

Hydropower Project Development: Property Acquisition Policy and Experience

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BACKGROUND

- 1964 Canada/U.S. Columbia River Treaty: B.C agrees to build three new storage dams in the Canadian section of Columbia River – Keenleyside (1968), Duncan (1970) and Mica (1973)
- New dams created 15.5 million acre feet of water storage to control flooding in Washington and Oregon and allowed states to produce 2400 MW/year additional power known as downstream benefits (“DSBs”)
- B.C. received \$64.4 million for dam construction and half of DSBs, which it sold to U.S. utilities for 30 years, expiring in 1998
- Since 1998, BC Hydro’s subsidiary Powerex has been re-selling DSBs in the U.S. on a short-term basis; DSBs thru 2025 estimated at C\$7.0 billion
- Dams benefited Province but cost residents of Columbia Basin Region
- In 1995, Province created unique program to compensate Region – 8% of DSBs’ value allocated for new power project development in Region

COLUMBIA POWER CORPORATION

- 1995 Financial Agreement: Columbia Basin Trust (CBT, a regional entity) and Columbia Power Corporation (CPC, a Crown corporation) receive C\$500 million over 10 years for equity investment in new power projects
- 3 core hydroelectric projects designated – Arrow Lakes Generating Station, Brilliant Expansion and Waneta Expansion
- CPC designated manager of project development and operations for CBT and Province, with following mandate:
 - Develop cost-competitive core power projects
 - Earn acceptable rate of return
 - Finance projects on commercial terms without government guarantees
 - Promote economic development through power project development, and
 - Pay dividends to Region and Province
- CPC/CBT have 330 MW hydroelectric capacity in operation, 125 MW under construction and 435 MW in permitting, making them the 4th largest power producer in B.C. with \$800 million in assets

LOCATION OF TREATY DAMS & PROJECTS



Arrow Lakes Generating Station
185 MW - completed

Brilliant Expansion
125 MW – under construction

Waneta Expansion
up to 435 MW – in permitting

ARROW LAKES PROJECT AT KEENLEYSIDE DAM

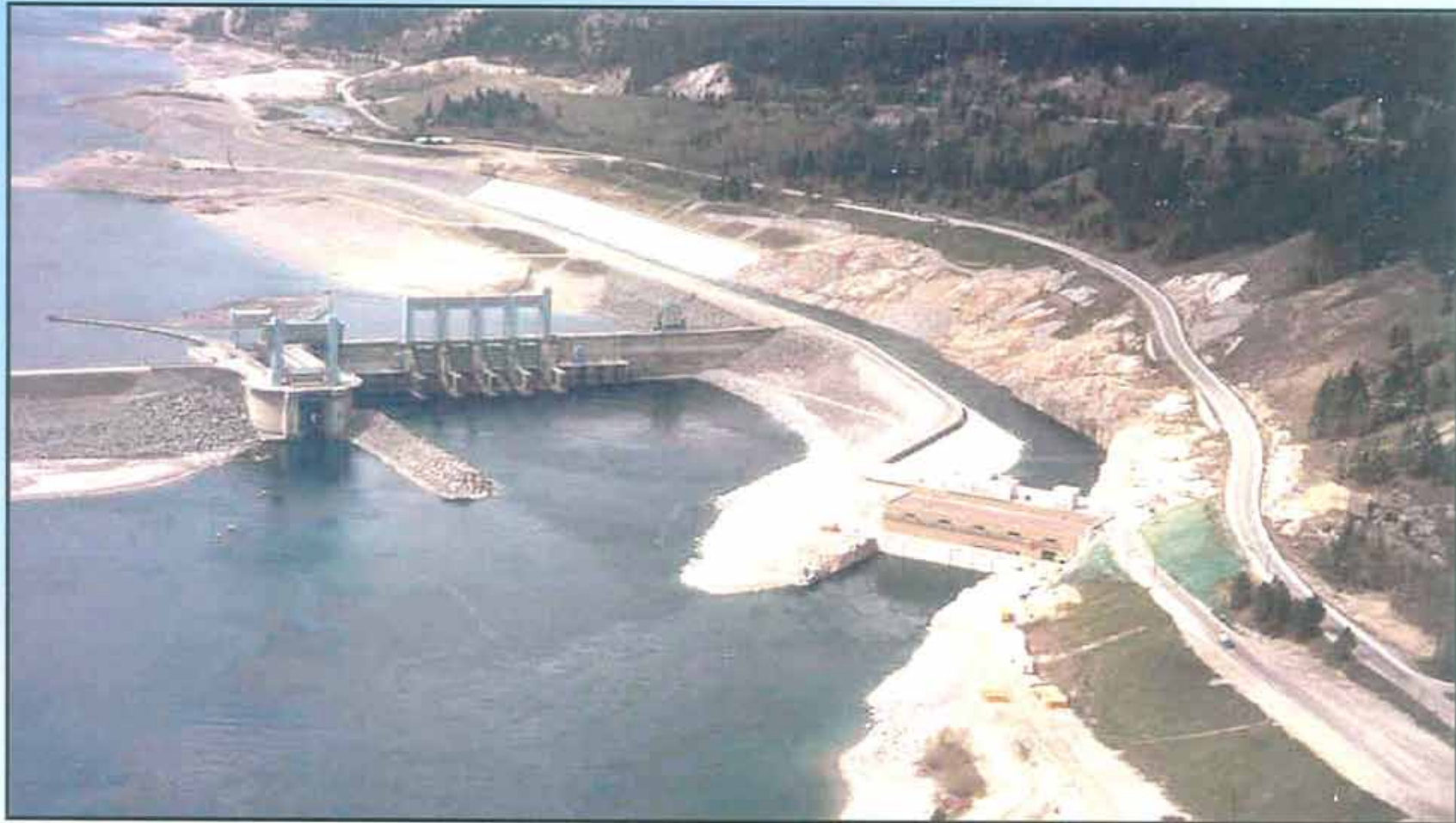
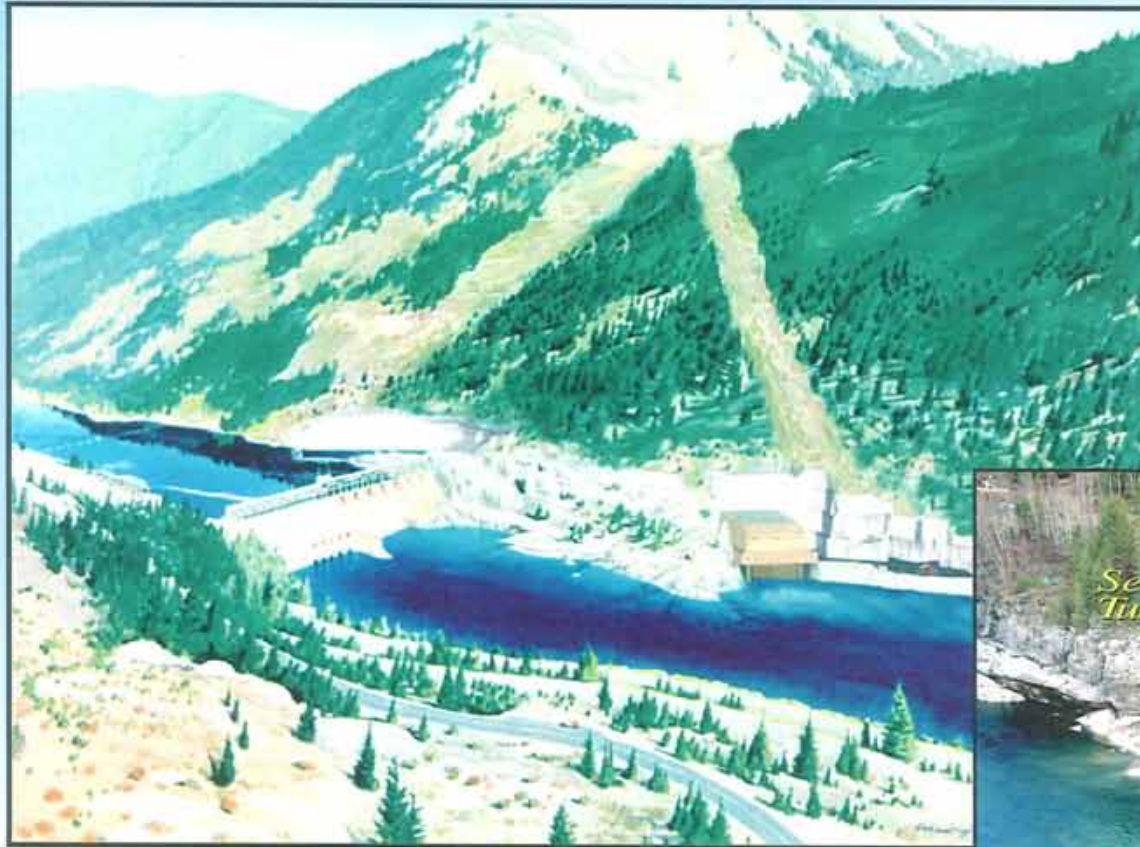


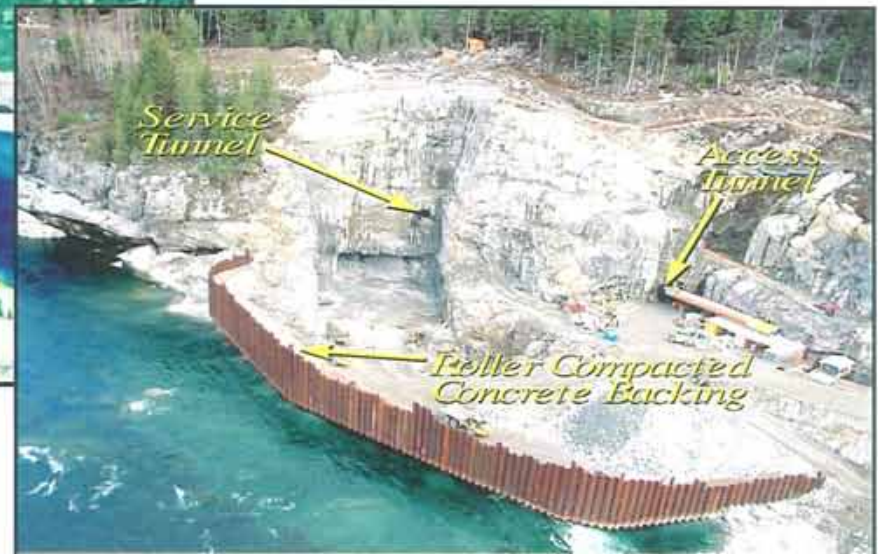
Photo of by-pass channel and new powerhouse completed in 2002

BRILLIANT EXPANSION UNDER CONSTRUCTION

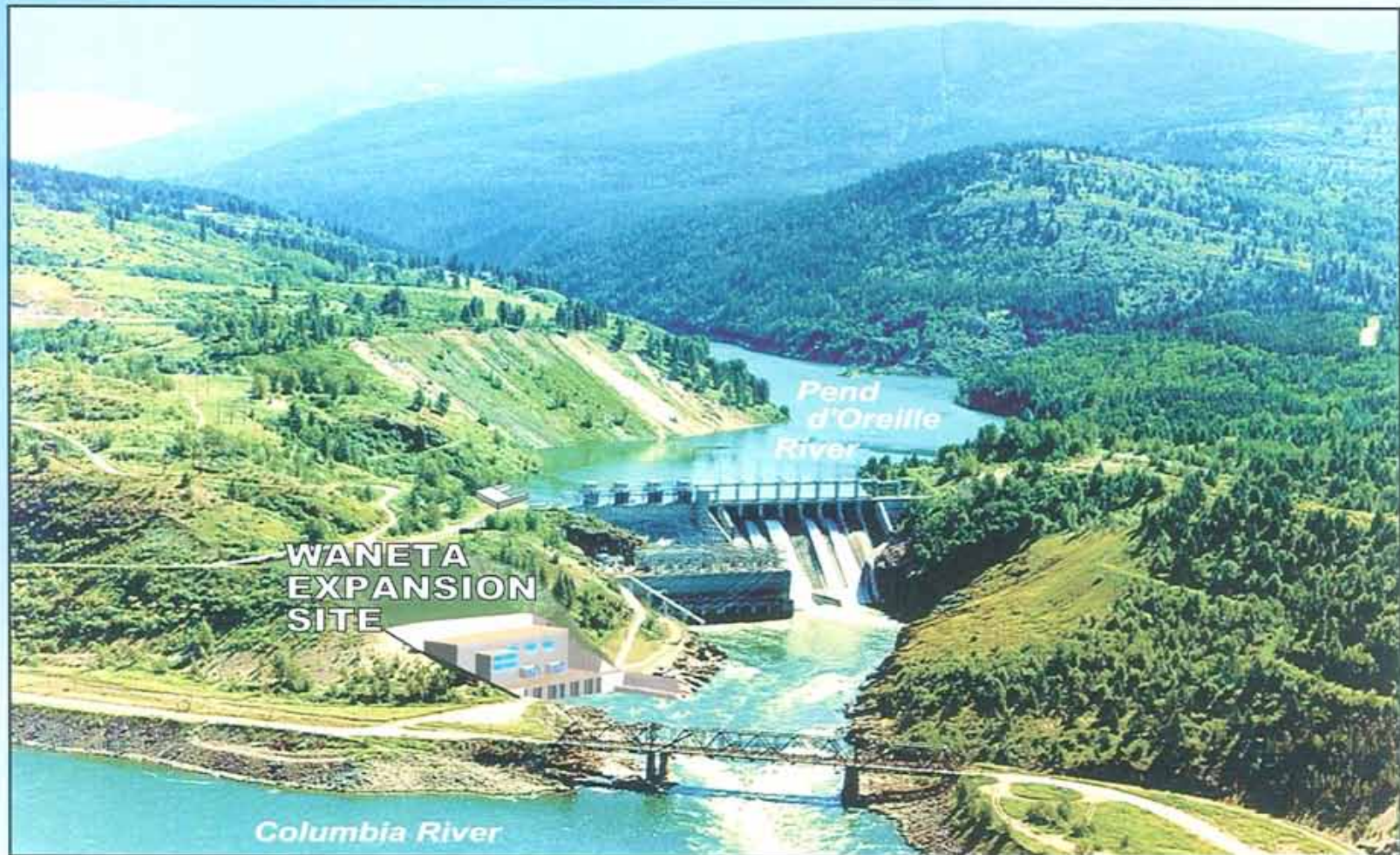


Artist's rendering of new powerhouse at Brilliant Dam to be completed in 2006

Berm in place to protect powerhouse excavation



WANETA EXPANSION IN PERMITTING



Artist's rendering of proposed new powerhouse at existing Waneta Dam

ARROW LAKES PROPERTY REQUIREMENTS

- 52 ha of approach channel and generating station at BC Hydro's Keenleyside Dam site
- 48 km (500 ha) statutory right-of-way ("SRW") for construction, operation and maintenance of 230 kV transmission line to BC Hydro's Selkirk Substation
- 5 ha for Brilliant Terminal Station
- A combination of BC Hydro lands, Crown lands, private lands and industrial lands were acquired in the period 1998 to 2002

PROPERTY ACQUISITION POLICY

- Comply with requirements of Project Approval Certificate
- Negotiate commercial property transfer agreement with BC Hydro for Keenleyside Dam lands, with necessary undertakings and protections for both parties
- Secure timely SRWs on Crown lands
- Obtain, but avoid use of, Water Licence expropriation rights
- Negotiate necessary, fair, equitable and prudent SRWs and/or fee simple purchase of private lands – avoid costly precedent setting
- Promote good environmental management and good community relations

LANDS ACQUISITION

- Project Team managed design and construction of Arrow Lakes to Selkirk 230 kV Transmission Line (ALH SELT/L), including land acquisition and environmental management
- Project Team developed final alignment, electrical clearance zone (ECZ), tree management zone (TMZ), access, Environmental Management Plan, and public consultation requirements for ALH SEL T/L
- Early in process private landowners received letter explaining acquisition requirements and process, including CPC's "Right-of-Way Acquisition Process" document
- Land owners received flat fee for Permission to Enter to allow final design for transmission line
- Land owners entitled to all safeguards under *Expropriation Act*
- Independent property appraisers prepared evaluation reports which reflected market value and injurious affection for remaining lands

LANDS ACQUISITION (Continued)

- Compensation offers developed by property acquisition specialists, included appraisal information, temporary and permanent access rights, variety of property-specific issues (e.g. building fences, installing cattle guards on access roads, building new/upgrading existing roads & bridges)
- Compensation proposals included loss of timber values for TMZ but owners free to use TMZ
- “Signing bonuses” paid to owners who signed offer Without Prejudice within 30 days
- CPC obtained SRW where possible but negotiated a fee simple purchase if owner wished, residual lands to be subsequently resold or donated as offsets for environmental impacts
- Exchange of lands with owners if necessary
- Only one Notice of Expropriation issued and resolved by purchasing strategic piece of land from the owner to augment the SRW purchase offer

ARROW LAKES EXPERIENCE

- Numerous ownership & environmental issues:
 - Open House sessions
 - Electromagnetic field (EMF) concerns
 - Changes to design & alignment, and offer land purchases rather than SRWs
 - Double-circuited transmission line sections parallel to BC Hydro's SRW to avoid additional land alienation
 - Used non-reflective power lines to eliminate visual impacts
 - Knapweed program to control additional infestation
 - Purchased equivalent forest land for exchange with one forestry company (lands in Forest Land Reserve required additional regulatory approvals)
- CPC obtained SRWs on Crown lands and private lands with some fee simple purchases involving the Crown, 24 private landowners and two industrial corporations, all without expropriation
- All project lands, incl. transmission SRWs, were assembled on schedule and on budget - \$4 million for the \$275 million Arrow Lakes Project

SUMMARY AND CONCLUSIONS

- North American and B.C. power producers need to build large amounts of new generation and transmission capacity to meet expected electric energy demands
- Acquisition of plant site and transmission line properties a major challenge
- CPC acquired between 1998 and 2002 lands for Arrow Lakes Generating Station and related transmission facilities, on budget and on schedule
- Lands acquired on fair and equitable terms without alienating landowners or lands, without expropriation and no environmental incidents
- Fairness, transparency, organization, flexibility, adequate resources, information sharing and financial responsibility are key to success
- New property acquisition challenges await CPC – we will see if the formula works again.

• RISK ALLOCATION • PUBLIC – PRIVATE PARTNERSHIPS

Presented to the BRITISH
COLUMBIA EXPROPRIATION
ASSOCIATION

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TRANSPORTATION P3 PROJECTS UNDERWAY

- SEA TO SKY
- KICKING HORSE CANYON
- OKANAGAN LAKE CROSSING
- GATEWAY
- RAV (RICHMOND AIRPORT
VANCOUVER)

P3 DELIVERY

- Ministry of Transportation P3's are delivered with Partnerships British Columbia
- This recently created Company determines the business case and deal structure, and leads the procurement process

WHAT IS PROJECT RISK ?

- It's an event which, if it happens, will affect one or more project objectives
- The impact from a risk event can be either positive or negative

REQUIREMENTS FOR PROJECT RISK EVENTS

- There has to be uncertainty associated with the event, and
- If the event occurs, it must impact any or all of the project objectives, and
- The event must occur in the future.

PUBLIC-PRIVATE PARTNERSHIP CONTEXT

- Fundamental building block is to allocate risks to one or more partners
- Goal is to allocate the risks to the partner best able to manage them – more efficient
- This must be balanced against the cost to the project of the risk allocation

P3 CONTEXT (cont'd)

- Once allocated, the responsibility for these risks will be clearly articulated in the partnership deal
- Again, these responsibilities will be reflected in the cost to deliver the project, so they must be well understood

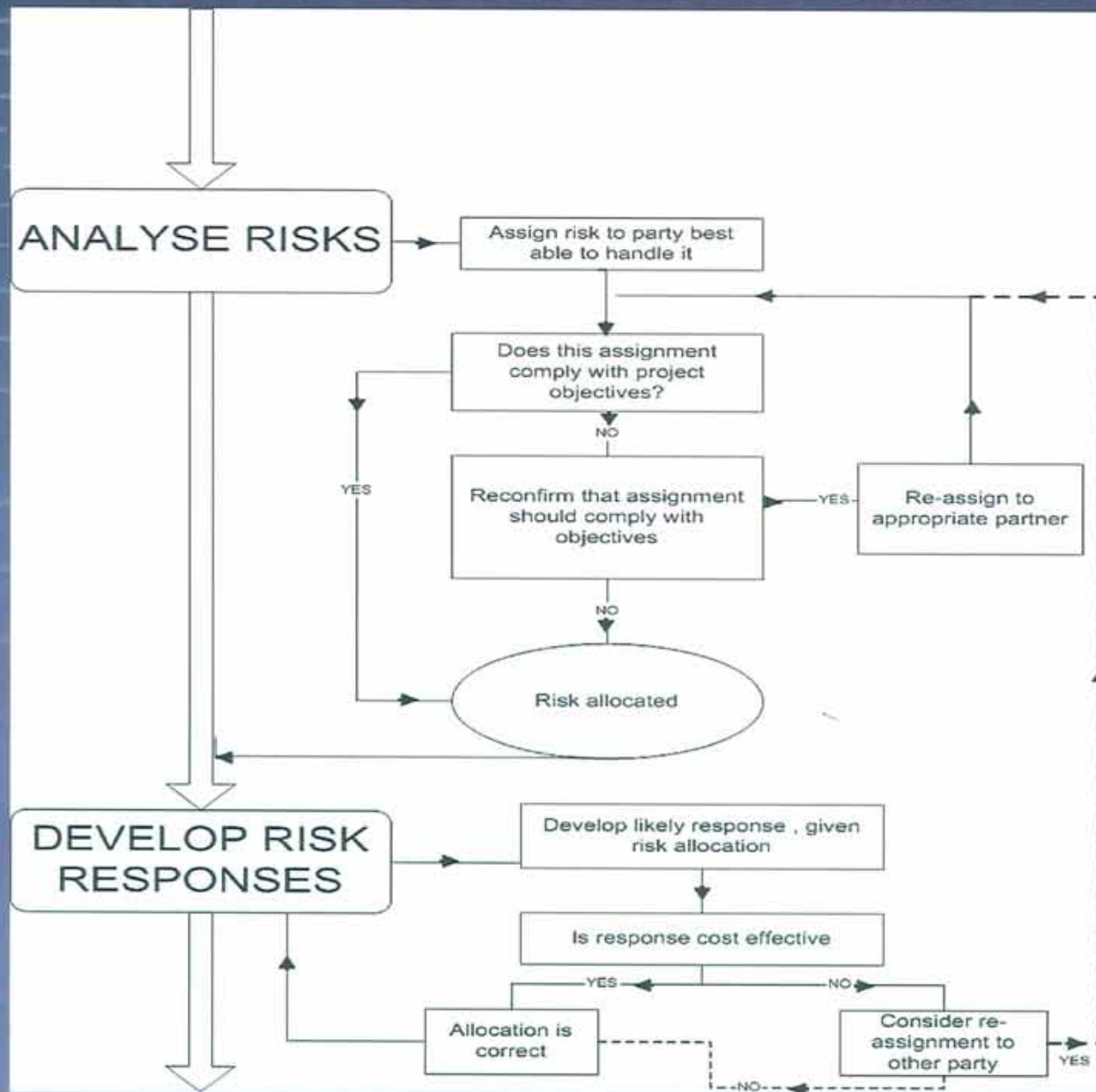
MANAGEMENT

RISK PLANNING

- Assign roles & responsibilities
- Determine reporting requirements
- etc....



SIMPLIFIED PROJECT ALLOCATION PROCESS



PROCESS FOR DEVELOPING THE RISK MATRIX

- Workshop with functional experts on the project
- Risks identified and grouped for analysis- in Risk Matrix
- Discuss each risk as to appropriate allocation
- Once allocated, risk likelihoods/probabilities and impacts are developed

PROCESS (CONT'D)

- Expected values for the cost/severity of risks is ascertained (probability X impact)
- Estimated risk response by partner taking the risk is developed
- Re-assess with respect to project objectives and cost to project

LESSONS LEARNED

- Project objectives must be clear, approved by the Executive and well understood by all Project Team members
- Risk allocation is an iterative process-not a one-time exercise
- A knowledgeable facilitator is key to developing an appropriate risk matrix
- The risk management process should be initiated at the outset with the project