Building A Good Road Takes Time

An overview of the road design and construction process

It can take 8 years to complete a road project, but long range planning starts some 20 years prior to project start.

Building a road project involves years of research, planning, design, engineering, and budgeting. Gathering public input throughout the process is essential. Factors that go into planning include environmental impact studies, safety analysis and engineering considerations, public input, traffic patterns, and land use plans. The amount of available funding must also be considered. Using the Performance Programming Process (P3) and asset management principles, MDT determines the right time, treatment and place to forecast a 20-year design life to build roads that will last. Local government officials, legislators, individual citizens, and the Transportation Commission (a panel of private citizens appointed by the governor) all work together in deciding where to invest the money. Once project priorities and funding are set, preliminary engineering can begin.

How is a project nominated and selected?

MDT management systems, District Administrators, and other stakeholders such as the public or other government agencies can nominate projects. MDT reviews, analyzes, and evaluates nominated projects using the Performance Programming Process (P3). This procedure screens proposed projects against established performance objectives. Projects that contribute to highway system performance goals move to the next stage. MDT engineers and staff then visually inspect the proposed site to determine if the project is feasible. Finally, MDT submits the projects to the Montana Transportation Commission for its approval. Once the Commission approves the projects, funding is programmed and project development begins.

How can I become involved in project selection?

MDT publishes a new Statewide Transportation Improvement Program (STIP) every year – a draft is announced and released for a 30-day public comment period. You can locate the STIP draft on the MDT web site, at your local library, or request a copy by calling MDT's toll-free number.

For more information on MDT projects:

Website: **www.mdt.mt.gov**

Email: **mdtstip@mt.gov**

Call: **800.714.7296 (toll free)**

Write: Project Analysis Manager
Montana Department of Transportation
P.O. Box 201001 | Helena, MT 59620-1001

Contact: The MDT District Office in your region

MONTANA
Department of Transportation

2 YEARS

1 YEAR

2 YEARS

2 YEARS

1 YEAR

20 YEARS

The long road to project completion takes the form of a typical design-bid-build process beginning with crucial long range planning.

CONSTRUCTION PHASE | 8 months - 2 years

Prior to construction, MDT invites contractors to bid on the project. Once the project is awarded and construction begins, MDT inspectors ensure that contractors meet the specifications for the project.

- Advertise
- Accept bids
- Determine if contractors have met all requirements
- Bid letting
- Transportation Commission awards contract
- Stake centerline
- Construction

RIGHT-OF-WAY PHASE | 6 months - 1 year

After engineers complete the project plan, right-of-way agents contact landowners who will be affected by the project. The agents calculate a fair market value for any property used for the road and help landowners relocate if necessary. Utility agents contact utility companies about relocating gas, electric, fiber optic, telephone, water, and sewer lines and obtain the proper permits.

- Obtain regulatory permits
- Final road plan details - final bridge plans - Final right-of-way plans
- Negotiate railroad and utility agreements
- Relocate utilities - Acquisition of right-of-way
- Relocation Assistance Program for displaced residences and businesses
- Environmental mitigation
- Final plans check

DESIGN PHASE | 15 months - 2 years

- Develop detailed engineering designs
- Water quality study
- Hazardous materials study
- Surfacing and geometrics (horizontal and vertical alignment of the road)
- Additional survey
- Electrical plans
- Irrigation study and design
- Bridge and hydraulic designs
- Formal public involvement hearing
- Signing and pavement-marking plans
- Erosion control details
- Traffic maintenance measures

SURVEY | 8 months - 2 years

In designing the project, engineers must decide how wide the road will be, where to change access points, what safety features to incorporate, community preferences and amenities to include given type of project and budget constraints, where signs and markings should be, and materials to use. Computer modeling, aerial photography, and survey data are some of the inputs used to create the best possible design to consider future use and demand.

- Preliminary field review
- Preliminary environmental studies, i.e. air quality, biological impact, and traffic noise studies
- News release/public involvement
- Preliminary right-of-way reports
- Engineering studies
- Field Survey
- Establish alignment and grade
- Letter of Intent
- Address environmental concerns
- Scope of Work
- Traffic studies
- Bridge structure and functionality studies
- Soils study
- Hydraulics study
- Start design plan preparation

DEVELOPMENT | 1 year

MDT carries out studies to find the best design for the project. Engineers consider the features of the land, its present use, and existing and future conditions. In addition, the Department must do a great deal of work to determine the impact the project will have on the natural environment, communities, the economy, and the public. Once again, public input is essential and an effort by MDT to include the public is consistent throughout.

- Project nominations from the public, local governments, management systems, and MDT districts
- Project analysis and review
- Performance objectives review
- Add project to the Statewide Transportation Improvement Program (STIP)
- Public involvement
- Public comment review
- Funding level evaluation
- Transportation Commission approval
- Project programming
- Federal authorization to proceed

LONG RANGE PLANNING | 5-20 years

It can take 8 years to complete a road project, but long-range planning starts some 20 years prior to project start.

- Public Input
- Environmental impact studies
- Safety analysis
- Engineering considerations
- Traffic patterns
- Land use plans
- Funding
- Performance Programming Process (P3)

04 | 2023