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Airport Master Planning – Process & Update

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ICAO Airport Planning Seminar for the SAM Region

Lima, Peru | 10-14 Sep. 2018





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Job Card 014

Update of ICAO Document 9184:
Airport Planning Manual –
Part 1: Master Planning



ICAO AMPTF

GOAL: Update existing ICAO Airport Master Planning Documentation. (Doc 9184-AN/902: Airport Planning Manual, Part 1 – Master Planning)

Existing ICAO document last revised over **20 years ago**. Much in the aviation/airport industry has changed including airport privatization. ICAO documentation needs to recognize and support this trend.



In 2016 ICAO assembled an initial Task Force of 23 (twenty-three) volunteer industry advisors / consultants to update the ICAO Airport Planning Manual (Part 1: Master Planning)

An initial meeting was convened at ICAO HQ in Montreal on September 14/15, 2016 to introduce task force members, begin deliberations, confirm sub-group work teams and provisional leads/co-leads and agree next steps.



AMPTF members:

Consultants



Regulators



Airports



Intl. Organizations





Four (4) separate work teams address the 4 main sections of the current Master Plan manual:

Section 1: The Airport Planning Process

Section 2: Airside Development (Runways, Taxiways, etc.)

Section 3: Landside Development (Pax Terminal, GTC, etc.)

Section 4: Airport Operations and Support Elements
(ATC, Mtx Hangars, Catering, etc.)

Each Section team consists of three to five members with a lead and co-lead.



Task Force members agreed on additional topics to include in the updated manual:

- Collaboration / Communication strategies with external stakeholders
- Surface Access/capacity issues - road, rail (regional and commuter), ferries, etc
- Airport City developments



(continued):

- Sustainability
- Passengers with Reduced Mobility (PRMs)
- Military operational interfaces – airport “sharing”
- General aviation – airport “sharing”



ICAO Work program:

- Final draft of completed update due from AMPTF work team early Q4 2018.
- Additional phases required for editing, translation (6 languages) and printing 2019
- final hard-copy versions available Q4 2020.





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ICAO Document 9184

Airport Planning Manual – Part 1: Master Planning

Section 1: The Airport Planning Process



What is an airport master plan?

An airport master plan is the airport's vision of how the ultimate development potential of the airport could be realized.

- It is a physical representation of an airport's long-term capital investment / business plan
- It will provide an indication of how capacity enhancement may proceed over the short (0-10 year), medium (10-20 year) and long (20+ year) terms.



A master plan indicates how developments are linked to:

- Air traffic type & demand
- Economic & environmental factors
- Investment requirements
- Financial implications & strategies

Master plans should be developed for new and existing airports to guide their development and business strategy.



A master plan is a long-term guide to development that supports an airport's business development strategy.

It underpins a preliminary assessment of financing.

It is an indication of required investment levels.





A master plan provides a context for constructive consultation to take place between all stakeholders, with the objective of reaching a consensus on all major decisions & changes to the plan over time.





Airport master plans at major airports should be reviewed regularly and also when significant changes in demand occur.

This ensures that future plans reflect the latest market conditions, technological improvements & emerging trends.



Without a Master Plan?...

There is a real and significant risk that short term decision making will result in capital intensive capacity enhancement projects that are poorly located and inappropriately sized.





Without a Master Plan?...

Result: Wasted capital on projects that potentially restrict the airport's overall capacity and performance, thereby impeding the airport's ability to fully utilize the runway system's ultimate capacity.





A Master Plan is not:

- A detailed and definitive airport design
- A detailed development program
- A financing plan
- A business plan
- A final solution



The changing nature of the airline business & the potential for this to impact on an airport's strategic direction dictates that the master plan should be routinely reviewed about every 5 years.





Why have a Master Plan?

A Master Plan is required so that all airside, landside and airport support elements can develop, expand and improve the operational flexibility and efficiency of their business in a structured, balanced and orderly fashion.





A Master Plan ensures that the potential of the available land and the capacity of the airport's runway system and terminal area will be maximized.

Airports need a Master Plan to guide their future infrastructure development in a logical, cost efficient and affordable manner

A Master Plan also ensures that any adverse impacts on the businesses of the airport and its stakeholders both on and off the airport site are minimal.



Master Plans can be tailored to suit specific airport conditions and situations.

Airports subject to aggressive and continuous growth (+5% annually) should consider producing and regularly updating a Master Plan. This requirement should be imbedded in regulatory process and included in privatization agreements and contracts.



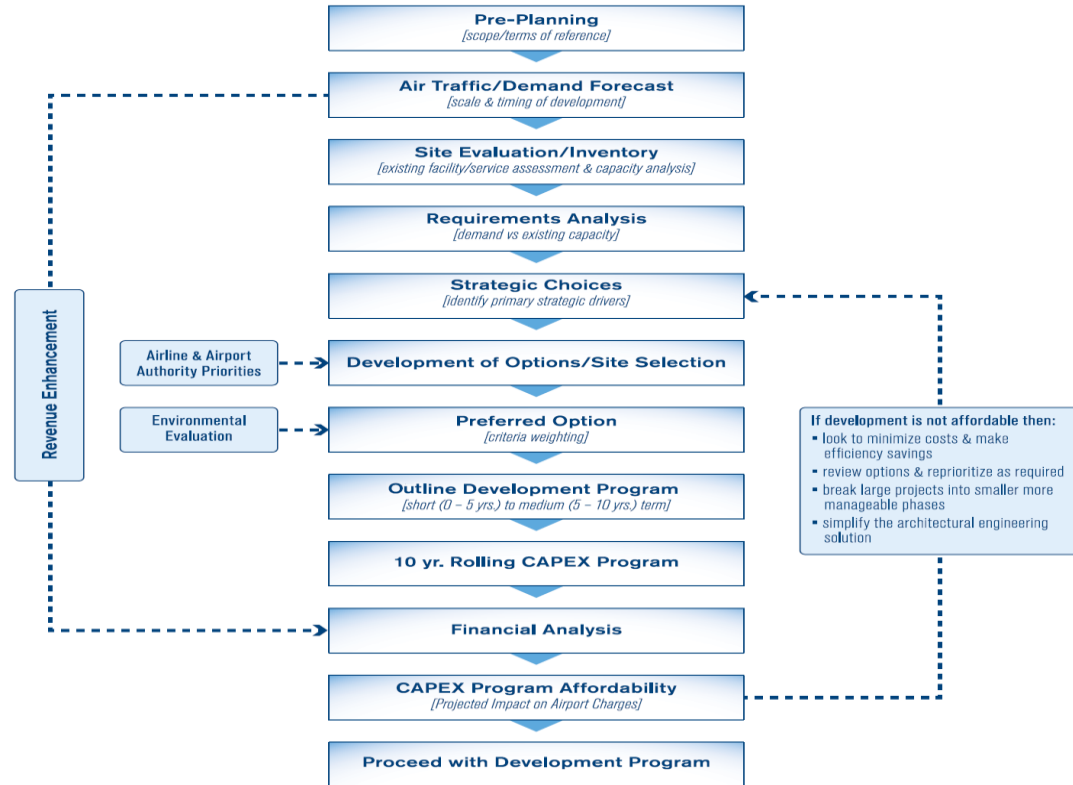
The level of detail in a Master Plan is a function of:

- The size, issues & opportunities at the airport
- Budget considerations include investment so that the decision making process is appropriate & the evolution of the plan adequately reflects local conditions & the special circumstances of its users
- National policies & regulations



The airport planning process can be tailored to suit the size of the airport and the available funding.

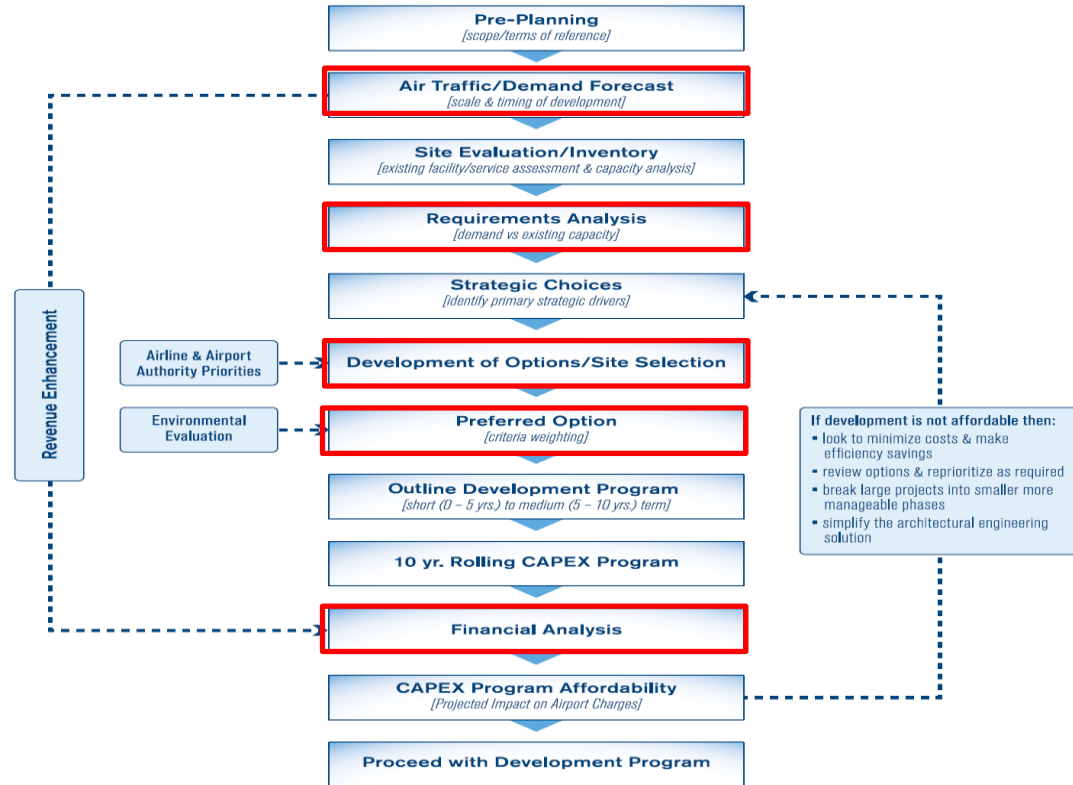
Steps outlined in the chart can be combined to simplify the overall process.





However some steps are key to the overall process:

- Forecasting
- Data Analysis
- Option Development
- Preferred Option
- Financial Analysis and Phasing





Master Plan Phasing and Triggers

Useful Master Plans look far into the future (20 years +).

The future is uncertain.

Good planning therefore addresses “project phasing” guided by “development triggers”.

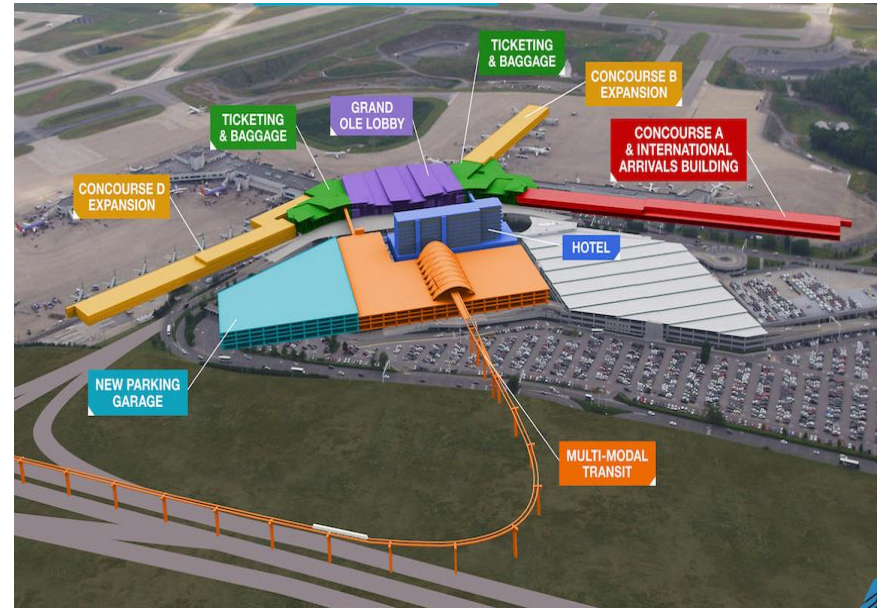


Phasing:

Not everything has to happen all at one time.

Balanced capacity enhancements.

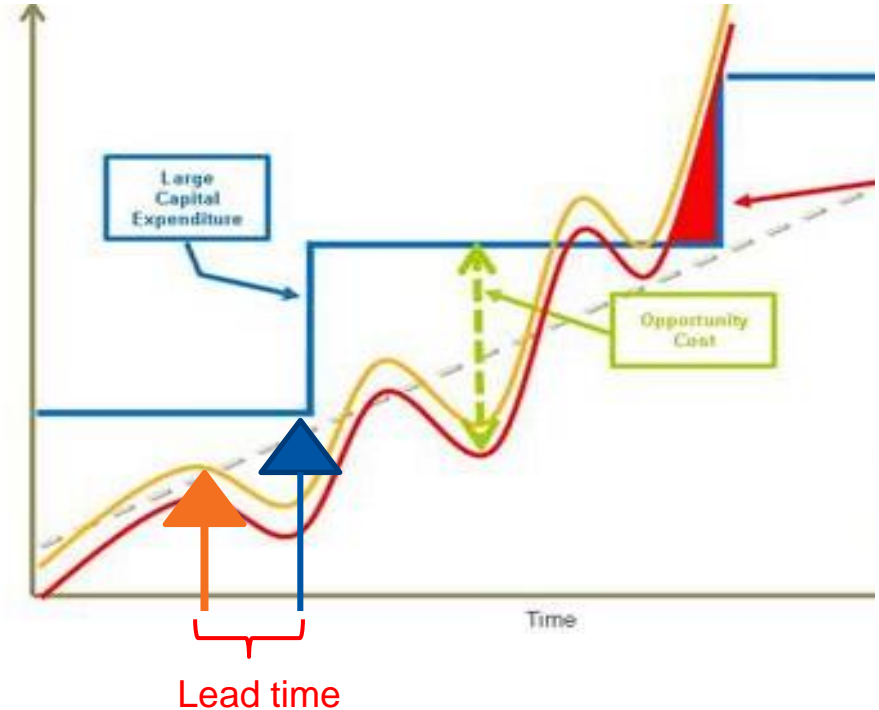
Different projects occur as demand and funding dictate.





Triggers:

- ▲ Throughput triggers project start with sufficient “Lead time”.
- ▲ New capacity delivered





Triggers

Triggers are established based on agreed levels of “throughput” – i.e.:

- Annual aircraft movements
- Annual passenger numbers
- Hourly peak passengers

Triggers are NOT based on time (2020, etc.)

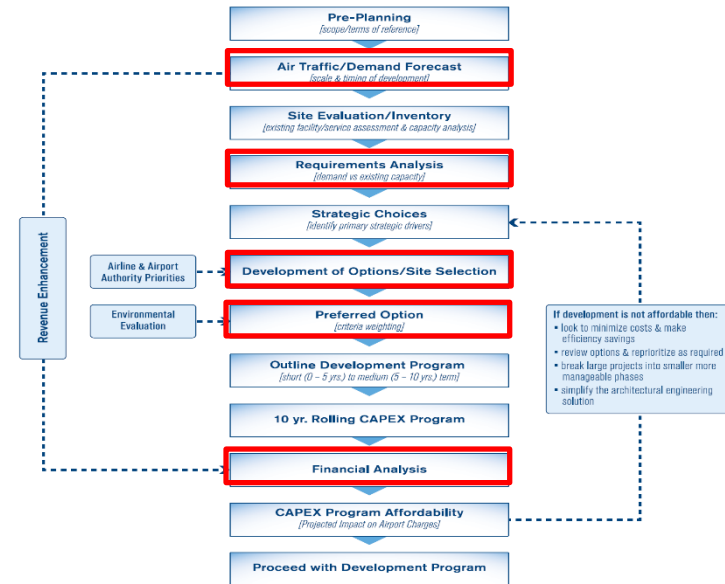
This allows the phased development program to “flex” with the variations in actual growth and assists in the delivery of “Just in Time” infrastructure.



Summary

Developing an airport Master Plan by following the Master Plan Process:

- Delivers a long term development strategy that supports the vision of the airport's future.





(cont.)

- Provides an airport development plan that fits the budget.
- Addresses stakeholders issues and delivers infrastructure that is fit for purpose.
- Delivers infrastructure that comes on line as and when needed.
- Outlines development phases and the associated growth triggers.
- Minimizes the risk of compromising the airport's ultimate development potential; the optimal future.



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THANK YOU

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Questions and Discussion

