

**APPENDIX II-7**  
**RESULTS OF ENVIRONMENTAL INSPECTION**

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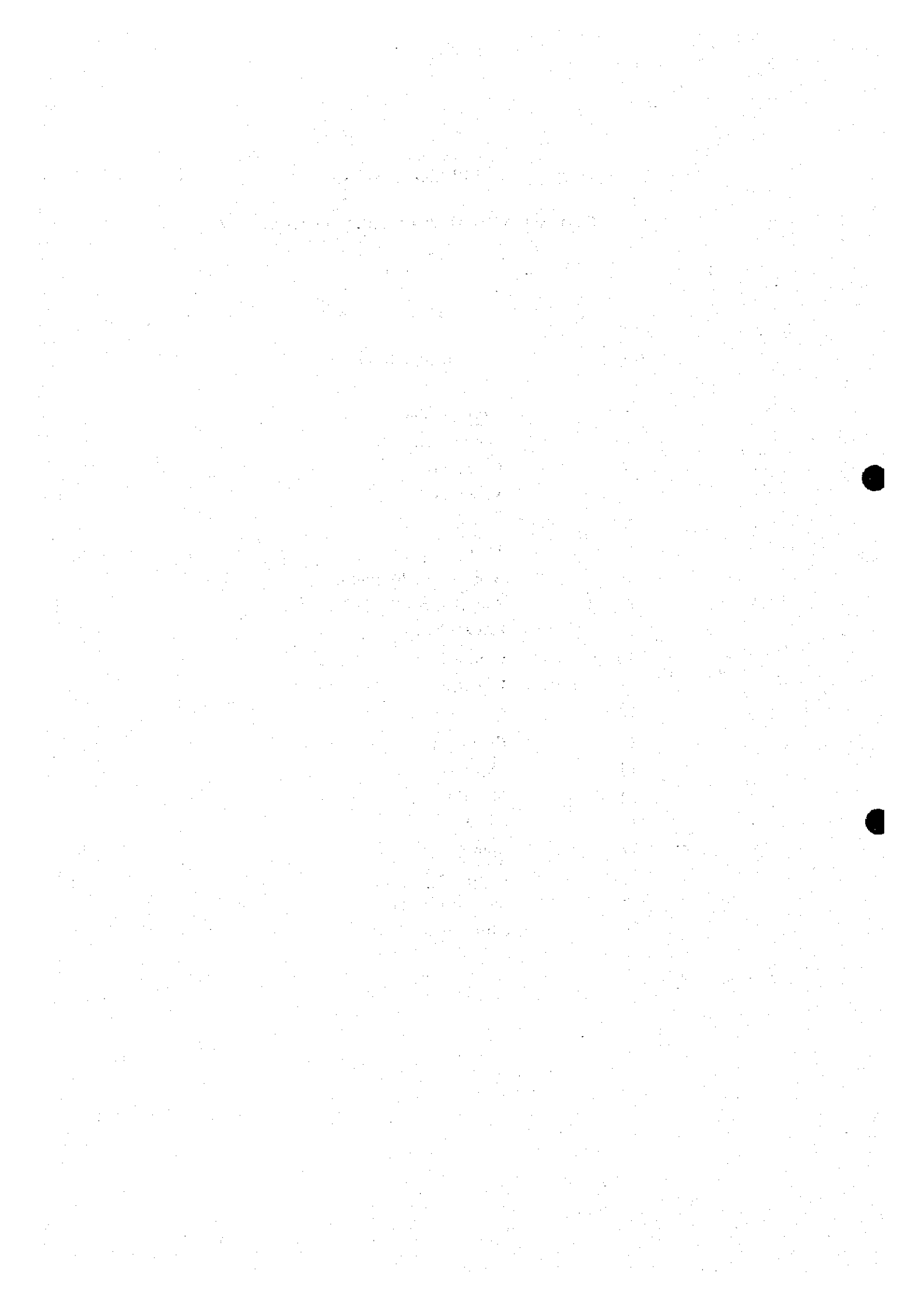
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## APPENDIX II-7-A

### PROJECT AND SITE DESCRIPTION SHEETS

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Project location: No. h Bridge name: Confluencia Region: IV Coquimbo Province: Choapa

Item	Description
<b>Background</b>	Flaking and deterioration on surface paint of the main steel beam is recognized. Cracks are recognized on the reinforced concrete cantilevered deck. Damages are recognized on railing post connections and top rails.
<b>Objectives</b>	Repair of repainting of steel beam, cracks of reinforced concrete deck, re-installation of railing is required.  If possible widen of sidewalks is desirable for visitors due to provision of enough space for enjoy valley scenic view at the location.
<b>Executing Agency</b>	Ministry of Public Works (MOP)
<b>Beneficiaries</b>	Keep maintaining smooth and safety traffic. Safety and pleasant pedestrian crossing on the bridge sidewalks if enough width of side walks with sufficient strength of the railing.
<b>Project Components</b>	
Existing bridge structure bridge length, width Other specific features	Slab(Conc.), Beam(Steel), Abutment(Conc.), Pier(Conc.), Foundation(Conc.) Length( m), Width( m) Carriage way width ( m), Side walk width ( m)
Project Type	( ) Replacement, ( X ) Repair
Road Type	( ) Urban / ( X ) Rural area, ( ) Plain area / ( X ) Mountain area ( X ) Paved / ( ) Unpaved
Existing traffic volume	Year 79/6/13(Fri.) (46)Cars/hour, ( )Cars/day
Road width/lanes	Exist Width =( 5x2 m ) Nos. lanes = ( 2 )
Road structure	( ) Embankment / ( ) Elevated / ( X ) Others: Cutting of original ground
Supplemental facilities	Parking and vista space at right bank of downstream.
<b>Others</b>	River name: Choapa, Illapel river is confluenced at upperstreram. The bridge construction began in 1973 and finished in 1978. The area vicinity of the bridge has no other detour route to cross the river. Area of th bridge and it's surroundings has potentially a good view point of rocky deep valley and river confluence. Illapel is the nearest town 6 km off the bridge.

Site description for IEE and preliminary EIA preparation work

Project location: No. h Bridge name: Confluencia Region: IV Coquimbo Province: Choapa

Item	Description	
<b>Social environment</b>		
Inhabitants: Residents, Indigenous people  Their views on the project Others	<b>Upperstream: Left bank area:</b> A farm house at approx. 30 m distance from the bridge <b>Downstream: Left bank area:</b> 4 farm houses at approx. 70m to 100 m distance from the bridge	<b>Right bank area:</b> No settlement  <b>Right bank area:</b> No settlement
Landuse and facilities: Urban area, Farm land, Others Historic & cultural site, Scenic spot Hospitals and other facilities	<b>Upperstream: Left bank area:</b> Barren hill and partially farm land  <b>Downstream: Left bank area:</b> Barren hill and partially farm land	<b>Right bank area:</b> Barren hill and grass land  <b>Right bank area:</b> Barren hill and grass land
Economy: Commerce, Agriculture, Forestry Others	<b>Upperstream: Left bank area:</b> Agriculture <b>Downstream: Left bank area:</b> Forestation and agriculture	<b>Right bank area:</b> Agriculture <b>Right bank area:</b> Agriculture
Transport: Bus terminal, etc.	No bus terminal	
<b>Natural environment</b>		
Topography, ( Feature of river bank area) Steep slopes, Soft ground, Wetland	<b>Upperstream: Left bank area:</b> Steep rocky cliff of 25m to 30m depth  <b>Downstream: Left bank area:</b> Steep rocky cliff of 25m to 30m depth	<b>Right bank area:</b> Steep rocky cliff with flat river bed spread of river conluent  <b>Right bank area:</b> Steep rocky cliff of 25 to 30m depth
Geology, (feature of river bank/bed): Outcrop, stone, gravel, sand / Fault Soil type, etc.,	<b>Left bank area:</b> Rocky outcropped river bank  River bed: Course large stony river bed	<b>Right bank area:</b> Rocky outcropped river bank
Hydrology, ( Feature of river flow, Water level, flood level )	A confluence of river at aprox.. 200m at upstream, Flow direction: NW 1.4m to 3.3 m of river water depth at deep point, flow velocity aprox.. 0.5m/sec Flood level: plus 5m from existing water level	
Fauna & Flora / habitats Rare species /community, etc.,	Thorny heath dry mountainous area vegetation, Common fish fauna, No specific area of importance. Rare species are not recognized	
<b>Pollution</b>		
Complaints: Population of the utmost concern	No specific complaint	
Measures taken: Institutional measures Compensation	No necessity	
<b>Others</b>	The site has high potentials of scenic point of valley landscape for visitors.	

Project location: No.2 Bridge name: David Garcia Region: V. Valparaiso, Province: Los Andes

Item	Description
<b>Background</b>	The bridge was built in 1930's and deteriorated condition. Bridge length is not enough width of river flow. Many damages on railing portions and expansion joints are recognized. Increase of traffic volume will be highly required on the load capacity of the bridge. Narrow width for pedestrian sidewalks of the bridge. Problems of traffic accidents on pedestrian crossing on the bridge.
<b>Objectives</b>	Replacement of the bridge due to strengthen of deteriorated existing structure condition and increasing of traffic volume. Widen of carriage way and sidewalk. Safeguard and security for pedestrian path on the bridge
<b>Executing Agency</b>	Ministry of Public Works (MOP)
<b>Beneficiaries</b>	Maintain of smooth and safety in increased traffic volume. Safety pedestrian crossing on the bridge sidewalks if enough width of side walks.
<b>Project Components</b>	
Existing bridge structure bridge length, width Other specific features	Slab(Conc.), Beam(conc.), Abutment(Conc.), Pier(Conc.), Foundation(Conc.) Length( 93.5m), Width( 8.3m) Carriage way width ( 6.0m), Side walk width ( 1.15m)
<b>Project Type</b>	( X ) Replacement, ( ) Repair
<b>Road Type</b>	( X ) Urban / ( ) Rural area, ( X ) Plain area / ( ) Mountain area ( X ) Paved / ( ) Unpaved
<b>Existing traffic volume</b>	Year 79/6/12(Thr.), 6/30 (255)Cars/hour, ( )Cars/day
<b>Road width/lanes</b>	Exist Width =( 3x2 m ) Nos. lanes = ( 2 )
<b>Road structure</b>	( X ) Embankment / ( ) Elevated / ( ) Others: Embankment at left bank with 100m
<b>Supplemental facilities</b>	Concrete revetment with 2m in high, 200m in length at right bank of upper watershed.
<b>Others</b>	River name: Aconcagua, Flow direction: NW Road: Town road (Los Andes - San Esteban) of Los Andes. Bridge locates at 1.2km from town center of Los Andes.  The bridge was the first reinforced concrete bridge built in 1930's.

Site description for IEE and preliminary EIA preparation work

Project location: No.2 Bridge name: David Garcia Region: V. Valparaiso, Province: Los Andes

Item	Description	
<b>Social environment</b>		
Inhabitants: Residents, Indigenous people	<b>Upperstream: Left bank area:</b> None	<b>Right bank area:</b> Farm house locate at approx. 70m distance from the bridge
	<b>Downstream: Left bank area:</b> None	<b>Right bank area:</b> Cattle market facility site locates adjacent the bridge.
Their views on the project Others		
Landuse and facilities: Urban area, Farm land, Others Historic & cultural site, Scenic spot Hospitals and other facilities	<b>Upperstream: Left bank area:</b> Barren land, Residential at hinterland	<b>Right bank area:</b> Agriculture (Vine yard)
	<b>Downstream: Left bank area:</b> Barren land, residential at hinterland	<b>Right bank area:</b> Barren land, Cattle market facility Residential at hinterland
Economy: Commerce, Agriculture, Forestry Others	<b>Upperstream: Left bank area:</b> Barren land, Small sand borrow pits	<b>Right bank area:</b> Agriculture
	<b>Downstream: Left bank area:</b> Agriculture	<b>Right bank area:</b> Barren land
Transport: Bus terminal, etc.	None	
<b>Natural environment</b>		
Topography, ( Feature of river bank area) Steep slopes, Soft ground, Wetland	<b>Upperstream: Left bank area:</b> Slope and terrace mixed bank	<b>Right bank area:</b> Slope and terrace mixed bank
	<b>Downstream: Left bank area:</b> Slope and terrace mixed bank	<b>Right bank area:</b> Slope and terrace mixed bank
Geology, (feature of river bank/bed): Outcrop, stone, gravel, sand / Fault Soil type, etc.,	<b>Left bank area:</b> Gravel and silt soil mixed bank	<b>Right bank area:</b> Gravel and silt soil mixed bank
	<b>River bed:</b> Flat river bed with round grovels and stone river bed	
Hydrology, ( Feature of river flow, Water level, flood level)	Flow regime divides 2 flows and gravel dunes exist in the water flow. Water depth of 1.3m at flow center of the river. Flow velocity of Aprox... 1.5m/sec. Flood level comes up to 3.5m from the river bottom. Flow direction: NW	
Fauna & Flora / habitats Rare species /community, etc.,	Pre-cordilleran deciduous forest area, dry land vegetation. Eucaliputus plantings at left bank. Common fish fauna and birds No specific area of importance. Rare species are not recognized	
<b>Pollution</b>		
Complaints: Population of the upmost concern	No specific complaint	
Measures taken: Institutional measures Compensation	No necessity	
<b>Others</b>	River bank areas are under the circumstance of damp yard of construction waste. One of the worse environmental degradation area of the bridge surroundings. Daily pedestrian flow activities cross over the bridge is facing traffic threaten.	

Project location: No.3 Bridge name: Granallas Region: V. Valparaiso, Province: San Felipe de Aconcagua

Item	Description
<b>Background</b>	The bridge was built in 1930's and deteriorated condition. Bridge length is not enough width of river flow. Many damages on railings and expansion joints are existed. Single carriage way and narrow width is not enough for increasing traffic volume. Timber plate deck is not sufficient for existing traffic condition.
<b>Objectives</b>	Copper mining site is situated at hillside area in right bank hinterland, Heavey loaded trucks pass through the bridge which has limitation of 12 tons weight. Single timber plate carriage way of the bridge is not sufficient for Heavey loaded trucks. Safeguard and security for pedestrian path on the bridge
<b>Executing Agency</b>	Ministry of Public Works (MOP)
<b>Beneficiaries</b>	Maintain of 2 way carriage way and smooth and safety in increased traffic volume. Safety pedestrian crossing on the bridge sidewalks.
<b>Project Components</b>	
Existing bridge structure bridge length, width Other specific features	Slab(Timber), Beam(Steel), Abutment(Conc.), Pier(Conc.), Foundation(Conc.) Length( 50.0m), Width( 4.3m) Carriage way width ( 2.52m), Side walk width ( 0.3m)
Project Type	( X ) Replacement, ( ) Repair
Road Type	( ) Urban / ( X ) Rural area, ( X ) Plain area / ( ) Mountain area ( ) Paved / ( X ) Unpaved
Existing traffic volume	Year 79/6/16(Mon), 6/30(Mon) (30)Cars/hour, ( )Cars/day
Road width/lanes	Exist Width =( 5.5m ) Nos. lanes = ( 2 )
Road structure	( X ) Embankment / ( ) Elevated / ( ) Others: Extended embankment at left bank
Supplemental facilities	Stone piled revetment with 2.5m in high, 20m in length at right and left bank of upper watershed. Temporally wooden suspension pedestrian bridge is located adjacent at Upperstream.
<b>Others</b>	River name: Putaendo, Tributary of Aconcagua river. Road: Local branch line of E-71, Putaendo is the nearest town off 0.5km. Timber plate deck was replaced 1995. Paintings of wood railing has been finished recently. Location of replacement of the new bridge shall be the same place of the existing one. Detour route of the bridge locates at uppershed, Possibility of crossing river on site in dry season when water not flows.



**Site description for IEE and preliminary EIA preparation work**

**Project location: No.3 Bridge name: Granallas Region: V. Valparaiso,  
Province: San Felipe de Aconcagua**

Item	Description	
<b>Social environment</b>		
Inhabitants: Residents, Indigenous people	<b>Upperstream: Left bank area:</b> None	<b>Right bank area:</b> Farm houses locate at approx. 30m distance from the bridge
	<b>Downstream: Left bank area:</b> None	<b>Right bank area:</b> Farm houses locate at approx. 30m distance from the bridge.
Their views on the project Others		
Landuse and facilities: Urban area, Farm land, Others Historic & cultural site, Scenic spot Hospitals and other facilities	<b>Upperstream: Left bank area:</b> Barren land, Residential at hinterland	<b>Right bank area:</b> Agriculture (Orchard)
	<b>Downstream: Left bank area:</b> Barren land, ware house at 100m Residential at hinterland	<b>Right bank area:</b> Agriculture (Orchard) Residential at hinterland
Economy: Commerce, Agriculture, Forestry Others	<b>Upperstream: Left bank area:</b> Barren land, Stone borrow pits	<b>Right bank area:</b> Agriculture
	<b>Downstream: Left bank area:</b> Stone borrow pits, agriculture	<b>Right bank area:</b> Agriculture
Transport: Bus terminal, etc.	None	
<b>Natural environment</b>		
Topography, ( Feature of river bank area) Steep slopes, Soft ground, Wetland	<b>Upperstream: Left bank area:</b> Flat expanded bank	<b>Right bank area:</b> Flat expanded bank
	<b>Downstream: Left bank area:</b> Flat expanded bank	<b>Right bank area:</b> Flat expanded bank
Geology, (feature of river bank/bed): Outcrop, stone, gravel, sand / Fault Soil type, etc.,	<b>Left bank area:</b> Round stony bank	<b>Right bank area:</b> Round stony bank
	<b>River bed:</b> Flat river bed with round stony bed.	
Hydrology, ( Feature of river flow, Water level, flood level )	Flow regime sifted to the right bank and gravel dunes exist in the water flow. Water depth of 0.6m and 0.4m/sec. flow velocity, Flow direction: SES Flood level comes up to high of bridge free board.	
Fauna & Flora / habitats Rare species /community, etc.,	Pre-cordilleran deciduous forest area, dry land vegetation. Scattered eucaliputus plantings at river banks. Common fish fauna and birds No specific area of importance. Rare species are not recognized	
<b>Pollution</b>		
Complaints: Population of the upmost concern	No specific complaint	
Measures taken: Institutional measures Compensation	No necessity	
<b>Others</b>		

Project location: No.7 Bridge name: Ventanas Region: V. Valparaiso, Province: Valparaiso

Item	Description
<b>Background</b>	Concrete honey combing are recognized on the reinforced concrete abutments. Exceeded rusting are recognized all way through the railing. Location of the bridge vicinity is heavy industrial zone, traffic of Heavey loaded trucks pass through the bridge and traffic volume is tended to increase. Narrow width for pedestrian sidewalks of the bridge.
<b>Objectives</b>	Repair of the bridge for maintain existing function. Widen side walks for safeguard and security for pedestrian path on the bridge.
<b>Executing Agency</b>	Ministry of Public Works (MOP)
<b>Beneficiaries</b>	Maintain safety traffic flow as well as safety pedestrian crossing on the bridge sidewalks.
<b>Project Components</b>	
Existing bridge structure bridge length, width Other specific features	Slab(Conc.), Beam(Conc.), Abutment(Conc.), Pier(Conc.), Foundation(Conc.) Length( m), Width( m) Carriage way width ( m), Side walk width ( 1.2m)
Project Type	<input type="checkbox"/> Replacement, <input checked="" type="checkbox"/> Repair
Road Type	<input checked="" type="checkbox"/> Urban / <input type="checkbox"/> Rural area, <input checked="" type="checkbox"/> Plain area / <input type="checkbox"/> Mountain area <input type="checkbox"/> Paved / <input checked="" type="checkbox"/> Unpaved
Existing traffic volume	Year 79/6/17(Tue), 6/27(Fri.) (360)Cars/hour, ( )Cars/day
Road width/lanes	Exist Width =( 3.5 x 2 m ) Nos. lanes = ( 2 )
Road structure	<input type="checkbox"/> Embankment / <input type="checkbox"/> Elevated / <input checked="" type="checkbox"/> Others: Flat type
Supplemental facilities	
<b>Others</b>	River name: Estero Ventanas, Road: F-30-F Principal road. Bridge location is the central area of heavy industrial zone, Las Ventanas is the nearest town center off 1.0km from the bridge.

## Site description for IEE and preliminary EIA preparation work

Project location: No.7 Bridge name: Ventanas Region: V. Valparaiso, Province: Valparaiso

Item	Description	
<b>Social environment</b>		
Inhabitants: Residents, Indigenous people	<b>Upperstream: Left bank area:</b> None	<b>Right bank area:</b> None
	<b>Downstream: Left bank area:</b> None	<b>Right bank area:</b> None
Their views on the project Others		
Landuse and facilities: Urban area, Farm land, Others Historic & cultural site, Scenic spot Hospitals and other facilities	<b>Upperstream: Left bank area:</b> Industrial, Copper mint yard	<b>Right bank area:</b> Industrial, Storage yard
	<b>Downstream: Left bank area:</b> Industrial, Discharge waste sedimentation pond	<b>Right bank area:</b> Industrial, Copper mint factory
Economy: Commerce, Agriculture, Forestry Others	<b>Upperstream: Left bank area:</b> Industrial	<b>Right bank area:</b> Industrial
	<b>Downstream: Left bank area:</b> Industrial	<b>Right bank area:</b> Industrial
Transport: Bus terminal, etc.	None	
<b>Natural environment</b>		
Topography, ( Feature of river bank area) Steep slopes, Soft ground, Wetland	<b>Upperstream: Left bank area:</b> Steep slope bank	<b>Right bank area:</b> Steep slope bank
	<b>Downstream: Left bank area:</b> Steep slope bank	<b>Right bank area:</b> Steep slope bank
Geology, (feature of river bank/bed): Outcrop, stone, gravel, sand / Fault Soil type, etc.,	<b>Left bank area:</b> Sandy silt bank	<b>Right bank area:</b> Sandy silt bank
	<b>River bed:</b> Flat river bed with sandy silt bed.	
Hydrology, ( Feature of river flow, Water level, flood level )	Flow regime is moderate and affected a tidal backwater due to closer to the coast. Water depth of 0.5m and 0.05 to 0.1m/sec. flow velocity, Flow direction: NE Flood level comes up to 1.5m in high from the river bed and tidal affected area..	
Fauna & Flora / habitats Rare species /community, etc.,	Thorny heath of dry coastal area vegetation. Common small fish fauna and coastal birds No specific area of importance. Rare species are not recognized	
<b>Pollution</b>		
Complaints: Population of the upmost concern	No specific complaint	
Measures taken: Institutional measures Compensation	No necessity	
<b>Others</b>	Upmost concern for the inhabitants of the area is exhaust ambient air from copper refining factory.	

Project location: No.10 Bridge name: San Jose Region: Metropolitana, Province: Chacabuco

Item	Description
<b>Background</b>	Old concrete bridge, Steel bars are exposed on the main beam. Damages on the railing and expansion joint are recognized. High volume of traffic is facing congestion of vehicle waiting both ends of the bridge. Road alignment has critical curvature on the right bank. Need of double lanes of carriage way of the bridge. Narrow width for pedestrian sidewalks of the bridge.
<b>Objectives</b>	Need of double lanes of carriage way of the bridge. Replacement of the bridge. Location of the replacement is required adjustment to the road alignment at right bank.
<b>Executing Agency</b>	Ministry of Public Works (MOP)
<b>Beneficiaries</b>	Establish 2 way carriage smooth traffic flow on double lanes carriage way of the bridge. Safety pedestrian crossing on the bridge sidewalks.
<b>Project Components</b>	
Existing bridge structure bridge length, width Other specific features	Slab(Conc.), Beam(Conc.), Abutment(Conc.), Pier(Conc.), Foundation(Conc.) Length( 16.1m), Width( 6.0m) Carriage way width ( 4.0m x 1), Side walk width ( 0.6m )
Project Type	( <input checked="" type="checkbox"/> ) Replacement, ( <input type="checkbox"/> ) Repair
Road Type	( <input checked="" type="checkbox"/> ) Urban / ( <input type="checkbox"/> ) Rural area, ( <input checked="" type="checkbox"/> ) Plain area / ( <input type="checkbox"/> ) Mountain area ( <input type="checkbox"/> ) Paved / ( <input checked="" type="checkbox"/> ) Unpaved
Existing traffic volume	Year 79/6/18(Wed.), ( 270 ) Cars/hour, ( <input type="checkbox"/> ) Cars/day
Road width/lanes	Exist Width =( 3.0 x 2 m ) Nos. lanes = ( 2 )
Road structure	( <input type="checkbox"/> ) Embankment / ( <input type="checkbox"/> ) Elevated / ( <input checked="" type="checkbox"/> ) Others: Flat type
Supplemental facilities	
<b>Others</b>	River name: Colina, Tributary of Estero Lampa of Maipo river. Road: Principal road G-15 San Jose is the nearest town 1.0 km off the bridge.  Location of the replacement bridge is recommended at down stream with consideration of road alignment.

Site description for IEE and preliminary EIA preparation work

Project location: No. 10 Bridge name: San Jose

Province: RM

Item	Description	
<b>Social environment</b>		
Inhabitants: Residents, Indigenous people	<b>Upperstream: Left bank area:</b> None	<b>Right bank area:</b> Farm residence
	<b>Downstream: Left bank area:</b> Farm residence	<b>Right bank area:</b> None
Their views on the project Others	Traffic conjection on the bridge point.	
Landuse and facilities: Urban area, Farm land, Others Historic & cultural site, Scenic spot Hospitals and other facilities	<b>Upperstream: Left bank area:</b> Industrial, Stone manufacturing yard	<b>Right bank area:</b> Agricultural, farm yard
	<b>Downstream: Left bank area:</b> Agricultural, orchard	<b>Right bank area:</b> Agricultural, farm yard
Economy: Commerce, Agriculture, Forestry Others	<b>Upperstream: Left bank area:</b> Agricultural, partially industrial	<b>Right bank area:</b> Agricultural,
	<b>Downstream: Left bank area:</b> Agricultural, fruit production	<b>Right bank area:</b> Agricultural,
Transport: Bus terminal, etc.	None	
<b>Natural environment</b>		
Topography, ( Feature of river bank area) Steep slopes, Soft ground, Wetland	<b>Upperstream: Left bank area:</b> Steep slope bank with 2.5m of low terraced levee	<b>Right bank area:</b> Steep slope bank with 3.5m high
	<b>Downstream: Left bank area:</b> Steep slope bank with 3.5m high	<b>Right bank area:</b> Steep slope bank with 3.5m high
Geology, (feature of river bank/bed) Outcrop, stone, gravel, sand / Fault Soil type, etc.,	<b>Left bank area:</b> Sandy silt with gravel mixed soil bank	<b>Right bank area:</b> Sandy silt with gravel mixed soil bank
	<b>River bed:</b> Flat river bed with sandy silt bed.	
Hydrology, ( Feature of river flow, Water level, flood level )	Flow regime is moderate and affected a tidal backwater due to closer to the coast. Water depth of 1.2m and 1.0m/sec. flow velocity, Flow direction: SW Flood level comes up to level of the road.	
Fauna & Flora / habitats Rare species /community, etc.,	Pre-cordilleran deciduous forest area, dry land vegetation. Common small fish fauna. No specific area of importance. Rare species are not recognized	
<b>Pollution</b>		
Complaints: Population of the upmost concern	No specific complaint	
Measures taken: Institutional measures Compensation	No necessity	
<b>Others</b>	Road on the right of the downstream has sharp curved alignment at bridge, and serious traffic conjection occurred on the point.	

Project location: No.12 Bridge name: Punague Region: Metropolitana Province: Melipilla

Item	Description
<b>Background</b>	The bridge was built in 1930s, Web of reinforced concrete beam at bridge end parts has many cracks. Damage of concrete surface flaking, exposure of steel bars, concrete honey combing are recognized at abutment and piers. Scour and erosion at the pier of left bank side will be presumed. Increase of traffic volume will be affected on the load capacity of the bridge.
<b>Objectives</b>	Replacement of the bridge due to strengthen of deteriorated existing structure condition and increasing of traffic volume. Problems of traffic accidents on pedestrian crossing, Consideration of security and safeguard for school children's path as well as daily community pedestrian flow. Safeguard and security for pedestrian path on the bridge
<b>Executing Agency</b>	Ministry of Public Works (MOP)
<b>Beneficiaries</b>	Maintain of smooth and safety in increased traffic volume. Safety pedestrian crossing on the bridge if enough width of side walks.
<b>Project Components</b>	
Existing bridge structure bridge length, width Other specific features	Slab(Conc.), Beam(conc.), Abutment(Conc.), Pier(Conc.), Foundation(Conc.) Length( 51m), Width( 8.0m) Carriage way width ( m), Side walk width ( m)
Project Type	( X ) Replacement, ( ) Repair
Road Type	( ) Urban / ( X ) Rural area, ( X ) Plain area / ( ) Mountain area ( X ) Paved / ( ) Unpaved
Existing traffic volume	Year 79/6/12(Thr.) (240)Cars/hour, ( )Cars/day
Road width/lanes	Exist Width =( 3x2 m ) Nos. lanes = ( 2 )
Road structure	( X ) Embankment / ( ) Elevated / Embankment at left bank with 100m
Supplemental facilities	
<b>Others</b>	River name: Estero Puange, Tributary of Maipo river The bridge locates in Puangue (100m), Melipill is the nearest town 11km off the bridge. Road: G-78 Principal road. A primary school and church locate at the bridge vicinity. Daily pedestrian flow activities cross over the bridge is facing traffic threaten. Location of the bridge replacement will recommend at the downstream adjacent the existing bridge.

**Site description for IEE and preliminary EIA preparation work**

**Project location: No.12 Bridge name: Punague Region: Metropolitana Province: Melipilla**

Item	Description	
<b>Social environment</b>		
Inhabitants: Residents, Indigenous people  Their views on the project Others	<b>Upperstream: Left bank area:</b> None  <b>Downstream: Left bank area:</b> None	<b>Right bank area:</b> A farm house at approx. 25m distance from the bridge  <b>Right bank area:</b> A farm hatch locates adjacent the bridge. (2m off the bridge)
Landuse and facilities: Urban area, Farm land, Others Historic & cultural site, Scenic spot Hospitals and other facilities	<b>Upperstream: Left bank area:</b> Grass land, agriculture  <b>Downstream: Left bank area:</b> Grass land, school yard Water level gauge of the river	<b>Right bank area:</b> Agriculture Church locates aprox... 150m off the bridge.  <b>Right bank area:</b> Agriculture Primary school at prox.100m off the bridge
Economy: Commerce, Agriculture, Forestry Others	<b>Upperstream: Left bank area:</b> Agriculture  <b>Downstream: Left bank area:</b> Agriculture	<b>Right bank area:</b> Agriculture  <b>Right bank area:</b> Agriculture
Transport: Bus terminal, etc.	Bus terminal locates in front of primary school at left bank of downshed	
<b>Natural environment</b>		
Topography, ( Feature of river bank area) Steep slopes, Soft ground, Wetland	<b>Upperstream: Left bank area:</b> Terrace raised bank and flat top land  <b>Downstream: Left bank area:</b> Low moderate slope land	<b>Right bank area:</b> High raised terrace bank and flat land on top.  <b>Right bank area:</b> High raised terrace bank and flat land on top.
Geology, (feature of river bank/bed): Outcrop, stone, gravel, sand / Fault Soil type, etc.,	<b>Left bank area:</b> Swampy low river bank with silt soil deposit  <b>River bed:</b> Silt sand with gravel river bed	<b>Right bank area:</b> Strait single terrace with gravel mixed soil
Hydrology, ( Feature of river flow, Water level, flood level )	Flow regime sifted to the right bank, water depth of 4.5m at flow center of the river. Fast flow velocity of Aprox... 1.0m/sec. Turbid water quality. Flood level comes up to 8.0m from the river bottom. Flow direction: SSW	
Fauna & Flora / habitats Rare species /community, etc.,	Pre-cordilleran deciduous forest area but dry land bush vegetation, Common fish fauna, No specific area of importance. Rare species are not recognized	
<b>Pollution</b>		
Complaints: Population of the upmost concern	No specific complaint	
Measures taken: Institutional measures Compensation	No necessity	
<b>Others</b>		

Project location: No.16 Bridge name: San Jose de March  
 Region: VI, Libertador General Bernardo O'Higgins, Province: Cachapol

Item	Description
<b>Background</b>	Flood level always inundates over the bridge due to occurs sedimentation of flown sandy silt at bottle neck of lake area. Many damages on bridge deck, railing and expansion joints are recognized. Concrete honey combing on sub-structure are also recognized.  Narrow width for pedestrian sidewalks of the bridge.
<b>Objectives</b>	Replacement of the bridge. Establishment of smooth and flood safety traffic flow.
<b>Executing Agency</b>	Ministry of Public Works (MOP)
<b>Beneficiaries</b>	Maintain smooth traffic especially in the flood periods.  Safety pedestrian crossing on the bridge sidewalks.
<b>Project Components</b>	
Existing bridge structure bridge length, width Other specific features	Slab(Conc.), Beam(Steel), Abutment(Conc.), Pier(Conc. cap with steel pier ), Foundation( Conc.) Length( 120.0m), Width( 5.5m) Carriage way width ( 4.0m x 1), Side walk width ( 0.6m )
Project Type	<input checked="" type="checkbox"/> Replacement, <input type="checkbox"/> Repair
Road Type	<input type="checkbox"/> Urban / <input checked="" type="checkbox"/> Rural area, <input checked="" type="checkbox"/> Plain area / <input type="checkbox"/> Mountain area <input type="checkbox"/> Paved / <input checked="" type="checkbox"/> Unpaved
Existing traffic volume	Year 79/6/19(Thr.), (12)Cars/hour, ( )Cars/day
Road width/lanes	Exist Width =( 3.0 x 2 m ) Nos. lanes = ( 2 )
Road structure	<input type="checkbox"/> Embankment / <input type="checkbox"/> Elevated / <input checked="" type="checkbox"/> Others: Flat type, unpaved condition
Supplemental facilities	
<b>Others</b>	River name: Tinguirica, Tributary of Rapel river. Consideration of bridge location at the Upperstream side would be better in relation with affected land aquisition matter.  Solution for traffic function even in the flood period.



**Site description for IEE and preliminary EIA preparation work**

**Project location: No. 16 Bridge name: San Jose de March**

**Region: VI, Libertador General Bernardo O'Higgins, Province: Cachapol**

Item	Description	
<b>Social environment</b>		
Inhabitants: Residents, Indigenous people	<b>Upperstream: Left bank area:</b> None	<b>Right bank area:</b> Temporally hatch on the bank.
	<b>Downstream: Left bank area:</b> None	<b>Right bank area:</b> Farm house on the top of banked hill
Their views on the project Others	Traffic difficulty cause by flooding over the bridge.	
Landuse and facilities: Urban area, Farm land, Others Historic & cultural site, Scenic spot Hospitals and other facilities	<b>Upperstream: Left bank area:</b> Barren land	<b>Right bank area:</b> Barren land
	<b>Downstream: Left bank area:</b> Barren land	<b>Right bank area:</b> Barren land
Economy: Commerce, Agriculture, Forestry Others	<b>Upperstream: Left bank area:</b> Agricultural,	<b>Right bank area:</b> Agricultural,
	<b>Downstream: Left bank area:</b> Agricultural, fruit production	<b>Right bank area:</b> Agricultural,
Transport: Bus terminal, etc.	None	
<b>Natural environment</b>		
Topography, ( Feature of river bank area) Steep slopes, Soft ground, Wetland	<b>Upperstream: Left bank area:</b> Slight sloped hilly mounded land	<b>Right bank area:</b> Low swampy mash.
	<b>Downstream: Left bank area:</b> Slight sloped hilly mounded land	<b>Right bank area:</b> Low swampy mash.
Geology, (feature of river bank/bcd): Outcrop, stone, gravel, sand / Fault Soil type, etc.,	<b>Left bank area:</b> Sandy silt with gravel mixed soil bar	<b>Right bank area:</b> Sandy silt with gravel mixed soil bank
	<b>River bed:</b> Flat expanded river bed with silt bed.	
Hydrology, ( Feature of river flow, Water level, flood level )	Flow regime is moderate due to flood retarding basin area. Water depth of 1.5m and 0.2m/sec. flow velocity, <b>Flow direction:</b> Flood level comes up to level of the road.	
Fauna & Flora / habitats Rare species /community, etc.,	Thorny heath of dry coastal area, but objective area is wet swampy land native vegetation. Common small fish fauna and birds. No specific area of importance but lake area recreation zone locates near here. Rare species are not recognized	
<b>Pollution</b>		
Complaints: Population of the upmost concern	Substitute detour to cross the river during construction period. Land acquisition may be required depends on location of replacement.	
Measures taken: Institutional measures Compensation	Construction period shall be selected during dry season due to no water flow or less water for easy cross over, and temporary access shall be provided. Careful selection of the location and proper compensation if in the case.	
Others	Location of the bridge right bank has been made by embanked earth fill, ground level needs to be risen up more for free for flood level when new bridge to be planed.	

Project location: Bridge name: Antivero No.2  
 Region: VI, Libertador General Bernardo O'Higgins, Province: Colchagua

Item	Description
Background	The bridge constructed during 1935 to 1940 and comes to be deteriorated not enough to functioned today's increased traffic volume. Many cracks and damaged portions at the main beam of the ends, Exposure of steel bars with honey combing concrete are recognized. Scour at the pier foundation also generated. Increase of traffic volume and heavy loaded trucks require enough width of carriage way.
Objectives	Replacement of the bridge Widen of the carriage way, safeguard and security for pedestrian path are required.
Executing Agency	Ministry of Public Works (MOP)
Beneficiaries	Smooth and safety traffic flow and passage function, Safety pedestrian crossing on the bridge sidewalks.
<b>Project Components</b>	
Existing bridge structure bridge length, width Other specific features	Slab(Conc.), Beam(Conc.), Abutment(Conc.), Pier(Conc.), Foundation(Conc.) Length( 102.9m), Width( 8.5m) Carriage way width ( 3.0m x 2), Side walk width ( 1.2m )
Project Type	( X ) Replacement, ( ) Repair
Road Type	( X ) Urban / ( ) Rural area, ( X ) Plain area / ( ) Mountain area ( X ) Paved / ( ) Unpaved
Existing traffic volume	Year 79/6/24(Tue), (720)Cars/hour, ( )Cars/day
Road width/lanes	Exist Width =( 3.0 x 2 m ) Nos. lanes = ( 2 )
Road structure	( X ) Embankment / ( ) Elevated / ( ) Others:
Supplemental facilities	20m long stone revetment on the right bank of downstream.
Others	River name: Estero Antivero, tributary of Chachapol river of Papel river. Road: I-50 Principal road, San Fernando is the nearest town 1.2km off the bridge. Location of the replacement site is recommended at Upperstream of the bridge.

Site description for IEE and preliminary EIA preparation work

Project location: Bridge name: Antivero No.2

Region: VI, Libertador General Bernardo O'Higgins, Province: Colchagua

Item	Description	
<b>Social environment</b>		
Inhabitants: Residents, Indigenous people	Upperstream: Left bank area: None  Downstream: Left bank area: None	Right bank area: None  Right bank area: None
Their views on the project Others	Threaten of safety of pedestrian cross over bridge due to Heavey traffic with narrow carriage way.	
Landuse and facilities: Urban area, Farm land, Others Historic & cultural site, Scenic spot Hospitals and other facilities	Upperstream: Left bank area: Barren grass land  Downstream: Left bank area: Agricultural, vine yard	Right bank area: Agricultural, vine yard Industrial (corn mill ) adjacent vine yard Right bank area: Agricultural, Workshop yard of agricultural machines
Economy: Commerce, Agriculture, Forestry Others	Upperstream: Left bank area: Agricultural, Downstream: Left bank area: Agricultural,	Right bank area: Agricultural, industrial Right bank area: Agricultural,
Transport: Bus terminal, etc.	None	
<b>Natural environment</b>		
Topography, ( Feature of river bank area) Steep slopes, Soft ground, Wetland	Upperstream: Left bank area: Steep sloped bank within flat land  Downstream: Left bank area: Steep sloped bank within flat land	Right bank area: Steep sloped bank within flat land  Right bank area: Steep sloped bank within flat land
Geology, (feature of river bank/bed) Outcrop, stone, gravel, sand / Fault Soil type, etc.,	Left bank area: Sandy silt with gravel mixed soil bank	Right bank area: Sandy silt with gravel mixed soil bank
	River bed: Flat expanded river bed with round stone bed and stone dunes in river course.	
Hydrology, ( Feature of river flow, Water level, flood level )	Flow regime is rather fast and shallow depth, water is slightly turbid. Water depth of 0.5m and 0.5m/sec. flow velocity after rainfall Flood level comes up to 2.5m from the river bed. Dry wash in summer season.	
Fauna & Flora / habitats Rare species /community, etc.,	Thorny heath of dry coastal area native vegetation, Salix spp, Common small fish fauna and birds. No specific area of importance. Rare species are not recognized	
<b>Pollution</b>		
Complaints: Population of the upmost concern	No specific complaint	
Measures taken: Institutional measures Compensation	No necessity	
Others	Location of replacement of the bridge is possibility for affection of some portion of private land.	

Project location: No.20 Bridge name: Los Cardos

Region: VI, Libertador General Bernardo O'Higgins, Province: Colchagua

Item	Description
Background	Narrow width of single carriage way of timber plate bridge, Heavy loaded trucks pass under the maximum limit of 12tons capacity.
Objectives	Repair of timber deck plate and railing which has damaged portion.
Executing Agency	Ministry of Public Works (MOP)
Beneficiaries	Sustain of safety traffic passage.
<b>Project Components</b>	
Existing bridge structure bridge length, width Other specific features	Slab(Timber.), Beam(Steel), Abutment(Conc.), Pier(Conc.), Foundation(Conc.) Length(75.0m), Width( 4.5m) Carriage way width ( 2.6 m x 1), Side walk width ( 0.3m )
Project Type	( ) Replacement, ( ) Repair No need of repair or replacement
Road Type	( ) Urban / ( X ) Rural area, ( X ) Plain area / ( ) Mountain area ( ) Paved / ( X ) Unpaved
Existing traffic volume	Year 79/6/25(wed), ( 5 ) Cars/hour, ( ) Cars/day
Road width/lanes	Exist Width =( 4.3m in total width) Nos. lanes = ( 1 )
Road structure	( ) Embankment / ( ) Elevated / ( X ) Others: Flat type, unpaved condition
Supplemental facilities	Electric transmission line locate uppershed side.
Others	River name: Estero Las Toscas, tributary of Tinguiririch river Road: secondary road, San Miguel is the nearest village off 3km from the bridge.  Timber slab has been repaired 1991. Traffic volume increases at every Thursday due to passengers for market.

Site description for IEE and preliminary EIA preparation work

Project location: Bridge name: No.20 Los Cardos

Region: VI, Libertador General Bernardo O'Higgins, Province: Colchagua

Item	Description	
<b>Social environment</b>		
Inhabitants: Residents, Indigenous people	Upperstream: Left bank area: None	Right bank area: None
	Downstream: Left bank area: None	Right bank area: A farm house in 100m off the bridge.
Their views on the project Others	Traffic difficulty due to narrow bridge width.	
Landuse and facilities: Urban area, Farm land, Others Historic & cultural site, Scenic spot Hospitals and other facilities	Upperstream: Left bank area: Farm land, maize	Right bank area: Farm land, maize
	Downstream: Left bank area: Farm land, maize	Right bank area: Farm land, maize
Economy: Commerce, Agriculture, Forestry Others	Upperstream: Left bank area: Agricultural, Downstream: Left bank area: Agricultural,	Right bank area: Agricultural, Right bank area: Agricultural,
Transport: Bus terminal, etc.	None	
<b>Natural environment</b>		
Topography, ( Feature of river bank area) Steep slopes, Soft ground, Wetland	Upperstream: Left bank area: Swampy flat mash bank continues to low lying farm land	Right bank area: Steeply slope bank and flat terraced top
	Downstream: Left bank area: Swampy flat mash bank continues to low lying farm land	Right bank area: Steeply slope bank and flat terraced top
Geology, (feature of river bank/bed): Outcrop, stone, gravel, sand / Fault Soil type, etc.,	Left bank area: Silt soil with some gravel mixed bank	Right bank area: Silt soil with some gravel mixed bank
	River bed: Silt soil river bed	
Hydrology, ( Feature of river flow, Water level, flood level )	Flow regime is rather sited left bank side with deep water volume. Water depth of 3.0m and 0.4m/sec. flow velocity, Flow direction: NNW Flood level comes up to level of near free board of the bridge.	
Fauna & Flora / habitats Rare species /community, etc.,	Pre-cordilleran deciduous forest area, native low bush type vegetation, Salix spp. Eucaliputus planted on the left bank. Common small fish fauna and birds. No specific area of importance. Rare species are not recognized	
<b>Pollution</b>		
Complaints: Population of the upmost concern	No specific complaint	
Measures taken: Institutional measures Compensation	No necessity	
Others		

Project location: No.a Bridge name: Cautin Region: IX, Alaucañia Province: Cautin

Item	Description
<b>Background</b>	Surface of concrete railings has been weathered and quite deteriorated. Many exposure of steel bars on the main concrete beams are recognized. Large cracks and alligator cracks are observed on the main concrete beam. Concrete cracks are recognized on the abutments.
<b>Objectives</b>	Repair of damaged portion of the bridge. Maintain smooth and safety traffic flow and pedestrian passage.
<b>Executing Agency</b>	Ministry of Public Works (MOP)
<b>Beneficiaries</b>	Maintain smooth and safety traffic flow as well as safe guard of pedestrian path
<b>Project Components</b>	
Existing bridge structure bridge length, width Other specific features	Slab(RC), Beam(RC), Abutment(RC), Pier(RC), Foundation(Spread foundation) Length( 140.0m), Width( 6.6m) Carriage way width ( 5.0m), Side walk width ( 0.7m X 2 )
Project Type	( ) Replacement, ( X ) Repair
Road Type	( ) Urban / ( X ) Rural area, ( X ) Plain area / ( ) Mountain area / ( ) Hilly area ( ) Paved / ( X ) Unpaved
Existing traffic volume	Year 79/7/12 (Sat), ( 8 ) Cars/hour, ( ) Cars/day
Road width/lanes	Exist. Width =( 7.0m ) Nos. lanes = ( 2 )
Road structure	( ) Embankment / ( ) Elevated / ( X ) Flat:
Supplemental facilities	
<b>Others</b>	River name: Cautin  Road category: Principal road S-11-R, The bridge was constructed in 1930's Lautaro is the nearest town apart 0.8km from the bridge.

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Site description for IEE and preliminary EIA preparation work

Project location: No.a Bridge name: Cautin Region: IX, Alaucañia Province: Cautin

Item	Description	
<b>Social environment</b>		
Inhabitants: Residents, Indigenous people	<b>Upperstream: Left bank area:</b> Several small houses locate 30 to 40m off the bridge. <b>Downstream: Left bank area:</b> Farm house locate 20m off the bridge	<b>Right bank area:</b> Farm house locate 20m off the bridge  <b>Right bank area:</b> None
Their views on the project Others	Access road at right bank is sharply carved and narrow shingle carriage way, difficulty of traffic pass is always facing. Railing is not high enough for pedestrians.	
Landuse and facilities: Urban area, Farm land, Others Historic & cultural site, Scenic spot Hospitals and other facilities	<b>Upperstream: Left bank area:</b> Barren slope bank, flat terrace 6m height <b>Downstream: Left bank area:</b> Barren grass bank and farm yard	<b>Right bank area:</b> Barren slope bank, flat terrace 8m height  <b>Right bank area:</b> Barren slope bank, flat terrace 7m height
Economy: Commerce, Agriculture, Forestry Others	<b>Upperstream: Left bank area:</b> Grassy house yard, agriculture <b>Downstream: Left bank area:</b> Farm yard, agriculture	<b>Right bank area:</b> Agriculture, cattle ranch  <b>Right bank area:</b> Road area, agriculture
Transport: Bus terminal, etc.		
<b>Natural environment</b>		
Topography, ( Feature of river bank area) Steep slopes, Soft ground, Wetland	<b>Upperstream: Left bank area:</b> Moderate slope to flat terrace 6m height  <b>Downstream: Left bank area:</b> Moderate slope continue to flat terrace 6m height.	<b>Right bank area:</b> Steep slope to flat terrace 8m height  <b>Right bank area:</b> Steep slope to flat terrace 7m height
Geology, (feature of river bank/bed): Outcrop, stone, gravel, sand / Fault Soil type, etc.,	<b>Left bank area:</b> Sandy loam with rock out crops	<b>Right bank area:</b> Sandy loam with rock out crops
	<b>River bed:</b> Gravelly silt and rocky bed	
Hydrology, ( Feature of river flow, Water level, flood level )	Flow regime is divided into two flow at downshed, and flow toward W direction. Water depth of 2.5m and 0.3m/sec., flow velocity. Clean water quality. Flood level comes up to 2.0m of existing water level.	
Fauna & Flora / habitats Rare species /community, etc.,	Deciduous forest of Frontera area vegetation, tall trees mixed. Salix spp., Euclyptus spp., are vegetated. Common fishes, trout and birds species are inhabited. No specific area of importance. Rare species are not recognized	
<b>Pollution</b>		
Complaints: Population of the upmost concern	Traffic conjection at the right bank end of the bridge during the repair period.	
Measures taken: Institutional measures Compensation	Safety traffic control and safe guard for the pedestrian passage.	
Others		

Project location: No. b Bridge name: El Indio Region: IX La Alaucania, Province: Malleco

Item	Description
<b>Background</b>	Rusting are recognized in some portion on the main steel beam.  Traffic volume increases and serious conjection during summer season due to natural forest camping site. Bridge carriage way and pedestrian width are narrow in comparison to the 7m width of connecting road.
<b>Objectives</b>	Repair of damaged portion of the bridge. Widen sidewalks for the pedestrian path under the circumstance of summer traffic volume.
<b>Executing Agency</b>	Ministry of Public Works (MOP)
<b>Beneficiaries</b>	Maintain smooth and safety traffic flow as well as safe guard of pedestrian path.
<b>Project Components</b>	
Existing bridge structure bridge length, width Other specific features	Slab(RC), Beam(Steel), Abutment(RC), Pier(None), Foundation(Spread foundation) Length( 21.2m), Width( 7.6m) Carriage way width ( 6.2m), Side walk width ( 0.7m X 2 )
Project Type	( ) Replacement, ( X ) Repair
Road Type	( ) Urban / ( X ) Rural area, ( ) Plain area / ( X ) Mountain area / ( ) Hilly area ( X ) Paved / ( ) Unpaved
Existing traffic volume	Year 79/79 (Wed), ( 10 ) Cars/hour, ( ) Cars/day
Road width/lanes	Exist. Width =( 7.0m ) Nos. lanes = ( 2 )
Road structure	( ) Embankment / ( ) Elevated / ( X ) Others: Cutting
Supplemental facilities	
<b>Others</b>	River name: Indio Tributary of Cautin river Road category: S-11-R, Principal road The bridge was built in 1985, the road was paved in 1995. Curacautin is the nearest town off 5 km from the bridge.  Left bank of downshed area is designated as recreational camping area, traffic volume is increased in summer season.



## Site description for IEE and preliminary EIA preparation work

Project location: No. b Bridge name: El Indio Region: IX La Alaucaña, Province: Malleco

Item	Description	
<b>Social environment</b>		
Inhabitants: Residents, Indigenous people	<b>Upperstream: Left bank area:</b> None	<b>Right bank area:</b> None
	<b>Downstream: Left bank area:</b> None	<b>Right bank area:</b> None
Their views on the project Others	Narrow bridge width is critical in comparing 7m width of paved load and need of more width of side walks for summer season.	
Landuse and facilities: Urban area, Farm land, Others Historic & cultural site, Scenic spot Hospitals and other facilities	<b>Upperstream: Left bank area:</b> Natural riverine forest, flat grass terrace behind.	<b>Right bank area:</b> Natural riverine forest, forested area behind.
	<b>Downstream: Left bank area:</b> Natural riverine forest, natural conservation forest behind.	<b>Right bank area:</b> Natural riverine bush forest and grass land behind.
Economy: Commerce, Agriculture, Forestry Others	<b>Upperstream: Left bank area:</b> Forestry	<b>Right bank area:</b> Forestry
	<b>Downstream: Left bank area:</b> Nature recreational camping area	<b>Right bank area:</b> Forestry
Transport: Bus terminal, etc.	Access routes to camping site locates at left side upper and downstream off 50m from the bridge location.	
<b>Natural environment</b>		
Topography, ( Feature of river bank area) Steep slopes, Soft ground, Wetland	<b>Upperstream: Left bank area:</b> Cliff bank of 2m high and flat top	<b>Right bank area:</b> Steep slope continues to hilly area.
	<b>Downstream: Left bank area:</b> Cliff bank of 2-3m high and flat hilly area	<b>Right bank area:</b> Cliff bank of 2-3m high and steep hillside.
Geology, (feature of river bank/bed) Outcrop, stone, gravel, sand / Fault Soil type, etc.,	<b>Left bank area:</b> Yellow brown loam soil top with rava rock layer	<b>Right bank area:</b> Yellow brown loam soil top with rava rock layer
	<b>River bed:</b> Stony bed and rock outcrops	
Hydrology, ( Feature of river flow, Water level, flood level )	Flow regime is faster within narrow water coarse and flown toward NW. Water depth of 0.7m and 0.5m/sec., flow velocity. Clean water quality. Flood level comes up to 2.0m of existing water level.	
Fauna & Flora / habitats Rare species /community, etc.,	Deciduous forest of Andes-Bio-Bio area vegetation, rich natural forest vegetation. Quercus spp. Nothofagus spp. are vegetated. Common fishes, and birds species are inhabited. No specific area of importance. Rare species are not recognized	
<b>Pollution</b>		
Complaints: Population of the upmost concern	Traffic conjection and safe guard for pedestrian path during recreational season.	
Measures taken: Institutional measures Compensation	Safeguard and information system shall be provided during repairing period.	
Others		

Project location: Bridge name: Quillen Region: IX La Alaucaña Province: Cautin

Item	Description
<b>Background</b>	Lacking of timber plates on the deck. Railings are generally unstable and some portions are collapsed. A main timber beam portion has been broken. Traffic of heavy loaded trucks is increasing.
<b>Objectives</b>	Repair of damaged portion of the bridge. Maintain of bridge structure against current traffic for heavy loaded trucks. Fulfill of safeguard for pedestrian path of which school and church are located near the bridge.
<b>Executing Agency</b>	Ministry of Public Works (MOP)
<b>Beneficiaries</b>	Smooth and safety traffic flow for the vehicle as well as safety pedestrian path.
<b>Project Components</b>	
Existing bridge structure bridge length, width Other specific features	Slab(Timber.), Beam(Timber), Abutment(Timber), Pier(Timber), Foundation(Timber spread foundation) Length( 25.9m), Width( 3.9m) Carriage way width ( 2.85 m), Side walk width ( 0.3m X 2 )
Project Type	( ) Replacement, ( X ) Repair
Road Type	( ) Urban / ( X ) Rural area, ( ) Plain area / ( ) Mountain area / ( X ) Hilly area ( ) Paved / ( X ) Unpaved
Existing traffic volume	Year 79/7/9 (Wed), ( 0 ) Cars/hour, ( ) Cars/day
Road width/lanes	Exist. Width =( 3.0m ) Nos. lanes = ( 1 )
Road structure	( X ) Embankment / ( ) Elevated / ( ) Others: Embanked 200m at right bank side
Supplemental facilities	
<b>Others</b>	River name: Quillen, tributary of Cholchol river of Imperial river Road category: Local branch line of S-10,  Lautaro is the nearest town off 12km from the bridge.

Site description for IEE and preliminary EIA preparation work

Project location: Bridge name: Quillen Region: IX La Alaucaania Province: Cautin

Item	Description	
<b>Social environment</b>		
Inhabitants: Residents, Indigenous people	<b>Upperstream: Left bank area:</b> None	<b>Right bank area:</b> None
	<b>Downstream: Left bank area:</b> None	<b>Right bank area:</b> A farm house on the hillside locates 120m from the bridge.
Their views on the project Others	Narrow road width and single bridge carriage way are facing community problem for safety traffic.	
Landuse and facilities: Urban area, Farm land, Others Historic & cultural site, Scenic spot Hospitals and other facilities	<b>Upperstream: Left bank area:</b> Natural riverine bush forest	<b>Right bank area:</b> Swampy lowland area
	<b>Downstream: Left bank area:</b> Natural riverine bush forest and agricultural area behind.	<b>Right bank area:</b> Natural riverine bush forest and grass land behind.
Economy: Commerce, Agriculture, Forestry Others	<b>Upperstream: Left bank area:</b> Agriculture	<b>Right bank area:</b> Agriculture
	<b>Downstream: Left bank area:</b> Agriculture	<b>Right bank area:</b> Agriculture
Transport: Bus terminal, etc.		
<b>Natural environment</b>		
Topography, ( Feature of river bank area) Steep slopes, Soft ground, Wetland	<b>Upperstream: Left bank area:</b> 1-1.5m height terraced bank to low flat land.	<b>Right bank area:</b> Swampy low flat to tender hill slope
	<b>Downstream: Left bank area:</b> 1-1.5m height terraced bank to low flat land.	<b>Right bank area:</b> Swampy low flat to tender hill slope
Geology, (feature of river bank/bed): Outcrop, stone, gravel, sand / Fault Soil type, etc.,	<b>Left bank area:</b> Sandy loam soil with gravel mixed	<b>Right bank area:</b> Sandy loam soil with gravel mixed
	<b>River bed:</b> Sandy loam soil	
Hydrology, ( Feature of river flow, Water level, flood level )	Flow regime is divided in both side due to islet dune locate uppershed and flown toward NW direction. Water depth of 0.8m and 0.3m/sec., flow velocity. Clean water quality. Flood level comes up to 2.2m of existing water level.	
Fauna & Flora / habitats Rare species /community, etc.,	Deciduous forest of Frontera area vegetation, bush and tall trees mixed; Quercus spp. Salix spp. are vegetated. Common fishes trout, and plenty birds are inhabited. No specific area of importance. Rare species are not recognized	
<b>Pollution</b>		
Complaints: Population of the upmost concern	No specific complaint	
Measures taken: Institutional measures Compensation	No necessity	
<b>Others</b>		

Project location: No.99 Bridge name: Poculon Region: IX La Alaucañia Province: Cautin

Item	Description
<b>Background</b>	<p>Timber main beams have been decayed.</p> <p>Most of timber structure of the bridge has been broken and only some of top deck plates are kept for temporally single pedestrian passage.</p> <p>Since the bridge has been collapsed, the local road has been closed for any vehicles. Only pedestrian path can be functioned with temporally works of repair.</p>
<b>Objectives</b>	Sooner replacement of the bridge has been desired for local vehicle transportation as well as smooth vicinity communication.
<b>Executing Agency</b>	Ministry of Public Works (MOP)
<b>Beneficiaries</b>	Re-opening of the local road and smooth transportation through the replaced bridge and expecting smooth vicinity communications
<b>Project Components</b>	
Existing bridge structure bridge length, width Other specific features	Slab(Timber.), Beam(Timber), Abutment(Timber), Pier(Timber), Foundation(Spread foundation) Length( 31.0m), Width( 3.5m) Carriage way width ( Broken), Side walk width ( Temporally 0.6m )
Project Type	<input checked="" type="checkbox"/> Replacement, ( ) Repair
Road Type	( )Urban / <input checked="" type="checkbox"/> Rural area, ( )Plain area / ( )Mountain area / <input checked="" type="checkbox"/> Hilly area ( )Paved / <input checked="" type="checkbox"/> Unpaved
Existing traffic volume	Year 79/77 (Mon), ( The road has been closed: 0 )Cars/hour, ( 0 )Cars/day
Road width/lanes	Exist Width =( 4.0m in total width) Nos. lanes = ( 1 ) Width ( 3.5 m) Nos. lanes ( 1 )
Road structure	<input checked="" type="checkbox"/> Embankment / ( )Elevated / ( )Others:
Supplemental facilities	
<b>Others</b>	<p>River name: Huillio, tributary of Tolten river</p> <p>Road category: Local branch line of S-60, aggregate surfaced road.</p> <p>Timber slab for only pedestrian path has been repaired 1991.</p> <p>Teodoro Schmid is the nearest village off 4 km from the bridge.</p>

Site description for IEE and preliminary EIA preparation work

Project location: No.99 Bridge name: Poculon Region: IX La Alaucañia Province: Cautin

Item	Description	
<b>Social environment</b>		
Inhabitants: Residents, Indigenous people	Upperstream: Left bank area: None	Right bank area: None
	Downstream: Left bank area: None	Right bank area: A farm house in 100m off the bridge.
Their views on the project Others	Closed traffic due to collapse of the bridge.	
Landuse and facilities: Urban area, Farm land, Others Historic & cultural site, Scenic spot Hospitals and other facilities	Upperstream: Left bank area: Farm land, maize	Right bank area: Farm land, maize
	Downstream: Left bank area: Farm land, maize	Right bank area: Farm land, maize
Economy: Commerce, Agriculture, Forestry Others	Upperstream: Left bank area: Agriculture	Right bank area: Agriculture
	Downstream: Left bank area: Agriculture	Right bank area: Agriculture
Transport: Bus terminal, etc.	None	
<b>Natural environment</b>		
Topography, ( Feature of river bank area) Steep slopes, Soft ground, Wetland	Upperstream: Left bank area: Swampy flat mash bank continues to low lying farm land	Right bank area: Steeply slope bank and flat terraced top
	Downstream: Left bank area: Swampy flat mash bank continues to low lying farm land	Right bank area: Steeply slope bank and flat terraced top
Geology, (feature of river bank/bed): Outcrop, stone, gravel, sand / Fault Soil type, etc.,	Left bank area: Gravelly silt brawn soil	Right bank area: Gravelly silt brawn soil
	River bed: Silt soil deposit	
Hydrology, ( Feature of river flow, Water level, flood level )	Flow regime is divided both upper and down shed near off the bridge with WSW flow direction and plenty water volume. Water depth of 2.0m and 0.15m/sec. flow velocity after rainfall. Flood level comes up to level of near free board of the bridge.	
Fauna & Flora / habitats Rare species /community. etc.,	Deciduous forest of southern area vegetation, natural forest vegetation grows Upperstream on the left bank. Common fish fauna and plenty species of bird. No specific area of importance. Rare species are not recognized	
<b>Pollution</b>		
Complaints: Population of the upmost concern	No specific complaint, Location of the replacement slightly affects farm land acquisition.	
Measures taken: Institutional measures Compensation	Compensation of farmland shall be considered if the bridge location to be affected.	
Others		

Project location: No.86 Bridge name: Malleco Region: IX La Alaucaña, Province: Malleco

Item	Description
<b>Background</b>	Wooden superstructure has been burnt recently, MOP has started repair of the superstructure . Concrete honey combing and cracks are recognized on the left bank abutment.  Safety pedestrian path requires against increase of traffic of heavy gravel loaded ,timber loaded trucks.
<b>Objectives</b>	Repair of damaged portion of sub-structure of the bridge. Widen sidewalks for the pedestrian path under the circumstance of summer traffic volume.
<b>Executing Agency</b>	Ministry of Public Works (MOP)
<b>Beneficiaries</b>	Maintain smooth and safety traffic flow as well as safe guard of pedestrian path.
<b>Project Components</b>	
Existing bridge structure bridge length, width Other specific features	Slab(Timber), Beam(Timber), Abutment(timber), Pier(Timber), Foundation(Spread foundation), Length( 92.0m), Width( m) Carriage way width ( 3.0 m), Side walk width ( 0.3 m X 2 )
Project Type	( ) Replacement, ( X ) Repair
Road Type	( ) Urban / ( X ) Rural area, ( X ) Plain area / ( ) Mountain area / ( X ) Hilly area ( ) Paved / ( X ) Unpaved
Existing traffic volume	Year 79/7/10 (Thr.), ( 0 ) Cars/hour, ( ) Cars/day Road has been closed due to burning of the bridge on May in 1997.
Road width/lanes	Exist. Width =( 4.6m ) Nos. lanes = ( 2 )
Road structure	( X ) Embankment / ( ) Elevated / : Embanked 15m at left, 40m at right bank
Supplemental facilities	Railway bridge is closer located adjacent to the bridge at downstream.
<b>Others</b>	River name: Malleco Road : Local branch licne of R-86, The bridge has been burned left bank portion on February 1997.  Angol is the nearest town off 1.0km from the bridge.

Site description for IEE and preliminary EIA preparation work

Project location: No.86 Bridge name: Malleco Region: IX La Alaucaña, Province: Malleco

Item	Description	
<b>Social environment</b>		
Inhabitants: Residents, Indigenous people	<b>Upperstream: Left bank area:</b> Temporally hatches locate at 30m off the bridge. <b>Downstream: Left bank area:</b> None	<b>Right bank area:</b> None  <b>Right bank area:</b> None
Their views on the project Others	Since the bridge burned and collapsed, no way to cross the bridge. And long way of 10km distance is required taking detour route.	
Landuse and facilities: Urban area, Farm land, Others Historic & cultural site, Scenic spot Hospitals and other facilities	<b>Upperstream: Left bank area:</b> Barren riverine land, farm yard on to terrace area behind. <b>Downstream: Left bank area:</b> Cattle ranch	<b>Right bank area:</b> Swampy low land, cattle ranch  <b>Right bank area:</b> Swampy low land, cattle ranch
Economy: Commerce, Agriculture, Forestry Others	<b>Upperstream: Left bank area:</b> Agriculture, <b>Downstream: Left bank area:</b> Agriculture,	<b>Right bank area:</b> Agriculture <b>Right bank area:</b> Agriculture
Transport: Bus terminal, etc.		
<b>Natural environment</b>		
Topography, ( Feature of river bank area) Steep slopes, Soft ground, Wetland	<b>Upperstream: Left bank area:</b> Steep slope to 6m terrace  <b>Downstream: Left bank area:</b> Tender slope continues	<b>Right bank area:</b> Slight slope to low laying terrain  <b>Right bank area:</b> Slight slope to low laying terrain
Geology, (feature of river bank/bed): Outcrop, stone, gravel, sand / Fault Soil type, etc.,	<b>Left bank area:</b> Dark silt sand soil with gravel mixed  <b>River bed:</b> Silt sand bed	<b>Right bank area:</b> Dark silt sand soil with gravel mixed
Hydrology, ( Feature of river flow, Water level, flood level )	Flow regime is sifted right bank side, and flow toward SW direction. Water depth of 1.5m and 0.2m/sec., flow velocity. Turbid water quality. Flood level comes up to 2.0m of existing water level.	
Fauna & Flora / habitats Rare species /community, etc.,	Well grown riverine vegetation and tall trees mixed; Deciduous trees, Salix spp., are plenty vegetated. Common fishes, and birds species are inhabited. No specific area of importance. Rare species are not recognized	
<b>Pollution</b>		
Complaints: Population of the upmost concern	No specific items	
Measures taken: Institutional measures Compensation	No specific items	
<b>Others</b>		

Project location: No.69 Bridge name: Mira Flores Region: IX La Alaucañia, Province: Malleco

Item	Description
<b>Background</b>	Timbers of the deck are lacking in some portions. Bolts at joint portions of main beam and deck are lacked. Wooden retaining wall at the abutment wings decayed and lacked. Depression at the road behind abutment are generated. Timber bridge has no longer maintained, many portions have to be repaired. Heavy loaded truck's traffic gives continuous damage to the bridge structure.
<b>Objectives</b>	Rehabilitation of damaged portion of the bridge. Widen sidewalks for the pedestrian path. Abatement and structural strengthen is the most urgent requirement for rehabilitation.
<b>Executing Agency</b>	Ministry of Public Works (MOP)
<b>Beneficiaries</b>	Maintain smooth and safety traffic flow as well as safe guard of pedestrian path
<b>Project Components</b>	
Existing bridge structure bridge length, width Other specific features	Slab(Timber), Beam(Timber), Abutment(Timber), Pier(Timber), Foundation(Timber spread foundation) Length( 14.4m), Width( m) Carriage way width ( 2.3m), Side walk width ( 0.3m X 2)
Project Type	( ) Replacement, ( X ) Repair
Road Type	( ) Urban / ( X ) Rural area, ( ) Plain area / ( ) Mountain area / ( X ) Hilly area ( ) Paved / ( X ) Unpaved
Existing traffic volume	Year 79/7/10 (Thr..), ( 4 ) Cars/hour, ( ) Cars/day
Road width/lanes	Exist. Width =( 2.9m ) Nos. lanes = ( 1 )
Road structure	( X ) Embankment / ( ) Elevated / ( ) Others: Embanked 10m at both sides
Supplemental facilities	
<b>Others</b>	River name: Rehue river Road category: Principal road I-39, aggregate road  Los Saues is the nearest town off 9km from the bridge.



## Site description for IEE and preliminary EIA preparation work

Project location: No.69 Bridge name: Mira Flores Region: IX La Alaucañia, Province: Malleco

Item	Description	
<b>Social environment</b>		
Inhabitants: Residents, Indigenous people	<b>Upperstream: Left bank area:</b> None	<b>Right bank area:</b> None
	<b>Downstream: Left bank area:</b> None	<b>Right bank area:</b> None
Their views on the project Others	Narrow single carriage width is critical for heavy truck's traffic.	
Landuse and facilities: Urban area, Farm land, Others Historic & cultural site, Scenic spot Hospitals and other facilities	<b>Upperstream: Left bank area:</b> Barren river bank, road and railway bank	<b>Right bank area:</b> Natural riverine swamp forest, forested area behind.
	<b>Downstream: Left bank area:</b> Natural riverine area and grass land behind	<b>Right bank area:</b> forestation and forested area
Economy: Commerce, Agriculture, Forestry Others	<b>Upperstream: Left bank area:</b> road, railway space, forestry hill area	<b>Right bank area:</b> Forestry
	<b>Downstream: Left bank area:</b> Forestry, cattle ranch	<b>Right bank area:</b> Forestry
Transport: Bus terminal, etc.	Bus depot at 50m from the bridge on left bank of downshed. the bridge location.	
<b>Natural environment</b>		
Topography, ( Feature of river bank area) Steep slopes, Soft ground, Wetland	<b>Upperstream: Left bank area:</b> Low swampy land to tender slope	<b>Right bank area:</b> Tender slope with low terrace to hillside
	<b>Downstream: Left bank area:</b> Tender slope continue to low terrace area	<b>Right bank area:</b> Low terraced bank with 1.0m high to hilly slope
Geology, (feature of river bank/bed) Outcrop, stone, gravel, sand / Fault Soil type, etc.,	<b>Left bank area:</b> Silt sand layer and gravel mixed	<b>Right bank area:</b> Silt sand layer and gravel mixed
	<b>River bed:</b> Silt sandy bed	
Hydrology, ( Feature of river flow, Water level, flood level )	Flow regime is even flown toward NW direction. Water depth of 1.0m and 0.3m/sec., flow velocity. Turbid water quality. Flood level comes up to 1.5m of existing water level.	
Fauna & Flora / habitats Rare species /community, etc.,	Deciduous forest of Concepcion area vegetation, tall trees mixed; Eucaliputus spp. Acacia spp are vegetated. Common fishes, and birds species are inhabited. No specific area of importance. Rare species are not recognized	
<b>Pollution</b>		
Complaints: Population of the upmost concern	No specific items	
Measures taken: Institutional measures Compensation	No specific items	
Others		

Project location: No.40 Bridge name: San Juan Region: IX La Alaucañia Province: Cautin

Item	Description
<b>Background</b>	Timber bridge has been damaged and spoiled at many portions, it is serious to keep maintain the bridge as it is now. Traffic of heavy loaded trucks for timbers and cattle gives continuous damage to the bridge structure. Bridge vicinity is populated area, hospital and several schools are located in this area. Safeguard of many pedestrians pass is most urgently required.
<b>Objectives</b>	Replacement of the bridge. Double carriage lane with enough width of sidewalks are required for replacement of the bridge.
<b>Executing Agency</b>	Ministry of Public Works (MOP)
<b>Beneficiaries</b>	Maintain smooth and safety traffic flow as well as safe guard of pedestrian path
<b>Project Components</b>	
Existing bridge structure bridge length, width Other specific features	Slab(Timber), Beam(Timber), Abutment(Timber ), Pier(Timber, Steel ), Foundation(Timber spread foundation) Length( 31.5m), Width( 4.8m) Carriage way width ( 2.8m), Side walk width ( 0.4m X 2 )
Project Type	<input checked="" type="checkbox"/> Replacement, <input type="checkbox"/> Repair
Road Type	<input checked="" type="checkbox"/> Urban / <input type="checkbox"/> Rural area, <input checked="" type="checkbox"/> Plain area / <input type="checkbox"/> Mountain area / <input type="checkbox"/> Hilly area <input type="checkbox"/> Paved / <input checked="" type="checkbox"/> Unpaved
Existing traffic volume	Year 79/7/10 (Thr.), ( 50 )Cars/hour, ( )Cars/day
Road width/lanes	Exist. Width =( 7.0m ) Nos. lanes = ( 2 )
Road structure	<input checked="" type="checkbox"/> Embankment / <input type="checkbox"/> Elevated / <input type="checkbox"/> Others: Embanked 15m at both sides
Supplemental facilities	Portable water pipe line is installed uppershed adjacent to the bridge.
<b>Others</b>	River name: San Juan, sub-tributary of El Peral river, Tributary of Moncul Road category: Principal road P-70, principal road Bridge locates in town of Trovolhue Detour road and bridge locate 1.0km downstream of the bridge. Location of the replacement is the same site as it is now.

## Site description for IEE and preliminary EIA preparation work

Project location: No.40 Bridge name: San Juan Region: IX La Alaucañia, Province: Cautin

Item	Description	
<b>Social environment</b>		
Inhabitants: Residents, Indigenous people	<b>Upperstream: Left bank area:</b> Residential houses 60m off the bridge <b>Downstream: Left bank area:</b> Many residential houses 15m off the bridge.	<b>Right bank area:</b> Several residential houses 40m off the bridge. <b>Right bank area:</b> Some residential houses 15m off the bridge.
Their views on the project Others	Narrow single carriage width is critical for heavy truck's traffic and many pedestrians passing.	
Landuse and facilities: Urban area, Farm land, Others Historic & cultural site, Scenic spot Hospitals and other facilities	<b>Upperstream: Left bank area:</b> Barren grass area, residential behind <b>Downstream: Left bank area:</b> Barren grass area, residential behind	<b>Right bank area:</b> Barren grass area, residential behind. <b>Right bank area:</b> Barren grass area, residential behind.
Economy: Commerce, Agriculture, Forestry Others	<b>Upperstream: Left bank area:</b> Residential <b>Downstream: Left bank area:</b> Residential	<b>Right bank area:</b> Residential <b>Right bank area:</b> Residential
Transport: Bus terminal, etc.	Bus depots at town street near off 50m from the bridge at left bank at downshed.	
<b>Natural environment</b>		
Topography, ( Feature of river bank area) Steep slopes, Soft ground, Wetland	<b>Upperstream: Left bank area:</b> Moderate slope to flat top area <b>Downstream: Left bank area:</b> Moderate slope to flat top area	<b>Right bank area:</b> Steep bank to low terraced area <b>Right bank area:</b> Steep bank to low terraced swampy area
Geology, (feature of river bank/bed): Outcrop, stone, gravel, sand / Fault Soil type, etc.,	<b>Left bank area:</b> Sand silt soil <b>River bed:</b> Sand silt soil	<b>Right bank area:</b> Sand silt soil
Hydrology, ( Feature of river flow, Water level, flood level )	Flow regime is rather sifted right bank side flown toward SW direction. Water depth of 2.3m and 0.1m/sec., flow velocity. Turbid water quality. Flood level comes up to 1.0m of existing water level.	
Fauna & Flora / habitats Rare species /community, etc.,	Deciduous forest of Concepcion area vegetation, tall trees scattered; Common fishes, and birds species are inhabited. No specific area of importance. Rare species are not recognized	
<b>Pollution</b>		
Complaints: Population of the upmost concern	Temporally traffic close on the bridge point.	
Measures taken: Institutional measures Compensation	Location of replacement is recommended at the same existing location due to avoid affection of land acquisition and compensation. Safety system of traffic flow to the detour road and bridge.	
Others		

Project location: No.32 Bridge name: Medina Region: IX La Alaucañia Province: Cautin

Item	Description
<b>Background</b>	Lacking of timber plates on the deck. Many honey combing of concrete on the left bank abutment are recognized. Heavy loaded trucks for timber transportation is the main traffic.
<b>Objectives</b>	Repair of damaged portion of the bridge.
<b>Executing Agency</b>	Ministry of Public Works (MOP)
<b>Beneficiaries</b>	Smooth and safety traffic flow.
<b>Project Components</b>	
Existing bridge structure bridge length, width Other specific features	Slab(Timber.), Beam(Steel), Abutment(RC), Pier(RC), Foundation(Spread foundation), Length( 170.0m), Width( 5.0m) Carriage way width ( 3.05 m), Side walk width ( 0.45m X 2 )
Project Type	( ) Replacement, ( X ) Repair
Road Type	( ) Urban / ( X ) Rural area, ( X ) Plain area / ( ) Mountain area / ( ) Hilly area ( ) Paved / ( X ) Unpaved
Existing traffic volume	Year 79/7/8 (Tue), ( 5 ) Cars/hour, ( ) Cars/day
Road width/lanes	Exist. Width =( 3.5m ) Nos. lanes = ( 1 )
Road structure	( X ) Embankment / ( ) Elevated / ( ) Others: Embanked 20m at Left bank
Supplemental facilities	Electric transmission concrete pole is situated at gravel deposit in the center of upper river course.
<b>Others</b>	River name: Llaima, sub-tributary of Allipin river of main river of Tolten Road category: Local branch line of S-61, aggregate surfaced road.  National park, Congollio Los Paragus is located 6km uppershed direction from the bridge. Melipeuco is the nearest town off 16.4 km from the bridge.

## Site description for IEE and preliminary EIA preparation work

Project location: No.32 Bridge name: Medina Region: IX La Alaucañia Province: Cautin

Item	Description	
<b>Social environment</b>		
Inhabitants: Residents, Indigenous people	<b>Upperstream: Left bank area:</b> None	<b>Right bank area:</b> Small hut located off 50m of the bridge.
	<b>Downstream: Left bank area:</b> Farm house located 20m off the bridge	<b>Right bank area:</b> None (Farm house at 200m off the bridge.)
Their views on the project Others	Narrow road width and long single bridge carriage way are facing community problem for heavy loaded truck's traffic.	
Landuse and facilities: Urban area, Farm land, Others Historic & cultural site, Scenic spot Hospitals and other facilities	<b>Upperstream: Left bank area:</b> Farm land, cattle ranch	<b>Right bank area:</b> Natural forested land at riverside and farm land behind
	<b>Downstream: Left bank area:</b> Natural forested land at riverside and farm garden behind.	<b>Right bank area:</b> Natural forested land at riverside and farm land behind
Economy: Commerce, Agriculture, Forestry Others	<b>Upperstream: Left bank area:</b> Agriculture	<b>Right bank area:</b> Agriculture
	<b>Downstream: Left bank area:</b> Agriculture	<b>Right bank area:</b> Agriculture
Transport: Bus terminal, etc.	Bus depot at 80m of the bridge in uppershed of left bank	
<b>Natural environment</b>		
Topography, ( Feature of river bank area) Steep slopes, Soft ground, Wetland	<b>Upperstream: Left bank area:</b> Flat to 2 - 3 m high terraced bank continues to the top flat area.	<b>Right bank area:</b> Steeply slope bank and 3-4m flat terraced top
	<b>Downstream: Left bank area:</b> Flat to 2 - 3 m high terraced bank continues to the top flat area.	<b>Right bank area:</b> Steeply slope bank and 3-4m flat terraced top
Geology, (feature of river bank/bed): Outcrop, stone, gravel, sand / Fault Soil type, etc.,	<b>Left bank area:</b> Sandy loam dark brown soil	<b>Right bank area:</b> Sandy loam dark brown soil
	<b>River bed:</b> Round gravel and sand deposit	
Hydrology, ( Feature of river flow, Water level, flood level )	Flow regime shifts at upper left bank to the center and shifts down to right bank side with SW flow direction and shallow water. Water depth of 2.0m and 0.3m/sec. flow velocity. Flood level comes up to 2m of existing water level.	
Fauna & Flora / habitats Rare species /community, etc.,	Deciduous forest of Andes-Bio-Bio area vegetation, bush and tall trees mixed, Quercus, Salix spp. Pinus spp. vegetated. Common fishes and birds species, rabbits are many. No specific area of importance. Rare species are not recognized	
<b>Pollution</b>		
Complaints: Population of the upmost concern	No specific complaint	
Measures taken: Institutional measures Compensation	No necessity	
<b>Others</b>		

Project location: No.88 Bridge name: Cautin Region: IX. La Alaucania, Province: Cautin

Item	Description
<b>Background</b>	Rusting cover all way on the main steel beam. Many honey combing of concrete on the right bank abutment are recognized.  Safety pedestrian path requires against increase of traffic of heavy gravel loaded ,timber loaded trucks.
<b>Objectives</b>	Repair of damaged portion of the bridge. Widen sidewalks for the pedestrian path under the circumstance of summer traffic volume.
<b>Executing Agency</b>	Ministry of Public Works (MOP)
<b>Beneficiaries</b>	Maintain smooth and safety traffic flow as well as safe guard of pedestrian path.
<b>Project Components</b>	
Existing bridge structure bridge length, width Other specific features	Slab(Timber), Beam(Steel), Abutment(RC), Pier(RC), Foundation(Spread foundation), Length( 39.4m), Width( 4.5m) Carriage way width ( 3.85m), Side walk width ( 0.3m X 2 )
<b>Project Type</b>	<input type="checkbox"/> Replacement, <input checked="" type="checkbox"/> Repair
<b>Road Type</b>	<input type="checkbox"/> Urban / <input checked="" type="checkbox"/> Rural area, <input type="checkbox"/> Plain area / <input type="checkbox"/> Mountain area / <input checked="" type="checkbox"/> Hilly area <input checked="" type="checkbox"/> Paved / <input type="checkbox"/> Unpaved
<b>Existing traffic volume</b>	Year 79/7/9 (Wed), ( 12 )Cars/hour, ( )Cars/day
<b>Road width/lanes</b>	Exist. Width =( 3.2m ) Nos. lanes = ( 1 )
<b>Road structure</b>	<input checked="" type="checkbox"/> Embankment / <input type="checkbox"/> Elevated / <input type="checkbox"/> Others: Embanked 20m at left bank
<b>Supplemental facilities</b>	
<b>Others</b>	River name: Cautin river Road category: Local branch licne of R-89, aggregate road The bridge was built in 1972, National park Conguillio Los Praguas is located 12km at uppershed.  Curacautin is the nearest town off 13 km from the bridge.

Site description for IEE and preliminary EIA preparation work

Project location: No.88 Bridge name: Cautin Region: IX La Alaucañia Province: Cautin

Item	Description	
<b>Social environment</b>		
Inhabitants: Residents, Indigenous people	None	<b>Right bank area:</b> None
	<b>Downstream: Left bank area:</b> None	<b>Right bank area:</b> 2 farm houses at 30-40m off the bridge.
Their views on the project Others	Narrow single carriage width is critical for heavy aggregate loaded trucks. Single log laying sidewalk is always threaten for pedestrian when vehicle pass.	
Landuse and facilities: Urban area, Farm land, Others Historic & cultural site, Scenic spot Hospitals and other facilities	<b>Upperstream: Left bank area:</b> Natural riverine forest, forested area	<b>Right bank area:</b> Natural riverine forest, forested area behind.
	<b>Downstream: Left bank area:</b> Natural riverine area and meadow behind	<b>Right bank area:</b> Natural riverine forest and forested area behind.
Economy: Commerce, Agriculture, Forestry Others	<b>Upperstream: Left bank area:</b> Forestry	<b>Right bank area:</b> Forestry
	<b>Downstream: Left bank area:</b> Forestry, cattle ranch	<b>Right bank area:</b> Forestry
Transport: Bus terminal, etc.	Bus depot at 50m from the bridge on left bank of downshed. the bridge location.	
<b>Natural environment</b>		
Topography, ( Feature of river bank area) Steep slopes, Soft ground, Wetland	<b>Upperstream: Left bank area:</b> Tender slope continue to hillside	<b>Right bank area:</b> Steep slope continue to hillside
	<b>Downstream: Left bank area:</b> Tender slope continue to low hilly area	<b>Right bank area:</b> Terraced bank with 1.5m high to hilly area
Geology, (feature of river bank/bed): Outcrop, stone, gravel, sand / Fault Soil type, etc.,	<b>Left bank area:</b> Dark silt sand layer and gravel mixed sub-course	<b>Right bank area:</b> Dark silt sand layer and gravel mixed sub-course
	<b>River bed:</b> Sandy bed and rock outcrops	
Hydrology, ( Feature of river flow, Water level, flood level )	Flow regime is sifted right bank side, and flown toward SSW direction. Water depth of 0.5-0.8m and 0.5m/sec., flow velocity. Clear water quality. Flood level comes up to 2.0m of existing water level.	
Fauna & Flora / habitats Rare species /community, etc.,	Deciduous forest of Andes-Bio-Bio area vegetation, tall trees mixed; Quercus spp. pinus spp are vegetated. Common fishes, and birds species are inhabited. No specific area of importance. Rare species are not recognized	
<b>Pollution</b>		
Complaints: Population of the upmost concern	Safe guard for pedestrian path when heavy loaded truck pass.	
Measures taken: Institutional measures Compensation	Safeguard and information system shall be provided during repairing period.	
<b>Others</b>		

Project location: No.24 Bridge name: Salva Tu Alma Region: IX La Alaucania, Province: Cautin

Item	Description
<b>Background</b>	Lacking of timber plates on the deck. Railings are generally unstable and some portions are collapsed. Rusting cover all way on the main steel beam. Connection joints of the main beam are utilized with steel bars. Right bank abutment exposes many honey combing, and plane concrete structure. Traffic of heavy loaded trucks is increasing.
<b>Objectives</b>	Repair of damaged portion of the bridge. Maintain of bridge structure against current traffic for heavy loaded trucks. Fulfill of safeguard for pedestrian path of which school and church are located near the bridge.
<b>Executing Agency</b>	Ministry of Public Works (MOP)
<b>Beneficiaries</b>	Smooth and safety traffic flow for the heavy loaded trucks as well as daily school children's' pedestrian path.
<b>Project Components</b>	
Existing bridge structure bridge length, width Other specific features	Slab(Timber.), Beam(Steel), Abutment(RC), Pier(RC), Foundation(Spread foundation), Length( 40.7m), Width( 3.6m) Carriage way width ( 2.6 m), Side walk width ( 0.4m X 2 )
Project Type	<input type="checkbox"/> Replacement, <input checked="" type="checkbox"/> Repair
Road Type	<input type="checkbox"/> Urban / <input checked="" type="checkbox"/> Rural area, <input type="checkbox"/> Plain area / <input checked="" type="checkbox"/> Mountain area / <input type="checkbox"/> Hilly area <input type="checkbox"/> Paved / <input checked="" type="checkbox"/> Unpaved
Existing traffic volume	Year 79/7/8 (Tue.), <input type="checkbox"/> ( 12 ) Cars/hour, <input type="checkbox"/> ( ) Cars/day
Road width/lanes	Exist. Width =( 3.0m ) Nos. lanes = ( 1 )
Road structure	<input checked="" type="checkbox"/> Embankment / <input type="checkbox"/> Elevated / <input type="checkbox"/> Others: Embanked 20m at both sides
Supplemental facilities	
<b>Others</b>	River name: Pedoregos, tributary of Tolten river Road category: Local branch line of S-65, aggregate surfaced road.  Small lake, Huilipilun is located 2km uppershed direction from the bridge. Village settlement Queihue is located 500m uppershed area. Villarrica is the nearest town off 16.5 km from the bridge.



**Site description for IEE and preliminary EIA preparation work**

**Project location: No.24 Bridge name: Salva Tu Alma Region: IX La Alaucañia, Province: Cautin**

Item	Description	
<b>Social environment</b>		
Inhabitants: Residents, Indigenous people	Upperstream: <b>Left bank area:</b> None  Downstream: <b>Left bank area:</b> None	<b>Right bank area:</b> 2 farm houses locates 15 - 20 from the river edge. Primary school, church at 80-100m  <b>Right bank area:</b> None
Their views on the project Others	Narrow road width and single bridge carriage way are facing community problem for traffic of sand and gravel loaded heavy trucks.	
Landuse and facilities: Urban area, Farm land, Others Historic & cultural site, Scenic spot Hospitals and other facilities	Upperstream: <b>Left bank area:</b> Forest area  Downstream: <b>Left bank area:</b> Cattle ranch and farm yard.	<b>Right bank area:</b> Residential area: School and church locate at 80 -100m from the bridge.  <b>Right bank area:</b> Forest area
Economy: Commerce, Agriculture, Forestry Others	Upperstream: <b>Left bank area:</b> Agriculture, forestry  Downstream: <b>Left bank area:</b> Agriculture, forestry	<b>Right bank area:</b> Agriculture, forestry  <b>Right bank area:</b> Agriculture, forestry
Transport: Bus terminal, etc.	Bus depot at 80m of the bridge in down of right bank	
<b>Natural environment</b>		
Topography, ( Feature of river bank area) Steep slopes, Soft ground, Wetland	Upperstream: <b>Left bank area:</b> 2 - 3 m high terraced bank  Downstream: <b>Left bank area:</b> 2 - 3 m high terraced bank	<b>Right bank area:</b> Tender slope bank  <b>Right bank area:</b> Tender slope bank
Geology, (feature of river bank/bed): Outcrop, stone, gravel, sand / Fault Soil type, etc.,	<b>Left bank area:</b> Gravely loam dark brawn soil  <b>River bed:</b> Round gravely bed with rock outcrops	<b>Right bank area:</b> Gravely loam dark brawn soil
Hydrology, ( Feature of river flow, Water level, flood level )	Flow regime is equally spread flown toward SW direction. Water depth of 0.8m and 0.5m/sec., flow velocity. Clean water quality. Flood level comes up to 2m of existing water level.	
Fauna & Flora /habitats Rare species /community, etc.,	Deciduous forest of andes-Bio-Bio area vegetation, bush and tall trees mixed, Quercus, Salix, Pinus spp. are vegetated. Common fishes trout, and birds species are plenty. No specific area of importance. Rare species are not recognized	
<b>Pollution</b>		
Complaints: Population of the upmost concern	No specific complaint	
Measures taken: Institutional measures Compensation	No necessity	
Others		

Project location: No. d Bridge name: Quinchilca Region: X Los Lagos, Province: Valdivia

Item	Description
<b>Background</b>	Exposure of steel bars on the side walks deck is observed. Flaking, lacking and concrete honey combing on the deck surface are recognized. Cracks on the main concrete beam are recognized. A supporting portion of the main beam collapse by heavy compression. Cracks on the abutments are recognized.
<b>Objectives</b>	Repair damaged portion of the bridge. Maintain smooth and safety traffic flow and pedestrian passage.
<b>Executing Agency</b>	Ministry of Public Works (MOP)
<b>Beneficiaries</b>	Maintain smooth and safety traffic flow as well as safe guard of pedestrian path
<b>Project Components</b>	
Existing bridge structure bridge length, width Other specific features	Slab(RC), Beam(RC), Abutment(RC), Pier(RC), Foundation(Spread foundation) Length( 143.5m), Width( 6.5m) Carriage way width ( 4.8m), Side walk width ( 0.85m X 2)
Project Type	( ) Replacement, ( X ) Repair
Road Type	( ) Urban / ( X ) Rural area, ( X ) Plain area / ( ) Mountain area / ( ) Hilly area ( X ) Paved / ( ) Unpaved
Existing traffic volume	Year 79/7/11 (Fri.), ( 70 ) Cars/hour, ( ) Cars/day
Road width/lanes	Exist. Width =( 7.0m ) Nos. lanes = ( 2 )
Road structure	( X ) Embankment / ( ) Elevated : Embanked at all right bank, 30m at left bank
Supplemental facilities	Gabions which constructed in 1981 are installed uppershed of both bank.
<b>Others</b>	River name: Quinchilca, sub-sub tributary of San Pedro, Sub-tributary of Callecalle, tributary of Valdivia river. Road : Principal road I-39, principal road The bridge was constructed in 1930's Los Lagos is the nearest town apart 5km from the bridge. Sport fishing is popular in summer November to May.

Site description for IEE and preliminary EIA preparation work

Project location: No.d Bridge name: Quinchilca Region: X Los Lagos, Province: Valdivia

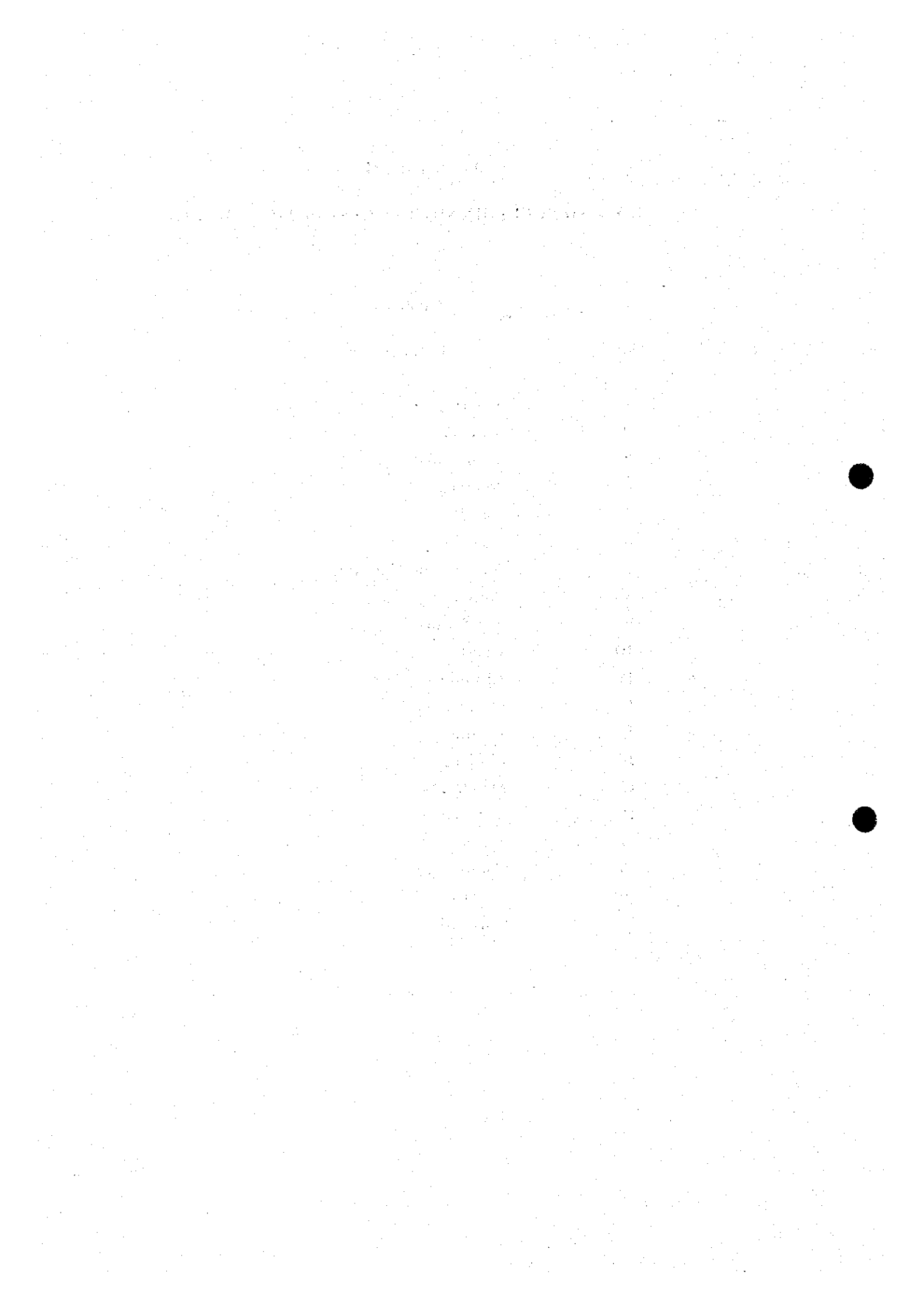
Item	Description	
<b>Social environment</b>		
Inhabitants: Residents, Indigenous people	Upperstream: Left bank area: A farm house locates 40m off the bridge. Downstream: Left bank area: None	Right bank area: None Right bank area: A farm house locates 20m off the bridge
Their views on the project Others		
Landuse and facilities: Urban area, Farm land, Others Historic & cultural site, Scenic spot Hospitals and other facilities	Upperstream: Left bank area: Barren grass area Downstream: Left bank area: Barren grass area, cattle ranch	Right bank area: Barren grass area, cattle ranch behind. Right bank area: Barren grass area, cattle ranch
Economy: Commerce, Agriculture, Forestry Others	Upperstream: Left bank area: Agriculture, cattle ranch Downstream: Left bank area: Agriculture, cattle ranch	Right bank area: Agriculture, cattle ranch Right bank area: Agriculture, cattle ranch
Transport: Bus terminal, etc.		
<b>Natural environment</b>		
Topography, ( Feature of river bank area) Steep slopes, Soft ground, Wetland	Upperstream: Left bank area: Moderate slope to low land, area of hilltop locates behind Downstream: Left bank area: Tender slope continue to low terrace	Right bank area: Tender slope and low swampy land. Gabion installation on the bank Right bank area: Tender slope and flat land.
Geology, (feature of river bank/bed): Outcrop, stone, gravel, sand / Fault Soil type, etc.,	Left bank area: Sandy soil with round gravel mixed River bed: Sandy gravel	Right bank area: Sandy soil with round gravel mixed
Hydrology, ( Feature of river flow, Water level, flood level )	Flow regime is rather sifted right bank side flown toward WOW direction. Water depth of 2.0m and 0.3m/sec., flow velocity. Clean water quality. Flood level comes up to 1.0m of existing water level.	
Fauna & Flora / habitats Rare species /community, etc.,	Deciduous forest of southern area vegetation, tall trees scattered; Common fishes, trout and birds species are inhabited. No specific area of importance. Rare species are not recognized	
<b>Pollution</b>		
Complaints: Population of the upmost concern	No specific items	
Measures taken: Institutional measures Compensation	No specific items	
Others		

## APPENDIX II-7-B

### IEE AND PRELIMINARY EIA EVALUATION SHEETS

#### Contents

No.	Bridge Name
1	Confluencia
2	David Garcia
3	Granallas
4	Ventanas
5	San Jose
6	Puangué
7	San José de Marchiue
8	Antivero No. 2
9	Los Cardos
10	Cautin
11	El Indio
12	Quillen
13	Pocufon
14	Malleco
15	Miraflores
16	San Juan
17	Medina
18	Cautin (88)
19	Salva Tu Alma
20	Quinchilca



Environmental No	Component	Identification of activities	Description of activities	IEE evaluation	Preliminary EIA evaluation	Remarks (Reason)
<b>Socio economic Environment</b>						
1	Land and Property	Land aquisition	Transfer of right of land ownership compensation	No		
		Resettlement	Transfer of rights of residence / compensation	No		
2	Economic	Economic activities	Loss of basis of economic activities, such as land, and change of economic structure	No		
		Employment	Increase or decrease of employment opportunity	No		
3	Traffic and Public facilities	Traffic	Impact on present traffic conditions, increase of traffic congestion	Temporal		Partial use of deck space
		Public facilities	Impacts on schools, hospitals caused by increase of traffic volume	No		
4	Communities	Disintegration of communities	Community split due to interruption of area traffic	No		
5	Amenity	Amenities	Increase or loss of existing amenities	Increase		Aesthetic condition
6	Historical and Cultural	Historical assets	Damage or loss of the value of historic or archaeological remains	No		
		Cultural properties	Damage or loss of the value of cultural assets	No		
7	Vested rights	Water rights and rights of common	Obstruction of fishing rights, water rights, or other rights of common	No		
8	Waste	Waste	Generation of construction and demolition debris	No		
9	Hazards	Risk and damage	Risk of accidents, traffic damage	No		
<b>Natural Environment</b>						
10	Land	Topographic feature /river bank and bed	Changes of valuable topographic land form condition	No		
		Geological condition	Changes of geological condition	No		
		Land use	Change of original land use	No		
		Soil erosion	Topsoil erosion by rainfall after earth work and vegetation removal	No		
11	Surface water	Hydrological feature	Changes of flow variation	No		
		Water use	Change of existing water use	No		
		Water quality	Change of water quality	No		
		Floating debris	Floating obstacles	No		
		Flood affection	Flood affected area	No		
12	Species and their population, habitat	Terrestrial vegetation /flora	Obstruction of valuable species and their community, habitat	No		
		Terrestrial wildlife /fauna	Obstruction of breeding and extinction of species, communities, habitat	No		
		Aquatic flora	Obstruction of valuable species	No		
		Aquatic fish fauna	Obstruction of breeding and extinction of species, communities, habitat	No		
13	Aesthetics	Landscape	Changes of topography and vegetation due to reclamation. Deterioration of aesthetic harmony by structure	No		
<b>Pollution</b>						
15	Atmosphere	Air pollution	Pollution caused by exhaust gas or toxic gas from vehicles	No		
16	Water	Water pollution	Pollution by inflow of silt, sand and effluent into rivers	No		
17	Noise and vibration	Noise and vibration	Generation by construction machinery and traffic vehicles	No		
Overall evaluation				No need of Pre-EIA		
Is Preliminary EIA necessary for the project implementation?						

Environmental No	Component	Identification of activities	Description of activities	IEE evaluation	Preliminary EIA evaluation	Remarks (Reason)
<b>Socio economic Environment</b>						
1	Land and Property	Land aquisition	Transfer of right of land ownership compensation	No		
		Resettlement	Transfer of rights of residence / compensation	No		
2	Economic	Economic activities	Loss of basis of economic activities, such as land, and change of economic structure	No		
		Employment	Increase or decrease of employment opportunity	Increase		Const. Period
3	Traffic and Public facilities	Traffic	Impact on present traffic conditions, increase of traffic congestion	Temporal	Temporal	Use of detour route Safety control
		Public facilities	Impacts on schools, hospitals caused by increase of traffic volume	No		
4	Communities	Disintegration of communities	Community split due to interruption of area traffic	No		
5	Amenity	Amenities	Increase or loss of existing amenities	Increase	Enhance	Aesthetic condition
6	Historical and Cultural	Historical assets	Damage or loss of the value of historic or archaeological remains	No		
		Cultural properties	Damage or loss of the value of cultural assets	No		
7	Vested rights	Water rights and rights of common	Obstruction of fishing rights, water rights, or other rights of common	No		
8	Waste	Waste	Generation of construction and demolition debris	Yes	Temporal	Obligation to the construction side
9	Hazards	Risk and damage	Risk of accidents, traffic damage	Slightly	Temporal	Safety control
<b>Natural Environment</b>						
10	Land	Topographic feature /river bank and bed	Changes of valuable topographic land form condition	No		
		Geological condition	Changes of geological condition	No		
		Land use	Change of original land use	No		Negligible
		Soil erosion	Topsoil erosion by rainfall after earth work and vegetation removal	Slightly	Temporal	Negligible
11	Surface water	Hydrological feature	Changes of flow variation	No		
		Water use	Change of existing water use	No		
		Water quality	Change of water quality	slightly	Temporal	Negligible
		Floating debris	Floating obstacles	No		
		Flood affection	Flood affected area	No		
12	Species and their population, habitat	Terrestrial vegetation /flora	Obstruction of valuable species and their community, habitat	No		
		Terrestrial wildlife /fauna	Obstruction of breeding and extinction of species, communities, habitat	No		
		Aquatic flora	Obstruction of valuable species	No		
		Aquatic fish fauna	Obstruction of breeding and extinction of species, communities , habitat	Slightly	Temporal	Negligible
13	Aesthetics	Landscape	Changes of topography and vegetation due to reclamation. Deterioration of aesthetic harmony by structure	No		
<b>Pollution</b>						
15	Atmosphere	Air pollution	Pollution caused by exhaust gas or toxic gas from vehicles	Slightly	Temporal	Control of soil dust
16	Water	Water pollution	Pollution by inflow of silt, sand and effluent into rivers	Slightly	Temporal	Negligible
17	Noise and vibration	Noise and vibration	Generation by construction machinery and traffic vehicles	Slightly	Temporal	Control operation hour.
Overall evaluation Is Preliminary EIA necessary for the project implementation?				Need of Pre-EIA		

Environmental No.	Component	Identification of activities	Description of activities	IEE evaluation	Preliminary EIA evaluation	Remarks (Reason)
<b>Socio economic Environment</b>						
1	Land and Property	Land aquisition	Transfer of right of land ownership compensation	No		
		Resettlement	Transfer of rights of residence / compensation	No		
2	Economic	Economic activities	Loss of basis of economic activities, such as land, and change of economic structure	No		
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3	Traffic and Public facilities	Traffic	Impact on present traffic conditions, increase of traffic congestion	Temporal	Temporal	Use of detour route Safety control
		Public facilities	Impacts on schools, hospitals caused by increase of traffic volume	No		
4	Communities	Disintegration of communities	Community split due to interruption of area traffic	No		
5	Amenity	Amenities	Increase or loss of existing amenities	Increase	Enhance	Aesthetic condition
6	Historical and Cultural	Historical assets	Damage or loss of the value of historic or archaeological remains	No		
		Cultural properties	Damage or loss of the value of cultural assets	No		
7	Vested rights	Water rights and rights of common	Obstruction of fishing rights, water rights, or other rights of common	No		
8	Waste	Waste	Generation of construction and demolition debris	Yes	Temporal	Obligation to the construction side Safety control
9	Hazards	Risk and damage	Risk of accidents, traffic damage	Slightly	Temporal	Safety control
<b>Natural Environment</b>						
10	Land	Topographic feature /river bank and bed	Changes of valuable topographic land form condition	No		
		Geological condition	Changes of geological condition	No		
		Land use	Change of original land use	No		Negligible
		Soil erosion	Topsoil erosion by rainfall after earth work and vegetation removal	Slightly	Temporal	Negligible
11	Surface water	Hydrological feature	Changes of flow variation	No		
		Water use	Change of existing water use	No		
		Water quality	Change of water quality	slightly	Temporal	Negligible
		Floating debris	Floating obstacles	No		
		Flood affection	Flood affected area	No		
12	Species and their population, habitat	Terrestrial vegetation /flora	Obstruction of valuable species and their community, habitat	No		
		Terrestrial wildlife /fauna	Obstruction of breeding and extinction of species, communities, habitat	No		Negligible
		Aquatic flora	Obstruction of valuable species	No		
		Aquatic fish fauna	Obstruction of breeding and extinction of species, communities, habitat	Slightly	Temporal	Negligible
13	Aesthetics	Landscape	Changes of topography and vegetation due to reclamation. Deterioration of aesthetic harmony by structure	No		
<b>Pollution</b>						
15	Atmosphere	Air pollution	Pollution caused by exhaust gas or toxic gas from vehicles	Slightly	Temporal	Control of soil dust
16	Water	Water pollution	Pollution by inflow of silt, sand and effluent into rivers	Slightly	Temporal	Negligible
17	Noise and vibration	Noise and vibration	Generation by construction machinery and traffic vehicles	Slightly	Temporal	Control operation hour.
Overall evaluation				Need of Pre-EIA		
Is Preliminary EIA necessary for the project implementation?						



Environmental No	Component	Identification of activities	Description of activities	IEE evaluation	Preliminary EIA evaluation	Remarks (Reason)
<b>Socio economic Environment</b>						
1	Land and Property	Land aquisition	Transfer of right of land ownership compensation	No		
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		Employment	Increase or decrease of employment opportunity	No		
3	Traffic and Public facilities	Traffic	Impact on present traffic conditions, increase of traffic congestion	Temporal		Partial use of deck space
		Public facilities	Impacts on schools, hospitals caused by increase of traffic volume	No		
4	Communities	Disintegration of communities	Community split due to interruption of area traffic	No		
5	Amenity	Amenities	Increase or loss of existing amenities	Increase		Aesthetic condition
6	Historical and Cultural	Historical assets	Damage or loss of the value of historic or archaeological remains	No		
		Cultural properties	Damage or loss of the value of cultural assets	No		
7	Vested rights	Water rights and rights of common	Obstruction of fishing rights, water rights, or other rights of common	No		
8	Waste	Waste	Generation of construction and demolition debris	No		
9	Hazards	Risk and damage	Risk of accidents, traffic damage	No		
<b>Natural Environment</b>						
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		Water use	Change of existing water use	No		
		Water quality	Change of water quality	No		
		Floating debris	Floating obstacles	No		
		Flood affection	Flood affected area	No		
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		Aquatic flora	Obstruction of valuable species	No		
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13	Aesthetics	Landscape	Changes of topography and vegetation due to reclamation. Deterioration of aesthetic harmony by structure	No		
<b>Pollution</b>						
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17	Noise and vibration	Noise and vibration	Generation by construction machinery and traffic vehicles	No		
Overall evaluation				No need of Pre-EIA		
Is Preliminary EIA necessary for the project implementation?						

Environmental No	Environmental component	Identification of activities	Description of activities	IEE evaluation	Preliminary EIA evaluation	Remarks (Reason)
<b>Socio economic Environment</b>						
1	Land and Property	Land aquisition	Transfer of right of land ownership compensation	No		
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2	Economic	Economic activities	Loss of basis of economic activities, such as land, and change of economic structure	No		
		Employment	Increase or decrease of employment opportunity	Increase		Const. Period
3	Traffic and Public facilities	Traffic	Impact on present traffic conditions, increase of traffic congestion	Temporal		Use of deture route safety control
		Public facilities	Impacts on schools, hospitals caused by increase of traffic volume	No		
4	Communities	Disintegration of communities	Community split due to interruption of area traffic	No		
5	Amenity	Amenities	Increase or loss of existing amenities	Increase		Aesthetic condition
6	Historical and Cultural	Historical assets	Damage or loss of the value of historic or archaeological remains	No		
		Cultural properties	Damage or loss of the value of cultural assets	No		
7	Vested rights	Water rights and rights of common	Obstruction of fishing rights, water rights, or other rights of common	No		
8	Waste	Waste	Generation of construction and demolition debris	Yes	Temporal	Obligation to the construction side
9	Hazards	Risk and damage	Risk of accidents, traffic damage	Slightly	Temporal	
<b>Natural Environment</b>						
10	Land	Topographic feature /river bank and bed	Changes of valuable topographic land form condition	No		
		Geological condition	Changes of geological condition	No		
		Land use	Change of original land use	No		
		Soil erosion	Topsoil erosion by rainfall after earth work and vegetation removal	No		
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		Floating debris	Floating obstacles	No		
		Flood affection	Flood affected area	No		
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		Terrestrial wildlife /fauna	Obstruction of breeding and extinction of species, communities, habitat	No		
		Aquatic flora	Obstruction of valuable species	No		
		Aquatic fish fauna	Obstruction of breeding and extinction of species, communities , habitat	No		
13	Aesthetics	Landscape	Changes of topography and vegetation due to reclamation. Deterioration of aesthetic harmony by structure	No		
<b>Pollution</b>						
15	Atmosphere	Air pollution	Pollution caused by exhaust gas or toxic gas from vehicles	No		
16	Water	Water pollution	Pollution by inflow of silt, sand and effluent into rivers	No		
17	Noise and vibration	Noise and vibration	Generation by construction machinery and traffic vehicles	No		
Overall evaluation				Need of Pre-EIA		
Is Preliminary EIA necessary for the project implementation?						

Environmental No	Identification of activities	Description of activities	IEE evaluation	Preliminary EIA evaluation	Remarks (Reason)	
<b>Socio economic Environment</b>						
1	Land and Property	Land aquisition	Transfer of right of land ownership compensation	Yes	Private land	Need of compensation
		Resettlement	Transfer of rights of residence / compensation	Yes	1 house, depends on site	Need of compensation
2	Economic	Economic activities	Loss of basis of economic activities, such as land, and change of economic structure	No		
		Employment	Increase or decrease of employment opportunity	Increase		Const. Period
3	Traffic and Public facilities	Traffic	Impact on present traffic conditions, increase of traffic congestion	Temporal	Temporal	Use of existing bridge for detour pass.
		Public facilities	Impacts on schools, hospitals caused by increase of traffic volume	No		
4	Communities	Disintegration of communities	Community split due to interruption of area traffic	No		
5	Amenity	Amenities	Increase or loss of existing amenities	Increase	Enhance	Aesthetic condition
6	Historical and Cultural	Historical assets	Damage or loss of the value of historic or archaeological remains	No		
		Cultural properties	Damage or loss of the value of cultural assets	No		
7	Vested rights	Water rights and rights of common	Obstruction of fishing rights, water rights, or other rights of common	No		
8	Waste	Waste	Generation of construction and demolition debris	Yes	Temporal	Obligation to the construction side
9	Hazards	Risk and damage	Risk of accidents, traffic damage	Slightly	Temporal	Safety control
<b>Natural Environment</b>						
10	Land	Topographic feature /river bank and bed	Changes of valuable topographic land form condition	Slightly	Slightly	Control of limited changes
		Geological condition	Changes of geological condition	No		
		Land use	Change of original land use	Yes	Slightly	Negligible
		Soil erosion	Topsoil erosion by rainfall after earth work and vegetation removal	Slightly	Temporal	Negligible
11	Surface water	Hydrological feature	Changes of flow variation	No		
		Water use	Change of existing water use	No		
		Water quality	Change of water quality	slightly	Temporal	Negligible
		Floating debris	Floating obstacles	No		
		Flood affection	Flood affected area	No		
12	Species and their population, habitat	Terrestrial vegetation /flora	Obstruction of valuable species and their community, habitat	No		
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13	Aesthetics	Landscape	Changes of topography and vegetation due to reclamation. Deterioration of aesthetic harmony by structure	No		
<b>Pollution</b>						
15	Atmosphere	Air pollution	Pollution caused by exhaust gas or toxic gas from vehicles	No		
16	Water	Water pollution	Pollution by inflow of silt, sand and effluent into rivers	Slightly	Temporal	Negligible
17	Noise and vibration	Noise and vibration	Generation by construction machinery and traffic vehicles	Slightly	Temporal	Control operation hour.
Overall evaluation			Is Preliminary EIA necessary for the project implementation?	Need of Pre-EIA		

Environmental No	Identification of component	Identification of activities	Description of activities	IEE evaluation	Preliminary ELA evaluation	Remarks (Reason)
<b>Socio economic Environment</b>						
1	Land and Property	Land aquisition	Transfer of right of land ownership compensation	Yes	If private land	Need of compensation
		Resettlement	Transfer of rights of residence / compensation	Yes	Small hatch	Need of compensation
2	Economic	Economic activities	Loss of basis of economic activities, such as land, and change of economic structure	No		
		Employment	Increase or decrease of employment opportunity	No		
3	Traffic and Public facilities	Traffic	Impact on present traffic conditions, increase of traffic congestion	Temporal	Temporal	Use of detour route to be made
		Public facilities	Impacts on schools, hospitals caused by increase of traffic volume	No		
4	Communities	Disintegration of communities	Community split due to interruption of area traffic	No		
5	Amenity	Amenities	Increase or loss of existing amenities	Increase	Enhance	Aesthetic condition
6	Historical and Cultural	Historical assets	Damage or loss of the value of historic or archaeological remains	No		
		Cultural properties	Damage or loss of the value of cultural assets	No		
7	Vested rights	Water rights and rights of common	Obstruction of fishing rights, water rights, or other rights of common	No		
8	Waste	Waste	Generation of construction and demolition debris	Yes	Temporal	Obligation to the construction side
9	Hazards	Risk and damage	Risk of accidents, traffic damage	Slightly	Temporal	Safety control
<b>Natural Environment</b>						
10	Land	Topographic feature /river bank and bed	Changes of valuable topographic land form condition	No		
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		Floating debris	Floating obstacles	No		
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12	Species and their population, habitat	Terrestrial vegetation /flora	Obstruction of valuable species and their community, habitat	No		
		Terrestrial wildlife /fauna	Obstruction of breeding and extinction of species, communities, habitat	No		
		Aquatic flora	Obstruction of valuable species	No		
		Aquatic fish fauna	Obstruction of breeding and extinction of species, communities , habitat	Slightly	Temporal	Negligible
13	Aesthetics	Landscape	Changes of topography and vegetation due to reclamation. Deterioration of aesthetic harmony by structure	No		
<b>Pollution</b>						
15	Atmosphere	Air pollution	Pollution caused by exhaust gas or toxic gas from vehicles	Slightly	Temporal	Control of soil dust
16	Water	Water pollution	Pollution by inflow of silt, sand and effluent into rivers	Slightly	Temporal	Negligible
17	Noise and vibration	Noise and vibration	Generation by construction machinery and traffic vehicles	Slightly	Temporal	Control operation hour.
Overall evaluation				Need of Pre-EIA		
Is Preliminary EIA necessary for the project implementation?						

Environmental No	Component	Identification of activities	Description of activities	IEE evaluation	Preliminary EIA evaluation	Remarks (Reason)
<b>Socio economic Environment</b>						
1	Land and Property	Land aquisition	Transfer of right of land ownership compensation	Yes	If private land	Need of compensation
		Resettlement	Transfer of rights of residence / compensation	No		
2	Economic	Economic activities	Loss of basis of economic activities, such as land, and change of economic structure	No		
		Employment	Increase or decrease of employment opportunity	No		
3	Traffic and Public facilities	Traffic	Impact on present traffic conditions, increase of traffic congestion	Temporal	Temporal	Use of existing bridge as a detour route
		Public facilities	Impacts on schools, hospitals caused by increase of traffic volume	No		
4	Communities	Disintegration of communities	Community split due to interruption of area traffic	No		
5	Amenity	Amenities	Increase or loss of existing amenities	Increase	Enhance	Aesthetic condition
6	Historical and Cultural	Historical assets	Damage or loss of the value of historic or archaeological remains	No		
		Cultural properties	Damage or loss of the value of cultural assets	No		
7	Vested rights	Water rights and rights of common	Obstruction of fishing rights, water rights, or other rights of common	No		
8	Waste	Waste	Generation of construction and demolition debris	Yes	Temporal	Obligation to the construction side
9	Hazards	Risk and damage	Risk of accidents, traffic damage	Slightly	Temporal	Safety control
<b>Natural Environment</b>						
10	Land	Topographic feature /river bank and bed	Changes of valuable topographic land form condition	No		
		Geological condition	Changes of geological condition	No		
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11	Surface water	Hydrological feature	Changes of flow variation	No		
		Water use	Change of existing water use	No		
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		Floating debris	Floating obstacles	No		
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		Aquatic flora	Obstruction of valuable species	No		
		Aquatic fish fauna	Obstruction of breeding and extinction of species, communities , habitat	Slightly	Temporal	Negligible
13	Aesthetics	Landscape	Changes of topography and vegetation due to reclamation. Deterioration of aesthetic harmony by structure	No		
<b>Pollution</b>						
15	Atmosphere	Air pollution	Pollution caused by exhaust gas or toxic gas from vehicles	Slightly	Temporal	Control of soil dust
16	Water	Water pollution	Pollution by inflow of silt, sand and effluent into rivers	Slightly	Temporal	Negligible
17	Noise and vibration	Noise and vibration	Generation by construction machinery and traffic vehicles	Slightly	Temporal	Control operation hour.
Overall evaluation				Need of Pre-EIA		
Is Preliminary EIA necessary for the project implementation?						

Environmental No	Identification of component	Identification of activities	Description of activities	IEE evaluation	Preliminary EIA evaluation	Remarks (Reason)
<b>Socio economic Environment</b>						
1	Land and Property	Land aquisition	Transfer of right of land ownership compensation	No		
		Resettlement	Transfer of rights of residence / compensation	No		
2	Economic	Economic activities	Loss of basis of economic activities, such as land, and change of economic structure	No		
		Employment	Increase or decrease of employment opportunity	No		
3	Traffic and Public facilities	Traffic	Impact on present traffic conditions, increase of traffic congestion	Temporal		Partial use of deck space
		Public facilities	Impacts on schools, hospitals caused by increase of traffic volume	No		
4	Communities	Disintegration of communities	Community split due to interruption of area traffic	No		
5	Amenity	Amenities	Increase or loss of existing amenities	Increase		Aesthetic condition
6	Historical and Cultural	Historical assets	Damage or loss of the value of historic or archaeological remains	No		
		Cultural properties	Damage or loss of the value of cultural assets	No		
7	Vested rights	Water rights and rights of common	Obstruction of fishing rights, water rights, or other rights of common	No		
8	Waste	Waste	Generation of construction and demolition debris	No		
9	Hazards	Risk and damage	Risk of accidents, traffic damage	No		
<b>Natural Environment</b>						
10	Land	Topographic feature /river bank and bed	Changes of valuable topographic land form condition	No		
		Geological condition	Changes of geological condition	No		
		Land use	Change of original land use	No		
		Soil erosion	Topsoil erosion by rainfall after earth work and vegetation removal	No		
11	Surface water	Hydrological feature	Changes of flow variation	No		
		Water use	Change of existing water use	No		
		Water quality	Change of water quality	No		
		Floating debris	Floating obstacles	No		
		Flood affection	Flood affected area	No		
12	Species and their population, habitat	Terrestrial vegetation /flora	Obstruction of valuable species and their community, habitat	No		
		Terrestrial wildlife /fauna	Obstruction of breeding and extinction of species, communities, habitat	No		
		Aquatic flora	Obstruction of valuable species	No		
		Aquatic fish fauna	Obstruction of breeding and extinction of species, communities, habitat	No		
13	Aesthetics	Landscape	Changes of topography and vegetation due to reclamation. Deterioration of aesthetic harmony by structure	No		
<b>Pollution</b>						
15	Atmosphere	Air pollution	Pollution caused by exhaust gas or toxic gas from vehicles	No		
16	Water	Water pollution	Pollution by inflow of silt, sand and effluent into rivers	No		
17	Noise and vibration	Noise and vibration	Generation by construction machinery and traffic vehicles	No		
Overall evaluation				No need of Pre-EIA		
Is Preliminary EIA necessary for the project implementation?						

Environmental No	Environmental component	Identification of activities	Description of activities	IEE evaluation	Preliminary EIA evaluation	Remarks (Reason)
<b>Socio economic Environment</b>						
1	Land and Property	Land aquisition	Transfer of right of land ownership compensation	No		
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2	Economic	Economic activities	Loss of basis of economic activities, such as land, and change of economic structure	No		
		Employment	Increase or decrease of employment opportunity	No		
3	Traffic and Public facilities	Traffic	Impact on present traffic conditions, increase of traffic congestion	Temporal		Partial use of deck space
		Public facilities	Impacts on schools, hospitals caused by increase of traffic volume	No		
4	Communities	Disintegration of communities	Community split due to interruption of area traffic	No		
5	Amenity	Amenities	Increase or loss of existing amenities	Increase		Aesthetic condition
6	Historical and Cultural	Historical assets	Damage or loss of the value of historic or archaeological remains	No		
		Cultural properties	Damage or loss of the value of cultural assets	No		
7	Vested rights	Water rights and rights of common	Obstruction of fishing rights, water rights, or other rights of common	No		
8	Waste	Waste	Generation of construction and demolition debris	No		
9	Hazards	Risk and damage	Risk of accidents, traffic damage	No		
<b>Natural Environment</b>						
10	Land	Topographic feature /river bank and bed	Changes of valuable topographic land form condition	No		
		Geological condition	Changes of geological condition	No		
		Land use	Change of original land use	No		
		Soil erosion	Topsoil erosion by rainfall after earth work and vegetation removal	No		
11	Surface water	Hydrological feature	Changes of flow variation	No		
		Water use	Change of existing water use	No		
		Water quality	Change of water quality	No		
		Floating debris	Floating obstacles	No		
		Flood affection	Flood affected area	No		
12	Species and their population, habitat	Terrestrial vegetation /flora	Obstruction of valuable species and their community, habitat	No		
		Terrestrial wildlife /fauna	Obstruction of breeding and extinction of species, communities, habitat	No		
		Aquatic flora	Obstruction of valuable species	No		
		Aquatic fish fauna	Obstruction of breeding and extinction of species, communities , habitat	No		
13	Aesthetics	Landscape	Changes of topography and vegetation due to reclamation. Deterioration of aesthetic harmony by structure	No		
<b>Pollution</b>						
15	Atmosphere	Air pollution	Pollution caused by exhaust gas or toxic gas from vehicles	No		
16	Water	Water pollution	Pollution by inflow of silt, sand and effluent into rivers	No		
17	Noise and vibration	Noise and vibration	Generation by construction machinery and traffic vehicles	No		
Overall evaluation				No need of Pre-EIA		
Is Preliminary EIA necessary for the project implementation?						

Environmental No	Component	Identification of activities	Description of activities	IEE evaluation	Preliminary EIA evaluation	Remarks (Reason)
<b>Socio economic Environment</b>						
1	Land and Property	Land aquisition	Transfer of right of land ownership compensation	No		
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		Employment	Increase or decrease of employment opportunity	No		
3	Traffic and Public facilities	Traffic	Impact on present traffic conditions, increase of traffic congestion	Temporal		Partial use of deck space
		Public facilities	Impacts on schools, hospitals caused by increase of traffic volume	No		
4	Communities	Disintegration of communities	Community split due to interruption of area traffic	No		
5	Amenity	Amenities	Increase or loss of existing amenities	Increase		Aesthetic condition
6	Historical and Cultural	Historical assets	Damage or loss of the value of historic or archaeological remains	No		
		Cultural properties	Damage or loss of the value of cultural assets	No		
7	Vested rights	Water rights and rights of common	Obstruction of fishing rights, water rights, or other rights of common	No		
8	Waste	Waste	Generation of construction and demolition debris	No		
9	Hazards	Risk and damage	Risk of accidents, traffic damage	No		
<b>Natural Environment</b>						
10	Land	Topographic feature /river bank and bed	Changes of valuable topographic land form condition	No		
		Geological condition	Changes of geological condition	No		
		Land use	Change of original land use	No		
		Soil erosion	Topsoil erosion by rainfall after earth work and vegetation removal	No		
11	Surface water	Hydrological feature	Changes of flow variation	No		
		Water use	Change of existing water use	No		
		Water quality	Change of water quality	No		
		Floating debris	Floating obstacles	No		
		Flood affection	Flood affected area	No		
12	Species and their population, habitat	Terrestrial vegetation /flora	Obstruction of valuable species and their community, habitat	No		
		Terrestrial wildlife /fauna	Obstruction of breeding and extinction of species, communities, habitat	No		
		Aquatic flora	Obstruction of valuable species	No		
		Aquatic fish fauna	Obstruction of breeding and extinction of species, communities , habitat	No		
13	Aesthetics	Landscape	Changes of topography and vegetation due to reclamation. Deterioration of aesthetic harmony by structure	No		
<b>Pollution</b>						
15	Atmosphere	Air pollution	Pollution caused by exhaust gas or toxic gas from vehicles	No		
16	Water	Water pollution	Pollution by inflow of silt, sand and effluent into rivers	No		
17	Noise and vibration	Noise and vibration	Generation by construction machinery and traffic vehicles	No		
Overall evaluation				No need of Pre-EIA		
Is Preliminary EIA necessary for the project implementation?						



Environmental No	Component	Identification of activities	Description of activities	IEE evaluation	Preliminary EIA evaluation	Remarks (Reason)
<b>Socio economic Environment</b>						
1	Land and Property	Land aquisition	Transfer of right of land ownership compensation	No		
		Resettlement	Transfer of rights of residence / compensation	No		
2	Economic	Economic activities	Loss of basis of economic activities, such as land, and change of economic structure	No		
		Employment	Increase or decrease of employment opportunity	No		
3	Traffic and Public facilities	Traffic	Impact on present traffic conditions, increase of traffic congestion	Temporal		Partial use of deck space
		Public facilities	Impacts on schools, hospitals caused by increase of traffic volume	No		
4	Communities	Disintegration of communities	Community split due to interruption of area traffic	No		
5	Amenity	Amenities	Increase or loss of existing amenities	Increase		Aesthetic condition
6	Historical and Cultural	Historical assets	Damage or loss of the value of historic or archaeological remains	No		
		Cultural properties	Damage or loss of the value of cultural assets	No		
7	Vested rights	Water rights and rights of common	Obstruction of fishing rights, water rights, or other rights of common	No		
8	Waste	Waste	Generation of construction and demolition debris	No		
9	Hazards	Risk and damage	Risk of accidents, traffic damage	No		
<b>Natural Environment</b>						
10	Land	Topographic feature /river bank and bed	Changes of valuable topographic land form condition	No		
		Geological condition	Changes of geological condition	No		
		Land use	Change of original land use	No		
		Soil erosion	Topsoil erosion by rainfall after earth work and vegetation removal	No		
11	Surface water	Hydrological feature	Changes of flow variation	No		
		Water use	Change of existing water use	No		
		Water quality	Change of water quality	No		
		Floating debris	Floating obstacles	No		
		Flood affection	Flood affected area	No		
12	Species and their population, habitat	Terrestrial vegetation /flora	Obstruction of valuable species and their community, habitat	No		
		Terrestrial wildlife /fauna	Obstruction of breeding and extinction of species, communities, habitat	No		
		Aquatic flora	Obstruction of valuable species	No		
		Aquatic fish fauna	Obstruction of breeding and extinction of species, communities, habitat	No		
13	Aesthetics	Landscape	Changes of topography and vegetation due to reclamation. Deterioration of aesthetic harmony by structure	No		
<b>Pollution</b>						
15	Atmosphere	Air pollution	Pollution caused by exhaust gas or toxic gas from vehicles	No		
16	Water	Water pollution	Pollution by inflow of silt, sand and effluent into rivers	No		
17	Noise and vibration	Noise and vibration	Generation by construction machinery and traffic vehicles	No		
Overall evaluation Is Preliminary EIA necessary for the project implementation?				No need of Pre-EIA		

Environmental No.	Component	Identification of activities	Description of activities	IEE evaluation	Preliminary EIA evaluation	Remarks (Reason)
<b>Socio economic Environment</b>						
1	Land and Property	Land aquisition	Transfer of right of land ownership compensation	Yes	If private land	Need of compensation
		Resettlement	Transfer of rights of residence / compensation	No		
2	Economic	Economic activities	Loss of basis of economic activities, such as land, and change of economic structure	No		
		Employment	Increase or decrease of employment opportunity	No		
3	Traffic and Public facilities	Traffic	Impact on present traffic conditions, increase of traffic congestion	Temporal	Temporal	Use of existing bridge as a detour route
		Public facilities	Impacts on schools, hospitals caused by increase of traffic volume	No		
4	Communities	Disintegration of communities	Community split due to interruption of area traffic	No		
5	Amenity	Amenities	Increase or loss of existing amenities	Increase	Enhance	Aesthetic condition
6	Historical and Cultural	Historical assets	Damage or loss of the value of historic or archaeological remains	No		
		Cultural properties	Damage or loss of the value of cultural assets	No		
7	Vested rights	Water rights and rights of common	Obstruction of fishing rights, water rights, or other rights of common	No		
8	Waste	Waste	Generation of construction and demolition debris	Yes	Temporal	Obligation to the construction side
9	Hazards	Risk and damage	Risk of accidents, traffic damage	Slightly	Temporal	Safety control
<b>Natural Environment</b>						
10	Land	Topographic feature /river bank and bed	Changes of valuable topographic land form condition	No		
		Geological condition	Changes of geological condition	No		
		Land use	Change of original land use	No		
		Soil erosion	Topsoil erosion by rainfall after earth work and vegetation removal	Slightly	Temporal	Negligible
11	Surface water	Hydrological feature	Changes of flow variation	No		
		Water use	Change of existing water use	No		
		Water quality	Change of water quality	Slightly	Temporal	Negligible
		Floating debris	Floating obstacles	No		
		Flood affection	Flood affected area	No		
12	Species and their population, habitat	Terrestrial vegetation /flora	Obstruction of valuable species and their community, habitat	No		
		Terrestrial wildlife /fauna	Obstruction of breeding and extinction of species, communities, habitat	Slightly	If cattle ranch is closer	Care for cattalos
		Aquatic flora	Obstruction of valuable species	No		
		Aquatic fish fauna	Obstruction of breeding and extinction of species, communities , habitat	Slightly	Temporal	Negligible
13	Aesthetics	Landscape	Changes of topography and vegetation due to reclamation. Deterioration of aesthetic harmony by structure	No		
<b>Pollution</b>						
15	Atmosphere	Air pollution	Pollution caused by exhaust gas or toxic gas from vehicles	Slightly	Temporal	Control of soil dust
16	Water	Water pollution	Pollution by inflow of silt, sand and effluent into rivers	Slightly	Temporal	Negligible
17	Noise and vibration	Noise and vibration	Generation by construction machinery and traffic vehicles	Slightly	Temporal	Care for cattle
Overall evaluation Is Preliminary EIA necessary for the project implementation?				Need of Pre-EIA		

Environmental No	Component	Identification of activities	Description of activities	IEE evaluation	Preliminary EIA evaluation	Remarks (Reason)
<b>Socio economic Environment</b>						
1	Land and Property	Land aquisition	Transfer of right of land ownership compensation	No		
		Resettlement	Transfer of rights of residence / compensation	No		
2	Economic	Economic activities	Loss of basis of economic activities, such as land, and change of economic structure	No		
		Employment	Increase or decrease of employment opportunity	No		
3	Traffic and Public facilities	Traffic	Impact on present traffic conditions, increase of traffic congestion	Temporal		Partial use of deck space
		Public facilities	Impacts on schools, hospitals caused by increase of traffic volume	No		
4	Communities	Disintegration of communities	Community split due to interruption of area traffic	No		
5	Amenity	Amenities	Increase or loss of existing amenities	Increase		Aesthetic condition
6	Historical and Cultural	Historical assets	Damage or loss of the value of historic or archaeological remains	No		
		Cultural properties	Damage or loss of the value of cultural assets	No		
7	Vested rights	Water rights and rights of common	Obstruction of fishing rights, water rights, or other rights of common	No		
8	Waste	Waste	Generation of construction and demolition debris	No		
9	Hazards	Risk and damage	Risk of accidents, traffic damage	No		
<b>Natural Environment</b>						
10	Land	Topographic feature /river bank and bed	Changes of valuable topographic land form condition	No		
		Geological condition	Changes of geological condition	No		
		Land use	Change of original land use	No		
		Soil erosion	Topsoil erosion by rainfall after earth work and vegetation removal	No		
11	Surface water	Hydrological feature	Changes of flow variation	No		
		Water use	Change of existing water use	No		
		Water quality	Change of water quality	No		
		Floating debris	Floating obstacles	No		
		Flood affection	Flood affected area	No		
12	Species and their population, habitat	Terrestrial vegetation /flora	Obstruction of valuable species and their community, habitat	No		
		Terrestrial wildlife /fauna	Obstruction of breeding and extinction of species, communities, habitat	No		
		Aquatic flora	Obstruction of valuable species	No		
		Aquatic fish fauna	Obstruction of breeding and extinction of species, communities, habitat	No		
13	Aesthetics	Landscape	Changes of topography and vegetation due to reclamation. Deterioration of aesthetic harmony by structure	No		
<b>Pollution</b>						
15	Atmosphere	Air pollution	Pollution caused by exhaust gas or toxic gas from vehicles	No		
16	Water	Water pollution	Pollution by inflow of silt, sand and effluent into rivers	No		
17	Noise and vibration	Noise and vibration	Generation by construction machinery and traffic vehicles	No		
Overall evaluation				No need of Pre-EIA		
Is Preliminary EIA necessary for the project implementation?						

Environmental No	Component	Identification of activities	Description of activities	IEE evaluation	Preliminary EIA evaluation	Remarks (Reason)
<b>Socio economic Environment</b>						
1	Land and Property	Land aquisition	Transfer of right of land ownership compensation	No		
		Resettlement	Transfer of rights of residence / compensation	No		
2	Economic	Economic activities	Loss of basis of economic activities, such as land, and change of economic structure	No		
		Employment	Increase or decrease of employment opportunity	No		
3	Traffic and Public facilities	Traffic	Impact on present traffic conditions, increase of traffic congestion	Temporal		Partial use of deck space
		Public facilities	Impacts on schools, hospitals caused by increase of traffic volume	No		
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5	Amenity	Amenities	Increase or loss of existing amenities	Increase		Aesthetic condition
6	Historical and Cultural	Historical assets	Damage or loss of the value of historic or archaeological remains	No		
		Cultural properties	Damage or loss of the value of cultural assets	No		
7	Vested rights	Water rights and rights of common	Obstruction of fishing rights, water rights, or other rights of common	No		
8	Waste	Waste	Generation of construction and demolition debris	No		
9	Hazards	Risk and damage	Risk of accidents, traffic damage	No		
<b>Natural Environment</b>						
10	Land	Topographic feature /river bank and bed	Changes of valuable topographic land form condition	No		
		Geological condition	Changes of geological condition	No		
		Land use	Change of original land use	No		
		Soil erosion	Topsoil erosion by rainfall after earth work and vegetation removal	No		
11	Surface water	Hydrological feature	Changes of flow variation	No		
		Water use	Change of existing water use	No		
		Water quality	Change of water quality	No		
		Floating debris	Floating obstacles	No		
		Flood affection	Flood affected area	No		
12	Species and their population, habitat	Terrestrial vegetation /flora	Obstruction of valuable species and their community, habitat	No		
		Terrestrial wildlife /fauna	Obstruction of breeding and extinction of species, communities, habitat	No		
		Aquatic flora	Obstruction of valuable species	No		
		Aquatic fish fauna	Obstruction of breeding and extinction of species, communities , habitat	No		
13	Aesthetics	Landscape	Changes of topography and vegetation due to reclamation. Deterioration of aesthetic harmony by structure	No		
<b>Pollution</b>						
15	Atmosphere	Air pollution	Pollution caused by exhaust gas or toxic gas from vehicles	No		
16	Water	Water pollution	Pollution by inflow of silt, sand and effluent into rivers	No		
17	Noise and vibration	Noise and vibration	Generation by construction machinery and traffic vehicles	No		
Overall evaluation				No need of Pre-EIA		
Is Preliminary EIA necessary for the project implementation?						

Environmental No	Environmental component	Identification of activities	Description of activities	IEE evaluation	Preliminary EIA evaluation	Remarks (Reason)
<b>Socio economic Environment</b>						
1	Land and Property	Land aquisition	Transfer of right of land ownership compensation	No		
		Resettlement	Transfer of rights of residence / compensation	No		
2	Economic	Economic activities	Loss of basis of economic activities, such as land, and change of economic structure	No		
		Employment	Increase or decrease of employment opportunity	Increase		Const. Period
3	Traffic and Public facilities	Traffic	Impact on present traffic conditions, increase of traffic congestion	Temporal		Partial use of deck space
		Public facilities	Impacts on schools, hospitals caused by increase of traffic volume	No		
4	Communities	Disintegration of communities	Community split due to interruption of area traffic	No		
5	Amenity	Amenities	Increase or loss of existing amenities	Increase		Aesthetic condition
6	Historical and Cultural	Historical assets	Damage or loss of the value of historic or archaeological remains	No		
		Cultural properties	Damage or loss of the value of cultural assets	No		
7	Vested rights	Water rights and rights of common	Obstruction of fishing rights, water rights, or other rights of common	No		
8	Waste	Waste	Generation of construction and demolition debris	No		
9	Hazards	Risk and damage	Risk of accidents, traffic damage	No		
<b>Natural Environment</b>						
10	Land	Topographic feature /river bank and bed	Changes of valuable topographic land form condition	No		
		Geological condition	Changes of geological condition	No		
		Land use	Change of original land use	No		
		Soil erosion	Topsoil erosion by rainfall after earth work and vegetation removal	Temporal		Const. Period
11	Surface water	Hydrological feature	Changes of flow variation	No		
		Water use	Change of existing water use	No		
		Water quality	Change of water quality	Temporal		Const. Period
		Floating debris	Floating obstacles	No		
		Flood affection	Flood affected area	No		
12	Species and their population, habitat	Terrestrial vegetation /flora	Obstruction of valuable species and their community, habitat	No		
		Terrestrial wildlife /fauna	Obstruction of breeding and extinction of species, communities, habitat	No		
		Aquatic flora	Obstruction of valuable species	No		
		Aquatic fish fauna	Obstruction of breeding and extinction of species, communities, habitat	Temporal		Const. Period
13	Aesthetics	Landscape	Changes of topography and vegetation due to reclamation. Deterioration of aesthetic harmony by structure	No		
<b>Pollution</b>						
15	Atmosphere	Air pollution	Pollution caused by exhaust gas or toxic gas from vehicles	Temporal		Const. Period
16	Water	Water pollution	Pollution by inflow of silt, sand and effluent into rivers	Temporal		Const. Period
17	Noise and vibration	Noise and vibration	Generation by construction machinery and traffic vehicles	Temporal		Const. Period
Overall evaluation				Need of Pre-EIA		
Is Preliminary EIA necessary for the project implementation?						

Environmental No	Identification of component	Identification of activities	Description of activities	IEE evaluation	Preliminary EIA evaluation	Remarks (Reason)
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		Employment	Increase or decrease of employment opportunity	No		
3	Traffic and Public facilities	Traffic	Impact on present traffic conditions, increase of traffic congestion	Temporal		Partial use of deck space
		Public facilities	Impacts on schools, hospitals caused by increase of traffic volume	No		
4	Communities	Disintegration of communities	Community split due to interruption of area traffic	No		
5	Amenity	Amenities	Increase or loss of existing amenities	Increase		Aesthetic condition
6	Historical and Cultural	Historical assets	Damage or loss of the value of historic or archaeological remains	No		
		Cultural properties	Damage or loss of the value of cultural assets	No		
7	Vested rights	Water rights and rights of common	Obstruction of fishing rights, water rights, or other rights of common	No		
8	Waste	Waste	Generation of construction and demolition debris	No		
9	Hazards	Risk and damage	Risk of accidents, traffic damage	No		
<b>Natural Environment</b>						
10	Land	Topographic feature /river bank and bed	Changes of valuable topographic land form condition	No		
		Geological condition	Changes of geological condition	No		
		Land use	Change of original land use	No		
		Soil erosion	Topsoil erosion by rainfall after earth work and vegetation removal	No		
11	Surface water	Hydrological feature	Changes of flow variation	No		
		Water use	Change of existing water use	No		
		Water quality	Change of water quality	No		
		Floating debris	Floating obstacles	No		
		Flood affection	Flood affected area	No		
12	Species and their population, habitat	Terrestrial vegetation /flora	Obstruction of valuable species and their community, habitat	No		
		Terrestrial wildlife /fauna	Obstruction of breeding and extinction of species, communities, habitat	No		
		Aquatic flora	Obstruction of valuable species	No		
		Aquatic fish fauna	Obstruction of breeding and extinction of species, communities , habitat	No		
13	Aesthetics	Landscape	Changes of topography and vegetation due to reclamation. Deterioration of aesthetic harmony by structure	No		
<b>Pollution</b>						
15	Atmosphere	Air pollution	Pollution caused by exhaust gas or toxic gas from vehicles	No		
16	Water	Water pollution	Pollution by inflow of silt, sand and effluent into rivers	No		
17	Noise and vibration	Noise and vibration	Generation by construction machinery and traffic vehicles	No		
Overall evaluation				No need of Pre-EIA		
Is Preliminary EIA necessary for the project implementation?						

Environmental No	Component	Identification of activities	Description of activities	IEE evaluation	Preliminary EIA evaluation	Remarks (Reason)
<b>Socio economic Environment</b>						
1	Land and Property	Land aquisition	Transfer of right of land ownership compensation	No		
		Resettlement	Transfer of rights of residence / compensation	No		
2	Economic	Economic activities	Loss of basis of economic activities, such as land, and change of economic structure	No		
		Employment	Increase or decrease of employment opportunity	Slight increase	Temporally	
3	Traffic and Public facilities	Traffic	Impact on present traffic conditions, increase of traffic congestion	Temporal		Partial use of deck space
		Public facilities	Impacts on schools, hospitals caused by increase of traffic volume	No		
4	Communities	Disintegration of communities	Community split due to interruption of area traffic	No		
5	Amenity	Amenities	Increase or loss of existing amenities	Increase		Aesthetic condition
6	Historical and Cultural	Historical assets	Damage or loss of the value of historic or archaeological remains	No		
		Cultural properties	Damage or loss of the value of cultural assets	No		
7	Vested rights	Water rights and rights of common	Obstruction of fishing rights, water rights, or other rights of common	No		
8	Waste	Waste	Generation of construction and demolition debris	No		
9	Hazards	Risk and damage	Risk of accidents, traffic damage	No		
<b>Natural Environment</b>						
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		Geological condition	Changes of geological condition	No		
		Land use	Change of original land use	No		
		Soil erosion	Topsoil erosion by rainfall after earth work and vegetation removal	No		
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		Aquatic flora	Obstruction of valuable species	No		
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<b>Pollution</b>						
15	Atmosphere	Air pollution	Pollution caused by exhaust gas or toxic gas from vehicles	No		
16	Water	Water pollution	Pollution by inflow of silt, sand and effluent into rivers	No		
17	Noise and vibration	Noise and vibration	Generation by construction machinery and traffic vehicles	No		
Overall evaluation Is Preliminary EIA necessary for the project implementation?				No need of Pre-EIA		

Environmental No	Environmental component	Identification of activities	Description of activities	IEE evaluation	Preliminary EIA evaluation	Remarks (Reason)
<b>Socio economic Environment</b>						
1	Land and Property	Land aquisition	Transfer of right of land ownership compensation	No		
		Resettlement	Transfer of rights of residence / compensation	No		
2	Economic	Economic activities	Loss of basis of economic activities, such as land, and change of economic structure	No		
		Employment	Increase or decrease of employment opportunity	No		
3	Traffic and Public facilities	Traffic	Impact on present traffic conditions, increase of traffic congestion	Temporal		Partial use of deck space
		Public facilities	Impacts on schools, hospitals caused by increase of traffic volume	No		
4	Communities	Disintegration of communities	Community split due to interruption of area traffic	No		
5	Amenity	Amenities	Increase or loss of existing amenities	Increase		Aesthetic condition
6	Historical and Cultural	Historical assets	Damage or loss of the value of historic or archaeological remains	No		
		Cultural properties	Damage or loss of the value of cultural assets	No		
7	Vested rights	Water rights and rights of common	Obstruction of fishing rights, water rights, or other rights of common	No		
8	Waste	Waste	Generation of construction and demolition debris	No		
9	Hazards	Risk and damage	Risk of accidents, traffic damage	No		
<b>Natural Environment</b>						
10	Land	Topographic feature /river bank and bed	Changes of valuable topographic land form condition	No		
		Geological condition	Changes of geological condition	No		
		Land use	Change of original land use	No		
		Soil erosion	Topsoil erosion by rainfall after earth work and vegetation removal	No		
11	Surface water	Hydrological feature	Changes of flow variation	No		
		Water use	Change of existing water use	No		
		Water quality	Change of water quality	No		
		Floating debris	Floating obstacles	No		
		Flood affection	Flood affected area	No		
12	Species and their population, habitat	Terrestrial vegetation /flora	Obstruction of valuable species and their community, habitat	No		
		Terrestrial wildlife /fauna	Obstruction of breeding and extinction of species, communities, habitat	No		
		Aquatic flora	Obstruction of valuable species	No		
		Aquatic fish fauna	Obstruction of breeding and extinction of species, communities, habitat	No		
13	Aesthetics	Landscape	Changes of topography and vegetation due to reclamation. Deterioration of aesthetic harmony by structure	No		
<b>Pollution</b>						
15	Atmosphere	Air pollution	Pollution caused by exhaust gas or toxic gas from vehicles	No		
16	Water	Water pollution	Pollution by inflow of silt, sand and effluent into rivers	No		
17	Noise and vibration	Noise and vibration	Generation by construction machinery and traffic vehicles	No		
Overall evaluation				No need of Pre-EIA		
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