD scheme utilize workers whose housing needs for the most part would be inconsistent with the economic realities of the PUD residential sector. In other words, the PUD employment opportunities would most likely be relevant to non-PUD residents, i.e., the worker presently housed in the older central city areas. With insufficient transportation linkages, an avenue of upward mobility for rural refugees (in the

urban milieu) is thereby removed, and a dependence on motor vehicle transportation is fostered. The overall PUD scheme then may produce deleterious environmental externalities in terms of the larger societal picture, by encouraging increasing use of a pollution generating transport mode. Although the above considerations have not been adequately documented, this does not negate their potential implications.

### *The Externalities of PUD*

What is almost established doctrine for the PUD advocate is the notion that the land use control inherent in such a development mechanism is an effective counter to that nemesis of urban figurations, service commercial development, and attendant industrial institutions oriented toward a mini-urban center, the unbridled growth of homogeneous housing tracts and the subsequent haphazard spread of predatory development lacking a common focus is supposedly avoided. While this may be a valid conception *within the internal context of any PUD project*, i.e., the PUD itself may be a rationally ordered alternative to the typical urban tract development, it must be emphasized that no extraordinary land development controls exist *external* to the boundaries of the project limits. Thus strip commercial development may very well be just as natural and accompaniment to a PUD project as to a conventionally platted subdivision.

The sprawl conceptualization attempts to summarize under a simple rubric complex phenomena that arose with the deterioration of the constraints of fixed rail transit, which constraints, although having much earlier origins, occurred principally after World War II. With the availability of a relatively unbounded mode of transit to most segments of the population, the voids and interstices between existing urban centers were soon filled with low density residential accommodations. The outer rings of the metropolitan complex developed in a similar pattern, lacking concomitant urban foci and contrasting open space, a pattern conceived to be environmentally deleterious due to absolute reliance on the automobile and a gross inconsideration of ecologically fragile territories. The alternative continually posed was, and is, the formation of suburban subcenters of moderate residential density containing commercial and attendant service facilities. As distance from these subcenters increased, a density decrease would be experienced, until the transition to

natural land would occur. (Open space *between* centers is ideally preserved from exploitation through a holding mechanism.) Such an alternative poses a pattern not unlike that which evolved when prime dependence on public transit was in existence.

While the PUD mechanism is posed as an implementation device to achieve this latter pattern, several deficiencies must again be highlighted. Control is solely an *internal* phenomenon—external effects are largely unbridled. Consequently, there is no formal mechanism to prevent the voids and interstices between PUDs and existing urbanization from developing in a manner similar to that generated by the market forces of the last three decades. Although open space is achieved within the project boundaries, the open space necessary to buffer or isolate the PUD and to achieve focused development is not insured. Thus the PUD may not by itself represent the alternative to sprawl that planners have long looked for.

*In fact, PUD ultimately may accelerate present tendencies toward continual sprawl.* A massive infusion of residential population over a relatively short time period, and the rapid development of a PUD as a destination in the journey-to-work trip, i.e., employment location, may generate traffic volumes on primary roadways to such an extent that predatory commercial development is spawned faster than that which occurs during a conventional land development process. Unless an extremely restrictive zoning pattern adjacent to principle transport arteries is in existence, strip commercial development, the most obvious manifestation of urban sprawl, will not be deterred. The PUD, acting perhaps as a catalyst, might soon find itself engulfed in the tidal wave of conventional development which has overtaken "Radburn," New Jersey's garden city of the 1930's.

It must be emphasized, however, that we are attempting here to evaluate some very complex dynamics. While we are suggesting a phenomenon of self generating growth, i.e., growth fostering growth, one could effectively hypothesize that PUD would result in market usurpation, i.e., all available growth is absorbed via the PUD entity.

Nevertheless, the possibility remains that PUD—supposedly leading to an era of planned heterogeneous communities focussing on a local center and countering the trend toward continued urban sprawl—may in reality generate quite different results. Not only may this mechanism have deleterious effects in terms

of the environmental realities of the broader regional structure, but it may also serve as an impetus for undesirable development external to the spatial domains of any authorized PUD project. As long as an institutionalized procedure to insure adequate amounts of open space external to the PUD sphere of operation does not exist, developmental pressures, aided and abetted by the PUD catalyst, will generate an exploitation of adjacent land. One must view with skepticism the somewhat rosy prediction of the effective channelization by PUD of market forces into an ideal urban pattern

#### CONCLUSION

The PUD mechanism is seen as an effective device to package an environmentally sound community of residential, commercial, and industrial components. At this scale of analysis, such a mechanism represents the most effective environmental control system yet available to control local subcommunities. However, this represents only one aspect of the total situation, albeit an important one. What remains subject to the older control system is the land enveloping an operational PUD. The unanswered question is the effect of the induced growth upon this property. Will the increased traffic generated by the new community foster market pressures for exploitation? Without an effective land holding procedure, such consequences, if imminent, cannot be controlled by this mechanism. Thus while PUD itself can effectively control the quality of the environment for a municipal subsystem, the externalities engendered by the suboptimization remain substantially uncalculated and uncontrolled.



#### FOOTNOTES

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<sup>1</sup> Planned Unit Residential Development (PURD) is a lesser form of planned unit development (in terms of the extent and variety of non-residential uses included) yet in all other aspects parallels the newer and more extensive PUD.

<sup>2</sup> See Burchell, Robert W. *Planned Unit Development—New Communities American Style* (New Brunswick, New Jersey, Transaction Press, 1972).

For other definitions of PUD see: Ahrens, Clifford H. "Planned Unit Development" *Missouri Law Review* (Vol. 35—Winter 1970) 27-38; Candeub, Isadore "New Techniques in Making the General Plan" in Erber, Ernest, *Urban Planning in Transition* (New York, N.Y. Grossman Publishers, 1970) 223-224; Hubert, Curt J. "Planned Unit Development," in *Jersey Plans* (Spring 1967) 36-47; Krasnowiecki, Jan, *Legal Aspects of Planned Unit Development*, (U.L.I. Tech. Bull. #52) (Washington, D.C. Urban Land Institute, 1961); Krasnowiecki, Jan, "Planned Unit Development: A Challenge to Established Theory and Procedure of Land Use Control" *University of Pennsylvania Law Review* (Vol. 114-1, Nov. 1965) 3-14; Mandelker, Daniel R. *Controlling Planned Residential Environments* (Chicago, Illinois, American Society of Planning Officials, 1966); Scattergood, Roger, "Planned Unit Development" (New Jersey Federation of Planning Officials, Federation Planning Information Report, Vol. IV-4, September 1969); U.S. Department of Housing and Urban Development, "Planned Unit Development with a Homes Association"—Land Planning Bulletin #6—(Washington, D.C., U.S. Government Printing Office, 1970); Wolfe, Lenard L. *New Zoning Landmarks in Planned Unit Developments* (U.L.I. Tech. Bull. #62) (Washington, D.C., Urban Land Institute, 1968); and "Zoning: Planned Unit Development—The Attorney and the City Planner" *Oklahoma Law Review* (Volume 22, February 1969) 108-119.

<sup>3</sup> See Wilkens, Edward B. "Planning Analysis Twin Rivers Development—Township of East Windsor, New Jersey" a consultant report prepared for the Planning Board of East Windsor, N.J. Spring, 1968 at 3.

<sup>4</sup> An administrative process wherein unimproved property is submitted for land registration. This is necessary before the property can be categorized for block and lot purposes, subsequently improved and ultimately sold.

<sup>5</sup> A percentage leeway from equal residential apportionment is usually permitted the developer and is frequently relied upon to absorb any scheduling inefficiencies of non-residential uses.

<sup>6</sup> East Windsor Township, New Jersey "Zoning Ordinance Amendment—Planned Unit Development," Adopted October 2, 1967. at 1.

<sup>7</sup> For excellent descriptions of various forms of commercial zoning see: Williams, Norman, Jr., *The Structure of Urban Zoning* (New York, N.Y. Bottenheim Publishing Corporation, 1966); Anderson, Robert M. *American Law of Zoning: Zoning, Subdivision Control Planning* (Rochester N.Y. The Lawyers Cooperative Publishing Company, 1968).

<sup>8</sup> See Yokley, *The Law of Subdivisions* (Nashville, Tennessee, The Michie Company, 1963); "Developments in Land Use Control" in *Notre Dame Lawyer* (Vol. 45-2 Spring 1970) 399-411; Yearwood, Rich-

ard M. "Accepted Controls of Land Subdivision" in *Journal of Urban Law* (Vol. 45, Winter 1967) 217-229.

<sup>9</sup> Lands for public purposes, i.e., schools, fire/rescue stations, sewage treatment plants, etc. are also provided for in PUD. Maintenance of these facilities, however, are usually the responsibility of the respective municipal agency.

<sup>10</sup> See Bell, Christopher, Jr., "Controlling Residential Developments of the Urban Fringe: St. Louis County, Missouri" *Journal of Urban Law* (Vol. 48-2, 1971) 419-447.

<sup>11</sup> Taking the "Twin Rivers" example again in return for the community being able to plan for population growth that would potentially double its population and additionally impose design control on over 700 contiguous acres, the developer was allowed to build approximately three times the number of units that he normally would have derived from the tract and also to develop substantial inclusive industrial and commercial areas.

<sup>12</sup> Alonso, William, "The Mirage of New Towns," *The Public Interest* (Vol. 19, Spring 1970) 9-13.

<sup>13</sup> Scattergood, Roger, "Planned Unit Development" (Mountainside, New Jersey, New Jersey Federation of Planning Officials, Federation Planning Information Report, Vol. IV-4, September 1969) 2.

<sup>14</sup> Mandelker, *supra* note 2 at 3.

<sup>15</sup> Williams, Norman Jr., *Land Use and the Police Power*, Chapter 16 (Forthcoming).

<sup>16</sup> Utilizing stepwise regression of 25 variables which profile the socio-economic and land use characteristics of a community, it was found that the presence of large amounts of vacant land combined with a commutershed or recreational/retirement potential were prime selection criteria for developers pursuing PUD.

<sup>17</sup> Wehrly, Max, "Urban and Rural America: Policies for Future Growth—A Critique," *Urban Land* (Vol. 28-5, May 1969) at 6.

<sup>18</sup> Advisory Committee on Intergovernmental Relations, *Urban and Rural America: Policies for Future Growth* (Washington, D.C., U.S. Government Printing Office, April 1968) at 75.

<sup>19</sup> Goodman, William I. and Freund, Eric C. (eds.) *Principles and Practice of Urban Planning* (Washington D.C. International City Managers Association 1968) at 480.

<sup>20</sup> *Id.*

<sup>21</sup> American Society of Planning Officials, *Shopping Center Zoning: Part II* (Chicago, Illinois, American Society of Planning Officials, Planning Advisory Service Report #129, 1959).

<sup>22</sup> Mandelker, *supra* note 2 at 19.

<sup>23</sup> Hubert, *supra* note 2 at 36.

<sup>24</sup> Krasnowiecki, *supra* note 2 at 68.

<sup>25</sup> Mandelker, *supra* note 2 at 16.

<sup>26</sup> *Id.* at 15.

<sup>27</sup> A procedure whereby a zone comes to rest over any municipal area if certain conditions are fulfilled. "Planned Unit Development: A New Tool for Achieving A More Desirable Environment" (Trenton, New Jersey: State of New Jersey, Department of Conservation and Economic Development, July 1966) 16.

<sup>28</sup> The ordinance lists specific zones in which these developments would be considered as well as the conditions which must be met prior to approval. *Id.* at 18.

<sup>29</sup> Scattergood, *supra* note 13 at 2.

<sup>30</sup> Advisory Committee on Intergovernmental Relations, *supra* note 18 at 111.

<sup>31</sup> Scattergood, *supra* note 13 at 2.

<sup>32</sup> *Id.*

<sup>33</sup> "Planned Unit Development: A New Tool for Achieving a More Desirable Environment," *supra* note 27 at 37-40.

<sup>34</sup> *Id.* at 37.

<sup>35</sup> The local ordinance in Mount Laurel Township, New Jersey was held invalid in a lower court because it permitted the commercial area of a PUD to be regional in nature in violation of the enabling statute. The enabling statute modified from a model statute designed for a PURD is unduly restrictive in this instance. Subsequent legislation will attempt to rectify the obvious shortcomings of the enabling legislation.

<sup>36</sup> Scattergood, *supra* note 13 at 2.

<sup>37</sup> Mandelker, *supra* note 2 at 30-32.

<sup>38</sup> Davidoff, Paul and Linda, and Gold, Neil, "Suburban Action: Advocate Planning for an Open Society" *Journal of the American Institute of Planners* (Vol. XXXVI, Number 1) at 3.

<sup>39</sup> The Ford Plant in Mahwah, N.J. is a classic visible example. This municipality is currently in court for effectively "zoning out" the bulk of a plant's working force, yet the local populace actively lobbied to recruit the plan for ratable purposes. See "UAW, NCDH in Zoning Test: Challenge New Jersey Town in Complaint to State Agency" *NCDH—Trends in Housing* (New York National Committee Against Discrimination in Housing, Vol. XV-1, 1971).

<sup>40</sup> "Sprawl is an ill-defined word, referring to a condition characterized by very large lots, or by a ribbon development along major highways, or by the leap frogging of clustered development that results from speculation. Thus by thin development or by leaving gaps, sprawl covers more land than continuous compact development." Alonso, William "The Mirage of New Towns" *The Public Interest* (Number 19, Spring, 1970) at 9-10.