

Location of Growth, Urban Form, and Cost of Infrastructure TECHNICAL PAPER FOLLOW UP

Follow-up Items

1. Concern was raised that this paper did not adequately address 1) the relationship between growth and water and wastewater infrastructure and 2) the cost of growth

Response: These issues will be addressed in July and August Technical Reports on these specific topics.

2. Provide a set of maps showing the difference between the 4 scenarios

Response: Maps will be distributed at the July Committee meeting.

3. On page 85 of the report, clarify what is meant by the sentence "Link urban form to activity space-time measures..."

Response: Residents of densely developed neighborhoods with more retail stores and better connected streets generally have smaller area sizes of daily activity and shorter daily travel distance. Retail mix and street connectivity are key factors relating to individuals' uses of space while building density is less important. See White Paper Reference No. 26.

4. On page 82 of the report, further explain Table 15

Response: Nine consequences of urban form were identified for use as qualitative comparators between the Growth Scenarios. The White Paper team assigned none, one, two, or three checkmarks for each combination of comparator and Growth Scenario. These decisions were made on the basis of the entire process and cumulative findings.

5. On pages 51- 53, the usefulness and validity of the data in Figures 21-24 is questioned

Response: R2 is a statistic that will give some information about the goodness of fit of a model. In regression, the R2 coefficient of determination is a statistical measure of how well the regression line approximates the real data points. An R2 of 1.0 indicates that the regression line perfectly fits the data. The weak reported R2 values reflect the simple nature of the analysis. It is suspected that many of the Traffic Analysis Zone (TAZ) have other significant variables that could be controlled for in a more complete and exhaustive analysis. The density thresholds may be where diminishing returns begin; the point is that there are general visible patterns and relationships between the graphed variables. The variability is worth investigating.

6. On page 6 of the report, CO2 emission # seems low

Response: The information came from the following report www.energy.ca.gov/places/

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7. On page 53, clarify measure of density and water usage

Response: Data presented in the White Paper was annual per capita usage by TAZ (Figure 23) and was gallons per person per day by utility (Figure 24).

8. Further explanation of the Conservation Lands System (CLS) and Habitat Conservation Plans and their relationship to the habitat protection scenario

Response: For Pima County, the Conservation Lands System is a policy and not an ordinance. Although the County can only implement it in unincorporated Pima County, the mapping data exists for all of Pima County making it simple for other jurisdictions to adopt it consistently. Two other jurisdictions have adopted the CLS: The City of Tucson adopted the CLS in October 2008 for annexations, and the City Council directed that the CLS be incorporated into the General Plan during the next update. The City is also undertaking a Habitat Conservation Planning process for the Greater Southlands - including quite a bit of land that is currently in unincorporated county. This process is building off of the CLS and will include conservation strategies for areas outside of the CLS in addition to what is protected through the CLS. The Town of Oro Valley, in 2008, adopted the CLS for the massive proposed annexation of 9,000 acres of State Trust land north of Oro Valley. The majority of the rest of the Town is built out. As for implementation of the CLS, the County is committed to both land acquisition and development set asides to achieve the goals of the CLS.

Comments/Recommendations/Themes

1. The following factors strongly affect if, how and where we grow and will make it difficult to achieve these scenarios:
 - Land values are a major driver of density that needs to be considered.
 - Economic factors are a significant factor in how communities grow– where are the jobs?
 - Availability of private land and release of State Land strongly influence where growth will occur.
 - Growth will be influenced to go to areas that are undeveloped unless we protect those areas.
 - It is still so much cheaper to build on the edge than to do infill.
2. A blend of the growth scenarios might make the most sense. We don't want to give the impression that these scenarios are mutually exclusive. What are the attributes of these scenarios that might be combined?
3. Density should come with public investment and benefits. Taxpayer savings through more efficient growth should be invested in new and upgraded infrastructure to serve more dense areas. In the past we've seen increases in density without increased investment in infrastructure and services – we need commitments to do these things before we commit to density.
4. Need to use caution with benchmark data because in some cases, correlations aren't that strong, and the benchmark communities are different than Tucson (e.g. types of water resources available).
5. Increasing density can disrupt existing neighborhoods making it impractical and may not be desirable.

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6. Scenarios need to include job centers and areas for recreation.
7. We need to lay this out for the public – we need input and education.
8. It is important to consider what governments have control over when it comes to growth.
We are more likely to influence the form of growth than how many people come here.
9. Government should not be dictating density in terms of minimum residences per acre (RAC).
Instead government should plan, construct and phase infrastructure in desired growth areas.
10. The economics of the status quo scenario are unsustainable.
11. Do we have enough water for 2 million people?

Issues for Regional or State-level Discussion

1. It is very important that this discussion happen regionally, because how the other jurisdictions grow has a big impact on how the City and County will grow.