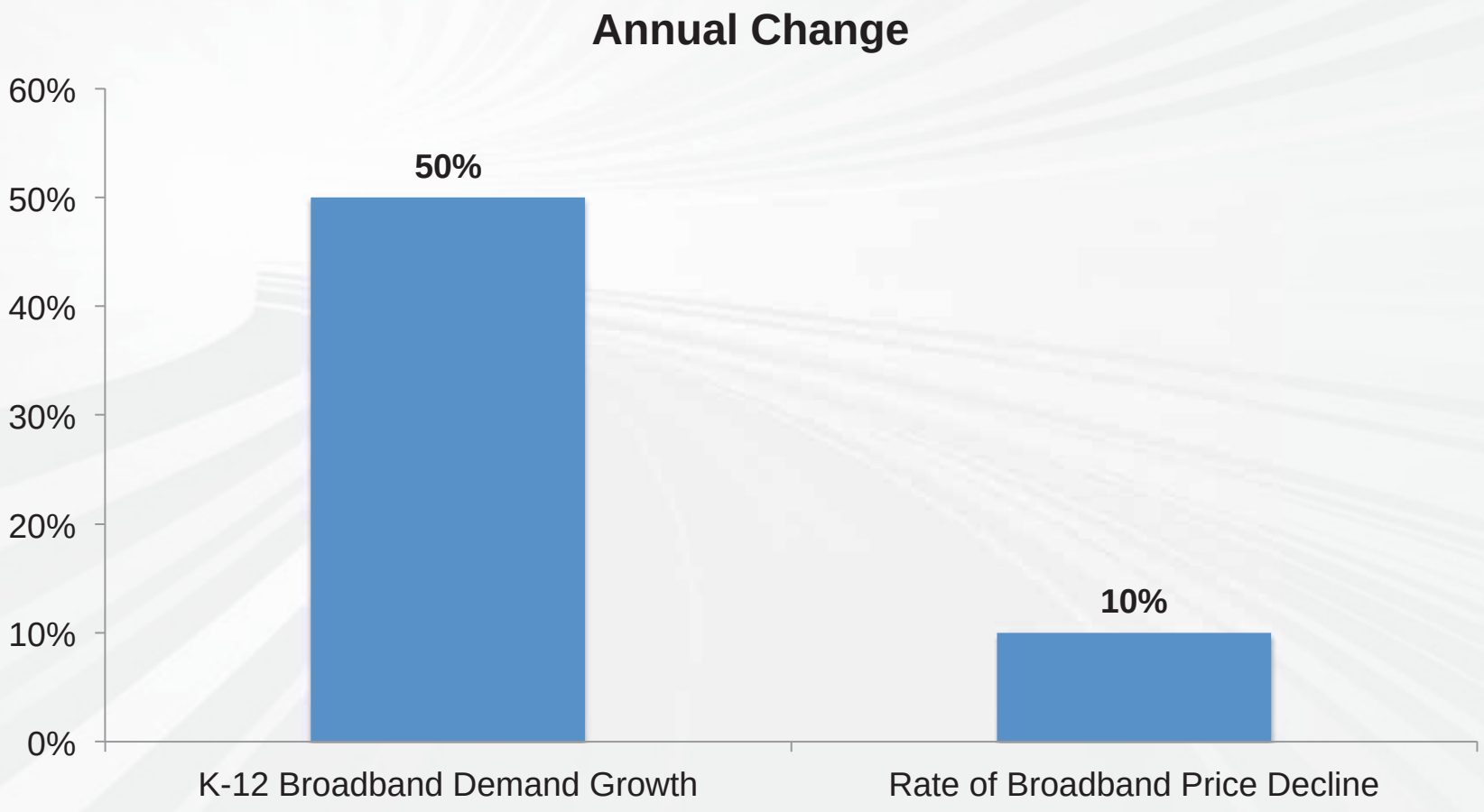
Education SUPERHIGHWAY

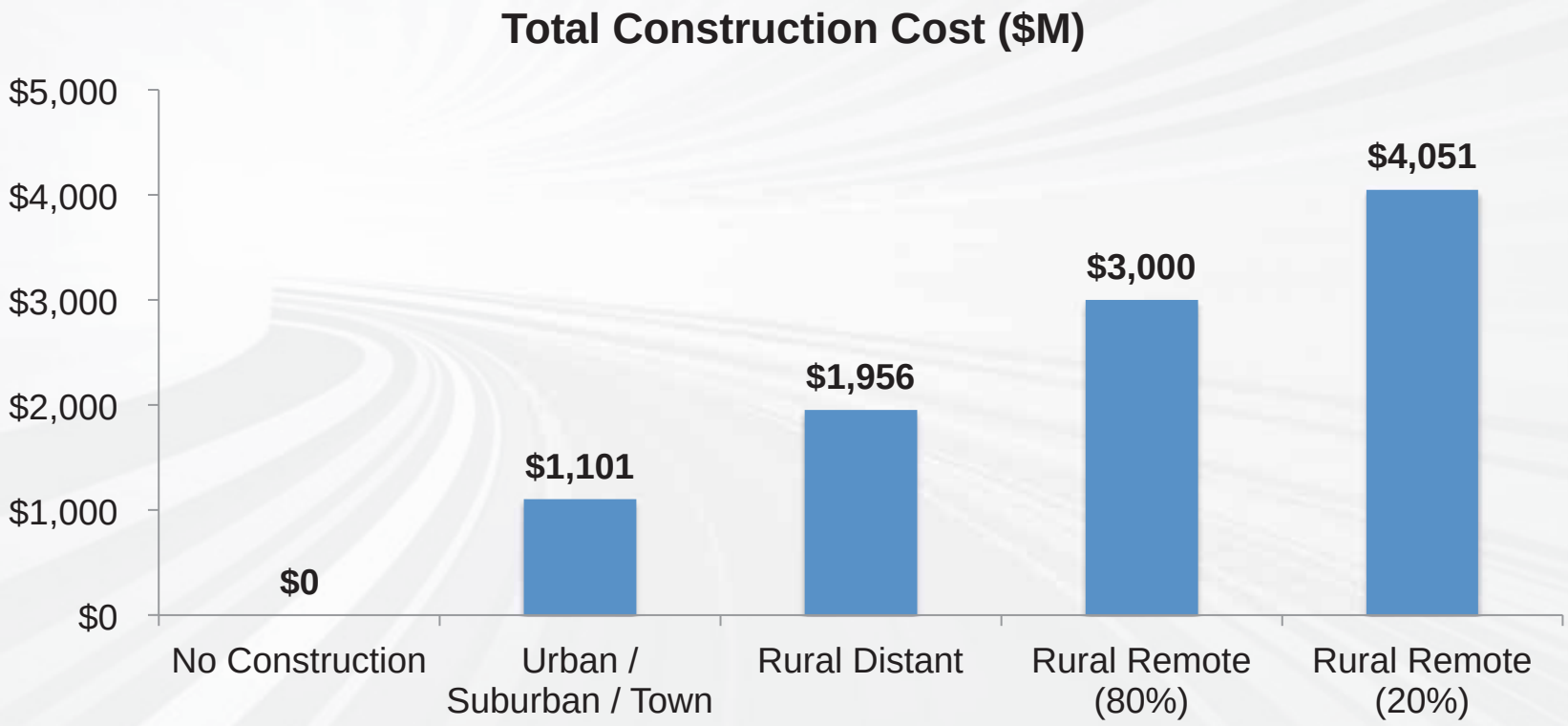
E-rate Connectivity Cost Model and Policy Scenarios

October 2014

Bandwidth Demand vs. Broadband Pricing



Cost to Close the Fiber Gap



% Schools with Fiber	65%	92%	97%	99%	100%

Note: Some schools in each scenario will continue to self-fund build-out through amortized operating expense

Use NRC Discounts to Fund Fiber Builds

- E-rate already provides discounts on non-recurring construction charges
- NRC significantly more cost effective than building into monthly service charges
  - Creates transparency of construction costs
  - Allows enforcement of LCP for fiber construction
  - Eliminates need for service providers to charge cost of capital
  - Ensures construction costs are not charged beyond payback period
  - Increases number of service providers able to compete for business
  - Lowers ongoing cost to E-rate

Critical Roadblocks

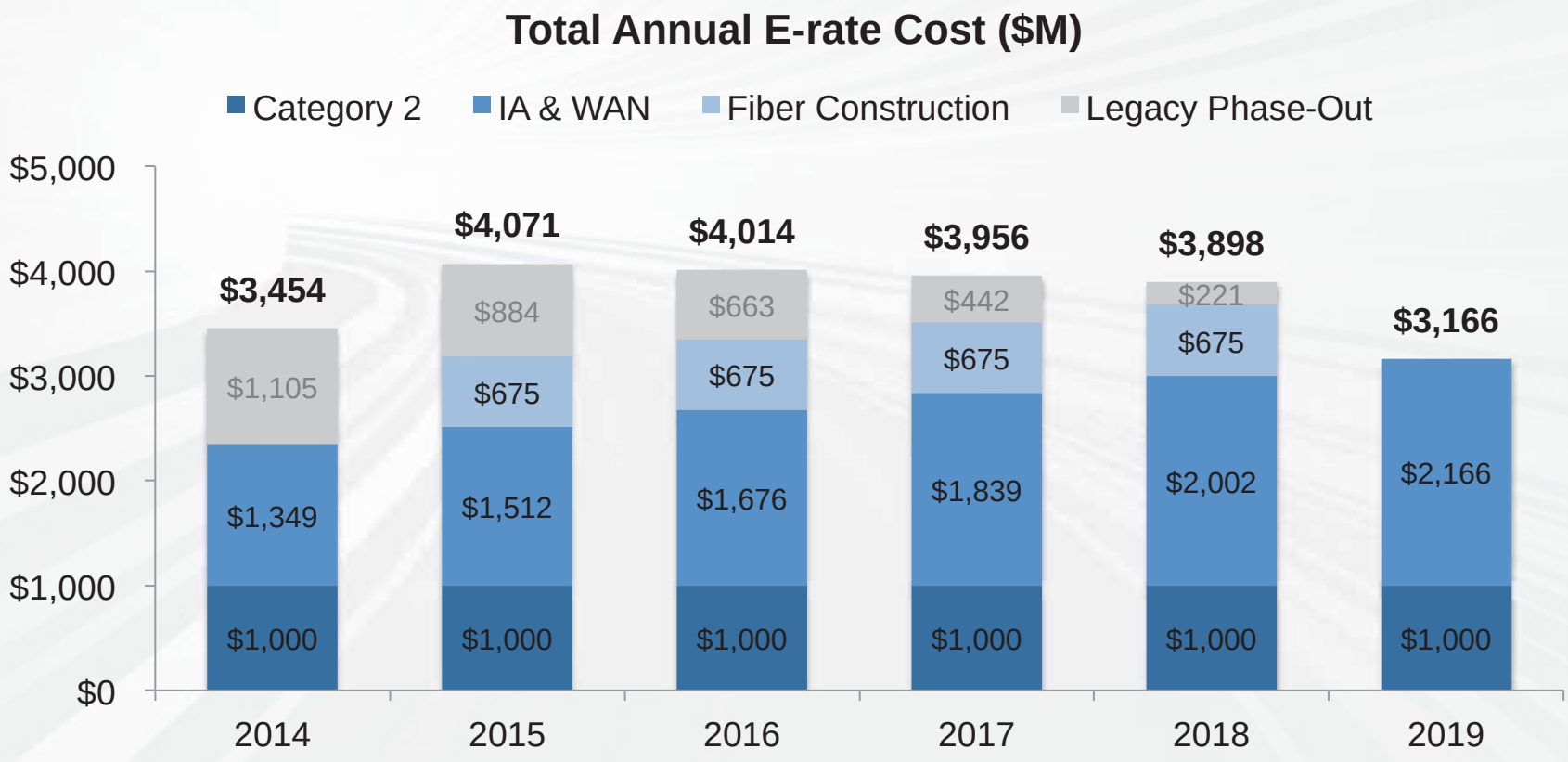
- NRC Cap ($500,000)
  - Not high enough for most school districts to connect all their schools
- Applicant Budgets
  - Schools and libraries don’t have capital for large up-front payments
- Access to Affordable Fiber
  - Require service providers to provide fiber (CAF)
  - Allow self-provisioning when no affordable commercial option available

Policy Recommendations: Fiber Gap

- NRC Cap
  - Suspend NRC cap for 5 years for new fiber construction
- Applicant Budgets
  - Increase funding for new construction (90% discount rate or matching funds)
  - Allow schools to pay their portion of NRC over life of contract
- Access to Affordable Fiber
  - Add self provisioning to ESL if no bid or most cost effective
  - Fund electronics and maintenance for self-provisioned networks
  - Change CAF rules to minimize mileage needed to connect schools

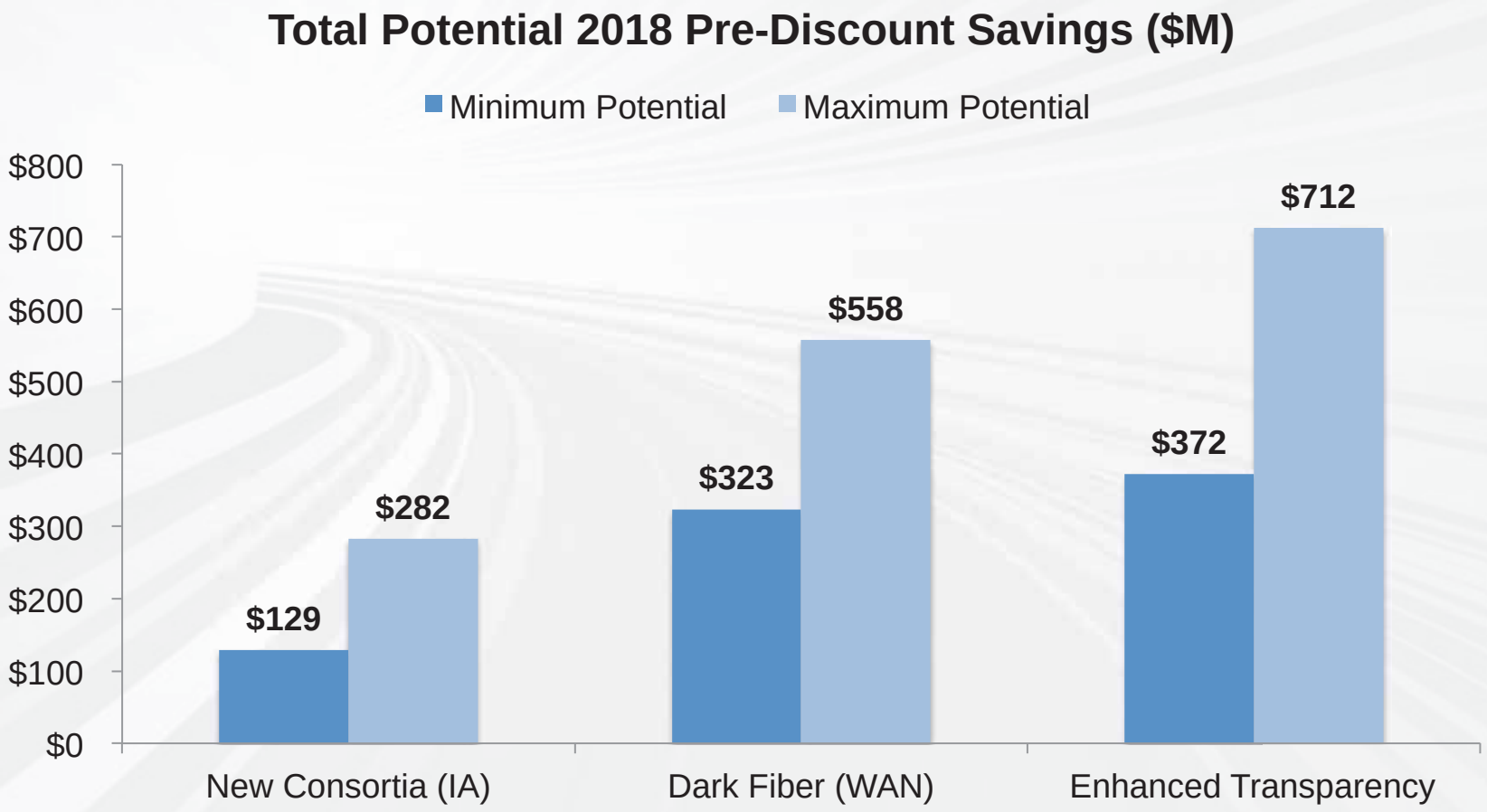
Estimated Annual E-rate Costs

Total projected on-going cost for E-rate program will be over $3B annually



Note: Annual cost estimates based on 99% subsidized construction scenario

Cost Savings Opportunities



Note: Enhanced transparency primarily benefits districts/schools not already participating in consortia or using dark fiber

Policy Recommendations: New Consortia

- **Goal:** Aggregate Internet access purchasing for greater economies of scale and network concurrency benefits

- **Policy Recommnedations**

  – Provide additional 5% discount for consortia that achieve 30% lower cost per Mbps relative to market (for their level of bandwidth need)

  – Fund routers, microwave and optical equipment used to connect consortia members

  – Waive cost allocation requirements for public networks if fiber offered at below market rates

Policy Recommendations: Dark Fiber

- **Goal:** Separate bandwidth need from circuit costs; invest in services that can increase capacity at fixed cost

- **Policy Recommendations**

  – Equalize the treatment of dark and lit fiber (special constructions charges, equipment, maintenance & redundancy)

  – Allow 20 year contracts for leased dark fiber and IRUs if contracts meet national benchmark prices

Policy Recommendations: Transparency

- **Goal:** Increase market efficiency to drive down total cost
- **Policy Recommendations**
  - Require USAC to publish updates to Item 21 data as part of PIA process
  - Increase enforcement of the LCP rule and clearly define what constitutes a similarly situated customer
  - Direct USAC to prioritize PIA reviews based on (1) total cost of services and (2) cost of each service relative to average cost across applicants
  - Standardize collection of pricing data for Category 2 equipment