

**GROUP**


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## MEMORANDUM

PROJECT NUMBER: 2080413                      DATE: October 22, 2008  
PROJECT NAME: Metro Infrastructure Study

TO: Associated General Contractors  
Clackamas County Business Alliance  
Columbia Corridor Association  
Commercial Real Estate Economic Coalition  
East Metro Economic Alliance  
Home Builders Association of Metro Portland  
National Association of Industrial and Office Properties  
Portland Business Alliance  
Portland Metro Association of Realtors  
Westside Economic Alliance

FROM: Matthew Butts, PE LEED AP   
Associate Principal / Director of Civil Engineering

**SUBJECT: Review of Materials and Findings**

At the request of the above listed business organizations, Group Mackenzie and Johnson-Gardner have reviewed a Metro document entitled "Comparative infrastructure cost: local case studies, Regional Infrastructure Analysis, Discussion Draft" (Discussion Draft) dated July 9, 2008. We believe this document is part of the support for a policy document issued by Metro within a similar timeline, entitled "Regional Infrastructure Analysis," which is currently being used to focus infrastructure funding priorities.

Based on our review, we find the Discussion Draft has significant limitations that can be grouped into three categories: the selection of dissimilar case studies, restrictions due to the approach or methodologies utilized within the case studies, and the purported conclusions, based on the study. It is our determination that the Discussion Draft fails to support its conclusions and should not be used as a foundation for policy recommendations.

It is important to note we have not prepared alternative recommendations as part of this summary, and do not have specific opposition to the supposition that infrastructure costs are lower for centrally-located development. We caution, however, that more detailed analysis is required in order to make policy conclusions.

### PROBLEMS WITH THE CASE STUDY APPROACH

The case studies are grouped in two categories: the first category is urban areas, with five examples that tend to be development projects, most 2 to 5 acres in size, with South Waterfront the largest at 130 acres; the second category is urbanizing areas, which are entire development areas that range between 200 and 12,000 acres. Costs were divided between local/community and regional. This was done to create comparative averages between the categories and is identified as being representative of the seven-county area.

We question the ability to draw comparisons between individual mixed-use projects, for example the 2.39-acre Lakeview Village in Lake Oswego, which is in the urban category, and a large-scale single-use UGB expansion, such as the 431-acre SW Tualatin Concept Area or the 12,000-acre mixed use Damascus

urbanizing area. The method used to accomplish this comparison is a conversion into a general EDU figure for comparison between, what we see as dissimilar projects.

Regional infrastructure costs appear to be compared against a seven-county average taken from an external source, while local/community infrastructure costs are compared against a selected average of the 17 case studies, less individually considered outliers. With this, the case studies are located only in the Metro service area and not the larger seven-county area.

It is our opinion that a case study approach provides anecdotal information and should not be used to draw final conclusions. Local/community infrastructure costs in the 12 urbanizing areas were based on preliminary estimates from the concept plans of those areas, rather than measurable actualized costs. The preliminary cost estimates from the concept plans utilized as the case studies were developed with differing methodologies and underlying assumptions, making it difficult to compare across averages.

The cost findings that are presented show that the local/community costs vary widely for both urban and urbanizing projects. Despite what the averages purport to show, a look at the individual data points show that the cost of providing local/community infrastructure for urban redevelopment projects can be just as high or higher than in urbanizing areas. Reviewed individually, the local/community costs for three of the five selected urban project case studies showed costs close to, or greater than, the urbanizing average.

It should also be noted that the case studies represent a mix of land use goals. The Shute Road and SW Tualatin areas are almost exclusively designated for employment uses, with specific restrictions placed on them as to the type and size of uses. These compare with other urbanizing case studies that are either a mix of uses to create complete communities, such as Damascus, and other areas that are predominately residential in nature, such as North Bethany. The urban case studies are either exclusively residential projects, with some support retail (e.g. Lake Oswego Village, North Main Village), or mixed use with a combination of housing, office and retail (e.g. Brewery Blocks). These differing land use goals need to be considered in a policy discussion on regional infrastructure, not simply the costs of providing infrastructure.

The caution of projecting conclusions from the case studies is acknowledged in the Discuss Draft on Page 11, where it states that "the small number of case studies included herein places limitations on drawing firm conclusions". However, the study, in numerous places, goes on to draw the conclusion that costs of providing infrastructure to urban redevelopment is less expensive than urbanizing areas. Specifically, this is stated on Page 8, "when all public costs, including regional costs...are added up, urban redevelopments are less expensive per EDU than developments in urbanizing areas."

## **METHODOLOGY ISSUES**

### ***Regional Costs***

The most glaring methodological issue is the use of commute distances as a proxy for regional costs. As stated on Page 8, "a good proxy for gauging regional infrastructure consumption is household commute distance." The report lists a number of costs that should be included in the regional category, including "highways, light rail, bridges, and marine and air terminals," but does not attempt to quantify these costs, rather defaulting to commute distances. There is no discussion of alternative or additional elements (other than commute distance) for comparison. Using commute distances therefore results in the urban redevelopment projects having a much smaller impact on regional facilities than urbanizing development. The study assumes that urban residents will have an average commute distance of 5 miles, compared to 17 miles in new urbanizing plan areas.

The report cites an article by Jonathan Miller of the Urban Land Institute, also on Page 8, wherein he recommends a full infrastructure cost analysis for developments and states his conclusion that, if this were done, “central, transit-oriented locations” would be favored. This article does not reference commute distances as a measure of impact.

Using commute distances and assuming that future patterns will “increase in concentric rings around the region’s core” (Page 9 graphic) does not seem to match the current available data. The most recent Census data for a range of locations around the Portland Metro area show that commute times, and the percentage of employed residents who commute alone by automobile are remarkably consistent from urban to suburban locations:

	Mean Commute Time (Minutes)	% of Commuters, Alone by Auto
97209	22	71%
97212 (Inner Eastside)	21	61%
Portland	23	60%
Lake Oswego	22	78%
Gresham	27	71%
Oregon City	25	77%
Tualatin	22	77%
Hillsboro	24	72%
Forest Grove	24	70%

Source: US Census Data

In other words, it remains far from proven that residents in an urban redevelopment area such as the Brewery Blocks are not commuting to a suburban location for employment, and thus using the regional transportation system. According to the Census, an estimated 60% of Portland residents commute to the suburbs for work.

Therefore, if commute distance is used as the proxy for regional costs between development locations, it seems likely that the regional infrastructure impact of urban redevelopment projects is under-estimated in this analysis.

Also, many residents in new urbanizing plan areas will likely be employed elsewhere in the suburbs or outside the CBD. In other words, it may be as likely a Brewery Blocks resident commutes to the suburbs as it is likely a Witch Hazel or Springwater resident commutes into Beaverton or the Columbia Corridor, respectively. If this is the case, transportation impacts may be mainly a localized cost, rather than a regional one. The use of commute distance alone fails to acknowledge the creation of mixed uses (particularly jobs) outside of the City Center and within the urbanizing areas.

***Full Impact of Urban Redevelopment***

In assessing the true cost per EDU of redevelopment in urban areas, it is important to fully consider the costs of added congestion from the increased density. As central Portland and inner neighborhoods grow more dense, the existing infrastructure system must be retro-fitted and upgraded to accommodate more people, employees, vehicle trips, energy use, waste, etc.

The public method for recovering a portion of these costs is through the assessment of System Development Charges (SDC). These costs are paid by the developer, builder, or end user, and are carefully calculated for both reimbursement for existing infrastructure and new infrastructure needed to serve the development.

Increasing inner-city growth necessitates the sometimes extraordinary costs of retrofit projects such as the Big Pipe, the bus mall redesign, extended street car and MAX, the Aerial Tram, bridge repair, arterial redesigns, plus the increased maintenance of all existing facilities.

It is far from clear that the methodology used in this study estimates the total costs of the private and public investments, as well as the cost of congestion, in assessing the impacts of urban redevelopment.

### ***Public Subsidy of Urban Development***

While the study acknowledges that urban redevelopment projects often include public subsidies, the cost estimates of individual case studies (e.g., Lake Oswego Village Center, North Main Village, Brewery Blocks) were shown to have “zeroes” for infrastructure cost while these developments did benefit from public investment (e.g. parking, streetcar, parks).

### ***Supportive Citations***

There is also a general lack of citations in the report. Much of the data and assumptions in the Discussion Draft go without citation, while the citations provided center on Urban Land Institute articles and editorial articles from the Atlantic Monthly and American Planning Association. The data used to create these articles may well be relevant to the general discussion, but they do not offer rationale toward direct comparison between averaged groups of case studies.

## **CONCLUSIONS**

While the draft report does not have a section for conclusions, there are statements throughout the report that can be read as conclusions. Our thoughts and conclusions follow:

- The sample of urbanizing projects used demonstrates a great variety in infrastructure costs. This implies that it isn't urbanizing per se that is cost inefficient, but perhaps large scale suburban development in poorly chosen areas. Areas nearer the existing infrastructure grid, in the natural path of development, should carry lower costs. The conclusion of the data as presented may be only that the infrastructure cost of new urbanizing areas or redevelopment in urban areas can vary widely depending on the suitability of the location and its proximity to existing core infrastructure, regardless of a designation of urban or urbanizing and a projected commute distance.
- The cost of increased congestion on existing urban systems needs to be fully factored into cost estimates and regional impacts are under-represented for the urban redevelopment projects considered in this study. There is no inclusion of cost for large-scale urban infrastructure improvements in part due to increased density (streetcar, water and sewer systems, bridge repair, etc.). This also relates to the stated inability to link a particular development to regional costs, while the analysis then does so only to projects in the urbanizing areas.
- It seems likely that the regional infrastructure impacts of urban redevelopment have been underestimated in this analysis (based on commute distance as the proxy). The fact is that residents of dense urban redevelopment are still quite likely to commute by car out of the immediate area. Likewise, employees in the redeveloped urban area may well live in the suburbs and commute into the city. Thus the regional infrastructure costs for these developments shouldn't be as great as those presented in this study.

Metro Infrastructure Study  
Review of Materials and Findings  
Project Number 2080413  
October 22, 2008  
Page Number 5

In conclusion, due to the small sample size and variety of methodologies used among the examples, the results of this study should not be used to state the conclusion that it is more expensive to serve urbanizing areas at the edge of the UGB, than mixed use urban projects. Again, while this may generally be acknowledged, more detailed analysis is required to provide the quantifiable analysis necessary to make infrastructure funding decisions.

c: Jerry Johnson – Johnson-Gardner  
Mark Clemons, Chris Clemow – Group Mackenzie