The MassDOT Project Development Process

Pamela Haznar, P.E.
Project Development Engineer
Project Development Process

Spans from Planning through Construction
(and beyond)

Funding and Project Design
Concurrent, intertwined tracks

Funding – federal aid funds secured through the Transportation Improvement Program (TIP)
MPO activity

Project Design - Engineering, Environmental Permitting and Right of Way –
MassDOT oversight
Planning/Design
Final Construction
Project Delivery

Requirements for Construction Advertising

• Funding –
  • Project must be fully programmed on the TIP in the current federal fiscal year

• Design Process –
  • Engineering
  • Environmental permitting
  • Right of Way process
Partners in the Process

- FHWA (Federal Highway Administration)
- MassDOT – OTP, Headquarters, District
- MPO (Metropolitan Planning Organization)
- RPA (Regional Planning Agency)
- JTPG (Joint Transportation Planning Group)
- Municipality
- Community/Abutters
- Advocacy Groups
- General Public
FUNDING
This plan accounts for every state and federal dollar available to MassDOT for expenditure on capital projects and programs during a 5 year timespan.

Project Selection Advisory Council

Project Selection Criteria –

tool for evaluating and prioritizing our investments to ensure that the Commonwealth achieves the best possible return on its transportation investments.
Transportation Improvement Program (TIP)

- Spans four years, endorsed annually
- Conforms to projects and goals set out by RTP
- Federally mandated: all projects receiving federal funding must be in the TIP
- Includes highway and transit project listings
- State Transportation Improvement Program (STIP): a combination of the TIPs from all the MPOs, must be approved by FHWA, FTA, DEP, and EPA
- Must remain fiscally constrained
Transportation Improvement Program
- Amended/Adjusted during the year
- Federal aid with state match

Metropolitan Planning Organization (MPO)
- Votes to endorse TIP
- Regional allocations distributed based on formula
  - Population, FA eligible lane miles
Funding Categories

- Highway Safety Improvement Program (HSIP)
- Congestion Mitigation and Air Quality Improvement Program (CMAQ)
- Surface Transportation Program (STP)
- Transportation Alternative Program (TAP)
- National Highway Performance Program (NHPP)
Critical Players in TIP Process

- Regional Planning Agency (RPA)
- SRPEDD
  - Technical Assistance, Staff to the MPO
- Joint Transportation Planning Group (JTPG) – Advisory group to the MPO
- Delegates from each municipality
- Metropolitan Planning Organization (MPO)
  - Votes to endorse the TIP
Metropolitan Planning Organization

- 13 MPOs in the Commonwealth
- 6 MPOs in District 5
  - Boston (18 communities out of 101)
  - SMMPO Region (27 communities)
  - Old Colony (16 communities)
  - Cape Cod (15 communities)
  - Martha’s Vineyard (6 communities)
  - Nantucket
Key Points

- Projects are funded through the TIP
- MPO votes to endorse the TIP
- JTPG advises the MPO
- RPA (SRPEDD) is staff to JTPG and MPO
- TIP is fiscally constrained
  - Competitive process
  - Typically more projects than funds
- Proponent must advocate for their Project
- 5 year CIP development underway
PLANNING AND DESIGN
Planning/Design Process

Projects are developed to address identified needs

- Safety
- Congestion
- Multimodal accommodation
- Corridor improvements
- Preservation
Planning/Design Process

Proposals are initiated by:

- MassDOT – District
- Office of Transportation Planning (OTP)
- Municipalities
- MPO/RPA (studies, regional priorities, High Crash lists, RTP)
- Legislative/Congressional
Project Need Form (PNF)

PNF Submitted to MassDOT District 5 and RPA
- Opens a formal dialogue

Outcomes -
- No concurrence of project need
- Additional planning: complex proposal
  - Public outreach, informational meeting
  - Local support
- Advance to Project Initiation Stage – PIF
Outreach

- One of the keys to success
- Early coordination – get stakeholders involved
- Solicit input, begin a discussion
- Gauge interest
- Identify challenges
- Shape proposal
Stakeholders/Support

- Locally
  - Enter agreement with MassDOT
    - contract signatory
- Affected abutters
- Community at large
- Environmental interests
- Regionally
Project Initiation Form (PIF)

- PIF builds on PNF
- Additional detail, public outreach

- PIF document presented to Project Review Committee (PRC) for approval
- PNF and PIF forms are on MassDOT Website

District and SRPEDD are available for advice/information
PNF/PIF Forms on Website

MassDOT – Highway
  Doing Business with us
    Design/Engineering
      Project Management

Other valuable documents on this site
Project Review Committee

- Meets 3 times/year
- Proposals are evaluated and scored statewide by a pre-PRC Committee
- Expectations of improvement – safety, congestion, mobility, multi-modal improvements, pavement preservation, environmental and neighborhood impacts, environmental justice, local/regional support
- Upon approval “proposals” become “projects” in the MassDOT system
Design Process

- 3 components -
  - Engineering
  - Environmental Permitting
  - Right of Way

- Proponent is responsible for the Design
Design Contract Considerations

- Pre-qualified Design Consultant
- Pre-qualified Surveyor
  - notify abutters prior to surveying on private property

- MassDOT Scope and Work hour estimate
- MassDOT Municipal Project Guide
  - [http://www.massdot.state.ma.us/highway/DoingBusinessWithUs/LocalAidPrograms.aspx](http://www.massdot.state.ma.us/highway/DoingBusinessWithUs/LocalAidPrograms.aspx)
Design Considerations

- **Balance**
  - Achieve the goals of the project
  - Comply with engineering best practices
  - Limited ROW
  - Environmental impacts
  - Impacts to abutting property
  - Context sensitive
  - Cost (fiscal constraint)
Design

Preliminary
- 25% design
- Comment Resolution Meeting (all stages)
  - Municipal contact
- Design public hearing

Final
- 75% design
- 100%
- PSE (Plans, Specifications, Estimate)
  - (PSE bid package for advertising)
Engineering Reviews

- Review for compliance with State and Federal standards, Best Management Engineering Practices
  - Project Development and Design Guide
  - Standards Specifications for Highways and Bridges (blue book)
  - Construction and Bridge Standards
  - AASHTO – 13 controlling criteria, Bike/Ped
  - Design Exception Report (DER)
  - MUTCD (Manual of Uniform Traffic Control Devices)
  - Utility Coordination
  - ADA/AAB, Complete Streets, GreenDOT
25% Design Stage

**Preliminary Design –**
- Obtain and plot Survey
- Prepare Base Plans
- Compile necessary Traffic Data (traffic counts, crash data)
- Develop Horizontal and Vertical Geometry
- Develop Typical Cross Sections
- Develop Draft Traffic Signal Plan (if required)
- Develop Bridge Type Studies and Sketch Plans for Bridges, Culverts and Walls (if required)
- Coordination with Landscape Design
- Develop Preliminary Pavement Design
- Develop Preliminary Right of Way plans
- Develop Preliminary Cost Estimate
- Prepare a Functional Design Report
- Prepare a Design Exception Report (if necessary)
- Plot proposed Utility locations
Design Public Hearing

- Upon review and approval of the 25% design submission a design public hearing is held.

- Opportunity to solicit public input
  - Project adequately developed
    - Basic geometric design
    - Operation of Traffic Signals
    - Right of Way – land acquisitions, slope easements
Utility Coordination

- District Utility/Constructability Section
  - Coordination with Utility companies throughout design and construction
  - Field meetings – Utility companies, designer, municipality, MassDOT

- Engineering Directives
  - Scheduling within construction contract
  - Reimbursement - meet performance criteria
  - Right of Way acquisition – SHLO alterations
75% Design Stage

- Refine horizontal and vertical geometry
- Prepare subsurface exploratory plan
- Develop Construction cross sections
- Develop Construction Plans
- Develop Traffic management plans
- Develop Traffic-related PS&E data
- Refine pavement design
- Develop drainage design
- Coordinate Utility Relocation
- Develop Special Provisions
- Develop Calculation Book
- Update Cost estimate
100% Design Stage

- Finalize Construction Plans
- Finalize Estimate
- Finalize Special Provisions
- Calculation Book revised
- Detail Sheets submitted

(PSE – submission for bid package)
Estimate

- Bid items
- Construction Engineering
- Contingencies
- Traffic Police
- Utility relocation reimbursement for impacts (not betterments)
  - (100% municipal, up to 50% private)
Environmental

- All environmental permits must be secured prior to advertising.
- Permits vary depending on the project and associated impacts
- MEPA/NEPA
- Wetland Protection Act (NOI, RDA)
- Army Corps, Coast Guard, EPA, DEP, CZM, Historic
Right of Way

- Right of Way must be secured prior to advertising
- Municipalities are responsible to secure ROW on municipally owned roadways
  - (Town meeting approval)
- By law all impacted property owners must be offered just compensation for their property and informed of their right to have an appraisal
- Complicated process – recommend discussion with MassDOT ROW Bureau
Time/Money

- A project can easily take 2 to 4 years minimum to design, permit and secure ROW, most take longer.
- Critical to estimate the cost reasonably accurately early on.
- TIP is fiscally constrained.
- Proponent’s responsibility to maintain project within budget.
- Over budget projects create a domino effect on the TIP.
- Readiness, Readiness, Readiness!!!
Coordinating funds and design

- **Recommended programming schedule**
  - PSE design stage ideally entering current year (Federal fiscal year begins October 1)
  - 75% design stage in going into the 2\(^{nd}\) year
  - 25% design stage in 3\(^{rd}\) or 4\(^{th}\) year
  - Not programmed unless PRC approved

- Proponents advocate at JTPG and MPO meetings for their projects to be programmed in the TIP
Construction Advertising

- Funding on the TIP in current year
- Engineering design at PSE, Environmental Permits and ROW secured
- Project is Advertised by MassDOT
Key Points

- Outreach and support are critical
- PNF/PIF to initiate a project
- TIP is fiscally constrained
- Secure a prequalified consultant
- Advertising –
  - Engineering at PSE stage
  - Environmental Permits complete
  - Secure Right of Way
- Readiness is critical
Fall River ABP Project

[Image of construction site with machinery and buildings in the background, dated 10/30/2015]
Fall River/Freetown – Exit 8B
Fairhaven – Rte I-195/River Ave
Berkley/Dighton Bridge
Quequechan River Rail Trail
New Bedford - JFK Highway
Construction Stage

Municipal Agreement – each municipality and the Commonwealth sign prior to commencement of construction. “The Department shall participate in the construction up to, but not exceeding 10% over the bid items of work.”

Sample agreements are sent out with the PRC approval letter.
Construction Stage

- All TIP projects have MassDOT oversight
- Municipal design contracts should include hours during construction for consultants—
  - Review of shop drawings
  - Questions/construction advice
  - Fine tuning and adjustment of traffic signals
  - Meetings
Key Points

- Set realistic expectations
  - Time, money and effort

- Coordinate with MassDOT and SRPEDD

- Stay involved - YOU are the proponent
Questions???

Contact info -

Pamela Haznar, P.E.
Project Development Engineer
MassDOT - District Five
(508) 884-4239
pamela.haznar@state.ma.us