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NSW Infrastructure

Education Infrastructure Baseline Report

Infrastructure NSW

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1 Key highlights

- The NSW Government has \$20.8 billion (fair value) invested in education infrastructure. Just under a third is land value.
- Over the last 10 years, the Department has received around \$547 million annually¹ for major and minor capital works in schools and TAFES. It is forecast expenditure needs to be maintained (indexed) to provide for growth at existing and new schools.
- Over the next 10 years (2012 to 2022), 65,000 additional students will be enrolled at primary and high schools with most of these in the Sydney Metropolitan area. The majority of these will enrol at existing schools but DEC anticipates more than 30 new schools will also be needed over this period to cater for population growth.
- The proportion of students attending private schools grew steadily over the last 10 years with some reports by non-government providers of unmet demand.
- New schools are especially important in new growth areas and can affect the uptake of new housing as potential buyers consider whether a local school will be operational when they move in
- The Commonwealth Government commissioned Gonski review highlighted the differences in quality of facilities and levels of capital investment in government and non-government schools and recommended that increased funding be made available by the Commonwealth Government for government schools to improve the standard of infrastructure and also recommended establishing state and territory based planning authorities that better integrate planning for government and non-government schools
- The review also promoted developing minimum facilities standards – in NSW the current standards date from the 1970s but are now being reviewed, particularly to reflect the rapid technology driven changes that affect how teaching and learning occur.
- Larger schools can have advantages over smaller schools including providing greater subject choice, more extra-curricular activities, ability to attract experienced, quality teachers and capacity to provide more specialised infrastructure and equipment.
- Teacher training and support and a focus on learning have been identified as critical success factors for improving education outcomes but can involve trade-offs that impact facility design. For example, average class sizes in the top performing systems Shanghai (40), Korea (35), Hong Kong (36) and Singapore (35) are significantly higher than in Australia (23) but average results are better and teachers have more non-teaching hours each week.² In NSW, a proportion of investment has been driven by policies on smaller class sizes.

¹ Excludes ad hoc Commonwealth programs including Building the Education Revolution.

² Jensen, B (2012), Catching up: Learning from the best school systems in East Asia, Full report.

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- DEC has recently implemented a number of structural changes to improve planning for and delivery of infrastructure to create better value including:
 - A continuous planning process to better identify needs and solutions that have a good fit with local circumstances and that facilitate modern and innovative ways to teach
 - A Life Cycle Costing approach to asset management expected to be rolled out across the portfolio over the next two years including developing target asset standards
 - It is also trialling innovative approaches to delivering infrastructure including:
 - Investigating redevelopment opportunities for school sites in commercially attractive locations and locating new facilities close to residential areas on a cost neutral or cost benefit basis
 - Alternative streamlined delivery approaches to construction procurement to reduce costs and simplify allocation of risks
 - DEC has quarterly meetings with non government school providers – a stronger integrated planning approach would provide increased opportunities to look to shared facilities such as ovals and libraries and avoid duplication of assets.

Proposed strategies for improving infrastructure provision

Three groups of strategies for improving infrastructure have been identified:

1. Building better schools:
 - a. Deliver the prioritised expansion and new school program using a streamlined contract model and leveraging contributions from developers
 - b. Implement government/private co-planning arrangement to avoid over-investment in the public sector and under-utilisation of assets across the sector e.g. by identify greater opportunities for use of shared facilities
 - c. Implement new facilities standards designed for technology-driven ways of learning
2. Local resources and decisions:
 - a. Rely on local school decision making for maintenance and priority fixes
 - b. Increase community use of facilities out of schools hours and through shared facilities where common needs can be met e.g. libraries, co-use of open space
3. Rationalise and recycle capital:
 - a. Implement a more active program of rationalisation to improve education outcomes and recycle investment in better facilities
 - b. Increase and support strategic partnerships between TAFE NSW Institutes and Schools

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2 Introduction

Infrastructure NSW is conducting a high level stocktake of the State's social infrastructure including the education sector to inform the development of strategies for social infrastructure provision to be included in the 20 year NSW State Infrastructure Strategy.

2.1 Purpose

This report is an overview of investment in infrastructure in the education and training sector and seeks to provide high level answers to the following questions:

- How is infrastructure planned and managed?
- What is the condition of the existing assets?
- What is the current capacity and ability to meet demand?
- How is the infrastructure performing?
- What are the critical gaps?

This information is used as part of an evidence base for strategies for improved infrastructure provision in the sector.

2.2 Scope

- Infrastructure included in analysis of this sector is:
- Public primary and secondary schools
- Technical and Further Education (TAFE) facilities.

The role of the private sector in providing education facilities and delivering education services is considered to the extent that it provides context for identifying gaps and priorities for NSW Government investment but detailed analysis of the non-government sector has not been undertaken.

3 Governance and context

- Education in NSW operates as a partnership between the Australian Government, NSW Government and the non-government school sector
- The NSW Government is the primary funder of public primary and secondary schools and TAFE colleges which are the focus of this baseline report
- The NSW Government has responsibility for registering and regulation of all schools and both government and non-government schools must comply with various standards and regulations related to school buildings and facilities The Commonwealth Government is the main Government funder of non-government schools although in most cases, the majority of funding for non-government schools is raised through student fees
- The Commonwealth Government contributes to non-government school infrastructure via the Capital Grants Program (supplementary to the private income of non-government schools)
- The Commonwealth Government commissioned a Review of Funding for Schooling (the Gonski Review) which was completed in December 2011 – the review made specific recommendations about funding school infrastructure including increased capital funding from the Commonwealth for government schools to lift the quality of infrastructure to a higher standard
- Increasingly, there are shared national objectives and outcomes as well as some shared reform directions of national significance

NSW Department of Education and Communities

- The Department provides teaching and learning to over 1.4 million students through pre-schools, Schools as Community Centres, primary schools, secondary schools, Schools for Specific Purposes (SSPs) and TAFE colleges.
- 66 per cent of the school student population attends government schools and TAFE delivers around two thirds of accredited training in NSW.
- These services are provided through 2,234 schools and 130 TAFE campuses, accommodated in over 26,000 buildings.
- The management of school assets occurs through a regional structure of 10 Asset Management Units and Regional Asset Planners delivering planning, project delivery and maintenance to meet regional priorities.
- A central structure is used for school Total Asset Management, Information Communications Technology (ICT), facilities management, management of the maintenance and cleaning contracts, safety compliance and environmental sustainability management, management of existing PPP schools, office accommodation, disposals and fleet.

NSW 2021 Goals

- Goal 15 of NSW 2021 is to “improve education and learning outcomes for all students”
- Aspects of this include:
 - Access to early childhood education in the 12 months prior to formal schooling
 - Improving student achievement in literacy and numeracy
 - More students finishing high school or equivalent
 - Having high expectations for all students through catering for diverse learners with specific targets for Aboriginal students, students in rural and regional NSW and support for students with a disability
 - Improving the quality of teaching
 - Public schools have more options for local decision making.
- TAFE facilities and training will assist in meeting additional 2021 goals including:
 - 50% increase in the proportion of 20 to 64 year olds with qualifications at AQF Certificate III level and above by 2020
 - 100% increase in the number of completions in qualifications at Diploma and Advanced Diploma level by 2020
 - Halve the gap in Year 12 or equivalent attainment for Aboriginal 20 to 24 year olds by 2020
 - 20% increase in the number of completions in higher level VET qualifications at AQF Certificate III level and above by students in rural and regional NSW by 2020
 - 10% increase in the number of apprenticeship and traineeship completions by 2016, including in rural and regional NSW
- Infrastructure provision is an important enabler of these goals. It facilitates access to quality education services.

Local Schools Local Decisions

- In line with increasing options for local decision making, the NSW Government is implementing a Local Schools Local Decisions policy aimed at improving teaching and learning in public schools by increasing the authority of local schools to make decisions about how they deliver education and maintain facilities for students
- As part of this process schools will manage a much greater proportion of their budgets
- Schools will be able to manage annual planned maintenance to fit in with educational needs³
- Asset management will continue to be provided through the existing regional structure supported by the central asset management group.
- TAFE NSW Institutes will also have greater autonomy with greater Institute flexibility in meeting customer demand and capacity to make local decisions regarding capital planning to be competitive.

³ Department of Education and Communities, Local Schools, Local Decisions Fact Sheet – Managing Resources.

4 Commonwealth Government review of school funding⁴

- The Commonwealth Government commissioned a review of school funding (the Gonski review) and received the report in December 2011.
- The panel found that although Australia has a relatively high-performing schooling system, there has been declining performance across the board over the last decade – this is confirmed by an analysis of OECD assessment results which show a significant decline in mean reading scores of around 13 points in Australia compared to a 15 point increase in Korea between 2000 and 2009.⁵
- In addition there is a significant gap between the highest and lowest performance students which is greater than many other OECD countries with an unacceptable link between low levels of achievement and educational disadvantage, particularly among students from low socioeconomic and indigenous backgrounds.
- The focus of the review panel’s findings was on implementing a school resource standard as the basis for funding.
- It made recommendations about the factors and adjustments that should be considered as part of developing a resource standard for recurrent funding and emphasised targeting to support the most disadvantaged students.
- Patchy data made it more difficult to identify the right level of infrastructure investment in schools because:
 - There is a limited understanding of the quality of infrastructure and facilities that are appropriate to support student outcomes
 - Nationally comparable data on capital expenditure has only recently become available through the My School website
 - There is limited understanding of the different cost drivers and costs associated with the provision and maintenance of school infrastructure and facilities.
- The panel considered that there should be a national statement about what quality of facilities Australia expects for its schools.
- The panel also concluded that despite patchy data it was clear many government schools and some poorly resourced non-government schools facilities are not up to scratch.
- It found there is a lack of data and public accountability in the current schooling system which makes it difficult for school communities to understand the capital funding rights and needs.
- There are currently no coherent and transparent institutional or regulatory arrangements in place at the state or national level by which sectors (Catholic, other non-government and government) can participate to agree the best approach to school provision – this can lead to duplication of provision, reductions in economies of scale and increases in per-student costs.
- Submissions to the review from all schooling sectors raised concern about the inefficient investment in and use of school facilities and the opportunities for more shared use.

⁴ Expert Panel Review of Funding for Schooling Final Report 2011, Commonwealth Government

⁵ Jensen, B (2012), Catching up: Learning from the best school systems in East Asia, Full report, Grattan Institute.

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- The panel identified characteristics of effective use of funding including:
 - Funding supports equity objectives
 - Funding targets educational need and expenditure has educational value
 - Sectors work together to achieve mutually beneficial outcomes for communities
 - Funding is used efficiently and there is no duplication of services
 - The cost of individual projects is in line with market price.
 - It also suggested that an appropriately defined funding application process and a guaranteed stream of funding could support stronger master planning in the government sector.
 - Despite recent initiatives to increase philanthropy in schooling, the panel also considered there was scope for the Australian Government to develop a philanthropic fund with deductible gift recipient status focused on assisting schools to develop philanthropic partnerships with a wide scope (ie. Including building improvements but other activities as well) – it was suggested the fund also have a role in assisting disadvantage schools to develop capacity to advance philanthropic partnerships.

Summary of Gonski review recommendations related to school infrastructure

Recommendations

Commonwealth funding for capital should be available to both government and non-government systems

School Planning Authorities with government and non-government sector representation should be established within each jurisdiction and work to develop a coordinated approach to planning for new schools and school growth

The Australian Government should establish a “School Growth Fund” for new schools and major school expansions, with the School Planning Authorities solely responsible for the approval of funding to projects

Australian Government investment in non-government school infrastructure should be maintained and continue to be provided in partnership with relevant Block Grant Authorities.

The Australian Government should provide an additional amount of funding to support major works and infrastructure in existing government schools in each state and territory. This should be funded at equivalent levels as the non-government sector.

The National Schools Resourcing Body should develop a national definition of the maintenance and minor works responsibilities of schools and education authorities required to be addressed from recurrent funds.

The Australian and state and territory governments should, in consultation with the non-government sector, strengthen public accountability for the public funding of school capital projects.

The Australian Government should create a fund to provide national leadership in philanthropy in schooling and to support schools in need of assistance to develop philanthropic partnerships

5 Planning for schools

- DEC restructured its Asset Management Directorate in 2011 and created a new Planning unit.
- 10 Regional Asset Planners have been located in the regions and two in Bridge St, Sydney – they all report to the Manager, Planning based in Bridge St
- The Regional Asset Planners (RAPs):
 - Provide support to regional schools offices and Institutes for the annual development of the Total Asset Management Plan, Gateway Reviews and Business Cases
 - Foster local planning connections and present local knowledge to the central planning unit creating a state-wide planning network
 - Implement the Department’s continuous planning process (shown on next page)
- RAPs are champions for their regions with the aim of improving the response to regional matters and improving decision making across the State
- RAPs become experts in the region on all planning matters - they get involved in local and regional planning processes e.g. by joining local planning boards, connecting with Council planning departments, connecting with local developers
- Information travels from the RAPs to the centre.

Planning process

- A continuous planning process has replaced a more formulaic approach to identifying the need and location of new education facilities.
- Previously, demographic and spatial data were the primary information sources used to determine where a school was required – forecasts of student aged population and specified catchment areas to meet the needs of these students helped to identify where and when new schools were needed and minimum areas of required land were specified for primary and secondary schools.
- These remain important considerations but the continuous planning process also incorporates greater consideration of local factors (through RAPs who are linked in to local planning processes) and seeks out opportunities that are a good fit with communities (with their input) and can deliver greater value from the provision of education infrastructure. Examples of options that are now being considered are provided below.

- There are particular challenges in providing schools in developing areas, both greenfields and brownfields. Provision of education facilities is important for attracting new residents but in the early years, the number of students may be low. Providing schools later tends to increase the difficulty in identifying suitable land which is also more costly once developments are well established. The planning process needs to have sufficient flexibility e.g. through voluntary planning agreements with developers, to allow developers to contribute upfront to the establishment of new schools if these are to be provided early in the life of a new development and contribute to its success. Flexibility around the area of land needed, ownership of land and sharing facilities such as sports fields can increase the range of available options and help identify a solution that has a good fit with local circumstances. For example, 17,700 new dwellings have been built at Rhodes West, Wentworth Point and Sydney Olympic Park generating a need for new schools and an expansion of an existing school. The Department has secured some developer contributions to acquire suitable facilities and provide education infrastructure.
- DEC meets quarterly with non-government school providers to share plans – this is also an opportunity to identify potential for shared facilities (such as ovals and libraries) and who is increasing capacity and where to avoid excessive competition or over provision.

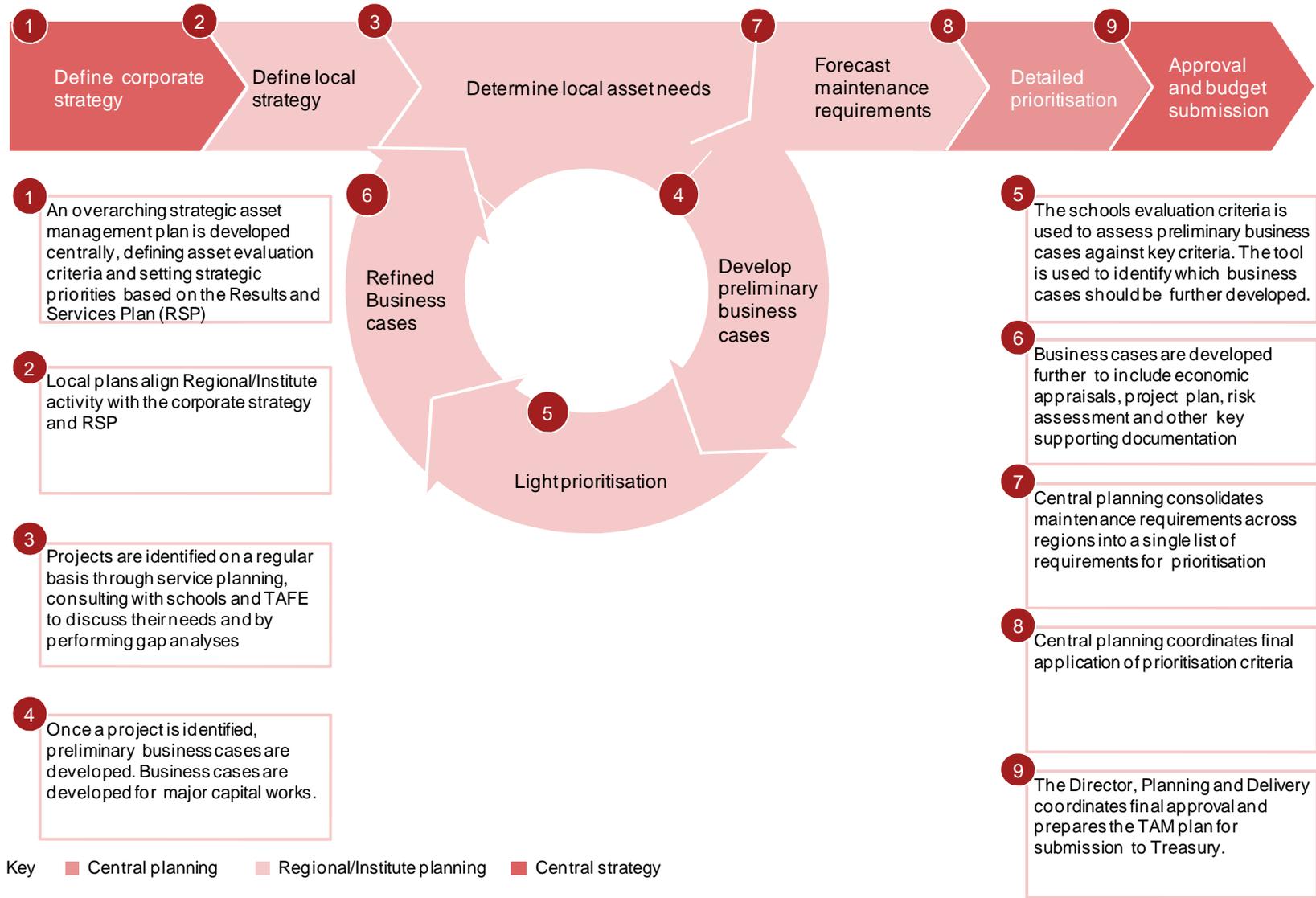
Canada Bay LGA Primary School

- DEC has been working with City of Canada Bay Council to identify a site for a new schools within the LGA
- Rather than the traditional approach of buying land for the new school, DEC will lease council-owned land (peppercorn rent) for the establishment of the primary school. The adjacent council playing fields will be licensed for use by the school and shared with the local community.
- The school will provide a larger than usual hall for shared community use, a child care centre, and community access to the school library.
- The development will provide new parking and bus layover facilities for the school which will also be used by the community during sports events.

Redevelopment strategies

- DEC is currently developing potential redevelopment opportunities for three school sites in commercially attractive locations.
- Redevelopment ins some locations has the potential to provide new schools within multi-storey residential or commercial development, on a cost neutral or cost benefit basis.
- Substantial growth in residential developments around the Sydney metropolitan area requires DEC to consider alternative solutions for educational facilities including the provision of schools as part of high rise developments

DEC restructured its Asset Management Directorate in 2010 and has adopted a cyclical planning process to better identify needs and solutions



1 An overarching strategic asset management plan is developed centrally, defining asset evaluation criteria and setting strategic priorities based on the Results and Services Plan (RSP)

2 Local plans align Regional/Institute activity with the corporate strategy and RSP

3 Projects are identified on a regular basis through service planning, consulting with schools and TAFE to discuss their needs and by performing gap analyses

4 Once a project is identified, preliminary business cases are developed. Business cases are developed for major capital works.

5 The schools evaluation criteria is used to assess preliminary business cases against key criteria. The tool is used to identify which business cases should be further developed.

6 Business cases are developed further to include economic appraisals, project plan, risk assessment and other key supporting documentation

7 Central planning consolidates maintenance requirements across regions into a single list of requirements for prioritisation

8 Central planning coordinates final application of prioritisation criteria

9 The Director, Planning and Delivery coordinates final approval and prepares the TAM plan for submission to Treasury.

DEC has moved away from a formulaic approach to identifying the need for a new school (based almost entirely on demographics) to encompass greater consideration of local factors

Local Level	Needs Analysis	Demographic projections
		Existing school facilities
		Local development affecting demographic projections
		Needs identified
	Options	Discussion with councils
		Discussion with developers
		Discussion with Department of Planning and Infrastructure
		Discussion with local government schools
		Discussion with local non-government education sector
		Discussion with regional school management to develop
	Regional education model	
	Short-term planning options	
	Long-term planning options	
State Level	State-wide Capital Procurement Plan	
	Business case Gateway for projects over \$10million	
	Total Asset Management reports for all capital needs are submitted to Treasury	
	State Budget	

Source: NSW Department of Education and Communities

Criteria for assessing priorities

NSW 2021 strategies and goals set the highest level criteria for investment in education including increasing productivity, strengthening the skills base and having more options for local decision-making.

A set of state level objectives for infrastructure provision across the sector as well as criteria that apply to the prioritisation of specific projects has been developed. These are broadly consistent with DEC's existing criteria and criteria set out in the Gonski review. However, the Gonski criteria lend themselves to stronger integration of planning for government and non-government infrastructure provision. DEC does arrange quarterly meetings with non-government school providers but this is a relatively informal arrangement for sharing plans and opportunities and does not extend to early stage integrated planning for new schools (or significant expansions).

Objectives for infrastructure provision across the sector are to:

1. Provide universal access to education
2. Improve quality of facilities
3. Contribute to improved education outcomes
4. Improve the NSW market for provision of education services across the government and non-government sectors
5. Implement life-cycle cost management
6. Promote co-use and community access to facilities.

Criteria that apply to the assessment of specific projects at a local scale include:

- Meet local demand
- Optimise location choices given consideration of land use, transport and community outcomes
- Maximise the appropriate mix of school and community use of facilities
- Meet asset condition standards
- Deliver functionality
- Maximise efficiency in terms of capital and maintenance life-cycle cost reduction as well as productivity (staff).

6 Asset portfolio

6.1 Government schools

The NSW Government has about \$20.8 billion (fair value)⁶ invested in education infrastructure including \$6.5 billion in land value. This includes:

- 1,605 Primary Schools
- 399 High Schools
- 100 Government Pre-Schools
- 68 Central and Community Schools
- 114 Schools for Special Purposes
- 23 Environmental Education Centres
- Ten TAFE institutes with 130 colleges.

The asset portfolio includes:

- 20,442 permanent school buildings with a gross floor area of 8.446 million sqm and average building age of 39.7 years
- 1,900 permanent TAFE buildings with a gross floor area of 1.648 million sqm and average building age of 29 years.

Building the Education Revolution

- Between 2008-09 and 2012-13, fiscal stimulus from the Australian Government has included \$3.3 billion predominantly for building or upgrading large-scale infrastructure in primary schools. Priorities were new or extra halls and libraries and replacing demountables.
- The National School Pride Program also allowed primary and secondary schools to access funding of up to \$200,000 to renew existing infrastructure and undertake minor building works.
- A smaller program for funding new science labs and language centres was targeted at secondary schools.
- This has provided new facilities or upgrades in most schools but was not designed to cater for growing capacity demands.

⁶ Provided by NSW Treasury.

6.2 DEC is moving to holistic planned asset management using Life Cycle Costing for schools

- DEC maintenance contracts currently manage plant and equipment under a life cycle costing (LCC) type system
- Major and minor building works are undertaken without a whole of life consideration
- Condition assessments identify the state of the asset against a building element's minimum performance standard but not its operational appropriateness and there are no baseline standards for assessment of all asset types
- 2012-13 budget for maintenance across schools and TAFEs is \$361M⁷ or around 1.6% of asset value.
- TAFE NSW is not provided with tied funding and expended \$39.5 million in 2011-12. Expenditure on maintenance varies between \$35 million and \$50 million per year.

Plans to adopt life cycle costing

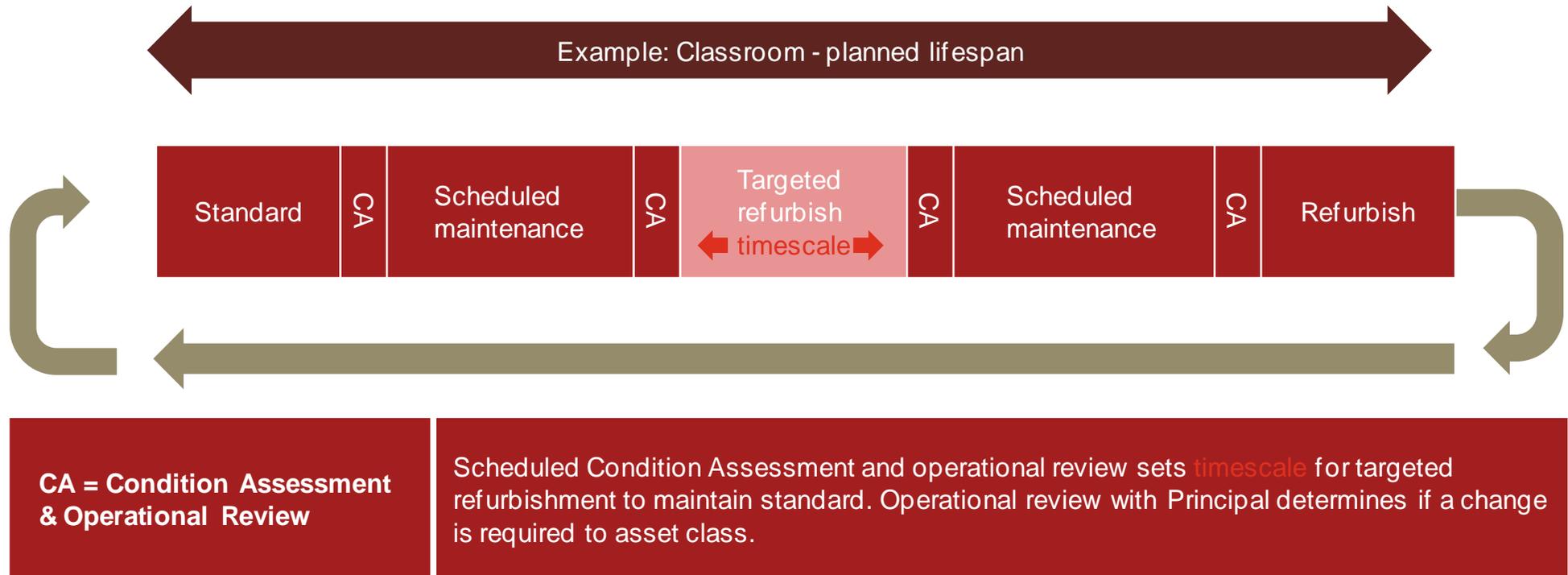
- DEC is planning to use life cycle costing to:
 - Support whole-of-facility planning from acquisition to disposal
 - Plan investment over time which:
 - Enables effective maintenance investment (at lower cost in the long term)
 - Directs minor and major works on existing school sites to change-of-use only projects
- Enable an asset standard to be targeted and achieved (this can also facilitate local management of facilities consistent with Local Schools, Local Decisions)
- Inform acquisition decisions based on whole-of-life costs
- Facilitate long-term planned investment in the asset portfolio to:
 - Achieve greater economies of scale through planned programs
 - Provide certainty for schools on asset refurbishment timing and promote engagement with local communities in school planning

⁷ Provided by NSW Treasury

Implementation

DEC is planning to implement the system over the next 18 – 24 months for the whole portfolio which will involve:

- A pilot involving schools in two School Education Groups using established industry LCC software.
- Adapt current condition assessment process to facilitate LCC
- Adopt a LCC software appropriate to DEC's schools
- Develop detailed asset classes and appropriate standards:
 - Asset standard based on manufacturers lifespan for asset class elements for new and existing facilities
 - Operation standards based on service delivery criteria models.



6.3 Review of School Facilities Standards

- Existing School Facilities Standards were developed in the 1970s and do not reflect rapid technology driven changes to how teaching and learning occur
- The Department is undertaking a comprehensive review of the standards
- The objectives of the review are to:
 - Establish if the current spatial and technical standards are appropriate and support education in the 21st Century
 - Respond to concerns of educators that the current standards are too restrictive and result in inappropriate designs
 - Achieve value for money
 - Encourage innovation, sustainability and energy efficiency.
- The first stage is to assess functionality and requirements of the physical learning environment which will involve case studies of 13 schools
- Stage 2 will involve implementation of the recommendations which may include new design guidelines, new systems and processes for design development.
- The review of the standards and its outcomes will inform the long term strategy for new school design and upgrades and are expected to be consistent with delivery of a quality education and support provision of contemporary and effective learning spaces.

6.4 Procurement models

- The Department has developed a continuous procurement planning process for major capital works. This includes reviewing planned procurement against multiple procurement options and market opportunities (including PPPs).
- Following the restructure of its Asset Management Directorate, DEC is trialling a new model for procurement (initially in relation to Hurstville Public School and Oran Park Public School). It will:
 - Procure one external Head Consultant to engage and manage the consultant team
 - Procure a design team
 - Procure and appoint a builder for projects using a modified GC21 contract.
- This model has already delivered significant savings in the design stage and is expected to deliver reduced building costs as the builder carries minimal design risk under a construct only contract. If the model is proven to deliver better value for money it may be adopted more broadly.
- DEC has two existing PPPs for two groups of schools constructed between 2001 and 2008 (nine schools in the first phase and ten in the second).
- Services included in the PPPs cover both asset management and cleaning, janitorial and grounds maintenance.

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- A review by the Auditor General conducted in 2006 of the contracts for the two groups of schools found notional savings against the public sector comparator of 7 and 23% respectively – this assessment was conducted the early stages of implementation.⁸
 - However, DEC reports there is some rigidity in the contracts and future PPPs could generate additional savings if there was greater flexibility around the service standards for asset maintenance e.g. facilities could be maintained at an equivalent standard to 10 to 15 year old assets rather than as new.
 - PPPs may be viable where packages of new schools can be contracted and when finance is cheaper for the private sector relative to government.

6.5 Non-government schools

- There are 586 Catholic schools and 354 Independent schools in Sydney and across NSW
- Around 30% of students attend non-government primary schools. This proportion grows to 38% as students reach secondary school (34% across both primary and secondary).⁹
- The proportion of enrolments in non-government schools has increased steadily since 2000 when 30.6% of students (primary and secondary) attended private schools but is below the national average of 35%.¹⁰
- The rate of growth has slowed over the last 4 years – growth in enrolments tends to follow trends in economic growth.
- There is some evidence of unmet demand for non-government school places. The Sydney Catholic Education Office has announced that a budget of \$50 million every year for 20 years has been allocated to opening new schools and expanding the grounds of established schools across the inner west, south-west and eastern suburbs – it is reported more than 2,000 prospective students were turned away from Catholic schools in 2012 because of insufficient capacity.¹¹

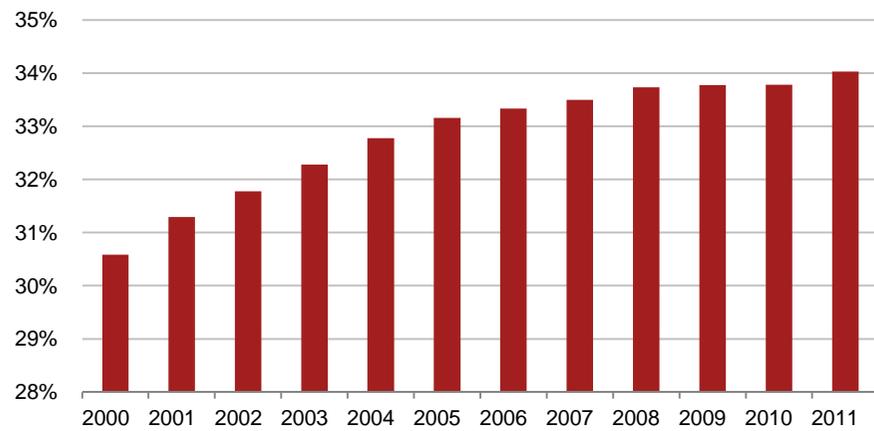
⁸ Auditor General of NSW, *The New Schools Privately Financed Project*, March 2006, p. 30.

⁹ ABS 4221.0 Schools, Australia 2011

¹⁰ ABS 4221.0 Schools, Australia 2011

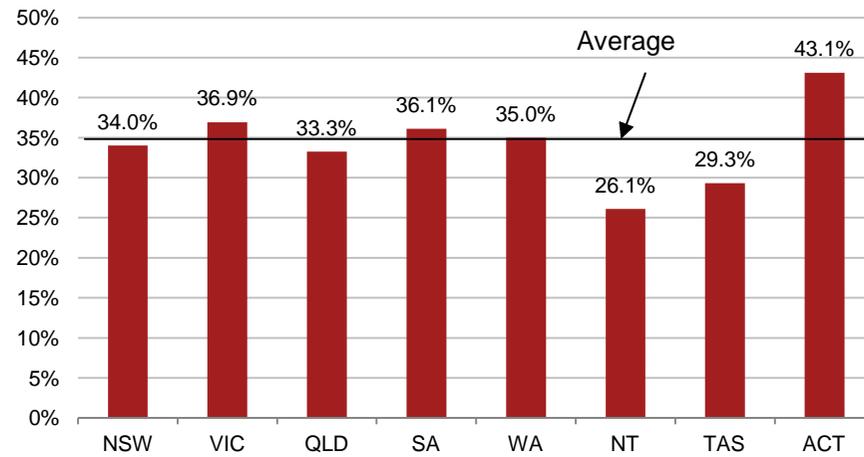
¹¹ Cath News, Church to spend \$1 billion to expand Cath schools, published March 25, 2012

Proportion NSW school students attending private schools



Source: ABS 4221.0, Schools, Australia 2011

Proportion of school students attending private schools by state 2011



7 Performance

The Department has adopted several asset performance measures and targets to help assess the value of its assets in delivering services. One indicator of effectiveness is the level of enrolments. Enrolments per school have been largely steady since 2003.

	Effectiveness Measures	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Schools	Primary Enrolments per Primary School	269.8	266.5	264.3	264.2	262.9	262.1	263.8	265.2	264.8	267.2
	Secondary Enrolments per Secondary School	774.2	769.4	765.5	768.1	770.8	767.2	766.0	776.4	772.0	760.4
TAFE	Total enrolments	Not provided	506,626	513,070	500,410	497,747	504,009	524,838	556,340	552,856	n.a.
	Certificate III and above enrolments	Not provided	202,128	198,149	200,348	203,343	215,053	239,525	257,777	274,504	n.a.

Source: Department of Education and Communities

- The consistent trends in enrolments per school suggest a static operational model over time
- There is mixed evidence around the relationship between school size and student achievement. A systematic review of studies of high schools in the US and UK schools suggests that student achievement increase as school size increases up to a particular point or range. The optimum school size estimated in the study ranged from 600 to 2,155 and the optimal year group size ranged from 150 to 225. Given the 6 year groups in most NSW high schools, this suggests NSW schools may be on average smaller than is optimal.¹²
- A Grattan Institute study identified the success factors of rapidly improving East Asian school systems that now dominate OECD rankings as the best performers. Four of the top five OECD school systems are Shanghai, Korea, Hong Kong and Singapore. The study identified teacher training and support and a focus on learning in the classroom as the critical success factors in the rapid improvement in outcomes in these jurisdictions compared to a relative decline in Australia. This can involve trade-offs. For example class sizes in the top performing systems Shanghai (40), Korea

¹² Garrett Z, Newman M, Elbourne D, Bradley S, Noden P, Taylor J, West A (2004) Secondary School Size: a Systematic Review, In: *Research Evidence in Education Library*. London: EPPI-Centre, Social Science Research Unit, Institute of Education, University of London

(35), Hong Kong (36) and Singapore (35)) are significantly higher than in Australia (23) which allows for more non-teaching time for teachers.¹³ Australia's relative decline has occurred during a period of implementing reduced class sizes (which has also increased demand for teaching spaces).

- The general benefits of larger schools over smaller schools include providing greater subject choice, more extra-curricular activities, ability to attract experienced, quality teachers and capacity to provide more specialised infrastructure and equipment
- There is no clear trend in TAFE numbers – enrolments were static between 2004 and 2008 but grew to 2011, with most of the recent growth in Certificate III and above enrolments with relatively static or declining enrolments in lower level qualifications.

¹³ Jensen, B (2012), Catching up: Learning from the best school systems in East Asia, Full report, Institute.

Efficiency of the infrastructure is measured by surplus teaching spaces and floor area per student. Some anomalies in this measure for schools over the last two years result from the logistics of the BER program with demountables now replaced by permanent buildings yet to be removed in some cases. There is a significant number of surplus teaching spaces in high schools.

- Surplus teaching spaces suggest capacity to accommodate significant growth in existing high schools but there are geographic difficulties in matching demand with excess spaces
- Reconfiguration and rationalisation of under-utilised assets across the high school and TAFE portfolios can provide opportunities for recycling capital to improve facilities and provide larger schools

<i>Efficiency measures</i>		<i>2010</i>	<i>2011</i>	<i>2012 (Target)</i>
Primary School	Utilisation - Permanent Usable Floor Area per Student (M2 per Student)	7.33	8.24	8.22
High School	% of Total Teaching Spaces that are Surplus ¹	11.8%	14.7% ²	TBA
	Utilisation - Permanent Usable Floor Area per Student (M2 per Student)	9.17	9.12	8.22

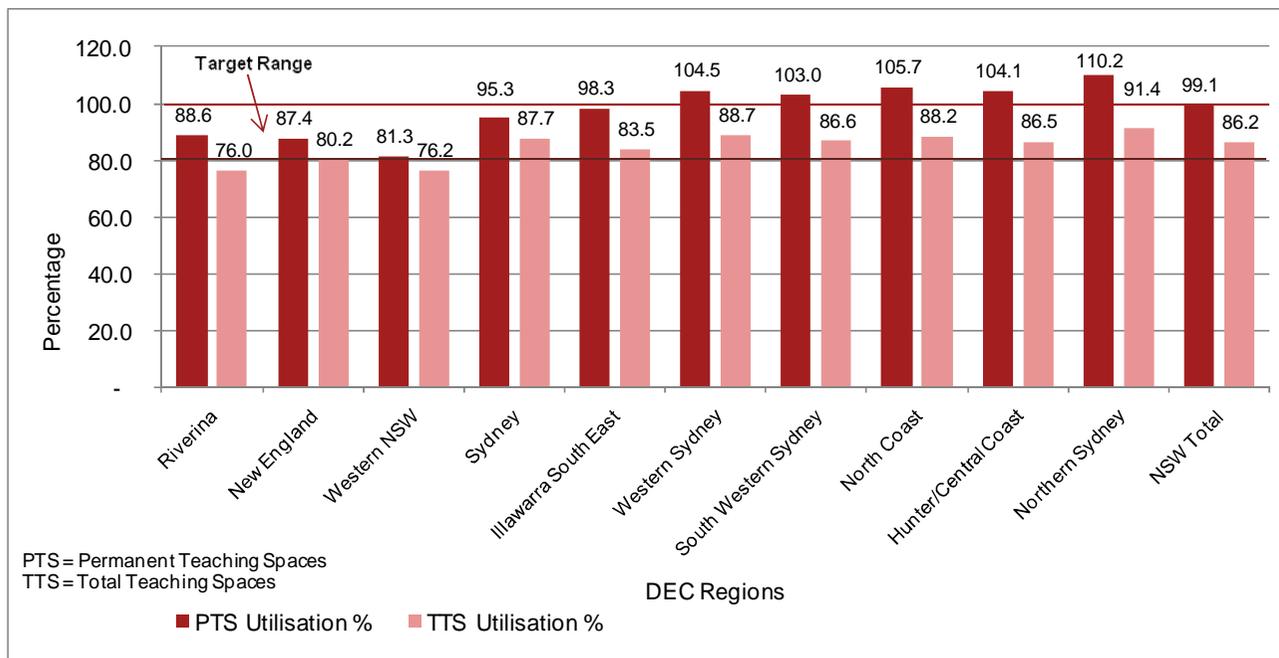
Source: Department of Education and Communities

Notes:

1. Includes permanent and demountable teaching spaces.
2. At Schools total teaching spaces includes demountables that have been replaced by permanent buildings as part of the Building the Education Revolution funding but not yet removed from site.

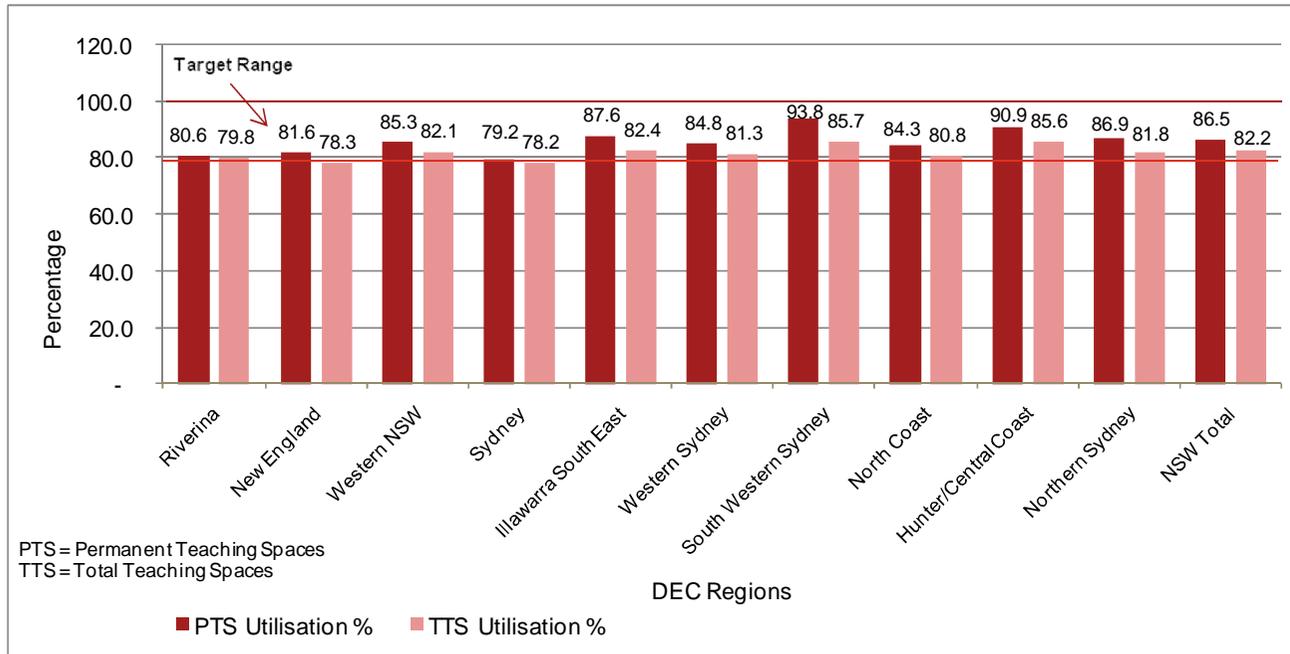
Permanent teaching space utilisation rates exceed 100% in some primary schools mostly in metropolitan areas (northern, western and south western Sydney) – the shortfall in permanent spaces is made up with temporary spaces (dountables) which provide flexibility to respond to demographic change over time.

Space utilisation, NSW Primary Schools



There are sufficient permanent teaching spaces in high schools to cater for current levels of demand. Averages across regions do not highlight capacity constraints at particular schools or underutilisation of some schools.

Space utilisation, NSW Secondary Schools

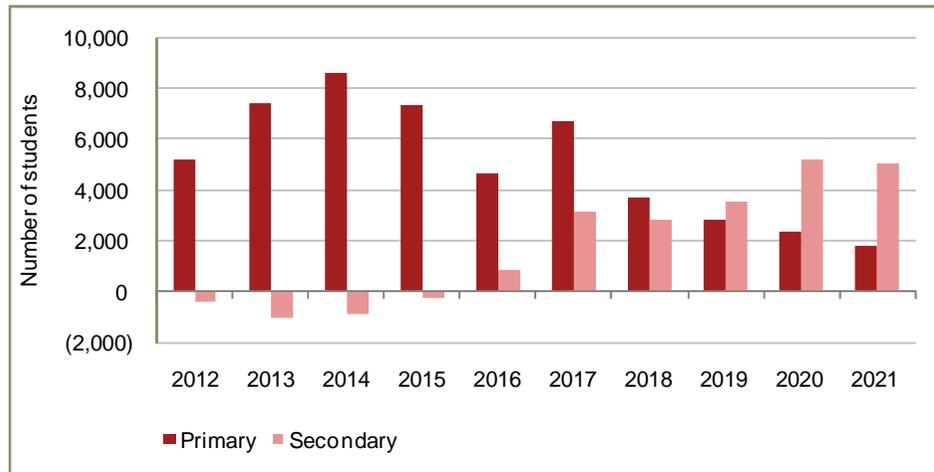


8 Demand drivers

DEC projects construction of 38 new schools in the next ten years to meet projected future enrolment demand with over half of these required in the next five years.

- Demand for education infrastructure is predictable at least five years in advance. Demand has been impacted by:
 - The post millennium “baby boom” - the size of the student aged population is forecast to grow by 1.5% pa in the next 20 years;
 - An increase in private enrolments to 34% from just under 31% in 2000.
 - Smaller class sizes introduced over the last 10 years which require more separate teaching spaces and have reduced capacity to absorb additional enrolments within existing facilities.
 - The increase in the minimum school leaving age from 15 to 17 in 2010.
 - Catchment boundaries which are reviewed to direct students to schools with capacity.
- An additional 65,000 primary and secondary enrolments are expected throughout NSW in the next 10 years with growth concentrated in the four metropolitan regions of Sydney, Western Sydney, South Western Sydney and Northern Sydney.¹⁴

Forecast annual increase in student numbers – 2012 to 2021

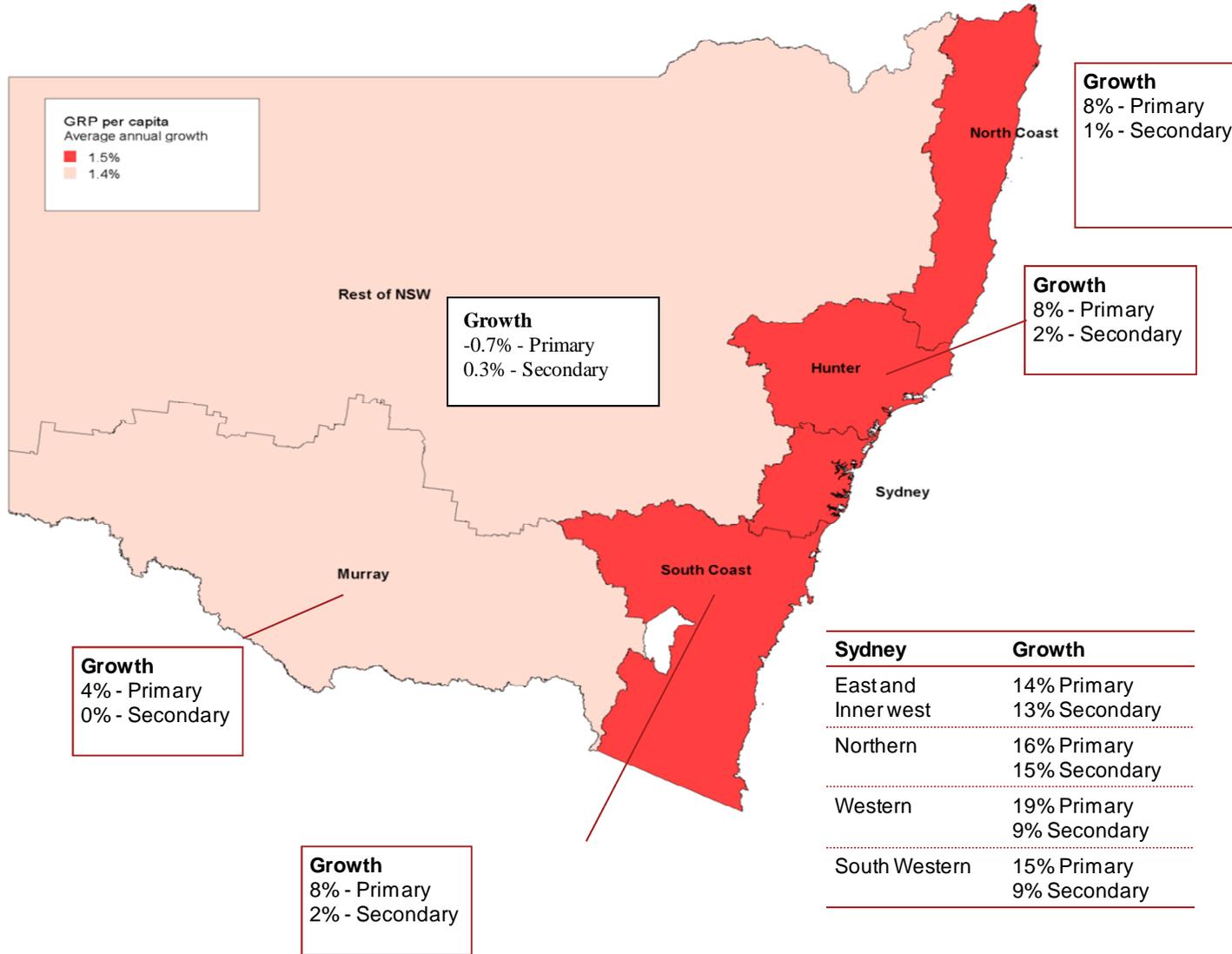


Source: DEC Total Asset Management Strategy 2012/13 to 2021/22

¹⁴ Department of Education and Communities 2011, Draft Total Asset Management Strategy 2012/2013 – 2021/2022, p. 8

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- Information Communications Technology (ICT) is also playing a growing role in the delivery of education services and the Department is moving towards a highly available architecture to cater for the increasing demand for ICT in Learning.
 - The continued growth in demand for information technology systems and services across the Department is putting significant pressure on its centralised corporate IT data centre facilities and on ICT capital and recurrent budgets.
 - A number of under used schools are in regional areas where population growth is not expected to be sufficient to maintain demand. Reducing the number of schools can be beneficial in these cases by providing students with opportunities to attend larger schools with the proceeds of disposals invested in improved facilities in these towns or regions.
 - Population forecasts are less directly linked to growth in enrolments for TAFE because of the broad age range of students and the range of options for tertiary study but the population of persons aged 15 to 29 years is expected to grow by 6.7% by 2021.
 - The map on the next page shows demographic trends in the primary and secondary aged populations by region showing the greatest growth is expected in metropolitan regions with the majority of the required new schools expected to be located in these regions.

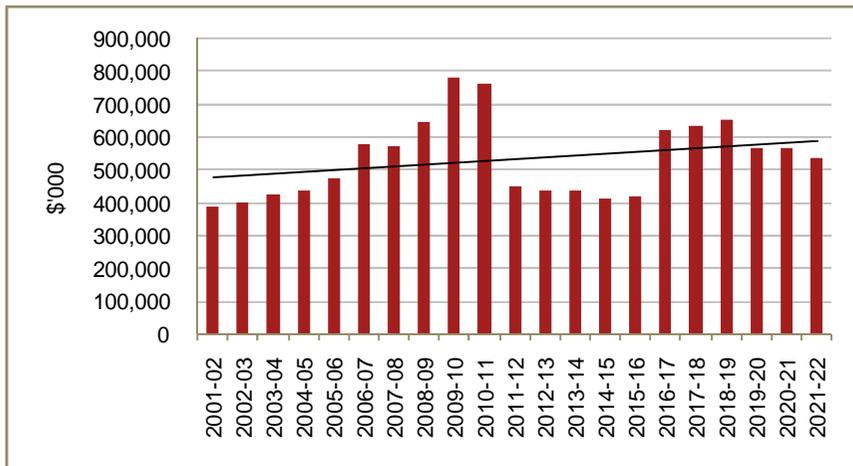
Priority new schools and demographic trends by region



9 Trends in capital investment

- The trend line for capital expenditure in education is relatively flat though higher expenditure in recent years is offset by lower expenditure to 2015-16. Average expenditure over the last 10 years has been around \$547 million (excluding Commonwealth funded national partnership programs such as the Building the Education Revolution).
- It is forecast that about this level of expenditure with an allowance for growth is needed over the next decade to provide for projected growth and required refurbishment of existing schools. This is equivalent to around \$5.5 billion in the first decade and \$6 billion in the second decade.

Capital expenditure in education 2001-02 to 2010-11 and 2011-12 to 2021-22 forecast*



Source: Data provided by NSW Treasury

* Note One-off National Partnership Funding for Building the Education Revolution, Trade Training Centres and Solar in Schools is excluded from the data shown in the graph to highlight underlying trends.

Per student capital expenditure in NSW in 2008-09 was comparable to other major states but below the national average, particularly for secondary schools

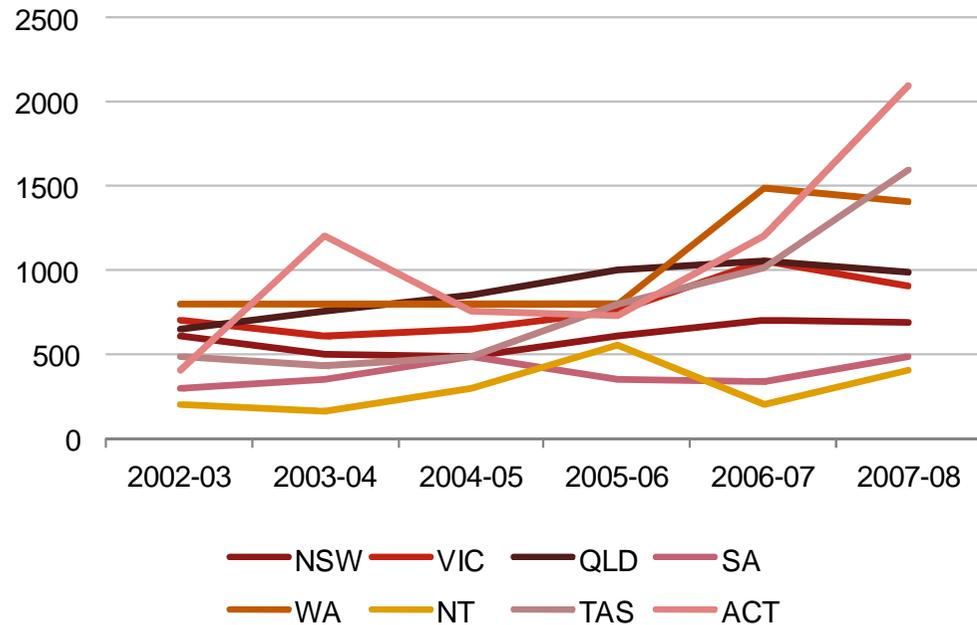
Per capita expenditure on government schools by level of education, by State and Territory, 2008-09 financial year (\$/full-time student – accrual basis)

<i>Capital/investing per capita expenditure</i>	<i>Primary</i>	<i>Secondary</i>	<i>Total</i>
New South Wales	799	862	825
Victoria	806	1,196	970
Queensland	1,074	1,925	1,380
South Australia	246	410	306
Western Australia	778	1,867	1,157
Tasmania	598	740	660
Northern Territory	1,827	1,009	1,527
Australian Capital Territory	2,497	2,959	2,706
Australia	851	1,245	1,006

Source: MCEECDYA, National Schools Statistics Collection, 2005-2009

Trends in per student expenditure have been relatively steady in NSW compared to other states

Average capital investment per student in government schools, by jurisdiction (in 2008 dollars)



Source: MCEETYA, National report on schooling in Australia, 2003 to 2008.

10 Strategies for better provision of social infrastructure

DEC is already implementing significant reform to its planning and maintenance processes and has identified a number of other strategies to deliver better value – these are incorporated in the three groups of recommended strategies for better provision of education infrastructure below

<i>Building better schools</i>	<ol style="list-style-type: none">1. Deliver the prioritised expansion and new school program using a streamlined contract model and leveraging contributions from developers2. Implement government/private co-planning arrangement to avoid over-investment in the public sector and under-utilisation of assets across the sector e.g. by identify greater opportunities for use of shared facilities3. Implement new facilities standards designed for technology-driven ways of learning
<i>Local resources and decisions</i>	<ol style="list-style-type: none">1. Use authority for local school decision making for maintenance and priority fixes2. Increase community use of facilities out of schools hours and through shared facilities where common needs can be met e.g. libraries, co-use of open space
<i>Rationalise and recycle capital</i>	<ol style="list-style-type: none">1. Implement a more active program of rationalisation to improve education outcomes and recycle investment in better facilities2. Increase and support strategic partnerships between TAFE NSW Institutes and Schools.
