

Conservation Study Group comments on Design Scenario Measurements

29 September 2011

The Conservation Study Group (a.k.a. Expert Forum) has reviewed a number of documents regarding the design scenario process and the measurements being considered as of 11 June 2011 to evaluate design scenarios. We offer the following observations, comments and suggestions as modeling and scenario evaluation moves ahead. We wish to thank you for the opportunity to comment and offer suggestions at this critical and time-sensitive point. We know deadlines are looming.

The CAC sub-group for design scenario development and the City planners are really starting to move along! It is great to see a commitment to establish a Conservation Lands System included as a policy in the Open Space element of the Revised Plan, and at least the potential to address some key aspects of natural and cultural resource conservation in both the measurements and in one of the three 'severe' elements [see item 3-c of Sandy Epstein's May 18, 2011 notes from the Scenario Sub-Committee meeting -- "All scenarios must consider and respect **federal land boundaries** (and perhaps some state lands)"].

These aspects of the Revised Plan are quite important to Flagstaff-area residents. For example, in the December 2010 *Flagstaff 2012 Regional Plan Community Values Survey Report* prepared by NAU's Laboratory for Applied Social Research 89% of respondents agreed open space preservation is important, and 79% of respondents agreed that wildlife habitat should be conserved within the city. Similarly, the *City of Flagstaff Parks, Open Space and Recreation Master Plan Survey Findings* (March 2011) revealed that more respondents desired "open space meadows" (~31% of those surveyed) than any other park-related amenity, and 60% ranked the preservation of open space as the function *most* important for the City to provide.

These findings are mirrored by the results of various statewide (e.g. Arizona Forward 2011) and national (Crompton 2001, NTPP 2011) studies revealing that open space and parks are not only highly valued by the state's citizens but also convey multiple economic benefits, including neutral or positive impacts on real estate values where greenspace has been preserved within urban developments.

Finally, during the Design Charrettes, there was a high degree of agreement on priority lands to be conserved among all three scenarios.

All of these findings are consistent with [The Greater Flagstaff Open Spaces and Greenways Plan](#), which, among many other things, defines several open space categories and [Retention Priorities](#). It also includes an inter-agency MOU that is in need of renewal – perhaps with several updates. We urge the City and the County to actively pursue renewal of the MOU.

Thus a successful Plan will need to do a good job in providing for conservation as we grow. Ideally, development and conservation will often occur in synergy, rather than just always in a compromise, as in the case of wastewater being used to support the wetland ecosystem at Picture Canyon, or the permanent protection of the crater at Dry Lake. This type of synergy should be a goal of the process.

General:

We are concerned that the scenario evaluation process is based on a set of quantitative measurements that may prove to have limited efficacy when it comes to assessing the conservation of natural (ecosystems, wildlife, plants) or cultural (ancient and historic human places) resources, but we appreciate the efforts that have been made. In complex systems, much of what is important is contextual; it may be difficult to predict what assemblage of conservation elements will be most effective until the adopted scenario is known. As an example, some parcels in the FMPO are ecologically important because of their location in a wildlife corridor, even though they may not support a high diversity of species, or be very large in themselves. Conversely, for similar reasons it is difficult at this point to assign relative conservation value to the different scenarios using the measurements available to the modeling process that is being developed – a more qualitative and context-sensitive approach to valuing and prioritizing specific open space parcels is likely to yield better evaluation of different scenarios.

But we must move on, so we first offer suggestions that we believe will be most important regardless of the scenario chosen.

Lands to conserve in any scenario

We encourage identification of the following lands for potential conservation as part of the ‘severe’ element -- “All scenarios must consider and respect federal land boundaries (and perhaps some state lands).” A number of parcels across different ownership categories are of high conservation value to wildlife and provide core habitat and/or are components of important wildlife movement corridors within the FMPO, while others are of cultural/historical, recreational, scenic, or other value as open space.

Arizona State Trust Lands. We acknowledge that Arizona State Trust Lands must be a) reclassified as worthy of conservation under the API process and b) purchased at state auction at their appraised value. However, we believe an important part of the Regional Plan and Scenario process needs to be identification of Arizona State Trust Land parcels that are of highest priority for eventual conservation pending availability of future funding and successful purchase at auction. Thus we advise incorporating some means of identifying specific ASLD parcels of highest priority for potential conservation into the scenario process; see Section d- iii under the “Measurements” heading below for one idea. ASLD parcels of high value to wildlife and/or for their cultural resources include:

1. Multiple ASLD parcels in the Woody Ridge wildlife corridor south of I-40 (bounded on west by Camp Navajo and on the east by the area around Dry Lake, and extending further south, some of which also provide breeding habitat for species of conservation concern.
2. Observatory Mesa, in particular the western parcels which are part of the same wildlife corridor that connects the Peaks to the Rim country through Woody Ridge.
3. Picture Canyon Section 4
4. Parcels in proximity to Walnut Canyon National Monument.

Coconino National Forest. Some Coconino National Forest lands, while not under the specific purview of the revised Regional Plan, are nonetheless of high conservation value as wildlife habitat and/or for mixed recreational use, conserving scenic viewsheds, etc. These should be acknowledged as such in the Plan in some way to support future collaboration among the City, CNF, and other partners and to promote “conservation-friendly” development wherever possible. For example, certain National Forest lands -- e.g. the area west of Observatory Mesa between Baderville on the north and I-40/the Naval Observatory on the south -- are critical to the future integrity of the Woody Ridge “Peaks to Rim” wildlife corridor cited in the preceding paragraph, providing essential internal links or “anchor points” at the ends of these corridors that help maintain unimpeded wildlife movements and migrations. This same area of CNF (and its associated wildlife corridor) also greatly overlaps the proposed “US 180 Corridor Mobility Study” in the Flagstaff 2030 Regional Transportation Plan, while the area of Forest surrounding Highway 180 just east of Baderville in Ft. Valley provides another “link” in the same wildlife movement area. (Please also see the section “Micro issue - Future bypass routes” below for further comment). Thus we feel it is essential that areas of the Coconino National Forest of high resource value be specifically identified now to ensure they will be adequately considered in the context of any future proposed land exchanges, roadway development, or other actions that may involve the USFS within the FMPO area. This could also facilitate future conversations regarding development of potential mitigation (wildlife crossing structures, more permeable fencing) to reduce vehicular collisions and maintain the integrity of existing wildlife corridors.

Uncertainty

The general economy and the housing market in particular have swung widely over the past several years. The predicted growth rate, based upon one median number and (sometimes) a narrow range around it directs the City’s planning focus. However, we are concerned that the low end of the range may not really accommodate what will happen if markets continue as they have for several more years. This will not necessarily be a problem in implementing the revised Plan, but the likely effects should be considered. For example, activities that are time-sensitive or rely upon some cash flow may be significantly affected by growth rates.

At the least, Vision (which is essentially ‘timeless’) should be kept separate from the time and tasks (objectives) it takes to get there.

Monitoring

Speaking of getting there, it would behoove us to have a feedback mechanism specifically built into planning as a part of adaptation. This is often ignored in plan creation and implementation – leading to stale plans that no one uses.

Let’s take the opportunity to keep the product people are working so hard on viable – a living document! This could and should be an effort that goes beyond a task for City staff to undertake; it could easily be used to keep citizens and organizations productively and positively involved in the future of Flagstaff.

'MICRO ISSUES'

The Sub-Committee for Development Scenarios has identified “micro or sub-level decisions” that will not necessarily be incorporated into the initial development of the design scenarios, but which will “likely be carefully examined later in the planning process” (May 18, 2011 Sub-Committee notes from Sandy Epstein). The following comments address a number of areas that would likely fall under this category of “micro” issues:

'Micro issue' - Development design elements for any scenario

We appreciate the broad range of conservation-oriented Goals and Policies that have been incorporated into the “Environmental Planning and Conservation” and “Open Space” elements of the Revised Plan. We wish to highlight that they are consonant with many policies in the current Coconino County Comprehensive Plan (see below), and we feel they could prove useful as guidelines in evaluating the different scenarios. They could also be helpful at a more “micro” level for guiding the quality of development in areas with different degrees of environmental sensitivity, as we believe is the intent of many aspects of the EPC element. The following policies from the County Comp Plan seem well in accord with policies in the “EPC” and “Open Space” Elements of the Revised Regional Plan:

Development projects within ponderosa pine forests should preserve existing meadows for neighborhood open space whenever appropriate and practical.

Promote the protection of threatened and endangered vegetative species and encourage the preservation of native, non-invasive vegetation and retention of other significant vegetative features for all new development proposals.

To the extent possible, revegetation and restoration of disturbed areas with native species shall be required. Appropriate action to prevent the spread of noxious weeds prior to implementation of a development project or roadway maintenance is required.

Developments in forested areas accommodate the connectivity of trails and wildlife corridors to avoid habitat fragmentation and discourage the haphazard development of social or user-created roads and trails.

Protect and preserve old-growth habitat and ecosystems.

'Micro issue' - Wildlife-friendly communities in any scenario

The Arizona Game and Fish Department has written Wildlife-Friendly Guidelines for project developers. We recommend they be incorporated as a way to encourage developments that are appropriately porous to wildlife and perhaps plant movement, and that probably also enhance land values in many cases.

'Micro issue' – Future bypass routes. (applies to all scenarios)

There are several locations where new bypass roads have been proposed in the planning area (e.g. 180 bypass, SR 89 bypass). Some of these (e.g. 180/Snowbowl bypass) have the potential to fragment multiple-species wildlife movement corridors, such as the Woody Ridge corridor mentioned above that connects the Peaks with the Rim country. This same bypass may block the best existing I-40 wildlife

crossing Between Flagstaff and Williams. Careful placement with mitigation can reduce the negative impacts. While we do not assume that any of these proposed roads is a given, we do have a number of relevant questions: Can we proactively suggest more wildlife- and habitat-friendly locations for these potential routes early in the planning process? Is there an opportunity to optimally locate it (now) that could, with appropriate design, enhance or redevelop movement corridors with overpasses, underpasses, tunneling or elevation? Could some locations serve as a barrier to human disturbance of key areas (social trails, ATVs, etc.?) Could it serve to provide drainage water to enhance springs likely to disappear as the climate heats and effectively dries? These are issues we would like to see included in the evaluation of any such potential routes in the future.

‘Micro issue’ – Implementation Plan

An implementation plan, scheduling the actions identified in the Regional Plan should be developed and included in the final RP itself. This could be modeled on the Implementation Plan that was incorporated as an addendum to the Coconino County Comprehensive Plan when that Plan was adopted in 2003.

Measurements

While we don’t wish to make the job of scenario development more complicated or difficult, there are some challenging issues inherent in defining measurements such as many of those below that we wish to highlight. For example, as noted below there are different types or categories of lands that could be considered open space (e.g. FUTS trail, City park, National Forest) and different functions that open space can serve (active recreation, undeveloped open space, wildlife movement corridor, etc.). In addition, different functions of Open Space may sometimes overlap (“multiple use”) and in some cases these functions or uses can conflict. This necessarily complicates the development of unitary measurements such as that suggested in a) Land Use letter I, “Open Space : % residential units within ¼ mile of open space.” A high percentage of residential units within ¼ mile of a FUTS trail would rightly be considered an amenity in evaluating a future development scenario, but a high percentage of such units with the same distance to an area of forest providing habitat to a sensitive species or that was part of an important wildlife corridor would likely be considered a negative attribute.

a) LAND USE

- i) Open Space: _____% residential units within ¼ mile of open space (FUTS trail, park, designated Open Space, and National Forest). *Measure via GIS mapping.*
- ii) Industrial: Potential for industrial development within existing zoning = _____ sqft (map this). _____% of this developable / re-developable area is served by adequate infrastructure (water, sewer, power and roads). *Measure via GIS mapping.*
- iii) Infill / Redevelopment: (DEFINE THESE CLEARLY FOR CHARRETTE PROCESS)
 - (1) Infill - _____ lots / acres available based upon ARS State Statutes for ‘Infill Incentive Areas’ which COULD = _____ residential units and _____ commercial sqft based upon existing zoning. *Measure via GIS mapping.*
 - (2) Redevelopment - _____ acres appropriate for redevelopment areas (as defined through the Regional Plan process). Which COULD = _____ residential units and _____ commercial sqft based upon existing zoning. *Measure via GIS mapping after*

'redevelopment areas' established through charrette process and CAC definition, working with John Saltonstall.

b) TRANSPORTATION

- i) Mode Share: _____% auto/transit/bike/pedestrian. Use FMPO Transportation Trip Diary Survey to set base; next updated one scheduled for summer/fall 2011.
- ii) VMT: Vehicle Miles Traveled per capita (break out locals and tourists?)
 - (1) Gas dollars
 - (2) Tax dollars for HURF
 - (3) Carbon footprint

c) ECONOMIC & FISCAL STABILITY

- i) Infrastructure: for each scenario
 - (1) _____% new build = cost/benefit
 - (2) _____% upgraded / redevelopment area = cost/benefit
- ii) Housing Costs & Availability:
 - (1) _____% single family = cost/benefit
 - (2) _____% multi-family = cost / benefit
 - (a) How does each scenario fit in with demographic shifts?
 - (b) How does each scenario relate to rate of pay?
- iii) Mixed-Use:
 - (1) Population can support _____ acres of mixed-use = cost/benefit
 - (a) For next 20 years – need _____ housing units and _____ sqft commercial. If _____% of this is within mixed-use at _____ stories high, implications to (walkability / water use / etc.)
 - (b) Marketability? Finance Risk?

d) Environment and Conservation

- i) Water: demand vs. supply (potable, reclaim, grey). How do conservation measures calculate in the model?
 - (1) Water energy demand / use / cost for production, delivery and treatment.
- ii) Energy: demand vs. supply (supply portfolio).
 - (1) Measure ___% buildings energy efficiency – relate back to individuals energy bills.
- iii) Conservation:
 - (1) Conserved land for riparian waterways = wildlife corridors = people/animal connectivity to open space.

Comments: See above issues raised about possible conflicts between different open space functions/uses under "Measurements." People and animal connectivity are not always compatible, though conservation of riparian areas and associated native vegetation are generally very positive for wildlife, and appropriate levels of recreation/human use can be compatible with wildlife values there. Connectivity may also be important for plants, for example for plants that depend on specific animal pollinators or seed dispersers, though this may be difficult to quantify.

- (2) Wildlife – ask AZ Game & Fish what type of measurement would help ascertain biodiversity eco-system health.

*Comments: There really is no single or simple measurement that alone can define the health of a given ecosystem type or overall biodiversity; biodiversity is relative to ecosystem type so trend in biodiversity (stable vs. decreasing) is a better assessment. Attempting to define such indicators is a worthwhile but challenging process in the context of focused ecosystem management and restoration – the US Forest Service is working to develop “Management Indicator Species” of wildlife whose presence and/or numbers are typically indicative of healthy grasslands, ponderosa pine forests, etc. But it’s harder to come up with something overall for this planning process. Similarly, the Arizona Game and Fish Department has developed a **statewide** GIS-based model called the “Species and Habitat Conservation Guide” to evaluate the landscape of Arizona based largely on overall species diversity, but this tool is not really intended for application at the scale of the Scenario process, and excludes some important aspects such as the presence of wildlife corridors. A better strategy would be to engage a team of appropriate content experts and incorporate various approaches (such as the USFS Management Indicators, AGFD data and models, habitat for sensitive species, qualitative judgments, etc.) to conduct a systematic evaluation of lands within the planning area for their relative natural resource values – an approach that would also directly support development a Conservation Lands System. That said, a number of the ideas raised under “Micro issues” above would serve the general goals of promoting ecosystem health and maintenance of native biodiversity if widely adopted in the FMPO area.*

- (3) Add number of parcels or area conserved in ‘very important’ and ‘important’ categories of ASLD parcels here or in Open Space above.

*Comment: We provide this as one possible added indicator for Design Scenarios, but as per our remarks above (see “Lands to conserve in any scenario”), raw numbers of parcels or area of parcels conserved that are judged to be important for conservation/open space values are likely not the best methods. Instead, identifying **specific** parcels on the landscape is likely to be a better and more context—sensitive approach for the community.*

References

A review of surveys of price and saleability of homes near greenways. 2001. From article in the *Journal of Park and Recreation Administration*, Fall 2001 by John L. Crompton, Department of Recreation, Park and Tourism Sciences, Texas A&M University, College Station, Texas.

<http://www.americantrails.org/resources/adjacent/CromptonProximate.html>

City of Flagstaff Parks, Open Space and Recreation Master Plan. Survey Findings. March 2011.

Economic Benefits of Wildlife Habitat. Facts about expenditures related to wildlife recreation. Accessed from the website of the National Trails Training Partnership (NTTP) on September 13, 2011.

<http://americantrails.org/resources/wildlife/EconWild.html>

Flagstaff 2012 Regional Plan Community Values Survey Report. Laboratory for Applied Social Research, Northern Arizona University, December 2010.

Regional Plan 2012, CAC Sub-Committee for Design Scenarios meeting notes. March 18, 2011. Sandy Epstein, ASU Decision Theater, notetaker.

Why parks and open space matter: The economics of Arizona's natural assets. Arizona Forward, September 2011.