Emigration Canyon Road Safety Improvement Guidelines

I. Apply the Standard Design Baseline First, Then Deviate with Justification

- **The single objective of this project is a safer roadway.** Every design decision is, first, a road-safety decision. The improved cross-section, realignment, shoulder treatment, and lane configuration exist to improve the safety of the traveled way—and manage all types of road users—through road geometry, sight distance through curves, design speed, and the separation of road users from hazards.
- **Lay out standard roadway geometry across the project before any deviation.** Apply 11-foot lanes and 5-foot shoulders consistently project-wide to identify all potential impacts before considering modifications. This sequence keeps decisions from being arbitrary or capricious; document every deviation with justification (waivers or design exceptions).
- **Traffic Calming Measures.** Incorporate context-sensitive traffic-calming measures, as resources allow, into the roadway design to moderate vehicle speeds, improve safety for pedestrians and cyclists, and support neighborhood livability, while preserving emergency-vehicle access, snow-removal operations, and reasonable through-traffic functionality.
- **Prioritize the uphill (eastbound) shoulder.** The 5-foot uphill/eastbound shoulder is the primary design goal; the westbound shoulder is secondary.
- **Do not upgrade non-standard existing field elements** (e.g., guardrail or curves not meeting current standards) unless the project directly impacts them. Obtain UDOT Safety Hardware Upgrade Eligible (SHUE) waiver as necessary for maintaining existing non-standard safety hardware.

II. Emigration Creek and Environmental Constraints

1. **Avoid disturbing Emigration Creek, up to and including the high water mark.** Where the creek is on one side, resolve conflicts in this order: if a structure (e.g., guardrail) sits along the top of bank, shift safety improvements to the other side; if a structure is on that side too, remove the downhill shoulder; if still constrained, remove the structure opposite the creek.
2. Creek/bank disturbance is acceptable only for culvert replacement, when the creek is on both sides of the roadway, or when other design choices aren't feasible.
3. **Where the road lies between the creek and a hillside, cut into the hillside.** Preferred approach is to cut the hillside to avoid stream impacts and the associated environmental/regulatory requirements.

4. **Structure-vs-creek tie-break:** where safety improvements conflict with a structure on one side and the creek on the other and the conflict persists without adding a downhill shoulder, shift safety improvements to the structure side.

III. Encroachment Avoidance Hierarchy (Apply In Order at Each Conflict)

When safety improvements conflict with a structure (fence, wall, shed, garage, home, or other structure), work through these steps in order. The governing policy is to **avoid or minimize removal of private structures in the ROW where feasible**, even though the City would be justified in removing them for a capital improvement project.

1. Where safety improvements conflicts with a structure on one side, shift safety improvements to the other side if there is room. Minor items like a mailbox generally do not trigger a shift.
2. Where safety improvements conflict with structures on both sides, remove the downhill shoulder in that area.
3. If structures cannot be avoided, even after removing the downhill shoulder, remove the lower-priority structure (see Tier IV priority order).
4. If shifting safety improvements to the other side requires cutting into a non-retained slope, that is acceptable; include slope stabilization in the design. Slope stabilization design will be completed in Phase 2.
5. **Apply functional thresholds.** Treat a functional impairment as an impact inside the ROW — e.g., a garage that cannot be accessed without pulling into the roadway may create a conflict regardless of the ROW boundary. Evaluate safety improvements to minimize negative impacts properties.
6. If a structure conflicts with safety improvements, inform MSD and Emigration Canyon City before committing to a design.

IV. Encroachment Resolution (Lowest Priority Removed First)

When removal is unavoidable, remove the lowest-priority structure first. Order from highest priority (most preserved) to lowest priority (removed first):

1. Septic tank or leach field *(highest — most preserved)*
2. Driveway bridge
3. Garage
4. Retaining wall
5. Stairs
6. Shed
7. Carport
8. Landscaping wall
9. Fence *(lowest — removed first)*

10. **Adjust for quality and condition.** The condition of a specific structure may raise or lower its position in the order. A mailbox, driveway curb, or similar is not treated as a structure for this hierarchy.
11. **Septic systems do not, by themselves, defeat safety improvements.** A conflict with a septic tank or leach field is not treated as affecting a home's livability, because other wastewater options exist.
12. **Utilities relocate as needed.** Utility boxes, utility poles, and similar infrastructure can be relocated. Minimize relocation of utilities that have larger structural footprints, like gas lines, large concrete vaults, transmission lines or overhead utility pole angle points.

V. Shoulder and Parking Continuity

1. **Evaluate parking after safety improvements are made.** For example, in downhill lane sections where the shoulder was removed from other factors, evaluate whether off street parking on private land with a minimum 5 foot buffer between the street side parking area and the traveled roadway. Off-street parking dimensions are 9'×18' (diagonal/90°) and 8'×20' (parallel).
2. **Resolve minimum shoulder section length/width by functional use** (e.g., pedestrian or bicycle use). Analyze whether the downhill shoulder may be dropped in areas that conflict with safety improvements in minimum length sections rather than setting a blanket rule in advance.

VI. Deconfliction, Documentation, and Communications

1. **Evaluate conflicts on case-by-case basis for structures within the ROW.** If a structure conflicts with safety improvements within the ROW, and cannot be resolved through the above guidelines, the Council will determine how to resolve.
2. **Compile impacts as counts without locations for Council review.** Provide a summary list of impact types (e.g., number of garages, fences, driveways, mailboxes) without specific property locations, so the Council can weigh the decision landscape.
3. **Communication with affected properties.** After all the above, the Council will communicate with the affected property owners through staff to resolve safety improvements with existing conditions. The preferred resolution is a voluntary agreement with case-by-case terms.
