Yosemite National Park

Merced River Plan

Distribution: Public Workshop on the Protection & Enhancement of River Values
Date: Aug. 2, 2012
Time and Location: 9 a.m. to 3 p.m., Garden Terrace, Yosemite Lodge, Yosemite Valley

Merced River Plan Public Workshop
"Protection and Enhancement of River Values"
Meeting Notes

Presenters: Kathleen Morse, Planning Division chief; Jim Bacon, transportation planner; and Bo Shelby and Doug Whittaker of Confluence Research and Consulting

Welcome: Yosemite Planning Division Chief Kathleen Morse and Superintendent Don Neubacher welcomed 41 participants to the "Protection and Enhancement of River Values" Merced River Plan public meeting and highlighted the day's five-part agenda.

Workshop Overview: The Aug. 2, 2012 meeting is designed to fulfill the requirement of the Sept. 29, 2009, Settlement Agreement that requires the National Park Service to meet with the public between the release of the Merced River Plan Preliminary Alternative Concepts Workbooks and the forthcoming draft environmental impact statement (DEIS). The meeting reviewed the foundational planning materials and fostered discussion of user capacity, including a 2011 river-use study.

PART 1: MERCED RIVER PLAN FRAMEWORK – FOUNDATION, presented by Kathleen Morse

Planning Goals for the Merced River Plan Include: determine programmatic and site-specific actions needed to protect and enhance river values; look at facilities and services, as requested by the U.S. Court of Appeal's Ninth Circuit; and keep the values of the river – as the foundation of the plan.

A Planning Framework incorporates eight steps, of which the first five are foundational and the last three are the "moving" parts of the plan.
1. Identify outstandingly remarkable values—everything builds off this
2. Assess baseline conditions of river values
3. Define the desired condition—what to strive to maintain
4. Identify specific actions to avoid adverse impacts
5. Determine facilities necessary for public use and feasibility of relocation
6. Solicit public input on range of alternatives and organizing themes – ask the public if the right range
7. Evaluate operational and implementation feasibility of draft alternatives
8. Establish user capacities consistent with protecting river values

Protecting River Values Depends on Terminology – Specifically, the terms "adverse impact" and "degradation," are noted in the Wild and Scenic Rivers Act (WSRA):

* "Each component … shall be administered in such manner as to protect and enhance the values which caused it to be included in said system." (WSRA, Sec. 10)

* “Each component will be managed to protect and enhance the values for which the river was designated, while providing for public recreation and resource uses which do not adversely impact or degrade those values.” (WSRA Guidelines, 1982)

Adverse Impact as defined by the Merced River Plan: A significant reduction in the quality of a river value in relation to baseline conditions as a result of public use or development. Adverse impact is determined at a segmentwide scale and requires immediate attention by the agency.

Degradation as defined by the Merced River Plan: The state in which a river value has been fundamentally altered by public use or development to point that its value is lost for at least 10 years. Degradation is defined at a segmentwide scale.

This planning framework, which includes a management standard, implements a monitoring program to ensure that actions are taken before adverse impacts and degradation occur. Although the park is not compelled by the Wild and Scenic Rivers Act to take certain actions, the park seeks to execute them because they will enhance the visitor experience in the Merced River corridor.

Management Standard Illustration (Slides 8-10 of Part 1): Informal trails in Stoneman Meadow illustrated an undesired ecological condition, in the past. By using a Largest Patch Index (LPI), Yosemite scientists were able to define the meadow’s fragmentation through a numerical rating of the resource to be tracked over time. More disturbance = a lower number. Less disturbance = a higher number. The management standard is 93%. Adverse impact would be less than 81%, and degradation would be less than 40%.

QUESTION: Is there a process you might use to adjust your management standard?
ANSWER: *You can change your use level or change your standard, but it is difficult to do unless the time and resources are available. Corrective actions can be taken to put yourself back to where you want to be. In response to a degraded meadow illustration, a last resort would be to close the meadow.*

FOLLOW-UP QUESTION: Does the NPS look at existing standards to ask if these are reasonable standards? For example, if the park’s geologist has access to a new tool, could he apply it to raise or lower a standard?
ANSWER: *Once a plan is done, it’s stated what a park is committed to doing. Changing that would be a change of the commitment. New plan amendments can happen, which would change standards. The amendment can require a NEPA process.*

FOLLOW-UP QUESTION: Which NEPA process would be required to change a standard?
ANSWER: *Adjusting a standard called for in an environmental impact statement (EIS) would likely warrant a supplemental EIS to adjust a standard. If new science indicates a new standard, then the park management can decide if it is going to meet it. And, if new science indicates the park would need to do a series of politically painful elements to improve a condition, the public would be brought in to amend it.*

QUESTION: Do you have capacity numbers in wilderness?
ANSWER: *Yes. In wilderness, most quotas are correlated by social conditions and solitude as drivers.*

Biophysical impacts, however, are related to "kinds" of use more than the "amount" of people. As an example, it doesn't take many people crossing a fragile meadow to make a big impact, and each person has variable amounts of impact. The question is: How do we make a site more resilient, through a boardwalk or channeled use, or, if necessary, closure? If a few people go off trail in wilderness, a permanent informal trail might not occur, so a wilderness solution might not need a boardwalk.

QUESTION: When do you address having the staff needed to do monitoring for such a complex plan? ***ANSWER:*** *Each year we look at the staff we need – including how much staff we need to do the monitoring and to retain that level of monitoring over time.*

PART 2: RECREATION ORV and RIVER-USE STUDY, introduced by Jim Bacon and followed by "Boats, Beaches, and River Banks" river-use study by user-capacity experts Bo Shelby and Doug Whittaker

Planners must ask themselves what kinds of use and amounts of recreation to allow. The *National Wild and Scenic Rivers System: Final Revised Guidelines for Eligibility, Classification and Management of River Areas*, also referred to as the Secretarial Guidelines, indicates use can only be allowed if it will not impact the resource. Planners have to be discerning: Are activities truly river dependent? And are they outstandingly remarkable?

Yosemite's wilderness activities include hiking, backpacking, and swimming. Yosemite Valley's activities include broader variety like viewing scenery, paddling, and picnicking. Through the Recreational Outstandingly Remarkable Values (ORV), social scientists ask visitors subjective questions about how they feel about their experience. From survey data, it's possible to quantify Yosemite's experiential activities. Visitor-use experts compile data on:
1. Recreational activity participation – can you participate or are the activities there you want?
2. Setting attributes – is it a setting you desire? Do you have parking? Are there too many people? (Wilderness is a pristine setting and, socially, you will not see a lot of other people. Yosemite Valley is a natural setting with a high level of social interaction, such as large picnics with family and friends.)
3. Recreation experience quality – is it a quality experience?

**** River-Use Study PowerPoint presentation (Slides 5-57 of Part 2): "Boats, Beaches, and River Banks: Visitor Evaluations of Recreation on the Merced River in Yosemite Valley" (also presented publicly June 12, 2012, in Valley).

River-Use Survey Specifics: In July 2011, Confluence Research and Consulting conducted a 15-day survey to measure visitor experiences in and along the Merced River corridor. Response: 806 people responded with a 92% response rate indicating experiences from "great" to "frustrating." Sample: Visitors were sampled at different locations and different times of the day. The Study's Objectives: Describe river users; measure perceived crowding; evaluate densities; and evaluate management actions. Overlap with the Merced River Plan: The 2011 river-use survey seeks to understand the Recreational ORVs, in part, by examining indicators and standards to query capacity questions.

The 2011 river-use study defined characteristics of recreationists along the Merced River:
* Groups average 5.3 people; mostly Californians (72%); with a long history of visiting the park.

* More than half the people spend night in park, spend four days per trip here, and spend three hours at or on the river each day.
* Primary Activities: Relaxing on river; followed by picnicking; rental and private floating; and swimming.

QUESTION: Were visitor recreation surveys done in Wawona or El Portal?
ANSWER: *No, this particular 2011 study surveyed visitors situated between Clark's Bridge to El Cap Bridge locations in Yosemite Valley; however, a broad variety of visitor-use surveys have been done parkwide.* ***ON THE PARK WEBSITE:*** *http://www.nps.gov/yose/naturescience/visitor-use.htm*

Perceived Crowding: The 2011 river-use study measured perceived crowding through an established research technique done in studies throughout the world. Surveys ask participants how crowded do they feel today? Respondents then rate their experience on a Likert-type scale. In the Yosemite survey, the scale was anchored by "not at all crowded" as No. 1 on the scale to "extremely crowded" at No. 9. Yosemite's Results: Perceived crowding ratings for boating, relaxing, and swimming landed in the "normal" or "high normal" range. The same respondents felt crowded, however, driving on roads, finding parking, and riding shuttles – all rated as "greatly over capacity" in the 80% or higher category.

What Yosemite's Survey Experts Learned: Crowding is less of an issue on Merced River shorelines than on the roads and shuttles. The opportunity is to address a high-volume transportation system, including parking, to relate to a high-quality park experience.

QUESTION: Is the "perception" of crowding factored in? Someone who is used to living in the woods might feel differently about crowding than someone from a large city like Manhattan?
ANSWER: *Yes, perceived crowding is subjective. Social scientists argue this is an empirical question to be measured, as people's responses fall on a bell curve indicating a consensus or norm of what is right and wrong about a place, such as density levels. When scientists find agreement, they can say the basis for action is appropriate. Overall, scientists rarely find survey differences due to "hermits" or "urbanites".*

QUESTION: How many days is the park overcrowded?
ANSWER: *Think of it as how many days do we need to manage to make sure we don't' get overcrowded.*

QUESTION: In this boating survey, did you measure crowding experience at different times of year?
ANSWER: *No. On a normal year, boating occurs Memorial Day to Labor Day. Surveying this time of year is best as the conditions make floating permissible (the combined temperature and water are 100 degrees), and school is out of session. A question to ask: Do people who visit in September have a different level of crowding standards – avoiding coming earlier in the summer when it's more crowded?*
ON THE PARK WEBSITE: *Find a broad variety of visitor-use surveys done at various times of year, such as the 2009 winter recreation study, at http://www.nps.gov/yose/naturescience/visitor-use.htm*

QUESTION: Do expectations play into the crowding rating?
ANSWER: *Yes. Expectations are different than tolerances. If you prefer to see fewer people, you are more like to say it is crowded.*

QUESTION/COMMENT: The perception is that Yosemite is now crowded even by people, like this participant, who didn't used to view Yosemite this way in the past.
ANSWER: *A "creep" phenomenon posed in the research: If a site was not managed to limit increased use, does everyone notice the creep over time or are people just used to the new situation? This relates to a process of setting a standard and trying to manage to it.*

FOLLOW-UP COMMENT: Park management should manage customer expectations regarding Yosemite's crowded reality. Give your "customer" the information up front, and then the "customer" won't have surprises, especially bad surprises.
ANSWER: *If you can change their expectations, you might be able to change their evaluation of it. Need to keep expectations realistic as a good management practice*.

QUESTION: Are you aware of research about anticipated conditions and perceptions of overcrowding?
ANSWER: *We have photo illustrations of different levels of densities and ask visitors which is acceptable and which is unacceptable. We ask two questions: What did you see? What do you think about it? You don't just establish capacity and then manage for it but rather you use a variety of tools to address it.*

QUESTION: Are swimmers and boaters using the river at the same time? Is there a conflict?
ANSWER: *It was thought that shore-users may not desire the same number of boaters. Surprisingly, shore-users showed more support than opposition for boaters.*

QUESTION: To what extent do you survey the non-boaters about boating?
ANSWER: *Shore users, often present to picnic and relax, and boaters have the same response in opposing or supporting limits or reductions of boaters.*

To evaluate boating use, the 2011 river-use study showed four photo illustrations to visitors displaying different densities. Result: More boats meant lower acceptability. Peak 2011 boating use: Highest rental day had 209 raft rentals. (By rule, the park concessioner can only rent 100 boats at one time.) Peak total boat estimate: 330 boats. Peak density: 70 boats per mile or 10 boats per snapped photograph. What the Survey Experts Learned: Visitor experiences are relatively positive. Visitor-use conditions might not be what someone would prefer, but, in general, conditions are acceptable. Some support exists to reduce boating, including commercial raft rentals.

To evaluate shore use, the 2011 river-use study presented four photo illustrations of a generic beach front with different people-at-one-time (POAT) densities of 10, 30, 60, and 100 people. What the Survey Experts Learned: Survey participants found densities up to 60 people as acceptability with unacceptable levels above that. Beachgoer density, however, varied on beaches throughout the day – often with peak use at 2 or 3 in the afternoon. Highest Measured Beach Use: A beach located near Stoneman Bridge referred to as "River Right" that was photographed at 3:43 p.m. Aug. 7 with 81 people at one time (when typical beach levels support 20 people at one time). What Survey Experts Learned: At the seven studied beach locations, visitors found densities to be in an acceptable range. To address shore use, potential management actions include: telling visitors of less busy beach locations; and offering trails to the lesser-used beaches. Survey participants opposed reducing beach parking or limiting general Valley day use to control beach density.

To evaluate people's perception of riverbank conditions, the 2011 river-use study presented photos of the Merced River shoreline with another Likert-type scale anchored by "very unacceptable" on one end and "very acceptable" on the other end. Survey participants were shown photos of degraded habitats, but many found the habitat images to be very acceptable. Summary: Visitors perceive the severity of ecological impacts differently than park biologist do.

Finally, to evaluate potential management tools like fencing and boardwalk, the 2011 river-use study presented photos with accompanied text indicating the closing of sensitive areas and the re-routing to other areas. What the Experts Learned: In general, survey respondents supported all management actions -- even those indicating the use of "many boardwalks." To discourage use in sensitive area, park managers should address how visitors view a landscape. What is the location of the spot? Is there a beach there? Is shade available? Can I get to the beachfront? Is there a place to sit? And then, management solutions must work for human, plant, and animal habitats.

QUESTION: In terms of human impact on the environment, is it peak days of use or something else?
ANSWER: *Biological impacts are related to the things people do or the places they go rather than the number of people who are there. It isn't as simple as more people equates to more impact. In a meadow, a few people might start an informal trail that becomes heavily used by hundreds, but the damage was started by just the first few people. Therefore, instituting regulations like having no more than "10" people at a site may not be an effective management tool because those 10 people could cause impacts depending on what they do there.*

<u>PART 3: FACILITIES AND SERVICES ANALYSIS,</u> presented by Kathleen Morse

The Wild and Scenic River System's Secretarial Guidelines states, "Major public use facilities such as developed campgrounds, major visitor centers, and administrative headquarters will, where feasible, be located outside the river area. If such facilities are necessary to provide for public use and/or to protect the river resource, and location outside the river area is infeasible, such facilities may be located within the river area provided they do not have an adverse effect on the values for which the river area was designated."

To meet this mandate, all facilities within the Merced River corridor were examined to determine if a facility:

1. Meets the definition of a "major public use facility"
2. Is necessary for public use and/or to protect the river resources
3. Could feasibly be relocated outside the river corridor
4. Causes localized adverse impacts to river values that require mitigation

Structures used for administrative needs, visitor lodging, employee housing, food and retail services, campgrounds, roads, bridges, and utility infrastructure are among those that are considered a "major facility" within the Merced River corridor.

A list of facilities to be removed across all alternatives was presented – as documented previously in the

spring 2012 workbook. Foundational actions seek to improve and to eliminate adverse impacts across all alternatives. Based on Footnote 5, it's important to ask: How many facilities should really be provided? The answer will vary across the alternatives based upon the type of visitor experience that the alternative concept represents. Facilities can be relocated, re-purposed or reduced. Types and size of services can change, too. Park planners aim to craft visitor experiences that will to be consistent with the spectrum of river values and to craft a future by design.

QUESTION: Within facilities, did you examine locations where employees live?
ANSWER: *An analysis has been done of the number of employees needed to support different visions, and that relationship is tracked in each alternative. For example: The fewer services -- the fewer employees needed -- and the fewer housing units needed.*

QUESTION: Have alternatives changed since the preliminary alternative concepts were released?
ANSWER: *In response to public comment, the park management has made adjustments to alternatives.*

QUESTION (Aug. 2 context: Yosemite Lodge maintenance pouring concrete around the snack stand) Why pour concrete around snack stand if it is proposed to be removed in all alternatives?
ANSWER: *The concrete work in and around the Yosemite Lodge area address the path-of-travel deficiencies and bring these locations up to code to meet the requirements of the Architectural Barriers Act of 1968.****QUESTION/COMMENT: Hotels near the river allow visitors to walk to the river, but on the other hand, there are impacts and displacement of other users groups, like campers. Comment?***
ANSWER: *The idea of public use is not only use that allows the experience of the ORVs, it is use that allows for any public enjoyment. As an example, BLM might not have the intense use that the NPS has because it is a different mandate and visitor expectation. When we look at the NPS mandate, the park sees the need to allow overnight accommodations and food for visitors. Overall, public use doesn't always relate to river values, but it is allowable as long as it does not harm river values.*

<u>PART 4: BACKGROUND TO ADDRESSING USER CAPACITY,</u> introduction by Jim Bacon, followed by Bo Shelby and Doug Whittaker

User-capacity and visitor-use management has been studied by Yosemite consultants -- Confluence Research and Consulting -- dating back to a 2009 user-capacity symposium. A seven-step user-capacity planning process begins with defining river values. These ORVs, along with preserving high-water quality and the river's free flowing condition, are foundational elements.

Key Points About the User-Capacity Process: User capacity cannot be given as a pre-determined single number, but rather it is an outcome of the planning process. The process involves both science and value judgments. It identifies kinds and amounts of use. It applies monitoring to ensure use doesn't adversely impact or degrade river values.

<u>PART 5: OUTCOMES OF ADDRESSING USER CAPACITY,</u> presented by Bo Shelby and Doug Whittaker. River-Use Study PowerPoint presentation (Slides 1-59 of Part 5): "Addressing User Capacity in the Merced River Plan"

Capacity Definition: The type and amount of use that protects river values

Types of Use: Include visitor use (such as frontcountry vs. wilderness and overnight vs. day use) and administrative use (NPS vs. concessioner and overnight vs. commuting)

Define Units of Use: Be sure to question what type of unit is being measured -- individual people or people traveling together in one group—and how traveling -- by horse, vehicle, or public transportation.

Define Location: Be sure to question if impacts refer to a segmentwide area or a subsegment called a reach or a subsegment of a that called a site.

Define Time. Be sure to question if the activity is at one time or occurs over a day or on a daily basis.

Define Indicators and Standards: These must be defined before it can be said if in a healthy condition or at high quality. Indicators are variable chosen to represent a condition. Wild and Scenic River indicators relate to river values, according to the law, and it's important to have at least one indicator for each river value. Indicators must relate to use -- because even if use increases, conditions may not change if the indicator you're looking at is not related to use. Standards are a point on an indicator scale that differentiate acceptable from unacceptable and present a management commitment to take action.

Define Other Actions: Capacity can be influenced by certain actions. If you have boardwalks that keep people out of sensitive areas, for example, you might be able to have more people present.

Frequently Asked Questions: The user-capacity experts present questions they are frequently asked.

1. **Is there one capacity based on an area's inherent characteristics?** No. A 10-acre piece of land, typically, can have more than one use; therefore, the land itself doesn't necessarily have an inherent use because it could be used as front country or wilderness (depending on other factors).
2. **Do capacities require value judgments?** Yes. Planners must make a decision on if land is in frontcountry or backcountry, for example.
3. **How do biological values fit with other values when developing capacities?** There are times and places where visitation capacities are strongly related to use, but there are other times when capacities are not a limiting factor. It depends on what actions you can use to fix the problem and what restraints you have. The NPS has a legislative mandate for preservation on one hand and enjoyment on the other, and the individual park site must do the balancing.
4. **What calculations are involved?** Calculations and values are both being made. User-capacity experts can't say that we have a formula and that X number is the result. Conceptually, Yosemite must translate use levels in models at different spatial and temporal scales. Modeling must take us from one issue to another. For example: How do vehicles at all entrance grates per day lead to vehicles into the Valley per day and then to the number of people in an area per day and then to people in an area at one time and then to people in a photo at one time?

Complex spreadsheets allow experts to change an assumption, like changing the number of people in a car from 3 to 5, and trace the effects of those numbers. In addition, Yosemite has road and trail counters

that provide crucial data. The number of vehicles traveling past the Yosemite Chapel on Southside Drive, for example, correlates to the number of people at other locations, such as Vernal Fall.

QUESTION: How do you factor in the people who enter into Yosemite at Tioga?
ANSWER: *We don't use the number of people who enter at Tioga Pass as a mechanism to manage use Yosemite Valley.*

QUESTION: Is there any current monitoring of historic visitor-use data?
ANSWER: *Yes. With transportation data, the park knows every 15 minutes the number of cars that go through certain intersections.*

QUESTION: Is there anything that addresses what a reasonable amount of displacement might be? It's given that a certain number of people will be dissatisfied but what about the larger group?
ANSWER: *Few displacements studies are available in the research because the displaced people are really difficult to track down.. There is no standard in the literature of displacing. Even if certain location or activity at Yosemite displaces people, the park offers a spectrum of opportunities. It's important to make sure that displacement does not simply move a problem elsewhere.*

QUESTION: You have surveyed boaters and shore users, but how about hikers, scenic drivers, picnickers and campers?
ANSWER: *People surveyed in the 2011 river-use study included picnickers, people relaxing on the river, and campers visiting the river. Under the Visitor Use and Social Science website at http://www.nps.gov/yose/naturescience/visitor-use.htm, posted surveys include other user groups asked the same types of questions. The NPS contracted the 2011 river-use survey because the park hadn't done a sufficient job reaching boaters and shore users*.

Trade-offs in the Merced River Plan: Presented as a three-legged stool where all legs balance together – capacity; conditions; and infrastructure (you've built to handle that capacity).

Parking trade-offs are clear, for example. Is parking designed along the road or head-in? Is it efficient to get in and get out? How much space do you have to devote? Pros and Cons exist to roadside parking vs. lot parking. Lots allow for safety and visitor immersion but not for efficiency. Between-lot efficiency is influenced by real-time parking information systems. Parking in Yosemite allows for about 5,000 existing parking spaces, with approximately 4,000 of those for visitors, and about half the parking is overnight parking; 27% in day-use lots; 18% for employees; and 6% along roads.

Intersections and circulation allow for trade-offs. It's possible to trade some development for better efficiency. In Yosemite, bottlenecks exist due to pedestrian crossings, stop sign junctions, and one-lane capacity. Trade-offs include costs, infrastructure footprint, and loss of naturalness. In terms of traffic flow, low use produces low impacts. If you operate a system at the peak level, you will get traffic jams.

Roundabouts allow for trade-offs. Pros include the fact that a driver only looks one direction. Cons include construction costs, more space needed at junctions, and an unfamiliar traffic mechanism for some drivers.

QUESTION: How safe are roundabouts for pedestrian safety?
ANSWER: *Roundabouts are safer for pedestrians if considering a single-lane roundabout. The bicyclists are not as safe in roundabouts, however.*

FOLLOW-UP QUESTION: Have you considered the accident rate of a roundabout, especially with distracted drivers looking at the scenery and drivers here who are not familiar with the area?
ANSWER: *Accident rates go down in roundabouts and the severity of the accidents are less because all drivers are only able to make a right-hand turn. In typical intersections, the oncoming accidents are usually caused when a left-hand turn is being made across an oncoming traffic lane. Also, designs of roundabouts are important to get the driver's speed down.*

QUESTION: Have surveys been done of people's preference to take a bus rather than drive to prevent frustration with traffic conditions?
ANSWER: *If the desired plan is to have a larger number of visitors, then a transit system is necessary. Yosemite is trying to implement a real-time traffic information system to inform visitors of conditions.*

QUESTION (regarding slide 28 of Part 5): On one hand you say that the limit of the transportation system is about 5,000 vehicles on the roadway, but then you say there is not really a limit on capacity?
ANSWER: *The conceptual graph shown is based on a given set of assumptions -- the number of lanes, intersections, and pedestrian underpasses, for example. If you were to add roundabouts or underpasses in your transportation system, then the shape of the graph's curve could be changed. If you build more parking, you can bring more people in; likewise, if you construct more parking but do not fix the intersections, then traffic flow won't improve. If you have a tolerance for traffic, you can operate at a level of service "D" rather than "C."*

QUESTION: Is there an ultimate capacity to Yosemite?
ANSWER: *You need to determine what type of a place are you willing to make Yosemite into? If the desire is simply to bring in more people, a train could bring in people more and then transport those people around through other efficient types of people-movers.*

QUESTION: Is transportation related to the river values?
ANSWER: *User-capacity experts argue that transportation is related to river values because traffic congestions directly impacts people's ability to access their recreational activities. In Yosemite, crowding data from the river study shows transportation has a definite impact on a visitor's overall experience. Because scenic driving is the biggest recreation activity, an efficient transportation is connected to the experience.*

Types of overnight-use allows for trade-offs. Does the park have lodges? Does the park have campsites? Does the park add or subtract lodging and camping? Considerations include space requirements; locations in the floodplain; amount and cost of infrastructure; and staff demands to operate the facility. One campground host can run a campground, but it takes many employees to run a lodge, for example.

Meadow and Riparian Values: These biophysical indicators have components strongly related to use, but visitors may not recognize biophysical indicators. The California Rapid Assessment Method (CRAM) is a

technique to give variables a score. Experts use CRAM scores to identify sensitive riparian areas. Actions to protect meadows from use impacts include boardwalks, fencing, and defined trails. Planners need to pose different questions across the alternatives – if we put lodging in here, then what would that mean?

To address crowding, user-capacity experts re-examined the crowded Mist and Bridalveil Fall trails. In the hourly data of visitors traveling the Mist Trail to Vernal Fall, the number of Valley inbound vehicles correlated loosely with the number of people on the Vernal Fall trail. Only one point on the Vernal Fall trail was an unacceptable point (as shown on graphic – slide 46 of Part 5). At Bridalveil Fall, the correlation is even stronger between the number of Valley inbound vehicles and the number of people at Bridalveil. Yet, on Bridalveil Fall trail, unacceptable crowding levels were much higher where management actions could be of value.

Illustrating Trade-offs on the Range of Alternatives: User-capacity experts zeroed in on differences between lower- vs. higher-use alternatives. In terms of parking, ranges within the alternatives go from 4,000 to 6,500 parking spaces with an existing value of 5,500 parking spaces. On the worst peak days, 900 cars are on the road at one time looking for parking. Through managing user capacity, the goal is to provide available parking spaces rather than asking vehicles to circle a lot in order to find a space. In all the alternatives, use level will be equivalent to the provided parking level.

QUESTION: When discussing restoration levels, are you talking about restoration relative to today?
ANSWER: *Yes*

QUESTION: What is the likely way for the public to move forward to assess the Merced River plan?
ANSWER: *The Draft Environmental Impact Statement (DEIS) will present every assumption – with the indicators and standards spelled out. A preferred alternative will be identified on where the NPS would like to go. The park's management will present what is thought to be in the best interest of Yosemite.*

QUESTION: Is it true that keeping the bridges would support a higher capacity?
ANSWER: *Bridges are independent of potential visitor capacity. The preliminary alternative concept that allows in the most people also keeps all three bridges; however, this doesn't mean the bridges are what allow the increase in use. Sometimes alternatives "packages" occur – and the bridges are an example of this packaging. If you have a higher-use alternative with a focus on restoration, then you have to spend a lot of staff effort to maintain the few places you have.*

QUESTION/COMMENT: The Wild and Scenic Rivers Act requires the capacity of the Valley be dealt with in terms of health and safety. How much time would it take to evacuate the Valley if necessary?
ANSWER: *Often, shelter-in-place is the best option for a given emergency like rockfall or fire, rather than a complete evacuation. In terms of Yosemite's traffic flow, a designated emergency lane has been considered, but that would take away from maximum road capacity.*