

CHILEAN MANAGEMENT SYSTEM FOR SINGULAR INFRASTRUCTURES PROJECTS:

BIDDING PROCESS (SIP-TMS)



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26 April 2017



Ministerio de
Obras Públicas

Gobierno de Chile



Road Department – Ministry of Public Works



The Roads Department of the Ministry of Public Works has, among others, the mission of the planning, design, construction, replacement and repair of bridges, footbridges within the road network:

Under its custody:

Basic and Community network.



Contracts MOP



Traditional System

- Design Contract
- Construction Contract
- Contractor build
- Payment: Stages during the contract

Legal Codes:

- RCOP Decree MOP N° 75 year 2004
- RCTC Decree MOP
- Bidding Process
- Tender of Contractor
- Decree of Awarded

Exception:

**Supreme Decree (President Resolution),
where Special Basis or Contract**



Contracts MOP



Traditional System

MOP qualified Recorded List

Major

Minor

Special
List

Emergency System

Direct Deal

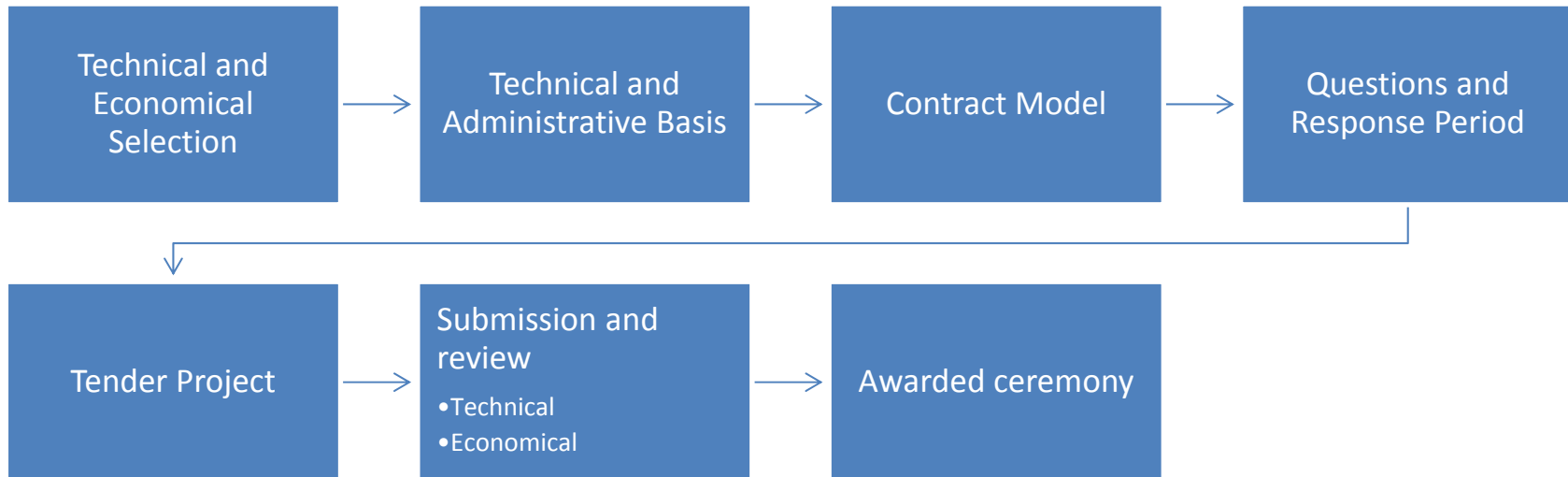
- An emergency

Private Quote

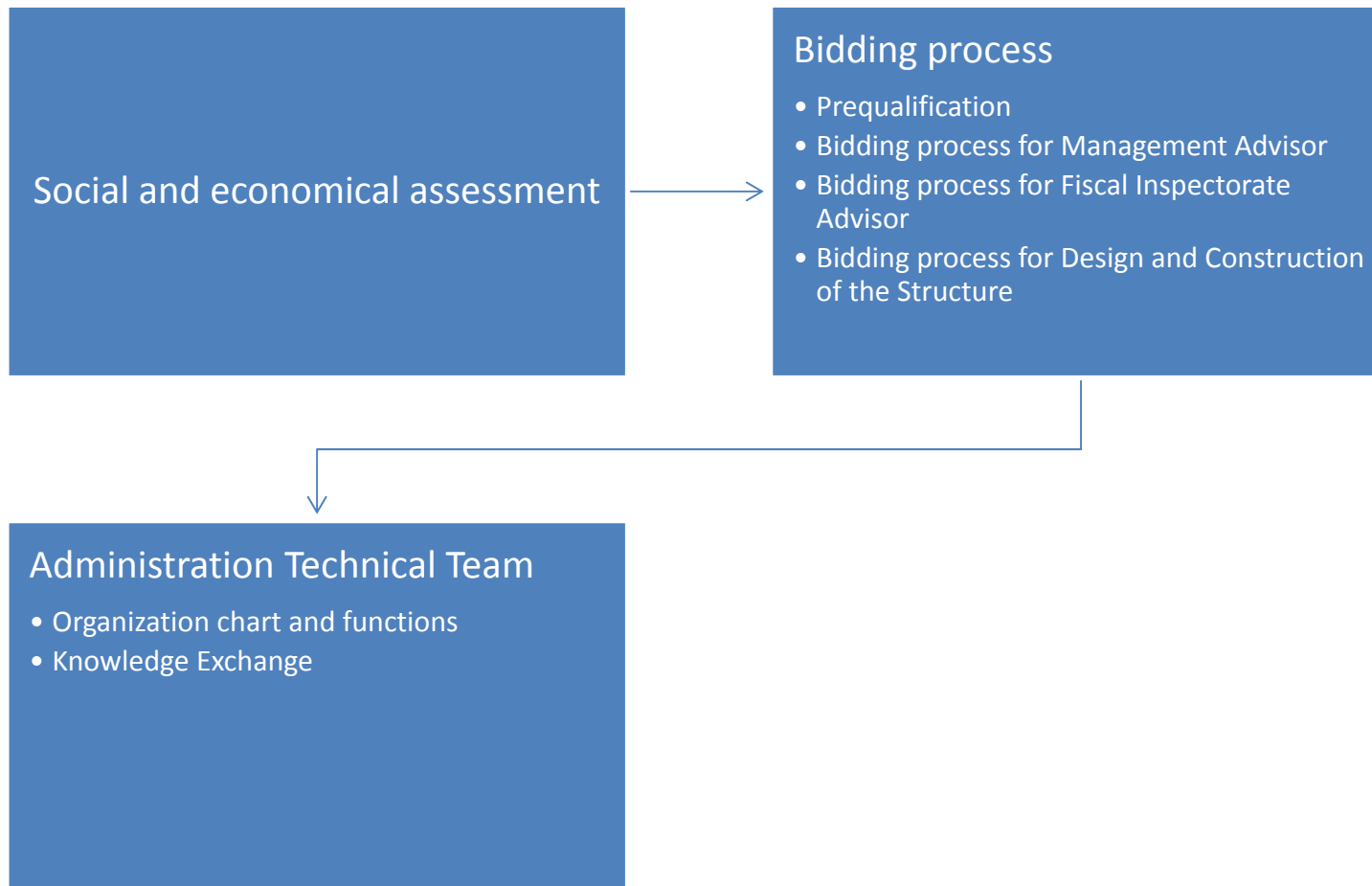
- Specialists in the requested field



Traditional Bidding Process



Bidding Process (SIP-TMS)



Suspension Bridges

3 Puente General Carrera

Región de Aysén



4 Puente Ibáñez

Región de Aysén

Span 210 meters



Latest Important Projects

Bidding process of D&B

1. Chacao Bridge



CCOP (PPP Contract)

2. Américo Vespucio Oriente Highway
3. Costanera Central Highway





Chacao Bridge: A long journey

90 decade: Conceptual Engineering.

2001: Study of Basic Engineering and Project Reference Suspension bridge.

2005: Tender under the system of public works concession (PPP).

2012: Re-evaluation of the project.

- Maximum amount of USD 740 million including access roads and service area
- Design and construction of public works contract by the traditional system of state procurement
- February 18, 2014: Award (International Consortium)



General background of the project



- Project** : International bidding: Chacao Bridge Design and Construction
- Type of contract** : Traditional system of public works contracts
- Bridge Typology** : Suspension bridge about 2.75 km in length
Large spans (more vain about 1,055 and 1,155 m)
- Location** : Los Lagos region, 1,100 km south of Santiago
- Maximum investment** : USD 740 million
Total project)





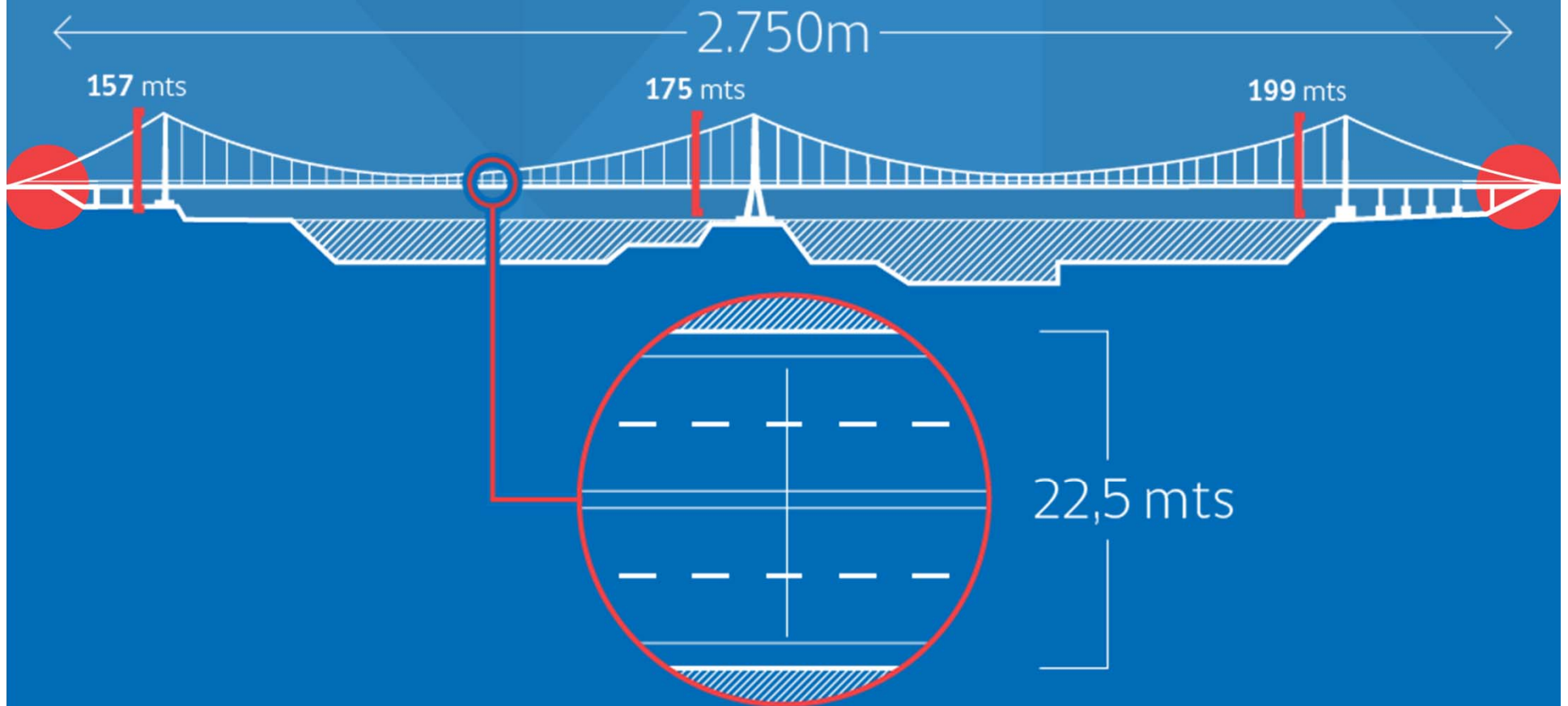
Characteristics of the area of location

- Chiloé Island and bridge construction sector, are in a highly seismic zone
- The channel is characterized by strong winds, tides and currents
- The depth of the channel reaches a maximum of 120 m
- In the central part of the channel there is a place called Roca Remolinos, which can support the central pylon



Structural Scheme: Chacao Bridge

PPWS Method





Suspension Bridges

Largest spans in service

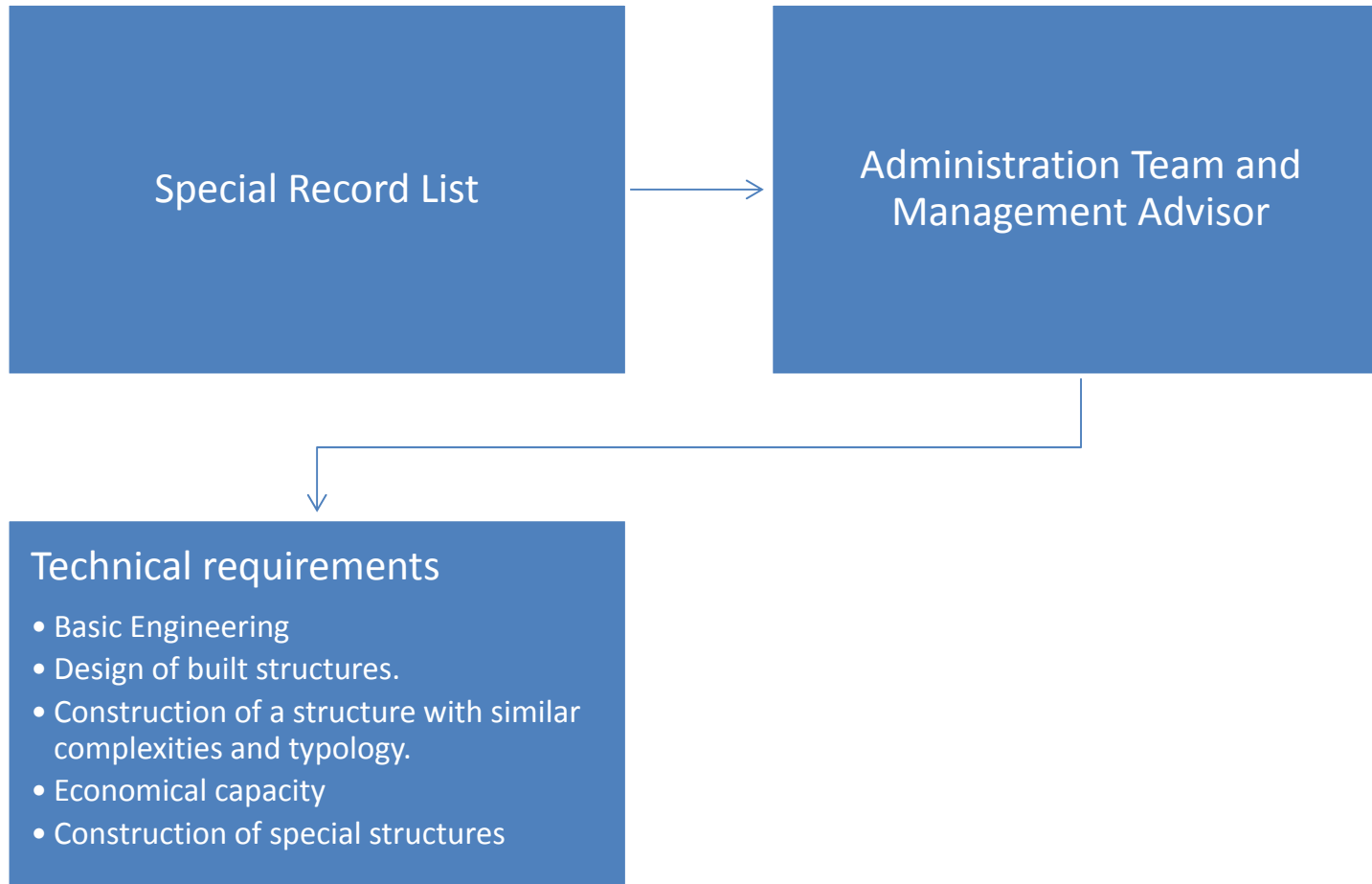
1	Akashi Kaikyo	Isla Awaji - Kobe, Japón	1.991	1998
2	Xihoumen	Archipiélago Zhoushan, China	1.650	2009
3	Great Belt	Halsskov - Sprogø, Dinamarca	1.624	1998
4	Yi Sun Sin	Yeosu - Gwangyang, Corea del Sur	1.545	2012
5	Runyang	Río Yangtzé, China	1.490	2005
6	Humber	Barton - Hull, Inglaterra	1.410	1981
7	Jiangyin	Río Yangtzé, China	1.385	1999
8	Tsing Ma	Tsing Yi - Ma Wan, Hong Kong	1.377	1997
9	Verrazano Narrows	New York, Estados Unidos	1.298	1964
17	Chacao	Canal de Chacao, Chile	1.155	2020



Location and Access Bridge



Bidding Process (SIP-TMS) Prequalification





REQUISITOS

para la precalificación

INGENIERÍA Y DISEÑO

de al menos un puente colgante de vano mayor, igual o superior a 600m, puesto en servicio desde el año 1985 en adelante.

ESTUDIOS DE ING. BÁSICA

geológicos, geotécnicos, de vientos e hidráulica marina.

CONSTRUCCIÓN

FUNDACIONES BAJO EL AGUA

off shore, marinas o fluviales, en profundidades superiores a los 20m realizadas desde el año 1985 y hasta el 31 de Julio de 2012.

CAPITAL DE TRABAJO

acreditado superior a USD 200 millones

Consortium Awarded

Consortio
**OAS, Hyundai, Systra,
Aas-Jackobsen.**

Límite base
de Licitación

\$ 361.000 MM

Oferta
Económica

\$ 360.134 MM

Plazo Máximo
de Construcción

84 meses

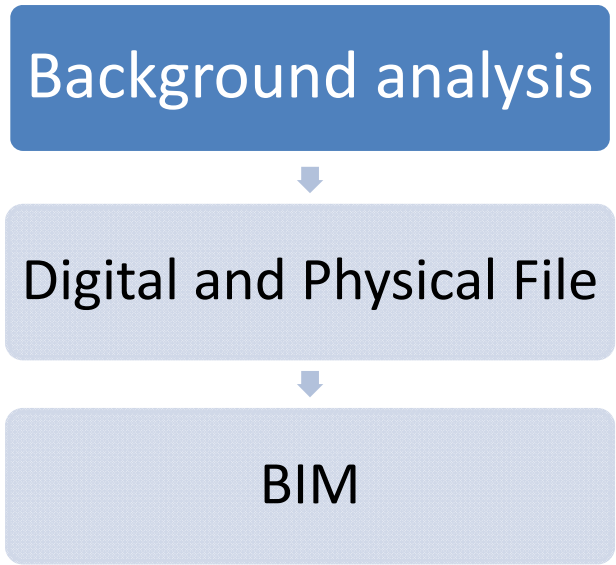
Plazo Propuesto
por Consorcio

79 meses

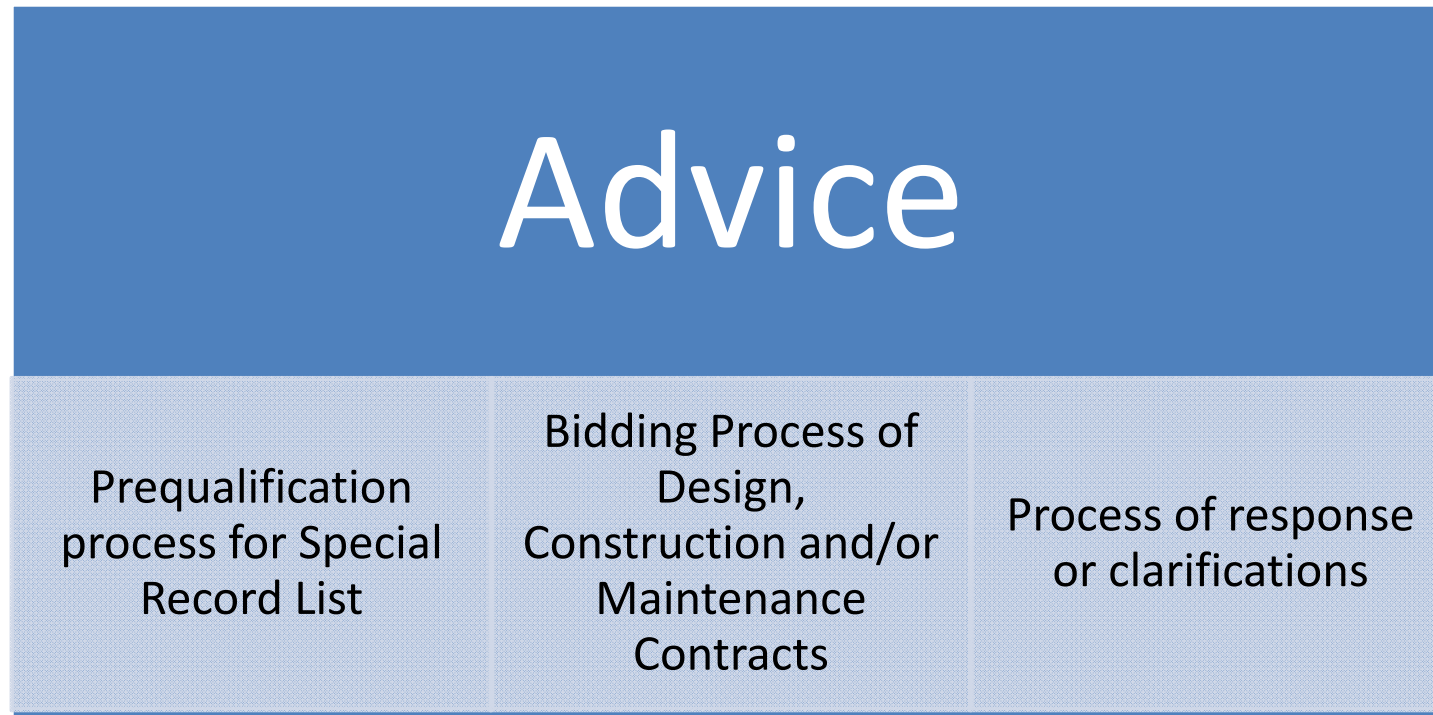
Inicio del Contrato:

18 de Febrero 2014

Bidding Process (SIP-TMS) Management Advisor



Bidding Process (SIP-TMS) Management Advisor



Study and analyze the background
Develop a critical analysis of the Technical Basis



Bidding Process (SIP-TMS) Management Advisor



Elaboration of Final Basis
and Check List for Tenders

Assessment of the
Proposal Projects

Advisory during award
process

Coordination Meetings
Technical Meetings



Bidding Process (SIP-TMS) Management Advisor



Basic Engineering: Current and reference



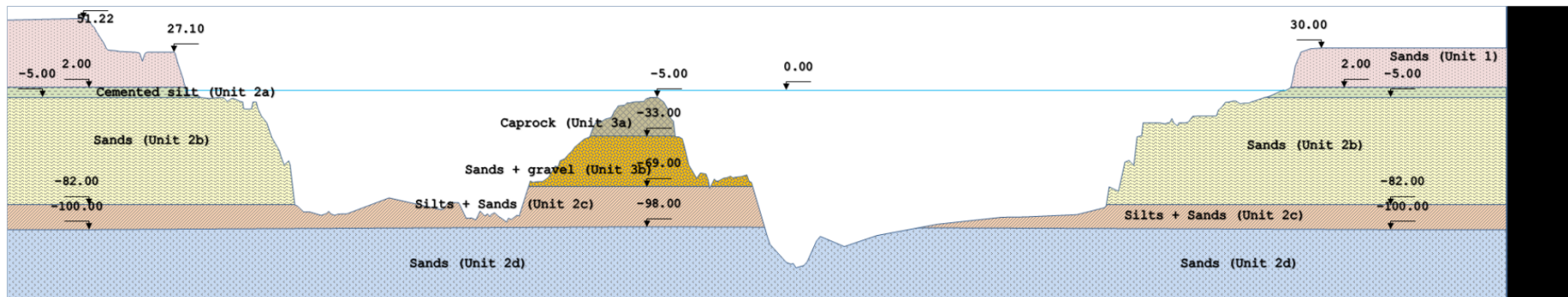
Topography
and
Geodesy



Basic Engineering: Current and reference



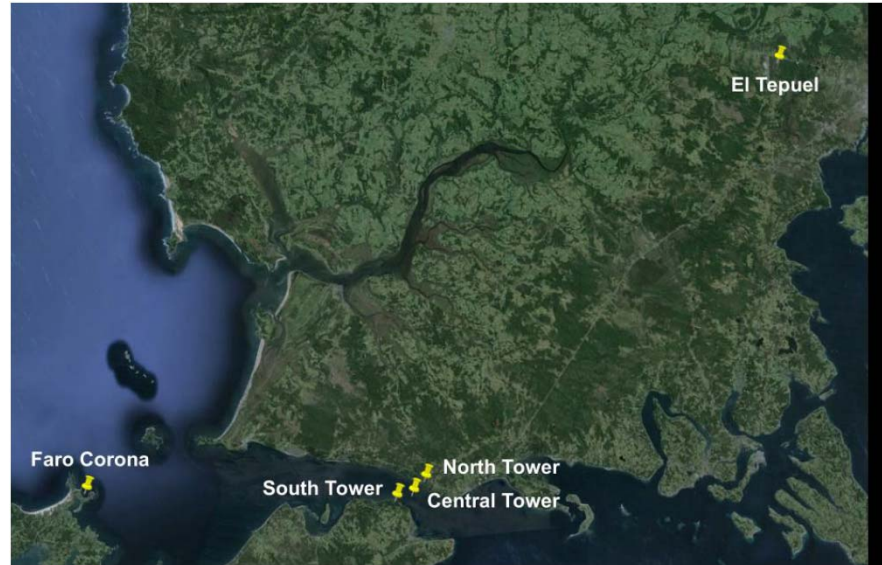
Geology
and
Geotechnic



Basic Engineering: Current and reference



Wind measurements



Basic Engineering: Current and reference



Seismic studies



Basic Engineering: Current and reference



Maritime studies



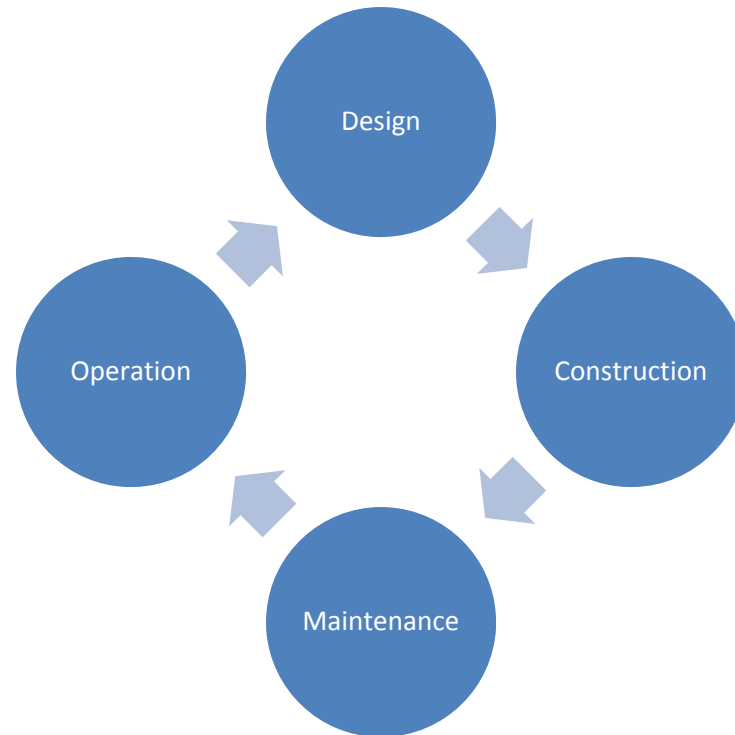
Bidding Process (SIP-TMS) Technical Visit



Advisory Team



Administration Team



Technical Visits



Maintenance Cables (New Carquinez)



Hanger (New Carquinez)



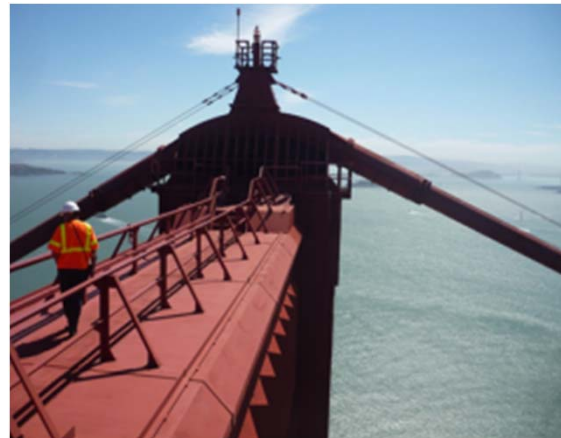
Technical Visits



(Tacoma Narrows 2007 - 1950)



(Golden Gate)



(Mackinac)



Technical Visits



Hedges, lifts
(Mackinac)



Technical Visits



Piers
(SAS)



Cranes
(SAS)



Trucks
(SAS)



Cranes
(SAS)



Technical Visits

- Mackinac - Museum



Technical Visits

- Golden Gate



Technical Visits

Xihoumen Bridge

BMS Buildings



Bidding Process (SIP-TMS)

Final Report



General review of the Tender Project

Complementary opinion of the Project from professionals and experts

Integrity review of the structure (bridge, tunnel, port, among others)

Report of suitability of the Project.

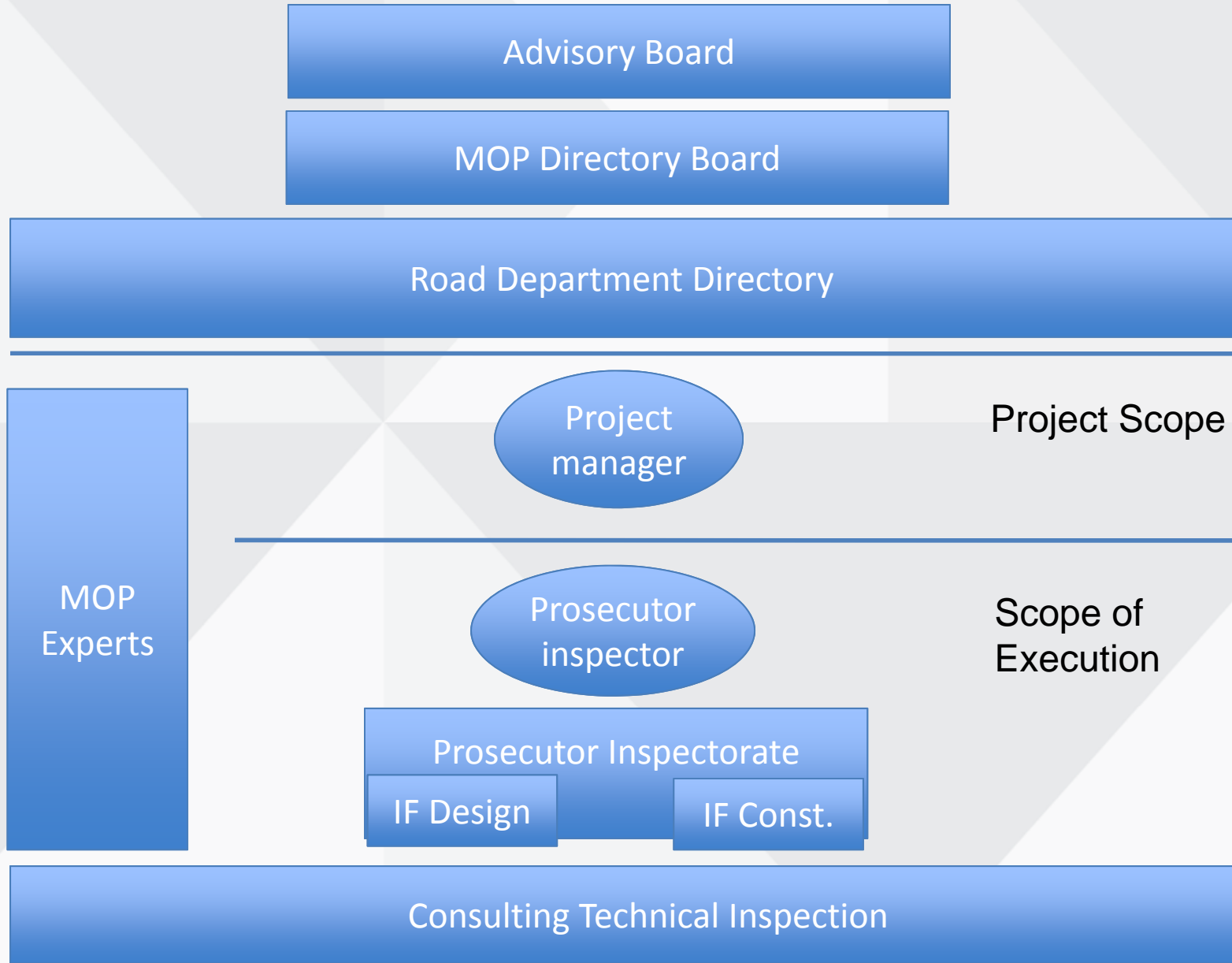




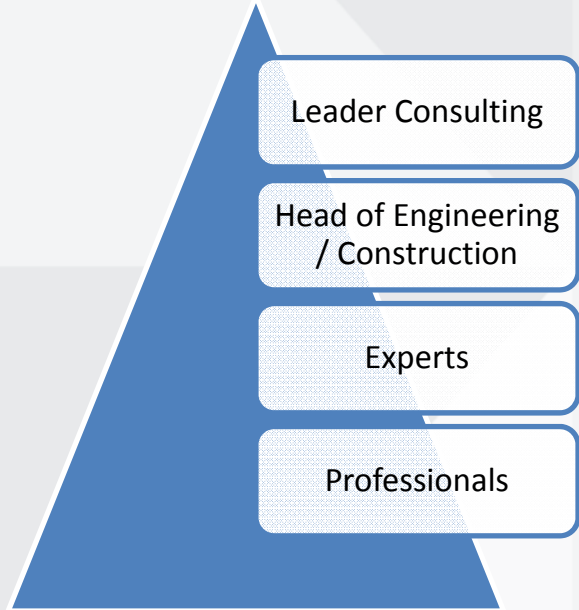
Puente Chacao

**INSPECTION
TEAM**

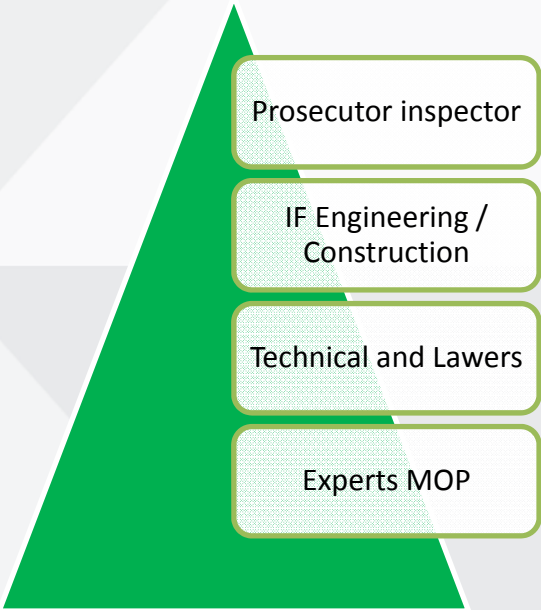
Structure of Owner



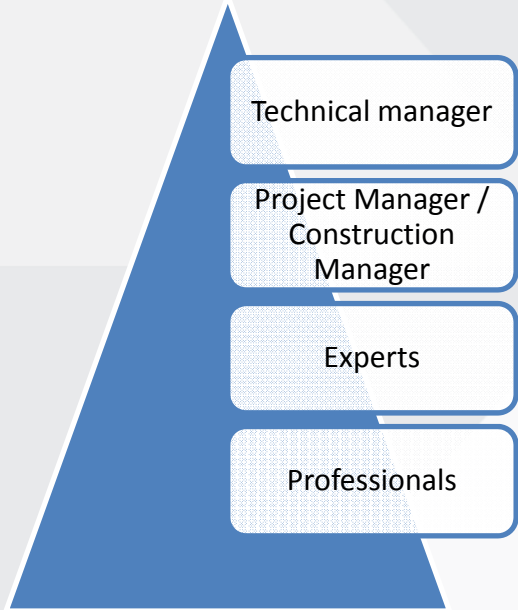
LEVELS OF INTERRELATION BETWEEN CLIENT AND CONTRACTOR



Consulting Technical Inspection



Prosecutor Inspectorate



Contractor



G12 Program

Selección de postulantes

Serán seleccionados 12 profesionales para que se especialicen de manera efectiva en el diseño y construcción de puentes constituyéndose, adicionalmente, en una instancia de apoyo a las tareas que realiza la Dirección de Vialidad. De esta manera, los/las profesionales seleccionados/as trabajarán directamente como asistentes de las jefaturas del proyecto aportando al avance del mismo.

Proceso de Postulación y Selección

El periodo de recepción de los antecedentes (Curriculum Vitae y copia de Título Profesional) comienza el 14 de enero y finaliza el 8 de febrero de 2015 y pueden ser enviados a través del correo electrónico dv.postulacion@puentechacao@mop.gov.cl o dejarlos personalmente en el Departamento de Desarrollo Organizacional de la Dirección de Vialidad, con el encargado del proceso, Psicólogo Claudio Carrasco Opazo, en Morandé 59, oficina 354.



Perfil de Postulante

Ingeniero/a Civil titulado/a en Chile, con especialización en estructura, construcción u obras civiles.

Experiencia máxima de 2 años en la carrera (contados desde su titulación profesional).

Se valorará favorablemente el manejo del idioma inglés.

Tipo de Contrato

Primer año a Honorarios asimilado a grado 12.
Carta de compromiso de permanencia en la Dirección de Vialidad durante todo el programa de especialización.

MARTES

13 de enero de 2015
11.30 horas

AUDITORIO MINISTERIO DE
OBRAS PÚBLICAS

MORANDÉ 71, PISO 3
SANTIAGO - CHILE

PROGRAMA DE ESPECIALIZACIÓN

DE INGENIEROS AS JÓVENES CHILENOS AS EN LA PLANIFICACIÓN, DISEÑO Y CONSTRUCCIÓN DE PUENTES TRADICIONALES Y SINGULARES



Bidding Process (SIP-TMS) Dissemination and Exchange Of Knowledge



Santiago – CHILE
16 al 21 de Octubre de 2017
October 16 to 21, 2017



SECOND INTERNATIONAL BRIDGES CONGRESS - CHILE 2017, DESIGN, CONSTRUCTION AND MAINTENANCE

Venue

Santiago - Chile

Dates

18 - 20 October 2017

Organizan / Organized by



Bidding Process (SIP-TMS)

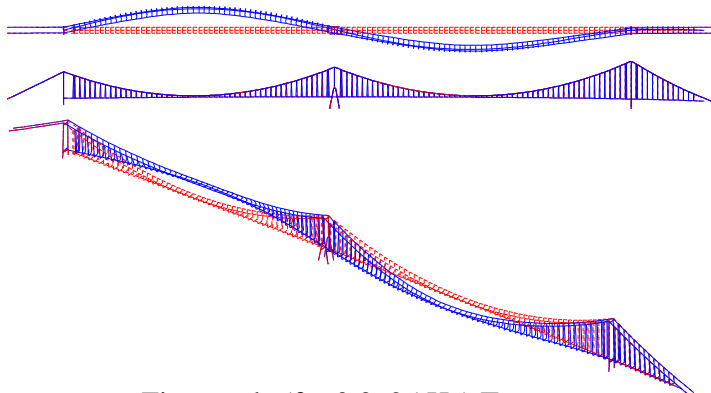
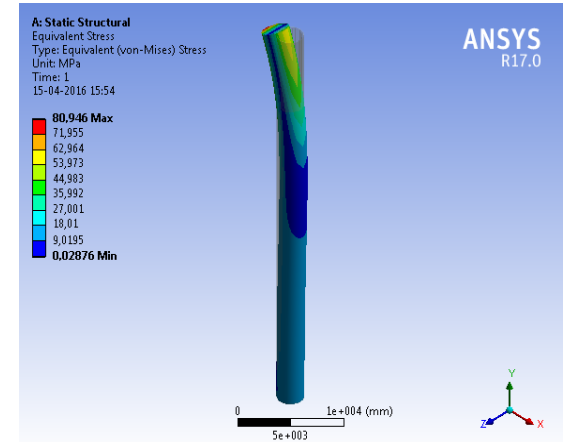
Dissemination and Exchange Of Knowledge



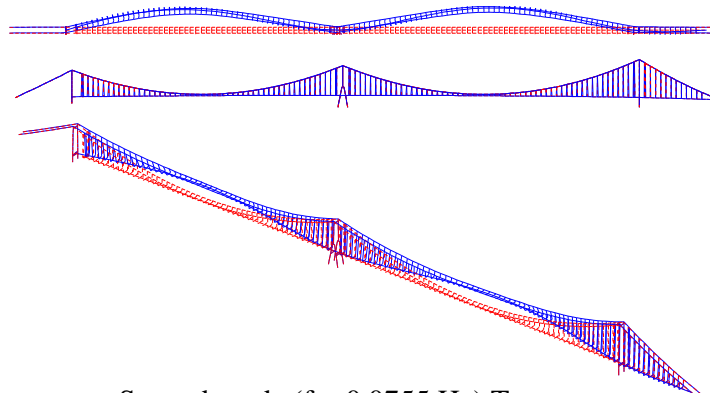
- Agreements MOP – Universities

Dynamic Behavior
I.C Diego Pizarro

Piles study
I.C Pablo Trucco



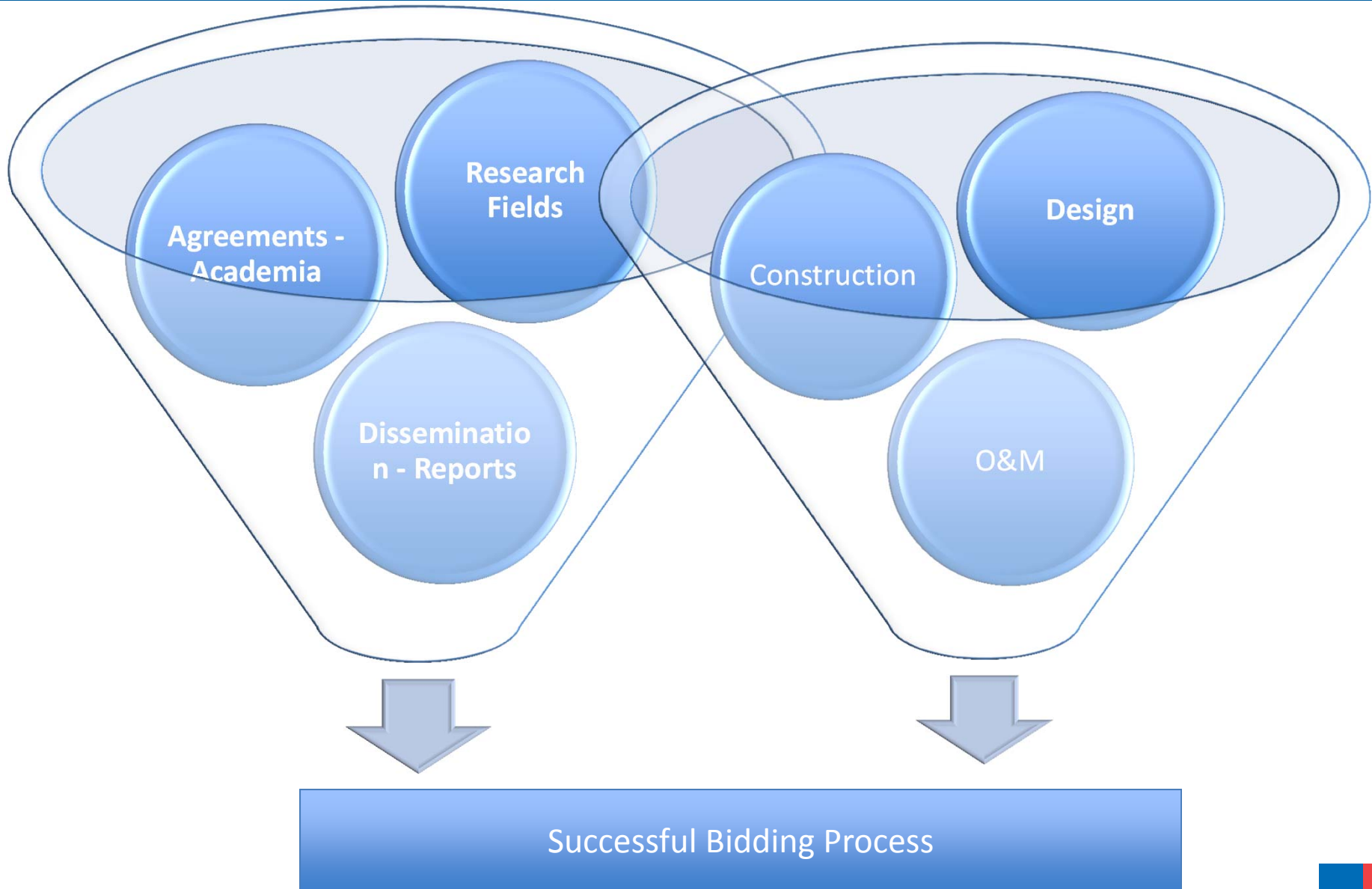
First mode (f = 0.0625 Hz) Transverse



Second mode (f = 0.0755 Hz) Transverse



Final Comments



Final Comments

The Chilean Administration has implemented a new methodology of management for nontraditional structures, following SIP-TMS method presented in this paper. The first application of this method was the Chacao Bridge Project.

To use the traditional codes as a framework of the nontraditional structures.

A new code or normative has to be developed for this kind of projects.

Support of the technical teams and the authorities.

The Administration has to prepare a background of the project with special focus on:

- Administrative issues,
- Conceptual design and basic engineering

An advisor team has to be hired with national and international experience.

Exchange knowledge and dissemination are the two main concepts that have to be promoted in this project.



Thank You

Q&A

[integrando el territorio]

www.mop.cl/puentechacao

