

land use and economic outcomes.^{1,2} The legislation provided funding for UDOT to hire regional planning managers, one for each of its regional offices, who would lead local planning efforts, in coordination with UDOT's central planning office. UDOT's systematic process for corridor planning dovetailed with the changes in legislation.

PlanWorks as Starting Point

UDOT's Planning team used the PlanWorks Decision Guide as a starting point in developing the Department's new corridor planning process. Internal UDOT groups (including environmental, project delivery, and data/GIS) and representative staff from each of UDOT's four region offices provided input on required data, key steps, and other important considerations specific to their subject areas and the needs of the UDOT regions. UDOT refers to the new corridor planning process as instrumental in "delivering the right project at the right time for the right reason." The corridor planning process in Utah follows many of the key decisions outlined in the PlanWorks Decision Guide, and incorporates other elements from the resource, including Questions to Consider and the Planning and Environment Linkages (PEL) Application.

Phases of the Corridor Planning Process

UDOT's corridor planning process is divided into two phases. The first is a visioning process that helps UDOT understand the corridor's overall context and needs, and the second phase is for the agency to develop solutions and specific projects for potential inclusion in the STIP. The visioning component is critical for staff

Decision Guide Connections

- **COR-1: Approve Scope.** Although not formally approved until Phase 2 Step 6, UDOT primarily develops the scope of the corridor plan in Phase 1, Steps 3 and 5.
- **COR-2: Approve Problem Statements and Opportunities.** UDOT develops high-level needs for the corridor in Phase 1, Step 4. UDOT develops detailed problems and opportunities in Phase 2 Step 8.
- **COR-3: Approve Goals.** High-level goals for the corridor during scoping; Phase 1 Step 4.
- **COR-5: Approve Evaluation Criteria, Methods and Measures.** UDOT develops evaluation criteria after goals and needs are determined in Step 9.
- **COR-6: Approve Range of Solution Sets.** In Step 10 UDOT and partners approve a list of alternatives for evaluation.
- **COR-7: Adopt Preferred Solution Set.** In Steps 11 and 12, UDOT evaluates alternatives and documents strategies to move forward.
- **COR-9: Adopt Priorities for Implementation.** An implementation strategy is developed in Step 13; which includes phasing options and prioritization of selected projects. UDOT moves projects to the STIP based on this prioritization.

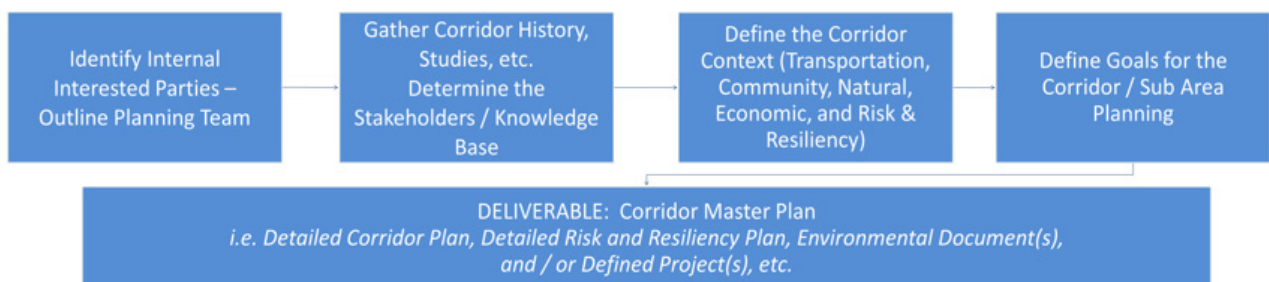


Figure 1. Phase 1 Steps in UDOT Corridor Planning Process (UDOT, Available at: <http://gis.bio-west.com/corridorplanning>)

1 <https://le.utah.gov/~2018/bills/static/SB0136.html>

2 <https://house.utah.gov/2018/05/16/transportation-reform/>



Figure 2. Phase 2 Steps of the UDOT Corridor Planning Process.

to identify the goals for the corridor that will best address the community, natural, economic, risk and resiliency, transportation and health needs of the area. From these goals, objectives and performance measures (PMs) are carried through to Phase 2 to ensure solutions address the documented needs of the area.

Phase One: Visioning

UDOT region planners will use Phase 1 to conduct a high-level assessment for each corridor to understand the contextual nature of the corridor, high level needs and goals, and to determine next steps. (Figure 1).

In this phase, planners will:

- Identify internal interested parties,
- Gather a corridor history (including plans, studies, etc.) and determine relevant stakeholders,
- Define the corridor context using the contextual lenses of transportation, community, natural, economic, risk and resilience, and health,
- Define corridor goals, objectives and PMs; and
- Develop a corridor master, or implementation, plan.

The corridor master plan at this phase does not include specific projects. Instead it serves as a high-level plan with context-specific goals for the corridor. These context-specific goals, objectives and PMs, developed by staff with consultation of key stakeholders, are used to evaluate potential solutions in Phase 2, or other planning process.

Phase Two: Defining Solutions

Phase 1 steps are considered flexible enough to fit a

What is PEL?

Planning and Environment Linkages (PEL) is a collaborative transportation decision making approach that has been supported by federal legislations since SAFETEA-LU. PEL permits the use of information, analysis, and products developed during long range planning to inform the environmental review process. Under the FAST Act, agencies can use PEL to more directly connect planning products, analyses, and decisions to the NEPA process.

given situation, yet consistent enough to be relied upon in subsequent phases of project development. Ideally, after developing the high-level corridor master plan, UDOT can move to Phase 2 of the planning process. In this phase, UDOT regions, internal and external stakeholders and partners develop a detailed corridor solution, culminating in a list of improvements for Statewide Transportation Improvement Program (STIP) inclusion, if appropriate. (Figure 2).

Steps include:

- Define and approve the scope for the corridor;
- Gather additional contextual data (including environmental data);
- Define problems, needs, and opportunities;
- Develop evaluation criteria;
- Identify strategies;
- Evaluate strategies;
- Document strategies to move forward;



Figure 3. PEL considerations throughout UDOT's corridor planning process. Source: UDOT Corridor Planning Process website. Available at: <http://gis.bio-west.com/corridorplanning/>

- Develop network business plan; and
- Create a prioritized list of projects to submit to the STIP.

The activities in this phase must build on the findings from Phase 1. Staff consider environmental risks throughout the process to avoid potential rework or issues in the project development phase.

Project Implementation

UDOT designed the new corridor planning process to improve the connection between the long-range planning process and project implementation. The long-range planning process is very good at establishing transportation system needs. The corridor planning process is designed to develop a solution for the established need. Solutions will likely contain a number of distinct, but interrelated, components. Thinking about the planning process in terms of needs and solutions helps ensure the process is comprehensive, and that UDOT develops the right solution, at the right time, for the right reason. Linking the planning and project development processes streamlines the overall process. As part of these efforts, the agency integrated

Planning Environment Linkages (PEL)³ into the corridor planning process. While the approach is designed to allow flexibility for planners to study the unique needs of each corridor and its context, following a consistent process helps UDOT and its partners anticipate each planning step and find efficiencies in reviewing plans.

Planning and Environment Linkages

FHWA has assigned NEPA responsibility to UDOT. By taking on the responsibility of approving NEPA documentation, UDOT has a strong interest in ensuring all environmental review is thorough and meets Federal requirements. By including PEL considerations at key steps throughout the corridor planning process, UDOT can increase its efficiency by ensuring the products of the planning process can be used in the NEPA process and do not have to be redone (Figure 3). Using PEL guidelines⁴ in the planning process adds rigor by focusing attention on documentation of decisions, and

3 FHWA Environmental Review Toolkit website. Available at: https://www.environment.fhwa.dot.gov/env_initiatives/PEL.aspx

4 FHWA Planning and Environment Linkages – Questions and Answers. Available at: <https://www.fhwa.dot.gov/hep/guidance/pel/pelfaq16nov.cfm#q1>

the nature and degree to which the public and other stakeholders are engaged.

Planning Guide and GIS Story Maps

UDOT's corridor planning system guide is documented online in an interactive website, which helps improve the transparency of UDOT's processes, expands access, and allows the agency to make quick content updates when needed. UDOT is also working to improve data storage and access related to specific corridor plans.

At the time of this case study, UDOT plans to organize corridor plan results around the use of ArcGIS Story Maps. The story maps will contain the narrative of the corridor planning results, contextual understanding, corridor performance outcomes with live links to structured and un-structured data sets.⁵ This helps preserve all relevant information on projects at all phases, which can be lost as projects advance from one stage to the next.

Internal Stakeholder Collaboration

UDOT's corridor planning process was developed with collaboration as an integral component of the process. Because of the need to standardize the corridor planning process, it was critical that all UDOT functional areas had buy-in. While the development of the corridor planning process was championed by the Central Planning Division, it was driven out of request

⁵ <http://uplan.maps.arcgis.com/apps/MapSeries/index.html?appid=3b674647ffe046d2b39c2aff088aec12>

from UDOT Regions to better integrate and streamline the planning and project delivery processes.

Key Outcomes

- Involving key internal and external stakeholders early in the planning process creates buy-in, efficiencies in gathering data, assessing process risks and delivering the right solutions at the right time, for the right reasons.
- UDOT includes PEL considerations throughout planning and project development activities, which can streamline the project delivery process.
- Corridor visioning done with stakeholders is critical to developing the right solutions rather than starting with an outcome in mind. The visioning process does not include a discussion of solutions. The development of broad contextual goals, objectives and performance measures helps ensure that the analyses of alternatives is rigorous, unbiased and reflects the stakeholder wishes.

For more information

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Resources

- **UDOT Corridor Planning Process**
<http://gis.bio-west.com/corridorplanning/>