

# (I2PD)



## RT383 – Industrial Integrated Project Delivery (I2PD):

**A Good Candidate for Quickly Planning and Executing Capital Projects as Government and Industry Relaunch the Global Economy**

Aug. 2020

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## Agenda



- COVID-19 Economic Impact
- Political Response
- What is Needed to Rapidly Deliver Capital Projects?
- I2PD an Alternative Project Delivery Method
  - What is I2PD?
  - I2PD Project Types
  - Why I2PD?
  - Case Study: Otto Holden Generating Station
  - Benefits of I2PD
- Q/A

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# COVID-19 Economic Impact

Global Economy Projected to Contract by in 2020

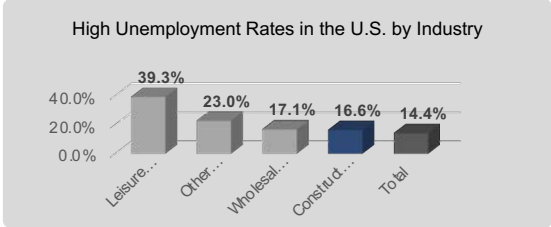
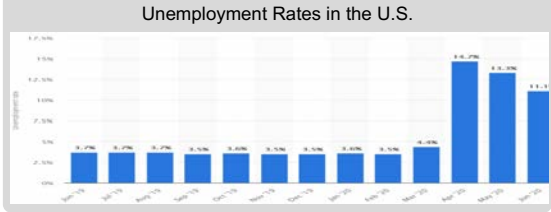
**3.8%** (Original forecast: 2.4%)

MONETARY GDP LOSS IN WORST CASE COVID-19 SCENARIO (6 Months of Travel Bans + Sharp Drop in Demand)

**\$347B**

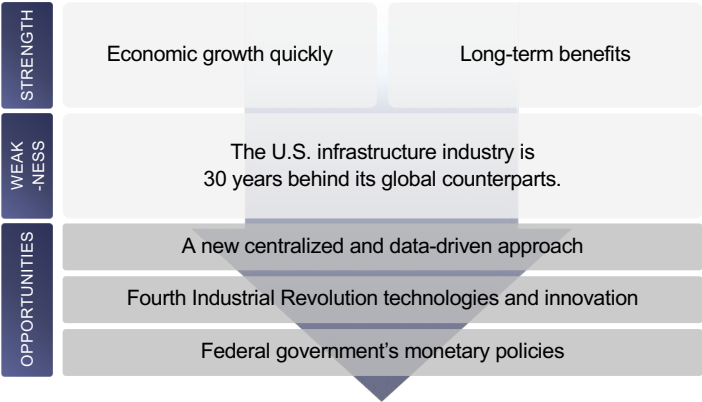
Forecasted GDP Loss in the US for 2020

**5.0%** (Original forecast: 5.2%)



(DATA: Statistics & Facts, S&P Global Ratings, July 2020)

# Infrastructures Role in Economic Relief Efforts



**Right now, investing in the infrastructure sector is the best approach:**  
 infrastructure creates economic growth, 5G cellular infrastructure will allow for faster data rates, a better electric grid allows us to drive electric cars and new roads reduce congestion and commute times.

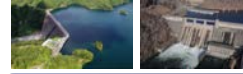
## Past Economic Recovery Examples (The Great Depression, U.S.)

During the Great Depression, President FDR enacted several government programs and agencies to build construction and infrastructure projects across the United States while providing jobs and stimulating the economy.



Public Works Administration (PWA), 1933

- ✓ Notable projects: Hoover Dam, The George Washington Bridge, & San Francisco Mint
- ✓ PWA was mostly dissolved in 1943; some functions partly absorbed by General Services Administration (GSA).

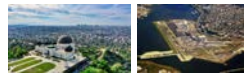


Tennessee Valley Authority (TVA), 1933

- ✓ Notable projects: Fontana Dam, Norris Dam, & Wilson Dam
- ✓ TVA still operates today.

Works Progress Administration (WPA), 1939

- ✓ Notable projects: Griffith Observatory, LaGuardia Airport, & Smithsonian American Art Museum
- ✓ WPA was terminated in 1943.



## Past Economic Recovery Examples (Financial crisis of 2007-08)

After the the Great Recession in 2008 countries around the globe dedicated significant amounts of money towards construction and infrastructure projects.



South Korea

- ✓ 14 trillion won (\$13 Billion) stimulus package for infrastructure.



Canada

- ✓ \$13 billion stimulus bill for new infrastructure as well as the repair of existing infrastructure.



The United States

- ✓ \$105 billion of the American Recovery and Reinvestment Act of 2009 was dedicated for improving infrastructure.

# Current - Proposed Response: United States



▶ The U.S. coronavirus relief plan - Donald J. Trump

- ✓ Days after signing a record \$3 trillion stimulus bill to curb the effects of coronavirus, President Donald Trump said the next phase to revive **the economy should include up to \$3 trillion more for roads, bridges, and other.**
- ✓ Trump and congressional lawmakers are already making opening bids on another stimulus bill.
- ✓ The \$3 trillion economic aid package Trump signed, the largest economic rescue bill in U.S. history, provides cash payments to Americans, loans to businesses, and financial relief for industries. The goal is to inject cash into an economy ravaged by shutdowns brought about by the spread of coronavirus.



▶ Keywords of the fourth coronavirus relief bill



# Current - Proposed Response: Canada



▶ Federal Infrastructure Minister - Catherine McKenna

- ✓ Preparing plans to rush out billions of dollars in budgeted, but largely unspent thus far, **infrastructure funds to stimulate the Canadian economy** now that most pandemic restrictions are lifted.

▶ Alberta Premier – Jason Kenney

- ✓ Announcement of a **\$10-billion investment in infrastructure maintenance and renewal projects** to keep people working during the COVID-19 pandemic.
- ✓ He said the projects will include repairs on K-12 schools (roofs, doors, windows), HVAC updates, and mechanical retrofits to post-secondary facilities, upgrading information technology, and audio systems in courthouses, work on roads and bridge decks.
- ✓ **“Construction season is upon us,”** Kenney said. **“We cannot afford to lose a day when we need the money to be spent in this economy now.”**



## Current - Proposed Response: New Zealand



### ► Funding for "Shovel-ready" infrastructure projects

- ✓ The Government is looking to fund large **"shovel-ready" infrastructure projects** to boost the economy after the COVID-19 lockdown.

### ► Trying to seek out adequate projects

- ✓ A group of industry leaders have been tasked by the Government to **seek out projects now that the construction industry is returning to normal**, to help reduce the economic impact the lockdown has on New Zealand.



### ► New Zealand Upgrade Programme

- ✓ The new projects will be funded in addition to, and build on, the Government's already massive **\$12 billion New Zealand Upgrade Programme** announced in late 2019, and existing Provincial Growth Fund (PGF) **infrastructure investments**.



## What's Needed to Rapidly Plan and Deliver Capital Projects?



# Industrial Integrated Project Delivery (I2PD)

Defined as the balancing of nine principles to promote team *collaboration* and *integration* of work processes and systems.

1. Continuous Communication and Issue Resolution Process
2. Jointly Developed and Validated Targets
3. Access to Shared Information Systems
4. Early Involvement of Stakeholders
5. Collaborative and Equitable Decision Making

## COMMERCIAL IPD

### Collaboration Principles

6. Financial Transparency among Key Participants
7. Shared Risk and Reward
8. Relational Contracting, Multi-party Agreement
9. Negotiated Risk Distribution

## ALLIANCING Integration Principles

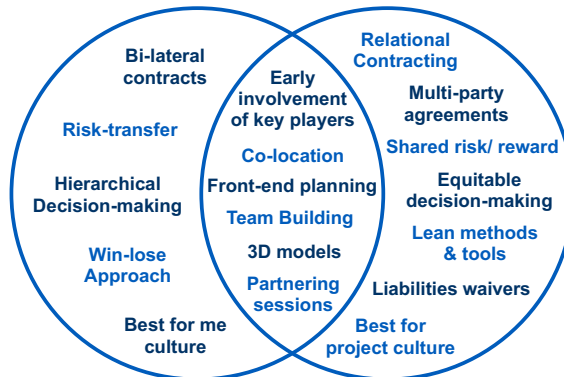


# What is I2PD?

Trust, Collaboration, Integration, Open Communication

EPC, EPCM,  
DB, CMR

DBB



I2PD

Improved Safety, Earlier Cost and Schedule Certainty, Optimized Design



## What Types of Projects Can I2PD Deliver?



### Downstream and Chemicals

- ✓ Refining facilities
- ✓ Petrochemical facilities
- ✓ Specialty chemical facilities



### Manufacturing and Life Sciences

- ✓ Pharmaceuticals
- ✓ Personal Protective Equipment (PPE)



### Power, Utilities, and Infrastructure

- ✓ Transmission & generation
- ✓ Rail Line and Terminals
- ✓ Dams, bridges & roads
- ✓ Port & harbor upgrades



### Upstream, Midstream and Mining

- ✓ Offshore terminals
- ✓ Pipeline
- ✓ Oil and gas production



### Facilities and Healthcare Buildings

- ✓ Warehouses
- ✓ hospitals



## Why I2PD?

Commercial IPD has been proven to have a **superior performance** in metrics related to quality, communication, and change performance.

Projects see **less change**, **faster processing times**, and **significantly faster delivery times** (El-Asmar et al. 2013).

A major finding, on a study of construction projects utilizing Commercial IPD, showed a striking uniformity of **success for all projects** in the study, **regardless of project type, scope, geographic location, or previous experience with IPD** (Cheng et al. 2016).



Increased cost certainty



Assurance of costs being covered



Schedule acceleration



Supply chain certainty



Improved quality



Collaborative next gen environment



Facilitates knowledge transfer

“I2PD is a great fit for the planning and execution for complex and large capital projects.”

# Disaster Infrastructure Recovery Case Study: Collaborative/Integrated Delivery Model

CHRISTCHURCH, NEW ZEALAND  
EARTHQUAKE DAMAGE &  
RELIEF EFFORTS



**STRONGER CHRISTCHURCH INFRASTRUCTURE REBUILD TEAM (SCIRT)**  
ALLIANCE FORMED TO REBUILD CITY | \$2.2 BILLION PROGRAM SPREAD OVER 5 YEARS



New Zealand Government



## I2PD Case Study: Otto Holden Generating Station



**I2PD**  
Everyone benefits from a project delivery method that is highly integrated and collaborative as each of the stakeholders' goals align with one another.

"What's Best for the Project"

Big Room

Joint Risk Assessment

Shared Risk/Reward

Multi-Party Agreement

- COST REDUCTION

**32%** from RFP
- SCHEDULE IMPROVEMENT

**36%** from RFP
- Four major vendors putting 100% of their profits at risk for equitable decision making and majority of execution savings



## Benefits of I2PD

### Protect contractors

Protects contractors financially, reducing the possibility of lay offs.

### Incentives

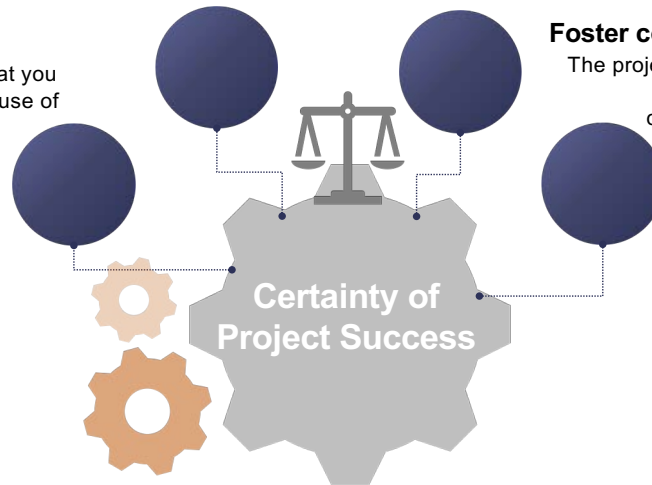
All parties have much to gain by meeting the client's financial goals

### Increase certainty

You can begin projects that you otherwise would not because of high levels of uncertainty.

### Foster collaborative environment

The project team is encouraged to work through changes rather than detail out each party's liabilities.



## Summary



**Governments around the world are beginning to stimulating their economies as part of the economic recovery required - as a result of their COVID-19 pandemic responses to "flatten infection and death rate curves".**



AREA	2020 GROWTH PROJECTION (%)	DIFFERENCE FROM APRIL WEO (%)	2021 GROWTH PROJECTION (%)
World output	-4.9	-1.9	5.4
U.S.	-8	-2.1	4.5
Euro Area	-10.2	-2.7	6
China	1	-0.2	8.2
U.K.	-10.2	-3.7	6.3
Japan	-5.8	-0.6	2.4
Canada	-8.4	-2.2	4.9
Germany	-7.8	-0.8	5.4
Brazil	-9.1	-3.8	3.6
Russia	-6.6	-1.1	4.1
India	-4.5	-6.4	6

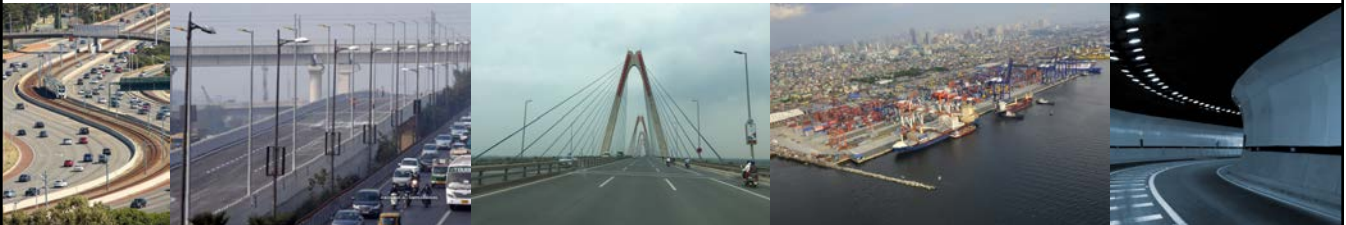
Source: MarketWatch June 24, 2020

- ✓ Global trade will contract by 11.9% this year, according to the IMF. Inflation pressures remains muted.
- ✓ "Urgent and bold policy measures are needed, not only to contain the pandemic and save lives, but also to protect the most vulnerable in our societies from economic ruin and to sustain economic growth and financial stability," stressed Under-Secretary-General for Economic and Social Affairs Liu Zhenmin.()

## Summary



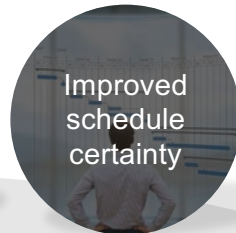
Many of these governments will be looking to *quickly* plan and execute infrastructure and other capital projects in partnership with private industry.



## Summary



I2PD increases speed, trust and transparency as a contracting strategy - delivers project outcome certainty



I2PD

# Questions and Answers

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