Recommendations for Wayside Integration Strip Version 1

~ revise markers along the timeline so visitors don’t try to establish a one-to-one correspondence with the real trail
~ keep “WHAT LIVED ON EARTH?” but eliminate “AGES OF GRAND CANYON ROCKS….”
~ eliminate “TIME: MILLIONS OF YEARS…”
~ add a small key, e.g.:
  - Ma = millions of years ago
  - = Grand Canyon rocks [couldn’t get rid of the black line, but you get the idea]
  - = what this panel is about [my limited computer skills prevented me from making this box RED, or eliminating the black line; also not sure what this text should be; it’s not just about where you are on the timeline]

~ keep 4 eras(?) but slightly revise/reposition text as follows:
  - single celled life (Protozoic)
  - early mammals ( Paleozoic )
  - dinosaurs ( Mesozoic)
  - mammals ( Cenozoic)

~ revise markers along the timeline so visitors don’t try to establish a one-to-one correspondence with the real trail, but that they recognize it as representing the trail
~ label 1840ma with something about oldest rock in the GC – otherwise it’s not clear why it’s marked along the strip. I’m assuming the 65, 248, 543 refer to the edges of the ages?
~ on the 6ma strip make it so the red line at the right is more noticeable
~ revise colors to address the color blind issue
~ revise/eliminate the WHERE IN THE CANYON as previously discussed.

Recommendations for Wayside Integration Strip Version 2

~ ditto all the above
~ draw strip as a uniform 3D plank (or 2-D timeline?) with no feet, rocks, or unconformities. Make the strip entirely about where you are along the timeline.
Recommendations for all 3 waysides
~ revise text to relate more closely to theme/big idea about time.
~ choose conversational action verbs, words people would actually SAY to each other, e.g. Find instead of Spot, or Imagine instead of Visualize.
~ eliminate unnecessary words, e.g. instead of “Use this photograph to name the layers…” it could be just “Name the layers.”
~ eliminate jargon/technical terms whenever possible. When it’s not possible, explain what is meant.

Recommendations for 6ma

~ revise title as we discussed.
~ replace SPOT with FIND; FIND with TOUCH; and CARVE with IMAGINE carving.
~ if there is a 6ma marker under the girl’s foot, there needs to be one on the trail itself.
~ Suggested rewrite of WALK paragraph: WALK six big steps. These steps represent the 6 million years it took the Colorado River to carve the Grand Canyon. Find those 6 million years at the far right of the timeline below.
~ Suggested rewrite of OVER A MILE paragraph: It took the Colorado River 6 million years to carve the Canyon to where it is today.
~ Suggested rewrite of FIND THE ROCKS paragraph: Feel rocks that were shaped and eroded by the powerful river for millions of years.
~ Suggested rewrite of WHILE IT MAY LOOK paragraph: The river uses boulders, sand, and its magnificent power to slowly carve through ancient rock.
~ another possible suggestion would be to have an image/drawing of what the area looked like 70ma, i.e. a flat plain. IMAGINE a plain. Imagine what this looked like 6 million years ago before the Colorado River started to carve the Grand Canyon. Slowly, slowly the river worked like a saw, deepening the canyon by the thickness of one sheet of paper each year.
Recommendations for 70ma

Off-site testing revealed great confusion between (a) erosion by the Colorado River to create the Grand Canyon; (b) erosion of the top layer of rocks; and (c) erosion of the “missing layers.” Although obviously closely related, for the layperson these are three very different (and unfamiliar) concepts.

The two middle pieces of this panel (VISUALIZE and VISIT) confused and detracted from the main messages that (a) this place used to be at sea level and then 70ma uplift happened, (b) the uplift caused an increase in elevation drop, and (c) without this uplift and subsequent increase in elevation drop the Grand Canyon would not have been formed.

On the other hand, the two graphics (subducting oceanic plate, and the map of the four corners) did not effectively communicate the concepts of uplift, subsequent elevation gain, or the subsequent formation of the Grand Canyon.

move content about the missing layers to the Unconformity wayside, and maybe even also the eroded top layers as these two concepts seem more related to the erosion that creates unconformities than the Colorado River eroding to make the GC and this panel really is about the conditions for the eroding of the Grand Canyon.

revise the panel to deal specifically with each of the three main messages, perhaps in a series of 3 graphics. In order to capitalize on what visitors are looking at, you could still have a photograph of what they see as they look out over the canyon with a caption about IMAGINE 70 million years ago. The area was at sea level, and there was no hole in the ground.
obviously someone with better drawing capabilities needs to be brought in!

70ma; relatively flat, GC region at sea level, minimal elevation

big uplift in the region, and huge gain in elevation

elevation gain made it possible for the Colorado river to slowly carve the Grand Canyon through the ancient rocks of Colorado Plateau
Recommendations for 270Ma

~ off-site testing indicated that this panel worked pretty well, although did not achieve the TGE goal of helping visitors understand that the upper set of rocks are sedimentary or what that means. Rather it focused attention on the fact that there are rock layers, and that the layers have names...names that can be said out loud.
~ shorten the USE caption to be just NAME the top layers
~ replace LEARN the names with SAY the names; replace “use this phrase to remember the names of each rock layer” with “To remember: Know The...etc.”
~ replace USE the viewing tubes with LOOK across the canyon [This is assuming the viewing tube will be located right there at that corner.]
~ eliminate the word pronounced in the middle diagram.
~ switch the middle diagram and the photograph
~ eliminate the “geologist” caption under the photograph, and start the top left paragraph with something like: The rock you are standing on is 270 million years old. Geologists call it the Kaibab formation. All the upper rock layers at Grand Canyon formed between 525 and 270 million years ago.
~ FIND the fossils: revise to not use the term wayside [national park jargon]. Eliminate the question How many different types can you find? Something like: FIND the fossils: 270 million years ago this area was a sea. These Kaibab fossils are from animals that lived in the sea. 
~ make sure that the fossils pictured are the same ones visitors will actually find
~ this mnemonic (a) is not what is used in other GC interpretation and (b) confused respondents who tried to match the W of were. It will be important for all GC interpretation to be consistent.
~ revise the gray connecting shading to include the supai; add a yellow line to indicate the bottom of the Supai
~ Find the Tapeats sandstone: In this paragraph flip oldest and lowest, so the time reference comes first, i.e. It is the oldest (and lowest) of the horizontal layers.
~ replace pronunciations: coco-KNEE-no (middle diagram); MOO-awv; add one for butte