1. Incentives / Disincentives

What is it?

Incentives is a contracting provision that compensates the contractor a specific amount of money for each day that critical work is completed ahead of schedule or for achieving set goals. Disincentives is a contracting provision that can assess a fee for each day identified that the contractor overruns the specified time or for failing to achieve set goals *(1–3)*.

Why use it?

The Caltrans Project Delivery Acceleration Toolbox *(4)*, which focuses on improvements to the project delivery process, states that incentives/disincentives (I/Ds) encourages a contractor to meet the specific schedule stated in the project’s contract. Some benefits of I/Ds, as stated in the Minnesota Department of Transportation (MnDOT) *Innovative Contracting Guidelines (1)* include:

* Potentially lower construction administration costs;
* Reduced construction time; and
* Better control of project acceleration when compared to A+B

The MnDOT *Innovative Contracting Guidelines (1)* also states I/Ds provide the opportunity for better public relations with businesses and residents because it reflects the agency’s commitment to a quick project completion. The National Cooperative Highway Research Program (NCHRP) Report 652 *(5)*, *Time-Related Incentive/Disincentive Provisions in Highway Construction Projects,* describes I/Ds as provisions that have been used widely by State Transportation Agencies (STAs) and the majority has been successful at reducing delays to the traveling public by accelerating construction work. Additionally, the NCHRP Report also states that I/D provisions are beneficial because they provide an adequate consideration of the true cost of delays or expediting project to contractors and the public *(5)*.

What does it do?

The principle concept of I/Ds, as stated previously, is to encourage contractors to finish a project on or before the schedule stated in the project’s contract *(4)*. The NCHRP Report 652 *(5)* provides a summary of the impact I/Ds have on six primary project factors; 1) cost, 2) innovation, 3) contract administration, 4) staffing, 5) quality, and 6) safety.

* **Cost** – Increased costs may be noticed by the agency as a result of accelerating construction to achieve an earlier completion. Although these costs depend on many factors, the agency’s procurement provisions have usually the most influence.
* **Innovation** – The use and incorporation of innovative methods and materials are a common result of I/D provisions. Contractors can recoup additional costs put forth to incorporate innovation through the incentives received with early project completion.
* **Contract administration** – Utilizing I/Ds requires focus from the agency to monitor how contract time and impacts associated with excusable delays are measured. Inefficiencies in this area can negate the effectiveness and benefits offered through I/D provisions.
* **Staffing** – Incorporating accelerated work schedules often requires an increase in the amount of hours worked per week - for both contractors and the agency. Failure to address and prepare for extra strain may lead to a “burn out” on staff.
* **Quality** – I/D provisions do not have negative impacts on quality.
* **Safety** – Safety practices, when considering contractors and agencies, are unaffected with I/Ds. Safety risks to the traveling public are decreased as exposure is decreased with shorter construction schedules.

How to use it?

The Oregon Department of Transportation (ODOT) Report SPR630 Establishing Guidelines for Incentive/Disincentive Contracting at ODOT (2) provides a flowchart (figure 3) on the implementation process of I/Ds. The process identifies six major project components where the I/D provision have a crucial role: 1) Project Initiation, 2) Design Acceptance, 3) Advanced Plans, 4) Final Plans and PS & E Submittal, 5) Documentation Requirements, and 6) Construction.

* **Project Initiation** – Even though I/D provisions can be implemented at later project stages, the decision to use I/D provisions is most effective at this stage. Here, the agency must identify the project goals and needs finding the elements that could benefit from having a “date certain” completion requirement and/or an accelerated project schedule.
* **Design Acceptance** – The agency should make and document the final decision regarding the use of I/D provisions at this stage. However, the agency should continuously review the suitability of the project for the use of I/D provisions as the project development progresses.
* **Advanced Plans** – At this stage, the agency should determine key contract parameters related to the I/D provisions. The NCHRP report 652 *(5)*(Fick et al. 2010) identifies the following variables:
	+ Contract Time – Definition of contract length and milestone dates.
	+ Units of Time – Clear specification of how time is measured in the project (e.g. calendar days, modified calendar day, working days, what constitutes a day, etc)
	+ I/D Amount – This represents how much early or late completion is really worth. It is generally obtained using Road User Costs (R.U.C.).
	+ I/D Accrual and Capping – The agency should establish how the incentives and disincentives are calculated (e.g. daily rate or lump sum), and what the maximum amount for each is.
	+ Disincentive – The specific amount that the contractor will be charged by failing to meet the milestone date
	+ Incentive – The specific amount that the contractor will be awarded by completing the work before the milestone date.
	+ Substantial Completion – Specific criteria that defines substantial completion of a project milestone.
	+ Time Adjustments – Provides under what circumstances will the I/D milestone date be adjusted.
* **Final Plans and PS & E Submittal** – At this stage, the agency should perform a final check review of the I/D amounts and specifications.
* **Documentation** - When documenting the project, Federal Highway Administration (FHWA) requires that the decision process, rationale and justification, and variable values behind the I/D provisions is maintained within project files for audit purposes.
* **Construction** – During this stage, an I/D project requires prompt decision making, approvals, problem solving, and conflict resolution.



Figure 3: ODOT I/D Implementation Process

When to use it?

According to the NCHRP report 652 *(5)*, FHWA considers five characteristics to evaluate the appropriateness of a project for the use of I/D provisions.

* Projects on high traffic volume facilities, generally in urban areas;
* Projects that will complete a gap in a significant highway system;
* Major reconstruction or rehabilitation on an existing facility that will severely disrupt traffic;
* Major bridges out of service, and;
* Projects with lengthy detours.

Additionally, other characteristics used by STAs are *(5)*:

* Construction requires temporary traffic barrier on both sides of a lane and/or a lack shoulder area;
* Special events (school openings, holidays, etc.);
* Environmental or political commitment requiring work to be completed;
* Agreements requiring completion within a given time frame;
* Disruption of emergency services, and;
* Adjacent neighborhoods or businesses would be impacted significantly.

Limitations?

When deciding on the appropriateness of I/D provisions for a project the following drawbacks should be considered:

* Additional funding may be required *(1)*;
* Contract changes can lead to disputes regarding the incentive payments *(1)*;
* There is a risk for increased costs for construction oversight *(6)*; and
* Incentive amount or disincentive rate may not be enough to motivate the contractor to accelerate construction *(6)*.

Who uses it?

The NCHRP Report 652 *(5)* states that at least 46 states have had experience with contracts involving some variation of I/D provisions. Between the years 2008 and 2010, Florida, South Carolina, Ohio, New York, California, and Virginia had at least 50 documented projects that used I/D provisions *(5)*.

Example

The Minnesota Department of Transportation (MnDOT) used early completion I/Ds on several projects executed on the I-35 corridor between 2012 and 2013 *(7)*. The Sandstone to south of Willow River road section for instance, was a $20.7 million project which consisted in the concrete overlay of 24 miles (12 mi northbound and 12 mi southbound) of highway and reconstruction of ramps. The MnDOT offered a daily incentive of $10,000/day up to 25 days or $250,000 for early completion and equal disincentive for late completion on this project. Another of these I-35 projects was the $30.1 million concrete overlay and bridge rehabilitation project between Scanlon and Boundary Avenue. Here, MnDOT offered a similar early completion incentive of $10,000/day up to 25 days or $250,000 with equal disincentive for late completion. Finally, on the $22.6 million concrete overlay of I-35 between Moose Lake and Barnum project (northbound) MnDOT offered an incentive of 10,000/day up to 9 days or $90,000 for early completion with equal disincentives for late completion.

The following is the actual contract language used on the Sandstone to south of Willow River road section project.

S-38.7 **Intermediate Completion Time (A) Incentive**

 The Contractor will be paid $10,000 (ten thousand dollars) for each Calendar Day the work required in this Contract, as indicated in Section S-9.1 (CONSIDERATION OF PROPOSALS (A+B METHOD) – Intermediate Completion Time (A)), is completed prior to the number of Calendar Days stated by the Contractor on the Proposal Site Page of the Schedule of Prices, in the # of Days column. The total number of Calendar Days for incentive payment will not exceed twenty (25) days or $250,000 (two hundred and fifty thousand dollars). Payment of the incentive will be made on the first partial estimate voucher processed after the Completion of Work has concluded.

S-39.3 The Department will assess the Contractor a disincentive for failure to complete the work, indicated in Section S-9.1 (CONSIDERATION OF PROPOSALS (A+B METHOD) - Intermediate Completion Time (A)) of these Special Provisions, within the established number of Calendar Days (the number entered as Item 2016.621 (Intermediate Completion Time (A)) on the Proposal Site Page of the Schedule of Prices, in the # of Days column). The disincentive will be $10,000 (ten thousand dollars) for each Calendar Day the work remains incomplete after the expiration of the work days established by the Contractor. The assessment will be deducted from any monies due or to become due the Contractor.

References

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