



NORTH SYDNEY COUNCIL
ASSET MANAGEMENT PLAN
FENCES 2022-2032



Table of Contents

| | |
|--|----|
| Fences and Bollards (Roads and Parks)..... | 4 |
| Executive Summary..... | 4 |
| Fences and Bollards – Future Demand | 6 |
| Fences and Bollards – Levels of Customer Service..... | 6 |
| Fences and Bollards – Levels of Technical Service | 7 |
| Fences and Bollards – Condition..... | 8 |
| Fences and Bollards – Review of Useful Lives | 9 |
| Fences and Bollards – Funding Strategy | 11 |
| Fences and Bollards – Capital works..... | 11 |
| Fences and Bollards – Managing the Risks | 11 |
| Fences and Bollards – Maintenance | 16 |
| Fences and Bollards – Prioritised Expenditure Forecast | 16 |
| Fences and Bollards – Valuation Forecast..... | 17 |
| Fences and Bollards – Key Assumptions – Financial Forecasts | 17 |
| Fences and Bollards – Creation / Acquisition / Upgrade Program..... | 18 |
| Fences and Bollards – Disposal Plan | 18 |
| Fences and Bollards – Forecast reliability and confidence | 18 |
| Fences and Bollards – Improvement Plan..... | 18 |
| Fences and Bollards – Monitoring and Review Procedures | 18 |
| Fences and Bollards – Renewal and Replacement Program | 18 |
| Fences and Bollards – Funding Scenarios | 18 |
| Fences and Bollards – Service and Risk Tradeoffs..... | 19 |
| Service trade-off | 19 |
| Risk trade-off..... | 19 |
| Fences and Bollards – Renewal and Replacement Program – FY2023-FY2032 (10 Year Plan) | 19 |
| Capital Renewal – Fences and Bollards Within Road Reserves..... | 20 |
| Priority Projects 2022/23 (Year 1)..... | 20 |
| Priority Projects 2023/24 (Year 2)..... | 20 |
| Priority Projects 2024/25 (Year 3)..... | 21 |
| Priority Projects 2025/32 (Year 4-10) | 21 |
| Works Identified – Years 2025 – 32 (Years 4 – 10)..... | 23 |
| Capital Renewal – Fences and Bollards Within Parks | 24 |
| Priority Projects 2022/23 (Year 1)..... | 24 |
| Priority Projects 2023/24 (Year 2)..... | 25 |
| Priority Projects 2024/25 (Year 3)..... | 26 |
| Priority Projects 2025/32 (Year 4-10) | 26 |
| Works Identified – Years 2025 - 32 (Years 4 - 10) | 29 |
| Fences and Bollards – Performance Measures | 34 |
| Fences and Bollards – References..... | 34 |
| APPENDICES | 35 |
| Appendix A: Maintenance Management System | 35 |
| Appendix B: Safety Barrier Upgrade | 37 |

Fences and Bollards (Roads and Parks)

Executive Summary

Across the North Sydney Council LGA there is a total 22.3km of fence assets and 1,178 Bollards in parks and 21.7km of fence assets and 1,322 bollards in road reserves. These fences comprise of a range of styles including Ordinance Timber, Metal Fences, Structural (Safety) Fences and bollards.

In 2019 Rapid Map Services consultants conducted a Fences and Bollards condition audit for North Sydney Council. The objectives were to conduct a detailed inventory data collection, accurately map each type of fence and assess all fences in detail for condition and defects. The relative risk of each fence was also assessed.

Both fences and bollard sections were visited in the field. Of these:

- 2,845 fence sections with a total length of 43,979m were inspected.
- A total of 2,500 individual bollards were inspected.

Each fence was attributed with a type. The majority of fences, 46% or 20,267m, are Ordinance style fences. There are also 5,074m of “structural” type fences.

Overall some 94.9% of the portfolio is in very good to fair condition (1 to 3) with some 5.1% in poor to very poor condition (4 to 5).

A Risk rating was assigned to each fence. Overall 94.9 % of the portfolio has a low to medium risk rating and 5.1% has a high to very high risk rating.

The total Replacement Value of the portfolio is \$21,841,052 as at 30 June 2021. The values are shown in the Table below.

Table 1: Fences and Bollards (Roads and Parks) – Summary Table

| Asset Category | Replacement Value (2021) | Accumulated Depreciation (2021) | Fair Value (2021) | Depreciation Expense |
|-------------------------|--------------------------|---------------------------------|---------------------|----------------------|
| Fences in Parks | \$5,111,317 | \$2,027,659 | \$3,083,657 | \$130,119 |
| Fences in Road Reserves | \$16,729,736 | \$6,084,917 | \$10,644,818 | \$546,173 |
| TOTAL | \$21,841,052 | \$8,112,577 | \$13,728,475 | \$676,292 |

The following table provides a summary of the quantities and replacement values for each fence and bollard type. The portfolio is dominated by timber ordinance fences.

Table 2: Fences (Roads and Parks) – Typology

| Fence and Bollard Type | No. of Fences Section | Length (m) | Total No. of Bollards | Sum of Replace Costs |
|---|-----------------------|------------|-----------------------|----------------------|
| Bollard - Concrete | | | 314 | \$101,978 |
| Bollard - Concrete Filled PVC | | | 1 | \$325 |
| Bollard - Concrete Filled Steel | | | 150 | \$321,302 |
| Bollard - Decorative | | | 661 | \$1,221,695 |
| Bollard - Metal | | | 563 | \$1,040,566 |
| Bollard - Plastic | | | 17 | \$1,651 |
| Bollard - PVC | | | 2 | \$194 |
| Bollard - Rock | | | 3 | \$0 |
| Bollard - Stainless Steel | | | 220 | \$406,616 |
| Bollard - Timber | | | 569 | \$55,253 |
| Armco Guardrail | 98 | 2,684 | | \$2,356,006 |
| Barrier | 2 | 2 | | \$256 |
| Bicentennial Fence | 6 | 453 | | \$1,440,275 |
| Bicycle Barrier | 6 | 8 | | \$1,231 |
| Concrete Post and Chain Wire Fence | 36 | 1,570 | | \$509,731 |
| Concrete Post and Rail Fence | 63 | 1,072 | | \$347,980 |
| Concrete Road Barrier | 3 | 128 | | \$85,653 |
| Galvanised Post and Chain Wire Fence | 120 | 2,964 | | \$473,031 |
| Galvanised Post and Rail Fence | 101 | 1,636 | | \$261,119 |
| Gate - Cast Iron | 2 | 3 | | \$636 |
| Gate - Cast Iron, Stone | 3 | 9 | | \$2,130 |
| Gate - Galvanised Steel | 19 | 40 | | \$9,768 |
| Gate - Metal | 12 | 34 | | \$8,250 |
| Gate - Metal Powder Coated | 54 | 124 | | \$30,453 |
| Gate - Metal, Timber | 9 | 27 | | \$6,659 |
| Gate - Timber | 29 | 56 | | \$4,537 |
| Gate Post | 1 | 0 | | \$97 |
| Handrail Stainless Steel | 72 | 453 | | \$72,314 |
| Handrail Steel | 441 | 3,538 | | \$564,578 |
| Holding Rail | 129 | 258 | | \$41,264 |
| Log Fence | 22 | 280 | | \$44,624 |
| Low Pillar | 3 | 2 | | \$490 |
| Ordinance Fence | 1,204 | 20,267 | | \$3,106,631 |
| Other | 2 | 9 | | \$1,391 |
| Picket Fence - Metal | 110 | 3,355 | | \$617,169 |
| Picket Fence - Timber | 38 | 757 | | \$139,228 |
| Pillar | 5 | 3 | | \$6,520 |
| RTA Pedestrian Fence | 179 | 1,615 | | \$1,817,299 |
| Safety Fence - Galvanised Post & Rail on Concrete | 23 | 938 | | \$4,876,422 |

| Fence and Bollard Type | No. of Fences Section | Length (m) | Total No. of Bollards | Sum of Replace Costs |
|---|-----------------------|---------------|-----------------------|----------------------|
| Safety Fence - Steel Post & Cable | 29 | 1,452 | | \$1,470,484 |
| Special - Post and Rail Fence with Glass Panels | 12 | 117 | | \$253,409 |
| Steel Post and Chain Fence | 6 | 66 | | \$121,800 |
| Timber Post and Chain Fence | 2 | 30 | | \$9,613 |
| Timber Post and Rope | 1 | 31 | | \$10,133 |
| Unknown Post | 3 | 0 | | \$291 |
| Grand Total | 2,845 | 43,979 | 2,500 | \$21,841,052 |

Fences and Bollards – Future Demand

Drivers affecting demand for fences and bollards include things such as population change, regulation changes – new development, community expectations (Public Safety), technological changes, economic factors and environmental factors.

Fences and Bollards – Levels of Customer Service

Service levels are defined service levels in two terms, customer levels of service and technical levels of service. These are supplemented by organisational measures.

Customer Levels of Service measure how the customer receives the service and whether value to the customer is provided.

Customer levels of service measures used in the asset management plan are:

Quality How good is the service ... *what is the condition or quality of the service?*

Function Is it suitable for its intended purpose *Is it the right service?*

Capacity/Use Is the service over or under used ... *do we need more or less of these assets?*

The current and expected customer service levels are detailed in the table below.

Table 3: Fences and Bollards – Levels of Customer Service

| Service Attribute | Expectation | Performance Measure Used | Current Performance | Desired Position in 10 Years |
|-------------------|-----------------------------|--|--|---|
| Quality | Fences are well maintained. | Percentage of Fences in 'very good', 'good' or 'Fair' (1, 2, 3) condition and Percentage 'poor' or 'very poor' (4, 5) Condition. | 94.9% of Fences in 'very good', 'good' or 'fair' (1, 2, 3) condition. 5.1% of Fences in 'poor' or 'very poor' (4, 5) Condition. | Maintain – Condition 1-2-3 Improve and replace Condition 4-5 |

| Service Attribute | Expectation | Performance Measure Used | Current Performance | Desired Position in 10 Years |
|-------------------------|---|--|--|------------------------------|
| Function | Fences providing adequate separation or protection. | Attributes of fence and the surrounding environment. | 17 Fences requiring Structural Upgrade Program | Upgrade |
| Capacity and Use | Number of fences required is appropriate. | Number of additional fences required. | No fences identified as being required. | Maintain |

Fences and Bollards – Levels of Technical Service

Technical Levels of Service - Supporting the customer service levels are operational or technical measures of performance. These technical measures relate to the allocation of resources to service activities to best achieve the desired customer outcomes and demonstrate effective performance.

Technical service measures are linked to the activities and annual budgets covering:

- Operations – the regular activities to provide services (e.g. cleansing and inspections, etc.)
- Maintenance – the activities necessary to retain an asset as near as practicable to an appropriate service condition. Maintenance activities enable an asset to provide service for its planned life (e.g. Fence repair, fence painting, building and structure repairs),
- Renewal – the activities that return the service capability of an asset up to that which it had originally (e.g. Fence replacement or fence component replacement),
- Upgrade/New – the activities to provide a higher level of service (e.g. extending a fence or upgrading it to a superior material for another function – i.e. “structural” treatment applied to an existing fence adjacent to a steep drop off.

Table 4 shows the technical levels of service expected to be provided for Fences and Bollards. The ‘Desired’ position in the table documents the position being recommended in this AM Plan.

Table 4: Fences and Bollards – Technical Levels of Service

| Service Attribute | Service Activity Objective | Activity Measure Process | Current Performance | Desired for Optimum Lifecycle Cost |
|--------------------|--|--|---|---|
| Operations | Undertake network inspections to monitor condition | Network inspections to monitor condition | Network inspected in 2018 | Network inspected every 5 years |
| Maintenance | Reactive service Requests completed in a timely manner or made safe. | Respond to complaints. | Minor repairs undertaken in accordance with Maintenance Management System | Minor repairs undertaken in accordance with Maintenance Management Delivery System. |
| Renewal | Maintain existing assets to a satisfactory | Percentage of Fences in ‘very good’, ‘good’ or | 94.9% of Fence assets in ‘very good’, ‘good’ or ‘Fair’ (1, 2, 3) | Improve or replace |

| Service Attribute | Service Activity Objective | Activity Measure Process | Current Performance | Desired for Optimum Lifecycle Cost |
|-------------------|--|---|--|--|
| | condition | 'Fair' (1, 2, 3) condition and Percentage 'poor' or 'very poor' (4, 5) Condition. | condition. 5.1% of Fence assets in poor/very poor (4, 5) Condition. | |
| Upgrade | Standard of fences and bollards are constructed from Timber where practical. | Fences upgraded with "Structural" treatment as required. | 17 fences identified for upgrade. | "Structural" treatment upgrade for identified fences. |
| New | Satisfactory provision of fences and bollards. | New fences and bollards provided as required. | No additional fences and bollards identified as being required | No additional fences and bollards identified as being required |

Fences and Bollards – Condition

The condition of Council's Fence network was surveyed in 2019 by Consultants, Rapid Map Services Pty Ltd in conjunction with Asset & Facilities Management Consulting Pty Ltd. The following condition criteria was used.

Table 5: Fences and Bollards Condition Survey Criteria

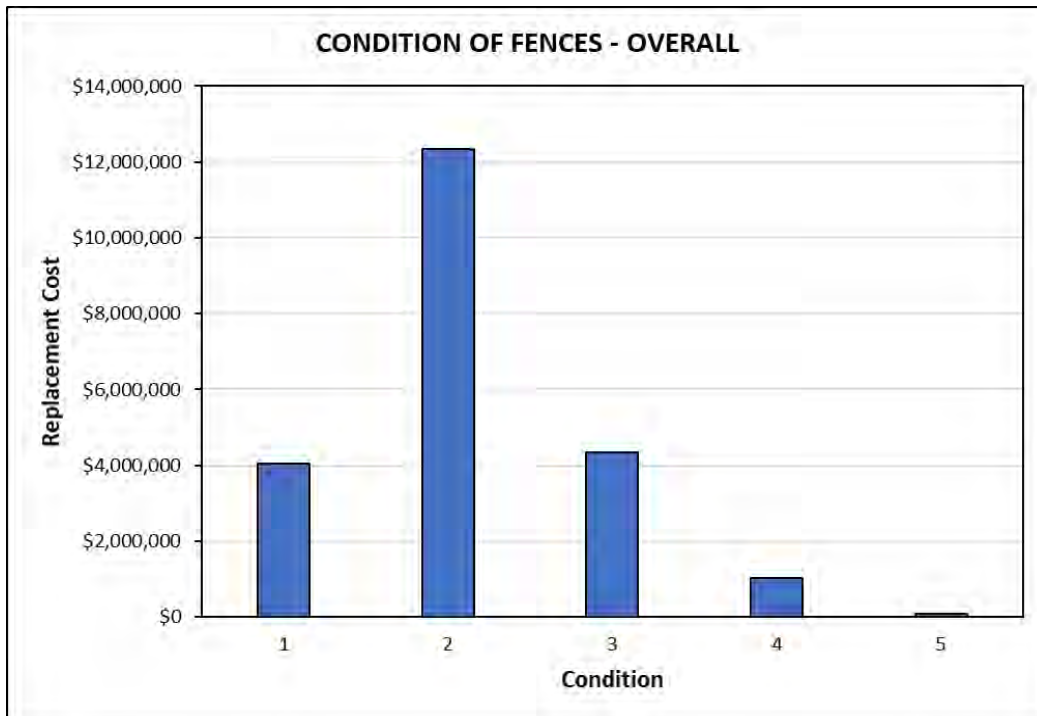
| Grade | Condition | Description |
|-------|-----------|--|
| 1 | Very Good | Sound fence or bollard designed to current standards and well maintained with no defects. No work required |
| 2 | Good | As grade 1 but not designed to current standards or showing minor wear, tear and deterioration of surfaces e.g. rust – corrosion and weathering, but no undermining of fence / bollard structure. Needs to be reinspected in 2- 3 years. Deterioration has no significant impact on stability and appearance of the fence / bollard. Only minor work required |
| 3 | Fair | Fence / bollard functionally sound, but appearance affected by minor defects e.g. loose straps, surface weathering, warping and or minor loss of stability, isolated undermining of fence / bollard foundations, but no overall loss of stability. Some deterioration beginning to be reflected in stability and appearance of fence / bollard. Some work required |
| 4 | Poor | Fence / bollard functioning but with problems due to significant defects e.g. damaged/ missing railings, loss of stability, undermining of foundations, severe corrosion and deformation and loss of support, likely to cause marked deterioration of stability and appearance likely within 1 year. Some replacement or rehabilitation needed within 1 year |
| 5 | Very Poor | Fence / bollard has serious problems and has failed or are about to fail in the near future, causing unacceptable stability, appearance and public safety hazard. Urgent replacement/ rehabilitation required |

The Table below shows the Replacement Cost for each of the condition scores. It should be noted that the replacement cost is based on the condition of fences as cost per metre and conditions of bollards as cost per bollard. In practice and where funds permit, fences or bollard sections in condition 3 are generally replaced at the same time as fence or bollard sections in condition 4 or 5 if they are adjacent, due to the potential risks present and cost-effectiveness.

Table 6: Fence and Bollards Condition Survey Results - Overall

| CONDITION OF FENCES & BOLLARDS – ENTIRE NETWORK | | |
|---|---------------------|-----------------------------|
| Condition | Replacement Cost | % Condition (based on cost) |
| 1 (Very Good) | \$4,044,054 | 18.5% |
| 2 (Good) | \$12,347,224 | 56.5% |
| 3 (Fair) | \$4,338,983 | 19.9% |
| 4 (poor) | \$1,034,034 | 4.7% |
| 5 (Very Poor) | \$76,758 | 0.4% |
| Total | \$21,841,052 | 100.0% |

The Graph below shows the condition of fences and bollards over the entire network in terms of replacement cost.



Fences and Bollards – Review of Useful Lives

Determining the useful lives of fences and bollards in North Sydney is a challenging process as there appears to be limited information on a numbers of fences and bollards. Research into the historical construction date is currently being undertaken and once the construction date is estimated, the current

age of each fence or bollard section can be determined. Adding the estimated Remaining Life (based on current condition) to the age will provide an estimate of the total Useful Life.

Until this further research has been carried out a conservative approach has been undertaken and a modest range of useful lives have been assumed for all fences and bollards section. Due to the dissimilarity of structuring, materials and applications of all fences and bollards, useful lives varies with fence and bollard type. The useful lives and the corresponding calculated depreciation cost per annum are as follows:

| Fence Type | Useful Life (Years) |
|---|----------------------------|
| Armco Guardrail | 20 |
| Bicentennial Fence | 80 |
| Concrete Post and Chain Wire Fence | 30 |
| Concrete Post and Rail Fence | 30 |
| Concrete Road Barrier | 40 |
| Galvanised Post and Chain Wire Fence | 30 |
| Galvanised Post and Rail Fence | 30 |
| Handrail Stainless Steel | 30 |
| Handrail Steel | 30 |
| Log Fence | 30 |
| Ordinance Fence | 30 |
| Picket Fence - Metal | 30 |
| Picket Fence - Timber | 30 |
| RTA Pedestrian Fence | 30 |
| Safety Fence - Galvanised Post & Rail on Concrete | 40 |
| Safety Fence - Steel Post & Cable | 40 |
| Sandstone Wall | 50 |
| Special - Post and Rail Fence with Glass Panels | 30 |

| Bollard Type | Useful Life (Years) |
|-----------------------------------|----------------------------|
| Bollard - Concrete | 20 |
| Bollard - Decorative | 20 |
| Bollard - Metal | 20 |
| Bollard - Stainless Steel | 20 |
| Bollard - Timber | 20 |
| Safety Fence - Bollard Structural | 40 |

The Annual Depreciation values for Fences are as follows:

| Capital funding to maintain a renewal ratio of 1 | |
|---|----------------------------|
| | Annual Depreciation |
| Fences in Parks | \$130,119 |
| Fences in Road Reserves | \$546,173 |
| TOTAL | \$676,292 |

A budget of \$676,292 is required on average over the long term to maintain the condition of Council's Fences and Bollards network, noting that fluctuations in renewal requirements in the medium term.

Fences and Bollards – Funding Strategy

The Asset Renewal Funding Ratio is the most important indicator. It compares funding with depreciation. An Asset Renewal Funding Ratio of 1 or greater sustained over the long term indicates the optimal renewal and replacement of assets.

The forecast for the Depreciation (or Long Term Average Annual Asset Consumption) is \$676,292. Therefore, an annual average capital renewal funding of \$676,292 (2021 dollars) will achieve an Asset Renewal Funding Ratio of 1.

The cost to fully replace assets identified by Consultants, Rapid Map Services Pty Ltd in condition 4 and 5 as well as the cost to replace the condition 3 assets which will become condition 4 over the next 10 is \$5,449,775. This is an average annual cost of \$544,978 which is less than the \$676,292 Depreciation Expense and is greater than the average annual forecast budget of \$220,000. With further investigation and detailed design it is hoped that alternate and lesser cost solutions may be possible to maintain fences and bollard assets at an optimal level.

Fences and Bollards – Capital works

Replacement of fences and bollard sections are assumed to be a Capital works project.

The ranking criteria used to determine priority of identified renewal and replacement proposals is detailed in Table 7. A priority for action of 1 to 5 has been assigned to each fence or bollard requiring capital works as described in the following table.

Fences and Bollards – Managing the Risks

There are risks associated with providing and maintaining fences and bollards. They are primarily as follows:

- Sudden failure of **Fences and Bollards** providing separation from steep drop offs, waterbodies or hazardous areas – causing property damage – public safety hazards, injury or death.

The following risk response table was used to identify those fence and bollard segments requiring action within the next 10 years.

Table 7: Fences and Bollards – Risk Response Table

| Level of Risk | | Category | Action Required | Time frame for repairs, upgrade or replacement |
|---------------|----------------|----------|------------------------------|--|
| VH | Very High Risk | 5 | Immediate corrective action | 1-12 months |
| H | High Risk | 4 | Prioritised action required | 2-10 Years |
| M | Medium Risk | 3 | Planned action required | 4-10 Years |
| L | Low Risk | 2 | Manage by routine procedures | Inspections 1-2 years |
| None | No Risk | 1 | None | None |

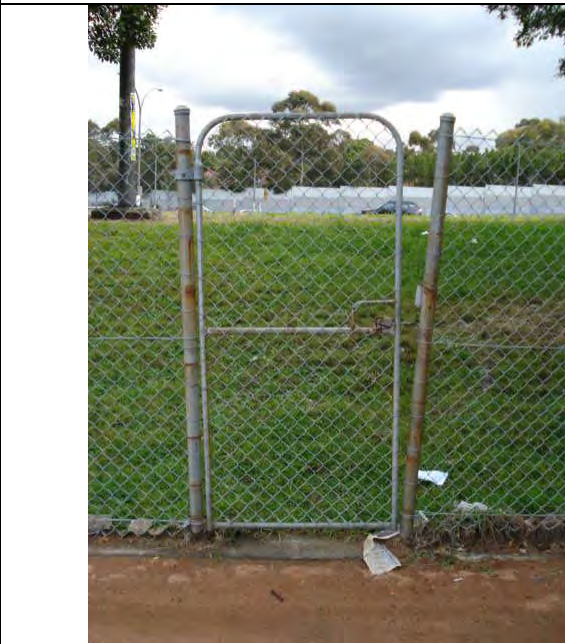
Consideration has been given to each fence and bollard, whether to replace the asset or perform maintenance on it.

Fence segments and bollards that have a **Very High or High** risk rating were considered to need replacement within the 1-10 year forecast period.

Fence segments and bollards with a **Medium** risk rating were also considered needing replacement within the 4-10 year forecast period.









Council will endeavour to manage these risks within available funding by prioritising fence and bollard renewal works based on the Fences Condition Audit prepared by Consultants, Rapid Map Services Pty Ltd.

Table 8: Fences and bollards – Capital renewal Priorities based on Condition and Risk Rating

| Risk Matrix – Fences (Condition and Risk Rating) | | | | | |
|--|------------------------------------|---------|------------|-----------|----------------------------|
| Likelihood (L) Refer to Table 5 Condition Criteria | Fences (No. of Sections/ Bollards) | | | | |
| | Drop Height | 0 to 1m | >1m to 2m | >2m to 3m | >3m |
| | Road Hierarchy | Lane | Local Road | Collector | State/ Regional Road |
| | Park Hierarchy | Local | District | Regional | |
| | Slope below fence | Shallow | Medium | Steep | Vertical |
| | Priority | d | c | b | a |
| Condition 1 – Very Good (18.5%) | 5 | 4 | 11 | 17 | 12 |
| Condition 2 - Good (56.5%) | 4 | 47 | 122 | 99 | 77 |
| Condition 3 – Fair (19.9%) | 3 | 268 | 483 | 439 | 455 |
| Condition 4 – Poor (4.7%) | 2 | 362 | 755 | 709 | 710 |
| Condition 5 – Very Poor (0.4%) | 1 | 148 | 192 | 209 | 218 |

(Note: Also Refer to Table 6)

Note: This table is based on data in the current register.

Note: Capital works are proposed for those Fences and Bollards identified in “Very Poor”, “Poor” and “Fair” condition.

Note: Factors which are used to determine the priority include ‘Drop Height’, ‘Road Hierarchy’ and ‘Slope below fence’. The most critical factor is used to determine the priority.

It should be noted that fences and bollards may also be replaced based on other criteria including:

- Damage
- Restorations
- Fences replaced in association with other projects such as kerb & gutter or retaining wall works
- Streetscape projects
- Structural Upgrade Program

Fences and Bollards – Maintenance

Routine maintenance is the regular on-going work that is necessary to keep assets operating, including instances where portions of the asset fail and need immediate repair to make the asset operational again, e.g. replacing deteriorated or weathered sections, painting.

Maintenance includes all actions necessary for retaining an asset as near as practicable to an appropriate service condition including regular ongoing day-to-day work necessary to keep assets operating.

Current maintenance expenditure levels are considered to be inadequate to meet projected service levels.

Over the longer term future operations and maintenance expenditure is forecast to be steady as the asset stock is not forecast to increase. The following table summarises the prioritised capital works.

Fences and Bollards – Prioritised Expenditure Forecast

Table 9a: Fences and bollards – In Road Reserves – Prioritised Expenditure Forecast – 10 years FY2023-FY2032

| Year | | Priority | Capital Costs | Maintenance Costs | Total Cost |
|--------------------|---------|----------|--------------------|-------------------|--------------------|
| 1 | 2022/23 | 1a to 2a | \$240,000 | \$61,914 | \$301,914 |
| 2 | 2023/24 | 2a | \$240,000 | \$61,914 | \$301,914 |
| 3 | 2024/25 | 2a to 2b | \$90,000 | \$61,914 | \$151,914 |
| 4-10 | 2025/32 | 2b to 3a | \$630,000 | \$433,398 | \$1,063,398 |
| Works Identified | 2025/32 | 3a | \$2,362,184 | | \$2,362,184 |
| Grand Total | | | \$3,562,184 | \$619,140 | \$4,181,324 |

Table 9b: Fences and bollards – In Parks – Prioritised Expenditure Forecast – 10 years FY2023-FY2032

| Year | | Priority | Capital Costs | Maintenance Costs | Total Cost |
|--------------------|---------|----------|--------------------|-------------------|--------------------|
| 1 | 2022/23 | 1a to 2a | \$100,000 | \$0 | \$100,000 |
| 2 | 2023/24 | 2a | \$100,000 | \$0 | \$100,000 |
| 3 | 2024/25 | 2a to 2b | \$100,000 | \$0 | \$100,000 |
| 4-10 | 2025/32 | 2b to 3a | \$700,000 | \$0 | \$700,000 |
| Works Identified | 2025/32 | 3a | \$887,591 | | \$887,591 |
| Grand Total | | | \$1,887,591 | \$0 | \$1,887,591 |

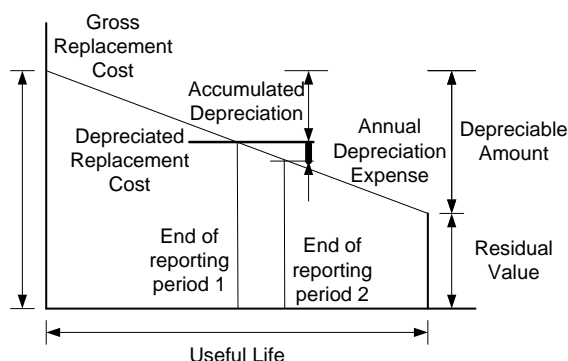
Table 9c: Fences and bollards – Safety Barriers – Prioritised Expenditure Forecast – 10 years FY2023-FY2032

| Year | | Capital Costs | Maintenance Costs | Total Cost |
|--------------------|---------|--------------------|-------------------|--------------------|
| 1 | 2022/23 | \$600,000 | \$0 | \$600,000 |
| 2 | 2023/24 | \$600,000 | \$0 | \$600,000 |
| 3 | 2024/25 | \$100,000 | \$0 | \$100,000 |
| 4-10 | 2025/32 | \$700,000 | \$0 | \$700,000 |
| Works Identified | 2025/32 | \$5,023,000 | | \$5,023,000 |
| Grand Total | | \$7,023,000 | \$0 | \$7,023,000 |

In summary the current value of Fences and Bollards assets is detailed in the Table below.

Table 10: Fences and Bollards – Valuation

| Asset Category | Replacement Value (2021) | Accumulated Depreciation (2021) | Fair Value (2021) | Depreciation Expense |
|-------------------------|--------------------------|---------------------------------|---------------------|----------------------|
| Fences in Parks | \$5,111,317 | \$2,027,659 | \$3,083,657 | \$130,119 |
| Fences in Road Reserves | \$16,729,736 | \$6,084,917 | \$10,644,818 | \$546,173 |
| TOTAL | \$21,841,052 | \$8,112,577 | \$13,728,475 | \$676,292 |



Fences and Bollards – Valuation Forecast

Asset values (Fences and Bollards) are forecast to remain steady. It is forecast that no additional assets are expected to be added to the asset stock from new construction and acquisition by Council or from assets constructed by land developers or other assets donated to Council.

Fences and Bollards – Key Assumptions – Financial Forecasts

Key assumptions made in this asset management plan for fences and bollards are:

Table 11: Key Assumptions made in AM Plan and Risks of Change

| Key Assumptions | Risks of Change to Assumptions |
|-------------------------------------|--------------------------------|
| Useful Lives of Fences and Bollards | Low risk |
| Rate of deterioration | Low risk |

Fences and Bollards – Creation / Acquisition / Upgrade Program

New works are those that create a new asset that did not previously exist, or works which will upgrade or improve an existing asset beyond its existing capacity. They may result from growth, social or environmental needs. Assets may also be acquired at no cost. No new assets are currently identified.

Fences and Bollards – Disposal Plan

No fence and bollard Assets have been identified for disposal.

Fences and Bollards – Forecast reliability and confidence

The estimated confidence level and reliability of data used in this AMP is considered to be reliable as the data is based on a detailed condition report on fences and bollards.

Fences and Bollards – Improvement Plan

The improvement plan is shown in the table below.

| Task No | Task | Responsibility | Resources Required | Timeline |
|----------------|---|-----------------------|---------------------------|-----------------|
| 1 | Research the Useful Life of Fences and bollards | EPS | Staff Time | 2024 |

Fences and Bollards – Monitoring and Review Procedures

This Asset Management Plan will be reviewed during annual budget planning processes and amended to show any material changes in service levels and/or resources available to provide those services as a result of budget decisions.

The Asset Management Plan has a life of 4 years and is due for complete revision and updating within 1 year of each Council election.

Fences and Bollards – Renewal and Replacement Program

Renewal and replacement expenditure is major work which does not increase the asset's design capacity but restores, rehabilitates, replaces or renews an existing asset to its original service potential. Work over and above restoring an asset to original service potential is considered to be an upgrade/expansion or new work expenditure resulting in additional future operations and maintenance costs.

Fence and bollard assets requiring renewal/replacement have been identified by the Fences and Bollards Condition Audit completed by Consultants, Rapid Map Services Pty Ltd in conjunction with Asset & Facilities Management Consulting Pty Ltd, in 2019.

Fences and Bollards – Funding Scenarios

The Long Term Financial Plan includes three scenarios, all of which maintain current services levels but propose differing levels of capital expenditure on the renewal of Council's ageing infrastructure assets.

In summary:

- Pessimistic Scenario - This Scenario results in a decline in operating results and deficits in the later years.

- Optimistic Scenario - This Scenario results in improvements in operating results for the life of the plan.
- Planned Scenario - This Scenario results modest surplus operating results for the life of the plan.

Table 12: Funding Scenarios – Fences and Bollards (Overall) – North Sydney Councils 10 Year Plan

| Scenario | Capital Funding Level Required Per Annum | 10 Year Plan \$ Total |
|-------------|--|-----------------------|
| Scenario 1. | \$420,000/year | \$4,200,000 |
| Scenario 2. | \$420,000/year | \$4,200,000 |
| Scenario 3. | \$420,000/year | \$4,200,000 |

Note: These Scenarios are based on the 10-year Long Term Financial Plan.

Fences and Bollards – Service and Risk Tradeoffs

The decisions made in adopting this AM Plan are based on the objective to achieve the optimum benefits from the available resources.

Service trade-off

If this funding Scenario is adopted, then the Level of Service will be maintained.

Risk trade-off

If this funding Scenario is adopted, then it there is less risk of a sudden collapse or failure of fences and bollards.

Fences and Bollards – Renewal and Replacement Program – FY2023-FY2032 (10 Year Plan)

Council’s projected 10 year Capital Renewal Program is shown in the Tables 13-22 below. It is based on the funding required to replace fences and bollards identified by the Fences and Bollards Condition Audit completed by Consultants, Rapid Map Services Pty Ltd in conjunction with Asset & Facilities Management Consulting Pty Ltd, in 2019.

It should be noted that fences and bollards may also be replaced based on other criteria. Including:

- Damage
- Restorations
- Fence or Bollard replaced in association with other projects such as Parks and Streetscape projects
- Streetscape projects

Project priorities may also be subject to change due to accelerated deterioration, sudden failure or finalization of detailed designs and project costings.

Capital Renewal – Fences and Bollards Within Road Reserves

Table 13: Fences and Bollards – Renewal and Replacement Program (Within Roads)

Priority Projects 2022/23 (Year 1)

| Year | Priority | Fence ID | Location | Risk Rating / Category | Condition | Capital Cost |
|--------------|----------|----------|-----------------------------------|------------------------|-----------|------------------|
| 2022/23 | 1a | FN10033 | Bent St, Neutral Bay | Very High (5) | Very Poor | \$10,000 |
| 2022/23 | 1a | FN10389 | Young St, Cremorne | Very High (5) | Very Poor | \$7,000 |
| 2022/23 | 1a | FN10429 | Alfred St North, Neutral Bay | Very High (5) | Very Poor | \$11,000 |
| 2022/23 | 1a | FN10442 | Miller To Edwin Footway, Cammeray | Very High (5) | Very Poor | \$7,000 |
| 2022/23 | 1c | FN10280 | Shellcove Rd, Kurraba Point | Very High (5) | Very Poor | \$1,000 |
| 2022/23 | 1c | FN22685 | Ross St, Waverton | Very High (5) | Very Poor | \$1,000 |
| 2022/23 | 2a | FN10035 | Bent St, Neutral Bay | High (4) | Poor | \$159,000 |
| 2022/23 | 2a | FN10070 | Carlyle St, Wollstonecraft | High (4) | Poor | \$1,000 |
| 2022/23 | 2a | FN10098 | Cremorne Rd, Cremorne Point | High (4) | Poor | \$3,000 |
| 2022/23 | 2a | FN10150 | Henry Lawson Ave, McMahons Point | High (4) | Poor | \$5,000 |
| 2022/23 | 2a | FN10227 | Milson Rd, Cremorne Point | High (4) | Poor | \$2,000 |
| 2022/23 | 2a | FN10243 | Park Ave, Cremorne | High (4) | Poor | \$2,000 |
| 2022/23 | 2a | FN10246 | Parkes St, Kirribilli | High (4) | Poor | \$2,000 |
| 2022/23 | 1a to 1d | | Bollards In Various Locations | Very High (5) | Very Poor | \$29,000 |
| TOTAL | | | | | | \$240,000 |

Note: These Cost estimates do not include inflation / building escalations costs which can vary between 3-8% each year.

Table 14: Fences and Bollards – Renewal and Replacement Program (Within Roads)

Priority Projects 2023/24 (Year 2)

| Year | Priority | Fence ID | Location | Risk Rating / Category | Condition | Capital Cost |
|---------|----------|----------|---|------------------------|-----------|--------------|
| 2023/24 | 2a | FN10119 | Ellalong Rd, Cremorne | High (4) | Poor | \$46,000 |
| 2023/24 | 2a | FN10229 | Montpelier St, Neutral Bay | High (4) | Poor | \$12,000 |
| 2023/24 | 2a | FN10304 | Walker St, North Sydney | High (4) | Poor | \$7,000 |
| 2023/24 | 2a | FN10340 | Ennis Rd, Kirribilli | High (4) | Poor | \$7,000 |
| 2023/24 | 2a | FN10351 | Hampden St, North Sydney | High (4) | Poor | \$6,000 |
| 2023/24 | 2a | FN10425 | Falcon St, Neutral Bay | High (4) | Poor | \$19,000 |
| 2023/24 | 2a | FN10433 | Premier To Spruson Footway, Neutral Bay | High (4) | Poor | \$5,000 |
| 2023/24 | 2a | FN10450 | Pile To High Footway, North Sydney | High (4) | Poor | \$8,000 |
| 2023/24 | 2a | FN10484 | Henry Lawson Ave, McMahons Point | High (4) | Poor | \$4,000 |

| Year | Priority | Fence ID | Location | Risk Rating / Category | Condition | Capital Cost |
|--------------|----------|----------|--------------------------------|------------------------|-----------|------------------|
| 2023/24 | 2a | FN10528 | Miller St, Cammeray | High (4) | Poor | \$88,000 |
| 2023/24 | 2a | FN10548 | Tiley La, Cammeray | High (4) | Poor | \$7,000 |
| 2023/24 | 2a | FN10579 | Dumbarton St, McMahons Point | High (4) | Poor | \$2,000 |
| 2023/24 | 2a | FN10622 | Premier St, Neutral Bay | High (4) | Poor | \$9,000 |
| 2023/24 | 2a | FN10683 | Premier St, Neutral Bay | High (4) | Poor | \$3,000 |
| 2023/24 | 2a | FN10701 | Blues Point Rd, McMahons Point | High (4) | Poor | \$2,000 |
| 2023/24 | 2a | FN10785 | Kirribilli Ave, Kirribilli | High (4) | Poor | \$2,000 |
| 2023/24 | 2a | FN10786 | Kirribilli Ave, Kirribilli | High (4) | Poor | \$2,000 |
| 2023/24 | 2a | | Bollards In Various Locations | High (4) | Poor | \$11,000 |
| TOTAL | | | | | | \$240,000 |

Note: These Cost estimates do not include inflation / building escalations costs which can vary between 3-8% each year.

Table 15: Fences and Bollards – Renewal and Replacement Program (Within Roads)

Priority Projects 2024/25 (Year 3)

| Year | Priority | Fence ID | Location | Risk Rating / Category | Condition | Capital Cost |
|--------------|----------|----------|-------------------------------|------------------------|-----------|-----------------|
| 2024/25 | 2a | FN10516 | Carter St, Cammeray | High (4) | Poor | \$40,000 |
| 2024/25 | 2a | FN10787 | Waruda St, Kirribilli | High (4) | Poor | \$6,000 |
| 2024/25 | 2a | FN10893 | Milson Rd, Cremorne Point | High (4) | Poor | \$12,000 |
| 2024/25 | 2a | FN10932 | Milson Rd, Cremorne Point | High (4) | Poor | \$10,000 |
| 2024/25 | 2a | FN10965 | Milson Rd, Cremorne Point | High (4) | Poor | \$2,000 |
| 2024/25 | 2b | | Bollards In Various Locations | High (4) | Poor | \$20,000 |
| TOTAL | | | | | | \$90,000 |

Note: These Cost estimates do not include inflation / building escalations costs which can vary between 3-8% each year.

Table 16: Fences and Bollards – Renewal and Replacement Program (Within Roads)

Priority Projects 2025/32 (Year 4-10)

| Year | Priority | Fence ID | Location | Risk Rating / Category | Condition | Capital Cost |
|---------|----------|----------|--------------------------------|------------------------|-----------|--------------|
| 2025/32 | 2a | FN11023 | Ellalong Rd, Cremorne | High (4) | Poor | \$21,000 |
| 2025/32 | 2a | FN11234 | Bridgeview Ave, Cammeray | High (4) | Poor | \$3,000 |
| 2025/32 | 2a | FN11508 | East Ave, Cammeray | High (4) | Poor | \$5,000 |
| 2025/32 | 2b | FN10014 | Bay Rd, Waverton | High (4) | Poor | \$1,000 |
| 2025/32 | 2b | FN10030 | Bent St, Neutral Bay | High (4) | Poor | \$56,000 |
| 2025/32 | 2b | FN10049 | Blues Point Rd, McMahons Point | High (4) | Poor | \$7,000 |
| 2025/32 | 2b | FN10188 | Lumsden St, Cammeray | High (4) | Poor | \$1,000 |
| 2025/32 | 2b | FN10256 | Premier St, Neutral Bay | High (4) | Poor | \$4,000 |
| 2025/32 | 2b | FN10257 | Premier St, Neutral Bay | High (4) | Poor | \$2,000 |

| Year | Priority | Fence ID | Location | Risk Rating / Category | Condition | Capital Cost |
|--------------|----------|----------|---|------------------------|-----------|------------------|
| 2025/32 | 2b | FN10260 | Rangers Rd, Neutral Bay | High (4) | Poor | \$17,000 |
| 2025/32 | 2b | FN10295 | Union St, Mcmahons Point | High (4) | Poor | \$2,000 |
| 2025/32 | 2b | FN10366 | Mirradong Pl, Kirribilli | High (4) | Poor | \$5,000 |
| 2025/32 | 2b | FN10582 | Edward St, North Sydney | High (4) | Poor | \$3,000 |
| 2025/32 | 2b | FN10837 | Commodore To John Footway, Mcmahons Point | High (4) | Poor | \$2,000 |
| 2025/32 | 2b | FN22583 | Rawson St, Neutral Bay | High (4) | Poor | \$1,000 |
| 2025/32 | 2b | FN22601 | Alfred St South, Milsons Point | High (4) | Poor | \$1,000 |
| 2025/32 | 2c | FN10067 | Carabella St, Kirribilli | High (4) | Poor | \$35,000 |
| 2025/32 | 2c | FN10133 | French St, Mcmahons Point | High (4) | Poor | \$2,000 |
| 2025/32 | 2c | FN10144 | Grosvenor La, Neutral Bay | High (4) | Poor | \$1,000 |
| 2025/32 | 2c | FN10182 | Kurraba Rd, Kurraba Point | High (4) | Poor | \$2,000 |
| 2025/32 | 2c | FN10196 | Mckye St, Waverton | High (4) | Poor | \$6,000 |
| 2025/32 | 2c | FN10297 | Upper Pitt St, Kirribilli | High (4) | Poor | \$3,000 |
| 2025/32 | 2c | FN10343 | Ennis Rd, Milsons Point | High (4) | Poor | \$59,000 |
| 2025/32 | 2c | FN10344 | Green St, Cremorne Point | High (4) | Poor | \$7,000 |
| 2025/32 | 2c | FN10432 | Kurraba To Aubin Footway, Neutral Bay | High (4) | Poor | \$1,000 |
| 2025/32 | 2c | FN10460 | Chandos St (Westbound), St Leonards | High (4) | Poor | \$28,000 |
| 2025/32 | 2c | FN22611 | West St, Cammeray | High (4) | Poor | \$1,000 |
| 2025/32 | 2d | FN10348 | Hampden St, North Sydney | High (4) | Poor | \$19,000 |
| 2025/32 | 2d | FN10355 | Jenkins La, Crows Nest | High (4) | Poor | \$4,000 |
| 2025/32 | 2d | FN10356 | Jenkins La, Crows Nest | High (4) | Poor | \$5,000 |
| 2025/32 | 2d | FN10377 | Wellington La, Mcmahons Point | High (4) | Poor | \$49,000 |
| 2025/32 | 2d | FN10441 | Edwin To Metcalfe Footway, Cammeray | High (4) | Poor | \$2,000 |
| 2025/32 | 3a | FN10019 | Belgrave St, Cremorne | Medium (3) | Fair | \$37,000 |
| 2025/32 | 3a | FN10027 | Ben Boyd Rd, Neutral Bay | Medium (3) | Fair | \$2,000 |
| 2025/32 | 3a | FN10031 | Bent St, Neutral Bay | Medium (3) | Fair | \$6,000 |
| 2025/32 | 3a | FN10034 | Bent St, Neutral Bay | Medium (3) | Fair | \$58,000 |
| 2025/32 | 3a | FN10042 | Alfred St North (Southbound), Neutral Bay | Medium (3) | Fair | \$3,000 |
| 2025/32 | 3a | FN10056 | Brook St, Crows Nest | Medium (3) | Fair | \$29,000 |
| 2025/32 | 2b | | Bollards In Various Locations | High (4) | Poor | \$140,000 |
| TOTAL | | | | | | \$630,000 |

Note: These Cost estimates do not include inflation / building escalations costs which can vary between 3-8% each year.

Table 17: Fences and Bollards – Renewal and Replacement Program (Within Roads)

Works Identified – Years 2025 – 32 (Years 4 – 10)

| Year | Priority | Fence ID | Location | Risk Rating / Category | Condition | Capital Cost |
|---------|----------|----------|-------------------------------------|------------------------|-----------|--------------|
| 2025/32 | 3a | FN10059 | Broughton St, Kirribilli | Medium (3) | Fair | \$27,000 |
| 2025/32 | 3a | FN10071 | Carr St, Waverton | Medium (3) | Fair | \$27,000 |
| 2025/32 | 3a | FN10079 | Chandos St (Westbound), St Leonards | Medium (3) | Fair | \$23,000 |
| 2025/32 | 3a | FN10083 | Clark Rd, North Sydney | Medium (3) | Fair | \$16,000 |
| 2025/32 | 3a | FN10088 | Cowdroy Ave, Cammeray | Medium (3) | Fair | \$14,000 |
| 2025/32 | 3a | FN10090 | Cowdroy Ave, Cammeray | Medium (3) | Fair | \$7,000 |
| 2025/32 | 3a | FN10092 | Cremorne Rd, Cremorne Point | Medium (3) | Fair | \$13,000 |
| 2025/32 | 3a | FN10093 | Cremorne Rd, Cremorne Point | Medium (3) | Fair | \$2,000 |
| 2025/32 | 3a | FN10102 | Cremorne Rd, Cremorne Point | Medium (3) | Fair | \$3,000 |
| 2025/32 | 3a | FN10106 | Dumbarton St, McMahan's Point | Medium (3) | Fair | \$15,000 |
| 2025/32 | 3a | FN10126 | Falcon St, Crows Nest | Medium (3) | Fair | \$3,000 |
| 2025/32 | 3a | FN10127 | Falcon St, Crows Nest | Medium (3) | Fair | \$2,000 |
| 2025/32 | 3a | FN10136 | Gillies St, Wollstonecraft | Medium (3) | Fair | \$4,000 |
| 2025/32 | 3a | FN10137 | Glen St, Milsons Point | Medium (3) | Fair | \$7,000 |
| 2025/32 | 3a | FN10148 | Harriette St, Kurraba Point | Medium (3) | Fair | \$68,000 |
| 2025/32 | 3a | FN10149 | Harriette St, Neutral Bay | Medium (3) | Fair | \$17,000 |
| 2025/32 | 3a | FN10163 | Iredale Ave, Cremorne Point | Medium (3) | Fair | \$9,000 |
| 2025/32 | 3a | FN10166 | Jeffreys St, Kirribilli | Medium (3) | Fair | \$12,000 |
| 2025/32 | 3a | FN10169 | Kareela Rd, Cremorne Point | Medium (3) | Fair | \$2,000 |
| 2025/32 | 3a | FN10174 | King St, Wollstonecraft | Medium (3) | Fair | \$18,000 |
| 2025/32 | 3a | FN10175 | King St, Waverton | Medium (3) | Fair | \$22,000 |
| 2025/32 | 3a | FN10176 | Kirribilli Ave, Kirribilli | Medium (3) | Fair | \$23,000 |
| 2025/32 | 3a | FN10177 | Kirribilli Ave, Kirribilli | Medium (3) | Fair | \$1,000 |
| 2025/32 | 3a | FN10183 | Kurraba Rd, Neutral Bay | Medium (3) | Fair | \$2,000 |
| 2025/32 | 3a | FN10205 | Miller St, North Sydney | Medium (3) | Fair | \$6,000 |
| 2025/32 | 3a | FN10210 | Miller St, Cammeray | Medium (3) | Fair | \$12,000 |
| 2025/32 | 3a | FN10211 | Miller St, Cammeray | Medium (3) | Fair | \$4,000 |
| 2025/32 | 3a | FN10217 | Milray Ave, Wollstonecraft | Medium (3) | Fair | \$35,000 |
| 2025/32 | 3a | FN10218 | Milray Ave, Wollstonecraft | Medium (3) | Fair | \$6,000 |
| 2025/32 | 3a | FN10219 | Milson Rd, Cremorne Point | Medium (3) | Fair | \$3,000 |
| 2025/32 | 3a | FN10224 | Milson Rd, Cremorne Point | Medium (3) | Fair | \$5,000 |
| 2025/32 | 3a | FN10225 | Milson Rd, Cremorne Point | Medium (3) | Fair | \$18,000 |
| 2025/32 | 3a | FN10234 | Murdoch St, Cremorne | Medium (3) | Fair | \$9,000 |
| 2025/32 | 3a | FN10247 | Parkes St, Kirribilli | Medium (3) | Fair | \$1,000 |
| 2025/32 | 3a | FN10248 | Parkes St, Kirribilli | Medium (3) | Fair | \$2,000 |
| 2025/32 | 3a | FN10253 | Premier St, Neutral Bay | Medium (3) | Fair | \$3,000 |
| 2025/32 | 3a | FN10254 | Premier St, Neutral Bay | Medium (3) | Fair | \$6,000 |

| Year | Priority | Fence ID | Location | Risk Rating / Category | Condition | Capital Cost |
|--------------|----------|----------|--------------------------------------|------------------------|-----------|--------------------|
| 2025/32 | 3a | FN10263 | Reynolds St, Cremorne | Medium (3) | Fair | \$29,000 |
| 2025/32 | 3a | FN10264 | Reynolds St, Cremorne | Medium (3) | Fair | \$51,000 |
| 2025/32 | 3a | FN10271 | Rosalind St, Cammeray | Medium (3) | Fair | \$35,000 |
| 2025/32 | 3a | FN10274 | Rowlison Pde, Cammeray | Medium (3) | Fair | \$12,000 |
| 2025/32 | 3a | FN10281 | Shirley Rd, Wollstonecraft | Medium (3) | Fair | \$14,000 |
| 2025/32 | 3a | FN10282 | Shirley Rd, Wollstonecraft | Medium (3) | Fair | \$2,000 |
| 2025/32 | 3a | FN10283 | Shirley Rd, Wollstonecraft | Medium (3) | Fair | \$4,000 |
| 2025/32 | 3a | FN10284 | Sinclair St, Wollstonecraft | Medium (3) | Fair | \$1,000 |
| 2025/32 | 3a | FN10299 | Upper Pitt St, Kirribilli | Medium (3) | Fair | \$173,000 |
| 2025/32 | 3a | FN10302 | Vale St, Cammeray | Medium (3) | Fair | \$40,000 |
| 2025/32 | 3a | FN10303 | Waiwera St, McMahons Point | Medium (3) | Fair | \$9,000 |
| 2025/32 | 3a | FN10308 | Weringa Ave, Cammeray | Medium (3) | Fair | \$3,000 |
| 2025/32 | 3a | FN10310 | Weringa Ave, Cammeray | Medium (3) | Fair | \$2,000 |
| 2025/32 | 3a | FN10333 | Alfred St North, Neutral Bay | Medium (3) | Fair | \$20,000 |
| 2025/32 | 3a | FN10339 | Ennis Rd, Kirribilli | Medium (3) | Fair | \$6,000 |
| 2025/32 | 3a | FN10342 | Ennis Rd, Kirribilli | Medium (3) | Fair | \$108,000 |
| 2025/32 | 3a | FN10349 | Hampden St, North Sydney | Medium (3) | Fair | \$35,000 |
| 2025/32 | 3a | FN10354 | Highview Ave, Neutral Bay | Medium (3) | Fair | \$1,000 |
| 2025/32 | 3a | FN10358 | Lavender Cres, Lavender Bay | Medium (3) | Fair | \$12,000 |
| 2025/32 | 3a | FN10359 | Lower Spofforth Walk, Cremorne Point | Medium (3) | Fair | \$45,000 |
| 2025/32 | 3a | FN10368 | Munro St, McMahons Point | Medium (3) | Fair | \$1,229,000 |
| 2025/32 | | | Contingency | | | \$84,184 |
| TOTAL | | | | | | \$2,278,000 |

Note: These Cost estimates do not include inflation / building escalations costs which can vary between 3-8% each year.

Capital Renewal – Fences and Bollards Within Parks

Table 18: Fences and Bollards – Renewal and Replacement Program (Within Parks)

Priority Projects 2022/23 (Year 1)

| Year | Priority | Fence ID | Location | Risk Rating / Category | Condition | Capital Cost |
|---------|----------|----------|-----------------------------------|------------------------|-----------|--------------|
| 2022/23 | 1a | FN11089 | Balls Head Dr, Waverton | Very High (5) | Very Poor | \$12,000 |
| 2022/23 | 1a | FN11220 | Fred Hutley Reserve, Cammeray | Very High (5) | Very Poor | \$7,000 |
| 2022/23 | 1a | FN11919 | Beulah Street Reserve, Kirribilli | Very High (5) | Very Poor | \$3,000 |
| 2022/23 | 1b | FN11369 | St Leonards Park, North Sydney | Very High (5) | Very Poor | \$2,000 |
| 2022/23 | 1b | FN11507 | Tunks Park, Cammeray | Very High (5) | Very Poor | \$3,000 |
| 2022/23 | 1b | FN11741 | Forsyth Park, Neutral Bay | Very High (5) | Very Poor | \$20,000 |

| Year | Priority | Fence ID | Location | Risk Rating / Category | Condition | Capital Cost |
|--------------|----------|----------|--|------------------------|-----------|------------------|
| 2022/23 | 1c | FN11383 | St Thomas' Rest Park, Crows Nest | Very High (5) | Very Poor | \$5,000 |
| 2022/23 | 1c | FN11865 | St Thomas' Rest Park, Crows Nest | Very High (5) | Very Poor | \$4,000 |
| 2022/23 | 1c | FN11878 | St Thomas' Rest Park, Crows Nest | Very High (5) | Very Poor | \$6,000 |
| 2022/23 | 1d | FN22527 | Wakelin Reserve, Waverton | Very High (5) | Very Poor | \$1,000 |
| 2022/23 | 2a | FN11099 | Ben Boyd Road Park, Neutral Bay | High (4) | Poor | \$7,000 |
| 2022/23 | 2a | FN11108 | Berry Island Reserve, Wollstonecraft | High (4) | Poor | \$2,000 |
| 2022/23 | 2a | FN11109 | Blues Point Reserve, McMahons Point | High (4) | Poor | \$11,000 |
| 2022/23 | 2a | FN11111 | Blues Point Reserve, McMahons Point | High (4) | Poor | \$1,000 |
| 2022/23 | 2a | FN11251 | John Street Open Space, McMahons Point | High (4) | Poor | \$1,000 |
| 2022/23 | 2a | FN11260 | Kurraba Reserve, Kurraba Point | High (4) | Poor | \$3,000 |
| 2022/23 | 1b to 2a | | Bollards In Various Locations | Very High (5) | Very Poor | \$12,000 |
| TOTAL | | | | | | \$100,000 |

Note: These Cost estimates do not include inflation / building escalations costs which can vary between 3-8% each year. Funded by Open Space and Environment Division. Priorities may change.

Table 19: Fences and Bollards – Renewal and Replacement Program (Within Parks)

Priority Projects 2023/24 (Year 2)

| Year | Priority | Fence ID | Location | Risk Rating / Category | Condition | Capital Cost |
|---------|----------|----------|---|------------------------|-----------|--------------|
| 2023/24 | 2a | FN11157 | Clifton St, Waverton | High (4) | Poor | \$13,000 |
| 2023/24 | 2a | FN11232 | Hamilton Reserve, Cammeray | High (4) | Poor | \$11,000 |
| 2023/24 | 2a | FN11233 | West St, Cammeray | High (4) | Poor | \$2,000 |
| 2023/24 | 2a | FN11277 | Lambert Street Gardens, Cammeray | High (4) | Poor | \$11,000 |
| 2023/24 | 2a | FN11291 | Lord St, North Sydney | High (4) | Poor | \$10,000 |
| 2023/24 | 2a | FN11314 | O'briens Gardens, McMahons Point | High (4) | Poor | \$10,000 |
| 2023/24 | 2a | FN11318 | Phillips Street Playground, Neutral Bay | High (4) | Poor | \$6,000 |
| 2023/24 | 2a | FN11354 | Sawmillers Reserve, McMahons Point | High (4) | Poor | \$5,000 |
| 2023/24 | 2a | FN11395 | Toongarah Rd, North Sydney | High (4) | Poor | \$8,000 |
| 2023/24 | 2a | FN11403 | Lavender To Wharf Footway, Lavender Bay | High (4) | Poor | \$9,000 |
| 2023/24 | 2a | FN11420 | Whatmore La, Waverton | High (4) | Poor | \$3,000 |

| Year | Priority | Fence ID | Location | Risk Rating / Category | Condition | Capital Cost |
|--------------|----------|----------|---------------------------------|------------------------|-----------|------------------|
| 2023/24 | 2a | FN11481 | Watt Park, Lavender Bay | High (4) | Poor | \$8,000 |
| 2023/24 | 2a | FN11763 | Ben Boyd Road Park, Neutral Bay | High (4) | Poor | \$4,000 |
| TOTAL | | | | | | \$100,000 |

Note: These Cost estimates do not include inflation / building escalations costs which can vary between 3-8% each year. Funded by Open Space and Environment Division. Priorities may change.

Table 20: Fences and Bollards – Renewal and Replacement Program (Within Parks)

Priority Projects 2024/25 (Year 3)

| Year | Priority | Fence ID | Location | Risk Rating / Category | Condition | Capital Cost |
|--------------|----------|----------|---|------------------------|-----------|------------------|
| 2024/25 | 2a | FN11509 | East Ave, Cammeray | High (4) | Poor | \$2,000 |
| 2024/25 | 2a | FN11785 | Bradfield Park, Milsons Point | High (4) | Poor | \$19,000 |
| 2024/25 | 2a | FN12016 | Waverton Park (Includes Merrett Playground), WAVERTON | High (4) | Poor | \$7,000 |
| 2024/25 | 2a | FN12024 | Sugar Works Reserve, Waverton | High (4) | Poor | \$4,000 |
| 2024/25 | 2a | FN12046 | Balls Head Reserve, Waverton | High (4) | Poor | \$21,000 |
| 2024/25 | 2a | FN12180 | Cremorne Reserve, Cremorne Point | High (4) | Poor | \$7,000 |
| 2024/25 | 2a | FN12181 | Cremorne Reserve, Cremorne Point | High (4) | Poor | \$4,000 |
| 2024/25 | 2a | FN12295 | Smoothey Park, Wollstonecraft | High (4) | Poor | \$4,000 |
| 2024/25 | 2b | FN11195 | East Ave, Cammeray | High (4) | Poor | \$3,000 |
| 2024/25 | 2b | | Bollards In Various Locations | Very High (5) | Very Poor | \$29,000 |
| TOTAL | | | | | | \$100,000 |

Note: These Cost estimates do not include inflation / building escalations costs which can vary between 3-8% each year. Funded by Open Space and Environment Division. Priorities may change.

Table 21: Fences and Bollards – Renewal and Replacement Program (Within Parks)

Priority Projects 2025/32 (Year 4-10)

| Year | Priority | Fence ID | Location | Risk Rating / Category | Condition | Capital Cost |
|---------|----------|----------|----------------------------------|------------------------|-----------|--------------|
| 2025/32 | 2b | FN11076 | Anderson Park, Neutral Bay | High (4) | Poor | \$11,000 |
| 2025/32 | 2b | FN11086 | Balls Head Dr, Waverton | High (4) | Poor | \$5,000 |
| 2025/32 | 2b | FN11117 | Alfred St South, Milsons Point | High (4) | Poor | \$15,000 |
| 2025/32 | 2b | FN11175 | Cremorne Reserve, Cremorne Point | High (4) | Poor | \$1,000 |

| Year | Priority | Fence ID | Location | Risk Rating / Category | Condition | Capital Cost |
|---------|----------|----------|--------------------------------------|------------------------|-----------|--------------|
| 2025/32 | 2b | FN11192 | Dowling St, McMahons Point | High (4) | Poor | \$2,000 |
| 2025/32 | 2b | FN11204 | Bent St, Neutral Bay | High (4) | Poor | \$72,000 |
| 2025/32 | 2b | FN11219 | Fred Hutley Reserve, Cammeray | High (4) | Poor | \$20,000 |
| 2025/32 | 2b | FN11226 | Green Park, Cammeray | High (4) | Poor | \$5,000 |
| 2025/32 | 2b | FN11227 | Green Park, Cammeray | High (4) | Poor | \$2,000 |
| 2025/32 | 2b | FN11368 | St Leonards Park, North Sydney | High (4) | Poor | \$3,000 |
| 2025/32 | 2b | FN11535 | Hamilton Reserve, Cammeray | High (4) | Poor | \$4,000 |
| 2025/32 | 2b | FN11615 | Euroka Street Playground, Waverton | High (4) | Poor | \$5,000 |
| 2025/32 | 2b | FN11710 | Willow Tree Park, Neutral Bay | High (4) | Poor | \$6,000 |
| 2025/32 | 2b | FN11742 | Forsyth Park, Neutral Bay | High (4) | Poor | \$31,000 |
| 2025/32 | 2b | FN11743 | Forsyth Park, Neutral Bay | High (4) | Poor | \$2,000 |
| 2025/32 | 2b | FN11782 | Bradfield Park, Milsons Point | High (4) | Poor | \$32,000 |
| 2025/32 | 2b | FN11981 | Balls Head Dr, Waverton | High (4) | Poor | \$2,000 |
| 2025/32 | 2b | FN12025 | Horace St, Waverton | High (4) | Poor | \$5,000 |
| 2025/32 | 2b | FN12043 | Balls Head Dr, Waverton | High (4) | Poor | \$15,000 |
| 2025/32 | 2b | FN12108 | Kurraba Reserve, Kurraba Point | High (4) | Poor | \$10,000 |
| 2025/32 | 2b | FN22691 | Coal Loader Parklands, Waverton | High (4) | Poor | \$3,000 |
| 2025/32 | 2c | FN11278 | Lavender Bay Foreshore, Lavender Bay | High (4) | Poor | \$19,000 |
| 2025/32 | 2c | FN11381 | St Thomas' Rest Park, Crows Nest | High (4) | Poor | \$27,000 |
| 2025/32 | 2c | FN11519 | Cairo St, Cammeray | High (4) | Poor | \$3,000 |
| 2025/32 | 2c | FN11527 | West St, Cammeray | High (4) | Poor | \$3,000 |
| 2025/32 | 2c | FN11530 | Cairo St, Cammeray | High (4) | Poor | \$3,000 |
| 2025/32 | 2c | FN11534 | Vale St, Cammeray | High (4) | Poor | \$1,000 |
| 2025/32 | 2c | FN11541 | Tunks Park Carpark, Cammeray | High (4) | Poor | \$4,000 |
| 2025/32 | 2c | FN11558 | Primrose Park, Cremorne | High (4) | Poor | \$1,000 |
| 2025/32 | 2c | FN11789 | Watt Park, Lavender Bay | High (4) | Poor | \$12,000 |
| 2025/32 | 2c | FN11790 | Watt Park, Lavender Bay | High (4) | Poor | \$29,000 |
| 2025/32 | 2c | FN11863 | St Thomas' Rest Park, Crows Nest | High (4) | Poor | \$7,000 |
| 2025/32 | 2c | FN11864 | St Thomas' Rest Park, Crows Nest | High (4) | Poor | \$5,000 |
| 2025/32 | 2c | FN11937 | Winslow St, Kirribilli | High (4) | Poor | \$7,000 |
| 2025/32 | 2c | FN12020 | Whatmore Lane Reserve, Waverton | High (4) | Poor | \$1,000 |

| Year | Priority | Fence ID | Location | Risk Rating / Category | Condition | Capital Cost |
|---------|----------|----------|---|------------------------|-----------|--------------|
| 2025/32 | 2c | FN22518 | Primrose Park, Cremorne | High (4) | Poor | \$1,000 |
| 2025/32 | 2c | FN22519 | Primrose Park, Cremorne | High (4) | Poor | \$1,000 |
| 2025/32 | 2c | FN22667 | Waverton Park (Includes Merrett Playground), WAVERTON | High (4) | Poor | \$1,000 |
| 2025/32 | 2c | FN22784 | Waverton Park (Includes Merrett Playground), WAVERTON | High (4) | Poor | \$1,000 |
| 2025/32 | 2c | FN22785 | Waverton Park (Includes Merrett Playground), WAVERTON | High (4) | Poor | \$1,000 |
| 2025/32 | 2c | FN22786 | Waverton Park (Includes Merrett Playground), WAVERTON | High (4) | Poor | \$1,000 |
| 2025/32 | 2d | FN11397 | Parkes To Robertson Footway, Kirribilli | High (4) | Poor | \$3,000 |
| 2025/32 | 2d | FN11417 | Westleigh St, Neutral Bay | High (4) | Poor | \$1,000 |
| 2025/32 | 2d | FN11531 | Cairo St, Cammeray | High (4) | Poor | \$1,000 |
| 2025/32 | 2d | FN22528 | Victoria Street Playground, McMahons Point | High (4) | Poor | \$1,000 |
| 2025/32 | 2d | FN22765 | Anzac Park, Cammeray | High (4) | Poor | \$1,000 |
| 2025/32 | 3a | FN11084 | Balls Head Reserve, Waverton | Medium (3) | Fair | \$26,000 |
| 2025/32 | 3a | FN11085 | Balls Head Reserve, Waverton | Medium (3) | Fair | \$2,000 |
| 2025/32 | 3a | FN11087 | Balls Head Reserve, Waverton | Medium (3) | Fair | \$17,000 |
| 2025/32 | 3a | FN11088 | Balls Head Reserve, Waverton | Medium (3) | Fair | \$31,000 |
| 2025/32 | 3a | FN11097 | Bellevue St, Cammeray | Medium (3) | Fair | \$3,000 |
| 2025/32 | 3a | FN11104 | Berry Island Reserve, Wollstonecraft | Medium (3) | Fair | \$26,000 |
| 2025/32 | 3a | FN11105 | Berry Island Reserve, Wollstonecraft | Medium (3) | Fair | \$54,000 |
| 2025/32 | 3a | FN11110 | Blues Point Reserve, McMahons Point | Medium (3) | Fair | \$6,000 |
| 2025/32 | 3a | FN11123 | Brennan Park, Wollstonecraft | Medium (3) | Fair | \$9,000 |
| 2025/32 | 3a | FN11124 | Brennan Park, Wollstonecraft | Medium (3) | Fair | \$19,000 |
| 2025/32 | 3a | FN11126 | Brennan Park, Wollstonecraft | Medium (3) | Fair | \$5,000 |
| 2025/32 | 3a | FN11146 | Falcon St, Neutral Bay | Medium (3) | Fair | \$11,000 |
| 2025/32 | 3a | FN11148 | Clark Park, Lavender Bay | Medium (3) | Fair | \$38,000 |
| 2025/32 | 3a | FN11151 | Clark Park, Lavender Bay | Medium (3) | Fair | \$4,000 |
| 2025/32 | 3a | FN11188 | Doris To Bray Footway, North Sydney | Medium (3) | Fair | \$4,000 |

| Year | Priority | Fence ID | Location | Risk Rating / Category | Condition | Capital Cost |
|--------------|----------|----------|-------------------------------|------------------------|-----------|------------------|
| 2025/32 | 2c to 3a | | Bollards In Various Locations | High (4) | Poor | \$59,000 |
| TOTAL | | | | | | \$700,000 |

Note: These Cost estimates do not include inflation / building escalations costs which can vary between 3-8% each year. Funded by Open Space and Environment Division. Priorities may change.

Table 22: Fences and Bollards – Renewal and Replacement Program (Within Parks)

Works Identified – Years 2025 - 32 (Years 4 - 10)

| Year | Priority | Fence ID | Location | Risk Rating / Category | Condition | Capital Cost |
|---------|----------|----------|---|------------------------|-----------|--------------|
| 2025/32 | 3a | FN11154 | Lavender St, Lavender Bay | Medium (3) | Fair | \$14,000 |
| 2025/32 | 3a | FN11166 | Copes Lookout, Kirribilli | Medium (3) | Fair | \$16,000 |
| 2025/32 | 3a | FN11169 | Cremorne Reserve, Cremorne Point | Medium (3) | Fair | \$29,000 |
| 2025/32 | 3a | FN11172 | Cremorne Reserve, Cremorne Point | Medium (3) | Fair | \$5,000 |
| 2025/32 | 3a | FN11184 | David Earle Reserve, McMahons Point | Medium (3) | Fair | \$8,000 |
| 2025/32 | 3a | FN11193 | Dr Mary Booth Lookout, Kirribilli | Medium (3) | Fair | \$3,000 |
| 2025/32 | 3a | FN11194 | East Ave, Cammeray | Medium (3) | Fair | \$1,000 |
| 2025/32 | 3a | FN11197 | Echo St, Cammeray | Medium (3) | Fair | \$17,000 |
| 2025/32 | 3a | FN11207 | Montpelier St, Neutral Bay | Medium (3) | Fair | \$24,000 |
| 2025/32 | 3a | FN11211 | Yeo St, Neutral Bay | Medium (3) | Fair | \$5,000 |
| 2025/32 | 3a | FN11235 | Harry Howard Reserve, Wollstonecraft | Medium (3) | Fair | \$25,000 |
| 2025/32 | 3a | FN11236 | Rocklands To Newlands Footway, Wollstonecraft | Medium (3) | Fair | \$17,000 |
| 2025/32 | 3a | FN11249 | Ilbery Park, Neutral Bay | Medium (3) | Fair | \$5,000 |
| 2025/32 | 3a | FN11257 | Kurraba Reserve, Kurraba Point | Medium (3) | Fair | \$32,000 |
| 2025/32 | 3a | FN11258 | Kurraba Reserve, Kurraba Point | Medium (3) | Fair | \$39,000 |
| 2025/32 | 3a | FN11261 | Kurraba Reserve, Kurraba Point | Medium (3) | Fair | \$2,000 |
| 2025/32 | 3a | FN11263 | Kurraba Wharf Reserve, Kurraba Point | Medium (3) | Fair | \$3,000 |
| 2025/32 | 3a | FN11264 | Kurraba Wharf Reserve, Kurraba Point | Medium (3) | Fair | \$1,000 |
| 2025/32 | 3a | FN11271 | Kirribilli Ave, Kirribilli | Medium (3) | Fair | \$7,000 |
| 2025/32 | 3a | FN11272 | Kirribilli Ave, Kirribilli | Medium (3) | Fair | \$13,000 |
| 2025/32 | 3a | FN11273 | Kirribilli Ave, Kirribilli | Medium (3) | Fair | \$10,000 |
| 2025/32 | 3a | FN11276 | Kirribilli Ave, Kirribilli | Medium (3) | Fair | \$3,000 |
| 2025/32 | 3a | FN11280 | Lavender Bay Foreshore, | Medium (3) | Fair | \$4,000 |

| Year | Priority | Fence ID | Location | Risk Rating / Category | Condition | Capital Cost |
|---------|----------|----------|---|------------------------|-----------|--------------|
| | | | Lavender Bay | | | |
| 2025/32 | 3a | FN11283 | Middle St, Mcmahons Point | Medium (3) | Fair | \$6,000 |
| 2025/32 | 3a | FN11285 | Middle St, Mcmahons Point | Medium (3) | Fair | \$1,000 |
| 2025/32 | 3a | FN11296 | Kurraba Rd, Neutral Bay | Medium (3) | Fair | \$7,000 |
| 2025/32 | 3a | FN11301 | Milson Park, Kirribilli | Medium (3) | Fair | \$153,000 |
| 2025/32 | 3a | FN11308 | Miller St, Cammeray | Medium (3) | Fair | \$7,000 |
| 2025/32 | 3a | FN11321 | Pine Street/Arkland Street Reserve, Cammeray | Medium (3) | Fair | \$4,000 |
| 2025/32 | 3a | FN11323 | Primrose Park, Cremorne | Medium (3) | Fair | \$7,000 |
| 2025/32 | 3a | FN11325 | Primrose Park, Cremorne | Medium (3) | Fair | \$29,000 |
| 2025/32 | 3a | FN11334 | Prior Avenue Reserve, Cremorne Point | Medium (3) | Fair | \$6,000 |
| 2025/32 | 3a | FN11346 | River Road Pedestrian Link, Wollstonecraft | Medium (3) | Fair | \$7,000 |
| 2025/32 | 3a | FN11347 | River Road Pedestrian Link, Wollstonecraft | Medium (3) | Fair | \$3,000 |
| 2025/32 | 3a | FN11348 | Balfour La, Wollstonecraft | Medium (3) | Fair | \$23,000 |
| 2025/32 | 3a | FN11352 | Ellalong Rd, Cremorne | Medium (3) | Fair | \$4,000 |
| 2025/32 | 3a | FN11353 | Samora Ave, Cremorne | Medium (3) | Fair | \$2,000 |
| 2025/32 | 3a | FN11360 | Sinclair St, Wollstonecraft | Medium (3) | Fair | \$7,000 |
| 2025/32 | 3a | FN11362 | Rocklands La, Wollstonecraft | Medium (3) | Fair | \$2,000 |
| 2025/32 | 3a | FN11363 | Smoothey Park, Wollstonecraft | Medium (3) | Fair | \$5,000 |
| 2025/32 | 3a | FN11374 | Blues Point Rd, North Sydney | Medium (3) | Fair | \$13,000 |
| 2025/32 | 3a | FN11379 | St Thomas' Rest Park, Crows Nest | Medium (3) | Fair | \$68,000 |
| 2025/32 | 3a | FN11396 | Vernon St, Cammeray | Medium (3) | Fair | \$25,000 |
| 2025/32 | 3a | FN11399 | Lavender To Wharf Footway, Lavender Bay | Medium (3) | Fair | \$19,000 |
| 2025/32 | 3a | FN11400 | Walker Street Road Reserve, Lavender Bay | Medium (3) | Fair | \$2,000 |
| 2025/32 | 3a | FN11402 | Walker Street Road Reserve, Lavender Bay | Medium (3) | Fair | \$11,000 |
| 2025/32 | 3a | FN11404 | Walker Street Road Reserve, Lavender Bay | Medium (3) | Fair | \$6,000 |
| 2025/32 | 3a | FN11407 | Watt Park, Lavender Bay | Medium (3) | Fair | \$22,000 |
| 2025/32 | 3a | FN11408 | Watt Park, Lavender Bay | Medium (3) | Fair | \$3,000 |
| 2025/32 | 3a | FN11411 | Waverton Park (Includes Merrett Playground), WAVERTON | Medium (3) | Fair | \$2,000 |
| 2025/32 | 3a | FN11415 | West Crescent Street Road Reserve, Mcmahons Point | Medium (3) | Fair | \$3,000 |
| 2025/32 | 3a | FN11424 | Willow Tree Park, Neutral Bay | Medium (3) | Fair | \$9,000 |

| Year | Priority | Fence ID | Location | Risk Rating / Category | Condition | Capital Cost |
|--------------|----------|----------|----------------------------------|------------------------|-----------|------------------|
| 2025/32 | 3a | FN11427 | Wilson St, Cammeray | Medium (3) | Fair | \$18,000 |
| 2025/32 | 3a | FN11433 | Wrixton Park, Kirribilli | Medium (3) | Fair | \$1,000 |
| 2025/32 | 3a | FN11434 | Bent St, Neutral Bay | Medium (3) | Fair | \$9,000 |
| 2025/32 | 3a | FN11435 | Merlin St, Neutral Bay | Medium (3) | Fair | \$3,000 |
| 2025/32 | 3a | FN11453 | Cremorne Reserve, Cremorne Point | Medium (3) | Fair | \$7,000 |
| 2025/32 | 3a | FN11474 | Bank St, North Sydney | Medium (3) | Fair | \$8,000 |
| 2025/32 | 3a | FN11475 | Toongarah Rd, North Sydney | Medium (3) | Fair | \$7,000 |
| 2025/32 | 3a | FN11480 | Watt Park, Lavender Bay | Medium (3) | Fair | \$7,000 |
| 2025/32 | 3a | FN11482 | Anderson Park, Neutral Bay | Medium (3) | Fair | \$4,591 |
| 2025/32 | | | Contingency | | | \$84,000 |
| TOTAL | | | | | | \$887,591 |

Note: These Cost estimates do not include inflation / building escalations costs which can vary between 3-8% each year. Funded by Open Space and Environment Division. Priorities may change.

Fence and Bollard – Renewal Program



North Sydney Oval Picket Fence replacement 2015



Berry Street – New Stainless Steel Bollards 2016



Berry Street new – stainless steel traffic bollards 2017



Young Street – Neutral Bay Road Closure – Bollards 2016



Military Road Neutral Bay (Before) –Decorative Safety Fence



Military Road Neutral Bay (After) –Decorative Safety Fence



McDougall Street Kirribilli – Timber Fence replacement 2016



Willoughby Street – Pocket Park Fence – refurbishment 2014



Doris Street – Neutral Bay – Fence Repairs 2015

Fences and Bollards – Performance Measures

The effectiveness of the asset management plan can be measured in the following ways:

- The degree to which the required projected expenditures identified in this asset management plan are incorporated into the long term financial plan,
- The degree to which 1-5 year detailed works programs, budgets, business plans and corporate structures take into account the 'global' works program trends provided by the asset management plan,
- The degree to which the existing and projected service levels and service consequences (what we cannot do), risks and residual risks are incorporated into the Strategic Plan and associated plans,
- The Asset Renewal Funding Ratio achieving the target of 1.0.

Fences and Bollards – References

- Fences and Bollards Data Collection & Condition Survey Audit by North Sydney Council.
- IPWEA, 2006, 'International Infrastructure Management Manual', Institute of Public Works Engineering Australasia, Sydney, www.ipwea.org/IIMM
- IPWEA, 2008, 'NAMS.PLUS Asset Management', Institute of Public Works Engineering Australasia, Sydney, www.ipwea.org/namsplus.
- IPWEA, 2015, 2nd edn., 'Australian Infrastructure Financial Management Manual', Institute of Public Works Engineering Australasia, Sydney, www.ipwea.org/AIFMM.
- IPWEA, 2015, 3rd edn., 'International Infrastructure Management Manual', Institute of Public Works Engineering Australasia, Sydney, www.ipwea.org/IIMM
- IPWEA, 2012 LTFP Practice Note 6 PN Long Term Financial Plan, Institute of Public Works Engineering Australasia, Sydney

APPENDICES

Appendix A: Maintenance Management System

Defect Management Inspection - Fences

Inspection areas have been defined in accordance with their usage – high (**red**), medium (**blue**) or low (**white**)





Inspection frequencies are based on these areas as defined by the reference maps and the resources currently available to undertake the inspections. The results of inspections are downloaded into the MMDS database.

Red – 2 times per year

Blue – Once each year

White – Once every 2 years

There are 5 categories in which a defect may be placed.

| | | |
|--------------|---|--|
| Cat 5 |  | Will be completed or made safe no later than 2 working days after allocation of defect to work crew. If made safe defect will then be re-categorised as Cat 4 or Cat 3. |
| Cat 4 |  | Will be repaired no later than 10 working days after allocation of defect to work crew. |
| Cat 3 |  | Will be repaired no later than 40 working days after allocation of defect to work crew. |
| Cat 2 |  | Will be repaired no later than 160 working days after allocation of defect to work crew. |
| Cat 1 | | As new. Surface displaying no defects. May have aesthetic issues such as gum, stains, services mark-up, etc. |

Intervention Matrix – Fences

| DEFECT | SEVERITY | RISK ADJUSTED FOR PEDESTRIAN VOLUME AND AGE | | |
|---|----------|---|-----------|-----------|
| | | WHITE | BLUE | RED |
| MINOR DEFECTS ONLY WITH FADED PAINT or GRAFFITI | | LOW | LOW | LOW |
| REQUIRES MAINTENANCE TO RETURN TO ACCEPTABLE LEVEL OF SERVICE; TYPICALLY, MINOR EVIDENCE OF WOOD ROT, UNSTABLE MOVEMENT OF POSTS; DAMAGED CHAIN WIRE MESH; PRESCENCE OF RUST; LOOSENED STRAPS ON TIMBER FENCE | Slight | MEDIUM | HIGH | HIGH |
| SECTIONS REQUIRE REPLACEMENT OR SIGNIFICANT RENEWAL; EVIDENCE OF WOOD ROT; POSTS MOVING WITH EASE | Moderate | HIGH | HIGH | VERY HIGH |
| BROKEN BEYOND REPAIR; OVER 50% REQUIRES REPLACEMENT; HAS MISSING SECTIONS; VERY UNSTABLE POSTS | Extreme | HIGH | VERY HIGH | VERY HIGH |

NOTES:

1. Appearance defects (gum, stains, surface marks etc) are not safety issues. Response time TBA. Record in "Category" as "A".
2. **Red** areas are where failure is most disruptive and expensive to the community/users and/or high traffic (both pedestrian and vehicular) flows, eg. retail/commercial areas; schools; hospitals; plazas.
3. **Blue** areas have medium traffic flows, eg. streets leading to retail/commercial areas; schools; hospitals; plazas.
4. **White** areas have low traffic flows, eg. residential street.

Appendix B: Safety Barrier Upgrade

Priority Projects

| Fence ID | Location | Road Hierarchy | Length (m) | Upgrade Estimate |
|-----------------|----------------------------------|-----------------------|-------------------|-------------------------|
| FN10035 | Bent St, Neutral Bay | Collector | 199 | \$598,000 |
| FN10038 | Bent St, Neutral Bay | Collector | 59 | \$176,000 |
| FN10071 | Carr St, Waverton | Collector | 70 | \$211,000 |
| FN10379 | Milson Rd, Cremorne Point | Collector | 1 | \$4,000 |
| FN10933 | Milson Rd, Cremorne Point | Collector | 19 | \$59,000 |
| FN10934 | Milson Rd, Cremorne Point | Collector | 8 | \$23,000 |
| FN10516 | Carter St, Cammeray | Local | 51 | \$152,000 |
| FN10087 | Cowdroy Ave, Cammeray | Local | 30 | \$90,000 |
| FN10088 | Cowdroy Ave, Cammeray | Local | 37 | \$111,000 |
| FN10532 | Cowdroy Ave, Cammeray | Local | 39 | \$117,000 |
| FN10101 | Cremorne Rd, Cremorne Point | Local | 5 | \$15,000 |
| FN10110 | East Crescent St, McMahons Point | Local | 82 | \$247,000 |
| FN10119 | Ellalong Rd, Cremorne | Local | 58 | \$174,000 |
| FN11023 | Ellalong Rd, Cremorne | Local | 54 | \$162,000 |
| FN11026 | Ellalong Rd, Cremorne | Local | 80 | \$240,000 |
| FN10870 | Grasmere Rd, Cremorne | Local | 83 | \$249,000 |
| FN10913 | Kareela Rd, Cremorne Point | Local | 29 | \$88,000 |
| FN10215 | Milray Ave, Wollstonecraft | Local | 139 | \$416,000 |
| FN10216 | Milray Ave, Wollstonecraft | Local | 104 | \$312,000 |
| FN10217 | Milray Ave, Wollstonecraft | Local | 85 | \$256,000 |
| FN10218 | Milray Ave, Wollstonecraft | Local | 2 | \$5,000 |
| FN11044 | Milray Ave, Wollstonecraft | Local | 7 | \$22,000 |
| FN11047 | Milray Ave, Wollstonecraft | Local | 17 | \$51,000 |
| FN11058 | Milray Ave, Wollstonecraft | Local | 6 | \$18,000 |
| FN10513 | Pine St, Cammeray | Local | 108 | \$324,000 |
| FN10517 | Pine St, Cammeray | Local | 130 | \$392,000 |
| FN10263 | Reynolds St, Cremorne | Local | 76 | \$228,000 |
| FN10264 | Reynolds St, Cremorne | Local | 135 | \$405,000 |
| FN11032 | Richmond Ave, Cremorne | Local | 18 | \$54,000 |
| FN11033 | Richmond Ave, Cremorne | Local | 12 | \$36,000 |
| FN12234 | Richmond Ave, Cremorne | Local | 28 | \$85,000 |
| FN10274 | Rowlison Pde, Cammeray | Local | 32 | \$96,000 |
| FN10289 | Telopea St, Wollstonecraft | Local | 10 | \$30,000 |
| FN10523 | The Boulevarde, Cammeray | Local | 35 | \$105,000 |
| FN10560 | The Boulevarde, Cammeray | Local | 9 | \$28,000 |
| FN10302 | Vale St, Cammeray | Local | 50 | \$149,000 |
| FN10559 | Vernon St, Cammeray | Local | 12 | \$36,000 |
| FN10411 | West St, Cammeray | Local | 33 | \$98,000 |

| Fence ID | Location | Road Hierarchy | Length (m) | Upgrade Estimate |
|--------------|--------------------------------|----------------|--------------|--------------------|
| FN10324 | Willoughby St, Kirribilli | Local | 4 | \$12,000 |
| FN10326 | Wonga Rd, Cremorne | Local | 15 | \$46,000 |
| FN12285 | Balfour St, Wollstonecraft | Local | 2 | \$7,000 |
| FN10012 | Barry St, Neutral Bay | Lane | 54 | \$163,000 |
| FN11234 | Bridgeview Ave, Cammeray | Lane | 138 | \$416,000 |
| FN11196 | East Ave, Cammeray | Lane | 8 | \$23,000 |
| FN10134 | Gerard La, Cremorne | Lane | 7 | \$23,000 |
| FN11128 | Little Wonga Rd, Cremorne | Local | 14 | \$44,000 |
| FN10464 | Lodge Rd Loop Access, Cremorne | Lane | 44 | \$131,000 |
| FN10238 | North Ave, Cammeray | Lane | 38 | \$114,000 |
| FN11550 | Rowlison Pde, Cammeray | Local | 10 | \$31,000 |
| FN10458 | Walumetta Dr, Wollstonecraft | Lane | 16 | \$50,000 |
| FN10471 | Whatmore St, Waverton | Lane | 28 | \$84,000 |
| FN10818 | Whatmore St, Waverton | Lane | 6 | \$17,000 |
| TOTAL | | | 2,333 | \$7,023,000 |

Note: These Cost estimates do not include inflation / building escalations costs which can vary between 3-8% each year. Priorities may change subject to detailed inspection and design.